Rittal – The System.

Faster – better – everywhere.

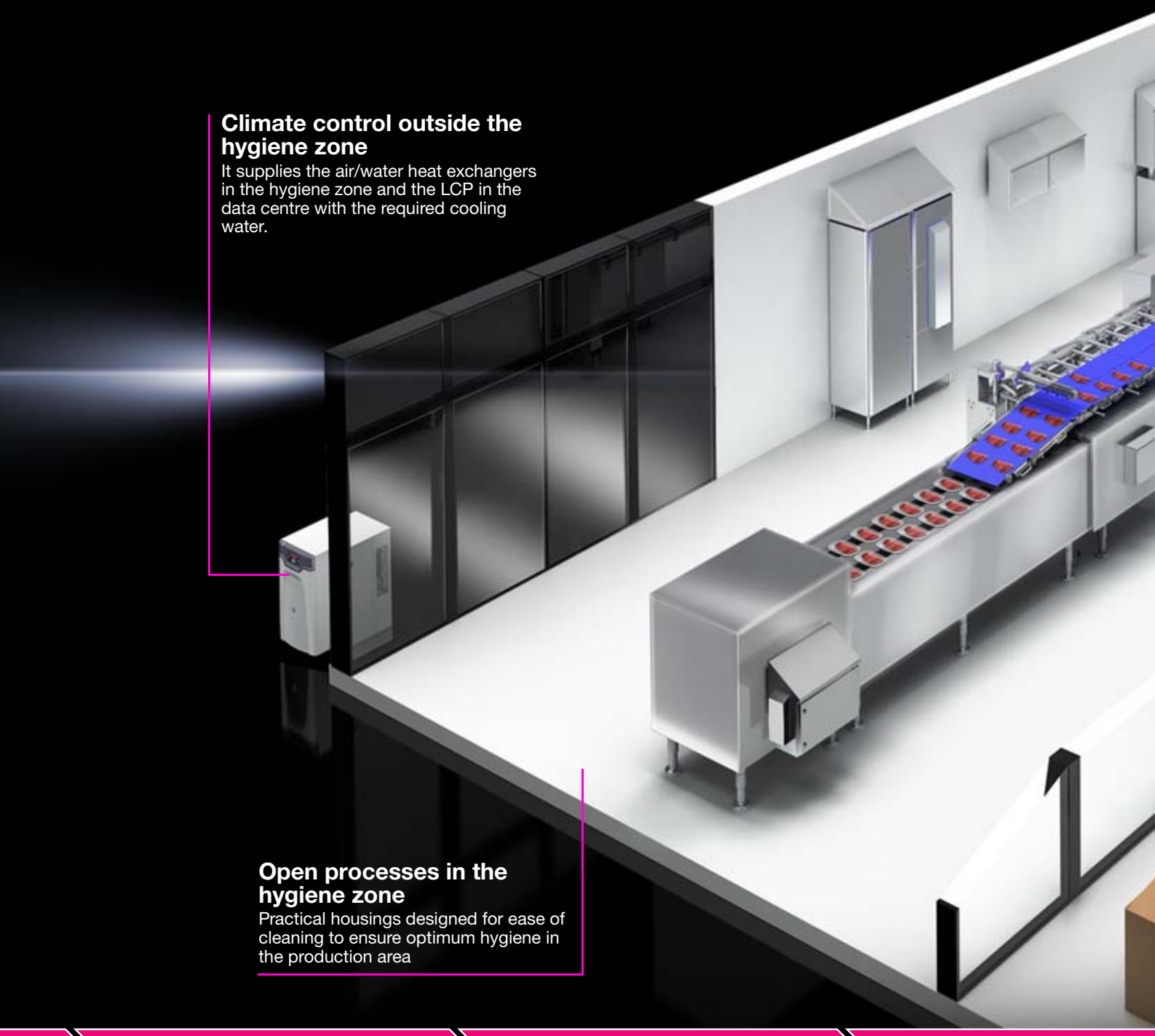
Hygienic Design – Extra cleanliness guaranteed

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

FRIEDHELM LOH GROUP

Rittal – The System.

Faster – better – everywhere.



Climate control outside the hygiene zone

It supplies the air/water heat exchangers in the hygiene zone and the LCP in the data centre with the required cooling water.

Open processes in the hygiene zone

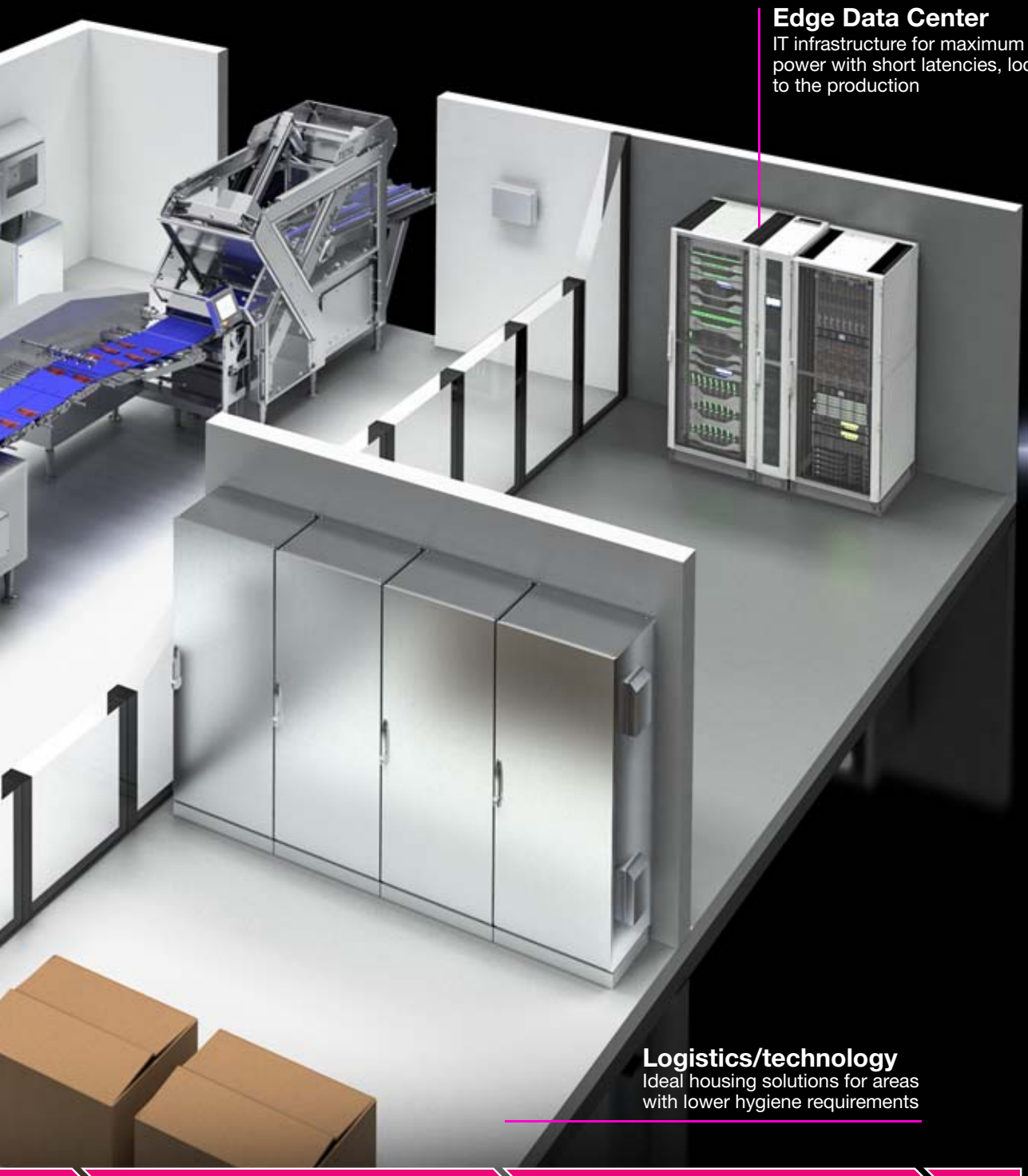
Practical housings designed for ease of cleaning to ensure optimum hygiene in the production area

ENCLOSURES | POWER DISTRIBUTION | CLIMATE CONTROL

FRIEDHELM LOH GROUP

One-stop solution for optimum processes

All areas of the food industry require different hygiene standards. Rittal has the right solution for everything, from the housing and the power distribution to the climate control – everything is a perfect match. Naturally, the IT infrastructure is no exception.



Edge Data Center
IT infrastructure for maximum computing power with short latencies, located close to the production

Logistics/technology
Ideal housing solutions for areas with lower hygiene requirements

IT INFRASTRUCTURE | SOFTWARE & SERVICES

Hygiene standards for high productivity and reliability

“Rittal – The System.” stands for cleverly thought-out system solutions for hygienic production in the food industry. Particularly in open processes, where the resistance of the seal to detergents and disinfectants is crucial, it is vital for production plant to be equipped with optimised enclosures, terminal boxes and command panels.

The Rittal Hygienic Design for food safety is based on:

European standards and directives

- EN 1672-2:2005 Food machinery/General design principles/Part 2: Hygiene requirements
- EN ISO 14 159 2004 Safety of machinery – Hygiene requirements for the design of machinery
- EN 16 001 Energy management to improve energy efficiency
- Machinery directive 2006/42/EC binding
- Document 13 EHEDG guideline on the hygienic design of apparatus for open processes, prepared in collaboration with 3-A and NSF International

EU regulations

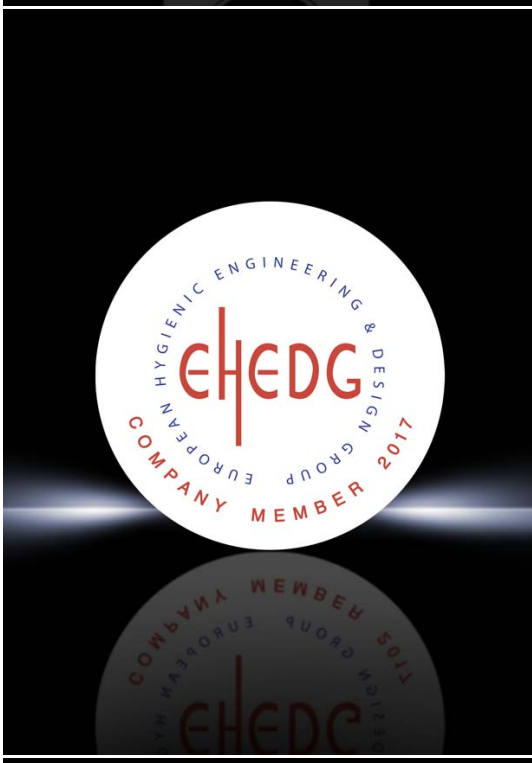
- 852/2004 on the hygiene of foodstuffs
- 853/2004 specific hygiene rules for food of animal origin
- 854/2004 specific rules for the organisation of official controls on products of animal origin intended for human consumption
- 1935/2004 on materials and articles intended to come into contact with food

Decide for yourself what is important.

Rittal Hygienic Design boosts operational hygiene

- Reduces the use of C&D agents
- Optimises cleaning results
- Ensures higher productivity
- Minimises risks
- Increases energy efficiency (CO_2 footprint)

All terminal boxes and compact enclosures are cULus listed.



Extra cleanliness guaranteed!

Terminal boxes and compact enclosures in Hygienic Design (HD) are key elements in the design of open processes in the food industry and clean rooms due to their ease of cleaning. Compatible accessories such as wall spacer brackets and HD-compatible cable glands complete the range. If you have specific requirements, “Rittal – The System.” is sure to have the right solution.

Silicone seal

- All-round external, joint-free silicone seal
- Easy to replace
- Guides and fixes the lid to the screw fasteners
- All-round tilt for terminal boxes
  – Enclosure: 3°
  – Lid: 10°

Interior configuration

- Hole pitch of 6.25 mm for greater flexibility
- KL support rails and mounting plates can be fitted directly

Hinges and seal

- Hinges that are inside the sealing zone create an exceptionally easy-clean design on the outside
- The durable all-round, external silicone seal effectively prevents all gaps
- Installed sealing frames are easily replaced
- No external cavity between enclosure and door
- Seal dyed blue to clearly distinguish it from foodstuffs

Screw fastener

- Captive
- With external seal
- Hexagon shape for perfect cleanliness

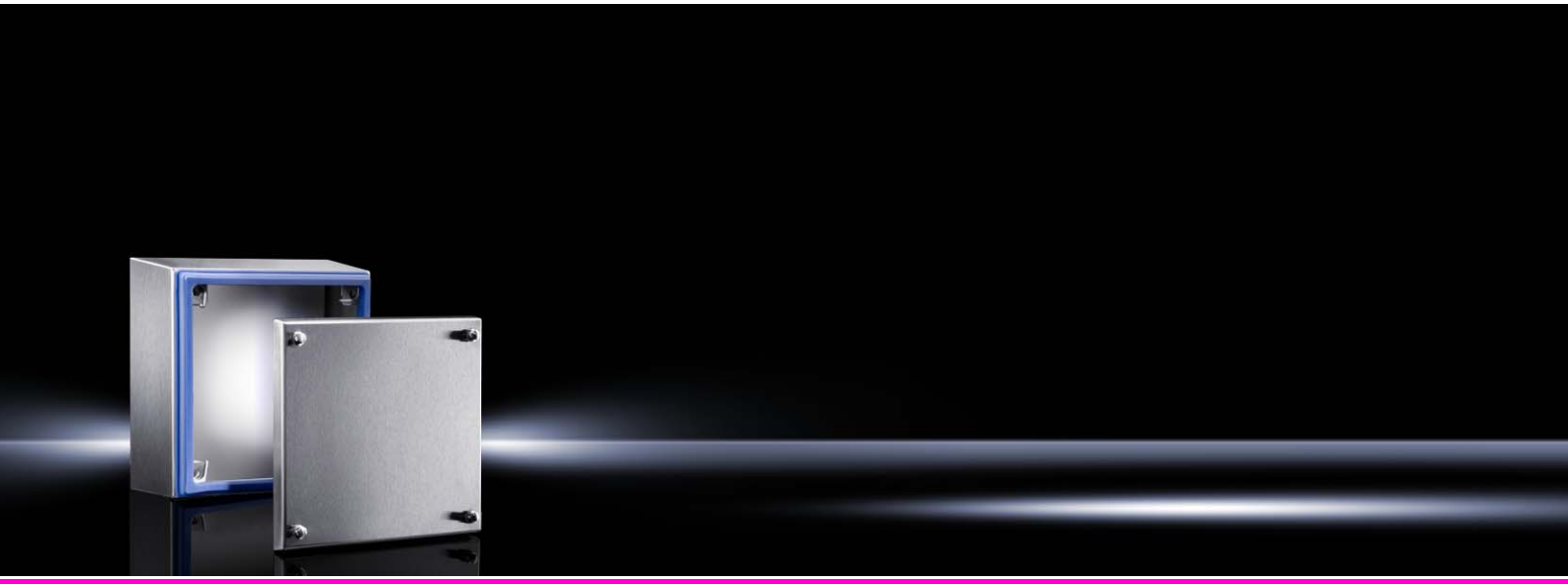
Lock and lock insert

- External parts made of stainless steel
- Material and shape allow easy and reliable cleaning

Roof angled forwards

- The roof angled forwards by 30° on compact enclosures prevents objects from being deposited on it
- Is easily inspected
- Allows fluids to drain off rapidly

Hygienic Design



HD accessories Page 21 **System accessories** Cat. 35, page 613 **KL stainless steel** Cat. 35, page 217 **Switch housing** Cat. 35, page 216

Design:
– Enclosure angled forwards by 3°

Material:
– Enclosure and cover: Stainless steel 1.4301 (AISI 304) 1.5 mm
– Mounting bracket: Sheet steel, zinc-plated, passivated, 2.0 mm
– Screw plug: Stainless steel
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600

Surface finish:
– Enclosure and cover: Brushed, grain 400, peak-to-valley height < 0.8 µm
– Seal: Blue, dyed (RAL 5010)

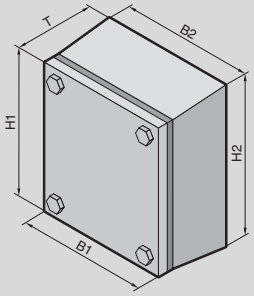
Protection category IP to IEC 60 529:
– IP 66

Protection category IP to DIN 40 050-9:
– IP 69K

Protection category NEMA:
– NEMA 13
– NEMA 3R
– NEMA 4X

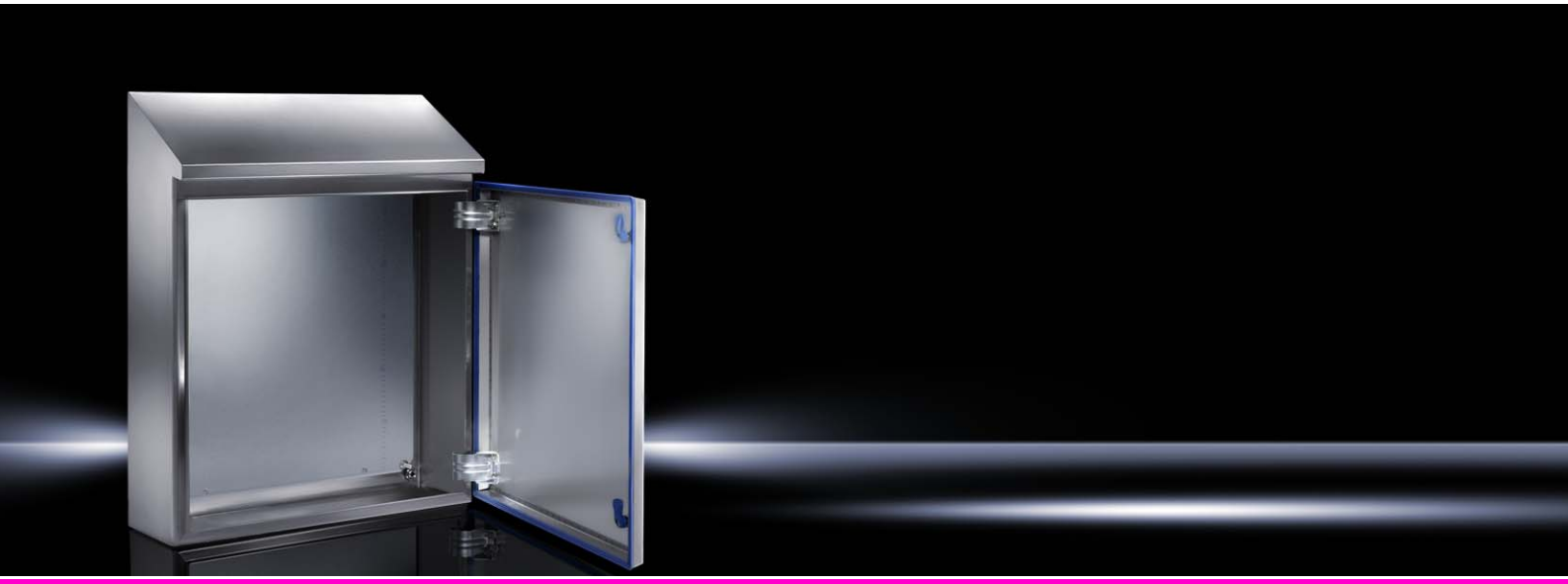
Supply includes:
– Enclosure of all-round solid construction
– Cover
– Mounting bracket (pre-assembled)
– Seal and screw plug (supplied loose)

Approvals:
– UL
– cUL



Terminal boxes HD

Width (front) (B1) mm	Packs of	150	150	200	300	400	400	Page
Width (rear) (B2) mm		172	177	227	327	427	427	
Height (front) (H1) mm		150	150	200	200	200	300	
Height (rear) (H2) mm		172	177	227	227	227	327	
Depth (T) mm		80	120	120	120	120	120	
Model No.	1 pc(s).	**1670.600**	**1671.600**	**1672.600**	**1674.600**	**1675.600**	**1676.600**	
Weight kg		1.7	2.2	3.0	4.0	5.0	5.9	
Accessories								
HD wall spacer bracket	1 pc(s).	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100	24
Mounting plates	1 pc(s).	1560.700	1560.700	1562.700	1563.700	1564.700	1568.700	Cat. 35, 702
Support rails TS 35/7.5	10 pc(s).	2314.000	2314.000	2315.000	2316.000	2317.000	2317.000	Cat. 35, 725
HD cable gland		see page	see page	see page	see page	see page	see page	28



HD accessories Page 21 **System accessories** Cat. 35, page 613 **AE stainless steel** Cat. 35, page 219

Design:
– Roof angled forwards by 30°

Material:
– Enclosure and door: Stainless steel 1.4301 (AISI 304)
– Mounting plate: Sheet steel
– Lock inserts HD: Stainless steel 1.4404 (AISI 316L)
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600

Surface finish:
– Enclosure and door: Brushed, grain 400, peak-to-valley height < 0.8 µm
– Mounting plate: Zinc-plated
– Seal: Blue, dyed (RAL 5010)

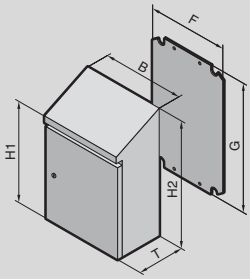
Protection category IP to IEC 60 529:
– IP 66

Protection category IP to DIN 40 050-9:
– IP 69K

Protection category NEMA:
– NEMA 13
– NEMA 4X

Supply includes:
– Enclosure of all-round solid construction
– Door with inserted seal
– Door hinged on the right, may be swapped to the left
– Mounting plate

Approvals:
– UL
– cUL



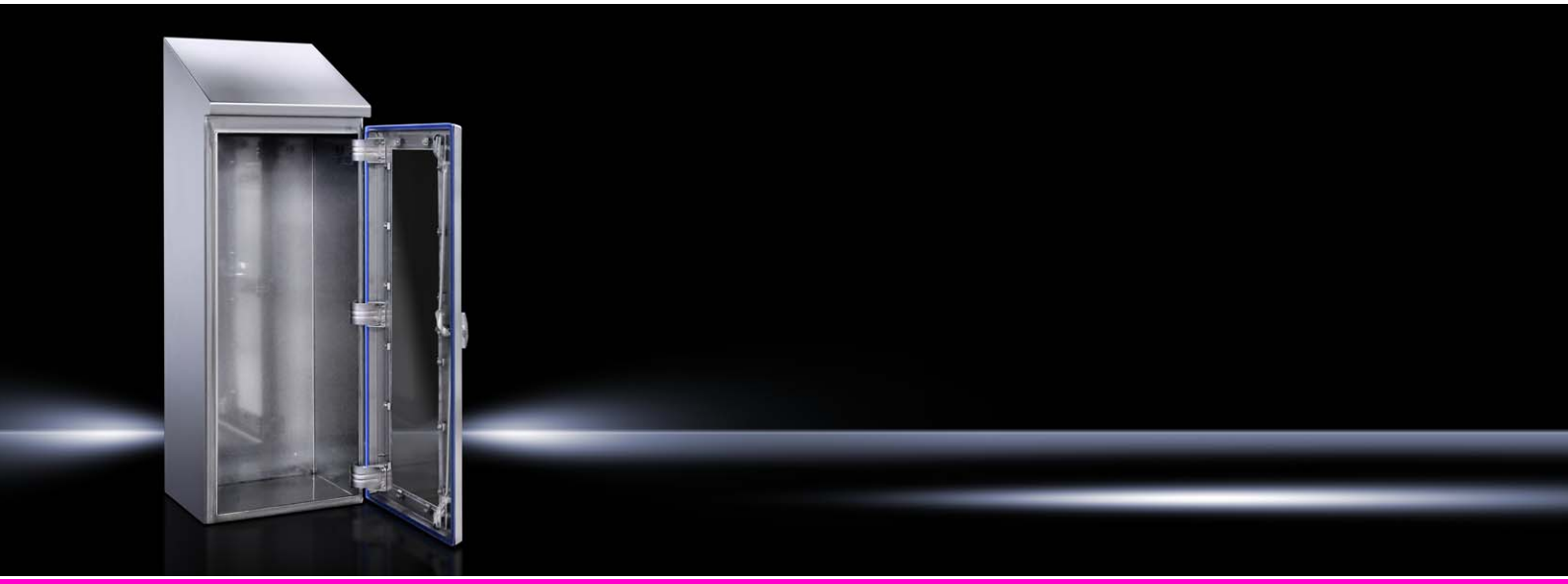
Compact enclosure HD

Width (B) mm	Packs of	220	390	390	510	610	Page
Height (front) (H1) mm		350	430	650	550	430	
Height (rear) (H2) mm		437	549	769	669	601	
Depth (T) mm		155	210	210	210	300	
Mounting plate width (F) mm		162	334	334	449	549	
Mounting plate height (G) mm		275	355	570	470	355	
Model No.	1 pc(s).	**1302.600**	**1306.600**	**1308.600**	**1307.600**	**1320.600**	
Weight kg		6.6	14.7	17.9	19.7	21.7	
Accessories							
HD wall spacer bracket	1 pc(s).	4000.100	4000.100	4000.100	4000.100	4000.100	24
HD wall spacer bracket	1 pc(s).	4000.110	4000.110	4000.110	4000.110	4000.110	24
HD cable gland		see page	see page	see page	see page	see page	28
HD hinge	2 pc(s).	4000.130	4000.130	4000.130	4000.130	4000.130	23
Rails for interior installation	4 pc(s).	–	–	5001.050	–	–	27
HD T-handle	1 pc(s).	4000.065	4000.065	4000.065	4000.065	4000.065	22

Hygienic Design

Compact enclosure HD

Width (B) mm	Packs of	610	810	810	810	810	Page
Height (front) (H1) mm		650	430	650	1050	1250	
Height (rear) (H2) mm		769	549	821	1221	1421	
Depth (T) mm		210	210	300	300	300	
Mounting plate width (F) mm		549	749	739	739	740	
Mounting plate height (G) mm		570	570	355	955	1155	
Model No.	1 pc(s).	**1310.600**	**1314.600**	**1315.600**	**1316.600**	**1317.600**	
Weight kg		27.4	25.5	39.0	60.1	71.0	
Accessories							
HD wall spacer bracket	1 pc(s).	4000.100	4000.100	4000.100	4000.100	4000.100	24
HD wall spacer bracket	1 pc(s).	4000.110	4000.110	4000.110	4000.110	4000.110	24
HD cable gland		see page	see page	see page	see page	see page	28
HD hinge	2 pc(s).	4000.130	4000.130	4000.130	4000.130	4000.130	23
Rails for interior installation	4 pc(s).	5001.050	–	5001.050	see page	see page	27
HD T-handle	1 pc(s).	4000.065	4000.065	4000.065	4000.065	4000.065	22



HD accessories Page 21

Design:
– Roof angled forwards by 30°

Benefits:
– Hygienic, hose-proof storage of fire extinguishers
– Time and cost savings thanks to simple, effective cleaning options
– Fire extinguisher is easily removed with one hand thanks to the T-handle
– Quick inventory check with the integral viewing door

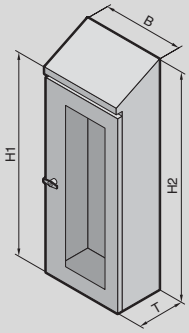
Material:
– Enclosure and door: Stainless steel 1.4301 (AISI 304)
– Handle and lock: Stainless steel 1.4301 (AISI 304)
– Viewing window: Polycarbonate
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600

Surface finish:
– Enclosure and door: Brushed, grain 400, peak-to-valley height < 0.8 µm
– Seal: Blue, dyed (RAL 5010)

Protection category IP to IEC 60 529:
– IP 66

Protection category IP to DIN 40 050-9:
– IP 59K

Supply includes:
– Enclosure of all-round solid construction
– Door with viewing window and inserted seal
– Interchangeable door hinge
– T-handle with 3-point lock system



Fire extinguisher enclosure HD

Width (B) mm	Packs of	390	Page
Height (front) (H1) mm		840	
Height (rear) (H2) mm		1010	
Depth (T) mm		300	
Viewing window width mm		190	
Viewing window height mm		670	
Model No.	1 pc(s).	**4000.075**	
Weight kg		22.0	
Accessories			
HD wall spacer bracket	1 pc(s).	4000.100	24
HD levelling feet		see page	21
HD hinge	2 pc(s).	4000.130	23

Hygienic control and monitoring

Command panels and printer enclosures play a key role in the decentralised control and monitoring of open processes in the food and luxury goods industry. Their functional design means that standard commercially available PC components such as printers, monitors and label printers, for example, are easily and securely integrated into the production process.

Silicone seal

- All-round external, joint-free silicone seal
- Easy to replace
- All-round tilt
  – Command panel: 3°
  – Printer enclosure: 10°

Easy monitoring

- Large visible area with inset and sealed polycarbonate window in the door
- Screwed-fastened mounting plate with holes for VESA 75 and 100 connection
- Attachment of monitors of up to 24″

User-friendly design

- Enclosure tilted forwards by 3°
  – to allow liquids to drain off reliably whilst cleaning
  – for the support of keyboards during production
- Component shelves with telescopic slides for easy integration of computers or e.g. label printers
- Interior installation rails allow the installation of additional component shelves

Modular combination

- Connection component for combining a command panel and a printer enclosure into a complete PC enclosure
- Integral drilled holes with a diameter of 40 mm for easy cable entry with connectors

Hygienic Design

Printer enclosure HD P. 15 **Support arm system CP 40, stainless steel** Cat. 35, p. 180 **Command panel housings w. door, stainless steel** Cat. 35, p. 229

Design:
– Roof angled forwards by 30°

Benefits:
– For hygienic, secure siting of monitors and PCs in the production hall
– Combinable with HD printer enclosure to assemble a complete PC enclosure
– Holder for desktop TFT, height-adjustable for screens up to 24"

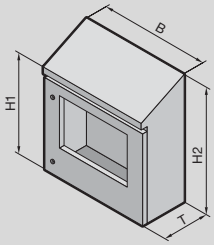
Material:
– Enclosure and door: Stainless steel 1.4301 (AISI 304)
– Lock inserts HD: Stainless steel 1.4404 (AISI 316L)
– Viewing window: Polycarbonate
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600

Surface finish:
– Enclosure and door: Brushed, grain 400, peak-to-valley height < 0.8 µm
– Seal: Blue, dyed (RAL 5010)

Protection category IP to IEC 60 529:
– IP 66

Protection category IP to DIN 40 050-9:
– IP 59K

Supply includes:
– Enclosure of all-round solid construction
– Door with viewing window and inserted seal
– R/h door hinge
– Holder for desktop TFT with VESA 75/100 locator



Command panel HD

Width (B) mm	Packs of	810	Page
Height (front) (H1) mm		692	
Height (rear) (H2) mm		848	
Depth (T) mm		266	
Viewing window width mm		535	
Viewing window height mm		325	
Model No.	1 pc(s).	**4000.062**	
Weight kg		33.2	
Accessories			
HD keyboard support	1 pc(s).	4000.072	25
HD wall spacer bracket	1 pc(s).	4000.100	24
HD wall spacer bracket	1 pc(s).	4000.110	24
HD hinge	2 pc(s).	4000.130	23
HD cable gland		see page	28
HD connection components	1 pc(s).	4000.066	24
HD T-handle	1 pc(s).	4000.065	22

Command panel HD Page 14 **PC enclosure system, stainless steel** Cat. 35, page 227

Design:
– Enclosure angled forwards by 3°

Benefits:
– For hygienic, secure siting of printers in the production hall
– Combinable with HD command panel to assemble a complete PC enclosure
– Pull-out, height-adjustable component shelf for fast access to printer, e.g. for changing the labels

Material:
– Enclosure and door: Stainless steel 1.4301 (AISI 304)
– Lock inserts HD: Stainless steel 1.4404 (AISI 316L)
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600
– Component shelf: Sheet steel, spray-finished

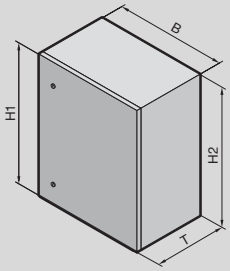
Surface finish:
– Enclosure and door: Brushed, grain 400, peak-to-valley height < 0.8 µm
– Seal: Blue, dyed (RAL 5010)

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
– Door with inserted seal
– Door hinged on the right, may be swapped to the left
– Component shelf

Optional:
– HD supporting structure with levelling



Printer enclosure HD

Width (B) mm	Packs of	810	Page
Height (front) (H1) mm		863	
Height (rear) (H2) mm		888	
Depth (T) mm		496	
Model No.	1 pc(s).	**4000.064**	
Weight kg		54.2	
Accessories			
HD flap	1 pc(s).	4000.068	25
HD hinge	2 pc(s).	4000.130	23
HD cable gland		see page	28
HD connection components	1 pc(s).	4000.066	24
HD T-handle	1 pc(s).	4000.065	22
HD levelling feet		see page	21

System partner for the food industry

Create the optimum conditions for successful audits by IFS 6 and trading firms with the Rittal System for Hygienic Design. The baying system and production data enclosures can be integrated perfectly into your production clean rooms. Thanks to the infinite possibilities for baying, even complex control systems for open processes are no longer a problem.

Seal

- Silicone profile seal between door, side panels and enclosure
- Joint-free, all-round external seal – simple to replace
- Seal dyed blue to clearly distinguish it from foodstuffs
- Silicone seal for the angled roof and baying frame comprising self-adhesive, jointed profile lengths and rectangular profiles

Door

- Hinges that are inside the sealing zone create an exceptionally easy-clean design on the outside
- Two locking rods, external parts in stainless steel, for secure and sealed closing
- Easy-to-clean lock insert – can be exchanged for a T-handle

Designing

- Integrated, non-detachable rear panel guarantees reliable hygiene and sealing in an area which is difficult to monitor
- Side panels screw-fastened from the inside
- Door and enclosure with all-round internal system punching for installation of accessories
- Door hinged on the right, may be swapped to the left
- Solid base
- Mounting plate from TS 8 baying system
- Rounded edge folds on the door and side panels as a significant contribution to easy cleaning
- Open top for mounting of angled roof
- A special angled roof can be manufactured upon request for combinations of two 600 or 800 mm wide enclosures

Hygienic Design

SE 8 stainless steel Cat. 35, page 224 **TS 8 stainless steel** Cat. 35, page 222 **Interior installation** Page 29 **Air/water heat exchangers** Page 20

Material:
- Enclosure and door: Stainless steel 1.4301 (AISI 304)
- Lock inserts HD: Stainless steel 1.4404 (AISI 316L)
- Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600
- Mounting plate: Sheet steel

Surface finish:
- Enclosure and door: Brushed, grain 400, peak-to-valley height < 0.8 µm
- Mounting plate: Zinc-plated
- Seal: Blue, dyed (RAL 5010)

Protection category IP to IEC 60 529:
- IP 66

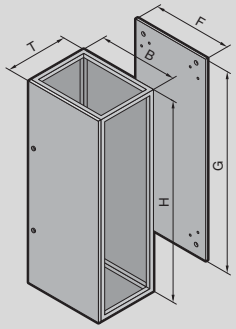
Protection category IP to DIN 40 050-9:
- IP 59K

Supply includes:
- Enclosure frame with welded rear panel gland plate
- Door with inserted seal
- R/h door hinge with single-door enclosures, may be swapped to opposite side
- Mounting plate

Please observe the product-specific scope of supply.

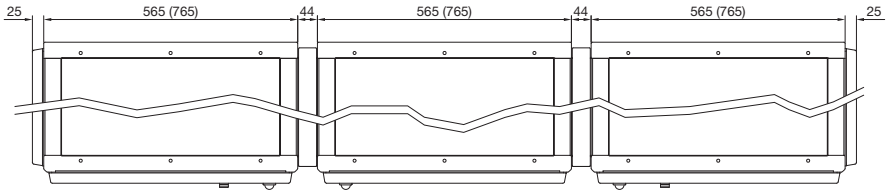
Optional:
- HD supporting structure with levelling

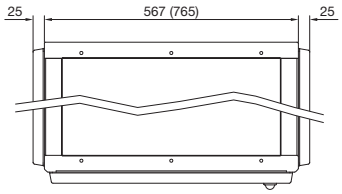
Note:
- To achieve a protection category of IP 66/IP 59K, the HD versions of the side panel, roof and (where applicable) baying frame must be selected.



HD system enclosure

Width (B) mm	Packs of	400	600	800	1200	Page
Height (H) mm		1800	1800	1800	1800	
Depth (T) mm		500	500	500	500	
Mounting plate width (F) mm		299	499	699	1099	
Mounting plate height (G) mm		1696	1696	1696	1696	
Model No.	1 pc(s).	**4000.485**	**4000.685**	**4000.885**	**4000.285**	
Weight kg		69.0	89.0	108.0	177.0	
Product-specific scope of supply						
Screw-fastened centre bar		–	–	–	■	
Door(s)		1	1	1	2	
Accessories						
HD side panels	2 pc(s).	4000.185	4000.185	4000.185	4000.185	21
HD baying frame	1 pc(s).	4000.785	4000.785	4000.785	4000.785	21
HD mounting plate infill	1 pc(s).	4000.508	4000.508	4000.508	4000.508	25
HD attachment	1 pc(s).	4000.545	4000.565	4000.585	4000.525	23
HD T-handle	1 pc(s).	4000.065	4000.065	4000.065	4000.065	22
HD levelling feet		see page	see page	see page	see page	21
HD hinge	2 pc(s).	4000.130	4000.130	4000.130	4000.130	23
HD viewing window	1 pc(s).	4000.080	4000.080	4000.080	4000.080	22
LED system light	1 pc(s).	2500.110	2500.110	2500.110	2500.110	Cat. 35, 750

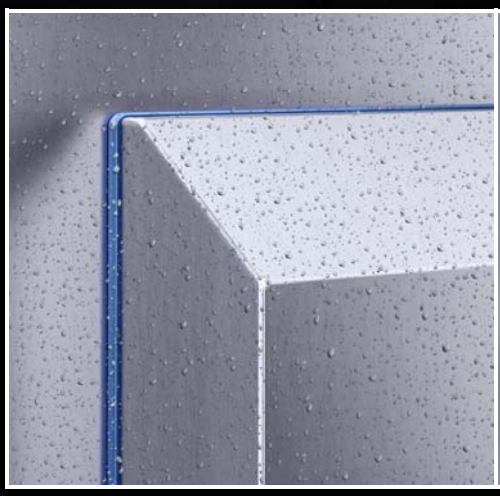




Air/water heat exchangers Hygienic Design

An easy-to-clean enclosure climate control solution is now available for hygiene-critical production zones in the food and consumables industry.

- Hygienic design simplifies cleaning procedures and guarantees food safety
- Protection category IP 56/59 if correctly fitted – suitable for high-pressure and steam-jet cleaning
- Enclosure made from 1.4301 (AISI 304) stainless steel with the roof tilted forwards by 30°
- Water connections made from stainless steel 1.4301 (AISI 304)
- Suitable for use in the food industry to DIN EN 1672-2:2009



Air/water heat exchangers

Accessories for climate control Cat. 35, page 454 **Chillers** Cat. 35, page 446 **Therm software** Cat. 35, page 474

Air/water heat exchanger for hygienically sensitive production zones in the food and consumables industry – the optimum addition to the Rittal Hygienic Design range. The cleaning-friendly design reduces the risk of contamination and ensures food safety.

Benefits:
- Easy-to-clean, hygienic design
- A roof tilt of 30° prevents objects from being deposited on it, and allows liquids to run off quickly.
- All-round external, replaceable silicone seal prevents the accumulation of dirt between the enclosure and the air/water heat exchanger.

Material:
- Enclosure: Stainless steel 1.4301 (AISI 304)

Surface finish:
- Enclosure: Brushed, grain 400, peak-to-valley height < 0.8 µm

Protection category IP to IEC 60 529:
- IP 56/59

Protection category NEMA:
- NEMA 4X

Cooling medium:
- Water (see Internet for specifications)

Supply includes:
- Fully wired ready for connection (plug-in terminal strip)
- Drilling template
- Sealing and assembly parts

Note:
- To achieve a protection category of IP 66/69 to IEC 60 529, the ingress of leakage air through the condensate discharge opening must be completely prevented.

Output class 600 – 1300 W, wall-mounted HD

Model No.		Packs of	**3214.700**	**3215.700**	Cat. 35, page
Temperature control	Thermostat-controlled magnetic valve		■	■	
Total cooling output L35 W10, 200 l/h kW			**0.6**	**1**	
Total cooling output L35 W10, 400 l/h kW			**0.65**	**1.2**	
Power consumption P_{el} 50/60 Hz W			36 / 37	83 / 85	
Rated operating voltage V, ~, Hz			230, 1~, 50/60	230, 1~, 50/60	
Width mm			220	215	
Height mm			526	982	
Depth mm			100	100	
Rated current max. A			0.16 / 0.14	0.38 / 0.47	
Pre-fuse A			2	4	
Operating temperature range			+1°C...+70°C	+1°C...+70°C	
Setting range			+20°C...+60°C	+20°C...+60°C	
Water inlet temperature			+1°C...+30°C	+1°C...+30°C	
Water connection	G ⅜" external thread		■	■	
Permissible operating pressure (p. max.) bar			1 - 10	1 - 10	
Air throughput of fans (unimpeded air flow), Internal circuit 50/60 Hz m^3/h			280 / 310	680 / 735	
Weight kg			6.0	14.0	
Accessories					
Toroidal transformer			see page	see page	471
Cooling medium (ready-mixed)			see page	see page	465

HD levelling feet

Benefits:
– Minimises cleaning time thanks to fully covered, permanently sealed threads
– Compensation of floor inclines up to an angle of 10° thanks to flexible base
– Baying can even be achieved on sloping floors, thanks to a large levelling range
– Design to EHEDG standards

Material:
– Stainless steel 1.4301 (AISI 304)

Load capacity:
– Max. 7000 N static per levelling foot

Supply includes:
– Assembly parts and seals

Design	Thread	Adjustment range mm	Packs of	**Model No.**
without base mount	M12	122 - 175	4 pc(s).	**4000.240**
with base attachment	M12	122 - 175	4 pc(s).	**4000.250**

HD side panels

for HD system enclosure

Material:
– Stainless steel 1.4301 (AISI 304), 2.0 mm

Supply includes:
– With assembly parts for screw-fastening from the inside

Note:
– Depending on the fitted side panel, the overall width of the enclosure is increased by 25 mm

For enclosure height mm	For enclosure depth mm	Packs of	**Model No.**
1800	500	2 pc(s).	**4000.185**

HD baying frame

for HD system enclosure

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Seal for HD angled roof
– Assembly parts

Note:
– Depending on the fitted baying frame, the overall width of the enclosure is increased by 44 mm

For enclosure height mm	For enclosure depth mm	Packs of	**Model No.**
1800	500	1 pc(s).	**4000.785**

Accessories

Silicone seal

for TS, AE

In exchange for a damaged PU seal. This makes it more resistant to cleaning agents and disinfectants.

Material:
– Silicone foam profile

Colour:
– White

Length m	Packs of	Model No.
25	1 pc(s).	**5001.380**

Assembly

– The foamed-in PU seal can be removed without leaving a residue and the surface cleaned. The self-adhesive silicone seal must be pressed into the exact position, with the top horizontal sealing strip covering the vertical strip without any gaps.

HD viewing window

For the protection of switches or displays.

Benefits:
– Large viewing panel
– Gap-free transition between the viewing window and the frame
– External hinge
– With T-handle for easy opening without a key

Material:
– Frame: Stainless steel 1.4301 (AISI 304)
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600
– Viewing window: Polycarbonate

Supply includes:
– 2 hinges
– T-handle

Width mm	Height mm	Depth mm	Viewing area mm	Packs of	Model No.
518	436	23	410 x 320	1 pc(s).	**4000.080**

HD T-handle

For easy opening without a key. May be exchanged in all enclosures with cam lock.

Material:
– Stainless steel 1.4301 (AISI 304)

Packs of	Model No.
1 pc(s).	**4000.065**

HD cam lock

Hygienic Design variant for easy, safe cleaning.

Applications:
– Compact enclosures AE stainless steel (except AE 1017.XXX and AE 1019.XXX).
– May be integrated into customised applications, e.g. covers of machine panels.

Material:
– Stainless steel 1.4404 (AISI 316L)

Packs of	Model No.
1 pc(s).	**2304.010**

Accessories:

– Enclosure key HD, see page 23

HD enclosure key

For HD cam lock

Note:
– Enclosure, case and lock systems are supplied as standard with matching keys

Packs of	Model No.
1 pc(s).	**2549.600**

HD bit

for universal key 2549.500

Packs of	Model No.
1 pc(s).	**2549.510**

HD hinge

To be used in exchange in HD enclosures with internal hinges.

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Assembly parts

Packs of	Model No.
2 pc(s).	**4000.130**

HD attachment

for HD system enclosure

Design:
– Roof angled forwards by 30°

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Assembly parts

For enclosure width mm	For enclosure depth mm	Packs of	Model No.
400	500	1 pc(s).	**4000.545**
600	500	1 pc(s).	**4000.565**
800	500	1 pc(s).	**4000.585**
1200	500	1 pc(s).	**4000.525**

Also required:

– Side parts HD, see page 23

HD side parts

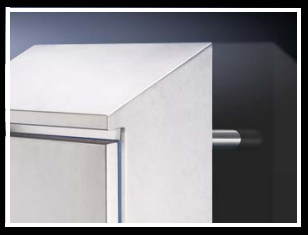
for HD attachment

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Assembly parts

Packs of	Model No.
2 pc(s).	**4000.505**

Accessories



HD wall spacer bracket

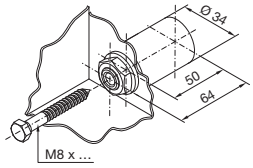
Benefits:
- Creates space for cleaning behind the enclosure.
- Shorter assembly times by eliminating the need for an all-round seal.
- Greater hygiene safety by avoiding an uncontrollable dead space or gap between the enclosure and wall.
- Mounting on the wall optionally from the enclosure interior via a through-hole (max. M8) or from the rear via an integral M10 thread.

Material:
- Stainless steel 1.4301 (AISI 304)

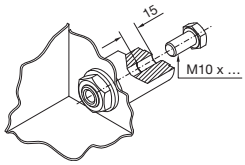
Supply includes:
- Assembly parts and seals

Note:
- Depending on the size of the enclosure, up to 4 wall spacer brackets are required to ensure sufficiently stable wall mounting

Wall distance mm	Packs of	**Model No.**
50	1 pc(s).	**4000.100**



Attachment from inside



Attachment from outside

HD wall spacer bracket

Greater distance from the wall to allow cleaning of large surfaces.

Material:
- Console: Stainless steel 1.4301 (AISI 304)
- Spacers: Plastic approved for use with foodstuffs, dyed blue

Supply includes:
- 2 consoles
- Spacer support
- Assembly parts

Wall distance mm	Packs of	**Model No.**
150	1 pc(s).	**4000.110**

HD connection components

for command panels HD, printer enclosures HD

For combining HD command panels and HD printer enclosures into one PC enclosure.

Material:
- Stainless steel 1.4301 (AISI 304)

Supply includes:
- 2 reinforcement plates for enclosure, top
- 4 reinforcement plates for enclosure, bottom (2 for the roof, 2 for the attachment of levelling feet or supporting structure)
- 2 spacer supports with drilled hole Ø 40 mm for cable entry, height 50/45.8 mm
- Assembly parts and seals

Packs of	**Model No.**
1 pc(s).	**4000.066**

HD mounting plate infill

for HD system enclosure
For a continuous mounting surface in bayed suites where the mounting plate is set forward.

Material:
– Sheet steel, 2 mm

Surface finish:
– Zinc-plated

Supply includes:
– Assembly parts

For enclosure height mm	Packs of	**Model No.**
1800	1 pc(s).	**4000.508**

HD keyboard support

To support standard keyboards, including water drain hole.

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Spacer support to the enclosure

Width mm	Depth mm	Contact surface, width mm	Contact surface, depth mm	Packs of	**Model No.**
573	250	570	190	1 pc(s).	**4000.072**

HD flap

For rapid access e.g. in order to change the labels.

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– T-handle
– Seal included
– Hinges and cam lock

Packs of	**Model No.**
1 pc(s).	**4000.068**

Accessories

Connector gland, small

For pre-assembled cables with connectors.
- For use with material thickness of up to 4 mm
- Strain relief of the pre-assembled cables can be achieved with cable ties.

Material:
– Plastic

Colour:
– RAL 9005

Protection category IP to IEC 60 529:
– IP 65 if installed correctly

Supply includes:
– Assembly parts

To fit	Packs of	Model No.
2 cables Ø 6 – 8 mm	1 pc(s).	**2400.300**
3 cables Ø 4 – 6 mm	5 pc(s).	**2400.500**

HD supporting structure

with levelling

Material:
– Stainless steel tube 1.4301 (AISI 304)

Size:
– Height: 300 mm

Supply includes:
– Assembly parts

On request.

Hose-proof hood

To increase the protection category
For fan-and-filter units/outlet filters. Easy cleaning thanks to exterior silicone coating approved for use with foodstuffs.

Material:
– Stainless steel
– Silicone

Protection category IP to IEC 60 529:
– IP 56 when fitted over fan-and-filter unit/outlet filter with filter mat

To fit Model No.	W x H x D mm	Protection category	Packs of	Model No.
3237....	150 x 230 x 40	NEMA 12	1 pc(s).	**3237.080**
3238....	176 x 245 x 55	NEMA 1 NEMA 12 NEMA 3 NEMA 4 NEMA 4X	1 pc(s).	**3238.080**
3239....	233 x 330 x 55	NEMA 1 NEMA 12 NEMA 3 NEMA 4 NEMA 4X	1 pc(s).	**3239.080**
3240..../3241....	282 x 390 x 85	NEMA 1 NEMA 12 NEMA 3 NEMA 4 NEMA 4X	1 pc(s).	**3240.080**
3243..../3244....	350 x 480 x 110	NEMA 1 NEMA 12 NEMA 3 NEMA 4 NEMA 4X	1 pc(s).	**3243.080**
3245....	350 x 480 x 160	NEMA 1 NEMA 12 NEMA 3R	1 pc(s).	**3245.080**

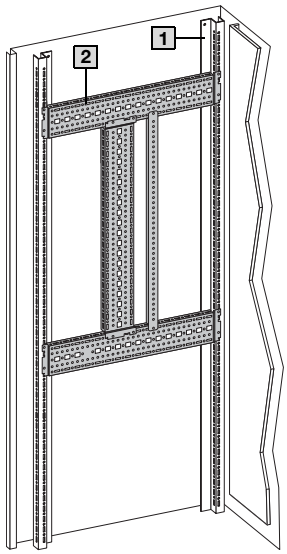
Rails for interior installation

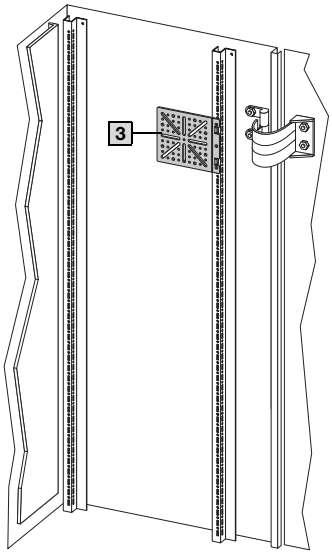
for HD compact enclosures
For mounting on the existing threaded bolts.
With TS system punchings on three sides.

Material:
– Sheet steel, zinc-plated

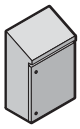
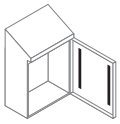
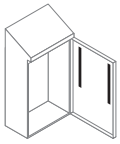
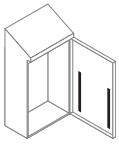
Supply includes:
– Assembly parts

Length mm	Packs of	Model No.	Cat. 35, page
510	4 pc(s).	**5001.050**	716
710	4 pc(s).	**5001.051**	716
910	4 pc(s).	**5001.052**	716
1110	4 pc(s).	**5001.053**	716

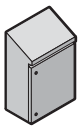




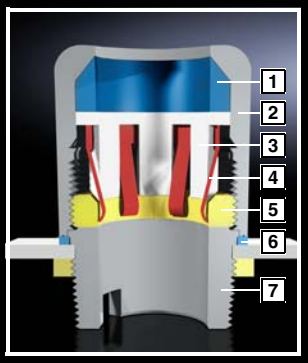
Interior installation, door

Enclosure 	1 	1 	1 
Model No.	**Model No.**		
1316.600	5001.052	5001.050	5001.050
1317.600	5001.053	5001.051 5001.050	5001.051 5001.050

Interior installation, enclosure

Enclosure 	1 Rails for interior installation	2 TS punched section with mounting flange 17 x 73 mm	3 Mounting plates
Model No.	**Model No.**	**Model No.**	
1308.600 1310.600 1315.600	5001.050	–	–
1316.600	5001.052	8612.130 (only on lock side)	8612.400 8612.410
1317.600	5001.053	8612.130 (only on lock side)	8612.400 8612.410

Accessories



1 Seal
2 Cap nut
3 Gripper jaws
4 Shield spring (EMC version only)
5 Clamping ring
6 Enclosure seal
7 Base with locator for assembly tool

HD cable gland

Applications:
- Manufacturing and packaging of foodstuffs etc.
- Clean room technology (e.g. pharmaceuticals)
- Biotechnology
- Chemical industry

Benefits:
- Smooth, solid exterior surfaces effectively prevent the depositing of harmful micro-organisms
- Much easier, and therefore cheaper, to clean compared with conventional cable glands

Material:
– Cap nut: Stainless steel 1.4305 (AISI 303)
– Seal: Conforms to FDA 21 CFR 177.2600

Protection category IP to IEC 60 529:
– IP 68 (5 bar, 30 min.)

Protection category IP to DIN 40 050-9:
– IP 69K

Standard version

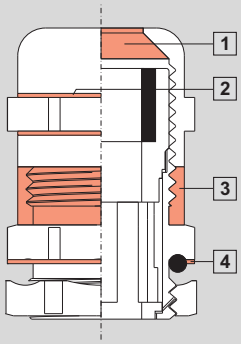
Size	Cable diameter mm	Packs of	Model No.
M12 x 1.5	3 – 6.5	5 pc(s).	**2410.000**
M16 x 1.5	5 – 10	5 pc(s).	**2410.010**
M20 x 1.5	6 – 12	5 pc(s).	**2410.020**
M25 x 1.5	12 – 17	5 pc(s).	**2410.030**

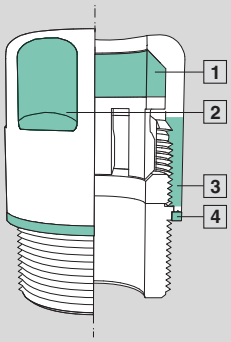
EMC version

Size	Cable diameter mm	Packs of	Model No.
M16 x 1.5	5 – 10	5 pc(s).	**2410.110**
M20 x 1.5	6 – 12	5 pc(s).	**2410.120**
M25 x 1.5	12 – 17	5 pc(s).	**2410.130**

Why use hygienic cable glands?

Critical points with conventional solutions
1 Cable entry in front of seal
2 No minimum radii on the hexagon
3 External threads
4 Gap caused by O-ring on the enclosure surface





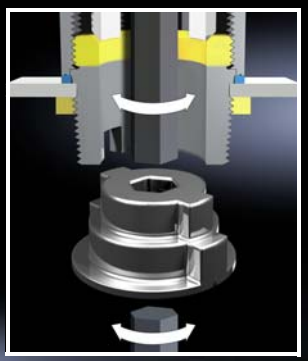
Hygienic design features
1 Seal directly at the cable entry
2 Compliance with minimum radii on the hexagon
3 No external threads
4 Flush termination between the cap nut and the enclosure

Stainless steel lock nut

To match HD cable glands.

Material:
– Stainless steel 1.4305 (AISI 303)

Size	Packs of	Model No.
M12 x 1.5	10 pc(s).	**2410.200**
M16 x 1.5	10 pc(s).	**2410.210**
M20 x 1.5	10 pc(s).	**2410.220**
M25 x 1.5	10 pc(s).	**2410.230**



Assembly tool

for HD cable gland
For attaching HD cable glands in an internal thread or using lock nuts. This can be achieved either from the inside or from the outside using an Allen key.

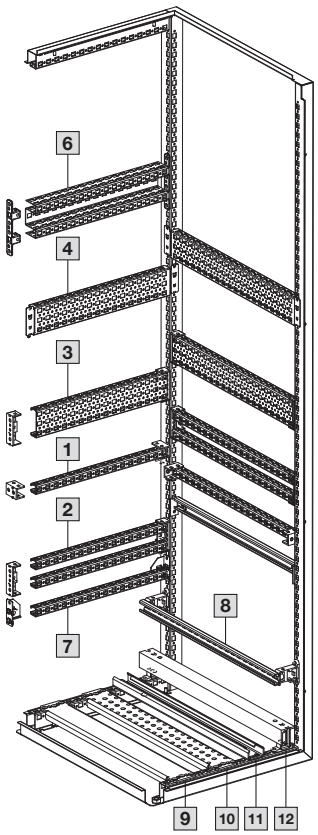
Supply includes:
– 1 pc(s). = Adaptor for sizes from M12 – M25

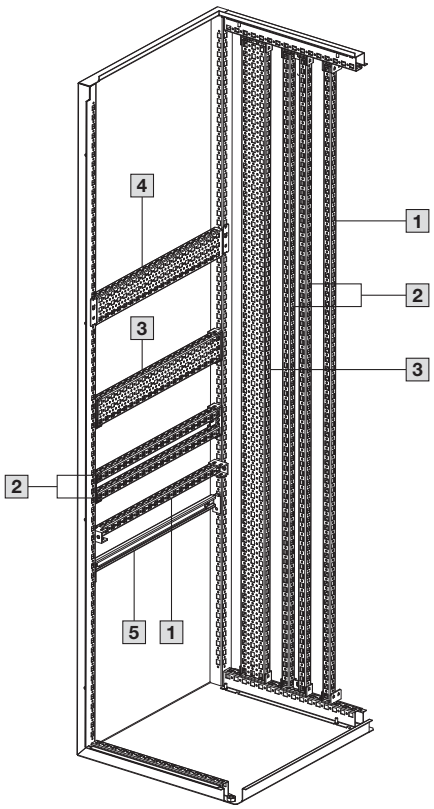
Packs of	Model No.
1 pc(s).	**2410.290**

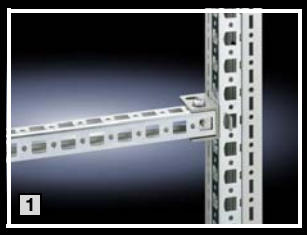
Rail systems

		Cat. 35, page
1	PS punched rail 23 x 23 mm with mounting bracket	721/730
2	PS punched rail 23 x 23 mm with support bracket PS (with one or two mounting rails 23 x 23 as an option)	721/731
3	PS punched section without mounting flange 23 x 73 mm with support bracket PS	722/731
4	PS punched section with mounting flange 23 x 73 mm	723
5	C rail for TS	724
6	TS punched section without mounting flange 45 x 88 mm	719
7	PS punched rail 23 x 23 mm with angle bracket PS	721/731
8	C rail 30/15 with bracket/spacer	723
9	Support rail, unslotted	724
10	Support rail, slotted	724
11	System supprt rail	724
12	Cable clamp rail – right-angle section	783

Note:
– Images 1 – 12 show details of applications in the TS 8 baying system

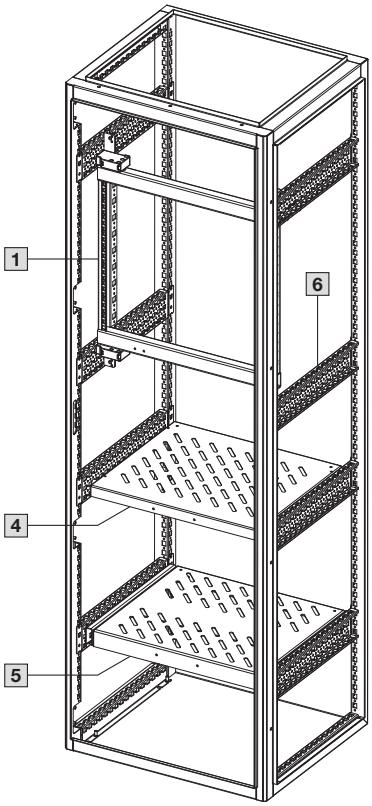






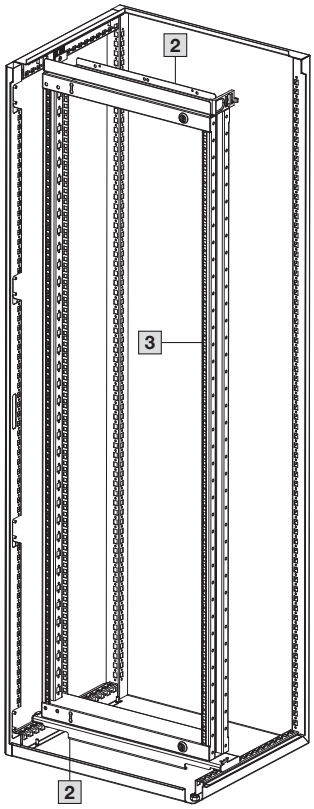
Interior installation – system enclosure HD

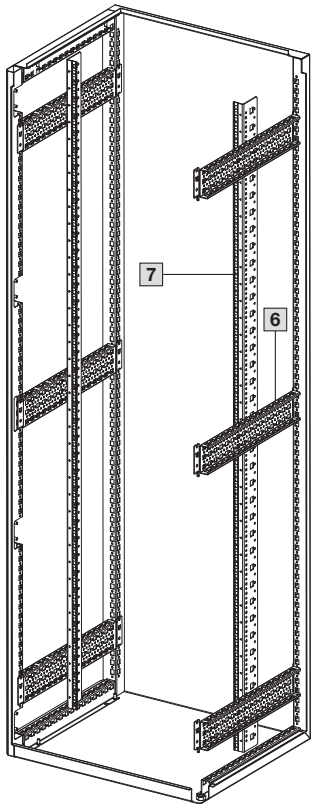
Swing frame, component shelf, mounting angles



		Cat. 35, page
1	Swing frame, small, with installation kit	796
2	Installation kit for swing frames, large, for TS/SE enclosures	797
3	Swing frame, large, without trim panel, for 600 mm wide enclosures	797
4	Component shelf for frame attachment 50 kg	739
5	Component shelf for frame attachment 100 kg	739
6	PS punched section with mounting flange 23 x 73 mm	723
7	Mounting angles – 482.6 mm (19″)	804

Note:
– Images 1 – 7 show details of applications in the TS 8 baying system





Hygienic Design enclosures at the Landgeflügel chicken processing plant

The special protection offered by HD enclosures is also invaluable in peripheral areas.

The horizontally hinged viewing window ensures additional protection for the display set into the HD enclosure whilst cleaning.

The state-of-the-art poultry plants Emsland Frischgeflügel in Haren and Celler Land Frischgeflügel in Wietze, Lower Saxony, produce poultry portions – from chicken wings, to legs, to fillets – for the food retail sector and for industrial processing.
Each day, more than 500,000 packets of fresh poultry leave the two slaughterhouses and butchery plants belonging to North-German company Landgeflügel. Sophisticated technology, the highest possible hygiene standards and a continuous cooling chain are vital for safe poultry production.
Special Hygienic Design enclosures HD provide additional process and operational reliability, by protecting the sensitive control electronics in the automated production plants.

They are installed at the rear of the production plant, where all system parts are thoroughly cleaned and disinfected each night.
Despite being exposed to large quantities of water, the HD enclosures remain completely water-tight during the daily washdown.
The blue silicone seal, which is resistant to all types of disinfectant, guarantees a permanent tight seal. Located externally, it provides a gap-free, secure seal for the door and enclosure.

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

XWW00029EN1705

ENCLOSURES POWER DISTRIBUTION CLIMATE CONTROL IT INFRASTRUCTURE SOFTWARE & SERVICES

FRIEDHELM LOH GROUP