

# Electrical equipment for hazardous areas



**HARDO**

## Upcoming products

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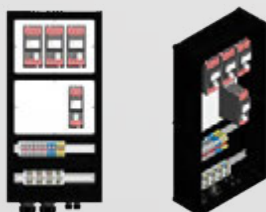
Polyamide junction boxes  
prices up to 20% lower than GRP versions

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Floodlight and high bay fixtures  
reliable quality at a reasonable price

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Distribution boards  
competitive price and short delivery time





# Electrical equipment

for hazardous areas

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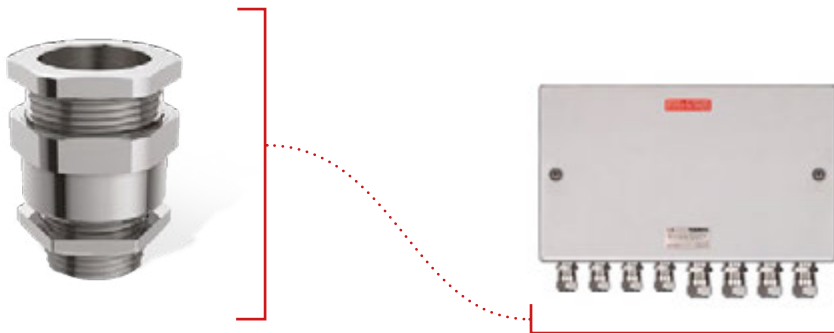
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HCG1 series for zones 1/2 and 21/22

## Steel glands for unarmoured cables



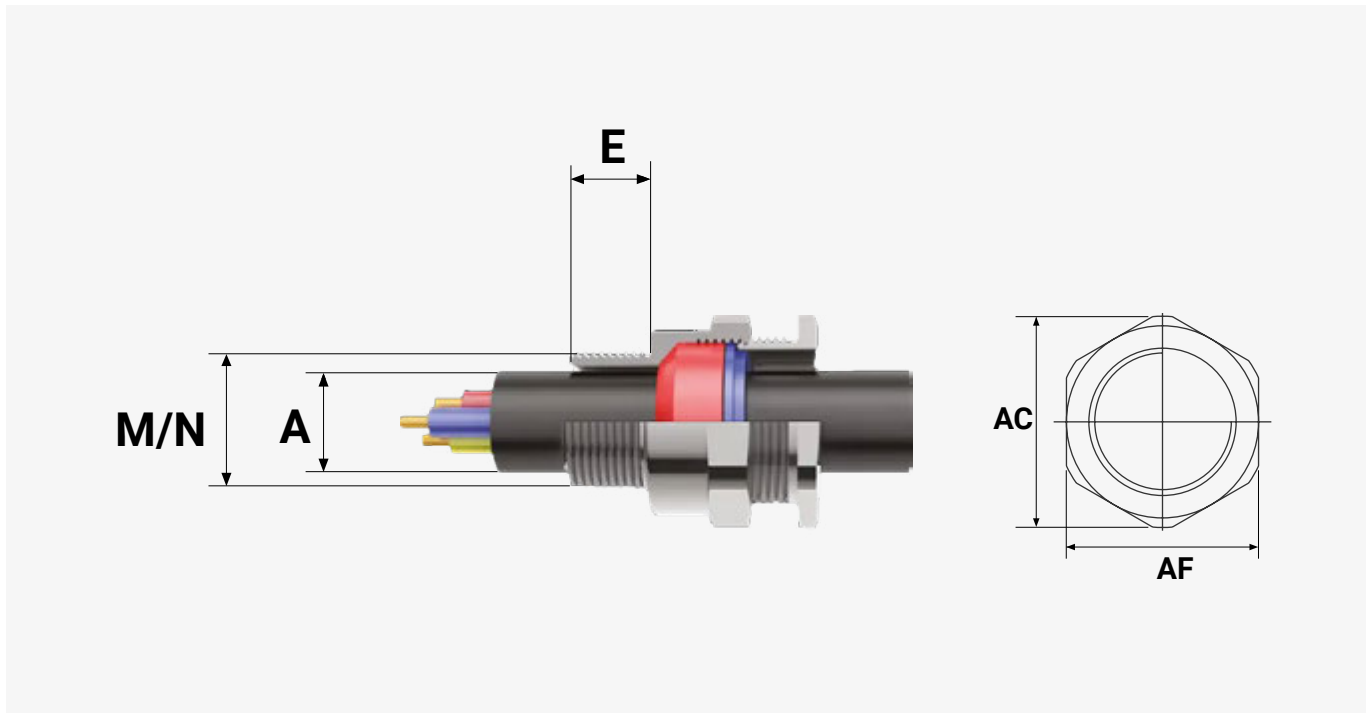
HARDO's HCG1 Series certified cable glands are designed for the installation of unarmoured cables in explosion hazard zones 1, 2 and 21 and 22. The silicone cable seal provides a high degree of protection IP68 (immersion up to 1.5 m for 30 min) and allows operation in a wide temperature range from -55°C to +160°C. HCG1 cable glands can be used with all types of unarmoured cables with a round cross-section.



### Technical data

Marking according to 2014/34/EU	<ul style="list-style-type: none"> <li>⊕ II 2 GD Ex db IIC Gb</li> <li>⊕ II 2 GD Ex eb IIC Gb</li> <li>⊕ II 2 GD Ex tb IIIC Db</li> </ul>
ATEX zones	gases: 1/2 dusts: 21/22
EC type examination certificate	DNV 22 ATEX 53555X
IECEX certificate of conformity	IECEX DNV 22.0086X
IECEX marking	Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db
Type of protection	Ex d, Ex e, Ex t
Ambient temperature	-55°C to +160°C (silicone seal)
Cable type	unarmoured
Degree of protection	IP66 / IP68 (1.5 m, 2 hours)
Thread type	Metric / NPT
Material	Brass Nickel-plated brass Stainless steel 316L

## HCG1 series unarmoured cable glands



METRIC		NPT			A Outer clamping Ø		AF/AC**	Order code <small>Replace [X] with the value from the table below; select M1 or N1.</small>
M	E	N	N*	E	Min.	Max.		
Thread size	Thread length	Thread size	Thread size	Thread length				
M20 [1M]	17	1/2" [1N]	3/4" [2N]	20	3.2	8.5	25 / 27,5	HCG1 [X][1M/1N/2N]20XS
M20 [1M]	17	1/2" [1N]	3/4" [2N]	20	6.2	11.6	25 / 27,5	HCG1 [X][1M/1N/2N]20S
M20 [1M]	17	1/2" [1N]	3/4" [2N]	20	8.0	13.9	27 / 30	HCG1 [X][1M/1N/2N]20
M25 [2M]	17	3/4" [2N]	1" [3N]	21	11.2	19.6	36 / 40	HCG1 [X][2M/2N/3N]25
M32 [3M]	17	1" [3N]	1 1/4" [4N]	26	17.1	26.0	42 / 46	HCG1 [X][3M/3N/4N]32
M40 [4M]	17	1 1/4" [4N]	1 1/2" [5N]	26	23.6	31.6	50 / 55	HCG1 [X][4M/4N/5N]40
M50 [5M]	17	1 1/2" [5N]	2" [6N]	26	31.1	37.5	55 / 60	HCG1 [X][5M/5N/6N]50S
M50 [5M]	17	2" [5N]	2 1/2" [6N]	27	35.7	43.1	60 or 61 / 65	HCG1 [X][5M/5N/6N]50
M63 [6M]	17	2" [6N]	2 1/2" [7N]	27	41.6	48.7	70 / 77	HCG1 [X][6M/6N/7N]63S
M63 [6M]	17	2 1/2" [6N]	3" [7N]	40	47.3	55.2	74 / 81	HCG1 [X][6M/6N/7N]63
M75 [7M]	17	2 1/2" [7N]	3" [8N]	40	54.1	61.2	80 / 87	HCG1 [X][7M/7N/8N]75S
M75 [7M]	17	3" [8N]	3 1/2" [9N]	42	61.2	67.2	85 or 91 / 93 or 98.5	HCG1 [X][7M/8N/9N]75
M90 [9M]	24	3 1/2" [9N]	4" --	--	66.7	79.2	108 / 116	HCG1 [X][9M/9N]90

\* Optional thread size - available on special order\*\*AF - ACROSS FLATS (distance between flat surfaces of hex bolt) / AC - ACROSS CORNERS (distance between opposite corners of hex bolt)

[X] Material		
N - nickel-plated brass	S - 316L stainless steel	B - brass

## Coding

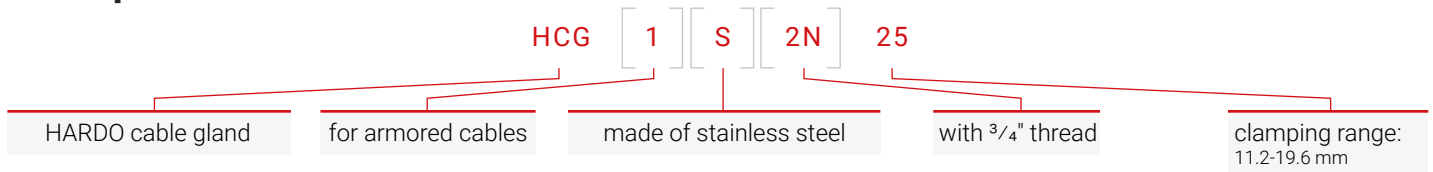
Options to choose

CODE HARDO	CABLE TYPE	MATERIAL	THREAD Select one of the options			CLAMPING RANGE
			METRIC	NPT	NPT Option	
HCG	[ 1 ] = UNARMoured CABLES [ 2 ] = ARMoured CABLES *	[ N ] = NICKEL-PLATED BRASS [ S ] = 316L STAINLESS STEEL [ B ] = BRASS	[ 1M ] M20	[ 1N ] 1/2"	[ 2N ] 3/4"	20XS
			[ 1M ] M20	[ 1N ] 1/2"	[ 2N ] 3/4"	20S
			[ 1M ] M20	[ 1N ] 1/2"	[ 2N ] 3/4"	20
			[ 2M ] M25	[ 2N ] 3/4"	[ 3N ] 1"	25
			[ 3M ] M32	[ 3N ] 1"	[ 4N ] 1 1/4"	32
			[ 4M ] M40	[ 4N ] 1 1/4"	[ 5N ] 1 1/2"	40
			[ 5M ] M50	[ 5N ] 1 1/2"	[ 6N ] 2"	50S
			[ 5M ] M50	[ 5N ] 2"	[ 6N ] 2 1/2"	50
			[ 6M ] M63	[ 6N ] 2"	[ 7N ] 2 1/2"	63S
			[ 6M ] M63	[ 6N ] 2 1/2"	[ 7N ] 3"	63
			[ 7M ] M75	[ 7N ] 2 1/2"	[ 8N ] 3"	75S
			[ 7M ] M75	[ 8N ] 3"	[ 9N ] 3 1/2"	75
			[ 9M ] M90	[ 9N ] 3 1/2"	---	90

\* To select glands for armored cables, please use the dedicated catalog card.

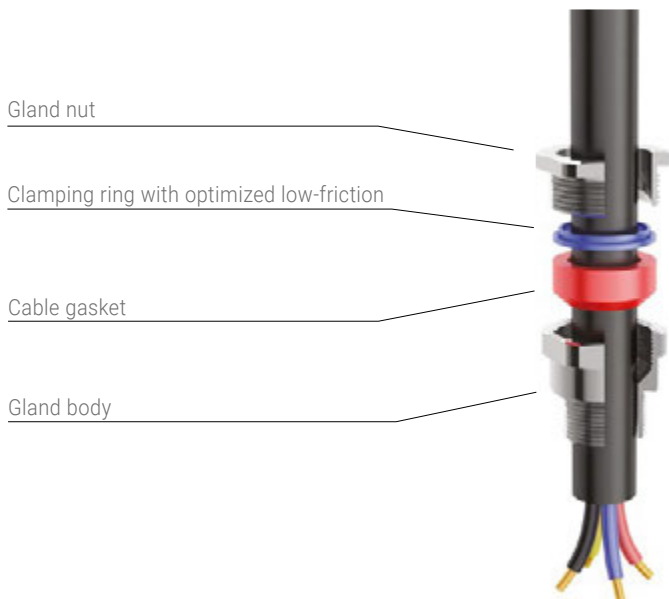
Thread and gland size must be selected from the same row

## Example

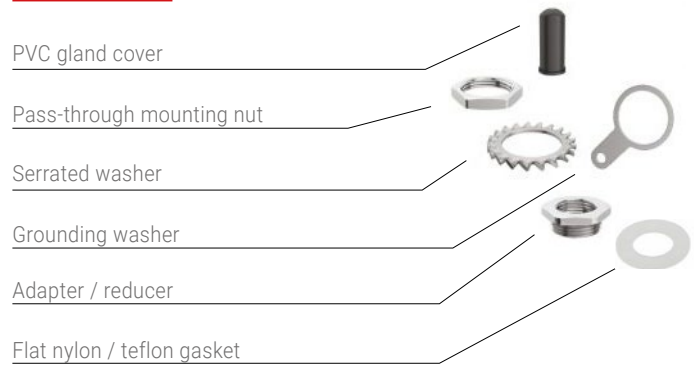


## Construction and accessories

### Construction



### Accessories



**NPT threads** are self-sealing and therefore do not require the use of gaskets.



HCG2 series for zones 1/2 and 21/22

## Steel glands for armoured/screened cables with double sealing



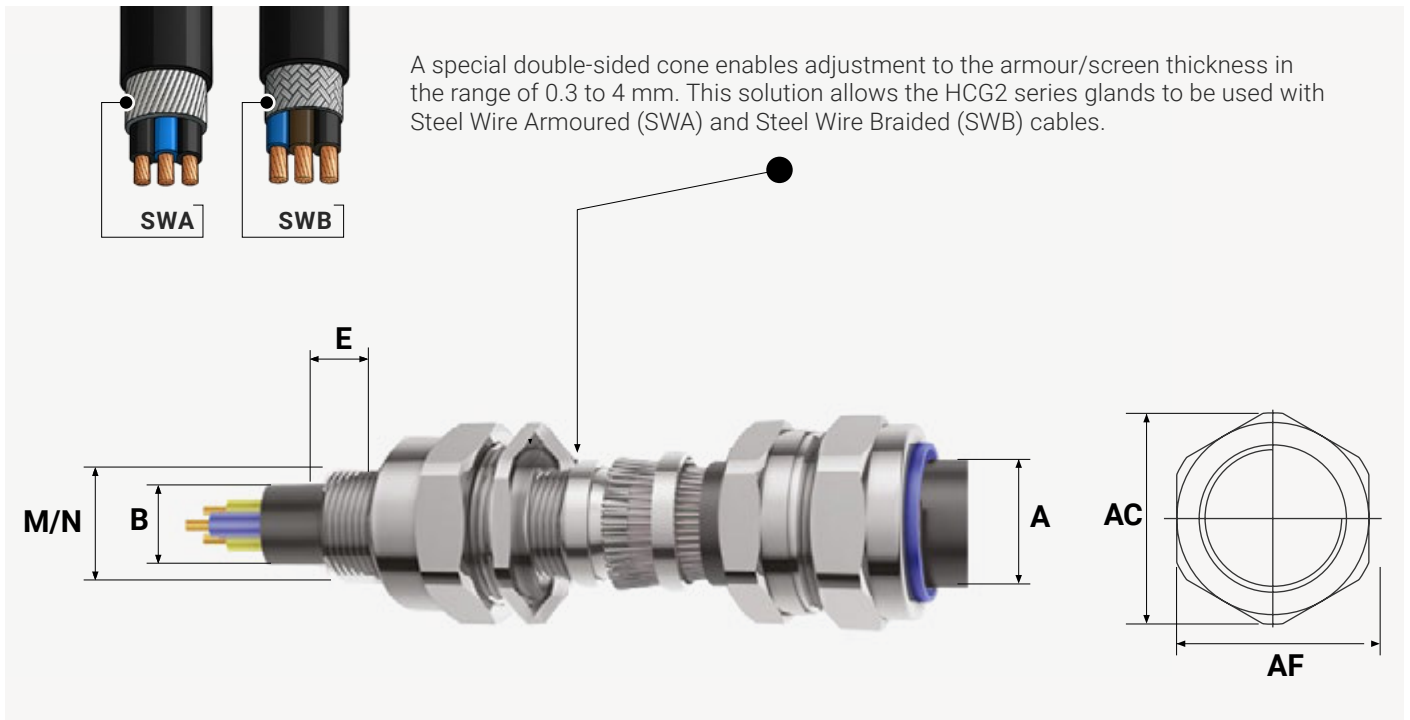
Certified HARDO cable glands HCG2 series are designed for armoured cables in zones 1, 2, 21 and 22. The double-sided cone clamps the armour, allowing the installation of SWA (Steel Wire Armoured) and SWB (Steel Wire Braided) cables. Double sealing of the cable allows to achieve IP68 protection (immersion up to 1.5 m for 30 minutes). HCG2 cable glands can be used in the temperature range from -55°C to +160°C (silicone sealing).



### Technical data

Marking according to 2014/34/EU	ⓧ II 2 GD Ex db IIC Gb ⓧ II 2 GD Ex eb IIC Gb ⓧ II 2 GD Ex tb IIIC Db
ATEX zones	gases: 1/2 dusts: 21/22
EC type examination certificate	DNV 22 ATEX 53555X
IECEX certificate of conformity	IECEX DNV 22.0086X
IECEX marking	Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db
Type of protection	Ex d, Ex e, Ex t
Ambient temperature	-55°C to +160°C (silicone seal)
Cable type	armoured
Degree of protection	IP66 / IP68 (1.5 m, 2 hours)
Thread type	Metric / NPT
Material	Brass Nickel-plated brass Stainless steel 316L

## HCG2 series glands for armored cables



METRIC		NPT					A		B		Armour thickness**				AF/AC***	Order code Replace [X] with the value from the table below; select M1, N1 or N2.
M	E	N	N*	E	Min.	Max.	Min.	Max.	Grooved cone		Graduated cone					
Thread size	Thread length	Thread size	Thread size	Thread length					Min.	Max.	Min.	Max.				
M20	[1M]	17	1/2" [1N]	3/4" [2N]	20	6.2	13.1	3.2	8.5	0.3	1	0.8	1.25	25 / 27,5	HCG2 [X][1M/1N/2N]20XS	
M20	[1M]	17	1/2" [1N]	3/4" [2N]	20	9.6	15.5	6.2	11.6	0.3	1	0.8	1.25	25 / 27,5	HCG2 [X][1M/1N/2N]20S	
M20	[1M]	17	1/2" [1N]	3/4" [2N]	20	12.5	20.9	8.0	13.9	0.4	1	0.8	1.25	31 / 34	HCG2 [X][1M/1N/2N]20	
M25	[2M]	17	3/4" [2N]	1" [3N]	21	14.0	21.5	11.2	19.6	0.4	1.2	1.25	1.6	38 / 42	HCG2 [X][2M/2N/3N]25S	
M25	[2M]	17	3/4" [2N]	1" [3N]	21	18.3	25.6	11.2	19.6	0.4	1.2	1.25	1.6	38 / 42	HCG2 [X][2M/2N/3N] 25	
M32	[3M]	17	1" [3N]	1 1/4" [4N]	26	23.7	33.4	17.1	26.0	0.4	1.2	1.6	2	46 / 51	HCG2 [X][3M/3N/4N]32	
M40	[4M]	17	1 1/4" [4N]	1 1/2" [5N]	26	28.0	39.5	22.1	31.6	0.4	1.6	1.6	2	55 / 60	HCG2 [X][4M/4N/5N]40	
M50	[5M]	17	1 1/2" [5N]	2" [6N]	26	35.2	46.0	29.5	37.5	0.4	1.6	2	2.5	61 / 66,5	HCG2 [X][5M/5N/6N]50S	
M50	[5M]	17	2" [5N]	2 1/2" [6N]	27	40.5	52.4	35.6	43.1	0.6	1.6	2	2.5	70 / 76	HCG2 [X][5M/5N/6N]50	
M63	[6M]	17	2" [6N]	2 1/2" [7N]	27	45.6	58.5	40.1	48.7	0.6	1.6	2	2.5	75 / 83	HCG2 [X][6M/6N/7N]63S	
M63	[6M]	17	2 1/2" [6N]	3" [7N]	40	54.6	64.5	47.2	55.2	0.6	1.6	2	2.5	80 / 89	HCG2 [X][6M/6N/7N]63	
M75	[7M]	17	2 1/2" [7N]	3" [8N]	40	59.0	70.4	52.8	61.2	0.6	1.6	2	2.5	91 / 98,5	HCG2 [X][7M/7N/8N]75S	
M75	[7M]	17	3" [8N]	3 1/2" [9N]	42	66.7	76.3	59.1	67.2	0.6	1.6	2.5	3	100 / 109	HCG2 [X][7M/8N/9N]75	
M90	[8M]	24	3 1/2" [9N]	---	44	76.2	87.2	66.6	79.2	0.8	1.6	3.15	4	114,5/124	HCG2 [X][8M/9N]90	

\* Optional thread size – available upon special request \*\* The armour clamping cone has two sides – depending on the mounting method, it allows for different armour clamping ranges \*\*\* AF – ACROSS FLATS (distance between the flat surfaces of a hexagonal screw) / AC – ACROSS CORNERS (distance between opposite corners of a hexagonal screw)

[X] Material		
N - nickel-plated brass	S - 316L stainless steel	B - brass

## Coding

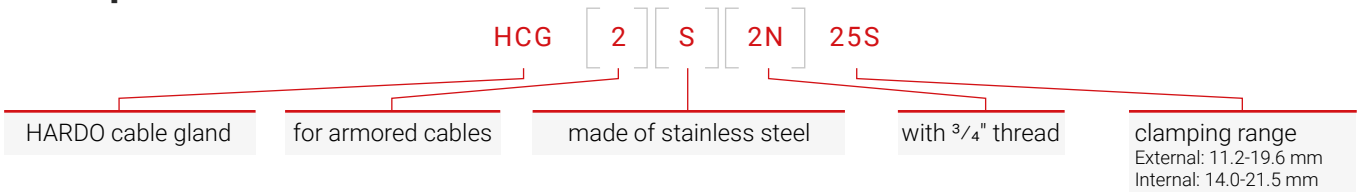
Options to choose

CODE HAR-DO	CABLE TYPE	MATERIAL	THREAD Select one of the options			CLAMPING RANGE
			METRIC	NPT	NPT Option	
HCG	[1] = UNREINFORCED CABLES* [2] = REINFORCED CABLES	[N] = NICKEL-PLATED BRASS [S] = 316L STAINLESS STEEL [B] = BRASS	[1M] M20	[1N] 1/2"	[2N] 3/4"	20XS
			[1M] M20	[1N] 1/2"	[2N] 3/4"	20S
			[1M] M20	[1N] 1/2"	[2N] 3/4"	20
			[2M] M25	[2N] 3/4"	[3N] 1"	25S
			[2M] M25	[2N] 3/4"	[3N] 1"	25
			[3M] M32	[3N] 1"	[4N] 1 1/4"	32
			[4M] M40	[4N] 1 1/4"	[5N] 1 1/2"	40
			[5M] M50	[5N] 1 1/2"	[6N] 2"	50S
			[5M] M50	[5N] 2"	[6N] 2 1/2"	50
			[6M] M63	[6N] 2"	[7N] 2 1/2"	63S
			[6M] M63	[6N] 2 1/2"	[7N] 3"	63
			[7M] M75	[7N] 2 1/2"	[8N] 3"	75S
			[7M] M75	[8N] 3"	[9N] 3 1/2"	75
			[8M] M90	[9N] 3 1/2"	---	90

Thread and gland size must be selected from the same row

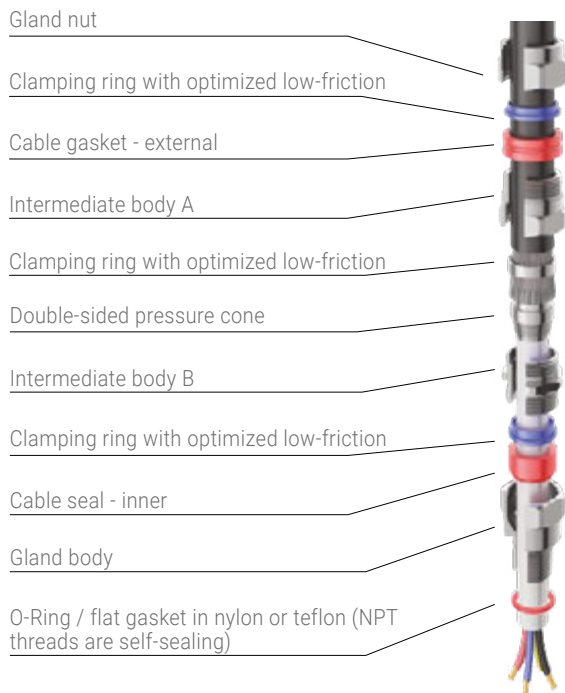
\* To select glands for unarmoured cables, please use the dedicated catalogue card.

## Example

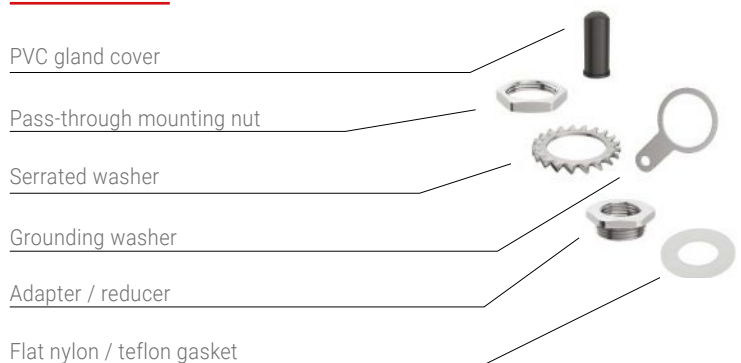


## Construction and accessories

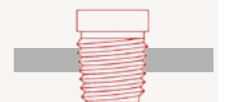
### Construction



### Accessories



**NPT1 threads** are self-sealing and therefore do not require the use of gaskets.



HAD/HAR/HPLG series for zones 1/2 and 21/22

## Adapters/reducers/plugs for hazardous areas



### Features

- ▶ Adapters, reducers and blanking plugs designed for hazardous areas (IECEx and ATEX certified). They can be used in zones 1, 2 (gases) and 21, 22 (dust).
- ▶ With an IP68 degree of protection, they provide a high level of protection against the ingress of dust and moisture.
- ▶ Made of brass (CuZn39Pb3) or stainless steel (SS304/SS316L), they have high corrosion resistance, making them ideal for use in harsh industrial environments.
- ▶ Versions with metric-metric, metric-NPT, NPT-NPT and NPT-metric threads are available, providing installation flexibility.
- ▶ The thread range from M16 to M100 guarantees compatibility with a variety of cable glands and housings.
- ▶ An operating temperature range of -55°C to +160°C allows use in extreme conditions.

### Technical data

Marking in accordance with 2014/34/EU	II 2 GD Ex db IIC Gb II 2 GD Ex eb IIC Gb II 2 GD Ex tb IIIC Db
EC type examination certificate	DNV 22 ATEX 62580X
IECEx certificate of conformity	IECEx DNV 22.0091X
IECEx Marking	Ex db IIC Gb Ex eb IIC Gb Ex tb IIIC Db
Type of protection	Ex d, Ex e, Ex t
Permissible ambient temperature	-55°C to +160°C
Degree of protection	IP66 / IP68 (1.5 m, 2 h)
Material	Brass (CuZn39Pb3) Stainless steel (316l) Nickel-plated brass (CuZn39Pb3)*

\* Available by special order only

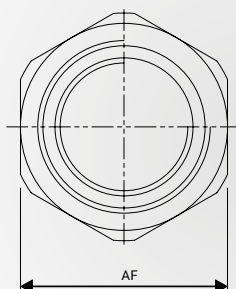
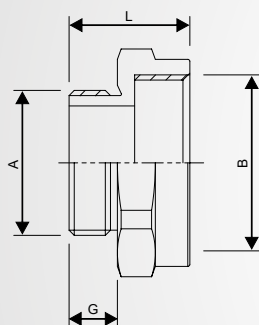
### Application

HARDO adapters and reducers are widely used in the oil and gas industry, chemical industry and heavy machinery sector where explosion protection is required. Thanks to their high mechanical strength and precision threading, they provide a safe and tight connection.



HAD series for zones 1/2 and 21/22

## Adapters for cable glands



IEC IECEx Ex IP68 CE

### Metric-metric

A	B	L	AF	G	Order No
M16	M20	34	25	16	HAD0M1M[X]
M16	M25	34	30	16	HAD0M2M[X]
M20	M20	34	25	16	HAD1M1M[X]
M20	M25	34	30	16	HAD1M2M[X]
M20	M32	34	36	16	HAD1M3M[X]
M25	M25	34	30	16	HAD2M2M[X]
M25	M32	34	36	16	HAD2M3M[X]
M25	M40	34	45	16	HAD2M4M[X]
M25	M50	34	55	16	HAD2M5M[X]
M32	M32	34	36	16	HAD3M3M[X]
M32	M40	34	45	16	HAD3M4M[X]
M32	M50	34	55	16	HAD3M5M[X]
M40	M40	34	45	16	HAD4M4M[X]
M40	M50	34	55	16	HAD4M5M[X]
M40	M63	34	68	16	HAD4M6M[X]
M40	M75	39	80	16	HAD4M7M[X]
M50	M50	34	55	16	HAD5M5M[X]
M50	M63	36	68	16	HAD5M6M[X]
M50	M75	39	80	16	HAD5M7M[X]
M63	M63	34	68	16	HAD6M6M[X]
M63	M75	39	80	16	HAD6M7M[X]
M63	M90	39	95	16	HAD6M8M[X]
M75	M75	44	80	20	HAD7M7M[X]
M75	M90	44	95	20	HAD7M8M[X]
M75	M100	44	105	20	HAD7M9M[X]
M90	M90	44	95	20	HAD8M8M[X]

### Metric-NPT

A	B	L	AF	G	Order No
M16	3/8"	34	20	16	HAD0M0N[X]
M16	1/2"	37	25	16	HAD0M1N[X]
M16	3/4"	37	30	16	HAD0M2N[X]
M20	1/2"	37	25	16	HAD1M1N[X]
M20	3/4"	37	30	16	HAD1M2N[X]
M20	1"	41	36	16	HAD1M3N[X]
M25	3/4"	37	30	16	HAD2M2N[X]
M25	1"	41	36	16	HAD2M3N[X]
M25	1.1/4"	41	45	16	HAD2M4N[X]
M32	1"	41	36	16	HAD3M3N[X]
M32	1.1/4"	41	45	16	HAD3M4N[X]
M32	1.1/2"	43	55	16	HAD3M5N[X]
M40	1.1/4"	41	45	16	HAD4M4N[X]
M40	1.1/2"	43	55	16	HAD4M5N[X]
M40	2"	43	65	16	HAD4M6N[X]
M50	1.1/2"	43	55	16	HAD5M5N[X]
M50	2"	43	65	16	HAD5M6N[X]
M50	2.1/2"	47	80	16	HAD5M6N[X]
M63	2"	43	68	16	HAD6M6N[X]
M63	2.1/2"	47	80	16	HAD6M6N[X]
M63	3"	47	95	16	HAD6M8N[X]
M75	2.1/2"	52	80	20	HAD7M6N[X]
M75	3"	52	95	20	HAD7M8N[X]
M75	4"	54	120	20	HAD7M9N[X]
M90	3"	52	95	20	HAD8M8N[X]
M90	4"	54	120	20	HAD8M9N[X]
M100	4"	54	120	20	HAD9M9N[X]

#### [X] Material

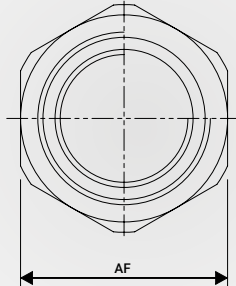
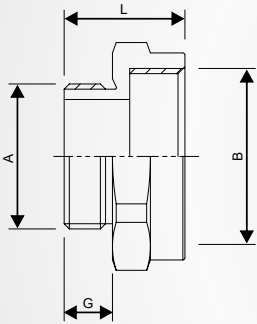
N - nickel-plated brass

S - 316L stainless steel

B - brass

HAD series for zones 1/2 and 21/22

## Adapters for cable glands



IEC IECEx Ex IP68 CE

### NPT-metric

A	B	L	AF	G	Order number
3/8"	M16	33	25	16	HAD0N0M[X]
3/8"	M20	33	25	16	HAD0N1M[X]
1/2"	M20	38	25	21	HAD1N1M[X]
1/2"	M25	39	30	21	HAD1N2M[X]
1/2"	M32	39	36	21	HAD1N3M[X]
3/4"	M25	39	30	21	HAD2N2M[X]
3/4"	M32	39	36	21	HAD2N3M[X]
3/4"	M40	39	45	21	HAD2N4M[X]
1"	M32	44	36	26	HAD3N3M[X]
1"	M40	44	45	26	HAD3N4M[X]
1"	M40	44	55	26	HAD3N4M[X]
1.1/4"	M40	44	45	26	HAD4N4M[X]
1.1/4"	M50	44	55	26	HAD4N5M[X]
1.1/4"	M63	44	68	26	HAD4N6M[X]
1.1/2"	M50	45	55	27	HAD5N5M[X]
1.1/2"	M63	45	68	27	HAD5N6M[X]
1.1/2"	M75	50	80	27	HAD5N7M[X]
2"	M63	48	68	28	HAD6N6M[X]
2"	M75	51	80	28	HAD6N7M[X]
2"	M90	51	95	28	HAD6N8M[X]
2.1/2"	M75	65	80	41	HAD6N7M[X]
2.1/2"	M90	65	95	41	HAD6N8M[X]
2.1/2"	M100	66	105	41	HAD6N9M[X]
3"	M90	66	95	42	HAD8N8M[X]
3"	M100	66	105	42	HAD8N9M[X]
4"	M100	70	120	45	HAD9N9M[X]

### NPT-NPT

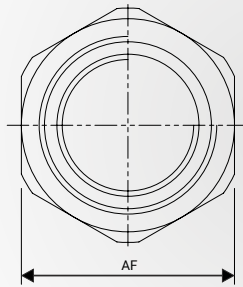
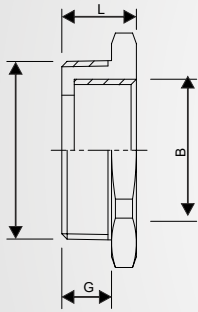
A	B	L	AF	G	Order number
3/8"	1/2"	37	25	16	HAD0N1N[X]
3/8"	3/4"	42	30	21	HAD0N2N[X]
1/2"	1/2"	42	36	21	HAD1N1N[X]
1/2"	3/4"	42	36	21	HAD1N2N[X]
3/4"	3/4"	42	45	21	HAD2N2N[X]
3/4"	1"	46	45	21	HAD2N3N[X]
1"	1"	51	45	26	HAD3N3N[X]
1"	1.1/4"	51	55	26	HAD3N4N[X]
1"	1.1/2"	53	55	26	HAD3N5N[X]
1.1/4"	1.1/4"	51	55	26	HAD4N4N[X]
1.1/4"	1.1/2"	53	55	26	HAD4N5N[X]
1.1/4"	2"	53	68	26	HAD4N6N[X]
1.1/2"	1.1/2"	54	68	27	HAD5N5N[X]
1.1/2"	2"	54	68	27	HAD5N6N[X]
1.1/2"	2.1/2"	58	68	27	HAD5N6N[X]
2"	2"	55	80	28	HAD6N6N[X]
2"	2.1/2"	59	80	28	HAD6N6N[X]
2"	3"	59	80	28	HAD6N8N[X]
2.1/2"	2.1/2"	73	80	41	HAD6N6N[X]
2.1/2"	3"	73	80	41	HAD6N8N[X]
2.1/2"	4"	73	95	41	HAD6N9N[X]
3"	3"	74	95	42	HAD8N8N[X]
3"	4"	74	120	42	HAD8N9N[X]



[X] Material		
N - nickel-plated brass	S - 316L stainless steel	B - brass

HAR series for zones 1/2 and 21/22

## Reducers for cable glands



IEC IECEx Ex IP68 CE

### Metric-metric

A	B	L	AF	G	Order No
M20	M12	22	25	16	HRD1MMS[X]
M20	M16	22	25	16	HRD1M0M[X]
M25	M12	22	30	16	HRD2MMS[X]
M25	M16	22	30	16	HRD2M0M[X]
M25	M20	22	30	16	HRD2M1M[X]
M32	M16	22	36	16	HRD3M0M[X]
M32	M20	22	36	16	HRD3M1M[X]
M32	M25	22	36	16	HRD3M2M[X]
M40	M20	22	45	16	HRD4M1M[X]
M40	M25	22	45	16	HRD4M2M[X]
M40	M32	22	45	16	HRD4M3M[X]
M50	M20	24	55	16	HRD5M1M[X]
M50	M25	24	55	16	HRD5M2M[X]
M50	M32	24	55	16	HRD5M3M[X]
M50	M40	24	55	16	HRD5M4M[X]
M63	M50	24	68	16	HRD6M5M[X]
M63	M25	24	68	16	HRD6M2M[X]
M63	M32	24	68	16	HRD6M3M[X]
M63	M40	24	68	16	HRD6M4M[X]
M63	M50	24	68	16	HRD6M5M[X]
M75	M63	28	80	20	HRD7M6M[X]
M75	M32	28	80	20	HRD7M3M[X]
M75	M40	28	80	20	HRD7M4M[X]
M75	M50	28	80	20	HRD7M5M[X]
M75	M63	28	80	20	HRD7M6M[X]
M90	M32	28	95	20	HRD8M3M[X]
M90	M40	28	95	20	HRD8M4M[X]
M90	M50	28	95	20	HRD8M5M[X]
M90	M63	28	95	20	HRD8M6M[X]
M90	M75	28	95	20	HRD8M7M[X]
M100	M40	30	110	20	HRD9M4M[X]
M100	M50	30	110	20	HRD9M5M[X]
M100	M63	30	110	20	HRD9M6M[X]
M100	M75	30	110	20	HRD9M7M[X]
M100	M90	30	110	20	HRD9M8M[X]

### Metric-NPT

A	B	L	A/F	G	Order No
M20	3/8"	22	25	16	HRD1M0N[X]
M25	3/8"	22	30	16	HRD2M0N[X]
M25	1/2"	22	30	16	HRD2M1N[X]
M32	1/2"	22	36	16	HRD3M1N[X]
M32	3/4"	22	36	16	HRD3M2N[X]
M40	1/2"	22	45	16	HRD4M1N[X]
M40	3/4"	22	45	16	HRD4M2N[X]
M40	1"	22	45	16	HRD4M3N[X]
M50	1/2"	22	55	16	HRD5M1N[X]
M50	3/4"	22	55	16	HRD5M2N[X]
M50	1"	22	55	16	HRD5M3N[X]
M50	1 1/4"	22	55	16	HRD5M4N[X]
M63	3/4"	22	68	16	HRD6M2N[X]
M63	1"	22	68	16	HRD6M3N[X]
M63	1 1/4"	22	68	16	HRD6M4N[X]
M63	1 1/2"	22	68	16	HRD6M5N[X]
M75	1"	28	80	20	HRD7M3N[X]
M75	1 1/4"	28	80	20	HRD7M4N[X]
M75	1 1/2"	28	80	20	HRD7M5N[X]
M75	2"	28	80	20	HRD7M6N[X]
M90	1"	28	95	20	HRD8M3N[X]
M90	1 1/4"	28	95	20	HRD8M4N[X]
M90	1 1/2"	28	95	20	HRD8M5N[X]
M90	2"	28	95	20	HRD8M6N[X]
M90	2 1/2"	28	95	20	HRD8M6N[X]
M100	1 1/4"	32	110	22	HRD9M4N[X]
M100	1 1/2"	32	110	22	HRD9M5N[X]
M100	2"	32	110	22	HRD9M6N[X]
M100	2 1/2"	32	110	22	HRD9M6N[X]
M100	3"	32	110	22	HRD9M8N[X]

#### [X] Material

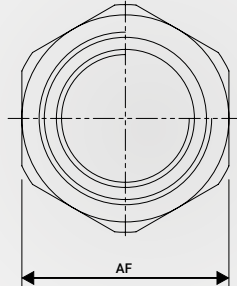
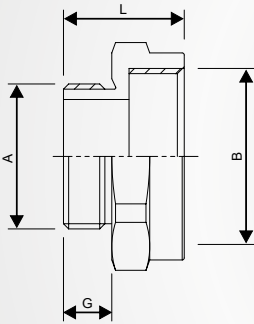
N - nickel-plated brass

S - 316L stainless steel

B - brass

HAR series for zones 1/2 and 21/22

## Reducers for cable glands



### NPT-metric

A	B	L	A/F	G	Order No
3/8"	M12	22	20	16	HRD0NMS[X]
1/2"	M12	27	25	21	HRD1NMS[X]
1/2"	M16	27	25	21	HRD1N0M[X]
3/4"	M12	27	30	21	HRD2NMS[X]
3/4"	M16	27	30	21	HRD2N0M[X]
3/4"	M20	27	30	21	HRD2N1M[X]
1"	M12	32	36	26	HRD3NMS[X]
1"	M16	32	36	26	HRD3N0M[X]
1"	M20	32	36	26	HRD3N1M[X]
1"	M25	32	36	26	HRD3N2M[X]
1 1/4"	M12	32	45	26	HRD4NMS[X]
1 1/4"	M16	32	45	26	HRD4N0M[X]
1 1/4"	M20	32	45	26	HRD4N1M[X]
1 1/4"	M25	32	45	26	HRD4N2M[X]
1 1/4"	M32	32	45	26	HRD4N3M[X]
1 1/2"	M20	35	55	27	HRD5N1M[X]
1 1/2"	M25	35	55	27	HRD5N2M[X]
1 1/2"	M32	35	55	27	HRD5N3M[X]
1 1/2"	M40	35	55	27	HRD5N4M[X]
2"	M25	36	68	28	HRD6N2M[X]
2"	M32	36	68	28	HRD6N3M[X]
2"	M40	36	68	28	HRD6N4M[X]
2"	M50	36	68	28	HRD6N5M[X]
2 1/2"	M32	51	80	41	HRD6N3M[X]
2 1/2"	M40	51	80	41	HRD6N4M[X]
2 1/2"	M50	51	80	41	HRD6N5M[X]
2 1/2"	M63	51	80	41	HRD6N6M[X]
3"	M32	54	95	42	HRD8N3M[X]
3"	M40	54	95	42	HRD8N4M[X]
3"	M50	54	95	42	HRD8N5M[X]
3"	M63	54	95	42	HRD8N6M[X]
3"	M75	54	95	42	HRD8N7M[X]
4"	M40	57	120	45	HRD9N4M[X]
4"	M50	57	120	45	HRD9N5M[X]
4"	M63	57	120	45	HRD9N6M[X]
4"	M75	57	120	45	HRD9N7M[X]
4"	M90	57	120	45	HRD9N8M[X]

### NPT-NPT

A	B	L	AF	G	Order No
1/2"	3/8"	29	25	21	HRD1N0N[X]
3/4"	1/2"	29	30	21	HRD2N1N[X]
1"	1/2"	34	36	26	HRD3N1N[X]
1"	3/4"	34	36	26	HRD3N2N[X]
1 1/4"	1/2"	34	45	26	HRD4N1N[X]
1 1/4"	3/4"	34	45	26	HRD4N2N[X]
1 1/4"	1"	34	45	26	HRD4N3N[X]
1 1/2"	1/2"	35	55	27	HRD5N1N[X]
1 1/2"	3/4"	35	55	27	HRD5N2N[X]
1 1/2"	1"	35	55	27	HRD5N3N[X]
1 1/2"	1 1/4"	35	55	27	HRD5N4N[X]
2"	3/4"	36	68	28	HRD6N2N[X]
2"	1"	36	68	28	HRD6N3N[X]
2"	1 1/4"	36	68	28	HRD6N4N[X]
2"	1 1/2"	36	68	28	HRD6N5N[X]
2 1/2"	3/4"	51	80	41	HRD6N2N[X]
2 1/2"	1"	51	80	41	HRD6N3N[X]
2 1/2"	1 1/4"	51	80	41	HRD6N4N[X]
2 1/2"	1 1/2"	51	80	41	HRD6N5N[X]
2 1/2"	2"	51	80	41	HRD6N6N[X]
3"	1 1/4"	54	95	42	HRD8N4N[X]
3"	1 1/2"	54	95	42	HRD8N5N[X]
3"	2"	54	95	42	HRD8N6N[X]
3"	2 1/2"	54	95	42	HRD8N6N[X]
4"	1 1/2"	57	120	45	HRD9N5N[X]
4"	2"	57	120	45	HRD9N6N[X]
4"	2 1/2"	57	120	45	HRD9N6N[X]
4"	3"	57	120	45	HRD9N8N[X]

#### [X] Material

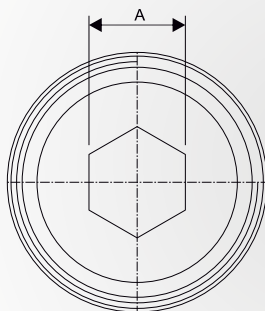
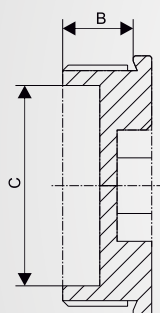
N - nickel-plated brass

S - 316L stainless steel

B - brass

HPLG series for zones 1/2 and 21/22

## Plugs for cable glands



### Metric

B	A	B	C	Order No
M16	8.1	14	4	HPLG0M[X]
M20	8.1	14	6	HPLG1M[X]
M25	10.1	14	10	HPLG2M[X]
M32	10.1	14	15	HPLG3M[X]
M40	14.1	14	22	HPLG4M[X]
M50	14.1	14	30	HPLG5M[X]
M63	14.1	14	40	HPLG6M[X]
M75	14.1	14	53	HPLG7M[X]
M90	14.1	14	65	HPLG8M[X]

### NPT

B	A	B	C	Order No
3/8"	8.1	14	4	HPLG0N[X]
1/2"	8.1	14	6	HPLG1N[X]
3/4"	10.1	14	10	HPLG2N[X]
1"	10.1	19	15	HPLG3N[X]
1 1/4"	14.1	19	22	HPLG4N[X]
1 1/2"	14.1	19	30	HPLG5N[X]
2"	14.1	19		HPLG6N[X]
2 1/2"	14.1	19	40	HPLG7N[X]
3"	14.1	24	53	HPLG8N[X]

### [X] Material

N - nickel-plated brass

S - 316L stainless steel

B - brass



# Terminal and junction boxes

for hazardous areas



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### Coming soon

Polyamide junction boxes at **prices up to 20% lower**



HTB1P series for zones 1/2 and 21/22

## Custom-built terminal and junction boxes for hazardous areas



HTB1P terminal and junction boxes, made of glass-reinforced polyester (GRP), are designed for applications in hazardous areas: 1, 2 (gases) and 21, 22 (dust). They feature high resistance to corrosion and UV radiation, ensuring durability even in harsh industrial environments. The boxes are used in industries such as chemical, petrochemical, and energy sectors.

### Wide selection of enclosures - with up to 11 size options



### Design features

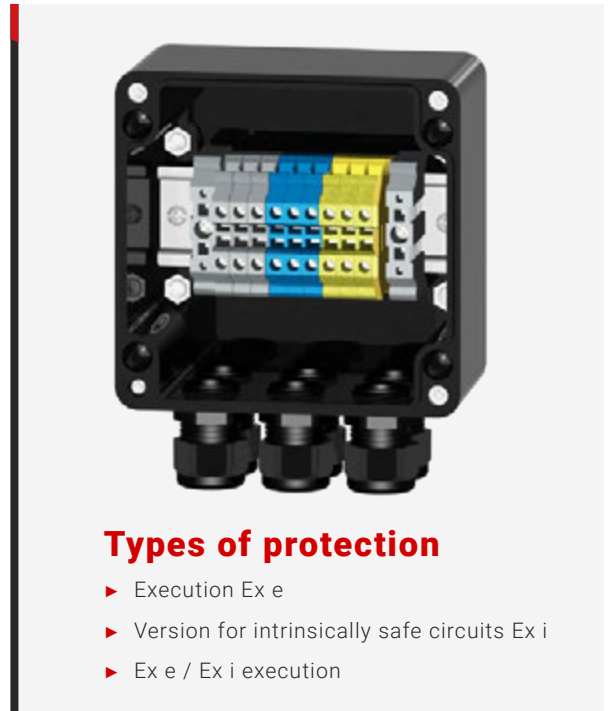
- ▶ **The robust, thick enclosure walls (4.5–9 mm)** ensure high structural rigidity and allow the use of threads with a large number of turns, further enhancing the device's reliability.
- ▶ **Silicone cover gasket**, which effectively protects the interior of the case from the ingress of moisture and dirt.
- ▶ **Cover screws**, made of AISI 316L stainless steel, guarantee durability and resistance to harmful external factors.
- ▶ **Internal mounting screws**, made of corrosion-resistant materials, significantly increase the durability and service life of the entire structure.

### Accessories

- ▶ **PE/PA rail with terminals** mounted along any wall of the enclosure.
- ▶ **Glands made of polyamide or steel** (brass / nickel-plated brass / stainless steel; armoured cables / unarmoured cables).
- ▶ **Grounding plate** for metal glands (stainless steel / brass; 2mm thick / 3mm thick)
- ▶ **Brass earth tags** for metal cable glands (a cost-effective solution replacing the grounding plate, used when mounting up to 2 cable glands on one wall).
- ▶ **Mounting plate** allowing up to 3 DIN rails to be mounted in different orientations (vertical / horizontal) and at different heights.
- ▶ **External grounding** connection through a grounding screw or a cable gland.

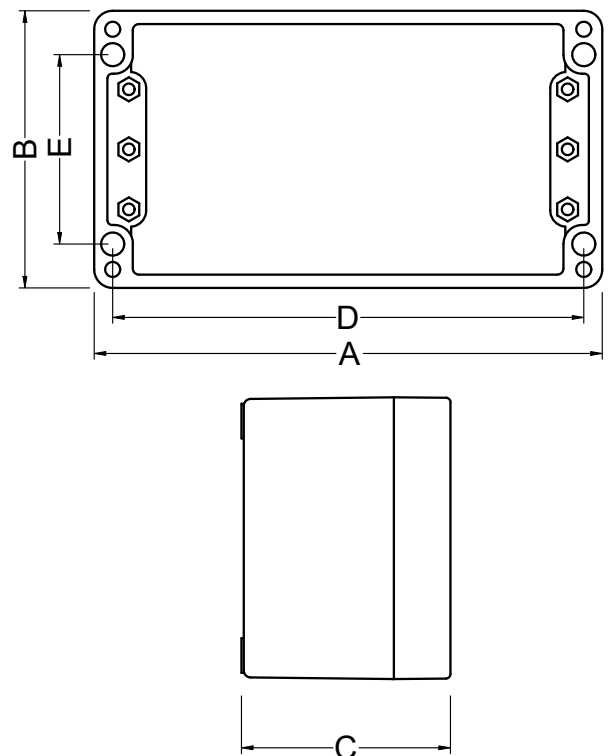
## Basic parameters

Technical data	
Marking according to 2014/34/EU	II 2 G Ex eb IIC/IIB T6...T4 Gb II 2 D Ex tb IIIC T85°C...T135°C Db
ATEX certificate	FIDI 22 ATEX 0065X
IECE certification	IECEX FIDI 22.0008X
Marking according to IECEX	Ex eb IIC/IIB T6...T4 Gb Ex tb IIIC T85°C...T135°C Db
Permissible ambient temperature	-20°C to +40°C -50°C to +95°C optional
Rated voltage	up to 690 V AC
Rated current	up to 350 A
Degree of protection according to EN 60529	IP66
Housing material	glass fiber reinforced polyester (GRP)
Housing color	black


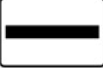
















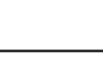


## Dimensions of enclosure

	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
<b>HTB1P 080806</b>	80	75	55	69	45
<b>HTB1P 081106</b>	110	75	55	99	45
<b>HTB1P 121209</b>	120	120	90	106	82
<b>HTB1P 122209</b>	220	120	90	204	82
<b>HTB1P 161609</b>	160	160	90	140	110
<b>HTB1P 162609</b>	260	160	90	240	110
<b>HTB1P 163609</b>	360	160	90	340	110
<b>HTB1P 252612</b>	255	250	120	235	200
<b>HTB1P 252616</b>	255	250	160	235	300
<b>HTB1P 254012</b>	400	250	120	380	200
<b>HTB1P 254016</b>	400	250	160	380	200
<b>HTB1P 256012</b>	600	250	120	580	200
<b>HTB1P 414012</b>	400	405	120	380	355

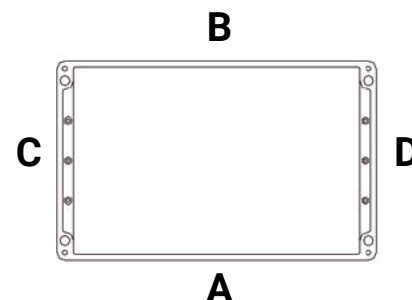


**Selection of DIN rails and terminals**

Product type	Rail layout (scheme)	Rail length [mm]	Rails qty	Maximum number of terminals												
				Cross section [mm <sup>2</sup> ]												
				2,5	4	6	10	16	35	50	70	95	120	150	185	240
<b>HTB1P 080806</b> [80x75x55mm]		68	1	6	5	-	-	-	-	-	-	-	-	-	-	-
<b>HTB1P 081106</b> [110x75x55mm]		98	1	12	10	-	-	-	-	-	-	-	-	-	-	-
<b>HTB1P 121209</b> [120x120x90mm]		110	1	13	11	8	-	-	-	-	-	-	-	-	-	-
<b>HTB1P 122209</b> [220x120x90mm]		205	1	32	27	20	-	-	-	-	-	-	-	-	-	-
		110	1	18	15	11	8	7	-	-	-	-	-	-	-	-
<b>HTB1P 161609</b> [160x160x90mm]		144	1	21	17	12	10	8	-	-	-	-	-	-	-	-
<b>HTB1P 162609</b> [260x160x90mm]		245	1	40	33	25	20	15	-	-	-	-	-	-	-	-
		145	1	25	21	16	13	10	7	-	-	-	-	-	-	-
<b>HTB1P 163609</b> [360x160x90mm]		345	1	59	49	37	29	25	-	-	-	-	-	-	-	-
		145	2	2 x 25	2 x 21	2 x 16	13	10	7	-	-	-	-	-	-	-
<b>HTB1P 252612</b> [255x250x120mm]		240	2	2 x 39	2 x 32	2 x 24	19	16	12	-	-	-	-	-	-	-
<b>HTB1P 252616</b> [255x250x160mm]		240	2	2 x 39	2 x 32	2 x 24	19	16	12	-	-	-	-	-	-	-
<b>HTB1P 254012</b> [400x250x120mm]		385	2	2 x 66	2 x 56	2 x 41	33	28	21	-	-	-	-	-	-	-
		235	2	2 x 42	2 x 35	2 x 26	21	17	13	10	10	-	-	-	-	-
<b>HTB1P 254016</b> [400x250x160mm]		385	2	2 x 66	2 x 56	2 x 41	33	28	21	-	-	-	-	-	-	-
		235	2	2 x 42	2 x 35	2 x 26	21	17	13	10	10	-	-	-	-	-
<b>HTB1P 256012</b> [600x250x120mm]		560	2	2 x 106	2 x 88	2 x 66	53	44	33	-	-	-	-	-	-	-
		208	2	2 x 42	2 x 35	2 x 26	21	17	13	9	9	7	5	5	5	5
<b>HTB1P 414012</b> [400x405x120mm]		385	3	3 x 66	3 x 56	3 x 41	3 x 33	28	21	17	16	13	-	-	-	-

## Selection of glands

	Walls	Size of cable glands							
		M12	M16	M20	M25	M32	M40	M50	M63
<b>HTB1P 080806</b> [80x75x55mm]	A/B	6	2	2	1	-	-	-	-
	C/D	2	1	1	1	-	-	-	-
<b>HTB1P 081106</b> [110x75x55mm]	A/B	8	3	3	2	2	-	-	-
	C/D	1	1	1	1	-	-	-	-
<b>HTB1P 121209</b> [120x120x90mm]	A/B	15	12	6	3	2	1	1	-
	C/D	9	6	4	2	1	1	1	-
<b>HTB1P 122209</b> [220x120x90mm]	A/B	30	24	12	9	4	3	3	-
	C/D	9	6	4	2	1	1	1	-
<b>HTB1P 161609</b> [160x160x90mm]	A/B	24	15	8	6	2	2	2	-
	C/D	15	12	6	3	2	1	1	-
<b>HTB1P 162609</b> [260x160x90mm]	A/B	48	27	14	12	5	4	3	-
	C/D	15	12	6	3	2	1	1	-
<b>HTB1P 163609</b> [360x160x90mm]	A/B	68	39	22	18	7	5	4	-
	C/D	15	12	6	3	2	1	1	-
<b>HTB1P 252612</b> [255x250x120mm]	A/B	55	36	21	12	10	4	3	2
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 252616</b> [255x250x160mm]	A/B	55	36	21	12	10	4	3	2
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 254012</b> [400x250x120mm]	A/B	95	60	36	20	16	6	5	4
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 254016</b> [400x250x160mm]	A/B	95	60	36	20	16	6	5	4
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 256012</b> [600x250x120mm]	A/B	150	96	57	32	26	10	8	6
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 414012</b> [400x405x120mm]	A/B	95	60	36	20	16	6	5	4
	C/D	90	56	33	18	15	6	5	4



## Cable glands

## Material

- ▶ polyamide
- ▶ stainless steel
- ▶ nickel-plated brass
- ▶ brass

## Type

- ▶ for armored cables
- ▶ for unarmoured cables

## Grounding

- ▶ internal grounding plate
- ▶ earthing tag

## Clamping range

Gland size	Range [mm]
<b>M12</b>	5-7
<b>M16</b>	7-10
<b>M20</b>	5,5-13
<b>M25</b>	8-17,5
<b>M32</b>	14-17,5
<b>M40</b>	19-28
<b>M50</b>	24-35
<b>M63</b>	29-48

Standard clamping ranges; other cable gland models available on request

## Accessories

### PE/PA rail for grounding / potential equalization



- ▶ Helps reduce price
- ▶ Eliminates the need for more expensive terminals mounted on a DIN rail
- ▶ Often allows the use of a smaller enclosure
- ▶ Available in grounded and insulated versions

### Grounding plate made of brass for use with metal cable glands



- ▶ Provides an effective grounding connection for metal glands
- ▶ Brass construction provides very good electrical conductivity
- ▶ Available in 2 mm or 3 mm variants

### Stainless steel grounding plate for metal cable glands



- ▶ Cost-effective alternative to the brass plate
- ▶ Provides an effective grounding connection for metal glands
- ▶ The brass construction provides good electrical conductivity
- ▶ Available in 2 mm or 3 mm variant

### Nickel-plated brass grounding tag



- ▶ Economical alternative to grounding plate
- ▶ Used when there are up to two cable glands on the same wall of the box
- ▶ Provides an effective grounding connection for metal glands
- ▶ The brass construction provides good electrical conductivity

### Mounting plate



- ▶ Allows increasing the number of DIN rails to 2 or 3 (depending on the box size)
- ▶ Allows changing the orientation of the DIN rail from horizontal to vertical
- ▶ Provides flexibility in arranging components inside the box

### External grounding connection



- ▶ Dedicated earthing bolt (M6 / M10) / polyamide gland / steel gland
- ▶ Degree of protection IP66
- ▶ Ambient temperature: -55°C to +160°C (earthing bolt) / -55°C to +70°C (cable gland)

### Drain / breather valve



- ▶ Effectively drains moisture from the housing and minimizes moisture accumulation
- ▶ Mounting at the lowest point of the housing with O-ring sealing, providing a high degree of IP66 protection
- ▶ Impact resistance up to 20 Nm and an operating temperature range of -50°C to +230°C

## Example 1

### Optimized design

- ▶ The vertical DIN rail made it possible to reduce the number of terminals by half and to use a smaller enclosure.
- ▶ The elongated enclosure provides the space needed to bend thick cables (more room on the left side for cables with larger diameters).
- ▶ The integrated mounting plate with a grounding plate ensures potential equalization and reduces the number of terminals.

### Certified GRP housing

- ▶ Socover, thick walls (4.5 - 9 mm)
- ▶ High resistance to chemicals
- ▶ Silicone gasket (cover)
- ▶ 316L stainless steel mounting screws (cover)
- ▶ Operating temperature: -50...+95°C

### Vertical DIN rail

- ▶ Galvanized steel / stainless steel / copper
- ▶ Low (35x7 mm) / high (35x15 mm) / mini (15x5.5 mm)
- ▶ Horizontal / vertical orientation
- ▶ Up to 3 rails in the enclosure

### Certified terminals

- ▶ For cables 2.5 - 120 mm<sup>2</sup>
- ▶ Markings according to customer requirements
- ▶ Operating temperature: -50...+120°C

### Integrated plate

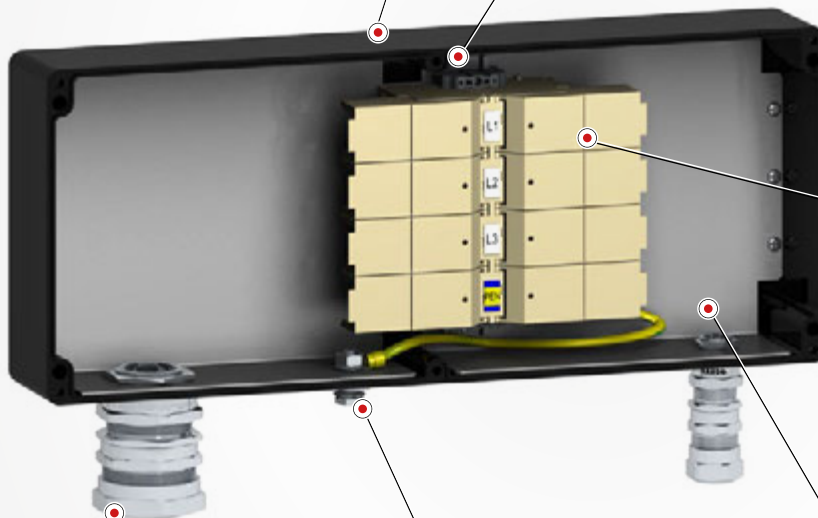
- ▶ Mounting and grounding plate as one component
- ▶ Stainless steel / brass

### Grounding outlet

- ▶ Dedicated grounding bolt M6 / M10 (nickel-plated brass) / cable gland for large conductor cross sections (polyamide / steel)
- ▶ M6 bolt for conductors up to 30 mm<sup>2</sup> cross-section / M10 bolt for conductors up to 120 mm<sup>2</sup> cross-section / cable gland for conductors over 120 mm<sup>2</sup> cross-section

### Certified metal cable glands

- ▶ Brass / nickel-plated brass / stainless steel
- ▶ Armored/unarmoured cables
- ▶ Operating temperature: -55...+160°C



## Example 2

### Basic variant

- ▶ Horizontal DIN rail mounted in dedicated holes with embedded stainless steel nuts.
- ▶ Terminals in three basic colors with end holders – terminal arrangement, terminal markings, and flag markings according to customer requirements.
- ▶ Polyamide cable glands mounted in threaded holes ensure high tightness.

### Certified GRP housing

- ▶ Socover, thick walls (4.5 - 9 mm)
- ▶ High resistance to chemicals
- ▶ Silicone gasket (cover)
- ▶ 316L stainless steel mounting screws (cover)
- ▶ Operating temperature: -50...+95°C

### DIN rail

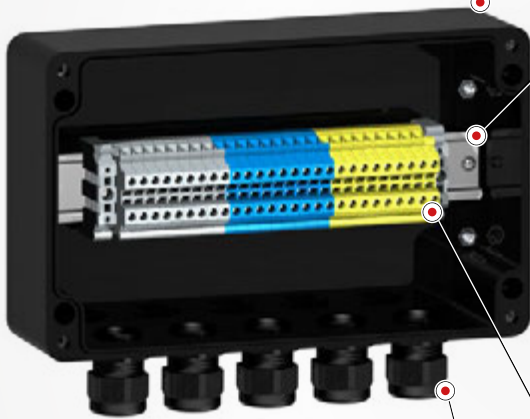
- ▶ Steelgalvanized / stainless steel / copper
- ▶ Low (35x7 mm) / high (35x15 mm) / mini (15x5.5 mm)
- ▶ Horizontal / vertical orientation
- ▶ Up to 3 rails in the enclosure

### Certified terminals

- ▶ For cables 2.5 - 120 mm<sup>2</sup>
- ▶ Markings according to customer requirements
- ▶ Operating temperature: -50...+120°C

### Certified cable glands

- ▶ Black / blue
- ▶ For cables 2.5 - 120 mm<sup>2</sup>
- ▶ Operating temperature: -40...+70°C



## Example 3

### Basic variant with PE/PA rail

- ▶ Transferring the PE terminals from the DIN rail to a dedicated rail helps reduce costs and, in many cases, allows for a smaller box enclosure.
- ▶ Possibility of mounting the PE/PA rail along any wall.
- ▶ A special connector equalizes the potential of the grounding rail and the DIN rail (without unnecessary wires).

### Certified GRP housing

- ▶ Socover, thick walls (4.5 - 9 mm)
- ▶ High resistance to chemicals
- ▶ Silicone gasket (cover)
- ▶ 316L stainless steel mounting screws (cover)
- ▶ Operating temperature: -50...+95°C

### Grounding rail

- ▶ Certified BZ or AKG terminals (conductor cross-section up to 4mm<sup>2</sup>)
- ▶ 3mm thick copper rail
- ▶ Brackets and fixing screws in stainless steel
- ▶ Grounded or insulated version

### DIN rail

- ▶ Steelgalvanized / stainless steel / copper
- ▶ Low (35x7 mm) / high (35x15 mm) / mini (15x5.5 mm)
- ▶ Horizontal / vertical orientation
- ▶ Up to 3 rails in the enclosure

### Certified terminals

- ▶ For cables 2.5 - 120 mm<sup>2</sup>
- ▶ Markings according to customer requirements
- ▶ Operating temperature: -50...+120°C

### Certified cable glands

- ▶ Black / blue
- ▶ For cables 2.5 - 120 mm<sup>2</sup>
- ▶ Operating temperature: -40...+70°C



## Example 4

### Variant with metal cable glands grounded with a brass plate

- ▶ The basic solution for boxes with metal cable glands.
- ▶ The grounding plate provides potential equalization of the glands.
- ▶ Terminals in three basic colors with end holders – terminal arrangement, terminal markings, and flag markings according to customer requirements.

### Certified GRP housing

- ▶ Socover, thick walls (4.5 - 9 mm)
- ▶ High resistance to chemicals
- ▶ Silicone gasket (cover)
- ▶ 316L stainless steel mounting screws (cover)
- ▶ Operating temperature: -50...+95°C

### DIN rail

- ▶ Steelgalvanized / stainless steel / copper
- ▶ Low (35x7 mm) / high (35x15 mm) / mini (15x5.5 mm)
- ▶ Horizontal / vertical orientation
- ▶ Up to 3 rails in the enclosure

### Certified terminals

- ▶ For cables 2.5 - 120 mm<sup>2</sup>
- ▶ Markings according to customer requirements
- ▶ Operating temperature: -50...+120°C

### Grounding plate

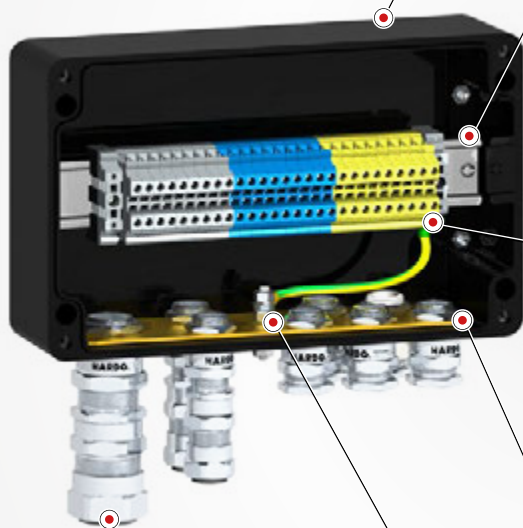
- ▶ Material: mosiądz / stainless steel
- ▶ Thickness: 2 mm / 3 mm
- ▶ Possibility to integrate the grounding plate into the mounting plate

### Grounding outlet

- ▶ Dedicated grounding bolt M6 / M10 (nickel-plated brass) / cable gland for large conductor cross sections (polyamide / steel)
- ▶ M6 bolt for conductors up to 30 mm<sup>2</sup> cross-section / M10 bolt for conductors up to 120 mm<sup>2</sup> cross-section / cable gland for conductors over 120 mm<sup>2</sup> cross-section

### Certified metal cable glands

- ▶ Brass / nickel-plated brass / stainless steel
- ▶ Armored/unarmoured cables
- ▶ Operating temperature: -55...+160°C



## Example 5

### Variant with metal cable glands grounded through earth tag

- ▶ The grounding tag made of nickel-plated brass is an economical alternative to grounding plates.
- ▶ This type of grounding is used for up to two cable glands on one wall.
- ▶ The grounding bolt allows the box to be connected to an external grounding point.

### Certified GRP housing

- ▶ Socover, thick walls (4.5 - 9mm)
- ▶ High resistance to chemicals
- ▶ Silicone gasket (cover)
- ▶ 316L stainless steel mounting screws (cover)
- ▶ Operating temperature: -50...+95°C

### DIN rail

- ▶ Galvanized steel / stainless steel / copper
- ▶ Low (35x7mm) / high (35x15mm) / mini (15x5.5mm)
- ▶ Horizontal / vertical orientation
- ▶ Up to 3 rails in the enclosure

### Grounding outlet

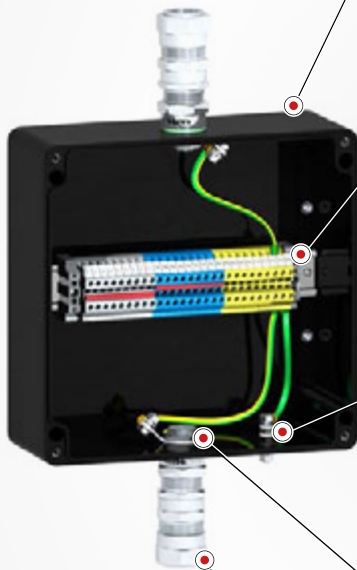
- ▶ Dedicated grounding bolt M6 / M10 (nickel-plated brass) / cable gland for large conductor cross sections (polyamide / steel)
- ▶ M6 bolt for conductors up to 30 mm<sup>2</sup> cross-section / M10 bolt for conductors up to 120 mm<sup>2</sup> cross-section / cable gland for conductors over 120 mm<sup>2</sup> cross-section

### Grounding washer

- ▶ Material: nickel-plated brass
- ▶ Economical alternative to grounding plates
- ▶ Solution for max. 2 cable glands on one wall

### Certified metal cable glands

- ▶ Brass / nickel-plated brass / stainless steel
- ▶ Armored/unarmoured cables
- ▶ Operating temperature: -55...+160°C



HTB1P series for zones 1/2 and 21/22

## Predefined junction boxes for hazardous areas and harsh operating conditions



### Design features

- ▶ Robust, thick enclosure walls provide high structural rigidity and allow for the use of threads with a large number of turns, further enhancing the device's reliability.
- ▶ The cover is equipped with a silicone gasket, which effectively protects the interior of the housing from the ingress of moisture and dirt.
- ▶ The cover screws, made of AISI 316L stainless steel, guarantee durability and resistance to harmful external factors.
- ▶ Internal mounting screws, made of corrosion-resistant materials, significantly increase the durability and service life of the entire structure.

### Technical data

Marking according to 2014/34/EU	II 2 G Ex eb IIC/IIB T6 Gb II 2 D Ex tb IIIC T85°C
ATEX certificate	FIDI 22 ATEX 0065X
IECE certification	IECEX FIDI 22.0008X
Marking according to IECEx	Ex eb IIC T6 Gb Ex tb IIIC T85°C Db
Permissible ambient temperature	from -20°C to 40°C (optional -50°C to 95°C)
Max voltage	690 V AC
Protection class	I
Degree of protection according to EN 60529	IP66
Housing material	glass fiber reinforced polyester (GRP)
Housing color	black




### Certifications

HTB1P enclosures comply with safety standards, as confirmed by ATEX (FIDI 22 ATEX 0065X) and IECEx (IECEX FIDI 22.0008X) certifications. The boxes comply with Directive 2014/34/EU concerning equipment intended for use in Ex zones, making them an excellent choice for hazardous areas.

### Versatility

An extensive portfolio of enclosures available in a variety of sizes makes it possible to precisely tailor a solution to individual user needs. The offer includes both small junction boxes and larger distribution boxes, ensuring versatility of applications.



## Junction boxes with 2 or 3 cable glands

Photo	Housing dimensions	Built-in components	Cable glands	Order No
	80 x 75 x 55	Through-terminal block 1x L, 1x N, 1x PE	2 x M25	HTB1P 080806 S02001
	80 x 75 x 55	Through-terminal block 1x L, 1x N, 1x PE	2 x M25	HTB1P 080806 S02002
	80 x 75 x 55	Through-terminal block with jumpers: 2x L, 2x N, 2x PE	3 x M25	HTB1P 080806 S03001

### Electrical parameters

Rated current	16 A
Cable glands / Openings	max. 2 x M25
Dimensions (L x W x H)	75 x 80 x 56 mm
Product weight	~0,3 kg
Terminals	up to 5 x 4 mm <sup>2</sup>

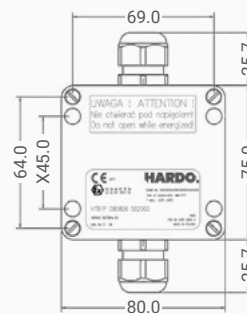
## Junction boxes with 4 cable glands

Photo	Housing dimensions	Built-in components	Cable glands	Order No
	80 x 110 x 60	Through-terminal block with jumpers: 2x L, 2x N, 2x PE	4 x M25	HTB1P 081106 S04001
	80 x 110 x 60	Through-terminal block with jumpers: 2x L, 2x N, 2x PE	4 x M25	HTB1P 081106 S04002

### Electrical parameters

Rated current	16 A
Cable glands / Openings	max. 2 x M25 or 1 x M25 + 2 x M12
Dimensions (L x W x H)	75 x 110 x 60 mm
Product weight	~0,4 kg
Terminals	up to 10 x 4 mm <sup>2</sup>

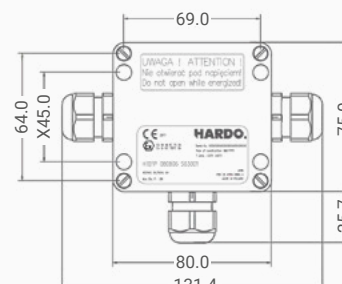
HTB1P 080806 S02001



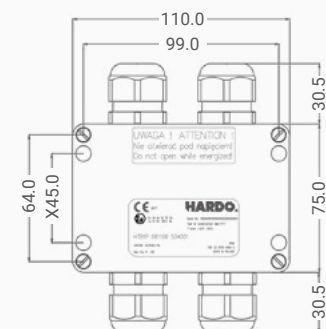
HTB1P 080806 S02002



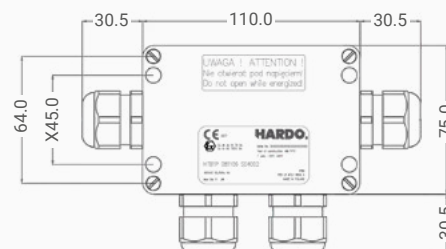
HTB1P 080806 S03001



HTB1P 081106 S04001



HTB1P 081106 S04002



X - mounting dimensions



# Control panels / stations and switches

for hazardous areas



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HCS1P series for zones 1/2 and 21/22

## Custom-built control panels and stations for hazardous areas



### Design features

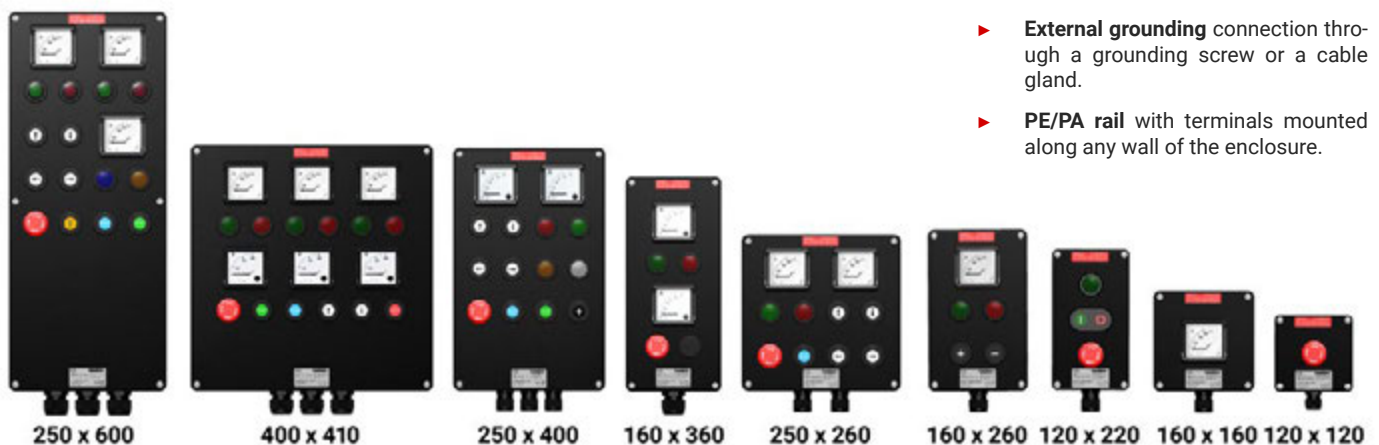
- ▶ **The robust, thick enclosure walls (4.5–9 mm)** ensure high structural rigidity and allow the use of threads with a large number of turns, further enhancing the device's reliability.
- ▶ **Silicone cover gasket**, which effectively protects the interior of the case from the ingress of moisture and dirt.
- ▶ **Cover screws**, made of AISI 316L stainless steel, guarantee durability and resistance to harmful external factors.
- ▶ **Internal mounting screws**, made of corrosion-resistant materials, significantly increase the durability and service life of the entire structure.

### Accessories

- ▶ **Cable glands made of polyamide or steel** (brass / nickel-plated brass / stainless steel; reinforced cables / unreinforced cables).
- ▶ **Grounding plate** for metal glands (stainless steel / brass; 2mm thick / 3mm thick)
- ▶ **Brass earth tags** for metal cable glands (a cost-effective solution replacing the grounding plate, used when mounting up to 2 cable glands on one wall).
- ▶ **Mounting plate** allowing mounting of up to 3 DIN rails in different orientations (vertical / horizontal) and at different heights.
- ▶ **External grounding** connection through a grounding screw or a cable gland.
- ▶ **PE/PA rail** with terminals mounted along any wall of the enclosure.

HCS1P control stations, made of glass-reinforced polyester (GRP), are designed for use in hazardous areas: 1, 2 (gases) and 21, 22 (dust). They feature high resistance to corrosion and UV radiation, ensuring durability even in harsh industrial environments. The control stations are used in such industries as the chemical, petrochemical and energy industries, among others.

### Wide selection of enclosures - with up to 9 size options




## Buttons and switches

AC-12	AC-15	DC-13	AC-3	AC-23	$U_{imp}$	$I_{cw}$	$I_{cm}$	Short-circuit protection
400 V/16A	400V/10A	125 V/2A	400 V/16A	400 V/16A	6 kV	0,4 kA/1s	0,566 kA	16A / 500V

$U_{imp}$  - rated impulse withstand voltage |  $I_{cw}$  - rated short-time withstand current |  $I_{cm}$  - rated short-circuit making capacity

### SERIES 0201-7

Contacts	Assembly
2 + NO, NC	Cover



### SERIES 0201-6

Contacts	Assembly
2 + NO, NC	DIN rail



### SERIES 0201-7

Contacts	Assembly
4 + NO, NC	Cover



### SERIES 0201-6


Contacts	Assembly
4 + NO, NC	DIN rail



### 0201-C SERIES

Contacts	Assembly
4 + NO, NC	DIN rail

(with open circuit and short circuit detection)



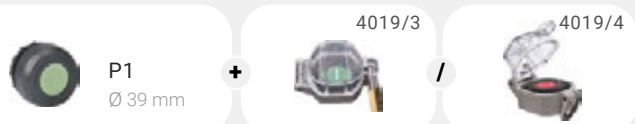
### SERIES 0201-H

Contacts	Assembly
4 + NO, NC	DIN rail

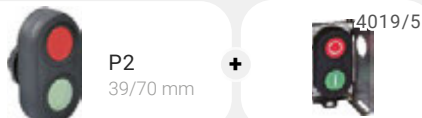
(control switch or isolation switch)



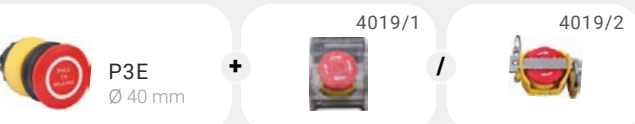

P1 Ø 39 mm + 4019/3 / 4019/4



P2 39/70 mm + 4019/5



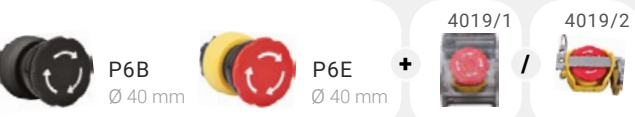
P3E Ø 40 mm + 4019/1 / 4019/2



Y Ø 39 mm



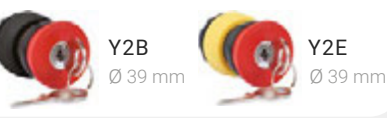
P6B Ø 40 mm P6E Ø 40 mm + 4019/1 / 4019/2



P7B Ø 55 mm P7E Ø 55 mm




Y2B Ø 39 mm Y2E Ø 39 mm



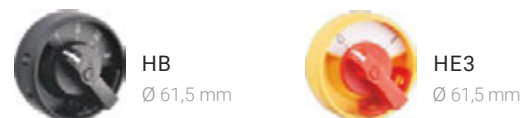
VB6 Ø 39 mm VE6 Ø 39 mm




KB Ø 39 mm SE Ø 61,5 mm SB Ø 61,5 mm



HB Ø 61,5 mm HE3 Ø 61,5 mm



 the space the component occupies in the enclosure (see section: Component layout)

## Illuminated buttons

SERIES 0212-7 Ø 39 mm

Ex db eb IIC Gb

Ex ia IIC Ga



<b>Assembly</b>	Cover
<b>Contacts</b>	1NO / 1NC
<b>Colors</b>	● ● ● ● ○



SERIES 0212-6 Ø 39 mm

Ex db eb IIC Gb

Ex ia IIC Ga



<b>Assembly</b>	DIN rail
<b>Contacts</b>	1NO / 1NC
<b>Colors</b>	● ● ● ● ○



## Indicator lamps

SERIES 0202-7 Ø 39 mm

Ex db eb IIC Gb

Ex ia IIC Ga



<b>Assembly</b>	Cover
<b>Colors</b>	● ● ● ● ○



SERIES 0202-7 Ø 39 mm

Ex db eb IIC Gb

Ex ia IIC Ga



<b>Assembly</b>	DIN rail
<b>Colors</b>	● ● ● ● ○



## Potentiometers

SERIES 0203-7 Ø 39 mm



Ex db eb IIC Gb

<b>Assembly</b>	Cover
<b>Voltage</b>	Up to 200V DC
<b>Power</b>	Up to 0.1W
<b>Resistance</b>	100Ω ÷ 2MΩ
<b>Scope</b>	0 ÷ 100%



SERIES 0203-6 Ø 39 mm



Ex db eb IIC Gb

<b>Assembly</b>	DIN rail
<b>Voltage</b>	Up to 200V DC
<b>Power</b>	Up to 0.1W
<b>Resistance</b>	100Ω ÷ 2MΩ
<b>Scope</b>	0 ÷ 100%



## Ammeters / voltmeters

Ammeters | SERIES 0205-6 and 7 70X70 mm



Ex db eb IIC Gb

<b>Assembly</b>	DIN rail (left) Cover (right)
<b>Measurement</b>	up to 40 mA up to 3000 A




Voltmeters | SERIES 0205-6 and 7 70X70 mm



Ex db eb IIC Gb

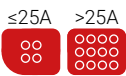
<b>Assembly</b>	DIN rail (left) Cover (right)
<b>Measurement</b>	up to 500 V



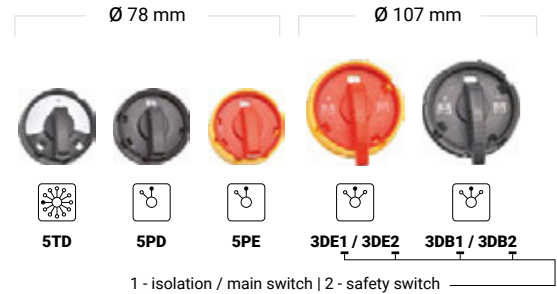
 the space the component occupies in the enclosure (see section: Component layout)

## Main / isolation / control / safety switches

SERIES 0513



<b>Assembly</b>	Mounting plate
<b>Contacts</b>	2 to 12 + NO, NC, PE, N
<b>Voltage</b>	230 - 690 V
<b>Current</b>	20A / 25A / 35A / 40A / 63A / 75A / 80A
<b>Voltage U<sub>i</sub> / U<sub>imp</sub></b>	800 V / 6kV
<b>Category of use</b>	AC-23, AC-3, AC-11
<b>Voltage</b>	0 ÷ 100%



## Motor switches

SERIES 0513



<b>Assembly</b>	Mounting plate
<b>Contacts</b>	3 + NO, NC, PE, D1, D2
<b>Voltage</b>	440 V
<b>Current</b>	25A
<b>Overload trigger setting range</b>	0.1 ~ 25A
<b>Voltage U<sub>i</sub> / U<sub>imp</sub></b>	800 V / 6kV
<b>Connecting capacity of the motor in AC3 category</b>	High, up to 440V/25A
<b>Voltage</b>	0 ÷ 100%



## Warning devices (acoustic / acoustic-optical)

SERIES 0201-H Ø 50 mm



sound



sound + light

Sound	Assembly	Voltage Rating:	Terminals	Degree of protection
60 dB (at a distance of 30 cm)	Cover	AC/DC 10-28V AC/DC 20-250V	2 x 2,5 mm <sup>2</sup>	IP 66



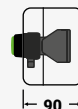
the space the component occupies in the enclosure (see section: Component layout)

## Arrangement of components

### Housing: HCS1P 121209



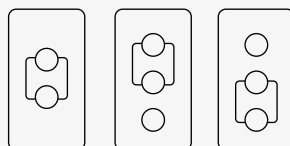
#### Examples



### Housing: HCS1P 122209



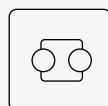
#### Examples



### Housing: HCS1P 161609



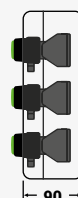
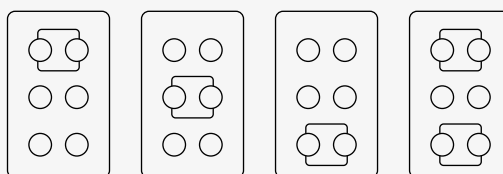
#### Examples



### Housing: HCS1P 162609



#### Examples



- 2-pole switch or button / double button / indicator light
- 4-pole switch or button
- ammeter / voltmeter
- DIN rail

- isolation / main / safety / motor circuit breaker 20A, 25A  
(only housing HCS1P 161609 and larger)

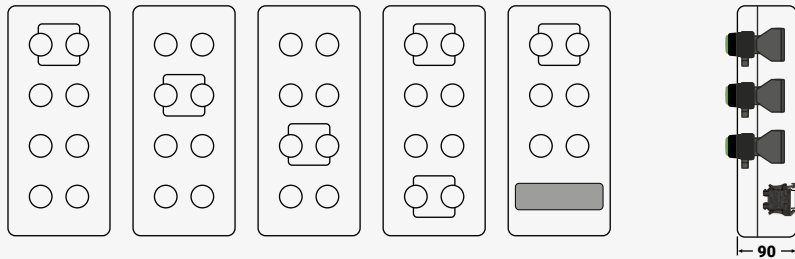
- isolation / main / safety switch 35A, 40A, 63A, 75A, 80A  
(HCS1P 252616 / 254016 enclosures only)

## Arrangement of components

### Housing: HCS1P 163609



#### Examples

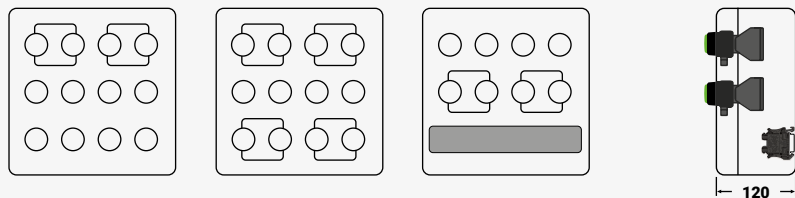


Terminals: 1 x 25 [2.5mm<sup>2</sup>] or 1 x 21 [4mm<sup>2</sup>]

### Housing: HCS1P 252612 / 252616

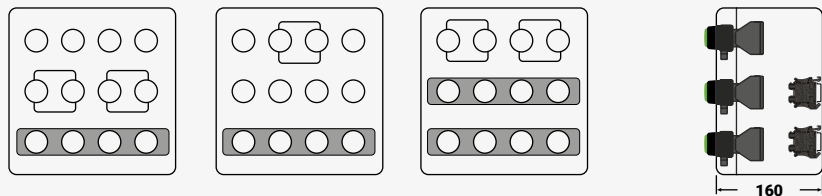


#### Examples: HCS1P 252612



Terminals: 1 x 39 [2.5mm<sup>2</sup>] or 1 x 32 [4mm<sup>2</sup>]

#### Examples: HCS1P 252616

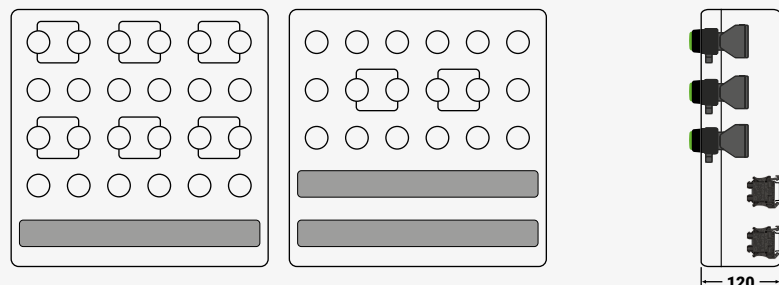


Terminals: 2 x 39 [2.5mm<sup>2</sup>] or 2 x 32 [4mm<sup>2</sup>]

### Housing: HCS1P 404112



#### Examples



Terminals: 2 x 66 [2.5mm<sup>2</sup>] or 2 x 56 [4mm<sup>2</sup>]

- 2-pole switch or button / double button / indicator light
- 4-pole switch or button
- ammeter / voltmeter
- ▬ DIN rail

- isolation / main / safety / motor circuit breaker 20A, 25A (only housing HCS1P 161609 and larger)

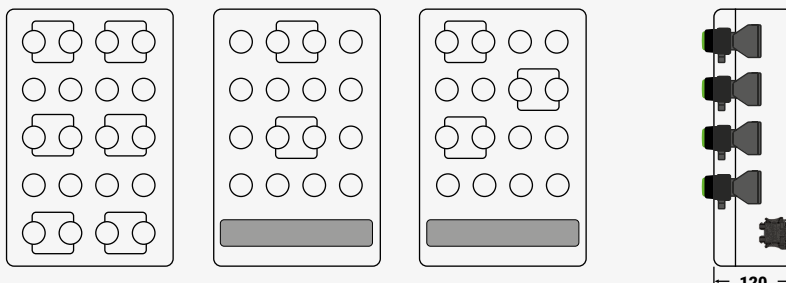
- isolation / main / safety switch 35A, 40A, 63A, 75A, 80A (HCS1P 252616 / 254016 enclosures only)

## Arrangement of components

### Housing: HCS1P 254012 / 254016

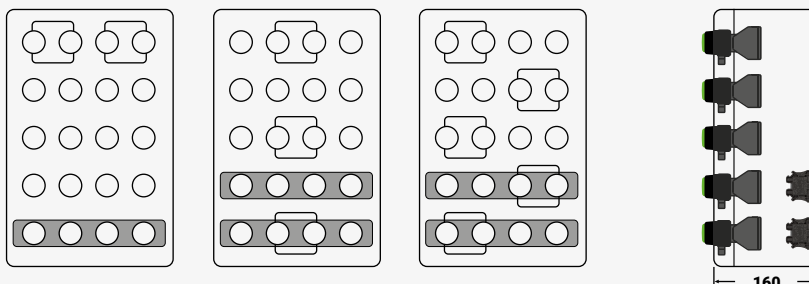


#### Examples: HCS1P 254012



Terminals: 1 x 42 [2.5mm<sup>2</sup>] or 1 x 35 [4mm<sup>2</sup>]

#### Examples: HCS1P 254016

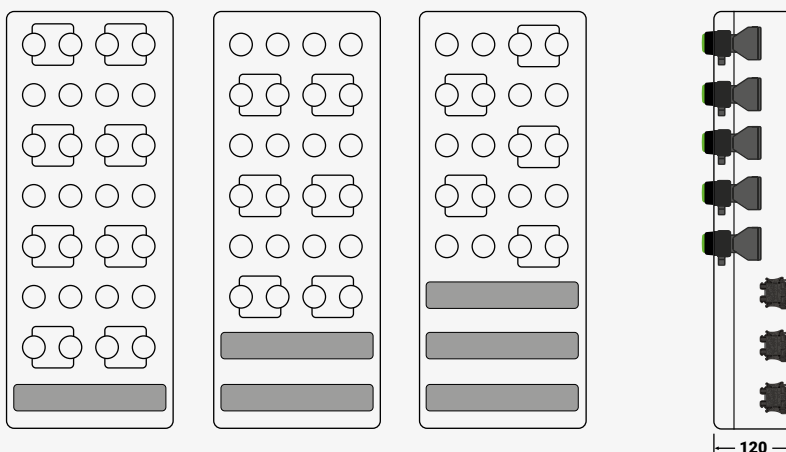


Terminals: 2 x 42 [2.5mm<sup>2</sup>] or 2 x 35 [4mm<sup>2</sup>]

### Enclosure: HCS1P 256012



#### Examples



Terminals: 3 x 42 [2.5mm<sup>2</sup>] or 3 x 35 [4mm<sup>2</sup>]

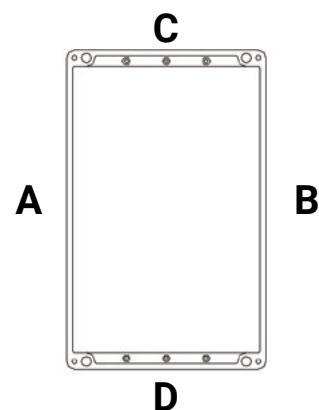
- 2-pole switch or button / double button / indicator light
- 4-pole switch or button
- ammeter / voltmeter
- DIN rail

- isolation / main / safety / motor circuit breaker 20A, 25A  
(only housing HCS1P 161609 and larger)

- isolation / main / safety switch 35A, 40A, 63A, 75A, 80A  
(HCS1P 252616 / 254016 enclosures only)

## Selection of cable glands - maximum number

	Walls	Size of cable glands							
		M12	M16	M20	M25	M32	M40	M50	M63
<b>HTB1P 121209</b> [120x120x90mm]	A/B	15	12	6	3	2	1	1	-
	C/D	9	6	4	2	1	1	1	-
<b>HTB1P 122209</b> [220x120x90mm]	A/B	30	24	12	9	4	3	3	-
	C/D	9	6	4	2	1	1	1	-
<b>HTB1P 161609</b> [160x160x90mm]	A/B	24	15	8	6	2	2	2	-
	C/D	15	12	6	3	2	1	1	-
<b>HTB1P 162609</b> [260x160x90mm]	A/B	48	27	14	12	5	4	3	-
	C/D	15	12	6	3	2	1	1	-
<b>HTB1P 163609</b> [360x160x90mm]	A/B	68	39	22	18	7	5	4	-
	C/D	15	12	6	3	2	1	1	-
<b>HTB1P 252612</b> [255x250x120mm]	A/B	55	36	21	12	10	4	3	2
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 252616</b> [255x250x160mm]	A/B	55	36	21	12	10	4	3	2
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 254012</b> [400x250x120mm]	A/B	95	60	36	20	16	6	5	4
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 254016</b> [400x250x160mm]	A/B	95	60	36	20	16	6	5	4
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 256012</b> [600x250x120mm]	A/B	150	96	57	32	26	10	8	6
	C/D	50	32	18	10	8	3	2	2
<b>HTB1P 414012</b> [400x405x120mm]	A/B	95	60	36	20	16	6	5	4
	C/D	90	56	33	18	15	6	5	4



### Cable glands

#### Material.

- ▶ polyamide
- ▶ stainless steel
- ▶ nickel-plated brass
- ▶ brass

#### Type

- ▶ for armored cables
- ▶ for unarmoured cables

#### Grounding



- ▶ internal grounding plate
- ▶ earthing tag

### Clamping range



Cable gland size	Range [mm]
<b>M12</b>	5-7
<b>M16</b>	7-10
<b>M20</b>	5,5-13
<b>M25</b>	8-17,5
<b>M32</b>	14-17,5
<b>M40</b>	19-28
<b>M50</b>	24-35
<b>M63</b>	29-48

Standard gland ranges, other gland models available on request

## Buttons and switches






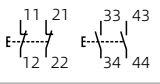
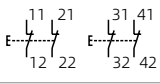
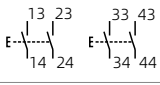
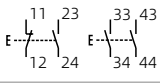
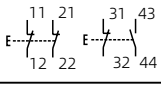
Mounting on the cover	Descriptions	Electrical diagram	Reference number
 2-pole Ø 39 mm	0, I, START, STOP		70SL-P100
	0, I, START, STOP		71SL-P100
	0, I, START, STOP		72SL-P100
 4-pole Ø 39 mm	0, I, START, STOP		750SL-P100
	0, I, START, STOP		751SL-P100
	0, I, START, STOP		752SL-P100
	0, I, START, STOP		753SL-P100
	0, I, START, STOP		754SL-P100

S - silver plated contacts (optional: G - gold plated contacts)  
 L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

DIN rail mounting	Descriptions	Electrical diagram	Reference number
 2-pole Ø 39 mm	0, I, START, STOP		60SL-P100
	0, I, START, STOP		61SL-P100
	0, I, START, STOP		62SL-P100
 4-pole Ø 39 mm	0, I, START, STOP		650SL-P100
	0, I, START, STOP		651SL-P100
	0, I, START, STOP		652SL-P100
	0, I, START, STOP		653SL-P100
	0, I, START, STOP		654SL-P100






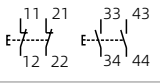
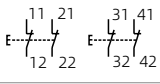
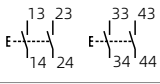
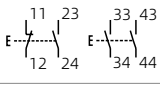
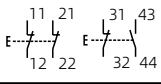
S - silver plated contacts (optional: G - gold plated contacts)  
 L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

## Buttons and switches

Mounting on the cover	Descriptions	Electrical diagram	Reference number	
 <p>2-pole</p>	0, I, START, STOP		1NC/1NO	70SL-P200
	0, I, START, STOP		2NC	71SL-P200
	0, I, START, STOP		2NO	72SL-P200
 <p>4-pole</p> <p>39X70 mm</p>	0, I, START, STOP		2NC/2NO	750SL-P200
	0, I, START, STOP		4NC	751SL-P200
	0, I, START, STOP		4NO	752SL-P200
	0, I, START, STOP		1NC/3NO	753SL-P200
	0, I, START, STOP		3NC/1NO	754SL-P200

S - silver plated contacts (optional: G - gold plated contacts)






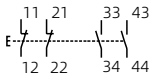
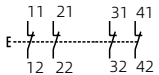
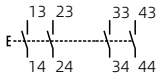
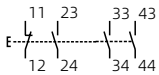
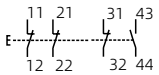
L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

DIN rail mounting	Descriptions	Electrical diagram	Reference number	
 <p>2-pole</p>	0, I, START, STOP		1NC/1NO	60SL-P200
	0, I, START, STOP		2NC	61SL-P200
	0, I, START, STOP		2NO	62SL-P200
 <p>4-pole</p> <p>39X70 mm</p>	0, I, START, STOP		2NC/2NO	650SL-P200
	0, I, START, STOP		4NC	651SL-P200
	0, I, START, STOP		4NO	652SL-P200
	0, I, START, STOP		1NC/3NO	653SL-P200
	0, I, START, STOP		3NC/1NO	654SL-P200






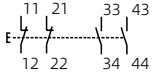
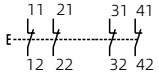
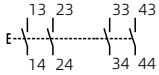
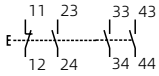
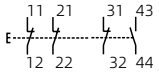
S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

## Buttons and switches




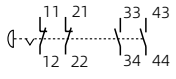
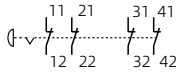
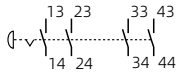
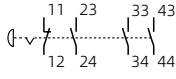
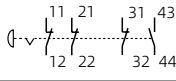
Mounting on the cover	Electrical diagram	Reference number
 <p>2-pole</p>	 <p>1NC/1NO</p>	70SL-P3E
	 <p>2NC</p>	71SL-P3E
	 <p>2NO</p>	72SL-P3E
 <p>4-pole</p> <p>Ø 40 mm</p>	 <p>2NC/2NO</p>	750SL-P3E
	 <p>4NC</p>	751SL-P3E
	 <p>4NO</p>	752SL-P3E
	 <p>1NC/3NO</p>	753SL-P3E
	 <p>3NC/1NO</p>	754SL-P3E

S - silver plated contacts (optional: G - gold plated contacts)  
L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

DIN rail mounting	Electrical diagram	Reference number
 <p>2-pole</p>	 <p>1NC/1NO</p>	60SL-P3E
	 <p>2NC</p>	61SL-P3E
	 <p>2NO</p>	62SL-P3E
 <p>4-pole</p> <p>Ø 40 mm</p>	 <p>2NC/2NO</p>	650SL-P3E
	 <p>4NC</p>	651SL-P3E
	 <p>4NO</p>	652SL-P3E
	 <p>1NC/3NO</p>	653SL-P3E
	 <p>3NC/1NO</p>	654SL-P3E

S - silver plated contacts (optional: G - gold plated contacts)  
L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)




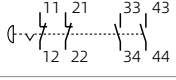
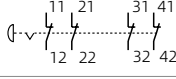
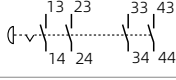
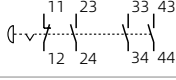
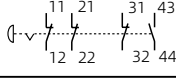
## Buttons and switches

Mounting on the cover	Electrical diagram	Reference number
2-pole	 1NC/1NO	70SL-P6B
	 2NC	71SL-P6B
	 2NO	72SL-P6B
4-pole	 2NC/2NO	750SL-P6B
	 4NC	751SL-P6B
	 4NO	752SL-P6B
	 1NC/3NO	753SL-P6B
	 3NC/1NO	754SL-P6B

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

B - black version - (optional: E - red-yellow version for safety switches)

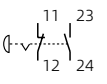
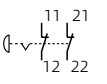
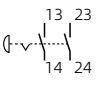
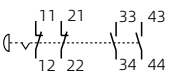
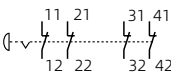
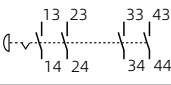
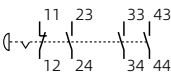
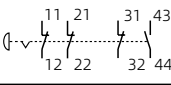
DIN rail mounting	Electrical diagram	Reference number
2-pole	 1NC/1NO	60SL-P6B
	 2NC	61SL-P6B
	 2NO	62SL-P6B
4-pole	 2NC/2NO	650SL-P6B
	 4NC	651SL-P6B
	 4NO	652SL-P6B
	 1NC/3NO	653SL-P6B
	 3NC/1NO	654SL-P6B

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

B - black version - (optional: E - red-yellow version for safety switches)

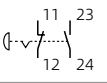
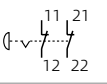
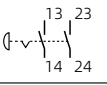
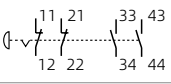
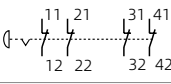
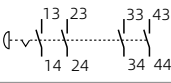
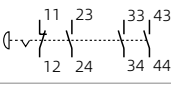
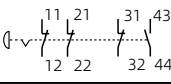
## Buttons and switches

Mounting on the cover	Electrical diagram	Reference number
2-pole	 11 23 12 24	1NC/1NO 70SL-P7B
	 11 21 12 22	2NC 71SL-P7B
	 13 23 14 24	2NO 72SL-P7B
4-pole	 11 21 33 43 12 22 34 44	2NC/2NO 750SL-P7B
	 11 21 31 41 12 22 32 42	4NC 751SL-P7B
	 13 23 33 43 14 24 34 44	4NO 752SL-P7B
	 11 23 33 43 12 24 34 44	1NC/3NO 753SL-P7B
	 11 21 31 43 12 22 32 44	3NC/1NO 754SL-P7B

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

B - black version - (optional: E - red-yellow version for safety switches)


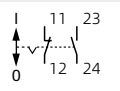
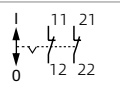
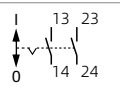


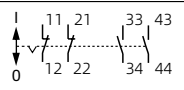
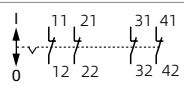
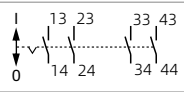
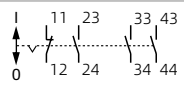
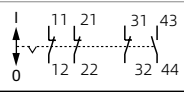
DIN rail mounting	Electrical diagram	Reference number
2-pole	 11 23 12 24	1NC/1NO 60SL-P7B
	 11 21 12 22	2NC 61SL-P7B
	 13 23 14 24	2NO 62SL-P7B
4-pole	 11 21 33 43 12 22 34 44	2NC/2NO 650SL-P7B
	 11 21 31 41 12 22 32 42	4NC 651SL-P7B
	 13 23 33 43 14 24 34 44	4NO 652SL-P7B
	 11 23 33 43 12 24 34 44	1NC/3NO 653SL-P7B
	 11 21 31 43 12 22 32 44	3NC/1NO 654SL-P7B

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

B - black version - (optional: E - red-yellow version for safety switches)


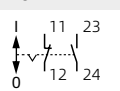
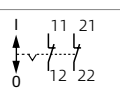
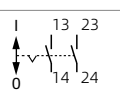


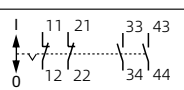
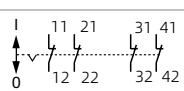
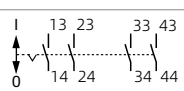
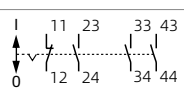
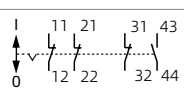
## Buttons and switches

Mounting on the cover	Electrical diagram	Reference number
 2-pole	 1NC/1NO	70SL-VB6201
	 2NC	71SL-VB6201
	 2NO	72SL-VB6201
 4-pole   Ø 39 mm	 2NC/2NO	750SL-VB6201
	 4NC	751SL-VB6201
	 4NO	752SL-VB6201
	 1NC/3NO	753SL-VB6201
	 3NC/1NO	754SL-VB6201

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

B - black version - (optional: E - red-yellow version for safety switches)


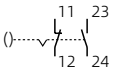
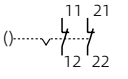
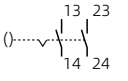


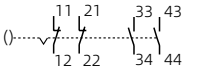
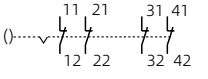
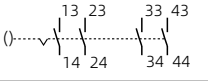
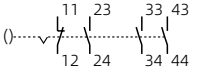
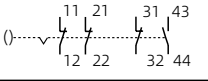
DIN rail mounting	Electrical diagram	Reference number
 2-pole	 1NC/1NO	60SL-VB6201
	 2NC	61SL-VB6201
	 2NO	62SL-VB6201
 4-pole   Ø 39 mm	 2NC/2NO	650SL-VB6201
	 4NC	651SL-VB6201
	 4NO	652SL-VB6201
	 1NC/3NO	653SL-VB6201
	 3NC/1NO	654SL-VB6201

S - silver plated contacts (optional: G - gold plated contacts)


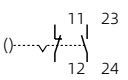
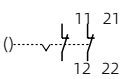
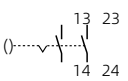


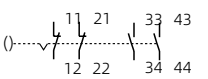
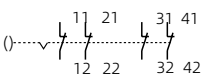
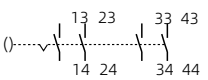
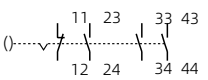
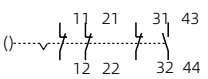
L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

B - black version - (optional: E - red-yellow version for safety switches)

## Buttons and switches

Mounting on the cover	Electrical diagram	Reference number
2-pole 	 1NC/1NO	70SL-Y222B
	 2NC	71SL-Y222B
	 2NO	72SL-Y222B
4-pole    Ø 39 mm	 O 2NC/2N	750SL-Y222B
	 4NC	751SL-Y222B
	 4NO	752SL-Y222B
	 1NC/3NO	753SL-Y222B
	 3NC/1NO	754SL-Y222B

S - silver plated contacts (optional: G - gold plated contacts)  
 L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)  
 B - black-red version - (optional E - red-yellow version for safety switches)

DIN rail mounting	Electrical diagram	Reference number
2-pole 	 1NC/1NO	60SL-Y22B
	 2NC	61SL-Y22B
	 2NO	62SL-Y22B
4-pole    Ø 39 mm	 2NC/2NO	650SL-Y22B
	 4NC	651SL-Y22B
	 4NO	652SL-Y22B
	 1NC/3NO	653SL-Y22B
	 3NC/1NO	654SL-Y22B

S - silver plated contacts (optional: G - gold plated contacts)  
 L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)  
 B - black-red version - (optional E - red-yellow version for safety switches)

## Buttons and switches

Mounting on the cover	Symbols	Electrical diagram		Reference number
 <p>2-pole</p>			1NC/1NO	70SL-Y62GS01
			2NC	71SL-Y62GS01
			2NO	72SL-Y62GS01
			1NC/1NO	70SL-Y32GS10
			2NC	71SL-Y32GS10
			2NO	72SL-Y32GS10
 <p>4-pole</p>			2NC/2NO	750SL-Y62GS01
			4NC	751SL-Y62GS01
			4NO	752SL-Y62GS01
			1NC/3NO	753SL-Y62GS01
			2NC/2NO	750SL-Y32GS10
			4NC	751SL-Y32GS10
 <p>Ø 39 mm</p>			4NO	752SL-Y32GS10
			1NC/3NO	753SL-Y62GS01
			3NC/1NO	754SL-Y62GS01
			2NC/2NO	750SL-Y32GS10
<p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li> Key remains in position</li> <li> Key returns to initial position</li> <li> Key removable position</li> <li><span style="color: red;">A,B,C</span> Key cannot be removed (optional)</li> </ul>			4NO	752SL-Y32GS10
			1NC/3NO	753SL-Y32GS10
			4NC	751SL-Y32GS10
			2NC/2NO	750SL-Y32GS10

S - silver plated contacts (optional: G - gold plated contacts)  
 L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)  
 S - standard version with possibility to remove the key in any position (optional A, B, C - lock the key in selected position(s))

## Buttons and switches

Mounting on the cover	Symbols	Electrical diagram	Reference number
2-pole	I O II		70SL-Y42GS04
	I O II		72SL-Y42GS04
	I O II		72SL-Y52GS04
	I O II		70SL-Y52GS03
4-pole	0 I		72SL-Y62GS01
	0 I		70SL-Y62GS02
	0 • I		70SL-Y82GS05
	0 I		750SL-Y62GS02
	0 I		752SL-Y62GS01
	0 I		754SL-Y62GS01
	I O II		752SL-Y42GS04
	I O II		752SL-Y52GS04
LEGEND		Key remains in position	
		Key returns to initial position	
		Key removable position	
	A, B, C	Key cannot be removed (optional)	



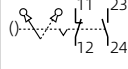

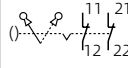

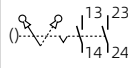

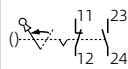

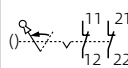

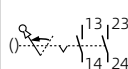


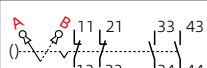







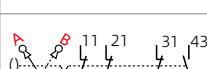

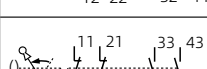

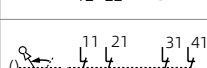

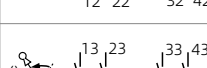

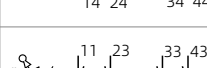



Ø 39 mm

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

S - standard version with possibility to remove the key in any position (optional A, B, C - lock the key in selected position(s))

## Buttons and switches



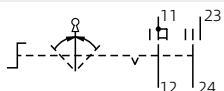

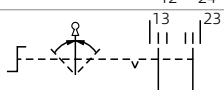

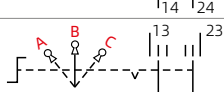

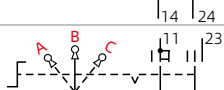


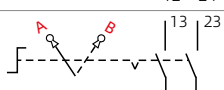

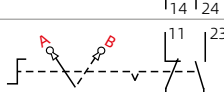

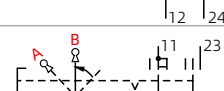

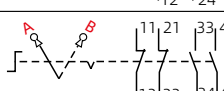

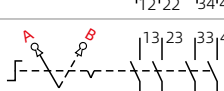

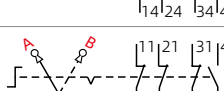

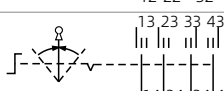

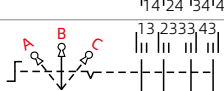




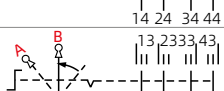

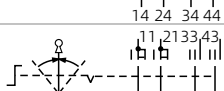

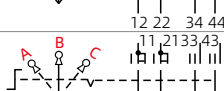

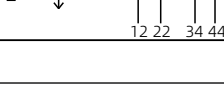
Mounting on the cover	Symbols	Electrical diagram		Reference number
 <p>2-pole</p>			1NC/1NO	60SL-Y62GS01
			2NC	61SL-Y62GS01
			2NO	62SL-Y62GS01
			1NC/1NO	60SL-Y32GS10
			2NC	61SL-Y32GS10
			2NO	62SL-Y32GS10
 <p>4-pole</p> <p>Ø 39 mm</p>			2NC/2NO	650SL-Y62GS01
			4NC	651SL-Y62GS01
			4NO	652SL-Y62GS01
			1NC/3NO	653SL-Y62GS01
			3NC/1NO	654SL-Y62GS01
			2NC/2NO	650SL-Y32GS10
			4NC	651SL-Y32GS10
			4NO	652SL-Y32GS10
			1NC/3NO	653SL-Y32GS10
	<b>LEGEND</b>  Key remains in position  Key returns to initial position  Key removable position <b>A,B,C</b> Key cannot be removed (optional)			

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

S - standard version with possibility to remove the key in any position (optional **A, B, C** - lock the key in selected position(s))

## Buttons and switches




Mounting on the cover	Symbols	Electrical diagram	Reference number
 <p>2-pole</p>			60SL-Y42GS04
			62SL-Y42GS04
			62SL-Y52GS04
			60SL-Y52GS03
 <p>4-pole</p>			62SL-Y62GS01
			60SL-Y62GS02
			60SL-Y82GS05
			650SL-Y62GS02
			652SL-Y62GS01
			654SL-Y62GS01
			652SL-Y42GS04
			652SL-Y52GS04
<p>Ø 39 mm</p> <p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li> Key remains in position</li> <li> Key returns to initial position</li> <li> Key removable position</li> <li><b>A, B, C</b> Key cannot be removed (optional)</li> </ul>			652SL-Y82GS04
			650SL-Y42GS03
			650SL-Y52GS03
			650SL-Y52GS03

S - silver plated contacts (optional: G - gold plated contacts)


L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)


S - standard version with possibility to remove the key in any position (optional **A, B, C** - lock the key in selected position(s))

## Buttons and switches

Mounting on the cover	Symbols	Electrical diagram	Reference number
 2-pole			70SL-KB4203
			72SL-KB4204
			72SL-KB5204
			70SL-KB5203
 4-pole			72SL-KB6201
			70SL-KB6202
			70SL-KB8205
			750SL-KB6202
 Ø 39 mm			752SL-KB6201
			754SL-KB6201
			752SL-KB4204
			752SL-KB5204
			752SL-KB8204
			750SL-KB4203
			750SL-KB5203
			750SL-KB8205




**LEGEND**

 Key remains in position



 Key returns to initial position

S - silver plated contacts (optional: G - gold plated contacts)  
 L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

## Buttons and switches



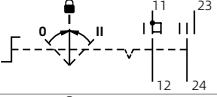


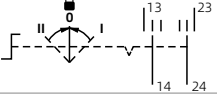


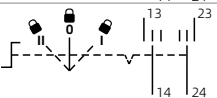


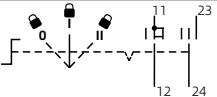



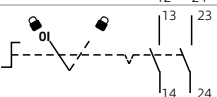


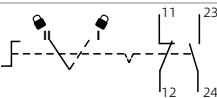





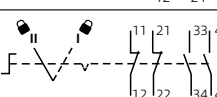


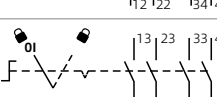


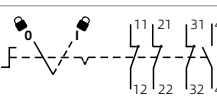


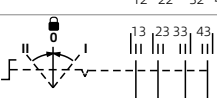


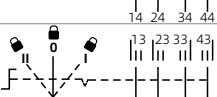


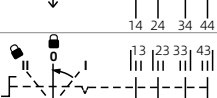


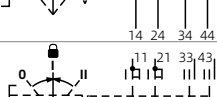


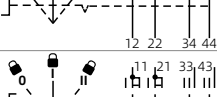


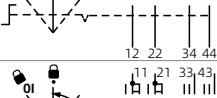

Mounting on the cover	Symbols	Electrical diagram	Reference number
 2-pole			60SL-KB4203
			62SL-KB4204
			62SL-KB5204
			60SL-KB5203
 4-pole			62SL-KB6201
			60SL-KB6202
			60SL-KB8205
			650SL-KB6202
 4-pole Ø 39 mm			652SL-KB6201
			654SL-KB6201
			652SL-KB4204
			652SL-KB5204
			652SL-KB8204
			650SL-KB4203
			650SL-KB5203
			650SL-KB8205

**LEGEND**

-  Key remains in position
-  Key returns to initial position

S - silver plated contacts (optional: G - gold plated contacts)  
 L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

## Buttons and switches

Mounting on the cover	Symbols	Electrical diagram	Reference number	
 <p>2-pole</p>				70SL-SB4203
				72SL-SB4204
				72SL-S5B204
				70SL-SB5203
 <p>4-pole</p>				72SL-SB6201
				70SL-SB6202
				70SL-SB8205
				750SL-SB6202
<p>Ø 61,5 mm</p>				752SL-SB6201
				754SL-SB6201
				752SL-SB4204
				752SL-SB5204
				752SL-SB8204
				750SL-SB4203
				750SL-SB5203
				750SL-SB8205




**LEGEND**

-  Key remains in position
-  Key returns to initial position
-  Padlock hole

S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)



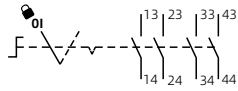

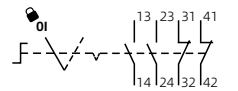

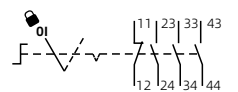

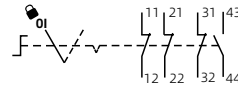

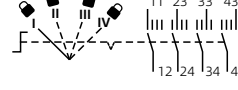

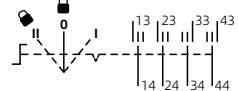

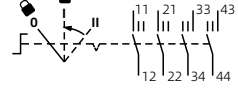

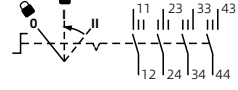

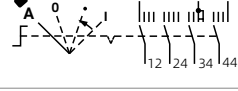

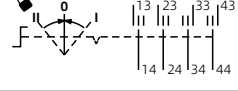

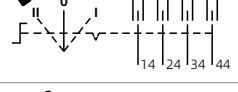

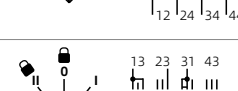

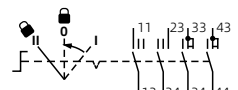

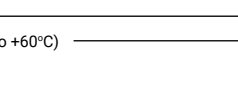
## Buttons and switches

Mounting on the cover	Symbols	Electrical diagram	Reference number	
 2-pole			60SL-SB4203	
			62SL-SB4204	
			62SL-SB5204	
			60SL-SB5203	
			62SL-SB6201	
			60SL-SB6202	
	 4-pole			60SL-SB8205
				650SL-SB6202
				652SL-SB6201
				654SL-SB6201
				652SL-SB4204
				652SL-SB5204
 Ø 61,5 mm			652SL-SB8204	
			650SL-SB4203	
			650SL-SB5203	
			650SL-SB8205	
	<b>LEGEND</b> Key returns to initial position Key removable position Padlock hole			650SL-SB4203
				650SL-SB5203
			650SL-SB8205	




S - silver plated contacts (optional: G - gold plated contacts)

L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

## Buttons and switches

Mounting on the cover	Symbols	Electrical diagram	Reference number
 <p>Ø 61,5 mm</p>			H601SL-HB3201
			H602SL-HB3201
			H603SL-HB3201
			H604SL-HB3201
			H605SL-HB4204
			H606SL-HB3203
			H607SL-HB3202
			H608SL-HB3202
			H609SL-HB4205
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			H613SL-HB3203
			H614SL-HB3203



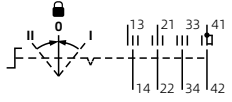
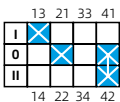

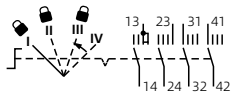
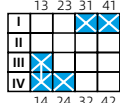

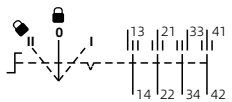
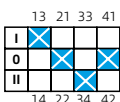

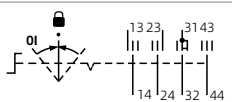
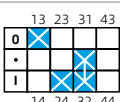

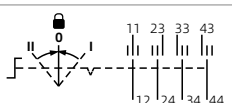
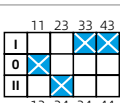

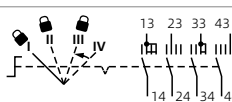
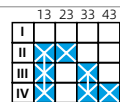

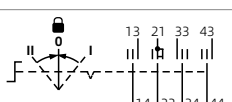
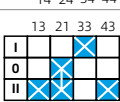

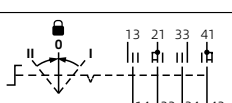


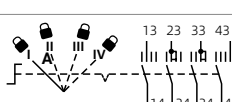
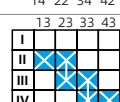

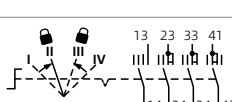
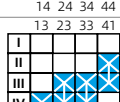


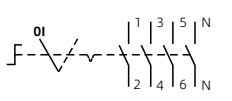
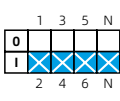

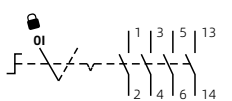
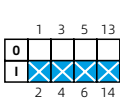

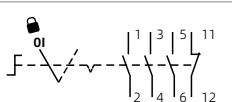
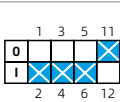
**LEGEND**


-  Key remains in position
-  Key returns to initial position
-  Padlock hole


S - silver plated contacts (optional: G - gold plated contacts)


L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

## Buttons and switches

Mounting on the cover	Symbols	Electrical diagram	Reference number	
				H618SL-HB3203
				H626SL-HB4204
				H631SL-HB3203
				H637SL-HB3205
				H650SL-HB3203
				H646SL-HB4204
				H656SL-HB3203
				H659SL-HB3203
				H660SL-HB4204
				H668SL-HB4204
Ø 61,5 mm				
				H697SL-HB3201
				H698SL-HB3201
				H699SL-HB3201


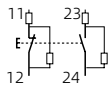
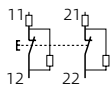
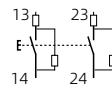

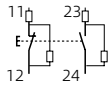
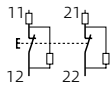
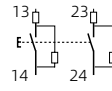

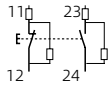
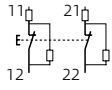
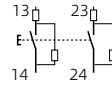
 Key remains in position

 Key returns to initial position

 Padlock hole



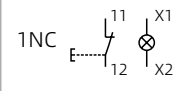
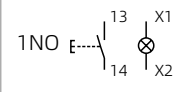
S - silver plated contacts (optional: G - gold plated contacts)  
L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)



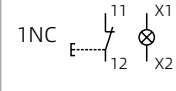
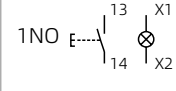
## Buttons and switches

DIN rail mounting	Description	Electrical diagram	Reference number			
 Ø 40 mm	Open circuit and short circuit detection function	1NC/1NO 	10kΩ/1kΩ	C60GL21-P6E		
			10kΩ/1.8kΩ	C60GL22-P6E		
			22.1kΩ/681Ω	C60GL23-P6E		
		2NC 	10kΩ/1kΩ	C61GL21-P6E		
			10kΩ/1.8kΩ	C61GL22-P6E		
			2NO 	10kΩ/1kΩ	C62GL21-P6E	
		 Ø 39 mm	Open circuit and short circuit detection function	1NC/1NO 	10kΩ/1kΩ	C60GL21-P100
					10kΩ/1.8kΩ	C60GL22-P100
					22.1kΩ/681Ω	C60GL23-P100
2NC 	10kΩ/1kΩ			C61GL21-P100		
	10kΩ/1.8kΩ			C61GL22-P100		
	2NO 			10kΩ/1kΩ	C62GL21-P100	
 39X70 mm	Open circuit and short circuit detection function			1NC/1NO 	10kΩ/1kΩ	C60GL21-P200
					10kΩ/1.8kΩ	C60GL22-P200
					22.1kΩ/681Ω	C60GL23-P200
		2NC 	10kΩ/1kΩ	C61GL21-P200		
			10kΩ/1.8kΩ	C61GL22-P200		
			2NO 	10kΩ/1kΩ	C62GL21-P200	



L - ambient temp. -40 to +60°C (optional: H - ambient temp. -55 to +60°C)

## Illuminated buttons


Mounting on the cover	Electrical diagram	Protection	Power supply lamps	Reference number
 <p>Ex ia IIC Ga</p>  <p>Ex db eb IIC Gb</p> <p>Ø 39 mm</p>	 <p>1NC</p>	Ex ia IIC Ga	10V - 2.8V AC/DC	7300H-P□
		Ex db eb IIC Gb	10V - 2.8V AC/DC	7303L-P□
			20V - 2.50V AC/D C	7301L-P□
	 <p>1NO</p>	Ex ia IIC Ga	10V - 2.8V AC/DC	7400H-P□
		Ex db eb IIC Gb	10V - 2.8V AC/DC	7403L-P□
			20V - 2.50V AC/D C	7401L-P□
		100V - 277V AC/DC	7404L-P□	
<p>L - ambient temp. -40 to +60°C (Optional: H - ambient temp. -55 to +60°C, possibility to change only from L to H)</p> <p> <span style="color: red;">●</span> R - red  <span style="color: green;">●</span> G - green  <span style="color: yellow;">●</span> Y - yellow  <span style="color: blue;">●</span> B - blue  <span style="color: white;">○</span> W - white                 </p>				

Mounting on the cover	Electrical diagram	Protection	Power supply lamps	Reference number
 <p>Ex ia IIC Ga</p>  <p>Ex db eb IIC Gb</p> <p>Ø 39 mm</p>	 <p>1NC</p>	Ex ia IIC Ga	10V - 2.8V AC/DC	6300H-P□
		Ex db eb IIC Gb	10V - 2.8V AC/DC	630L-P□
			20V - 2.50V AC/D C	6301L-P□
	 <p>1NO</p>	Ex ia IIC Ga	10V - 2.8V AC/DC	6400H-P□
		Ex db eb IIC Gb	10V - 2.8V AC/DC	6403L-P□
			20V - 2.50V AC/D C	6401L-P□
		100V - 277V AC/DC	6404L-P□	
<p>L - ambient temp. -40 to +60°C (Optional: H - ambient temp. -55 to +60°C, possibility to change only from L to H)</p> <p> <span style="color: red;">●</span> R - red  <span style="color: green;">●</span> G - green  <span style="color: yellow;">●</span> Y - yellow  <span style="color: blue;">●</span> B - blue  <span style="color: white;">○</span> W - white                 </p>				

## Indicator lamps


Mounting on the cover	Color lamps	Power supply lamps	Protection	Reference number
	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	10V - 28V AC/DC	Ex ia IIC Ga	700H-LR
				700H-LG
				700H-LY
				700H-LB
				700H-LW
 Ø 39 mm	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	10V - 28V AC/DC	Ex d e IIC Gb	703L-LR
				703L-LG
				703L-LY
				703L-LB
	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	20V - 250V AC/DC	Ex d e IIC Gb	701L-LR
				701L-LG
				701L-LY
				701L-LB
	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	100V - 277V AC/DC	Ex d e IIC Gb	704L-LR
				704L-LG
				704L-LY
				704L-LB
				704L-LW

L - ambient temperature -40 to +60°C  
(Optional: H - ambient temp. -55 to +60°C, possibility to change only from L to H)


Mounting on the cover	Color lamps	Power supply lamps	Protection	Reference number
	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	10V - 28V AC/DC	Ex ia IIC Ga	600H-LR
				600H-LG
				600H-LY
				600H-LB
				600H-LW
 Ø 39 mm	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	10V - 28V AC/DC	Ex d e IIC Gb	603L-LR
				603L-LG
				603L-LY
				603L-LB
	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	20V - 250V AC/DC	Ex d e IIC Gb	601L-LR
				601L-LG
				601L-LY
				601L-LB
	<ul style="list-style-type: none"> <li>● R - red</li> <li>● G - green</li> <li>● Y - yellow</li> <li>● B - blue</li> <li>○ W - white</li> </ul>	100V - 277V AC/DC	Ex d e IIC Gb	604L-LR
				604L-LG
				604L-LY
				604L-LB
				604L-LW

L - ambient temperature -40 to +60°C  
(Optional: H - ambient temp. -55 to +60°C, possibility to change only from L to H)

## Potentiometers

Mounting on the cover	Resistance	Reference number
 <p>Ø 39 mm</p>	100Ω	A701/1L-DW2
	200Ω	A702/1L-DW2
	500Ω	A703/1L-DW2
	1000Ω	A704/1L-DW2
	2000Ω	A705/1L-DW2
	5000Ω	A706/1L-DW2
	10000Ω	A707/1L-DW2
	20000Ω	A708/1L-DW2
	50000Ω	A709/1L-DW2
	100000Ω	A710/1L-DW2
	200000Ω	A711/1L-DW2
	500000Ω	A712/1L-DW2
	1000000Ω	A713/1L-DW2
	2000000Ω	A714/1L-DW2

L - ambient temperature -40 to +60°C  
(Optional: H - ambient temp. -55 to +60°C, possibility to change only from L to H)

Mounting on the cover	Resistance	Reference number
 <p>Ø 39 mm</p>	100Ω	A601/1L-DW2
	200Ω	A602/1L-DW2
	500Ω	A603/1L-DW2
	1000Ω	A604/1L-DW2
	2000Ω	A605/1L-DW2
	5000Ω	A606/1L-DW2
	10000Ω	A607/1L-DW2
	20000Ω	A608/1L-DW2
	50000Ω	A609/1L-DW2
	100000Ω	A610/1L-DW2
	200000Ω	A611/1L-DW2
	500000Ω	A612/1L-DW2
	1000000Ω	A613/1L-DW2
	2000000Ω	A614/1L-DW2

L - ambient temperature -40 to +60°C  
(Optional: H - ambient temp. -55 to +60°C, possibility to change only from L to H)

## Voltmeters and ammeters

### Accessories

#### Counterframe



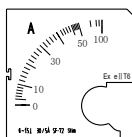
M2

#### Counterframe with label



M1

#### Scales



- 0...1
- 2.5
- 5
- 15
- 25
- 40
- 50
- 60
- 75
- 100
- 150
- 200
- 250
- 300
- 400
- 500
- 600

### Voltmeters



70x70 mm

#### Scope

- 0-25V
- 0-40V
- 0-150V
- 0-250V
- 0-500V

#### Protection

Ex emb II C Gb

#### Reference number

- 7V25-M1
- 7V40-M1
- 7V150-M1
- 7V250-M1
- 7V500-M1

7 - cover mounting (optional: 6 - DIN rail mounting)

M1 - counterframe without label (optional: M2 - counterframe with label)

### Milliammeters



70x70 mm

#### Scope

- 0-20/40mA
- 4-20//40mA

#### Protection

Ex emb II C Gb

#### Reference number

- 7mA11[ ]/M1
- 7mA12[ ]/M1

7 - cover mounting (optional: 6 - DIN rail mounting)

SCALE: 0...1 / 2.5 / 5 / 15 / 25 / 40 / 50 / 60 / 75 / 100 / 150 / 200 / 250 / 300 / 400 / 500 / 600

M1 - counterframe without label (optional: M2 - counterframe with label)



<p>70x70 mm</p>	Direct measurement	0-1 / 2A	7A1-M1
		0-5 / 10A	7A5-M1
		0-10 / 20A	7A10-M1
	For current transformer	0-1 / 2A	7A01 / 12-M1
		0-2.5 / 5A	7A2.5 / 12-M1
		0-5 / 10A	7A5 / 12-M1
		0-15 / 30A	7A15 / 12-M1
		0-25 / 50A	7A25 / 12-M1
		0-40 / 80A	7A40 / 12-M1
		0-50 / 100A	7A50 / 12-M1
		0-60 / 120A	7A60 / 12-M1
		0-75 / 150A	7A75 / 12-M1
		0-100 / 200A	7A100 / 12-M1
		0-150 / 300A	7A150 / 12-M1
		0-200 / 400A	7A200 / 12-M1
		0-250 / 500A	7A250 / 12-M1
		0-300 / 600A	7A300 / 12-M1
		0-400 / 800A	7A400 / 12-M1
		0-500 / 1000A	7A500 / 12-M1
		0-600 / 1200A	7A600 / 12-M1

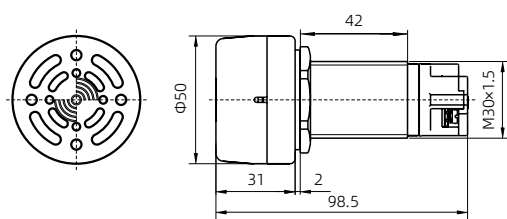
7 - cover mounting (optional: 6 - DIN rail mounting)

1 - current on the secondary side of the transformer 1A (optional: 5 - current on the secondary side of the transformer 5A)

M1 - counterframe without label (optional: M2 - counterframe with label)

## Warning devices (acoustic / acoustic-optical)

Mounting on the cover	Sound	Light	Rated voltage	Reference
	Yes, 60dB (at a distance of 30cm)	Yes, flashing light	10V - 28V AC/DC	2-R70
			20V - 250V AC/DC	2-R71
	Yes, 60dB (at a distance of 30cm)	Yes, 60dB (at a distance of 30cm)	10V - 28V AC/DC	2-B70
			20V - 250V AC/DC	2-B71



Ambient temperature	$-40^{\circ}\text{C} \leq T_a \leq +45^{\circ}\text{C}$
Degree of protection	IP66
Rated voltage	AC/DC10-28V, AC/DC20-250V
Rated frequency	50/60Hz
Sound level	60dB (at a distance of 30cm)
Connection terminals	2x2.5mm <sup>2</sup>

HCS1P series for zones 1/2 and 21/22

## Predefined control panels for hazardous areas



### Design features

- ▶ **The robust, thick enclosure walls (4.5–9 mm)** ensure high structural rigidity and allow the use of threads with a large number of turns, further enhancing the device's reliability.
- ▶ **Silicone cover gasket**, which effectively protects the interior of the case from the ingress of moisture and dirt.
- ▶ **Cover screws**, made of AISI 316L stainless steel, guarantee durability and resistance to harmful external factors.
- ▶ **Internal mounting screws**, made of corrosion-resistant materials, significantly increase the durability and service life of the entire structure.

### In this section you will find

#### Control panels with 2 elements



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[p. 64](#)



[p. 65](#)



[p. 66](#)



[p. 67](#)

#### Control panels with 3 elements



[p. 68](#)




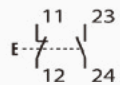

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## Control panel [2 elements]

## Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		self-return button (green) 1NO + 1NC	1 x M25	HCS1P 122209 S20001
		self-return button (red) 1NO + 1NC		

## Parameters


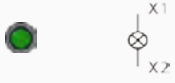
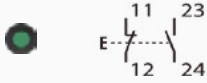
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~0,9 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

## NOTES:

- Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
- T6** temperature class available up to 13A (on request)
- IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
- IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control panel [2 elements]

### Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		indicator light (green)	1 x M25	HCS1P 122209 S20002
		self-return button (green) 1NO + 1NC		

### Parameters


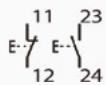
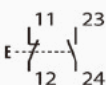
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEx	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~0,9 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

### NOTES:

1. **Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
2. **T6** temperature class available up to 13A (on request)
3. IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
4. IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control panel [2 elements]

**Predefined products** (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		self-return double button (green/red) 1NO + 1NC	1 x M25	HCS1P 122209 S20003
		emergency stop (pull-to-release) 1NO + 1NC		

### Parameters


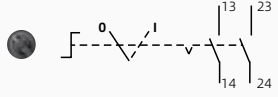

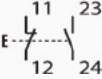
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~0,9 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

### NOTES:

- Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
- T6** temperature class available up to 13A (on request)
- IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
- IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control panel [2 elements]

### Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		control switch 2 stable positions 2NO description: 0 - I	1 x M25	HCS1P 122209 S20004
		emergency stop (pull-to-release) 1NO + 1NC		

### Parameters


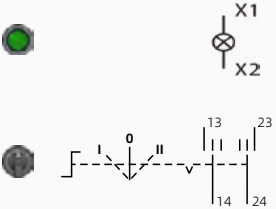
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~0,9 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

### NOTES:

1. **Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
2. **T6** temperature class available up to 13A (on request)
3. IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
4. IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control panel [2 elements]

## Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		indicator light (green)  control switch 3 stable positions 2NO description: I - 0 - II	1 x M25	HCS1P 122209 S20005

## Parameters



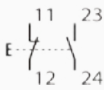
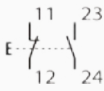
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~0,9 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

## NOTES:

- Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
- T6** temperature class available up to 13A (on request)
- IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
- IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control panel [3 elements]

### Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		indicator light (green)		
		self-return button (green) 1NO + 1NC	1 x M25	HCS1P 122209 S30001
		self-return button (red) 1NO + 1NC		

### Parameters





Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEx	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~1,1 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

### NOTES:

1. **Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
2. **T6** temperature class available up to 13A (on request)
3. IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
4. IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control panel [3 elements]

### Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		indicator light (green)		
		self-return double button (green/red) 1NO + 1NC	1 x M25	HCS1P 122209 S30002
		emergency stop (pull-to-release) 1NO + 1NC		

### Parameters




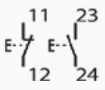

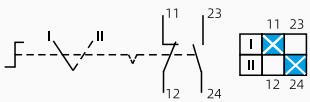
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	Ⓔ II 2 G Ex db eb IIC T5 Gb   Ⓔ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~1,1 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

### NOTES:

- Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
- T6** temperature class available up to 13A (on request)
- IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
- IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control panel [3 elements]

### Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		indicator light (green)		
		self-return double button (green/red) 1NO + 1NC	1 x M25	HCS1P 122209 S30003
		emergency stop (pull-to-release) 1NO + 1NC		

### Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to 2014/34/EU	Ⓔ II 2 G Ex db eb IIC T5 Gb   Ⓔ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 220 x 90 mm
Product weight	~1,1 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Maximum voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

### NOTES:

- Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
- T6** temperature class available up to 13A (on request)
- IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
- IIIC – most stringent dust group (includes **IIIB, IIIA**)








HCS1P Series for Zones 1/2 and 21/22

## Switches / selector switches for hazardous areas




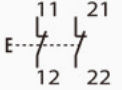

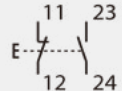

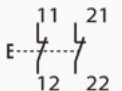

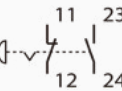

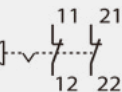
### Design features

- ▶ **The robust, thick enclosure walls (4.5–9 mm)** ensure high structural rigidity and allow the use of threads with a large number of turns, further enhancing the device's reliability.
- ▶ **Silicone cover gasket**, which effectively protects the interior of the case from the ingress of moisture and dirt.
- ▶ **Cover screws**, made of AISI 316L stainless steel, guarantee durability and resistance to harmful external factors.
- ▶ **Internal mounting screws**, made of corrosion-resistant materials, significantly increase the durability and service life of the entire structure.

Exemple	In this section you will find	Description	71-95
	<b>Emergency stop</b>	Mushroom head Current: up to 16A Poles: up to 4	72
	<b>Momentary switches</b>	Self-return button Current: up to 16A Poles: up to 4	73
	<b>Illuminated momentary switches</b>	Self-return button with LED Current: up to 16A Poles: up to 4	74
	<b>Control switches (16A, up to 3 positions)</b>	Switch with knob / key Current: up to 16A Poles: up to 4	75
	<b>Control switches (25A, up to 12 positions)</b>	Switch with knob Current: up to 25A Poles: up to 12	80, 83
	<b>Main, isolation and safety switches</b>	Switch with large knob (padlock) Current: up to 25A or 80A Poles: up to 6 (NO, NC, PE, N as an option)	76, 80, 83
	<b>Motor switches</b>	Type: switch with large knob (padlock) Overload trip: 0.1-25A	93

# Emergency stop

## Predefined products (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
<b>Pull to release</b>				
		1NO + 1NC 1 x mushroom button	1 x M25	HCS1P 121209 S10001
		2NC 1 x mushroom button	1 x M25	HCS1P 121209 S10002
		1NO + 1NC 1 x mushroom button Pull to release	1 x M25	HCS1P 121209 S10003
		2NC 1 x mushroom button Pull to release	1 x M25	HCS1P 121209 S10004
<b>Twist to release</b>				
		1NO + 1NC 1 x mushroom button Twist to release	1 x M25	HCS1P 121209 S10011
		2NC 1 x mushroom button Twist to release	1 x M25	HCS1P 121209 S10012

## Parameters


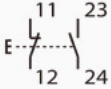

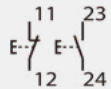
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to ATEX (2014/34/EU)	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 120 x 90 mm
Product weight	~0,4 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Max voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

## NOTES:

1. **Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
2. **T6** temperature class available up to 13A (on request)
3. IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
4. IIIC – most stringent dust group (includes **IIIB, IIIA**)

# Momentary switches

**Predefined products** (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		1NO + 1NC 1 x monostable button colour: green	1 x M25	HCS1P 121209 S10051
		1NO + 1NC 1 x monostable double button colours: red, green	1 x M25	HCS1P 121209 S10101

## Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to ATEX (2014/34/EU)	Ⓔ II 2 G Ex db eb IIC T5 Gb   Ⓔ II 2 D Ex tb IIIC T85°C
Marking according to IECEx	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 120 x 90 mm
Product weight	~0,4 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Max voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

## NOTES:

- Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
- T6** temperature class available up to 13A (on request)
- IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
- IIIC – most stringent dust group (includes **IIIB, IIIA**)

# Illuminated momentary switches

**Predefined products** (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
		1NO 1 x illuminated push button colour: ● red	1 x M25	HCS1P 121209 S10301
		1NO 1 x illuminated push button colour: ● green	1 x M25	HCS1P 121209 S10302
		1NO 1 x illuminated push button colour: ● yellow	1 x M25	HCS1P 121209 S10303
		1NO 1 x illuminated push button colour: ● blue	1 x M25	HCS1P 121209 S10304
		1NO 1 x illuminated button, 1NO colour: ○ white	1 x M25	HCS1P 121209 S10305

## Parameters


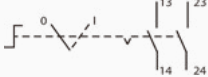





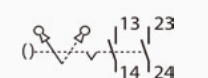

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to ATEX (2014/34/EU)	Ⓔ II 2 G Ex db eb IIC T5 Gb   Ⓔ II 2 D Ex tb IIIC T85°C
Marking according to IECEX	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 120 x 90 mm
Product weight	~0,4 kg
Mechanical life	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Max voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

## NOTES:

1. **Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
2. **T6** temperature class available up to 13A (on request)
3. IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
4. IIIC – most stringent dust group (includes **IIIB, IIIA**)

## Control switches (16A, up to 3 positions)

**Predefined products** (other on request)

Photo	Electrical diagram	Description	Cable glands	Order No
	 2NO 	1 x control switch 2 stable positions description: 0 - I	1 x M25	HCS1P 121209 S10151
	 2NO 	1 x control switch 3 stable positions description: I - 0 - II	1 x M25	HCS1P 121209 S10171
	 2NO 	1 x key-operated switch 2 positions: stable	1 x M25	HCS1P 121209 S10201

### Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
ATEX certificate	FIDI 22 ATEX 0065X
IECEX certification	IECEX FIDI 22.0008X
Marking according to ATEX (2014/34/EU)	⊕ II 2 G Ex db eb IIC T5 Gb   ⊕ II 2 D Ex tb IIIC T85°C
Marking according to IECEx	Ex db eb IIC T5 Gb   Ex tb IIIC T85°C
Dimensions (L x W x H)	120 x 120 x 90 mm
Product weight	~0,4 kg
Mechanical Life:	1 million cycles
Housing material	glass fiber reinforced polyester (GRP)
Permissible ambient temperature	-20°C to 40°C (optional -50°C to 60°C)
Degree of protection according to EN 60529	IP66
Max voltage	400 V AC
Rated current	16 A
Protection class	I
Short-circuit protection:	16A / 500V
Terminals	2 x 2,5 mm <sup>2</sup>

### NOTES:

1. **Other variants** on request (gland quantity, metal glands, larger enclosure, alternative components ect.)
2. **T6** temperature class available up to 13A (on request)
3. IIC – most stringent gas group (includes **IIB, IIA**); suitable e.g. for hydrogen and acetylene
4. IIIC – most stringent dust group (includes **IIB, IIIA**)

## Main, isolation and safety switches



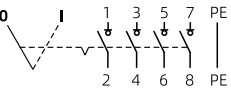

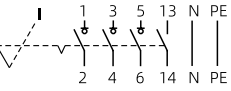

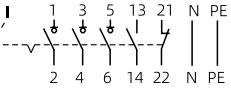


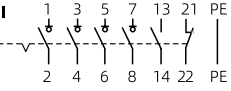

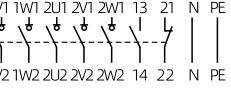
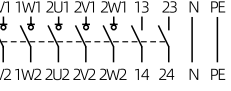
switch positions: 2 | contacts: 3-6 + PE + N | auxiliary contacts: NO + NC + 2NC | current: 20-80A



### Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
Marking according to ATEX	Ⓔ II 2 G Ex db eb IIC T5/T6 Gb   Ⓔ II 2 D Ex tb IIIC T85°C Db
Marking according to IECEx	Ex db eb IIC T5/T6 Gb   Ex tb IIIC T85°C Db
Electrical standards	IEC/EN 60947-1   IEC/EN 60947-1
Knob size	Ø 105 mm (120 mm including grip)
Permissible ambient temperature	-40°C to +55°C
Degree of protection	IP66
Rated voltage	230 to 690V
Rated current	20A / 25A / 35A / 40A / 63A / 75A / 80A
Category of use	AC-3, AC-23, AC11
Short circuit protection (fuse ratings)	20A/25A: 20kA, 500V/35A 30A/40A: 20kA, 500V/63A 63A/75A/80A: 50kA, 500V/160A Fuse type: gG (IEC/EN 60269-1)
Rated insulation voltage (U <sub>i</sub> )	800V
Rated impulse withstand voltage (U <sub>imp</sub> )	6kV
Rated short-time withstand current (I <sub>sw</sub> )	3kA for 20A, 25A, 35A, 40A 10kA for 63A, 75A, 80A
Rated short-circuit making capacity (I <sub>cm</sub> )	4kA (for 20A, 25A, 35A, 40) 17kA (for 63A, 75A, 80A)
Cross section of wires	20A/25A: 2×1.5 to 4mm <sup>2</sup> 35A/40A: 2×10mm <sup>2</sup> 63A/75A/80A: 2×16 to 25mm <sup>2</sup>
Contact material	silver alloy

## Switch module specifications

Switch modules	Electrical diagram	Rated current	Weight [kg]	Reference no
 <b>20A / 25A</b>		20 / 25	0,34	<b>25A/3P-□</b>
		35 / 40	1,05	<b>40A/3P-□</b>
		63 / 75 / 80	3,57	<b>80A/3P-□</b>
 <b>20A / 25A</b>		20 / 25	0,37	<b>25A/4P-□</b>
		35 / 40	1,12	<b>40A/4P-□</b>
		63 / 75 / 80	3,91	<b>80A/4P-□</b>
 <b>35A / 40A</b>		20 / 25	0,37	<b>25A/3P+N-□</b>
		35 / 40	1,09	<b>40A/3P+N-□</b>
		63 / 75 / 80	3,92	<b>80A/3P+N-□</b>
 <b>35A / 40A</b>		20 / 25	0,37	<b>25A/3P-4-□</b>
		35 / 40	1,14	<b>40A/3P-4-□</b>
 <b>63A / 75A / 80A</b>		20 / 25	0,44	<b>25A/3P-0-□</b>
		35 / 40	1,16	<b>40A/3P-0-□</b>
 <b>63A / 75A / 80A</b>		20 / 25	0,44	<b>25A/4P-4-□</b>
		35 / 40	0,96	<b>40A/4P-4-□</b>
 <b>63A / 75A / 80A</b>		20 / 25	0,47	<b>25A/4P-0-□</b>
		35 / 40	1,26	<b>40A/4P-0-□</b>
 <b>63A / 75A / 80A</b>		20 / 25	0,57	<b>25A/6P-0-□</b>
		35 / 40	1,69	<b>40A/6P-0-□</b>
 <b>63A / 75A / 80A</b>		20 / 25	0,57	<b>25A/6P-2-□</b>
		35 / 40	1,69	<b>40A/6P-2-□</b>



**3DE1**



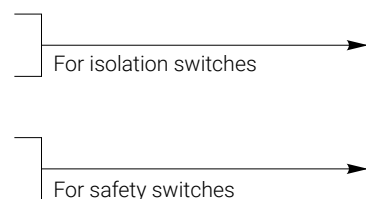
**3DB1**



**3DE2**




**3DB2**



## Main and isolation switches

switch positions: 2 | contacts: 3-6 + 2 x aux. contact + PE + N | current: 20A/25A/30A/40A/63A/75A/80A

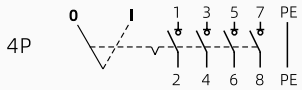
**Predefined products** (other on request)

Current	Photo	ATEX / IECEx	Dimensions	Cable glands	Order No
20A		⚠ II 2 G Ex db eb IIC T6 Gb [zone 1, 2] ⚠ II 2 D Ex tb IIIC T85°C Db [zone 21, 22]	160 x 160 x 90	2 x M32	HCS1P 161609 S01611
25A		⚠ II 2 G Ex db eb IIC T5 Gb [zone 1, 2] ⚠ II 2 D Ex tb IIIC T85°C Db [zone 21, 22]	160 x 160 x 90	2 x M32	HCS1P 161609 S01631
35A		⚠ II 2 G Ex db eb IIC T6 Gb [zone 1, 2] ⚠ II 2 D Ex tb IIIC T85°C Db [zone 21, 22]	250 x 260 x 160	2 x M40	HCS1P 252616 S01711
40A		⚠ II 2 G Ex db eb IIC T5 Gb [zone 1, 2] ⚠ II 2 D Ex tb IIIC T85°C Db [zone 21, 22]	250 x 260 x 160	2 x M50	HCS1P 252616 S01731
63A		⚠ II 2 G Ex db eb IIC T6 Gb [zone 1, 2] ⚠ II 2 D Ex tb IIIC T85°C Db [zone 21, 22]	250 x 400 x 160	2 x M50	HCS1P 254016 S01811
80A		⚠ II 2 G Ex db eb IIC T6 Gb [zone 1, 2] ⚠ II 2 D Ex tb IIIC T85°C Db [zone 21, 22]	250 x 400 x 160	2 x M50	HCS1P 254016 S01871

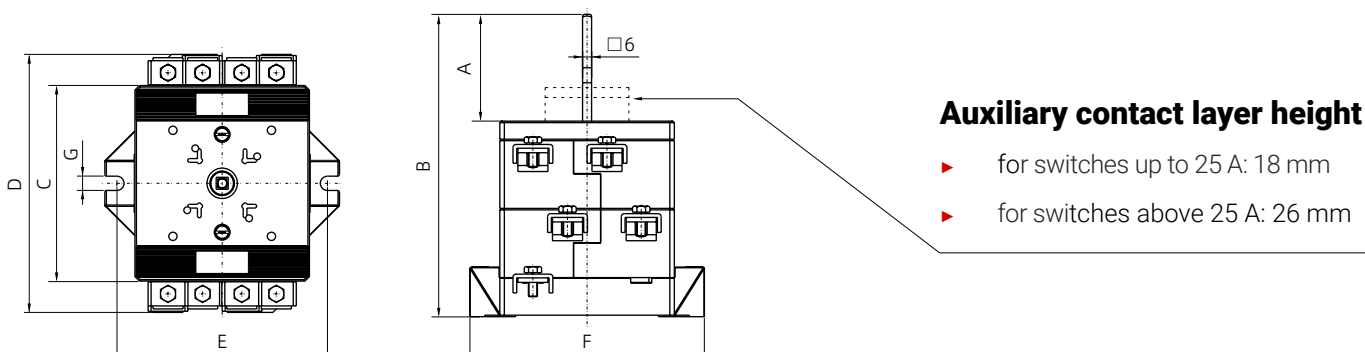
### Parameters

Rated voltage	up to 400V
Short-circuit protection (fuse ratings)	20A: 20kA, 500V/35A 25A: 20kA, 500V/35A 35A: 20kA, 500V/63A 40A: 20kA, 500V/63A 63A: 50kA, 500V/160A 75A: 50kA, 500V/160A Fuse type: gG (IEC/EN 60269-1)
Category of use	AC-3, AC-23, AC11
Rated insulation voltage (U)	800V
Rated impulse withstand voltage (U <sub>imp</sub> )	6kV
Rated short-time withstand current (I <sub>cw</sub> )	3kA (for 20A, 25A, 35A, 40A) 10kA (for 63A, 75A)
Rated short-circuit making capacity (I <sub>cm</sub> )	4kA (for 20A, 25A, 35A, 40) 17kA (for 63A, 75A)
Cross section of wires	20A/25A: 2x1.5 to 4mm <sup>2</sup> 35A/40A: 2x10mm <sup>2</sup> 63A/75A: 2x16 to 25mm <sup>2</sup>

### Technical specifications

Permissible ambient temperature	-40°C to 40°C									
Operating temperature	-40°C to +95°C									
Degree of protection	IP66									
Contact material	silver alloy									
Fast action	yes, thanks to the spring release mechanism									
Fire resistance	good									
Electrical diagram										
<b>On request</b> (see previous page):	<table border="1"> <tr> <td>3P</td> <td>3P - 0</td> <td>6P - 0</td> </tr> <tr> <td>3P + N</td> <td>4P - 4</td> <td>6P - 2</td> </tr> <tr> <td>3P - 4</td> <td>4P - 0</td> <td></td> </tr> </table>	3P	3P - 0	6P - 0	3P + N	4P - 4	6P - 2	3P - 4	4P - 0	
3P	3P - 0	6P - 0								
3P + N	4P - 4	6P - 2								
3P - 4	4P - 0									

## Switch module dimensions



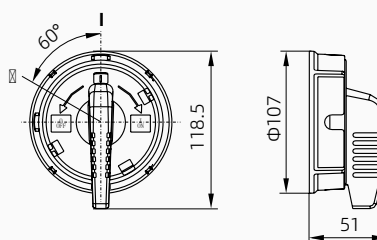
Poles	25A							40A							80A							
	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G	
3P	41	105						83	171						71	201						
4P	41	105						83	171						71	201	130	172	142	156	9.5	
3P+N	41	105						83	171						71	201						
3P-4	41	105						57	171													
3P-0	23	105	50	80	72	80	5.5	57	171	73	118	115	126	6.5	<p>The remaining variants <b>up to 180A</b> are available only in a stainless steel enclosure. Please ask.</p>							
4P-4	23	105						57	171													
4P-0	23	105						57	171													
6P-0	51	151						59	201													
6P-2	51	151						59	201													

## Switch handle dimensions

### Isolation switch



▶ Lockable with 3 x

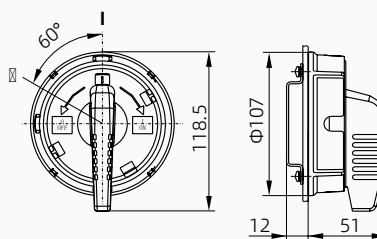


### Safety switch



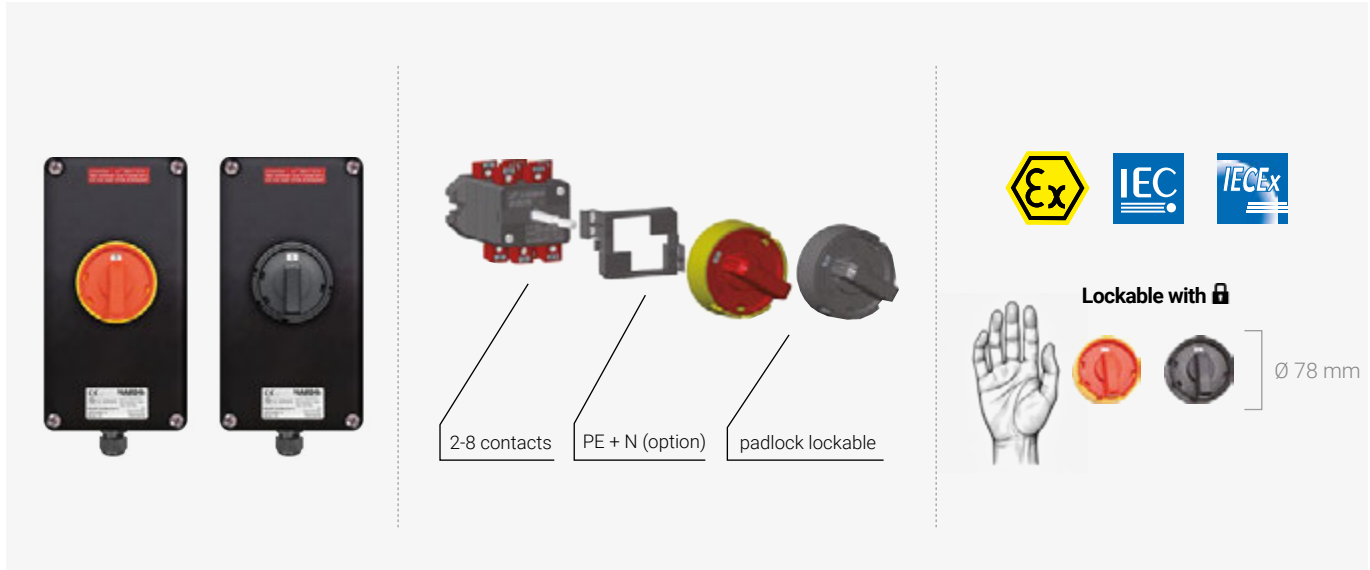
▶ Lockable with 3 x

▶ Mechanism preventing cover removal when the switch is in the OFF position



## Control and main switches (2 positions)

switch positions: 2 | contacts: 3-8 + PE + N | current: 16A/25A

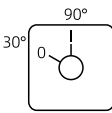
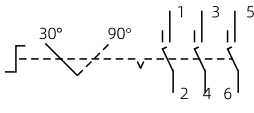
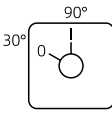
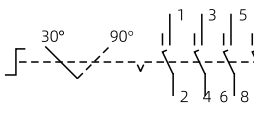
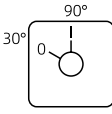
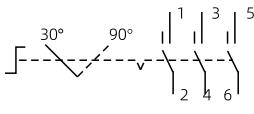
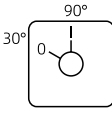
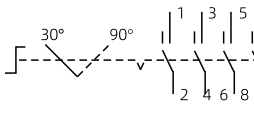
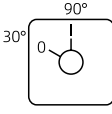
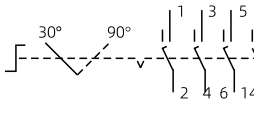
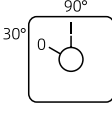
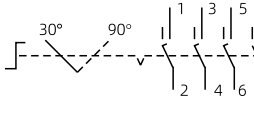
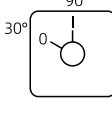
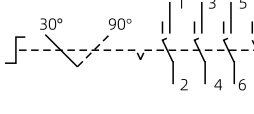
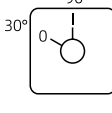
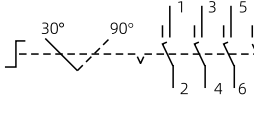
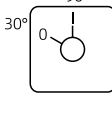
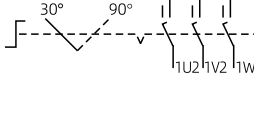
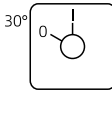
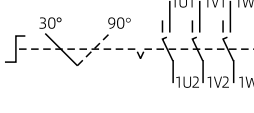


The two-position module used in HARDO switches allows safe control and isolation of electrical circuits in hazardous areas. The modular design offers extensive configuration possibilities – depending on requirements, a switch built on this module can be equipped with 3 to 8 contacts, as well as PN and N contacts. The integrated spring-operated quick-

break mechanism ensures reliable and durable operation. Silver alloy contacts and stainless steel screws guarantee high conductivity and corrosion resistance. In addition, the module features a long isolation path, which increases the safety of use.

### Parameters

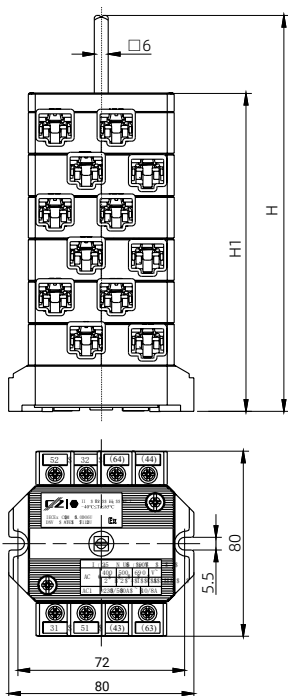
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
Marking according to ATEX	⊕ II 2 G Ex db eb IIC T5/T6 Gb   ⊕ II 2 D Ex tb IIIC T85°C Db
Marking according to IECEx	Ex db eb IIC T5/T6 Gb   Ex tb IIIC T85°C Db
Knob size	Ø 78 mm
Permissible ambient temperature	-40°C to +55°C
Degree of protection	IP66
Rated voltage	230 to 690V
Rated current	16A/25A
Category of use	AC-3, AC-23
Short circuit protection (fuse ratings)	25A: 20kA, 500V/35A Fuse type: gG (IEC/EN 60269-1)
Rated insulation voltage (U <sub>i</sub> )	800V
Rated impulse withstand voltage (U <sub>imp</sub> )	6kV
Rated short-time withstand current (I <sub>cw</sub> )	3kA
Rated short-circuit making capacity (I <sub>cm</sub> )	4kA
Cross section of wires	25A: 2×1.5 to 4mm <sup>2</sup>
Contact material	silver alloy

Switch positions	Contact diagram	Weight [kg]	Reference no
 3P		0.410	<b>25A/3P-5PD</b>
 4P		0.440	<b>25A/4P-5PD</b>
 3P		0.410	<b>25A/03-5PD</b>
 4P		0.440	<b>25A/04-5PD</b>
 4P		0.440	<b>25A/3P-4-5PD</b>
 5P		0.520	<b>25A/3P-0-5PD</b>
 5P		0.520	<b>25A/3P-2-5PD</b>
 6P		0.550	<b>25A/3P-5-5PD</b>
 8P		0.650	<b>25A/6P-0-5PD</b>
 8P		0.650	<b>25A/6P-2-5PD</b>

D - black knob (optional E - red knob)

Other configurations are available upon request.

## Switch module dimensions



Layers / poles	H1	H
1/2P	47	106
2/3P-4P	65	106
3/5P-6P	83	151
4/7P-8P	101	151
5/9P-10P	119	171
6/11P-12P	137	171

1. Each layer has two separate switch contacts or one switch contact and one cap.
2. Maximum of 6 layers / 12 poles.

## Knobs for switches with 2 positions, up to 25 A

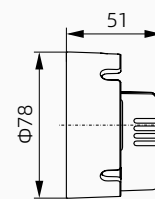
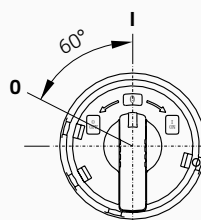
Lockable with 3 x



5PE

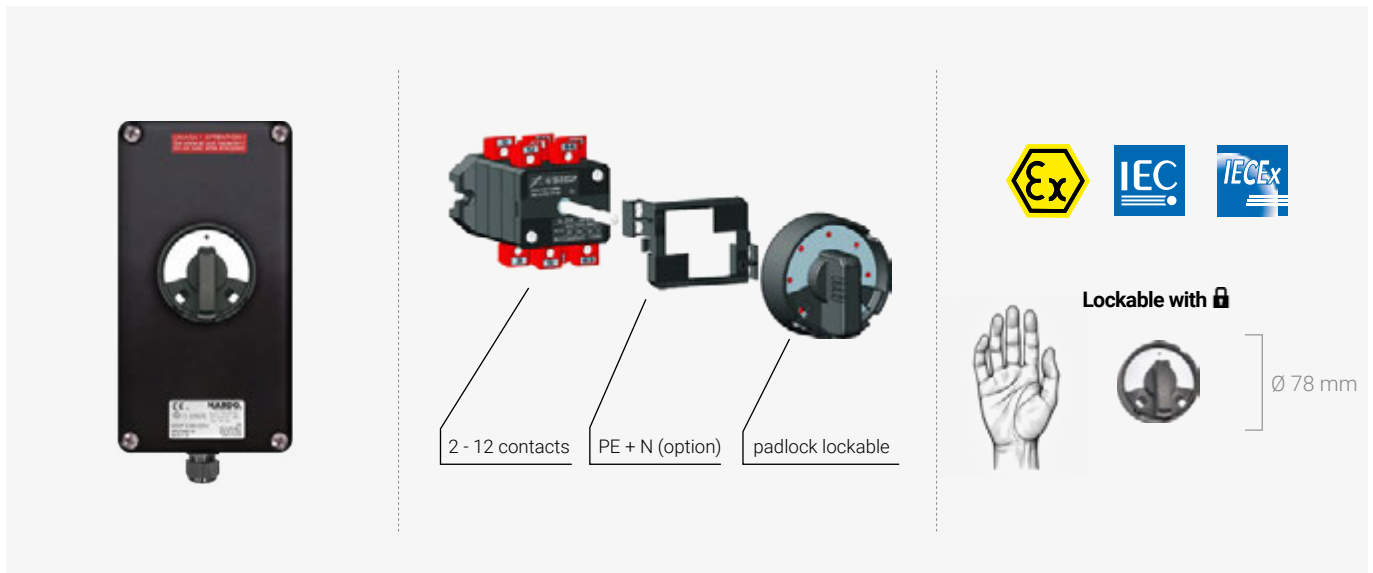


5PD



## Control and main switches (up to 12 positions)

**switch positions:** 2-12 | **contacts:** 2-12 + PE + N | **current:** 16A/25A



The configurable, multi-position module used in HARDO switches can serve either a control or isolation function. Thanks to its modular design, the switch can have from 2 to 12 operating contact poles, as well as PE and N

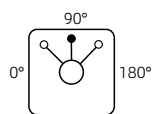
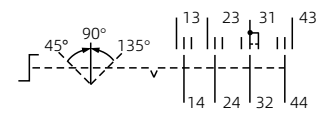
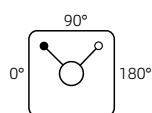
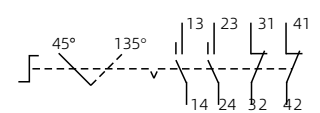
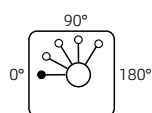
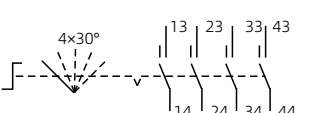
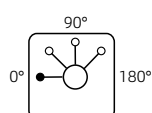
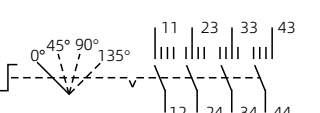
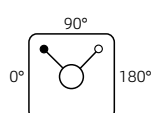
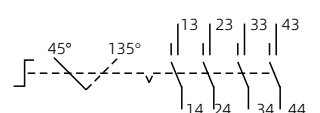
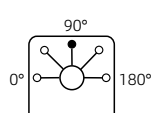
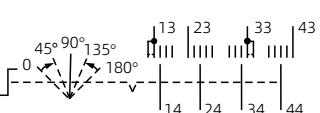
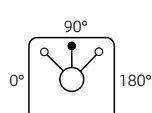
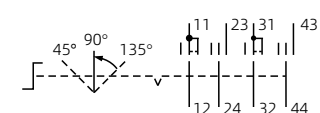
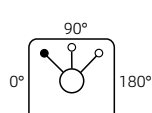
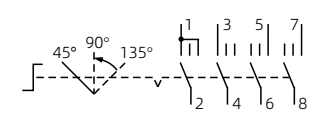
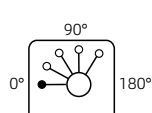
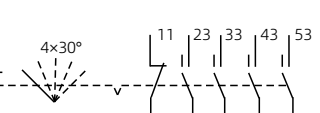
contacts. Depending on the position, the switch knob may lock or return to its original position. The device is equipped with a 78 mm diameter dial.

### Parameters

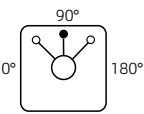
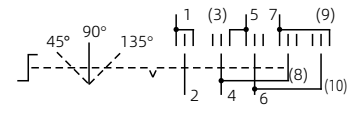
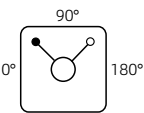
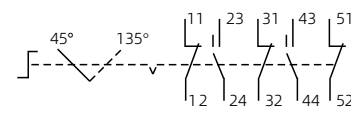
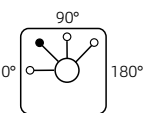
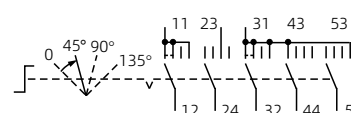
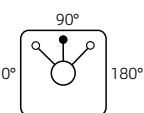
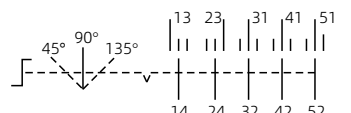
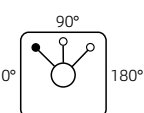
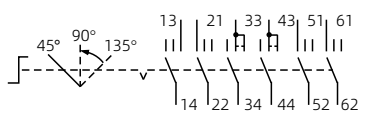
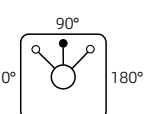
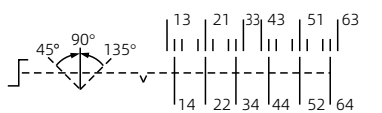
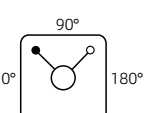
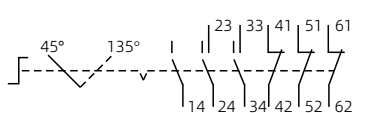
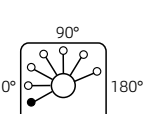
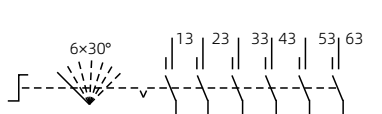
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
Marking according to ATEX	⊕ II 2 G Ex db eb IIC T5/T6 Gb   ⊕ II 2 D Ex tb IIIC T85°C Db
Marking according to IECEx	Ex db eb IIC T5/T6 Gb   Ex tb IIIC T85°C Db
Knob size	Ø 78 mm
Permissible ambient temperature	-40°C to +55°C
Degree of protection	IP66
Rated voltage	230 to 690V
Rated current	16A/25A
Category of use	AC-3, AC-23
Short circuit protection (fuse ratings)	25A: 20kA, 500V/35A Fuse type: gG (IEC/EN 60269-1)
Rated insulation voltage (U)	800V
Rated impulse withstand voltage (U <sub>imp</sub> )	6kV
Rated short-time withstand current (I <sub>cw</sub> )	3kA
Rated short-circuit making capacity (I <sub>cm</sub> )	4kA
Cross section of wires	25A: 2x1.5 to 4mm <sup>2</sup>
Contact material	silver alloy

Switch positions		Contact diagram	Weight [kg]	Reference no
	2P		0.350	<b>25A/02-101-5TD</b>
			0.350	<b>25A/02-102-5TD</b>
			0.350	<b>25A/02-103-5TD</b>
			0.350	<b>25A/02-104-5TD</b>
	3P		0.410	<b>25A/03-104-5TD</b>
			0.410	<b>25A/03-105-5TD</b>
			0.410	<b>25A/03-106-5TD</b>
	4P		0.440	<b>25A/04-100-5TD</b>
			0.440	<b>25A/04-101-5TD</b>
			0.440	<b>25A/04-102-5TD</b>

Other configurations are available upon request.

Switch positions	Contact diagram	Weight [kg]	Reference no
		0.440	<b>25A/04-103-5TD</b>
		0.440	<b>25A/04-104-5TD</b>
		0.440	<b>25A/04-105-5TD</b>
		0.440	<b>25A/04-106-5TD</b>
		0.440	<b>25A/04-107-5TD</b>
		0.440	<b>25A/04-108-5TD</b>
		0.440	<b>25A/04-109-5TD</b>
		0.440	<b>25A/04-110-5TD</b>
		0.520	<b>25A/05-101-5TD</b>

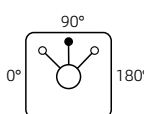
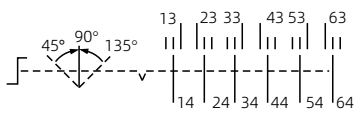
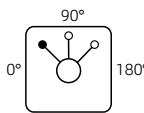
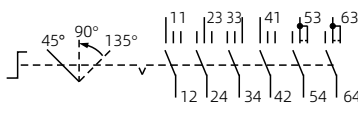
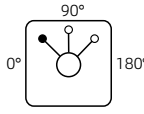
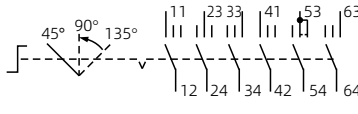
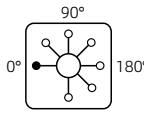
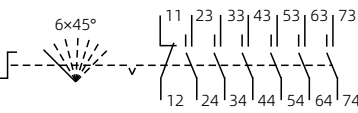
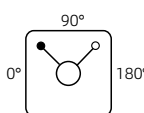
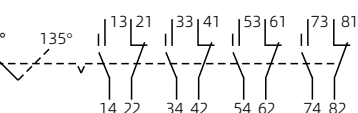
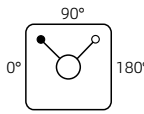
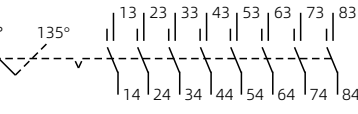
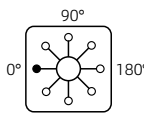
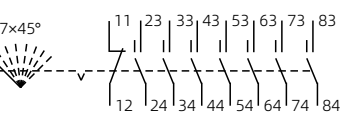
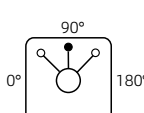
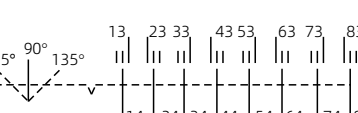
Other configurations are available upon request.

Switch positions	Contact diagram	Weight [kg]	Reference no
		0.520	<b>25A/05-102-5TD</b>
		0.520	<b>25A/05-103-5TD</b>
		0.520	<b>25A/05-104-5TD</b>
		0.520	<b>25A/05-105-5TD</b>
		0.550	<b>25A/06-101-5TD</b>
		0.550	<b>25A/06-102-5TD</b>
		0.550	<b>25A/06-103-5TD</b>
		0.610	<b>*25A/06-104-5TD</b>

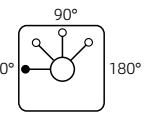
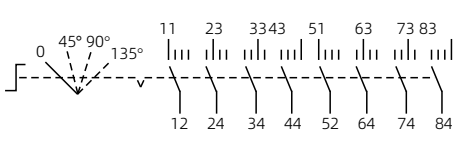
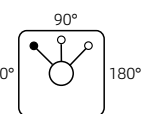
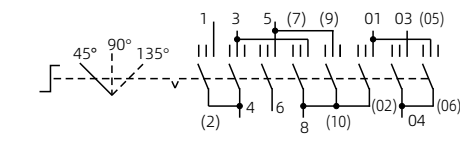
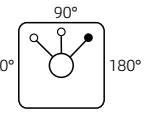
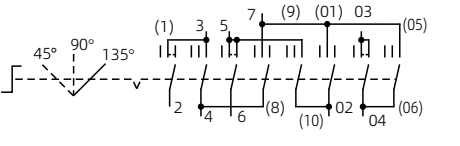
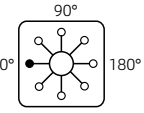
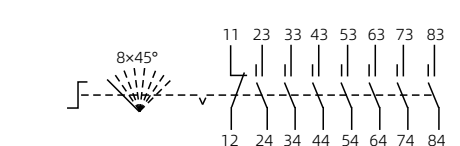
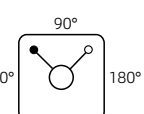
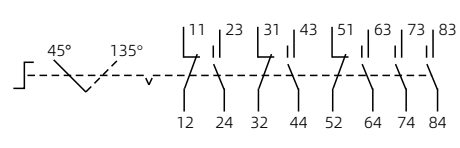
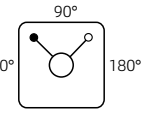
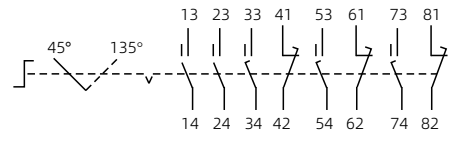
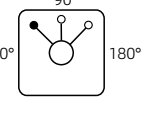
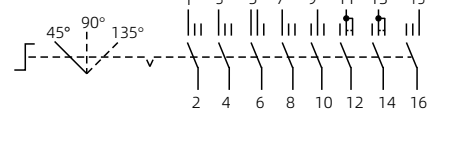
\* 25A/06-104TD The external dimensions of this switch correspond to 8 poles switch.  
Other configurations are available upon request.

Switch positions	Contact diagram	Weight [kg]	Reference no
		0.550	<b>25A/06-105-5TD</b>
		0.550	<b>25A/06-106-5TD</b>
		0.550	<b>25A/06-107-5TD</b>
		0.550	<b>25A/06-108-5TD</b>
		0.550	<b>25A/06-109-5TD</b>
		0.550	<b>25A/06-110-5TD</b>
		0.550	<b>25A/06-111-5TD</b>
		0.550	<b>25A/06-112-5TD</b>
		0.550	<b>25A/06-113-5TD</b>

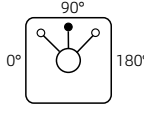
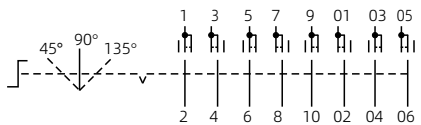
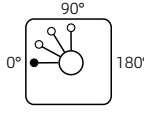

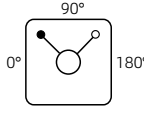
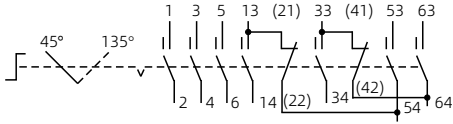
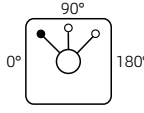
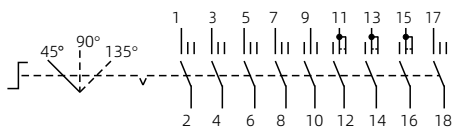
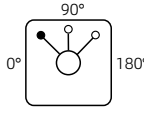
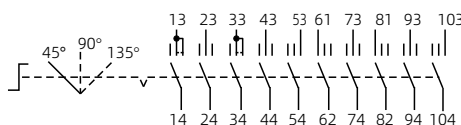
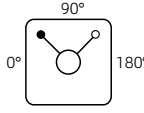
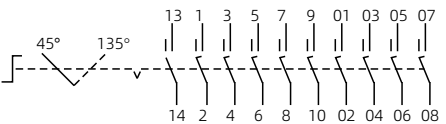
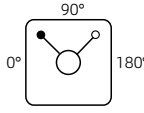
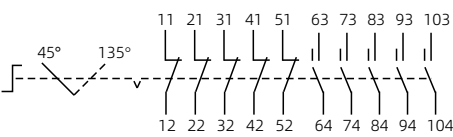
Other configurations are available upon request.

Switch positions	Contact diagram	Weight [kg]	Reference no
		0.550	<b>25A/06-114-5TD</b>
		0.550	<b>25A/06-115-5TD</b>
		0.550	<b>25A/06-116-5TD</b>
		0.620	<b>25A/07-101-5TD</b>
		0.650	<b>25A/08-101-5TD</b>
		0.650	<b>25A/08-102-5TD</b>
		0.650	<b>25A/08-103-5TD</b>
		0.650	<b>25A/08-104-5TD</b>

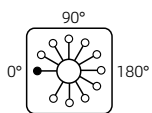
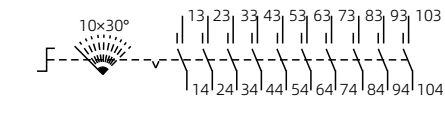
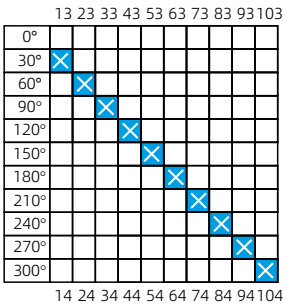
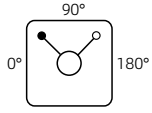
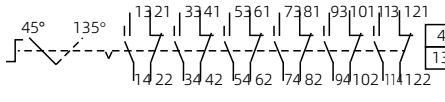
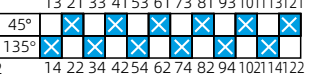
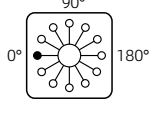
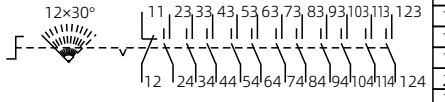
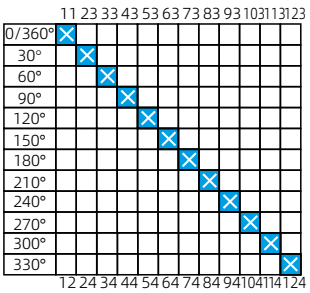
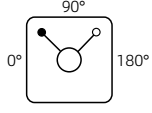
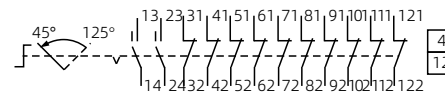
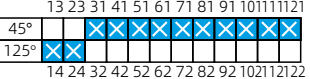
Other configurations are available upon request.

Switch positions	Contact diagram	Weight [kg]	Reference no																																																																																										
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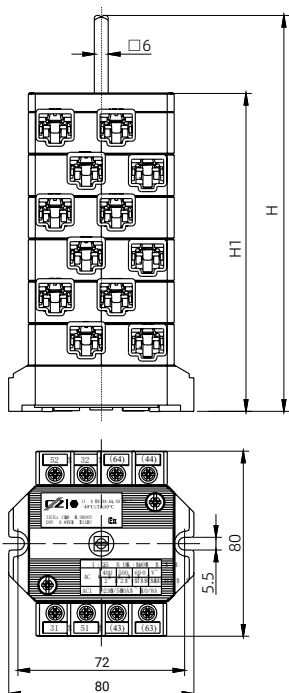
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Switch positions	Contact diagram	Weight [kg]	Reference no
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	 	0.840	<b>25A/12-101-5TD</b>
	 	0.840	<b>25A/12-102-5TD</b>
	 	0.840	<b>25A/12-103-5TD</b>

\* The external dimensions of this switch correspond to 12 poles switch.  
Other configurations are available upon request.

## Switch module dimensions

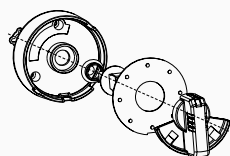


Layers / poles	H1	H
1/2P	47	106
2/3P-4P	65	106
3/5P-6P	83	151
4/7P-8P	101	151
5/9P-10P	119	171
6/11P-12P	137	171

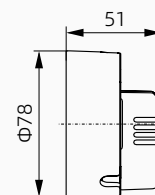
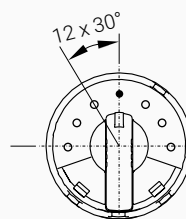
1. Each layer has two separate switch contacts or one switch contact and one cap.
2. Maximum of 6 layers / 12 poles.

## Knobs for switches with 2 to 12 positions, up to 25 A

Lockable with 



5TD



## Motor switches

switch positions: 2 | contacts: 3 + NO, NC, PE, D1, D2 | overload trigger: 0,1-25A


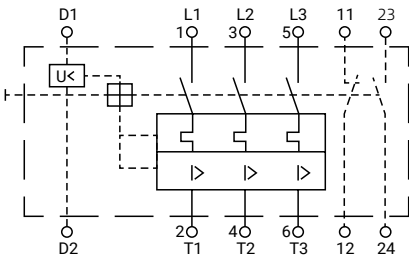


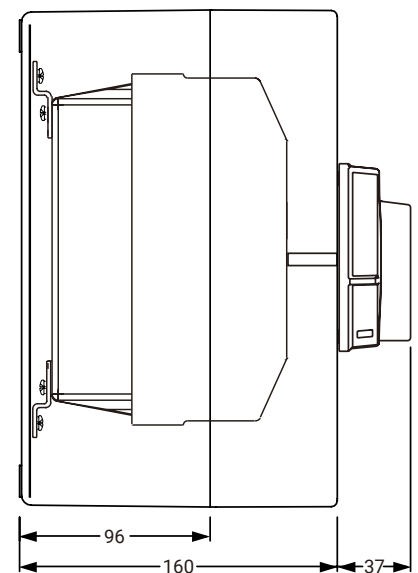
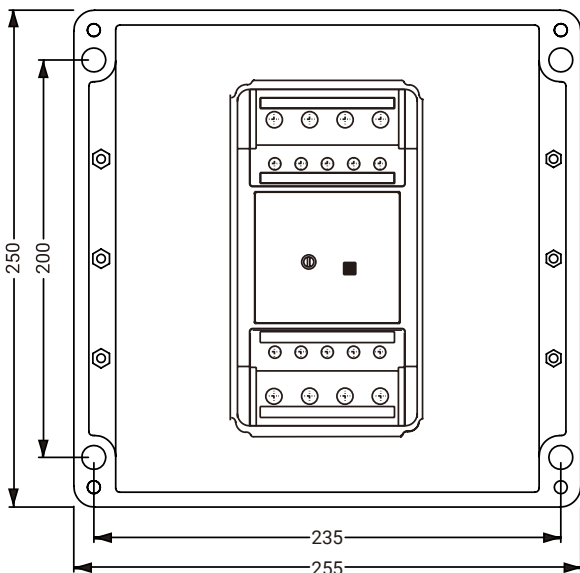
The HARDO motor circuit breaker provides comprehensive protection for electric motors against overload, short circuit, overheating, phase loss and optional voltage drop. Its robust design and wide range of current

settings allow it to be used in a variety of industrial applications. The device effectively protects motors from damage resulting from adverse operating conditions.

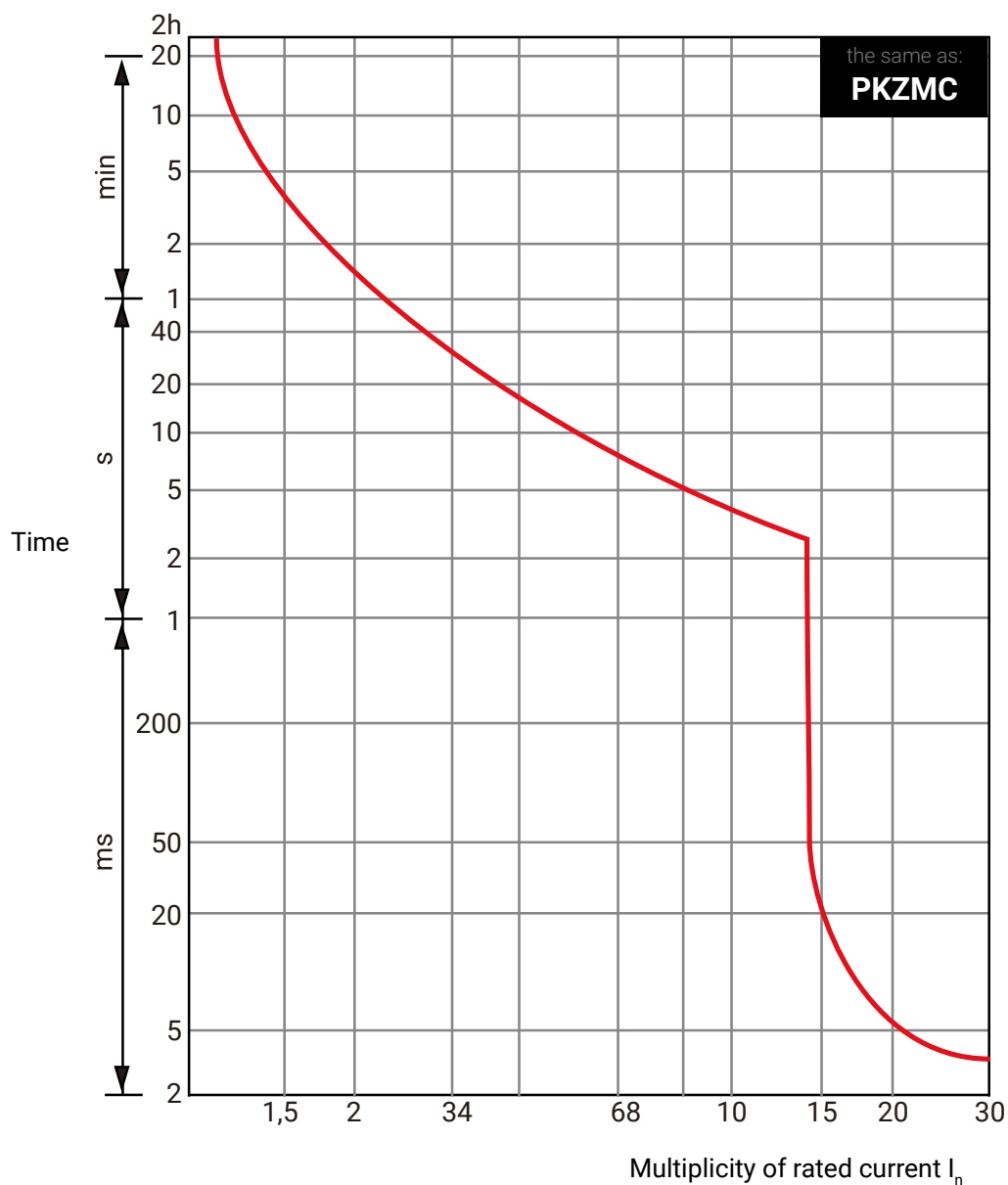
### Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dusts:</b> 21 and 22
Marking according to ATEX	⊕ II 2 G Ex db eb IIC T4/T5/T6 Gb   ⊕ II 2 D Ex tb IIIC T85°C Db
Marking according to IECEx	Ex db eb IIC T5/T6 Gb   Ex tb IIIC T85°C Db
Knob size	Ø 97 mm
Permissible ambient temperature	-40°C to +55°C
Degree of protection	IP66
Rated voltage	440V
Applied protections:	<ul style="list-style-type: none"> <li>▶ overload protection</li> <li>▶ undervoltage protection (optional)</li> <li>▶ phase failure protection</li> <li>▶ short-circuit protection</li> <li>▶ thermal protection</li> </ul>
Overload trip range	0.1 to 25A
Motor switching capacity in AC-3 category	up to 440V / 25A
Main contacts	from 1 to 10 mm <sup>2</sup> (from 6 to 10 mm <sup>2</sup> using collets)
Auxiliary contacts	1 to 2.5 mm <sup>2</sup>
Auxiliary contact capacity	AC15 1A / 230V
Rated switching capacity	high - up to 65 kA

Photo	Overload trip range	Rated switching capacity (making and breaking)	Cable glands	Order No
 <p>~6,25 kg 250 x 260 x 160 mm</p>	0.1 - 0.16A	65kA	2 x M25	HCS1P 252616 S01211
	0.16 - 0.25A	65kA	2 x M25	HCS1P 252616 S01221
	0.25 - 0.4A	65kA	2 x M25	HCS1P 252616 S01231
	0.4 - 0.63A	65kA	2 x M25	HCS1P 252616 S01241
	0.63 - 1A	65kA	2 x M25	HCS1P 252616 S01251
	1 - 1.6A	65kA	2 x M25	HCS1P 252616 S01261
	1.6 - 2.5A	65kA	2 x M25	HCS1P 252616 S01271
	2.5 - 4A	16kA	2 x M25	HCS1P 252616 S01281
	4 - 6.3A	16kA	2 x M25	HCS1P 252616 S01291
	6.3 - 10A	16kA	2 x M25	HCS1P 252616 S01301
	10 - 16A	16kA	2 x M25	HCS1P 252616 S01311
	16 - 20A	12kA	2 x M32	HCS1P 252616 S01321
	20 - 25A	12kA	2 x M32	HCS1P 252616 S01331
<b>Electrical diagram</b>			<b>Options</b>	
			<ul style="list-style-type: none"> <li>1 - basic version without trigger undervoltage and auxiliary contacts</li> <li>2 - with undervoltage trigger</li> <li>3 - with auxiliary contacts 1NO + 1NC</li> <li>4 - with undervoltage trigger and auxiliary contacts 1NO + 1NC</li> </ul>	



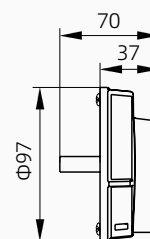
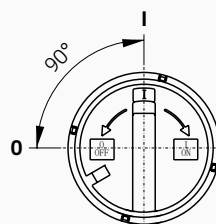
## Trigger characteristics (ambient temp. 30°C)



## Motor switch knob



8003/2DA



HS1P and HP1P series for zones 1/2 and 21/22

## Sockets and plugs for explosion hazard zones



### Design features

- ▶ **accidental connection protection** – different housing colors depending on operating voltage for quick and safe identification
- ▶ **integrated internal earthing** – ensuring continuity of electric shock protection throughout the plug-socket system
- ▶ **socket lockable with a padlock** – additional protection against unauthorized access or accidental use
- ▶ **housing made of glass fiber reinforced BMC resin** – high mechanical strength, antistatic and heat resistant

### Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22
ATEX marking	⊕ II 2 G D Ex db eb IIC T6/T5/T4 Gb   ⊕ II 2 G D Ex tb IIIC T80°C Db
Marking according to IECEx	Ex db eb IIC T6/T5/T4 Gb   Ex tb IIIC T80°C Db
Permissible ambient temperature	from -40°C to +65°C the upper limit depends on the required temperature class and the cross-section of the connected cables
Degree of protection	IP66
Rated current	16A / 32A / 63A / 125A (others on request)
Rated voltage	<b>for 16A / 32A / 63A / 125A</b> <ul style="list-style-type: none"> <li>▶ 200~250V AC</li> <li>▶ 380~415V AC</li> <li>▶ 480~500V AC</li> <li>▶ 600~690V AC</li> </ul> <b>for 16A:</b> <ul style="list-style-type: none"> <li>▶ 110~130V AC</li> </ul>
Number of poles	3P / 4P / 5P
Padlock lock	Yes
Switching method	<ul style="list-style-type: none"> <li>▶ <b>for 16A / 35A / 63A:</b> contacts are closed / opened when the plug is turned in the socket</li> <li>▶ <b>for 125A:</b> rotary switch on the socket housing</li> </ul>

## 16A, 3P sockets and plugs

Photo	Schematic electrical	Dimensions	Order number
<b>Current 16A, 3P</b>			
	<p>2P+PE</p>		<p>HS1PW16/3P/2P-PE/□ HS1PW16/3P/1P-N-PE/□</p>
	<p>or</p> <p>1P+N-PE</p>		<p>HP1P16/3P/2P-PE/□ HP1P16/3P/1P-N-PE/□</p>
			<p>HS1PP16/3P/2P-PE/□ HS1PP16/3P/1P-N-PE/□</p>
<b>Parameters</b>			
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22		
ATEX marking	⊕ II 2 G D Ex db eb IIC T5/T6 Gb   ⊕ II 2 G D Ex tb IIIC T80°C Db		
Marking according to IECEx	Ex db eb IIC T5/T6 Gb   Ex tb IIIC T80°C Db		
Permissible ambient temperature	from -40°C to +65°C		
Degree of protection	IP66		
Rated current	16A		
Rated voltage	<p>▶ 110~130V AC   h4    code: 4</p> <p>▶ 200~250V AC   h5    code: 6</p>		
Number of poles	3P (2P+PE or 1P+N+PE)		
Lockable with a padlock	Yes		
Terminals / plugs (socket)	2 x M25		
Switching method	contacts are closed / open when the plug is turned in the socket		


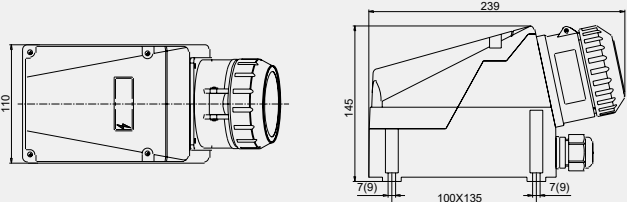

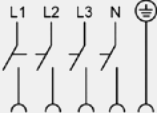
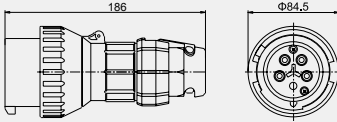

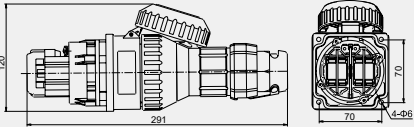




## Sockets and plugs 16A, 4P

Photo	Schematic electrical	Dimensions	Order number
<b>Current 16A, 4P</b>			
			HS1PW 16/4P/3P-PE/□
	3P+PE 		HP1P 16/4P/3P-PE/□
			HS1PP 16/4P/3P-PE/□


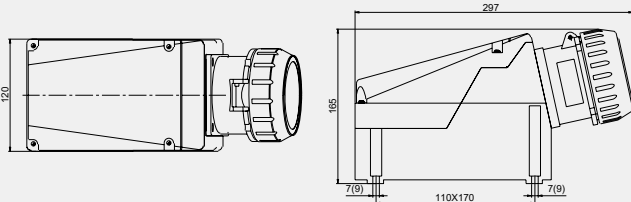

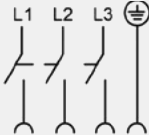
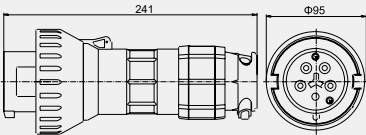

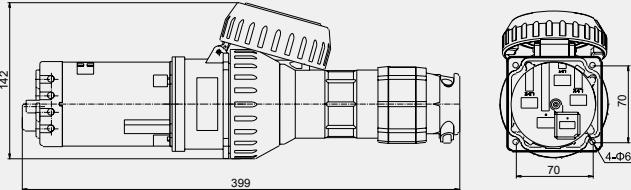




### Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22
ATEX marking	Ⓔ II 2 G D Ex db eb IIC T5/T6 Gb   Ⓔ II 2 G D Ex tb IIIC T80°C Db
Marking according to IECEx	Ex db eb IIC T5/T6 Gb   Ex tb IIIC T80°C Db
Permissible ambient temperature	from -40°C to +65°C
Degree of protection	IP66
Rated current	16A
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>
Number of poles	4P (3P+PE)
Lockable with a padlock	Yes
Terminals / plugs (socket)	2 x M25
Switching method	contacts are closed / open when the plug is turned in the socket


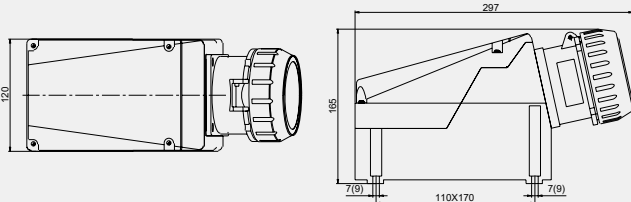

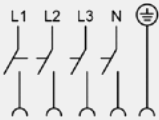
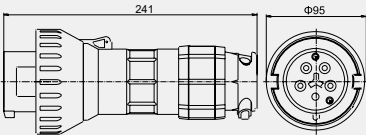

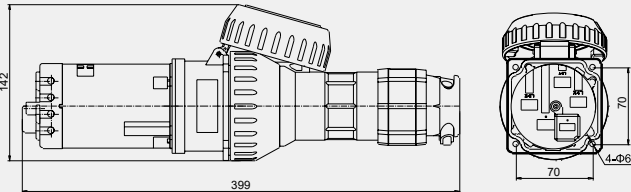




## 16A, 5P sockets and plugs

Photo	Schematic electrical	Dimensions	Order number
<b>Current 16A, 5P</b>			
			HS1PW 16/5P/3P-N-PE/□
	3P+N+PE 		HP1P 16/5P/3P-N-PE/□
			HS1PP 16/5P/3P-N-PE/□
<b>Parameters</b>			
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22		
ATEX marking	Ⓔ II 2 G D Ex db eb IIC T5/T6 Gb   Ⓔ II 2 G D Ex tb IIIC T80°C Db		
Marking according to IECEx	Ex db eb IIC T5/T6 Gb   Ex tb IIIC T80°C Db		
Permissible ambient temperature	from -40°C to +65°C		
Degree of protection	IP66		
Rated current	16A		
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>		
Number of poles	5P (3P+N+PE)		
Lockable with a padlock	Yes		
Terminals / plugs (socket)	2 x M25		
Switching method	contacts are closed / open when the plug is turned in the socket		


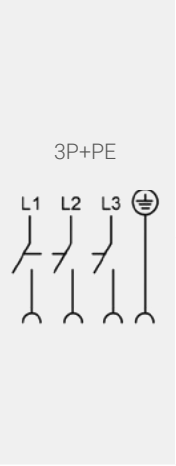
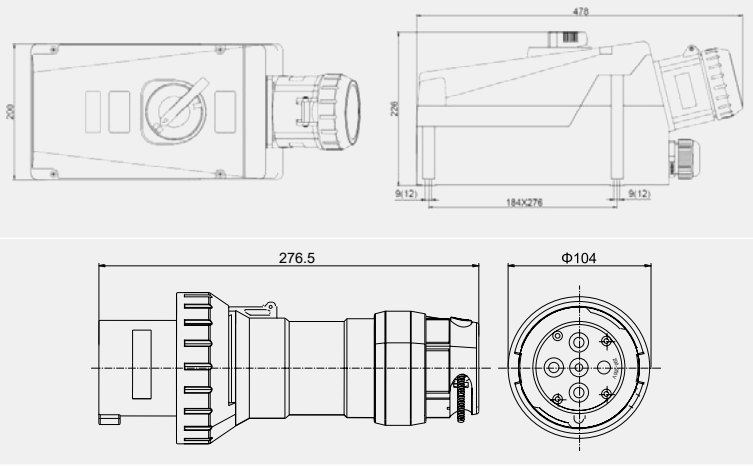




## 32A, 4P sockets and plugs

Photo	Schematic electrical	Dimensions	Order number
<b>Current 32A, 4P</b>			
			HS1PW 32/4P/3P-PE/□
	3P+PE 		HP1P 32/4P/3P-PE/□
			HS1PP 32/4P/3P-PE/□
<b>Parameters</b>			
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22		
ATEX marking	Ⓔ II 2 G D Ex db eb IIC T5 Gb   Ⓔ II 2 G D Ex tb IIIC T80°C Db		
Marking according to IECEx	Ex db eb IIC T5 Gb   Ex tb IIIC T80°C Db		
Permissible ambient temperature	from -40°C to +50°C		
Degree of protection	IP66		
Rated current	32A		
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>		
Number of poles	4P (3P+PE)		
Lockable with a padlock	Yes		
Terminals / plugs (socket)	2 x M40		
Switching method	contacts are closed / open when the plug is turned in the socket		


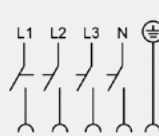
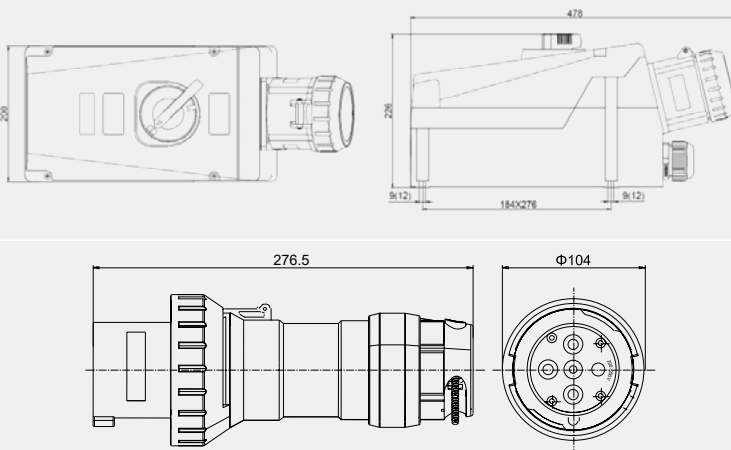




## Sockets and plugs 32A, 5P

Photo	Schematic electrical	Dimensions	Order number
<b>Current 32A, 5P</b>			
			HS1PW 32/5P/3P-N-PE/□
	3P+N+PE 		HP1P 32/5P/3P-N-PE/□
			HS1PP 32/5P/3P-N-PE/□
<b>Parameters</b>			
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22		
ATEX marking	Ⓔ II 2 G D Ex db eb IIC T5 Gb   Ⓔ II 2 G D Ex tb IIIC T80°C Db		
Marking according to IECEx	Ex db eb IIC T5 Gb   Ex tb IIIC T80°C Db		
Permissible ambient temperature	from -40°C to +50°C		
Degree of protection	IP66		
Rated current	32A		
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>		
Number of poles	5P (3P+N+PE)		
Lockable with a padlock	Yes		
Terminals / plugs (socket)	2 x M40		
Switching method	contacts are closed / open when the plug is turned in the socket		


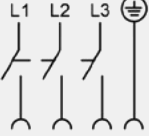
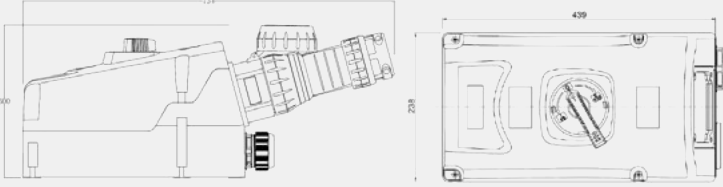


## Sockets and plugs 63A, 4P

Photo	Schematic electrical	Dimensions	Order number
<b>Current 63A, 4P</b>			
			<p>HS1PW 63/4P/3P-PE/□</p> <p>HP1P 63/4P/3P-PE/□</p>
<b>Parameters</b>			
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22		
ATEX marking	Ex II 2 G D Ex db eb IIC T4/T5 Gb   Ex II 2 G D Ex tb IIIC T80°C Db		
Marking according to IECEx	Ex db eb IIC T4/T5 Gb   Ex tb IIIC T80°C Db		
Permissible ambient temperature	from -40°C to +50°C		
Degree of protection	IP66		
Rated current	63A		
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>		
Number of poles	4P (3P+PE)		
Lockable with a padlock	Yes		
Terminals / plugs (socket)	2 x M50		
Switching method	contacts are closed / open when the plug is turned in the socket		





## Sockets and plugs 63A, 5P

Photo	Schematic electrical	Dimensions	Order number
<b>Current 63A, 5P</b>			
	<p>3P+N+PE</p> 		<p>HS1PW 32/5P/3P-N-PE/□</p> <p>HP1P 32/5P/3P-N-PE/□</p>
<b>Parameters</b>			
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22		
ATEX marking	⊕ II 2 G D Ex db eb IIC T4/T5 Gb   ⊕ II 2 G D Ex tb IIIC T80°C Db		
Marking according to IECEx	Ex db eb IIC T4/T5 Gb   Ex tb IIIC T80°C Db		
Permissible ambient temperature	from -40°C to +50°C		
Degree of protection	IP66		
Rated current	63A		
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>		
Number of poles	5P (3P+N+PE)		
Lockable with a padlock	Yes		
Terminals / plugs (socket)	2 x M50		
Switching method	contacts are closed / open when the plug is turned in the socket		


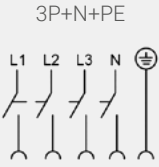
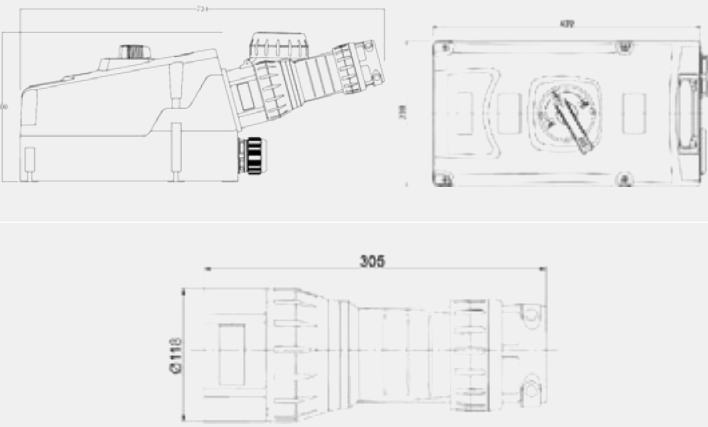




## Sockets and plugs 125A, 4P

Photo	Schematic electrical	Dimensions	Order number
<b>Current 125A, 4P</b>			
	3P+PE 		HS1PW 125/4P/3P-PE/□
			HP1P 125/4P/3P-PE/□

### Parameters

Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22
ATEX marking	Ex II 2 G D Ex db eb IIC T4 Gb   Ex II 2 G D Ex tb IIIC T80°C Db
Marking according to IECEx	Ex db eb IIC T4 Gb   Ex tb IIIC T80°C Db
Permissible ambient temperature	from -40°C to +40°C
Degree of protection	IP66
Rated current	125A
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>
Number of poles	4P (3P+PE)
Lockable with a padlock	Yes
Terminals / plugs (socket)	2 x M63
Switching method	contacts are closed / open when the plug is turned in the socket

## Sockets and plugs 125A, 5P

Photo	Schematic electrical	Dimensions	Order number
<b>Current 125A, 5P</b>			
			<p>HS1PW 125/5P/3P-N-PE/□</p> <p>HP1P 125/5P/3P-N-PE/□</p>
<b>Parameters</b>			
Designed for Ex zones	<b>Gases:</b> 1 and 2   <b>Dust:</b> 21 and 22		
ATEX marking	⊕ II 2 G D Ex db eb IIC T6 Gb   ⊕ II 2 G D Ex tb IIIC T80°C Db		
Marking according to IECEx	Ex db eb IIC T6 Gb   Ex tb IIIC T80°C Db		
Permissible ambient temperature	from -40°C to +55°C		
Degree of protection	IP66		
Rated current	63A		
Rated voltage	<ul style="list-style-type: none"> <li>▶ 200~250V AC   h9    code: 9</li> <li>▶ 380~415V AC   h6    code: 6</li> <li>▶ 480~500V AC   h7    code: 7</li> <li>▶ 600~690V AC   h5    code: 5</li> </ul>		
Number of poles	5P (3P+N+PE)		
Lockable with a padlock	Yes		
Terminals / plugs (socket)	2 x M63		
Switching method	contacts are closed / open when the plug is turned in the socket		







**HARDO.**