

# Rittal – The System.

Faster – better – everywhere.

## ► Industrial Fact Book Choose Better. Choose Rittal.



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# Rittal – The System.

Faster – better – everywhere.

## Let us help you make a change for the better.

### **You are an innovator. Your mind runs with “what if?”**

You know the status quo can always be improved. “We tried something similar 10 years ago” is not a dead end, but a challenge to do things better.

You explore new ideas, stretch your creativity and question the way things have always been done.

### **At Rittal, we celebrate the spirit of the engineer.**

With a forward-thinking supplier like Rittal, you know you've found a partner. A supplier known worldwide for equipment that incorporates cutting-edge technology, is designed for efficiency, and solves problems other engineers hadn't even considered yet. A company that lives the Industry 4.0 world and puts it into practice in every step of the process.

On every page of the Fact Book, you'll see the commitment we share with you for constant innovation. Join us, as together we make **A Change for the Better.**



## What's Inside the Fact Book

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# Blue e+ cooling unit series



**Join the  
revolution  
in hybrid  
technology.  
Never  
compromise  
on savings,  
efficiency  
and longevity.**

### **Blue e+ delivers energy savings up to 75%**

The Blue e+ uses an innovative process that relies upon two parallel cooling circuits working together, adjusting to the desired temperature of the enclosure. The integral heat pipe passively dissipates heat while active cooling is achieved via the compressor's cooling circuit with variable speed-controlled components. This unique inverter technology provides cooling output that is on target at the time it is needed. By combining variable speed cooling components, Blue e+ delivers significant energy savings and a longer service life for the enclosure components.



#### **The e+ Principle**

- **Efficiency** – Energy savings of 75% with speed-regulated components and heat pipe technology
- **Versatility** – Multi-voltage capability adapts to international requirements
- **Longevity** – Automatic shut-off and variable speed of components greatly increases service life
- **User-friendliness** – Intuitive operation due to touch display and intelligent interfaces















**Blue e+ enclosure air conditioners can save up to 75% in enclosure cooling costs and energy.** Featuring hybrid, climate control with patented heat pipe technology, the unit offers a range of powerful new features that provide longer component life, flexibility and ease of use.







# The facts: Engineered better to perform better than the competition

									
		Rittal Blue e+	Hoffman	Pfannenberg	Kooltronic	ICEcube	Thermal Edge	Saginaw	Rittal Blue e
	<b>Cooling Capacity</b>	1,000–20,000 BTU	800–19,000 BTU	1,000–19,000 BTU	1,000–26,000 BTU	1,000–27,000 BTU	1,000–20,000 BTU	1,000–13,650 BTU	1,000–14,000 BTU
	<b>Energy Efficient</b>	Average EER for Blue e+ is ~ 2.5	On Average ~ 30% less efficient than Blue e+	On Average ~ 30% less efficient than Rittal Blue e+	Not enough information to determine	Not enough information to determine	Not enough information to determine	Not enough information to determine	Average EER for Blue e is ~ 2.0
	<b>Mounting</b>	Wall-mounted, 3 Types of wall-mounting, 1 cutout wall-mount	Wall- and roof-mounted, 2 Types of wall-mounting	2 Types of installation, Twist&Fit	External Mounting	External Mounting	External Mounting	External Mounting	Wall- and roof-mounted, 3 Types of wall-mounting
	<b>Approvals</b>	UL Listed, GS, CSA, CE	UL/cUL Listed, UR/cUR, CE, GOST	cUL, GOST, CE	UL/cUL Listed	cUL	cUL	UL Recognized, CE	cUR, UL rec., GS, CSA, CE
	<b>System</b>	Complete portfolio in cooling, enclosures, IT and PD	Offers enclosures and climate products, IT and PD	Cooling solutions, Lights, Sensors	Only offers climate products	Only offers climate products	Only offers climate products	Offers enclosures and limited climate products	Complete portfolio in cooling, enclosures, IT and PD
	<b>Technical Support</b>	RICAD, RIDIAG, ePlan, Blue e+ App, website, email and phone support	Website, phone support	Own software tools, macros for ePlan	Website support	Website, phone support	Website has a tech support portal	Website support	RICAD, RIDIAG, ePlan, website, email and phone support

## Easy Assembly

- One version for external mounting, partial internal mounting and full internal mounting
- One mounting cut-out for external mounting, partial internal mounting and full internal mounting in multiple output categories
- Maintenance-friendly, toolless filter mat replacement



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# Choose the best:

## Blue e+ wall-mounted air conditioners

### Benefits:

- 75% energy saved due to speed-regulated components and heat pipe technology
- Suitable for international use due to a unique multi-voltage capability
- Longer service life of the components inside the enclosure and the cooling unit due to component-friendly cooling
- Intuitive operation due to touch display and intelligent interfaces

### Temperature control:

- e+ controller (factory setting +35°C)

### Material:

- Sheet steel

### Color:

- RAL 7035

### Protection category IP to

#### IEC 60 529:

- Internal circuit IP 55

### Supply includes:

- Assembly parts

### Power Category 5118 – 19808 BTU (1600W – 6000W)

Model No.	3185.830	3186.930	3187.930	3188.940	3189.940
<b>Total cooling output 50 Hz L35 L35 to DIN EN 14511 BTU (kW)</b>	<b>5459 (1.6)</b>	<b>6830 (2)</b>	<b>8879 (2.6)</b>	<b>14,330 (4.2)</b>	<b>19808 (5.8)</b>
Total cooling output 50/60 Hz L35 L35 BTU (kW)	5459 / 5459 (1.6 / 1.6)	6830 / 6830 (2 / 2)	8879 / 8879 (2.6 / 2.6)	14,330 / 14,330 (4.2 / 4.2)	19808 / 19808 (5.8 / 5.8)
Total cooling output 50/60 Hz L35 L50 BTU (kW)	4095 / 4095 (1.2 / 1.2)	4405 / 4405 (1.29 / 1.29)	6215 / 6215 (1.82 / 1.82)	10313 / 10313 (3.02 / 3.02)	14344 / 14344 (4.2 / 4.2)
Rated operating voltage V, ~, Hz	110 - 240, 1~, 50/60 380 - 480, 3~, 50/60	110- 240, 1~, 50/60 380 - 480, 3~, 50/60	110- 240, 1~, 50/60 380 - 480, 3~, 50/60	380 - 480, 3~, 50/60	380 - 480, 3~, 50/60
Width (B) inches (mm)	16 (400)	18 (450)	18 (450)	18 (450)	18 (450)
Height (H) inches (mm)	37 (950)	63 (1600)	63 (1600)	63 (1600)	63 (1600)
Depth (T) inches (mm)	12 (310)	12 (294)	12 (294)	15 (393)	15 (393)
Rated output kW	0.62	0.73	1.05	1.3	2.2
Power consumption Pel 50/60 Hz L35 L35 kW	0.54 / 0.54	0.57 / 0.57	0.99 / 0.99	1.21 / 1.21	2.2 / 2.2
Power consumption Pel 50/60 Hz L35 L50 kW	0.61 / 0.61	0.6 / 0.6	0.94 / 0.94	1.28 / 1.28	2.2 / 2.2
Operating temperature range	-20°C...+60°C	-20°C...+60°C	-20°C...+60°C	-20°C...+60°C	-20°C...+60°C
Setting range	+20°C...+50°C	+20°C...+50°C	+20°C...+50°C	+20°C...+50°C	+20°C...+50°C
Storage temperature range	-40°C...+70°C	-40°C...+70°C	-40°C...+70°C	-40°C...+70°C	-40°C...+70°C
Energy efficiency ratio (EER) 50 Hz L35 L35 to DIN EN 14511	3.05	3.5	2.63	3.46	2.64
Refrigerant	R134a, 750	R134a, 1150	R134a, 1150	R134a, 1750	R134a, 1750
Permissible operating pressure (p. max.) bar	24	24	24	24	24
Air throughput of fans (unimpeded air flow), Internal circuit/external circuit m³/h	700 / 895	1250 / 1250	1250 / 1250	2300 / 2300	2300 / 2300
Weight lbs (kg)	67 (30.5)	121 (55.2)	121 (55.2)	159 (72.4)	159 (72.4)
Note on Model No.	—	—	—	Full installation not possible	Full installation not possible

### Accessories

<b>Filter mats</b>	3285.800	3285.900	3285.900	3285.900	3285.900
<b>Metal filters</b>	3285.810	3285.910	3285.910	3285.910	3285.910
<b>Temperature sensor</b>	3124.400	3124.400	3124.400	3124.400	3124.400
<b>Door-operated switch</b>	4127.010	4127.010	4127.010	4127.010	4127.010

# TS 8 316 stainless steel enclosures





**TS 8 modular enclosures.  
Invented here. Perfected here.  
Poorly copied over there.**

This UL Type 4X modular enclosure system provides unsurpassed flexibility, scalability, strength, and durability. Stainless steel 316 construction makes this TS 8 impervious to corrosive atmospheres. Stainless steel 316 offers excellent resistance to high temperatures and common chlorides (such as salt present in seawater), as well as chemicals like sulfuric acid.

Whether housing drives, flow monitoring systems or critical electrical components, this TS 8's maintains a clean, consistent environment in the most extreme conditions found in industries like oil and gas, mining, pulp and paper, food and beverage, and life sciences. The 316 Stainless Steel TS 8 features and benefits include:

- 30 percent more available mounting space than traditional unibody enclosures
- Four-point latching system and a continuous foamed-in-place gasket that creates a water- and dust-proof seal
- All exposed hardware (handle, hinges, latches, eyebolts, etc.) made of 316 stainless steel
- Padlockable handle that delivers easy access and security
- A large assortment of internal accessories that allow for three-dimensional mounting on all internal surfaces
- Internally removable floor panel that simplifies conduit and wiring installation
- Depth-adjustable and removable zinc-plated carbon steel mounting panel
- Spring-loaded, quick-release hinges that enable fast and easy door removal and replacement
- Strength of modular construction that delivers a load capacity of 3,150 pounds to handle more equipment within the enclosure

**The TS 8 Line is proven more than  
10 million times over**

The TS 8 316 stainless steel enclosure is a welcome addition to the highly innovative and remarkably flexible TS 8 line of enclosures. Its modular construction allows for easy assembly, baying, equipment installations, removals and reconfigurations.







**The ideal  
modular  
freestanding  
solution for  
harsh  
environments.**



- Greater efficiency
- Unlimited flexibility
- Increased safety
- Better quality
- Greater productivity

# The facts: Engineered better to perform better than the competition



						
	<b>Rittal</b> 316 Stainless Steel TS 8 Enclosure, 2000H0800W0800D (P/N 9977466)	<b>Saginaw Enviroline®</b> Free Standing Single Door, (P/N SCE72EL3636SS6FS)	<b>Pentair Hoffman®</b> Free-Stand, Type 4X (P/N A72H3124SS6FS)	<b>Pentair Hoffman®</b> Free-Stand, Single Access with 3 Point Latches Type 4X (P/N A723636SSFSN4)	<b>Hammond Manufacturing®</b> Type 4X Freestanding Enclosure (P/N1418N4S16Y24)	<b>Cooper B-Line®</b> Ground-Mount Enclosure Type 4X Single-Door, Free-Standing Enclosure (P/N 7237244XSS6FS)
<b>Material</b>	Stainless Steel 316	Stainless Steel 316	Stainless Steel 316	Stainless Steel 304	Stainless Steel 316	Stainless Steel 316
<b>Latching System</b>	4 Point Internal	3 point internal and 2 quarter turns	External latching	3 point internal	External latching	External latching
<b>Hinge System</b>	Discrete, Easily Removable	Concealed	Continuous (Piano)	Continuous (Piano)	Continuous (Piano)	Concealed
<b>Gasketing System</b>	Foamed-in-place	Oil-resistant	Oil-resistant	Foamed-in-place	Poured-in place	Poured-in place
<b>Handle</b>	Padlockable Stainless Steel 316	Zinc Die Cast	None	316L Stainless Steel POWERGLIDE™ padlocking handle	None	None
<b>Expandable</b>	Yes	No	No	No	No	No
<b>Unibody or Modular</b>	Modular	Unibody	Unibody	Unibody	Unibody	Unibody
<b>Maximum Available Height</b>	87"	90"	72"	90"	72"	72"
<b>Maximum Available Width</b>	32"	36"	37"	36"	37"	37"
<b>Maximum Available Depth</b>	32"	36"	24"	36"	24"	24"
<b>Mounting Panel Included</b>	Yes	No	No	No	No	No
<b>Number of Eyebolts</b>	4	4	2	4	2	2
<b>Mounting Panel Dimensions</b>	75"×28"	60"×32"	60"×26"	60"×32"	60"×32"	60"×32"
<b>Mounting Panel Area (sq. in.)</b>	2100	1920	1560	1920	1920	1920
<b>Internal Gland Plate in Floor</b>	Yes	No	No	No	No	No

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### 316 Stainless Steel TS8 Enclosure, UL Type 4X, IP 66, Single Door — Type 316 Stainless Steel

Part No.	HxWxD inches	HxWxD mm	Sidewalls Part Number (Pair)	Mounting Panel (Included) HxW inches	Mounting Panel (Included) HxW mm	8" (200 mm) High Plinth, Front & Rear	8" (200 mm) High Plinth, Sides	12" (300 mm) High Floor Stand Kit
9977477	71x24x24	1800x0600x0600	9977479	67x20	1696x499	9972908	8702065	9963530
9977472	71x32x20	1800x0800x0500	9977478	67x28	1696x699	9972907	8702055	9963529
9977475	71x32x24	1800x0800x0600	9977479	67x28	1696x699	9972907	8702065	9963530
9977470	79x24x24	2000x0600x0600	9977481	75x20	1896x499	9972908	8702065	9963530
9977473	79x24x32	2000x0600x0800	9977482	75x20	1896x499	9972908	9977494	9973052
9977468	79x32x20	2000x0800x0500	9977480	75x28	1896x699	9972907	8702055	9963529
9977467	79x32x24	2000x0800x0600	9977481	75x28	1896x699	9972907	8702065	9963530
9977466	79x32x32	2000x0800x0800	9977482	75x28	1896x699	9972907	9977494	9973052
9977471	87x24x24	2200x0600x0600	9977483	83x20	2096x499	9972908	8702065	9963530
9977476	87x24x32	2200x0600x0800	9977484	83x20	2096x499	9972908	9977494	9973052
9977469	87x32x24	2200x0800x0600	9977483	83x28	2096x699	9972907	8702065	9963530
9977474	87x32x32	2200x0800x0800	9977484	83x28	2096x699	9972907	9977494	9973052

### System accessories



#### Padlockable handle

Provides both easy access and security.



#### Four-point latching system and continuous foamed-in-place gasket

Provides a water- and dust-proof environmental seal



#### Floor stand kit

Permits easy access to the bottom of the enclosure and is purchased separately.



#### Base/plinth trim panels

Fewer parts, more opportunities, lower purchasing, storage and assembly costs – this is the formula behind the base/plinth system.

# SE 8 system enclosures



# The singular choice for freestanding enclosures for industrial environments.

## SE 8 enclosure stands above in quality and value

As industrial facilities replace or upgrade control systems, many plant engineers are moving beyond the challenges of unibody enclosure designs. With unibody enclosures, the skins are welded together to support the load of the system. As a result, system integrators, OEMs and facilities are limited in the configurations and modifications to meet end-use needs. Because the lifecycle of a typical industrial enclosure is filled with planned and unplanned modifications and repairs, using a unibody enclosure can increase costs and downtime.

### Stand-Alone Design

By comparison, the Rittal SE 8 enclosure brings together the benefits of modular design and accessories with a price point that competes with unibody enclosures. Because the strength and interior mounting are handled by the roll-formed frame section of the enclosure, the SE 8 delivers improved durability and 30 percent more internal space than comparable unibody designs. In addition, the SE 8 is available in 16-gauge carbon or stainless steel, and features the standard, reversible TS 8 door to accommodate modifications over the lifecycle of the enclosure.

For larger control systems, the SE 8 is available in a double-door design starting at 39". To ensure components remain protected, the single-door carbon-steel model is UL Type 12 and 3R with a Type 4 version available. The double-door design is currently rated at Type 12 and 3R. The single-door stainless-steel model is UL Type 12, 3R with a Type 4X version available. The stainless-steel double-door version is rated Type 12 and 3R.

Unlike unibody enclosures, the SE 8 features a variety of interchangeable accessories, including:

- Cable entry options
- Plinth, cable base and flex-block
- Locking system
- Comfort handle, inserts
- TS 8 interior system accessories
- Swing frames, chassis, rails and partial panels
- Lighting and grounding systems







# Choose the best: SE 8 enclosures

## Stand-Alone Enclosures

### Roof and sides form a single piece

- Non-bayable single- or double-door
- Welded base frame

### Integrated roof with cheese-head bolts

- Eyebolts can be added as accessory

### Integrated roll-formed TS 8 frame

- 2 integrated mounting levels
- 25 mm hole pattern

### Door

- 2 mm rolled sheet metal or stainless steel
- Right-hand hinged, reversible door and handle with double-bit locking insert

### Rear Wall

- Removable rear panel
- Split rear walls start at 63"

### Closed housing body (roof/sides)

- 1.5 mm (16 ga.)

### Vertical frame members

- 1.5 mm (16 ga.)
- Standard TS 8 25 mm profile

### Mounting Panel

- Depth-adjustable
- 3 mm (11 ga.)

## SE 8 Carbon Steel – Type 12, 3R

Model No.	Height inches (mm)	Width inches (mm)	Depth inches (mm)	Door(s)
SE 5830.500	71" (1800 mm)	24" (600 mm)	16" (400 mm)	1
SE 5831.500	71" (1800 mm)	31" (800 mm)	16" (400 mm)	1
SE 5832.500	79" (2000 mm)	31" (800 mm)	16" (400 mm)	1
SE 5833.500	79" (2000 mm)	31" (800 mm)	20" (500 mm)	1
SE 5834.500	79" (2000 mm)	31" (800 mm)	24" (600 mm)	1
SE 5840.500	71" (1800 mm)	39" (1000 mm)	16" (400 mm)	2
SE 5841.500	71" (1800 mm)	47" (1200 mm)	16" (400 mm)	2
SE 5842.500	71" (1800 mm)	63" (1600 mm)	16" (400 mm)	2
SE 5843.500	79" (2000 mm)	47" (1200 mm)	16" (400 mm)	2
SE 5844.500	79" (2000 mm)	47" (1200 mm)	20" (500 mm)	2
SE 5845.500	79" (2000 mm)	47" (1200 mm)	24" (600 mm)	2
SE 5846.500	79" (2000 mm)	71" (1800 mm)	20" (500 mm)	2

## SE 8 Carbon Steel – Type 4, 3R

Model No.	Height inches (mm)	Width inches (mm)	Depth inches (mm)	Door(s)
SE 5830.580	71" (1800 mm)	24" (600 mm)	16" (400 mm)	1
SE 5831.580	71" (1800 mm)	31" (800 mm)	16" (400 mm)	1
SE 5834.580	79" (2000 mm)	31" (800 mm)	24" (600 mm)	1



#### Horizontal frame members

- 1.5 mm (16 ga.)
- Depth and width same as TS 8
- Symmetrical roof frame

#### Grounding

- Integrated potential equalization for back panel and gland plates

#### System accessories

- Full line of TS 8 accessories
- High levels of customization, cable and power management

### SE 8 304 Stainless Steel – Type 12, 3R

Model No.	Height inches (mm)	Width inches (mm)	Depth inches (mm)	Door(s)
SE 5850.500	63" (1600 mm)	24" (600 mm)	16" (400 mm)	1
SE 5851.500	71" (1800 mm)	24" (600 mm)	20" (500 mm)	1
SE 5852.500	71" (1800 mm)	31" (800 mm)	20" (500 mm)	1
SE 5853.500	79" (2000 mm)	31" (800 mm)	24" (600 mm)	1
SE 5854.500	71" (1800 mm)	39" (1000 mm)	16" (400 mm)	1
SE 5855.500	79" (2000 mm)	47" (1200 mm)	20" (500 mm)	2

### SE 8 304 Stainless Steel – Type 4X, 3R

Model No.	Height inches (mm)	Width inches (mm)	Depth inches (mm)	Door(s)
SE 5850.580	63" (1600 mm)	24" (600 mm)	16" (400 mm)	1
SE 5852.580	71" (1800 mm)	31" (800 mm)	20" (500 mm)	1
SE 5853.580	79" (2000 mm)	31" (800 mm)	24" (600 mm)	1



# simpliCity

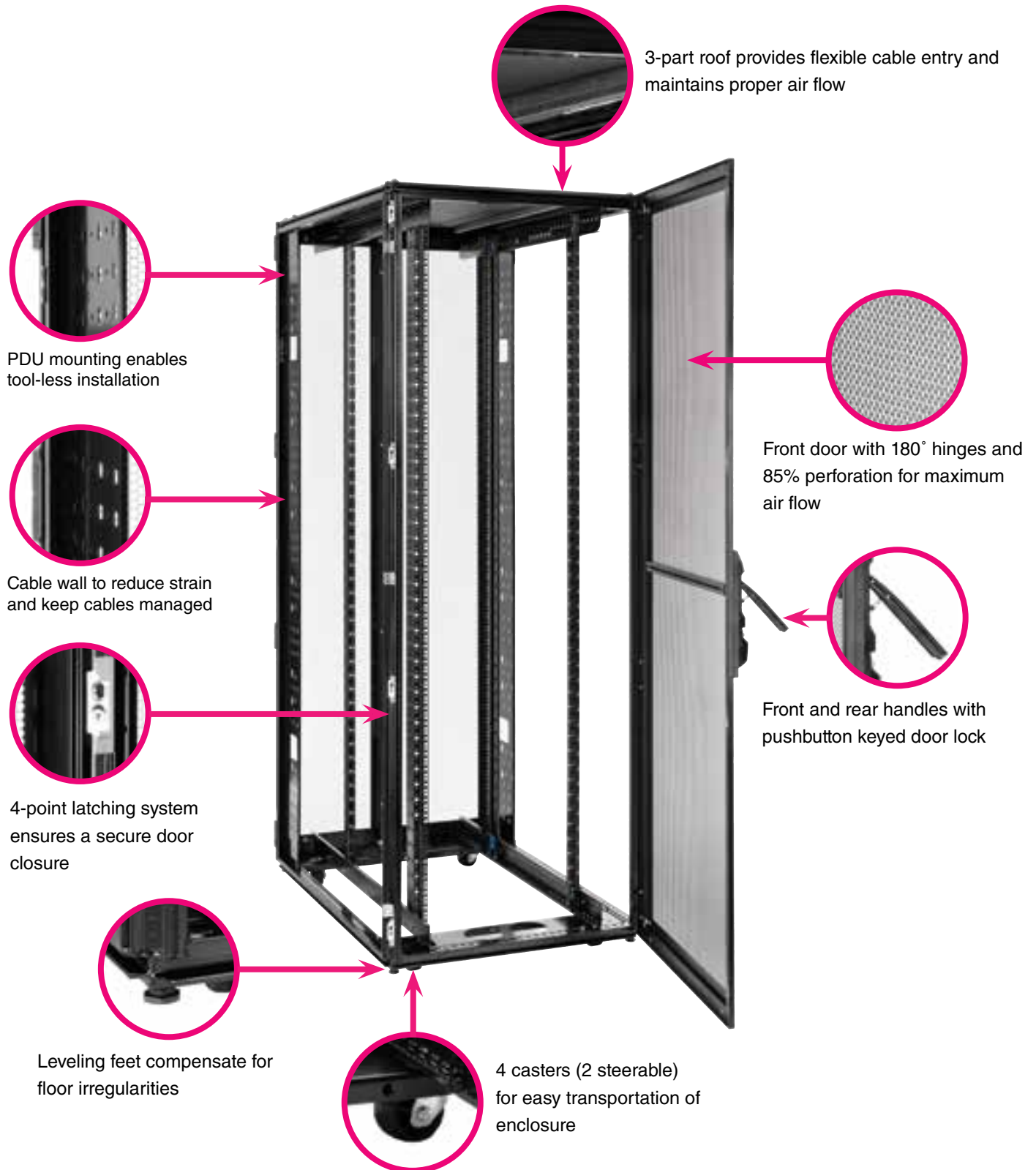
Data Center Enclosures ■ Ready to Ship ■ Easy to Order

Rittal's simpliCity enclosures are pre-configured with standard accessories and come complete with depth-variable 19" (482.6mm) profile rails, casters, cable management, PDU mounting options, and locking front and rear vented doors.

Part Number	Height	Width	Depth	Color	Sidewalls
TS42U2442BSW	42U (80", 2000mm)	24" (600mm)	42" (1050mm)	Black	Included
TS42U2442B	42U (80", 2000mm)	24" (600mm)	42" (1050mm)	Black	
TS42U2448B	42U (80", 2000mm)	24" (600mm)	48" (1200mm)	Black	
TS42U2448BSW	42U (80", 2000mm)	24" (600mm)	48" (1200mm)	Black	Included
TS42U2842B	42U (80", 2000mm)	28" (700mm)	42" (1050mm)	Black	
TS42U2842L	42U (80", 2000mm)	28" (700mm)	42" (1050mm)	Light Gray	
TS42U2842BSW	42U (80", 2000mm)	28" (700mm)	42" (1050mm)	Black	Included
TS42U2842LSW	42U (80", 2000mm)	28" (700mm)	42" (1050mm)	Light Gray	Included
TS42U2848BSW	42U (80", 2000mm)	28" (700mm)	48" (1200mm)	Black	Included
TS42U2848LSW	42U (80", 2000mm)	28" (700mm)	48" (1200mm)	Light Gray	Included
TS42U2848B	42U (80", 2000mm)	28" (700mm)	48" (1200mm)	Black	
TS42U2848L	42U (80", 2000mm)	28" (700mm)	48" (1200mm)	Light Gray	
TS47U2842LSW	47U (88", 2200mm)	28" (700mm)	42" (1050mm)	Light Gray	Included
TS47U2842BSW	47U (88", 2200mm)	28" (700mm)	42" (1050mm)	Black	Included
TS47U2842B	47U (88", 2200mm)	28" (700mm)	42" (1050mm)	Black	
TS47U2842L	47U (88", 2200mm)	28" (700mm)	42" (1050mm)	Light Gray	
TS47U3248BSW	47U (88", 2200mm)	32" (800mm)	48" (1200mm)	Black	Included
TS47U3248LSW	47U (88", 2200mm)	32" (800mm)	48" (1200mm)	Light Gray	Included
TS47U3248B	47U (88", 2200mm)	32" (800mm)	48" (1200mm)	Black	
TS47U3248L	47U (88", 2200mm)	32" (800mm)	48" (1200mm)	Light Gray	

# To put it simply, we've installed your favorite accessories.

SimpliciTy enclosures are not stripped down enclosures that you will have to upgrade with additional components. These Rittal enclosures come with your favorite accessories installed and ready for deployment.





## Choose Rittal **simpliCity** For Maximum Flexibility That Delivers Maximum Cost-Efficiency

Rittal has redefined the standard in Server and Network enclosures with the simpliCity modular system, featuring tool-less, snap-in installation technology that improves operating efficiency while reducing costs. Easy to deploy and providing a stable and secure installation environment for IT equipment, the simpliCity line can be easily reconfigured to meet future installation demands. With a streamlined design providing an optimum price/performance ratio, the simpliCity line establishes a new standard in functionality, supporting the demanding requirements placed on today's server and network enclosures.

- Most commonly requested dimensions – 24"/28"/32" widths. 40"/42"/48" depths.
- Offset positioning for mounting widths of 19", also 21" and 23" possible with 28" and 32" wide enclosures
- Viewing door or vented door options
- 180° hinges on both front and rear doors for unhindered access
- Vertically split rear doors
- Multifunctional roof design for flexible cable routing options
- High load carrying capacity—up to 3,300 lbs
- Engineered solutions for cable routing and management
- Seamlessly accommodates all of Rittal's LCP in-row cooling options
- Comprehensive range of accessories for power, cable and air flow management
- Tool-free installation of many accessories





**Choose the Best:**  
Accessories deliver more  
custom design options

## System Accessories



### Viewing and Vented Doors

Choose glass for rack climate control or vented for room climate control.



### Base/Plinth System

Flexible base/plinth system for practically every application.



### Airflow Options

Baffles, gland plates and blanking panels designed to provide optimal air flow in an enclosure.



### Security Options

Flexible access, either 3-digit code keyless or master control functionality.



### Cable Management

Ducts, fingers, cable management panels, cable management walls and D-rings keep cables organized.



### Shelving and System Chassis

Install heavy equipment securely within a 19-inch rack.

# IT cooling solutions



## Cooling solutions to protect vital equipment



### **From enclosure-based to room-based thermal management.**

Controlling climate is key, and Rittal has a lock on a complete range of solutions: CRAC, in line/ in row, chillers, condensers, pipe installations, water distribution cabinets or water heat exchangers. Each product offers state-of-the-art, high efficiency climate control technology. We can support your

precise application with planning, assembly, commission and service, all from your one-stop supplier.

## **All optimally coordinated to the tailored requirements of your data center**



You know that 30-50% of your data center energy costs are attributable to your cooling infrastructure. When your best IT Cooling Solution includes Rittal, you know that you are achieving energy efficiency while you reduce investment and running costs, save resources and CO<sub>2</sub> output while your IT components work to capacity.

**Rittal is  
the leading  
provider of  
closed-loop  
cooling  
systems,  
which  
eliminates  
the need  
for aisle  
containment.**





# The facts:

## Engineered better to perform better than the competition

				
	Rittal LCP CW In Row - Open Loop	APC IN ROW 301S ACRC301S	STULZ CYBER ROW CRS 090	LIEBERT CRV CR032RC1
MAXIMUM CAPACITY (kW)	30	40	37	32
ACTUAL CAPACITY (kW)	30.7	26k	29.5	25.2
Chill Water Supply	59	59	50	50
Warm Water Return	70.3	71	62	60
Server Air In	73	75	72	75
Server Air Return	111	111	100	95
Water Flow (GPM)	18.5	16.4	17	18
Air Flow (CFM)	2900	3200	2900	2550
Power Usage (Watts)	1053	1000	1040	1300
H x W x D	78" x 12" x 48"	78" x 12" x 43"	78" x 12" x 42"	78" x 12" x 43"
Weight (lbs.)	484	406	380	365
Input Power	208 VAC, 20 Amp, 1 Phase	100-220VAC, 20 Amp, 1 Ph	100-220VAC, 20 Amp, 1 or 3 Ph	120/208-230/-460VAC, 20 Amp, 1 or 3 Ph
Power Feed	Single, ATS Optional	Dual - A & B	Single - ATS Optional	Single - ATS Optional
Air Flow Path	Closed & Open Loop	Open Loop ONLY	Open Loop ONLY	Open Loop ONLY
Max. Air Flow (CFM)	2900	3200	2900	2550
Fan Type	EC, VFD, Hot swap	VFD, Hot Swap	EC, VFD	EC, VFD
Fan Location	Front	Front	Front	Front
Fan Speed Range	0 - 100%	30-100%	0-100%	0-100%
Number of Fans	4	8	3	6
Decibels @ 100% Fan Speed	77	77.1	58	72.4d - Discharge Side
Humidity Control	No	No	No	No
Water Valve	2 Way Control	3 Way Control	2 Way (std), 3 Way (Opt)	3 Way (Std), 2 Way (Opt)
Water Connections	Top & Bottom	Top & Bottom	Top & Bottom	Top & Bottom
Pipe Connection	1 1/2"	1"	1 1/4"	1 1/4"
Condensate Pump	Optional	Standard	Standard	Optional
Touch Screen	Optional	Included	Included	Included - iCOM
Remote Monitoring	Yes	Yes	Yes	Yes
Communications Protocols	SNMP, TCP/IP	SNMP, ModBus, TCP/IP	Optional - pLAN: SNMP, ModBus, BACNet	Optional - Intellislot: SNMP, RS485 Modbus, ModbusIP/ BACNet IP

IT Cooling Solutions Comparison Chart © Rittal North America LLC. Rittal is the trademarks of Rittal North America LLC. All additional depicted trademarks are owned by the respective identified Company(ies). All non-Rittal information and data was obtained from publicly available sources, including competitor websites, consumer product catalogs and industry trade publications. Rittal North America LLC does not warrant the accuracy of any non-Rittal information or data depicted herein, and is not responsible for the inclusion of any data inaccurately published by another party. For inquiries contact [rittal@rittal.com](mailto:rittal@rittal.com).





# Choose the best: IT cooling solutions

## 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<sup>2</sup>
- 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 2200mm 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	3311.148	3311.538	3311.548	3311.568
<b>Total cooling output/number of fan modules required BTU (kW)</b>		<b>61419 (18)/2 92128 (27)/3 102364 (30)/4</b>	<b>34121 (10)/1 68243 (20)/2 102364 (30)/3</b>	<b>61419 (18)/2 92128 (27)/3 102364 (30)/4</b>	<b>136486 (40)/4 153546 (50)/5 187668 (60)/6</b>
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 <sup>3</sup> /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
Touchscreen display, color	1 pc(s).	3311.030	3311.030	3311.030	3311.030
Connection hose, bottom and top	2 pc(s).	3311.040	3311.040	3311.040	3311.040



# RiLine busbar system



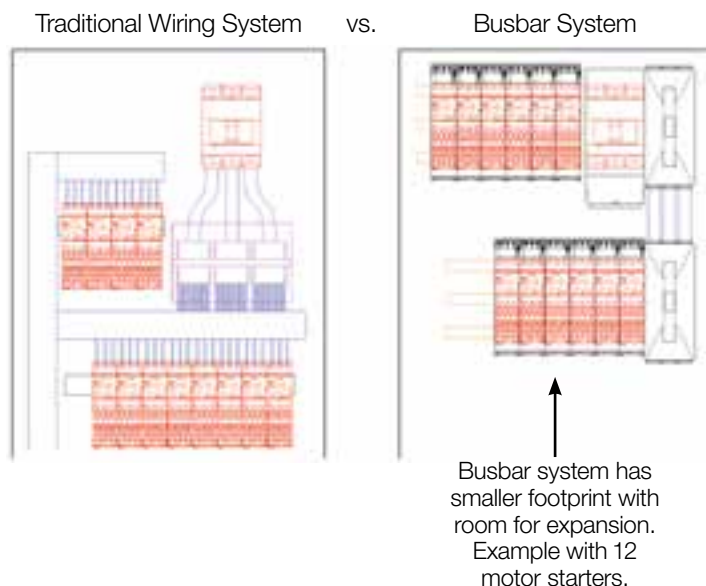
## RiLine busbar systems improve enclosure efficiency

Use of RiLine copper busbar systems provides reliable electrical power distribution, requires less panel modification and fewer contact points, and involves less wiring work. By eliminating power distribution blocks, line-side wiring and large, parallel cable runs, busbar systems save space and time for panel builders and increase contact hazard protection.



## Power management systems simplify system expansion

RiLine Busbar systems enable expansion without additional wiring. Rapidly add or change operational layouts without losing uptime. New components can be simply snapped onto the unpopulated bus system.



**Power  
management  
systems  
reduce space  
up to 50%  
within  
enclosures.**

## Flexibility is in the design

The design options for the RiLine Busbar system include 3- or 4-pole design, systems rated up to 1660A and bars centered at 60mm. You get a continuous, reliable connection, with the safety of all-around contact protection. In addition, the systems meet all international standards, including IEC, UL, and CSA.



# The facts:

## Engineered better to perform better than the competition

Aspect/Feature	Busbar	Traditional Wiring
<b>Approvals</b>	Approvals to IEC, UL, CSA, GL, DNV, CCC	Manufacturer-dependent
<b>Availability</b>	Worldwide availability	Manufacturer-dependent
<b>Cable Installation</b>	Minimized outlay for cable installation	Very high outlay and time requirement
<b>CAD data</b>	CAD data available free of charge	Manufacturer-dependent
<b>Combinability</b>	Perfect integration with the rest of the Rittal system	High outlay for integration
<b>Compactness</b>	Compact design (up to 50 per cent more compact than classic cabling)	Usually high space requirements for cable ducting, etc.
<b>Connection Types</b>	Diverse connection types in one system	Dependent on design
<b>Contact Hazard Protection</b>	Standardized and tested, all-round contact hazard protection	Dependent on solution, but usually considerable outlay (openly accessible contacts, etc.), frequently difficult to calculate, often manufactured individually, inconvenient mechanical fixings, no proof of temperature stability or observance of contact hazard protection
<b>Current Carrying Capacity</b>	Busbar supports for variable cross-sections and top-mounting	Manufacturer-dependent
<b>Dimensioning (Current, etc.)</b>	Very simple, by way of available tables or planning software	Complex (individual calculations, etc.)
<b>Electromagnetic Influence</b>	Low	Relatively high with normal cables
<b>Fire Load</b>	Low	High
<b>Installation Complexity</b>	Minimum of work (little drilling and thread cutting necessary), short installation time	Considerable materials and installation aids necessary, long installation time
<b>Manufacturer Support</b>	Flexible for devices for all usual manufacturers	Dependent on design, but mostly limited
<b>Material Quality</b>	Tested material quality	Manufacturer-dependent
<b>Power Losses</b>	Optimized power losses (no superfluous contact points)	High power losses due to high number of cables and contact points
<b>Project Planning</b>	Fast and simple, thanks to software-assisted system planning, including automated installation instructions	High outlay (distribution and cable configurations, wiring diagrams, etc.)
<b>Quality</b>	German engineered, tested to global standards	Manufacturer-dependent
<b>Retrofitting</b>	Low complexity	High complexity
<b>Screwed Connections</b>	Few screwed connections (minimized errors)	Usually high outlay for drilling, threads, etc.
<b>Service</b>	Service-friendly (very tidy and no tangles of cables)	Service-unfriendly
<b>Short Circuit Protection</b>	Pre-defined high short-circuit protection, thanks to busbar technology	Extensive calculations required for every project
<b>Space Requirements</b>	Low; maximum space utilization (power breakers, etc. integrated into system)	High; considerable space occupied by cabling and devices, as broad-scale distribution usually necessary
<b>Structure</b>	Tidy, readily comprehensible structure	Possibly confusing (due to large number of cables, etc.)
<b>System Documentation</b>	Software-assisted system documentation for IEC end users	Complex, as documentation from all individual manufacturers must be collected together
<b>System Expansion</b>	Simple expansion	Complicated expansion, as new cables need to be routed
<b>Technical Calculations</b>	Considerably reduced outlay for calculation (electrical calculations from tables or via software)	Individual calculation/planning necessary for each system (time-consuming)
<b>Testing</b>	Systems tested to current standards by accredited laboratories	Manufacturer-dependent
<b>Troubleshooting</b>	Very simple	Complicated
<b>User Safety</b>	High user safety (finger protection IPxxB)	Dependent on solution, but usually considerable outlay (openly accessible contacts, etc.)

# Choose the best: RiLine busbar systems

## Busbar improves space management over traditional wiring

RiLine copper busbar systems deliver a number of advantages for design engineers over traditional wiring of enclosures. By eliminating line-side wiring and distribution blocks, enclosure size is reduced by 50 percent. It also removes difficult electrical calculations because short-circuit and operating current ratings for specific temperatures are provided at the beginning of the project. From a design perspective, busbar systems also allow for easy system modifications and expansions.

System integrators are looking to busbar systems more and more because of the speed and ease of integration, which can reduce labor and production time up to 50 percent. Busbar systems also mean fewer panel modifications, less wiring work and fewer contact points. Integrators and panel builders also appreciate the easier connection of large cables and the improved certification process. This means quicker delivery to the customer with better power management organization.

Customers appreciate the lower maintenance and troubleshooting costs associated with better organization. As they grow their enterprise, a busbar system delivers greater flexibility without the need for additional wiring. And regardless of its location, a busbar system meets major international standards (IEC, UL, CSA) and is supported by a global network for replacement parts.



# Flange mount disconnect





**When the  
slave door  
is open,  
the power  
cannot be  
turned on.**

### **Added safety found only with Rittal**

#### **Safe, smart technology that meets and exceeds industry standards for panel builders**






Keeping your staff from opened and powered enclosures is one of the safest things you can do for them and your company. That sense of security is available with a simple switch to Rittal's TS 8 Flange Mount Disconnect. Rittal is the only manufacturer of a flange mount disconnect that truly meets and exceeds the UL508A standard for one simple reason — you cannot throw the power switch on unless all of the enclosure doors are closed. It seems like a simple thing to do, but only Rittal provides this option.

The reason is simple: when any slave door is open, the master door cannot be closed and the power cannot be turned on. This added safety feature from Rittal allows end users to further protect their staff from exposure to uninsulated live electrical controls.



# The facts:

## Engineered better to perform better than the competition

					
	<b>FMD TS 8 Enclosure 1800H1600W0500D</b>	<b>FMD IMS Enclosure 1800H1600W0550D</b>	<b>AMOD Enclosure 1832H1994W0460D</b>	<b>FMD XM Enclosure 1828H1670W455D</b>	<b>FMD XM Enclosure 1832H1689W0460D</b>
<b>Material</b>	16/14 ga carbon steel	0.104" carbon steel	11 ga carbon steel	0.125" carbon steel	11 ga carbon steel
<b>Latching System</b>	4 Point	3 Point	3 Point	3 Point	3 Point
<b>Hinge System</b>	External	Concealed	Concealed	Concealed	Continuous Hinge
<b>Handle</b>	Padlockable comfort handles with defeater function	Black padlocking handles with defeater function	Black padlocking handle with defeater function	Black padlocking handle with defeater function	Black padlocking handle with defeater function
<b>Expandable</b>	Yes	Yes	Yes	No	No
<b>Unibody or Modular</b>	Modular	Modular	Modular	Unibody	Unibody
<b>Maximum Available Height</b>	79" (2000mm)	79" (2000mm)	84" (2200mm)	90" (2286mm)	90" (2286mm)
<b>Maximum Available Width</b>	71" (1800mm)	71" (1800mm)	79" (2000mm)	78" (1981mm)	79" (2000mm)
<b>Maximum Available Depth</b>	24" (600mm)	22" (550mm)	24" (600mm)	24" (600mm)	24" (600mm)
<b>Mounting Panel Included</b>	Yes, galvanized	No	Yes, painted	Yes, white powder coated	Yes, galvanized
<b>Mounting Panel Dimensions</b>	67" x 59"	66" x 59"	60" x 72" **	60" x 60"	60" x 60"
<b>UL Type Ratings</b>	Type 12	Type 3R, 12	Type 12	Type 3R, 12, 4*	Type 12
<b>Flange Trim Door</b>	Yes, 125mm wide	Yes, 178mm wide	No, 56mm offset	No, 56mm offset	No, 56mm offset
<b>Operator Handle Installation</b>	Simple, access behind handle with flange door open	Simple, access behind handle with flange door open	Simple, no behind access	Simple, no behind access	Simple, no behind access
<b>Operator Handles Acceptability</b>	Both low and high amperage handles with adapter plates	Low amperage only, large amperage with field cutouts only	Both low and high amperage handles with adapter plates	Low amperage only, large amperage with field cutouts or special order with universal cutout	Both low and high amperage handles with adapter plates
<b>Door to Door Interlocking</b>	Factory installed with added safety, slave door must be closed before powering	Factory installed simple design, slave door can't be opened first, but can remain open with power ON	Factory installed simple design, slave door can't be opened first, but can remain open with power ON	Factory installed simple design, slave door can't be opened first, but can remain open with power ON	Factory installed simple design, slave door can't be opened first, but can remain open with power ON

\* Only a handful of sizes

\*\* Bigger size used for comparison

Flange Mount Housing Comparison Chart © Rittal North America LLC. Rittal is a trademark of Rittal North America LLC. All additional depicted trademarks are owned by the respective identified Company(ies). All non-Rittal information and data was obtained from publicly available sources, including competitor websites, consumer product catalogs and industry trade publications. Rittal North America LLC does not warranty the accuracy of any non-Rittal information or data depicted herein, and is not responsible for the inclusion of any data inaccurately published by another party. For inquiries contact [rittal@rittal.com](mailto:rittal@rittal.com).



# Choose the best: Flange mount disconnect

	FMDC Part Number	Dimensions HxWxD		Sidewalls Part Number	Mounting Panel (included) HxW		4" (100mm) High Flex Block Plinths Part Numbers			4" (100mm) High Plinths Part Numbers	
		inches	mm		inches	mm	front & rear	sides	corners	front & rear	sides
Single Door	9951.134	71x32x16	1800x0800x0400	8184.235	67x28	1696x0699	8100.800	8100.400	8100.000	8601.800	8601.040
	9951.135	71x32x20	1800x0800x0500	8185.235	67x28	1696x0699	8100.800	8100.500	8100.000	8601.800	8601.050
	9951.136	71x39x20	1800x1000x0500	8185.235	67x35	696x0899	8100.010	8100.500	8100.000	8601.800	8601.050
	9951.142	79x32x20	2000x0800x0500	8105.235	75x28	1896x0699	8100.800	8100.500	8100.000	8601.800	8601.050
	9951.143	79x32x24	2000x0800x0600	8106.235	75x28	1896x0699	8100.800	8100.600	8100.000	8601.800	8601.060
	9951.144	79x32x32	2000x0800x0800	8108.235	75x28	1896x0699	8100.800	8100.800	8100.000	8601.800	8601.080
	9951.145	79x39x20	2000x1000x0500	8105.235	75x35	1896x0899	8100.010	8100.500	8100.000	8601.800	8601.050
	9951.146	79x39x24	2000x1000x0600	8106.235	75x35	1896x0899	8100.010	8100.600	8100.000	8601.800	8601.060
	9951.153	87x32x24	2200x0800x0600	8126.235	83x28	2096x0699	8100.800	8100.600	8100.000	8601.800	8601.060
	9951.154	87x39x20	2200x1000x0500	9964.893	83x35	2096x0899	8100.010	8100.500	8100.000	8601.800	8601.050
Double Door	9951.138	71x63x20	1800x1600x0500	8185.235	67x59	1696x1499	8100.160	8100.500	8100.000	8901.920	8601.050
	9951.140	71x71x20	1800x1800x0500	8185.235	67x67	1696x1699	8100.180	8100.500	8100.000	8901.920	8601.050
	9951.147	79x63x20	2000x1600x0500	8105.235	75x59	1896x1499	8100.160	8100.500	8100.000	8901.920	8601.050
	9951.148	79x63x24	2000x1600x0600	8106.235	75x59	1896x1499	8100.160	8100.600	8100.000	8901.920	8601.060
	9951.150	79x71x20	2000x1800x0500	8105.235	75x67	1896x1699	8100.180	8100.500	8100.000	8901.920	8601.050
	9951.151	79x71x24	2000x1800x0600	8106.235	75x67	1896x1699	8100.180	8100.600	8100.000	8901.920	8601.060

Accessories		
Description	Part Number	
1 Low amp adapter plate (included with enclosure)	9951.157	
1 High amp adapter plate	9951.155	
1 Blank adapter plate	9951.159	
2 Coupling for interconnecting rod	9951.158	
3 Connecting rod replacement kit	9951.160	
4 Slave door interlocking kit for single door enclosures	4911.000	
4 Slave door interlocking kit for double door enclosures	4911.100	
5 Interlocking rods 24" (600mm)	4916.000	
5 Interlocking rods 32" (800mm)	4918.000	
5 Interlocking rods 47" (1200mm)	4920.000	
6 Interlock activator*	4912.000	



# Hygienic design wallmount







**Roof angled  
forward at  
30° to allow  
fluid to drain  
rapidly and  
to be easily  
inspected**

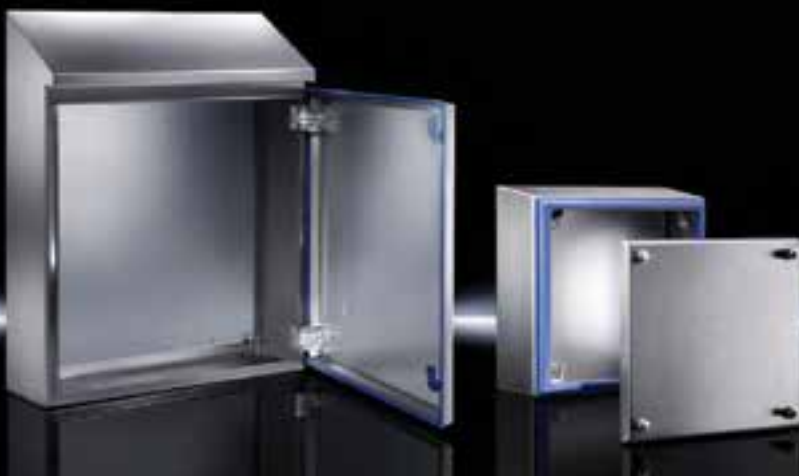
### **Excellence in hygienic standards for the food industry**

Successful Hygienic Design (HD) helps you battle the ever-present risk of contamination. It is crucial to maximize the units' safety for open processes. Our terminal boxes and compact enclosures are key elements in our plan for your cleaning solution. But we don't stop there. Rittal's baying system and production data enclosures have a number of flexible design options that can be integrated into production clean rooms for almost endless possibilities. Compatible accessories such as wall spacer brackets and HD-compatible cable glands customize your unit to your exact specifications.

### **It's all about cleanliness**

Our designs optimize your cleaning. There is no external cavity between the enclosure and the door. Strategic silicone sealing is joint-free, extends all around, and is a distinctive blue color to distinguish it from foodstuffs. Hinges are inside the sealing zone to create an exceptionally easy-to-clean surface on the outside. Every surface is designed with durability while being easy to maintain, from captive screws to stainless steel locks. Contamination risks are minimized, reducing the excessive use of cleaning and disinfecting agents.





# Choose the best: Hygienic design wallmount

## Material:

- Enclosure and cover/door: Stainless steel 1.4301 (AISI 304)
- Screw fasteners/lock inserts: Stainless steel
- Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600
- Mounting plate: Sheet steel (HD compact enclosures only)

## Surface finish:

- Enclosure and cover/door: Brushed, grain 400, RA < 0.8 µm
- Mounting plate: Zinc-plated
- Seal: Blue, dyed (RAL 5010)

## Approvals

- UL + C-UL
- DGUV

	Rittal Hygienic Design	Hoffman Watershed
Roof Design	30° forward sloping roof drains rapidly and prevents objects from being placed on top	20° forward sloping angle limits drainage
	Overhanging roof protects the door seal	
Gasket	Joint-free blue silicon gasket sharply contrasts with food deposits	PU foam absorbs liquids and detergents and has shorter service life
	Easily replaceable	Not replaceable
Seal	Gapless seal provided on the entire circumference	Space between door and body is difficult to clean
	No external cavity between enclosure and door	
Door Design	10° circumferential chamfered door fold prevents liquid accumulation	Angled door seal preventing liquid accumulation
Hinge Design	Hinges located inside the sealing zone improves exterior cleanability	Hinges located outside the sealing zone accumulate contaminants and makes cleaning more difficult
Lock	Unique external contour meets hygiene requirements	Screw driver insert lock is difficult to clean
	Prevents unauthorized access	
Accessories	Leveling feet, cable glands, retrofit accessories available	No leveling feet, cable glands or retrofit accessories available

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# The facts:

## Engineered better to perform better than the competition

### Protection category IP to IEC 60 529:

- IP 66

### Protection category IP to DIN 40 050-9:

- IP 69K

### Supply includes:

- Enclosure of all-round solid construction
- Cover/door
- Mounting bracket (pre-assembled, HD terminal boxes only)
- Mounting plate (HD compact enclosures only)

### Protection category NEMA:

- NEMA 13
- NEMA 4X
- NEMA 3R (HD terminal boxes only)

### Technical details:

Available on the Internet

### Terminal boxes

<b>Width (front) in. (mm)</b>	Packs of	5.9" (150)	5.9" (150)	7.8" (200)	11.8" (300)	15.7" (400)	15.7" (400)
<b>Width (rear) in. (mm)</b>		6.7" (172)	6.9" (177)	8.9" (227)	12.8" (327)	16.6" (427)	16.8" (427)
<b>Height (front) in. (mm)</b>		5.9" (150)	5.9" (150)	7.8" (200)	7.8" (200)	7.8" (200)	11.8" (300)
<b>Height (rear) in. (mm)</b>		6.7" (172)	6.9" (177)	8.9" (227)	8.9" (227)	8.9" (227)	12.8" (327)
<b>Depth in. (mm)</b>		3.1" (80)	4.7" (120)	4.7" 120	4.7" 120	4.7" 120	4.7" 120
<b>Model No.</b>	1 pc(s).	<b>1670.600</b>	<b>1671.600</b>	<b>1672.600</b>	<b>1674.600</b>	<b>1675.600</b>	<b>1676.600</b>
<b>Weight lbs. (kg)</b>		3.1 lbs. (1.7)	4.1 lbs (2.2)	6.9 lbs. (3.0)	8.1lbs. (4.0)	11lbs. (5.0)	13lbs. (5.9)

### Accessories

<b>HD wall spacer bracket</b>	1 pc(s).	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100
<b>Mounting plates</b>	1 pc(s).	1560.700	1560.700	1562.700	1563.700	1564.700	1568.700
<b>Support rails TS 35/7.5</b>	10 pc(s).	2314.000	2314.000	2315.000	2316.000	2317.000	2317.000
<b>HD cable gland</b>		Details on Rittal.us					

### Compact enclosure HD

<b>Width in. (mm)</b>	Packs of	8.6" (220)	15.3" (390)	15.3" (390)	20" (510)	24" (610)	24" (610)
<b>Height (front) in. (mm)</b>		13.7" (350)	16.9" (430)	25.5" (650)	21.6" (550)	16.9" (430)	25.5" (650)
<b>Height (rear) in. (mm)</b>		17.2" (437)	21.6" (549)	30.2" (769)	26.3" (669)	23.6" (601)	30.2" (769)
<b>Depth in. (mm)</b>		6.1" (155)	8.2" (210)	8.2" (210)	8.2" (210)	11.8" (300)	8.2" (210)
<b>Mounting plate width in. (mm)</b>		6.3" (162)	13.1" (334)	13.1" (334)	17.6" (449)	21.6" (549)	21.6" (549)
<b>Mounting plate height in. (mm)</b>		10.8" (275)	13.9" (355)	22.4" (570)	18.5" (470)	13.9" (355)	22.4" (570)
<b>Model No.</b>	1 pc(s).	<b>1302.600</b>	<b>1306.600</b>	<b>1308.600</b>	<b>1307.600</b>	<b>1320.600</b>	<b>1310.600</b>
<b>Weight lbs. (kg)</b>		14.8 lbs. (6.6)	32.6 lbs. (14.7)	39.7 lbs. (17.9)	43.6 lbs. (19.7)	47.1 lbs. (21.7)	60.6 lbs. (27.4)

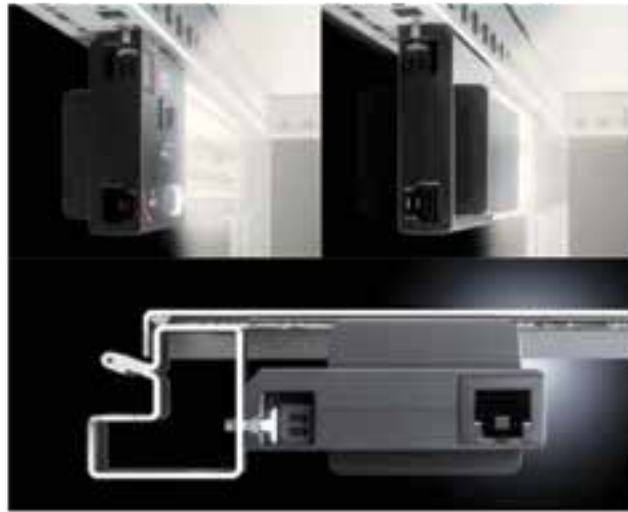
<b>Width (B) mm</b>	Packs of	31.8" (810)	31.8" (810)	31.8" (810)	31.8" (810)	24" (610)	29.9" (760)
<b>Height (front) in. (mm)</b>		16.9" (430)	25.5" (650)	41.3" (1050)	49.2" (1250)	31.8" (810)	31.8" (810)
<b>Height (rear) in. (mm)</b>		21.6" (549)	32.3" (821)	48" (1221)	55.9" (1421)	36.5" (929)	38.6" (981)
<b>Depth in. (mm)</b>		8.02" (210)	11.8" (300)	11.8" (300)	11.8" (300)	8.2" (210)	11.8" (300)
<b>Mounting plate width in. (mm)</b>		29.4" (749)	29.1" (739)	29.1" (739)	29.1" (740)	21.6" (549)	27.7" (704)
<b>Mounting plate height in. (mm)</b>		22.4" (570)	13.9" (355)	37.5" (955)	45.4" (1155)	28.7" (730)	28.7" (730)
<b>Model No.</b>	1 pc(s).	<b>1314.600</b>	<b>1315.600</b>	<b>1316.600</b>	<b>1317.600</b>	<b>4000.012</b>	<b>4000.014</b>
<b>Weight lbs. (kg)</b>		56.3 lbs. (25.5)	85.1 lbs. (39.0)	132.7 lbs. (60.1)	156.8 lbs.(71.0)	70.8 lbs. (32)	74.1 lbs. (34)

### Accessories

<b>HD wall spacer bracket</b>	1 pc(s).	4000.100		
<b>HD cable gland</b>		Details on Rittal.us		
<b>HD hinge</b>	2 pc(s).	4000.130		
<b>Rails for interior installation</b>	4 pc(s).	Details on Rittal.us		
<b>HD T-handle</b>	1 pc(s).	4000.065		

# LED light





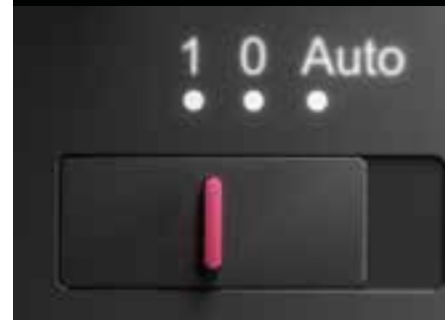
### **Brilliant! innovative lighting designed for enclosures and sealed cases**

Shine some light in your enclosure with the Rittal LED Compact Lighting System. It is safe, with an extra low voltage range. And it packs the newest generation of LED technology for double the luminous flux of past lighting. A Fresnel structured optical cover spreads light coverage throughout the enclosure. With the LED system, you blend economical energy use with low maintenance.

### **Get attached to intelligent lighting**

For optimal illumination of every corner of your enclosure, Rittal LED Compact Lighting is perfectly integrated into the TS 8. Assembly is fast and tool-free because the light simply clips to the latch-in hook pattern, and optional screw fastening is available. Or go magnetic, for free positioning within the enclosure. A motion-detection or door-operated switch is available for hands-free illumination. The LED system is suitable for immediate global use with a wide range of voltages from 100 to 240 V (AC) and 24 V (DC).

**LED lights provide brilliance at 1200 lumens.**





# The facts:

## Engineered better to perform better than the competition

### Benefits:

- Optimum illumination of the entire enclosure
- Optional clip, screw or magnetic attachment
- A configuration to suit every application

### Material:

- Plastic
- Aluminum

### Color:

- Enclosure: RAL 7016

### Light Color:

- 4000 K (neutral white)

### Supply Includes:

- Assembly screws

	 	 	 	 	 
	<b>RITTAL</b> <b>LED System Light</b> <b>25003x0</b>	<b>HOFFMAN</b> <b>LED Light</b> <b>LEDA1S35</b>	<b>STEGO</b> <b>Ecoline LED</b> <b>025 02540.0-11</b>	<b>SAGINAW</b> <b>LED Strip Light</b> <b>SCE-SLMS, SCE-SLOF</b>	<b>SEIFERT</b> <b>stripLite SL-4000</b> <b>400000, 400100</b>
<b>Max Luminosity</b>	1200/900 Lm	400 Lm	400 Lm	400 Lm	400 Lm
<b>Light Color</b>	4000K (neutral white)	6000-7000K	6000-7000K	6500K	6500K
<b>Adjustable Light Distribution</b>	Yes	Yes	Yes	Yes	Yes
<b>Motion Sensor Option</b>	Yes	Yes	Yes	Yes	Yes
<b>Outlet Option</b>	Yes, European 16A	No	No	No	No
<b>Mounting Options</b>	Toolless clip, screw, magnet	Screw, magnet	Screw, magnet, clip	Screw, magnet, clip	Screw, magnet, clip
<b>Cable Connection</b>	90° rotating	One direction only	One direction only	One direction only	One direction only
<b>Daisy Chain Wiring</b>	up to 15 lights without outlet, up to 10 lights with outlet	up to 10 lights	up to 10 lights	up to 16 AC lights up to 8 DC lights	up to 16 AC lights up to 8 DC lights
<b>AC/DC Versions</b>	AC 100-240V DC 24V	AC 100-240V DC 20-60V	AC 100-240V DC 20-60V	AC/DC 24-240V	AC/DC 24-240V
<b>Product Cover</b>	Transparent optical with Fresnel structure	Plastic, transparent	Plastic, transparent	Transparent	Transparent
<b>Overall Product Length</b>	17.2" (437mm)	13.8" (351mm)	13.8" (351mm)	14" (357.4mm)	14" (357.4mm)
<b>UL Certification</b>	Yes, UL listed E489137	Yes, E234324	Yes, E234324	Yes, E358386	Yes, E358386








LED Housing Comparison Chart © Rittal North America LLC. Rittal is a trademark of Rittal North America LLC. All additional depicted trademarks are owned by the respective identified Company(ies). All non-Rittal information and data was obtained from publicly available sources, including competitor websites, consumer product catalogs and industry trade publications. Rittal North America LLC does not warranty the accuracy of any non-Rittal information or data depicted herein, and is not responsible for the inclusion of any data inaccurately published by another party. For inquiries contact [rittal@rittal.com](mailto:rittal@rittal.com).

# Choose the best: LED light



## Note:

- Connection accessories should be ordered separately
- Information on other country-specific versions with socket can be found on the internet

								
Model No.		2500.314	2500.300	2500.214	2500.200	2500.220	2500.114	2500.104
Output (lumen)		1200	1200	900	900	900	600	400
Length (inches/mm)		17/437	17/437	17/437	17/437	17/437	13/337	10/262
Motion sensor		■	■	–	–	–	–	–
Equipment	Rated operating voltage	100 – 240 V AC	■	■	■	–	■	■
	24 V DC	–	–	–	–	■	–	–
	Socket – NEMA	■	–	■	–	–	–	–
	90° rotating connector	■	■	■	■	■	–	–
	Adjustable light direction	■	■	–	–	–	–	–
	Adjustable light distribution	■	■	■	■	■	–	–
Protection class II		II (all-insulated)				III (SELV)	II (all-insulated)	
Approvals	UL	■	■	■	■	■	■	■
	cUL	■	■	■	■	■	■	■
	CCC	–	■	–	■	–	■	■
	ENEC	■	■	■	■	■	■	■
Installation type	Screw-fastening	■	■	■	■	■	■	■
	Clip attachment	■	■	■	■	■	■	■
	Magnetic attachment to surfaces (accessory)	–	■	–	■	■	■	■
Connection options	Infeed	3-pole	3-pole	3-pole	3-pole	2-pole	2-pole	2-pole
	Through-wiring	3-pole	3-pole	3-pole	3-pole	2-pole	2-pole	2-pole
	Door-operated switch (accessories)	–	–	■	■	■	■	■
Mounting options	Enclosures with a 22mm pitch pattern	Screw Fastening/clip	Directly on the profile	Directly on the profile	Directly on the profile	Directly on the profile	Directly on the profile	Directly on the profile
	AE		With universal bracket					
Accessories								
Universal bracket		2373.300	2373.300	2373.300	2373.300	2373.300	2373.300	2373.300
Mounting kit magnet		–	2500.490	–	2500.490	2500.490	2500.490	2500.490
Door-operated switch		–	–	2500.460	2500.460	2500.460	2500.460	2500.460
Door-operated switch, UL		–	–	2500.470	2500.470	2500.470	2500.470	2500.470
Connection accessories								
Infeed, 2-pole		–	–	–	–	2500.410	2500.420	2500.420
Infeed, 2-pole, ENEC, UL		–	–	–	–	–	2500.520	2500.520
Infeed, 3-pole		2500.400	2500.400	2500.400	2500.400	–	–	–
Infeed, 3-pole, ENEC, UL		2500.500	2500.500	2500.500	2500.500	–	–	–
Through-wiring, 2-pole		–	–	–	–	2500.440	2500.450	2500.450
Through-wiring, 2-pole, ENEC, UL		–	–	–	–	–	2500.550	2500.550
Through-wiring, 3-pole		2500.430	2500.430	2500.430	2500.430	–	–	–
Through-wiring, 3-pole, ENEC, UL		2500.530	2500.530	2500.530	2500.530	–	–	–

Metric measurements are exact, imperial measurements are rounded.



# Optimum surface protection with innovative technology



# Choose the best: Rittal surface protection

**A finish  
and barrier  
of protection  
that will last  
for years.**

## **Eco-friendly coatings extend product life**

The three-phase eco-friendly finish provides the industry's best protection against corrosion and is resistant to mineral oils, lubricants, machining emulsions and solvents. Unlike most other enclosure manufacturers, Rittal uses the same paint and process as the automotive industry to guarantee a finish and barrier of protection that will last for years to come. Rittal uses a process that's free from phosphates, solvents, and toxic heavy metals to coat and protect its products:

### **Raw material**

#### **1st phase: Nanoceramic coating**

- Nanoparticles form a solid connection with the metal surface
- An ultra-thin, glass-like layer is created to ensure extreme durability

### **Primer**

#### **2nd phase: Electrophoretic dipcoat-priming**

- The material is dipped in eco-friendly, water-based paint free of heavy metals, chromates and silicon
- The process creates even layers on the surfaces, edges and hollow spaces, which ensures a complete seal
- Stove enameling of the primer creates a layer that's approximately 20 µm thick

### **Powder**

#### **3rd phase: Textured powder-coating**

- The eco-friendly powder coating on a polyester resin delivers excellent mechanical and electrostatic resistance, and is free of heavy metals, chromates and silicone
- The decontaminatable coating creates excellent chemical, temperature and weather resistance
- Stove enameling of the powder coating creates a layer approximately 80 µm thick



# Rittal Value Chain

## Link to the value chain



From the very first customer interface through every process necessary to complete a customer's order... each step forms a link in the Rittal Value Chain.

Every step optimizes your production process to optimize your efficiency potential. Requirements are defined collaboratively to simulate your control panel design. In addition, individual production stages are validated and documented in the virtual

design. A final check ensures materials and resources will be efficiently utilized, and then the design is output to the machine for production. Once complete, and delivered safely, your system is seamlessly installed. After your purchase, Rittal provides ongoing service support, assuring your complete satisfaction.

Rittal brings the Industry 4.0 Value Chain to control panel designers at any organization of any size. You will appreciate the effective production and increased flexibility for your industry edge.



**Rittal is the only  
manufacturer to provide  
solutions across the  
entire value chain**

## **EPLAN**

### **efficient engineering**

As a world-class suite of CAE software solutions, EPLAN provides design automation, automatic report generation, and data integration tools that can reduce engineering times by 50% when compared with traditional, manually intensive CAD-based drafting packages. Based on a common database architecture, EPLAN facilitates inter-departmental collaboration through the following efficiency and quality improving products:

- EPLAN Electric P8: For the design and documentation of electrical schematics and layouts.
- EPLAN Pro Panel: For mounting panel and entire enclosure layouts and virtual verification in 3D.
- EPLAN Fluid: For the design and documentation of hydraulic, pneumatic, cooling and lubrication schematics and layouts.
- EPLAN Preplanning: For capturing preliminary project data to be used in detailed engineering, as well as the design and documentation of I&C systems and P&IDs.
- EPLAN Data Portal: An integrated, web-based library of up-to-date, certified manufacturers' parts data.
- EPLAN Engineering Configuration (EEC): A modular, rule-based configurator that binds together the mechatronic aspects of mechanical, electrical and software engineering, as well as documentation.
- EPLAN Harness ProD: For the design and documentation of wire harnesses and cable routing in 2D/3D, from the digital prototype to the automatic generation of production documents, including 1:1 nailboards.



- **Process consulting**
- **Engineering software**
- **Implementation**
- **Global support**





# Rittal Value Chain

**Rittal: world leader in the field of IT and industrial enclosure systems, climate control, and IT infrastructure solutions**

When you specify product for a comprehensive data center or a single stand-alone enclosure unit, know that Rittal keeps your user experience at the forefront in everything they do. Our innovations don't simply introduce something new and different, they solve a problem, improve your efficiency, lower your costs or decrease your CO<sub>2</sub> footprint. We chose our superior stainless steel for TS 8 to withstand your most aggressive environment. We developed Blue e+ to be the world's most efficient cooling unit to save you operating costs, and give your components a longer service life. Rittal wants to give you and your company the global competitive advantage you deserve.



**Value chain  
links engineering  
to manufacturing.**



## Rittal Automation Systems (RAS) to optimize your panel building processes



We've automated panel building and switchgear engineering with a comprehensive range of solutions from manual tools to fully mechanical engineering solutions. We can assist in implementing the exact modifications for your individual panels.

- **Machining:** Discover our solutions for the fully automated, fast, precise and reliable milling or laser machining of enclosures and cases, plus cut-optimized machining of cable ducts and DIN rails.
- **Assembly:** Find enhanced efficiency with automated production of clamping strips and ergonomic component mounting systems.
- **Wire Processing:** Professional and practical solutions for wire machining and processing support simple and reliable handling.
- **Wiring:** Our fully automated wiring of mounting plates offers efficient wiring and intuitive control.
- **Tools:** High quality manual tools are available for use by those with high professional standards.
- **Handling:** Ergonomic, efficient handling systems simplify transport and lifting operations.

**For each step, Rittal Automation Systems will simplify and streamline your panel building process.**



# Rittal REV





**A Rittal  
REV Truck  
visit is an  
event not to  
be missed**



### **Seeing is believing with Rittal Expo Vehicles and mobile design center**

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- Climate Control
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- Software & Services

## **Rittal North America LLC**

Woodfield Corporate Center

425 North Martingale Road, Suite 400 • Schaumburg, Illinois 60173 • USA

Phone: 937-399-0500 • Toll-free: 800-477-4000

Email: [rittal@rittal.us](mailto:rittal@rittal.us) • Online: [www.rittal.us](http://www.rittal.us)

## **Rittal Systems Ltd.**

6485 Ordan Drive • Mississauga, Ontario L5T 1X2 • Canada

Phone: 905-795-0777 • Toll-free: 800-399-0748

E-Mail: [marketing@rittal.ca](mailto:marketing@rittal.ca) • Online: [www.rittal.ca](http://www.rittal.ca)

## **Rittal Mexico**

Dr. Roberto Gayol 1219-1B • Col. Del Valle Sur, 03100 • Mexico, D.F.

Phone: (+52) (55) 5559-5369 • Toll-free: 01 800 8 Rittal (748.825)

E-Mail: [info@rittal.com.mx](mailto:info@rittal.com.mx) • Website: [www.rittal.com.mx](http://www.rittal.com.mx)

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