

Operating Instructions

Empty enclosures



Design

Series

KEL 93xx



Use

The empty enclosures made of stainless steel are designed for installation of Ex components and terminals.

Purpose of these instructions

When work is done in areas where there is risk of explosion, the safety of persons and equipment depends on adherence to the relevant safety regulations. Installation and maintenance personnel working on this equipment have a serious responsibility, and they need to have detailed knowledge of the applicable regulations and requirements. These instructions present a brief summary of the most important safety guidelines. It is intended as an enhancement to the appropriate regulations which the persons responsible must comply with.



Safety Information

The empty enclosure must only be used for the approved purpose. Inappropriate or unauthorised use or failure to comply with the information contained in these instructions voids any warranty on our part. Modifications or changes to the empty enclosure which impair explosion protection are not allowed. The empty enclosure must be clean and undamaged when it is installed.

You must adhere to the following when you use the enclosure :

- + national safety regulations
- + national workplace health and safety regulations
- + national installation and set-up regulations
- + generally accepted engineering standards
- + the safety information contained in these operating instructions
- + the data and rated operating conditions on the name plate and rating plate
- + the EU prototype testing certificate

Conformance to standards

The empty enclosures conform to the following standards and regulations:

EN 50014, EN 50019

Series KEL 93xx empty enclosures are suitable for use in explosion hazard areas. The empty enclosures conform to the requirements for "e" enhanced ignition safety for a Group II EX component.

Technical data

Explosion protection  0102 II 2 G EEx e II

Component certificate – empty enclosure PTB 03 ATEX 1013U

Important: After having been equipped with components, empty enclosures with component certificate still require overall approval (prototype test certificate).

Material: **corrosion protected material**

KEL/KE 93xx-00 = 1.4301 / 304
KEL/KE 93xx-30 = 1.4401 / (316)
KEL/KE 93xx-40 = 1.4571
KEL/KE 93xx-26 = 1.4404 / (316L)

Protection category IP 66 per EN 60 529/10.91



We will gladly provide test certificates on request.

Cable and wire entries (KEL)

Cable and wire entries as well as sealing plugs made of metal or cold impact resistant plastic can be used. All cable and wire entries must have a separate EU prototype test certificate, for example:

PTB 00 ATEX 3119X	manufactured by Stahl
PTB 02 ATEX 1066U	manufactured by Stahl
PTB 99 ATEX 3121 (flared)	manufactured by CEAG
PTB 98 ATEX 3109 (metal)	manufactured by Pflitsch

The maximum number of entries listed in the table for each side of the enclosure has been defined to avoid weakening of the side panels or degrading the stability of the enclosure. Metric cable glands can be used as well as PG sizes. All cable and wire entries must be installed using a metal counternut. The number of possible standard cable glands decreases if strain relief or cable guards are used. A mixture of cable and wire entries can be used. Zones for intrinsically safe circuits must be marked.

Unused openings for cable and wire entries must be closed with plastic or metal plugs that have a separate EU prototype test certificate, for example: PTB 99 ATEX 3133 type 8290 manufactured by Stahl.



On new designs, use cable and wire entries with metric threads only

Max. number of cable entries

The maximum number of cable/wire entries on the respective enclosure is as follows:

Size / Side	KEL 9301				KEL 9302				KEL 9303			
	A	B	C	D	A	B	C	D	A	B	C	D
PG 7	4	2	4	4	4	2	11	11	6	4	6	6
PG 9	3	1	3	3	3	1	10	10	5	3	5	5
PG 11	3	1	3	3	3	1	8	8	5	3	5	5
PG 13.5	3	1	3	3	3	1	8	8	4	2	4	4
PG 16			2	2			7	7			4	4
PG 21			2	2			5	5			3	3
PG 29												
PG 36												
PG 42												
PG 48												
M 12	4	2	4	4	4	2	11	11	6	4	6	6
M 16	3	1	3	3	3	1	10	10	5	3	5	5
M 20	3	1	3	3	3	1	8	8	4	2	4	4
M 25			2	2			7	7			4	4
M 32			2	2			5	5			3	3
M 40												
M 50												
M 63												

Size / Side	KEL 9304				KEL 9305				KEL 9306			
	A	B	C	D	A	B	C	D	A	B	C	D
PG 7	6	4	11	11	18	16	48	48	33	31	33	33
PG 9	5	3	10	10	10	8	42	42	20	18	30	30
PG 11	5	3	8	8	10	8	36	36	16	14	24	24
PG 13.5	4	2	8	8	8	6	22	22	16	14	16	16
PG 16			7	7	8	6	20	20	14	12	14	14
PG 21			5	5	3	1	14	14	5	3	10	10
PG 29					2		6	6	4	2	4	4
PG 36					2		5	5	3	1	3	3
PG 42					2		5	5	3	1	3	3
PG 48												
M 12	6	4	11	11	18	16	48	48	33	31	33	33
M 16	5	3	10	10	9	7	41	41	19	17	29	29
M 20	4	2	8	8	8	6	22	22	16	14	16	16
M 25			7	7	7	5	19	19	13	11	13	13
M 32			5	5	3	1	13	13	4	2	9	9
M 40					2		6	6	3	1	3	3
M 50					2		5	5	2	1	2	2
M 63												

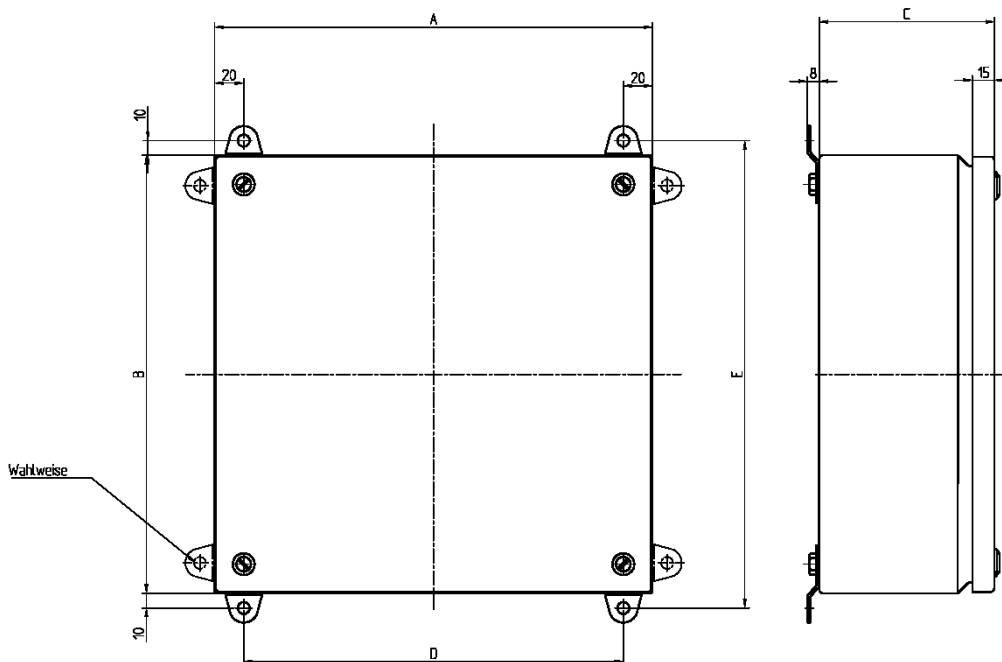
Max. number of cable glands at 2 mm width across corners.



The information contained in the operating instructions provided by the manufacturers of cable and wire entries must be observed!

Installation

Dimension sketch



Enclosure dimensions (mm)

Side	KEL					
	9301	9302	9303	9304	9305	9306
A	150	300	200	300	400	300
B	150	150	200	200	200	300
C	80	80	80	80	120	120
D	110	260	160	260	360	260
E	170	170	220	220	220	320

When you mount cable and wire entries, you must ensure that the defined protection category for the enclosure is maintained. Use appropriate tools and wrenches to fasten cable and wire entries. The cover and the bottom section of the enclosure are screw-fastened by using recessed head screws. The recessed head screws are held captively in the cover by a plastic bush. M8 screws are recommended for mounting the enclosure on a wall. You can also use DIN 96 screws. You must use appropriate locking hardware such as split washers or tooth lock washers. If the enclosure is exposed to the elements or mounted outside, we recommend that you install a protective cover or panel. The original packaging must be used when the enclosure is transported or stored.

Initial start-up procedure

Before you apply power for the first time, you must check the following items:

- + the enclosure must be properly installed
- + the enclosure must not be damaged; this applies in particular to the seals
- + there must be no foreign objects inside the enclosure and the wiring space must be clean
- + mounting and device screws must be securely fastened
- + cable and wire entries must be securely fastened
- + all cables and wires must be installed in the leadthroughs as required for the protection category
- + unused cable and wire entries must be closed with certified plugs
- + unused holes must be sealed with certified plugs
- + the outer protective earth connection must be properly installed near the enclosure

Repair and maintenance

Only authorised personnel with the appropriate training may carry out repair and maintenance work on the enclosures listed above.

The enclosures should be checked for seal damage during maintenance and inspection.



Applicable national regulations must be observed during operation of the enclosures listed above.

Accessories and spare parts



Only original accessories and spare parts from Rittal GmbH & Co. KG may be used.

Disposal

Please observe your national disposal regulations.