

Product Catalog

# Data and Telecommunication Solutions and Racks

**CONTEG**



# WE ARE CONTEG

Leading Producer of **IT, Data Center, and Industrial Solutions**

Since its founding in 1998, CONTEG has continued its constant development and growth. Today, we are one of the leading manufacturers of complete solutions for data centers, telecommunication racks, and industrial cabinets.

We provide a global sales and technical support, have manufacturing plants equipped with latest technologies, and also operate a data center testing laboratory.

We supply our solutions to small businesses, large corporations as well as industrial customers.



# CONTEG IN NUMBERS

**Year of foundation:** 1998

**International branches and showrooms:** 10

**Partners:** in 60 countries on 3 continents

**Headquarters:** Prague, Czech Republic

**Production plant and central warehouse:**  
Pelhrimov, Czech Republic



Production plant and central warehouse: Pelhrimov, Czech Republic

## CONTEG—Total Solutions for Data Centers

Building a data center is a very complex process, requiring knowledge of other disciplines, cooling and power systems, safety equipment access, monitoring and supervision. Correct layout ensures your satisfaction relating to safety issues, energy consumption, technical availability and countless other areas.

The CONTEG team has extensive experience in working out systems and proposals, from basic layout to monitoring and traffic control. Our design services include consultation on all sizes of projects, from remote office server rooms to large scale data center enterprises.



For more information please contact our sales or technical team at [www.conteg.com/contacts](http://www.conteg.com/contacts)



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A row of server racks with orange mesh doors. A central vertical bar in shades of orange and yellow runs through the middle. The racks have handles with the brand name 'CONTEG' visible. The text 'FREE -STANDING RACKS' is overlaid in large, bold, orange letters.

# FREE -STANDING RACKS

# 1

## FREE-STANDING RACKS

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Comparison *	PREMIUM Rack Series— welded frame, 1,5mm and 2mm sheet steel			iSEVEN Rack Series— welded frame/unassembled, 1,5mm and 2mm sheet steel			
	RF1 extrusion type A (see page 9)	RF1 extrusion type V (see page 9)	RB1 (see page 15)	Ri7 (see page 22)	SERVER (see page 27)	Flex RM7 (see page 29)	Flex SERVER (see page 33)
<b>Appropriate use</b>							
Server rack	+++	++	+++	++	+++	+	+++
Data rack	++	+++	+	+++	+++	+++	+++
Cable rack	++	++	+	+++	++	+++	++
Data centers	+++	+++	+++	+	++	+	++
<b>Adjustable extrusions</b>							
19"	✓	✓	✓	-	-	-	-
21" or 23"	-	✓	-	-	-	-	-
<b>Balanced load rating</b>							
Up to 800 kg	✓	✓	✓	✓	-	✓	-
Up to 1000 kg	✓	✓	✓	-	-	✓	✓
Up to 1500 kg	✓	✓	✓	-	✓	-	-
Up to 2 000 kg	✓	-	-	-	-	-	-
<b>IP protection</b>							
IP 20	✓	✓	✓	✓	✓	✓	✓
IP 54	✓	✓	-	-	-	-	-
<b>Linking</b>							
Lateral	✓	✓	✓	✓	✓	✓	✓
With special parts	✓	✓	✓	-	-	-	-
<b>Targeted cooling</b>							
Door perforation 86 %	✓	✓	✓	✓	✓	✓	✓
Ventilation units	✓	✓	-	✓	✓	✓	✓
CoolTop above-row units	✓	✓	✓	-	✓	-	-
CoolTeg in-row units	✓	✓	✓	✓	✓	✓	✓
<b>Cabling</b>							
Changeable internal configuration	✓	✓	✓	✓	✓	✓	✓
Supports HDWM (Cat. 6A and higher)	✓	✓	✓	✓	✓	✓	✓
Supports OptiWay	✓	✓	✓	✓	✓	✓	✓
Supports TopDucts	✓	✓	✓	✓	✓	✓	✓
<b>Size</b>							
15U	-	-	-	✓	-	✓	-
21U	-	-	-	✓	-	✓	-
27U	✓	✓	-	✓	-	✓	-
33U	-	-	-	✓	-	✓	-
42U	✓	✓	✓	✓	✓	✓	✓
45U	-	-	-	✓	✓	✓	-
47U	✓	✓	✓	-	-	-	-
48U	-	-	-	✓	✓	✓	-
52U	✓	✓	✓	-	-	-	-
<b>Colors</b>							
Black RAL 9005	✓	✓	✓	✓	✓	✓	✓
Light gray RAL 7035	✓	✓	✓	✓	✓	✓	✓
<b>Locking system</b>							
Single-point	✓	✓	✓	✓	✓	✓	✓
Multipoint	✓	✓	-	-	-	-	-
<b>Security options</b>							
Access control system	✓	✓	✓	✓	✓	✓	✓
Airflow management	✓	✓	✓	✓	✓	✓	✓
Monitoring indoor and outdoor environment	✓	✓	✓	✓	✓	✓	✓

\* General comparisons of IT rack series; for technical details see appropriate catalog pages.

# PREMIUM SERVER RF1



RF1-42-80/12A

➤ The **PREMIUM Server RF1** is an unrivaled new rack from the Premium series designed for the most demanding conditions and applications. Its cornerstone is a highly rigid, laser-welded frame made of patented profile to ensure maximum rigidity and load capacity of up to 2 000 kg. It features a new type of easy-to-mount extrusions with marked U positions and offers maximum variability of internal arrangement. Its doors with 86 % perforation can be opened up to a 190° angle. The RF1 rack is designed to function with any CONTEG cooling system, air flow system or flexible cable management system, as well as with many additional systems such as access control systems, PDUs or fire prevention systems.

## MAIN ADVANTAGES

- Available in 27, 42, 47, 52U heights
- Load capacity—up to 2 000 kg
- Suited for heavy IT equipment
- Rigid welded frame of patented design
- Maximum usable internal space of the rack
- Unmatched 86 % door perforation; single or double door
- Two types of vertical extrusions with marked U positions and depth off-set
- Additional 12/24U available for 800 mm wide racks when using type A vertical extrusions
- Easy to adjust from 19" to 21" or 23" for 800 mm wide racks when using type V vertical extrusions
- Tool-less door installation
- Wide range of accessories
- Easy removing of the rack from the pallet after transport

STANDARD COLOR:  RAL 9005  RAL 7035 OPTIONAL COLOR:  RAL 5010  
 RAL 3020  RAL 6033  RAL 1018  RAL 2004

## DESCRIPTION

### Sizes

- Height: 27, 42, 47, 52U
- Width: 600, 800 mm
- Depth: 800, 1000, 1200 mm.  
For detailed information see the technical data and dimensions table.

### Construction

- Welded-frame design
- 1.5 & 2.0 mm zinc-plated and sheet steel

### Load rating

- Up to 2 000 kg balanced load

### Vertical extrusions

- 2 pairs of sliding 19" vertical A-type (600 or 800 mm) extrusions (for 800 mm provide additional 24U of installation space—valid for racks 42U and higher), adjustable from inside
- Option for 800 mm wide racks: 2 pairs of variable sliding extrusions V-type with variable adjustment of width—19, 21, or 23", adjustable from inside, load rating 1 500 kg.
- Painted in smooth black color

- Marking and number of every U position
- Marking and number of horizontal bars for depth off-set

### IP rating

- Standard IP00
- IP20 when bottom plates installed
- IP40 when solid doors, bottom plate, and top covers applied
- Options: up to IP54 with multipoint lock only
- A/C-ready—IP54 when A/C unit installed with multipoint lock only

### Colors

- Standard RAL 9005 and 7035

### Front door

- Vented door—perforation rate 86 %
- Swivel handle lock—DIN profile, universal key 333, multipoint; optional combination lock or electronic locks, single or multipoint
- Door opening angle 190°
- Easy re-hanging to open on right or left
- Tool-less door installation

- Options: single or vertically divided door with perforation rate 86 %, glass or steel

### Rear door

- Vented door—perforation rate 86 %
- Swivel handle lock—DIN profile, universal key 333, multipoint; optional combination lock or electronic locks, single or multipoint
- Easy re-hanging to open on right or left
- Tool-less
- Options: single or vertically divided door with perforation rate 86 %, glass or steel

### Side panels

- Horizontally divided side panels
- Removable with locks
- Hanging simple installation
- Securing of side panels as an option—DP-DR-SSP-RF1

### Top plate

- Single-piece design, removable
- Two lateral cable entries 88 mm wide covered by brushes and with

- length 600/800/1 000 for racks 800/1 000/1 200 mm deep
- Opening for ventilation unit: ~ 420×280 mm ventilation opening(s) covered with removable blank sheet steel panel allow for installation of up to 6-fan ventilation unit ~ 420×440 mm ventilation opening covered with removable blank sheet steel panel allow for installation of 9-fan ventilation unit (only for 800 mm wide racks with depth of 1 000 and 1 200 mm)
- Other types upon request

### Bottom plate

- Segmented design, removable
- Front segment included with depth 240 mm, rear segments as option

### Feet

- Optional adjustable feet M12, plinth or plinth with filter

### Other

- Easily installable in blocks—DP-DR-RF1
- GND/earthing kit included

# PREMIUM Server RF1 Racks



STANDARD CONFIGURATION (short code only)		OPTIONS	
1	Front vented door 86 % with multipoint swivel handle lock	9	Adjustable feet M12
2	Rear vertically divided vented door 86 % with multipoint swivel handle lock	10	Plinth
3	2 pairs A-type 19" sliding extrusions	11	Plinth with filter
4	Horizontal extrusion holders	12	Glass door
5	2 pairs of horizontally divided side panels with locks	13	Sheet steel door
6	Rack frame	14	Vertically divided glass door <sup>1,2</sup>
7	Removable H-design of top plate with lateral cable entry openings and ventilation unit	15	Vertically divided vented door 86 % <sup>2</sup>
8	Removable segmented bottom plate set (consists of front segment; may differ for different rack footprints)	16	Vertically divided sheet steel door <sup>2</sup>
	• GND/earthing kit	29	Ventilation unit
	• 28 mounting kits		

<sup>1</sup>Not available for 600 mm wide racks.

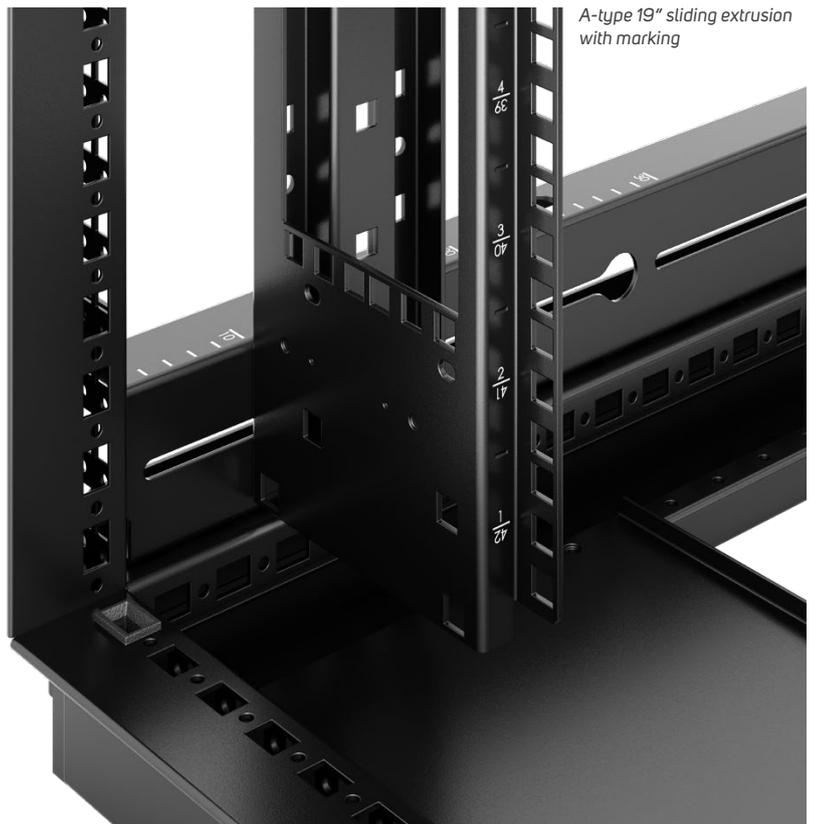
<sup>2</sup>Requires multipoint lock.

## PREMIUM Server RF1 Racks—technical data and dimensions

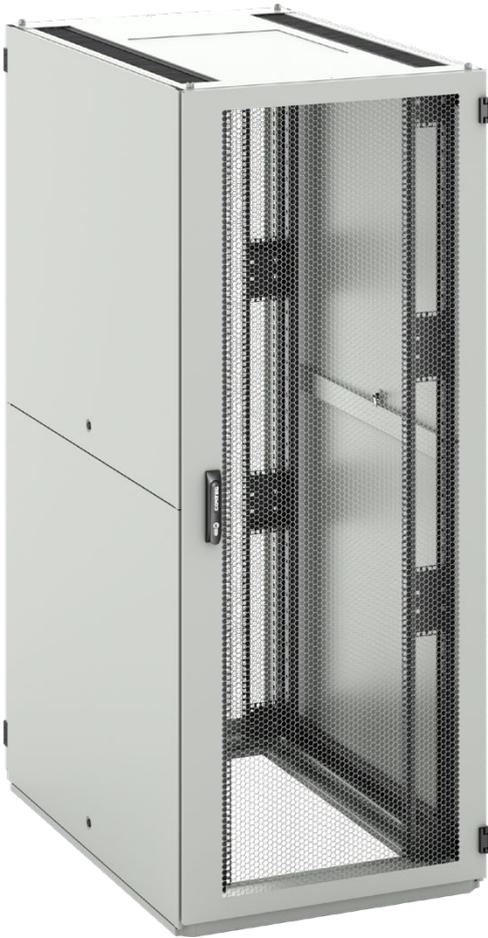
Code	H (in U)	Load rating (kg)	Dimensions (mm)				Dimensions incl. packing (mm)		
			H *	W	D	Useful depth	H	W	D
RF1-27-60/8A	27	2000	1355	600	800	770	1510	660	900
RF1-42-60/8A	42	2000	2005	600	800	770	2160	660	900
RF1-47-60/8A	47	2000	2205	600	800	770	2360	660	900
RF1-52-60/8A	52	2000	2450	600	800	770	2605	660	900
RF1-27-60/10A	27	2000	1355	600	1000	970	1510	660	1100
RF1-42-60/10A	42	2000	2005	600	1000	970	2160	660	1100
RF1-47-60/10A	47	2000	2205	600	1000	970	2360	660	1100
RF1-52-60/10A	52	2000	2450	600	1000	970	2605	660	1100
RF1-27-60/12A	27	2000	1355	600	1200	1170	1510	660	1300
RF1-42-60/12A	42	2000	2005	600	1200	1170	2160	660	1300
RF1-47-60/12A	47	2000	2205	600	1200	1170	2360	660	1300
RF1-52-60/12A	52	2000	2450	600	1200	1170	2605	660	1300
RF1-27-80/8A	27	2000	1355	800	800	770	1510	860	900
RF1-42-80/8A	42	2000	2005	800	800	770	2160	860	900
RF1-47-80/8A	47	2000	2205	800	800	770	2360	860	900
RF1-52-80/8A	52	2000	2450	800	800	770	2605	860	900
RF1-27-80/10A	27	2000	1355	800	1000	970	1510	860	1100
RF1-42-80/10A	42	2000	2005	800	1000	970	2160	860	1100
RF1-47-80/10A	47	2000	2205	800	1000	970	2360	860	1100
RF1-52-80/10A	52	2000	2450	800	1000	970	2605	860	1100
RF1-27-80/12A	27	2000	1355	800	1200	1170	1510	860	1300
RF1-42-80/12A	42	2000	2005	800	1200	1170	2160	860	1300
RF1-47-80/12A	47	2000	2205	800	1200	1170	2360	860	1300
RF1-52-80/12A	52	2000	2450	800	1200	1170	2605	860	1300

\* Height in mm without feet.

# PREMIUM Server RF1 Racks



## PREMIUM Server RF1 Racks



RAL 7035



RF1-42-80/12A in RAL 7035 color, with opened front vented door (86 % door perforation ratio) with multipoint swivel handle lock.



3x RF1-42-80/12A in RAL 7035 color, with CoolTop cooling unit on the top.

# PREMIUM Server RF1 Racks—ordering and shipping information

Configure the rack that meets your requirements. The ordering matrix below will help you create a Code. As soon as you have the Code, please contact your CONTEG products distributor. Please note that **all RF1 racks are delivered fully assembled** and palletized!

## FOLLOW THE STEPS TO SET UP THE DESIRED RF1 RACK CODE

**R F 1 - 1. - 2. / 3. 4. - 5. 6. 7. 8. 9. - 10. 11. 12. - 13.**

An example of a correct Code:

**R F 1 - 47 - 80 / 12 A - W W F W A - O H K - H**

1. HEIGHT			2. WIDTH		3. DEPTH			4. EXTRUSION	
Code	Height (in U)	External height (mm)	Code	Width (mm)	Code	Depth (mm)	Useful depth (mm)	Code	Note
27	27	1355	60	600	8	800 <sup>1</sup>	770	A	A-type extrusions, non-divided (600 or 800 mm wide) extrusions (for 800 mm provide additional 24U of installation space—valid for racks 42U and higher) adjustable from inside, blank panels not included
42	42	2005	80	800	10	1000	970	V	V-type with variable adjustment of width—19, 21, or 23", for racks 800 mm wide only, adjustable from inside, load rating 1500 kg.
47	47	2205			12	1200	1170		
52	52	2450							

<sup>1</sup>Not available for 52U.

5. FRONT DOOR		6. FRONT DOOR LOCK		7. REAR DOOR/PANEL		8. REAR DOOR/PANEL LOCK	
Code	Note	Code	Note	Code	Note	Code	Options
O	Without door	V	Swivel handle, DIN profile, universal key 333	O	Without panel/door	V	Swivel handle, DIN profile, universal key 333
G	Glass door	W	Swivel handle, DIN profile, universal key 333, multipoint	G	Glass door	W	Swivel handle, DIN profile, universal key 333, multipoint
S	Sheet steel door	G	Swivel handle with combination lock, individual key	S	Sheet steel door	G	Swivel handle with combination lock, individual key
W	Vented door (perforation rate 86%) <sup>1</sup>	H	Swivel handle with combination lock, individual key, multipoint	W	Vented door (perforation rate 86%) <sup>1</sup>	H	Swivel handle with combination lock, individual key, multipoint
A	Vertically divided glass door <sup>2</sup>	1	Electronic door lock with profile half cylinder, cable 4 m	A	Vertically divided glass door <sup>2</sup>	1	Electronic door lock with profile half cylinder, cable 4 m
C	Vertically divided sheet steel door <sup>2</sup>	2	Electronic door lock with profile half cylinder and built-in card reader (EM&HID Prox format 125 kHz), 4.5 m cables included	C	Vertically divided sheet steel door <sup>2</sup>	2	Electronic door lock with profile half cylinder and built-in card reader (EM&HID Prox format 125 kHz), 4.5 m cables included
F	Vertically divided vented door (perforation rate 86%) <sup>1,2</sup>	3	Electronic door lock with profile half cylinder, cable 4 m, multipoint	F	Vertically divided vented door (perforation rate 86%) <sup>1,2</sup>	3	Electronic door lock with profile half cylinder, cable 4 m, multipoint
Other		4	Electronic door lock with profile half cylinder and built-in card reader (EM&HID Prox format 125 kHz), 4.5 m cables included, multipoint	Other		4	Electronic door lock with profile half cylinder and built-in card reader (EM&HID Prox format 125 kHz), 4.5 m cables included, multipoint
		Other				Other	

<sup>1</sup>IP 20 max.  
<sup>2</sup>Multipoint lock only.  
 \* Options apply for RF1 800 only.

9. SIDE PANELS (BOTH SIDES) *		10. IP RATING <sup>1</sup>		11. PLATES			
Code	Note	Code	Note	Code	Top plate	Bottom plate	Note
O	No side panels	O	IP 00	A	P	X	Top and bottom single piece plates required for IP54
A	2 pairs of horizontally divided side panels, sheet steel, universal key	2	IP 20	C	No top	X	Open top—for A/C-ready option
B	1 pair of horizontally divided side panels, sheet steel, universal key	3	IP 30	H	H	No bottom <sup>1</sup>	Standard bottom—ready for installation on raised floor or plinth
		4	IP 40	X	No top <sup>1</sup>	No bottom <sup>1</sup>	Open top and bottom, for individual plates ask your CONTEG representative
		5	IP 54 <sup>3</sup>				
		A	A/C ready <sup>2,3</sup>				

\* Open side/sides results in no IP protection.  
<sup>1</sup> Open top or bottom results in no IP protection, unless otherwise stated.  
<sup>1</sup> According to EN 60 529.  
<sup>2</sup> Ready for A/C unit installation; recommended when cooling planned or required; IP54 when A/C unit installed according to instructions.  
<sup>3</sup> Multipoint lock only.

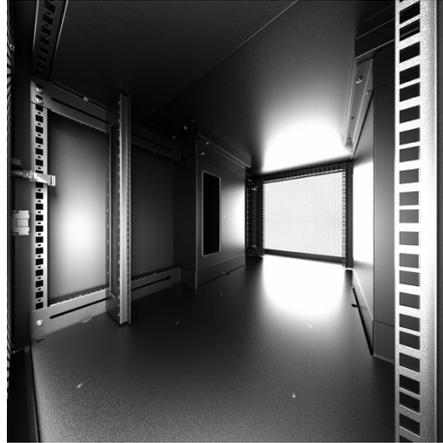
12. LOAD RATING			13. COLOR	
Code	Load rate (kg)	Note	Code	Note
F	1500	Balanced load	B	RAL 7035 (light gray)
K	2000		H	RAL 9005 (black)

# PREMIUM HOUSING RB1



RB1-42-80/120-3

➤ The **PREMIUM Housing RB1** rack series is designed for server housing and co-location centers. All types of active or passive 19" equipment can be housed inside.



## MAIN ADVANTAGES

- Flexible server-housing rack for collocation and housing data centers
- 2, 3 and 4 individual compartments
- Unmatched 86% door perforation ratio decreases server fan power consumption
- Installable as standalone or in rows with other racks
- Individual cable guides for cable management included
- Separation frame for each compartment

COLOR:  RAL 9005  RAL 7035

## DESCRIPTION

### Sizes

- Height: 42, 47, 52U
- Width: 600, 800 mm
- Depth: 1000 and 1200 mm

### Construction

- 1.5 & 2.0 mm sheet steel
- 2–4 compartments; other combinations upon request

### Load rating

- 2 000 kg maximum load rating per frame
- Load rating 500 kg per 19" compartments; 100 kg per shelf

### IP rating

- IP20

### Colors

- Standard RAL 7035 and 9005

### Front and rear doors

- Vented door—perforation rate 86%
- Swivel handle lock—DIN profile, universal key 333, single point
- Door opening angle 190°
- Easy re-hanging to open on right or left

### Side panels

- Horizontally divided full side panels

- Removable with locks
- Hanging simple installation
- Securing of side panels as an option—DP-DR-SSP-RF1

### Cable entries

- Top and bottom

### 19" vertical extrusions

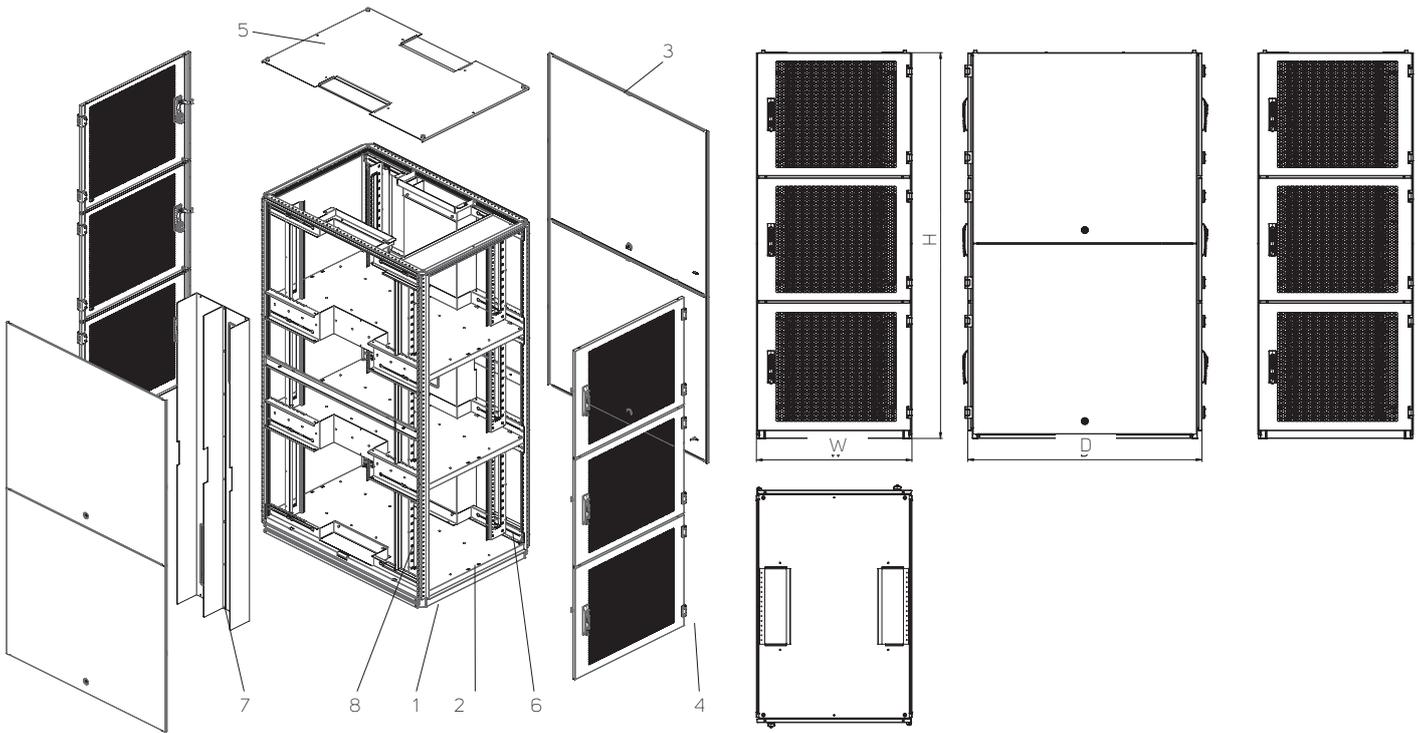
- 2 pairs for each section, sliding depth adjustment:
- L-type — for 600 mm wide racks (2–4 compartments)
  - P-type — for 800 mm wide racks (2–3 compartments)
  - C-type — for 800 mm wide racks (4 compartments)

### Other

- Individual cabling for each compartment included
- GND/earthing kit included
- Installable in blocks with DP-DR-RF1 (ordered separately)
- Air separation frame for all compartments (ordered separately)

Rack height	2 sections (individual heights)	3 sections (individual heights)	4 sections (individual heights)
42U	20, 20U	13, 13, 13U	9, 10, 10, 9U
47U	22, 22U	14, 15, 14U	10, 11, 11, 10U
52U	25, 25U	17, 17, 16U	12, 12, 12, 11U

# PREMIUM Housing RB1 Racks



RB1-42-80/120-3

STANDARD CONFIGURATION (short Code only) *		OPTIONS	
1	Server housing rack frame	8	Separation frame for each compartment
2	3 pieces of high-load shelf		
3	2 removable side panels with locks		
4	6 pieces of vented doors with swivel handle lock		
5	Removable Z-design top plate with cable entry openings		
6	2 pairs of 19" vertical P-type extrusions for each compartment		
7	Set of individual cable guiding		
	• GND/earthing kit		
	• 28 mounting kits		

\* Valid for RB1 racks with 3 compartments.

## Technical data and dimensions

Code	H (in U)	Load rating (kg)	Dimensions (mm)				Dimensions incl. packing (mm)		
			H	W	D	Useful depth	H	W	D
RB1-42-60/100	42	2 000	2 005	600	1 000	970	2 160	660	1 060
RB1-47-60/100	47	2 000	2 205	600	1 000	970	2 360	660	1 060
RB1-52-60/100	52	2 000	2 450	600	1 000	970	2 605	660	1 060
RB1-42-60/120	42	2 000	2 005	600	1 200	1 170	2 160	660	1 260
RB1-47-60/120	47	2 000	2 205	600	1 200	1 170	2 360	660	1 260
RB1-52-60/120	52	2 000	2 450	600	1 200	1 170	2 605	660	1 260
RB1-42-80/100	42	2 000	2 005	800	1 000	970	2 160	860	1 060
RB1-47-80/100	47	2 000	2 205	800	1 000	970	2 360	860	1 060
RB1-52-80/100	52	2 000	2 450	800	1 000	970	2 605	860	1 060
RB1-42-80/120	42	2 000	2 005	800	1 200	1 170	2 160	860	1 260
RB1-47-80/120	47	2 000	2 205	800	1 200	1 170	2 360	860	1 260
RB1-52-80/120	52	2 000	2 450	800	1 200	1 170	2 605	860	1 260

## PREMIUM Housing RB1 Racks—ordering and shipping information

Configure the rack that meets your requirements. The ordering matrix below will help you create a Code. As soon as you have the Code, please contact your CONTEG products distributor. Please note that **all RB1 racks are delivered fully assembled** and palletized.

### FOLLOW THE STEPS TO SET UP THE DESIRED RB1 RACK CODE

**R B 1 - 1. - 2. / 3. - 4. - 5.**

An example of a correct Code:

**R B 1 - 47 - 60 / 100 - 3 - B**

1. HEIGHT *		
Code	Height (in U)	External height (mm)
42	42	2 005
47	47	2 205
52	52	2 450

\* Height in mm without feet.

2. WIDTH	
Code	Width (mm)
60	600
80	800

3. DEPTH	
Code	Depth (mm)
100	1 000
120	1 200

4. NUMBER OF COMPARTMENTS	
Code	Options
2	2 compartments
3	3 compartments
4	4 compartments

5. COLOR	
Code	Note
B	RAL 7035 (light gray)
H	RAL 9005 (black)

ACCESSORIES	
Code	Description
DP-RB1-CW-y <sup>1</sup> -xx <sup>2</sup>	Set of air separation frames for RB1 racks

<sup>1</sup>Substitute **y** with number of compartments (2, 3 or 4).

<sup>2</sup>Substitute **xx** with height of rack in U (42, 47 or 52).

### Recommended accessories



Managed PDU



RAMOS Ultra

# PREMIUM RACK SERIES PLATES



CO-T1-80/120-B-H

➤ CONTEG's PREMIUM rack series gives you unlimited flexibility when planning the final configuration of your rack. Our product portfolio contains a unique interface between out-of-rack and in-rack cabling systems (such as OptiWay, Top Ducts and High Density Wire Management). Simply choose the plate design (quantity and type of cable entry openings) that perfectly suits your needs. All plates are applicable for RF1 rack series.

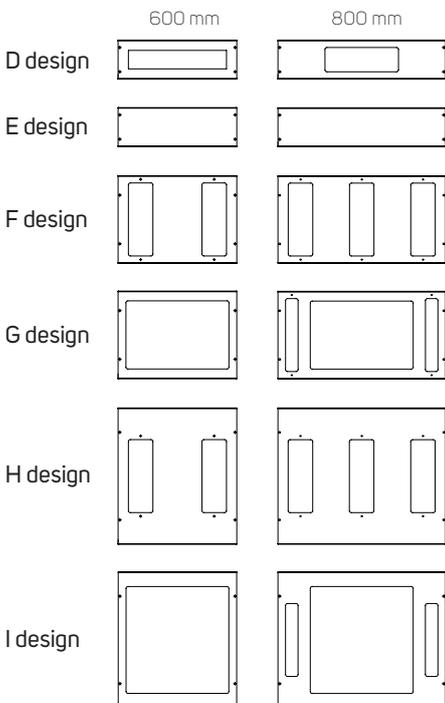
## MAIN ADVANTAGES

- PREMIUM rack series with interchangeable top and bottom plates
- 2 different single-piece top plates
- 6 types of segmented bottom plates
- Applicable for RF1 rack series
- Compatible with out-of-rack and in-rack cabling systems
- Cabling systems (such as OptiWay, Top Ducts and High Density Wire Managers)

COLOR:  RAL 9005  RAL 7035 Other colors available on request.

## BOTTOM PLATES

Segmented bottom plates consist of 3 or 4 per set, delivered separately in a carton box. Any plate may be left out (incomplete bottom plate sets applicable — results in no IP protection). Write O if the position should be left empty.

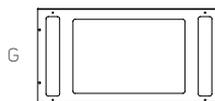


Code	RF1 rack width (mm)	Package
CO-B1-60-X-Y	600	1 pc
CO-B1-80-X-Y	800	1 pc

Single plates are delivered in carton boxes. Instead of "X" choose suitable design and write the code: A to I. Instead of "Y" write "H" for black (RAL 9005) or "B" for gray (RAL 7035).

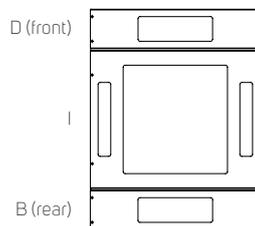
### Example

CO-B1-80-G-Y



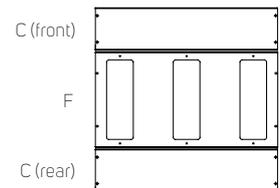
### Example

1× CO-B1-80-D-Y  
1× CO-B1-80-I-Y  
1× CO-B1-80-D-Y



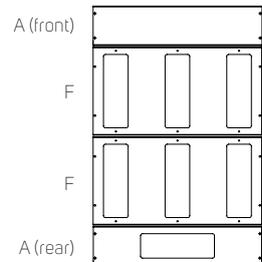
### Example

2× CO-B1-80-E-Y  
1× CO-B1-80-F-Y



### Example

1× CO-B1-80-E-Y  
1× CO-B1-80-D-Y  
2× CO-B1-80-F-Y



### D, E designs: lateral plates

Complete bottom plate always contains two plates of D or E design. Combination of two different plates is allowed.

### F, G designs: central plates for 800 and 1200 mm deep racks

Complete bottom plate always contains one (800 mm deep racks) or two (1200 mm deep racks) plates of F or G design. Combination of two different plates is allowed.

### H, I designs: central plates for 1000 mm deep racks

Complete bottom cover always contains one plate of H or I design.

Bottom plate design	For rack width (mm)	Type of openings			
		300 × 100 mm	300 × 50 mm	420 × 280 mm	420 × 440 mm
D	600	1x	–	–	–
	800	1x	–	–	–
E	600	–	–	–	–
	800	–	–	–	–
F	600	2x	–	–	–
	800	3x	–	–	–
G	600	–	–	1x	–
	800	–	2x	1x	–
H	600	2x	–	–	–
	800	3x	–	–	–
I	600	–	–	–	1x
	800	–	2x	–	1x

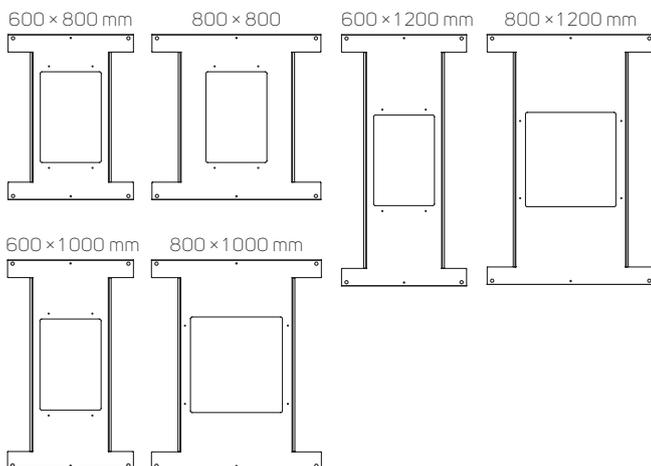
## TOP PLATES

Single-pieces, with four different design options; delivered separately in a carton box, with blanking panels/plastic caps.

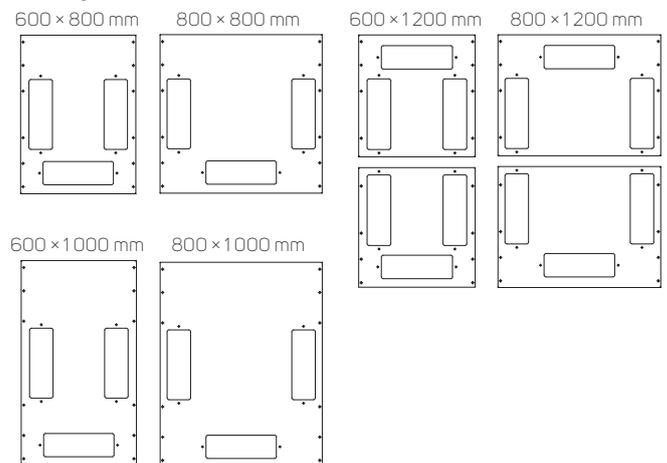
Code	RF1 rack footprint (mm)	Package
CO-T1-60/80-X-Y	600 × 800	1pc
CO-T1-60/100-X-Y	600 × 1000	1pc
CO-T1-60/120-X-Y	600 × 1200	1pc
CO-T1-80/80-X-Y	800 × 800	1pc
CO-T1-80/100-X-Y	800 × 1000	1pc
CO-T1-80/120-X-Y	800 × 1200	1pc

Instead of "X" choose suitable design and write the code: H or P. Instead of "Y" write "H" for black (RAL 9005) or "B" pro gray (RAL 7035). [P design is compatible with IP54.]

### H design



### P design



Bottom plate single-piece × for IP55 is similar to type P.

Top plate design	For rack dimensions (width × depth)	Opening type					
		300 × 100 mm	100 × 700 mm	100 × 900 mm	100 × 1100 mm	420 × 280 mm	420 × 440 mm
H	600 × 800	-	2x	-	-	1x	-
	600 × 1000	-	-	2x	-	-	1x
	600 × 1200	-	-	-	2x	-	1x
	800 × 800	-	2x	-	-	1x	-
	800 × 1000	-	-	2x	-	-	1x
	800 × 1200	-	-	-	2x	-	1x
P	600 × 800	3x	-	-	-	-	-
	600 × 1000	3x	-	-	-	-	-
	600 × 1200	6x	-	-	-	-	-
	800 × 800	3x	-	-	-	-	-
	800 × 1000	3x	-	-	-	-	-
	800 × 1200	6x	-	-	-	-	-

## Recommended accessories



Cable protection DP-KP-KAR4



Cable protection DP-KP-HCE2



Cable protection DP-KP-KAR

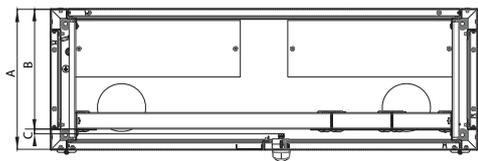


Cable protection DP-KP-KAR4-D

# OPTIMAL CABLE MANAGEMENT



ROF-CS-42-90/40-CWYUA + ROF-CS-42-30/40-SVYUA



➤ The **OPTIMAL Cable Management** rack is designed to support either horizontal Cross Connect configuration or Consolidation Point topology based on ISO/IEC 11801, TIA-942 and TIA-568 B standards. This solution is recommended for telecommunication rooms where active components and patch panels need to be separated.

## MAIN ADVANTAGES

- Specific system for High Density cabling or Consolidation point
- Flexible arrangement of inner components

COLOR:  RAL 9005  RAL 7035

## Technical data and dimensions

Code	Specification	H (in U)	Dimensions (mm)	
			W	D
ROF-CS-42-90/30-CWYUA	Main Cable Management rack	42	900	300
ROF-CS-45-90/30-CWYUA	Main Cable Management rack	45	900	300
ROF-CS-42-90/40-CWYUA	Main Cable Management rack	42	900	400
ROF-CS-45-90/40-CWYUA	Main Cable Management rack	45	900	400
ROF-CS-42-30/30-SVYUA	Extension Cable Management rack	42	300	300
ROF-CS-45-30/30-SVYUA	Extension Cable Management rack	45	300	300
ROF-CS-42-30/40-SVYUA	Extension Cable Management rack	42	300	400
ROF-CS-45-30/40-SVYUA	Extension Cable Management rack	45	300	400

Code	Depth of rack	Total useful depth for installed equipment	19" extrusions in front position	
			Rearward useful depth	Frontward useful depth
	A	B + C	B	C
ROF-CS-xx-90/30	300	264	254	10
ROF-CS-xx-90/40	400	364	354	10

## DESCRIPTION

### Sizes

- Height: 42, 45U
- Width of main rack—900 mm
- Width of extended rack—300 mm
- Depth: 300 or 400 mm

### Construction

- Welded-frame design
- 1.5 mm sheet steel
- Free-standing solution (attach to the wall or connect together)

### IP rating

- IP30

### 19" Vertical extrusions

- Adjustable positioning of 19" extrusions—front to rear and left, central or right

- Pair of patch cord management panels
- When 19" extrusions are in front position of main rack:
  - Useful rearward depth is 254 mm for 300 mm and 354 mm for 400 mm depth of ROF-CS; when cable management accessories installed useful depth is different
  - Useful frontward space limited by multipoint lock and ranges between 10 and 15 mm
  - Extended rack can be attached to main cable management rack at both sides

### Colors

- Standard RAL 7035 and 9005

### Front door

- Main rack—vertically divided sheet steel front doors, multipoint lock; rear and side panels with lock
- Extended rack—sheet steel front door, single point lock; rear and side panels with lock

### Rear and side panels

- Removable sheet steel door with lock

### Cable entries

- In top and bottom plate
- Covered by removable blank metal and plastic panels

### Feet

- Adjustable feet standard

### Cable management

- Management panels can be equipped with cable management accessories:
  - Fibre storage spools—HDWM-FSS-50 or HDWM-FSS-100 (4x HDWM-FSS-50 included)
  - Plastic cable brackets—VO-xxx
  - Metal cable brackets—VO-Wx-xx/xx

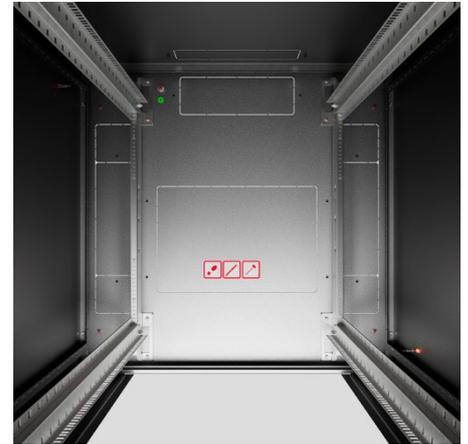
### Package includes

- Main unit: rack, 19" frame, 2x management panels, 4x cable spools HDWM-FSS-50
- Extension unit: rack, 1x management panel, 2x cable spools HDWM-FSS-50



Ri7-42-80/80

➤ The **iSEVEN Ri7** rack has been designed to provide users with an unmatched ratio between price, utility value and quality. Ideal for installers and end-users who want to spend less time choosing between various options.



## MAIN ADVANTAGES

- Universal rack for standard daily IT use
- Available in 36 dimensions
- Pre-configured rack, with many other options

COLOR:  RAL 9005  RAL 7035

## DESCRIPTION

### Sizes

- Height: 15, 21, 27, 42, 45, 48U
- Width: 600, 800 mm
- Depth: 600, 800, 1000 mm; 1200 mm (for 42, 45, 48U)

### Construction

- Welded-frame design

### Load rating

- 800 kg

### 19" Vertical extrusions

- 2 pairs of sliding 19" extrusions, adjustable from inside

### IP rating

- Standard IP30

### Colors

- Standard RAL 7035 and 9005

### Front door

- Security glass door with swivel handle lock—DIN profile, universal key 333
- Optional: sheet steel door, perforated door, single or vertically divided door with perforation rate of 86 %
- Easy re-hanging to open on right or left
- Door opening angle 180°

### Rear panel

- Removable, with knock-out cable entry and lock
- Optional: sheet steel door, perforated door, single or vertically divided door with perforation rate of 86 %

### Side panels

- Removable, with locks

### Knock-out openings—cable entry

- Universal size 300×100 mm—rear side of top and bottom plate and rear panel
- Universal openings can be covered by blank panels (ordered separately)
- Extended size 500×115 mm—both sides of top and bottom plate. Consists of 3 parts—300×115 mm and 2×—100×115 mm, each of which can be opened individually.
- Extended opening can be covered by blank panel or standard cable brush—middle opening. Opening can be protected by rubber edge piece (DP-KP-LEM-6) or brushes (DP-KP-KAR-6).
- 4" (100 mm) rounded cable entry in every top corner

### Knock-out openings—ventilation unit installation

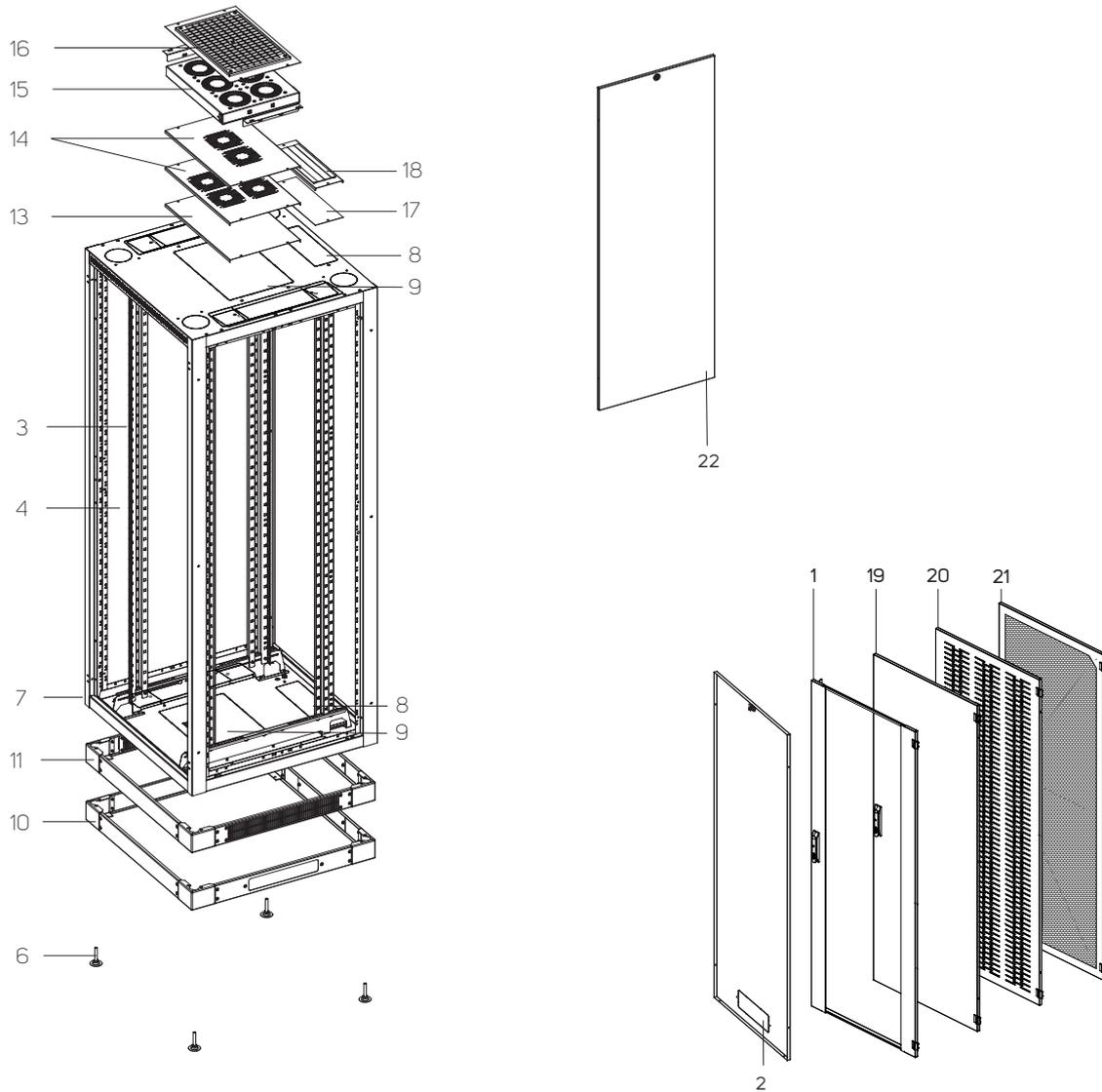
- Standard size 480×280 mm (1000 mm deep—480×440 mm)
- Available in top and bottom plate
- Can be covered with blank panels (ordered separately)

### Adjustable Feet

### Other

- OptiWay system support—12× M6 nuts on the upper frame

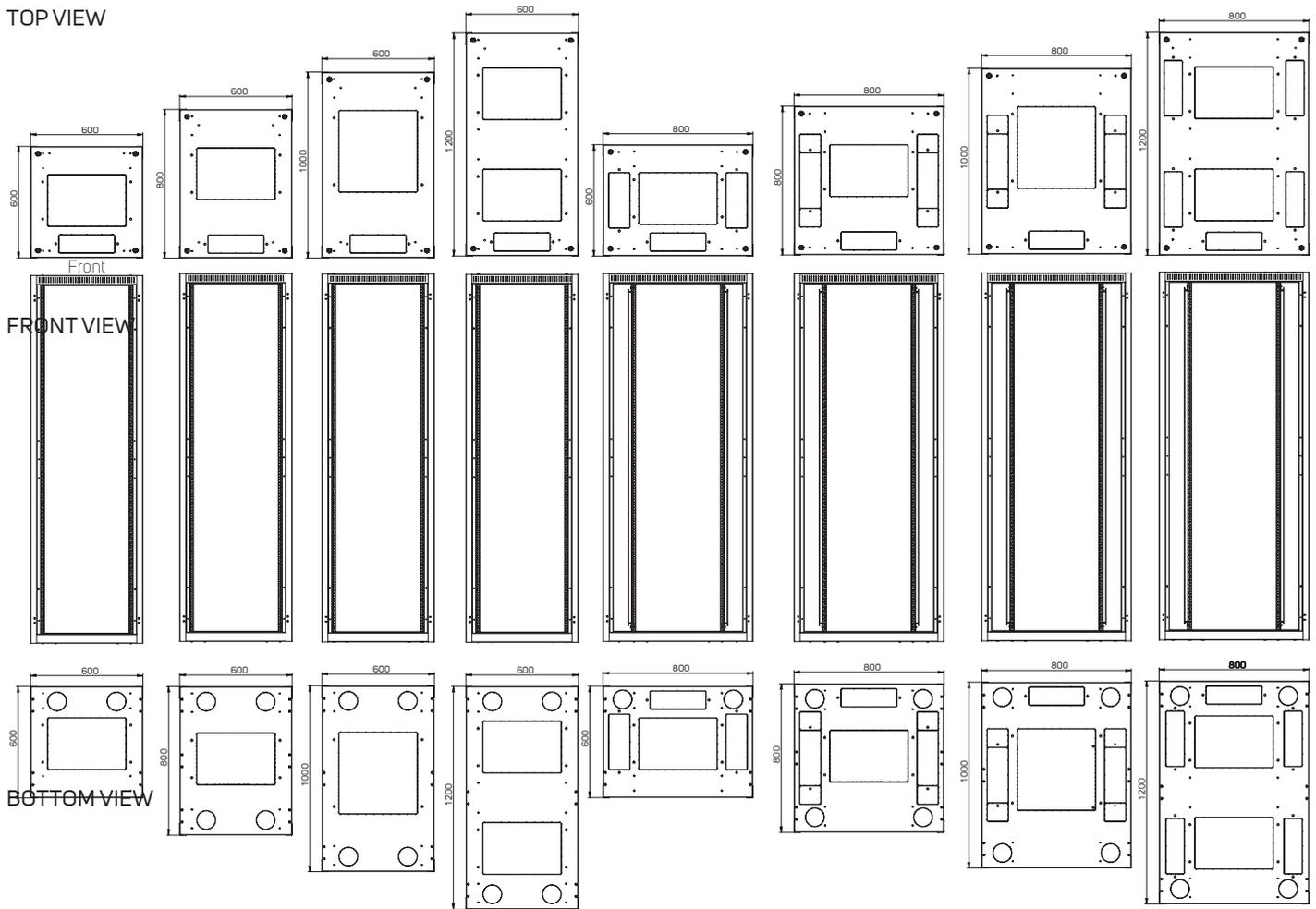
# iSEVEN Ri7 racks



STANDARD CONFIGURATION (short code only)		OPTIONS	
1	Glass door	10	Plinth
2	Rear panel with knock-out cable entry	11	Plinth with filter
3	4 pcs of 19" vertical extrusions	13	Blank panel
4	Holders for vertical extrusions	14	Blank panels for ventilation unit openings
6	Adjustable feet	15	Ventilation unit
7	Frame of rack	16	Connecting kit with filter for ventilation unit
8	Top and bottom knock-out openings for cable entry	17	Blank panel for cable entry openings
9	Top and bottom knock-out openings for ventilation unit	18	Dust-proof panel with brush for cable entry openings
22	Side panel	19	Sheet steel door
•	GND/earthing kit	20	Perforated sheet steel door
•	28 mounting kits	21	Vented door—perforation 86 %

# ISEVEN Ri7 racks—technical drawing

## TOP VIEW



Front

### <sup>1</sup> Available heights:

- 15U/778 mm
- 21U/1044 mm
- 27U/1311 mm
- 42U/1978 mm
- 45U/2111 mm
- 48U/2245 mm

### <sup>2</sup> Available depths:

- for width 600 mm: 600, 800, 1000 mm; 1200 mm for 42, 45, 48U
- for width 800 mm: 800, 1000 mm; 1200 mm for 42, 45, 48U

### <sup>3</sup> When rear doors applied (rear panel standard), max. angle 180 degrees

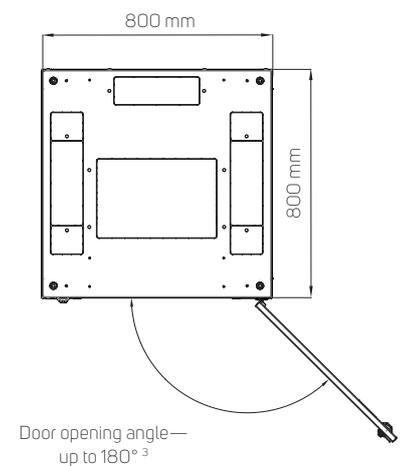
### Ventilation unit openings

- 420 × 280 mm (depth of the rack—600, 800 mm)
- 420 × 440 mm (depth of the rack—1000 mm)
- 2 × 420 × 280 mm (depth of the rack—1200 mm)

### Cable entries

- 300 × 100 mm 1× on top and bottom—rear
- 500 × 115 mm 2× on top and bottom—side for width 800 mm
- 100 mm (4") 4× on top—every corner, round cable entry

### EXAMPLE—OPENED DOOR



Door opening angle—  
up to 180°<sup>3</sup>

Note: All dimensions in mm

## iSEVEN Ri7 racks—technical data and dimensions

Code	H (in U)	Load rating (kg)	Dimensions (mm)				Dimensions including packing (mm)			Gross weight (kg)
			H*	W	D	Useful depth	H	W	D	
Ri7-15-60/60	15	800	778	600	600	590	913	640	640	43
Ri7-21-60/60	21	800	1045	600	600	590	1179	640	640	52
Ri7-27-60/60	27	800	1311	600	600	590	1446	640	640	61
Ri7-42-60/60	42	800	1978	600	600	590	2113	640	640	83
Ri7-45-60/60	45	800	2111	600	600	590	2246	640	640	88
Ri7-48-60/60	48	800	2245	600	600	590	2380	640	640	95
Ri7-15-60/80	15	800	778	600	800	790	913	640	840	54
Ri7-21-60/80	21	800	1045	600	800	790	1179	640	840	61
Ri7-27-60/80	27	800	1311	600	800	790	1446	640	840	70
Ri7-42-60/80	42	800	1978	600	800	790	2113	640	840	94
Ri7-45-60/80	45	800	2111	600	800	790	2246	640	840	100
Ri7-48-60/80	48	800	2245	600	800	790	2380	640	840	106
Ri7-15-60/100	15	800	778	600	1000	990	913	640	1040	65
Ri7-21-60/100	21	800	1045	600	1000	990	1179	640	1040	70
Ri7-27-60/100	27	800	1311	600	1000	990	1446	640	1040	77
Ri7-42-60/100	42	800	1978	600	1000	990	2113	640	1040	108
Ri7-45-60/100	45	800	2111	600	1000	990	2246	640	1040	115
Ri7-48-60/100	48	800	2245	600	1000	990	2380	640	1040	120
Ri7-42-60/120	42	800	1978	600	1200	1190	2113	640	1240	116
Ri7-45-60/120	45	800	2111	600	1200	1190	2246	640	1240	123
Ri7-48-60/120	48	800	2245	600	1200	1190	2380	640	1240	128
Ri7-15-80/80	15	800	778	800	800	790	913	840	840	65
Ri7-21-80/80	21	800	1045	800	800	790	1179	840	840	73
Ri7-27-80/80	27	800	1311	800	800	790	1446	840	840	84
Ri7-42-80/80	42	800	1978	800	800	790	2113	840	840	116
Ri7-45-80/80	45	800	2111	800	800	790	2246	840	840	120
Ri7-48-80/80	48	800	2245	800	800	790	2380	840	840	124
Ri7-15-80/100	15	800	1311	800	1000	990	913	840	1040	74
Ri7-21-80/100	21	800	1045	800	1000	990	1179	840	1040	82
Ri7-27-80/100	27	800	1311	800	1000	990	1446	840	1040	90
Ri7-42-80/100	42	800	1978	800	1000	990	2113	840	1040	125
Ri7-45-80/100	45	800	2111	800	1000	990	2246	840	1040	130
Ri7-48-80/100	48	800	2245	800	1000	990	2380	840	1040	139
Ri7-42-80/120	42	800	1978	800	1200	1190	2113	840	1240	143
Ri7-45-80/120	45	800	2111	800	1200	1190	2246	840	1240	149
Ri7-48-80/120	48	800	2245	800	1200	1190	2380	840	1240	157

\* Height in mm without feet; for feet add 16-45 mm.

## iSEVEN Ri7 racks—ordering and shipping information

Configure the rack that meets your requirements. The ordering matrix below will help you create a Code. As soon as you have the Code, please contact your CONTEG products distributor. Please note that **all iSEVEN Ri7 racks are delivered fully assembled** and palletized!

### FOLLOW THE STEPS TO SET UP THE DESIRED Ri7 RACK CODE

**R I 7 - 1 - 2 / 3. 4. - 5. 6. 7. 8. 9. - 10. 11. 12. - 13.**

An example of a correct Code:

**R I 7 - 45 - 60 / 6 0 - G V S V A - 3 0 4 - H**

1. HEIGHT			2. WIDTH		3. DEPTH			4. EXTRUSIONS			
Code	Height (in U)	External height (mm)	Code	Width (mm)	Code	Depth (mm)	Useful depth (mm)	Code	Front pair	Rear pair	Note
15	15	778	60	600	6	600	590	0	L	L	L-type undivided extrusions
21	21	1045	80	800	8	800	790				
27	27	1311			10	1000	990				
42	42	1978			12	1200	1190				
45	45	2111									
48	48	2245									

5. FRONT DOOR		6. FRONT DOOR LOCK		7. REAR DOOR/PANEL		8. REAR DOOR/PANEL LOCK	
Code	Note	Code	Note	Code	Note	Code	Options
O	Without door	V	Swivel handle DIN profile, universal key, 333	O	Without panel/door	V	Swivel handle DIN profile, universal key 333
G	Glass door	W	Swivel handle DIN profile, universal key 333, multi-point <sup>1</sup>	G	Glass door	W	Swivel handle DIN profile, universal key 333, multi-point <sup>1</sup>
S	Sheet steel door		Other	S	Sheet steel door	U	Lock for rear panel, universal key
P	Perforated sheet steel door <sup>1</sup>	<sup>1</sup> Only for door code F		P	Perforated sheet steel door <sup>1</sup>		Other
W	Vented door (perforation rate 86%) <sup>1</sup>			W	Vented door (perforation rate 86%) <sup>1</sup>	<sup>1</sup> Only for door code F	
F	Vertically divided door with perforation (perforation rate 86%) <sup>1,2</sup>			F	Vertically divided door with perforation (perforation rate 86%) <sup>1,2</sup>		
	Other			Y	Rear panel—single piece		
					Other		

<sup>1</sup> IP 20 max.

<sup>2</sup> Multi-point lock only

<sup>1</sup> IP 20 max.

<sup>2</sup> Multi-point lock only

9. SIDE PANELS (BOTH SIDES)*		10. IP RATING <sup>1</sup>		11. PLATES		12. LOAD RATING		
Code	Note	Code	Note	Code	Options	Code	Load rate (kg)	Note
O	No side panels	0	IP 00	O	Top & bottom plates—integral	3	800	For rack heights 15–27U
A	2 side panels, sheet steel, universal key	2	IP 20			4	800	For rack heights 42–48U
	Other	3	IP 30					

\* Open side/sides result in IP 00.

<sup>1</sup> According to EN 60 529.

13. COLOR	
Code	Note
B	RAL 7035 (light gray)
H	RAL 9005 (black)



Configure IT rack on-line

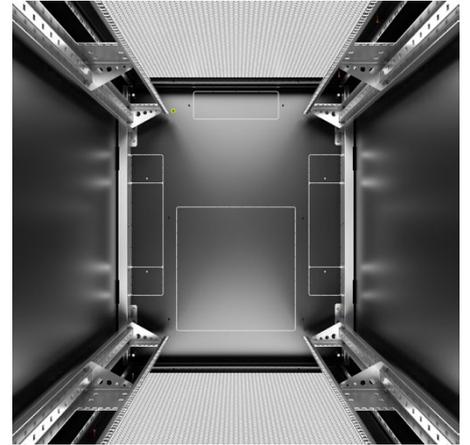
[www.conteg.com/configurators](http://www.conteg.com/configurators)

# iSEVEN SERVER



RI7-42-80/100-S2-H

➤ The **iSEVEN Server** rack is ideal for anyone who needs to house servers properly. It combines our day-to-day rack with the highly valuable features of our RF1 pure server rack.



## MAIN ADVANTAGES

- Server rack for standard IT hardware up to 1500 kg
- Unmatched 86% door perforation ratio decreases server fan power consumption
- Extrusions support Zero U (0U) PDU

COLOR:  RAL 9005  RAL 7035

## DESCRIPTION

### Size

- Height: 42, 45, 48U
- Width: 600, 800 mm
- Depth: 1000, 1200 mm

### Construction

- Welded-frame design

### Load rating

- 1500 kg

### 19" vertical extrusions

- A-type extrusions, non-divided (600 or 800 mm wide) extrusions without horizontal holders (for 800 mm provide additional 24U of installation space); adjustable from inside, blank panels not included.

### IP rating

- Standard IP 20

### Color

- Standard: RAL 9005, RAL 7035
- Other colors on request

### Front door

- Perforated door—perforation rate 86 %
- Swivel handle lock—DIN profile, universal key EK333, single point
- Door opening angle 180°
- Easy re-hanging to open on right or left

### Rear door

- Perforated doors—perforation rate 86 %, vertically split version available—option S3
- Swivel handle lock—DIN profile, universal key EK333, single point
- Vertically divided door with perforation—perforation rate 86 %, together with multi-point lock
- Door opening angle 180°
- Easy re-hanging to open on right or left

### Side panels

- Removable, with locks

### Knock-out openings—cable entry

- Universal size 300×100 mm—rear side of top and bottom plate
- Universal openings can be covered by blank panels (ordered separately)
- Extended size 500×115 mm—only for 800 mm width—both sides of top and bottom plate. Consists of three parts—300×115 mm and two parts—100×115 mm, each of which can be opened individually.
- Extended opening can be covered by a blank panel or standard cable brush—middle opening. Opening can be protected by rubber edge piece (DP-KP-LEM-6) or brush (DP-KP-KAR-6).
- 4" (100 mm) rounded cable entry in every top corner

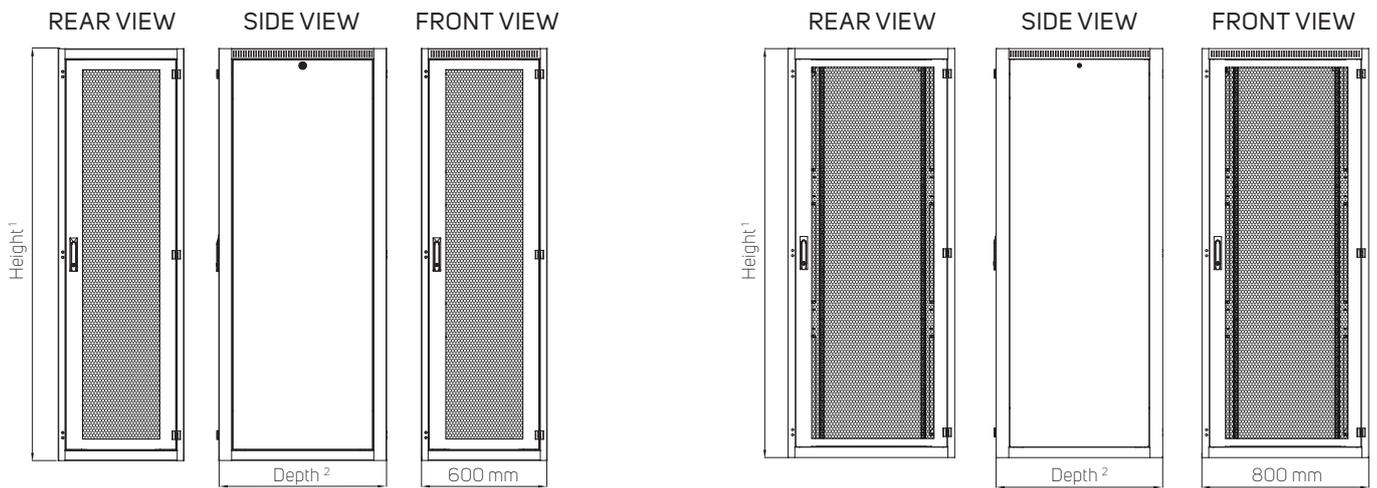
### Knock-out openings—ventilation unit installation

- Standard size—420×440 mm for 1000 mm depth—420×280 mm (2×) for 1200 mm depth
- Available in top and bottom plate
- Can be covered with blank panels (ordered separately)

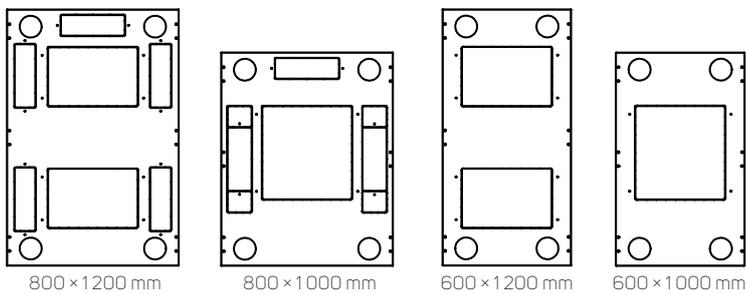
### Other

- OptiWay system support—12× M6 nuts on the upper frame

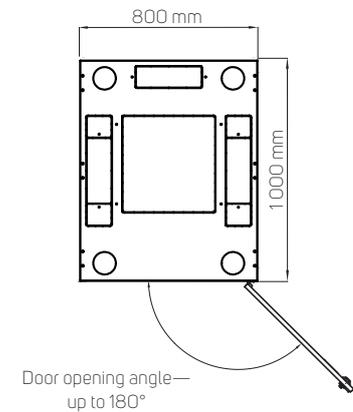
# iSEVEN Server racks—technical drawing



TOP VIEW



EXAMPLE—OPENED DOOR



<sup>1</sup> Available heights:

- for width 600 mm: 42U/1978 mm, 45U/2 111 mm, 48U/2 245 mm
- for width 800 mm: 42U/1978 mm, 45U/2 111 mm, 48U/2 245 mm

<sup>2</sup> Available depths:

- for width 600 mm: 1000, 1200 mm
- for width 800 mm: 1000, 1200 mm

## Ventilation unit openings

1000 mm rack depth—420 × 440 mm

1200 mm rack depth—420 × 280 mm (2×)

## Cable entries

300 × 100 mm 1× on top and bottom—rear (for 600 mm width)

300 × 100 mm 5× on top and bottom—rear (for 800 mm width, 1200 mm deep rack)

500 × 115 mm 2× on top and bottom—side (for 800 mm width, 1000 mm deep rack)

100 mm (4") 4× on top—every corner, round cable entry

## Technical data and dimensions

Code *	Height (in U)	Width (mm)	Depth (mm)
Ri7-42-60/100-S1-X	42	600	1000
Ri7-42-60/120-S1-X	42	600	1200
Ri7-45-60/100-S1-X	45	600	1000
Ri7-45-60/120-S1-X	45	600	1200
Ri7-48-60/100-S1-X	48	600	1000
Ri7-48-60/120-S1-X	48	600	1200
Ri7-42-80/100-S2-X	42	800	1000
Ri7-42-80/120-S2-X	42	800	1200
Ri7-45-80/100-S2-X	45	800	1000
Ri7-45-80/120-S2-X	45	800	1200
Ri7-48-80/100-S2-X	48	800	1000
Ri7-48-80/120-S2-X	48	800	1200

Code *	Height (in U)	Width (mm)	Depth (mm)
Ri7-42-60/100-S3-X	42	600	1000
Ri7-42-60/120-S3-X	42	600	1200
Ri7-45-60/100-S3-X	45	600	1000
Ri7-45-60/120-S3-X	45	600	1200
Ri7-48-60/100-S3-X	48	600	1000
Ri7-48-60/120-S3-X	48	600	1200
Ri7-42-80/100-S3-X	42	800	1000
Ri7-42-80/120-S3-X	42	800	1200
Ri7-45-80/100-S3-X	45	800	1000
Ri7-45-80/120-S3-X	45	800	1200
Ri7-48-80/100-S3-X	48	800	1000
Ri7-48-80/120-S3-X	48	800	1200

\* Instead of "X" write "H" for black (RAL 9005) or "B" for gray (RAL 7035).

## Ordering and shipping information

Configurations, mentioned in the table above, can not be changed.

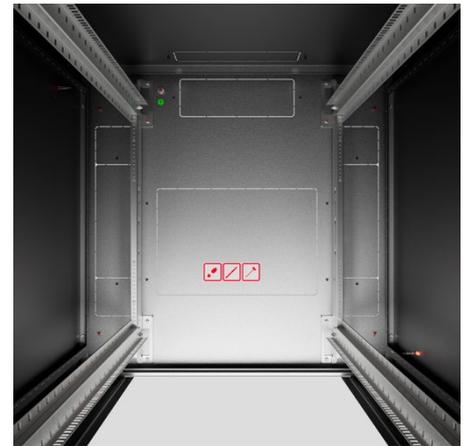
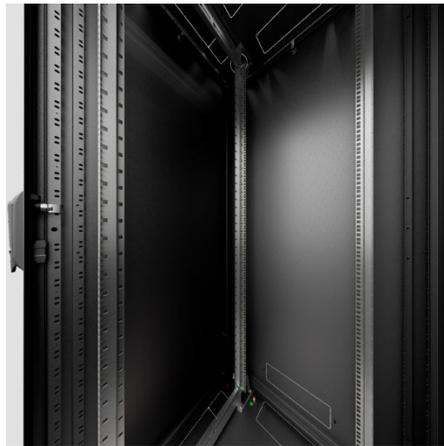
Please note that **all iSEVEN Server racks are delivered fully assembled** and palletized.

# iSEVEN FLEX RM7



RM7-42-80/80-H

➤ The **iSEVEN Flex RM7** racks have been designed for users whose access path constraints do not allow for installation of the iSEVEN rack series (Ri7) with a welded design. iSEVEN Flex racks are delivered unassembled for easy transportation to the installation site, where they can be assembled quickly and easily.



## MAIN ADVANTAGES

- Universal rack for standard daily use
- Unassembled version for transport to unaccessible spaces

COLOR:  RAL 9005  RAL 7035

## DESCRIPTION

### Sizes

- Height: 21, 27, 42, 45U
- Width: 600 and 800 mm
- Depth: 800 and 1000 mm

### Construction

- Robust frame design, joined by 32 M6×12 screws
- Delivered unassembled; assembly at installation site
- Quick and easy assembly

### Load rating

- 21, 27U: 400 kg
- 42, 45U: 800 kg

### 19" Vertical extrusions

- 2 pairs of sliding 19" extrusions, adjustable from inside

### IP rating

- Standard IP30

### Colors

- Standard RAL 7035 and 9005

### Front door

- Security glass door with swivel handle lock—DIN profile, universal key 333
- Optional: sheet steel door, perforated door, single or vertically divided door with perforation rate of 86 %
- Easy re-hanging to open on right or left
- Door opening angle 180°

### Rear panel

- Removable, with knock-out cable entry and lock
- Optional: sheet steel door, perforated door, single or vertically divided door with perforation rate of 86 %

### Side panels

- Removable, with locks

### Knock-out openings—cable entry

- Universal size 300×100 mm—rear side of top and bottom plate and rear panel
- Universal openings can be covered with blank panels (ordered separately)
- Extended size 500×115 mm—both sides of top and bottom plate. Consists of three parts—300×115 mm and 2×—100×115 mm, each of which can be opened individually.
- Extended opening can be covered with blank panel or standard cable brush—middle opening. Opening can be protected by rubber edge piece (DP-KP-LEM-6) or brushes (DP-KP-KAR-6).
- 4" (100 mm) rounded cable entry in every top corner

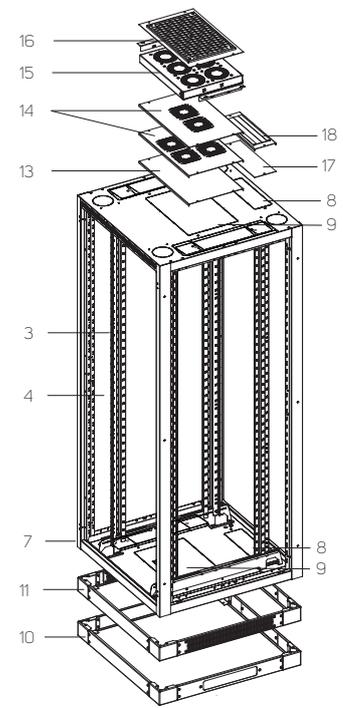
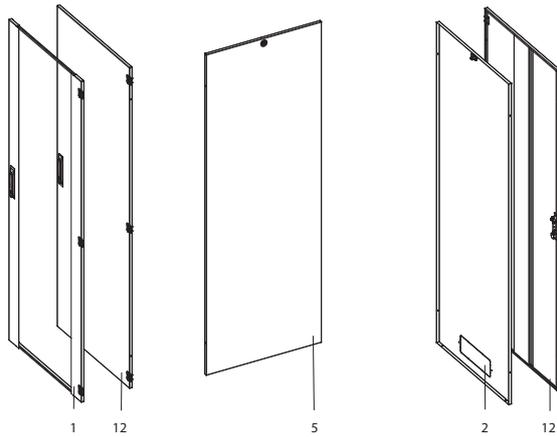
### Knock-out openings—ventilation unit installation

- Standard size 480×280 mm (1000 mm deep—480×440 mm)
- Available in top and bottom plate
- Can be covered with blank panels (ordered separately)

### Other

- OptiWay system support—12× M6 nuts on the upper frame

# iSEVEN Flex RM7 racks



STANDARD CONFIGURATION		OPTIONS	
1	Front glass door with swivel handle lock	10	Plinth
2	Rear sheet steel panel with knock-out opening for cable entry and lock	11	Plinth with filter
3	4 pcs of 19" vertical extrusions	12	Sheet steel door
4	Holders for vertical extrusions	13	Blank panels for ventilation unit openings
5	1 pair of side sheet steel panels with lock	14	Perforated panels for ventilation unit
-		15	Ventilation unit
7	Rack frame	16	Connecting kit with filter for ventilation unit
8	Top and bottom knock-out openings for cable entry	17	Blank panel for cable entry openings
9	Top and bottom knock-out openings for ventilation unit	18	Dust-proof panel with brush for cable entry openings
-	GND/earthing kit		
-	28 mounting kits		

## Technical data and dimensions

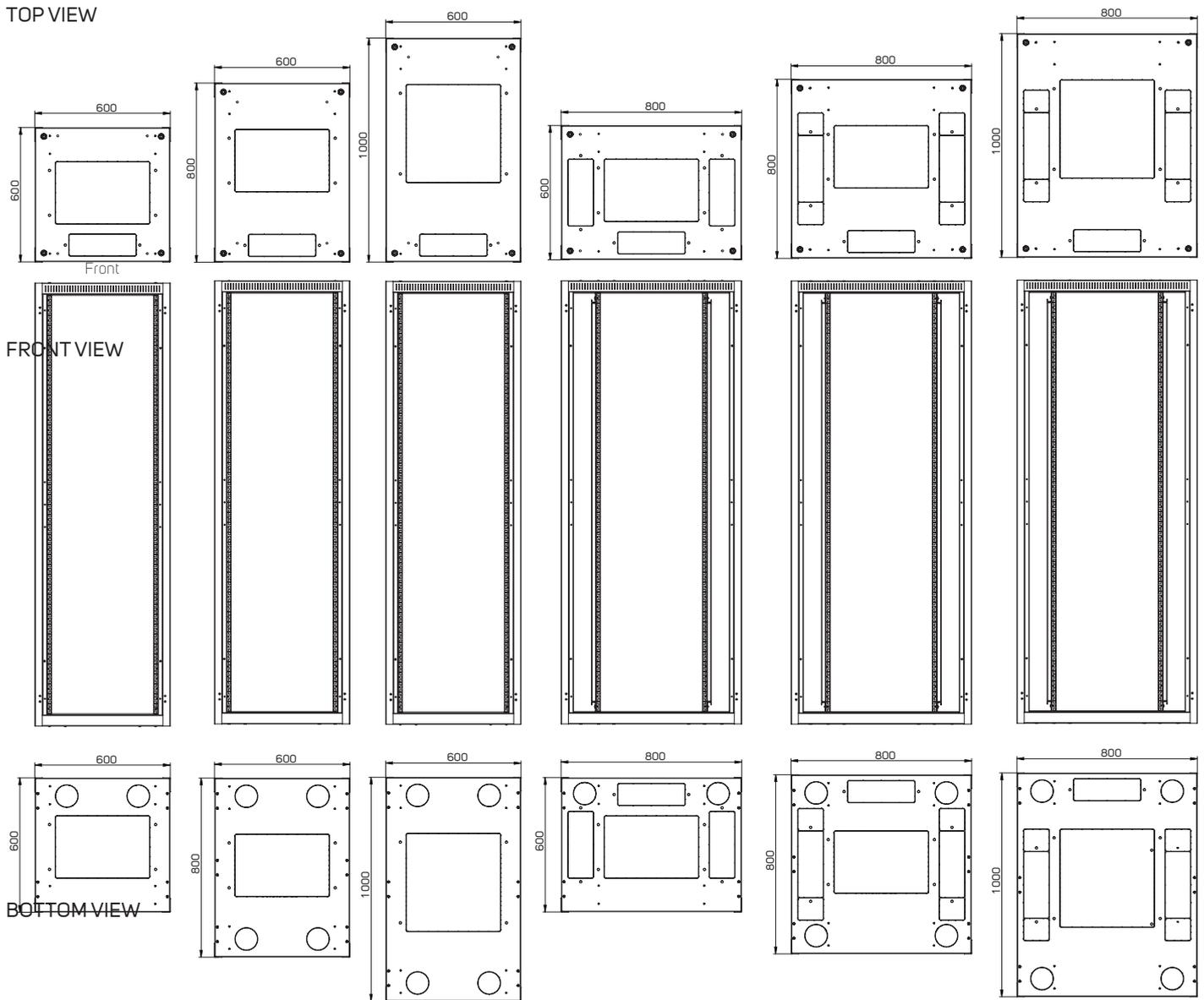
Code— Standard configuration <sup>1</sup>	H (in U)	Rack dimensions (mm)				Package dimensions (mm)				
		H *	W	D	Useful depth	Package 1 RM7-CO-xx/yy <sup>2</sup>	Package 2 RM7-TB-yy/zz <sup>2</sup>	Package 3 RM7-DO-xx/yy <sup>2</sup>	Package 4 RM7-SP-xx/zz <sup>2</sup>	Package 5 RM7-HVE-yy/zz <sup>2</sup>
RM7-21-60/60-X	21	1044	600	600	590	105 × 140 × 1165	630 × 620 × 135	550 × 70 × 955	520 × 990 × 85	-
RM7-27-60/60-X	27	1311	600	600	590	105 × 140 × 1430	630 × 620 × 135	550 × 70 × 1255	520 × 1255 × 85	-
RM7-42-60/60-X	42	1978	600	600	590	105 × 140 × 2100	630 × 620 × 135	550 × 70 × 1890	520 × 1920 × 85	185 × 75 × 100
RM7-45-60/60-X	45	2111	600	600	590	105 × 140 × 2230	630 × 620 × 135	550 × 70 × 2020	520 × 2055 × 85	185 × 75 × 100
RM7-21-60/80-X	21	1044	600	800	790	105 × 140 × 1165	630 × 820 × 135	550 × 70 × 955	720 × 990 × 85	-
RM7-27-60/80-X	27	1311	600	800	790	105 × 140 × 1430	630 × 820 × 135	550 × 70 × 1255	720 × 1255 × 85	-
RM7-42-60/80-X	42	1978	600	800	590	105 × 140 × 2100	630 × 820 × 135	550 × 70 × 1890	720 × 1920 × 85	185 × 75 × 100
RM7-45-60/80-X	45	2111	600	800	790	105 × 140 × 2230	630 × 820 × 135	550 × 70 × 2020	720 × 2055 × 85	185 × 75 × 100
RM7-27-60/100-X	27	1311	600	1000	990	105 × 140 × 1430	630 × 1020 × 135	550 × 70 × 1255	920 × 1255 × 85	-
RM7-42-60/100-X	42	1978	600	1000	990	105 × 140 × 2100	630 × 1020 × 135	550 × 70 × 1890	920 × 1920 × 85	185 × 75 × 100
RM7-45-60/100-X	45	2111	600	1000	990	105 × 140 × 2230	630 × 1020 × 135	550 × 70 × 2020	920 × 2055 × 85	185 × 75 × 100
RM7-27-80/80-X	27	1311	800	800	790	105 × 140 × 1430	1005 × 820 × 135	750 × 70 × 1255	720 × 1255 × 85	-
RM7-42-80/80-X	42	1978	800	800	790	105 × 140 × 2100	1005 × 820 × 135	750 × 70 × 1890	720 × 1920 × 85	185 × 75 × 100
RM7-45-80/80-X	45	2111	800	800	790	105 × 140 × 2230	1005 × 820 × 135	750 × 70 × 2020	720 × 2055 × 85	185 × 75 × 100
RM7-27-80/100-X	27	1311	800	1000	990	105 × 140 × 1430	1005 × 1020 × 135	750 × 70 × 1255	720 × 1255 × 85	-
RM7-42-80/100-X	42	1978	800	1000	990	105 × 140 × 2100	1005 × 1020 × 135	750 × 70 × 1890	920 × 1920 × 85	185 × 75 × 100
RM7-45-80/100-X	45	2111	800	1000	990	105 × 140 × 2230	1005 × 1020 × 135	750 × 70 × 2020	920 × 2055 × 85	185 × 75 × 100

\* Height in mm without feet; for feet add 16–45 mm.

<sup>1</sup> Substitute "X" with desired color: "H"—RAL 9005 (black) nebo "B"—RAL 7035 (light gray). <sup>2</sup> xx—rack height; yy—rack width; zz—rack depth.

# ISEVEN Flex RM7 racks—technical drawings

## TOP VIEW



Front

- <sup>1</sup> Available heights:  
 – for width 600 mm: 21U/1044 mm, 27U/1311 mm, 42U/1978 mm, 45U/2111 mm  
 – for width 800 mm: 27U/1311 mm, 42U/1978 mm, 45U/2111 mm
- <sup>2</sup> Available depths:  
 – for width 600 mm: 600, 800, 1000 mm  
 – for width 800 mm: 800, 1000 mm
- <sup>3</sup> When rear doors applied (rear panel standard) max. angle is 180°.

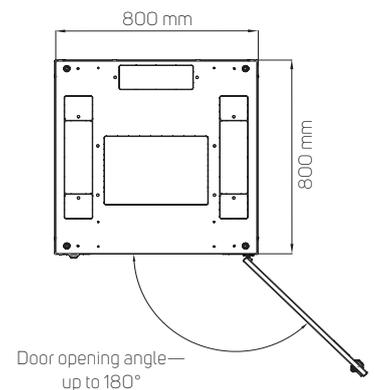
### Ventilation unit openings

420 × 280 mm (depth 1000 mm—420 × 440 mm)

### Cable entries

300 × 100 mm 1× on top and bottom—rear  
 500 × 115 mm 2× on top and bottom—side (for 800 mm width)  
 100 mm (4") 4× on top—every corner, round cable entry

### EXAMPLE— OPENED DOOR



Door opening angle—  
up to 180°

## iSEVEN Flex RM7 racks—ordering and shipping information

Configure the rack that meets your requirements. You can choose a standard or modified configuration for your iSEVEN Flex RM7 rack. The ordering matrix below will help you create a Code. As soon as you have the Code, please contact your CONTEG products distributor. Please note that **all iSEVEN Flex RM7 racks are delivered unassembled in 3–4 carton boxes.**

### Standard configuration ordering table

Code— standard configuration <sup>1</sup>	Column code	Top and bottom plate codes	Door code	Side panel code
RM7-21-60/60-X	RM7-CO-21/60-X	RM7-TB-60/60-X	RM7-DO-21/60-X	RM7-SP-21/60-X
RM7-27-60/60-X	RM7-CO-27/60-X	RM7-TB-60/60-X	RM7-DO-27/60-X	RM7-SP-27/60-X
RM7-42-60/60-X	RM7-CO-42/60-X	RM7-TB-60/60-X	RM7-DO-42/60-X	RM7-SP-42/60-X
RM7-45-60/60-X	RM7-CO-45/60-X	RM7-TB-60/60-X	RM7-DO-45/60-X	RM7-SP-45/60-X
RM7-21-60/80-X	RM7-CO-21/60-X	RM7-TB-60/80-X	RM7-DO-21/60-X	RM7-SP-21/80-X
RM7-27-60/80-X	RM7-CO-27/60-X	RM7-TB-60/80-X	RM7-DO-27/60-X	RM7-SP-27/80-X
RM7-42-60/80-X	RM7-CO-42/60-X	RM7-TB-60/80-X	RM7-DO-42/60-X	RM7-SP-42/80-X
RM7-45-60/80-X	RM7-CO-45/60-X	RM7-TB-60/80-X	RM7-DO-45/60-X	RM7-SP-45/80-X
RM7-27-60/100-X	RM7-CO-27/60-X	RM7-TB-60/100-X	RM7-DO-27/60-X	RM7-SP-27/100-X
RM7-42-60/100-X	RM7-CO-42/60-X	RM7-TB-60/100-X	RM7-DO-42/60-X	RM7-SP-42/100-X
RM7-45-60/100-X	RM7-CO-45/60-X	RM7-TB-60/100-X	RM7-DO-45/60-X	RM7-SP-45/100-X
RM7-27-80/80-X	RM7-CO-27/80-X	RM7-TB-80/80-X	RM7-DO-27/80-X	RM7-SP-27/80-X
RM7-42-80/80-X	RM7-CO-42/80-X	RM7-TB-80/80-X	RM7-DO-42/80-X	RM7-SP-42/80-X
RM7-45-80/80-X	RM7-CO-45/80-X	RM7-TB-80/80-X	RM7-DO-45/80-X	RM7-SP-45/80-X
RM7-27-80/100-X	RM7-CO-27/80-X	RM7-TB-80/100-X	RM7-DO-27/80-X	RM7-SP-27/100-X
RM7-42-80/100-X	RM7-CO-42/80-X	RM7-TB-80/100-X	RM7-DO-42/80-X	RM7-SP-42/100-X
RM7-45-80/100-X	RM7-CO-45/80-X	RM7-TB-80/100-X	RM7-DO-45/80-X	RM7-SP-45/100-X

<sup>1</sup>Substitute "X" with desired color: "H"—RAL 9005 (black) nebo "B"—RAL 7035 (light gray).

### Modified configuration ordering table

Cover (modifications from standard configuration are written in bold script)	Itemized iSEVEN Flex RM7 rack Codes			
	Package 1	Package 2	Package 3	Package 4
Front glass door, <b>rear sheet steel door</b> , 2 side panels	RM7-CO-xx/yy-X	RM7-TB-yy/zz-X	RM7-DO-xx/yy- <b>GVSV</b> -X	RM7-SP-xx/zz-X
<b>Front sheet steel door</b> , rear sheet steel panel, 2 side panels	RM7-CO-xx/yy-X	RM7-TB-yy/zz-X	RM7-DO-xx/yy- <b>SVYU</b> -X	RM7-SP-xx/zz-X
<b>Front sheet steel door, rear sheet steel door</b> , 2 side panels	RM7-CO-xx/yy-X	RM7-TB-yy/zz-X	RM7-DO-xx/yy- <b>SVSV</b> -X	RM7-SP-xx/zz-X
Front glass door, rear sheet steel panel, <b>without side panels</b>	RM7-CO-xx/yy-X	RM7-TB-yy/zz-X	RM7-DO-xx/yy-X	–
Front glass door, <b>rear sheet steel door</b> , <b>without side panels</b>	RM7-CO-xx/yy-X	RM7-TB-yy/zz-X	RM7-DO-xx/yy- <b>GVSV</b> -X	–
<b>Front sheet steel door</b> , rear sheet steel panel, <b>without side panels</b>	RM7-CO-xx/yy-X	RM7-TB-yy/zz-X	RM7-DO-xx/yy- <b>SVYU</b> -X	–
<b>Front sheet steel door, rear sheet steel door</b> , <b>without side panels</b>	RM7-CO-xx/yy-X	RM7-TB-yy/zz-X	RM7-DO-xx/yy- <b>SVSV</b> -X	–

### Item overview of individual boxes

Code <sup>1</sup>	Package includes
RM7-CO-xx/yy	4× column and 4× 19" vertical extrusion
RM7-TB-yy/zz	Top and bottom cover plate, 4× bracket for vertical extrusions
RM7-DO-xx/yy	Front door and rear panel (package contents may differ for customized versions)
RM7-SP-xx/zz	2× side panels

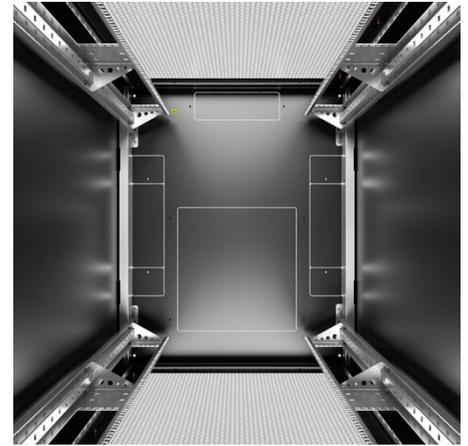
<sup>1</sup> xx—rack height; yy—rack width; zz—rack depth.

# iSEVEN FLEX SERVER



RM7-42-80/10A-S2-H

➤ The **iSEVEN Flex Server** rack is ideal for anyone who needs to house servers properly. The iSEVEN Flex Server combines our day-to-day rack with the highly valuable features of our RF1 pure server rack. Comes with a mounted frame (delivered unassembled).



## MAIN ADVANTAGES

- Server rack for standard IT hardware up to 1 000 kg
- Unmatched 86% door perforation ratio decreases server fan power consumption
- Unassembled version for transport to inaccessible spaces

COLOR:  RAL 9005  RAL 7035

## DESCRIPTION

### Sizes

- Height: 42U
- Width: 600, 800 mm
- Depth: 1 000 mm

### Construction

- Robust frame design, joined by 32 M6×12 screws
- Delivered unassembled; assembly at installation site
- Quick and easy assembly

### Load rating

- 1 000 kg

### 19" Vertical extrusions

- A-type extrusions, non-divided (600 or 800 mm wide) extrusions without horizontal holders (for 800 mm provide additional 24U of installation space); adjustable from inside, blank panels not included.

### IP rating

- Standard IP20

### Colors

- Standard RAL 7035 and 9005

### Front door

- Vented door—perforation rate 86%
- Swivel handle lock, DIN profile, universal key 333, single-point

### Rear door

- Vented door—perforation rate 86%
- Swivel handle lock, DIN profile, universal key 333, single-point

### Side panels

- Removable, with locks

### Knock-out openings—cable entry

- Universal size 300 × 100 mm—rear side of top and bottom plate
- Universal openings can be covered with blank panels (ordered separately)
- Extended size 500 × 115 mm—for 800 mm width only—both sides of top and bottom plate. Consists of 3 parts—300 × 115 mm and 2×—100 × 115 mm, each of which can be opened individually.
- Extended opening can be covered with blank panel or standard cable brush—middle opening. Opening can be protected by rubber edge piece (DP-KP-LEM-6) or brush (DP-KP-KAR-6).
- 100 mm (4") 4× on top—every corner, round cable entry

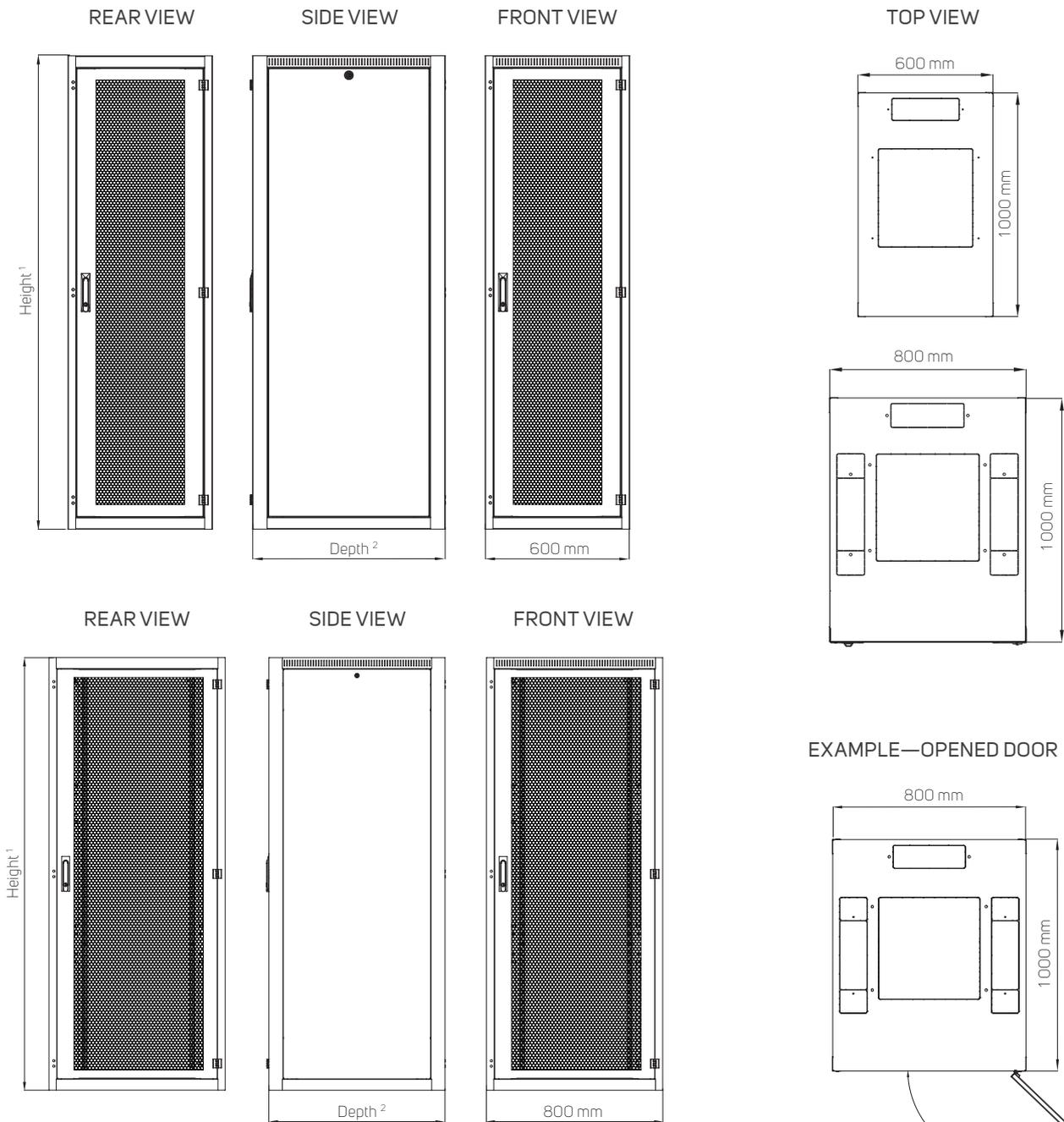
### Knock-out openings—ventilation unit installation

- Standard size 420 × 440 mm
- Available in top and bottom plate
- Can be covered with blank panels (ordered separately)

### Other

- OptiWay system support—12× M6 nuts on the upper frame

# iSEVEN Flex Server racks—technical drawings



<sup>1</sup> Available heights:  
 – for width 600 mm: 42U/1978 mm  
 – for width 800 mm: 42U/1978 mm

<sup>2</sup> Available depths:  
 – for width 600 mm: 1000 mm  
 – for width 800 mm: 1000 mm

## Ventilation unit openings

420 × 440 mm

## Cable entries

300 × 100 mm 1× on top and bottom—rear

500 × 115 mm 2× on top and bottom—side (for 800 mm width)

100 mm (4") 4× on top—every corner, round cable entry

## iSEVEN Flex Server racks—ordering and shipping information

Choose the iSEVEN Flex Server rack meeting your requirements from the table below. Each configuration comes with a separate list of components. After choosing the proper configuration and Codes, please contact your CONTEG products distributor. Please note that **all iSEVEN Flex Server racks are delivered unassembled** (in 4 separate boxes).

### iSEVEN Flex Server standard configuration

- Top and bottom covers
- 4 columns
- 2 pairs of 19" A-profile sliding vertical extrusions
- 2 pairs of A-profile vertical extrusion holders
- Front vented door—perforation rate 86 %, with swivel handle lock
- Rear vented door—perforation rate 86 %, with swivel handle lock
- 1 pair of sheet steel side panels, with locks
- GND/earthing kit
- 28 mounting kits

Code	Height (in U)	Height (mm) *	Width (mm)	Depth (mm)	Useful depth (mm)	Color
RM7-42-60/10A-S1-B	42	1978	600	1000	990	RAL 7035
RM7-42-60/10A-S1-H	42	1978	600	1000	990	RAL 9005
RM7-42-80/10A-S2-B	42	1978	800	1000	990	RAL 7035
RM7-42-80/10A-S2-H	42	1978	800	1000	990	RAL 9005

Package information	For code RM7-42-60/10A-S1-B	For code RM7-42-60/10A-S1-H	Dimensions (mm) for RM7-42-60/10A-S1-B and RM7-42-60/10A-S1-H	For code RM7-42-80/10A-S2-B	For code RM7-42-60/10A-S1-H	Dimensions (mm) for RM7-42-80/10A-S2-B and RM7-42-60/10A-S1-H
Package 1	RM7-CO-42/6A-B	RM7-CO-42/6A-H	105 × 140 × 2100	RM7-CO-42/8A-B	RM7-CO-42/8A-H	105 × 140 × 2100
Package 2	RM7-TB-60/10A-S1-B	RM7-TB-60/10A-S1-H	630 × 1020 × 135	RM7-TB-80/10A-S2-B	RM7-TB-80/10A-S2-H	1005 × 1020 × 135
Package 3	RM7-DO-42/60-WVWV-B	RM7-DO-42/60-WVWV-H	550 × 70 × 1890	RM7-DO-42/80-WVWV-B	RM7-DO-42/80-WVWV-H	750 × 70 × 1890
Package 4	RM7-SP-42/100-B	RM7-SP-42/100-H	920 × 1920 × 85	RM7-SP-42/100-B	RM7-SP-42/100-H	920 × 1920 × 85

### Recommended accessories



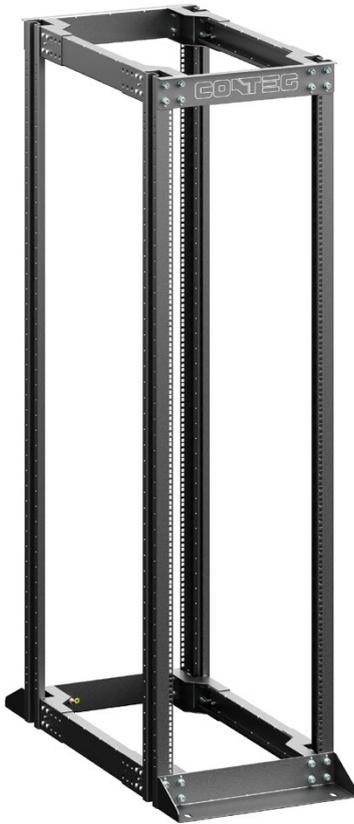
19" vented panel with brush



Basic PDU

# FREE-STANDING RACKS

## OPEN FRAMES RSG4



42U with outward-oriented base and adjustable profile for depths 920–1100 mm

➤ **RSG4** high-load, four post open frames ensure unbeatable accessibility. With a balanced load rating of up to 1500 kg, they are ideal for installation of heavy servers, disk arrays, etc.

### MAIN ADVANTAGES

- 4-post frame for heavy IT hardware (up to 1500 kg)
- Unlimited access for component installation
- Full on-site configurability and depth adjustment
- High Density Wire Management compatible
- Unassembled version for transport to inaccessible spaces

COLOR:  RAL 9005

### DESCRIPTION

#### Sizes

- Height: 42, 47U
- Width: 550 mm
- Depth: 500–680 mm, 710–890 mm, 920–1100 mm (step 30 mm)

#### Load rating

- 1500 kg (balanced load)

#### IP rating

- IP00 (no protection)

#### Construction

- 2.0 mm sheet steel

#### Color

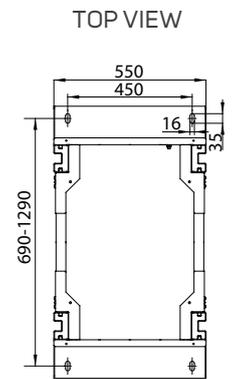
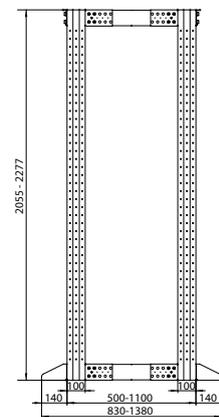
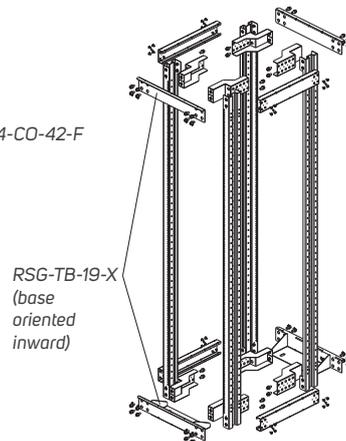
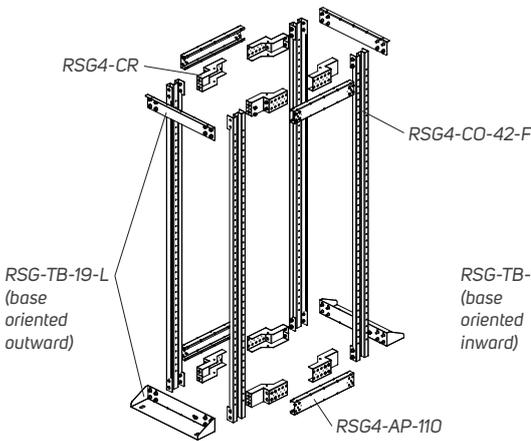
- Standard RAL 9005

#### Base

- Composed of sheet steel
- L – outward-oriented (X – inward-oriented optionally)
- Complete with holes for anchoring screws

#### Delivered unassembled and consists of:

- 2 pairs of 19" vertical extrusions
- Corners
- Outward-oriented or inward-oriented base with upper parts
- Adjustable profile with required depths



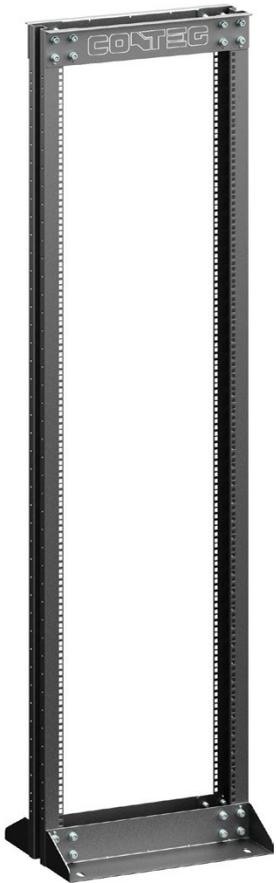
Note: All dimensions in mm

Code	Description	42U. Height 2 055 mm, Width 550 mm			47U. Height 2 277 mm, Width 550 mm		
		Depth 500–680 mm	Depth 710–890 mm	Depth 920–1100 mm	Depth 500–680 mm	Depth 710–890 mm	Depth 920–1100 mm
RSG4-CO-42-F	19" vertical extrusions (with U markign) for 42U	2 <sup>1</sup>	2 <sup>1</sup>	2 <sup>1</sup>	–	–	–
RSG4-CO-47-F	19" vertical extrusions (with U markign) for 47U	–	–	–	2 <sup>1</sup>	2 <sup>1</sup>	2 <sup>1</sup>
RSG4-CR	Corners	1	1	1	1	1	1
RSG-TB-19-L	Outward-oriented base, upper parts	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>2</sup>	1 <sup>2</sup>
RSG-TB-19-X	Inward-oriented base, upper parts						
RSG4-AP-68	Adjustable profile for depths 500–680 mm	1	–	–	1	–	–
RSG4-AP-89	Adjustable profile for depths 710–890 mm	–	1	–	–	1	–
RSG4-AP-110	Adjustable profile for depths 920–1100 mm	–	–	1	–	–	1

<sup>1</sup> Necessary to order 2 pcs. <sup>2</sup> For mounting the frame, either an inward or outward-oriented base must be ordered.

# FREE-STANDING RACKS

## OPEN FRAMES RSG2



RSG2-42-19-LA

➤ **RSG2** high-load, two post open frames are designed to be used with High Density Wire Management.

### MAIN ADVANTAGES

- 2-post frame with 500 or 1000 kg load rating
- Universal frame for cable management (fully compatible with High Density Wire Management)
- Unlimited access to for component installation

COLOR:  RAL 9005

### DESCRIPTION

#### Sizes

- Height: 27, 42, 47U
- Width: 550 mm
- Depth: 100 mm

#### Construction

- 2.0 mm sheet steel

#### Load rating

- 500 kg (balanced load; all heights)
- 1000 kg (balanced load; 42U and 47U only)

#### IP rating

- IP00 (no protection)

#### Color

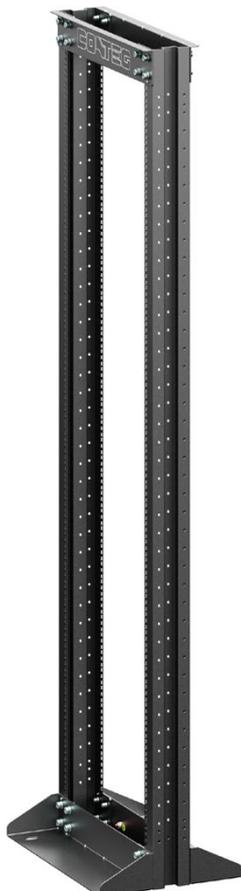
- Standard RAL 9005

#### Base

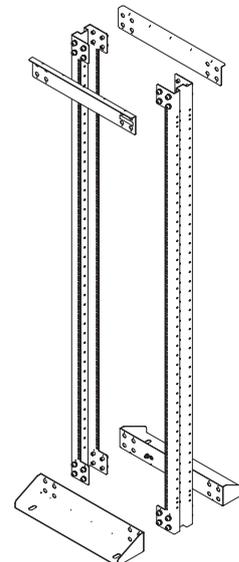
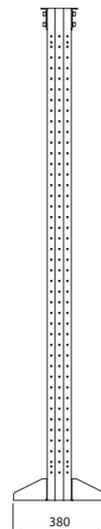
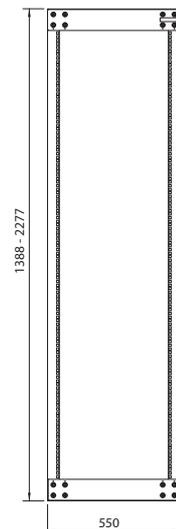
- Composed of sheet steel
- Complete with holes for anchoring screws

#### Standard equipment

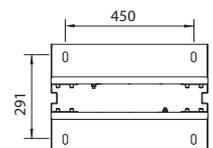
- 1 pair of 19" vertical extrusions with U marking
- Top angles
- 2× base



RSG2-42-19-LA



#### TOP VIEW

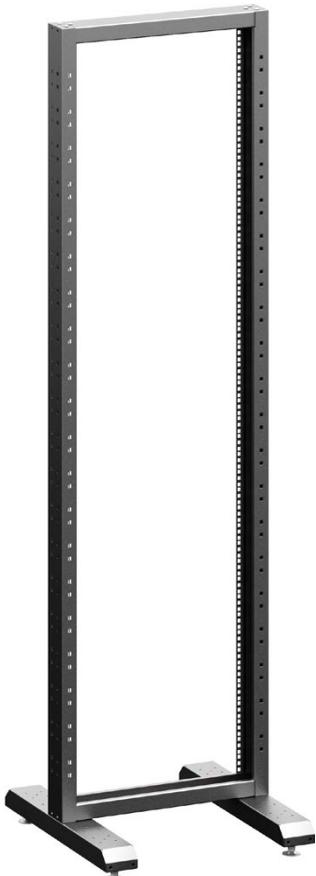


Note: All dimensions in mm

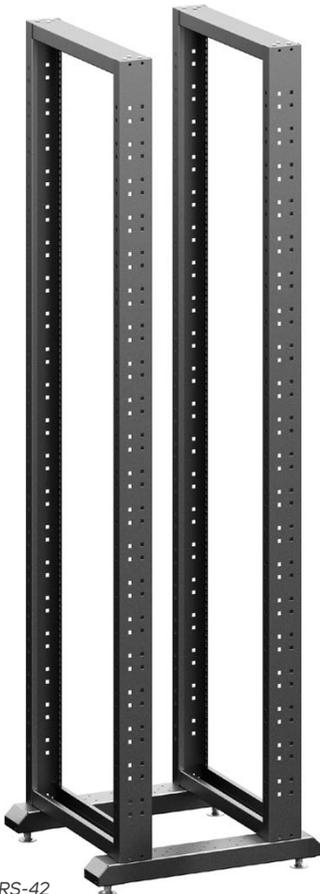
Code	H (in U)	D (mm)	Load rating (kg)
RSG2-27-19-L5	27	1388	500
RSG2-42-19-L5	42	2055	500
RSG2-47-19-L5	47	2277	500
RSG2-42-19-LA	42	2055	1000
RSG2-47-19-LA	47	2277	1000

# FREE-STANDING RACKS

## OPEN FRAMES RS



RS-P + RS-42



RS-P + 2x RS-42

➤ The **RS frame series** is used in closed rooms with controlled access, within a suitable operating environment for installed components, or wherever racks cannot be used.

### MAIN ADVANTAGES

- Light frame
- Single or double version

COLOR:  RAL 9005

### DESCRIPTION

#### Sizes

- Height: 27, 36, 42, and 45U
- Width: 559 mm
- Depth: 600 mm (base size)

#### Construction

- 2.0 mm sheet steel

#### Load rating

- 200 kg—two-post frame
- 400 kg—four-post frame

#### IP rating

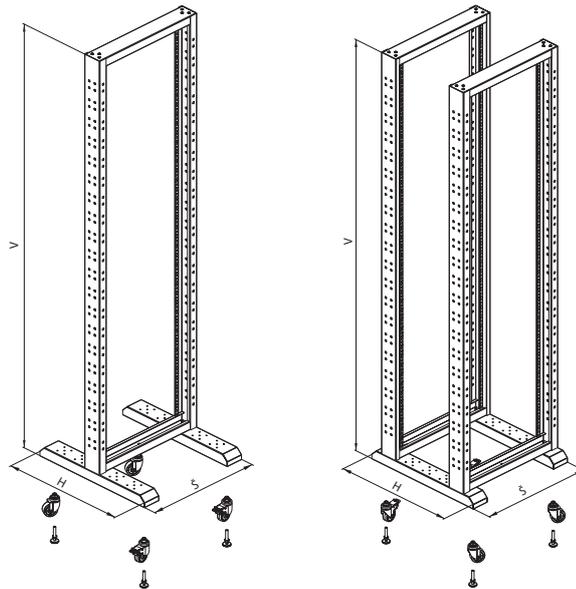
- IP 00 (no protection)

#### Colors

- Standard RAL 9005

#### Base

- Composed of sheet steel
- Equipped with feet
- Optional castors (to be ordered separately)



Configuration order quantities						
H (in U)	Code	19" two post frames	19" four post frames	Dimensions (mm)		
				W	D	H
27U	RS-27	1	2	559	600	1339
	RS-P	1	1			
36U	RS-36	1	2	559	600	1739
	RS-P	1	1			
42U	RS-42	1	2	559	600	2005
	RS-P	1	1			
45U	RS-45	1	2	559	600	2139
	RS-P	1	1			

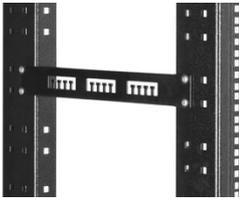
## CROSS-RAIL FOR FOUR-POST FRAMES



- Used for fixing four-post frame
- 2 mm sheet steel
- Color: powder-coated RAL (standard RAL 9005)
- Package includes: 2× cross rails, 12× screw M5×12

Code	Description	Package
RSSD-RAIL	Cross-rail for four-post frame	1 pair

## WIRE-MANAGEMENT PANEL FOR FOUR-POST FRAMES



- Store and secure cables between two pairs of 19" vertical extrusions (four-post frame)
- 1.5 mm sheet steel
- Color: powder-coated RAL (standard RAL 9005)
- Package includes: 1× wire management panel

Code	Description	Package
RSSD-VP	Wire management panel for four-post frame	1 piece

## STABILIZER FOR TWO-POST AND FOUR-POST FRAMES



- Increases sturdiness and stability of RS open frames
- Package includes: 1× left + 1× right stabilizer, 8× screws M5, 4× nuts M5

Code	Description	Package
RSSD-BRACE	Stabilizer for two and four-post frame	1 pair

# SPACE OPTIMIZATION SECTIONS

End-of-the-row section

Front/rear section



➤ CONTEG's **Space Optimization Sections** are designed to provide your data center with additional layout flexibility.

## MAIN ADVANTAGES

- Special sections for adding extra space
- Allow layout flexibility via expansion of previously installed racks
- Same size as racks for minimal space consumption
- Can be added to the side, front and/or rear of standard racks

## DESCRIPTION

- Compatible with RSF and Ri7 series
- Expansion of both existing and new solutions—ready for next decade

### END-OF-ROW SECTION

- Additional space for infrastructure use with wide 300 mm module
- Can be used for power management

### FRONT/REAR SECTION

- Increase usable depth by 300 mm modules
- Can be fitted out with extrusions
- Can be used for power management

End-of-the-row section



Front/rear section



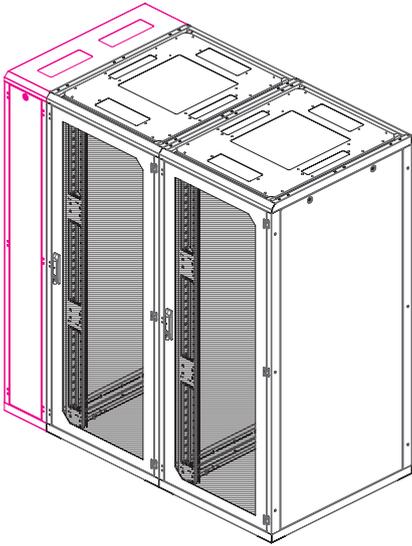
Space optimization sections	Compatible racks
ROF-ES-42-30/80	Ri7/RSF-42-xx/80
ROF-ES-45-30/80	Ri7/RSF-45-xx/80
ROF-ES-42-30/100	Ri7/RSF-42-xx/100
ROF-ES-45-30/100	Ri7/RSF-45-xx/100
ROF-RS-42-60/30	RSF/Ri7
ROF-RS-45-60/30	RSF/Ri7
ROF-RS-42-80/30	RSF/Ri7
ROF-RS-45-80/30	RSF/Ri7

Front/rear section



End-of-the-row section

## END-OF-THE-ROW SECTION

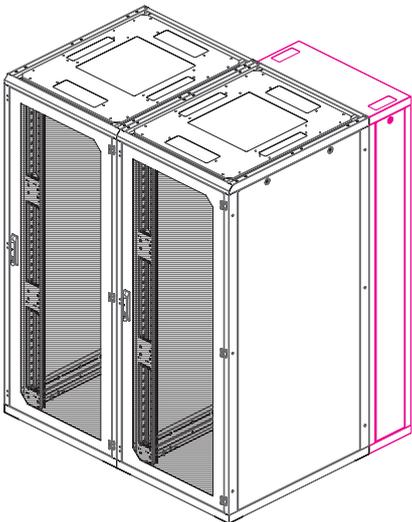


- For cable management, patching and power distribution at end of rack row
- Frame design
- Front and rear panels with locks, no side panels
- Cable entries in top and bottom covers
- Accepts vertical cable management systems (e.g. perforated flat panels, basket trays)
- Package includes: 1× rack, 1x DP-DR-UNI, 4× feet

Code	H (in U)	Dimensions (mm)		Compatible racks
		W	D	
ROF-ES-42-30/80	42	300	800	RSF*, Ri7, RM7
ROF-ES-42-30/100	42	300	1000	
ROF-ES-45-30/80	45	300	800	
ROF-ES-45-30/100	45	300	1000	

\* Optimized

## FRONT/REAR SECTION



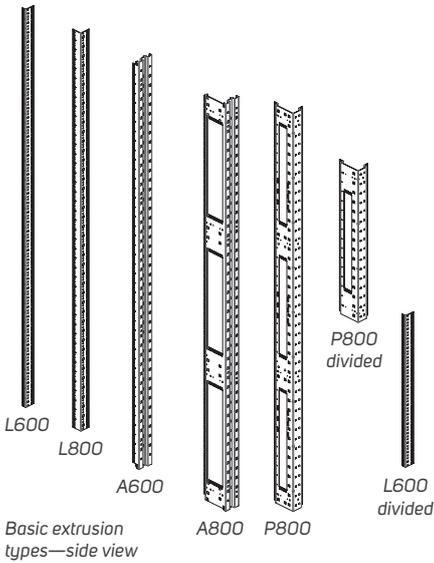
- Expands available space at rear/front of rack, allowing for installation of deeper equipment
- Further possibility for patching and power distribution
- Cable entries in top and bottom covers
- Tinted glass door with swivel handle; full range of RSF family door options (security glass, sheet steel, perforated sheet steel, vented, active vented, etc.)
- Accepts 19" vertical extrusions or vertical cable management systems
- Package includes: 1× rack with glass door, 1× DP-DR-UNI, 4× feet

Code	H (in U)	Dimensions (mm)		Compatible racks
		W	D	
ROF-RS-42-60/30	42	600	300	RSF, Ri7, RM7
ROF-RS-45-60/30	45	600	300	
ROF-RS-42-80/30	42	800	300	
ROF-RS-45-80/30	45	800	300	

## Related accessories

Code	Description	Note
DP-RS-VP-42/30/19-A	(H) 42U, (W) 300 mm, 9× 19" positions	<b>Vertical panels for front/rear sections—</b> vertical panels required for installing relevant 19" and 10" equipment (patch panels, PDUs, switches) and 14 or 15 RJ-45 panels in the front/rear section
DP-RS-VP-45/30/19-A	(H) 45U, (W) 300 mm, 9× 19" positions	
DP-RS-VP-42/30/10-A	(H) 42U, (W) 300 mm, 24× 10" positions	
DP-RS-VP-45/30/10-A	(H) 45U, (W) 300 mm, 24× 10" positions	
DP-RS-VP-42/30/RJ-A	(H) 42U, (W) 300 mm, 14× positions for RJ-45 panels, 6×RJ-45 modules each panel	
DP-RS-VP-45/30/RJ-A	(H) 45U, (W) 300 mm, 15× positions for RJ-45 panels, 6×RJ-45 modules each panel	
DP-RS-RJ-14-XX	14 empty panels for snap in, 6× RJ-45 modules each; check with sales for compatibility of the respective RJ-45 brand	
DP-ES-VP-42/30/19-A	(H) 42U, (W) 300 mm, 9× 19" positions	<b>Vertical panels for end-of-the-row sections—</b> vertical panels required for installing 9× 19" equipment (patch panels, PDUs, switches) in end-of-the-row section
DP-ES-VP-45/30/19-A	(H) 45U, (W) 300 mm, 9× 19" positions	

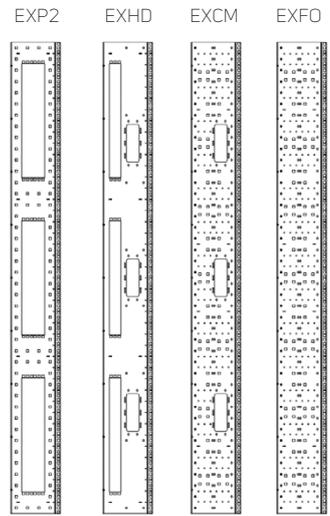
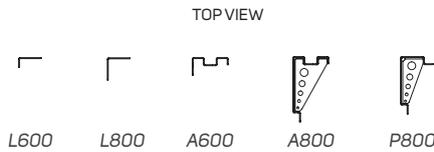
# 19" EXTRUSIONS



➤ A unique combination of 19" extrusions, with many advantages.

## MAIN ADVANTAGES

- Strong, stable system
- Slidable throughout entire rack depth
- Wide extrusions with additional positions



## DESCRIPTION

STANDARD EXTRUSIONS	
Type	Description
L	L-profile extrusions guarantee maximum compatibility with server mounting kits, making installation even easier. L-type extrusions are standard in 600 mm and 800 mm wide racks. Vertical holders are used for 800 mm wide racks.
A	A-type extrusions; for 800 mm wide racks. Provide additional 24U (3× 2U 19") of installation space—valid for racks 42U and taller, adjustable from inside.
P	P-type extrusions; for 800 mm wide RB1 racks. A single continuous piece, each with three 3U, 19" vertical mounting positions. Divided version, each with 1U 19" opening.

ECCENTRIC EXTRUSIONS	
Type	Description
EXP2	Space for patch panels, PDUs and switches
EXHD	Combination space for patch panels, PDUs, switches and vertical HDWM-VMR-12/10F
EXCM *	Space for HDWM-VMR-12/10F and individual cable management
EXFO *	Universal space for individual cable management

Possible to install in racks: Ri7 only in 800 mm width with L-type extrusions, for racks of 42U up to 48U height. One pair of 19" vertical extrusions included; the opposite is always an L-profile extrusion.

\* Compatible with HDWM-FSS-50 and HDWM-FSS-100.

## Ordering information for eccentric extrusions

All CONTEG racks listed in the product catalog come with industry standard extrusions. **To order custom solutions using Eccentric Extrusions, start by ordering a rack without extrusions.** To do this, simply place an "X" in the last position (normally used to indicate rack depth) in the ordering code matrix, followed by the code for the extrusion part you've selected. The following are some examples of correct part numbers for 42U racks: ROF-LV-42/8X-EXP2, ROF-LV-42/8X-EXHD, ROF-LV-42/8X-EXCM or ROF-LV-42/8X-EXFO.

It is always necessary to order two extrusion packages: one for the front, and one for the rear. Different combinations of front and rear extrusion positions are possible. Eccentric rack extrusions can be installed by simply ordering the extrusion (mentioned above), removing the existing parts and installing the new extrusions.

COMPONENTS FOR COVERING HOLES IN EXTRUSIONS	
Type	Description
DP-EHC-1000	Set of covers for 9.5 mm holes, packaged in sets of 1 000 pcs each

# EDURACK-3 FOR NOTEBOOKS AND LAPTOPS



RE-32280003



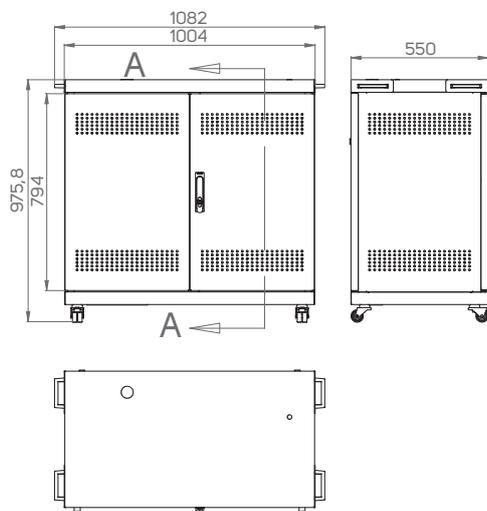
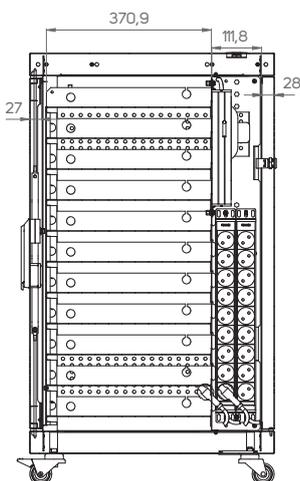
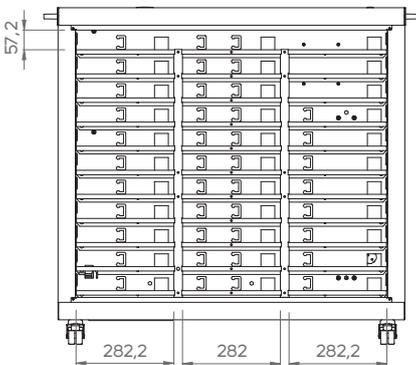
➤ **EDURACK-3** was designed for safe and convenient storage of notebooks and laptops in the educational environment. Provides smart equipment recharge, with digital programmer and surge protection.

## MAIN ADVANTAGES

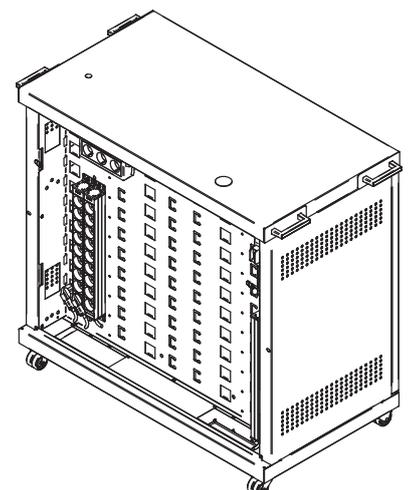
- Capacities of 30 notebooks/laptops (up to 15.6") and 20 laptops 17"
- One additional tray for a Laptop, WiFi access point or extra space.
- Double front door with 3 locking points for security.
- Back panel with double lock.
- Trays and rack with ventilation slots.
- 4 caster wheels, both front with brake. Ergonomic handles for an easier transport.
- Made of steel, finishing in epoxy paint (rust-free and highly resistant). Standard colour: black RAL 9005 and white RAL 9002.
- 4x PDU's of 9 schukos each (34 useful total) +1x PDU of 2 schukos with thermal circuit breaker as a protection of installation.
- Programmable digital timer to select how long and when to recharge.
- Isolation of the storage section from the electrical part. Side entry of each power connector for each laptop with protective glands.
- Specific attachments at the back for the battery chargers of the Notebooks/Laptops.
- Options: Modular fan unit with two fans and thermostat. Other PDU's configurations.

COLOR:  RAL 9005/RAL9002

Code	Height (mm)	Width (mm)	Depth (mm)
RE-32280003	976	1082	550



Note: All dimensions in mm



A photograph of a server rack with a green overlay and geometric shapes. The text is centered and reads: 

**WALL-  
-MOUNTED  
& SOHO  
RACKS**

# 2

## WALL-MOUNTED & SOHO RACKS

Comparison of RUN/Split RUD/RQN/REN/ACP racks .....	46
PREMIUM RUN .....	47
PREMIUM Split RUD .....	48
iSEVEN RQN .....	49
SOHO In-Wall ACP .....	50
SOHO On-Wall ACP .....	51
MiniNET .....	52
SOHO Mini REH 10" .....	53
Accessories for SOHO Mini REH 10" .....	54
10" Fiber-optic splice box .....	54

Comparison *	WALL-MOUNT RACK SERIES welded frame, assembled			
	RUN (see page 47)	Split RUD (see page 48)	RQN (see page 49)	ACP (see pages 50–51)
<b>Sheet steel</b>				
0,8 mm	-	-	✓	-
1 mm	-	-	-	-
1,25 mm	✓	✓	-	✓
1,5 mm	✓	✓	✓	✓
<b>Appropriate use</b>				
Cable rack	+++	+++	+++	+++
IT systems	+++	+++	+	+
Distribution point	+++	+++	+++	+++
Lockable side panels	+++	+++	-	-
<b>Balanced load rating</b>				
Up to 20 kg	✓	✓	✓	✓
Up to 50 kg	✓	✓	✓	-
Up to 60 kg	✓	-	-	-
<b>IP rating</b>				
IP 30	✓	✓	✓	✓
<b>Size</b>				
6U	✓	✓	✓	✓
9U	✓	✓	✓	-
10U	-	-	-	-
12U	✓	✓	✓	-
15U	✓	✓	✓	-
18U	✓	✓	✓	-
21U	✓	-	✓	-
<b>Depth</b>				
300 mm	-	-	-	-
400 mm	✓	-	-	-
450 mm	-	-	✓	-
500 mm	✓	✓	-	-
600 mm	✓	-	✓	-
800 mm	-	✓	-	-
<b>Colors</b>				
Light gray RAL 7035	✓	✓	✓	✓
<b>Locking system</b>				
Single-point	✓	✓	✓	✓
Side panel locks	✓	✓	-	-

\* General comparison of IT rack series; for technical details see appropriate catalog pages.

# WALL-MOUNTED & SOHO RACKS

## PREMIUM RUN



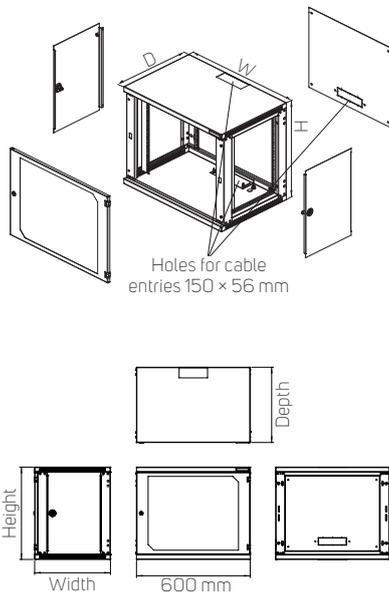
RUN-09-60/60

➤ **Wall-Mounted PREMIUM RUN racks** are designed for wall-mounted installation with extended access.

### MAIN ADVANTAGES

- Excellent rigidity
- Unobstructed access to installed equipment from front and sides
- Lockable side panels
- Load rating up to 60 kg

COLOR: RAL 7035



Code	H (in U)	Dimensions (mm)				Dimensions incl. packing (mm)			Gross weight (kg)
		H	W	D	Useful depth	H	W	D	
RUN-06-60/40	6	358	600	400	380	378	620	430	16
RUN-09-60/40	9	491	600	400	380	510	620	430	20
RUN-12-60/40	12	624	600	400	380	645	620	430	23
RUN-15-60/40	15	758	600	400	380	778	620	430	27
RUN-18-60/40	18	891	600	400	380	910	620	430	33
RUN-21-60/40	21	1025	603	400	380	1044	620	430	40
RUN-06-60/50	6	358	600	500	480	378	620	530	18
RUN-09-60/50	9	491	600	500	480	510	620	530	23
RUN-12-60/50	12	624	600	500	480	645	620	530	26
RUN-15-60/50	15	758	600	500	480	778	620	530	30
RUN-18-60/50	18	891	600	500	480	910	620	530	36
RUN-21-60/50	21	1025	603	500	480	1044	620	530	42
RUN-06-60/60	6	358	603	600	580	378	620	630	20
RUN-09-60/60	9	491	603	600	580	510	620	630	26
RUN-12-60/60	12	624	603	600	580	645	620	630	29
RUN-15-60/60	15	758	603	600	580	778	620	630	33
RUN-18-60/60	18	891	603	600	580	910	620	630	39
RUN-21-60/60	21	1025	603	600	580	1044	620	630	45

## DESCRIPTION

### Sizes

- Height: 6, 9, 12, 15, 18, 21U
- Width: 600 mm
- Depth: 400, 500 or 600 mm

### Construction

- 1,25 mm/1,5 mm sheet steel

### Load rating

- Standard 60 kg balanced load

### IP rating

- Standard IP 30

### Colors

- Standard: RAL 7035
- Other colors on request

### Front door

- Security-glass (EN 12150-1) or sheet steel door
- Reversible door—easy re-hanging to open right or left
- Door opening angle 180°

### Rear panel

- Removable, with module for cable entry
- Mounting holes for wall installation on back

### Cable entries

- Top and bottom openings for cable entry, size 150 × 56 mm, knock out opening
- Can be covered by sliding blank panel with butterfly nuts (DP-DB-200×68) or brush cable entry (DP-KP-KAR3)—ordered separately
- Cable entries on the rear edge of enclosure for straight cable path alongside the wall

### Other

- Downloadable drilling template is available on a PREMIUM RUN product page at [www.conteg.cz](http://www.conteg.cz)
- Extra pair of DP-LV-N-xx extrusions optional

### STANDARD CONFIGURATION:

- 1 pair sliding 19" vertical extrusions
- 2 removable side panels with lock
- Tinted security-glass door (EN 12150-1) with lock
- GND/earthing kit

# WALL-MOUNTED & SOHO RACKS

## PREMIUM SPLIT RUD



RUD-09-60/50

➤ **Wall-Mounted PREMIUM Split RUD racks** are designed for wall-mount installation with easy access.

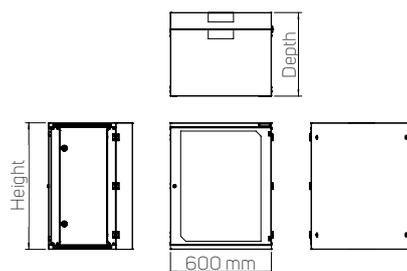
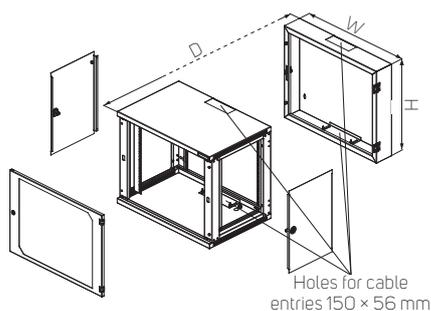
### MAIN ADVANTAGES

- Designed for excellent rigidity
- Free access to installed equipment from front, rear and sides
- Lockable side panels and rear section
- Load rating up to 50 kg

COLOR:  RAL 7035



Code	H (in U)	Dimensions (mm)				Dimensions incl. packing (mm)			Gross weight (kg)
		H	W	D	Useful depth	H	W	D	
RUD-06-60/50	6	358	600	500	490	378	620	530	20
RUD-09-60/50	9	491	600	500	490	510	620	530	24
RUD-12-60/50	12	624	600	500	490	645	620	530	28
RUD-15-60/50	15	758	600	500	490	778	620	530	32
RUD-18-60/50	18	891	600	500	490	910	620	530	40
RUD-06-60/80	6	358	600	800	790	378	620	830	24
RUD-09-60/80	9	491	600	800	790	510	620	830	28
RUD-12-60/80	12	624	600	800	790	645	620	830	31
RUD-15-60/80	15	758	600	800	790	778	620	830	35
RUD-18-60/80	18	891	600	800	790	910	620	830	44



### DESCRIPTION

#### Sizes

- Height: 6, 9, 12, 15, 18U
- Width: 600 mm
- Depth: 500 and 800 mm

#### Construction

- 1,25mm/1,5mm sheet steel

#### Load rating

- Standard 50 kg balanced load

#### IP rating

- Standard IP 30

#### Colors

- Standard: RAL 7035
- Other colors on request

#### Front door

- Security-glass (EN 12150-1) or sheet steel door
- Reversible door—easy re-hanging to open right or left
- Door opening angle 180°

#### Rear module

- Removable, with module for cable entry depth 500 or 800 mm
- Mounting holes for wall installation on back

#### Cable entries

- Top and bottom openings for cable entry, size 150 × 56 mm, knock out opening
- Can be covered by sliding blank panel with butterfly nuts (DP-DB-200×68) or brush cable entry (DP-KP-KAR3)—ordered separately
- Cable entries on the rear edge of enclosure for straight cable path alongside the wall

#### Other

- Downloadable drilling template is available on a PREMIUM Split RUD product page at [www.conteg.cz](http://www.conteg.cz)
- Extra pair of DP-LV-N-xx extrusions optional

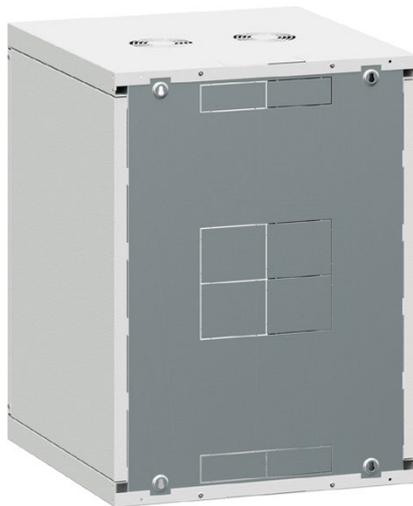
#### STANDARD CONFIGURATION:

- 1 pair sliding 19" vertical extrusions
- 2 removable side panels with lock
- Tinted security-glass door (EN 12150-1) with lock
- GND/earthing kit

# iSEVEN RQN



RQN-15-60/60



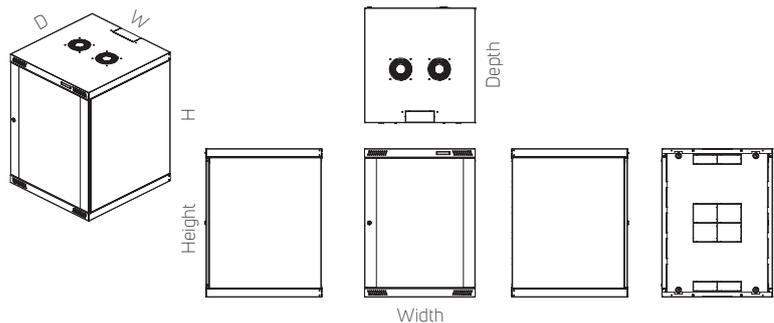
➤ **Wall-mounted iSEVEN RQN racks** are ready for daily use, with an unmatched ratio between price, utility value and quality.

## MAIN ADVANTAGES

- Unobstructed access to installed equipment from front and sides
- Load rating up to 50 kg

COLOR:  RAL 7035  RAL 9005

Code	H (in U)	Dimensions (mm)				Dimensions incl. packing (mm)			Gross weight (kg)
		H	W	D	Useful depth	H	W	D	
RQN-06-60/45	6	374	572	450	405	390	600	490	13,5
RQN-09-60/45	9	507	572	450	405	522	600	490	16
RQN-12-60/45	12	640	572	450	405	655	600	490	19
RQN-15-60/45	15	773	572	450	405	788	600	490	21,5
RQN-18-60/45	18	907	572	450	405	922	600	490	24
RQN-21-60/45	21	1040	572	450	405	1055	600	490	27
RQN-12-60/60	12	640	572	600	555	655	600	640	23
RQN-15-60/60	15	773	572	600	555	788	600	640	25
RQN-18-60/60	18	907	572	600	555	922	600	640	29
RQN-21-60/60	21	1040	572	600	555	1055	600	640	32



## DESCRIPTION

- Sizes**
- Height: 6, 9, 12, 15, 18, 21U
  - Width: 572 mm
  - Depth: 450 mm, 600 mm (12U+)
- Construction**
- 0.8mm/1.5mm sheet steel
- Load rating**
- Standard 50 kg balanced load
- IP rating**
- Standard IP20

- Colors**
- Standard: RAL 7035, RAL 9005
  - Other colors on request
- Front door**
- Security-glass (EN 12150-1) or sheet steel door
  - Reversible door—easy re-hanging to open right or left (at installation site)
  - Door opening angle 180°
- Ventilations**
- 2× top cover perforation
  - 2× bottom cover perforation

- Cable entries**
- Top and bottom openings for cable entry, size 150 × 56 mm, knock out opening
  - Can be covered by sliding blank panel with butterfly nuts (DP-DB-200×68) or brush cable entry (DP-KP-KAR3)—ordered separately
  - Cable entries on the rear edge of enclosure for straight cable path alongside the wall

- Rear panel**
- Easy wall installation
  - Cable entry for wall through cables
  - Integrated additional 19" extrusions for fixing

- STANDARD CONFIGURATION:**
- 1 pair sliding 19" vertical extrusions
  - 2 removable side panels with lock
  - Tinted security-glass door (EN 12150-1) with lock
  - GND/earthing kit

# WALL-MOUNTED & SOHO RACKS

## SOHO IN-WALL ACP



ACP-IW-55/53/14

➤ **ACP series SOHO** racks are designed for households and small offices. They are the only racks in the CONTEG portfolio that can be installed directly into the wall, making them an ideal solution for use within a space-constrained environment.

### MAIN ADVANTAGES

- Equipped with extrusions for both active equipment installation (2U) and mounting passive components (4U)
- Offers access to installed equipment through front door

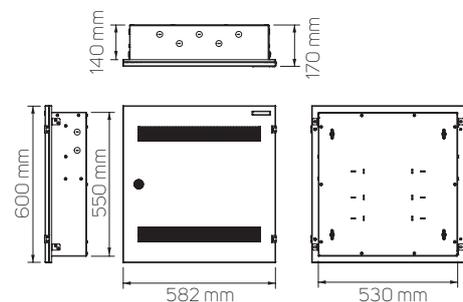
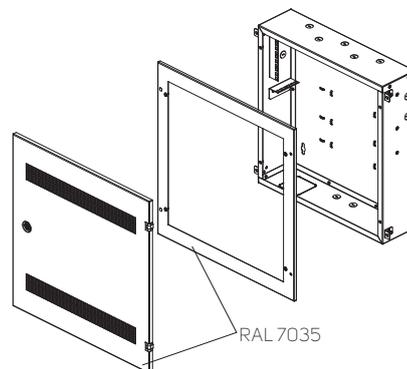
COLOR:  RAL 7035



Code	Box dimensions (mm)			Vertical extrusions		Horizontal extrusions		External dimensions including packing (mm)			Gross weight (kg)
	H	W	D	U *	UD **	U *	UD **	H	W	D	
ACP-IW-55/53/14	550	530	140	4	90	2	300	630	595	170	12

\* Length of extrusions in U units

\*\* Max. depth of installed equipment in mm



### DESCRIPTION

#### Sizes

- Height: 550 mm
- Width: 530 mm
- Depth: 140 mm

#### Construction

- Zinc-coated 1.25/1.5 mm sheet steel box

#### Colors

- Standard: RAL 7035
- Other colors on request

#### Load rating

- 20 kg

#### Front door

- Door opening angle 180°
- Perforated door for effective ventilation with lock

#### Cable entries

- Knock-out at bottom for internal electrical outlet
- Multiple 22.6 mm conduit knock-outs on all sides of box
- Cable tie bump outs on rear side of box

#### STANDARD CONFIGURATION:

- 1 pair of fixed 19" horizontal extrusions (2U)
- 1 pair of fixed 19" vertical extrusions (4U)
- Sheet steel perforated door with lock

# WALL-MOUNTED & SOHO RACKS

## SOHO ON-WALL ACP



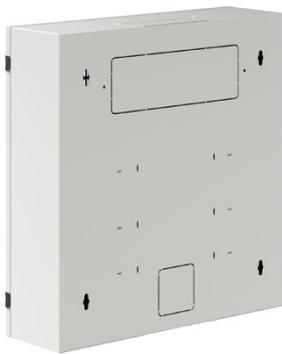
ACP-OW-55/53/14

➤ **SOHO On-Wall ACP** racks are installed directly on the wall. This distribution enclosure gives great deployment flexibility, while offering a more aesthetically pleasing and cost-effective solution to the developer/homeowner.

### MAIN ADVANTAGES

- Equipped with extrusions for both active equipment installation (2U) and mounting passive components (4U)
- Offers access to installed equipment through front door

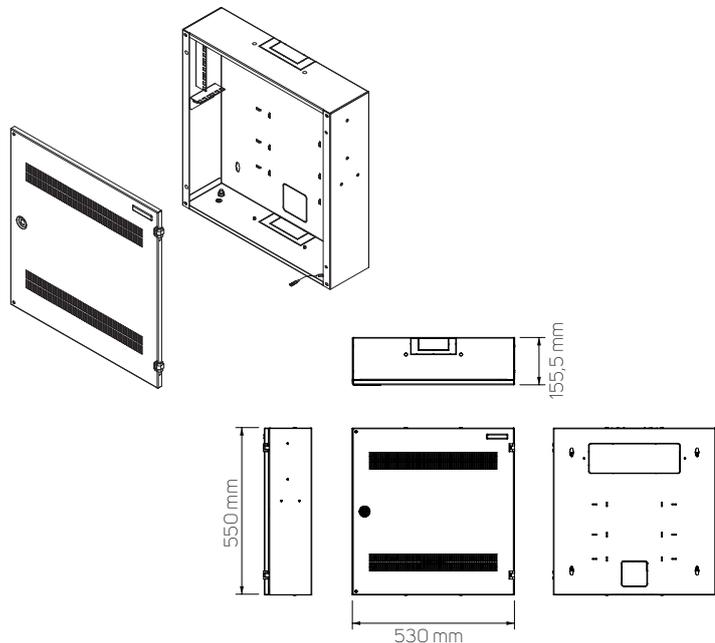
COLOR:  RAL 7035



Code	Box dimensions (mm)			Vertical extrusions		Horizontal extrusions		External dimensions including packing (mm)			Gross weight (kg)
	H	W	D	U*	UD**	U*	UD**	H	W	D	
ACP-OW-55/53/14	550	530	155	4	90	2	300	630	595	170	12

\* Length of extrusions in U units

\*\* Max. depth of installed equipment in mm



### DESCRIPTION

#### Sizes

- Height: 550 mm
- Width: 530 mm
- Depth: 155 mm

#### Construction

- Box and door made of 1.25/1.5 mm sheet steel

#### Colors

- Standard: RAL 7035
- Other colors on request

#### Load rating

- 20 kg

#### Front door

- Door opening angle 180°
- Perforated door for effective ventilation with lock

#### Cable entries

- Knock-out at bottom for internal electrical outlet
- Cable tie bump outs on rear side of box

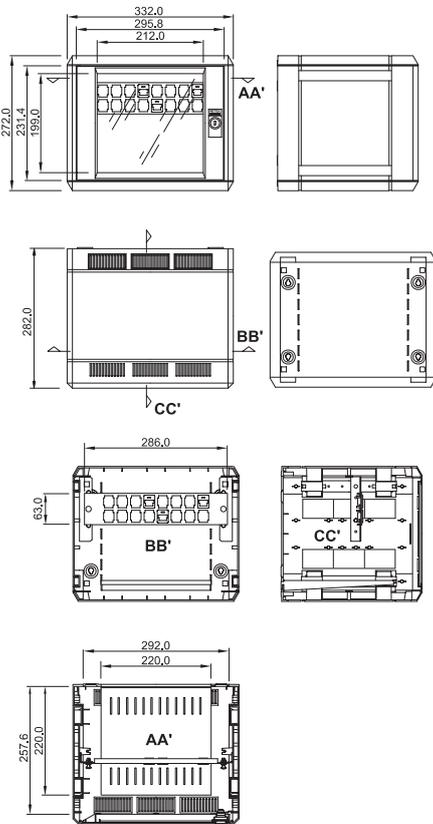
#### STANDARD CONFIGURATION:

- 1 pair of fixed 19" horizontal extrusions (2U)
- 1 pair of fixed 19" vertical extrusions (4U)
- Sheet steel perforated door with lock

# MININET



RE-32240010



➤ **MiniNET** wall rack was conceived for small household and SOHO (Small Office, Home Office) installations. Offers quick and easy assembly, without bolts or tools, thanks to four practicable lateral stoppers. Delivered Flat-pack.

## MAIN ADVANTAGES

- Its special design and thermoplastic construction are perfectly adapted to such diverse surroundings as stores, bank branch offices, industrial settings, etc. This is the ideal choice for any small voice/data, DSL telephony, Internet or video conferencing installation, with the additional benefit of its compatibility with Wireless technology.
- Door with built-in hinge, which allows the door's direction of rotation to be reversed during assembly without using tools. Transparent bronze-coloured window for supervising the equipment. Security lock with key.
- Upper/lower bodies and lateral cover panels in heat-resistant thermoplastic ABS.
- Standard ventilation in the upper/lower bodies allows optimum circulation of air (total ventilated area = 90 cm<sup>2</sup>).
- Pre-machined and practicable rear ventilation slots which allow the wiring to be managed easily.
- Internal sections adjustable for depth.
- Rear cover panel with anchor points to wall.
- Electronic support tray with bolt-free attachments, adjustable for height.
- Quick-assembly patch-panel.
- New design of jack anchoring frames makes the unit compatible with the assembly of Keystone and Systimax connectors.
- Structured manufactured in heat-resistant ABS (90 °C), and top cover panel, tray, locking sections and patch-panel in 1 mm thick sheet steel, finished in epoxy paint.
- Color: sides, door frame and internal accessories in a color similar to RAL 9002, top and bottom cover panels and side stoppers similar to RAL 7044.

**Standard configuration:** 1 MiniNET, 1 pair of variable-depth sections, height-variable tray, patch-panel with 16 RJ45 ports, 16 jack attachment frames, upper and lower ventilation useful for wiring output.

COLOR:  RAL 9002/7044

Code	Box dimensions (mm)			External dimensions in package (mm)			Gross weight (kg)
	H	W	D	H	W	D	
RE-32240010	272	332	282	139	344	365	2



# WALL-MOUNTED & SOHO RACKS

## SOHO Mini REH 10"



REH-09-30/26

➤ **SOHO Mini REH** racks are suitable for the placing of 10" patch panels, shelves, SOHO active components, etc.

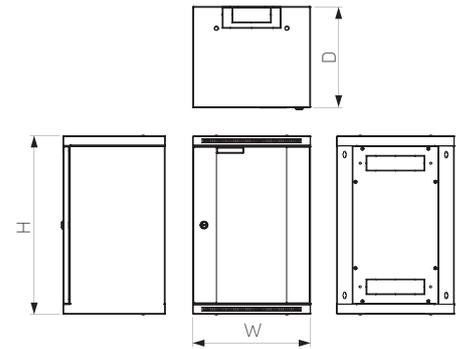
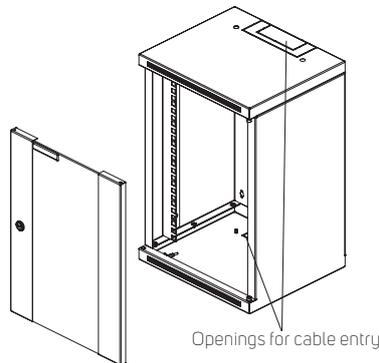
### MAIN ADVANTAGES

- Minimal dimensions allow installation in small
- Offers access to installed equipment through front door

COLOR:  RAL 7035



Code	H (in U)	Dimensions (mm)				Dimensions including packaging (mm)			Gross weight (kg)
		H	W	D	Užitná hloubka	H	W	D	
REH-04-30/26	4	237	300	260	230	257	317	287	4,5
REH-06-30/26	6	326	300	260	235	346	317	287	5,5
REH-09-30/26	9	459	300	260	235	477	317	287	7



## DESCRIPTION

### Sizes

- Height: 4, 6 and 9U
- Width: 300 mm
- Depth: 260 mm

### Construction

- 1.25mm sheet steel

### Load rating

- Standard 20 kg balanced load

### IP rating

- Standard IP 30

### Colors

- Standard: RAL 7035
- Other colors on request

### Front door

- Tinted security-glass (EN 12 150-1)
- Reversible door—easily re-hangs to open on right or left (at installation site)
- Door opening angle 180°

### Cable entries

- Knock-out top and bottom openings for 150 × 56 mm cable entry, 150 × 56 mm rear cable

entry; openings can also be covered with blank panel (DP-DB-200x68) or brush (DP-KP-KAR3)

- Cable entries start on rear edge of enclosure for straight cable path alongside wall

### Other

- One pair of 10" vertical extrusions; can be moved back up to 20 mm
- Drilling template
- Mounting holes on back for wall installation

### STANDARD CONFIGURATION:

- 1 pair of 10" vertical extrusions
- Tinted security glass door (EN 12 150-1) with lock
- Openings for cable entry
- 8 mounting kits

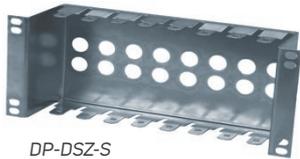
## ACCESSORIES FOR SOHO Mini REH 10"



DP-MP-S1U



DP-PP-S1U



DP-DSZ-S



DP-PT-S200



DP-ZA-S1U



DP-S01-VENT



DP-VP-PS01

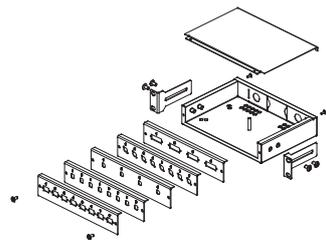
REH—PATCH PANELS				
Code	H (in U)	W	Used with	Package
DP-PP-S1U	1	10"	8 Keystone type modules with DP-KEY; 16.7×24.3 mm standard hole size	1 pc
DP-MP-S1U	1	10"	12 modules Panduit	1 pc
DP-DSZ-S	2+1/2	10"	8 modules LSA-PLUS	1 pc

REH—ACCESSORIES				
Code	H (in U)	W	Description	Package
DP-PT-S200	1	10"	150 mm deep shelf	1 pc
DP-ZA-S1U	1	10"	Blank panel	1 pc
DP-S01-VENT	1	10"	Vented panel	1 pc
DP-VP-PS01	1	10"	Wire management panel with plastic brackets	1 pc

## 10" FIBER-OPTIC SPLICE BOX



ORMS-01



- For use with modular front panel
- Up to 8 positions: ST, SC or FC type or 4 positions DSC or FCD type
- Height: 1U
- Cable entry via two PG9 couplings on rear part (included)
- Holes not in use can be covered
- Installation in 10" rack with two sliding holders
- Installation kit for splice cassette size 142×95 mm (included)
- Color: powder-coated RAL (standard RAL 9005)
- Package includes: 1× fiber optic box, 2× holder for 10" rack, 2× PG9 couplings, 2× screws for affixing to front panel (front panel not included)

Code	Description	H (in U)	W	D (mm)	Package
ORMS-01	10" fiber-optic splice box	1	10"	160	1 pc
Front panels					
ORS-08ST	Modular front panel	1	10"	–	1 pc
ORS-08SC	Modular front panel	1	10"	–	1 pc
ORS-04DSC	Modular front panel	1	10"	–	1 pc
ORS-08FC	Modular front panel	1	10"	–	1 pc
ORS-04FCD	Modular front panel	1	10"	–	1 pc



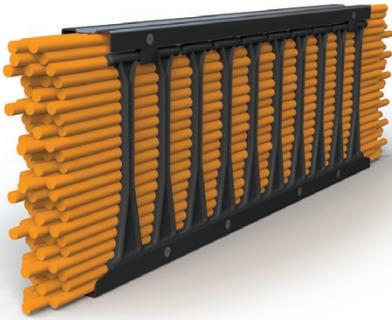
# CABLE MANAGEMENT

# 3

## CABLE MANAGEMENT

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# HIGH DENSITY WIRE MANAGEMENT



➤ **High Density Wire Management (HDWM)** helps to improve network performance and reliability (system under industrial trademark).

## MAIN ADVANTAGES

- Reduces risk of attenuation and substantially increases data transmission reliability
- Solution for racks and open frames
- Innovative approach for backbone and patch cables allow better organization in accordance with industry standards and major cable manufacturer recommendations
- New design for 48 patch cords (Cat. 7A) in 1U position
- Unbeatable density of patch cords
- Bend radius control
- Allows installation of up to 2 016 patch cords in one rack
- Unique front panel latching system
- Front or front/rear design layout available
- Wide range of sizes usable for typical applications

COLOR SAMPLER:  RAL 9005

HIGH DENSITY WIRE MANAGER CABLE FILL CALCULATOR						
Code	Description	Cable Details	Number of cables			
			CAT 6 UTP	CAT 6a UTP	CAT 7a PiMF	Own
		Ø (mm)	5.870	7.239	7.620	8.000
		Fill Factor	50 %			
<b>Standard version</b>						
HDWM-HM-1F	Horizontal HDWM, 1U×10 finger, front only 1U×19"×112 mm		50	33	30	27
HDWM-VMR-42-12/10F	Vertical High Density Rack Wire Manager, 41 fingers, front only, 42U×100×112 mm		184	121	109	99
HDWM-VMF-42-15/20F	Vertical High Density Frame Wire Manager, 41 fingers, front only, 42U×151×200 mm		507	333	301	273
HDWM-VMF-42-25/20F	Vertical High Density Frame Wire Manager, 41 fingers, front only, 42U×251×200 mm		913	600	541	491
HDWM-VMF-42-25/30F	Vertical High Density Frame Wire Manager, 41 fingers, front only, 42U×251×300 mm		1411	928	837	760
Finger Opening Standard	Capacity of finger opening—standard version		47	31	28	25
<b>Longer version</b>						
HDWM-HML-1F	Horizontal HDWM, 1U×10 long finger, front only 1U×19"×182mm		92	60	54	49
HDWM-VMR-42-19/10F	Vertical High Density Rack Wire Manager, 41 long fingers, front only, 42U×100×182 mm		312	205	185	168
HDWM-VMF-42-22/20F	Vertical High Density Frame Wire Manager, 41 long fingers, front only, 42U×221×200 mm		791	520	469	426
HDWM-VMF-42-32/20F	Vertical High Density Frame Wire Manager, 41 long fingers, front only, 42U×321×200 mm		1197	787	710	644
HDWM-VMF-42-32/30F	Vertical High Density Frame Wire Manager, 41 long fingers, front only, 42U×321×300 mm		1851	1217	1098	996
Finger Opening Long	Capacity of finger opening—longer version		92	60	54	49

## DESCRIPTION

### Front/rear design

- Dual pathway for managing cables within the same HDWM
- Horizontal and vertical orientations, vertical racks (VMR) for front only

### Front only design

- Simple pathway for cables
- Available in horizontal and vertical orientations

### Horizontal orientation

- Horizontal pathway for managing cables between installed equipment
- For mounting onto 19" extrusions

### Vertical orientation

- Vertical pathway for managing cables into and through the rack or frame

- Velcro cable ties for optimum cable bundle management
- Vertical managers can be bolted together (front to back), customizing the HDWM to your requirements

### Frame vertical panel (VMF)

- 3 mm thick aluminum ensures high rigidity and structural strength
- Easy installation onto RSG frames

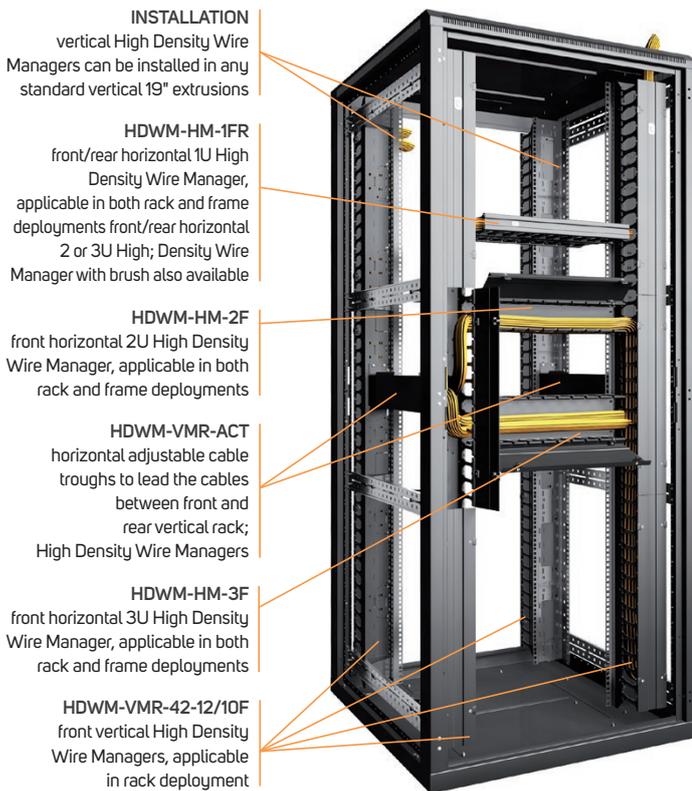
### Cable Troughs

- Allows cable management of cables between vertical rack (VMR) or frame (VMF) HDWM
- Adjustable length

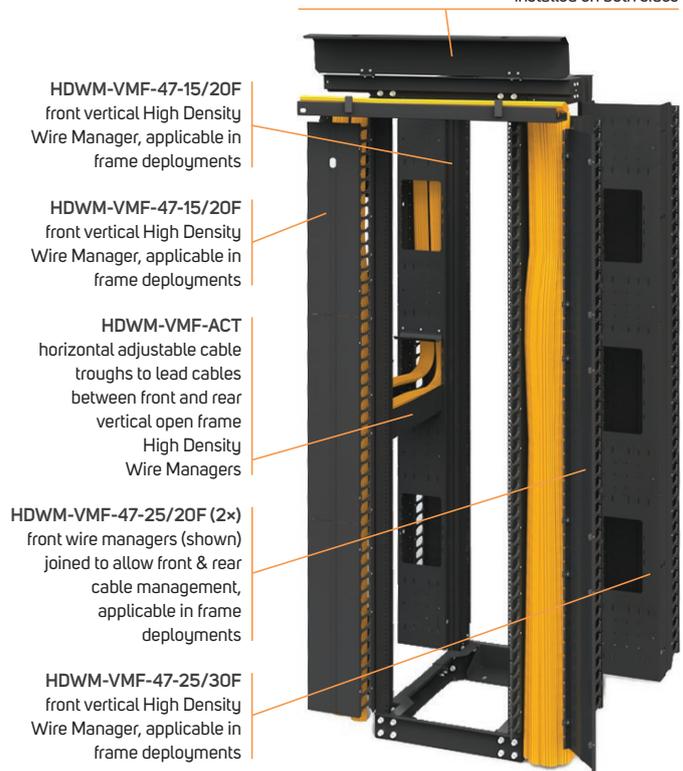
### Sizes

- Fingers come in two sizes—standard and long

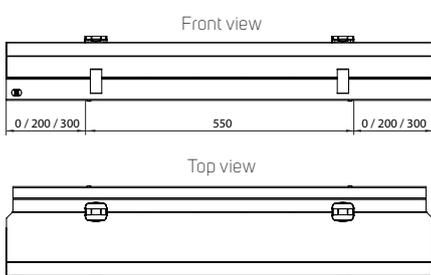
# HDWM—example of use



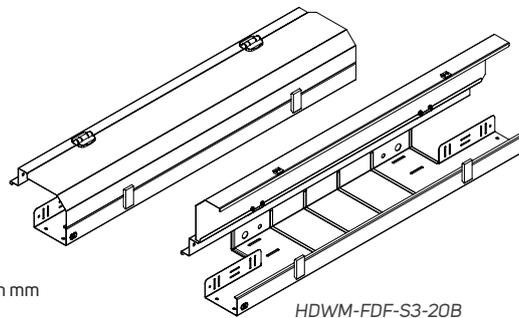
HDWM-FDF-S3-20B  
front duct system, compatible with HDWM-VMF-xx-yy/20F installed on both sides



## Front duct system compatible with vertical HDWM—RSG open frame installation



Note: all dimensions in mm



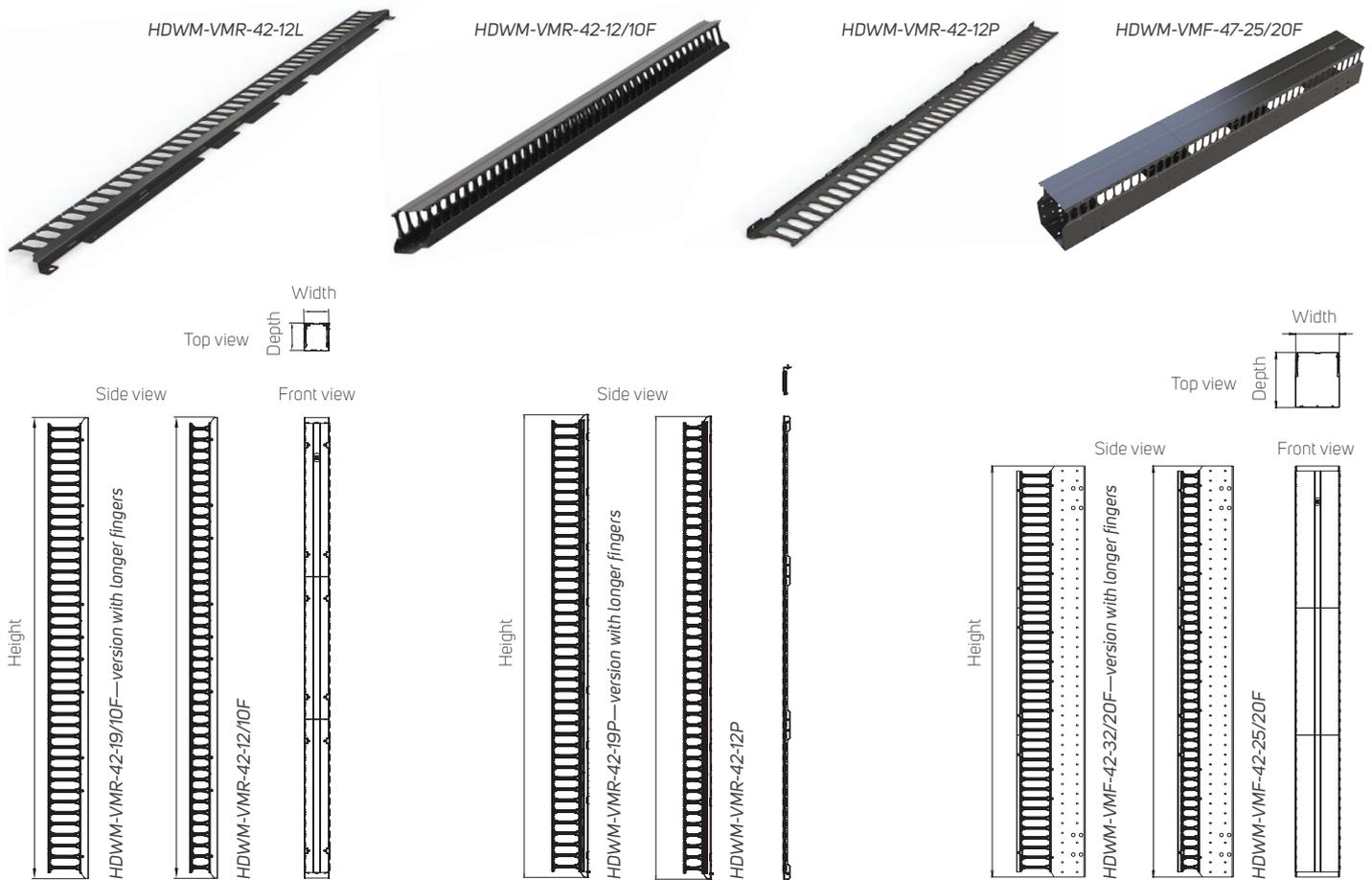
### Package includes:

- Set 1: 1x HDWM front duct, 1x cable radius protector, 1x connecting module, 4x screws M5, 4x nuts M5, 4x washer M5
- Set 2: 1x HDWM front duct, 2x cable radius protector, 1x connecting module, 4x screws M5, 4x nuts M5, 4x washer M5

Code	Installation	Description	Package
HDWM-FDF-S3-20L	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/20F installed on the left-hand side	1 pc of set 1
HDWM-FDF-S3-20R	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/20F installed on the right-hand side	1 pc of set 1
HDWM-FDF-S3-20B	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/20F installed on both sides	1 pc of set 2
HDWM-FDF-S3-30L	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/30F installed on the left-hand side	1 pc of set 1
HDWM-FDF-S3-30R	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/30F installed on the right-hand side	1 pc of set 1
HDWM-FDF-S3-30B	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/30F installed on both sides	1 pc of set 2
HDWM-FDF-S3-20L30R	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/20F installed on the left-hand side and HDWM-VMF-xx-yy/30F installed on the right-hand side	1 pc of set 2
HDWM-FDF-S3-30L20R	Open frame	Front duct system, compatible with HDWM-VMF-xx-yy/30F installed on the left-hand side and HDWM-VMF-xx-yy/20F installed on the right-hand side	1 pc of set 2
HDWM-FDF-S3-EC	Open frame	End cap for front duct system	2 pcs

# Vertical high density wire managers

## Rack & RSG open frame installation



### Package includes:

- Set 1: 1x HDWM manager, set of blanking panels, 8x screws M5, 8x nuts M5, 8x washer M5, 10x velcro ties HDWM-VCT
- Set 2: 1x HDWM manager, 4x screws M5, 4x nuts M5, 4x washer M5, 5x velcro ties HDWM-VCT
- Set 3: 1x HDWM manager, 4x screws M5, 4x nuts M5, 4x washer M5, 10x velcro ties HDWM-VCT

Code	Installation	Type	No. of fingers		Dimensions			Extended version with longer fingers		Package
			Front	Rear	H (in U)	W (mm)	D (mm)	Code	D (mm)	
HDWM-VMR-42-12/10F	Rack	Front	41	x	42	100	112	HDWM-VMR-42-19/10F	182	1 pc of set 1
HDWM-VMR-45-12/10F	Rack	Front	44	x	45	100	112	HDWM-VMR-45-19/10F	182	
HDWM-VMR-47-12/10F	Rack	Front	46	x	47	100	112	x	x	
HDWM-VMR-48-12/10F	Rack	Front	47	x	48	100	112	HDWM-VMR-48-19/10F	182	
HDWM-VMR-52-12/10F	Rack	Front	51	x	52	100	112	x	x	
HDWM-VMR-42-12L	Rack	L-type 800 mm extrusion and A-type RF1, 600 mm width, one row	41	x	42	-	112	HDWM-VMR-42-19L	182	1 pc of set 2
HDWM-VMR-45-12L	Rack		44	x	45	-	112	HDWM-VMR-45-19L	182	
HDWM-VMR-48-12L	Rack		47	x	48	-	112	HDWM-VMR-48-19L	182	
HDWM-VMR-42-12P	Rack	P-type extrusion and A-type RF1, 800 mm width, one row	41	x	42	-	112	HDWM-VMR-42-19P	182	
HDWM-VMR-45-12P	Rack		44	x	45	-	112	HDWM-VMR-45-19P	182	
HDWM-VMR-48-12P	Rack		47	x	48	-	112	HDWM-VMR-48-19P	182	
HDWM-VMF-42-15/20F	Open frame	Front <sup>1</sup>	41	x	42	200	151	HDWM-VMF-42-22/20F	221	1 pc of set 3
HDWM-VMF-45-15/20F	Open frame	Front <sup>1</sup>	44	x	45	200	151	HDWM-VMF-45-22/20F	221	
HDWM-VMF-47-15/20F	Open frame	Front <sup>1</sup>	46	x	47	200	151	HDWM-VMF-47-22/20F	221	
HDWM-VMF-42-25/20F	Open frame	Front <sup>1</sup>	41	x	42	200	251	HDWM-VMF-42-32/20F	321	
HDWM-VMF-45-25/20F	Open frame	Front <sup>1</sup>	44	x	45	200	251	HDWM-VMF-45-32/20F	321	
HDWM-VMF-47-25/20F	Open frame	Front <sup>1</sup>	46	x	47	200	251	HDWM-VMF-47-32/20F	321	
HDWM-VMF-42-25/30F	Open frame	Front <sup>1</sup>	41	x	42	300	251	HDWM-VMF-42-32/30F	321	
HDWM-VMF-45-25/30F	Open frame	Front <sup>1</sup>	44	x	45	300	251	HDWM-VMF-45-32/30F	321	
HDWM-VMF-47-25/30F	Open frame	Front <sup>1</sup>	46	x	47	300	251	HDWM-VMF-47-32/30F	321	

<sup>1</sup> For front/rear design, simply order respective front managers and install them easily at the installation site with enclosed hardware (standard). Both the standard and longer versions may be combined as well.

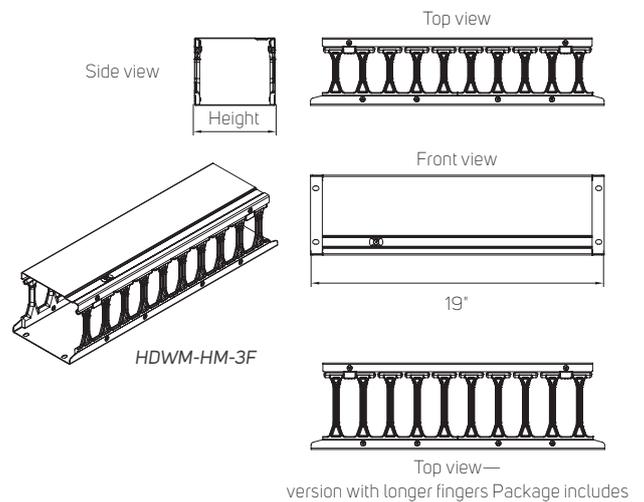
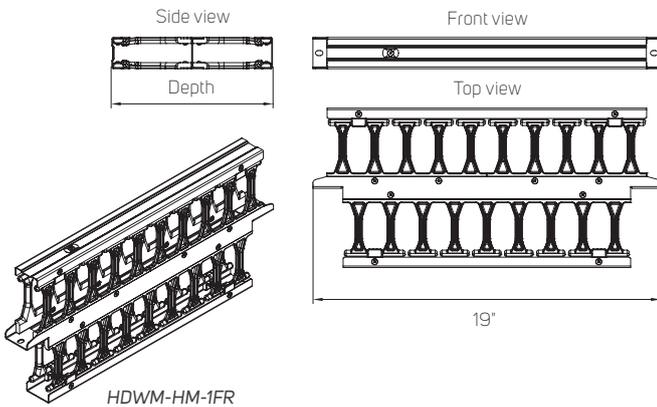
## Horizontal high density wire managers



### Front/rear design



### Front only design



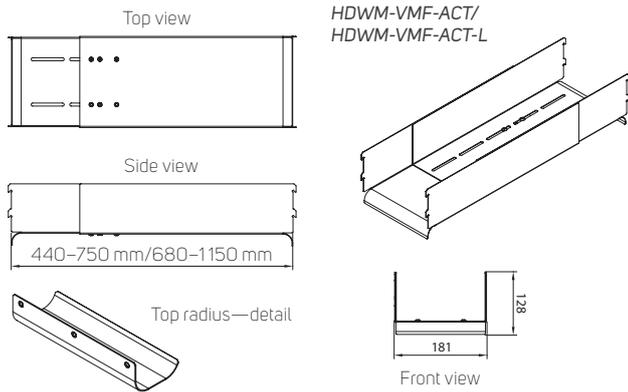
#### Package includes:

- HDWM manager, 1x DP-MO-01

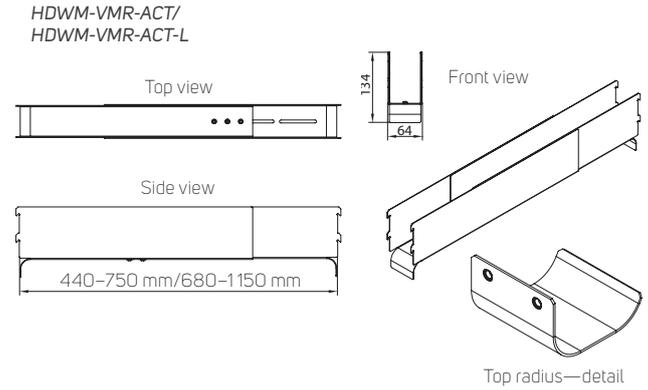
Code	Installation	Type	No. of fingers		Dimensions			Extended version with longer fingers		Package
			Front	Rear	H (in U)	W	D (mm)	Code	D (mm)	
HDWM-HM-1F	Open frame/rack	Front	10	–	1	19"	112	HDWM-HML-1F	182	1 pc
HDWM-HM-1FR	Open frame/rack	Front/rear	10	9	1	19"	223	HDWM-HML-1FR	363	1 pc
HDWM-HM-2F	Open frame/rack	Front	10	–	2	19"	112	HDWM-HML-2F	182	1 pc
HDWM-HM-2FR	Open frame/rack	Front/rear	10	9	2	19"	223	HDWM-HML-2FR	363	1 pc
HDWM-HM-2FRB	Open frame/rack	Front/rear, brush	10	9	2	19"	223	HDWM-HML-2FRB	363	1 pc
HDWM-HM-3F	Open frame/rack	Front	10	–	3	19"	112	HDWM-HML-3F	182	1 pc
HDWM-HM-3FR	Open frame/rack	Front/rear	10	9	3	19"	223	HDWM-HML-3FR	363	1 pc
HDWM-HM-3FRB	Open frame/rack	Front/rear, brush	10	9	3	19"	223	HDWM-HML-3FRB	363	1 pc

# Adjustable cable trough for vertical HDWM

## RSG open frame installation



## Rack installation



### Package includes:

- HDWM-VMX-ACT-X: 1x duct, 2x radius control, 4x screws M5

### ACCESSORIES FOR HIGH DENSITY WIRE MANAGERS

Code	Description	Package
HDWM-VMR-19	Bracket for attachment of HDWM-VMR-XX-XX/XXF to 19" profiles (not required for RF1 and iSEVEN)	1 set
HDWM-VMR-ACT	Adjustable cable trough—for front-to-rear cable management between front and rear mounted VMR, top radius included, range 440 to 750 mm	1 set
HDWM-VMF-ACT	Adjustable cable trough—for front-to-rear cable management between front and rear mounted VMF, top radius included, range 440 to 750 mm	1 set
HDWM-VMR-ACT-L	Adjustable cable trough—long—for front-to-rear cable management between front and rear mounted VMR, top radius included, range 680 to 1150 mm	1 set
HDWM-VMF-ACT-L	Adjustable cable trough—long—for front-to-rear cable management between front and rear mounted VMF, top radius included, range 680 to 1150 mm	1 set
HDWM-VMF-B15	Bracket for attachment of HDWM-VMF-XX-15/XXF to back of open frame (not required for RSG)	2 pcs
HDWM-VMF-B25	Bracket for attachment of HDWM-VMF-XX-25/XXFR to back of open frame (not required for RSG)	2 pcs
HDWM-VMF-BLANK-42	Blank panel kit to close ACT holes for 42U VMF range of wire managers	3 pcs
HDWM-VMF-BLANK-45	Blank panel kit to close ACT holes for 45/47U VMF range of wire managers	3 pcs
HDWM-FSS-50	Fiber storage spools, 50 mm deep, including mounting hardware	1 pair
HDWM-FSS-100	Fiber storage spools, 100 mm deep, including mounting hardware	1 pair
HDWM-VCT	Velcro cable ties, 25×300 mm, black	10 pcs
HDWM-VCT-B	Velcro cable belt, 13×5000 mm, black	1 pc
HDWM-VCT-B-RD	Velcro cable belt, 13×5000 mm, red	1 pc
HDWM-VCT-B-GN	Velcro cable belt, 13×5000 mm, green	1 pc
HDWM-VCT-B-YL	Velcro cable belt, 13×5000 mm, yellow	1 pc
HDWM-VCT-S	Velcro cable ties—small, 13×190 mm, black	25 pcs
HDWM-VCT-S-BU	Velcro cable ties—small, 13×190 mm, blue	25 pcs
HDWM-VCT-S-RD	Velcro cable ties—small, 13×190 mm, red	25 pcs
HDWM-VCT-S-YL	Velcro cable ties—small, 13×190 mm, yellow	25 pcs
HDWM-VCT-S-GN	Velcro cable ties—small, 13×190 mm, green	25 pcs



HDWM-FSS-50



HDWM-VCT-S

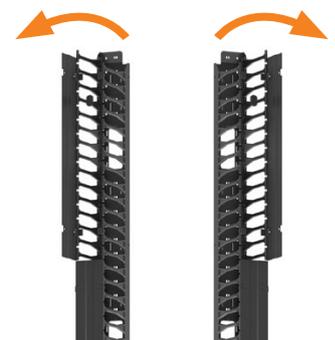
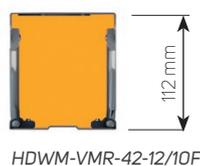
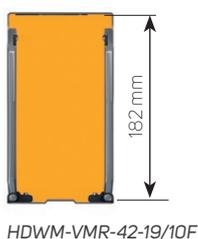


HDWM-VCT-B



HDWM-VCT

## Differences between longer and standard version



Opening system right and left side

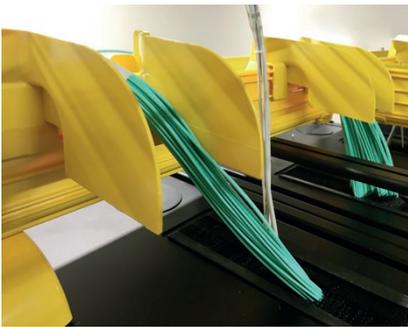
# OPTIWAY OPTICAL PATHWAY SYSTEM



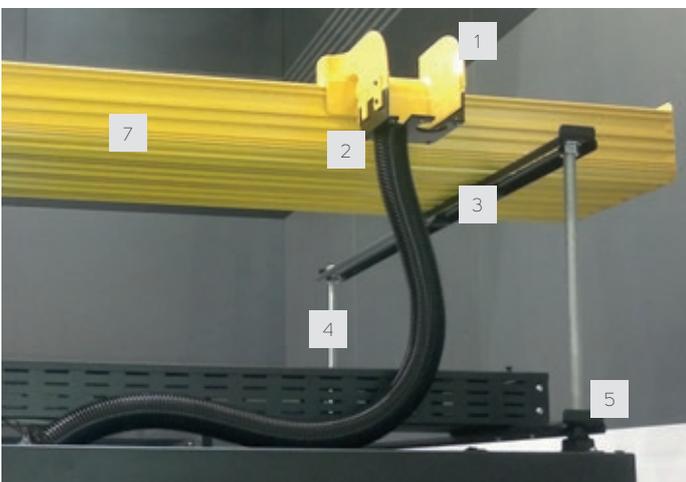
➤ **OptiWay** is designed to provide a safe, easy-to-use and cost-effective management system for fragile optical cables. OptiWay allows you to route fiber-optic cables between equipment, providing both the physical protection and bend radius management crucial to optical cable performance.

## MAIN ADVANTAGES

- Fully modular, scalable system
- Bend radius protection
- Halogen-free PC-ABS material, compliant with UL 94 V-0
- Designed for three installation variables: hung from ceiling, top of rack support or a combination of these
- Multilevel installation
- Differentiation of wiring routing by colored extrusion
- Possibility of covering the entire cable route up to the level of the top plate rack



Description of pictures 1 and 2 below		
No.	Code	Description
1	OPW-10DRF-YL	Direct spillover
2	OPW-10DRF-TG	Spillover fall-out tube guide (up to two tubes)
3	OPW-RRB-100	Threaded rod attachment bracket (rack mounting)
4	OPW-TR-16/40	Threaded rod
5	OPW-TR-BR	Threaded rod mounting bracket
6	OPW-TR-16/100	Threaded rod
7	OPW-30MD2M	Main duct
8	OPW-TRB-30	Threaded rod attachment bracket (ceiling mounting)



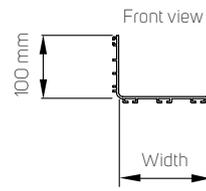
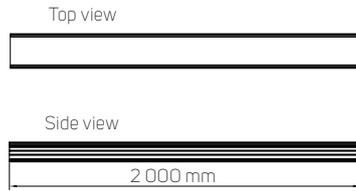
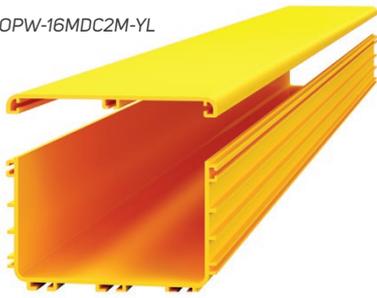
1. OptiWay installation with Direct spillover on top of rack



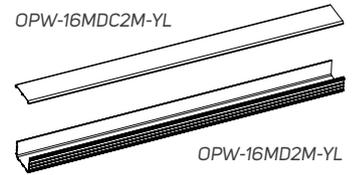
2. OptiWay ceiling installation

## MAIN DUCT

OPW-16MDC2M-YL



OPW-16MDC2M-YL



OPW-16MD2M-YL

OPW-16MD2M-YL

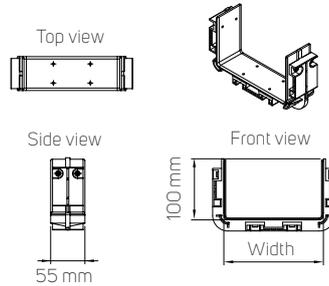
- An extruded 2-meter-long conduit; can be connected with other OptiWay products using joiners
- Delivered in even numbers (packaged by 2 pcs = 4 m)
- Color: Yellow
- Can be easily cut to length on-site
- Duct load rating 20 kg/m; required distance between brackets max. 900 mm

Code	Inner duct size (mm)		Length (m)	Package
	H	W		
OPW-16MD2M-YL	100	160	2	2 pcs
OPW-30MD2M-YL	100	300	2	2 pcs
<b>Covers</b>				
OPW-16MDC2M-YL	-	160	2	1 pc
OPW-30MDC2M-YL	-	300	2	1 pc

## JOINER



OPW-16JO-YL



- Used to connect two OptiWay component
- Does not require drilling of duct or components
- Color: Yellow
- Package includes: 1x joiner, 8x screws

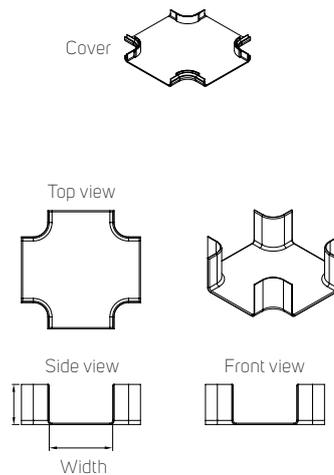
Code	Inner duct size (mm)		Package
	H	W	
OPW-10JO-YL	100	100	1 pc
OPW-16JO-YL	100	160	1 pc
OPW-30JO-YL	100	300	1 pc

## CROSS

OPW-16CAC-YL



OPW-16CA-YL



- Used to establish a 4-way, right-angled intersection
- Four joiners required per cross
- Color: Yellow

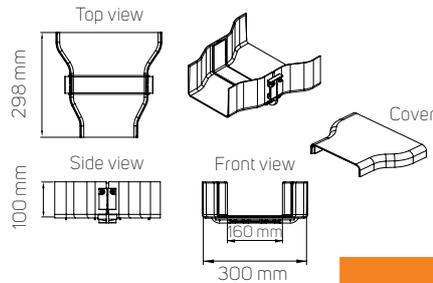
Code	Inner duct size (mm)		Package
	H	W	
OPW-16CA-YL	100	160	1 pc
OPW-30CA-YL	100	300	1 pc
<b>Covers</b>			
OPW-16CAC-YL	-	160	1 pc
OPW-30CAC-YL	-	300	1 pc

## REDUCER



OPW-3016RD-YL

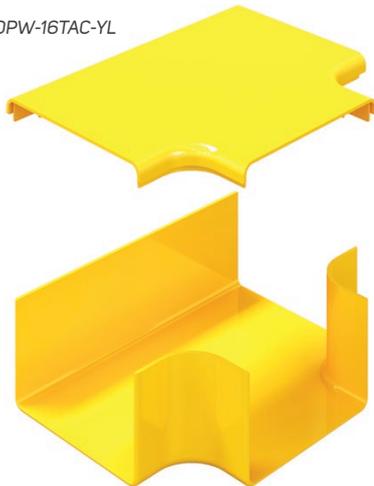
- Allows 300×100 mm and 160×100 mm OptiWay sections to be joined together
- Two joiners required per reducer
- Color: Yellow



Code	Inner duct size (mm)		Package
	H	W1/W2	
OPW-3016RD-YL	100	300/160	1 pc
<b>Cover</b>			
OPW-3016RDC-YL	-	300/160	1 pc

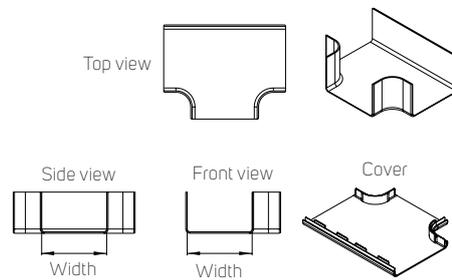
## TEE

OPW-16TAC-YL



OPW-16TA-YL

- Used to establish a 3-way, right-angled intersection
- Three joiners required per tee
- Color: Yellow



Code	Inner duct size (mm)		Package
	H	W	
OPW-16TA-YL	100	160	1 pc
OPW-30TA-YL	100	300	1 pc
<b>Covers</b>			
OPW-16TAC-YL	-	160	1 pc
OPW-30TAC-YL	-	300	1 pc

## HORIZONTAL ELBOW

OPW-16HA45C-YL

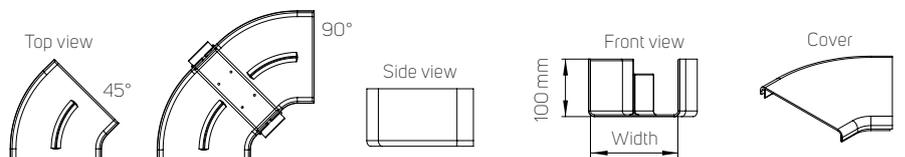


OPW-16HA45-YL



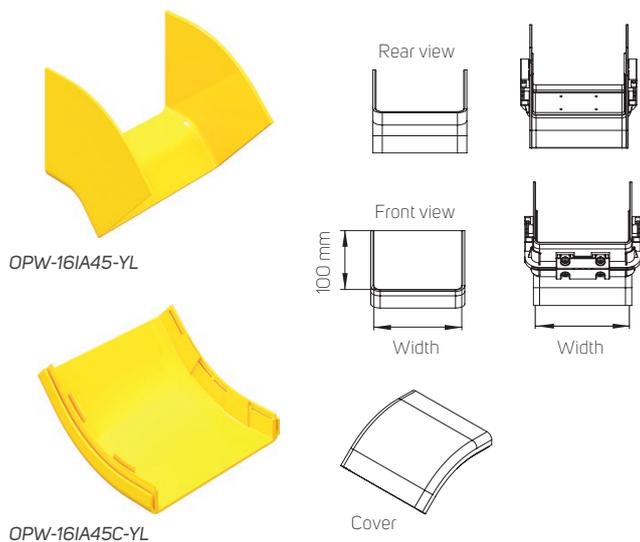
OPW-16HA90-YL

- Allows ducts to be diverted through 45° or 90°
- Two joiners required per elbow
- Color: Yellow

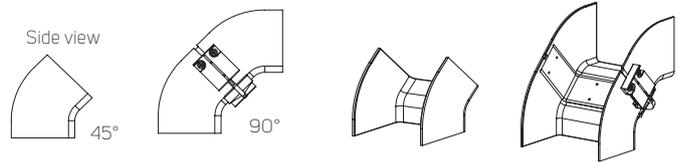


Code	Type	Inner duct size (mm)		Package
		H	W	
OPW-16HA45-YL	45°	100	160	1 pc
OPW-30HA45-YL	45°	100	300	1 pc
OPW-16HA90-YL	90°	100	160	1 pc
OPW-30HA90-YL	90°	100	300	1 pc
<b>Covers</b>				
OPW-16HA45C-YL	45°	-	160	1 pc
OPW-30HA45C-YL	45°	-	300	1 pc
OPW-16HA90C-YL	90°	-	160	1 pc
OPW-30HA90C-YL	90°	-	300	1 pc

## VERTICAL INSIDE ELBOW

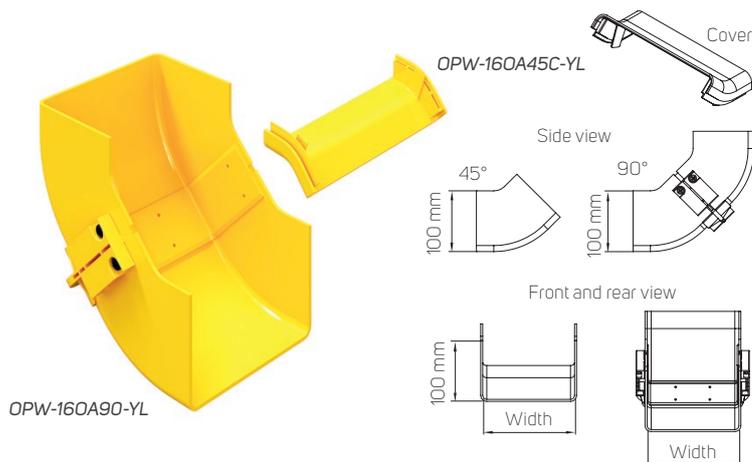


- Allows ducts to be diverted through 45° or 90° with an inside angle (usually in a downward direction)
- Two joiners required per elbow
- Color: Yellow



Code	Type	Inner duct size (mm)		Package
		H	W	
OPW-16IA45-YL	45°	100	160	1 pc
OPW-30IA45-YL	45°	100	300	1 pc
OPW-16IA90-YL	90°	100	160	1 pc
OPW-30IA90-YL	90°	100	300	1 pc
<b>Covers</b>				
OPW-16IA45C-YL	45°	-	160	1 pc
OPW-30IA45C-YL	45°	-	300	1 pc
OPW-16IA90C-YL	90°	-	160	1 pc
OPW-30IA90C-YL	90°	-	300	1 pc

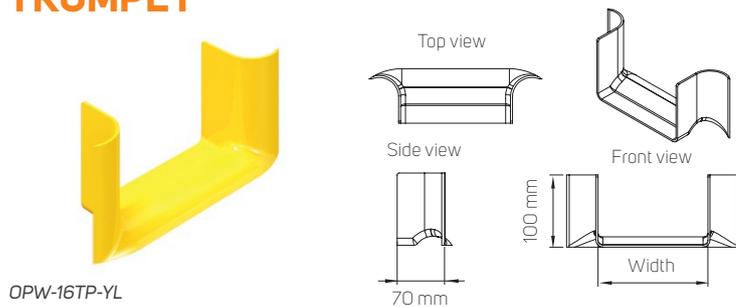
## VERTICAL OUTSIDE ELBOW



- Allows ducts to be diverted through 45° or 90° with an inside angle (usually in an upward direction)
- Two joiners required per elbow
- Color: Yellow

Code	Angle	Inner duct size (mm)		Package
		H	W	
OPW-16OA45-YL	45°	100	160	1 pc
OPW-30OA45-YL	45°	100	300	1 pc
OPW-16OA90-YL	90°	100	160	1 pc
OPW-30OA90-YL	90°	100	300	1 pc
<b>Covers</b>				
OPW-16OA45C-YL	45°	-	160	1 pc
OPW-30OA45C-YL	45°	-	300	1 pc
OPW-16OA90C-YL	90°	-	160	1 pc
OPW-30OA90C-YL	90°	-	300	1 pc

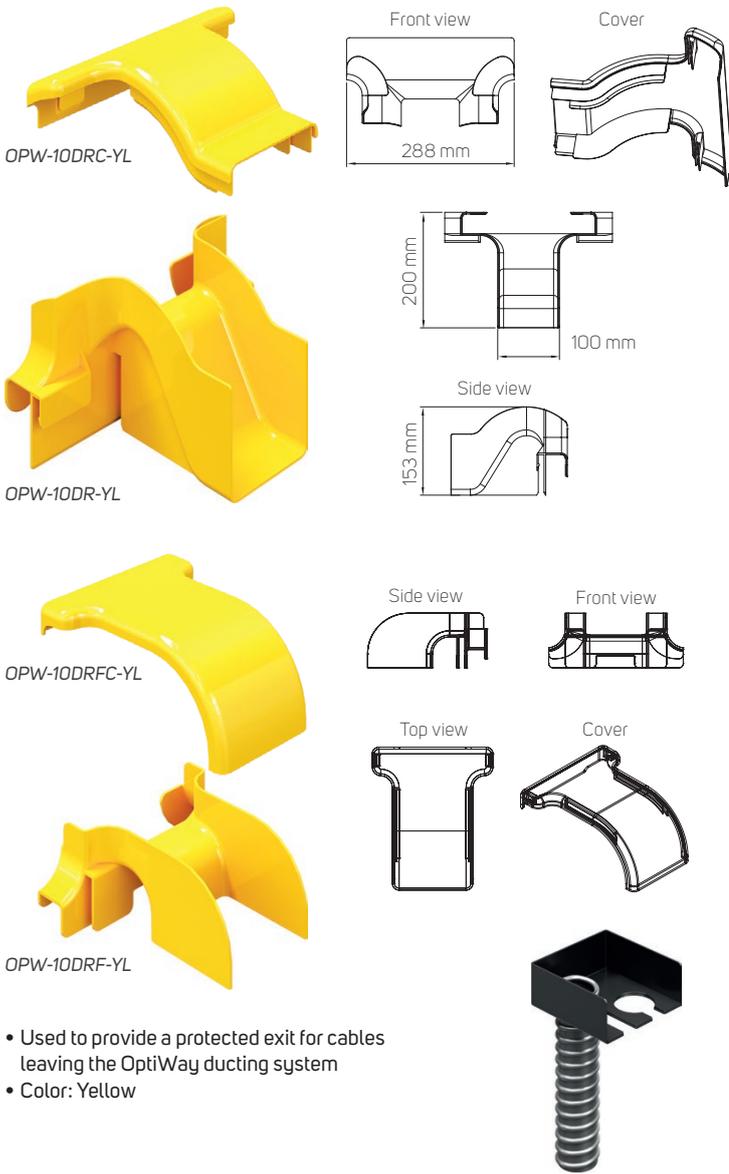
## TRUMPET



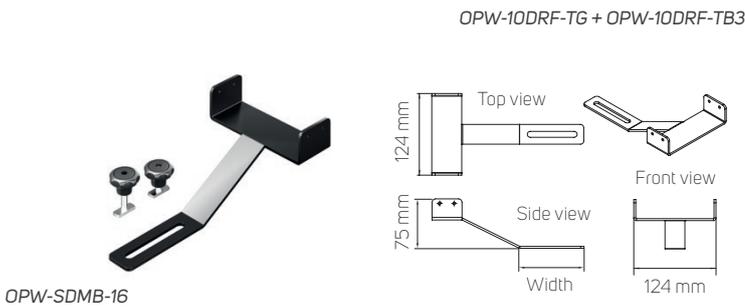
- Used to provide bend-radius control for cables entering or exiting the OptiWay ducting system
- One joiner required per trumpet
- Color: Yellow

Code	Inner duct size (mm)		Package
	H	W	
OPW-10TP-YL	100	100	1 pc
OPW-16TP-YL	100	160	1 pc
OPW-30TP-YL	100	300	1 pc

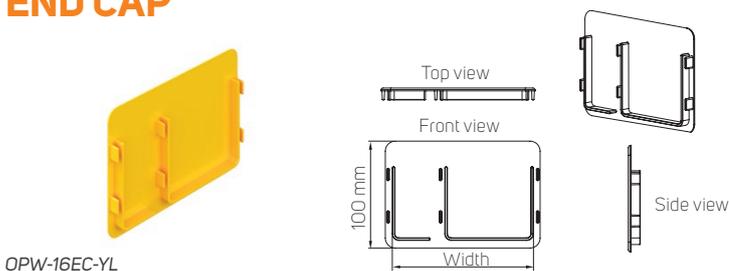
# SPILLOVER



- Used to provide a protected exit for cables leaving the OptiWay ducting system
- Color: Yellow



# END CAP



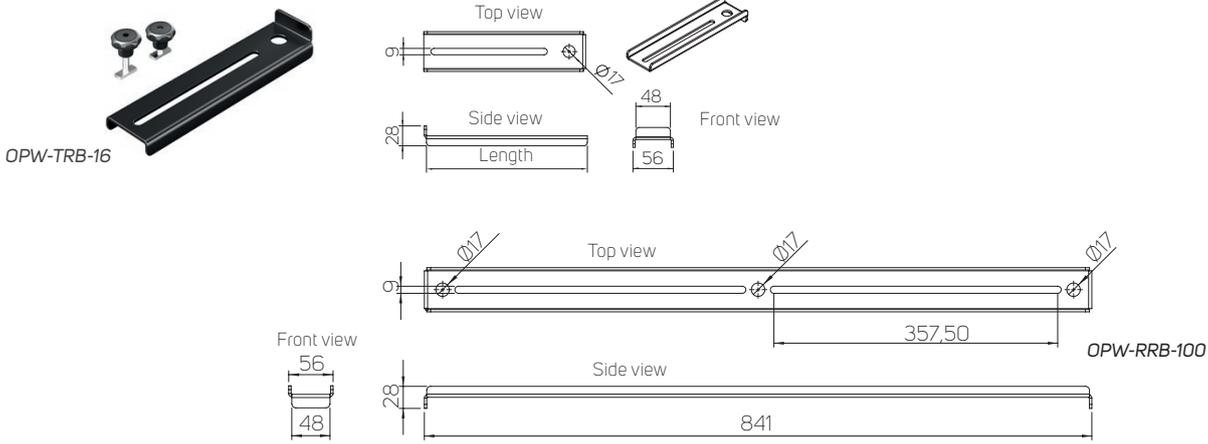
- Provides a clean finish to end of OptiWay run
- Color: Yellow

Code	Inner duct size (mm)		Package
	H	W	
OPW-10DR-YL	100	100	1 pc
OPW-10DRF-YL	100	100	1 pc
<b>Covers</b>			
OPW-10DRC-YL	-	100	1 pc
OPW-10DRFC-YL	-	100	1 pc

SPILLOVER ACCESSORIES		
Code	Description	Package
OPW-10JO-YL	Joiner, 100×100 mm, yellow	1 pc
OPW-10TP-YL	Trumpet, 100×100 mm, yellow	1 pc
OPW-10IA45-YL	Vertical inside elbow, 45° down angle	1 pc
OPW-SDMB-16	Support bracket for spillover OPW-10DR for 160×100 mm duct, black color. Package includes: metal bracket and 2× fixing screws	1 pc
OPW-SDMB-30	Support bracket for spillover OPW-10DR for 300×100 mm duct, black color. Package includes: metal bracket and 2× fixing screws	1 pc
OPW-10DRF-TG	Spillover fall-out tube guide (up to two tubes), without tube, black	1 pc
OPW-10DRF-TB3	Tube for spillover, outer diam. 50 mm, length 3 m, black	1 pc
OPW-10DRF-TB30	Tube for spillover, outer diam. 50 mm, length 30 m, black	1 pc

Code	Inner duct size (mm)		Package
	H	W	
OPW-16EC-YL	100	160	1 pc
OPW-30EC-YL	100	300	1 pc

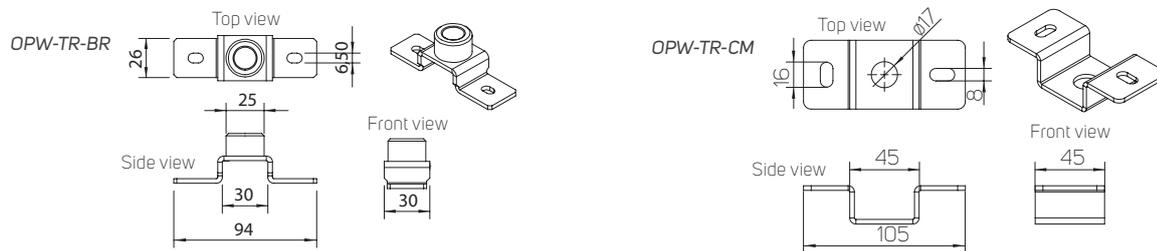
## OPTIWAY FIXING ON THE TOP OF THE RACK



Code	Description	Bracket length (mm)	Recommended rack depth (mm)	Mounted Holes	Supported duct inner size (mm)		Package
					H	Size	
OPW-TR-BR	Bracket for attaching a threaded rod to racks of PREMIUM series					M16	1 pc
OPW-TR-16/20	Threaded rod				210	M16	1 pc
OPW-TR-16/40	Threaded rod				400	M16	1 pc
OPW-TR-16/60	Threaded rod				600	M16	1 pc
OPW-RRB-40	Bracket mounted on top of the half part of the rack	344	800	2			1 pc
OPW-RRB-50	Bracket mounted on top of the half part of the rack	444	1000	2			1 pc
OPW-RRB-60	Bracket mounted on top of the half part of the rack	644	1200	2			1 pc
OPW-RRB-80	Bracket mounted on the top or overlapping the rack	641	800	3			1 pc
OPW-RRB-100	Bracket mounted on the top or overlapping the rack	841	1000	3			1 pc
OPW-RRB-120	Bracket mounted on the top or overlapping the rack	1041	1200	3			1 pc
OPW-SRB-60	Side mounting bracket for installation of cable duct on the rack width 600 mm — front/rear orientation	632		2			1 pc
OPW-SRB-80	Side mounting bracket for installation of cable duct on the rack width 800 mm — front/rear orientation	832		2			1 pc

Note: Max. distance required between RRB brackets: 900 mm.

## OPTIWAY SUSPENSION SYSTEM



Code	Description	Bracket length (mm)	Mounted Holes	Supported duct inner size (mm)		Package
				H	Size	
OPW-TR-CM	Ceiling mountable bracket for a threaded rod (dowels and screws for the ceiling not included)				M16	1 pc
OPW-TR-16/100	Threaded rod			1000	M16	1 pc
OPW-TR-16/200	Threaded rod			2000	M16	1 pc
OPW-TRB-16	Threaded rod attachment bracket for the main duct	160	1			1 pc *
OPW-TRB-30	Threaded rod attachment bracket for the main duct	300	1			1 pc *

\* Fixing screws included.

Note: All dimensions in mm

# TOP DUCT LIGHT



CPW-TDL-80



CPW-TDL-30



CPW-TDL-EC

➤ **Top Duct Light** (TDL) is designed to provide a safe, cost-effective and easy-to-use management system for copper cables above the racks. Top Duct Light is simple to install and allow for easy installation, manipulation and re-patching of copper cables between server, network and UPS racks. The TDL system is designed to provide a simple connection between the rack rows without ceiling or other exterior support, reducing installation time and allowing for ease of changeability.

## MAIN ADVANTAGES

- Designed for copper cables above racks
- Simple connection between racks and rows of racks
- Compatible and combinable with OptiWay, Contained Aisle, CoolTop and CoolTeg units
- Backbone cable management system above racks
- Length corresponding to rack width
- Allow several independent cable routes
- Easy installation, maximal tool-less support
- Adjustable cross-connection ducts above corridors and contained aisles

## MAIN COMPONENTS

- Top Duct Light—lengths 300, 400, 600 and 800 mm
- Top Duct Light—end part
- Cross connection with radius protectors
- Accessories for cable management

COLOR:  RAL 9005

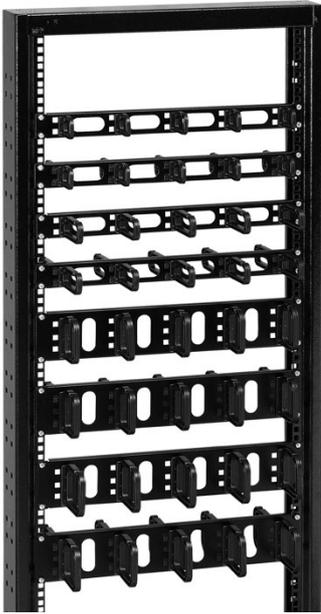


Code	Dimensions (mm)			Package
	L	H	W	
CPW-TDL-30	300	100		2 pcs
CPW-TDL-40	400	100		2 pcs
CPW-TDL-60	600	100		2 pcs
CPW-TDL-80	800	100		2 pcs
CPW-TDL-EC	800, 1000, 1200	100		2 pcs
CPW-CDL	1000, 1200, 1800	200	70	1 pc

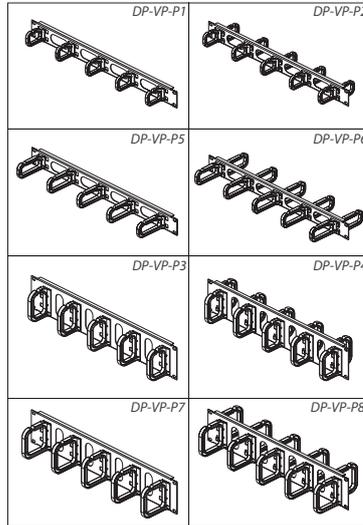
Example mounted on rack RF1 (width—800 mm, depth—1 200 mm)



## 19" WIRE MANAGEMENT PANELS WITH PLASTIC BRACKETS



DP-VP-P



- Used for storing and managing cables horizontally within the rack
- Height: 1U or 2U
- Available in "front only" and "front and rear" variables
- 5 plastic brackets per side
- Oval openings in panel allow front to rear cabling
- Color: wire management panels—black powder-coated RAL 9005; brackets—black, orange (OR), green (GN)

Code	H (in U)	Type	Hook sizes H × D (mm)	# of brackets	Package
DP-VP-P1	1	Front only	40 × 50	5	1pc
DP-VP-P1-OR	1	Front only	40 × 50	5	1pc
DP-VP-P1-GN	1	Front only	40 × 50	5	1pc
DP-VP-P2	1	Both sides	40 × 50	10	1pc
DP-VP-P3	2	Front only	80 × 60	5	1pc
DP-VP-P4	2	Both sides	80 × 60	10	1pc
DP-VP-P5	1	Front only	40 × 80	5	1pc
DP-VP-P5-OR	1	Front only	40 × 80	5	1pc
DP-VP-P5-GN	1	Front only	40 × 80	5	1pc
DP-VP-P6	1	Both sides	40 × 80	10	1pc
DP-VP-P7	2	Front only	80 × 80	5	1pc
DP-VP-P8	2	Both sides	80 × 80	10	1pc

## PLASTIC CABLE BRACKETS

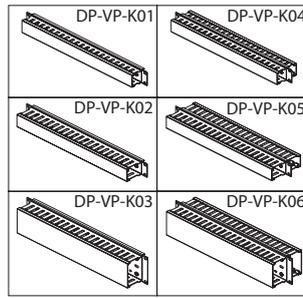


VO-P1-40/50	VO-P5-40/80	VO-P3-80/60	VO-P7-80/80
VO-P2-40/50	VO-P6-40/80	VO-P4-80/60	VO-P8-80/80
VO-40/50	VO-40/80	VO-80/60	VO-80/80

- Mounted on 19" vertical extrusions for management of horizontal and vertical cabling within the rack
- Types: a) For managing vertical cables  
b) For managing horizontal cables
- Equipped with metal flange for installing onto 19" vertical extrusions
- Color: black powder-coated RAL 9005; black brackets

Code	D (mm)	D (mm)	Orientation	Package
VO-P1-40/50	40	50	Horizontal	10 pcs
VO-P2-40/50	40	50	Vertical	10 pcs
VO-P3-80/60	80	60	Horizontal	10 pcs
VO-P4-80/60	80	60	Vertical	10 pcs
VO-P5-40/80	40	80	Horizontal	10 pcs
VO-P6-40/80	40	80	Vertical	10 pcs
VO-P7-80/80	80	80	Horizontal	10 pcs
VO-P8-80/80	80	80	Vertical	10 pcs

## 19" WIRE MANAGEMENT PANELS WITH PLASTIC DUCTS



- Used for storing and managing cables horizontally within the rack
- Height: 1U or 2U
- Available in "front-only" and "front-and-rear" variables
- Plastic duct for cable managing
- Oval openings in panel allow front to rear cable passage
- Color: black powder-coated RAL 9005

Code	H (in U)	Type	Duct sizes H × D (mm)	Package
DP-VP-K01	1	Front only	40 × 40	1 pc
DP-VP-K02	1	Front only	40 × 60	1 pc
DP-VP-K03	2	Front only	80 × 60	1 pc
DP-VP-K04	1	Both sides	40 × 40	1 pc
DP-VP-K05	1	Both sides	40 × 60	1 pc
DP-VP-K06	2	Both sides	80 × 60	1 pc

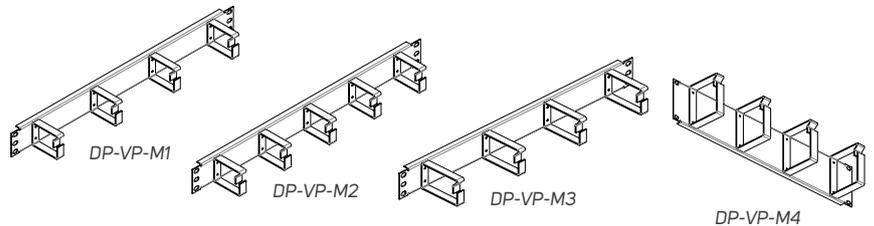
## WIRE MANAGEMENT PANELS WITH METAL BRACKETS



DP-VP-M1



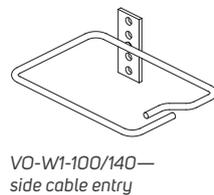
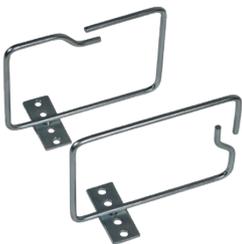
DP-VP-M4



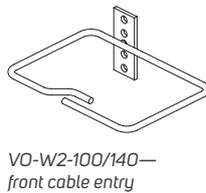
- Used for storing and managing cables horizontally within the rack
- Height: 1U or 2U
- Available in "front only"
- 4 or 5 metal brackets per side
- Full panel without openings
- Color: black powder-coated RAL 9005

Code	H (in U)	Hook sizes H × D (mm)	Number of brackets	Package
DP-VP-M1	1	44 × 55	4	1 pc
DP-VP-M2	1	44 × 55	5	1 pc
DP-VP-M3	1	44 × 76	4	1 pc
DP-VP-M4	2	88 × 76	4	1 pc

## METAL CABLE BRACKETS



VO-W1-100/140—  
side cable entry



VO-W2-100/140—  
front cable entry

- Mounted on 19" vertical extrusions; used for vertical cable management in racks
- One-chamber dimensions 100×100 or 100×140 mm with front or side cable entry
- Two-chamber dimensions 230×100 or 300×100 mm with side cable entry
- Flange with 4 holes for installation on front or side of 19" vertical extrusion
- Zinc-plated

Code	Dimensions (mm)		Cable entry	Package
	W	D		
VO-W1-100/140	140	100	side	10 pcs
VO-W2-100/140	140	100	front	10 pcs
VO-W2-100/100	100	100	front	10 pcs
VO-W3-100/230	230	100	2× side	10 pcs
VO-W3-100/300	300	100	2× side	10 pcs

# VERTICAL WIRE MANAGEMENT PANELS AND CABLE BRACKET HOLDERS



HVMP-42



HVMF 42U

- Used for installation of vertical wire management panels, cable brackets (ordered separately) or additional 19" space in 800 mm wide Ri7 racks with L-type extrusions
- Two designs: HVMF and HVMP
- HVMF—ready for cable management; compatible with VO-XX/YY and DP-VP-VR-XX
- HVMP—additional 3x1U 19" space (load rating 5 kg per position); compatible with separation frame
- Color: black powder-coated RAL 9005

Code	Rack height (in U)	Package
HVMF-15	15	1 pair
HVMF-21	21	1 pair
HVMF-27	27	1 pair
HVMF-33	33	1 pair
HVMF-42	42	1 pair
HVMF-45	45	1 pair
HVMF-48	48	1 pair
HVMP-42	42	1 pair
HVMP-45	45	1 pair
HVMP-48	48	1 pair

## VERTICAL WIRE MANAGEMENT PANELS

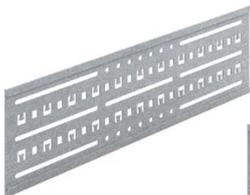


DP-VP-VR-42U

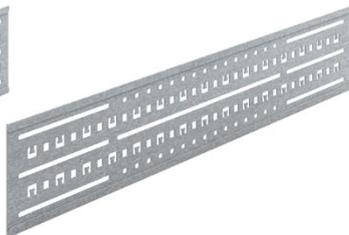
- Used for storing and managing cables vertically in 800 mm wide free-standing racks
- For racks 15–48U high
- 80 x 60 mm plastic duct for cable management
- Oval openings in base of ducts allow front to rear cabling
- Ducts with a minimum height of 33U have divided covers for easier handling
- Installed onto front of vertical extrusions using vertical wire holder; management panels (HVMF)—ordered separately
- Color: black powder-coated RAL 9005

Code	Rack height (in U)	Package
DP-VP-VR-15	15	1 pc
DP-VP-VR-21	21	1 pc
DP-VP-VR-27	27	1 pc
DP-VP-VR-33	33	1 pc
DP-VP-VR-42	42	1 pc
DP-VP-VR-45	45, 48	1 pc

## HORIZONTAL HOLDERS FOR SIDE CABLE MANAGEMENT



HVMS-H-600



HVMS-H-800



HVMS-H-A

- HVMS-H-A: holder for HVMS-B, DP-UL in iSEVEN Server series with A-type extrusions, mounted on horizontal holders
- HVMS-H-RF1: holder for HVMS-B, DP-UL in RF1 series with A-type extrusions, mounted on horizontal holders
- HVMS-H: for all rack series (recommended for RM7 and Ri7), mounted on vertical extrusions
- Mounting kit included

## SIDE CABLE PERFORATED PANELS FOR A-TYPE EXTRUSIONS WITH PDU SUPPORT



DP-VV-A-42

- Used for storing and managing cables horizontally within the rack with support for up to two PDU in parallel position
- Used in free-standing racks 42–48U in high
- Available width—122 mm
- Installation directly in top and bottom frame of the PREMIUM rack or iSEVEN Server (with A type extrusions only)
- Installation kit is included in delivery

Code	Used in rack height (U)	Package
DP-VV-A-42	42	1 pc
DP-VV-A-45	45	1 pc
DP-VV-A-48	48	1 pc

## WIRE MESH CABLE TRAYS



HVMS-B

- Cable basket trays HVMS-B are used to guide and support vertical cables in free-standing racks between 19" extrusions and side panels
- 140 × 30 mm (W × D); can be mounted between horizontal holder and side panel
- 300 × 60 mm and 400 × 60 mm (W × D); mounted on inner side of horizontal holder
- 140 × 60 mm (W × D); mounted on inner side of horizontal holder
- Produced for rack sizes 15–52U
- Mounted on holders of vertical extrusions—Ri7/RM7; iSEVEN Server with A-type extrusions—use with HVMS-H-A; RF1—use with HVMS-H-RF1
- Set of fittings (included)
- Package includes:
  - Set 1: 1× cable basket, 2× holders
  - Set 2: 1× cable basket, 4× holders

Code	Dimensions (mm)			Used in rack height (U)	Package
	H	W	D		
HVMS-B-600-140/30	605	170	35	15	1 pc of set 1
HVMS-B-800-140/30	805	170	35	21	1 pc of set 1
HVMS-B-1000-140/30	1005	170	35	27	1 pc of set 1
HVMS-B-1400-140/30	1405	170	35	33	1 pc of set 1
HVMS-B-1800-140/30	1805	170	35	42, 45, 47, 48, 52	1 pc of set 1
HVMS-B-600-140/60	605	170	65	15	1 pc of set 1
HVMS-B-800-140/60	805	170	65	21	1 pc of set 1
HVMS-B-1000-140/60	1005	170	65	27	1 pc of set 1
HVMS-B-1400-140/60	1405	170	65	33	1 pc of set 1
HVMS-B-1800-140/60	1805	170	65	42, 45, 47, 48, 52	1 pc of set 1
HVMS-B-1800-300/60	1805	325	65	42, 45, 47, 48, 52	1 pc of set 2
HVMS-B-1800-400/60	1805	425	65	42, 45, 47, 48, 52	1 pc of set 2

## SIDE PERFORATED CABLE-FASTENING PANELS



DP-VV-42/300

- Panels DP-VV are used to guide and support vertical cables in free-standing racks between 19" extrusions and side panels
- Used in free-standing racks 15–52U in height
- Available widths—150 mm and 300 mm
- Installation either directly in top and bottom frame of the rack (OPTIMAL/PREMIUM racks series only) or on vertical extrusion holders (all free-standing rack series)
- Installation kit included in delivery

Code		Used in rack height (U)	Package
Panel width 150 mm	Panel width 300 mm		
DP-VV-15/150	DP-VV-15/300	15	1 pc
DP-VV-21/150	DP-VV-21/300	21	1 pc
DP-VV-27/150	DP-VV-27/300	27	1 pc
DP-VV-33/150	DP-VV-33/300	33	1 pc
DP-VV-42/150	DP-VV-42/300	42	1 pc
DP-VV-45/150	DP-VV-45/300	45	1 pc
DP-VV-48/150	DP-VV-48/300	47, 48	1 pc
DP-VV-52/150	DP-VV-52/300	52	1 pc

## SIDE CABLE GRIDS



HVMS-CH

- Used for managing cables in the sides of rack behind the 19" extrusions
- Installation possible in racks 600, 800 and 1000 mm deep
- Installation kit included in delivery
- Cable ties not included in delivery
- Package includes: 1× cable grid, 4× holder

Code	Dimensions (mm)	Used in rack depths (mm)	Package
HVMS-CH-400	404 × 181	600, 800, 1000	1 pc
HVMS-CH-500	504 × 181	600, 800, 1000	1 pc
HVMS-CH-600	604 × 181	800, 1000	1 pc
HVMS-CH-700	704 × 181	800, 1000	1 pc
HVMS-CH-800	804 × 181	1000	1 pc

# ACCESSORIES



# 4

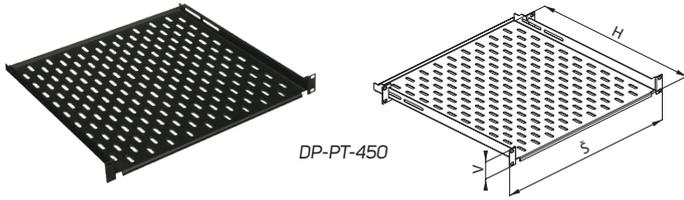
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# ACCESSORIES

# SHELVING

## 19" FIXED LITE SHELVES SERIES DP-PT



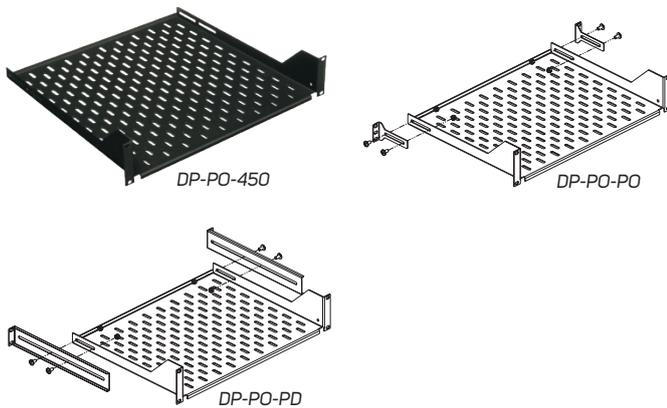
- 1.5 mm sheet steel
- Supporting brackets included
- Color: powder-coated RAL 9005
- Load rating max. 20 kg balanced load; maximum load rating decreased to 25 % when mounted on front pair of vertical extrusions only (shelf depth 150, 250, and 350 mm)
- Longer supporting bracket DP-PO-PD available for use
- Package includes: 1× shelf, 2× rear brackets

Code	H (in U)	W	D (mm)	Min-max dist. <sup>1</sup>	Max dist. <sup>2</sup>	Package
DP-PT-150	1	19"	150	75–121	370	1 pc
DP-PT-250	1	19"	250	125–221	470	1 pc
DP-PT-350	1	19"	350	175–321	570	1 pc
DP-PT-450	1	19"	450	225–421	670	1 pc
DP-PT-550	1	19"	550	275–521	770	1 pc
DP-PT-650	1	19"	650	325–621	870	1 pc
DP-PT-750	1	19"	750	375–721	970	1 pc
DP-PT-850	1	19"	850	425–821	1070	1 pc

<sup>1</sup> Between standard front and rear brackets (in mm).

<sup>2</sup> Between front and rear brackets—with DP-PO-PD (in mm).

## 19" FIXED SHELVES SERIES DP-PO



- 2 mm sheet steel
- Support brackets optional
- Color: powder-coated RAL 9005
- Load rating max. 60 kg balanced load (when supporting brackets used—ordered separately); load rating decreased to 25 % when mounted on front pair of vertical extrusions only—shelf depth 150, 250 and 350 mm
- Package includes: DP-PO-xxx: 1× shelf

Code	H (in U)	W	D (mm)	Min-max dist. <sup>1</sup>	Max dist. <sup>2</sup>	Package
DP-PO-150	1	19"	150	75–180	385	1 pc
DP-PO-250	1	19"	250	125–265	470	1 pc
DP-PO-350	2	19"	350	230–380	585	1 pc
DP-PO-450	2	19"	450	260–480	685	1 pc
DP-PO-550	2	19"	550	360–580	785	1 pc
DP-PO-650	2	19"	650	460–680	885	1 pc
DP-PO-750	2	19"	750	560–780	985	1 pc
DP-PO-850	2	19"	850	660–880	1085	1 pc

<sup>1</sup> Between standard front and rear brackets (in mm).

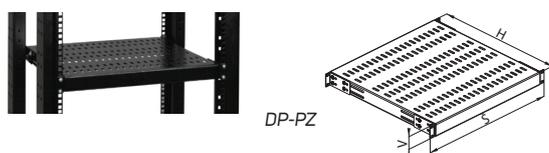
<sup>2</sup> Between front and rear brackets—with DP-PO-PD (in mm).

### SUPPORTING BRACKETS

Code	Type	Package	Length (mm)	H (in U)
DP-PO-PO	Standard	1 pair	88	1
DP-PO-PD *	Extended	1 pair	298	1

\* Compatible with DP-PO-xxx, DP-PT-xxx.

## 19" FIXED HIGH-LOAD SHELVES SERIES DP-PZ

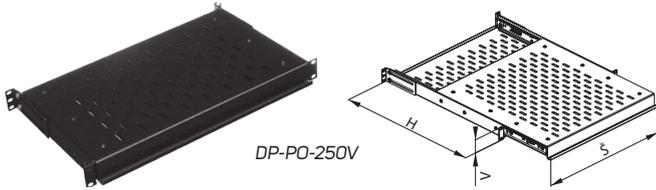


- 2 mm sheet steel, reinforced with metal bars
- Four supporting brackets (for mounting on vertical extrusions) included
- Color: powder-coated RAL 9005
- Load rating max. 100 kg balanced load
- Package includes: 1× shelf, 4× brackets, 16× screws M6, 16× nuts M6

Code	H (in U)	W	D (mm)	Min-max distance *	Package
DP-PZ-450	1	19"	450	113–463	1 pc
DP-PZ-550	1	19"	550	213–563	1 pc
DP-PZ-650	1	19"	650	313–663	1 pc
DP-PZ-750	1	19"	750	413–763	1 pc
DP-PZ-850	1	19"	850	513–863	1 pc

\* Between standard front and rear brackets (in mm).

## 19" PULL-OUT SHELVES SERIES DP-PO-V



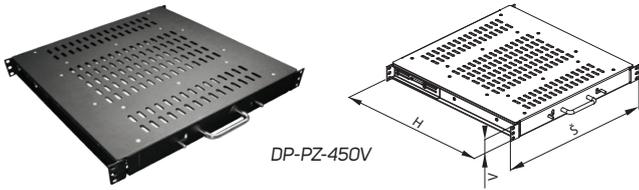
DP-PO-250V

- 1.5 mm sheet steel
- Height: 1U
- Equipped with one pair of side telescopic rails
- Supporting brackets included
- Color: powder-coated RAL 9005
- Load rating max. 25 kg balanced load; maximum load rating decreased to 25 % when mounted on front pair of vertical extrusions only (shelf depth: 250 and 350 mm)
- Package includes: 1x shelf, 2x rear brackets, 4x screws M5

Code	H (in U)	W	D (mm)	Min-max dist.*	Drawout part max.	Package
DP-PO-250V	1	19"	271	155–370	160 mm	1 pc
DP-PO-350V	1	19"	371	255–470	260 mm	1 pc
DP-PO-450V	1	19"	471	355–570	325 mm	1 pc
DP-PO-550V	1	19"	571	455–670	410 mm	1 pc
DP-PO-650V	1	19"	671	555–770	485 mm	1 pc
DP-PO-750V	1	19"	771	655–870	520 mm	1 pc

\* Between standard front and rear brackets (in mm).

## 19" PULL-OUT HIGH LOAD SHELVES SERIES DP-PZ-V



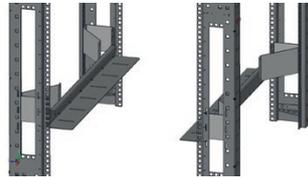
DP-PZ-450V

- 2 mm and 2.5 mm sheet steel
- Height: 1U
- Max. pull-out 450 mm
- Color: powder-coated RAL 9005
- Load rating max. 80 kg balanced load
- Package includes: 1x shelf

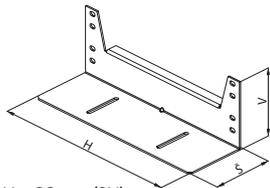
Code	H (in U)	W	D (mm)	Min-max distance *	Package
DP-PZ-450V	1	19"	471	296–507	1 pc
DP-PZ-550V	1	19"	571	406–607	1 pc

\* Between standard front and rear brackets (in mm).

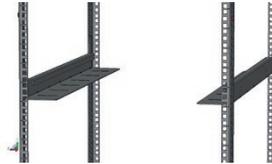
## SUPPORTING RAILS



DP-DU-75S-800



H—88 mm (2U)  
W—80 mm



DP-DU-75S-600

- 2 mm sheet steel
- Mountable on vertical extrusion side holes (with DP-MO-01 mounting kit, not included)
- Color: powder-coated RAL 9005
- Space between rails provides effective cooling of active devices
- Load rating max. 50 kg balanced load
- Package includes:
  - DP-DU-xxxx: 2x supporting rails
  - DP-DU-S75: 2x supporting rails, 4x brackets for 800 mm racks, 36x screws M5, 16x floating nuts M5
- Compatible with L-Type extrusions; other information upon request

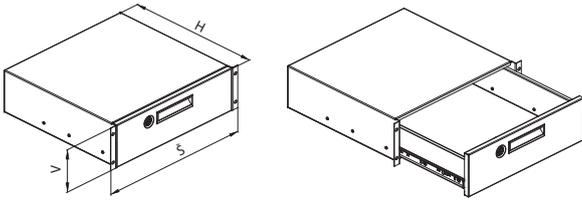
Rack *	Max. DP-DU
RDF 80/80	700
RDF 80/100	900
RSF 60/80	700
RSF 60/100	900
RSF 80/80	700
RSF 80/100	900
Rx7 60/60	500
Rx7 60/80	700
Rx7 60/100	900
Rx7 80/80	700
Rx7 80/100	900

\* Replace "x" with "I" or "M".

SUPPORTING RAILS			
Code	Distance between front and rear vertical L-type extrusions (mm)	Depth (mm)	Package
DP-DU-300	296	242	1 pair
DP-DU-400	396	342	1 pair
DP-DU-500	496	442	1 pair
DP-DU-600	596	542	1 pair
DP-DU-700	696	642	1 pair
DP-DU-800	796	742	1 pair
DP-DU-900	896	842	1 pair
DP-DU-1000	996	942	1 pair
DP-DU-S75 *	740	692	1 pair

\* Load rating of 100 kg for 600 and 800 mm width.

## 19" PULL-OUT DRAWER DP-DD



- 1.25 and 1.5 mm sheet steel
- Height: 3U
- Max. pull-out distance 280 mm
- Color: powder-coated RAL 9005
- Load rating max. 10 kg balanced load
- Package includes: 1x drawer

Code	H (in U)	W	D (mm)	Package
DP-DD-03	3	19"	430	1 pc

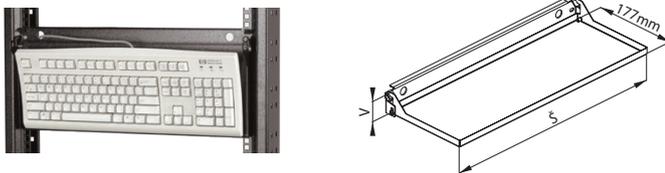
## 19" PULL-OUT KEYBOARD HOLDER SERIES DP-PV



- 1.5 mm sheet steel
- Max. keyboard width 400 mm and height 36 mm
- Shelf depth: 480 mm
- Max. pull-out distance 330 mm
- Color: powder-coated RAL 9005
- Supporting brackets included
- Supporting brackets DP-PV-PD for installation into 800 and 1000 mm deep racks (optional)
- Package includes: 1x keyboard holder, 2x rear brackets, 4x screws M5, 1x self-adhesive velcro tape

Code	H (in U)	W	D (mm)	Package
DP-PV-02	1	19"	480	1 pc

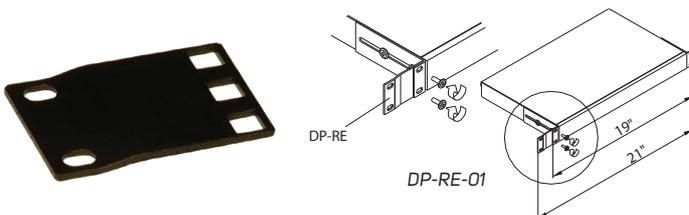
## 19" FOLDING KEYBOARD HOLDER SERIES DP-PV



- Enables keyboard placement in front of sliding vertical extrusions
- Max. keyboard size 480x175 mm
- Color: powder-coated RAL 9005
- Height: 1U
- Fix keyboard to shelf using self-adhesive velcro— 8 pcs of size 12x25 mm (included)
- Package includes: 1x keyboard holder, 1x self-adhesive velcro tape

Code	H (in U)	W	Package
DP-PV-01	1	19"	1 pc

## 21" ADAPTORS



- Allows for use of 19" equipment in 21" rack
- Color: powder-coated RAL 9005
- Package includes: 1x adaptor

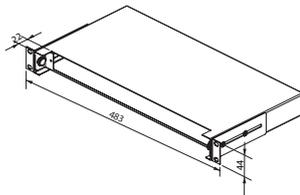
Code	H (in U)	Package
DP-RE-01	1	1 pc
DP-RE-02	2	1 pc
DP-RE-03	3	1 pc



## 19" TELESCOPIC FIBER-OPTIC SPLICE BOXES



ORVE-01-250



- Used to terminate optical cables in racks
- Type: telescopic
- Height: 1U
- Modular front panels not included – see table on page 115
- Up to 24 positions for FO couplings

- Front panel must be selected and ordered separately
- Cable entry openings in rear
- Holes not in use can be covered with blank modules
- Installs into racks with two sliding holders

- Installation kit for splice cassettes and inner organizer included (ORVM-01 only)
- Wide range of accessories (optional)
- Color: powder-coated RAL 9005

Package includes:

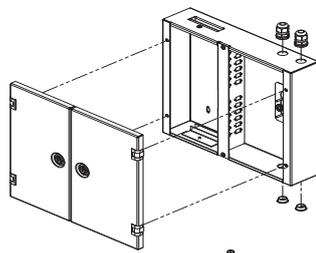
- ORVM-01: 1x fibre-optic box, 2x cable holders, 2x screws M4
- ORVE-01-250: 1x fibre-optic box, 2x 19" brackets, 6x screws M4

Code	H (in U)	W	D (mm)	Description	Package
ORVM-01	1	19"	320	Telescopic	1 pc
ORVE-01-250	1	19"	250	Telescopic	1 pc

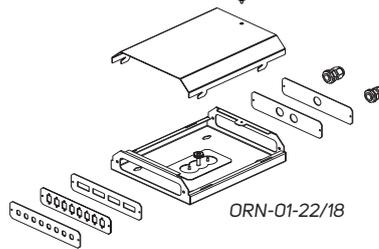
## WALL-MOUNTING FIBER-OPTIC SPLICE BOXES



ORN-02-35/30



ORN-01



ORN-01-22/18



ORN-02-35/30 equipped with ORN-24SC



ORN-01-30/18

Code	Type	W × H (mm)	Package
ORN-01-30/18	Single	300 × 180	1 pc
ORN-01-22/18	Single	220 × 180	1 pc
ORN-02-35/30	Double	350 × 300	1 pc

- Wall-mounting fiber-optic splice boxes (used to terminate optical cables)
- Types:
  - double—size 350×300 mm; equipped with double-leaf door and lock
  - single—size 300×180 mm or 220×180 mm

- Modular panels with holes for couplings—see table below (must be ordered separately)
- In double FO splice-box up to 24 positions for ST or SC or FC or 12 DSC or FCD adapters
- In single FO splice-box up to 8 positions for ST or SC or FC or 4 DSC or FCD adapters

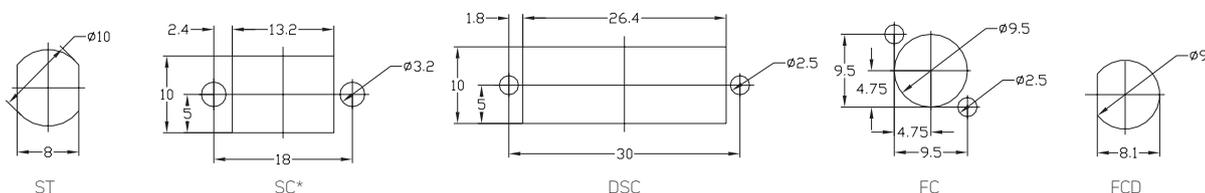
- Holes not in use can be covered with blank modules
- Cable entry through PG couplings (PG 9 for ORN-01 and PG 11 for ORN-02)
- Installation kit for splice cassette (ORO-K2000) included
- Color: powder-coated RAL 7035

Package includes:

- ORN-01-xx/xx: 1x WM box (box with cover), 1x screw M4, 4x screws M3, 1x nut M5
- ORN-02-xx/xx: 1x WM box (box with 2 doors), 2x PG11 with nuts, 2x Cover of opening for PG, 2x screws M4, 1x nut M5
- ORN-M-xxxx, ORN-xxxxx: 1x panel

PANELS FOR WALL-MOUNTING FIBER-OPTIC SPLICE BOXES		
ORN-01-30/18 and ORN-01-22/18	ORN-02-35/30	Package
ORN-M-8ST	ORN-24ST	1 pc
ORN-M-8SC	ORN-24SC	1 pc
ORN-M-4DSC	ORN-12DSC	1 pc
ORN-M-1PG	ORN-24FC	1 pc
ORN-M-2PG	ORN-12FCD	1 pc
ORN-M-8FC	–	1 pc
ORN-M-4FCD	–	1 pc

### Types of holes for fiber-optic connectors:

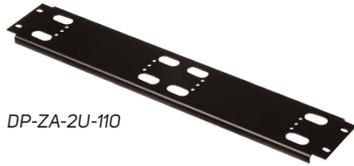


\* Used also for DUAL-LC (adapter needed).

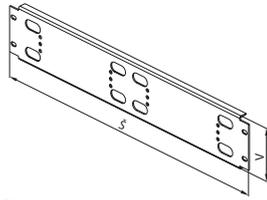
Note: dimensions in mm (before powder coating).

# PATCH PANELS

## 19" PANELS FOR 110 CONNECTING BLOCKS



DP-ZA-2U-110



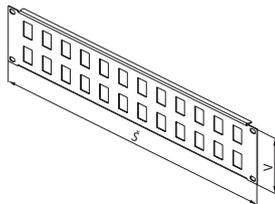
- For installation of 110 connecting blocks in 19" racks
- Available in 2U and 4U
- Color: powder-coated RAL 9005
- Can install up to 100 pairs for 2U height (incl. wire management)
- Package includes panels for 100 blocks

Code	H (in U)	For		Package
		110 block	Cable man. panel	
DP-ZA-2U-110	2	1 pc	1 pc	5 pcs
DP-ZA-4U-110	4	2 pcs	2 pcs	5 pcs

## 19" PATCH PANELS FOR KEYSTONE MODULES



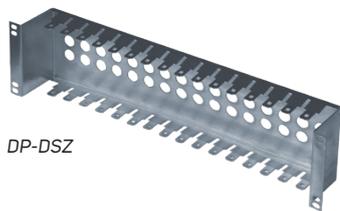
PP-02-24



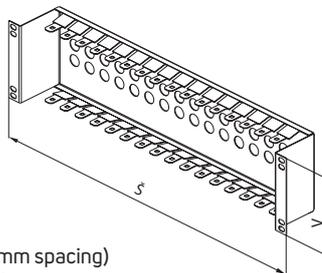
- For installation of Keystone rack modules
- Available in heights of 1U, 2U and 3U
- Can install up to 16 Keystone modules for 1U height (hole size 16.7×24.3 mm)
- Color: powder-coated RAL 9005
- Each module requires DP-KEY adaptor
- Package includes: 1x panel for Keystones

Code	H (in U)	Width	No. of positions	Package
PP-01-16	1	19"	16	1 pc
PP-02-24	2	19"	24	1 pc
PP-02-32	2	19"	32	1 pc
PP-03-48	3	19"	48	1 pc

## 19" PATCH PANELS FOR LSA-PLUS MODULES



DP-DSZ



- For installation of LSA-PLUS modules (96 mm spacing)
- 16 positions for 10 pairs of LSA-PLUS modules
- Zinc-plated finish
- Package includes: 1x panel for LSA-PLUS modules

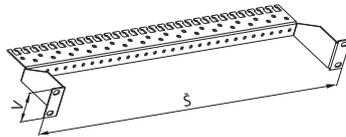
Code	H (in U)	Width	No. of positions	Package
DP-DSZ	2.5	19"	16	1 pc

# EARTHING BARS

## CABLE CLAMP BRACKET/EARTHING BAR FOR PATCH PANEL



DP-HR-01



- For earthing installed equipment
- Height: 1U and 2U
- Holds cables with cable ties or PVC
- Suitable for use as earthing bar
- Zinc-plated finish
- Package includes:
  - DP-HR-01, DP-HR-02: 1x earthing bar
  - DP-HR-03: 5x earthing bar, 5x mounting kit DP-MO-01



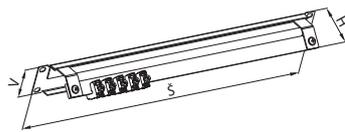
DP-HR-03

Code	Description	Package
DP-HR-01	19" cable clamp bracket/earthing bar for patch panel, 1U	1 pc
DP-HR-02	19" cable clamp bracket/earthing bar for patch panel, 2U	1 pc
DP-HR-03	19" cable clamp bracket/earthing bar cable/bundle of cables, 1U	1 set

## 19" PANEL WITH EARTHING BAR



DP-ZE-RAM

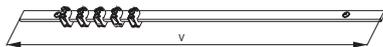


DP-ZE-CL

- Height: 1U
- Copper earthing rail with 5 earthing clips (DP-ZE-CL) included
- Color: powder-coated RAL 9005
- Package includes:
  - DP-ZE-RAM: 1x earthing rail, 5x clips DP-ZM-CL
  - DP-ZE-CL: 1x earthing clip

Code	Description	Package
DP-ZE-RAM	19" panel with earthing rail and 5 clips	1 pc
DP-ZE-CL	Earthing clip	1 pc

## EARTHING BAR



- For rack sizes 15–52U
- 25x5 mm copper bar
- Installation kit for rack mounting (included)
- Package includes: 1x earthing bar, 5x clips DP-ZM-CL, 4x screws M5, 4x nuts M5, 2x holder

Code	Height (in U)	Length (mm)	Package
DP-UL-15U	15	667	1 pc
DP-UL-21U	21,27	993	1 pc
DP-UL-42U	42, 45, 47, 48	1867	1 pc
DP-UL-52U	52	2325	1 pc

## EARTHING RAIL



- 22 terminals for cable diameters:
  - ø 1–10 mm<sup>2</sup>—solid conductor
  - ø 1–6 mm<sup>2</sup>—stranded conductor
- Nominal voltage—230/400 V
- Nominal current—40 A
- Mounting kit for installation (at either frame or extrusions)
- Ground cable 6 mm<sup>2</sup> with M8 lug, length 500 mm
- In accordance with standard specification LG-19
- Package includes: 1x earthing rail, 2x plastic holders, 2x screws M5

Code	Description	Package
DP-ZE-ER24	Earthing rail, 8x8 mm, 22 terminals, 40 A, ground cable	1 pc

# MODULAR PLINTHS



➤ **Plinths** are installed as both an aesthetic and stabilizing element instead of feet or castors. When a filter is used, the plinth supplies a sufficient amount of filtered air and can also be used for storing cables.

- Used with PREMIUM and iSEVEN rack series (RF1, RB1, Ri7 and RM7)
- Height: 100 mm
- Delivered unassembled; assembly hardware and instructions included
- Consists of:
  - set of corners and front/rear panels
  - set of side panels

*An example of an assembled modular plinth 800 × 1000 mm with a 100 mm height under RF1 rack. Individual parts of the plinth are shown below.*

COLOR:  RAL 9005  RAL 7035

## SET OF PLINTH CORNERS WITH FRONT/REAR PANELS + SET OF SIDE PANELS



DP-PR-L80 set

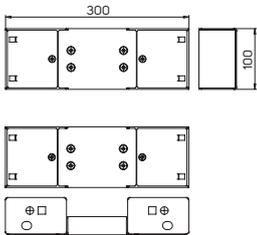


DP-P-S100 set

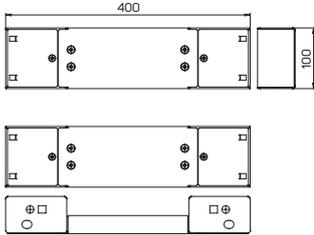


DP-PR-L80 + DP-P-S100

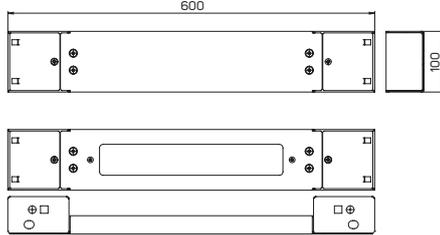
DP-PR-L30



DP-PR-L40



DP-PR-L60



## SET OF CORNERS WITH FRONT/REAR PANELS

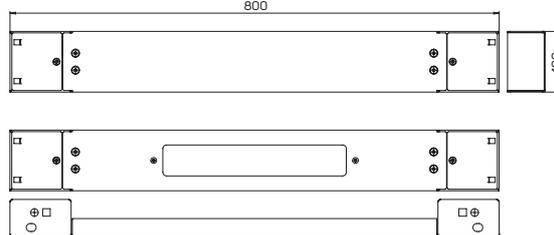
- Set of two plinth panels with corners for all racks
- Size corresponds to the width of the rack or CoolTeg Plus unit
- Load rating: 1700 kg
- Height: 100 mm

Code	Description	Width (mm)	Package *
DP-PR-L30	Plinths for 300 mm wide racks; includes front and rear panels with corners, mounting kit; height 100 mm	300	1 set
DP-PR-L40	Plinths for 400 mm wide racks; includes front and rear panels with corners, mounting kit; height 100 mm	400	1 set
DP-PR-L60	Plinths for 600 mm wide racks; includes front and rear panels with corners, mounting kit; height 100 mm	600	1 set
DP-PR-L80	Plinths for 800 mm wide racks; includes front and rear panels with corners, mounting kit; height 100 mm	800	1 set

\* Package includes:

- 2x corners with blank panel, mounting kit
- 2x corners with panel with cable entry, mounting kit

DP-PR-L80



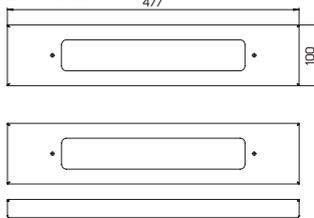
## SET OF SIDE PANELS

- Set of two plinth panels for RF1/RB1 racks—DP-P1-Sxxx
- Set of two plinth panels for Ri7/RM7 racks or CoolTeg—DP-P-Sxxx
- Height: 100 mm

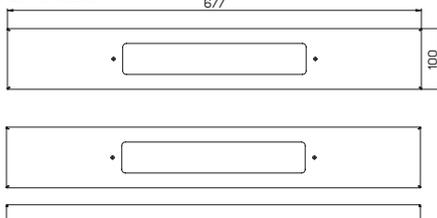
\*\* Package includes:

- 2x side plinth panels, mounting kit

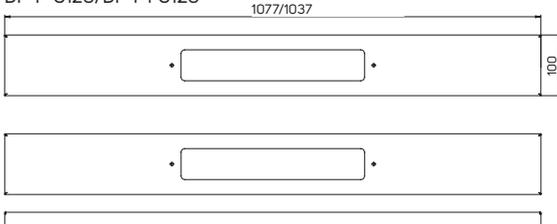
DP-P-S60



DP-P-S80

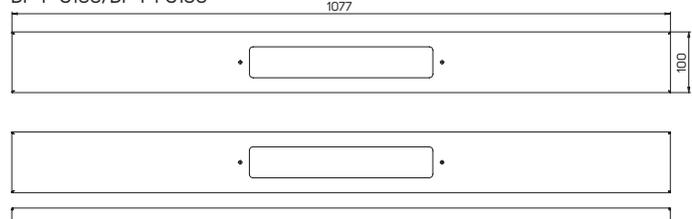


DP-P-S120/DP-P1-S120



Code	Description	Depth (mm)	Package **
DP-P1-S60	Set of two side panels for plinth DP-PR-L, for RF1/RB1 racks of 600 mm depth, height 100 mm	600	1 set
DP-P1-S80	Set of two side panels for plinth DP-PR-L, for RF1/RB1 racks of 800 mm depth, height 100 mm	800	1 set
DP-P1-S100	Set of two side panels for plinth DP-PR-L, for RF1/RB1 racks of 1000 mm depth, height 100 mm	1000	1 set
DP-P1-S120	Set of two side panels for plinth DP-PR-L, for RF1/RB1 racks of 1200 mm depth, height 100 mm	1200	1 set
DP-P-S60	Set of two side panels for plinth DP-PR-L, for Ri7 racks of 600 mm depth or CoolTeg, height 100 mm	600	1 set
DP-P-S80	Set of two side panels for plinth DP-PR-L, for Ri7 racks of 800 mm depth or CoolTeg, height 100 mm	800	1 set
DP-P-S100	Set of two side panels for plinth DP-PR-L, for Ri7 racks of 1000 mm depth or CoolTeg, height 100 mm	1000	1 set
DP-P-S120	Set of two side panels for plinth DP-PR-L, for Ri7 racks of 1200 mm depth or CoolTeg, height 100 mm	1200	1 set
DP-P-S80	Set of two side panels for plinth DP-PR-L, RF1 rack depth 800 mm, height 100 mm	800	1 set
DP-P-S100	Set of two side panels for plinth DP-PR-L, RF1 rack depth 1000 mm, height 100 mm	1000	1 set
DP-P-S1200	Set of two side panels for plinth DP-PR-L, RF1 rack depth 1200 mm, height 100 mm	1200	1 set

DP-P-S100/DP-P1-S100



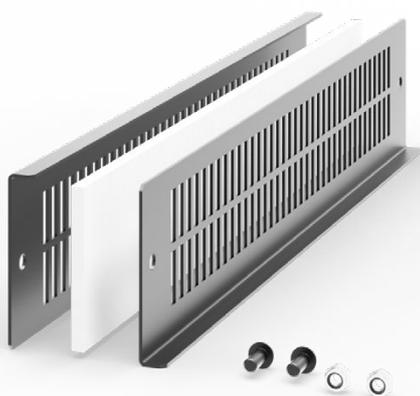
## ADJUSTABLE FEET FOR PLINTH

Code	Description	Package
DP-PR-L-A	Adjustable feet for plinth DP-PR-Lxx	4 pcs



## SET OF FRAMES WITH FILTERS FOR SIDE PANELS

Code	Description	Package
DP-P-F	Set of frames with filters for plinth side panels DP-P1-Sxx and DP-P-Sxx	2 pcs



# MOUNTING & CONNECTING KITS

## MOUNTING KIT



DP-MO-01



DP-MO-F2

- Attaches equipment to vertical extrusions
- Package includes:
  - DP-MO-0x: 1x screw, 1x floating nut, 1x washer
  - DP-MO-F2: 1x screw, 1x nut
  - DP-MO-100: 100x mounting kit (1x screw, 1x floating nut, 1x washer)

Code	Description	Size	Package
DP-MO-01 *	Mounting kit	M5	1 set
DP-MO-02 *	Mounting kit	M6	1 set
DP-MO-F2 *	Mounting kit—fast installation	M6	1 set
DP-MO-100	Mounting kit—multipack	M5	1 set

\* Please order in multiples of four only (one package = 4 sets, see above).

## CONNECTING KITS



DP-DR-UNI



DP-DR-RF1



DP-DR-7

Code	Description	Package
DP-DR-UNI	Connecting kit for all Ri7 free-standing rack series	1 set
DP-DR-7	Connecting kit for all Ri7 series racks without side panels	1 set
DP-DR-RF1	Connecting kit for RF1/RB1 free-standing racks	1 set
DP-DR-SSP-RF1	Kit for securing RF1/RB1 side panels	1 set
DP-DR-RF1-AC	Kit for connecting RF1 with CoolTeg—top cover installation	1 set

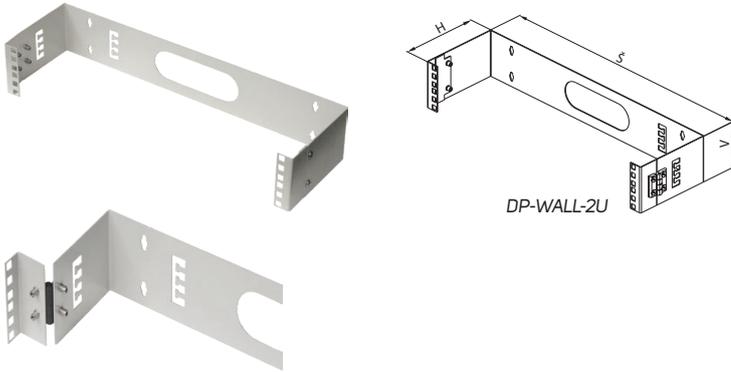
- Connects (bays) free-standing racks of the same height and depth into one row
- DP-DR-UNI: connects entire Ri7 rack row; side panels need not be removed
- DP-DR-7: connects entire Ri7 rack row; side panels must be removed
- DP-DR-RF1: connects RF1 and RB1 series racks
- DP-DR-RF1-AC: connects RF1 series racks and CoolTeg units through top covers

- Package includes:
  - DP-DR-UNI: 6x butterfly nuts M5, 6x screws M5x20, 12x washers
  - DP-DR-7: 6x hexagonal nuts, 12x screws M5x10, 12x washers M5 DIN125
  - DP-DR-RF1: 4x frame connection, 16x screws M5x9
  - DP-DR-SSP-RF1: 8x side panel holder, 8x screws M5x9
  - DP-DR-RF1-AC: 2x top holder, 4x screws M5x9, 4x screws M6x12

# ACCESSORIES

## OTHERS

### 19" WALL-MOUNTING HOLDERS



- For 19" wall equipment installation
- 2U and 4U in height
- Mounting holes (for wall installation) on rear
- Holder equipped with hinges (enables equipment to swing open from wall)
- Side cable entry openings
- Color: powder-coated RAL 7035
- Package includes: 1x Wall-mounting holder

Code	H (in U)	W	Depth (mm)	Package
DP-WALL-2U	2	19"	150	1 pc
DP-WALL-4U	4	19"	150	1 pc

### CASTORS & FEET



DP-KO-H1



DP-KO-H2



DP-KO-01



DP-KO-02



DP-NO-01



DP-KO-TC

- Package includes:
  - Set 1: 1x castor, 1x screw M10, 1x washer
  - Set 2: 1x foot
  - Set 3: 4x castors
  - Set 4: 1x castor, 1x adapter M10/M12; 1x connector M12/M12

Code	Description	Load rating per castor (kg) *	Package
DP-KO-01	Castor for free-standing rack	50 kg	1 pc of set #1
DP-KO-02	Lockable castor for free-standing rack	50 kg	1 pc of set #1
DP-KO-H1	High-load castor for free-standing rack	100 kg	1 pc of set #1
DP-KO-H2	Lockable high-load castor for free-standing rack	100 kg	1 pc of set #1
DP-NO-01	Adjustable foot for free-standing rack	-	1 pc of set #2
DP-KO-TC	Transport castors for free-standing racks	30 kg	1 pc of set #3
DP-KO-F1	Castor for free-standing rack, integrated adjustable leg	280 kg	1 pc of set #4
DP-KO-F5	Castor for free-standing rack, integrated adjustable leg	500 kg	1 pc of set #4

\* Castor load rating = (rack weight + device weight)/3

## LIGHTING UNIT



- Lamp: LED, 120° angle, 6500 K
- Luminosity: 400 lm
- Voltage/Frequency: 24-265 V DC/AC ~ 50/60 Hz
- Power consumption: 5 Watt
- Control of light: Built-in motion sensor, switch off time—5 min.
- Mounting: Magnets
- Operating temperature range: from –30 °C up to +70 °C
- Dimension: 357,4 × 32 × 35,5 mm (H × W × D)
- Weight: 140 g
- Certifications: CE, UL

Code	Description	Package
DP-OJ-06	Lighting unit 400 lm with motion sensor, 24–265 V DC/AC ~ 50/60 Hz, magnetic fixing	1 set

## CABLE PROTECTION IN OPENINGS



DP-KP-KAR



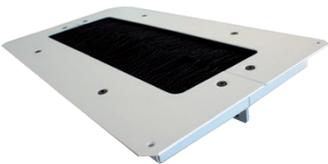
DP-KP-RB4



DP-KP-HCE2



DP-KP-KAR9



DP-KP-KAR-A



DP-KP-KAR7



DP-KP-KAR4



DP-KP-KAR4-D

- Protective strips and brush panels help protect cable entries, limiting dust penetration
- Installed in cable entry openings (300 × 100 mm or 300 × 50 mm)
- Mounting holes (for wall installation) on rear

Code	Description	Available colors		Package
		RAL 7035	RAL 9005	
DP-KP-LEM	Protective edging of cable entries (length 790 mm)	–	✓	1 pc
DP-KP-HCE2	Hermetic cable entry for rack with IP54 (opening 300×100 mm)	✓	✓	1 pc
DP-KP-KAR	Cable entry covered with brush for iSEVEN and Premium series (opening 300×100 mm)	✓	✓	1 pc
DP-KP-KAR3	Cable entry 150×56 mm covered with brush for RUN, RUD, REN series	✓	–	1 pc
DP-KP-KAR4	Cable entry, two layers of brushes (opening 300×100 mm)	✓	✓	1 pc
DP-KP-KAR4-D	Cable entry, two layers of brushes, divided version (opening 300×100 mm)	✓	✓	1 pc
DP-KP-KAR5	Cable entry 300×50 mm, covered with brush	✓	✓	1 pc
DP-KP-KAR6	Dust-proof brush for cable entry 500×110 mm (for Ri7/RM7), two pieces of brushes and two pieces of rubber for edges of cable entry	–	✓	1 pc
DP-KP-KAR7	Slidable cover for cable entry 300×100 mm	✓	✓	1 pc
DP-KP-KAR9	Cable entry with radius cable protection, for 300×100 mm opening	✓	✓	1 pc
DP-KP-RB4	Cable entry diameter 100 mm (4"), covered with brush	–	✓	1 pc
DP-KP-RP4	Cable entry diameter 100 mm (4"), plastic	–	✓	1 pc
DP-KP-KAR-A	Cable entry for raised floor tiles, two layers of brushes (opening 410×215 mm)	✓	✓	1 pc

A server room with several server racks. The racks are open, revealing internal components and cooling fans. The room is dimly lit, with a blue tint. The text 'TARGETED COOLING AND AIRFLOW MANAGEMENT' is overlaid in large, bold, blue letters. The background shows a perspective view of the server racks receding into the distance. The top right corner shows a close-up of a cooling fan on a server rack. The overall scene is a data center environment.

**TARGETED**

**COOLING**

**AND**

**AIRFLOW**

**MANAGEMENT**

# 5

## TARGETED COOLING AND AIRFLOW MANAGEMENT

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Comparison	CoolTeg Plus				CoolTop		CoolSeven	CoolRAC		
	CW	DX	XC	DF	CW	DX		CW	XC	DF
<b>Installation</b>										
Between IT racks	✓	✓	✓	✓	-	-	-	-	-	-
On top of IT racks	-	-	-	-	✓	✓	-	-	-	-
Inside of 19" racks	-	-	-	-	-	-	✓	-	-	-
Farther from IT racks	-	-	-	-	-	-	-	✓	✓	✓
<b>Cooling medium</b>										
Water/glycol	✓	-	-	-	✓	-	-	✓	-	-
R410A	-	✓	✓	-	-	✓	✓	-	✓	-
R410A + water/glycol	-	-	-	✓	-	-	-	-	-	✓
<b>Application</b>										
Smaller	✓	✓	✓	✓	✓	✓	✓	-	-	-
Medium	✓	-	✓	✓	✓	✓	-	✓	✓	✓
Bigger	-	-	-	-	-	-	-	✓	✓	✓
<b>Occupied floor area (in data center)</b>										
None	-	-	-	-	✓	✓	✓	-	-	-
Small	✓	✓	✓	✓	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	✓	✓	✓
<b>Nominal cooling capacity</b> <span style="float: right;">Air temperature in hot zone: 35 °C; water temperature of 6/12 °C (for CW units), no condensation.</span>										
7-19 kW	-	DXSmall DX30	-	-	-	-	CoolSeven	-	-	-
20-39 kW	CW30	DX30	XC30	DF	CoolTop2	CoolTop2 CoolTop3	-	CoolRAC XC CoolRAC DF		
40-100 kW	CW30 SuperC CW60	-	XC40	-	CoolTop3	CoolTop2 CoolTop3	-	CoolRAC CW CoolRAC XC CoolRAC DF		
<b>Suitable for</b>										
Smaller applications – e.g. Modular Closed Loop	-	✓	-	✓	-	-	✓	-	-	-
High outside temp.	-	-	✓	-	-	-	✓	-	✓	-
Cooling system with a cold-water source	✓	-	-	-	✓	-	-	✓	-	-
No water in a data center	-	✓	✓	-	-	✓	-	-	✓	-
Free-cooling	✓	-	-	✓	✓	-	-	✓	-	✓

# COOLTEG PLUS COOLING UNITS



➤ **CoolTeg Plus** equipment represents a family of precision cooling in-row units specifically designed for easy integration between IT racks. These air-conditioning units—with various cooling principles, sizes and capacities—are CONTEG's main product line for effective targeted cooling, from server rooms to large data centers.

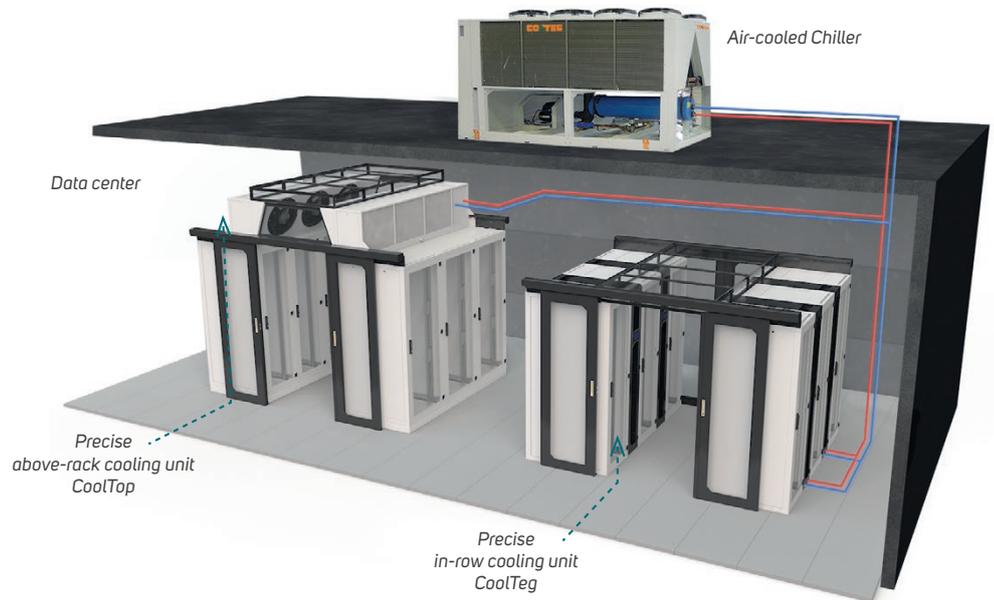
## MAIN ADVANTAGES

- Small occupied floor area
- Brings chilled air directly to server rack
- Raised floor unnecessary for air distribution
- Very low power consumption, due to EC fans and control software
- Modern "server-friendly" control system
- Flexibility of room arrangement
- Perfect compatibility with CONTEG IT racks
- Wide range of accessories

## SUITABLE FOR

- Open aisle
- Contained cold aisle
- Contained hot aisle
- Modular Closed Loop (MCL)—high capacity cooling system, where air is recirculated inside the rack and no heat is released into the environment

COLOR:  RAL 9005  RAL 7035



## DESCRIPTION

- Radial fans (with EC motors) for lowest energy consumption and precise control of airflow to servers
- High-efficiency copper-aluminium heat exchangers; also useful for Free-cooling systems
- Controller with special CONTEG software, based on long-term experience from worldwide data centers
- 4.3" color touch-screen display for user-friendly communication
- One display operating up to 16 units per group
- Independent unit control as well as CoolTeg group control functions for entire row of racks
- Wide range of settings adjust performance to specific project
- Communication through TCP/IP protocol (standard)
- Easy ModBUS and remote management from any computer
- connected to Internet (via integrated Webservice)
- Other protocols available
- Humidity sensors in both cold and hot zones
- Humidification and dehumidification mode in each unit
- Four temperature sensors per unit
- Four cooling systems:
  1. CW—chilled water system
  2. DX—direct expansion system with compressor (in outdoor unit)
  3. XC—direct expansion system with compressor (within CoolTeg Plus unit)
  4. DF—hybrid Dual Fluid system

# CHILLED WATER COOLING UNITS

## COOLTEG PLUS CW



CoolTeg Plus CW30



CoolTeg Plus CW60

➤ **CoolTeg Plus CW** chilled water in-row cooling units are designed to be connected to any system with chillers producing cold water.

### MAIN ADVANTAGES

- Virtually unlimited number of indoor units per hydraulic circuit
- Free-cooling system saves significant amount of power
- Variable chiller types fulfill any requirements (outdoor noise level, extreme ambient temperatures, etc.)
- Water temperature variable during the year, saving energy while controlling humidity level
- Operation water temperature between 6 °C and 30 °C

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus CW				
		CW30	CW30 Super C	CW60
Indoor unit code	Unit	AC-TCW-42-30/XX-XXX	AC-TCW-42-30/XX-XXX	AC-TCW-42-60/XX-XXX
Connected outdoor unit code		Chilled water system (Chiller)		
<b>Basic data</b>				
Cooling system	–	Chilled water		
Architecture <sup>1</sup>	–	Open or closed	Open or closed	Open
Nominal cooling capacity <sup>2</sup>	kW	31.9	57	80.7
Nominal net cooling capacity <sup>3</sup>	kW	31.1	54.2	75.9
Power supply	V/ph/Hz	230/1/50-60		400/3/50-60
Running current	A	6.3	12.2	6.7
Maximum current	A	7.2	13.3	8.3
Nominal power consumption	W	860	2 780	4 800
Nominal airflow <sup>4</sup>	m <sup>3</sup> /h	4 000	8 500	13 000
Number of fans	ks	5	5	3
Motor fan technology	–	EC		
Water flow	l/h	4 220	7 500	11 000
Filter class <sup>5</sup>	–	G4		
<b>Dimensions</b>				
Height <sup>6</sup>	mm (U)	1 978 (42U), 2 111 (45U), 2 245 (48U)		
Width	mm	300	300	600
Depth <sup>7</sup>	mm	1 000 or 1 200		
Weight—depth 1 000 mm, height 42/45/48U	kg	163/168/173	164/169/174	248/256/264
Weight—depth 1 200 mm, height 42/45/48U	kg	173/179/185	174/180/186	260/270/280
<b>Piping connection</b>				
Supply pipe diameter and type	–	5/4" female	5/4" female	6/4" female
Return pipe diameter and type	–	5/4" female	5/4" female	6/4" female

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C (for CW). <sup>3</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment. <sup>4</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>5</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>6</sup>Without plinth or transport trolley. <sup>7</sup>Units for Modular Closed Loop architecture (MCL) are available in 1 200 mm depth only.

# COOLTEG PLUS CW30



CoolTeg Plus CW30

➤ **CoolTeg Plus CW30** chilled water in-row cooling units are designed to be connected to any system with chillers producing cold water.

## MAIN ADVANTAGES

- Virtually unlimited number of indoor units per hydraulic circuit
- Free-cooling system saves significant amount of power
- Variable chiller types fulfill any requirements (outdoor noise level, extreme ambient temperatures, etc.)
- Water temperature variable during the year, saving energy while controlling humidity level
- Operation water temperature between 6 °C and 30 °C

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus CW30		
Indoor unit code	Unit	AC-TCW-42-30/XX-XXX
Connected outdoor unit code		Chilled water system (Chiller)
<b>Basic data</b>		
Cooling system	–	Chilled water
Architecture <sup>1</sup>	–	Open or closed
Nominal cooling capacity <sup>2</sup>	kW	31.9
Nominal net cooling capacity <sup>3</sup>	kW	31.1
Power supply	V/ph/Hz	230/1/50-60
Running current	A	6.3
Maximum current	A	7.2
Nominal power consumption	W	860
Nominal airflow <sup>4</sup>	m <sup>3</sup> /h	4 000
Number of fans	ks	5
Motor fan technology	–	EC
Water flow	l/h	4 220
Filter class <sup>5</sup>	–	G4
<b>Dimensions</b>		
Height <sup>6</sup>	mm (U)	1 978 (42U), 2 111 (45U), 2 245 (48U)
Width	mm	300
Depth <sup>7</sup>	mm	1 000 or 1 200
Weight—depth 1 000 mm, height 42/45/48U	kg	163/168/173
Weight—depth 1 200 mm, height 42/45/48U	kg	173/179/185
<b>Piping connection</b>		
Supply pipe diameter and type	–	5/4" female
Return pipe diameter and type	–	5/4" female

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C (for CW). <sup>3</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment. <sup>4</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>5</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>6</sup>Without plinth or transport trolley. <sup>7</sup>Units for Modular Closed Loop architecture (MCL) are available in 1 200 mm depth only.

# COOLTEG PLUS CW30 SUPER C



CoolTeg Plus CW30 Super C

➤ **CoolTeg Plus CW30 Super C** chilled water in-row cooling units are designed to be connected to any system with chillers producing cold water.

## MAIN ADVANTAGES

- Virtually unlimited number of indoor units per hydraulic circuit
- Free-cooling system saves significant amount of power
- Variable chiller types fulfill any requirements (outdoor noise level, extreme ambient temperatures, etc.)
- Water temperature variable during the year, saving energy while controlling humidity level
- Operation water temperature between 6 °C and 30 °C

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus CW30 Super C		
Indoor unit code	Unit	AC-TCW-42-30/XX-XXX
Connected outdoor unit code		Chilled water system (Chiller)
<b>Basic data</b>		
Cooling system	–	Chilled water
Architecture <sup>1</sup>	–	Open or closed
Nominal cooling capacity <sup>2</sup>	kW	57
Nominal net cooling capacity <sup>3</sup>	kW	54.2
Power supply	V/ph/Hz	230/1/50-60
Running current	A	12.2
Maximum current	A	13.3
Nominal power consumption	W	2 780
Nominal airflow <sup>4</sup>	m <sup>3</sup> /h	8 500
Number of fans	ks	5
Motor fan technology	–	EC
Water flow	l/h	7 500
Filter class <sup>5</sup>	–	G4
<b>Dimensions</b>		
Height <sup>6</sup>	mm (U)	1 978 (42U), 2 111 (45U), 2 245 (48U)
Width	mm	300
Depth <sup>7</sup>	mm	1 000 or 1 200
Weight—depth 1 000 mm, height 42/45/48U	kg	164/169/174
Weight—depth 1 200 mm, height 42/45/48U	kg	174/180/186
<b>Piping connection</b>		
Supply pipe diameter and type	–	5/4" female
Return pipe diameter and type	–	5/4" female

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C (for CW). <sup>3</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment. <sup>4</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>5</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>6</sup>Without plinth or transport trolley. <sup>7</sup>Units for Modular Closed Loop architecture (MCL) are available in 1 200 mm depth only.

# COOLTEG PLUS CW60



CoolTeg Plus CW60

➤ **CoolTeg Plus CW60** chilled water in-row cooling units are designed to be connected to any system with chillers producing cold water.

## MAIN ADVANTAGES

- Virtually unlimited number of indoor units per hydraulic circuit
- Free-cooling system saves significant amount of power
- Variable chiller types fulfill any requirements (outdoor noise level, extreme ambient temperatures, etc.)
- Water temperature variable during the year, saving energy while controlling humidity level
- Operation water temperature between 6 °C and 30 °C

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus CW60		
Indoor unit code	Unit	AC-TCW-42-60/XX-XXX
Connected outdoor unit code		Chilled water system (Chiller)
<b>Basic data</b>		
Cooling system	–	Chilled water
Architecture <sup>1</sup>	–	Open
Nominal cooling capacity <sup>2</sup>	kW	80.7
Nominal net cooling capacity <sup>3</sup>	kW	75.9
Power supply	V/ph/Hz	400/3/50-60
Running current	A	6.7
Maximum current	A	8.3
Nominal power consumption	W	4 800
Nominal airflow <sup>4</sup>	m <sup>3</sup> /h	13 000
Number of fans	ks	3
Motor fan technology	–	EC
Water flow	l/h	11 000
Filter class <sup>5</sup>	–	G4
<b>Dimensions</b>		
Height <sup>6</sup>	mm (U)	1 978 (42U), 2 111 (45U), 2 245 (48U)
Width	mm	600
Depth <sup>7</sup>	mm	1 000 or 1 200
Weight—depth 1 000 mm, height 42/45/48U	kg	248/256/264
Weight—depth 1 200 mm, height 42/45/48U	kg	260/270/280
<b>Piping connection</b>		
Supply pipe diameter and type	–	6/4" female
Return pipe diameter and type	–	6/4" female

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C (for CW). <sup>3</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment. <sup>4</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>5</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>6</sup>Without plinth or transport trolley. <sup>7</sup>Units for Modular Closed Loop architecture (MCL) are available in 1 200 mm depth only.

# DIRECT EXPANSION COOLING UNITS

## COOLTEG PLUS DX



CoolTeg Plus DXSmall



CoolTeg Plus DX30

➤ **CoolTeg Plus DX** in-row cooling units work on the direct expansion principle, with refrigerant circulating between one indoor and one outdoor unit (equipped by compressor).

### MAIN ADVANTAGES

- No water in data center
- Independent indoor and outdoor unit system ensures the whole system's redundancy
- Easy installation and additional capacity expansion
- R410A refrigerant
- Regulation between 30–100 % cooling capacity. If the CoolTeg Plus DX unit is connected to the CoolOut unit—the cooling capacity control is then starting from 11 %.

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus DX					
		DXSmall	DX30		
Indoor unit code	Unit	AC-TDS-42-30/ XX-XXX	AC-TDX-42-30/ XX-XXX	AC-TDX-42-30/ XX-XXX	AC-TDX-42-30/ XX-XXX
Connected outdoor unit code		AC-ODX-07- -XXXXXXX or AC-PUHZ- -ZRP71V	AC-PUHZ- -ZRP125Y	AC-PUHZ- -ZRP200Y	AC-ODX-25- -XXXXXXX or AC-PUHZ- -ZRP250Y
<b>Basic data</b>					
Cooling system	-	Direct expansion			
Architecture <sup>1</sup>	-	Open or closed			
Nominal cooling capacity <sup>2</sup>	kW	8.1 <sup>10</sup> /7.0	12.1	19.7	26 <sup>10</sup> /22.8
Nominal net cooling capacity <sup>3</sup>	kW	7.9 <sup>10</sup> /6.8	11.9	18.8	25.1 <sup>10</sup> /21.9
Power supply <sup>4</sup>	V/ph/Hz	230/1/50-60			
Running current	A	3.8	6.2	6.2	6.2
Maximum current	A	4.8	7.2	7.2	7.2
Nominal power consumption	W	510	850	850	850
Nominal airflow <sup>5</sup>	m <sup>3</sup> /h	2 100	4 000	4 000	4 000
Number of fans	ks	3	5		
Motor fan technology	-	EC			
Refrigerant type	-	R410A			
Filter class <sup>6</sup>	-	G4			
<b>Dimensions</b>					
Height <sup>7</sup>	mm (U)	1978 (42U), 2 111 (45U), 2 245 (48U)			
Width	mm	300			
Depth <sup>8</sup>	mm	1 000 or 1 200			
Weight—depth 1 000 mm, height 42/45/48U	kg	153/158/163	163/168/173		
Weight—depth 1 200 mm, height 42/45/48U	kg	163/169/175	173/179/185		
<b>Piping connection</b>					
Supply pipe diameter and type <sup>9</sup>	mm	16	16		
Return pipe diameter and type <sup>9</sup>	mm	16	22		

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C (for CW). <sup>3</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment. <sup>4</sup>Outdoor condensing units AC-PUHZ-ZRP-xx are powered by 50Hz only. <sup>5</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>6</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>7</sup>Without plinth or transport trolley. <sup>8</sup>Units for Modular Closed Loop architecture (MCL) are available in 1 200 mm depth only. <sup>9</sup>Only connection diameter is mentioned. Please design the refrigerant piping according manual of outdoor condensing unit, depending on the piping length. <sup>10</sup>If using the AC-ODX-XX-XXXXXXX outdoor unit.

# COOLTEG PLUS DXSMALL



CoolTeg Plus DXSmall

➤ **CoolTeg Plus DXSmall** in-row cooling units work on the direct expansion principle, with refrigerant circulating between one indoor and one outdoor unit (equipped by compressor).

## MAIN ADVANTAGES

- No water in data center
- Independent indoor and outdoor unit system ensures the whole system's redundancy
- Easy installation and additional capacity expansion
- R410A refrigerant
- Regulation between 30–100 % cooling capacity. If the CoolTeg Plus DX unit is connected to the CoolOut unit—the cooling capacity control is then starting from 11 %.

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus DXSmall		
Indoor unit code	Unit	AC-TDS-42-30/XX-XXX
Connected outdoor unit code		AC-ODX-07-XXXXXXX or AC-PUHZ-ZRP7IV
<b>Basic data</b>		
Cooling system	-	Direct expansion
Architecture <sup>1</sup>	-	Open or closed
Nominal cooling capacity <sup>2</sup>	kW	8.1 <sup>10</sup> /7.0
Nominal net cooling capacity <sup>3</sup>	kW	7.9 <sup>10</sup> /6.8
Power supply <sup>4</sup>	V/ph/Hz	230/1/50-60
Running current	A	3.8
Maximum current	A	4.8
Nominal power consumption	W	510
Nominal airflow <sup>5</sup>	m <sup>3</sup> /h	2 100
Number of fans	ks	3
Motor fan technology	-	EC
Refrigerant type	-	R410A
Filter class <sup>6</sup>	-	G4
<b>Dimensions</b>		
Height <sup>7</sup>	mm (U)	1978 (42U), 2 111 (45U), 2 245 (48U)
Width	mm	300
Depth <sup>8</sup>	mm	1 000 or 1 200
Weight—depth 1 000 mm, height 42/45/48U	kg	153/158/163
Weight—depth 1 200 mm, height 42/45/48U	kg	163/169/175
<b>Piping connection</b>		
Supply pipe diameter and type <sup>9</sup>	mm	16
Return pipe diameter and type <sup>9</sup>	mm	16

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C (for CW). <sup>3</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment. <sup>4</sup>Outdoor condensing units AC-PUHZ-ZRP-xx are powered by 50Hz only. <sup>5</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>6</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>7</sup>Without plinth or transport trolley. <sup>8</sup>Units for Modular Closed Loop architecture (MCL) are available in 1 200 mm depth only. <sup>9</sup>Only connection diameter is mentioned. Please design the refrigerant piping according manual of outdoor condensing unit, depending on the piping length. <sup>10</sup>If using the AC-ODX-07-XXXXXXX outdoor unit.

# COOLTEG PLUS DX30



CoolTeg Plus DX30

➤ **CoolTeg Plus DX30** in-row cooling units work on the direct expansion principle, with refrigerant circulating between one indoor and one outdoor unit (equipped by compressor).

## MAIN ADVANTAGES

- No water in data center
- Independent indoor and outdoor unit system ensures the whole system's redundancy
- Easy installation and additional capacity expansion
- R410A refrigerant
- Regulation between 30–100 % cooling capacity. If the CoolTeg Plus DX unit is connected to the CoolOut unit—the cooling capacity control is then starting from 11 %.

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus DX30				
Indoor unit code	Unit	AC-TDX-42-30/ XX-XXX	AC-TDX-42-30/ XX-XXX	AC-TDX-42-30/ XX-XXX
Connected outdoor unit code		AC-PUHZ-ZRP125Y	AC-PUHZ-ZRP200Y	AC-ODX-25- -XXXXXXX or AC-PUHZ-ZRP250Y
<b>Basic data</b>				
Cooling system	-	Direct expansion		
Architecture <sup>1</sup>	-	Open or closed		
Nominal cooling capacity <sup>2</sup>	kW	12.1	19.7	26 <sup>10</sup> /22.8
Nominal net cooling capacity <sup>3</sup>	kW	11.9	18.8	25.1 <sup>10</sup> /21.9
Power supply <sup>4</sup>	V/ph/Hz	230/1/50-60		
Running current	A	6.2	6.2	6.2
Maximum current	A	7.2	7.2	7.2
Nominal power consumption	W	850	850	850
Nominal airflow <sup>5</sup>	m <sup>3</sup> /h	4 000	4 000	4 000
Number of fans	ks	5		
Motor fan technology	-	EC		
Refrigerant type	-	R410A		
Filter class <sup>6</sup>	-	G4		
<b>Dimensions</b>				
Height <sup>7</sup>	mm (U)	1978 (42U), 2 111 (45U), 2 245 (48U)		
Width	mm	300		
Depth <sup>8</sup>	mm	1000 or 1200		
Weight—depth 1000 mm, height 42/45/48U	kg	163/168/173		
Weight—depth 1200 mm, height 42/45/48U	kg	173/179/185		
<b>Piping connection</b>				
Supply pipe diameter and type <sup>9</sup>	mm	16		
Return pipe diameter and type <sup>9</sup>	mm	22		

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C (for CW). <sup>3</sup>Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment. <sup>4</sup>Outdoor condensing units AC-PUHZ-ZRP-xx are powered by 50Hz only. <sup>5</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>6</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>7</sup>Without plinth or transport trolley. <sup>8</sup>Units for Modular Closed Loop architecture (MCL) are available in 1200 mm depth only. <sup>9</sup>Only connection diameter is mentioned. Please design the refrigerant piping according manual of outdoor condensing unit, depending on the piping length. <sup>10</sup>If using the AC-ODX-25-XXXXXXX outdoor unit.

# COOLOUT CONDENSING UNITS



CoolOut—front view



CoolOut—rear view

➤ The **CoolOut** outdoor condensing units are specially designed for conducting heat out of data centers. The units meet all the strict demands on precision, stability and service life required for data centers.

## MAIN BENEFITS

- Advanced communication and cooling regulation based on commands from the data center
- Very low consumption thanks to high-quality EC fans and active regulation of condensing pressure
- Inverter-controlled BLDC compressor
- Wide range of cooling power from 11 % upwards
- Versions for extreme ambient temperatures available
- Robust frame and housing made of high-quality corrosion-resistant materials
- Ability to communicate with a monitoring system (SNMP, Modbus TCP, Modbus RS485)
- Ability to monitor and control operating parameters through the indoor unit
- Simple to install and operate
- Option for remote servicing after connecting a PGDx service display
- Specially designed for precision cooling
- Linear electronic expansion valve

## SUITABLE FOR

- Wide range of ambient conditions
- Installations emphasizing economical and reliable operation
- Compatible with CONTEG's CoolTeg DXSmall, CoolTop DX and CoolSeven cooling units

## DESCRIPTION

- CoolOut is an outdoor condensing unit designed for precision compression cooling. The units are fitted with an inverter-controlled rotary DC compressor.
  - Thanks to the use of hot gas bypass technology, the unit's cooling power can be adjusted from 11 % of total cooling power upwards regardless of outdoor conditions.
  - The use of a specially designed condenser, EC fans and a system of dynamic control of condensing pressure allowed minimizing the power consumption and noise emissions of the cooling unit.
  - The running of the unit and correct functioning of all its parts is overseen by a built-in regulator with special CONTEG software.
- The regulator also ensures communication with the indoor unit via Fieldbus protocol. Basic information about the running of the outdoor unit can be tracked through the indoor unit.
- The design of the condensing unit allows its mounting onto the floor or a wall.
  - CoolOut units are highly user-friendly in their setup and operation. Initialization and operation is very simple.

		AC-ODX-07-XXXXXXX	AC-ODX-07-SXXXXXX	AC-ODX-25-XXXXXXX
Operating conditions	°C	-20 to +47 °C	-20 to +55 °C	-20 to +47 °C
Operating conditions <sup>4</sup>	°C	-40 to +47 °C	-	-40 to +47 °C
Power regulation		Smooth 11-100%	Smooth 11-100 %	Smooth 11-100%
Rated cooling power	kW	8.1	8.1	26
Power supply	V/ph/Hz	230/1/50-60	230/1/50-60	400/3/50-60
Operating current <sup>1</sup>	A	8.84	10.4	11.28
Maximum current	A	12.8	17.5	17
Rated input power <sup>1</sup>	kW	2.03	2.39	8.2
Compressor control		BLDC Inverter	BLDC Inverter	BLDC Inverter
Coolant regulation		Linear expansion valve	Linear expansion valve	Linear expansion valve
R410A coolant capacity <sup>2</sup>	kg	0	0	0
Acoustic pressure Lp(A) <sup>1</sup>	dBA	44	63	50
<b>Dimensions/weight</b>				
Width	mm	1200	1200	1400
Depth	mm	400	400	450
Height <sup>3</sup>	mm	996	996	1200
Weight	kg	72	99	130
<b>Piping connection</b>				
Fluid piping (diameter)	mm	12	12	12
Gas piping (diameter)	mm	16	16	22
Max. piping length	m	75	75	85
Max. difference in elevation	m	50	50	50

<sup>1</sup> Values at stabilized 80 % output. <sup>2</sup> Without coolant, filled in during installation. <sup>3</sup> Including the profile for mounting the condensing unit. <sup>4</sup> If fitted with winter-kit accessories. The values shown may vary depending on the current product innovation.



### Part number on request.

Please contact our sales or technical team [www.conteg.com/contacts](http://www.conteg.com/contacts)

## COOLOUT CONDENSING UNITS

# ACCESSORIES

### DUAL POWER SUPPLY

- Electrical distributor for two power supply branches.
- The device allows powering a unit from two separate power sources.

### RS485 BMS COMMUNICATION CARD

- Optically insulated card allowing communication with a unit via Modbus RTU protocol.



### pCO WEB COMMUNICATION CARD

- Allows further individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: web server, e-mail, FTP, SNMP, BACNet, ModBus TCP/IP and more.



FOR COOLTEG PLUS DX COOLING UNITS

# MITSUBISHI CONDENSING UNITS

➤ A CoolTeg Plus DX in-row cooling unit can be connected with an **outdoor condensing unit**, which contains all of the control elements (compressor, expansion valve, frequency driver). The units are equipped with a scroll compressor that works with the R410A refrigerant.



## Technical parameters

	Unit	AC-PUHZ-ZRP71V	AC-PUHZ-ZRP125Y	AC-PUHZ-ZRP200Y	AC-PUHZ-ZRP250Y
Nominal cooling capacity	kW	7.1	12.5	19.7	22.8
Power supply	V/ph/Hz	230/1/50	400/3/50 <sup>1</sup>	400/3/50	400/3/50
Operation current	A	7.63	5.93	7.77	8.28
Maximum current	A	19	9.5	19	21
Nominal power consumption	kW	1.72	3.78	5.46	8.3
Compressor control	–	Inverter			
Control valve	–	Linear expansion valve			
Refrigerant volume R410A <sup>2</sup>	kg	3.5	5.0	7.1	7.7
<b>Dimensions</b>					
Width	mm	950	1050	1050	1050
Depth	mm	330	330	330	330
Height	mm	943	1338	1338	1338
Weight	kg	67	126	135	144
<b>Piping connection</b>					
Supply pipe diameter (liquid) <sup>3</sup>	mm	10	10	10	10
Return pipe diameter (gas) <sup>3</sup>	mm	16	16	25	25
Max. pipe length	m	50	70	100	100
Max. difference in elevation	m	30	30	30	30
Operation conditions	°C	from –15 up to +46			

<sup>1</sup>Outdoor unit AC-PUHZ-ZRP125 requires power supply: 400V/3ph/50Hz, it is also available in 1ph version.

<sup>2</sup>Outdoor units are pre-filled with the refrigerant R410A for piping length 30 m. <sup>3</sup>This datasheet considers connecting pipe dimensions only. Please follow outdoor unit's manual to design the proper diameters of refrigerant piping.



# COOLTEG PLUS XC



CoolTeg Plus XC30



CoolTeg Plus XC40

➤ **CoolTeg Plus XC** in-row cooling units are based on the direct expansion principle. A compressor is integrated into the indoor unit, which is connected to its outdoor condenser.

## MAIN ADVANTAGES

- Remarkable energy efficiency and stepless cooling capacity control
- Operation in extreme temperatures (−45 °C up to +55 °C)
- Regulation between 10-100 % cooling capacity
- No water in data center
- Compressor safely positioned inside the data center
- Variable design of outdoor unit (with regards to temperature, space, noise level, etc.)
- Low level of outdoor unit's noise
- R410A refrigerant

COLOR:  RAL 9005  RAL 7035

CoolTeg Plus XC			
		XC30	XC40
Indoor unit code	Unit	AC-TXC-42-30/XX-XXX	AC-TXC-42-40/XX-XXX
Connected outdoor unit code		AC-CONDx-xx-xx	AC-CONDx-xx-xx
<b>Basic data</b>			
Cooling system	-	Direct expansion	
Architecture <sup>1</sup>	-	Open or closed	
Nominal cooling capacity <sup>2</sup>	kW	21.5	42.2
Nominal net cooling capacity <sup>3</sup>	kW	20.7	39.1
Power supply	V/ph/Hz	400/3/50-60	
Running current	A	?	22.7
Maximum current	A	?	25.3
Fan power consumption (maximum)	kW	0.85	3.1
Compressor power consumption <sup>4</sup>	kW	5.45	12.3
Nominal airflow <sup>5</sup>	m <sup>3</sup> /h	4 000	9 000
Number of radial fans	pcs	5	3
Motor fan technology	-	EC	
Refrigerant type	-	R410A	
Filter class <sup>6</sup>		G4	
<b>Dimensions</b>			
Height	mm (U)	1978 (42U), 2 111 (45U), 2 245 (48U)	
Width	mm	300	400
Depth <sup>7</sup>	mm	1000 or 1200	
Weight—depth 1000 mm, height 42/45/48U	kg	194/199/204	262/270/278
Weight—depth 1200 mm, height 42/45/48U	kg	204/209/214	274/284/294
<b>Piping connection</b>			
Piping diameter—liquid line	mm	12	16
Piping diameter—gas line	mm	16	22

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), outside temp. +35 °C (condensing temp. 45 °C), clean filters. <sup>3</sup>Net cooling capacity is the total cooling capacity reduced for fan heat load. Useful unit cooling capacity. <sup>4</sup>Power consumption at condensing temperature of 45 °C and evaporation temperature of 10 °C. <sup>5</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>6</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>7</sup>Units for Modular Closed Loop architecture (MCL) are available in 1200 mm depth only.

# DIRECT EXPANSION COOLING UNITS WITH AN INTEGRATED COMPRESSOR

## COOLTEG PLUS XC30



CoolTeg Plus XC30

➤ **CoolTeg Plus XC30** in-row cooling unit is based on the direct expansion principle. A compressor is integrated into the indoor unit, which is connected to its outdoor condenser.

### MAIN ADVANTAGES

- Remarkable energy efficiency and stepless cooling capacity control
- Operation in extreme temperatures (–45 °C up to +55 °C)
- Regulation between 10-100 % cooling capacity
- No water in data center
- Compressor safely positioned inside the data center
- Variable design of outdoor unit (with regards to temperature, space, noise level, etc.)
- Low level of outdoor unit's noise
- R410A refrigerant

COLOR:  RAL 9005  RAL 7035

#### CoolTeg Plus XC30

Indoor unit code	Unit	AC-TXC-42-30/XX-XXX
Connected outdoor unit code		AC-CONDx-xx-xx
<b>Basic data</b>		
Cooling system	-	Direct expansion
Architecture <sup>1</sup>	-	Open or closed
Nominal cooling capacity <sup>2</sup>	kW	21.5
Nominal net cooling capacity <sup>3</sup>	kW	20.7
Power supply	V/ph/Hz	400/3/50-60
Running current	A	?
Maximum current	A	?
Fan power consumption (maximum)	kW	0.85
Compressor power consumption <sup>4</sup>	kW	5.45
Nominal airflow <sup>5</sup>	m <sup>3</sup> /h	4 000
Number of radial fans	ks	5
Motor fan technology	-	EC
Refrigerant type	-	R410A
Filter class <sup>6</sup>		G4
<b>Dimensions</b>		
Height	mm (U)	1978 (42U), 2111 (45U), 2 245 (48U)
Width	mm	300
Depth <sup>7</sup>	mm	1000 or 1200
Weight—depth 1000 mm, height 42/45/48U	kg	194/199/204
Weight—depth 1200 mm, height 42/45/48U	kg	204/209/214
<b>Piping connection</b>		
Piping diameter—liquid line	mm	12
Piping diameter—gas line	mm	16

### DESCRIPTION

- Twin rotary compressor
- BLDC driven compressor
- Electronic expansion valve and advanced steering logic
- Low vibrations
- Low- and high-pressure safety switches
- Refrigerant valves for easy maintenance
- Distance between indoor and outdoor units up to 60 m

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), outside temp. +35 °C (condensing temp. 45 °C), clean filters. <sup>3</sup>Net cooling capacity is the total cooling capacity reduced for fan heat load. Useful unit cooling capacity. <sup>4</sup>Power consumption at condensing temperature of 45 °C and evaporation temperature of 10 °C. <sup>5</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>6</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>7</sup>Units for Modular Closed Loop architecture (MCL) are available in 1200 mm depth only..

# DIRECT EXPANSION COOLING UNITS WITH AN INTEGRATED COMPRESSOR

## COOLTEG PLUS XC40



CoolTeg Plus XC40

➤ **CoolTeg Plus XC40** in-row cooling unit is based on the direct expansion principle. A compressor is integrated into the indoor unit, which is connected to its outdoor condenser.

### MAIN ADVANTAGES

- Remarkable energy efficiency and stepless cooling capacity control
- Operation in extreme temperatures (–45 °C up to +55 °C)
- Regulation between 10-100 % cooling capacity
- No water in data center
- Compressor safely positioned inside the data center
- Variable design of outdoor unit (with regards to temperature, space, noise level, etc.)
- Low level of outdoor unit's noise
- R410A refrigerant

COLOR:  RAL 9005  RAL 7035

#### CoolTeg Plus XC40

Indoor unit code	Unit	AC-TXC-42-40/XX-XXX
Connected outdoor unit code		AC-CONDx-xx-xx
<b>Basic data</b>		
Cooling system	-	Direct expansion
Architecture <sup>1</sup>	-	Open or closed
Nominal cooling capacity <sup>2</sup>	kW	42.2
Nominal net cooling capacity <sup>3</sup>	kW	39.1
Power supply	V/ph/Hz	400/3/50-60
Running current	A	22.7
Maximum current	A	25.3
Fan power consumption (maximum)	kW	3.1
Compressor power consumption <sup>4</sup>	kW	12.3
Nominal airflow <sup>5</sup>	m <sup>3</sup> /h	9 000
Number of radial fans	ks	3
Motor fan technology	-	EC
Refrigerant type	-	R410A
Filter class <sup>6</sup>		G4
<b>Dimensions</b>		
Height	mm (U)	1978 (42U), 2111 (45U), 2 245 (48U)
Width	mm	400
Depth <sup>7</sup>	mm	1000 or 1200
Weight—depth 1000 mm, height 42/45/48U	kg	262/270/278
Weight—depth 1200 mm, height 42/45/48U	kg	274/284/294
<b>Piping connection</b>		
Piping diameter—liquid line	mm	16
Piping diameter—gas line	mm	22

<sup>1</sup>CoolTeg units can be used either independently (in rack rows) or integrated in Modular Closed Loop (MCL)—closed architecture rack systems and cooling units. Code changed as per ordering matrix. <sup>2</sup>Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), outside temp. +35 °C (condensing temp. 45 °C), clean filters. <sup>3</sup>Net cooling capacity is the total cooling capacity reduced for fan heat load. Useful unit cooling capacity. <sup>4</sup>Power consumption at condensing temperature of 45 °C and evaporation temperature of 10 °C. <sup>5</sup>Airflow is changed by the controller; nominal airflow matches nominal cooling capacity. <sup>6</sup>Units in Modular Closed Loop architecture (MCL) are delivered without filters. <sup>7</sup>Units for Modular Closed Loop architecture (MCL) are available in 1200 mm depth only.

### DESCRIPTION

- The most efficient compressor to date
- Inverter-driven compressor built into the internal unit
- Environmentally-friendly R410A refrigerant
- Electronic expansion valve and advanced steering logic
- Stepless capacity control from 20 to 100 %
- Oil separator and Trax-oil inside
- Low- and high-pressure safety switches
- Refrigerant valves for easy maintenance
- Operation in outdoor temperatures between –40 °C and +55 °C
- Distance between indoor and outdoor unit up to 60 m

FOR COOLTEG PLUS XC COOLING UNITS

# OUTDOOR AIR-COOLED CONDENSERS



➤ Outdoor air-cooled condensers dissipate the data center heat-load to the ambient. Indoor unit is designed so it's able to cooperate with the widest field of condensers. It allows customer to select the type which perfectly fits the requirements.

Recommended **condensers for CoolTeg Plus XC** are listed in the table below. They are sorted according to the maximum ambient temperature.

AIR-COOLED FINS AND TUBES												
Indoor unit	Max. temp.	CONTEG P/N	Sound pressure level		Number of fans	Power supply			Length (mm)	Width (mm)	Height (mm)	Weight (kg)
			Lw(A)	Lp(A) 10m		ph/V/Hz	A	kW				
XC30	35 °C	AC-COND4-01-35	75 dB	55 dB	1	1/230/50-60	2,2	0,45	1284	1088	936	118
XC30	45 °C	AC-COND4-01-45	79 dB	59 dB	2	1/230/50-60	1,65	0,76	1884	888	885	145
XC30	55 °C	AC-COND4-01-55	73 dB	53 dB	2	1/230/50-60	1,15	0,48	2 484	1088	936	217
XC40	35 °C	AC-COND2-03-35	87 dB	56 dB	2	3/400/50-60	4,2	2,59	1884	888	957	158
XC40	45 °C	AC-COND2-02-45	93 dB	61 dB	2	3/400/50-60	6,2	4,02	2 484	1088	961	236
XC40	55 °C	AC-COND2-03-55	96 dB	64 dB	2	3/400/50-60	8,6	5,77	2 484	1088	961	267

# COOLTEG PLUS DF



CoolTeg Plus DF

CoolTeg Plus DF can save you up to 20 MWh per year compared to a compression cooling unit.

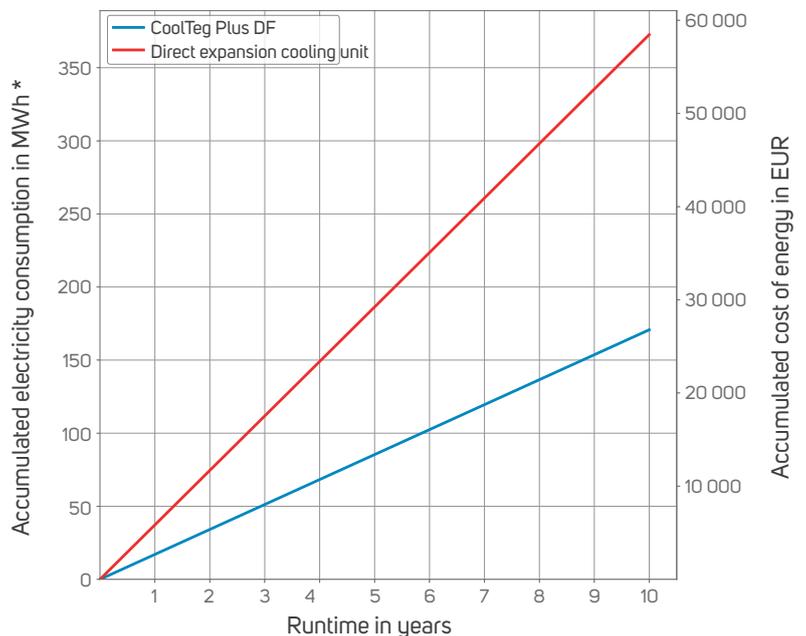
➤ **CoolTeg Plus DF** in-row cooling units combine the advantages of CW and XC systems—free-cooling for low and medium outdoor temperatures and direct expansion cooling for use during high outdoor temperatures. The system thus reaches optimal minimum operating costs without the need to compromise.

## MAIN ADVANTAGES

- Free-cooling for the majority of the year—the unit has the most efficient heat exchanger in its category.
- Smart control system uses free-cooling to pre-cool the air even during high outdoor temperatures—energy consumption thus remains minimal.
- Investment in the unit returns within a few years thanks to savings on operating costs (compared to DX or XC systems).
- Since the main heat carrier is water, waste heat can be reused for heating or other purposes to further reduce costs.
- The water circuit and compressor circuit can be connected to two separate water sources—the unit can thus be fully redundant.

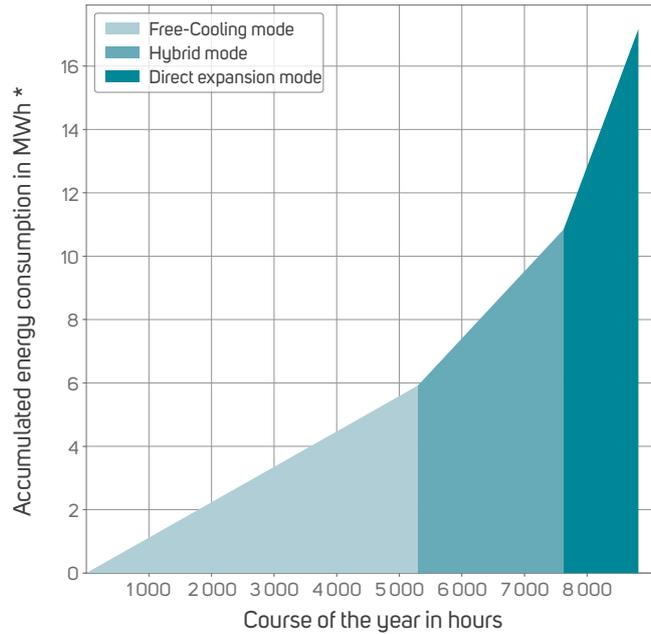
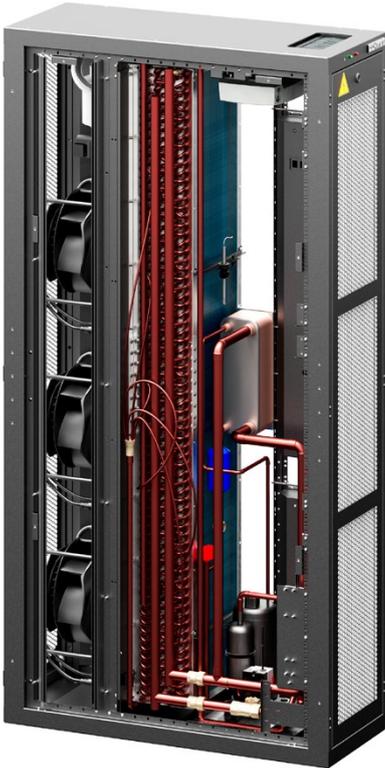
## DESCRIPTION

- 2-in-1—small and efficient cooling unit that smartly combines water-based and direct expansion-based cooling.
- Electronically controlled expansion valve—maximum cooling efficiency for any conditions
- Inverter-driven compressor—minimum energy consumption for all cooling capacities.
- Fans with EC technology enable efficient and smooth control of air flow rate.
- Smart control system ensures the set air parameters are reached precisely and with minimum consumption; immediately informs you of any issues.
- Operating range from  $-40$  to  $+40$  °C (upper temperature limit depends on the size of the outdoor heat exchanger). On request, can be supplied with accessories that allow operating the unit at as low as  $-55$  °C.



\* The unit's consumption is dependent on its location, or rather, the annual course of temperature at the location. The unit's consumption over the course of the year and use ratio of the individual cooling modes were calculated using nominal values and the annual course of temperature in Prague.

The DF hybrid unit runs in free-cooling mode up to 60 % of the year, in hybrid mode 26 % of the year, and in compression mode **only 14 % of the year.**



\* The unit's consumption is dependent on its location, or rather, the annual course of temperature at the location. The unit's consumption over the course of the year and use ratio of the individual cooling modes were calculated using nominal values and the annual course of temperature in Prague.

#### COOLTEG PLUS DF (HYBRID SYSTEM)

Indoor unit code		AC-TDF-42-40/XX-XXX
Connected outdoor unit		Dry cooler (water cooling using ambient air)
<b>Basic data</b>		
Cooling system	–	Hybrid free-cooling
Architecture <sup>1</sup>	–	Open or closed
Cooling capacity *	kW	25 (23.5**)
Refrigerant type	–	R410A
Nominal refrigerant charge	kg	2
Water flow rate *	m <sup>3</sup> /h	1.8 (3.4**)
Total pressure loss*	kPa	15 (35**)
Power supply	V/ph/Hz	400/3/50-60
Maximum current	A	19.5
Nominal unit consumption	kW	6.7
Average unit consumption ***	kW	1.9
Fan power consumption *	kW	0.7
Compressor power consumption *	kW	6
Air flow rate *	m <sup>3</sup> /h	6 000
Number of radial fans	pcs	3
Fan motor technology	–	EC
Filter class <sup>2</sup>	–	G4
<b>Dimensions</b>		
Height	mm (U)	1 978 (42U), 2 111 (45U), 2 245 (48U)
Width	mm	400
Depth <sup>3</sup>	mm	1 000 or 1 200
Weight—depth 1 000 mm, height 42/45/48U	kg	260/268/274
Weight—depth 1 200 mm, height 42/45/48U	kg	272/282/292
<b>Connection dimension</b>		
Supply pipe diameter and type	–	1" male thread
Return pipe diameter and type	–	1" male thread

Air parameters at the output (nominal conditions): 35 °C at 30 % RH. Condensing temperature: 45 °C. Water temperatures: 15/21 °C. Glycol content: 0 %.

\* Values at nominal conditions. \*\* Compressor circuit (water circuit). \*\*\* Calculated using the annual course of temperature in Prague.

<sup>1</sup> CoolTeg Plus units can be used either independently (in rack rows), or integrated in a Modular Closed Loop (MCL) system—closed loop architecture systems of racks and cooling units.

<sup>2</sup> Units in Modular Closed Loop architecture (MCL) are delivered without filters (standard).

<sup>3</sup> Units in Modular Closed Loop architecture (MCL) are available in 1 200 mm depth only.

# FOLLOW THE STEPS FOR DETERMINING THE CODE OF THE REQUIRED COOLTEG PLUS UNIT

AC - 1. - 2. - 3. / 4. - 5. - 6. 7. 8. 9. 10. 11. 12. 13.

An example of a correct code:

AC - TDX - 42 - 30 / 10F - BOW - 0 1 0 2 0 0 0 0

**Description of the example of a correct code:** CoolTeg Plus (facelift) in-row cooling unit with EC fans, suitable for connection to an outdoor condenser unit, open loop architecture, 300 mm width; 1000 mm depth and 42 U height. 4.3" color touch screen, 1x USB, 2x Ethernet port, proprietary CONTEG SW, installed in the front door. Bottom connection. Condensate pump installed in the cooling unit. pCO WEB card for SNMP communication. Prepared for a Mitsubishi Electric outdoor condensing unit. Standard warranty: 2 years.

1. CoolTeg COOLING SYSTEM		2. HEIGHT		3. WIDTH		4. DEPTH *		5.1. PIPE CONNECTION	
Code	Model	Code	Options	Code	Width (mm)	Code	Depth (mm)	Code	Options
TCW	Chilled water	41	42U (RF1/RB1)	30	300	10F	1000	B	Bottom connection
TDS	Direct expansion (small)	47	47U (RF1/RB1)	40	400	12F	1200	T	Top connection
TDX	Direct expansion	52	52U (RF1/RB1)	60	600	* F indicates a unit after a facelift. Units before a facelift have a 0 instead of an F.			
TXC	With internal compressor	42	42U (iSEVEN Server)						
TDF	Hybrid system	45	45U (iSEVEN Server)						
		48	48U (iSEVEN Server)						

5.2. ARCHITECTURE		5.3. DISPLAY		6. HUMIDIFIER		7. CONDENSATE PUMP		8. POWER SUPPLY	
Code	Options	Code	Options	Code	Options	Code	Options	Code	Options
0	Open	W	Not present	0	Not present	0	Not present	0	Standard 230V/1f/50Hz
C	MCL—modular closed loop	D	With screen	1	Humidifier (standard)	1	Condensate pump (standard)	A	Dual power supply
				2	Humidifier (low water conductivity)	2	Leak detection sensor rope		
						3	Condensate pump (powerful) *		
						A	Leak detection sensor rope + condensate pump (standard)		
						B	Leak detection sensor rope + condensate pump (powerful)		

9. COMMUNICATION		10. REGULATION		11. CONTROL VALVES		12. FANS		13. SPECIAL MODIFICATIONS	
Code	Options	Code	Options	Code	Options	Code	Options	Code	Options
0	Not present	0	Standard	0	Standard (3-way valve)	0	Standard	0	Standard
M	Modbus	P	Control based on pressure	2	2-way valve	S	Extra powerful fans (only for CW30)	R	External relay—unit status
W	SNMP	H	Communication with HMI (Mitsubishi Heavy Industry) units					6	6-row heat exchanger
		R	Control based on pressure + communication with HMI (Mitsubishi Heavy Industry) units						
		E	Control based on pressure in combination with CoolTop units						

\* Used in combination with a humidifier, or if displacement height is over 5 m. Max. height—30 m.



# BASIC ACCESSORIES

## TOUCH SCREEN

- For more user-friendly communication with the unit's regulator, you can use a 4.3" color touch screen.
- A single touch screen can control up to 16 cooling units. For quick communication and full functionality of BMS, we recommend using a maximum of 8 units.
- RS485 port and Ethernet port enable remote control and monitoring using various master systems. The USB is used primarily for quick and easy software updating and downloading of historical data.
- The touch terminal has a number of functions: connection to a customer network, remote control, ModBus communication and many more.
- The screen can be placed directly onto a CoolTeg unit, on the side of a rack or onto a wall in the data room.



## CONTROL BASED ON PRESSURE

- Each unit can control air flow rate (fan speed) based on differences in temperature between the hot and cool zones or based on pressure differences.
- Flow rate control based on pressure differences ensures that air is supplied to the area in front of the server at the exact same rate as that at which the servers draw the air in.
- Perfect environment for servers (no risk of server damage caused by over- or under-pressure).
- Minimizes power consumption of the entire cooling system due to precise distribution of cooled air.



## CONDENSATE PUMP

- All CONTEG units can be connected to the sewerage system via gravity feed.
- If there is no sewerage connection in the room, the water can be conducted away using a condensate pump.
- Each unit includes a water detector that activates the pump, and a level sensor that turns off the unit in case of increased water levels.



## DUAL POWER SUPPLY

- Electrical PDU for two power branches. The device allows powering the unit from two independent sources.

## STEAM HUMIDIFIER

- The steam humidifier maintains the set relative humidity of the air in the data center.
- The humidifier can output 3 kg of steam per hour
- The steam humidifier of the CoolTeg Plus unit is powered separately.
- You can choose from 2 boiling vessels depending on water hardness.



## pCO WEB COMMUNICATION CARD

- Accessory compatible with CoolTeg regulators.
- Enables additional individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: web server, e-mail, FTP, SNMP, BAC-Net, ModBus TCP/IP and more.



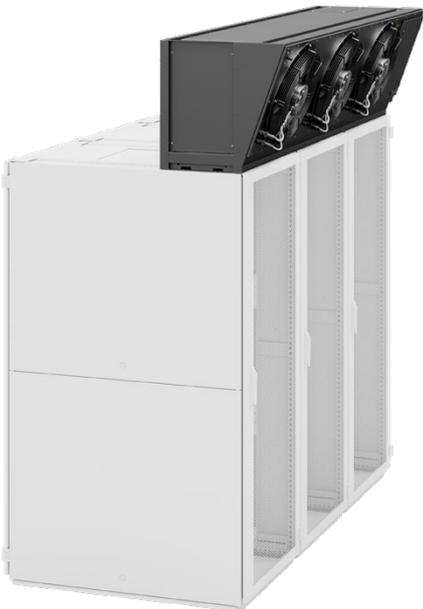
# COOLTOP CW COOLING UNITS



➤ **CoolTop CW** above-rack cooling units are specially designed for easy installation above IT racks, and are uniquely suitable for effective targeted cooling of server rooms and large data centers.

## MAIN ADVANTAGES

- Does not occupy floor area
- Brings chilled air directly to cold aisle in front of server racks
- Vertical air loop, with local flexibility
- Extremely low power consumption due to large heat exchanger and EC axial fans
- Modern and user-friendly control system
- Allows flexibility of room arrangement
- Raised floor unnecessary for air distribution
- Installs easily in contained hot or cold aisle
- Perfectly compatible with CONTEG IT racks
- Wide range of accessories
- Stainless steel double condensate tray located under the heat exchanger
- Regulation between 0–100 % cooling capacity
- Controller with ModBus communication (contained in the controller)



## SUITABLE FOR

- Contained cold aisle
- Contained hot aisle
- Can be combined with CoolTeg Plus units in the same zone (aisle)

COLOR:  RAL 9005  RAL 7035



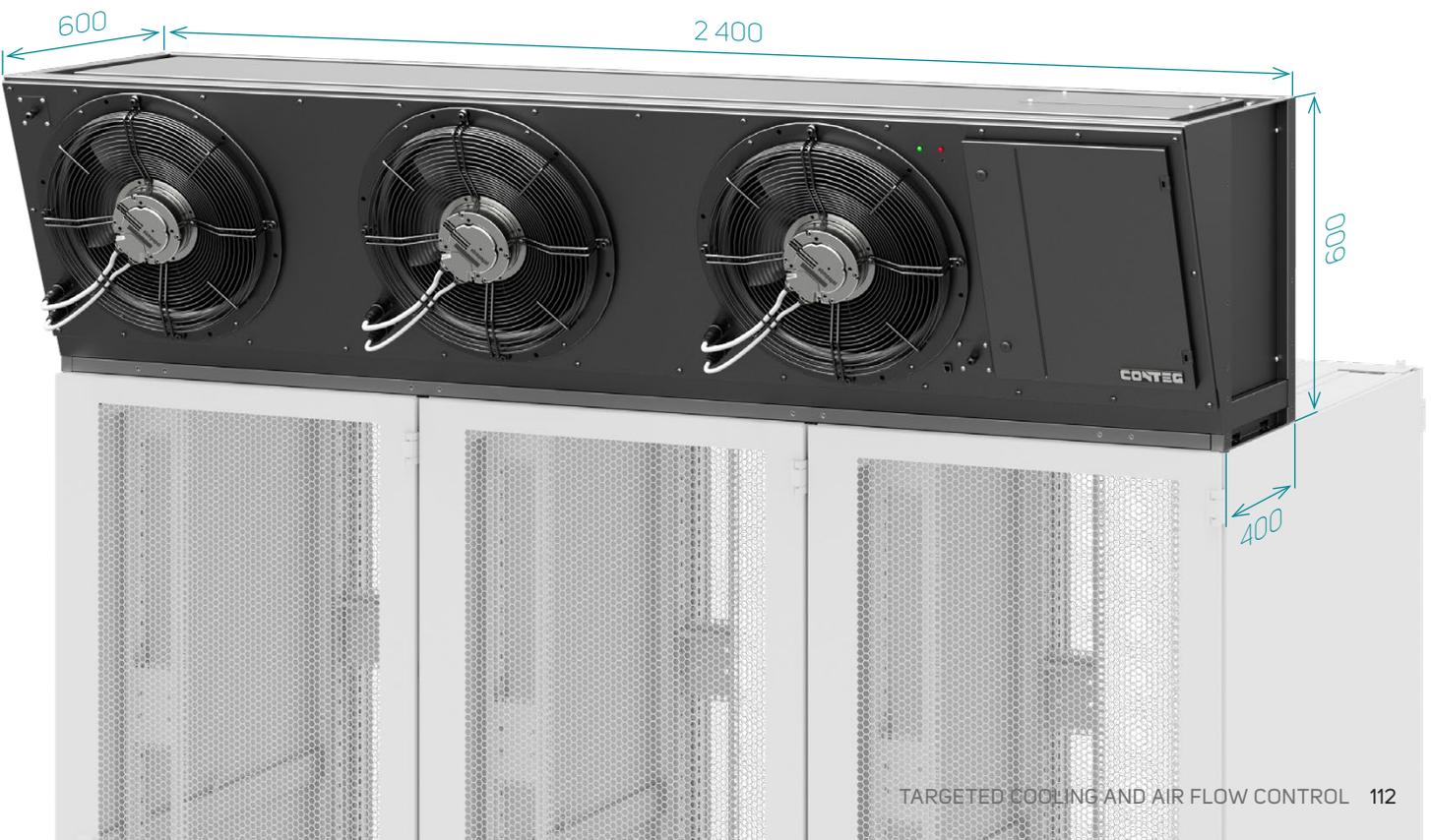
## CoolTop CW—technical parameters

		CoolTop2	CoolTop3
Indoor unit code	Unit	AC-TOP2-CW-240/60	AC-TOP3-CW-240/60
Connected outdoor unit		Chilled water system (Chiller)	
<b>Basic data</b>			
Cooling system	–	Chilled water	
Architecture	–	Open	Open
Nominal cooling capacity <sup>1</sup>	kW	37.0	49.2
Nominal net cooling capacity <sup>2</sup>	kW	36.3	48.1
Power supply	V/ph/Hz	230/1/50	
Running current	A	3.4	5.0
Maximum current	A	4.6	6.8
Nominal power consumption	W	710	1100
Nominal airflow <sup>3</sup>	m <sup>3</sup> /h	7 700	11 000
Number of fans	ks	2	3
Motor fan technology	–	EC	
Water flow	l/h	6 200	8 200
Filter class	–	G2 (+ droplet separator)	
<b>Dimensions</b>			
Height <sup>4</sup>	mm	600	
Width	mm	2 400	
Depth <sup>5</sup>	mm	400 (600)	
Weight <sup>6</sup>	kg	175	184
<b>Piping connection</b>			
Supply pipe diameter and type	–	6/4" female	
Return pipe diameter and type	–	6/4" female	

<sup>1</sup> Cooling capacity can be changed via electronic controller. Nominal cooling capacity is stated for air temperature of 35 °C in hot zone, without condensation (heat-exchanger's temperature above dew-point). Water temperature is 10/15 °C, clean filters. <sup>2</sup> Net cooling capacity (without heat from fans) is usable cooling capacity of entire system.

<sup>3</sup> Airflow is changed by control needs. <sup>4</sup> Without any base frame. <sup>5</sup> Bottom side length 400 mm; top side length 600 mm. <sup>6</sup> For weight with droplet separator, add 11 kg.

## CoolTop unit dimensions (in mm)



# COOLTOP DX COOLING UNITS



➤ **CoolTop DX** above-rack cooling units are specially designed for easy installation above IT racks, and are uniquely suitable for effective targeted cooling of server rooms and large data centers.

Indoor CoolTop DX unit is connected with outdoor condensing unit/units via refrigerant piping. CoolTop DX includes special heat exchanger with two separate refrigerant circuits.

In basic mode, one 19 kW or 24 kW cooling capacity outdoor unit can be connected to each CoolTop unit. If the cooling capacity needs to be increased, a second outdoor cooling unit can be added to increase the cooling capacity up to 38 kW or 48 kW.

CoolTop is the solution not only for the energy-conscious client but also for an immediate increase in cooling capacity in an existing space without the need for any structural modifications.

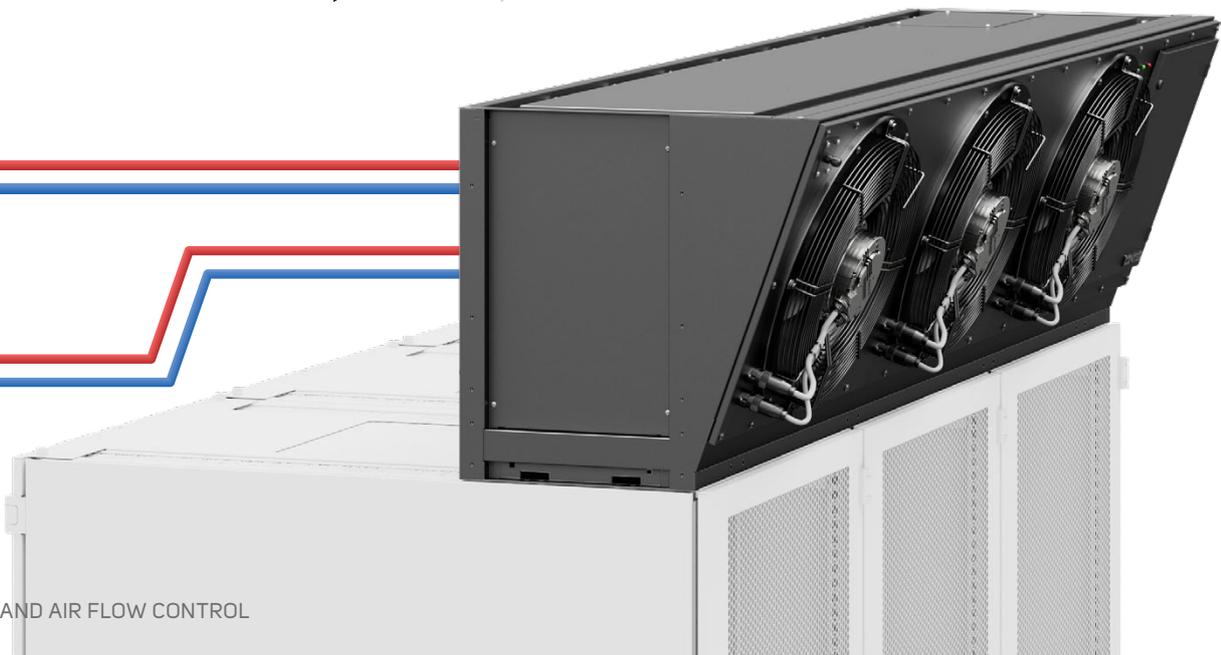
## MAIN ADVANTAGES

- Does not occupy floor area
- No water in data center
- Brings chilled air directly to cold aisle in front of server racks
- Vertical air loop, with local flexibility
- Extremely low power consumption due to large heat exchanger and EC axial fans
- Modern and user-friendly control system
- Allows flexibility of room arrangement
- Raised floor unnecessary for air distribution
- Installs easily in contained hot or cold aisle
- Perfectly compatible with CONTEG IT racks + wide range of accessories
- Dual-circuit heat exchanger
- Regulation between 30–100 % cooling capacity. If the CoolTop DX unit is connected to the CoolOut unit—the cooling capacity control is then starting from 11 %.
- Ready to be connected to 2 outdoor units
- Stainless steel double condensate tray located under the heat exchanger
- Controller with ModBus communication (contained in the controller)

## SUITABLE FOR

- Contained cold aisle
- Contained hot aisle
- Can be combined with CoolTeg Plus units in the same zone (aisle)

COLOR:  RAL 9005  RAL 7035



## CoolTop DX—technical parameters

		CoolTop2		CoolTop3	
Indoor unit code	Unit	AC-TOP2-DX-240/60		AC-TOP3-DX-240/60	
Connected outdoor unit code		AC-ODX-25-XXXXXXX or AC-PUHZ-ZRP-200Y One/Two outdoor units	AC-ODX-25-XXXXXXX or AC-PUHZ-ZRP-250Y One/Two outdoor units	AC-ODX-25-XXXXXXX or AC-PUHZ-ZRP-200Y One/Two outdoor units	AC-ODX-25-XXXXXXX or AC-PUHZ-ZRP-250Y One/Two outdoor units
<b>Basic data</b>					
Cooling system	–	System with direct expansion			
Architecture	–	Open		Open	
Nominal cooling capacity <sup>1</sup>	kW	26/52 <sup>8</sup> or 19.7/39.3	26/52 <sup>8</sup> or 22.8/42.5	26/52 <sup>8</sup> or 19.7/39.3	26/52 <sup>8</sup> or 22.8/45.6
Nominal net cooling capacity <sup>2</sup>	kW	25.1/50.2 <sup>8</sup> or 19.0/38.6	25.1/50.2 <sup>8</sup> or 22.1/41.8	25.1/50.2 <sup>8</sup> or 18.6/38.2	25.1/50.2 <sup>8</sup> or 21.7/44.5
Power supply	V/ph/Hz	230/1/50			
Running current	A	3.4		5.0	
Maximal current	A	4.6		6.8	
Nominal power consumption	W	710		1100	
Nominal airflow <sup>3</sup>	m <sup>3</sup> /h	7700		11 000	
Number of fans	ks	2		3	
Motor fan technology	–	EC			
Refrigerant type		R410A			
Filter class	–	G2 (+ droplet separator)			
<b>Dimensions</b>					
Height <sup>4</sup>	mm	600			
Width	mm	2 400			
Depth <sup>5</sup>	mm	400 (600)			
Weight <sup>6</sup>	kg	175		184	
<b>Piping connection</b>					
Supply pipe diameter and type <sup>7</sup>	mm	16			
Return pipe diameter and type <sup>7</sup>	mm	22			

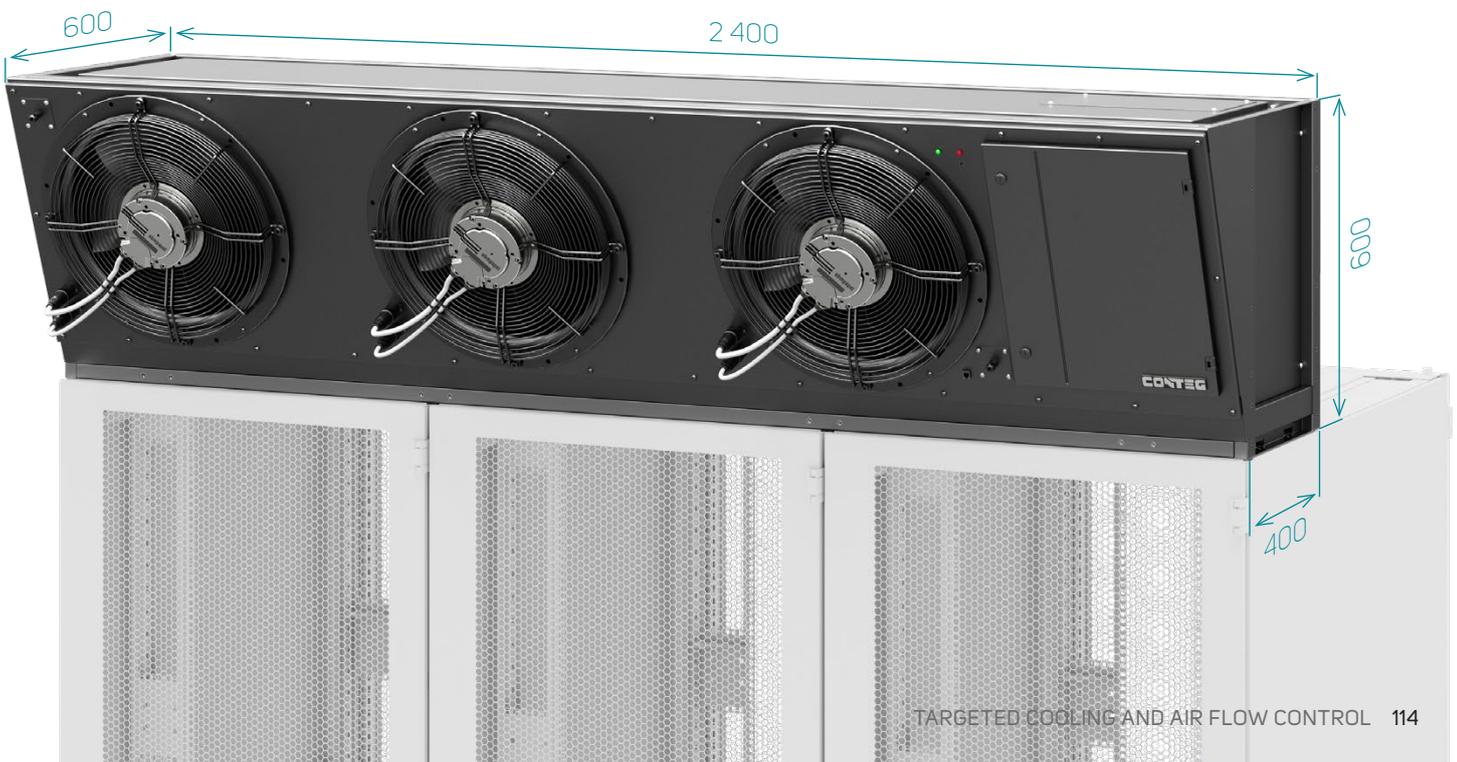
<sup>1</sup>Cooling capacity can be changed via electronic controller. Nominal cooling capacity is stated for air temperature of 35 °C in hot zone, without condensation (heat-exchanger's temperature above dew-point). Evaporation temperature 6 °C, clean filters.. <sup>2</sup> Net cooling capacity (without heat from fans) is usable cooling capacity of entire system.

<sup>3</sup> Airflow is changed by control needs.. <sup>4</sup> Without any base frame. <sup>5</sup> Bottom side length 400 mm; top side length 600 mm. <sup>6</sup> For weight with droplet separator, add 11 kg.

<sup>7</sup> Only connection diameter is mentioned. Please design the refrigerant piping according manual of outdoor condensing unit, depending on the length of the pipe.

<sup>8</sup> If using the AC-ODX-25-XXXXXXX outdoor unit.

## CoolTop unit dimensions (in mm)



# COOLOUT CONDENSING UNIT



CoolOut—front view



CoolOut—rear view

➤ The **CoolOut** outdoor condensing unit is specially designed for conducting heat out of data centers. The unit meets all the strict demands on precision, stability and service life required for data centers.

## MAIN ADVANTAGES

- Advanced communication and cooling regulation based on commands from the data center
- Very low consumption thanks to high-quality EC fans and active regulation of condensing pressure
- Inverter-controlled BLDC compressor
- Wide range of cooling power from 11 % upwards
- Versions for extreme ambient temperatures available
- Robust frame and housing made of high-quality corrosion-resistant materials
- Ability to communicate with a monitoring system (SNMP, Modbus TCP, Modbus RS485)
- Ability to monitor and control operating parameters through the indoor unit
- Simple to install and operate
- Option for remote servicing after connecting a PGDx service display
- Specially designed for precision cooling
- Linear electronic expansion valve

## SUITABLE FOR

- Wide range of ambient conditions
- Installations emphasizing economical and reliable operation
- Compatible with CONTEG's CoolTeg DXSmall, CoolTop DX and CoolSeven cooling units

## DESCRIPTION

- CoolOut is an outdoor condensing unit designed for precision compression cooling. The units are fitted with an inverter-controlled rotary DC compressor.
- Thanks to the use of hot gas bypass technology, the unit's cooling power can be adjusted from 11 % of total cooling power upwards regardless of outdoor conditions.
- The use of a specially designed condenser, EC fans and a system of dynamic control of condensing pressure allowed minimizing the power consumption and noise emissions of the cooling unit.
- The running of the unit and correct functioning of all its parts is overseen by a built-in regulator with special CONTEG software.
- The regulator also ensures communication with the indoor unit via Fieldbus protocol. Basic information about the running of the outdoor unit can be tracked through the indoor unit.
- The design of the condensing unit allows its mounting onto the floor or a wall.
- CoolOut units are highly user-friendly in their setup and operation. Initialization and operation is very simple.

AC-ODX-25-XXXXXXX

Operating conditions	°C	-20 to +47 °C
Operating conditions <sup>4</sup>	°C	-40 to +47 °C
Power regulation		Smooth 11-100%
Rated cooling power	kW	26
Power supply	V/ph/Hz	400/3/50-60
Operating current <sup>1</sup>	A	11.28
Maximum current	A	17
Rated input power <sup>1</sup>	kW	8.2
Compressor control		BLDC Inverter
Coolant regulation		Linear expansion valve
R410A coolant capacity <sup>2</sup>	kg	0
Acoustic pressure Lp(A) <sup>1</sup>	dBA	50
<b>Dimensions/weight</b>		
Width	mm	1400
Depth	mm	450
Height <sup>3</sup>	mm	1200
Weight	kg	130
<b>Piping connection</b>		
Fluid piping (diameter)	mm	12
Gas piping (diameter)	mm	22
Max. piping length	m	85
Max. difference in elevation	m	50

<sup>1</sup> Values at stabilized 80 % output. <sup>2</sup> Without coolant, filled in during installation. <sup>3</sup> Including the profile for mounting the condensing unit. <sup>4</sup> If fitted with winter-kit accessories. The values shown may vary depending on the current product innovation.



**Part number on request.**

Please contact our sales or technical team [www.conteg.com/contacts](http://www.conteg.com/contacts)

# COOLOUT CONDENSING UNIT ACCESSORIES

**DUAL POWER SUPPLY**

- Electrical distributor for two power supply branches.
- The device allows powering a unit from two separate power sources.

**RS485 BMS COMMUNICATION CARD**

- Optically insulated card allowing communication with a unit via Modbus RTU protocol.



**pCO WEB COMMUNICATION CARD**

- Allows further individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: web server, e-mail, FTP, SNMP, BACNet, ModBus TCP/IP and more.



# MITSUBISHI CONDENSING UNITS



➤ CoolTop DX cooling unit can be connected to up to 2 **outdoor condensing units**, which contain all of the control elements (compressor, expansion valve, frequency driver). The units are equipped with a scroll compressor that works with the R410A refrigerant.

## Technical parameters

	Unit	AC-PUHZ-ZRP200Y	AC-PUHZ-ZRP250Y
Nominal cooling capacity	kW	19.7	22.8
Power supply	V/ph/Hz	400/3/50	400/3/50
Operation current	A	7.77	8.28
Maximum current	A	19	21
Nominal power consumption	kW	5.46	8.3
Compressor control	–	Inverter	
Control valve	–	Linear expansion valve	
Refrigerant volume R410A <sup>1</sup>	kg	7.1	7.7
<b>Dimensions</b>			
Width	mm	1050	1050
Depth	mm	330	330
Height	mm	1338	1338
Weight	kg	135	144
<b>Piping connection</b>			
Supply pipe diameter (liquid) <sup>2</sup>	mm	10	10
Return pipe diameter (gas) <sup>2</sup>	mm	25	25
Max. pipe length	m	100	100
Max. height difference	m	30	30
Operation conditions	°C	from –15 up to +46	

<sup>1</sup>Outdoor units are pre-filled with the refrigerant R410A for piping length 30 m. <sup>2</sup>This datasheet considers connecting pipe dimensions only. Please follow outdoor unit's manual to design the proper diameters of refrigerant piping.

# CoolTop CW and CoolTop DX—ordering and shipping information

Configure the above-rack CoolTop cooling unit that meets your requirements. The ordering matrix below will help you create a Code. As soon as you have the Code, please contact your CONTEG products distributor.

## FOLLOW THE STEPS FOR DETERMINING THE CODE OF THE REQUIRED COOLTOP UNIT

**AC - 1. - 2. - 3. / 4. - 5. 6. 7. 8. 9. 10. 11. 12. 13.**

An example of a correct code:

**AC - TOP3 - CW - 240 / 60 - 0 R C 0 W P 0 0 0**

**Explanation of an example of a correct Code:** CoolTop3 above-rack cooling unit with three EC fans, chilled water, open architecture, width 2 400 mm, depth 400 mm and height 600 mm. Water rope detector; Condensate pump; Power supply 230V/1ph/50Hz; Communication card SNMP pCO WEB; Pressure control; 3-way valve.

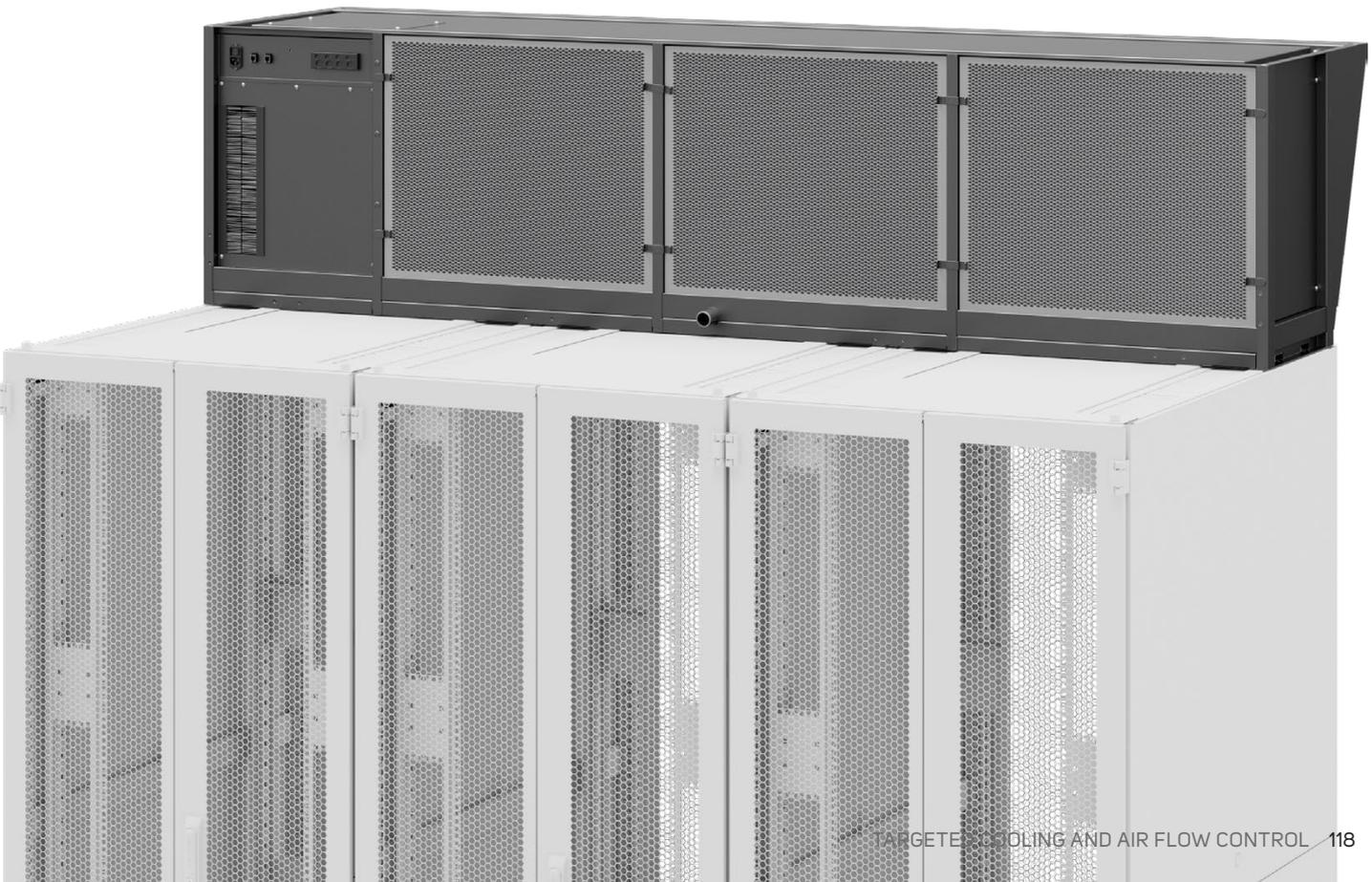
1. CoolTop COOLING SYSTEM		2. COOLING SYSTEM		3. WIDTH		4. HEIGHT		5. DROPLET SEPARATOR	
Code	Model	Code	Options	Code	Width (mm)	Code	Height (mm)	Code	Options
TOP2	With two fans	CW	Chilled water	240	2 400	60	600	0	Without
TOP3	With three fans	DX	Direct expansion					E	Droplet separator

6. SECURITY		7. CONDENSATE PUMP		8. POWER SUPPLY		9. COMMUNICATION		10. CONTROL	
Code	Options	Code	Options	Code	Options	Code	Options	Code	Options
0	Standard	0	Without	0	Standard 230V/1ph/50Hz	0	Without	0	Standard
S	Dew sensor	C	Condensate pump	A	Dual power supply	M	Modbus	P	Pressure control
R	Water rope detector					W	SNMP	H	Humidity sensor
A	Dew sensor + water rope detector							R	Pressure control + humidity sensor

11. CONTROL VALVES		12. OTHER ACCESSORIES		13. SPECIAL MODIFICATION	
Code	Options	Code	Options	Code	Options
0	Standard (3-way valve)	0	-	0	Standard
2	2-way valve	D	Display	2	Ready to be connected to 2 outdoor units (DX only)
Z	Without valves				



# BASIC ACCESSORIES

## TOUCH SCREEN

- For more user-friendly communication with the unit's regulator, you can use a 4.3" color touch screen.
- A single touch screen can control up to 16 cooling units. For quick communication and full functionality of BMS, we recommend using a maximum of 8 units.
- RS485 port and Ethernet port enable remote control and monitoring using various master systems. The USB is used primarily for quick and easy software updating and downloading of historical data.
- The touch terminal has a number of functions: connection to a customer network, remote control, ModBus communication and many more.
- The screen can be placed directly onto a CoolTeg unit, on the side of a rack or onto a wall in the data room.

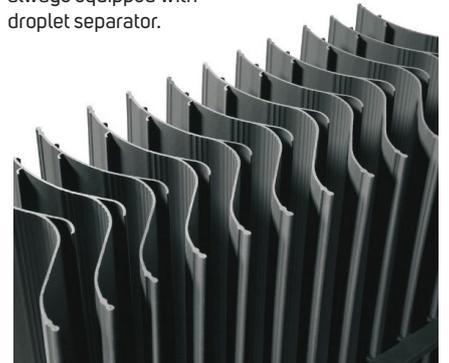


- Minimizes power consumption of the entire cooling system due to precise distribution of cooled air.



## WATER DROPLET SEPARATOR

- Horizontal construction located behind the heat exchanger in the direction of airflow.
- The separator prevents dripping of water droplets by the airflow into the fans.
- We recommend using the droplet separator if high relative humidity or low temperature of the chilled water is assumed, generally every time when there is a potential risk of condensation on the heat exchanger. CoolTop DX should be always equipped with droplet separator.



## CONDENSATE PUMP

- All CONTEG units can be connected to the sewerage system via gravity feed.
- If there is no sewerage connection in the room, the water can be conducted away using a condensate pump.
- Each unit includes a water detector that activates the pump, and a level sensor that turns off the unit in case of increased water levels.



## WATER ROPE DETECTOR

- Device for water detection. It is located at the top edge of condensate pan. If the water level reaches this level, the cooling unit goes to mode Emergency OFF. It is powered directly from the CoolTop controller.



## DEW SENSOR

- Dew sensor is placed on a heat exchanger and measures its surface temperature. If the temperature is lower than temperature of dew point, the controller triggers alarm, or switch the unit off.



## DUAL POWER SUPPLY

- Electrical PDU for two power branches. The device allows powering the unit from two independent sources.

## CONTROL BASED ON PRESSURE

- Each unit can control air flow rate (fan speed) based on differences in temperature between the hot and cool zones or based on pressure differences.
- Flow rate control based on pressure differences ensures that air is supplied to the area in front of the server at the exact same rate as that at which the servers draw the air in.
- Perfect environment for servers (no risk of server damage caused by over- or under-pressure).

## HANDRAIL (for moving)

- Special steel handrail designed for easy manipulation and placement of CoolTop units above racks.
- Supplied in a pair.
- Are connected with by screws from front and back side of the unit.

## pCO WEB COMMUNICATION CARD

- Accessory compatible with CoolTeg regulators.
- Enables additional individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: web server, e-mail, FTP, SNMP, BAC-Net, ModBus TCP/IP and more.



# COOLRAC ROOM COOLING SYSTEM



➤ **CoolRAC** units represent a family of precision cooling units specifically designed for easy integration into new and renovated data centers. These cooling units—with different cooling principles, sizes and outputs—are still the most widely used system for efficient targeted cooling from smaller server rooms to large data centers.

## MAIN ADVANTAGES

- Variable installation options for the unit with fan module and air outlet in the double floor or above the floor
- Option to equip the unit with one or two fans
- Very low energy consumption thanks to EC fans and control software
- User-friendly and modern control system
- Flexibility of spatial layout
- Option to place the unit outside the data center room and connect the unit to the air duct
- Wide range of accessories

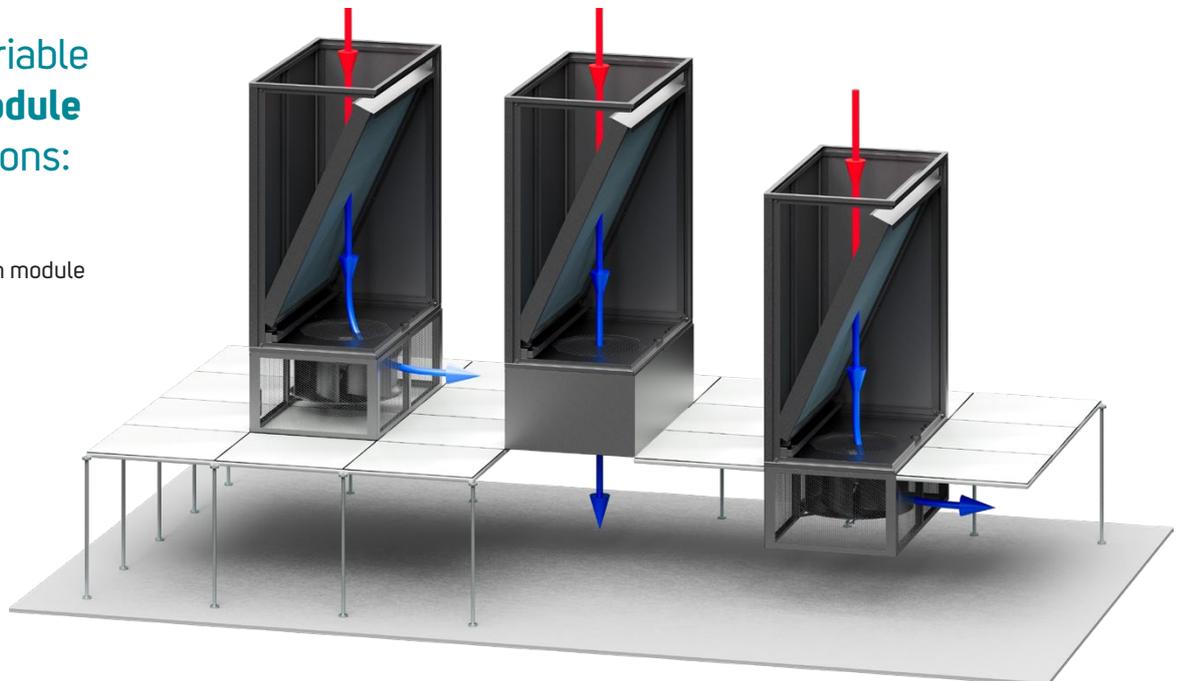
## SUITABLE FOR

- Open aisle
- Contained cold/hot aisle
- Data center of any size

COLOR:  RAL 9005  RAL 7035

## Examples of variable air outlet fan module installation options:

- Above the double floor
- Into the double floor
- With installation of the fan module inside the double floor



## DESCRIPTION

- Radial fans (with EC motors) for lowest energy consumption and precise control of airflow to servers
- High-efficiency copper-aluminium heat exchangers; also useful for Free-cooling systems
- Controller with special CONTEG software, based on long-term experience from worldwide data centers
- 4.3" color touch-screen display for user-friendly communication
- One display operating up to 16 units per group
- Independent unit control as well as CoolRAC group control functions for entire row of racks
- Wide range of settings adjust performance to specific project
- Communication through TCP/IP protocol (standard)
- Easy ModBUS and remote management from any computer connected to Internet (via integrated Webservice)
- Other protocols available
- Humidity sensors integrated into units
- Possibility of humidification and dehumidification mode integration in each unit
- Four temperature sensors per unit
- Three cooling systems:
  1. CW—chilled water system
  2. XC—direct expansion system with compressor (within CoolRAC unit)
  3. DF—hybrid Dual Fluid system

# COOLRAC CW



CoolRAC CW M



CoolRAC CW S

➤ **CoolRAC CW** water cooled room cooling units are designed to be connected to any system with a cold water source.

## MAIN ADVANTAGES

- Possibility to choose any type of chiller (water cooler) depending on the requirements of the environment
- Free-cooling system saves significant amount of power
- Virtually unlimited number of indoor units per hydraulic circuit
- Variable chiller types fulfill any requirements (outdoor noise level, extreme ambient temperatures, etc.)
- A wide range of different water temperatures and glycol mixtures can be used

COLOR:  RAL 9005  RAL 7035

CoolRAC CW					
Indoor unit code	Unit	AC-CRCW- -00S-04	AC-CRCW- -00S-06	AC-CRCW- -00M-08	AC-CRCW- -00M-10
Connected outdoor unit code		Chilled water system (Chiller)			
<b>Basic data</b>					
Cooling system	–	Chilled water			
Architecture	–	DownFlow/UnderFlow/FrontFlow			
Nominal cooling capacity <sup>1</sup>	kW	46,5	59	87,1	104,3
Nominal net cooling capacity <sup>2</sup>	kW	45	57,6	85,8	103
Power supply	V/f/Hz	400/3/50-60			
Running current	A	2,2		3,5	
Maximum current	A	3,2		4,5	
Fan consumption (maximum)	kW	1,4		1,3	
Nominal airflow <sup>3</sup>	m <sup>3</sup> /h	10 460	10 300	16 026	15 564
Number of fans	pcs	1		1 or 2	
Motor fan technology	–	EC			
Water flow	l/h	6 640	8 430	14 184	17 990
Filter class	–	G4			
<b>Dimensions</b>					
Height	mm	2 025			
Width	mm	714		1 353	
Depth	mm	763			
Weight	kg	200	210	290	295
<b>Piping connection</b>					
Supply pipe diameter and type	–	5/4" female thread		6/4" female thread	
Return pipe diameter and type	–	5/4" female thread		6/4" female thread	

<sup>1</sup> Cooling capacity is changed by controller; nominal cooling capacity is calculated at return hot air temperature of 35 °C without condensation (heat exchanger's temperature above dew-point), chilled water temp. 6/12 °C, clean filters.

<sup>2</sup> Net cooling capacity is the cooling capacity minus fan heat load—the actual unit cooling capacity available to IT equipment.

<sup>3</sup> Airflow is changed by the controller; nominal airflow matches nominal cooling capacity.

# COOLRAC XC



CoolRAC XC M



CoolRAC XC S

➤ **CoolRAC XC** room cooling units are based on the direct expansion principle. A compressor is integrated into the indoor unit, which is connected to its outdoor condenser.

## MAIN ADVANTAGES

- Cooling capacity up to 45 kW
- Operating temperature range –40 up to 55 °C
- Remarkable energy efficiency and stepless cooling capacity control
- No water in data center
- Compressor safely positioned inside the data center
- Low level of outdoor unit's noise
- R410A refrigerant

COLOR:  RAL 9005  RAL 7035

CoolRAC XC			
Indoor unit code	Unit	AC-CRXC-00S	AC-CRXC-00M
Connected outdoor unit code		AC-CONDx-xx-xx	
<b>Basic data</b>			
Cooling system	–	Direct expansion	
Architecture	–	DownFloor/UnderFloor/FrontFloor	
Nominal cooling capacity *	kW	21,5	45,8
Nominal net cooling capacity	kW	20,1	45,2
Power supply	V/f/Hz	400/3/50-60	
Running current *	A	13,5	18,1
Maximum current	A	21	25,9
Fan power consumption *	kW	1,4	0,63
Compressor power consumption *	kW	7,2	11,7
Nominal airflow *	m <sup>3</sup> /h	5 000	10 300
Maximum air flow	m <sup>3</sup> /h	10 400	13 040
Number of radial fans	pcs	1	1 or 2
Motor fan technology	–	EC	
Refrigerant type	–	R410A	
Filter class	–	G4	
<b>Dimensions</b>			
Height	mm	2 025	
Width	mm	714	1353
Depth	mm	763	
Weight	kg	290	330
<b>Piping connection</b>			
Piping diameter—liquid line	mm	12	16
Piping diameter—gas line	mm	16	22

Outlet air parameters (nominal conditions): 35 °C at 30 % RH. Condensing temperature 45 °C.

\* Values under nominal conditions.

FOR COOLRAC XC COOLING UNITS

# OUTDOOR AIR-COOLED CONDENSERS



➤ Outdoor air-cooled condensers dissipate the data center heat-load to the ambient. Indoor unit is designed so it's able to cooperate with the widest field of condensers. It allows customer to select the type which perfectly fits the requirements.

Recommended **condensers for CoolRAC XC** are listed in the table below. They are sorted according to the maximum ambient temperature.

AIR-COOLED FINS AND TUBES												
Indoor unit	Max. temp.	CONTEG P/N	Sound pressure level		Number of fans	Power supply			Length (mm)	Width (mm)	Height (mm)	Weight (kg)
			Lw(A)	Lp(A) 10m		ph/V/Hz	A	kW				
CoolRAC XC	35 °C	AC-COND2-03-35	87 dB	56 dB	2	3/400/50-60	4,2	2,59	1884	888	957	158
CoolRAC XC	45 °C	AC-COND2-02-45	93 dB	61 dB	2	3/400/50-60	6,2	4,02	2484	1088	961	236
CoolRAC XC	55 °C	AC-COND2-03-55	96 dB	64 dB	2	3/400/50-60	8,6	5,77	2484	1088	961	267

# COOLRAC DF



CoolRAC DF M



CoolRAC DF S

➤ **CoolRAC DF** room cooling units combine the advantages of CW and XC systems—free-cooling for low and medium outdoor temperatures and direct expansion cooling for use during high outdoor temperatures. The system thus reaches optimal minimum operating costs without the need to compromise.

## MAIN ADVANTAGES

Free-cooling for the majority of the year—the unit has the most efficient heat exchanger in its category.

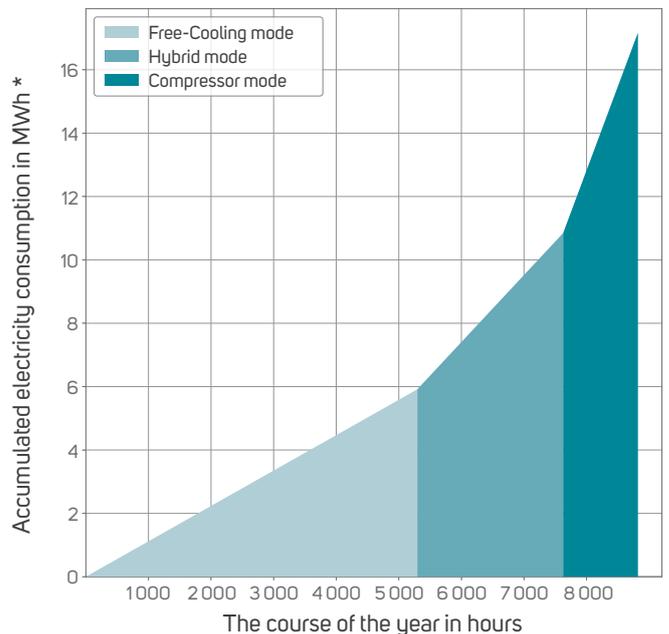
- Smart control system uses free-cooling to pre-cool the air even during high outdoor temperatures—energy consumption thus remains minimal.
- Investment in the unit returns within a few years thanks to savings on operating costs (compared to DX or XC systems).
- Since the main heat carrier is water, waste heat can be reused for heating or other purposes to further reduce costs.
- The water circuit and compressor circuit can be connected to two separate water sources—the unit can thus be fully redundant.

## DESCRIPTION

- 2-in-1—small and efficient cooling unit that smartly combines water-based and direct expansion-based cooling.
- Electronically controlled expansion valve—maximum cooling efficiency for any conditions
- Inverter-driven compressor—minimum energy consumption for all cooling capacities.
- Fans with EC technology enable efficient and smooth control of air flow rate.
- Smart control system ensures the set air parameters are reached precisely and with minimum consumption; immediately informs you of any issues.
- Operating range from  $-40$  to  $+40$  °C (upper temperature limit depends on the size of the outdoor heat exchanger). On request, can be supplied with accessories that allow operating the unit at as low as  $-55$  °C.
- R410A refrigerant

COLOR:  RAL 9005  RAL 7035

The DF hybrid unit runs up to 60 % of the year in Free-Cooling mode, 26 % of the year in Hybrid mode and **only 14 % of the year in Compressor mode.**



\* The unit's consumption is dependent on its location, or rather, the annual course of temperature at the location. The unit's consumption over the course of the year and use ratio of the individual cooling modes were calculated using nominal values and the annual course of temperature in Prague.

### CoolRAC DF (HYBRID SYSTEM)

Indoor unit code		AC-CRDF-00S	AC-CRDF-00M
Connected outdoor unit		Dry cooler (water cooling using ambient air)	
<b>Basic data</b>			
Cooling system	–	Hybrid free-cooling	
Architecture	–	DownFloor/UnderFloor/FrontFloor	
Nominal cooling capacity *	kW	25	45,8 (44,5 **)
Nominal net cooling capacity	kW	23,6	45,1
Power supply	V/Ph/Hz	400/3/50-60	
Running current *	A	13,5	18,1
Maximum current	A	21	25,9
Fan power consumption *	kW	1,4	0,7
Compressor power consumption *	kW	7,2	11,2
Nominal air flow rate *	m <sup>3</sup> /h	6 000	10 300
Maximum air flow rate	m <sup>3</sup> /h	10 400	12 320
Water flow rate *	m <sup>3</sup> /h	5,5 (5,3 **)	4,3 (4,2 **)
Total pressure loss *	kPa	20 (23 **)	40 (45 **)
Number of radial fans	pcs	1	1 or 2
Fan motor technology	–	EC	
Refrigerant type	–	R410A	
Refrigerant filling	kg		3
Filter class	–	G4	
<b>Dimensions</b>			
Height	mm	2025	
Width	mm	714	1353
Depth	mm	763	
Weight	kg	300	376
<b>Connection dimension</b>			
Supply pipe diameter and type	–	1" male thread	
Return pipe diameter and type	–	1" male thread	

Outlet air parameters (nominal conditions): 35 °C at 30 % RH. Condensing temperature 45 °C; water temperature 11/20 °C; glycol content: 0 %.

\* Values at nominal conditions.

\*\* Compressor circuit (water circuit).

# FOLLOW THE STEPS FOR DETERMINING THE CODE OF THE REQUIRED COOLRAC UNIT

AC - CR 1. - 2. 3. 4. - 5. - 6. 7. - 8. 9. 10. 11. 12. 13. 14. 15. 16.

An example of a correct code:

AC - CR DF - 0 0 M - 04 - 1 D - 1 3 A 2 0 0 2 0 3

**Explanation of an example of a correct Code:** CoolRAC cooling unit based on the principle of dual-fluid technology (with integrated indirect free-cooling function), medium-sized W × H × D = 1 353 × 2 025 × 790 mm. Cooling capacity 45 kW. With perforated bottom cover for air distribution into the double floor. With integrated 4.3" LCD touch screen. Integrated humidifier 3 kg/h steam. Powerful condensate pump. Dual power supply. pCO web communication card for SNMP communication. With two fans. Heating coils for electric reheating of air up to 1200 W.

1. UNIT TYPE	
Code	Model
CW	Chilled water
XC	Direct expansion with an integrated compressor
DF	Free-cooling water cooling with an integrated compressor

2. EMPTY POSITION	
Code	Options
0	

3. EMPTY POSITION	
Code	Options
0	

4. UNIT DIMENSIONS	
Code	W × H × D (mm)
S	Small. 714 × 2 025 × 763mm
M	Medium. 1 353 × 2 025 × 790 mm

5. COOLING CAPACITY	
Code	Options
04	45 kW
06	60 kW
08	80 kW
10	100 kW

6. AIR DISTRIBUTION	
Code	Options
0	All perforated
1	Perforated bottom
2	Perforated front
3	Perforated front and sides
4	Perforated front and one side
5	No perforation (for air-outlet installation)

7. DISPLAY POSITION	
Code	Options
D	Display in the door
W	Without display

8. HUMIDIFIER	
Code	Options
0	No humidifier
1	Standard humidifier
2	Humidifier for low conductivity
P	Preparation for humidifier

9. CONDENSATE	
Code	Options
0	Standard drain
1	MiniBlue
2	Flood rope
3	MegaBlue
A	MiniBlue + flood rope
B	MegaBlue + flood rope

10. POWER SUPPLY	
Code	Options
0	Standard
A	Dual

11. COMMUNICATION	
Code	Options
0	Standard
1	Modbus RS485 card
2	pCO WEB card

12. REGULATION	
Code	Options
0	Standard

13. EMPTY POSITION	
Code	Options
0	

14. FANS	
Code	Options
1	One fan
2	Two fans

15. SPECIAL MODIFICATIONS	
Code	Options
	Logo, color etc

16. ELECTRIC REHEATING OF AIR	
Code	Options
0	Without
1	600 W
2	900 W
3	1200 W

# BASIC ACCESSORIES

## TOUCH SCREEN

- For more user-friendly communication with the unit's regulator, you can use a 4.3" color touch screen.
- A single touch screen can control up to 16 cooling units. For quick communication and full functionality of BMS, we recommend using a maximum of 8 units.
- RS485 port and Ethernet port enable remote control and monitoring using various master systems. The USB is used primarily for quick and easy software updating and downloading of historical data.
- The touch terminal has a number of functions: connection to a customer network, remote control, ModBus communication and many more.
- The screen can be placed directly onto a CoolRAC unit, on the side of a rack or onto a wall in the data room.



## DUAL POWER SUPPLY

- Electrical PDU for two power branches. The device allows powering the unit from two independent sources.

## STEAM HUMIDIFIER

- The steam humidifier maintains the set relative humidity of the air in the data center.
- The humidifier can output 3 kg of steam per hour.
- The steam humidifier of the CoolRAC unit is powered separately.
- You can choose from 2 boiling vessels depending on water hardness.



## pCO WEB COMMUNICATION CARD

- Accessory compatible with CoolRAC regulators.
- Enables additional individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: web server, e-mail, FTP, SNMP, BAC-Net, ModBus TCP/IP and more.



## CONDENSATE PUMP

- All CONTEG units can be connected to the sewerage system via gravity feed.
- If there is no sewerage connection in the room, the water can be conducted away using a condensate pump.
- Each unit includes a water detector that activates the pump, and a level sensor that turns off the unit in case of increased water levels.



# VENTILATION UNITS



DP-VEC/VEN-09



DP-VEC/VEN-06



DP-VEC/VEN-03

Once installed within CONTEG racks, IT components require sufficient airflow to help them remain cool and functioning properly. When sufficiently cool environments cannot be sustained, they require assistance: installing CONTEG ventilation units.

We offer different styles, sizes, types and accessories—we've even developed DP-VEC units with highly efficient EC fans, to reduce operation costs.

## EC motors technology

Efficient, ecological and economical! New high-quality fans (produced in Europe by the reputable Ebm-papst) feature electronically commuted (or EC) synchronous motors, which offer very low power consumption in comparison to standard AC motors. In fact, power consumption of our new DP-VEC ventilation unit is seven times lower than the standard DP-VEN, which has equal airflow. Additionally, our DP-VEC provides up to 60% more airflow (with an equal number of fans and required air pressure) than DP-VEN.

Code	Airflow (m³/h)	Max. rated current (A)	Power consumption (W)	Annual power consumption <sup>1</sup> (kWh/year)	Possible heat removal <sup>2</sup> (kW)	Package
<b>Standard AC fans</b> Specific fan power (SFP) = 611 W/(m³/s)						
DP-VEN-02	224	0.180	38	333	0.38	1 pc
DP-VEN-03	336	0.270	57	499	0.57	1 pc
DP-VEN-04	448	0.360	76	666	0.76	1 pc
DP-VEN-06	672	0.540	114	999	1.14	1 pc
DP-VEN-09	1008	0.810	171	1498	1.71	1 pc
<b>High-end EC fans</b> Specific fan power (SFP) = 88 W/(m³/s)						
DP-VEC-03	540	0.057	13.2	116	0.92	1 pc
DP-VEC-06	1080	0.114	26.4	231	1.84	1 pc
DP-VEC-09	1620	0.171	39.6	347	2.75	1 pc

<sup>1</sup> For non-stop operation.

<sup>2</sup> If temperature difference between intake and exhaust air from the rack is  $\Delta t = 5$  K.

Ventilation unit type *	Connecting kit for installation in top or bottom frame of free-standing racks							
	Ri7				RF1			
	Depth of 600, 800 or 1200 mm		Depth of 1000 mm		Depth of 600 or 800 mm		Depth of 1000 or 1200 mm	
	Without filter	With filter	Without filter	With filter	Without filter	With filter	Without filter	With filter
DP-VEx-02, 03	DP-VER-03	DP-VER-03F	DP-VER-031	DP-VER-031F	DP-VER-03	DP-VER-03F	DP-VER-031	DP-VER-031F
DP-VEx-04, 06	DP-VER-06	DP-VER-06F	DP-VER-061	DP-VER-061F	DP-VER-06	DP-VER-06F	DP-VER-061	DP-VER-061F
DP-VEx-09	-	-	DP-VER-091	DP-VER-091F			DP-VER-091	DP-VER-091F

\* Replace x with N or C.

## DESCRIPTION

- Used to force airflow through a rack to assist with cooling
- 2 to 9 ventilators
- Installation variables:
  - In 19" extrusions—horizontally
  - In top or bottom frame of a free-standing rack
- Connecting kit for ventilation unit needed when installing in top or bottom frame
- Temperature range: from -10 °C up to +55 °C
- Thermostat ranges from 0–60 °C included (optionally without thermostat)
- Voltage range 230 V / 50–60 Hz (48 V DC optional)
- Protection: podle EN 60529, IP 20
- Color: powder-coated RAL 9005
- Standard solution with AC fans: DP-VEN-XX
- High-end version with most efficient EC fans: DP-VEC-XX
- Package includes:
  - Ventilation unit with 19" brackets
  - Thermostat
  - Power supply cable
  - DP-MO-01 installation set

## FANS



DP-VEN-01

- Forces air through racks
- Two versions:
  - with thermostat and metal chassis: DP-VEN-01 (for -VC openings)
  - without thermostat and metal chassis: DP-VE-01 (for -VH or -TH openings)
- Can be installed either on side or top of wall-mounting rack:
  - Special perforation needed—ordering code to be extended:
    - a) VH for 2× side perforation or TH for 2× top cover perforation; both for DP-VE-01 only
    - b) VC for 2× center-oriented holes for DP-VEN-01
  - In top or bottom frame of distribution rack, requires perforated gland plate DP-VE-ROV2 or DP-VE-ROV4
- Package includes:
  - DP-VE-01: Fan with grid, power cable, 8× screws, 8× nuts
  - DP-VEN-01: Fan in-house, power cable, thermostat, 4× screws, 4× nuts

Code	Airflow (m <sup>3</sup> /h)	Max. rated current (A)	Power consumption (W)	Annual power consumption <sup>1</sup> (kWh/year)	Possible heat removal <sup>2</sup> (kW)	Package
<b>Standard AC fans</b>						
Specific fan power (SFP) = 611 W/(m <sup>3</sup> /s)						
DP-VE-01	112	0.09	19	166	0.19	1 ks
DP-VEN-01	112	0.09	19	166	0.19	1 ks

<sup>1</sup> For non-stop operation.

<sup>2</sup> If temperature difference between intake and exhaust air from the rack is  $\Delta t = 5$  K.

## LITE VENTILATION UNIT



DP-VEL-04

- Forces air through racks to assist with cooling
- Two or four AC fans
- Can be installed in either top or bottom frame of free-standing rack
- Connecting kit for ventilation unit (included)
- Temperature range: -10 °C to 55 °C
- Thermostat range (if included): 0 °C to 60 °C
- Voltage range: 230 V / 50–60 Hz
- Protection category: EN 60529, IP20
- Color: powder-coated RAL 9005
- Package includes:
  - Ventilation unit with mounting plate
  - Thermostat (if part of model)
  - Power supply cable
  - Installation set: 4× screws, 4× nuts

Code	Description	Package
DP-VEL-02	Ventilation unit, 2 fans, with thermostat, for top or bottom installation into Ri7 racks with depths of 600, 800 and 1 200 mm	1 pc
DP-VEL-02B	Ventilation unit, 2 fans, without thermostat, for top or bottom installation into Ri7 racks with depths of 600, 800 and 1 200 mm	1 pc
DP-VEL-02/100	Ventilation unit, 2 fans, with thermostat, for top or bottom installation into 1 000 mm deep Ri7 racks	1 pc
DP-VEL-02B/100	Ventilation unit, 2 fans, without thermostat, for top or bottom installation into 1 000 mm deep Ri7 racks	1 pc
DP-VEL-04	Ventilation unit, 4 fans, with thermostat, for top or bottom installation into Ri7 racks with depths of 600, 800 and 1 200 mm	1 pc
DP-VEL-04B	Ventilation unit, 4 fans, without thermostat, for top or bottom installation into Ri7 racks with depths of 600, 800 and 1 200 mm	1 pc
DP-VEL-04/100	Ventilation unit, 4 fans, with thermostat, for top or bottom installation into 1 000 mm deep Ri7 racks	1 pc
DP-VEL-04B/100	Ventilation unit, 4 fans, without thermostat, for top or bottom installation into 1 000 mm deep Ri7 racks	1 pc

Code	Airflow (m <sup>3</sup> /h)	Max. rated current (A)	Power consumption (W)	Annual power consumption <sup>1</sup> (kWh/year)	Possible heat removal <sup>2</sup> (kW)
DP-VEL-02	224	0,180	38	333	0,38
DP-VEL-04	448	0,360	76	666	0,76

<sup>1</sup> For non-stop operation.

<sup>2</sup> If temperature difference between intake and exhaust air from the rack is  $\Delta t = 5$  K.

# CONTAINED AISLE

➤ **Contained aisle** is the basic solution concept for the mechanical separation of hot and cold air in data centers, leading to higher performance and energy efficiency. The proper separation of these two zones helps achieve lower temperatures for computers and higher temperatures for cooling systems. For proper function, it is possible to combine **sliding doors** or **blind panels** with different types of **roof panels** and use them to build a contained cold or hot aisle.

Contained aisles can be freely combined with various sources of cool air, such as:

- in-row cooling units **CoolTeg Plus** (CW, DX, XC, DF)
- above-rack cooling units **CoolTop** (CW, DX)
- cooling through the floor **CRAC**

## MAIN ADVANTAGES

- Complete and fully configurable solution
- Wide range of build options
- Easy installation options



# SLIDING DOORS AND BLIND PANELS FOR CONTAINED AISLES

The sliding door is used to close the aisle and allow access the operator. There are two door versions and two types of blind panels according to the width of the aisle.



Double-wing door  
CA-SDU-120-MS



Single-wing door  
CA-SDU-100-MS

Code	Description
CA-SDU-120-MS	Double-wing sliding door universal for aisle width 1200 to 1800 mm (1200 mm is recommended), for two rack rows installation, height of the racks from 42 to 48U (racks with or without plinth), RAL 7035 or RAL 9005; Mechanical, double door opening system
CA-SDU-100-MS	Single-wing universal sliding door for aisle width 1000 to 1200 mm (1000 mm is recommended), for wall-mount or two rack rows installation, height of the racks from 42 to 48U (racks with or without plinth), RAL 7035 or RAL 9005; Mechanical single door opening system

The doors are compatible with iSEVEN Server racks of height 42, 45 and 48U. For combinations with RF1 racks, the correct adapter must be selected.

Code	Description
CA-SDU-AD-W100-47	Adapter for covering the opening above the CA-SDU door 1000 mm wide, for RF1, 47U
CA-SDU-AD-W120-47	Adapter for covering the opening above the CA-SDU door 1200 mm wide, for RF1, 47U
CA-SDU-AD-W180-47	Adapter for covering the opening above the CA-SDU door 1800 mm wide, for RF1, 47U
CA-SDU-AD-W100-52	Adapter for covering the opening above the CA-SDU door 1000 mm wide, for RF1, 52U
CA-SDU-AD-W120-52	Adapter for covering the opening above the CA-SDU door 1200 mm wide, for RF1, 52U
CA-SDU-AD-W180-52	Adapter for covering the opening above the CA-SDU door 1800 mm wide, for RF1, 52U
CA-SDU-AD-RF1-42	Set of adapters for fixing CA-SDU doors to RF1 racks, height 42U
CA-SDU-AD-RF1-47	Set of adapters for fixing CA-SDU doors to RF1 racks, height 47U
CA-SDU-AD-RF1-52	Set of adapters for fixing CA-SDU doors to RF1 racks, height 52U

The double-wing door is basically mechanical; it is possible to fit it with an extension for more efficient operation.

Code	Description
CA-SDU-120-UPG-DS	Upgrade kit for modification of sliding door opening system from Mechanical to Dual Synchro door system
CA-SDU-120-UPG-SC	Upgrade kit for modification of sliding door opening system from Mechanical to Dual Synchro door system with self-closing
CA-SDU-120-UPG-AS	Upgrade kit for modification of sliding door opening system from Mechanical to Automatic door opening system
CA-SDU-120-UPG-AS-FL	Upgrade kit for modification of sliding door opening system from Mechanical to Automatic door opening system—with full logic

A blanking panel can be chosen instead of a door.



Blanking panel CA-SBU-120-RF1

Code	Description
CA-SBU-120-RF1	Universal blank door section to close the aisle containment width 1000 and 1200 mm, compatible with RF1
CA-SBU-180-RF1	Universal blank door section to close the aisle containment width 1800 mm, compatible with RF1
CA-SBU-120	Universal blank door section to close the aisle containment width 1000 and 1200 mm
CA-SBU-180	Universal blank door section to close the aisle containment width 1800 mm

## ROOF PANELS FOR CONTAINED AISLES

The closing of the aisle can be done at the height of the racks, in combination with **CoolTop** units or possibly closed in the ceiling. The load-bearing part of the roof consists of these load-bearing elements, which are combined with the polycarbonate panel variants listed below:



Roof panel CA-RS-120/60-NR

- The package contains: 2x side panel, 1x longitudinal panel according to the width of the aisle.

Code	Aisle width <sup>1</sup> (mm)	Width of panels (mm)
CA-RS-120/40-NR	1200	400
CA-RS-120/60-NR	1200	600
CA-RS-120/80-NR	1200	800
CA-RS-120/90-NR	1200	900 <sup>2</sup>
CA-RS-120/110-NR	1200	1100 <sup>2</sup>

<sup>1</sup> The aisle width can be 1000 or 1800 mm.

<sup>2</sup> Suitable for the combination of a rack and a CoolTeg Plus unit with a width of 300 mm.

## Variants of ceiling panels:

### Full polycarbonate

- Material thickness: 6 mm
- Light transmission: 88 %
- Fire resistance according to EN 13501-1: B-s2, d0

Code	Aisle width <sup>1</sup> (mm)	Width of panels (mm)
CA-RS-120/40-C	1200	400
CA-RS-120/60-C	1200	600
CA-RS-120/80-C	1200	800
CA-RS-120/90-C	1200	900
CA-RS-120/110-C	1200	1100

<sup>1</sup> The aisle width can be 1000 or 1800 mm.

### Hollow polycarbonate

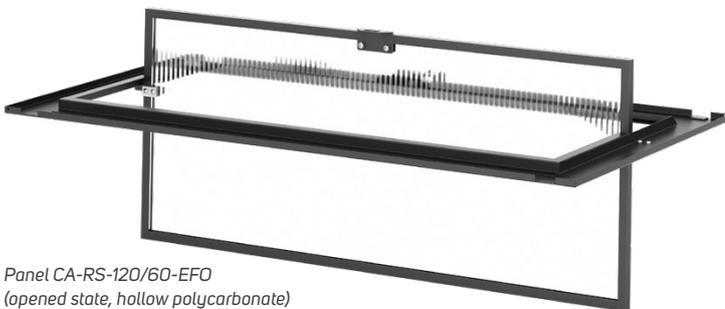
- Material thickness: 6 mm
- Light transmission: 82 %
- Fire resistance according to EN 13501-1: B-s1, d0

Code	Aisle width <sup>1</sup> (mm)	Width of panels (mm)
CA-RS-120/40-M	1200	400
CA-RS-120/60-M	1200	600
CA-RS-120/80-M	1200	800
CA-RS-120/90-M	1200	900
CA-RS-120/110-M	1200	1100

<sup>1</sup> The aisle width can be 1000 or 1800 mm.

## ROOF PANEL WITH ELECTRONIC CONTROL

The closing of the aisle can be done at the height of the racks, in combination with **CoolTop** units or possibly closed in the ceiling. The load-bearing part of the roof consists of these load-bearing elements, which are combined with the polycarbonate panel variants listed above:



Panel CA-RS-120/60-EFO  
(opened state, hollow polycarbonate)

- The panel is used to open the roof in the event of a fire for ventilation and to allow fire extinguishers to enter the aisle area.
- The opening of the panel is ensured by an electronic lock and works on the principle of gravity.
- The lock can be connected to the RAMOS system with smoke sensors or to the object's FDAS (Fire Detection and fire Alarm Systems) or BMS.
- Power supply for the lock is not included in the delivery.
- Technical parameters of the lock:
  - Voltage: 12 VDC
  - Max. current: 1 A
  - Cable length: 1 m
  - Operating current: 200 mA
  - Input control current: 25 mA

Code	Aisle width (mm)	Width of panels (mm)
CA-RS-120/60-EFO	1200	600

## ROOF SOLUTION IN COMBINATION WITH COOLTOP UNITS— COLD AISLE

In the case of a combination of racks with above-rack **CoolTop** cooling units for a contained cold aisle, sliding doors and roof panels are used as in the case of a contained aisle, and in addition, it is necessary to fill the space above the sliding doors and possibly above the racks where CoolTop units are not installed.

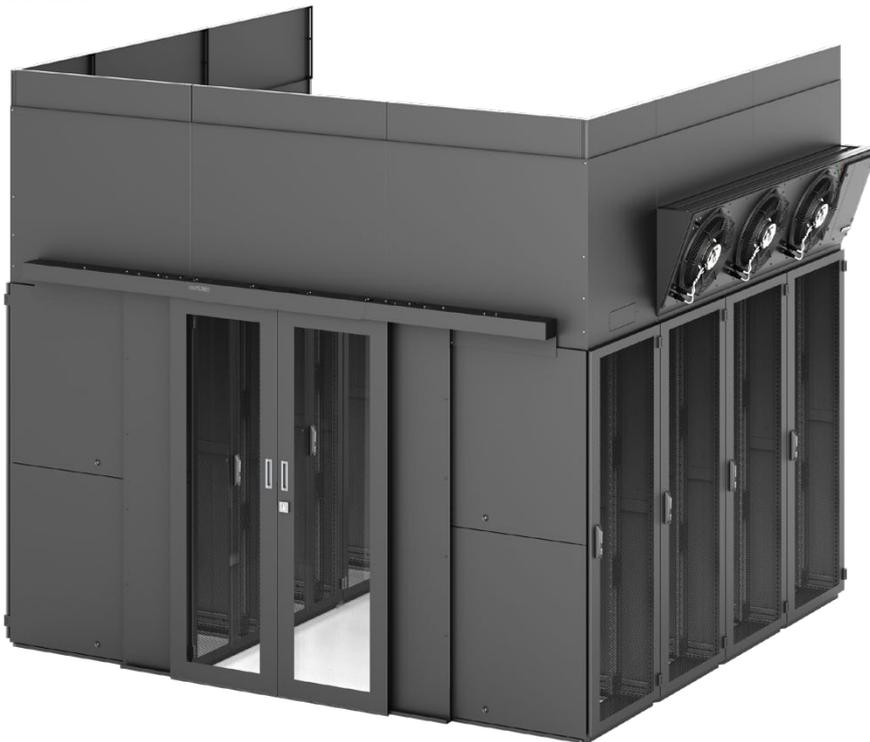


CA-SDU-AD-120-CTP + CA-RS-AD/80-CTP

Code	Description
CA-SDU-AD-120-CTP	Adapter above the door section for aisle width 1 200 mm for CoolTop installation
CA-RS-AD/60-CTP	Vertical blanking panel for aisle with CoolTop units above rack width 600 mm
CA-RS-AD/80-CTP	Vertical blanking panel for aisle with CoolTop units above rack width 800 mm

## ROOF SOLUTION IN COMBINATION WITH COOLTOP UNITS— HOT AISLE

In the case of a combination of racks with above-rack **CoolTop** cooling units for a contained hot aisle, the solution is to enclose the hot zone in the ceiling. Sliding doors and roof panels are used as in the case of a contained alley, and in addition, it is necessary to fill the space above the sliding doors and possibly above the racks where CoolTop units are not installed. Available panels with a height of 1 112 to 1 312 mm above the height of the rack.



Code	Description
CA-RS-CHA/100-SDU-S3	Adapter over the 1 000 mm door section when installing CoolTop units for chimney aisle *
CA-RS-CHA/120-SDU-S3	Adapter above the 1 200 mm door section when installing CoolTop units for chimney aisle *
CA-RS-CHA/40-S3	Covering panel for chimney aisle with CoolTop units above the rack, width 400 mm, size S3 *
CA-RS-CHA/60-S3	Covering panel for chimney aisle with CoolTop units above the 600 mm width rack, size S3 *
CA-RS-CHA/80-S3	Covering panel for chimney aisle with CoolTop units above the 800 mm width rack, size S3 *
CA-RS-CHA/100-S3	Covering panel for chimney aisle with CoolTop units above the 1 000 mm depth rack, size S3 *
CA-RS-CHA/120-R-S3	Covering panel for chimney aisle with CoolTop units above the 1 200 mm depth rack, right position, size S3 *
CA-RS-CHA/120-L-S3	Covering panel for chimney aisle with CoolTop units above the 1 200 mm depth rack, left position, size S3 *
CA-RS-CHA/240-S3	Cover of top aisle with CoolTop units above the CoolTop unit (height 312–512 mm), width 2 400mm above CoolTop

\* Panel height 1112–1312 mm.

# BLIND PANELS FOR CONTAINED AISLES

Serves to fill the space in a contained aisle instead of a missing rack or above-rack **CoolTop** cooling units



Code	Compatibility with racks line	Height of rack in U	Width of panel (mm)
RF1-BS-42 <sup>1</sup> -30-WP <sup>2</sup>	PREMIUM Server RF1	42 <sup>1</sup>	300
RF1-BS-42 <sup>1</sup> -40-WP <sup>2</sup>	PREMIUM Server RF1	42 <sup>1</sup>	400
RF1-BS-42 <sup>1</sup> -60-WP <sup>2</sup>	PREMIUM Server RF1	42 <sup>1</sup>	600
RF1-BS-42 <sup>1</sup> -80-WP <sup>2</sup>	PREMIUM Server RF1	42 <sup>1</sup>	800
ROF-BS-42 <sup>3</sup> -30-WP <sup>2</sup>	iSEVEN Server	42 <sup>3</sup>	300
ROF-BS-42 <sup>3</sup> -40-WP <sup>2</sup>	iSEVEN Server	42 <sup>3</sup>	400
ROF-BS-42 <sup>3</sup> -60-WP <sup>2</sup>	iSEVEN Server	42 <sup>3</sup>	600
ROF-BS-42 <sup>3</sup> -80-WP <sup>2</sup>	iSEVEN Server	42 <sup>3</sup>	800

<sup>1</sup> Can be changed to 47 or 52U.

<sup>2</sup> In the case of use a rack without plinth use suffix -WP (= without plinth), in case a rack with plinth use without suffix -WP.

<sup>3</sup> Can be changed to 45 or 48U.

# AIRFLOW MANAGEMENT PRODUCTS

## 19" BLANK AND FAST BLANK PANELS



- Cover empty positions in rack to minimize by-pass airflow, increase energy efficiency and enhance aesthetic appearance
- Heights: 1, 2, 3, 5, 10 and 15U
- Color: powder-coated RAL 9005
- Tool-less solution uses quarter-turn fasteners
- Package includes:
  - DP-ZA-XU: blank panel
  - DP-ZA-XF: blank panel with fasteners

Code *	H (in U)	Width	Package
DP-ZA-1U	1	19"	5 pcs
DP-ZA-2U	2	19"	5 pcs
DP-ZA-3U	3	19"	5 pcs
DP-ZA-5U	5	19"	5 pcs
DP-ZA-1F *	1	19"	5 pcs
DP-ZA-2F *	2	19"	5 pcs
DP-ZA-3F *	3	19"	5 pcs
DP-ZA-5F *	5	19"	5 pcs

\* For tool-less design use code with suffix F.

## AIR SEPARATION FRAME



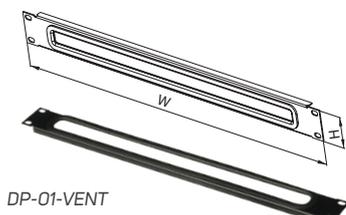
- Minimize bypass airflow between a rack's hot and cold zones, improving efficiency in support of contained aisle solutions
- Color: powder-coated RAL (standard RAL 7035 or 9005)
- Package includes:
  - Set 1: 2x vertical parts, 2x horizontal parts
  - Set 2: 2x horizontal parts, 1x brush for vertical parts

Code	Cold zone depth (mm)	H (in U)	Applicable for	W (mm)	Compatible extrusions	Package
DP-RSF-CWA-42/60 <sup>1</sup>	Variable	42	RSF, iSEVEN Server	600	Type A	1 pc of set 1
DP-RSF-CWA-42/80 <sup>1</sup>	Variable	42		800	Type A	1 pc of set 1
DP-RXF-CW-48/60/5	50	42–48	RSF, iSEVEN	600	Type L	1 pc of set 2
DP-RXF-CW-48/80/5	50	42–48	RSF, RDF, iSEVEN	800	Type L	1 pc of set 2
DP-RF1-CWA-42/60 <sup>2</sup>	Variable	42	RF1	600	Type A	1 pc of set 1
DP-RF1-CWA-42/80 <sup>2</sup>	Variable	42	RF1	800	Type A	1 pc of set 1
DP-RF1-CWV-42/80 <sup>2</sup>	Variable	42	RF1	800	Type V	1 pc of set 1

<sup>1</sup>Height (42U) can be replaced by height 45 or 48U.

<sup>2</sup>Height (42U) can be replaced by height 47 or 52U.

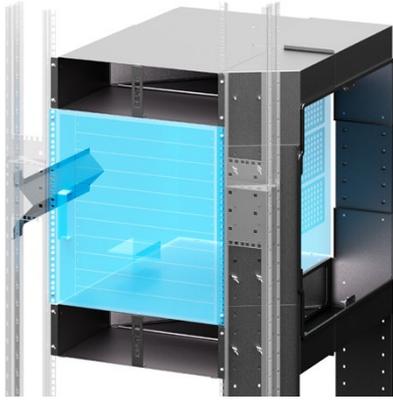
## 19" VENTED PANEL



- Enables front-to-rear cable passage through empty positions in rack
- Height: 1U
- Width: 19"
- Color: powder-coated RAL 9005

Code	H (in U)	Width	Package
DP-01-VENT	1	19"	1 pc

## AIRFLOW DEFLECTOR



DP-AFD-STS-S5

- The flexible deflector for Side-To-Side airflow network chassis can be used for any brand of network chassis where side-to-side airflow is required. It is suitable for all types of IT racks with a width of 800 mm and A-type extrusions. The deflector is designed for chassis heights of 5 to 25U and depths in the range of 450 to 710mm. 3U space above and below the chassis is required for proper airflow. The wedge-shaped deflector located on the exhaust edge of the chassis ensures that the airflow is divided into two directions, up and down. The deflector can be easily adjusted to the size of the chassis during the on-site installation. It is compatible with A-type extrusions and a separation frame.
- Package includes: DP-AFD-STS-S5 deflector set

Code	Height	Depth (mm)	Applicable for	Width (mm)	Package
DP-AFD-STS-S5	5-25U	450-710	RF1, iSEVEN Server	800	1 set

## CHIMNEY



Turning vane

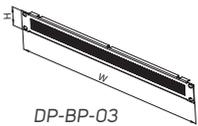


Chimney

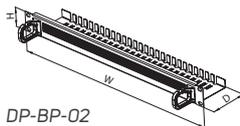
- Designed to lead hot exhaust air to the suspended ceiling; comes complete with gasket kits to ensure optimum sealing between rack and hot plenum; height can be adjusted from 750 to 1360 mm, according to site requirements.
- Turning vane is designed to enhance the natural draw effect of the chimney, allowing for cable passage; requires a min. of 200 mm offset on rear extrusions
- Package includes: top plate, chimney, turning vane

Code	Description	Package
DP-HPR-60/120-B	Designed for RSF-XX-60/120; light grey color (RAL 7035)	1 set
DP-HPR-60/120-H	Designed for RSF-XX-60/120; black color (RAL 9005)	1 set
DP-HPR-80/120-B	Designed for RDF/RSF-XX-80/120; light grey color (RAL 7035)	1 set
DP-HPR-80/120-H	Designed for RDF/RSF-XX-80/120; black color (RAL 9005)	1 set

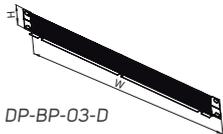
## 19" VENTED PANEL WITH BRUSH



DP-BP-03



DP-BP-02



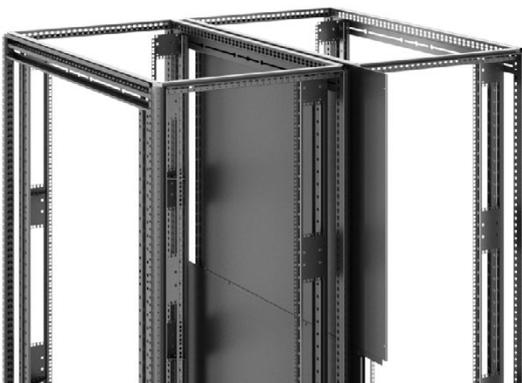
DP-BP-03-D



DP-BP-04

Code	H (in U)	Width	Depth (mm)	Package
DP-BP-02	1	19"	85	1 pc
DP-BP-03	1	19"	-	1 pc
DP-BP-03-D	1	19"	-	1 pc
DP-BP-04	1	19"	-	1 pc

## SLIDE-IN SIDE PANELS FOR RF1



- Used to separate two adjacent racks in a row without the need to manipulate the racks
- Heights: 42, 47 a 52U
- Depths: 300, 1000 a 1200 mm; 300 mm depth is universal, allows the usage of a separation frame, the rest of the depth of the frame is not separated
- Color: powder-coated RAL 9005
- Solutions for tool-free use
- You can use DP-DR-RF1 set to secure it
- Package includes: RF1-SIP-xx/yyy: 2 pcs of slide-in panels, 2 pcs connecting plastic unit

# TARGETED COOLING AND AIRFLOW MANAGEMENT

## COOLSPOT COOLING UNITS



CoolSpot CW



CoolSpot DX



➤ **CoolSpot** products are small cooling units designed for CONTEG PREMIUM Server RF1 racks to provide the desired environment inside the rack. In spite of the fluctuating ambient conditions in the room, CoolSpot keeps a set temperature for IT equipment installed in the rack, which should be protected against dust and outside humidity (IP 54).



### MAIN ADVANTAGES

- Compatible with CONTEG PREMIUM Server RF1 racks
- No filters required
- Individual cooling control at the level of a single rack
- Cost effective cooling

### SUITABLE FOR

- Production, industrial and warehouse spaces
- Telecommunications closets
- Racks with no or insufficient air-conditioning
- Dusty space

### DESCRIPTION

- Two different cooling principles—direct expansion with complete compressor circle inside (DX) and chilled water system (CW) connected to the building cold water piping system. Both cooling versions are produced in two basic designs for two different applications—Top Mount and Wall Mount.
- CoolSpot CW was developed for places where heat and noise from compressor could be disturbing in the room. It requires connection to the chilled water piping system of the building. Cooling capacity of the cooling unit is controlled by 2-way valve inside to keep the set temperature in the rack.
- CoolSpot DX units include a complete refrigerant circuit with compressor, evaporator, condenser, and all necessary components and control systems. This air-conditioning is designed to deliver cooling capacity up to 6 kW for standalone racks. CoolSpot DX units are designed as Plug & Play cooling system easy to use that requires only power supply, and condensate drainage. Cooling capacity of the cooling unit is controlled by controller with a simply display to keep the set temperature in the rack.

# COOLSPOT CW



CoolSpot CW—  
Wall Mount Version



**CoolSpot CW** cooling units are designed to be connected to any chilled water system. Temperature inside the rack is controlled by 2-way valve.

## MAIN ADVANTAGES

- All heat load is transferred to the water out of the room
- Operation in unlimited room temperature
- No filters required
- Top and wall mount solution



CoolSpot CW—  
Top Mount Version

CoolSpot CW—Top and Wall Mount Version							
		Top Mount		Wall Mount			
Chilled water	Unit	AC-TW-15	AC-TW-50	AC-WW-06	AC-WW-15	AC-WW-25	AC-WW-50
Cooling capacity (L35W10)	W	2 200	6 700	870	2 200	3 100	6 700
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Width	mm	772	905	306	402	402	503
Height	mm	189	255	403	916	916	1 091
Depth	mm	404	509	113	206	206	293
Maximum current	A	0,23	1,02	0,28	0,23	0,36	1,02
Prefuse	A	2	4	2	2	2	4
Power consumption	W	52	260	33	52	80	230
Rack airflow	m <sup>3</sup> /h	575	1 450	330	575	860	1 450
Rack temperature	°C	+10/+65	+10/+55	+10/+55	+10/+55	+10/+55	+10/+55
Pressure drop (water)	kPa	30	30	2	30	63	40
Max. pressure (water)	kPa	1 000	1 000	5 00	1 000	1 000	1 000
Waterflow	l/h	150	860	150	150	500	860
Water connection	"G	1/2	1/2	3/8	1/2	1/2	1/2
IP rating	IP	54	54	55	55	55	55
Noise level	dB(A)	58	58	58	58	58	58
Weight	kg	30	39	7	20	21	39
<b>Rack compatibility</b>							
Width	cm	60, 80	60, 80	all			
Height	U	all		42, 47, 52			
Depth	cm	80, 100, 120	100, 120	80, 100, 120	80, 100, 120	80, 100, 120	80, 100, 120

## Top cover

CoolSpot units are installed on the roof or side wall of the rack. For rooftop installation, a top cover must be ordered with the unit. This cover is ready for modification—openings for the specific type of CoolSpot unit. For side mounted units, the RF1 side cover can be modified.

TOP COVER	
Code	Description
CO-T1-60/80-TM-CS	Top cover for installation of a AC-Tx unit, ready for modification—cutout by type of CoolSpot unit, for PREMIUM Server RF1 rack width 600 mm, depth 800 mm
CO-T1-60/100-TM-CS	Top cover for installation of a AC-Tx unit, ready for modification—cutout by type of CoolSpot unit, for PREMIUM Server RF1 rack width 600 mm, depth 1000 mm
CO-T1-60/120-TM-CS	Top cover for installation of a AC-Tx unit, ready for modification—cutout by type of CoolSpot unit, for PREMIUM Server RF1 rack width 600 mm, depth 1200 mm
CO-T1-80/80-TM-CS	Top cover for installation of a AC-Tx unit, ready for modification—cutout by type of CoolSpot unit, for PREMIUM Server RF1 rack width 800 mm, depth 800 mm
CO-T1-80/100-TM-CS	Top cover for installation of a AC-Tx unit, ready for modification—cutout by type of CoolSpot unit, for PREMIUM Server RF1 rack width 800 mm, depth 1000 mm
CO-T1-80/120-TM-CS	Top cover for installation of a AC-Tx unit, ready for modification—cutout by type of CoolSpot unit, for PREMIUM Server RF1 rack width 800 mm, depth 1200 mm

## HOW TO ORDER

CoolSpot TM unit needs to be ordered together with the top cover and its modification code—"MODIFIKACE".

CoolSpot unit code	+	Panel/Cover code	+	Word "MODIFIKACE"
<b>An example of a correct Code</b>				
<b>AC-TM4-21-4000</b>	<b>+</b>	<b>CO-T1-80/100-TM-CS</b>	<b>+</b>	<b>MODIFIKACE</b>

# COOLSPOT DX



CoolSpot DX—  
Wall Mount Version



CoolSpot DX—  
Top Mount Version

➤ **CoolSpot DX** cooling unit is a standalone direct expansion solution with a compressor inside, which means that no additional plumbing or piping is required.

## MAIN ADVANTAGES

- Complete refrigerant circuit is inside
- Built-in condensate evaporation
- Triple condensate protection
- Filterless
- Top and wall mount solution
- Plug and play equipment, only power supply is needed
- AC-TM4 and AC-WM5 are equipped with Modbus communication via RS485, Master/Slave and redundancy functionalities

### CoolSpot DX—Top Mount Version—cooling units AC-TM4

New PRO design. Microchannel condenser allows 50% less refrigerant charge resulting in a lower CO<sub>2</sub> equivalent.  
Built-in electrical condensate evaporation.

Direct expansion	Unit	AC-TM4-07-4000	AC-TM4-08-4000	AC-TM4-08-6000	AC-TM4-13-4000	AC-TM4-13-6000	AC-TM4-16-4000	AC-TM4-16-6000	AC-TM4-21-4000	AC-TM4-21-6000	AC-TM4-32-6000	AC-TM4-40-6000
Cooling capacity (L35L35)	W	650	850	850	1250	1250	1550	1550	2100	2100	3200	4000
Cooling capacity (L35L50)	W	580	600	600	800	800	1200	1200	1600	1600	2640	3300
Power supply	V/ ph/Hz	230/ 1/50-60	230/ 1/50-60	400-460/ 2/50-60	230/ 1/50-60	400-460/ 2/50-60	230/ 1/50-60	400-460/ 2/50-60	230/ 1/50-60	400-460/ 2/50-60	400-460/ 3/50-60	400-460/ 3/50-60
Width	mm	400	400	400	595	595	595	595	595	595	795	795
Height	mm	368	368	368	412	412	412	412	435	435	456	456
Depth	mm	325	325	325	395	395	395	395	475	475	575	575
Current L35L35	A	1,7/1,6	2,3/2,5	2,3/2,5	3,2	1,6	3,4	1,7	4	1,7/1,8	2,9/2,8	3,2/3,3
Starting current	A	6	6	4	16	8	16	8	22	13	20	28
Maximum current	A	2,2	3,1	1,6	4,5	2,2	5,1	2,6	5,4	2,4	3,2	4,1
Prefuse	A	15 (T)										
Short-circuit current rating	kA	5										
Power consumption	W	337	505	537/617	680	680	722	722	906	880/1100	1160/1500	1480/1900
Rack airflow	m <sup>3</sup> /h	365	645	645	645	645	850	850	602	630	1233	1233
Rack temperature	°C	+20/+55										
Ambient temp. limit	°C	+5/+55										
IP rating	IP	54										
Weight	kg	16,4	32	36,5	37,25	41,75	37,25	41,75	40	40,1	54,2	57,2
<b>Rack compatibility</b>		<b>PREMIUM Server RF1</b>										
Width	cm	60, 80										
Depth	cm	80, 100, 120										

**CoolSpot DX—Wall Mount Compact Version—cooling units AC-WM4**

Compact design. Nano coated hydrophobic condenser. Various filter options for polluted environments. Condensation kit included.

Direct expansion	Unit	AC-WM4-03-4000	AC-WM4-05-4000	AC-WM4-05-6000	AC-WM4-08-4000	AC-WM4-08-6000	AC-WM4-10-4000	AC-WM4-10-6000	AC-WM4-15-4000	AC-WM4-15-6000	AC-WM4-20-4000	AC-WM4-20-6000
Cooling capacity (L35L35)	W	320/360	550/620	550/620	850/880	850/880	1000/1080	1000/1080	1500/1630	1500/1630	2 000/2 000	2 000/2 000
Cooling capacity (L35L50)	W	200/220	410/440	410/440	640/665	640/665	730/745	730/745	1220/1320	1220/1320	1600/1650	1600/1650
Power supply	V/ ph/Hz	230/1/50-60	230/1/50-60	400-460/2/50-60	230/1/50-60	400-460/2/50-60	230/1/50-60	400-460/2/50-60	230/1/50-60	400-460/2/50-60	230/1/50-60	380-415/3/50 400-460/3/60
Width	mm	280	315	315	315	315	315	315	395	395	395	395
Height	mm	501,6	651	651	651	651	651	651	980	980	980	980
Depth	mm	200	260	260	260	260	260	260	260	260	260	260
Cut out dimensions		480×240	635×275	635×275	635×275	635×275	635×275	635×275	920×335	920×335	920×335	920×335
Current L35L35	A	1,9/2,0	2,1	1,4/1,2	3,0/3,2	2,0/1,8	3,2	1,8/2,0	4,6/5,1	2,9/2,5	5,5/6,5	3,1/2,7
Starting current	A	6,1	9,8	4,3	15,9	5,1	15,9	5,1	21,2	5,3	22,3	5,7
Maximum current	A	2,8	2,5	1,6	4,1	2,6	4,1	2,6	5,6	3,5	9,4	3,6
Prefuse	A	6 (T)	6 (T)	2x 3,6 (T)	10 (T)	2x 3,6 (T)	10 (T)	2x 3,6 (T)	10 (T)	2x 6 (T)	10 (T)	3x 6 (T)
Short-circuit current rating	kA	5										
Power consumption	W	550	510	560	810	870	810	870	1170	1129	1170/1410	1260/1350
Rack airflow	m³/h	115/136	200/250	200/250	200/250	200/250	300/550	300/550	385/550	385/550	470/850	470/850
Rack temperature	°C	+20/+55										
Ambient temp. limit	°C	+10/+55										
IP rating	IP	54										
Weight	kg	19,5	27,7	33,7	30	36	30	36	39,7	47,7	44,2	44,2
<b>Rack compatibility</b>		<b>PREMIUM Server RF1</b>										
Height	U	27, 42, 47, 52										
Depth	cm	80, 100, 120										

**CoolSpot DX—Wall Mount Slim Line Pro Version—cooling units AC-WM5 (Table 1 of 3)**

New PRO design. Microchannel condenser allows 50% less refrigerant charge resulting in a lower CO<sub>2</sub> equivalent. Built in electrical condensate evaporation.

Direct expansion	Unit	AC-WM5-03-4000	AC-WM5-03-3000	AC-WM5-06-4000	AC-WM5-06-3000	AC-WM5-06-6000	AC-WM5-08-4000	AC-WM5-08-3000	AC-WM5-08-6000		
Cooling capacity (L35L35)	W	300/350	300/350	650/700	650	500/550	825/870	825/870	825/870		
Cooling capacity (L35L50)	W	200/215	200/215	460/490	395	400/430	820/835	820/835	820/835		
EER L35L35		1,16	1,16	1,41	1,41	1,41	1,8	1,8	1,8		
Power supply	V/ ph/Hz	230/1/50-60	120/1/50-60	230/1/50-60	120/1/50-60	400-460/2/50-60	230/1/50-60	120/1/50-60	400-460/2/50-60		
Width	mm	250	250	370	370	370	305	305	305		
Height	mm	680	600	520	520	520	950	950	950		
Depth	mm	135	135	155	155	185	210	210	210		
Cut out dimensions											
Current L35L35	A	1,5/1,3	2,4/2,2	1,9/1,8	4,1	1,15/1,05	2,1/2,3	4,2/4,6	1,2/1,15		
Starting current	A	4	7,5	6	13	3	6	28	4		
Maximum current	A	1,6	2,7	2,5	5,3	1,45	3	6,8	1,7		
Prefuse	A	15 (T)									
Short-circuit current rating	kA	5									
Power consumption	W	300	250/240	390/405	460	405	460/520	460/520	460/520		
Rack airflow	m³/h	122/180	122/180	122/180	122/180	122/180	350/550	350/550	350/550		
Rack temperature	°C	+20/+55									
Ambient temp. limit	°C	+10/+60									
IP rating	IP	55									
Weight	kg	13,7	13,7	16	16	20,5	25,2	30	30		
<b>Rack compatibility</b>		<b>PREMIUM Server RF1</b>									
Height	U	27, 42, 47, 52									
Depth	cm	80, 100, 120									

CoolSpot DX—Wall Mount Slim Line Pro Version—cooling units AC-WM5 (Table 2 of 3)

Direct expansion	Unit	AC-WM5-12-4000	AC-WM5-12-3000	AC-WM5-12-6000	AC-WM5-15-4000	AC-WM5-15-3000	AC-WM5-15-6000	AC-WM5-20-4000	AC-WM5-20-3000	AC-WM5-20-6000
Cooling capacity (L35L35)	W	1200	1200	1200/1260	1500	1500	1500	2000/2100	2000/2100	2000
Cooling capacity (L35L50)	W	900	900	900/1000	1300	1300	1300	1850	1850	1700/1750
EER L35L35		1,68	1,68	1,71	2,17	2,17	2,17	2	2	2
Power supply	V/ ph/Hz	230/ 1/50-60	120/ 1/50-60	380-415/ 3/50 400-460/ 3/60	230/ 1/50-60	120/ 1/50-60	380-415/ 3/50 400-460/ 3/60	230/ 1/50-60	120/ 1/50-60	380-415/ 3/50 400-460/ 3/60
Width	mm	305	305	305	395	395	395	395	395	395
Height	mm	950	950	950	1350	1350	1350	1350	1350	1350
Depth	mm	210	210	210	210	210	210	210	210	210
Cut out dimensions										
Current L35L35	A	3,3/3,6	6,6/7,2	1,6	2,9	1,6/1,8	1,5	4,4/5,6	8,8/11,2	1,9/2
Starting current	A	15	30	8,2	16	32	8,2	16	32	8
Maximum current	A	5	10	2	4,7	9,8	2	7,4	14,8	2,9
Prefuse	A	15 (T)								
Short-circuit current rating	kA	5								
Power consumption	W	715/830	715/830	700/875	690/700	690/700	710/890	1000/1250	1000/1250	970/1250
Rack airflow	m <sup>3</sup> /h	350/550	350/550	350/550	500/850	500/850	500/850	500/850	500/850	500/850
Rack temperature	°C	+20/+55								
Ambient temp. limit	°C	+10/+60								
IP rating	IP	55								
Weight	kg	30	33,5	33	41	44	44	46,2	49,5	48,7
<b>Rack compatibility</b>		<b>PREMIUM Server RF1</b>								
Height	U	27, 42, 47, 52								
Depth	cm	80, 100, 120								

CoolSpot DX—Wall Mount Slim Line Pro Version—cooling units AC-WM5 (Table 3 of 3)

Direct expansion	Unit	AC-WM5-25-4000	AC-WM5-25-3000	AC-WM5-25-6000	AC-WM5-40-4000	AC-WM5-40-6000	AC-WM5-62-6000
Cooling capacity (L35L35)	W	2500	2500	2500	4000/4200	4000/4200	6000/6200
Cooling capacity (L35L50)	W	2100	2100	2100	3500/3900	3500/3900	5000/5500
EER L35L35		2,08	2,08	2,06	2,3	2,31	2
Power supply	V/ ph/Hz	230/1/50-60	120/1/50-60	380-415/ 3/50 400-460/ 3/60	230/1/50-60	380-415/ 3/50 400-460/ 3/60	380-415/ 3/50 400-460/ 3/60
Width	mm	395	395	395	455	455	455
Height	mm	1350	1350	1350	1550	1550	1630
Depth	mm	210	210	210	270	270	270
Cut out dimensions							
Current L35L35	A	5,4/6,6	10,8/13,2	2,7	8,5/11	3,5/3,7	6,2/6,3
Starting current	A	22,5	11	20	50	15	52
Maximum current	A	8,5	19,3	3,1	14,8	4,8	10,5
Prefuse	A	15 (T)	25 (T)	15 (T)	15 (T)	15 (T)	15 (T)
Short-circuit current rating	kA	5					
Power consumption	W	1200/1470	1200/1470	1200/1470	1900/2500	1730/2270	3100/3900
Rack airflow	m <sup>3</sup> /h	500/850	500/850	500/850	750/1200	750/1200	1050/1400
Rack temperature	°C	+20/+55					+10/+50
Ambient temp. limit	°C	+10/+60					+10/+55
IP rating	IP	55					
Weight	kg	47	46,5	45	62	62	86,5
<b>Rack compatibility</b>		<b>PREMIUM Server RF1</b>					
Height	U	27, 42, 47, 52				42, 47, 52	
Depth	cm	80, 100, 120					



# TARGETED COOLING AND AIRFLOW MANAGEMENT

## COOLSEVEN COOLING UNIT



PREMIUM Server RF1 rack + CoolSeven unit

➤ The **CoolSeven** cooling unit with direct expansion represents a type of a unit with precision cooling inside racks. CoolSeven is a 7U tall indoor unit integrated into 19" racks and utilizing a split cooling system composed of two components—an indoor and an outdoor unit.

### MAIN ADVANTAGES

- Unit is a direct expansion type which provides precision cooling inside racks
- Compatible with all 19" IT racks
- Individual cooling control on rack level
- EC fans with very low power consumption
- Heat dissipation directly from the racks to outside areas
- Precise and fluent cooling capacity control corresponding to air temperature
- A variant of the outdoor unit for very low temperatures is available
- Can operate without filters
- A wide selection of accessories
- Capable of communicating with a monitoring system (for example, CONTEG Pro Server)
- Emergency door opening function when the emergency temperature is exceeded. Compatible with the EOS—Emergency opening system.

### SUITABLE FOR

- Office spaces
- IT racks or compact data centers (MCL—Modular closed loop)
- Racks with insufficient or no air-conditioning
- Dusty environments



CoolSeven

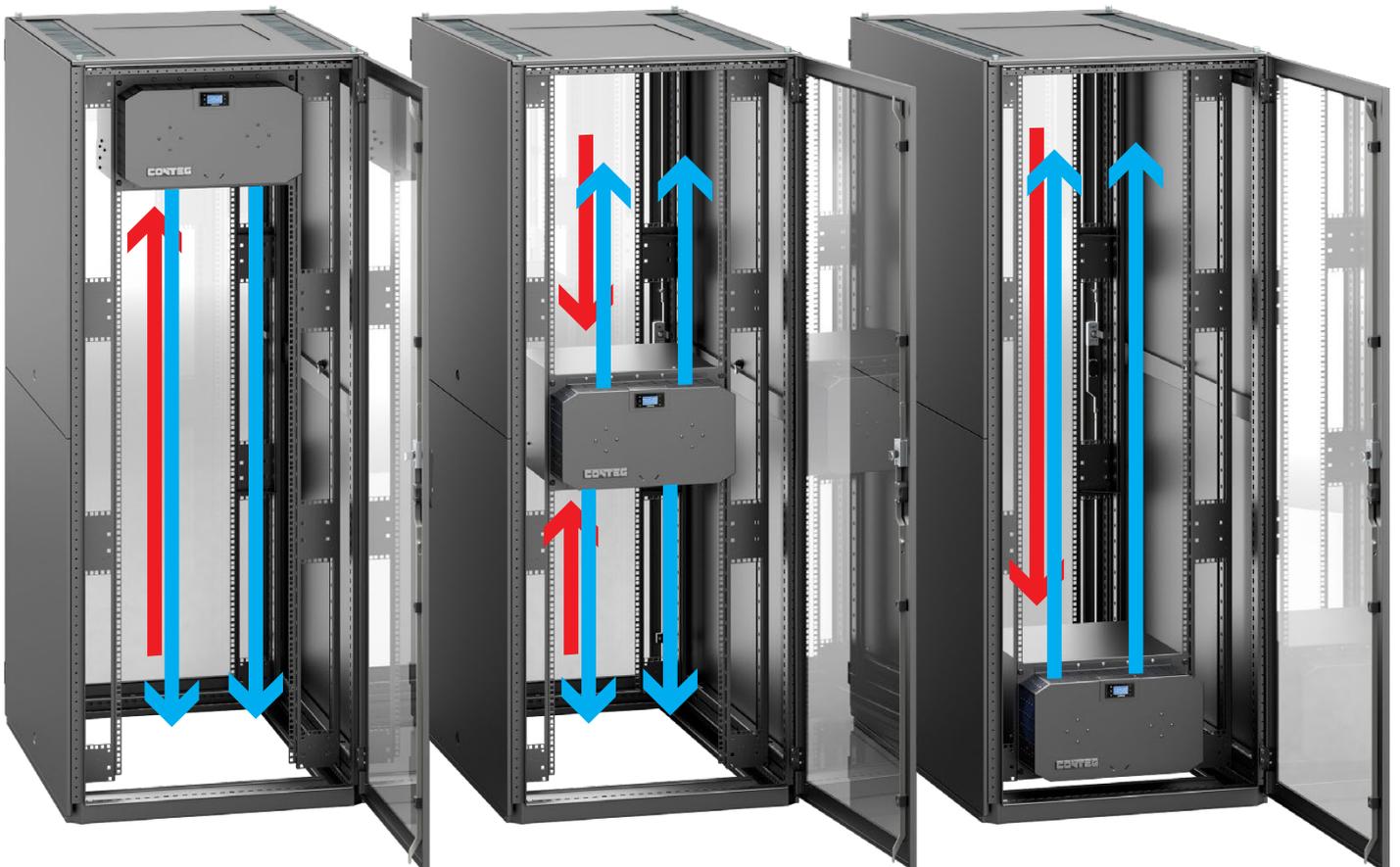
### DESCRIPTION

- The CoolSeven unit operates on the direct expansion principle, circulating the coolant between the indoor and outdoor units. The outdoor compressor unit is equipped with a BLDC inverter compressor, which allows for automatic cooling capacity control (up to 8 kW). Thanks to the indoor and outdoor units being separated, there is no need for additional room air-conditioning.
- The CoolSeven unit is designed for integration into 19" racks, with a height of seven rack units (7RU). Apart from the refrigerant piping, power supply and communications sources, the unit must also be connected to a condensate drainage.
- The highly efficient evaporator of the indoor air-conditioning unit features a special hydrophilic surface that retains condensate droplets, while the EC fans maintain very low power consumption.
- Airflow and cooling capacity are automatically controlled by an integrated control unit with proprietary CONTEG software. The unit is equipped with a compact LCD for checking and monitoring cooling parameters. To communicate with BMS systems, the unit is equipped with an integrated MODBUS RTU interface; alternatively, the unit can also be equipped with a network card (SNMP, WEB server, Logger, E-mail, FTP PUSH, MODBUS TCP/IP, BACnet...).
- Setting up the CoolSeven unit is very user-friendly, yet advanced, more complex functions are also available. Initial start-up and subsequent operation are therefore very easy and efficient.

COOLSEVEN—AC-C7-DX-XXXXXXX

Indoor unit	Code	AC-C7-DX-xxxxxxx
Connected outdoor unit	Code	AC-ODX-07-xxxxx
Cooling system		Direct expansion
Architecture		Open/closed
Capacity regulation		11-100 %
Nominal cooling capacity	kW	8,1
Nominal net cooling capacity	kW	7,5
Power supply	V/ph/Hz	230/1/50-60
Running current *	A	2,6
Maximum current	A	2,7
Nominal power consumption *	W	613
Maximum air flow	m <sup>3</sup> /h	1791
Number of fans	pcs	2
Motor fan technology		EC
Refrigerant type		R410A
Filter class		without filter
Sound pressure level Lw(A) **	dB	30-52
Width	mm (in)	482,6 (19" installation)
Height	mm (U)	311 (7U installation)
Depth	mm	624
Weight	kg	29,8
Supply pipe diameter and type	mm	12
Return pipe diameter and type	mm	16

\* Values at stable 80% output. \*\* Depends on rack and fans' RPM.



# COOLSEVEN COOLING UNIT ACCESSORIES

## LCD DISPLAY

The unit is equipped with a compact LCD for checking and monitoring cooling parameters.



## CONDENSATE PUMP

- All CONTEG units can be connected to a standard gravity drainage system.
- If such a system is not available, it is possible to drain water with a condensate pump.
- Each unit equipped with a pump includes a water level sensor to start the pump.
- Units without a pump are always equipped

with a water level sensor capable of powering down the unit when the water level in the condenser reaches a critical level, triggering an alarm.



## DUAL POWER SUPPLY

- Electrical switchboard for two power supply systems.
- This device allows the unit to be supplied from two independent sources.

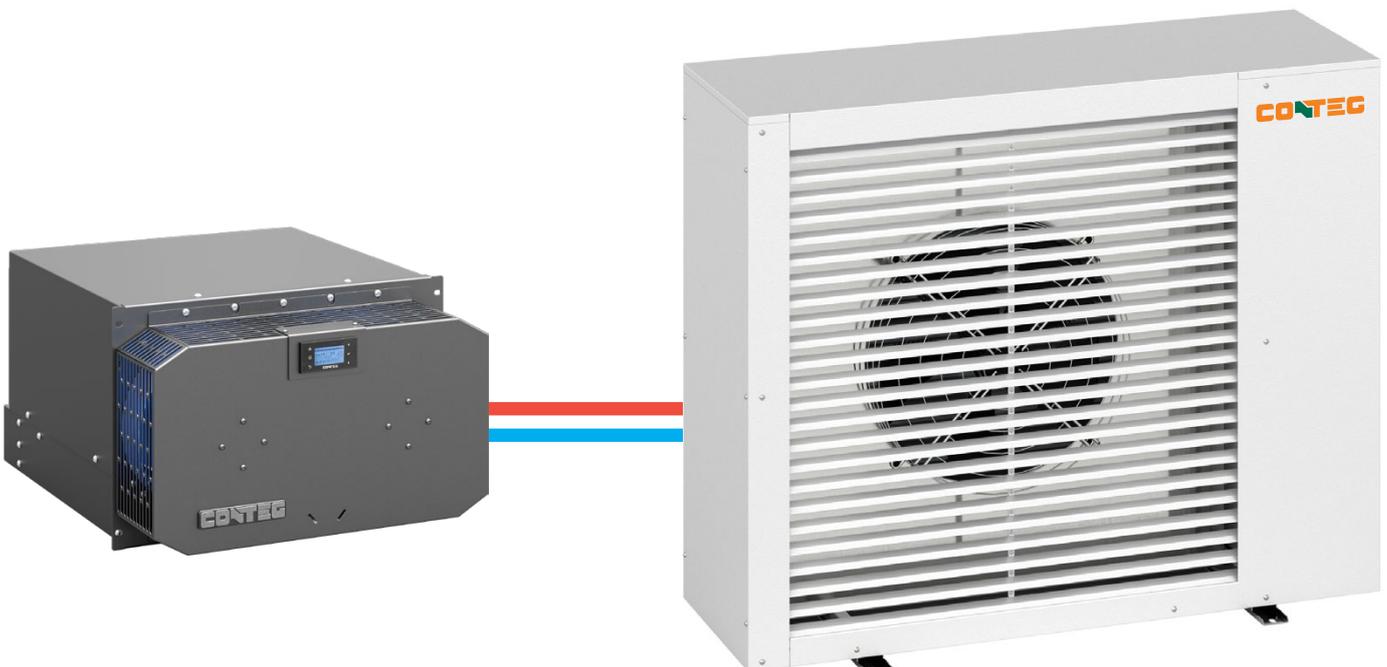
## "pCO WEB" COMMUNICATION CARD

- Enables additional individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: Web server, E-mail, FTP, SNMP, BACNet, ModBus TCP/IP and others.



### Part number on request.

Please contact our sales or technical team [www.conteg.com/contacts](http://www.conteg.com/contacts)



# COOLOUT CONDENSING UNITS



CoolOut—front view



CoolOut—rear view

➤ The **CoolOut** outdoor condensing units are specially designed for conducting heat out of data centers. The units meet all the strict demands on precision, stability and service life required for data centers.

## MAIN BENEFITS

- Advanced communication and cooling regulation based on commands from the data center
- Very low consumption thanks to high-quality EC fans and active regulation of condensing pressure
- Inverter-controlled BLDC compressor
- Wide range of cooling power from 11 % upwards
- Versions for extreme ambient temperatures available
- Robust frame and housing made of high-quality corrosion-resistant materials
- Ability to communicate with a monitoring system (SNMP, Modbus TCP, Modbus RS485)
- Ability to monitor and control operating parameters through the indoor unit
- Simple to install and operate
- Option for remote servicing after connecting a PGDx service display
- Specially designed for precision cooling
- Linear electronic expansion valve

## SUITABLE FOR

- Wide range of ambient conditions
- Installations emphasizing economical and reliable operation
- Compatible with CONTEG's CoolTeg DX, CoolTop DX and CoolSeven cooling units

## DESCRIPTION

- CoolOut is an outdoor condensing unit designed for precision compression cooling. The units are fitted with an inverter-controlled rotary DC compressor.
  - Thanks to the use of hot gas bypass technology, the unit's cooling power can be adjusted from 11 % of total cooling power upwards regardless of outdoor conditions.
  - The use of a specially designed condenser, EC fans and a system of dynamic control of condensing pressure allowed minimizing the power consumption and noise emissions of the cooling unit.
  - The running of the unit and correct functioning of all its parts is overseen by a built-in regulator with special CONTEG software.
- The regulator also ensures communication with the indoor unit via Fieldbus protocol. Basic information about the running of the outdoor unit can be tracked through the indoor unit.
- The design of the condensing unit allows its mounting onto the floor or a wall.
  - CoolOut units are highly user-friendly in their setup and operation. Initialization and operation is very simple.

		AC-ODX-07-XXXXXXX	AC-ODX-07-SXXXXXX	AC-ODX-25-XXXXXXX
Operating conditions	°C	-20 to +47 °C	-20 to +55 °C	-20 to +47 °C
Operating conditions <sup>4</sup>	°C	-40 to +47 °C	-	-40 to +47 °C
Power regulation		Smooth 11-100%	Smooth 11-100 %	Smooth 11-100%
Rated cooling power	kW	8.1	8.1	26
Power supply	V/ph/Hz	230/1/50-60	230/1/50-60	400/3/50-60
Operating current <sup>1</sup>	A	8.84	10.4	11.28
Maximum current	A	12.8	17.5	17
Rated input power <sup>1</sup>	kW	2.03	2.39	8.2
Compressor control		BLDC inverter	BLDC inverter	BLDC inverter
Coolant regulation		Linear expansion valve	Linear expansion valve	Linear expansion valve
R410A coolant capacity <sup>2</sup>	kg	0	0	0
Acoustic pressure Lp(A) <sup>1</sup>	dBA	44	63	50
<b>Dimensions/weight</b>				
Width	mm	1200	1200	1400
Depth	mm	400	400	450
Height <sup>3</sup>	mm	996	996	1200
Weight	kg	72	99	130
<b>Piping connection</b>				
Fluid piping (diameter)	mm	12	12	12
Gas piping (diameter)	mm	16	16	22
Max. piping length	m	75	75	85
Max. difference in elevation	m	50	50	50

<sup>1</sup> Values at stabilized 80 % output. <sup>2</sup> Without coolant, filled in during installation. <sup>3</sup> Including the profile for mounting the condensing unit. <sup>4</sup> If fitted with winter-kit accessories. The values shown may vary depending on the current product innovation.



### Part number on request.

Please contact our sales or technical team [www.conteg.com/contacts](http://www.conteg.com/contacts)

## COOLOUT CONDENSING UNITS

# ACCESSORIES

### DUAL POWER SUPPLY

- Electrical distributor for two power supply branches.
- The device allows powering a unit from two separate power sources.

### RS485 BMS COMMUNICATION CARD

- Optically insulated card allowing communication with a unit via Modbus RTU protocol.



### pCO WEB COMMUNICATION CARD

- Allows further individual communication (monitoring and control).
- Communication via Ethernet network protocols.
- Functions: web server, e-mail, FTP, SNMP, BACNet, ModBus TCP/IP and more.





ENVIRONMENT

MENT

MONITORING

AND ACCESS

CONTROL

SYSTEMS



# ENVIRONMENT MONITORING AND ACCESS CONTROL SYSTEMS

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# ENVIRONMENT MONITORING SYSTEMS

The **RAMOS monitoring system** is used to control the state of the indoor and outdoor environment (temperature, humidity, water leakage, smoke,...) in large data centers, server rooms, or individual racks. It allows you to easily integrate and subsequently monitor other components, such as intelligent power distribution units (PDUs), backup power supplies (UPS), AC units, etc. The system supports remote control.

RAMOS consists of hardware components and software—the CONTEG Pro Server application. Hardware comes in 4 different versions of main monitoring units, which are differentiated by their functionality levels. Each version has different features, a different number of sensors as well as different inputs and outputs. A wide range of accessories is available for the units, such as detectors, sensors, sirens, magnetic door contacts, expansion modules, etc.

The CONTEG Pro Server application has a user-friendly web interface for sensor configuration, data collection, settings for transmitting information about monitored parameters in different ways (SNMP, e-mails, SMS, MMS, SMTP, ...) and extensive graphical display of values.

	RAMOS Ultra/Ultra ACS	RAMOS Optimax/ Optimax GSM	RAMOS Plus/Plus GSM	RAMOS Micro
Suitable for	DC and server rooms	Multiple racks/cabinets or server room	Single or few racks/cabinets	Single racks/cabinets
Sensors	8×/2× intelligent ports (expandable up to 500 sensors)	8× intelligent ports and 10× digital inputs (expandable up to 150 sensors)	4× intelligent port	Up to 5 sensors (Temperature, Humidity, Pressure, CO <sub>2</sub> , leakage...) via 2× universal ports and 2× digital inputs
Virtual sensors	80× open	10× open (can be licensed up to 80)	5× open (can be licensed up to 40)	–
Communication	LAN: SNMP v1, v2 and v3, VPN Modbus TCP and RTU GSM: with plug-in USB GSM modem Serial: RS485 (Modbus only)	LAN: SNMP v1, v2 and v3 Modbus TCP, Modbus RTU via external adapter GSM: GSM version only	LAN: SNMP v1, v2 and v3 Modbus TCP GSM: GSM version only	LAN and Wi-Fi 802.11 bgn SNMP v1 and XML
Notifications	E-mails, SNMP traps SMS *, MMS *, Call *, Speech Skype call and SMS Relay control *, Door control * Server restart/shutdown/ wake-up	E-mails SNMP traps Siren and strobe * Relay *, EL. latch SMS variant with built-in GSM modem	E-mails SNMP traps Siren and strobe * Relay *, EL. latch SMS variant with built-in GSM modem	E-mails
Integration to CONTEG Pro Server	Free for up to 4 units—additional are licensed			Licensed
Advantages	Intelligent ports variability Expandable solution Monitoring of 3rd-party devices Sensor mapping	Intelligent ports variability Expandable solution Variant with built-in GSM modem Monitoring of 3rd-party devices Rack thermal mapping	Intelligent ports variability Variant with built-in GSM modem Monitoring of 3rd-party devices Rack thermal mapping	Small and simple Wi-Fi, PoE, SSL
Dimensions H × W × D	46 × 216 × 138 mm	44 × 432 × 50 mm (19" × 1U)	32 × 115 × 64 mm	30 × 103 × 68 mm
Voltage	7.5 V DC/12 V DC	5 V DC	5 V DC	5 V DC (PoE or via external power adapter)

\* Requires appropriate accessories.



**Intelligent ports**

Connected by LAN cables, automatically detects and powers the accessories.



**Easy expandability**

Using the expander for RAMOS Optimax and RAMOS Ultra.



**Virtual sensors**

They allow monitoring of other devices, reading of log parameters, PING, etc. It is possible to integrate 3rd party devices (PDU, UPS, cooling, etc.).



**Remote control**

Setup and remote control of the device using the CONTEG Pro Server software application.



**Notifications**

Email, commands via logs, voice messages, SMS, etc.

# RAMOS ULTRA AND ACCESSORIES

## RAMOS Ultra



RAMOS ULTRA-EX-016  
front and rear panels



RAMOS ULTRA-EX-18  
front and rear panels



RAMOS ULTRA-EX-D8-8 rear and side view

The RAMOS Ultra main monitoring unit for remote monitoring of the protected environment is suitable for server rooms and data centers where more than 8 sensors are required. Using expanders, this system can be expanded to up to 500 sensors, allowing a wide monitoring network to be created.

RAMOS Ultra can record all events in its database with a time stamp of an alarm event and action taken. It has 8 auto-sense intelligent sensor ports to which it is possible to connect a wide range of intelligent sensors (temperature, humidity, water leakage, airflow, access control, control relays, detect AC voltage, measure DC voltage, ...). Sensors include an integrated data collection and graphing package to spot trends in airflow, temperature, and humidity.

RAMOS Ultra has an easy-to-use web-based user interface for sensor configuration, data collection, and extensive graphing. Complete SNMP functions, including secured protocol SNMP v3, are also supported. RAMOS Ultra also supports Modbus Primary/Secondary, Modbus RTU, and Modbus over TCP/IP creating a customized, easy to configure Modbus to SNMP gateway. The web-based interface is written in PHP allowing the user to change language settings or add another language. RAMOS Ultra has a battery-operated clock for accurate record-keeping. RAMOS Ultra uses an open Linux Operating System. It is TCP/IP compliant and runs a Lighttpd web server that includes HTTPS (SSL), Bash, Perl, Telnet, PHP, Email, and Nagios.

RAMOS Ultra can also be integrated into the CONTEG Pro Server application for central management and supervision of the monitored environment.

- 8× intelligent ports, adjustable as input or output
- 4× expansion ports on the front panel for connecting expansion expanders (RAMOS ULTRA-EX-016, RAMOS ULTRA-EX-18, and RMS-ACS-U-RDU) allowing monitoring of up to 500 intelligent sensors
- Up to 80× virtual sensors monitoring other network devices, for example via SNMP, Modbus, PING, etc.
- All accessories are powered by the monitoring device.
- Configurable notification functions: E-mail, SNMP traps, SMS/MMS, SNMP and Modbus commands, etc.
- Fully configurable User and Group management
- Built-in graphs and data logging, internally or to a remote PC.
- Syslog history on internal memory or on the external Syslog server.
- In the application, it is possible to add sensor and detector icons using the drag & drop function onto the uploaded image or data center/server room diagram.
- The web-based interface is written in PHP allowing the end-user to change language preferences or create their own translation.
- USB 2.0 for connecting an external GPRS/GSM modem, Bluetooth, and Wi-Fi adapter
- SNMP (v1, v2, and v3), Modbus TCP/IP, and Modbus RTU protocols supported
- SD card slot for extending memory for history (up to 32 GB). SD card is not included.
- Integrated microphone and speaker

Package includes: 7.5 V DC 3A external power supply with exchangeable power cable, cross-over patch cord cable 1.5m length, 1U high bracket with screws, and installation CD

Code	Description
RAMOS Ultra	Main monitoring unit

## Expansion module RAMOS ULTRA-EX-I8



An expansion module that has 8 intelligent sensor ports and is connected to any expansion ports located on the front panel of the RAMOS Ultra or RAMOS Ultra ACS base units. They are connected using a standard CAT5 LAN cable.

The expander may also be daisy-chained using the E-Out/E-In ports on other Expanders. For Expansion can be used cable with max length of 300 m between each unit.

Compatible with RAMOS Ultra, RAMOS Ultra ACS, and RAMOS Optimax standard expansion ports.

The front pair of LEDs indicate the status of the connected accessories of all 8 intelligent ports.

Package includes: 7.5 V DC 3A external power supply with exchangeable power cable, 1U high bracket with screws, 1.5 m LAN CAT 5 cable

Code	Description
RAMOS ULTRA-EX-I8	Expander with 8 intelligent sensor ports

## Expansion module RAMOS ULTRA-EX-O16



An expansion module that has 16 optoisolated inputs and is connected to any expansion ports located on the front panel of the RAMOS ULTRA, RAMOS ULTRA ACS, RAMOS Optimax main monitoring units. They are connected using a standard CAT5 LAN cable.

The Expander may also be daisy-chained using the E-Out/E-In ports on other Expanders. For expansion can be used cable with a maximum length of 300 m between each unit.

A wide variety of equipment that generates an output signal or voltage can be connected to each of the 2 wire dry contact inputs located on the back of the module.

Compatible with Ramos Ultra, Ramos Ultra ACS, and Ramos Optimax standard expansion ports.

The front pair of LEDs indicate the status of all 16 inputs.

Package includes: 7.5 V DC 3A external power supply with exchangeable power cable, 1U high bracket with screws, 1.5 m LAN CAT 5 cable

Code	Description
RAMOS ULTRA-EX-O16	Expander with 16 optoisolated inputs

## Expander for intelligent port



The expander allows creating 8 inputs/outputs on a single intelligent port of the main unit. Each port can be set as an input or output (output up to 20 mA). The expander's input contact is capable of supporting any type of door contact. The device is automatically recognized and powered from the main unit. The expander is connected using a standard LAN CAT 5/6 cable. Maximum cable extension length is 300 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RAMOS ULTRA-EX-D8-8	Expander for intelligent port

## Relay Box 8



The Relay Box 8 is a specially designed multi-port relay for advanced process control with 8 changeover relay contacts that can be operated manually or via notifications. The Relay Box 8 is easily controlled by any sensors or detectors. The relay can provide automatic responses to sensor status changes. Setting up the Relay Box 8 is easy thanks to its built-in auto-sense feature and user-friendly web interface. This device allows controlling the power, turning On/Off cooling equipment, activating alarms, etc. It requires an external power supply 7.5 V DC (RMS-U-PW). Connection to the main monitoring unit is made using a standard LAN CAT 5/6 cable.

Package includes: 1.5 m LAN CAT 5 cable, 19" mounting brackets

Code	Description
RMS-U-RB-8	Relay Box 8

## Temperature & Humidity Sensor



The enclosed temperature and humidity sensor is designed for placement inside racks and measures temperature in the range  $-55^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  and humidity in the range 0 to 100 %. The sensor can be extended for reach of up to 300 m using a LAN CAT 5/6 cable.

Package includes: 1.5 m long loose cable

Code	Description
RMS-I-STHB	Temperature & Humidity sensor with extension up to 300 m

## Air-flow sensor



The sensor detects the presence or absence of flowing air inside the racks. The sensor works on the principle of differential measurement, which compares the resistance of the external and internal thermistor. This device can be connected to an alarm response and can be extended up to 30 m using a LAN CAT 5/6 cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-AF	Air-flow sensor

## Siren & strobe light



The Siren & Strobe serves as a visual and acoustic alarm for the operator. It emits a loud piercing of up to 100 dB at a distance of 1m from the device and the strobe flashes are at a frequency of 400 times per minute. The device has extensive setting options, such as turning off the alarm. Extension is done using a standard LAN CAT 5/6 cable. Maximum cable extension length is 30 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-AS	Siren & strobe light

## Smoke Detector



The detector emits an 85 dB two-state-alarm signal at a distance of 3 m from the unit and is also fitted with LED indication. It should be mounted on to the ceiling for maximum smoke detection ability. This device is powered from the main unit and can be connected to a back-up 9 V battery. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 150 m. Has a built-in flash light to alert when smoke is detected.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-01	Smoke Detector

## PIR motion detector



Motion detector with 60° detection angle and 3 m detection distance; used for securing rooms or buildings and sending alerts in case of intrusion into the monitored zone. It has a LED indication of the device status. Up to 10 motion sensors can be chain linked to a single intelligent port. Maximum total LANCAT 5/6 cable length for 10 sensors is 46 m. Maximum cable length between individual sensors should be less than 6 m. Maximum connectable cable length for a single sensor is 300 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-02	PIR motion detector

## Spot water sensor



The spot water detector is able to detect water at the installation site. It has the possibility of LED indication on the device itself. Extension is done using a standard LAN CAT 5/6 cable. Maximum cable extension length is max. 60 m.

Package includes: 4.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-04	Spot water sensor

## Rope water sensor



The rope water sensor with 3 m long detection rope protects water-sensitive devices stored inside a rack from potential damage. It is also capable of short-term detection of accumulator acid. The detection cable can be extended with a 3 m long extension cable up to a total length of 50 m. The detector is powered from the main monitoring unit and is recognized automatically. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 30 m. The sensor is fitted with a 3 m detection rope and 6 m long durable connecting cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-06	Rope water sensor with 3 m length detection cable
RMS-I-DE-06-EXT3	Rope water sensor extension—3m sensing cable

## Rope Water Locating Sensor



The rope water locating sensor is designed for specific location water detection. It can be connected to the main monitoring unit by intelligent sensor ports (RJ-45). This device is powered from the main unit. This sensor includes 3 m detection rope extendable via 3m extension detection cable, durable 6 m cable for connecting ropes to detector and detection module, main sensing module connected to intelligent LAN CAT 5/6 port via cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-07	Rope water locating sensor with 3m length detection cable
RMS-I-DE-07-EXT3	Rope water locating sensor extension—3m sensing cable.

## Dry contact



The dry contact sensor is used to connect external devices, such as security or fire systems, or any application that requires control by the unit. When used as an output, it can supply up to 20 mA. The input power supply range is 0 to 5 V. The contact is powered from the main unit. The extension is performed using a standard CAT5/6 network cable and an RJ45-RJ45 coupler RMS-I-CON. The maximum length of the extension cable is 300 m.

Package includes: 4.5 m LAN CAT 5 cable

Code	Description
RMS-I-DRC	Dry contact

## Magnetic door contact



The magnetic door contact is a security feature for door and side panel monitoring. With the magnetic door contact it is possible to monitor unauthorized opening of doors as well as side panels. The contact is powered from the main unit. The extension is performed using a standard CAT 5/6 network cable and an RJ45-RJ45 coupler (category 5e) RMS-I-CON. The maximum length of the extension cable is 300 m.

Package includes: 4.5 m LAN CAT 5 cable, mounting bracket

Code	Description
RMS-I-MK	Magnetic door contact

## AC-Sensor controlled relay (110V/220V)



The AC-Sensor controlled relay allows you to control electrical devices over the internet. It monitors the power load and receives a control signal which is sent from the unit. The relay can provide automatic responses to sensor alerts. It has a built-in replaceable 10A fuse and is equipped with connectors C13 and C14. The relay can be controlled by any sensor. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 30 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-PWR-NO	AC-Sensor controlled relay

## 4-20 mA Converter



The 4-20 mA signal converter is used to integrate the unit with a 4-20 mA transmitter. The 4-20 mA technology is used to communicate analog signals over long distances where electrical interference is a problem. This solution is often used in the process control industry to collect the analog values from a wide array of remote sensors. The 4-20 mA converters can now be integrated into the unit and can be enhanced by adding graphing, web interface, email interface, thresholds and limits. The converter is powered by the main unit. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 4.5 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-VC	4-20 mA Converter

## Coupler for extension



CAT 5e RJ45-RJ45 coupler is used to extend the sensor cable.

Package includes: 10 pcs

Code	Description
RMS-I-CON	CAT 5e RJ45-RJ45 coupler

## USB GSM Modem

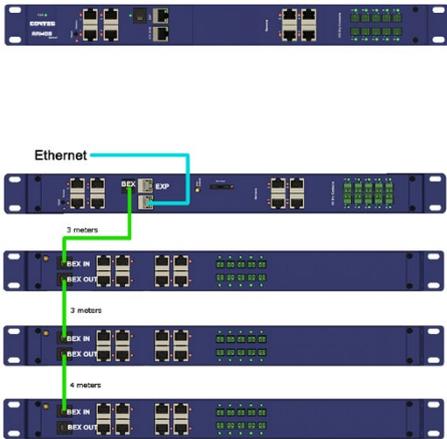


The USB modem can be used to send SMS, Voice Call and MMS alert directly from the base unit to a mobile phone or to a list of mobile phones. This RAMOS Ultra modem is a stand-alone solution and doesn't require third-party applications.

Code	Description
RMS-U-GSM	USB GSM Modem with audio cable (Quad-band)

# RAMOS OPTIMAX AND ACCESSORIES

## RAMOS Optimax



Main monitoring unit provides remote monitoring of the protected environment in smaller server rooms using installed sensors measuring temperature, humidity, detecting intrusion, the presence of harmful gases or chemicals, or other potentially dangerous conditions.

This device is an excellent choice thanks to its small size. It occupies only 1U when placed horizontally on the rails in a rack and still can monitor up to 150 sensors.

RAMOS Optimax can be extended by 2 ways, using basic expanders (RAMOS-BEX-I8-D10) with a maximum total cable length of 10 m in one row, or standard expansion modules (RAMOS ULTRA-EX-I8, RAMOS ULTRA-EX-O16 and RMS-ACS-U-RDU).

A version of the RAMOS Optimax GSM monitoring unit with a built-in 4G modem and an external antenna is available. In addition to the basic function, this version also allows you to send SMS notifications or communicate via the GSM network. The built-in web server of the RAMOS Optimax (GSM) unit allows convenient setting, control, and operation from anywhere. In the event of an alarm, the notification is sent by e-mail or via SMS to predefined recipients. RAMOS Optimax can also be integrated into the CONTEG Pro Server application for a central management and supervision of the monitored environment.

- 8× intelligent ports, adjustable as input or output
- 10× dry contact inputs
- 1× expansion port
- 1× basic expansion port
- Ethernet port 10/100
- 10 virtual sensors for monitoring 3rd party hardware using Modbus and SNMP protocol (can be licensed to 80 sensors)
- Built-in web server

Package includes: external power supply (5V DC 3A) with exchangeable power cord, 19" brackets, crossover cable for adjustment and mounting kit

Code	Description
RAMOS Optimax	Main monitoring unit
RAMOS Optimax GSM	Main monitoring unit with built-in 4G modem and an external antenna

## BEX Basic Expander



Ramos Optimax expansion unit allows chain connection via the BEX port and adds another 8 intelligent ports and 10 digital inputs to the main monitoring unit. The maximum total length of the connecting cables must not exceed 10 m.

Package includes: external power supply (5V DC 3A) with exchangeable power cord, telephone cable with RJ12 connector, 19" brackets, mounting kit

Code	Description
RAMOS-BEX-I8-D10	Basic expander for RAMOS Optimax

## Expander for intelligent port



The expander allows creating 8 inputs/outputs on a single smart port of the main unit. Each port can be set as an input or output (output up to 20 mA). The expander's input contact is capable of supporting any type of door contact. The device is automatically recognized and powered from the main unit. The expander is connected using a standard LAN CAT 5/6 cable. Maximum cable extension length is 300 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RAMOS Ultra-EX-D8-8	Expander for intelligent port

## Relay Box 8



The Relay Box 8 is a specially designed multi-port relay for advanced process control with 8 changeover relay contacts that can be operated manually or via notifications. The Relay Box 8 is easily controlled by any sensors or detectors. The relay can provide automatic responses to sensor status changes. Setting up the Relay Box 8 is easy thanks to its built-in auto-sense feature and user-friendly web interface. This device allows controlling the power, turning On/Off cooling equipment, activating alarms, etc. It requires an external power supply 7.5 V DC (RMS-U-PW). Connection to the main monitoring unit is made using a standard LAN CAT 5/6 cable.

Package includes: 1.5 m LAN CAT 5 cable, 19" mounting brackets

Code	Description
RMS-U-RB-8	Relay Box 8

## Temperature & Humidity Sensor



The enclosed temperature and humidity sensor is designed for placement inside racks and measures temperature in the range  $-55^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  and humidity in the range 0 to 100 %. The sensor can be extended for reach of up to 300 m using a LAN CAT 5/6 cable.

Package includes: 1.5 m long loose cable

Code	Description
RMS-I-STHB	Temperature & Humidity sensor with extension up to 300 m

## Sensors for thermal mapping



Thermal map sensors are ideal for complete environment monitoring in the racks. By using this device it is possible to determine hotspots and adjust the installation of IT hardware in the rack or regulate the output of the cooling unit. Pre-wired sensors on cable string monitor rack in 3 levels.

Monitor temperature at the top, middle and bottom of the IT rack in front or rear or both, as well as the temperature differential from the front to rear, ( $\Delta T$  value). Humidity sensors are also available as an option.

Package includes: 1.5 m long cable

Code	Description
RMS-P-ST3H	Thermal map sensor 3× temperature and 1 humidity, with 1.5m cable. Designed for mounting on one side, front or rear.
RMS-P-ST6H2	Thermal map sensor 6× temperature and 2× humidity (temperature 3× front, 3× rear and 3× $\Delta$ calculated; humidity on front and rear), with 1.5 m LAN cable; (can be extended by LAN CAT 5/6 cable). Sestava se skládá z 2 pcs RMS-P-ST3H and an adapter.

## Sensor Adapter for External Sensor



The Sensor Adapter makes it easy to connect 3rd party analog sensor with output 0-10 V DC. A switch on the side of the sensor adapter allows you to switch to a dry contact I/O instead, which is capable of maintaining a 5V DC output to power the sensor at all times, while still monitoring the dry contact input. This device is plugged into Optimax main monitoring units.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-P-SENS	Sensor Adapter for External Sensor with 0-10 V DC output and dry contact input

## Programmable Display



The Programmable Display is plugged into Optimax main monitoring unit, and can be programmed to display the data from any intelligent or virtual sensor and shows up to 8 parameters in sequence. LED indicators alerts if a sensor is in a critical condition. This is then reflected on the screen itself in the form of a critical or warning notification. The display is powered from the intelligent port and measures 1 temperature at the same time. Installation is performed on the door of an IT rack, on the wall in the room or aisle of the data center.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-P-ST-DSPL	Programmable backlit display with temperature sensor

## Air-flow sensor



The sensor detects the presence or absence of flowing air inside the racks. The sensor works on the principle of differential measurement, which compares the resistance of the external and internal thermistor. This device can be connected to an alarm response and can be extended up to 30 m using a LAN CAT 5/6 cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-AF	Air-flow sensor

## Siren & strobe light



The Siren & Strobe serves as a visual and acoustic alarm for the operator. It emits a loud piercing of up to 100 dB at a distance of 1m from the device and the strobe flashes are at a frequency of 400 times per minute. The device has extensive setting options, such as turning off the alarm. Extension is done using a standard LAN CAT 5/6 cable. Maximum cable extension length is 30 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-AS	Siren & strobe light

## Smoke Detector



The detector emits an 85 dB two-state-alarm signal at a distance of 3 m from the unit and is also fitted with LED indication. It should be mounted on to the ceiling for maximum smoke detection ability. This device is powered from the main unit and can be connected to a back-up 9 V battery. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 150 m. Has a built-in flash light to alert when smoke is detected.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-01	Smoke Detector

## PIR motion detector



Motion detector with 60° detection angle and 3 m detection distance; used for securing rooms or buildings and sending alerts in case of intrusion into the monitored zone. It has a LED indication of the device status. Up to 10 motion sensors can be chain linked to a single smart port. Maximum total LANCAT 5/6 cable length for 10 sensors is 46 m. Maximum cable length between individual sensors should be less than 6 m. Maximum connectable cable length for a single sensor is 300 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-02	PIR motion detector

## Spot water sensor



The spot water detector is able to detect water at the installation site. It has the possibility of LED indication on the device itself. Extension is done using a standard LAN CAT 5/6 cable. Maximum cable extension length is max. 60 m.

Package includes: 4.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-04	Spot water sensor

## Rope water sensor



The rope water sensor with 3 m long detection rope protects water-sensitive devices stored inside a rack from potential damage. It is also capable of short-term detection of accumulator acid. The detection cable can be extended with a 3 m long extension cable up to a total length of 50 m. The detector is powered from the main monitoring unit and is recognized automatically. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 30 m. The sensor is fitted with a 3 m detection rope and 6 m long durable connecting cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-06	Rope water sensor with 3 m length detection cable
RMS-I-DE-06-EXT3	Rope water sensor extension—3m sensing cable

## Rope Water Locating Sensor



The rope water locating sensor is designed for specific location water detection. It can be connected to the main monitoring unit by intelligent sensor ports (RJ-45). This device is powered from the main unit. This sensor includes 3 m detection rope extendable via 3m extension detection cable, durable 6 m cable for connecting ropes to detector and detection module, main sensing module connected to intelligent LAN CAT 5/6 port via cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-07	Rope water locating sensor with 3m length detection cable
RMS-I-DE-07-EXT3	Rope water locating sensor extension—3m sensing cable.

## Dry contact



The dry contact sensor is used to connect external devices, such as security or fire systems, or any application that requires control by the unit. When used as an output, it can supply up to 20 mA. The input power supply range is 0 to 5 V. The contact is powered from the main unit. The extension is performed using a standard CAT5/6 network cable and an RJ45-RJ45 coupler RMS-I-CON. The maximum length of the extension cable is 300 m.

Package includes: 4.5 m LAN CAT 5 cable

Code	Description
RMS-I-DRC	Dry contact

## Magnetic door contact



The magnetic door contact is a security feature for door and side panel monitoring. With the magnetic door contact it is possible to monitor unauthorized opening of doors as well as side panels. The contact is powered from the main unit. The extension is performed using a standard CAT 5/6 network cable and an RJ45-RJ45 coupler (category 5e) RMS-I-CON. The maximum length of the extension cable is 300 m.

Package includes: 4.5 m LAN CAT 5 cable, mounting bracket

Code	Description
RMS-I-MK	Magnetic door contact

## AC-Sensor controlled relay (110V/220V)



The AC-Sensor controlled relay allows you to control electrical devices over the internet. It monitors the power load and receives a control signal which is sent from the unit. The relay can provide automatic responses to sensor alerts. It has a built-in replaceable 10A fuse and is equipped with connectors C13 and C14. The relay can be controlled by any sensor. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 30 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-PWR-NO	AC-Sensor controlled relay

## 4-20 mA Converter



The 4-20 mA signal converter is used to integrate the unit with a 4-20 mA transmitter. The 4-20 mA technology is used to communicate analog signals over long distances where electrical interference is a problem. This solution is often used in the process control industry to collect the analog values from a wide array of remote sensors. The 4-20 mA converters can now be integrated into the unit and can be enhanced by adding graphing, web interface, email interface, thresholds and limits. The converter is powered by the main unit. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 4.5 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-VC	4-20 mA Converter

## Modbus RTU Adapter



Converts the MOD/EXP port on the RAMOS Optimax main monitoring unit in to serial Modbus Port.

The RAMOS Optimax main monitoring unit comes equipped with an RS485 Modbus and expansion port combined in one. When using this RJ45 port to connect Modbus appliances, the Modbus RTU Adapter makes it easier to connect a 2 wire serial bus cable to the RJ45 port, converting the RJ45 connector into a 3 pin terminal block connection.

Code	Description
RMS-O-MODBUS	Modbus RTU Adapter for Ramos Optimax

## Mini Sensor Controlled Relay



Mini Relay box with optional controlled power output can be plugged into RAMOS Plus or Optimax main monitoring units. This device can drive the larger relay with optional low current output. Equipment with a relay that needs to be switched based on sensor input, this adapter will switch contacts or output 200 mA—5 V DC based on a sensor's status.

Code	Description
RMS-P-RB	Mini Relay box with optional controlled power output

## Coupler for extension



CAT 5e RJ45-RJ45 coupler is used to extend the sensor cable.

Package includes: 10 pcs

Code	Description
RMS-I-CON	CAT 5e RJ45-RJ45 coupler

# RAMOS PLUS AND ACCESSORIES

## RAMOS Plus



The RAMOS Plus main monitoring unit is the smallest model from the RAMOS range of intelligent monitoring devices, designed for use in both free-standing racks and outdoor cabinets. It comes in two versions—the standard variant and the GSM variant with a built-in GSM modem and an external antenna. The built-in web server of the RAMOS Plus (GSM) unit allows convenient setting, control, and operation from anywhere. In the event of an alarm, the notification is sent by e-mail or via SMS to predefined recipients.

It has 4 auto-sense intelligent sensor ports to which it is possible to connect a wide range of intelligent sensors (temperature, humidity, water leakage, airflow, access control, control relays, detect AC voltage, measure DC voltage, ...). Sensors include an integrated data collection and graphing package to spot trends in temperature, and humidity. Complete remote management features are supported, including secure SNMP v3. RAMOS Plus also supports Modbus TCP and RADIUS.

RAMOS Plus can also be integrated into the CONTEG Pro Server application for central management and supervision of the monitored environment.

- 4× intelligent ports, adjustable as input or output
- 5× virtual sensors for monitoring 3rd party hardware using Modbus and SNMP protocol (can be licensed to 40 sensors)
- Ethernet port 10/100
- Built-in webserver

Package includes: 5 V DC 3A external power supply with exchangeable power cable, mounting brackets, crossover patch cord cable 1.5m length, mounting kit, and installation CD. The GSM version also contains an external GSM antenna with a 3m long cable and SMA connector.

Code	Description
RAMOS Plus	Main monitoring unit
RAMOS Plus GSM	Main monitoring unit with built-in 4G modem and an external antenna

## Expander for intelligent port



The expander allows creating 8 inputs/outputs on a single smart port of the main unit. Each port can be set as an input or output (output up to 20 mA). The expander's input contact is capable of supporting any type of door contact. The device is automatically recognized and powered from the main unit. The expander is connected using a standard LAN CAT 5/6 cable. Maximum cable extension length is 300 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RAMOS Ultra-EX-D8-8	Expander for intelligent port

## Relay Box 8



The Relay Box 8 is a specially designed multi-port relay for advanced process control with 8 changeover relay contacts that can be operated manually or via notifications. The Relay Box 8 is easily controlled by any sensors or detectors. The relay can provide automatic responses to sensor status changes. Setting up the Relay Box 8 is easy thanks to its built-in auto-sense feature and user-friendly web interface. This device allows controlling the power, turning On/Off cooling equipment, activating alarms, etc. It requires an external power supply 7.5 V DC (RMS-U-PW). Connection to the main monitoring unit is made using a standard LAN CAT 5/6 cable.

Package includes: 1.5 m LAN CAT 5 cable, 19" mounting brackets

Code	Description
RMS-U-RB-8	Relay Box 8

## Temperature & Humidity Sensor



The enclosed temperature and humidity sensor is designed for placement inside racks and measures temperature in the range  $-55^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  and humidity in the range 0 to 100 %. The sensor can be extended for reach of up to 300 m using a LAN CAT 5/6 cable.

Package includes: 1.5 m LAN CAT 5 cable for connection

Code	Description
RMS-I-STHB	Temperature & Humidity sensor with extension up to 300 m

## Sensors for thermal mapping



Thermal map sensors are ideal for complete environment monitoring in the racks. By using this device it is possible to determine hotspots and adjust the installation of IT hardware in the rack or regulate the output of the cooling unit. Pre-wired sensors on cable string monitor rack in 3 levels.

Monitor temperature at the top, middle and bottom of the IT rack in front or rear or both, as well as the temperature differential from the front to rear, ( $\Delta T$  value). Humidity sensors are also available as an option.

Package includes: 1.5 m LAN CAT 5 cable for connection

Code	Description
RMS-P-ST6	Thermal map sensor 6× temperature (3× front, 3× rear and 3× $\Delta$ calculated), with 1.5m cable; (can be extended by LAN CAT 5/6 cable)
RMS-P-ST6H2	Thermal map sensor 6× temperature and 2× humidity (temperature 3× front, 3× rear and 3× $\Delta$ calculated; humidity on front and rear), with 1.5 m LAN cable; (can be extended by LAN CAT 5/6 cable)

## Sensor Adapter for External Sensor



The Sensor Adapter makes it easy to connect 3rd party analog sensor with output 0-10 V DC. A switch on the side of the sensor adapter allows you to switch to a dry contact I/O instead, which is capable of maintaining a 5V DC output to power the sensor at all times, while still monitoring the dry contact input. This device is plugged into Optimax main monitoring units.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-P-SENS	Sensor Adapter for External Sensor with 0-10 V DC output and dry contact input

## Programmable Display



The Programmable Display is plugged into Optimax main monitoring unit, and can be programmed to display the data from any intelligent or virtual sensor and shows up to 8 parameters in sequence. LED indicators alerts if a sensor is in a critical condition. This is then reflected on the screen itself in the form of a critical or warning notification. The display is powered from the intelligent port and measures 1 temperature at the same time. Installation is performed on the door of an IT rack, on the wall in the room or aisle of the data center.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-P-ST-DSPL	Programmable backlit display with temperature sensor

## Air-flow sensor



The sensor detects the presence or absence of flowing air inside the racks. The sensor works on the principle of differential measurement, which compares the resistance of the external and internal thermistor. This device can be connected to an alarm response and can be extended up to 30 m using a LAN CAT 5/6 cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-AF	Air-flow sensor

## Siren & strobe light



The Siren & Strobe serves as a visual and acoustic alarm for the operator. It emits a loud piercing of up to 100 dB at a distance of 1m from the device and the strobe flashes are at a frequency of 400 times per minute. The device has extensive setting options, such as turning off the alarm. Extension is done using a standard LAN CAT 5/6 cable. Maximum cable extension length is 30 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-AS	Siren & strobe light

## Smoke Detector



The detector emits an 85 dB two-state-alarm signal at a distance of 3 m from the unit and is also fitted with LED indication. It should be mounted on to the ceiling for maximum smoke detection ability. This device is powered from the main unit and can be connected to a back-up 9 V battery. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 150 m. Has a built-in flash light to alert when smoke is detected.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-01	Smoke Detector

## PIR motion detector



Motion detector with 60° detection angle and 3 m detection distance; used for securing rooms or buildings and sending alerts in case of intrusion into the monitored zone. It has a LED indication of the device status. Up to 10 motion sensors can be chain linked to a single smart port. Maximum total LANCAT 5/6 cable length for 10 sensors is 46 m. Maximum cable length between individual sensors should be less than 6 m. Maximum connectable cable length for a single sensor is 300 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-02	PIR motion detector

## Spot Water Sensor



The spot water detector is able to detect water at the installation site. It has the possibility of LED indication on the device itself. Extension is done using a standard LAN CAT 5/6 cable. Maximum cable extension length is max. 60 m.

Package includes: 4.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-04	Spot water sensor

## Rope Water Sensor



The rope water sensor with 3 m long detection rope protects water-sensitive devices stored inside a rack from potential damage. It is also capable of short-term detection of accumulator acid. The detection cable can be extended with a 3 m long extension cable up to a total length of 50 m. The detector is powered from the main monitoring unit and is recognized automatically. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 30 m. The sensor is fitted with a 3 m detection rope and 6 m long durable connecting cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-06	Rope water sensor with 3 m length detection cable
RMS-I-DE-06-EXT3	Rope water sensor extension—3m sensing cable

## Rope Water Locating Sensor



The rope water locating sensor is designed for specific location water detection. It can be connected to the main monitoring unit by intelligent sensor ports (RJ-45). This device is powered from the main unit. This sensor includes 3 m detection rope extendable via 3m extension detection cable, durable 6 m cable for connecting ropes to detector and detection module, main sensing module connected to intelligent LAN CAT 5/6 port via cable.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-07	Rope water locating sensor with 3m length detection cable
RMS-I-DE-07-EXT3	Rope water locating sensor extension—3m sensing cable.

## Dry contact



The dry contact sensor is used to connect external devices, such as security or fire systems, or any application that requires control by the unit. When used as an output, it can supply up to 20 mA. The input power supply range is 0 to 5 V. The contact is powered from the main unit. The extension is performed using a standard CAT5/6 network cable and an RJ45-RJ45 coupler RMS-I-CON. The maximum length of the extension cable is 300 m.

Package includes: 4.5 m LAN CAT 5 cable

Code	Description
RMS-I-DRC	Dry contact

## Magnetic door contact



The magnetic door contact is a security feature for door and side panel monitoring. With the magnetic door contact it is possible to monitor unauthorized opening of doors as well as side panels. The contact is powered from the main unit. The extension is performed using a standard CAT 5/6 network cable and an RJ45-RJ45 coupler (category 5e) RMS-I-CON. The maximum length of the extension cable is 300 m.

Package includes: 4.5 m LAN CAT 5 cable, mounting bracket

Code	Description
RMS-I-MK	Magnetic door contact

## AC-Sensor controlled relay (110V/220V)



The AC-Sensor controlled relay allows you to control electrical devices over the internet. It monitors the power load and receives a control signal which is sent from the unit. The relay can provide automatic responses to sensor alerts. It has a built-in replaceable 10A fuse and is equipped with connectors C13 and C14. The relay can be controlled by any sensor. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 30 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-PWR-NO	AC-Sensor controlled relay

## 4-20 mA Converter



The 4-20 mA signal converter is used to integrate the unit with a 4-20 mA transmitter. The 4-20 mA technology is used to communicate analog signals over long distances where electrical interference is a problem. This solution is often used in the process control industry to collect the analog values from a wide array of remote sensors. The 4-20 mA converters can now be integrated into the unit and can be enhanced by adding graphing, web interface, email interface, thresholds and limits. The converter is powered by the main unit. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 4.5 m.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-VC	4-20 mA Converter

## Mini Sensor Controlled Relay



Mini Relay box with optional controlled power output can be plugged into RAMOS Plus or Optimax main monitoring units. This device can drive the larger relay with optional low current output. Equipment with a relay that needs to be switched based on sensor input, this adapter will switch contacts or output 200 mA—5 V DC based on a sensor's status.

Code	Description
RMS-P-RB	Mini Relay box with optional controlled power output

## Coupler for extension



CAT 5e RJ45-RJ45 coupler is used to extend the sensor cable.

Package includes: 10 pcs

Code	Description
RMS-I-CON	CAT 5e RJ45-RJ45 coupler

# RAMOS MICRO AND ACCESSORIES

## RAMOS Micro



RAMOS Micro is a simple small solution for monitoring the environment of IT racks. With two new universal ports it can monitor up to 5 sensors (temperature, humidity, flood, pressure, CO2, etc.) and with 2 binary inputs it can detect other possible parameters such as door contacts, smoke, motion, flood detectors, etc. It supports PoE power supply and WiFi communication.

With the new universal ports, new accessories can be connected, such as point flood detection and flood rope, or a special sensor for pressure and CO2 measurement.

Technical information:

- 2 universal RJ12 ports through which up to 5 parameters can be monitored.
- 2 input contacts for connecting detectors or contacts
- Power supply: PoE or external 5V power supply (optional accessory RMS-PW-05)
- Protocols: SNMP, XML
- Communication: LAN and WiFi
- Dimensions: 30 × 103 × 68 mm
- Built-in webservice

Included: RAMOS Micro, brackets, temperature sensor with 3 m cable.

Code	Description
RAMOS Micro	Main monitoring unit

## Temperature Sensor



Dimensions: 40 × 40 × 20 mm  
 Resolution: 0,1 °C  
 Range: -30 to +70 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-STB	Temperature sensor in a box with a 3 m cable.

## Temperature and Humidity Sensor



Dimensions: 40 × 40 × 20 mm  
 Resolution: 0,1 °C/0,1% RH  
 Range: -30 to +70 °C/0-100 % RH

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-STHB	Temperature and humidity sensor in a box with a 3 m cable.

## Air-Quality Sensor



Measures temperature, humidity, atmospheric pressure and the content of volatile substances in the air.

Dimensions: 40 × 40 × 20 mm  
 Resolution: 0,1 °C/0,1% RH/10 Pa/1–32 ppb  
 Range: –30 to +70 °C/0–100% RH/30–110 kPa/0–60 000 ppb

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-SQAB	Air-quality sensor in a box with a 3 m cable

## Temperature, Humidity and CO<sub>2</sub> Sensor



Measures temperature, humidity and CO<sub>2</sub> content in the air.

Dimensions: 60 × 60 × 20 mm  
 Resolution: 0,1 °C/0,1% RH/1–32 ppm  
 Range: –30 to +70 °C/0–100% RH/300–40 000 ppm

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-STHCOB	Temperature, Humidity and CO <sub>2</sub> Sensor in a box with a 3 m cable

## Spot Water Sensor



Does not require an external power supply and plugs into the sensor ports. For indoor and outdoor use.

Dimensions: 47 × 37 × 22 mm  
 IP protection: IP67  
 Mounting hole: Ø 4 mm

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-DE-07	Spot water sensor with a 3 m cable

## Rope Water Sensor



Flood detection rope with relay output and port for connection to sensor ports.

Power supply via adapter (included), via terminals or via sensor port.

The connection cable for the detection rope (RMS-DE-06-D2) is 2 m long (included).

The basic detection rope (RMS-DE-06-EXT2) 2m long is included in the kit and can be extended with 10m extensions (RMS-DE-06-EXT10), 50m extensions (RMS-DE-06-EXT50) and 5 m connecting parts (RMS-DE-06-C5) up to a maximum length of 185 m.

Code	Description
RMS-DE-06	Rope water sensor



## Temperature Sensor



Temperature sensor with a 3m cable.

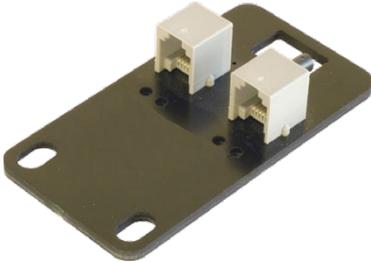
Resolution: 0,1 °C

Range: -10 to +80 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-ST-02	Temperature sensor 1-Wire, 3 m cable with RJ12 connector

## Temperature Sensor on Mounting Bracket



Temperature sensor on mounting bracket for connection in series with a 3 m cable.

Dimensions: 83 × 33 × 18 mm

Resolution: 0,1 °C

Range: -10 to +80 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-ST-04	Temperature sensor on mounting bracket 1-Wire, 3 m cable with two RJ12 connectors

## Outdoor Temperature Sensor



Outdoor temperature sensor 1-Wire with 3 m cable with RJ12 connector.

Resolution: 0,5 °C

Range: -50 to +125 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-ST-05	Outdoor temperature sensor 1-Wire with 3 m cable with RJ12 connector

## Humidity Sensor



Humidity sensor 1-Wire with 3 m cable with RJ12 connector.

Accuracy: 2 % RH (při 25 °C)

Resolution: 0,5 °C

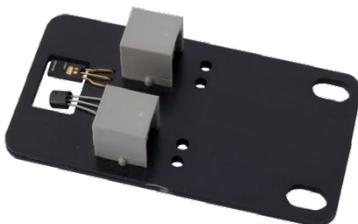
Measurement range: 0–100 % RH

Operational range: -40 to +85 °C

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-SH-02	Humidity sensor 1-Wire with 3 m cable with RJ12 connector.

## Temperature and humidity sensor



Temperature and humidity sensor 1-Wire, mounting bracket, 3 m cable, 2× RJ12 connector for series connection.

Dimensions: 83 × 33 × 18 mm

Operational range: -40 to +85 °C

Measurement range: -10 to +80 °C/0–100 % RH

Resolution: 0,1 °C/0,1 % RH

Package includes: 3 m long cable for sensor connection, 2× RJ12 connector, mounting bracket.

Code	Description
RMS-STH-02	Temperature and humidity sensor 1-Wire, mounting bracket, 3 m cable, 2× RJ12 connector

## Optical Smoke Detector



Optical smoke detector with relay output and dual detection — optical and temperature, equipped with siren for local warning with a volume of at least 85 db at a distance of 3 m from the device.

Dimensions:	Ø 126 mm, výška 65 mm
Operational range:	-10 to +70 °C
Alarm temperature:	+60 to +70 °C
Supply voltage:	9–15 VDC
Consumption at standard operation:	2,5 mA
Consumption during an alarm:	100 mA
Sensitivity:	0,11–0,13 db/m

The optical smoke detector with relay output does not include a connecting cable and voltage source. The optical smoke detector requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-01	Optical smoke detector with relay output. Power supply is required (e.g. RMS-PW-12). Does not include connecting cables.

## Motion Detector



PIR motion detector serves as a security element for securing the area and monitoring the movement of people in the selected zone.

Detection angle:	120°
Engagement length:	12 m
Operational range:	-10 to +55 °C
Supply voltage:	12 VDC
Consumption at standard operation:	10 mA
Consumption during an alarm:	35 mA

The PIR motion detector does not include a connection cable and voltage source. The motion detector requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-02	PIR motion detector. Power supply is required (e.g. RMS-PW-12). Does not include connection cables.

## Spot Flood Sensor



The flood detector is used to indicate water flooding that may endanger the functionality of the equipment. The sensing takes place at the electrodes of the detector, where the decisive factor is the water connecting the electrodes.

Supply voltage:	12 VDC ± 15 %
Consumption:	2 mA
Supply cable:	2,5 m
Operational range:	-10 to +40 °C

The flood detector does not contain a voltage source. It requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-04	Flood detector. Power supply is required (e.g. RMS-PW-12).

## Dual glass break detector



The glass break detector is used to guard glass surfaces and detect their destruction. It uses a dual method of detection in which slight changes in air pressure in the room (impact on the glass filling) and subsequent sounds of glass breaking are evaluated. This solution is characterised by a high reliability of response when the glass filling is broken. The sensitivity of the detector can be easily adjusted according to the distance and dimensions of the windows to be protected. In addition, the glass break detector is equipped with an optional memory indication.

Supply voltage: 12 VDC ± 25 %	Detection range: up to 9 m
Standby consumption (without LED): max 10 mA	Minimum area of window filling: 0,6 m × 0,6 m
Max consumption (with LED): max 35 mA	Operational range: -10 to +40 °C
Relay output: 60 V/50 mA	Stabilisation time after switching on: max 60 s
Internal resistance: max. 30 Ohm	

The glass break detector does not contain a voltage source. It requires a voltage source, e.g. RMS-PW-12.

Code	Description
RMS-DE-05	Dual glass break detector. Power supply is required (e.g. RMS-PW-12). Does not include connecting cables.

## Magnetic Contact



The magnetic door contact with mounting bracket serves as a monitoring element that monitors the opening of the rack.

Package includes: a 2.5 m long cable, mounting bracket and fasteners.

Code	Description
RMS-MK-01	Magnetic contact, Mounting bracket (universal mounting) including fasteners, VdS G, 2.5m

## Hub for Connecting 2 Sensors to a 1-Wire Bus



The 2× RJ-12 > 1× RF-12 hub for temperature and humidity sensors allows the connection of two sensors (with RJ-12 connector) to one 1-Wire bus (sensor port).

Package includes: 3 m long cable for sensor connection.

Code	Description
RMS-CON-04	Hub for connecting 2 sensors to 1-Wire bus (for RAMOS Micro)

## PowerBox



The PowerBox is designed to detect and control 110/230VAC voltage by turning on or off. The PowerBox can be controlled both voltage and voltage free. Suitable for remote server restart, controlling additional cooling or fan and many other functions.

Output control: 110/230 VAC, max 8A  
 Sockets: input C13/output C13  
 Control via relay or voltage: 3–15 VDC  
 Operational range: -20 to +80 °C  
 Dimensions: 88 × 65 × 50 mm

The PowerBox does not include cables and connecting wires/wires.

Code	Description
RMS-PWR-01	PowerBox, voltage detection function (only for RAMOS Mini)

## Universal Power Adapter



Universal power adapter 5 VDC for RAMOS Micro.

3 adapters: EU, UK, US/JAP  
 DC Source: 5V  
 Cable: 1 m

Code	Description
RMS-PW-05	Universal power adapter 5V/0.5 A

## Power adapter for accessories



Power adapter for RAMOS Micro accessories.

12 V / 0,5 A, cables without connector

Code	Description
RMS-PW-12	Power adapter for accessories, 12 V/0.5 A, cables without connector

# BLUETOOTH ACS

## Bluetooth ACS controller with electronic handle



Bluetooth ACS controller

Single Output Bluetooth Controller is an easy-to-use solution that opens new possibilities in virtual key sharing, security audit trails, and Internet of Things technology. Plug-and-play technology simplifies the installation process so any electronically actuated latch can easily be connected to a smart access network. Additionally, each Bluetooth controller has a built-in unique digital identifier so smart access networks can tell each of them apart.

Electronic Locking Swivel handle features an efficient microprocessor-controlled gear motor design that ensures minimal power consumption and provides intelligent locking and monitoring capabilities.

Package includes: Bluetooth ACS controller, electronic handle with cable, power supply 12V DC with exchangeable power cord (cord not included, see additional options below).



Electronic handle

Code	Description
RMS-ACS-BT	Bluetooth ACS controller with electronic handle DP-ZM-E1, cable and power supply without power cord

The Keypanion™ app lets you use your phone or smart device to wirelessly access your equipment anytime, anywhere. Compatible with Bluetooth® enabled hardware, the Keypanion app offers the secure creation and sharing of digital keys with other app users anywhere in the world, making wireless access control as easy as 1, 2, key!

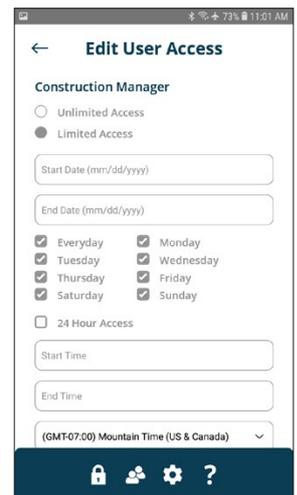
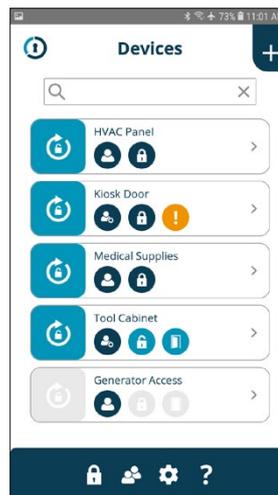
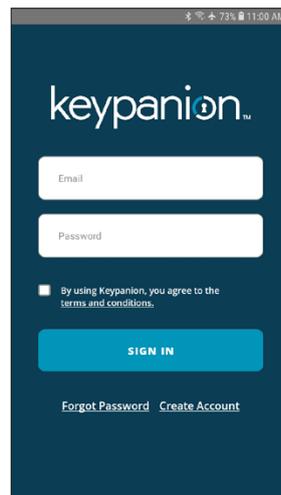


Power supply 12V DC with exchangeable power cord (cord not included, see additional options below)



Application Keypanion™

- For Android,
- For iOS,
- For Windows is in development process.



## Additional options—power cords for power supply



**IP-C-C3C410**

Power cord IEC 320 C13 to IEC 320 C14, length 1.0 m



**IP-C-C3SH06**

Power cord IEC 320 Schuko/UTE to C13, length 0.6 m

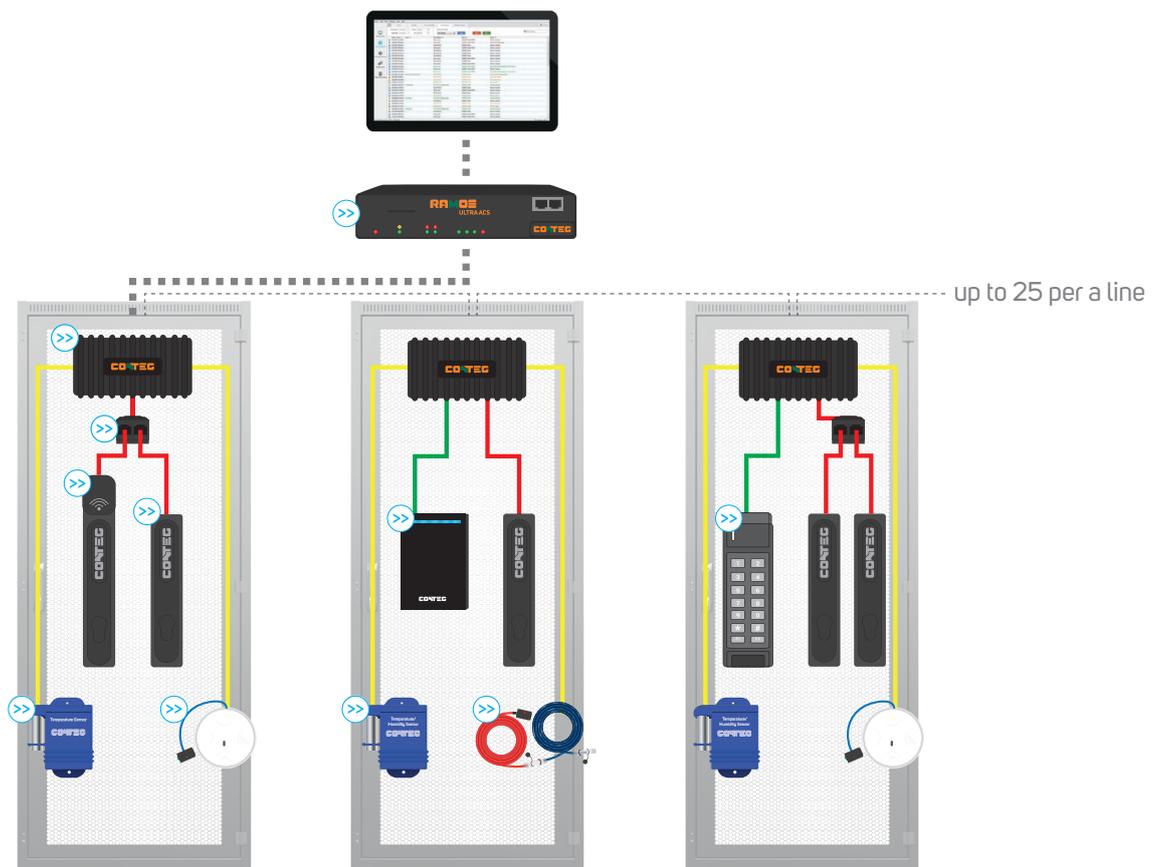
# RAMOS ACS AND ACCESSORIES



**RAMOS ACS**—centralized electronic access system capable of monitoring access for up to 5,000 doors, monitoring status of the environment (temperature, humidity, water leakage, smoke), integrating additional devices (PDU, UPS, IP cameras, etc.) and allowing remote control. The system consists of hardware components and the control software. The hardware includes a compact RAMOS ULTRA ACS or RAMOS ULTRA main control and monitoring unit along with accessories such as sensors, detectors, locks, readers, etc. The system is controlled by **CONTEG Pro Server** software with a user-friendly web interface for sensor configuration or data collection and featuring extensive options for graphical display of values.

**RAMOS ULTRA ACS** is a universal yet compact control and monitoring unit powered by 12 V DC. A single unit monitors up to 500 sensors and checks up to 50 racks via expanders (RDU). When using control and monitoring unit **RAMOS ULTRA**, the access control system allows monitoring up to 100 racks. Door access is then controlled via readers which allow access to the secured area after presenting a contact-less smart card/chip, a mobile phone with NFC, entering a numerical code or face recognition. These combined with IP cameras can then create full records of all activity in the area.

## Example Configurations of RAMOS ACS





## Rack Door Unit (RDU)



RDU's are connected in a daisy chain to control and monitoring units via expansion ports. Each RDU can be connected to one reader and one lock or two handles via a hub.

- 1 (green) port for a card reader or keypad
- 1 (red) port for an electronic handle or an electromagnetic lock
- 2 (yellow) smart autodetection ports
- LED indicators signaling connection and power status

The RDU is connected via RJ-45 extension ports using a standard LAN CAT 5 cable. Each expansion port of the control and monitoring unit can support up to 25 RDU's in series connection. The maximum length of the connecting cable (LAN CAT 5/6) for communication between rack door units and the control and monitoring unit is 300 meters.

Package includes: 12 V DC power supply with power cable and 1.5 m LAN cable

Dimensions: 132 × 54 × 34 mm

Code	Description
RMS-ACS-U-RDU	Rack door unit (RDU)

## Face Recognition Door Reader with a Multi-Format RFID Reader



The on-wall biometric reader for face recognition with a multi-format RFID reader can be programmed to open a door 3 different ways, by recognizing the geometry of a face, or by recognizing a face and an RFID medium, or simply by using an RFID medium. The integrated multi-format RFID reader offers the possibility of reading RFID media on both 125 kHz and 13.56 MHz (e.g. MIFARE®). Thanks to the operational lighting of the terminal from 0 lx to 25,000 lx, this device can operate reliably even in complete darkness at the place of installation. IR camera for capturing the face is equipped with an infrared-based fake face blocking technology (LFD), thus prevents spoofing by printed images and LCDs. The device is connected to the RAMOS ACS access control system via a Wiegand protocol.

Package includes: 24VDC/2.5A power supply in a connection box with power and connection cable, wall-mounting kit

Dimensions: 80 × 160,3 × 71,8 mm

Code	Description
RMS-ACS-U-FACE	Face recognition door reader with a multi-format RFID reader

## Contactless Reader



The dual contactless reader offers the capability to read RFID media on both the 125 kHz and 13.56 MHz frequency band (such as MIFARE® or NFC). Aside from standard RFID cards or fobs, the reader is also compatible with mobile phones equipped with NFC technology with Android® 4.4 Kit Kat OS (or higher) and the corresponding NFC application. The front section of the reader is protected by tempered glass and comes in black. Designed for mounting in indoor or outdoor unprotected areas (IP 55 enclosure). The reader is equipped with a buzzer and status indication LEDs. Low power consumption of only 65 mA in standard operation, max. 180 mA. Powered from the main unit.

Package includes: 4.5 m long cable with a green color-coded RJ-45 connector, 2 fastening screws

Dimensions: 96 × 67 × 13.5 mm

Code	Description
RMS-ACS-U-MCR	Dual contactless reader

## Keypad with Card Reader



Backlit keypad with built-in card reader (EM format) enables authentication either using only a card on the 125 kHz frequency band, or using a combination of a card along with a four-character code. Easy connection to an RDU via a cable with color-coded RJ-45 connector. The reader is equipped with a buzzer and status indication LEDs. Suitable for installation in indoor areas. Low power consumption of only 65 mA in standard operation. Powered from the main unit.

Package includes: 4.5 m long cable with a green color-coded RJ-45 connector and 3 fastening screws

Dimensions: 152 × 46 × 25 mm

Code	Description
RMS-ACS-U-KER	Backlit keypad with built-in card reader

## USB Card Reader



This desktop dual card reader for PC is a handy peripheral for user card administration in the CONTEG Pro Server application. The reader operates on 125 kHz and 13.56 MHz frequency. It is capable of working with 125 kHz identification media for access control and is fitted with LED signalization and a buzzer. The reader connects to the computer's USB port, from which it also draws power.

Package includes: 0.5 long USB cable

Dimensions: 105 × 70 × 13 mm

Code	Description
RMS-ACS-DCR	Desktop USB card reader

## Electronic Handle



The electronic handle is designed for mounting directly onto a rack door with a standard 25 × 150 mm mounting hole. The handle with half-cylindrical insert can be opened using a key and can be mounted onto a door with a multi-point or single-point locking mechanism. The body is fitted with LED indication of status—unlocked, locked, open and breach. The handle is highly energy efficient, requiring less than 50 mA when idle, and less than 250 mA when in working mode, and is powered from the main unit.

Package includes: 4.5 m long cable with a black color-coded RJ-45 connector

Code	Description
DP-ZM-E1	Electronic handle

## Electronic Handle with Card Reader



The electronic handle with card reader is located on the door of the switchboard itself with a standard mounting hole of 25 × 150 mm. The handle with semi-cylindrical insert can be opened with a key and can be fitted to doors with multi-point and single-point locking mechanisms. The handle body has LED signalling indicating the status: unlocked, locked, open and intrusion. A built-in miniature reader is located at the top of the handle body with a reading distance of 3 cm.

DP-ZM-E2 reads EM and HID Prox 125 kHz cards and communicates via Wiegand 26b protocol. DP-ZM-E3 reads Mifare and iClass 13.56 MHz cards and communicates via the Wiegand protocol.

The handle has low power consumption, less than 50 mA in normal state and less than 250 mA in operating mode, and is powered from the main unit.

Package includes: 2× 4.5 m long cable with green cap for the reader and black cap for the handle on the RJ-45 connector for proper connection.

Code	Description
DP-ZM-E2	Electronic handle with 125 kHz card reader
DP-ZM-E3	Elektronická klika s čtečkou karet 13,56 MHz

## Hub for Two Handles



Hub for connecting two handles onto a single rack door unit (RDU); allows splitting output in two to control two CONTEG handles on a single rack. Fitted with three RJ-45 ports (1 input and 2 outputs). Using the hub on an RDU makes it impossible to differentiate the individual handles in the system since they are both displayed as one handle. If any of the handles is opened or unlocked with a key, the system will display the status for both handles. Using the hub for RDUs allows connecting up to 100 racks (200 handles) through a single control and monitoring unit. The hub cannot be used for electromagnetic locks.

Package includes: 0.25 m long red LAN cable

Code	Description
RMS-CON-ACS	Hub for connecting two handles onto a single rack door unit (RDU)

## Expander for Smart Port



The expander allows creating 8 inputs/outputs on a single smart port of the main control and monitoring unit. The expander's input contact is capable of supporting any type of door contact (e.g. RMS-MK-01). The device is automatically recognized and powered from the main unit. The expander is connected using a standard LAN CAT 5/6 cable. Maximum cable extension length is 300 m.

Package includes: 1.5 m LAN cable for connection

Code	Description
RAMOS Ultra-EX-D8-8	Expander for smart port

## Magnetic Contact



Magnetic door contact with mount, designed as a tool for monitoring the opening of rack doors.

Package includes: 2.5 m long cable, mount and fasteners

Code	Description
RMS-MK-01	Magnetic door contact

## Electromagnetic Lock—Small



This small electromagnetic door lock with holding force of 700 N, which corresponds to 70 kg, is suitable for racks which cannot be fitted with a CONTEG electronic handle. LED indicates the status of the lock: unlocked, locked, open or breach. Powered from the main unit.

Package includes: 3 m long cable with a red color-coded RJ-45 connector and fastening screws

Dimensions: 90 × 33 × 19 mm

Weight: 0.7 kg

Code	Description
DP-ZM-EML-S	Small electromagnetic door lock

## Electromagnetic Lock—Large



This water-tight electromagnetic door lock with holding force of 3,500 N, which corresponds to 350 kg, is suitable for mounting onto entrance doors. LED indicates the status of the lock: unlocked, locked, open or breach. Powered from the main unit.

Package includes: 3 m long cable with a red color-coded RJ-45 connector and fastening screws.

Dimensions: 273 × 44 × 28 mm

Weight: 2.5 kg

Order Code	Description
DP-ZM-EML-LW	Large electromagnetic door lock

## RFID Media—Cards



EM and HID Prox. identification cards with a frequency of 125 kHz (LF), and MIFARE Classic cards with a frequency of 13,56 MHz (HF), in white color, sized 86 × 54 × 0.8 mm (ISO format).

Order Code	Description
RMS-ACS-EMC-10	10x EM identification cards
RMS-ACS-EMC-25	25x EM identification cards
MS-ACS-HID-10	10x HID Prox identification cards
MS-ACS-HID-25	25x HID Prox identification cards
RMS-ACS-MIFC-10	10x MIFARE Classic identification cards
RMS-ACS-MIFC-25	25x MIFARE Classic identification cards

## RFID Media—Fobs



EM identification fobs with frequency of 125 kHz (LF), and MIFARE Classic identification fobs with frequency of 13,56 MHz (HF), sized 31 × 40 × 4.5 mm.

Order Code	Description
RMS-ACS-EMT-10	10x EM identification fobs
RMS-ACS-EMT-25	25x EM identification fobs
RMS-ACS-MIFT-10	10x MIFARE Classic identification fobs
RMS-ACS-MIFT-25	25x MIFARE Classic identification fobs

## Temperature and Humidity Sensor



The enclosed temperature and humidity sensor is designed for placement inside racks and measures temperature in –55 °C to +75 °C range and humidity in 0 – 100 % range. The sensor can be extended for reach of up to 300 m using a LAN CAT 5/6 cable.

Package includes: 1.5 m long loose cable

Order Code	Description
RMS-I-STHB	Temperature and humidity sensor

## Smoke Detector



The detector emits an 85 dB two-state-alarm signal at a distance of 3 m from the unit and is also fitted with LED indication. It should be mounted on to the ceiling for maximum smoke detection ability. This device is powered from the main unit and can be connected to a back-up 9 V battery. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 150 m. Has a built-in flash light to alert when smoke is detected.

Package includes: 1.5 m LAN CAT 5 cable

Code	Description
RMS-I-DE-01	Smoke Detector

## Water Sensor



The rope water sensor with 3 m long detection rope protects water-sensitive devices stored inside a rack from potential damage. Also capable of short-term detection of accumulator acid. The detection cable can be extended with a 3 m long RMS-I-DE-06-EXT3 extension cable up to a total length of 50 m. The detector is powered from the main unit and is recognized automatically. It is connected using a standard LAN CAT 5/6 cable with maximum connection length of 30 m. The sensor is fitted with a 3 m detection rope and 6 m long durable connecting cable.

Package includes: 1.5 m LAN cable for sensor connection

Code	Description
RMS-I-DE-06	Water sensor
RMS-I-DE-06-EXT3	Extension of the detecting portion by another 3 m, maximum extension limit 50 m

## PIR Motion Detector



Motion detector with 60° detection angle and 3 m detection distance; used for securing rooms or buildings and sending alerts in case of intrusion into the monitored zone. Fitted with status LED indication. Up to 10 motion sensors can be chain linked to a single smart port. Maximum total LAN CAT 5/6 cable length for 10 sensors is 46 m. Maximum cable length between individual sensors should be less than 6 m. Maximum connectable cable length for a single sensor is 300 m. The detector is recognized automatically and is powered from the main unit.

Package includes: 1.5 m LAN cable for connection

Order Code	Description
RMS-I-DE-02	PIR motion detector

# CONTEG PRO SERVER SOFTWARE



➤ **CONTEG Pro Server (CPS)** takes the best features of environmental, security monitoring and access control systems and combines them into one centralized management software package.



## MAIN ADVANTAGES

- MS Windows based software (server and client application)
- User-friendly application supporting most CONTEG products
- Minimal server application hardware requirements specified on CONTEG website: <https://www.conteg.com/products/conteg-pro-server-management-software>

Code	License type for DCIM CONTEG Pro Server
RMS-DCIM-CPS	Unlimited license for the first year
RMS-DCIM-CPS-VS-25/1 *	Yearly license for 25 virtual sensors
RMS-DCIM-CPS-RAMOS/1*	Yearly license for 1 intelligent Ramos device (Plus, Optimax and Ultra series)
RMS-DCIM-CPS-IPC/1 *	Yearly license for 1IP camera (compatible with onvif, max. 25 cameras)
RMS-DCIM-CPS-TMPL-15/1 *	Yearly license for 1 network device configurable through a template (max. 15 parameters per template)
RMS-DCIM-CPS-TMPL-25/1 *	Yearly license for 1 network device configurable through a template (max. 25 parameters per template)
RMS-DCIM-CPS-TMPL-35/1 *	Yearly license for 1 network device configurable through a template (max. 35 parameters per template)

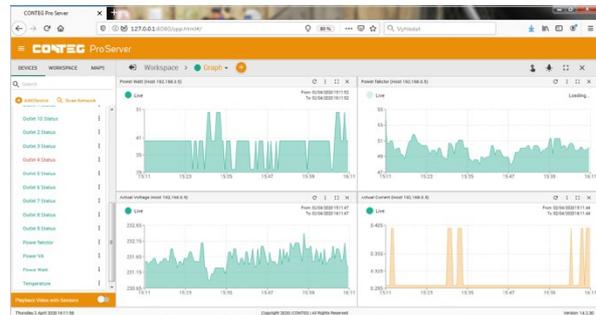
\* The licence can be ordered for 5 years—change the code ending from "/1" to "/5".

## DESCRIPTION

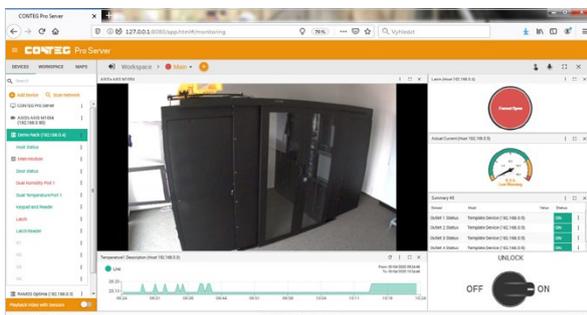
- Free integration of up to 4 intelligent RAMOS solutions (Plus, Optimax and Ultra)
- Centralizes RAMOS devices into one application
- Supports direct integration of third-party SNMP and Modbus TCP network devices
- Supports fingerprint access verification (with new RAMOS Ultra ACS)
- Access management—users, groups and history of access
- Monitoring management—sensors, detectors, access and video surveillance
- Customizable mapping feature
- Supports many types of third-party IP cameras and creates event initiation records
- Notification via many types of actions/alarms
- Customizable client access to server (multi-tenant user/group access)
- Can be shown on multiple customizable screens
- Supports basic calculations via virtual sensors (summary & division)



Monitoring—maps



Monitoring—graphs



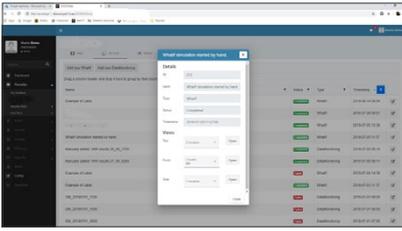
Notifications—alarms

Date	Time	Message	User	Group	Area	Zone	Access	Event
01/04/2022 10:10:08	10:10:08	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
01/04/2022 10:11:02	10:11:02	Successful authentication (User: admin)	admin	Admin	DCIM	DCIM	Success	Information
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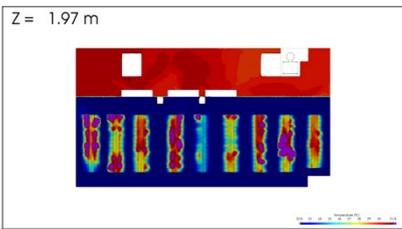
ACS history

# DATA CENTER INFRASTRUCTURE MANAGEMENT

# CONTEG AEGIS DCIM



What if scenarios



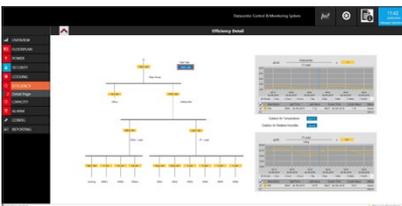
What if scenario result example



Capacity page

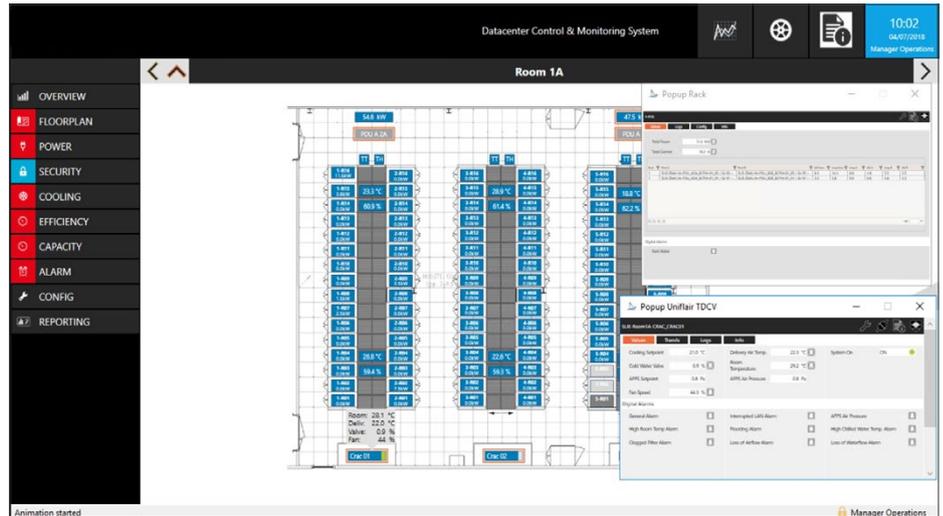


Alarm page



Performance page

➤ The CONTEG's **AEGIS DCIM** (Data Center Infrastructure Management) is a complete monitoring application for managing data center infrastructure. The AEGIS DCIM system collects, analyzes and reports all relevant information using standardized data communication protocols. With AEGIS DCIM, you have full control of your data center. The AEGIS DCIM system contains a real-time performance dashboard, with metrics such as PUE, EUE, EER, etc. Monitors data center status, reporting defects/equipment malfunctions and temperature problems such as excessive humidity. AEGIS also controls strategic equipment improving PUE.



Standard graphic with the navigation area at the left

## PRODUCT FEATURES

- **Data Center Efficiency:** Improving efficiency reduces both the data center's operational expenses (OPEX) and carbon footprint. It also helps make the facility compliant with current and future developing governmental regulations.
- **Integration with Third Party Applications:** CONTEG's AEGIS DCIM is designed to operate with all types of devices, equipment and third-party software applications.
- **Scalable Solution:** CONTEG's AEGIS Infrastructure Management can be adapted to fit any scenario, meeting data center project requirements regardless of size or scale.
- **CFD Analysis and What-if Scenarios:** use AI-Digital Twin technology, which enables hourly CFD creation and what-if scenario's when needed.
- **Energy Consumption:** Monitoring and reporting of IT equipment energy consumption—at facility, row, rack or outlet level and Electrical breaker load monitoring, based on actual and daily peak value.
- **White space graphics output with:** Racks; Temperature; Humidity; CRAC; Powermeter; Open pop-up for a rack (showing power consumption) and CRAC showing all real-time data.

## TECHNICAL INFORMATION

### Supported functions (native)

- EMS (Energy Management System)
- BMS (Building Managements System)
- CMS (Cooling Management System)

### Special functions

- Performance management (PUE, WUE, iPUE, etc) shown on dashboard
- Capacity Management (Both Electrical and Cooling)
- Overbooking/fail-over management

### Protocols

- SNMP-V1, V2, V3

### BACNET

- Modbus
- OPC
- XML/SOAP
- Database to Database

### Protocols (Third Party)

- All supplied OPC protocols from Kepware

### Scalable

- The system is extremely scalable and can serve up till 100.000 datapoints per server (approx. 3 000 devices) and the number of servers can be expanded unlimited

# KEYBOARD-VIDEO-MOUSE SOLUTIONS

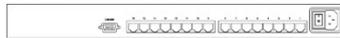
## KVM CONSOLES



K-SA-171



K-SA-171-S1601P-E



K-SA-171-C1601P-E



K-SA-171-S801P-E



K-SA-171-C3201P-E



K-SA-171-CIP3201P-E

➤ **KVM** is a solution for secure access in server farms where simple, universal access is required.

### DESCRIPTION

- Designed for deployment in server rooms or data centers, allowing either direct or remote access to individual servers (or their cascades). Console enables server configuration and administration from all main manufacturers (IBM, HP, DELL, SUN and others). Integrated KVM switch, LCD console (including keyboard and touch-pad) housed within a compact (1U high) design.
- Available in two types:  
Sxxxx—DB15—direct cable  
Cxxxx—Cat. 5—dongle via twisted pair cable

KVM SETS—LCD DRAWER & KVM SWITCH			
Code <sup>3</sup>	Number and type of ports	Access via IP	Description
K-SA-171-S801P-E	8× USB/PS2 <sup>1</sup>	–	up to 128 servers by 8-level cascade
K-SA-171-S1601P-E	16× USB/PS2 <sup>1</sup>	–	up to 128 servers by 8-level cascade
K-SA-171-C1601P-E	16× Cat. 5 <sup>2</sup>	–	up to 128 servers by 8-level cascade
K-SA-171-C3201P-E	32× Cat. 5 <sup>2</sup>	–	up to 128 servers by 8-level cascade
K-SA-171-CIP3201P-E	32× Cat. 5 <sup>2</sup>	✓	up to 128 servers by 8-level cascade

<sup>1</sup> Includes 8 KVM cables (additional cables to be ordered separately).

<sup>2</sup> USB, PS/2 dongles or Cat. 5 cords required for use (to be ordered separately).

<sup>3</sup> KVM set contains LCD type K-SA-171; can be replaced with any other LCD solution from LCD DRAWERS ONLY table.

## LCD HOLDERS

➤ **LCD holders** include high-quality (17" and 19" diagonal) SAMSUNG monitors, allowing the screen to be folded when not in use, so that the total height of the console (including LCD monitor) does not exceed 1U. Includes extrusions designed for both easy assembly and drawing out the KVM/LCD console. CONTEG KVM/LCD holders come equipped with a full keyboard (104 keys, including numerical) and optional language localization, including a touchpad.

### DESCRIPTION

- PS/2 or USB input into the LCD holder (according to the cabling terminal type)
- All LCD drawers include a standard English keyboard; other layouts available on request
- Optional language setting (USA, GBR, JPN, DEU, FRA, ITA, RUS, ESP, CHN, KOR, DNK, CHE, NOR and European localization)
- Equipped with a touchpad (with trackball option)
- Multilingual "on-screen" menu
- Sliding bars with fixed position to prevent movement during typing
- Easy connection to KVM console
- Standard power supply 230 V; 12, 24 and 48 V options available

LCD DRAWERS ONLY *										
Code	H (in U)	LCD size	Dimensions (mm)			Dimensions including packing (mm)			Weight (kg)	
			W	D	H	W	D	H	Nett	Gross
K-SA-171	1	17"	442	650	44	589	856	168	16	22
K-SA-191	1	19"	442	650	44	589	856	168	17	23
K-LKD-171	1	17"	442	650	44	589	856	168	15	21

\* LCD holders can be combined with individual KVM consoles from the CONTEG portfolio. Please don't hesitate to contact us if unable to locate the LCD holder or KVM console you desire. Special consoles and holders not included in standard offer.

# LOCAL EXTINGUISHING SYSTEM **LES-RACK**



Information is critically important to us all, therefore data security is paramount. One of the most dangerous threats to our data systems is fire. The **LES-RACK** ensures that any fires occurring within the rack are dealt with quickly and effectively.

Code	Description
LES-RACK-M1	Fire detection, control, evaluation, communication and fire-extinguishing unit

- ▶ LES-RACK is a self-contained, fully automatic fire detection and protection system (designed for direct installation into 19" racks with IP30 or higher) offering an efficient, effective solution for servers, telecommunication and control racks/cabinets. The LES-RACK-M1 unit comes with a fully equipped fire detection, control, evaluation, communication and extinguishing system. Larger-sized server racks and adjacent rack units may be protected with additional auxiliary LES-RACK-M1.
- ▶ LES-RACK employs clean gas, flooding the protected space until the fire is completely extinguished. The unit is comprised of metal cylinders filled with agent FK-5-1-12 in accordance with TUPO (the Technical Institute of Fire Protection, Authorization Body 221).
- ▶ The pressureless construction solution also enables air transport. After activation, the device can be refilled with extinguishing agent directly at the installation site.

LES-RACK parameter	Value
Unit width	483 mm/19"
Unit height	45 mm/1U
Unit base depth	495 mm
Total depth of detection extension (according to depth of protected equipment)	Max. 860 mm
System weight without extinguishing agent	11 kg
Weight of extinguishing agent—FK-5-1-12	2 kg
Classification of environmental conditions (according to EN 60721-3-3)	3 k5
Environment class	A
Operating temperature range	+5 °C to +40 °C
Relative air humidity	90 % non-condensing
Operating position	Horizontal
Operation	Permanent
Electrical input power	max. 200 VA
Protection rating	IP30
Supply voltage of main source	110-240 V AC
Supply frequency of main source	50/60 Hz

# POWER DISTRIBUTION UNITS (RACK PDUs)



► Our portfolio of rack **power distribution units (PDUs)** for IT environments with high power density comprises of 3 types—**managed PDUs**, allowing the user to control individual outlets or groups of outlets remotely via a data network, **monitored PDUs** enabling remote monitoring of current and energy consumption from the PDU and **basic PDUs** without additional features.

## MAIN ADVANTAGES

- PDUs offer a combination of outlets, including national outlet styles combined with industrial outlets and 1- or 3-phase power input
- Hybrid technology of access—Ethernet and data bus connections
- High accuracy of metered values

Overview of power distribution units (PDUs)	BASIC		MONITORED <sup>1</sup>		MANAGED <sup>2</sup>	
	DP-RP	IP-BA	IP-SEI	IP-SEI-POM <sup>3</sup>	IP-SEA	IP-SEA-POM <sup>4</sup>
Metered (V, A, f, PF, kVA, kW, kWh)	-	-	✓	✓	✓	✓
Input metering	-	-	✓	✓	✓	✓
Metering of individual outlets	-	-	✓	✓	-	✓
Switching of individual outlets	-	-	-	-	✓	✓
Primary-Secondary connection	-	-	✓	✓	✓	✓
SNMP	-	-	✓	✓	✓	✓
Modbus TCP	-	-	✓	✓	✓	✓

<sup>1</sup> MONITORED: Remote monitoring of power consumption (input metering).

<sup>2</sup> MANAGED: Remote monitoring of energy consumption (input metering) and switching of individual outlets.

<sup>3</sup> MONITORED with POM designation: Remote monitoring of energy consumption—input metering and metering on each individual outlet (POM = per outlet monitored).

<sup>4</sup> MANAGED with POM designation: Remote monitoring of energy consumption—input metering and metering on each individual outlet (POM = per outlet monitored) including the ability to control the outlets.

## BASIC POWER DISTRIBUTION UNITS



- Used for supply of energy and its distribution to individual IT equipment in the racks

Placement in the rack—versions for horizontal (for 19" and 10" extrusions) and vertical installation

- Output types: UTE, SCHUKO, UK, IEC320 C13, IEC320 C19 (other types possible on request)
- Max. load: for SCHUKO/UTE or IEC320 C19: 16 A, 250 V  
for UK: 13 A, 250 V  
for IEC320 C13: 10 A, 250 V
- Basic PDUs are supplied with a 3 m power cable and mounting brackets (to mount the PDU vertically, it is recommended to order a universal bracket, code DP-RP-VM-12)



DP-RP-09-UTE



DP-RP-12-IECC13



DP-RP-09-SCHU

## DESCRIPTION

### Material

- Unit: anodized aluminum with a protective layer against oxidation, PA6 plastic
- Mounting brackets: sheet steel

### Dimensions

- Length: predefined by type, or can be adjusted for the configuration of choice
- Height: 44 mm
- Depth: 48 or 50 mm

### Connection

- 1-phase 230 V AC or 3-phase 230/400 V AC, 16 A or 32 A

### Package includes

- Power distribution unit with non-detachable 3 m power cable with plug
- Brackets for horizontal mounting

## Basic Power Distribution Units—Uniform Outlet Type

Code	Mounting *	H (in U)	Input plug	Outlet type	Number of outlets	Overvoltage protection	Switch	Rated current (A)	Dimensions (mm)		
									H	W	D
DP-RP-02-UK	10"	1	UK	UK	2	–	–	13	44	208	48
DP-RP-03-UTE	10"	1	SCHUKO/UTE	UTE	3	–	–	16	44	208	48
DP-RP-03-SCHU	10"	1	SCHUKO/UTE	SCHUKO	3	–	–	16	44	208	48
DP-RP-06-UTESP	19"	2	SCHUKO/UTE	UTE	6	✓	✓	16	89	487	50
DP-RP-06-UTE <sup>1</sup>	19"	1	SCHUKO/UTE	UTE	6	✓	–	16	44	437	48
DP-RP-06-SCHUSP	19"	2	SCHUKO/UTE	SCHUKO	6	✓	✓	16	89	487	50
DP-RP-06-SCHUPH <sup>1</sup>	19"	1	SCHUKO/UTE	SCHUKO	6	✓	–	16	44	437	48
DP-RP-06-UKS	19"	1	UK	UK	6	–	✓	13	44	437	48
DP-RP-07-UK	19"	1	UK	UK	7	–	–	13	44	437	48
DP-RP-08-UTES	19"	1	SCHUKO/UTE	UTE	8	–	✓	16	44	437	48
DP-RP-08-SCHUS	19"	1	SCHUKO/UTE	SCHUKO	8	–	✓	16	44	437	48
DP-RP-08-SCHUF-IEEC14 <sup>2</sup>	19"	1	C14	SCHUKO	8	–	–	10	44	437	48
DP-RP-08-UTEF-IEEC14 <sup>2</sup>	19"	1	C14	UTE	8	–	–	10	44	437	48
DP-RP-09-UTE	19"	1	SCHUKO/UTE	UTE	9	–	–	16	44	437	48
DP-RP-09-SCHU	19"	1	SCHUKO/UTE	SCHUKO	9	–	–	16	44	437	48
DP-RP-09-IECC19	19"	1	SCHUKO/UTE	C19	9	–	–	16	44	437	48
DP-RP-12-IECC13	19"	1	SCHUKO/UTE	C13	12	–	–	16	44	437	48
IP-BA-C08C300016	19"	1	C20	C13	8	–	–	16	44	439	48
DP-RP-20-IECC19	Vertical	–	SCHUKO/UTE	C19	20	–	–	16	906	44	48
DP-RP-20-IECC13	Vertical	–	SCHUKO/UTE	C13	20	–	–	16	694	44	48
DP-RP-20-SCHUV	Vertical	–	SCHUKO/UTE	SCHUKO	20	–	–	16	906	44	48
DP-RP-20-UTEV	Vertical	–	SCHUKO/UTE	UTE	20	–	–	16	906	44	48

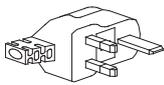
\* 10"/19" = horizontal mounting onto 10"/19" extrusions.

<sup>1</sup> The unit includes a high-frequency filter.

<sup>2</sup> The unit is fitted with a 10 A fuse.



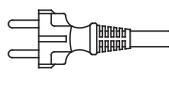
UK



UK (BS 1363)



SCHUKO



SCHUKO - GERMAN



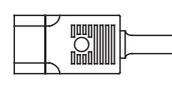
UTE



UTE - FRENCH



IEC320 C13



IEC320 C14



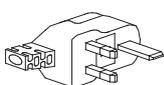
IEC320 C19

## Basic Power Distribution Units—Multiple Outlet Types

Code	Mounting	H (in U)	Input plug	Outlet type 1	Number of type 1 outlets	Outlet type 2	Number of type 2 outlets	Rated current (A)	Dimensions (mm)		
									H	W	D
IP-BA-308UK8C916	Vertical	–	EN 60309	UK	8	C19	8	16	860	44	48
IP-BA-312UK8C316	Vertical	–	EN 60309	UK	12	C13	8	16	985	44	48
IP-BA-308SH8C916	Vertical	–	EN 60309	SCHUKO	8	C19	8	16	722	44	48
IP-BA-312SH8C316	Vertical	–	EN 60309	SCHUKO	12	C13	8	16	777	44	48
IP-BA-308UT8C916	Vertical	–	EN 60309	UTE	8	C19	8	16	780	44	48
IP-BA-312UT8C316	Vertical	–	EN 60309	UTE	12	C13	8	16	865	44	48
IP-BA-320C34C916	Vertical	–	EN 60309	C13	20	C19	4	16	908	44	48
IP-BA-C20C34C916	Vertical	–	C20	C13	20	C19	4	16	908	44	48
IP-BA-320C34C932	Vertical	–	EN 60309	C13	20	C19	4	32	1035	44	48
IP-BA-318C36C911	Vertical	–	EN 60309	C13	18	C19	6	3×16	996	44	48
IP-BA-324C36C922	Vertical	–	EN 60309	C13	24	C19	6	3×32	1673	44	48



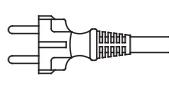
UK



UK (BS 1363)



SCHUKO



SCHUKO - GERMAN



UTE



UTE - FRENCH



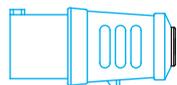
IEC320 C13



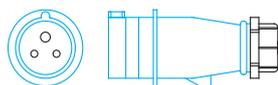
IEC320 C19



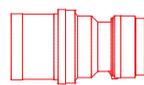
EN60309 16A 1PH



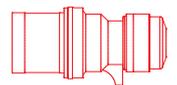
EN60309 32A 1PH



EN60309 16A 3PH



EN60309 32A 3PH



# MONITORED POWER DISTRIBUTION UNITS



- Provide supply of energy, measure voltage and frequency, allow reporting of the load power factor, active and apparent power, and energy consumption (in kWh)
- Monitoring of energy consumption from individual outlets (PDU versions with POM designation)
- Illuminated display located on the device or separately next to the power distribution unit
- Built-in web server enables the remote setting and reading of information about the specific PDU from a user-friendly web interface.
- Allow to integrate the PDU into a CONTEG Pro Server monitoring system for central management or into a third party system (MIB table available)
- Hybrid access technology—Ethernet connectivity and serial communication; both interfaces can be accessed simultaneously and independently
- Compatible with 19" IT racks
- Placement in the rack—types for horizontal and vertical mounting

Code <sup>1</sup>	Mounting *	H (in U)	Input plug	Power cable length (m)	Outlet type 1	Number of type 1 outlets	Outlet type 2	Number of type 2 outlets	Rated current (A)	Dimensions (mm)		
										H	W	D
IP-SEI-008C300016	19"	1.5	C20	— <sup>2</sup>	C13	8	—	—	1×16A	65	440	112
IP-SEI-008C3POM16	19"	1.5	C20	— <sup>2</sup>	C13	8	—	—	1×16A	65	440	112
IP-SEI-018C36C916	Vertical	—	C20	— <sup>2</sup>	C13	18	C19	6	1×16A	900	65	56
IP-SEI-018C36C9POM16	Vertical	—	C20	— <sup>2</sup>	C13	18	C19	6	1×16A	900	65	56
IP-SEI-318C36C932	Vertical	—	EN 60309	3	C13	18	C19	6	1×32A	980	65	56
IP-SEI-318C36C9POM32	Vertical	—	EN 60309	3	C13	18	C19	6	1×32A	980	65	56
IP-SEI-336C36C932	Vertical	—	EN 60309	3	C13	36	C19	6	1×32A	1410	65	56
IP-SEI-336C36C9POM32	Vertical	—	EN 60309	3	C13	36	C19	6	1×32A	1410	65	56
IP-SEI-336C36C911	Vertical	—	EN 60309	3	C13	36	C19	6	3×16A	1385	65	56
IP-SEI-336C36C9POM11	Vertical	—	EN 60309	3	C13	36	C19	6	3×16A	1385	65	56
IP-SEI-336C36C922	Vertical	—	EN 60309	3	C13	36	C19	6	3×32A	1560	65	56
IP-SEI-336C36C9POM22	Vertical	—	EN 60309	3	C13	36	C19	6	3×32A	1560	65	56

\* 19" = horizontal mounting onto 19" extrusions.

<sup>1</sup>The standard unit color is black. To order the unit in a different color, fill the suffix of the color of choice into the product's code. Suffixes: blue (-BU), red (-RD), green (-GN), yellow (-YL), orange (-OR), white (-WH).

<sup>2</sup> Power supply cables must be ordered separately.

Vertical PDUs are not equipped with brackets which need to be ordered separately.



Standard—black

-BU

-RD

-GN

-YL

-OR

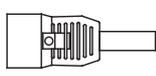
-WH



IEC320 C13



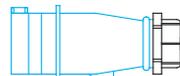
IEC320 C19



IEC320 C20



EN 60309 32A 1PH



EN60309 16A 3PH



EN60309 32A 3PH

## DESCRIPTION

### Material

- 1.5 mm anodized aluminum with a protective layer against oxidation with brackets made of stainless steel

### Dimensions

- Length: predefined by type, or can be adjusted for the configuration of choice
- Height: 65 mm
- Depth: 52.6 mm

### Color

- Black, red, blue, green, yellow, orange, white

### Display

- Illuminated LCD

### Connection

- 1-phase 230 V AC or 3-phase 230/400 V AC, 16 A or 32 A

### Measurement

- RMS value of current
- Voltage (V) and frequency
- Load power factor
- Total energy consumption
- True (W) and apparent power (VA)
- Measurement error <1%

### Data bus

- 2× RJ45 data bus RS-485 connectors

### Ethernet

- RJ45 connector
- TCP/IP 10/100 Mb/s, DHCP with back-up static IP, SNMP, Modbus, API

### Sensor port

- Option to connect temperature and humidity sensor

### Operating temperature range

- 0–60 °C

### Protection

Unrestricted choice of fuse type including:

- Miniature Circuit Breaker (MCB)
- Thermal fuse
- Glass cartridge fuse bracket
- PASCO cartridge bracket

### Overvoltage protection

- Optionally as a Hot Swap module

### Power consumption

- < 3 W

# MANAGED POWER DISTRIBUTION UNITS



- Provide supply of energy and remote control over individual outlets (switching on/off), enable server restart
- Measure voltage and frequency, allow reporting of the load power factor, active and apparent power, and energy consumption (in kWh)
- Monitoring of energy consumption from individual outlets (PDU versions with POM designation)
- Illuminated display located on the device or separately next to the power distribution unit
- Built-in web server enables the remote setting of the unit, reading the information and management of the outlets of the specific PDU from a user-friendly web interface.
- Allow to integrate the PDU into a CONTEG Pro Server monitoring system for central management or into a third party system (MIB table available)
- Hybrid access technology—Ethernet connectivity and serial communication; both interfaces can be accessed simultaneously and independently
- Compatible with 19" IT racks
- Placement in the rack—types for horizontal and vertical mounting

Code <sup>1</sup>	Mounting *	H (in U)	Input plug	Power cable length (m)	Outlet type 1	Number of type 1 outlets	Outlet type 2	Number of type 2 outlets	Rated current (A)	Dimensions (mm)		
										H	W	D
IP-SEA-008C300016	19"	1.5	C20	– <sup>2</sup>	C13	8	–	–	1×16A	65	440	112
IP-SEA-008C3POM16	19"	1.5	C20	– <sup>2</sup>	C13	8	–	–	1×16A	65	440	112
IP-SEA-018C36C916	Vertical	–	C20	– <sup>2</sup>	C13	18	C19	6	1×16A	1570	65	56
IP-SEA-018C36C9POM16	Vertical	–	C20	– <sup>2</sup>	C13	18	C19	6	1×16A	1570	65	56
IP-SEA-318C36C932	Vertical	–	EN 60309	3	C13	18	C19	6	1×32A	1680	65	56
IP-SEA-318C36C9POM32	Vertical	–	EN 60309	3	C13	18	C19	6	1×32A	1680	65	56
IP-SEA-318C36C911	Vertical	–	EN 60309	3	C13	18	C19	6	3×16A	1610	65	56
IP-SEA-318C36C9POM11	Vertical	–	EN 60309	3	C13	18	C19	6	3×16A	1610	65	56
IP-SEA-318C36C922	Vertical	–	EN 60309	3	C13	18	C19	6	3×32A	1700	65	56
IP-SEA-318C36C9POM22	Vertical	–	EN 60309	3	C13	18	C19	6	3×32A	1700	65	56

\* 19" = horizontal mounting onto 19" extrusions.

<sup>1</sup> The standard unit color is black. To order the unit in a different color, fill the suffix of the color of choice into the product's code. Suffixes: blue (-BU), red (-RD), green (-GN), yellow (-YL), orange (-OR), white (-WH).

<sup>2</sup> Power supply cables must be ordered separately.

Vertical PDUs are not equipped with brackets which need to be ordered separately.



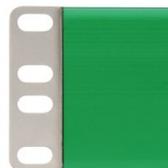
Standard—black



-BU



-RD



-GN



-YL



-OR



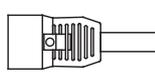
-WH



IEC320 C13



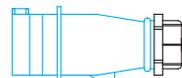
IEC320 C19



IEC320 C20



EN 60309 32A 1PH



EN60309 16A 3PH



EN60309 32A 3PH

## DESCRIPTION

### Material

- 1.5 mm anodized aluminum with a protective layer against oxidation with brackets made of stainless steel

### Dimensions

- Length: predefined by type, or can be adjusted for the configuration of choice
- Height: 65 mm
- Depth: 52.6 mm

### Color

- Black, red, blue, green, yellow, orange, white

### Display

- Illuminated LCD

### Connection

- 1-phase 230 V AC or 3-phase 230/400 V AC, 16 A or 32 A

### Measurement

- RMS value of current
- Voltage (V) and frequency
- Load power factor
- Total energy consumption
- True (W) and apparent power (VA)
- Measurement error <1%

### Data bus

- 2× RJ45 data bus RS-485 connectors

### Ethernet

- RJ45 connector
- TCP/IP 10/100 Mb/s, DHCP with back-up static IP, SNMP, Modbus, API

### Sensor port

- Option to connect temperature and humidity sensor

### Operating temperature range

- 0–60 °C

### Protection

Unrestricted choice of fuse type including:

- Miniature Circuit Breaker (MCB)
- Thermal fuse
- Glass cartridge fuse bracket
- PASCO cartridge bracket

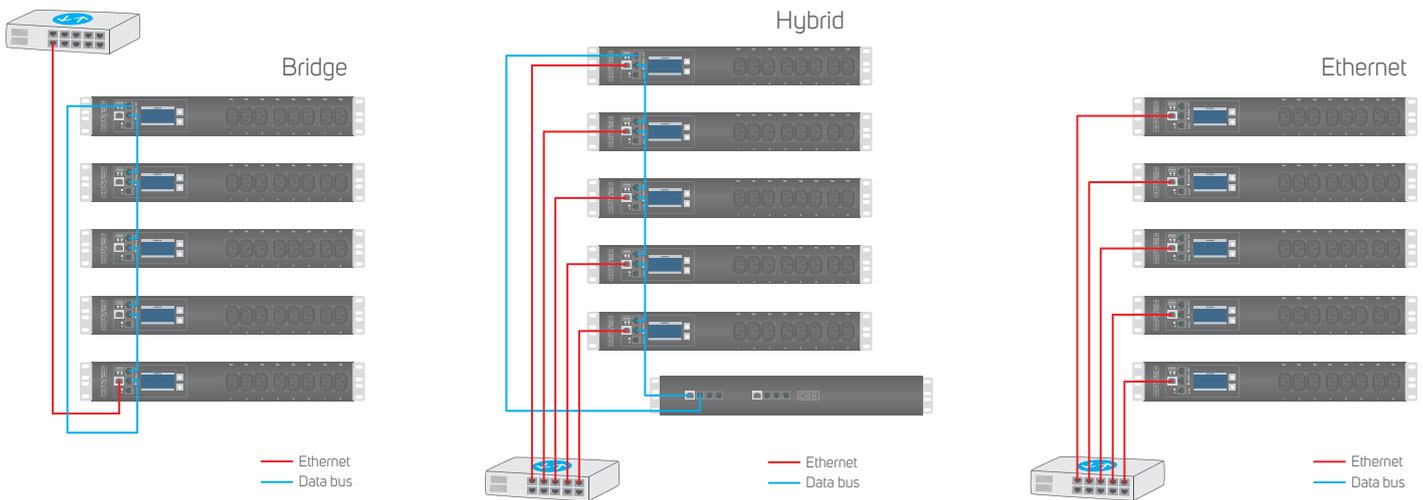
### Overvoltage protection

- Optionally as a Hot Swap module

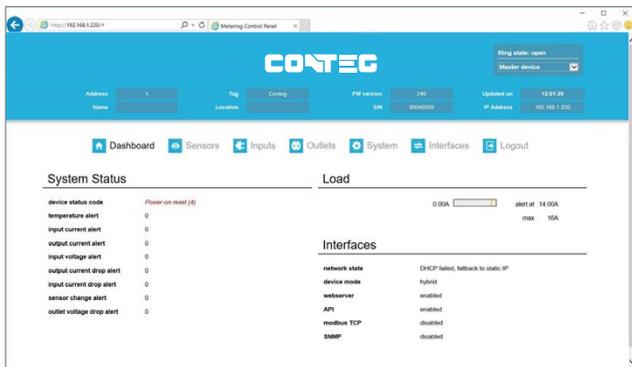
### Power consumption

- < 3 W

## Methods of Connection of Monitored and Managed PDUs



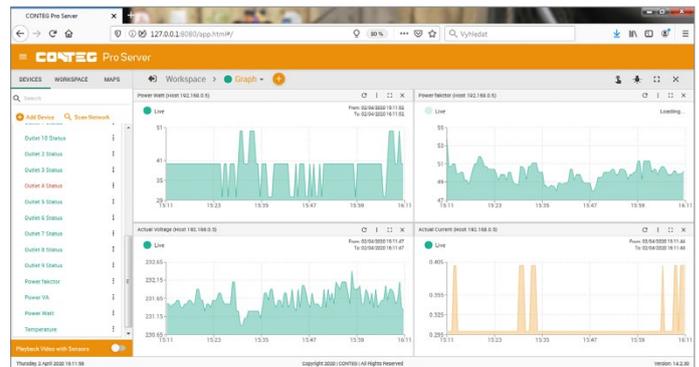
## Remote Control of Monitored and Managed PDUs



### User-Friendly Web Interface

Each monitored and managed PDU features a built-in web server which enables the remote setting of PDU parameters and reading of information through a web application. In the case of managed PDUs, the web interface can be used even to control individual outlets of the given PDU.

[Take a look at the web application >>](#)



### Integration of PDUs into a Monitoring System

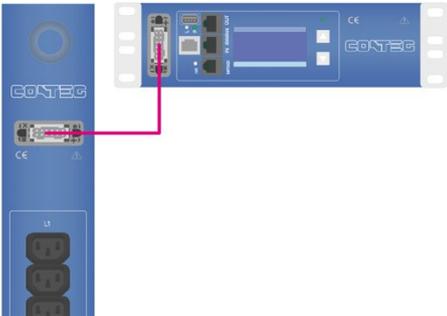
Monitored and managed PDUs can allow connecting to CONTEG Pro Server central monitoring system via SNMP (v1, v2, and v3), Modbus and API, or another 3rd party system.

[Take a look at CONTEG Pro Server >>](#)



# SPECIAL DESIGN PDU

## PDU variant with an external display



The external illuminated display is designed for monitored and managed PDUs that consist of two functional parts. The display is located on a separate communication module and is connected to the PDU by a 1.5 m cable. The PDU with an external display is suitable for critical IT devices that require an uninterrupted power supply. Its main benefit lies in the fact that it can be replaced at any time while the device is running. The display is fitted with brackets for horizontal mounting onto 19" extrusions, where it needs up to 1.5 U of space in height. If a rack is fitted with two PDUs, the communication modules with the display can be mounted next to each other at the same height onto 19" extrusions. The external display does not constitute a functional unit on its own. For more information, contact our technical department at [presales@conteg.com](mailto:presales@conteg.com).

**Suitable for**

- Monitored and managed PDUs

**Color**

- Black, red, blue, green, yellow, orange, white

**Module material**

- 1.5 mm anodized aluminum with a protective layer against oxidation with brackets made of stainless steel

**Display**

- Illuminated LCD

**Dimensions**

- Length: 209 mm
- Height: 65 mm
- Depth: 52.6 mm

## Inline Meter



The 1-phase or 3-phase inline power meter with an illuminated display is designed for measuring parameters on the lead-in cable to basic PDUs and is easy to connect into existing circuits. A built-in web server allows remote monitoring of power in real-time, as well as current consumption (A), voltage (V), energy consumption (kWh), and load power factor. The device also allows the connection of a temperature and humidity sensor (IP-S-PDU-SENSOR).

**Suitable for**

- Basic PDUs

**Connection**

- 1-phase 230 V AC or 3-phase 230/400 V AC, 16 A or 32 A

**Module material**

- 1.5 mm anodized aluminum with a protective layer against oxidation, brackets made of stainless steel

**Data bus**

- 2x RJ45 data bus RS-485 connectors

**Dimensions**

- Length: 280 mm
- Height: 65 mm
- Depth: 52.5 mm

**Ethernet**

- RJ45 connector

**Mounting**

- Vertical

**Sensor port**

- RJ11, option to connect temperature and humidity sensor

**Color**

- Black, red

**Package includes**

- 3 m non-detachable input cable with EN60309 plug, 0.5 m non-detachable output cable with EN60309 outlet
- Brackets for vertical mounting

**Display**

- Illuminated LCD

Code	Description	Color
IP-SEI-3-INLINE16	Inline meter 3.6 kW, 1-phase 16 A	Black
IP-SEI-3-INLINE16-RD	Inline meter 3.6 kW, 1-phase 16 A	Red
IP-SEI-3-INLINE32	Inline meter 7.2 kW, 1-phase 32 A	Black
IP-SEI-3-INLINE32-RD	Inline meter 7.2 kW, 1-phase 32 A	Red
IP-SEI-3-INLINE11	Inline meter 11 kW, 3-phase 16 A	Black
IP-SEI-3-INLINE11-RD	Inline meter 11 kW, 3-phase 16 A	Red
IP-SEI-3-INLINE22	Inline meter 22 kW, 3-phase 32 A	Black
IP-SEI-3-INLINE22-RD	Inline meter 22 kW, 3-phase 32 A	Red

# ACCESSORIES

## Temperature and Humidity Sensor



The sensor reads temperature and humidity inside the IT rack. It connects via a 2.5 m cable directly to a monitored or managed PDU. Once the sensor is connected to the PDU (RJ12 connector), the sensor is automatically detected and measured parameters are available via a web server or SNMP. Black color.

**Suitable for**

- Monitored and managed PDUs

**Package includes**

- 2.5 m cable (RJ12 connector)

Code	Description
IP-S-PDU-SENSOR	Temperature and humidity sensor

## Output Power Cables



IEC 60320 C20 > C19



IEC 60320 C14 > C13

Output power cables are used for transmitting electrical energy between the PDU and an IT device inside the IT rack. Cables are available in different lengths, types of input/output, and protection against unplugging (P-Lock). IEC Lock™ supplied on request.

Code	Input—output type	Length	Color	P-Lock
IP-C-C3C405	C13 – C14	0.5 m	Black	–
IP-C-PC3C405	C13 – C14	0.5 m	Black	✓
IP-C-C3C410	C13 – C14	1.0 m	Black	–
IP-C-PC3C410	C13 – C14	1.0 m	Black	✓
IP-C-C3C418	C13 – C14	1.8 m	Black	–
IP-C-PC3C415	C13 – C14	1.5 m	Black	✓
IP-C-C9C205	C19 – C20	0.5 m	Black	–
IP-C-PC9C205	C19 – C20	0.5 m	Black	✓
IP-C-C9C210	C19 – C20	1.0 m	Black	–
IP-C-PC9C210	C19 – C20	1.0 m	Black	✓
IP-C-C9C218	C19 – C20	1.8 m	Black	–
IP-C-PC9C215	C19 – C20	1.5 m	Black	✓
IP-C-PC9C220	C19 – C20	2.0 m	Black	✓
IP-C-PC9C225	C19 – C20	2.5 m	Black	✓
IP-C-PC9C230	C19 – C20	3.0 m	Black	✓

## Input Power Cables



1-phase 16 A monitored and managed PDUs are supplied without a lead-in cable. It must be ordered separately. Cables are available in black color, with a length of 2.5 m and with various types of plugs. Black color.

**Suitable for**

- 1-phase 16 A monitored and managed PDUs from the IP-SEI/SEA series

**Cable length**

- 2.5 m

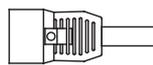


Code *	Output—input connector	Length
IP-C-C9SH25	IEC 320 C19 – SCHUKO	2.5 m
IP-C-C93025	IEC 320 C19 – EN 60309 (1x16 A)	2.5 m
IP-C-C9C225	IEC 320 C19 – IEC 320 C20	2.5 m

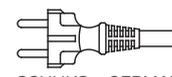
\* You can also choose from C19 – C20 power cables shown on the previous page (code e.g. IP-C-PC9C220, IP-C-PC9C225, IP-C-PC9C230), including their color variants.



EN60309 16A 1PH



IEC320 C20



SCHUKO – GERMAN

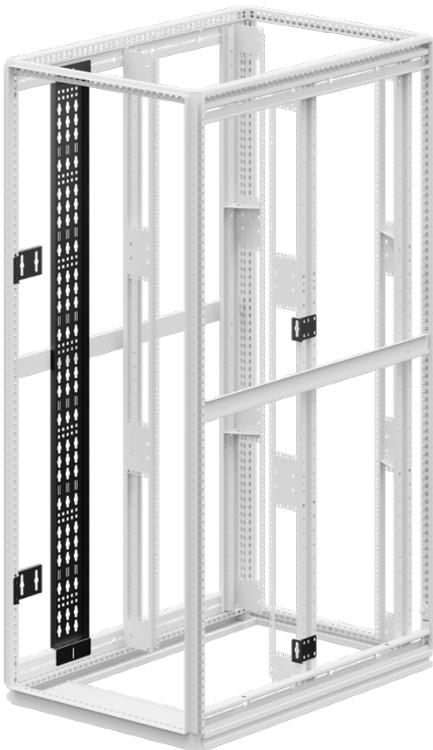
## Locking Inserts



Retention sleeves reduce the risk of accidental unplugging of the power cable. Our assortment includes sleeves for C13, C19 outlets, and C20 inlets as well as locking clips for C13 outlets, which are suitable for some types of basic PDUs.

Code	Description	Package
IP-C-FC13	Plug Lock sleeve insert for outlet C13	50 pcs
IP-C-FC19	Plug Lock sleeve insert for outlet C19	50 pcs
IP-C-PL20	Plug Lock sleeve insert for C20 inlet	50 pcs
DP-RP-LC-C3	Locking clip for C13 outlet—for DP-RP-12-IECC13 and DP-RP-20-IECC13	12 pcs

## Brackets for vertical installation of PDU

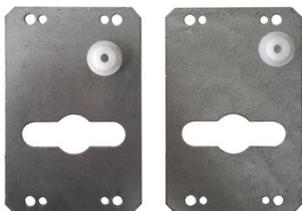


For vertical installation of a vertical power distribution panel into IT rack, it is necessary to order the appropriate bracket for basic, monitored and managed PDUs, which is not included in the package.

Universal bracket DP-RP-VM-12 can be used for installation of all types of PDUs into a rack with L, P and A-type of extrusions.

The black DP-RP-VM-15/xx bracket is designed for vertical mounting of up to 2 basic, monitored, or managed PDUs side by side into a rack with A-type 19" extrusions. To install the basic PDU, it is necessary to order the DP-RP-VM-BA adaptor. In addition, the perforation on the bracket can be used for managing the cabling. It is possible to set the position of the bracket to minimize the used space. Easy installation is done with only 2 screws.

Code	Description
DP-RP-VM-01	Bracket for 19"/1U basic PDU (DP-RP) into the rack frame of the Ri7 series
DP-RP-VM-02	Bracket for basic PDU (DP-RP-20 a IP-BA) into the rack frame of the Ri7 series
DP-RP-VM-12	Universal bracket for PDU (IP-BA or IP-S) into an Ri7 rack with L, P and A-type of extrusions
DP-RP-VM-13	Universal bracket for vertical PDUs IP-BA nebo IP-S, installation on L, P and A-type of extrusions, set for one PDU
DP-RP-VM-15/42	Bracket for up to 2 PDUs side by side (IP-S, IP-BA with adaptor DP-RP-VM-BA, not included in the package) into a 42U rack with A-type extrusions, RAL 9005
DP-RP-VM-15/45	Bracket for up to 2 PDUs side by side (IP-S, IP-BA with adaptor DP-RP-VM-BA, not included in the package) into a 45U rack with A-type extrusions, RAL 9005
DP-RP-VM-15/47	Bracket for up to 2 PDUs side by side (IP-S, IP-BA with adaptor DP-RP-VM-BA, not included in the package) into a 47U rack with A-type extrusions, RAL 9005
DP-RP-VM-15/48	Bracket for up to 2 PDUs side by side (IP-S, IP-BA with adaptor DP-RP-VM-BA, not included in the package) into a 48U rack with A-type extrusions, RAL 9005
DP-RP-VM-15/52	Bracket for up to 2 PDUs side by side (IP-S, IP-BA with adaptor DP-RP-VM-BA, not included in the package) into a 52U rack with A-type extrusions, RAL 9005
DP-RP-VM-16	Universal bracket for up to 2 vertical PDUs IP-BA or IP-S, installation on RF1 frame, pair
DP-RP-VM-BA	Adaptor with a button for PDU IP-BA at DP-RP-VM-15/xx bracket, set for one PDU



DP-RP-VM-12





# ENCLOSURES FOR ELEC- TRONICS

# 7

## ENCLOSURES FOR ELECTRONICS

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# SERIE 68



- High impact die-cast **Serie 68** universal enclosures for electronics with protection class IP68. Range of ten sizes where high resistance and protection are required—also ideal for EMI/RFI shielded applications (removing the gasket).

## DESCRIPTION

- Protection class: IP68 IS/IEC 60529:2001—DIN EN6059
- Standard unit includes: base, lid, silicon gasket (assembled in the lid), 2× M4 (for model RE-310168001) or 4× M4 or 4× M6 stainless screw (depending on model), 1× or 2× M4 earthing screws (copper coated)

## MATERIALS AND FINISH

- Enclosure—aluminum alloy ENAC-GdAlSi12(Fe) DIN1706 (corrosion-resistant alloy)
- Gasket—silicon (−60 °C up to 200 °C); neoprene gasket on request (−40 °C up to 130 °C)
- Screws—stainless steel
- Standard finish: natural aluminum color, powder-coated Silver Grey (RAL 7001) and powder-coated Signal Black (RAL9004)
- Optional finish: other colours, hybrid powder (epoxy & polyester) and CMD-KTL coatings on request

## OPTIONAL

- Custom made drilling, silk-screen printing, other colors

Code for natural aluminium finish	Code for RAL 7001 powder coating finish	Code for RAL9004 powder coating finish	Height (mm)	Width (mm)	Depth (mm)
RE-31068001	RE-31068111	RE-31068201	45	50	30
RE-31068002	RE-31068112	RE-31068202	64	58	34
RE-31068003	RE-31068113	RE-31068203	75	80	57
RE-31068004	RE-31068114	RE-31068204	125	80	57
RE-31068005	RE-31068115	RE-31068205	175	80	57
RE-31068006	RE-31068116	RE-31068206	120	122	81
RE-31068007	RE-31068117	RE-31068207	120	122	91
RE-31068008	RE-31068118	RE-31068208	250	80	57
RE-31068009	RE-31068119	RE-31068209	100	100	81
RE-31068010	RE-31068120	RE-31068210	140	140	91



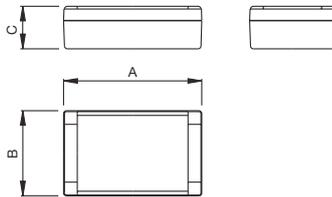
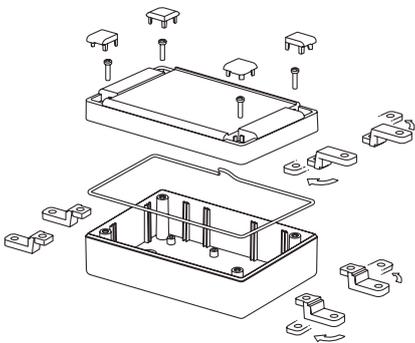
# SERIE 70



➤ Universal **Serie 70** enclosures for electronics in high-impact design meet various application needs within the industrial, electronics and office automation industries. Made in high-quality, high-impact ABS, they allow excellent mechanization and are resistant to temperatures up to 85 °C. With EPDM O-ring gasket, will comply to IP 65 protection in respect of dust and moisture.

## DESCRIPTION

- Protection class: IP65
- The two halves of the boxes are fixed together using metric screws into M3 inserts. These screw fixings are hidden by plastic covers.
- Bosses for circuits in all lids and base parts (except -01 and -02 lids)
- Resistant to temperatures up to 85 °C
- A keyboard area of different sizes is provided on both the top and base of the box further increasing its flexibility
- Wall mounting facility is provided in two ways, either by separately designed feet or by pre-punched holes in the base
- Guides for PCB in vertical mode are incorporated in the base and lid together with 5 mm high bosses for horizontal fixing
- Basic unit includes: lid, base, 4 bolts and 4 covers
- Accessories: O-ring gasket, EPDM rubber; multi-position wall mounting kit



## MATERIALS AND FINISH

- High-impact ABS plastic, excellent for machining
- Standard color: light grey—similar to RAL 7035, black—similar to RAL 9004

## OPTIONAL

- Custom made drilling, silk-screen printing, internal EMI/RFI shielding, UL94V0 ABS, other colors



Code for RAL 7035 color	Code for RAL9004 color	Height (mm)	Width (mm)	Depth (mm)
RE-33070001	RE-33070201	90	55	25
RE-33070002	RE-33070202	90	55	40
RE-33070004	RE-33070204	110	85	35
RE-33070007	RE-33070207	127	75	30
RE-33070008	RE-33070208	127	75	45
RE-33070011	RE-33070211	145	90	45
RE-33070014	RE-33070214	190	120	60
RE-33070016	RE-33070216	220	145	50
RE-33070017	RE-33070217	220	145	80



# SERIE 101



- **Serie 101** universal enclosures for electronics for standard applications with lid in light grey or black ABS plastic. Suitable for placement of membrane keyboards up to 1.2 mm.

## DESCRIPTION

- Modern aesthetics with square edges and rounded lateral sides
- Lid mounted by four M3 bolts, hidden by self-adapting rubber plugs
- Double, lid and bottom, recessed area allows membrane keypads
- Polished finish that allows an easy cleaning of the surface
- Maximum internal volume
- Bosses for mounting PCB in the base
- Resistant to temperatures up to 85 °C
- Basic unit includes: lid, base, 4 bolts and 4 plugs

## MATERIALS AND FINISH

- Lid and bottom—high impact ABS plastic, excellent for machining
- Plugs—rubber
- Standard color: light grey—similar to RAL 7035

## OPTIONAL

- Custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 VO rate, other colors available upon request

Code for RAL 7035 Light Grey	Height (mm)	Width (mm)	Depth (mm)
RE-33101001	90	50	35
RE-33101002	110	60	40
RE-33101003	125	75	50
RE-33101004	155	95	60
RE-33101005	190	115	75
RE-33101006	220	140	90



# SERIE 102



➤ **Serie 102** universal enclosures for electronics are suitable for applications where there is a need for a transparent lid, such as applications including LCD's or counters with visual inspection. Lid in high resistance polycarbonate plastic, bronze coloured. Allows 1.2 mm membrane keypads.

## DESCRIPTION

- Modern aesthetics with square edges and rounded lateral sides
- Lid mounted by four M3 bolts, hidden by self-adapting rubber plugs
- Double, lid and bottom, recessed area allows membrane keypads
- Polished finish that allows an easy cleaning of the surface
- Maximum internal volume
- Bosses for mounting PCB in the base
- Resistant to temperatures up to 85 °C
- Basic unit includes: lid, base, 4 bolts and 4 plugs

## MATERIALS AND FINISH

- Lid and bottom—high impact ABS plastic, excellent for machining
- Plugs—rubber
- Standard color: light grey—similar to RAL 7035

## OPTIONAL

- Custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 VO rate, other colors available upon request

Code for RAL 7035 Light Grey	Height (mm)	Width (mm)	Depth (mm)
RE-33102001	90	50	35
RE-33102002	110	60	40
RE-33102003	125	75	50
RE-33102004	155	95	60
RE-33102005	190	115	75
RE-33102006	220	140	90



# SERIE 103



➤ **Serie 103** universal enclosures for electronics are suitable for applications where a metallic lid is needed—allows for customized CNC machining. Lid in high-quality aluminum.

## DESCRIPTION

- Modern aesthetics with square edges and rounded lateral sides
- Lid mounted by four M3 bolts, hidden by plastic covers
- Recessed area for membrane keypad on the bottom
- Polished finish that allows an easy cleaning of the surface
- Maximum internal volume
- Bosses for mounting PCB in the base
- Resistant to temperatures up to 85 °C
- Basic unit includes: panel, base, 4 bolts and 2 covers

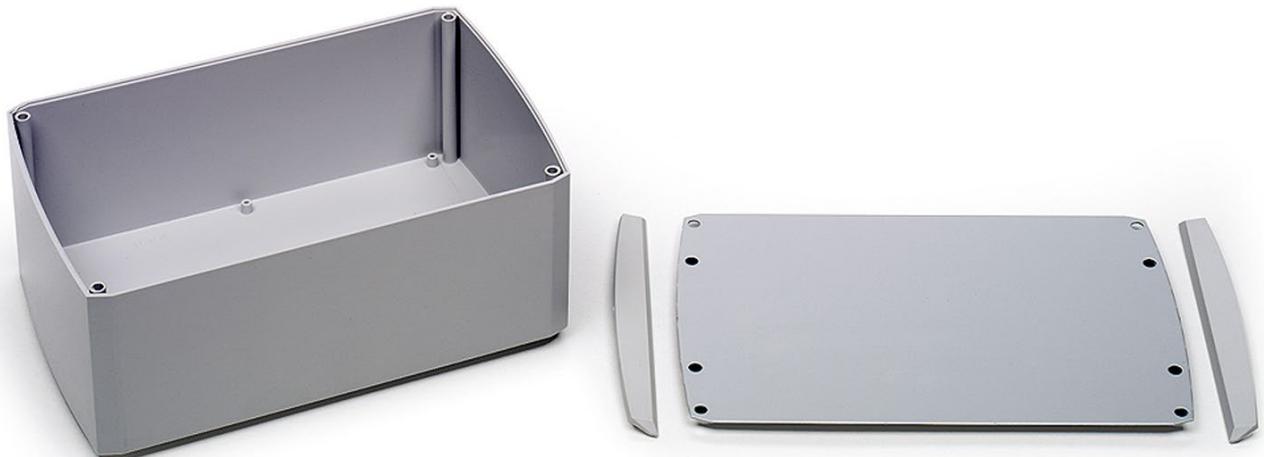
## MATERIALS AND FINISH

- Bottom and covers— high impact ABS plastic, excellent for machining
- Panel—1 mm aluminum, silver anodized
- Standard color: light grey—similar to RAL 7035

## OPTIONAL

- Custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 VO rate, other colors available upon request

Code for RAL 7035 Light Grey	Height (mm)	Width (mm)	Depth (mm)
RE-33103001	90	50	35
RE-33103002	110	60	40
RE-33103003	125	75	50
RE-33103004	155	95	60
RE-33103005	190	115	75
RE-33103006	220	140	90



# MINIBOX+



- Basic and multi-functional **Minibox+** universal aluminum enclosures for electronics. Used in applications from little testing equipment to heavy-duty installations such as machine/motor controls or automated pass controls.

## DESCRIPTION

- Easy and budget fitted drilling options, by programmable CNC punching machines
- Fifteen sizes from 55 to 4 400 cm<sup>3</sup> of internal volume
- Its aluminum construction eases EMI/RFI protection of equipments
- Two-piece construction held together with self-tapping screws, except the smallest size (31040101), which lid and base snap together
- Basic unit includes: base, cover, 4 self-tapping screws

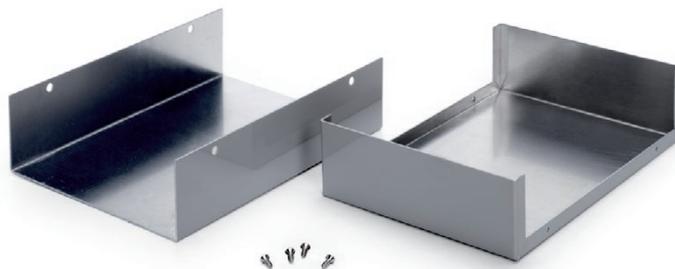
## MATERIALS AND FINISH

- Made entirely of 1 mm thick aluminum, natural anodized finish, outer surface covered with removable transparent protective film

## OPTIONAL

- Custom made drilling, silk-screen printing, special dimensions

Code	Height (mm)	Width (mm)	Depth (mm)
RE-31040101	55	40	25
RE-31040102	75	55	25
RE-31040103	75	40	35
RE-31040104	75	105	35
RE-31040105	105	55	35
RE-31040106	105	125	35
RE-31040107	125	55	45
RE-31040108	125	85	60
RE-31040109	155	105	45
RE-31040110	155	125	75
RE-31040111	155	125	75
RE-31040112	175	125	45
RE-31040113	175	155	75
RE-31040114	205	125	60
RE-31040115	205	205	105



# SERIE 31



➤ Small-capacity range of handheld **Serie 31** enclosures for electronics are suitable for pocket use or situations where a small, robust enclosure is required, sealed up to IP65.

## DESCRIPTION

- Modern design with beveled edges and high level of functionality
- Recesses in the cover and base for fitting membrane keypads
- Easy snap-fit assembly of base and cover
- The smaller-sized models have a lug for a key ring
- Possibility of EPDM gasket for an IP65 seal
- Standard membrane keypads for small and large models
- Temperature resistant up to 85 °C
- Basic unit includes: cover and base
- Accessories: EPDM joint seal, standard 3-button membrane keypad

## MATERIALS AND FINISH

- Base and cover—high-resistance molded ABS
- Standard color: light grey—similar to RAL 7035 or black—similar to RAL9004

## OPTIONAL

- Custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 VO rate, other colors available upon request

Code for RAL 7035 color	Code for RAL9004 color	Key-ring hole	Height (mm)	Width (mm)	Depth (mm)
RE-33131001	RE-33131201	–	55	40	18
RE-33131002	RE-33131202	✓	60	40	18
RE-33131003	RE-33131203	✓	70	50	20



# SERIE 32



- A range of **Serie 32** handheld enclosures for electronics could be used for control boxes in four sizes for medium-sized control applications with IP65 level of protection.

## DESCRIPTION

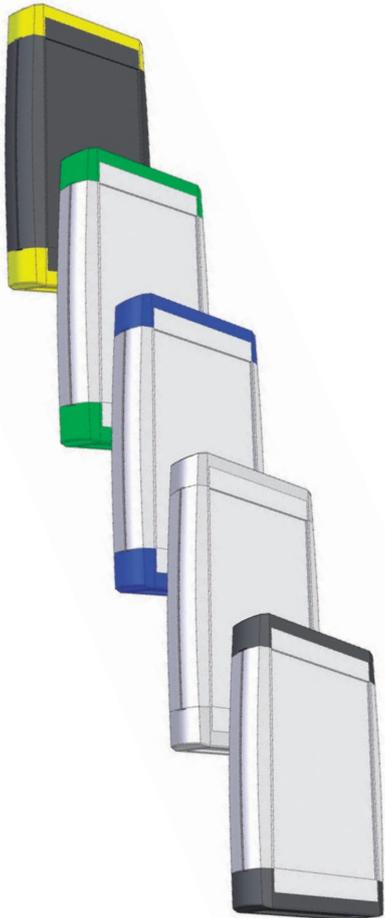
- New enclosure configuration with screw-less pressure closing
- Designed for functionality with several possibilities for mounting a membrane keypad
- Recessed areas in cover, base and front and rear panels to allow keypad mounting
- Easy pressure-assembly of the base, cover and the front and rear panels. Battery cover attached using screws
- Mounts on the base and cover for fixing PCB's using self-tapping screws
- Possibility of EPDM gasket for an IP65 seal
- Temperature resistant up to 85 °C
- Basic unit includes: cover, base and panels. In the larger sizes, cover for battery housing and screws
- Accessories: EPDM joint seal

## MATERIALS AND FINISH

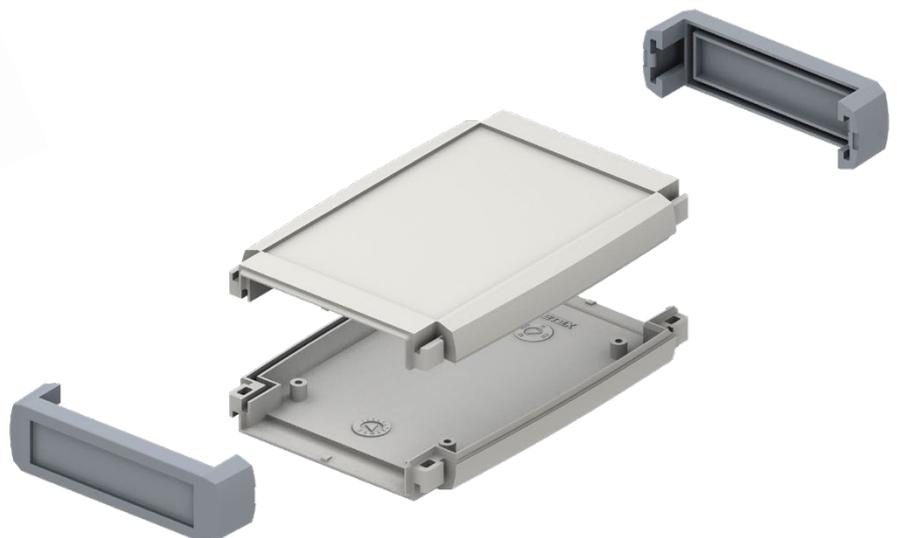
- Base and cover—high-quality injection-molded 3mm-thick ABS; light grey—color similar to RAL 7032 or dark grey—color similar to RAL 7021
- Panels—grey—color similar to RAL 7001 or black—color similar to RAL9004

## OPTIONAL

- Custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 V0 rate, other colors available upon request



Code for RAL 7035 color	Code for RAL9004 color	Height (mm)	Width (mm)	Depth (mm)
RE-33132002	RE-33132202	100	75	20
RE-33132003	RE-33132203	100	75	20
RE-33132004	RE-33132204	120	75	20
RE-33132005	RE-33132205	120	75	20



# SERIE 33



➤ A range of **Serie 33** handheld enclosures for electronics in six sizes are suitable for multiple control applications requiring a large volume.

## DESCRIPTION

- A new control box configuration for uses where strong construction is needed, the edges are coated for better protection and grip
- Assembly by simple pressure on the edges or in combination with screws
- New ergonomics, optimized for correct hand-held use
- Various options for mounting keypads. Recessed areas in the cover, base and front and rear panels.
- Easy pressure-assembly of the base, cover and the front and rear panels. Battery cover attached using screws.
- Mounts on the base and cover for fixing PCB's using self-tapping screws
- Possibility of EPDM gasket for an IP65 seal
- Temperature resistant up to 85 °C
- Basic unit includes: cover, base and edge protectors. In larger sizes, cover for battery housing and screws are included
- Accessories: EPDM joint seal

## MATERIALS AND FINISH

- Cover, base and battery cover—3mm-thick high-quality injection-molded ABS
- Edge surfaces—polypropylene and covered with TPE non-slip material
- Standard colors: enclosure in light grey—similar to RAL 7035 (ABS) and corners in light grey—similar to RAL 7001 (TPE)
- Standard colour options: enclosure—light grey RAL 7035 or black RAL9004; corners—blue RAL 5007, green RAL 6026, red RAL 3020, orange RAL 2003, black RAL9004, yellow RAL 1021, grey RAL 7001

## OPTIONAL

- Custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 V0 rate, other colors available upon request

Code for SERIE 33 enclosures without corners (order separately)	Height (mm)	Width (mm)	Depth (mm)	Color
RE-33133301	145	95	25	Black
RE-33133302	145	95	35	
RE-33133303	185	110	25	
RE-33133304	185	110	35	
RE-33133305	200	120	25	
RE-33133306	200	120	35	
RE-33133311	145	95	25	Grey
RE-33133312	145	95	35	
RE-33133313	185	110	25	
RE-33133314	185	110	35	
RE-33133315	200	120	25	
RE-33133316	200	120	35	

Code for CORNERS	Enclosure height (mm)	Color
RE-33133225	25	Blue
RE-33133325		Green
RE-33133425		Red
RE-33133525		Orange
RE-33133625		Black
RE-33133725		Yellow
RE-33133825	35	Grey
RE-33133235		Blue
RE-33133335		Green
RE-33133435		Red
RE-33133535		Orange
RE-33133635		Black
RE-33133735	Yellow	
RE-33133835	Grey	

# SERIE 50



➤ High quality **Serie 50** handheld aluminum enclosures for electronics with IP65 rating are suitable for a wide range of applications both indoor and outdoor. Hand-held use, applied to a wall or fixed/removable support as a machine RF/wire activated command.

## DESCRIPTION

- Profiles with integrated rails for PCB's fixing
- Lid mounting by M3 self-tapping screw
- Recessed area for keyboard is provided on both the top and base of the box
- Ergonomic shape of the sides of the profile, allows for a good portability
- Battery compartments
- Wall mounting standard option
- Resistant to temperatures up to 85 °C (plastic pieces)
- Basic unit includes: 1 profile, 2 end covers, 4 small covers, mounting screws

## MATERIALS AND FINISH

- Enclosure—6063 aluminum tube extrusion, epoxy painted, color similar to RAL 9002 or graphite grey
- Lids—injected high quality ABS, color similar to light-grey RAL7044 or black RAL 9004

## OPTIONAL

- EPDM rubber gasket for IP 65 sealing, battery holder, custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 VO rate, other colors available upon request

Code for RAL 7035 color	Code for RAL9004 color	Height (mm)	Width (mm)	Inner width (mm)	Depth (mm)
RE-31150001	RE-31150201	130	82	80	27
RE-31150002	RE-31150202	160	102	100	37
RE-31150003	RE-31150203	160	122	120	47
RE-31150004	RE-31150204	190	82	80	27
RE-31150005	RE-31150205	190	102	100	37
RE-31150006	RE-31150206	220	122	120	47



# BETABOX



➤ Small **Betabox** handheld enclosures for electronics are suitable for multiple applications of handheld or pocket equipment.

## DESCRIPTION

- Two enclosure sizes made in ABS, with 3 mm thick walls that provide a high impact resistance
- Base incorporates a battery compartment accessible via a snap-on lid at the back. Both sizes accept two AA, two AAA or one PP3 batteries.
- Integral bosses at the base for mounting PCB's, with screws provided with the box
- Resistant to temperatures up to 85 °C
- Basic unit includes: lid, base, battery compartment lid, screws for both box and PCB's

## MATERIALS AND FINISH

- Lid and base—3mm-thick high-quality injection-molded ABS
- Standard colors: black—similar to RAL9004, light grey—similar to RAL 7032

## OPTIONAL

- Custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 V0 rate, other colors available upon request

Code for RAL 7035 color	Code for RAL9004 color	Height (mm)	Width (mm)	Depth (mm)
RE-33050051	RE-33050551	105	61	28
RE-33050052	RE-33050552	145	80	34



# SERIE 110



Types 1, 2, 3, 4



Types 5, 6, 7



➤ Instrument desktop **Serie 110** enclosure for electronics are suitable for command, test or control applications with frontal display.

## DESCRIPTION

- Modern design oriented to functionality, conceived to optimize both case or equipment mounting and the use of internal space
- Basic structure of the box by two side aluminum extrusion profiles, steel lid/base covers and plastic brackets, to which both panels are fixed
- Side profiles include rails for mounting PCB's or other components
- Front brackets include handles in types 5, 6 and 7, with lids that can be customized with your corporate color
- Lid and base cover can be dismantled independently
- Ventilation slots are provided on rear part of lid and base covers
- The four small-profile sizes has four non-slip feet
- The three larger sizes are supplied with tilt-feet
- Resistant to temperatures up to 85 °C (plastic pieces)

## MATERIALS AND FINISH

- Lid and base—1 mm sheet steel, painted textured epoxy, in graphite grey color
- Side profiles—6063 aluminum extrusion, matt silver anodized
- Front/rear panels—1070 aluminum, 1 mm (types 1, 2, 3, 4) or 2 mm thick (types 5, 6, 7), silver anodized
- Brackets and tilt feet—high quality injected ABS, graphite grey color

## OPTIONAL

- Custom-made special drilling, silk-screen printing, other colors available upon request

Code	Type	Height (mm)	Width (mm)	Depth (mm)
RE-31110001	1	70	150	140
RE-31110002	2	70	200	200
RE-31110003	3	80	225	170
RE-31110004	4	90	250	200
RE-31110005	5	100	300	220
RE-31110006	6	120	350	260
RE-31110007	7	130	400	300

# ABOX



Type 1



Type 2



Type 3



Type 4



Type 5

➤ Desktop **Abox** enclosures for electronics are suitable as range consoles for control and visualization applications. Specially designed for equipments such as intercoms, displays, test or control units. Enclosures come in two configurations. The first configuration is designed as a sloped unit—see types 1, 2 and 4. The second configuration is designed as a sloped unit with angled panel for display purposes—see type 3 and 5.

## DESCRIPTION

- Bosses (types 1, 2 and 4) or slots (types 3 and 5) for mounting PCB's. Also suitable for mounting cards in accordance to IEC 60297 (Eurocards) in every size
- Includes four non-slip feet
- Resistant to temperatures up to 85 °C (plastic parts)
- Basic unit of type 1, 2 and 4 includes:  
lid, base, one aluminum panel, four non-slip feet and mounting screws
- Basic unit of type 3 and 5 includes:  
lid, base, two aluminum panel, four non-slip feet and mounting screws

## MATERIALS AND FINISH

- Lid and base—high-quality injected ABS; light-grey—color similar to RAL 7032 or black—color similar to RAL9004
- Panels—2 mm thick aluminum, quality 1070, with anodized silver finish

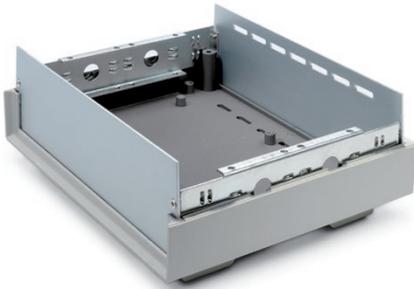
## OPTIONAL

- Custom-made special drilling, silk-screen printing, other colors available upon request

Code for light-grey color	Code for black color	Type	Height (mm)	Width (mm)	Depth (mm)
RE-33020101	RE-33020111	1	62	195	120
RE-33020102	RE-33020112	2	78	268	185
RE-33020103	RE-33020113	3	117,5	268	185
RE-33020104	RE-33020114	4	86,5	400	230
RE-33020105	RE-33020115	5	147	400	230



# ELBOX



➤ Desktop **Elbox** enclosures for electronics are suitable for command, test or control applications with frontal/rear display.

## DESCRIPTION

- Designed to optimize the use of internal space
- Base with bosses for mounting PCB's. Units of type 3 are also suitable for mounting cards in accordance to IEC 60297 (Eurocards).
- Basic inner structure of the box two side metallic chassis
- Lid and base cover this structure protecting the equipment. Rails include holes for sturdy mounting of cards or other components.
- Ventilation slots are provided on the base of the case and the rear panel
- Units of type 3 are supplied with tilt-feet.
- Resistant to temperatures up to 85 °C (plastic parts)
- Basic units of type 3 include: lid, base, front and rear panels, two metallic side rails, set of two tilt-up feet plus two fixed feet, mounting screws

## MATERIALS AND FINISH

- Lid and base—high-quality injected ABS; light-grey—color similar to RAL 7032 or dark-grey—color similar to RAL7016
- Panels—1.2 mm thick aluminum, quality 1070, with anodized silver finish

## OPTIONAL

- Box without side rails, custom-made special drilling, silk-screen printing, internal painting to achieve EMI/RFI shielding (graphite, copper or nickel base, depending on desired value of protection), self-extinguishing ABS material UL 94 V0 rate, other colors available upon request

Code for light-grey color	Code for dark-grey color	Type	Height (mm)	Width (mm)	Depth (mm)
RE-33030003	RE-330302013	3	77	232.5	180.5

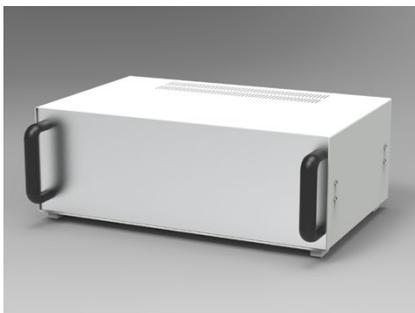
# SOLBOX



➤ Sturdy **Solbox** desktop enclosures for electronics are manufactured in steel, with front and rear aluminum panels.

## DESCRIPTION

- Lid and base cover with ventilation slots
- Front and rear panel in 2-3 mm thick silver anodized aluminum
- Non slip feet in types 1, 2 and 3
- Front handles and tilt-feet in types 4, 5 and 6
- Internal side plates for assembling PCB's, inner plates or other components
- Basic unit includes: base, lid, front and rear panels, side plates, feet , handles (on types 4, 5, 6) and assembly hardware

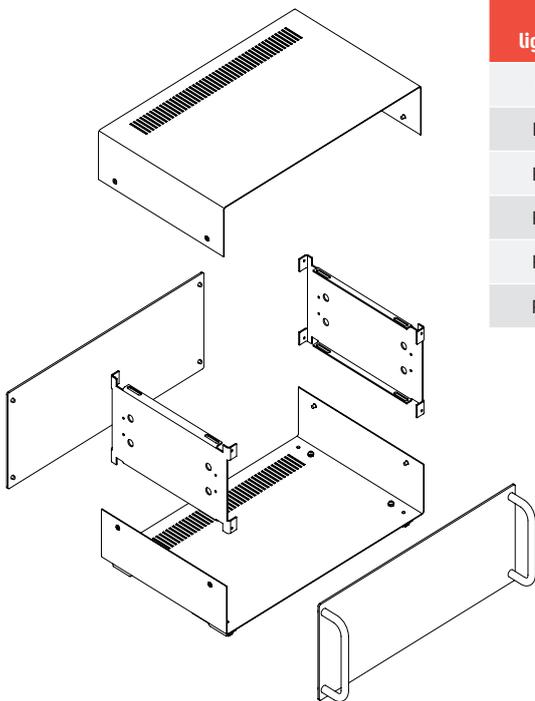


## MATERIALS AND FINISH

- Lid and base in steel coated epoxy; light-grey—color similar to RAL9002
- Front and rear panel—silver anodized aluminum

## OPTIONAL

- Special dimensions, custom-made special drilling, silk-screen printing



Code for light-grey color	Type	Front handles and tilt-feet	Height (mm)	Width (mm)	Depth (mm)
RE-31080011	1	-	70	150	110
RE-31080012	2	-	80	200	140
RE-31080013	3	-	100	250	160
RE-31080014	4	✓	120	300	190
RE-31080015	5	✓	130	350	220
RE-31080016	6	✓	140	400	250

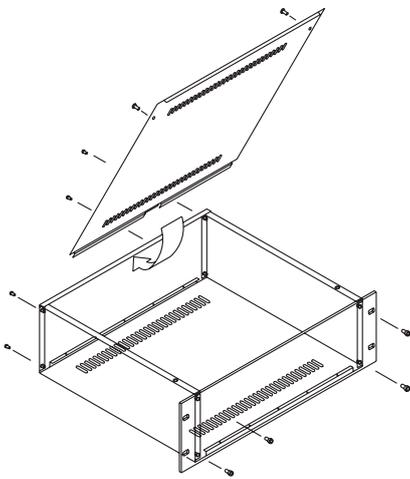
# SERIE 180



➤ Sub-rack & 19" enclosures **Serie 180** intended for electronics and telecommunication equipment which can be installed in 19" racks. Built to IEC 297-2 standard (DIN 41 494). Its easy assembly, optimum accessibility and strong construction allow for an effective installation of equipment into rack. Allows for mounting in 19" rack with standard telescopic guides (100% extension).

## DESCRIPTION

- Height: 1, 2 and 3U
- Depth: 263 and 363 mm
- Mounting: with ten screws M4 (eight for 1 U)
- Front and rear internal supports for the mounting of trays or circuits, except 1U
- Basic unit includes: front panel, enclosures, rear and upper lid



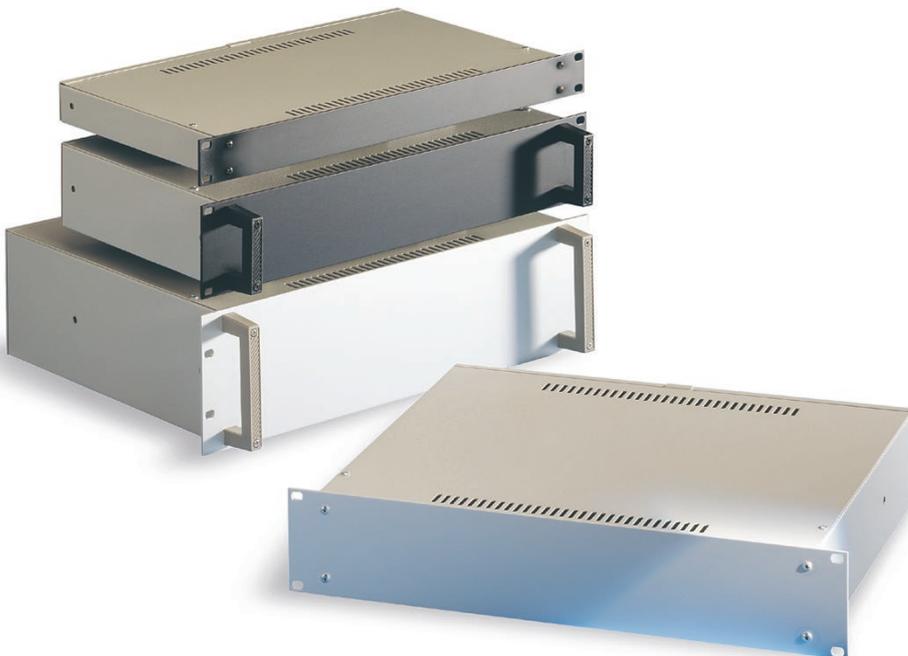
## MATERIALS AND FINISH

- Front panel—3 mm thick silver or black anodized aluminum
- Frame—1 mm thick steel, light-grey painted epoxy—color similar to RAL 9002

## OPTIONAL

- Special dimensions, custom-made special drilling, silk-screen printing on front panel/rear lid, other colors available upon request

Code for silver anodized front panel	Code for black anodized front panel	Height (in U)	Width (mm)	Depth (mm)
RE-32180011	RE-32180111	1	482,2	263
RE-32180012	RE-32180112	1		363
RE-32180021	RE-32180121	2		263
RE-32180022	RE-32180122	2		363
RE-32180031	RE-32180131	3		263
RE-32180032	RE-32180132	3		363



# SERIE EP



➤ Sturdy and light **Serie EP** sub-rack & 19" enclosures for electronics. Designed to meet IEC 60 297 and DIN 41 494, they accept full-width 84E sub-racks and cases.

## DESCRIPTION

- Available in 3 and 6U heights
- Supplied with ABS plastic feet, tilt-feet in front, fixed feet in rear
- Ventilation slots in base and rear panel
- Side panels have recessed handles in ABS, ergonomically disposed for comfort and ease of transport
- Basic unit includes: top and base covers, two side panels, one rear panel, four feet (two tilt-up feet in frontal part), brackets, handles and mounting hardware. Supplied flat-pack.

## MATERIALS AND FINISH

- Constructed entirely from 1 mm thick steel
- Upper and lower lid and side panels— graphite-grey color painted epoxy
- Handles—high-quality injected ABS; black— color similar to RAL9004
- Legs—high-quality injected ABS; dark grey—color similar to RAL7016

## OPTIONAL

- Special dimensions, custom-made special drilling, optional castors

Code	Height (in U)	Width (mm)	Depth (mm)
RE-32060333	3	489	330
RE-32060345	3		450
RE-32060633	6		330
RE-32060645	6		450

# SERVICES

The image shows a server room with several server racks. The racks are filled with server components, and the room has a grid ceiling with recessed lighting. The entire scene is overlaid with a teal color scheme and a large, semi-transparent teal geometric shape that resembles a stylized 'S' or a series of overlapping planes. The word 'SERVICES' is written in large, bold, white capital letters across the center of the image.



# SERVICES

Services .....	216
Test center for Data Centers (TC4DC) .....	217

# SERVICES

➤ When preparing a complex network project, your consultants, designers and IT department can benefit from the advice and support of our engineers. Our product managers and pre-sales team have in-depth knowledge about the parameters and characteristics of all CONTEG product portfolio items, along with technical certificates (Certified Data Center Design Professional, etc.) and years of experience in successfully delivering complex projects. CONTEG has an engineered solution to fully meet your requirements, no matter how challenging (or simple) your project may be.

We offer services such as pre-assembly of accessories, assembly assistance, cooling unit start-up, training, webinars and personal presentations about our products, along with solutions for both business partners and customers.

For more details and pricing information, please contact our Total Solutions Technical Support team or your Area Sales Managers. You can find a list of our services below.

SERVICES	Consulting for Data Center Solutions	Factory Pre-Assembling	CONTEG Assembly Assistance	Start-up Service	On-site Product Installation	Remote Technical Support
Data room layout	✓	–	–	–	–	–
Positioning/arrangement of individual components	✓	–	–	–	–	–
Energy studies and cooling system projects	✓	–	–	–	–	–
Project optimization	✓	–	–	–	–	–
CFD modeling	✓	–	–	–	–	–
Project documentation check and verification	–	✓	✓	–	✓	–
Factory installation of accessories	–	✓	–	–	–	–
Pre-shipment inspection	–	✓	✓	–	✓	–
Site-readiness check (before installation) and process coordination (during installation)	–	–	–	–	✓	–
Delivery to site, unpacking, positioning of products	–	–	–	–	✓	–
Installation of products	–	–	–	–	✓	–
Final inspection	–	–	✓	–	✓	–
Commissioning of cooling units	–	–	–	✓	–	–
User training	–	–	✓	✓	✓	–
Handover of finished project	–	–	✓	✓	✓	–
RAMOS	✓	partially	✓	✓	✓	✓
DCIM CONTEG Pro Server	✓	–	✓	✓	✓	✓



For more information, please contact our sales or technical team at [www.conteg.com/contacts](http://www.conteg.com/contacts)

# TEST CENTER FOR DATA CENTERS

➤ CONTEG's Test Center For Data Centers (**TC4DC**) in Pelhrimov (Czech Republic), was built for testing the impact of new and existing products on data center power consumption, efficiency, reliability and effectiveness in different configurations.

Computer simulations and laboratory measurements allow specialists to verify the principles of various server room processes in order to implement innovative solutions.



## WHAT CAN WE MEASURE?

- Humidity
- Temperature (water, air and surface of all equipment and racks)
- Air- and water-flow
- Speed of various media in pipes and ducts
- Pressure differences (in individual parts of experimental arrangements)
- CO<sub>2</sub> concentration
- Electrical parameters (voltage, current and power consumption)
- Noise parameters
- Rotation (fan or compressor speed)

## DESCRIPTION

Total area of 156 square meters.

### Includes

- Experimental data center (designed as an actual data center) with raised floor and suspended ceiling for simulating actual situations

- Possibility of installing individual racks, rows, contained aisles and closed-loops
- Rooms for technical support
- Spaces for hardware and software

### Ancillary spaces

- Workshop area for hardware (used in testing) and software (used to examine results)

- Conference room (for team meetings and technical presentations)



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