IT Infrastructure

Rittal – The System.

Faster – better – everywhere.

» nextlevel

for data centre

Rittal opens up new horizons in the world of IT. From the RiMatrix S standardized data center module to efficient individual components.

Rittal – The System.

- Rittal – modular, standardized data centers with RiMatrix S
- Rittal – system components for individual IT solutions

ENCLOSURES | **POWER DISTRIBUTION** | **CLIMATE CONTROL**

nextlevel

for data centre

IT INFRASTRUCTURE SOFTWARE & SERVICES

RITTAL

Rittal – The System.

Faster – better – everywhere.

IT Infrastructure from the smallest to the largest

- RiMatrix S
- IT Enclosure Systems
- IT Housing
- IT Power
- IT Cooling
- IT Monitoring
- IT Security Solutions

ENCLOSURES **POWER DISTRIBUTION** **CLIMATE CONTROL**

- RiMatrix S – mass-produced data center in tested and pre-certified modules
- IT security rooms – certified to ECB·S

IT INFRASTRUCTURE SOFTWARE & SERVICES

Your Benefits with RiMatrix

With unique IT system solutions from Rittal, you benefit from modern data center infrastructures. Choose any standardized components from our range of RiMatrix system components: IT Enclosure Systems/Housings, IT Power, IT Cooling, IT Monitoring and IT Security Solutions. The IT infrastructure can be precisely adapted to meet your needs – leaving plenty of flexibility for future expansion.

Faster – Precise-fit data center infrastructures with “Rittal – The System.”
Better – Standardized, coordinated system components
Everywhere – Commissioning by our international service engineers

IT INFRASTRUCTURE SOFTWARE & SERVICES

RITTAL

Your Benefits with RiMatrix S

RiMatrix S is the revolutionary alternative in data center construction. Standardized data center infrastructures are created on the basis of pre-configured, complete data center modules.
The data center modules already contain all the essential components, such as IT enclosure systems, power back-up and distribution, cooling, monitoring and security solutions. All the data center modules are prefabricated and available off the shelf, which allows specifically customized solutions to be quickly compiled.

Faster – Prefabricated data center modules available off the shelf
Better – Tested, pre-certified data center modules with outstanding efficiency
Everywhere – Installation in system-tested security rooms, standard aisle containments or containers

IT INFRASTRUCTURE

SOFTWARE & SERVICES

RITTAL

RiMatrix S

RiMatrix S

Your Benefits

- Standardized data center infrastructures based on data center modules
- Tested and pre-certified modules with outstanding efficiency
- Simplified planning thanks to pre-configuration
- Simplified service and administration processes

RiMatrix S App

Your configurator for standardized data centers for SMEs, branch concepts and flexible cloud applications. An intuitive user interface will guide you to your complete data center in just five steps.

RiMatrix S at a Glance

	Standard Room				
	Integration of RiMatrix S modules into an existing property. In order to achieve optimum air routing, precise-fit aisle containment is included with the supply.		Aisle containment is a combination of door and roof components which facilitate consistent separation of the hot and cold air. – Enhanced energy efficiency – Superior output density, due to guaranteed cold air supply – Dust- and watertight in the protected area above the raised floor, IP 20 to IEC 60 529 **Note:** – Configurations based on European standards. Contact Rittal Customer Service for North American versions.		
	Single 6	**Double 6**	**Single 9**	**Double 9**	
Model No.	**7998.106**	**7998.107**	**7998.406**	**7998.407**	
Fire protection	–				
Burglar resistance	–				
Acrid gas-tightness	–				
Water and dust protection	–				
Early fire detection	■				
Room extinguisher system	optional				
Humidification and dehumidification system	optional				
External dimensions					
Height inches (mm)	108 (2750)	108 (2750)	108 (2750)	108 (2750)	
Width inches (mm)	111 (2828)	191 (4854)	111 (2828)	191 (4854)	
Depth inches (mm)	279 (7080)	279 (7080)	279 (7080)	279 (7080)	
Rack configuration					
Server enclosure 79 x 24 x 47″ (2000 x 600 x 1200 mm)	6 pc(s).	12 pc(s).	8 pc(s).	16 pc(s).	
Combined network/server enclosure 79 x 32 x 47″ (2000 x 800 x 1200 mm)	1 pc(s).	2 pc(s).	1 pc(s).	2 pc(s).	
Uninterruptible power supply (partner product, see note on page 343)	204729 BTU (60 kW) + 68243 BTU (20 kW)	2 x 204729 BTU (60 kW) + 2 x 68243 BTU (20 kW)	–	–	

Security rooms

Standard Security Room

- Fire resistance EI 90 to EN 1363 / F 90 to DIN 4102
- Protection from unauthorized access – Resistance Class II to DIN V ENV 1630
- Basic EMC protection
- Acrid-gas tightness based on DIN 18 095
- Impact test with 3,000 Nm energy after 30 mins. flame impingement over standard temperature curve
- Dust- and watertight to IP 56 to EN 60 529

Note:

- Products based on European standards. Contact Rittal Customer Service for North American versions

Construction of the standard security room

- Element core made from thermally effective insulating material
- Robust, encapsulated carbon steel cassette panels
- Innovative connection system using patented profile technology
- Use of temperature- and humidity-resistant seals
- Use of climate control valves with electromagnetic drive
- Dismantling and reassembly are possible at any time

Container

Standard Container

Robust carbon steel container specifically designed for IT applications. The reinforced frame structure allows optimum weight distribution. Housed interior wall structure with thermal insulating materials.

- Vandal-proof interior in accordance with Resistance Class II to DIN EN 1630
- Fire protection category EI 30 to EN 1363
- Basic EMC protection
- Dust- and watertight to IP 55 to EN 60 529

Note:

- Product based on European standards. Contact Rittal Customer Service for North American versions

Single 6	Double 6	Single 9	Double 9	Single 6	Single 9
7998.306	**7998.307**	**7998.606**	**7998.607**	**7998.206**	**7998.506**
EI 90/F90				EI 30	
WK II				RC II	
■				–	
IP 56				IP 55	
■				■	
optional				optional	
optional				optional	
110 (2800)	110 (2800)	110 (2800)	110 (2800)	118 (3000)	118 (3000)
116 (2950)	196 (4974)	116 (2950)	196 (4974)	118 (3000)	118 (3000)
295 (7500)	295 (7500)	295 (7500)	295 (7500)	285 (7250)	285 (7250)
6 pc(s).	12 pc(s).	8 pc(s).	16 pc(s).	6 pc(s).	8 pc(s).
1 pc(s).	2 pc(s).	1 pc(s).	2 pc(s).	1 pc(s).	1 pc(s).
204729 BTU (60 kW) + 68243 BTU (20 kW)	2 x 204729 BTU (60 kW) + 2 x 68243 BTU (20 kW)	–	–	204729 BTU (60 kW) + 68243 BTU (20 kW)	–

RiMatrix S

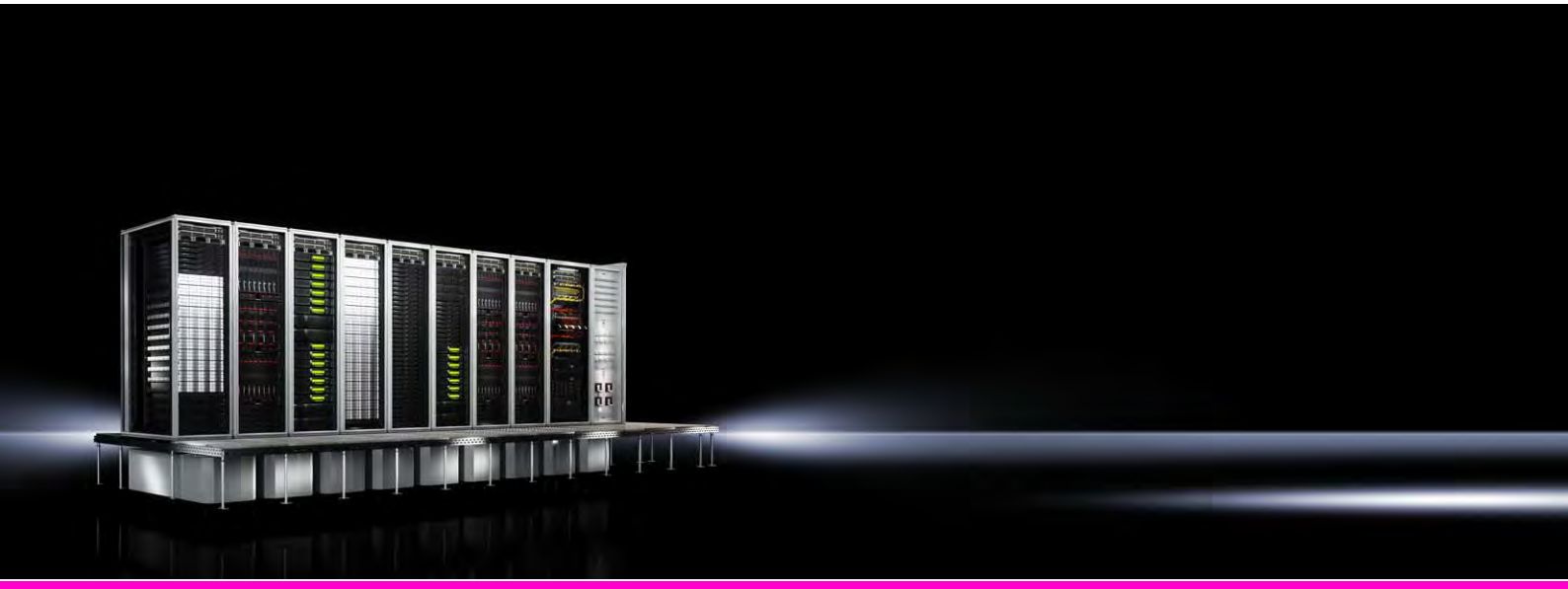
RiMatrix S Single 6/Double 6
- 6 server enclosures, 1 network enclosure
- 2 separate, optimized climate zones for server and technology sections
- UPS, battery case and distribution enclosure
- Space-saving climate control in the raised floor
- Consistent separation of cold air intake and hot waste air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 6, the second module is a mirror image with an integral cold aisle

RiMatrix S Single 9/Double 9
- 8 server enclosures, 1 network enclosure
- 1 climate zone for the server section
- When using a pre-existing UPS
- Distribution enclosure
- Space-saving climate control in the raised floor
- Consistent separation of cold air intake and hot waste air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 9, the second module is a mirror image with an integral cold aisle

Note:
– Product based on European standards. Contact Rittal Customer Service for North American versions

Standard Room

		Single 6	Double 6	Single 9	Double 9
External dimensions inches (mm)	Height	108 (2750)	108 (2750)	108 (2750)	108 (2750)
	Width	111 (2828)	191 (4854)	111 (2828)	191 (4854)
	Depth	279 (7080)	279 (7080)	279 (7080)	279 (7080)
Internal dimensions inches (mm)	Height	106 (2700)	106 (2700)	106 (2700)	106 (2700)
	Width	108 (2750)	188 (4774)	108 (2750)	188 (4774)
	Depth	276 (7000)	276 (7000)	276 (7000)	276 (7000)
Model No.		**7998.106**	**7998.107**	**7998.406**	**7998.407**
Physical security					
Fire protection		–			
Burglar resistance		–			
Acrid gas-tightness		–			
Water and dust protection		–			
Early fire detection		■			
Room extinguisher system		optional			
Humidification and dehumidification system		optional			
Infrastructure					
Server enclosure 79 x 24 x 47″ (2000 x 600 x 1200 mm)		6 pc(s).	12 pc(s).	8 pc(s).	16 pc(s).
Combined network/server enclosure 79 x 32 x 47″ (2000 x 800 x 1200 mm)		1 pc(s).	2 pc(s).	1 pc(s).	2 pc(s).
Uninterruptible power supply		204729 BTU (60 kW) + 68243 BTU (20 kW)	2 x (204729 BTU (60 kW) + 2 x 68243 BTU (20 kW)	–	–
Redundancy		1 x 68243 BTU (20 kW)	2 x 68243 BTU (20 kW)	–	–
Min. autonomy		13 minutes			
Low-voltage main distributor		1 pc(s).	2 pc(s).	1 pc(s).	2 pc(s).
PDU Basic		14 pc(s).	28 pc(s).	18 pc(s).	36 pc(s).
Climate control (ZUCS)		204729 BTU (60 kW) + 34121 BTU (10 kW)	409457 BTU (120 kW) + 68243 BTU (20 kW)	307093 BTU (90 kW) + 34121 BTU (10 kW)	614186 BTU (180 kW) + 68243 BTU (20 kW)
Redundancy		n+1	n+2	n+1	n+2



RiMatrix S Single 6/Double 6
- 6 server enclosures, 1 network enclosure
- 2 separate, optimized climate zones for server and technology sections
- UPS, battery case and distribution enclosure
- Space-saving climate control in the raised floor
- Consistent separation of cold air intake and hot waste air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 6, the second module is a mirror image with an integral cold aisle

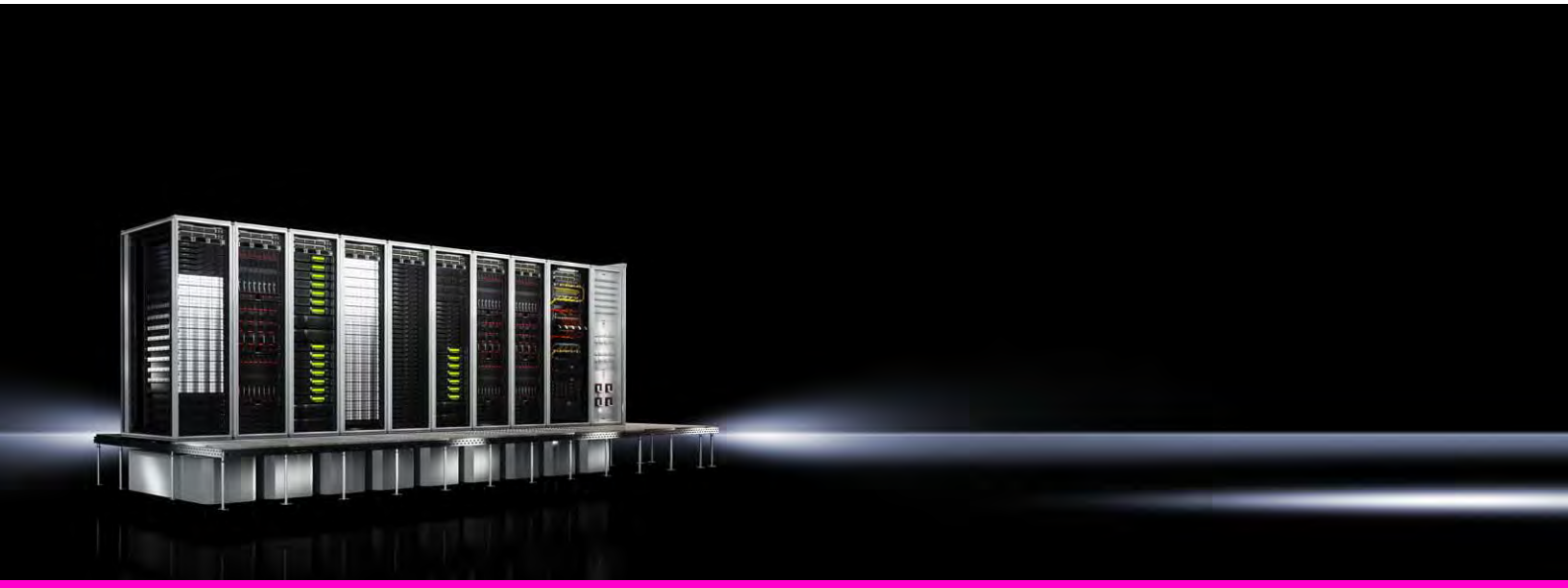
RiMatrix S Single 9/Double 9
- 8 server enclosures, 1 network enclosure
- 1 climate zone for the server section
- When using a pre-existing UPS
- Distribution enclosure
- Space-saving climate control in the raised floor
- Consistent separation of cold air intake and hot waste air integrated into the mechanical concept
- Cable routing above the racks
- In the Double 9, the second module is a mirror image with an integral cold aisle

Note:
– Product based on European standards. Contact Rittal Customer Service for North American versions

Standard Security Room

		Single 6	Double 6	Single 9	Double 9
External dimensions inches (mm)	Height	110 (2800)	110 (2800)	110 (2800)	110 (2800)
	Width	116 (2950)	196 (4974)	116 (2950)	196 (4974)
	Depth	295 (7500)	295 (7500)	295 (7500)	295 (7500)
Internal dimensions inches (mm)	Height	106 (2700)	106 (2700)	106 (2700)	106 (2700)
	Width	108 (2750)	188 (4774)	108 (2750)	188 (4774)
	Depth	287 (7300)	287 (7300)	287 (7300)	287 (7300)
Model No.		**7998.306**	**7998.307**	**7998.606**	**7998.607**
Physical security					
Fire protection		EI 90/F90			
Burglar resistance		WK II			
Acrid gas-tightness		■			
Water and dust protection		IP 56			
Early fire detection		■			
Room extinguisher system		optional			
Humidification and dehumidification system		optional			
Infrastructure					
Server enclosure 79 x 24 x 47″ (2000 x 600 x 1200 mm)		6 pc(s).	12 pc(s).	8 pc(s).	16 pc(s).
Combined network/server enclosure 79 x 32 x 47″ (2000 x 800 x 1200 mm)		1 pc(s).	2 pc(s).	1 pc(s).	2 pc(s).
Uninterruptible power supply		204729 BTU (60 kW) + 68243 BTU (20 kW)	2 x 204729 BTU (60 kW) + 2 x 68243 BTU (20 kW)	–	–
Redundancy		1 x 68243 BTU (20 kW)	2 x 68243 BTU (20 kW)	–	–
Min. autonomy		13 minutes			
Low-voltage main distributor		1 pc(s).	2 pc(s).	1 pc(s).	2 pc(s).
PDU Basic		14 pc(s).	28 pc(s).	18 pc(s).	36 pc(s).
Climate control (ZUCS)		204729 BTU (60 kW) + 34121 BTU (10 kW)	409457 BTU (120 kW) + 68243 BTU (20 kW)	307093 BTU (90 kW) + 34121 BTU (10 kW)	614186 BTU (180 kW) + 68243 BTU (20 kW)
Redundancy		n+1	n+2	n+1	n+2

RiMatrix S



RiMatrix S Single 6/Double 9
The RiMatrix S solution is assembled in the container, then commissioned and tested in accordance with our guidelines.

Our services include:
- Advice and ROI calculation
- Delivery and integration into the customer infrastructure
- Commissioning and handover
- Documentation, training, instruction
- Hotline and service/service agreements

Supply includes:
– Complete technical documentation of all components and works, together with the relevant user manuals

Note:
– Product based on European standards. Contact Rittal Customer Service for North American versions

Standard Container

		Single 6	Single 9
External dimensions inches (mm)	Height	118 (3000)	118 (3000)
	Width	118 (3000)	118 (3000)
	Depth	285 (7250)	285 (7250)
Internal dimensions inches (mm)	Height	106 (2685)	106 (2685)
	Width	108 (2750)	108 (2750)
	Depth	276 (7000)	276 (7000)
Model No.		**7998.206**	**7998.506**
Physical security			
Fire protection		EI 30	
Burglar resistance		RC II	
Acrid gas-tightness		–	
Water and dust protection		IP 55	
Early fire detection		■	
Room extinguisher system		optional	
Humidification and dehumidification system		optional	
Infrastructure			
Server enclosure 79 x 24 x 47″ (2000 x 600 x 1200 mm)		6 pc(s).	8 pc(s).
Combined network/server enclosure 79 x 32 x 47″ (2000 x 800 x 1200 mm)		1 pc(s).	1 pc(s).
Uninterruptible power supply		204729 BTU (60 kW) + 68243 BTU (20 kW)	–
Redundancy		1 x 68243 BTU (20 kW)	–
Min. autonomy		13 minutes	
Low-voltage main distributor		1 pc(s).	2 pc(s).
PDU Basic		14 pc(s).	18 pc(s).
Climate control (ZUCS)		204729 BTU (60 kW) + 34121 BTU (10 kW)	307093 BTU (90 kW) + 34121 BTU (10 kW)
Redundancy		n+1	n+1

Rittal – The System.

Faster – better – everywhere.

A standardized data center. Simply plug in and you're ready to go.

RiMatrix S Selector

Your solution is configured on the basis of standardized data center modules.

- The planning phase, delivery and commissioning times are significantly shortened
- An accurate efficiency calculation (including consumption figures) is always included as part of our consulting service, based on the data sheet
- Standardization leads to significant potential savings
- The data center modules are complete functional units (including power, cooling supply and monitoring)
- The modules are comprehensively measured, meaning they have a data sheet and can be ordered off the shelf by means of an item number

Further information is available on the Rittal website

RiMatrix S App

Your configurator for standardized data centers for SMEs, branch concepts and flexible cloud applications.

An intuitive user interface will guide you to your complete data center in five easy steps:

1. Requirements and constraints
2. Technical specifications
3. Standardized module selection
4. Optional packages
5. Your RiMatrix S solution

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IT Enclosure Systems/Housings

TS IT Network/Server Enclosures

Distributor Rack

IT Housing

Your Benefits

Network/Server Enclosures

- Individually usable for stand-alone installation and data centers
- Complete system solutions for small to large networks
- Maximum configuration diversity and protection for installed equipment
- Flexibility and investment protection, thanks to simple conversions and the use of our extensive modular system

Wall-Mounted Housing

- Choose from an extensive range of products – the right housing to suit all applications – up to protection category IP 66
- Many sizes available, from 3 U to 21 U
- A wide choice of accessories, with “Rittal – The System.”
- Fast assembly, conversion and simple installation based on the modular principle

Application examples

1 EL wall-mounted housing, see page 98

2 VerticalBox, see page 95

3 AE wall-mounted housing with 19˝ profile rails, see page 102

4 TS IT with glazed door for rack climate control, see page 92, base/plinth and installation accessories, see page 421

5 TS IT with vented door for room climate control, see page 90, bayed with base/plinth and installation accessories, see page 421

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IT Power

Power Distribution Unit

Your Benefits

- Holistic and systematic energy management concepts
- Comprehensive and complete solutions for energy distribution and back-up, consistently modular with the flexibility for expansion at any time
- Ultimate energy and cost efficiency with maximum availability of the overall system
- Reduced installation, administration and manpower costs
- High level of investment security
- All from a single source

Application examples

1 Power Distribution Rack, PDR
2 Power Distribution Module, PDM
3 Power System Module, PSM
4 Power Distribution, see page 189
5 UPS

Power Distribution Unit (PDU)

Basic, Metered, and Smart

High density computing power requirements continue to increase, creating heat expansion and more challenges for managing the IT environment.
To maintain their competitive advantage, data center managers need SNMP-based solutions that monitor and manage the performance data of the IT equipment.
This is the purpose of the Rittal PDU product range, which provides different products for each application.

- Basic PDU: Robust power distribution unit for integration in IT server and network enclosures
- Metered PDU: Integrated, local current measurement at the inlet (without a network interface)
- Smart PDU: Energy measurement at the inlet and remote monitoring over a network using a web browser/SNMP

Basic PDU

Basic PDU is a robust and reliable power distribution unit for supplying all the IT racks in a data center. Different versions are available for input voltages of 110 V and 208 V, and input currents of 20 A and 30 A (single phase).

The use of UL-listed circuit-breakers meets the current-limiting requirements (overload protection) of the individual circuits.
With the 30 A PDUs, the individual fuseways are color-coded to make them more distinctive.

Voltage V	Current A	Outlet type	Number of outlets	Connector	L x W x H inches (mm)	**Model No.**
120	20	5 – 20	24	C20	31.25 x 1.75 x 2.25 (794 x 44 x 57)	**9970.847**
208	30	C13	12	L6-30	1.75 x 17 x 2.25 (44 x 482 x 57)	**9970.846**

Metered PDU

Metered PDU products ensure a reliable energy supply for all the devices installed in the IT rack.

Single-phase 120 V and 208 V versions of metered PDUs are available. Local monitoring of the input current gives the on-site engineer an overview of the utilization of the energy distribution within the rack.

Voltage V	Current A	Outlet type	Number of outlets	Connector	Overcurrent protection	L x W x H inches (mm)	**Model No.**
120	30	5 – 20	24	L5-30	Fuse	54 x 1.75 x 2.25 (1372 x 44 x 57)	**9963.675**
208	30	C13	12	L6-30	Fuse	31.25 x 1.75 x 2.25 (794 x 44 x 57)	**9963.673**

Smart PDU

Smart PDUs provide reliable energy distribution for server and network enclosures. They also provide remote administration and monitoring of all the key performance data of energy distribution. Furthermore, additional sensors can be used to monitor the ambient conditions (such as temperature and humidity) in the rack.

PIPS (Per Inlet Power Sensing) monitors power distribution at the inlet.
The following parameters are recorded:
Voltage, current, active power, apparent power, energy consumption, power factor and crest factor.
Fuse monitoring is also integrated.
When a limit is violated, the PDU automatically transmits alarm messages via SNMP.

Voltage V	Current A	Outlet type	Number of outlets	Connector	Overcurrent protection	L x W x H inches (mm)	Master/ Expansion	**Model No.**
208 3P Delta	30	C13	24	L15-30	Fuse	69 x 1.75 x 2.25 (1753 x 44 x 57)	Master	**9971.104**

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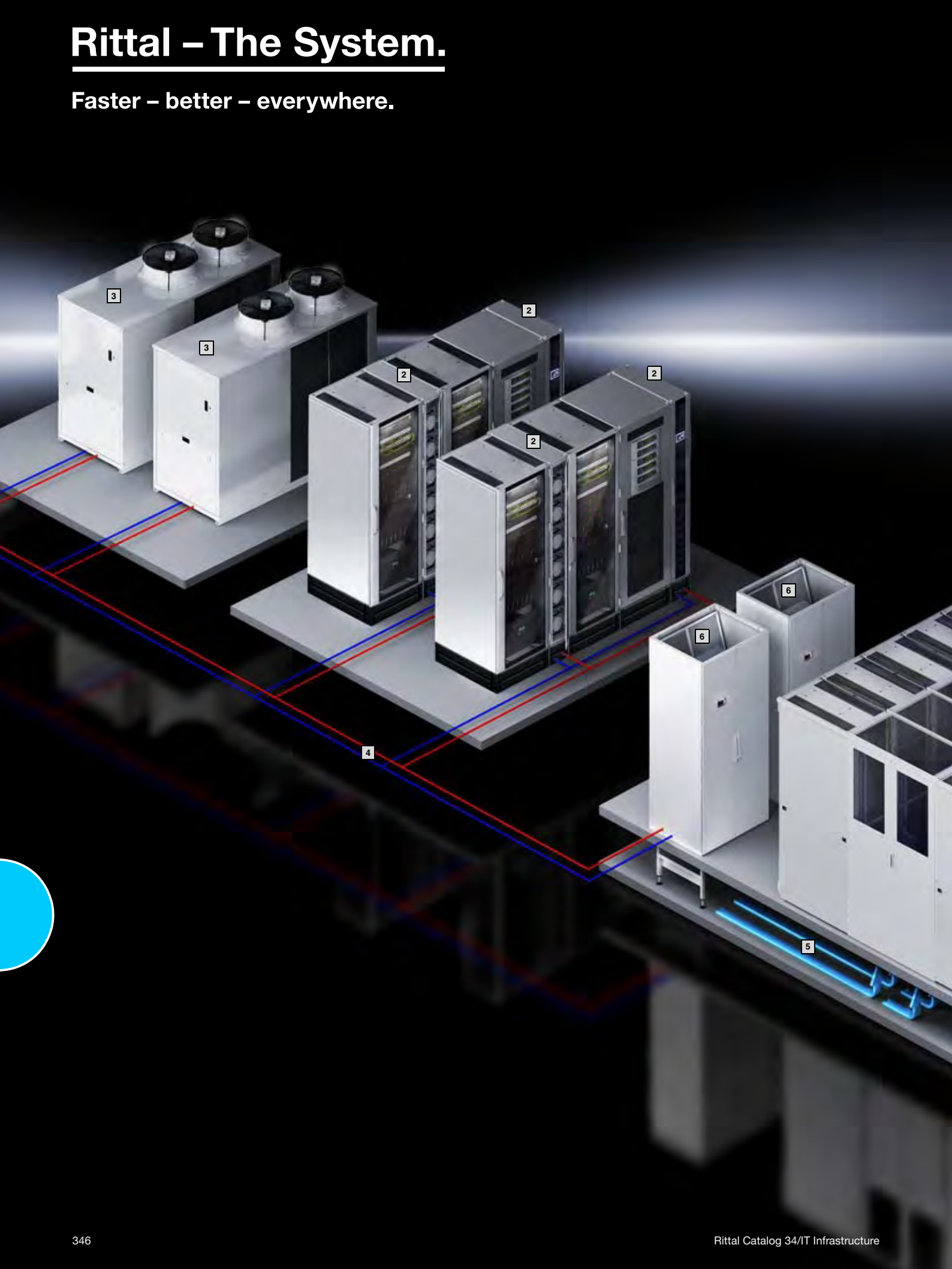


IT Cooling

Liquid Cooling Package

Aisle Containment

Small Cooling Units

Your Benefits

- State-of-the-art climate control technology from cooling single racks to complete data centers
- Individual concepts for rack, suite and room climate control
- Greater security and improved energy and cost efficiency
- Optimization with aisle containment and cross-system control concepts
- Energy-efficient cooling with IT chillers
- Operating costs are minimized with free cooling
- Ecofriendly, thanks to resource and CO_2 savings
- Planning, assembly, commissioning and servicing – all from a single source!

Application examples

1 Aisle containment, see page 356
2 Liquid Cooling Package LCP, see page 348
3 IT chiller with integral free cooling
4 Pipework
5 Raised floor for cold air supply
6 CRAC system

Liquid Cooling Package

Accessories for LCP Page 354 **TS IT Network/Server Enclosures** Page 90

Advantages:
- Maximum energy efficiency due to EC fan technology and IT-based control
- Minimal pressure loss at the air end, which in turn minimizes the power consumption of the fans
- Control of the server intake air temperature
- Redundant temperature sensor integrated at the air end
- Optimum adaptability due to dynamic, continuous control of the cold water volume flow
- By using high water inlet temperatures, the proportion of indirect free cooling is increased, which in turn reduces operating costs
- Targeted cooling output thanks to modular fan units
- Fan modules configurable as n+1 redundancy
- Standard 3-phase connection for electrical redundancy
- The separation of cooling and enclosure prevents water from entering the server enclosure
- Up to 55 kW cooling output on a footprint of just 0.36 m^2
- Minimal area load due to low weight

Functions:
The LCP draws in the air at the sides at the rear of the server enclosures, cools it using high-performance compact impellers, and blows the cooled air back into the front part of the server enclosure at the sides

Monitoring:
- Monitoring of all system-relevant parameters such as server air intake temperature, server waste air temperature, water inlet/return temperature, water flow, cooling output, fan speed and leakage
- Direct connection of the unit via SNMP over Ethernet

Temperature control:
- Infinitely variable fan control
- 2-way control ball valve

Color:
- RAL 7035

Protection category IP to IEC 60 529:
- IP 20

Cooling medium:
- Water

Optional:
- Fully integrated fire detection and extinguisher system
- Automatic server enclosure door opening
- Various sensors
- Racks 2200 mm high

Technical details:
Available on the Internet

Photo shows a configuration example with equipment not included in the scope of supply

LCP Rack CW

Model No.	Packs of	**3311.130**	**3311.230**	**3311.260**	Page
Total cooling output/number of fan modules required BTU (kW)		**34121 (10)/1 68243 (20)/2 102364 (30)/3**	**34121 (10)/1 68243 (20)/2 102364 (30)/3**	**136486 (40)/4 153546 (45)/5 187668 (55)/6**	
Number of fan modules in supplied state		1	1	4	
Height inches (mm)		79 (2000)	79 (2000)	79 (2000)	
Width inches (mm)		12 (300)	12 (300)	12 (300)	
Depth inches (mm)		39 (1000)	47 (1200)	47 (1200)	
Installation in bayed enclosure suite		Flush	Flush	Flush	
Rated operating voltage V, ~, Hz		230, 1~, 50/60 400, 3~, 50/60	230, 1~, 50/60 400, 3~, 50/60	230, 1~, 50/60 400, 3~, 50/60	
Type of connection (electrical)		Connector	Connector	Connector	
Air throughput at max. cooling output cfm (m^3/h)		2825 (4800)	2825 (4800)	4709 (8000)	
Fans may be exchanged with the system operational		■	■	■	
EC fan		■	■	■	
Water inlet temperature °F		59	59	59	
Permissible operating pressure (p. max.) psi (bar)		87 (6)	87 (6)	87 (6)	
Duty cycle %		100	100	100	
Water connection		1½″ BSP Male Thread	1½″ BSP Male Thread	1½″ BSP Male Thread	
Weight in supplied state lb (kg)		472 (214.0)	472 (214.0)	518 (235.0)	
Accessories					
Fan module	1 pc(s).	3311.011	3311.011	3311.011	355
Touchscreen display, color	1 pc(s).	3311.030	3311.030	3311.030	354
Connection hose, bottom and top	2 pc(s).	3311.040	3311.040	3311.040	354

Accessories for LCP Page 354 **TS IT Network/Server Enclosures** Page 90

Advantages:
- Maximum energy efficiency due to EC fan technology and IT-based control
- Minimal pressure loss at the air end, which in turn minimizes the power consumption of the fans
- Control of the server intake air temperature
- Redundant temperature sensor integrated at the air end
- Optimum adaptability due to dynamic, continuous control of the cold water volume flow
- By using high water inlet temperatures, the proportion of indirect free cooling is increased, which in turn reduces operating costs
- Targeted cooling output thanks to modular fan units
- Fan modules configurable as n+1 redundancy
- The separation of cooling and enclosure prevents water from entering the server enclosure
- Up to 60 kW cooling output on a footprint of just 0.36 m^2
- Minimal area load due to low weight

Approvals:
- UL
- cUL

Functions:
The LCP draws in the air at the sides at the rear of the server enclosures, cools it using high-performance compact impellers, and blows the cooled air back into the front part of the server enclosure at the sides

Monitoring:
- Monitoring of all system-relevant parameters such as server air intake temperature, server waste air temperature, water inlet/return temperature, water flow, cooling output, fan speed and leakage
- Direct connection of the unit via SNMP over Ethernet

Temperature control:
- Infinitely variable fan control
- 2-way control ball valve

Color:
- RAL 9005

Protection category IP to IEC 60 529:
- IP 20

Cooling medium:
- Water

Optional:
- Automatic server enclosure door opening
- Various sensors
- Racks 2200 mm high

Technical details:
Available on the Internet

Photo shows a configuration example with equipment not included in the scope of supply

LCP Rack CW (North American Version)

Model No.	Packs of	**3311.238**	**3311.268**	Page
Total cooling output/number of fan modules required BTU (kW)		**34121 (10)/1 68243 (20)/2 102364 (30)/3**	**136486 (40)/4 153546 (50)/5 187668 (60)/6**	
Number of fan modules in supplied state		1	4	
Height inches (mm)		79 (2000)	79 (2000)	
Width inches (mm)		12 (300)	12 (300)	
Depth inches (mm)		47 (1200)	47 (1200)	
Installation in bayed enclosure suite		Flush	Flush	
Rated operating voltage V, ~, Hz		208, 2~, 60 230, 1~, 50/60	208, 2~, 60 230, 1~, 50/60	
Type of connection (electrical)		Hard-wired	Hard-wired	
Air throughput at max. cooling output cfm (m^3/h)		2825 (4800)	4709 (8000)	
Fans may be exchanged with the system operational		■	■	
EC fan		■	■	
Water inlet temperature °F		59	59	
Permissible operating pressure (p. max.) psi (bar)		87 (6)	87 (6)	
Duty cycle %		100	100	
Water connection		1½″ BSP Male Thread	1½″ BSP Male Thread	
Weight in supplied state lb (kg)		485 (220.0)	529 (240.0)	
Accessories				
Fan module	1 pc(s).	3311.016	3311.016	355
Touchscreen display, color	1 pc(s).	3311.030	3311.030	354
Connection hose, bottom and top	2 pc(s).	3311.040	3311.040	354

Liquid Cooling Package

Accessories for LCP Page 354 **TS IT Network/Server Enclosures** Page 90

Advantages:
- Maximum energy efficiency due to EC fan technology and IT-based control
- Minimal pressure loss at the air end, which in turn minimizes the power consumption of the fans
- Optimum adaptability due to dynamic, continuous control of the cold water volume flow
- By using high water inlet temperatures, the proportion of indirect free cooling is increased, which in turn reduces operating costs
- Targeted cooling output thanks to modular fan units
- Fan modules configurable as n+1 redundancy
- Standard 3-phase connection for electrical redundancy
- Redundant temperature sensor integrated at the air end
- The separation of cooling and enclosure prevents water from entering the server enclosure
- Up to 55 kW cooling output on a footprint of just 0.36 m^2
- Minimal area load due to low weight

Functions:
The hot air is drawn in from the room or hot aisle at the rear of the device and expelled at the front into the cold aisle after cooling. The LCP achieves maximum performance and efficiency in conjunction with cold aisle containment. With this product, a raised floor is not necessary.

Monitoring:
- Monitoring of all system-relevant parameters such as server air intake temperature, server waste air temperature, water inlet/return temperature, water flow, cooling output, fan speed and leakage
- Direct connection of the unit via SNMP over Ethernet
- Integration into RiZone

Temperature control:
- Infinitely variable fan control
- 2-way control ball valve

Color:
- RAL 7035

Protection category IP to IEC 60 529:
- IP 20

Cooling medium:
- Water

Optional:
- Various sensors
- Racks 2200 mm high

Technical details:
Available on the Internet

Photo shows a configuration example with equipment not included in the scope of supply

LCP Inline CW

Model No.	Packs of	**3311.530**	**3311.540**	**3311.560**	Page
Total cooling output/number of fan modules required BTU (kW)		**34121 (10)/1 68243 (20)/2 102364 (30)/3**	**61419 (18)/2 92128 (27)/3 102364 (30)/4**	**136486 (40)/4 153546 (45)/5 187668 (55)/6**	
Number of fan modules in supplied state		1	2	4	
Height inches (mm)		79 (2000)	79 (2000)	79 (2000)	
Width inches (mm)		12 (300)	12 (300)	12 (300)	
Depth inches (mm)		47 (1200)	47 (1200)	47 (1200)	
Installation in bayed enclosure suite		Protruding	Flush	Protruding	
Rated operating voltage V, ~, Hz		230, 1~, 50/60 400, 3~, 50/60	230, 1~, 50/60 400, 3~, 50/60	230, 1~, 50/60 400, 3~, 50/60	
Type of connection (electrical)		Connector	Connector	Connector	
Air throughput at max. cooling output cfm (m^3/h)		2825 (4800)	2825 (4800)	4709 (8000)	
Fans may be exchanged with the system operational		■	■	■	
EC fan		■	■	■	
Permissible operating pressure (p. max.) psi (bar)		87 (6)	87 (6)	87 (6)	
Duty cycle %		100	100	100	
Water connection		1½″ BSP Male Thread	1½″ BSP Male Thread	1½″ BSP Male Thread	
Water inlet temperature °F		59	59	59	
Weight in supplied state lb (kg)		472 (214.0)	487 (221.0)	518 (235.0)	
Accessories					
Fan module	1 pc(s).	3311.011	3311.011	3311.011	355
Touchscreen display, color	1 pc(s).	3311.030	3311.030	3311.030	354
Connection hose, bottom and top	2 pc(s).	3311.040	3311.040	3311.040	354

Liquid Cooling Package

Accessories for LCP Page 354 **TS IT Network/Server Enclosures** Page 90

Advantages:
- Maximum energy efficiency due to EC fan technology and IT-based control
- Minimal pressure loss at the air end, which in turn minimizes the power consumption of the fans
- Optimum adaptability due to dynamic, continuous control of the cold water volume flow
- By using high water inlet temperatures, the proportion of indirect free cooling is increased, which in turn reduces operating costs
- Targeted cooling output thanks to modular fan units
- Fan modules configurable as n+1 redundancy
- Redundant temperature sensor integrated at the air end
- The separation of cooling and enclosure prevents water from entering the server enclosure
- Up to 60 kW cooling output on a footprint of just 0.36 m^2
- Minimal area load due to low weight

Approvals:
- UL
- cUL

Functions:
The hot air is drawn in from the room or hot aisle at the rear of the device and expelled at the front into the cold aisle after cooling. The LCP achieves maximum performance and efficiency in conjunction with cold aisle containment. With this product, a raised floor is not necessary.

Monitoring:
- Monitoring of all system-relevant parameters such as server air intake temperature, server waste air temperature, water inlet/return temperature, water flow, cooling output, fan speed and leakage
- Direct connection of the unit via SNMP over Ethernet
- Integration into RiZone

Temperature control:
- Infinitely variable fan control
- 2-way control ball valve

Color:
- RAL 9005

Protection category IP to IEC 60 529:
- IP 20

Cooling medium:
- Water

Optional:
- Various sensors
- Racks 2200 mm high

Technical details:
Available on the Internet

Photo shows a configuration example with equipment not included in the scope of supply

LCP Inline CW (North American Version)

Model No.	Packs of	**3311.148**	**3311.538**	**3311.548**	**3311.568**	Page
Total cooling output/number of fan modules required BTU (kW)		**61419 (18)/2 92128 (27)/3 102364 (30)/4**	**34121 (10)/1 68243 (20)/2 102364 (30)/3**	**61419 (18)/2 92128 (27)/3 102364 (30)/4**	**136486 (40)/4 153546 (50)/5 187668 (60)/6**	
Number of fan modules in supplied state		2	1	2	4	
Height inches (mm)		79 (2000)	79 (2000)	79 (2000)	79 (2000)	
Width inches (mm)		12 (300)	12 (300)	12 (300)	12 (300)	
Depth inches (mm)		41 (1050)	47 (1200)	47 (1200)	47 (1200)	
Installation in bayed enclosure suite		Flush	Protruding	Flush	Protruding	
Rated operating voltage V, ~, Hz		208, 2~, 60 230, 1~, 50/60	208, 2~, 60 230, 1~, 50/60	208, 2~, 60 230, 1~, 50/60	208, 2~, 60 230, 1~, 50/60	
Type of connection (electrical)		Hard-wired	Hard-wired	Hard-wired	Hard-wired	
Air throughput at max. cooling output cfm (m^3/h)		2825 (4800)	2825 (4800)	2825 (4800)	4709 (8000)	
Fans may be exchanged with the system operational		■	■	■	■	
EC fan		■	■	■	■	
Permissible operating pressure (p. max.) psi (bar)		87 (6)	87 (6)	87 (6)	87 (6)	
Duty cycle %		100	100	100	100	
Water connection		1½″ BSP Male Thread	1½″ BSP Male Thread	1½″ BSP Male Thread	1½″ BSP Male Thread	
Water inlet temperature °F		59	59	59	59	
Weight in supplied state lb (kg)		485 (220.0)	485 (220.0)	485 (220.0)	529 (240.0)	
Accessories						
Fan module	1 pc(s).	3311.016	3311.016	3311.016	3311.016	355
Touchscreen display, color	1 pc(s).	3311.030	3311.030	3311.030	3311.030	354
Connection hose, bottom and top	2 pc(s).	3311.040	3311.040	3311.040	3311.040	354

Liquid Cooling Package

Accessories for LCP Page 354 **TS IT Network/Server Enclosures** Page 90

Advantages:
- Maximum energy efficiency due to EC fan technology and IT-based control
- Minimal pressure loss at the air end, which in turn minimizes the power consumption of the fans
- Control of the server intake air temperature
- Due to the speed-regulated compressor, the cooling output is ideally adapted to actual requirements
- Redundant temperature sensor integrated at the air end
- Special maintenance of the LCP DX due to separation of cooling and server enclosure
- Absorbed thermal energy is emitted to the ambient air at the external condenser location, without heating up the installation room
- Ideal for IT cooling of small and medium-sized locations
- One or two racks can be cooled separately

Functions:
The LCP draws in the air at the sides at the rear of the server enclosures, cools it using high-performance compact impellers, and blows the cooled air back into the front part of the server enclosure at the sides

Temperature control:
- Infinitely variable fan control
- Inverter-controlled compressor

Color:
- RAL 9005

Protection category IP to IEC 60 529:
- IP 20

Cooling medium:
- R410a

Photo shows a configuration example with equipment not included in the scope of supply

LCP Rack DX

Model No.	Packs of	3311.415	3311.425	Page
Total cooling output/number of fan modules required BTU (kW)		**40946 (12)/4**	**40946 (12)/4**	
Height inches (mm)		79 (2000)	79 (2000)	
Width inches (mm)		12 (300)	12 (300)	
Depth inches (mm)		39 (1000)	47 (1200)	
Installation in bayed enclosure suite		Flush	Flush	
Rated operating voltage V, ~, Hz		208, 1~, 60	208, 1~, 60	
Type of connection (electrical)		Terminal	Terminal	
Air throughput at max. cooling output cfm (m^3/h)		2825 (4800)	2825 (4800)	
Fans may be exchanged with the system operational		■	■	
EC fan		■	■	
Duty cycle %		100	100	
Weight in supplied state lb (kg)		399 (181.0)	399 (181.0)	
Accessories				
SNMP card	1 pc(s).	3311.320	3311.320	355
Condenser unit	1 pc(s).	9951.077	9951.077	354

Accessories for LCP Page 354 **TS IT Network/Server Enclosures** Page 90

Advantages:
- Maximum energy efficiency due to EC fan technology and IT-based control
- Minimal pressure loss at the air end, which in turn minimizes the power consumption of the fans
- Temperature monitoring and control
- Due to the speed-regulated compressor, the cooling output is ideally adapted to actual requirements
- Redundant temperature sensor integrated at the air end
- Minimal area load due to low weight
- Special maintenance of the LCP DX due to separation of cooling and server enclosure
- Absorbed thermal energy is emitted to the ambient air at the external condenser location, without heating up the installation room
- Ideal for IT cooling of small and medium-sized locations
- One or two enclosures can be cooled separately

Functions:
LCP for siting within a bayed enclosure suite. Hot air is drawn in from the aisle at the rear of the device, cooled by the high-capacity compact impellers, and blown back into the room or cold aisle after cooling.

Temperature control:
- Infinitely variable fan control
- Inverter-controlled compressor

Color:
- RAL 9005

Protection category IP to IEC 60 529:
- IP 20

Cooling medium:
- R410a

Photo shows a configuration example with equipment not included in the scope of supply

LCP Inline DX

Model No.	Packs of	3311.435	3311.445	Page
Total cooling output/number of fan modules required BTU (kW)		**40946 (12)/4**	**40946 (12)/4**	
Height inches (mm)		79 (2000)	79 (2000)	
Width inches (mm)		12 (300)	12 (300)	
Depth inches (mm)		39 (1000)	47 (1200)	
Installation in bayed enclosure suite		Flush	Flush	
Rated operating voltage V, ~, Hz		208, 1~, 60	208, 1~, 60	
Type of connection (electrical)		Terminal	Terminal	
Air throughput at max. cooling output cfm (m^3/h)		2825 (4800)	2825 (4800)	
Fans may be exchanged with the system operational		■	■	
EC fan		■	■	
Duty cycle %		100	100	
Weight in supplied state lb (kg)		399 (181.0)	399 (181.0)	
Accessories				
SNMP card	1 pc(s).	3311.320	3311.320	355
Condenser unit	1 pc(s).	9951.077	9951.077	354

Accessories for LCP CW/DX

Touchscreen Display

for LCP rack, Inline, CW

The color display allows you to directly monitor key LCP functions and apply settings.

For LCP CW	Packs of	Model No.
3311.148 3311.238 3311.268 3311.538 3311.548 3311.568	1 pc(s).	**3311.030**

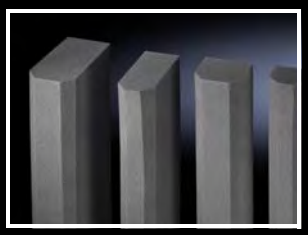
Condenser Unit

The condenser unit is needed to operate the refrigerant-based LCPs and comprises the external condenser and fan.

Refrigerant:
– R410a

For LCP DX	Packs of	Model No.
3311.415 3311.425 3311.435 3311.445	1 pc(s).	**9951.077**

Note:
– The pipework between the LCP DX and the condenser is not included with the supply



Vertical Shielding

for enclosure height 2000 mm

To block the airflow to the left and right of the 19″ (482.6 mm) level.

Length: 1900 mm

Material:
– Cellular PU foam
– Flame-inhibiting to UL 94 (HF1)
– Self-adhesive on one side

For seal between	For enclosure width inches (mm)	Packs of	Model No.
Side panel and 19″ (482.6 mm) level	24 (600)	1 pc(s).	**3301.380**
LCP and 19″ (482.6 mm) level	24 (600)	1 pc(s).	**3301.370**

Connection Hose

bottom and top

Flexible connection hose, may be shortened, including union nuts at both ends for connecting the LCP to existing pipework.

For LCP CW	Thread	Water connection from	Packs of	Model No.
3311.148 3311.238 3311.268 3311.538 3311.548 3311.568	1 1/2″ BSP	bottom/top	2 pc(s).	**3311.040**

Accessories for LCP CW/DX

SNMP Card

For integrating LCP Rack/Inline DX units into the network.

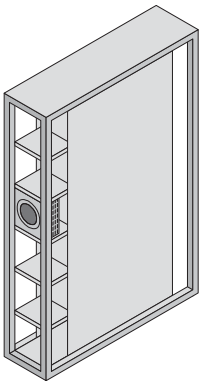
For LCP DX	Packs of	Model No.
3311.415 3311.425 3311.435 3311.445	1 pc(s).	**3311.320**

Fan Module

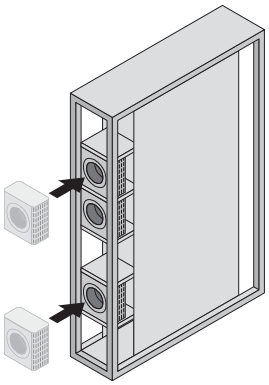
for LCP

To increase the cooling output, individual fan modules can be retro-fitted into the LCPs. This helps to generate redundancy or reduce the electrical power consumption of the LCP.

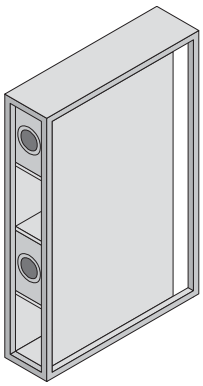
For LCP	Color	Packs of	Model No.
3311.130, 3311.230, 3311.260, 3311.530, 3311.540, 3311.560	RAL 7035	1 pc(s).	**3311.011**
3311.148, 3311.238, 3311.268, 3311.538, 3311.548, 3311.568	RAL 9005	1 pc(s).	**3311.016**



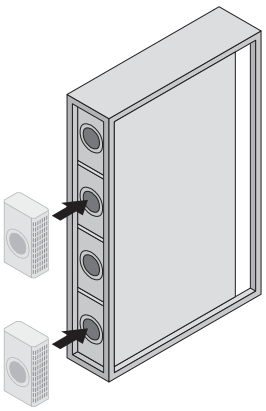
The LCP 3311.238/538 (max. 30 kW) is supplied with one fan module as standard.



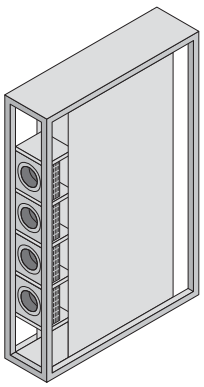
To achieve the max. cooling output of 30 kW, the customer/service should install two additional fan modules.



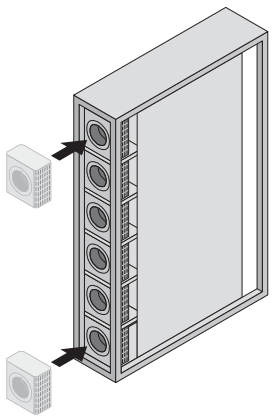
The LCP 3311.148/548 (30 kW) is supplied with two fan modules as standard.



To achieve the max. cooling output of 30 kW, the customer/service should install two additional fan modules.



The LCP 3311.268/.568 (max. 60 kW) is supplied with four fan modules as standard.



To achieve the max. cooling output of 60 kW, the customer/service should install two additional fan modules.

Aisle Containment

Liquid Cooling Package Page 348 **TS IT Network/Server Enclosures** Page 90

Slimline door component with viewing window and sliding door. Stable roof component in metal compound with high light transmission. Safety glass can also be used if required.

Applications:
– Depending on the application, aisle containment may be used with CRAC systems or LCP Inline as hot or cold aisle containment.

Advantages:
– Increased energy efficiency and performance capability of climate control.
– Superior output density is facilitated, thanks to targeted cold air supply.
– Easily installed and retrofitted, as it is fully compatible with the TS 8 enclosure system.
– An inexpensive way to boost the performance of your existing plant, lengthening the investment cycle until a replacement needs to be purchased.

Functions:
Aisle containment is a combination of door and roof components which facilitate consistent separation of the hot and cold air in the data center. Such separation is pivotal to saving energy and increasing the efficiency of the existing climate control technology.

Note:
– Individual project planning only

Photo shows a configuration example with equipment not included in the scope of supply

Model No.	7999.922

Fan Mounting Plate

for TS IT

For active ventilation. For use in the cut-out integrated into the roof plate. The unit may optionally be extended with additional fans.

Technical specifications for one fan:
- Fan expansion kit 7980.000, see page 358

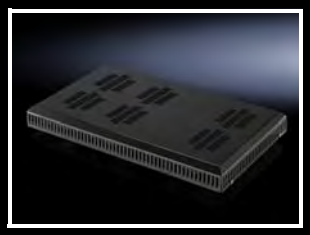
Technical specifications of thermostat:
- Rated operating voltage: 250 V
- Temperature range: +41°F...+131°F

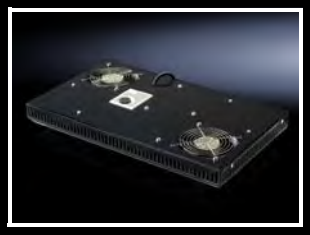
Color:
- RAL 9005

Supply includes:
- 1 fan unit
- 2 fans
- 1 thermostat
- 1 connection cable, open-end
- Assembly components

Note:
- Connection via distributor box or country-specific connector

Accessories:
- Fan expansion kit, see page 358





W x D inches (mm)	Number of prewired fans	Number of fans supported	Model No.
32 x 24 (800 x 600), 24 x 39 (600 x 1000), 24 x 47 (600 x 1200)	2	3	**5502.015**
32 x 32 (800 x 800), 32 x 39 (800 x 1000), 32 x 47 (800 x 1200)	2	6	**5502.025**

Fan Mounting Plate

For upgrading existing DK-TS applications.

The fan mounting plate can be retro-fitted into all existing DK-TS enclosures from above. The plate is mounted at the front of the enclosure, while the rear section is left free for cable entry. A rubber sealing profile is supplied loose for optional sealing at the rear.

The following combinations are also possible:
- Solid roof plate raised with 20 or 50 mm roof spacers
- Roof plate for cable entry raised with 20 or 50 mm roof spacers
- Vented roof plate for cable entry

Can only be used in conjunction with the large pivoting frame from an enclosure depth of 800 mm, and in conjunction with a roof plate for cable entry from 1000 mm.

Technical specifications for one fan:
- Rated operating voltage: 230 V
- Rated power: 15/14 W at 50/60 Hz
- Air throughput (unimpeded air flow): 160/180 m^3/h, 50/60 Hz
- Operating temperature range: +14°F...+131°F

Technical specifications of thermostat:
- Rated operating voltage: 250 V
- Operating temperature range: +41°F...+131°F

Color:
- RAL 7035

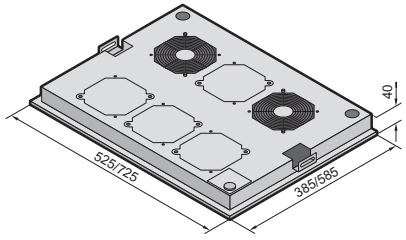
Supply includes:
- 2 fans
- 2/4 cutouts to extend to 4/6 fans
- Thermostat
- Foam cable clamp strip
- Thermostat and fan fully wired to connection cable, 3500 mm

Note:
- Not suitable for crane transportation
- Not suitable for combination with 19″ (482.6 mm) mounting frame

For enclosures		Number of fans	Max. number of fans	Model No.
Width inches (mm)	Depth inches (mm)			
24 (600)	32 (800) 39 (1000) 47 (1200)	2 pc(s).	6 pc(s).	**7968.035**

Air throughput can be increased with fan expansion kit 7980.000.

Accessories:
- Fan expansion kit, see page 358
- Foam cable clamp strip 2573.000 for sealing at the sides and targeted air routing when bayed, see page 563



Fan Expansion Kit

For retro-fitting various fan units or to supplement the fan mounting plate.

Technical specifications 7980.000:
- Rated operating voltage: 230 V
- Rated power: 15/14 W at 50/60 Hz
- Air throughput (unimpeded air flow): 160/180 m^3/h, 50/60 Hz
- Sound pressure level (unimpeded air flow): 37 dB (A)
- Operating temperature range: +14°F...+131°F

Technical specifications 7980.100, 7980.110:
- Rated operating voltage: 230 V, 115 V
- Rated power: 14/12 W at 50/60 Hz
- Air throughput (unimpeded air flow): 108/120 m^3/h, 50/60 Hz
- Sound pressure level (unimpeded air flow): 34 dB (A)
- Operating temperature range: -4°F...+158°F

Dimensions H x W x D inches (mm)	Packs of	**Model No.**
5 x 5 x 2 (119 x 119 x 38)	1 set(s)	**7980.000**
5 x 5 x 1 (119 x 119 x 25)	1 set(s)	**7980.100**
5 x 5 x 1 (119 x 119 x 25)	1 set(s)	**7980.110**

Supply includes:
- 1 fan expansion kit
- Assembly components
- 1 connection cable, 610 mm

Rittal – The System.

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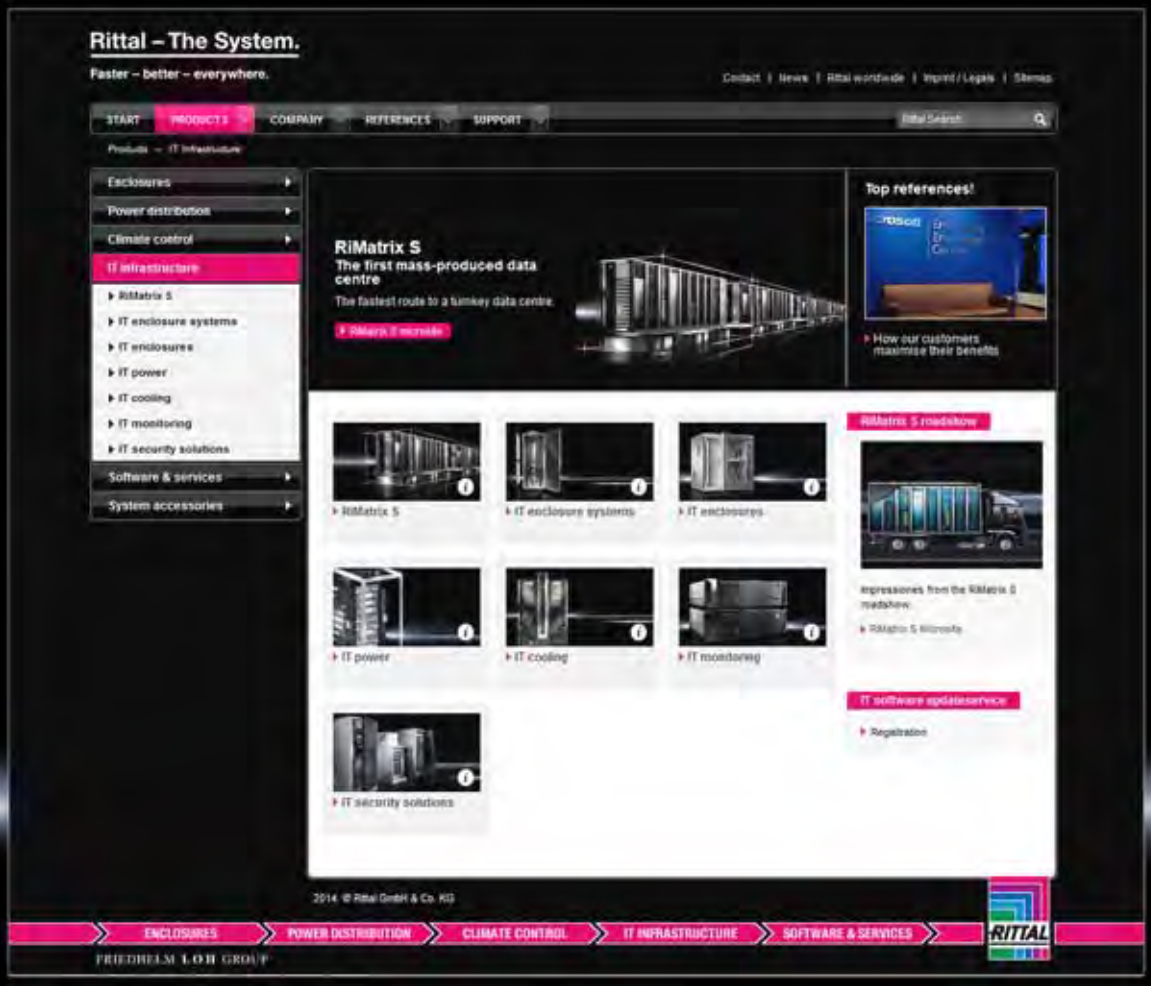
Rittal Internet – Always up to date



Rittal – The System.

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IT Monitoring

CMC III – Monitoring System

CMC III Sensors/Accessories

CMC III Accessories

Door Control System

Monitor/Keyboard Unit

Dynamic Rack Control

Management Software

Your Benefits

- A better overview of your IT infrastructure
- Enhanced security
- Automated processes
- Exceptional cost efficiency
- Enormous energy savings
- Simple project planning
- Fast installation
- Flexible and individual solutions with standard products from Rittal
- A high standard of quality with coordinated series products

Application examples

1 CMC III, see page 364

2 Liquid Cooling Package LCP, see page 348

3 Monitor/keyboard unit, see page 377

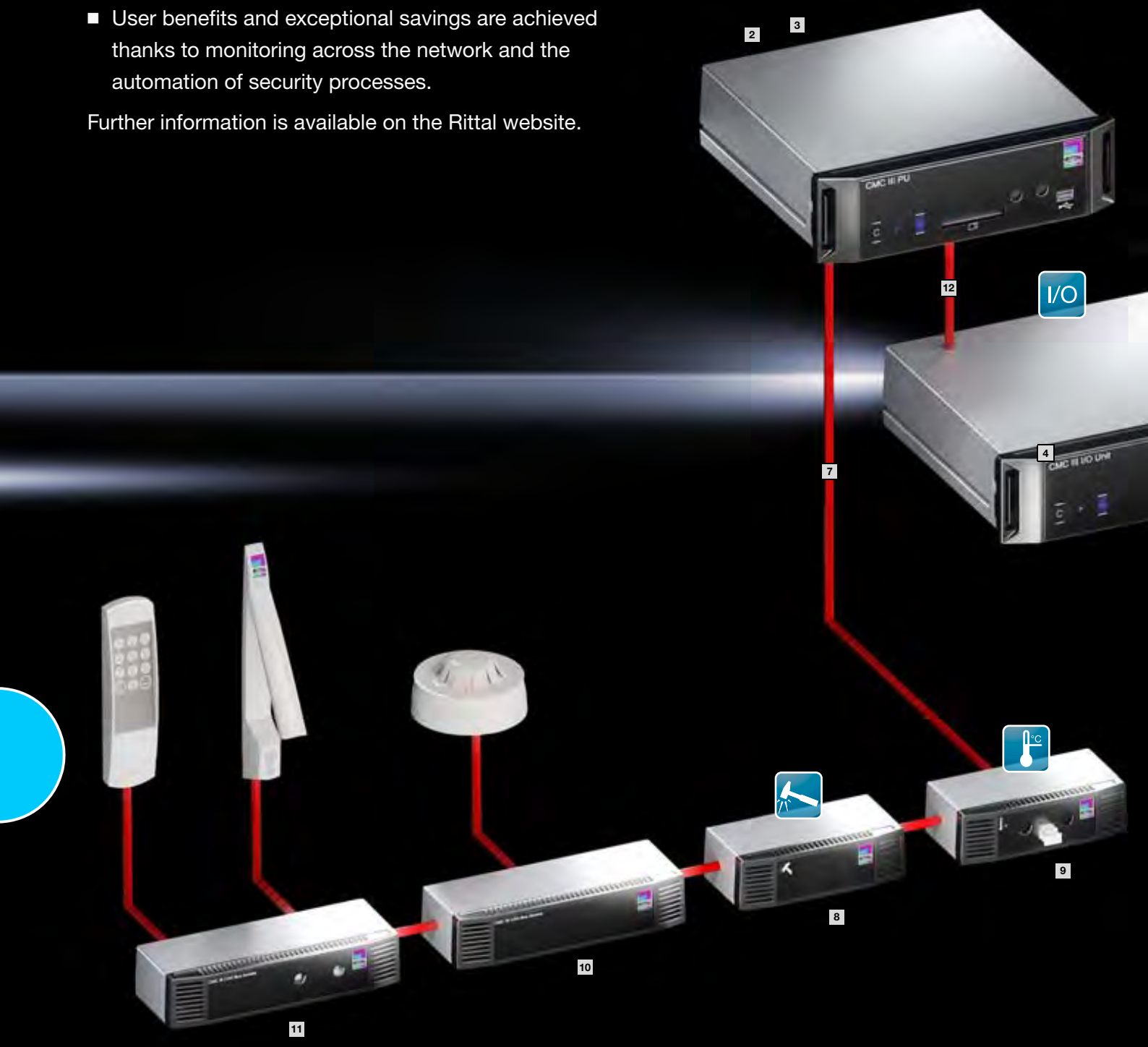
4 TS 8 electric comfort handle, see page 376

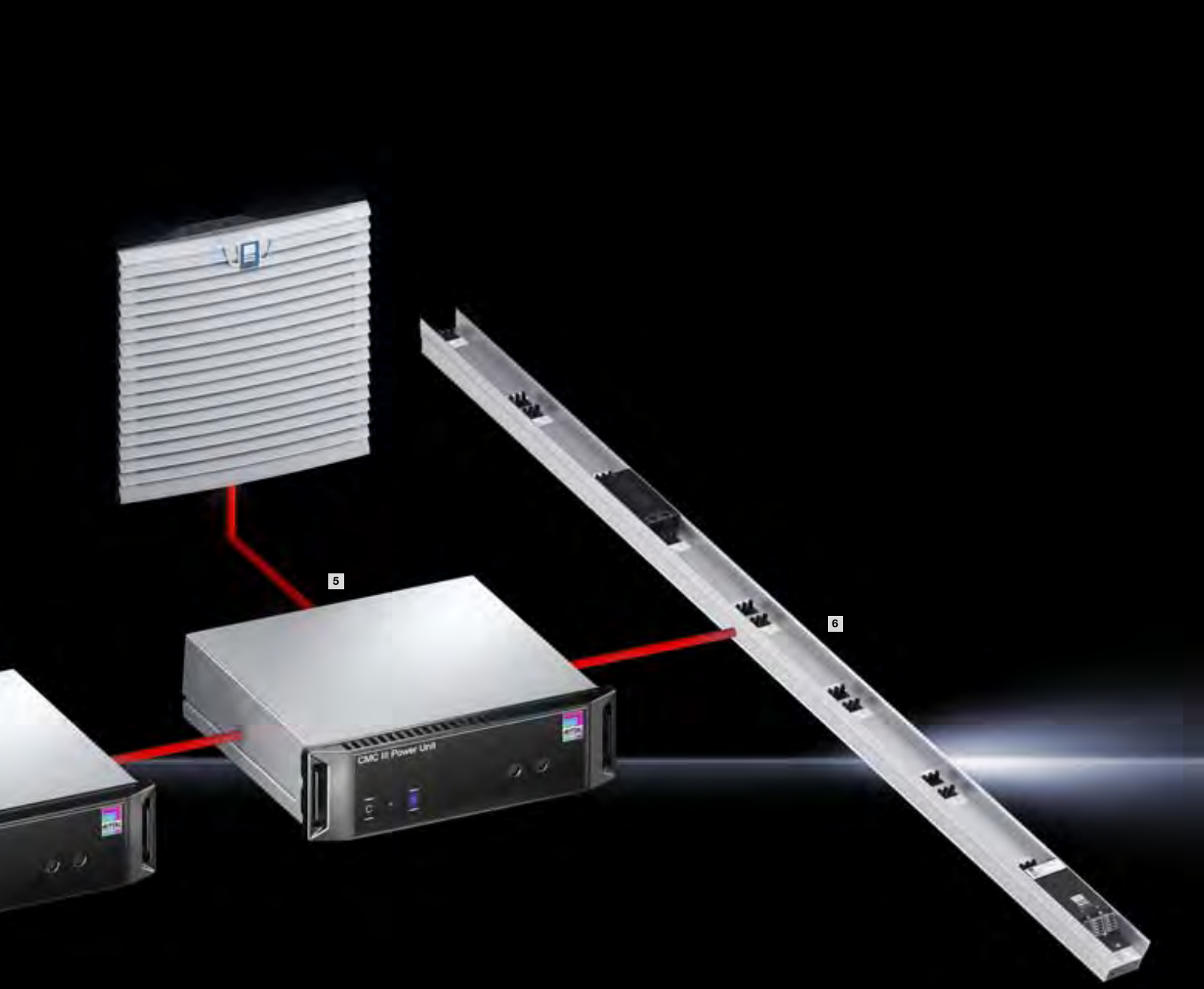
CMC III – Monitoring System

Computer Multi Control (CMC) is an alarm system for network and server enclosures, enclosures, containers and rooms.

- It monitors temperatures, humidity, access, smoke, energy and many other physical ambient parameters.
- It is a modular system that can be flexibly adapted to meet specific monitoring requirements.
- User benefits and exceptional savings are achieved thanks to monitoring across the network and the automation of security processes.

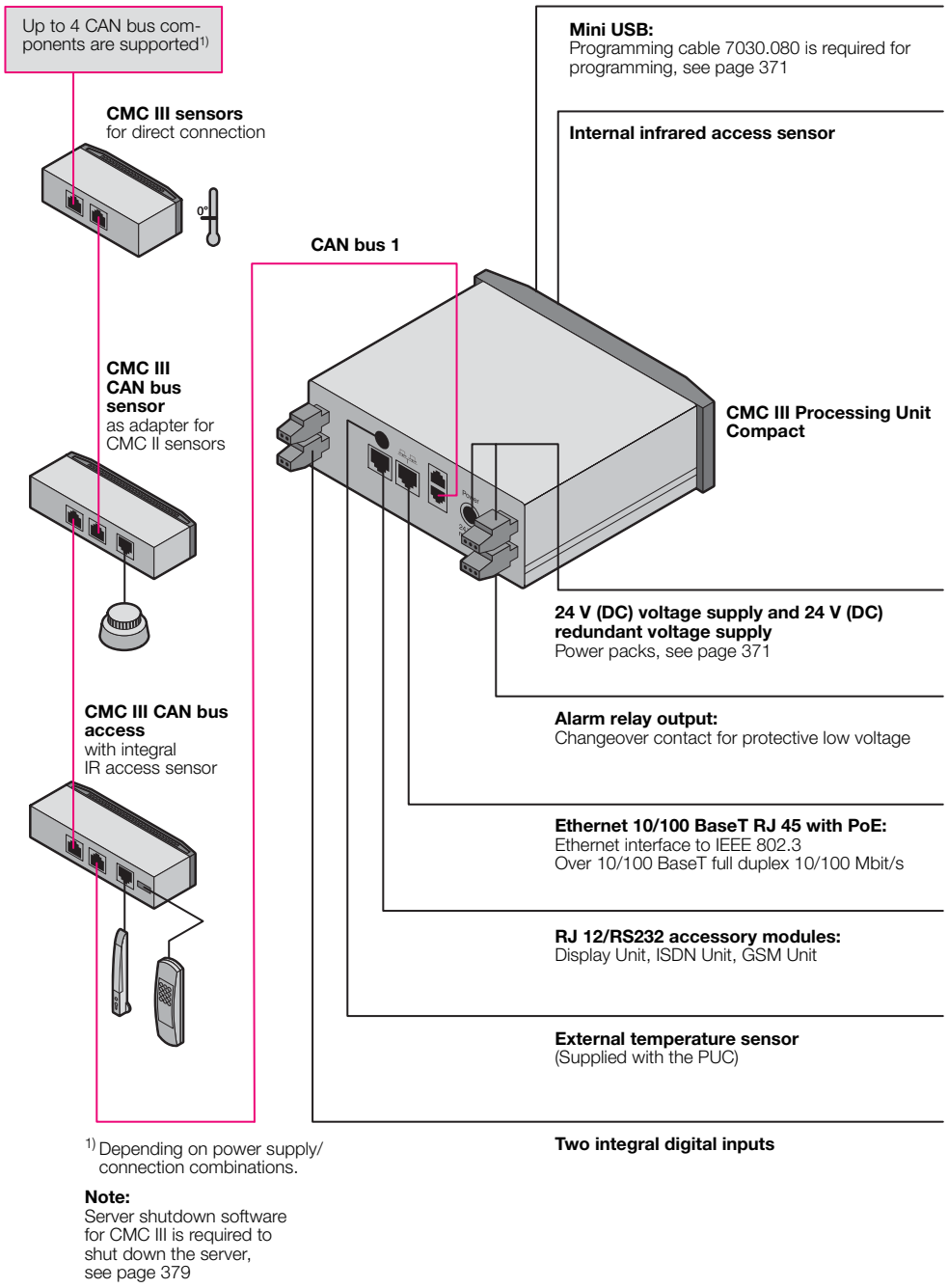
Further information is available on the Rittal website.





1 **CMC III Processing Unit,** see page 365
2 Power supply
3 Redundant power supply
4 CMC III I/O unit
5 CMC III power unit
6 CMC III PSM measuring bar for direct connection
7 Up to 16 CAN bus systems can be connected
8 CMC III vandalism sensor
9 CMC III temperature sensor
10 CAN bus sensor for connecting CMC II sensors
11 CMC III CAN bus access
12 Up to 16 CAN bus systems can be connected

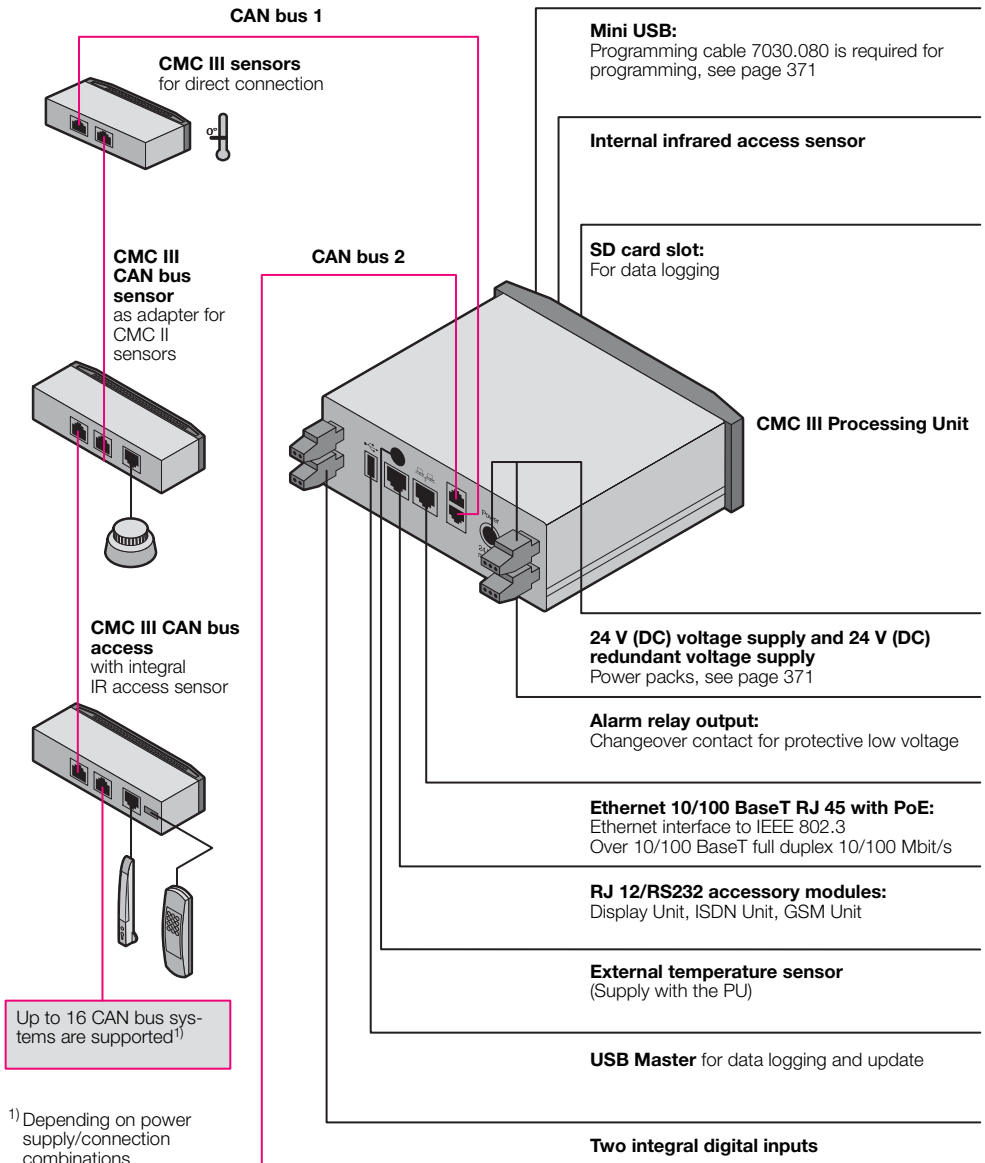
System Overview



1) Depending on power supply/ connection combinations.

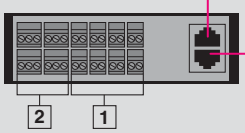
Note:
Server shutdown software for CMC III is required to shut down the server, see page 379

System Overview



Control units

CMC III I/O Unit



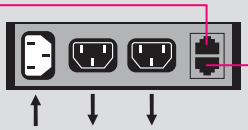
includes

1 8 digital inputs

2 and 4 relay outputs

	Model No.
CMC III I/O Unit	7030.040

CMC III Power Unit



Functions:
- Switching and measuring voltage, current, power and work
- With two outputs
- Also for activating fans

	Model No.
CMC III Power Unit	7030.050

Up to 16 CAN bus systems are supported[1)]

CMC III Processing Unit/Compact Processing Unit

System Overview Page 364/365

- Power supply designed for redundancy, plus Power over Ethernet (PoE)
- Simple cabling with the CAN bus connection system (RJ 45)
- Connection to control room systems via OPC UA

Material:
– Plastic

Surface finish:
– Front: Smooth
– Housing: Textured

Color:
– Front: RAL 9005
– Housing: RAL 7035

Protection category IP to IEC 60 529:
– IP 30

Supply includes:
– Basic system
– Quick reference guide
– 4 mounting feet

Approvals:
– cULus

Photo shows a configuration example with equipment not included in the scope of supply

		CMC III Processing Unit	CMC III Processing Unit Compact
W x H x D inches (mm)		5.4 x 1.6 x 4.7 + 0.47 (138 x 40 x 120 + 12 front assembly)	5.4 x 1.6 x 4.7 + 0.47 (138 x 40 x 120 + 12 front assembly)
Operating temperature range		32°F…+113°F	32°F…+113°F
Operating humidity range		5 – 95% relative humidity, non-condensing	5 – 95% relative humidity, non-condensing
Sensors/CAN bus connection units		Max. 32	Max. 4
Max. total cable length for CAN bus		2 x 1969″ (2 x 50 m)	1 x 1969″ (1 x 50 m)
Model No.		**7030.000**	**7030.010**
Interfaces	Network interface (RJ 45)	Ethernet to IEEE 802.3 via 10/100BaseT with PoE	Ethernet to IEEE 802.3 via 10/100BaseT with PoE
	Front USB port	Mini USB for system setup	Mini USB for system setup
	Rear USB port	For USB stick for recording up to 32 GB of data	–
	Front SD-HC slot	1 x up to 32 GB for recording data	–
	Rear serial RS232 (RJ 12)	1 x for connecting a Display Unit, GSM Unit or ISDN Unit	1 x for connecting a Display Unit, GSM Unit or ISDN Unit
	CAN bus (RJ 45)	2 x for max. 16 sensors each = 32 sensors in total (number is restricted, see page 367 – 370)	1 x for max. 4 sensors (number is restricted, see page 367 – 370)
Inputs and outputs	Digital inputs (terminal)	2	2
	Relay output (terminal)	Changeover contact max. 24 V (DC), 1 A	Changeover contact max. 24 V (DC), 1 A
Operation/ signals	Buttons	1 x acknowledgment button	1 x acknowledgment button
	Hidden reset button	1 x service button	1 x service button
	Piezoelectric signal transmitter	1	1
	LED display	1 x multi-color OK/warning/alarm	1 x multi-color OK/warning/alarm
	Rear LED	1 x for network status	1 x for network status
Protocols	Ethernet	TCP/IPv4, TCP/IPv6, SNMPv1, SNMPv2c, SNMPv3, Telnet, SSH, FTP, SFTP, HTTP, HTTPS, NTP, DHCP, DNS, SMTP, Syslog, LDAP	TCP/IPv4, TCP/IPv6, SNMPv1, SNMPv2c, SNMPv3, Telnet, SSH, FTP, SFTP, HTTP, HTTPS, NTP, DHCP, DNS, SMTP, Syslog, LDAP
Redundant power supply	Input 24 V DC (jack)	1 x for connecting CMC III power pack	1 x for connecting CMC III power pack
	Input 24 V DC (terminals)	1 x for direct connection or for connecting CMC III power pack	1 x for direct connection or for connecting CMC III power pack
	Power over Ethernet PoE	1 x 53 BTU (15.4 W)	1 x 53 BTU (15.4 W)
Functions	Time function	Real-time clock, energy-buffered (24 h) without battery/rechargeable battery, with NTP	Real-time clock, energy-buffered (24 h) without battery/rechargeable battery, with NTP
	User administration	LDAP	LDAP
	User interface	Integrated WEB server, with flexible dashboard	Integrated WEB server, with flexible dashboard
	Control room connection	Integrated OPC UA server, Modbus TCP	Integrated OPC UA server, Modbus TCP
Integral sensors	Temperature sensor	NTC sensor with cable, supplied loose	NTC sensor with cable, supplied loose
	Access sensor	Infrared technology in front of housing	Infrared technology in front of housing

Control Units for CMC III Processing Unit

Dimensions:
– H x W x D:
40 x 138 x 120 + 12 mm front frame

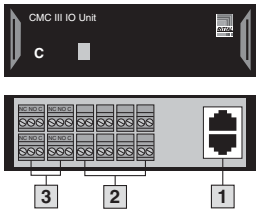
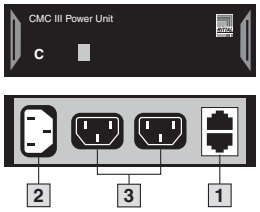
Material:
– Plastic

Surface finish:
– Front: Smooth
– Housing: Textured

Color:
– Front: RAL 9005
– Housing: RAL 7035

Protection category IP to IEC 60 529:
– IP 30

Also required:
– CAN bus connection cable 7030.090/.095, see page 371
– Mounting unit 1 U, 7030.070, see page 372

		1 Connection RJ 45 2 x CAN bus	2 Inputs	3 Outputs	Model No.	PU Compact	PU
						Maximum number	
	**I/O Unit Control Unit** The relays can be linked with measurements in the software, so that they switch under certain conditions. Devices can be monitored or messages forwarded in this way. Cannot be operated with the Processing Unit Compact – Inputs for floating signals – Relay output (changeover contact) can handle loads of up to max. 24 V (DC)/1 A	■	8 x digital	4 x relay	**7030.040**	–	16
	**Power Unit Control Unit** The input is switched to the outputs by two relays. In this way the outputs can be linked with measurements and therefore switched automatically. Fan control is one application example. Manual switching via the CMC III user interface is also possible. Each output is individually monitored and different values are measured. Cannot be operated with the Processing Unit Compact – Switches 2 outputs – Measures voltage, current, power, work – Application: Controlling and switching fans, heaters, equipment	■	1 x voltage C14 110 – 230 V 50/60 Hz	2 x current C13 Aggregate current max. 10 A	**7030.050**	–	16

Accessories

CMC III Sensors for Direct Connection

CMC III sensors are used to monitor the physical environment and can be directly connected to the PU by an RJ 45 CAN bus connection cable. The sensors can also be interconnected as a bus.

Dimensions:
- 7030.110, .111, .120, .130
  H x W x D: 28 x 80 x 40 mm
- 7030.140, .150, .190, .430, .440
  H x W x D: 30 x 110 x 40 mm
- 7030.400
  Ø x H: 100 x 60 mm

Material:
- Plastic

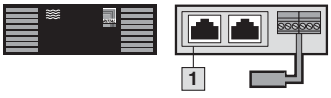
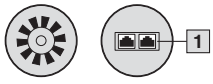
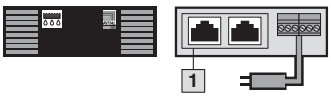
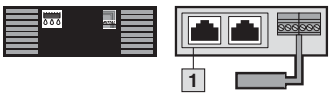
Surface finish:
- Front: Smooth
- Housing: Textured

Color:
- Front: RAL 9005
- Housing: RAL 7035
- Smoke detector: White

Protection category IP to IEC 60 529:
- IP 30

Supply includes:
- Sensor
- Mounting bracket
- Assembly components
- Instructions booklet

Also required:
- CAN bus connection cable 7030.090/.095, see page 371

		[1] RJ 45 connection 2 x CAN bus	[2] Inputs	Model No.	PU Compact	PU
					Maximum number	
	**Temperature sensor** – External NTC sensor, 2 m cable – Measurement range for external sensors: -40°F…+176°F	■	–	**7030.110**	4	32
	**Temperature/humidity sensor** Measurement range: 32°F…+131°F/ 5% r.h. … 95% r.h.	■	–	**7030.111**	4	32
	**Infrared access sensor** Monitoring with reflector on the door, distance adjustable	■	–	**7030.120**	4	32
	**Vandalism sensor** – Axis: x, y, z – Acceleration limits: -7…7 g, adjustable	■	–	**7030.130**	4	32
	**Analog airflow sensor** – External airflow sensor: 4 – 20 mA – Measurement range: 0.5 – 15 m/s – Application: Fan, filter, climate control devices	■	–	**7030.140**	4	10[1]
	**Analog differential pressure sensor** – 2 pressure measuring points (infeed via hose) – Measurement range: -500 m Pa – +500 m Pa – Application: Cold aisle containment, raised floor	■	–	**7030.150**	4	32
	**Universal sensor** Choice of digital inputs for an application: – Floating signals – S_0 input for energy measurement systems – 1 Wiegand interface (external access systems)	■	2 x digital, may be switched to pulse input S_0 or a Wiegand interface 1 x analog 4 – 20 mA	**7030.190**	4	32
	**Smoke detector** – With an optical element for monitoring the ambient air for smoke particles	■	–	**7030.400**	4	32
	**Leakage sensor** – For monitoring a point on the floor in the data center or in the enclosure for liquids. The external sensor can be used to choose any location for monitoring.	■	–	**7030.430**	4	32
	**Leakage sensor, 15 m** – For monitoring a larger area on the floor for liquids, using the 15 meter detection cable. The sensor also reports the section of the cable in which leakage has been detected.	■	–	**7030.440**	4	32

[1] Max. 5 pc(s) for power supply with PoE

Interface for CMC-TC Sensors

With the CMC III CAN bus sensor, it is possible to connect certain CMC-TC system sensors to the new CMC III. Old applications can be upgraded in this way with the CMC III Processing Unit/Compact. The unit not only has two CAN bus connections, but also one extra connection for one of the CMC-TC sensors. The unit therefore acts as the interface between the CMC-TC sensor and the new processing unit, and adapts the sensor data to the CAN bus protocol.

Dimensions:
– H x W x D:
30 x 110 x 40 mm

Material:
– Plastic

Surface finish:
– Front: Smooth
– Housing: Textured

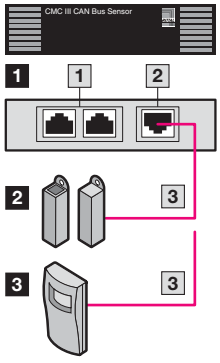
Color:
– Front: RAL 9005
– Housing: RAL 7035

Protection category IP to IEC 60 529:
– IP 30

Supply includes:
– Sensor
– Assembly parts
– Assembly components
– Instructions booklet

The following CMC-TC sensors can be connected to the CMC III CAN bus sensor:
– 1 x temperature sensor
– 1 x analog input 4 – 20 mA
– 5 x access sensors in series
– 1 x airflow sensor
– 1 x smoke detector
– 1 x motion detector
– 1 x digital input
– 1 x digital relay output
– 1 x voltage monitoring system
– 1 x 48 V voltage sensor
– 1 x leakage sensor
– 1 x leakage sensor, 15 m sensor length
– 1 x door control unit (two connections)
– 1 x DET-AC extinguisher system (three connections)
– 1 x DET-AC early fire detection system (three connections)

Also required:
– CAN bus connection cable 7030.090/.095, see page 371



	1 Connection RJ 45 2 x CAN bus	2 Input RJ 12	3 Output RJ 12	Model No.	PU Compact	PU
					Maximum number	
1 CAN bus sensor To connect a CMC-TC sensor	■	1 x	–	**7030.100**	4	32
Sensors that may be connected (max. 1 sensor per CAN bus sensor)						
2 CMC-TC access sensor – Sensor: Reed Contact/Magnet – Max. 5 reed contacts in series – 2 m cable included with the supply	–	–	1 x	**7320.530**	–	–
3 CMC-TC motion detector – Sensor: Infrared – 2 m cable included with the supply	–	–	1 x	**7320.570**	–	–

Accessories

Access system

CMC III unit for controlling and monitoring access to the enclosures. One handle and one reader unit can be connected to each CMC III CAN bus access. The handles can be linked with different number codes or RFID card numbers via the CMC III Processing Unit/ Compact website, so that all the handles connected to a CMC III Processing Unit/Compact can be controlled with just one reading system. Thanks to the integrated infrared sensor, the status of the controlled door (open/closed) is still monitored.

Dimensions:
– H x W x D:
30 x 110 x 40 mm

Material:
– Plastic

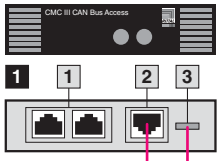
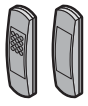
Surface finish:
– Front: Smooth
– Housing: Textured

Color:
– Front: RAL 9005
– Housing: RAL 7035

Protection category IP to IEC 60 529:
– IP 30

Supply includes:
– CAN bus access
– Assembly parts
– Assembly components
– Instructions booklet

Also required:
– CAN bus connection cable 7030.090/.095, see page 371

	Connection	Inputs		Outputs		Model No.	PU Compact	PU
	1	2	3	4	5			
	RJ 45 2 x CAN bus	RJ 12	Flat connector	RJ 12	Flat connector		Maximum number	
 **1 CAN bus access** – To connect a handle and reader unit for monitoring a door – Integrated IR access sensor	■	1 x	1 x	–	–	**7030.200**	2	16[1]
Handles and reader units that may be connected (max. 1 handle and max. 1 reader unit per CAN bus access)								
 **2 Handles** **– TS 8 handle with master key function** – Handle monitoring – Rated voltage: 24 V (DC) – 3 m and 2 m cable included with the supply	–	–	–	1 x	–	**7320.721**	–	–
 **3 CMC III Reader Units** **– Coded lock** – Any number code with up to 8 digits – 3 m cable included with the supply	–	–	–	–	1 x	**7030.220**	–	–
– Transponder reader – The contact-free provision of a transponder card allows the authorization (card UID) in the CMC III Processing Unit/Compact to be verified, and the relevant door/s released – Technology: 13.56 MHz transponder – Tags: ISO 14443A, ISO 14443B, ISO 15693, ISO 18000-3 – 3 m cable included with the supply	–	–	–	–	1 x	**7030.230**	–	–

[1] Max. 5 pc(s) for power supply with PoE

Power Pack Power Supply

for PU, PU Compact, CAN bus unit, CAN bus DRC, door control system.
The power pack is specifically adapted to the CMC III design and can be placed in a CMC III mounting unit. As well as a special connector for the CMC III Processing Unit/Compact, there are also two terminals available as 24 V outputs.

Technical specifications:
– Input voltage: 100 – 240 V / 50/60 Hz
– Output voltage: 24 V (DC)/2.5 A
– Length of 24 V DC connection cable: 0.6 m

Dimensions:
– H x W x D:
40 x 138 x 120 + 12 mm front frame

Material:
– Plastic

Surface finish:
– Front: Smooth
– Housing: Textured

Packs of	Model No.
1 pc(s).	**7030.060**

Color:
– Front: RAL 9005
– Housing: RAL 7035

Supply includes:
– Assembly components
– Instructions booklet

Also required:
– Connection cable, see page 372

Accessories:
– Mounting unit, see page 373

Interference Suppressor for Fans

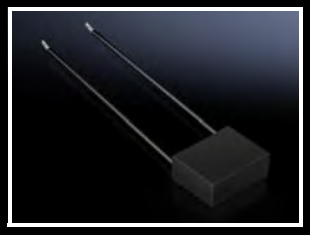
for CMC III
For connection of fans via the CMC III Power Unit 7030.050. Prevents malfunctions when switching off the fan motor. One interference suppressor is required per fan.

Material:
– Plastic

Color:
– RAL 9005

Supply includes:
– Assembly components

Packs of	Model No.
1 pc(s).	**7030.051**



Programming Cable

For initial commissioning of the Processing Unit (PU) or PU Compact. The CMC III Processing Unit/ Compact is connected to a PC USB port via the programming cable to do this. A driver for Windows systems is also supplied, which must be installed on the PC.

Supply includes:
– CD with driver and system description

Packs of	Model No.
1 pc(s).	**7030.080**

CAN Bus Connection Cable

With this cable, the PU can be hard-wired with the CAN bus III sensors, III units and III control units as a bus. Also for cabling with one another.
The different lengths allow the CMC III system to be adapted to different applications and specifically configured.

CMC III CAN bus connection cable	Length inches (m)	Packs of	Model No.
RJ 45	20 (0.5)	1 pc(s).	**7030.090**
RJ 45	39 (1)	1 pc(s).	**7030.091**
RJ 45	59 (1.5)	1 pc(s).	**7030.092**
RJ 45	79 (2)	1 pc(s).	**7030.093**
RJ 45	118 (3)	1 pc(s).	**7030.480**
RJ 45	157 (4)	1 pc(s).	**7030.490**
RJ 45	197 (5)	1 pc(s).	**7030.094**
RJ 45	394 (10)	1 pc(s).	**7030.095**

Accessories

Connection Cable/Extension

For connecting to:
- CMC III Power Pack C13
- CMC III Power Unit C13

Technical specifications:
– PVC cable, 3-pole, with IEC connector (non-heating appliances) with CEE22 contact protection
– Length: Min. 1.8 m

Country version	Voltage Volt	Packs of	Model No.
Non-heating appliance extension C13/C14	230/115	1 pc(s).	**7200.215**

RJ 12 Extension Cable

with RJ 12 connector/jack
To extend the cable connections to the CMC-TC sensors.

Length inches (m)	Packs of	Model No.
39 (1)	2 pc(s).	**7320.814**

Mounting Unit, 1 U

To make it easier to install the CMC III units in network and server enclosures.
Mounting in the 19″ (482.6 mm) profile (for three CMC III units).

To hold
- PU
- PU Compact
- Control units
- CMC III CAN bus DRC
- CMC III power pack
- CMC III GSM unit
- CMC III door control module

Can hold up to 3 CMC III housings and is mounted in the 19″ frame.

Packs of	Model No.
1 pc(s).	**7030.070**

Material:
– Carbon steel

Surface finish:
– Zinc-plated

Supply includes:
– 2 blanking covers

Accessories:
– Cable clamp bracket 7030.087, see page 372

Cable Clamp Bracket

for CMC III
For attachment to the rear of the CMC III 19″ mounting unit 7030.070. Enables neat cable routing at the rear of the installed CMC III devices, as well as fixing of the cables for strain relief. The cables can easily be laid as a loop, so that the installed CMC III devices can be removed from the mounting unit without the need for any tools.

Supply includes:
– Assembly components

Packs of	Model No.
1 pc(s).	**7030.087**

Mounting Unit

For mounting on the enclosure section (for a CMC III unit)

To hold
- PU
- PU Compact
- Control units
- CMC III CAN bus DRC
- CMC III power pack
- CMC III GSM unit
- CMC III door control module

Can hold one CMC III housing and is mounted on the enclosure frame.

Packs of	Model No.
1 pc(s).	**7030.071**

Material:
Carbon steel

Surface finish:
– Zinc-plated

CMC III GSM unit

For establishing a redundant transmission path or, if no network infrastructure is available, for alarm forwarding. The alarm message is sent as an SMS. To cover 4 GSM frequencies (quad band): 850 MHz, 900 MHz, 1800 MHz and 1900 MHz. A standard, commercially available SIM card must be provided by the customer.

Packs of	Model No.
1 pc(s).	**7030.570**

Material:
– Plastic

Color:
– Front: RAL 9005
– Housing: 7035

Supply includes:
– RJ 12 cable
– GSM aerial
– Assembly components
– Instructions booklet

Door Control System DCS

Comprising:
– Door Control Module
– Door Control Kit
For automatic opening of TS IT rack doors.

Application examples:
- Overtemperature in the sealed TS IT rack
- Extinguisher gas should get from the room to the rack

Control takes place through the Door Control Module DCM control unit. One DCM must control one rack with 2 doors (front/rear door). The use of CMC III and access sensors is recommended.

Note:
The following door kits can be connected:
– Two door kits (magnet systems with damper) 7030.240/.241/.250 (Required for all applications, Model No. depends on the door version)
– Two door kits (spindle motor) 7030.261 (For applications with negative pressure in the rack, e.g. LCP, powerful server fan motors, etc.)
– All the power packs used must be connected to the same power supply as the server, e.g. extinguisher systems

Activation in event of alarm:
– CMC III Task
– DCM, integrated temperature sensor
– DCM digital input

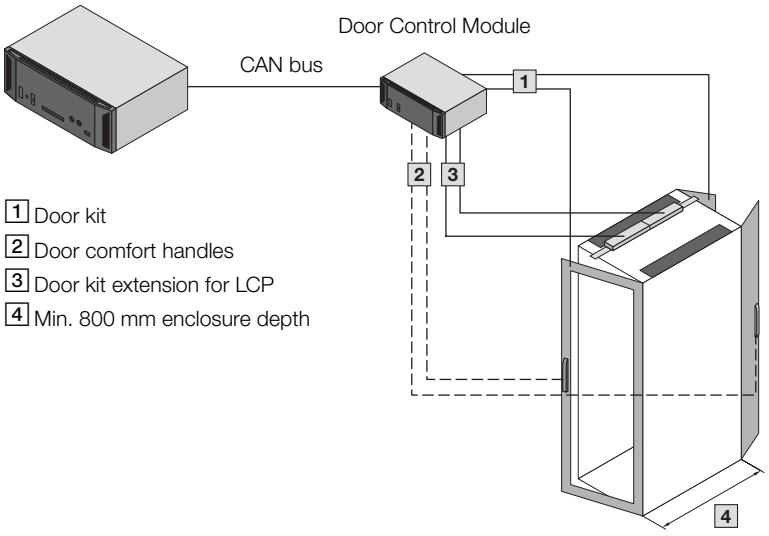
Activation for user access:
– One door switch/comfort handle 7320.793/.794 per door, see page 376
– Coded lock/transponder reader 7030.220/.230, see page 370

Also required:
– Door Control Module DCM, see page 375
– Door kits, see page 375
– Power packs, see page 371
– Connection cable, see page 372
– Mounting unit 1 U, see page 372

Accessories:
– CMC III Processing Unit/Compact with connection, supply and mounting accessories, from page 366
– Door switch/comfort handle, see page 376
– Coded lock/transponder reader, see page 370
– Access sensor, see from page 369

System diagram
Door Control System:
- Max. 16 Door Control Modules can be connected per Processing Unit
- Max. 4 Door Control Modules can be connected per Processing Unit Compact

CMC III
– Processing Unit
– Processing Unit Compact



1 Door kit
2 Door comfort handles
3 Door kit extension for LCP
4 Min. 800 mm enclosure depth

Door Control Module

Control unit for automatic opening of TS IT rack doors. Designed for a rack with a front and rear door. Suitable for the CMC III system with CAN bus.

Material:
– Plastic

Color:
– Front: RAL 9005
– Housing: 7035

Supply includes:
– Basic system
– 4 mounting feet
– Quick reference guide

Also required:
– Door kits, see page 375
– Power packs, see page 371
– Connection cable, see page 372
– Mounting unit 1 U, see page 372

Accessories:
– CAN bus connection cable, see page 371
– Door switch/comfort handle, see page 376
– Coded lock/transponder reader, see page 370

Model No.	7030.500
Packs of	1 pc(s).
1st rated voltage	24 V (DC) Door Control Module via CMC III CAN bus, redundant at 2nd rated voltage
2nd rated voltage	24 V (DC) 7030.060 for Door Control Module and magnet systems
3rd rated voltage	24 V (DC) 7030.060 for spindle motors only (protect via UPS)
1 x temperature sensor input	NTC sensor (included with the supply)
3 x digital inputs	Alarm/front door/rear door
1 x input for readers	Coded lock/transponder reader
2 x outputs for door kits	Magnet system with damper
2 x outputs for door kits extension	Spindle motors
2 x CAN bus CMC III	RJ 45 for CAN bus cables

Door Kit

for TS IT (magnet system with damper)
To open the door in emergency situations. Connection and activation via the Door Control Module, for standard TS IT doors. The doors are kept closed by a magnet system. If the voltage of the magnets is interrupted, the gas pressure damper system opens the door.

Technical specifications:
– Rated voltage: 24 V DC
– Rated current 7030.240/241: 390 mA
– Rated current 7030.250: 520 mA

Material:
– Carbon steel

Surface finish:
– Zinc-plated

TS IT version	Packs of	Model No.
1-piece glazed aluminum door	1 pc(s).	**7030.240**
1-piece carbon steel door	1 pc(s).	**7030.241**
2-piece door	1 pc(s).	**7030.250**

Supply includes:
– Gas pressure damper
– Cable harness
– Magnet system with damper
– Instructions booklet
– Assembly components

Also required:
– Door Control Module DCM, see page 375
– For 7030.250: Tubular door frame, see page 467

Door Kit Extension

for TS IT, LCP (spindle motor)
To open the door in emergency situations.
For applications with negative pressure in the rack, e.g. LCP, powerful server fan motors, etc., this kit is required in addition to the magnetic lock. The motor pushes the door open until the negative pressure is resolved. Mounting takes place on the roof.

Technical specifications:
– Rated current: 900 mA
– Compressive force: 1000 N
– Length of travel: Max. 200 mm

Material:
– Carbon steel
– Aluminum
– Plastic

Packs of	Model No.
2 pc(s).	**7030.261**

Supply includes:
– 2 spindle motors
– 2 push frames
– Instructions booklet
– Assembly components

Also required:
– Door Control Module DCM, see page 375
– Door kits, see page 375
– Power pack (with UPS protection), see page 371

Accessories

Door Comfort Handle

with door opener function
When the lock mechanism is actuated, the door is released by the automatic door opening system. Designed for the installation of commercially available 40 mm semi-cylinders and SZ lock and push-button inserts.
Length: 302 mm.

Technical specifications:
– Rated voltage: 24 V (DC)
– Rated current: Max. 3 A
– Connection cable: Length 3 m
– Temperature application range: +41°F...+104°F

Color:
– RAL 7035

Packs of	Model No.
1 pc(s).	**7320.794**

Also required:
– Handle adapter for mounting on glazed door 8611.080, see page 467

Accessories:
– Lock and push-button inserts, see page 483

Door Switch

Switch with normally closed contact for Door Control Module 7320.790 for manual door opening. Mounting takes place in the 25 mm hole pattern of the TS IT frame profile.

Technical specifications:
– Installation: Ø 16.2 mm
– 250 V/2 A

Packs of	Model No.
1 pc(s).	**7320.793**

Supply includes:
– 3 m connection cable
– Mounting bracket
– Assembly components

Monitor/Keyboard Unit, 1 U

with 17″ TFT display and VGA/DVI connection

Advantages:

- With digital and analog interfaces, VGA, DVI-D, PS/2, USB
- Simple, one-man installation
- Optionally with integrated KVM switch for up to 8 servers

Technical design:

- 17″/432 mm TFT display
- Physical resolution: 1280 x 1024
- Format: 4 : 3
- Colors: 16.7 million
- Brightness: Approx. 350 cd/m² (typical)
- Contrast ratio: Approx. 1000 :1
- Mains voltage: 100 – 240 V/50 – 60 Hz
- Ambient temperature: +41°F...+113°F (operational)
- Max. power consumption during operation without optional KVM system: 32 W
- Max. power consumption with closed monitor unit, without optional KVM system: < 1 W
- Rear connections:
  Mains voltage, VGA, DVI, PS/2, USB, power supply for KVM
- Lockable at the front
- Cables are safely routed in the energy chain

Height U	Width inches (mm)	Depth inches (mm)	Installation depth inches (mm)	Packs of	Color	Keyboard	**Model No.**
1	19 (482.6)	27 (680)	27-33 (680 – 850)	1 pc(s).	RAL 7035	English	**9055.312**

Accessories

RFID Aerial

for TS IT

Is inserted in the 19" profile of the TS IT.
Position detection of the components is accurate to within 1/3 U; for this reason there are 3 aerial elements and signaling LEDs integrated into each height unit. Reading and writing of the RFID tags is always signaled by an LED.

Supply includes:
– Assembly components

U	Packs of	Model No.
42	1 pc(s).	**7890.242**
47	1 pc(s).	**7890.247**

Also required:
– RFID controller 7890.500, see page 378
– RFID tags 7890.020, see page 378

RFID Tags

One RFID tag is required per component. Each tag has a unique ID (UID, not consecutive) that cannot be changed. In other respects, the data are stored on the tag in line with ISO 15693. In each case, the tag is glued to the 19″ mounting bracket on the inside/right. The tag is equipped with an adhesive surface for this purpose. Following this, the components are then screwed to the tag with the 19″ level.

Technical specifications:
– Type: Passive, writable
– Frequency: 13.56 MHz

Packs of	Model No.
20 pc(s).	**7890.020**

RFID Controller

Connects the RFID aerial with the CAN bus DRC. Using this, the CMC can report automatic changes, display the enclosure with the built-in components and carry out capacity management.
One RFID controller is required per rack/aerial.

Connections:
– RJ 45 jack for max. one CAN bus DRC
– Mini-DIN for max. one RFID aerial

Supply includes:
– Hook and loop straps for mounting

Packs of	Model No.
1 pc(s).	**7890.500**

Also required:
– CAN bus connection cable, see page 371
– CMC III CAN bus DRC, see page 378
– Mounting

CMC III CAN Bus DRC

For connecting an RFID controller 7890.500 to the PU/PU Compact.
Four CAN-Bus DRCs can be connected to the Processing Unit and 2 CAN-Bus DRCs to the Processing Unit Compact.

Packs of	Model No.
1 pc(s).	**7030.550**

Also required:
– CAN bus connection cable, see page 371
– Mounting unit, 1 U, 7030.070, see page 372
– Power pack power supply, see page 371

RiZone Appliance Standard

RiZone is supplied as a hardware or software appliance.
As a hardware appliance, RiZone is supplied with global support, installed on a powerful 1 U server. The software appliance is available as a virtual server which can easily be used on existing hardware in the data center.

Note:
– Both appliances support communication with Rittal devices and devices from third-party manufacturers via an integral MIB browser

Also required:
– RiZone Appliance IP node license corresponds to the number of IP nodes available.

Standard version	Model No.		
Hardware Appliance[1)]	Server with Windows	RiZone software	RiZone graphics tool
	7990.101	**7990.201**	**7990.301**
Software Appliance[1)]	Hard drive + Windows	RiZone software	RiZone graphics tool
	7990.103	**7990.203**	**7990.303**

[1)] All Model Nos. on the same line belong together and must always be ordered together

RiZone Appliance IP Node License

The flexible RiZone license model allows optimum adaptation to any project size, while at the same time allowing the opportunity to grow with the data center.
The volume licenses for the IP nodes are graduated with 25 and 100 nodes and may be adapted precisely to the size of the data center. One node license is required for each active component or other SNMP-compatible component to be covered.

For number of IP nodes[1)]	Console licenses included	Model No.	
		RiZone Software	RiZone Graphics tool
25	4	**7990.206**	**7990.306**
100	8	**7990.208**	**7990.308**

[1)] All Model Nos. on the same line belong together and must always be ordered together.

Server Shutdown Software

for CMC III

Client software to control the server shutdown via CMC III. The software supports all common operating systems and versions (e.g. Windows 7, VISTA, XP, Server 2003/2008, UNIX/LINUX and VMWARE Sphere/ESX Server, CITRIX XEN etc).
One license is required for each server to be shut down on an event-controlled basis.

Licenses	Model No.
Single license	**7857.421**

Note:
– Software updates and a complete list of currently supported operating systems can be found on the Rittal website

Rittal – The System.

Faster – better – everywhere.

IT Security Solutions

Your Benefits

- Simple and flexible integration into existing building structures
- Extendible for permanent cost-effectiveness and future-proofing
- Optimum space utilization due to the flexible modular system
- System-tested protection from potential physical threats
- Compatible with cross-plant IT infrastructures

Application examples

1 Micro Data Center, Level E with climate control, see page 382
2 Micro Data Center Level A, see page 384
3 Micro Data Center, Level B as a compact data center, see page 383

Micro Data Center

System Accessories Page 421

Applications:
- A high level of protection against potential physical threats to the IT
- Targeted configuration components are transformed into the Micro Data Center

Advantages:
- As well as facilitating installation in poorly accessible sites, the modular design also makes it possible to retrospectively enclose existing IT structures
- Extendibility, dismantling and reassembly mean a future-proof investment
- Tested safety – the tests were carried out by accredited institutes and verified with test reports

Protection standards:
- Fire protection fire resistance class F 90 to DIN 4102 Part 2
- Compliance with limits ΔT < 50 K, rel. humidity < 85% over 30 minutes
- Burglar resistance WK II, III and IV, tool attack analogous to DIN V ENV 1630/1999-04/ WK II
- Smoke protection based on DIN 18 095-2: 1991-03

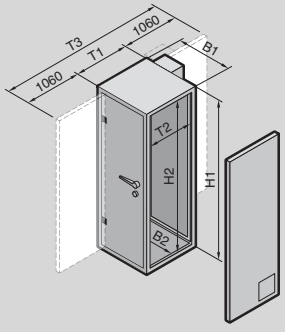
Material:
- Carbon steel, coated

Color:
- Housing and service door: RAL 7035
- Operator door: RAL 9005

Protection category IP to IEC 60 529:
- IP 56

Supply includes:
- Micro Data Center with operator door and service door
- Cable entry in both side elements
- Both doors with key lock

Optional:
- Choice of door catches
- Bifold doors
- Different cable entry systems
- Additional cable entry in the top or base unit
- Different lock variants
- Supporting structure



Note:
- Product based on European standards
- The Micro Data Center configuration is project-specific

Technical details:
Available on the Internet

Level E

Height units U		42	47	42	47	Page
External dimensions inches (mm)	Height (H1)	87 (2210)	95 (2410)	87 (2210)	95 (2410)	
	Width (B1)	43 (1100)	43 (1100)	43 (1100)	43 (1100)	
	Depth (T1)	47 (1200)	47 (1200)	55 (1400)	55 (1400)	
	Depth (T3)	131 (3320)	131 (3320)	139 (3520)	139 (3520)	
Internal dimensions inches (mm)	Height (H2)	80 (2030)	88 (2230)	80 (2030)	88 (2230)	
	Width (B2)	36 (920)	36 (920)	36 (920)	36 (920)	
	Depth (T2)	39 (1000)	39 (1000)	47 (1200)	47 (1200)	
Model No.		**7999.009**	**7999.009**	**7999.009**	**7999.009**	
Empty weight excluding cooling unit and excluding rack approx. lb (kg)		1455 (660)	1543 (700)	1609 (730)	1764 (800)	
Accessories						
TS IT Network/Server Enclosures		see page	see page	see page	see page	86
DET-AC III/EFD III Fire Alarm and Extinguisher System		see page	see page	see page	see page	387
CMC III Monitoring System		see page	see page	see page	see page	362
PDU – Power Distribution Unit		see page	see page	see page	see page	344
Climate Control for Micro Data Center		from page	from page	from page	from page	385
LCP – Liquid Cooling Package, Rack Depth 39″ (1000 mm)		see page	see page	see page	see page	348

Standard protection from:

System Accessories Page 421

Applications:
- Basic protection against potential physical threats to IT components. Targeted configuration components are transformed into the Micro Data Center

Advantages:
- Modular layout for installation in locations where access is difficult
- Lower weight than in Level E
- Tested safety – the tests were carried out by accredited institutes and verified with test reports

Protection standards:
- Fire protection fire resistance class EI 90/F 90 to DIN EN 1363-1: 1999 based on DIN 4102-2: 1977
- Burglar resistance RC 2, tool attack analogous to DIN EN 1630/2011-09/RC 2
- Smoke protection based on DIN EN 1634-3: 2005-01

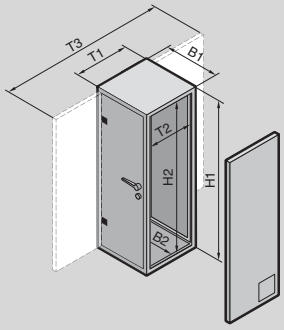
Material:
- Carbon steel, coated

Color:
- Housing and rear door: RAL 7035
- Operator door: RAL 9005

Protection category IP to IEC 60 529:
- IP 56

Supply includes:
- Micro Data Center with integrated TS 8 frame
- Front and rear 19″ level
- Adjusted air baffle plates
- Each side element is prepared for one cable entry at the bottom and one cable entry at the top
- Operator and service door with swing-lever handle and semi-cylinder

Optional:
- Choice of door catches
- Bifold doors
- Different cable entry systems
- Additional cable entry in the top and base unit
- Different lock variants
- Supporting structure with fire protection



Note:
- Product based on European standards
- The Micro Data Center configuration is project-specific

Technical details:
Available on the Internet

Level B

Height units U		42	47	42	47	Page
External dimensions inches (mm)	Height (H1)	87 (2205)	95 (2405)	87 (2205)	95 (2405)	
	Width (B1)	44 (1115)	44 (1115)	44 (1115)	44 (1115)	
	Depth (T1)	54 (1377)	54 (1377)	62 (1577)	62 (1577)	
	Depth (T3)	129 (3274)	129 (3274)	137 (3474)	137 (3474)	
Internal dimensions inches (mm)	Height (H2)	79 (2000)	87 (2200)	79 (2000)	87 (2200)	
	Width (B2)	36 (905)	36 (905)	36 (905)	36 (905)	
	Depth (T2)	42 (1060)	42 (1060)	50 (1260)	50 (1260)	
Model No.		**7999.709**	**7999.709**	**7999.709**	**7999.709**	
Empty weight excluding cooling unit approx. lb (kg)		1312 (595)	1389 (630)	1455 (660)	1543 (700)	
Accessories						
DET-AC III/EFD III Fire Alarm and Extinguisher System		see page	see page	see page	see page	387
CMC III Monitoring System		see page	see page	see page	see page	362
PDU – Power Distribution Unit		see page	see page	see page	see page	344
Climate Control for Micro Data Center		from page	from page	from page	from page	385
LCP – Liquid Cooling Package, Rack Depth 39″ (1000 mm)		see page	see page	see page	see page	348

Standard protection from:

Micro Data Center

System Accessories Page 421

Applications:
- Protection for server and storage applications
- Protection for business-critical data
- Storage of personal data, e.g. medical practices or tax advisors

Advantages:
- Complete system with built-in cooling and 19″ rack
- High level of operational and service-friendliness thanks to the two-door system
- Compatibility with other infrastructure elements
- Tested safety – the tests were carried out by accredited institutes and verified with test reports

Protection standards:
– Fire protection fire resistance class F 90 to DIN 4102 Part 2, compliance with limits ΔT < 50 K, rel. humidity < 85% over 10 minutes
– Burglar resistance WK II, tool attack analogous to DIN V ENV 1630/1999-04/ WK II

Material:
– Carbon steel, coated

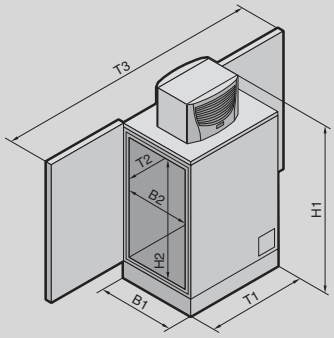
Color:
– Housing and service door: RAL 7035
– Operator door: RAL 9005

Protection category IP to IEC 60 529:
– IP 55

Supply includes:
– Security housing with operating and service doors (three-point locking)
– Cable entry in both side elements
– 2.4 kW cooling, designed as a split unit

Technical details:
Available on the Internet

Note:
– Product based on European standards



Level A

Height units U		15	Page
Cooling output BTU (W)		**8189 (2400)**	
External dimensions inches (mm)	Height (H1)	67 (1699)	
	Width (B1)	32 (806)	
	Depth (T1)	50 (1270)	
	Depth (T3)	108 (2746)	
Internal dimensions inches (mm)	Height (H2)	33 (827)	
	Width BW2)	24 (620)	
	Depth (T2)	40 (1024)	
Weight without internal equipment, including climate control unit, approx. lb (kg)		794 (360)	
Model No. Micro Data Center without built-in 19″ rack		**7999.898**	
Accessories			
19″ (482.6 mm) rack, 15 U, depth 39″ (1000 mm)		7995.992	
DET-AC III/EFD III Fire Alarm and Extinguisher System		see page	387
CMC III Monitoring System		see page	362
PDU – Power Distribution Unit		see page	344

Standard protection from:

Fire | Extinguishing water | Vandalism | Unauthorized access | Dust | Theft/Burglary

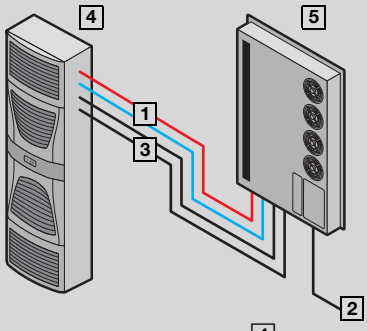
System Accessories Page 421 **Micro Data Center** From Page 382

- Separate, hermetically sealed internal and external circuits
- No ingress of dusts and flue gases
- The internal and external unit are connected to one another via refrigerant lines and control cables and are shielded for fire protection
- Air routing in the Micro Data Center is horizontal. Adjusted air baffle plates ensure targeted air routing. By separating the "cold side" from the "hot side", air short-circuits are avoided, and the cooling efficiency is increased.
- Use in rooms with climate control in the building or sufficient ventilation, as well as low or no noise requirements. The evaporator coil is fastened to the side panel on the inside of the Micro Data Center, and the external device on the service door.

Color:
– RAL 7035

Protection category IP to IEC 60 529:
– External circuit, IP 24
– Internal circuit, IP 54

Supply includes:
– Internal unit
– External unit
– Coolant lines
– Data and supply cables



1 Flexible inlet/return coolant lines
2 Power supply
3 Data cable
4 External unit
5 Internal unit

Note:
– Product based on European standards

Compact Split Cooling Solution

Model No.		**3126.230**	**3126.240**
Rated operating voltage V, ~, Hz		400/460, 3~, 50/60	400/460, 3~, 50/60
External unit	Height inches (mm)	62 (1580)	62 (1580)
	Width inches (mm)	20 (500)	20 (500)
	Depth inches (mm)	9 (231)	9 (231)
Internal unit	Height inches (mm)	61 (1544)	61 (1544)
	Width inches (mm)	32 (804)	32 (804)
	Depth inches (mm)	4 (100)	4 (100)
Cooling output 50/60 Hz L35 L35 BTU (W)		**8532/10546 (2500/3090)**	**13652/13686 (4000/4010)**
Cooling output 50/60 Hz L35 L50 BTU (W)		**7065/7850 (2070/2300)**	**10307/11092 (3020/3250)**
Rated current max. A		3.3/3.5	4.1/4.8
Start-up current A		14.2/14.7	15.2/15.8
Pre-fuse A		6.3 – 10.0	6.3 – 10.0
Motor circuit-breaker		■	■
Rated power P_{el} 50/60 Hz L35 L35 (W)		1275/1615	1620/2125
Rated power P_{el} 50/60 Hz L35 L50 (W)		1525/1920	1825/2835
Refrigeration factor $\varepsilon = Q_K/P_{el}$ L35 L35		2.0	2.5
Refrigerant oz (g)		R134a, 53 (1500)	R134a, 102 (2900)
Permissible operating pressure (p. max.) psi (bar)		406 (28)	363 (25)
Temperature range		+68°F...+131°F	+68°F...+131°F
Setting range		+68°F...+131°F	+68°F...+131°F
Noise level dB (A)		< 70	< 72
Weight lb (kg)	External unit	143 (65)	143 (65)
	Internal unit	154 (70)	154 (70)
Temperature control		Comfort controller, factory setting +25°C	

Data Center Container

System Accessories Page 421

Fire protection:
- Fire protection, internal panels: F30, optionally F90 based on DIN 4102/EN 1363, component-tested

Bulkhead system:
- Type: Hard duct DN200
- Dimensions of packing space: 120 x 120 mm
- Protected cable/pipe entries

Raised floor:
- Optimized load distribution
- Equipped with cable/pipe routing
- Variable ventilation plates with DFC

Climate control:
- Customized climate control variants
- Targeted cooling via cold aisle containment
- Energy-efficient DFC cooling (Direct Free Cooling), with no additional external units
- Powerful LCP cooling (Liquid Cooling Package), with minimal space requirements

Power distribution:
- Infeed: CEE wall-mounted unit connector 125 A, 3-phase/N/PE, 400 V/50 Hz
- Busbar system for rack-based power distribution

Customized solutions:
- Interlinked containers, other climate control variants

Optional:
- Up to seven TS IT racks with power supply
- Fire alarm/extinguisher system (Novec 1230)
- Access systems, access door (keyboard, code card)
- Monitoring and management (CMC, RiZone) for monitoring alarm signals, maintenance messages and customer-specific parameters

Note:
- Standard range of models with pre-configured data center types
- The Data Center Container configuration is product-specific
- Product based on European standards

Technical details:
Available on the Internet

Photo shows a configuration example with equipment not included in the scope of supply

Type	1	2	3	4	5	6	7	8	9
Height inches (mm)	128 (3250)								
Width inches (mm)	118 (3000)								
Depth inches (mm)	239 (6058)	315 (8000)	394 (10000)	453 (11500)	239 (6058)	315 (8000)	394 (10000)	453 (11500)	374 (9500)
Useful area ft² (m²)	163 (15.2)	219 (20.4)	276 (25.7)	319 (29.7)	163 (15.2)	219 (20.4)	276 (25.7)	319 (29.7)	219 (20.4)
Model No.	**7857.998**								
Direct Free Cooling/Liquid Cooling Packages climate control	DFC	DFC	DFC	DFC	LCP	LCP	LCP	LCP	LCP
Max. cooling output BTU (kW)	**68243 (20)**	**68243 (20)**	**170607 (50)**	**170607 (50)**	**68243 (20)**	**136486 (40)**	**272971 (80)**	**341214 (100)**	**136486 (40)**
Redundancy cooling	n+1	n+1	n+1	n+1	n+1	n+1	n+1	n+1	n+1
Heavy-duty raised floor	■	■	■	■	■	■	■	■	■
Plug-and-play power distribution	■	■	■	■	■	■	■	■	■
DN200 hard ducts	3	3	4	4	4	5	5	5	5
Security door, resistance class 2	■	■	■	■	■	■	■	■	■
Optional fittings									
DET-AC XL fire alarm/extinguisher system	■	■	■	■	□	□	□	□	□
UPS uninterruptible power supply	□	□	□	□	□	□	□	□	□
Max. number of racks 42 U, 24″ (600 mm) wide, without UPS	6	9	10	12	6	8	11	13	8
Max. number of racks 42 U, 32″ (800 mm) wide, without UPS	4	6	7	9	4	6	8	9	6
Higher racks (47 U)	□	□	□	□	□	□	□	□	□
Rack power supply	□	□	□	□	□	□	□	□	□
Monitoring package (CMC III)	□	□	□	□	□	□	□	□	□
RiZone package	□	□	□	□	□	□	□	□	□
Security door, resistance class 3	□	□	□	□	□	□	□	□	□
Additional hard ducts for cable/pipe entry	□	□	□	□	□	□	□	□	□
Metal sun shade	□	□	□	□	□	□	□	□	□

■ Standard □ Option

DET-AC III/EFD III Fire Alarm and Extinguisher System

System Accessories Page 421 **IT Network/Server Enclosures** Page 90

Advantages:
- Early fire detection
- Automatic extinguishing
  - Innovative extinguisher gas NOVEC™ 1230
  - Eco-friendly
  - Uncritical for IT components, non-conductive
- 19″ slide-in equipment with just 1 U
- Testing by VdS (VdS Schadenverhütung GmbH tests and certifies accident prevention equipment components or entire systems in its own laboratories)
- CAN bus interface for direct connection with the CMC III monitoring system

Material:
– Housing: Carbon steel

Color:
– Housing: RAL 7035
– Front trim panel: RAL 9005

Protection category IP to IEC 60 529:
– IP 30

Note:
– All three systems are designed exclusively for use in closed non-accessible enclosure systems
– Product based on European standards

DET-AC III Master
The active extinguisher system for use in sealed 19″ server enclosures includes the smoke extraction system and the extinguisher unit in a 19″ subrack, built into just 1 height unit. The smoke extraction system is identical to that used in the EFD III. When a main alarm is triggered, the extinguishing process starts automatically. The extinguisher medium used, NOVEC™ 1230, is stored in liquid form in the extinguisher tank. For the extinguishing process, pressure is applied to the tank and the extinguisher medium vaporizes at the extinguisher nozzle and is distributed within the server enclosure. Alarms and malfunctions can be forwarded to the CMC III monitoring system directly via the CAN bus interface. Floating contacts make it possible for the alarms (pre-alarm and main alarm) and the collective fault signal from the device to be forwarded to a superordinate location (monitoring or control system).

EFD III
The EFD III early fire detection system includes the smoke extraction system in a 19″ subrack built into just 1 height unit. An integrated fan continuously extracts air from the area to be protected, via a pipeline system. The extracted air is passed over two fire detectors. If smoke aerosols are detected, the highly-sensitive detector emits a pre-alarm, with the second fire detector emitting the main alarm. The correct functioning of the fire detectors is monitored at all times by the evaluation and control electronics on the control board. Alarms and malfunctions can be forwarded to a superordinate location (monitoring or control system) via floating contacts. The integrated CAN bus interface enables direct connection to the CMC III.

DET-AC III Slave
The add-on unit for the DET-AC III Master contains another extinguisher unit. Up to five bayed enclosures may be extinguished in combination. In addition to the DET-AC III Master unit, a DET-AC III Slave unit is used for each additional bayed enclosure and contains the extinguisher gas for the enclosure in question. Detection takes place via the DET-AC III Master unit, even if there are multiple bayed enclosures. When a main alarm goes off, the DET-AC III Master triggers extinguishing at all units simultaneously. The DET-AC III Slave unit can also be used in conjunction with the EFD III unit.

Technical details:
Available on the Internet

	Fire alarm and extinguisher system DET-AC III Master	Early fire detection system EFD III	Additional unit DET-AC III Slave	Page
Model No.	**7338.121**	**7338.221**	**7338.321**	
Height inches (mm)	2 (44) (1 U)	2 (44) (1 U)	2 (44) (1 U)	
Width inches (mm)	19″ (482.6) slide-in equipment	19″ (482.6) slide-in equipment	19″ (482.6) slide-in equipment	
Depth inches (mm)	26 (660)	19 (490)	26 (660)	
Weight, approx. lb (kg)	34 (15.5)	21 (9.6)	28 (12.5)	
Rated voltage V, ~, Hz	100 – 240 (AC), 1~, 50/60	100 – 240 (AC), 1~, 50/60	24 (DC)	
Emergency power supply h	approx. 4	approx. 4	approx. 4	
Also required				
Pipe kit	**7338.130**	**7338.130**	**7338.130**	
Access sensor	7320.530	–	7320.530	369
CAN bus connection cable RJ 45, 1m	see page	see page	see page	371
Slide rails, depth-variable	5501.480	5501.480	5501.480	596

Security Rooms

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The Basic Protection Room
The basic protection room provides a high-quality, system-tested solution. The basic protection room is an optimum, modular room-within-a-room solution for protecting IT/infrastructure components such as extinguisher systems, uninterruptible power supplies and climate control equipment. As a flexible modular system, it can be extended while the IT systems are operational.

Advantages:
- System-tested protection standards
- Multi-functional risk coverage
- Dust- and noise-reduced installation
- Dismantling and reassembly plus extendibility = investment security
- May be adapted for use in other room systems, such as the high-MTBF room

Criterion	Standard	
System testing	Testing the following standards as a complete system or construction	
Fire protection	ECB·S certifications to EN 1047-2, 50 K temperature increase and 85% rel. humidity up to 24 hours (reheating period), 60 minutes flame impingement time	
	50 K temperature rise and 85% rel. humidity without reheating period, 30 minutes flame impingement time	
	F 120 to DIN 4102	
	F 90 to DIN 4102	
Corrosive fire gases	Acrid-gas tightness based on DIN 18 095	
Falling debris	Impact test at 441 lb (200 kg)	
Water	IP X6 to EN 60 529	
	Protection against standing water	
Dust	IP 5X to EN 60 529	
Unauthorized access	WK IV to DIN V ENV 1630, door system only	
	WK III to DIN V ENV 1630, or DIN V 18 103 (ET2)	
	WK II to DIN V ENV 1630	
Explosion	Detonation test	
EMC	Protection against high-frequency irradiation and radiation	

System-tested structures are tested as a complete construction. This comprises the cell structure and built-in modules such as doors, cable shields or ventilation units. By contrast, generic component testing only refers to individual parts.

Conventional construction methods produce room structures made of plasterboard, concrete and other standard construction materials, which cannot offer sufficient protection for data center applications. Conventional construction methods are generally unsuitable for firewall use and are therefore only component-tested.

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The High-MTBF Room
The high-MTBF room provides maximum physical protection for data centers and IT system locations. The system has been certified by the ECB (European Certification Body GmbH) to ECB·S regulations.
This certification confirms that the high-MTBF room meets the requirements of EN 1047-2 in full. The construction of the security room is also subject to continuous, independent quality monitoring.

Advantages:
- System-tested high-MTBF protection
- Multi-functional risk coverage
- Dust- and noise-reduced installation
- Dismantling and reassembly plus extendibility = investment security
- ECB·S certification
- Independent quality monitoring
- May be adapted for use in other room systems, such as the basic protection room

	Basic protection room	High-MTBF room
	■	■
	–	■
	□	–
	–	■
	■	–
	■	■
	■	■
	■	■
	–	■
	■	■
	–	■
	□	■
	■	–
	–	■
	■	■

■ Standard □ Optional