Rittal – The System.

Faster – better – everywhere.

Blue e+ chillers with the e+ principle

ENCLOSURES | POWER DISTRIBUTION | CLIMATE CONTROL | IT INFRASTRUCTURE | SOFTWARE & SERVICES

RITTAL

FRIEDHELM LOH GROUP

Rittal – The System.

Faster – better – everywhere.

Blue e+ chillers

The world's most efficient range of chillers.

The e+ principle:

- **Efficient –** Energy savings of up to 70% thanks to DC inverter technology
- **Flexible –** Worldwide use due to international approvals, multi-voltage capability, high operating limits and pre-configured option packages
- **Reliable –** Longer service life for all components and high control accuracy for optimum workpieces thanks to component-friendly cooling and integrated monitoring sensor technology
- **User-friendliness –** Intuitive operation due to touch display and intelligent interfaces

IT INFRASTRUCTURE

SOFTWARE & SERVICES

RITTAL

The e+ principle

Pioneering energy efficiency thanks to DC inverter technology

Incredibly efficient

- By using DC inverter technology as standard (speed-controlled components) and an electronic expansion valve, the cooling power is adapted automatically to the load profile of the relevant application. As a result, only as much power is generated as is actually needed.
- The optional HGBP (hot gas bypass) controller has been eliminated, so the compressor no longer needs to run permanently at full power.

Transparent efficiency comparison

- Energy Efficiency Ratio (EER) – the standard-compliant efficiency value
- Seasonal Energy Performance Ratio (SEPR) – the power-specific efficiency value for actual annual energy consumption

Eco-friendly

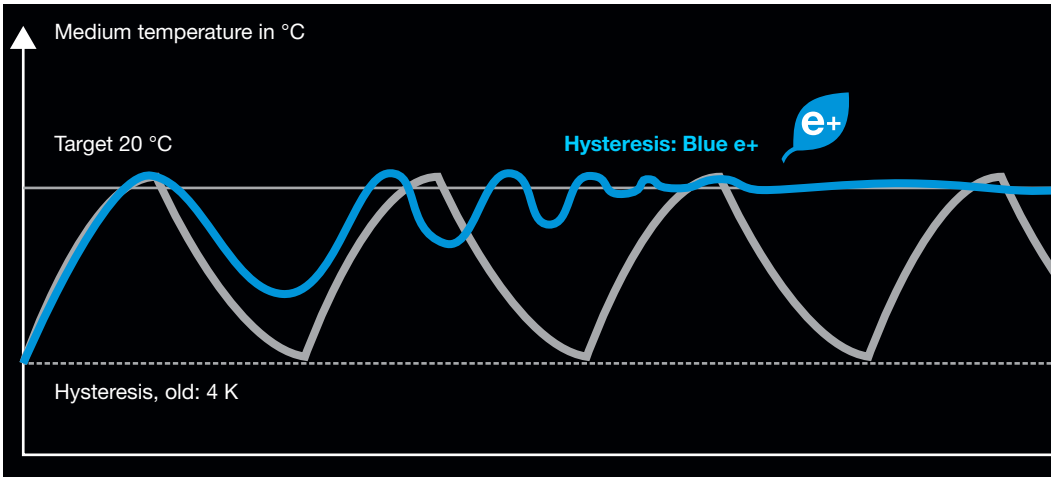
- 55% less refrigerant as a result of using micro-channel technology
- No galvanic corrosion, as the microchannel heat exchanger is 100% aluminium

Amazingly economical

- Energy savings of up to 70%
- Longer service life due to component-friendly cooling
- High control accuracy thanks to needs-based DC inverter technology with two regulating modes
- Excellent operational reliability thanks to integrated flow sensor, overflow valve and electronic fill level monitoring

Easy to calculate

- Calculate energy savings with the efficiency calculator
- Precise payback calculation



1 Electrical interfaces
2 Master switch
3 Water connections
4 Adjustable overflow valve
5 Drainage

Rittal specifies the SEPR to indicate a chiller's actual efficiency, since a precise calculation must be made in a power-specific temperature profile. The standard point for determining the EER does not make allowance for actual fluctuations in load profiles.


20
RITTAL
Blue e+
Daten wurden am 12.03. um 06:10 Uhr
erfolgreich übertragen
EER
20
Es liegen keine Syste
RITTAL

The e+ principle

Easy touch operation and intelligent interfaces

Find out faster

- Fast unit analysis using RiDiag III software via USB port
- Remote monitoring via Ethernet

Blue e+ app

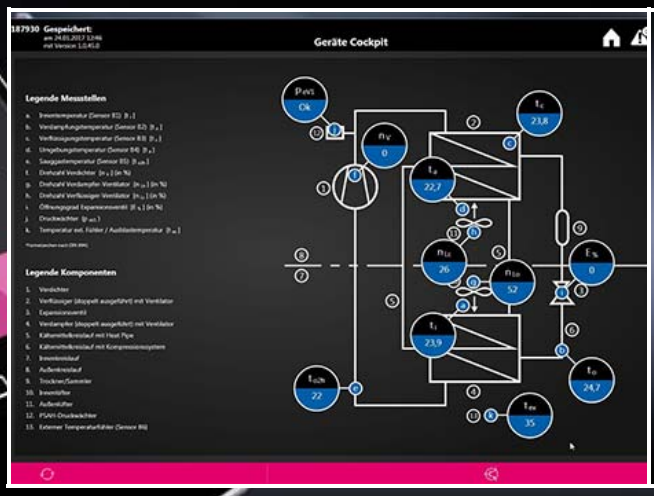
- Contactless on-site information sharing and fast, direct analysis via an NFC interface
- Send simple repair, maintenance and spare parts enquiries from a smartphone
- Save unit data directly on the unit

Easier to operate

- Fast parameterisation, data reading and plain-text system messages via the intelligent, multilingual, industry-grade display

Blue e+ update function

- For updating Blue e+ firmware
- Updating of language packs in 21 different languages
- Download at www.rittal.com



The e+ principle

Flexibility thanks to easy assembly

Mounting and installation

- Easy mounting thanks to plug and play
- Handles for removal and mounting of side panels
- Eyebolts make transport easier
- Customised waste air routing via radial fans enables flexible installation on walls and machinery
- Identical footprint for all performance classes
- Standardised water connections and externally adjustable overflow valve (bypass valve)
- Extensive range of accessories

Pre-configured option packages, e.g.

- Speed-controlled pump
- Integrated free cooler (hybrid operation)
- Water-cooled condenser
- And much more besides at www.rittal.com

Maximum flexibility due to unique multi-voltage capability

- One unit for all voltages and networks, suitable for worldwide use thanks to inverter technology:
  - 380 to 415 V, 3~, 50 Hz (±5%)
  - 440 to 480 V, 3~, 60 Hz (±5%)
- International approvals and certifications:
  - cULus Listed
  - EAC
  - TÜV Nord-tested output measurement

Design

- Compact and modular design
- Minimal footprint 0.29 m^2
- Service-friendly thanks to optimum accessibility of all components
- Easy replacement of components
- High operating limits: -5 °C to +50 °C

Chiller Blue e+

Accessories for climate control Cat. 35, page 454 **Chiller configurator** Cat. 35, page 475

Benefits:
- Blue e+ chillers ensure centralised and efficient cooling of liquid media with a high level of temperature accuracy and innovative DC inverter technology
- Suitable for international use thanks to its unique multi-voltage capability (without rewiring) and high operating limits
- Maximum reliability thanks to integral overflow valve and monitoring sensors
- Intuitive operation due to touch display and intelligent interfaces
- Compact and modular layout ensures minimum footprint
- Pumps with highly efficient IE3 motors

Temperature control:
- e+ controller (factory setting +20 °C)

Colour:
- Textured RAL 7035

Protection category IP to IEC 60 529:
- IP 24

Supply includes:
- Complete unit ready for connection (plug-in terminal strip)

Approvals:
Available on the Internet

Performance diagrams:
Available on the Internet

Output class 2500 – 5500 W

Model No.	Packs of	**3320.200**	**3334.300**	**3334.400**	Page
Total cooling output at T_w = 18 °C/T_u = 35 °C to DIN EN 14511 kW		**2.5 / 2.4**	**4 / 3.9**	**5.5 / 5.4**	
Power consumption P_{el} 50/60 Hz kW		1.19 / 1.33	1.66 / 1.91	2.45 / 2.63	
Rated operating voltage V, ~, Hz		380 - 415, 3~, 50 440 - 480, 3~, 60	380 - 415, 3~, 50 440 - 480, 3~, 60	380 - 415, 3~, 50 440 - 480, 3~, 60	
Width mm		450	450	450	
Height mm		820	820	1000	
Depth mm		710	710	710	
Rated current max. A		2.17 / 1.95	3.95 / 3.47	3.97 / 3.47	
Pre-fuse A		15	15	15	
Operating temperature range		-5 °C...+50 °C	-5 °C...+50 °C	-5 °C...+50 °C	
CO_2 equivalent (CO_2e) t		0.66	1.09	1.33	
Global Warming Potential (GWP)		1430	1430	1430	
Refrigerant g		R134a, 460	R134a, 760	R134a, 930	
Water connection ¾" internal thread		■	■	■	
Pump pressure bar		2.5 / 3.6	3.3 / 4.9	3.3 / 4.9	
Volumetric flow (cooling medium) l/min		7	15	15	
Temperature hysteresis		± 0.5 K	± 0.5 K	± 0.5 K	
Temperature of liquid		+5 °C...+35 °C	+5 °C...+35 °C	+5 °C...+35 °C	
Design		hermetically open	hermetically open	hermetically open	
Tank		PE plastic	PE plastic	PE plastic	
Tank capacity l		12	12	12	
Weight as delivered kg		84.0	90.0	96.0	
Accessories					
Filter mat for cooling units, air/air heat exchangers and chillers	3 pc(s).	3285.920	3285.920	3285.900	Cat. 35, 454
Filter mat for Blue e+ chillers (inverter housings)	3 pc(s).	3285.940	3285.940	3285.940	
Metal filters	1 pc(s).	3285.930	3285.930	3285.910	Cat. 35, 455
Temperature sensor	1 pc(s).	3124.400	3124.400	3124.400	Cat. 35, 470
IoT interface	1 pc(s).	3124.300	3124.300	3124.300	11
Cooling medium (ready-mixed)		see page	see page	see page	Cat. 35, 465
Cross member	2 pc(s).	8601.680	8601.680	8601.680	12
Levelling feet		see page	see page	see page	12
Twin castors	1 pc(s).	6148.000	6148.000	6148.000	12

IoT interface

The IoT interface is used to link Rittal components such as Blue e+ cooling units, Blue e+ chillers, smart monitoring systems etc. to the customer's own monitoring and/or energy management systems. Data may be integrated both horizontally and vertically into data collectors and processors, to allow the long-term logging and evaluation of device data, statuses and system messages.

Benefits:
- The IoT interface is middleware, whose interfaces allow a variety of devices and systems to communicate with one another. The data can then be forwarded into superordinate systems.
- Central element for the intelligent networking of Rittal components
- Up to 5 IoT interfaces may be connected in series
- Simple connection of up to two Blue e+ cooling units or chillers
- Compatible with up to 32 CMC III sensors and the Smart monitoring system

Material:
- Plastic to UL 94-V0

Colour:
- RAL 7016 Anthracite grey

Protection category IP to IEC 60 529:
- IP 20

Supply includes:
- USB cable (USB-A connector on micro-USB-B connector)
- Angle bracket for Blue e+ cooling unit

Note:
- The IoT interface is only supported by Blue e+ cooling units from firmware version 1.11.0 or above. If applicable, update the firmware using the RiDiag III software (3159.300).

Assembly

- The IoT interface can be secured on a 35 x 7.5 top hat rail to DIN EN 60715 using a spring-loaded metal clip, or to the rear of a Blue e+ cooling unit using the angle bracket.

W x H x D mm	18 x 117 x 120
For	Blue e+ cooling units Blue e+ chillers Smart Monitoring System CMC III sensors
Operating temperature range	+0 °C...+70 °C
Protocols	OPC-UA SNMPv1 SNMPv2c SNMPv3 Modbus/TCP TCP/IPv4 TCP/IPv6 Radius Telnet SSH FTP SFTP HTTP HTTPS NTP DHCP DNS SMTP Syslog LDAP
Interfaces	1 x Micro USB type B (device) for USB 2.0 1 x Micro-SD memory card slot for SD 2.0 1 x USB 2.0 high-speed functions (EHCI) 1 x acknowledgement button 1 x push-in spring connection terminal for NTC sensor 2 x RJ45 jack for RS 485 interface (climate control unit interface)
Network interface	Ethernet IPv4/IPv6 Ethernet to IEEE 802.3 via 10BASE-T, 100BASE-T and 1000BASE-T
Type of electrical connection	Push-in spring connection terminal (24 V DC)
Packs of	1 pc(s).
Model No.	**3124.300**

Accessories

Levelling feet

for VX, TS, TS IT, SE, PC, IW, Blue e+ chillers

Benefits:
– To compensate for height differences with floor irregularities

Material:
– Sheet steel

Assembly
– A base/plinth adaptor is required for mounting on the VX base/plinth

Design	Max. load capacity (static) per component N	Thread	Adjustment range mm	Packs of	Model No.
without hex socket	3000	M12 x 40	18 - 43	4 pc(s).	**4612.000**
with hex socket for adjustment from the inside of the enclosure	300	M12 x 60	18 - 63	4 pc(s).	**7493.100**

Twin castors

For mobile use, for mounting directly on the enclosure.

Thread:
– M12 x 20

Supply includes:
– 4 twin castors, 2 x with, 2 x without locks
– Assembly parts

Assembly
– A base/plinth adaptor is required for mounting on the TS base/plinth.

Colour	To fit enclosure type	Max. load capacity (static) per component N	Ground clearance mm	Packs of	Model No.
Black with grey running surface	VX TS SE PC TP pedestals IW Data Rack Chiller	750	85	1 pc(s).	**6148.000**
Black	VX TS SE PC TP pedestals IW Data Rack Chiller	1200	125	1 pc(s).	**7495.000**

Cross member

for VX, TS, SE, CM, TP, PC, IW, Blue e+ chillers

To increase stability, the cross member is positioned 138 mm from the base frame of the enclosure at the front and rear. For deeper enclosures, the rear part may be extended and screw-fastened again.

Benefits:
– To increase stability
– Adjustable to the enclosure depth

Installation options:
– For screw-fastening to the floor and enclosure with mounting hole at the sides, front and rear
– The castors and levelling feet may be secured to the welded nuts M12.
– For Blue e+ chillers, the cross member can be used as base/plinth component

Material:
– Sheet steel

Surface finish:
– Spray-finished

Colour:
– RAL 7015

Supply includes:
– 1 cross member, left
– 1 cross member, right

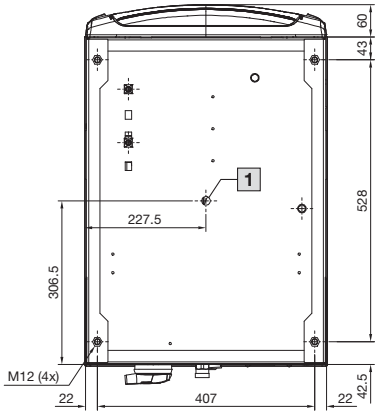
Note:
– Ensure sufficient stability to prevent the enclosure from tipping over!

Height mm	For enclosure depth mm	Packs of	Model No.
70	600 800	2 pc(s).	**8601.680**

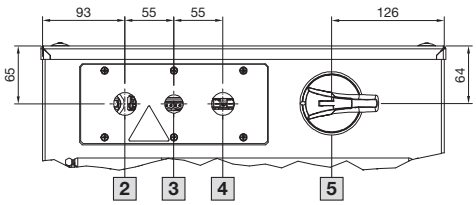
Accessories:
– Twin castors, see page 12
– Levelling feet, see page 12

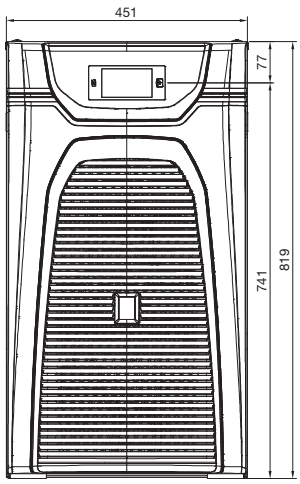
Blue e+ chiller

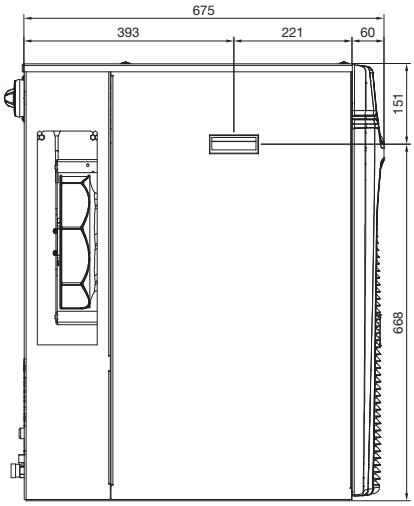
SK 3320.200

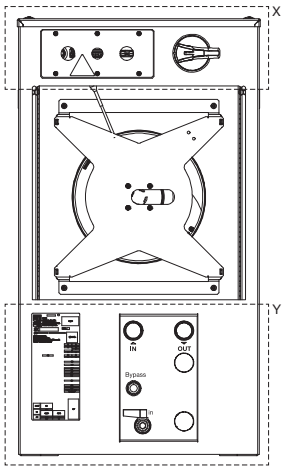


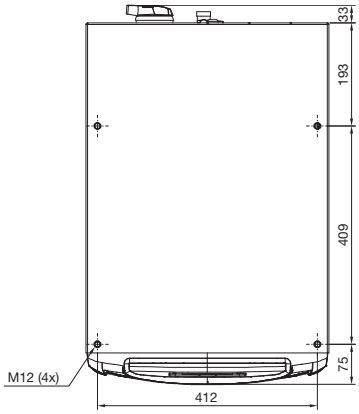
Detail X





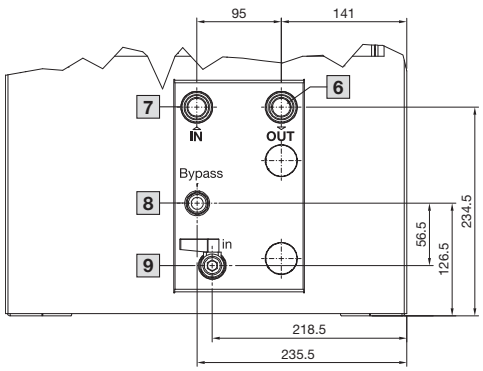






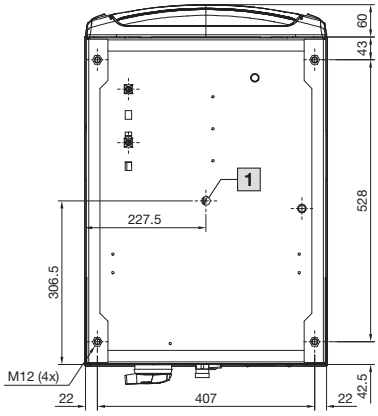
1. Bottom drain
2. IoT interface (M25)
3. Signal connector (M20)
4. Connector (M25)
5. Master switch
6. Water outlet
7. Water inlet
8. Bypass setting
9. Tank drain

Detail Y

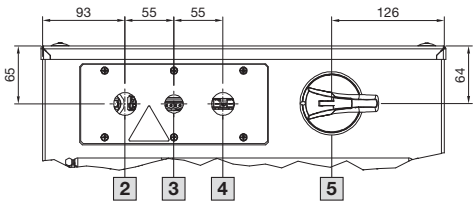


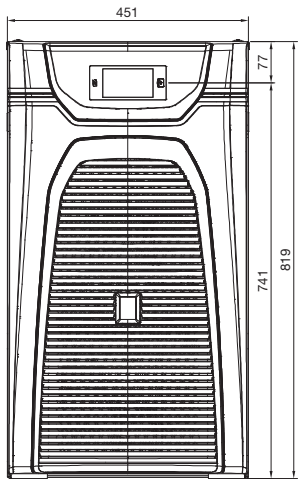
Technical details

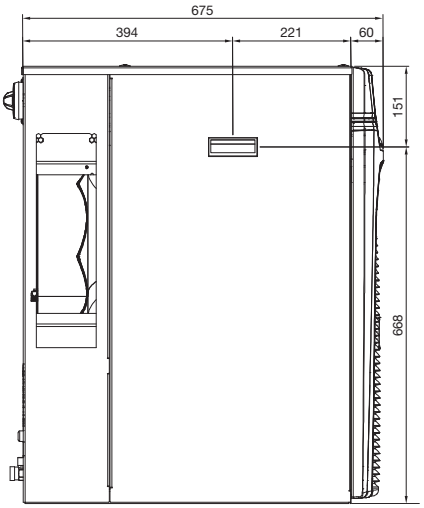
Blue e+ chiller
SK 3334.300

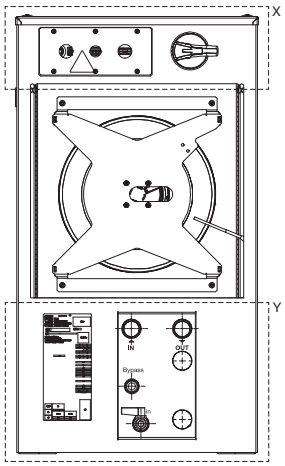


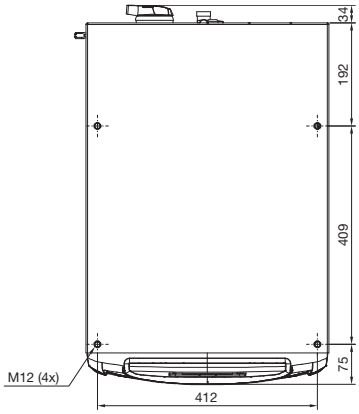
Detail X





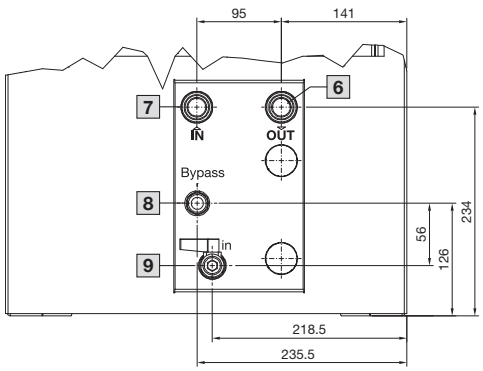






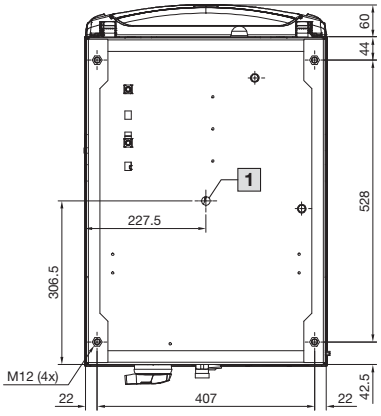
1. Bottom drain
2. IoT interface (M25)
3. Signal connector (M20)
4. Connector (M25)
5. Master switch
6. Water outlet
7. Water inlet
8. Bypass setting
9. Tank drain

Detail Y

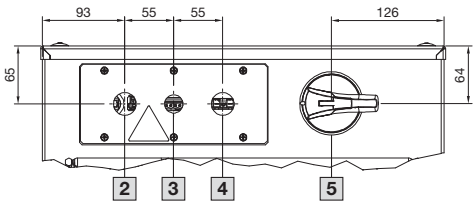


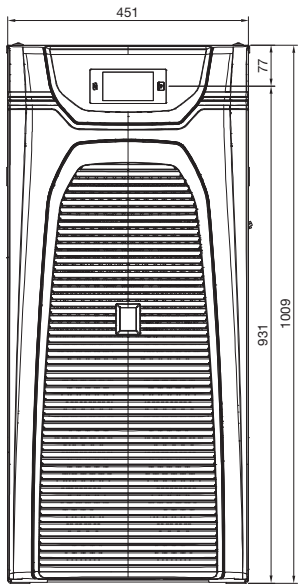
Blue e+ chiller

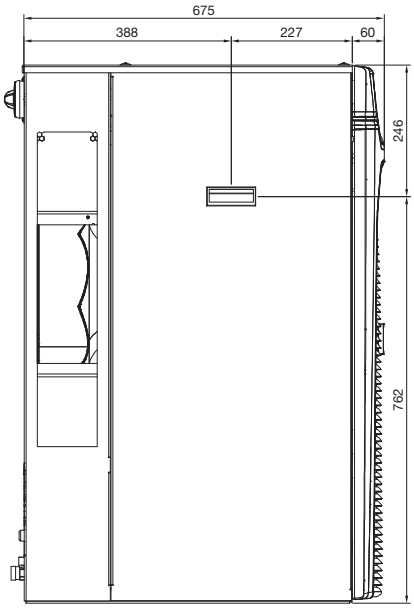
SK 3334.400

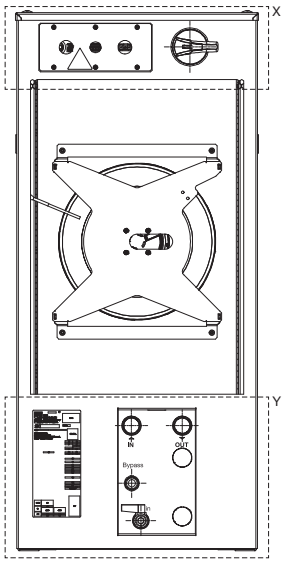


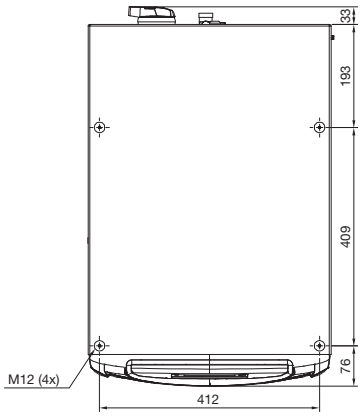
Detail X





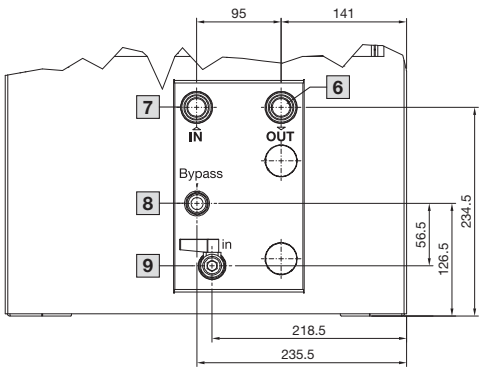






1. Bottom drain
2. IoT interface (M25)
3. Signal connector (M20)
4. Connector (M25)
5. Master switch
6. Water outlet
7. Water inlet
8. Bypass setting
9. Tank drain

Detail Y



Rittal – The System.

Faster – better – everywhere.

- Enclosures
- Power Distribution
- Climate Control
- IT Infrastructure
- Software & Services

You can find the contact details of all
Rittal companies throughout the world here.

www.rittal.com/contact

XWW00134EN1802

ENCLOSURES POWER DISTRIBUTION CLIMATE CONTROL IT INFRASTRUCTURE SOFTWARE & SERVICES

FRIEDHELM LOH GROUP