Rittal – The System.

Faster – better – everywhere.

▶ Hygienic Design

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.

DGUV Test
NG 08075
NG 11129
Hygiene geprüft
hygiene tested

EHEDG
EUROPEAN HYGIENIC ENGINEERING & DESIGN GROUP
COMPANY MEMBER 2015

c UL US 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
  – 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 by 30°

- Prevents objects from being deposited on it
- Is easily inspected
- Allows fluids to drain off rapidly

5

Hygienic Design terminal boxes/compact enclosures

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, $R_A < 0.8\ \mu m$
– 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
– NEMA 3R (HD terminal boxes only)

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

Technical details:
Available on the Internet

HD terminal boxes

Width	Front mm	Packs of	150	150	200	300	400	400
	Rear mm		172	177	227	327	427	427
Height	Front mm		150	150	200	200	200	300
	Rear mm		172	177	227	227	227	327
Depth mm			80	120	120	120	120	120
Model No.		1 pc(s).	**1670.600**	**1671.600**	**1672.600**	**1674.600**	**1675.600**	**1676.600**
Accessories								
HD wall spacer bracket		1 pc(s).	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100
Mounting plate		1 pc(s).	1560.700	1560.700	1562.700	1563.700	1564.700	1568.700
Support rail TS 35/7.5		10 pc(s).	2314.000	2314.000	2315.000	2316.000	2317.000	2317.000
HD cable gland			see page 15					

HD compact enclosures, single-door

Width mm		Packs of	220	390	390	510	610	610	810	810
Height	Front mm		350	430	650	550	430	650	1050	1250
	Rear mm		437	549	769	669	601	769	1221	1421
Depth mm			155	210	210	210	300	210	300	300
Mounting plate width mm			162	334	334	449	549	549	739	740
Mounting plate height mm			275	355	570	470	355	570	955	1155
Model No.		1 pc(s).	**1302.600**	**1306.600**	**1308.600**	**1307.600**	**1320.600**	**1310.600**	**1316.600**	**1317.600**
Accessories										
HD wall spacer bracket		1 pc(s).	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100	4000.100
Rails for interior installation			see Cat. 34, page 173							
HD cable gland			see page 15							
T handles with/without lock cylinder			on request							

Accessories for terminal boxes/compact enclosures

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 plate
– Baying can even be achieved on sloping floors, thanks to a large levelling range
– Designed to EHEDG regulations, including certification

Material:
– Stainless steel 1.4301 (AISI 304)

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

Supply includes:
– Assembly parts and seals

Version	Thread		Packs of	Model No.
without base mount	M12	122 – 175	4 pc(s).	**4000.240**
with base mount	M12	122 – 175	4 pc(s).	**4000.250**

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 inaccessible dead space or gap between the enclosure and wall

Functional principle:
– For mounting on the wall, either from the enclosure interior via a through-hole (max. M8) or from the rear via an integral M10 thread

Material:
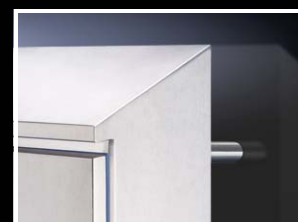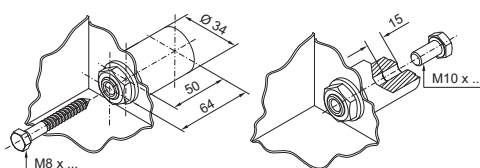– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Assembly parts and seals

Wall distance mm	Packs of	Model No.
50	1 pc(s).	**4000.100**
150	1 pair(s)	On request

Mounting alternatives:

Attachment from inside   Attachment from outside

HD enclosure key

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

HD bit

for universal key 2549.500
see Cat. 34, page 573

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

HD cam lock

Hygienic Design variant for easy, safe cleaning.

Applications:
– Compact enclosures AE stainless steel (except 1017.XXX and 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:**

– HD enclosure key, see page 7

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 upon request

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 system enclosure

Material:
– Stainless steel 1.4301 (AISI 304)
  Enclosure: 1.5 mm
  Door: 2.0 mm
– Lock inserts: Stainless steel
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600
– Mounting plate: Sheet steel

Surface finish:
– Brushed, grain 400, $R_A < 0.8$ 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 59 K

Supply includes:
– Enclosure, closed at rear and bottom, open at top and sides
– Door
– Mounting plate

System enclosure HD

Width mm	Packs of	400	600	800	1200	Page
Height mm	1 pc(s).	1800	1800	1800	1800	
Depth mm	1 pc(s).	500	500	500	500	
Model No.	1 pc(s).	**4000.485**	**4000.685**	**4000.885**	**4000.285**	
Accessories						
HD side panels	1 pair(s)	4000.185	4000.185	4000.185	4000.185	11
HD baying frame	1 pc(s).	4000.785	4000.785	4000.785	4000.785	11
Mounting plate infill	1 pc(s).	4000.508	4000.508	4000.508	4000.508	11
HD angled roof 30°, open at the sides	1 pc(s).	4000.545[1]	4000.565	4000.585	4000.525[1]	11
HD side panels for angled roof	1 pair(s)	4000.505	4000.505	4000.505	4000.505	11
Interior installation		see mounting and operating instructions				
HD cable gland		see page 15				
T handles with/without lock cylinder		on request				
HD supporting structure with levelling		on request				

[1] Extended delivery times.
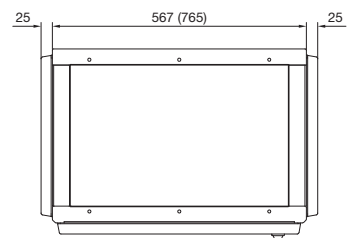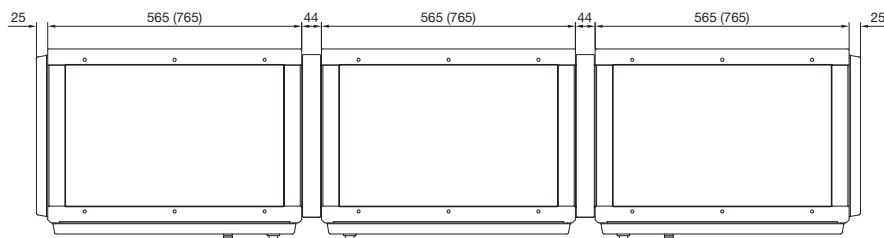
Hygienic Design

Accessories for system enclosure
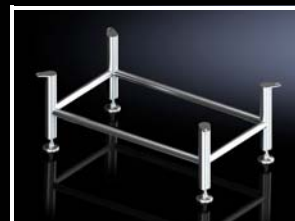
HD supporting structure with levelling

Material:
– Stainless steel tube 1.4301 (AISI 304)

Size:
– Height: 300 mm

Supply includes:
– Assembly parts
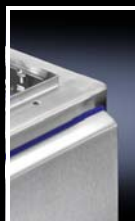
On request.

HD side panels
Width 25 mm

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

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

For enclosures H x D mm	Packs of	Model No.
1800 x 500	1 pair(s)	**4000.185**

HD baying frame
Width 44 mm

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Assembly parts

For enclosures H x D mm	Packs of	Model No.
1800 x 500	1 pc(s).	**4000.785**

Mounting plate infill
Width 106 mm

Material:
– Sheet steel, 2 mm

Surface finish:
– Zinc-plated

Supply includes:
– Assembly parts

For enclosures H mm	Packs of	Model No.
1800	1 pc(s).	**4000.508**

HD angled roof 30°
open at the sides

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Assembly parts

W x D mm	Packs of	Model No.
400 x 500	1 pc(s).	**4000.545**[1]
600 x 500	1 pc(s).	**4000.565**
800 x 500	1 pc(s).	**4000.585**
1200 x 500	1 pc(s).	**4000.525**[1]

[1] Extended delivery times.

HD side panels for angled roof

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Assembly parts

D mm	Packs of	Model No.
500	1 pair(s)	**4000.505**
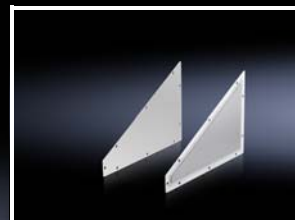
Hygienic Design production data cabinet

Material:
– Stainless steel 1.4301
  (AISI 304)
– Enclosure: 1.5 mm
  Door: 2.0 mm
– Lock inserts: Stainless steel
– Seal: Silicone, compliant with
  FDA Guideline 21 CFR
  177.2600

Surface finish:
– Brushed, grain 400,
  Ra <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 59 K

Supply includes:
– Solid enclosure, roof angled
  forwards by 30°
– Top door with integrated poly-
  carbonate pane for monitor;
  compartment with screw-
  fastened mounting plate with
  holes for VESA connection
  75 and 100
– Bottom door; compartment
  with pull-out component shelf
– Surface between top and bot-
  tom doors angled to the front
  by 3° as shelf or for a keyboard

HD production data cabinet

Width mm		596
Height	Front mm	1598
	Rear mm	1752
Depth mm		446
Model No.		**4000.090**
Accessories		
HD cable gland		see page 15
HD levelling feet		see page 7
HD supporting structure with levelling		on request
T handles with/without lock cylinder		on request

Material:
– Stainless steel 1.4301 (AISI 304)
– Enclosure: 1.5 mm Door: 2.0 mm
– Lock inserts: Stainless steel
– Seal: Silicone, compliant with FDA Guideline 21 CFR 177.2600

Surface finish:
– Brushed, grain 400, $R_A < 0.8$ µm
– Seal: Blue, dyed (RAL 5010)
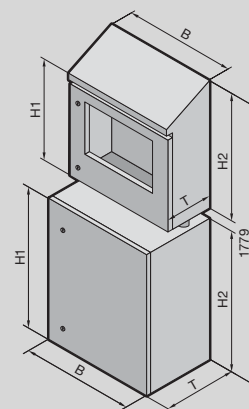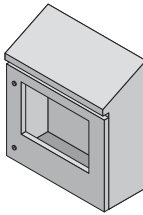
Protection category IP to DIN 40 050-9:
– Enclosure top: IP 59K
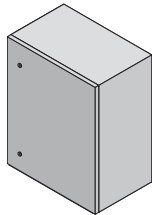– Enclosure bottom: IP 69K

Console supply includes:
– Roof angled forwards by 30°
– Door with integrated polycarbonate pane for monitor; compartment with screw-fastened mounting plate with holes for VESA connection 75 and 100
– Viewing window 535 x 325 mm
– Mounting plate height-adjustable for monitors up to 24"

Pedestal supply includes:
– Roof angled forwards by 3°, suitable as a support rest or for keyboard installation
– Component shelf spray-finished, pull-out and height-adjustable with side punched rails

HD production data cabinet, modular

	Packs of	Console	Pedestal
Width (B) mm		810	810
Height (front) (H1) mm		692	863
Height (rear) (H2) mm		848	888
Depth (T) mm		266	496
Model No.	1 pc(s).	**4000.062**	**4000.064**
Accessories			
T handles with/without lock cylinder		on request	
HD levelling feet		see Cat. 34, page 172	
HD connection components		see page 14	
Other accessories		see page 14	

Other optional modifications:
– Enclosure top: without viewing window, with mounting panel instead of mounting plate
– Enclosure top: with cut-out for touch panel instead of viewing window
– Enclosure bottom: without side rails, without component shelf, with mounting panel
– Both enclosures with drilled holes for connection components

Hygienic Design

Accessories production data cabinet

HD connection components
for console and pedestal

Material:
– Stainless steel 1.4301 (AISI 304)

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

Supply includes:
1 set =
– 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 diameter
  40 mm for cable entry, height 50/45.8 mm.
– Assembly parts and seals

HD wall spacer bracket

Functional principle:
– For mounting on the wall, either from the enclo-
  sure interior via a through-hole (max. M8) or from
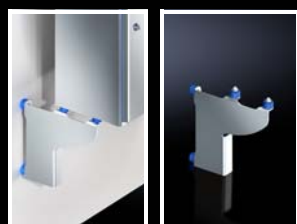 the rear via an integral M10 thread.

Material:
– Stainless steel 1.4301 (AISI 304)

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

Supply includes:
– Assembly parts and seals

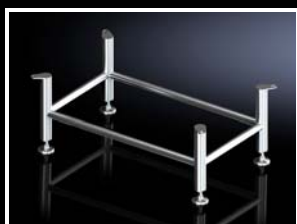### HD wall spacer bracket

Material:
– Support: Stainless steel 1.4301 (AISI 304)
– Spacers: Plastic approved for use with food-
  stuffs, dyed blue

Supply includes:
– 1 pair of brackets for the bottom, with space for
  welding on cable grids
– 1 spacer for the top
– Assembly parts

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

On request.

HD supporting structure with levelling

Material:
– Stainless steel tube 1.4301 (AISI 304)

Size:
– Height: 300 mm

Supply includes:
– Assembly parts

On request.

HD flap, side
for label tray

Material:
– Stainless steel 1.4301 (AISI 304)

Supply includes:
– Hinges and cam lock

On request.

Connector gland, small

Material:
– Plastic

Colour:
– RAL 9005

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

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**

Supply includes:
– Assembly parts

Accessories for cable gland

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, therefore cheaper, cleaning compared with conventional cable glands

Material:
- Cap nut: Stainless steel 1.4305 (AISI 303)
- Seal: Compliant with FDA 21 CFR 177.2600

Protection category:
- IP 68 (5 bar, 30 min.) to IEC 60 529
- IP 69K to DIN 40 050-9

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	4.5 – 10	5 pc(s).	**2410.010**
M20 x 1.5	6 – 12	5 pc(s).	**2410.020**
M25 x 1.5	11 – 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**
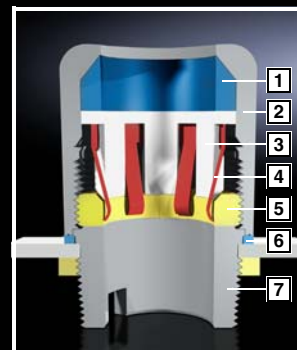
1 External cable seal
2 Cap nut
3 Gripper jaws
4 Shield spring (EMC version only)
5 Clamping ring
6 Enclosure seal
7 Base with locator for assembly tool

Why hygiene-compatible 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
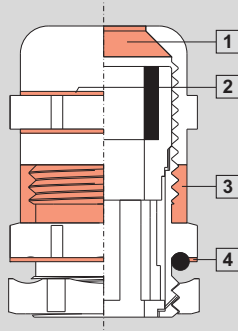
Hygiene-compatible design features
1 Seal directly at the cable entry
2 Compliance with minimum radii on the hexagon
3 No external threads
4 Flush termination between the cap nut and the enclosure
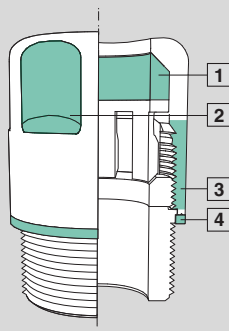
Stainless steel lock nut

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 set = Adaptor for sizes from M12 – M25

Packs of	Model No.
1 set(s)	**2410.290**
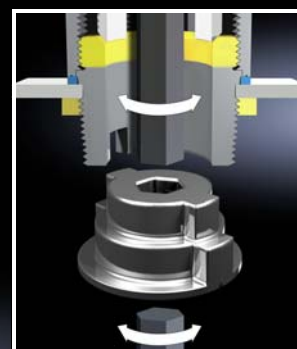
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- IT Infrastructure
- Software & Services

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