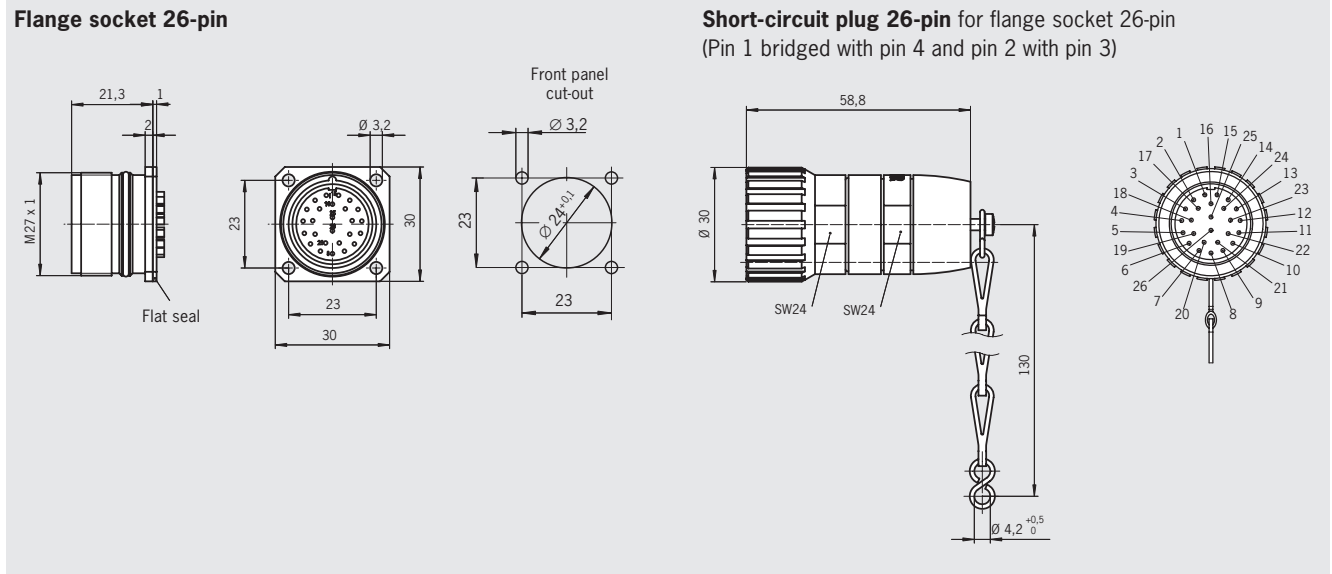


## Connection kit

for design HBA-102434 and HBA-103037, comprising flange socket 26-pin and short-circuit plug



### Technical data

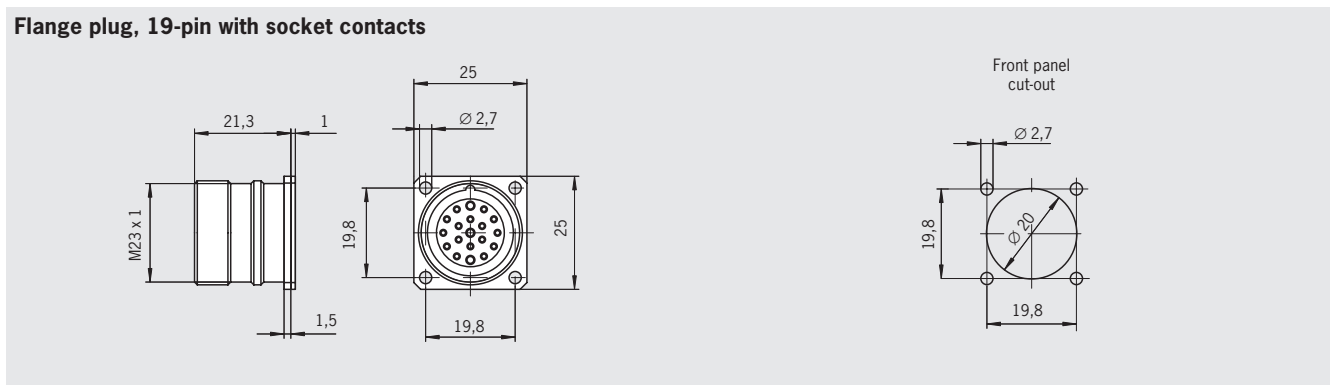
Parameter	Value
<b>Flange socket</b>	
Housing material	Metal
Number of pins	26
Degree of protection according to EN 60529 (inserted)	IP 67
Contact material	Copper alloy
Connection	Soldered connection
<b>Short-circuit plug</b>	
Housing material	Metal
Number of pins	26
Degree of protection according to EN 60529 (inserted)	IP 67
Contact material	Copper alloy

### Ordering table

Item	Order No.
Flange socket and short-circuit plug	103042

## Flange plug

for design HBAS-072949 and HBAS-094594



### Technical data

Parameter	Value
<b>Flange plug, 19-pin with socket contacts</b>	
Housing material	Metal
Number of pins	19
Degree of protection according to EN 60529 (inserted)	IP 65
Contact material	Copper alloy
Connection type	Soldered connection

### Ordering table

Item	Order No.
Flange plug, 19-pin with socket contacts	092374

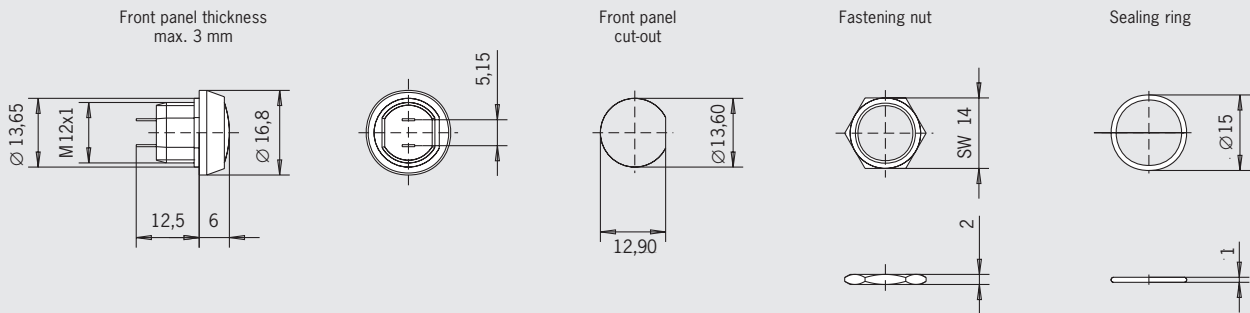


## Overview of accessories for kits for hand-held pendant stations

Accessories for kit	Accessories							Page
	EMERGENCY STOP device	Pushbutton	Key-operated switch	Selector switch	Enabling switch 3-stage	Plug connector	Connection cables	
Suitable for all designs		●						48
			●					49/50
				●				50
						●		51
							●	52/53
Hand-held pendant stations HBA/HBM	●							54
Hand-held pendant stations HBL	●				●			55
Hand-held pendant stations HBL	●				●			56
Hand-held pendant stations HBL					●			57

## Pushbutton

### Dimension drawing



### Technical data

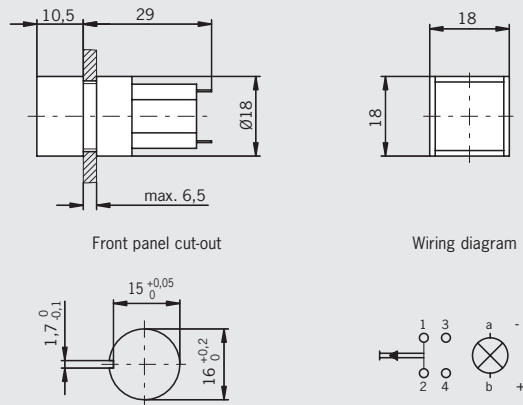
Parameter	Value	Unit
Ambient temperature	-25 ... +70	°C
Front degree of protection (integrated in front plate)	IP 67	
Switching principle	Button, snap-action switching element	
Switching elements	1 NO contact	
Switching voltage	30	V DC
Switching current max.	0.1	A
Connection type	Soldered connection	

### Ordering table

Item	Order No.
Pushbutton, black button	083640
Pushbutton, red button	086753
Pushbutton, green button	086754
Pushbutton, blue button	086757
Pushbutton, white button	086755
Pushbutton, yellow button	086756

## Illuminated pushbutton (can be individually labeled)

### Dimension drawing



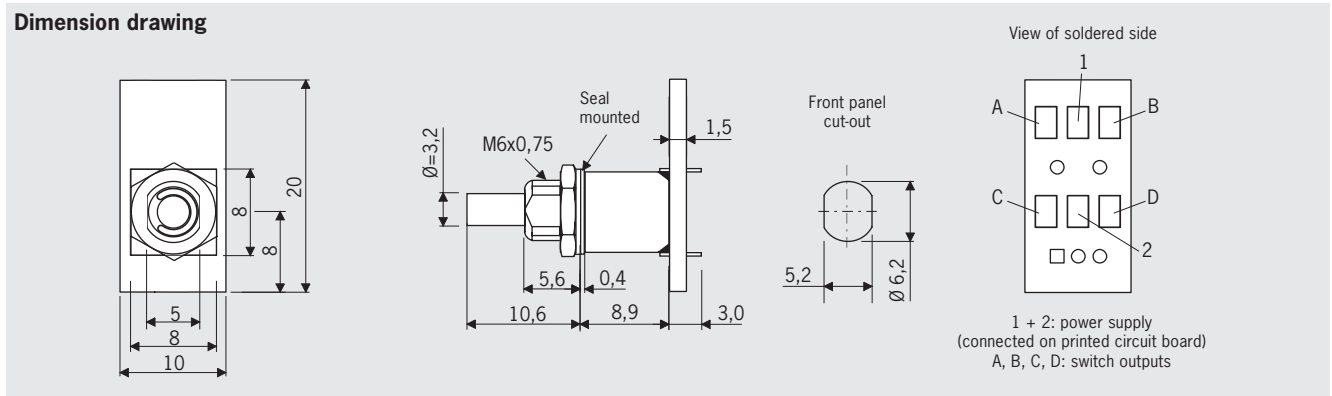
### Technical data

Parameter	Value	Unit
Ambient temperature	-25 ... +55	°C
Front degree of protection (integrated in front plate)	IP 65	
Switching principle	Button, snap-action switching element	
Switching elements	1 NC contact, 1 NO contact	
Switching current max.	100	mA
Switching voltage max.	30	V AC/DC
LED	24 V / 14 mA	
Connection type	Soldered connection	

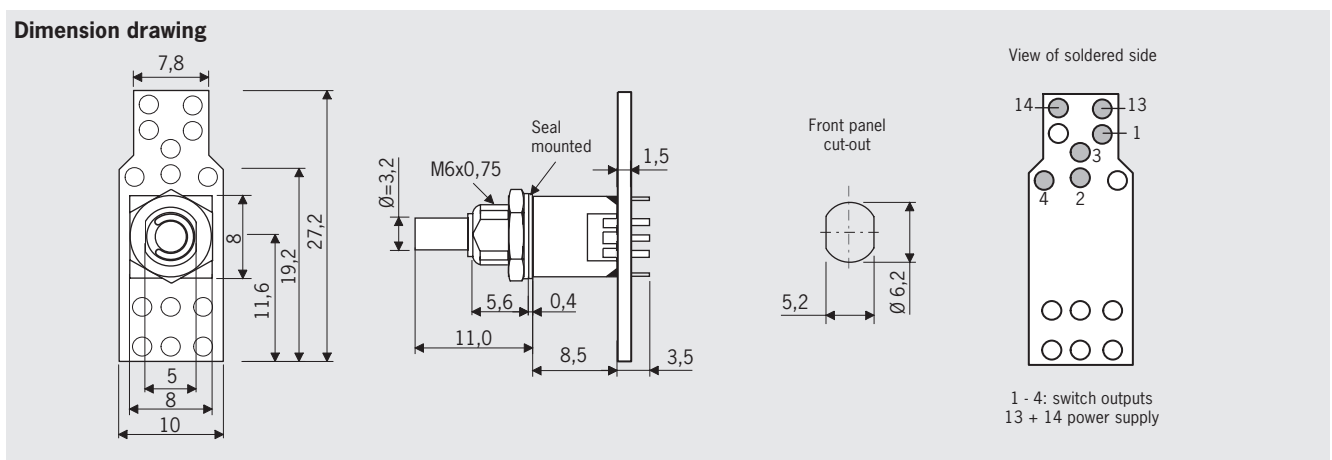
### Ordering table

Item	Order No.
Illuminated pushbutton, can be individually labeled (yellow LED)	074991
Illuminated pushbutton, can be individually labeled (white LED)	098045

## Gray code selector switch (ordering table see page 50)



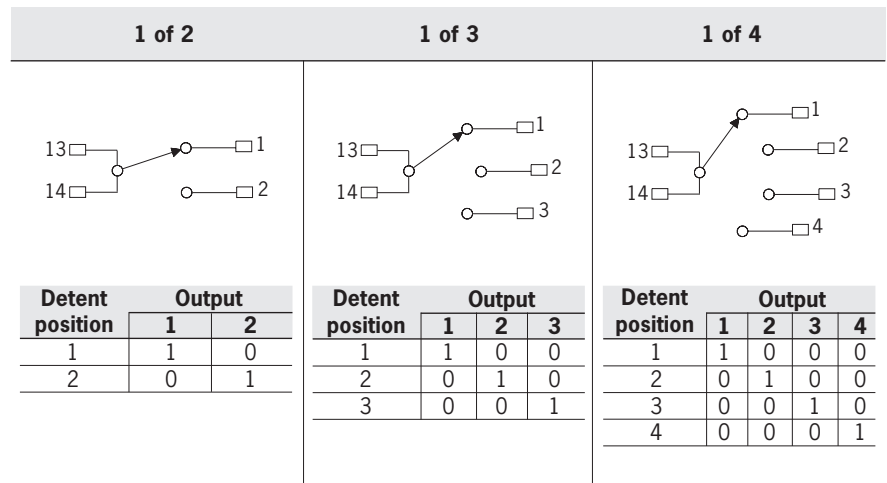
## Selector switch 1 of X (ordering table see page 50)



### Code table, switch with Gray code

Detent position	Output			
	D	C	B	A
1	0	0	0	0
2	0	0	0	1
3	0	0	1	1
4	0	0	1	0
5	0	1	1	0
6	0	1	1	1
7	0	1	0	1
8	0	1	0	0
9	1	1	0	0
10	1	1	0	1
11	1	1	1	1
12	1	1	1	0
13	1	0	1	0
14	1	0	1	1
15	1	0	0	1
16	1	0	0	0

### Circuit diagrams switch 1 of X



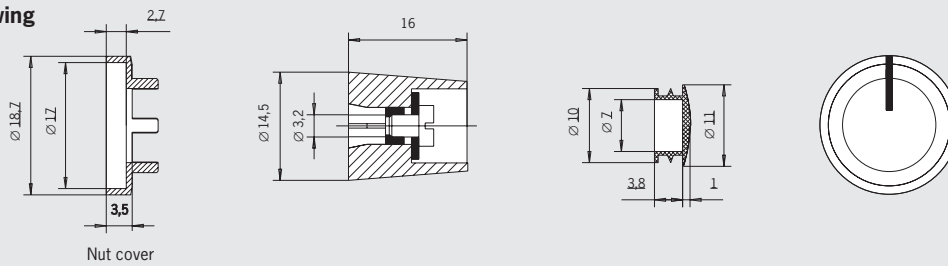
Connections A - D: switch outputs  
Connections 1 - 3: power supply

### Technical data

Parameter	Value	Unit
Front degree of protection (integrated in front plate)	IP 67	
Single-hole bushing mounting	M6 x 0.75	
Detent positions	2, 3, 4, 5, 6, 7, 8, 12 or 16 depending on item	
Detent angle	Gray code 22.5° / 1 of X: 30°	
Output code	1 of 2, 1 of 3, 1 of 4 or Gray code depending on item	
Breaking capacity max.	0.2	VA
Switching voltage max.	25	V AC/DC
Connection type	Soldered connection on printed circuit board	
Maximum soldering time.	≤ 5 (at t ≤ 260 °C)	s

## Rotary knob

### Dimension drawing



### Ordering table

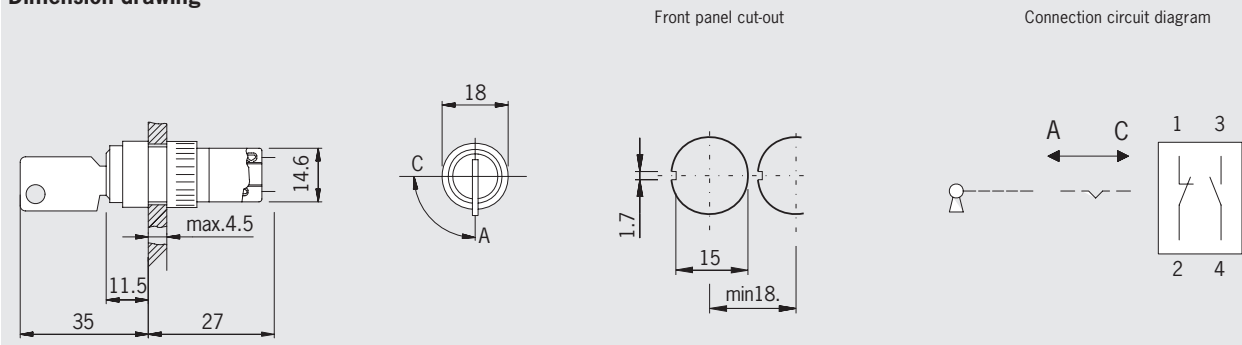
Item	Detent angle	Order No.
Selector switch, 2 detent positions, 1 of 2, break-before-make <sup>1)</sup>	30°	<b>097026</b>
Selector switch, 3 detent positions, 1 of 3, break-before-make <sup>1)</sup>	30°	<b>097027</b>
Selector switch, 4 detent positions, 1 of 4, break-before-make <sup>1)</sup>	30°	<b>097028</b>
Selector switch, 5 detent positions, Gray code, make-before-break <sup>2)</sup>	22.5°	<b>097029</b>
Selector switch, 6 detent positions, Gray code, make-before-break <sup>2)</sup>	22.5°	<b>097030</b>
Selector switch, 7 detent positions, Gray code, make-before-break <sup>2)</sup>	22.5°	<b>097031</b>
Selector switch, 8 detent positions, Gray code, make-before-break <sup>2)</sup>	22.5°	<b>097032</b>
Selector switch, 12 detent positions, Gray code, make-before-break <sup>2)</sup>	22.5°	<b>097033</b>
Selector switch, 16 detent positions, Gray code, make-before-break <sup>2)</sup>	22.5°	<b>097034</b>
Rotary knob, matt black with a marking, collet fastening for shaft 3.2 mm	-	<b>097141</b>

1) Break-before-make: all outputs are open between the switch positions.

2) Make-before-break: the related outputs are connected between the switch positions.

## Key-operated switch

### Dimension drawing



### Technical data

Parameter	Value	Unit
Ambient temperature	-25 ... +55	°C
Front degree of protection (integrated in front plate) / NEMA	IP 65 / 250-12	
Switching principle	Snap-action switching element	
Switching element	1 NC contact, 1 NO contact	
Switching voltage max.	30	V AC/DC
Switching current max.	250	mA
Connection type	Soldered connection	

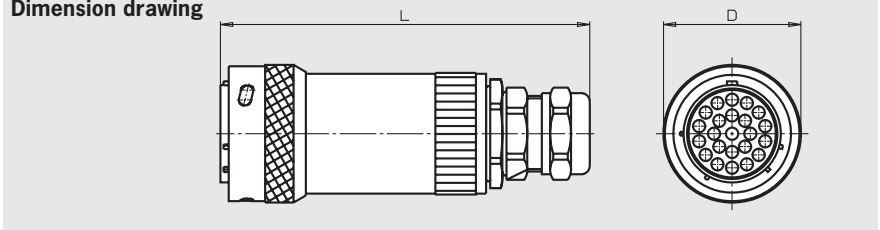
### Ordering table

Item	Order No.
Key-operated switch	<b>083639</b>
Replacement key	<b>092386</b>

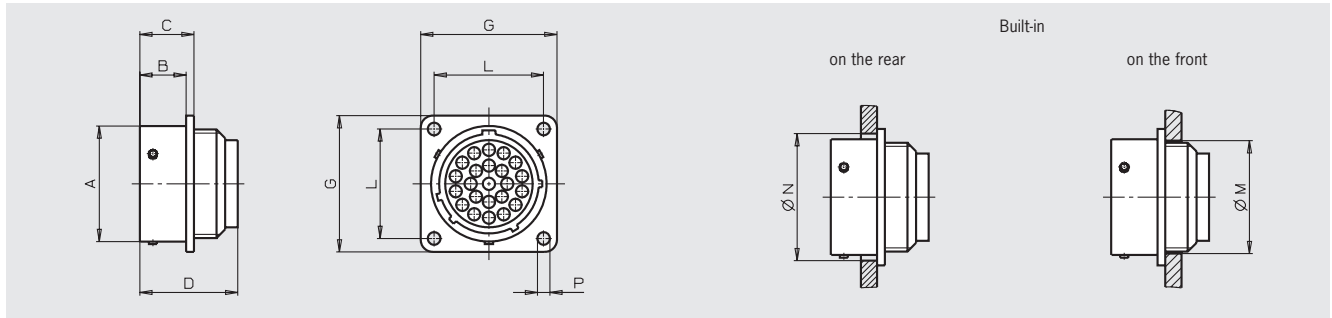
## Plug connectors

Number of pins	D	L	Cable-Ø
35	40.2	103	8.0 - 12.0
28	37.2	97	8.0 - 12.0
23	33.9	91	6.0 - 10.0
12	27.5	81	5.5 - 9.5

Dimension drawing



## Flange sockets

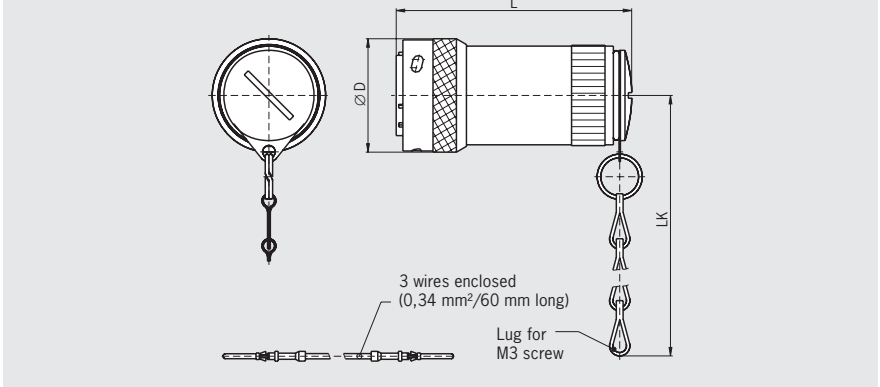


Number of pins	A	B <sub>max</sub>	C <sub>max</sub>	D <sub>max</sub>	G <sub>max</sub>	L	M	N	P
35	34.9	14.6	17.3	25.7	39.9	31.8	34.1	37.7	3.1
28	31.7	14.6	17.3	25.7	36.8	29.4	30.9	34.5	3.1
23	28.5	11.4	13.3	24.1	33.6	27	27.8	31.3	3.1
12	22.2	11.4	13.3	24.1	28.8	22.9	21.4	25	3.1

## Short-circuit plugs

Number of pins	D	L	LK
35	40.2	84	255
28	37.2	78	255
23	33.9	72	252
12	27.5	59.4	251

Dimension drawing



## Technical data

Parameter	Value	Unit
<b>Connecting plug/Flange socket</b>		
Housing material	Metal	
Number of pins	12 / 23 / 28 / 35	
Degree of protection according to EN 60529 (inserted) / NEMA	IP 65 / 250-12	
Contact material	Gold-plated	

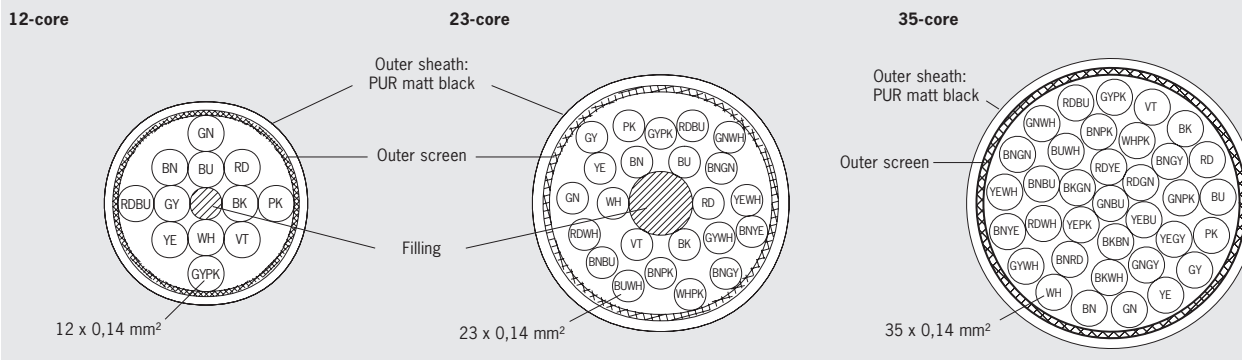
## Ordering table

Item	Anschluss	Order No.
Plug connector, 35-pin with pin contacts	Crimp contacts (supplied) *	<b>074395</b>
Plug connector, 28-pin with pin contacts	Crimp contacts (supplied) *	<b>074394</b>
Plug connector, 23-pin with pin contacts	Crimp contacts (supplied) *	<b>074393</b>
Plug connector, 12-pin with pin contacts	Crimp contacts (supplied) *	<b>086748</b>
Flange socket, 35-pin with socket contacts	Crimp contacts (supplied) *	<b>074386</b>
Flange socket, 28-pin with socket contacts	Crimp contacts (supplied) *	<b>074385</b>
Flange socket, 23-pin with socket contacts	Crimp contacts (supplied) *	<b>074384</b>
Flange socket, 12-pin with socket contacts	Crimp contacts (supplied) *	<b>086749</b>
Short-circuit plug with chain, 35-pin	Crimp contacts (supplied) *	<b>083459</b>
Short-circuit plug with chain, 28-pin	Crimp contacts (supplied) *	<b>083458</b>
Short-circuit plug with chain, 23-pin	Crimp contacts (supplied) *	<b>083457</b>
Short-circuit plug with chain, 12-pin	Crimp contacts (supplied) *	<b>087802</b>

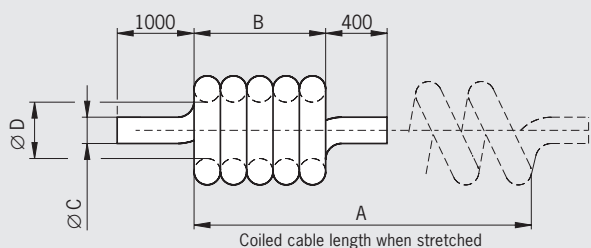
\* Suitable crimping tool Burndy (www.burndy.com) Y16RCM Crimping tool for machined contacts  
 Suitable extraction tool Burndy (www.burndy.com) RX2025GE1 Extraction tool

## Cable, coiled and straight

### View of cable cross-section



### Dimensions of coiled design



### Technical data

Parameter	Value	Unit	
Cable resistance	$\leq 145$	$\Omega/\text{km}$	
Test voltage core / core	1.0	kV <sub>eff</sub>	
Test voltage core / screen	1.0	kV <sub>eff</sub>	
Insulation resistance	12-core and 23-core 35-core	$\geq 200$ $\geq 20$	M $\Omega$
Operating temperature	-10 ... +70	°C	
Bending radius	once several times	$\geq 10$ x cable diameter $\geq 15$ x cable diameter	

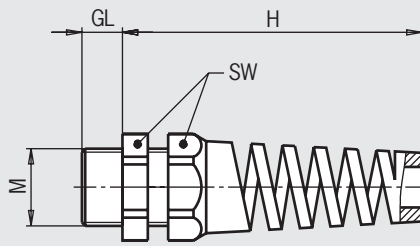
### Ordering table

Item	Cable length [mm]	A [mm]	B [mm]	Ø C [mm]	Ø D [mm]	Order No.
Cable, 12-core, coiled	3900	Approx. 2500	550 ± 20	6 ± 0.3	8 ± 2	086721
Cable, 12-core, coiled	5400	Approx. 4000	880 ± 20	6 ± 0.3	8 ± 2	086722
Cable, 12-core, straight	3500	-	-	-	-	087379
Cable, 12-core, straight	5000	-	-	-	-	087380
Cable, 12-core, straight	10000	-	-	-	-	087381
Cable, 23-core, coiled	3900	Approx. 2500	550 ± 20	7.5 ± 0.3	10 ± 2	087408
Cable, 23-core, coiled	5400	Approx. 4000	880 ± 20	7.5 ± 0.3	10 ± 2	087409
Cable, 23-core, straight	3500	-	-	-	-	087382
Cable, 23-core, straight	5000	-	-	-	-	087383
Cable, 23-core, straight	10000	-	-	-	-	087384
Cable, 35-core, coiled	3900	Approx. 2500	550 ± 20	8 ± 0.5	10 ± 2	097190
Cable, 35-core, coiled	5400	Approx. 4000	880 ± 20	8 ± 0.5	10 ± 2	097191
Cable, 35-core, straight	3500	-	-	-	-	097189
Cable, 35-core, straight	5000	-	-	-	-	097188
Cable, 35-core, straight	10000	-	-	-	-	097187



## Cable gland with anti-kink spiral

Dimension drawing



Thread M	Use	Cable diameter	SW	GL	H
M16x1.5	Kit HBA/HBM	5 - 10	22	8	71
Pg 11	Kit HBL	5 - 10	22	11	71
Pg 13.5	Kit HBL	6 - 12	24	12.5	81

### Ordering table

Item	Order No.
Cable gland M16x1.5 with anti-kink spiral, color black	<b>083641</b>
Cable gland Pg 11, with anti-kink spiral and fastening nut, color black	<b>073982</b>
Cable gland Pg 13.5, with anti-kink spiral and fastening nut, color black	<b>073983</b>

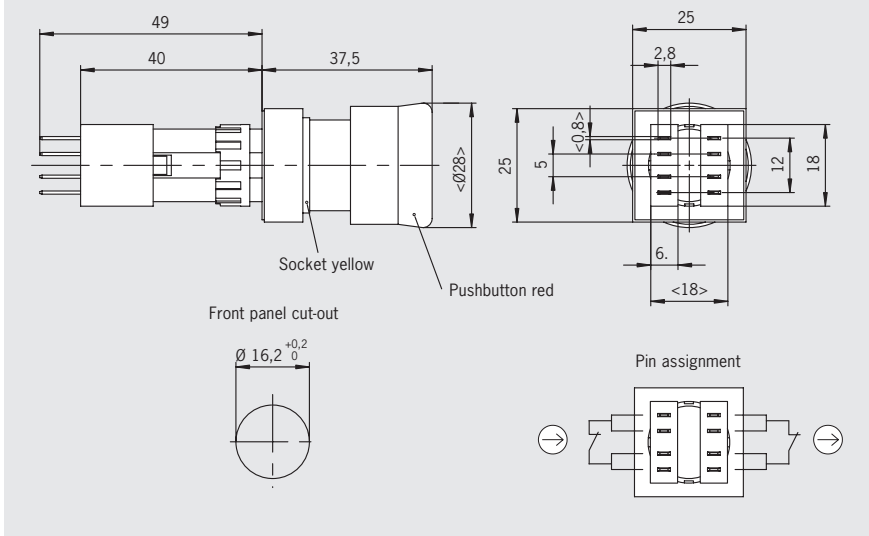
## EMERGENCY STOP devices according to EN ISO 13850

- ▶ With pull release
- ▶ EMERGENCY STOP device for housing HBA/HBM without enabling switch ZXE 3-stage

### Notes

- ▶ The EMERGENCY STOP device engages when actuated by pressing, unlocks when pulled, and is overload-proof
- ▶ Do not use for housing HBA/HBM with 3-stage enabling switch ZXE

### Dimension drawing



### Technical data

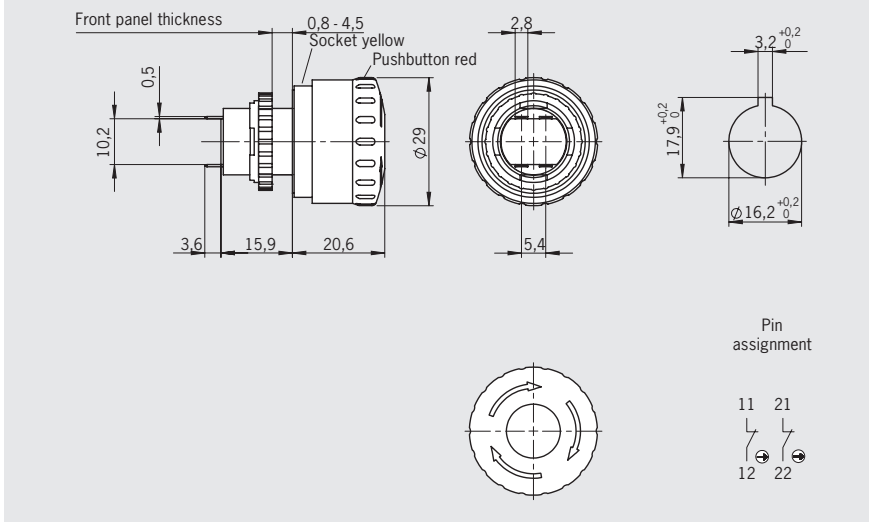
Parameter	Value	Unit
<b>Actuating element</b>		
Color of actuating button	Red	
Color of bottom shell	Yellow	
Switching elements	2, one positively driven contact each	
Degree of protection	IP 65	
Utilization category to IEC 947-5-1	DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 3 A	

- ▶ With rotary release
- ▶ EMERGENCY STOP device for housing HBA/HBM
- ▶ Bottom shell yellow

### Notes

- ▶ The EMERGENCY-STOP device engages when actuated by pressing, unlocks when turned or pulled, and is tampering proof

### Dimension drawing



### Technical data

Parameter	Value	Unit
<b>Actuating element</b>		
Color of actuating button	Red	
Color of bottom shell	Yellow	
Switching elements	2 positively driven contacts	
Degree of protection	IP 65	
Connection ratings	24 V DC / 3 A	

### Ordering table

Item	Order No.
EMERGENCY STOP device (pull release) with 2 switching elements, 1 positively driven contact each, long design	<b>096298</b>
EMERGENCY STOP device (pull and rotary release), bottom shell yellow, 2 positively driven contacts, short design	<b>106435</b>
Blanking plug for fastening hole for EMERGENCY STOP device	<b>083653</b>



## Enabling switch ZXE-091336, 3-stage, 2 NO contacts

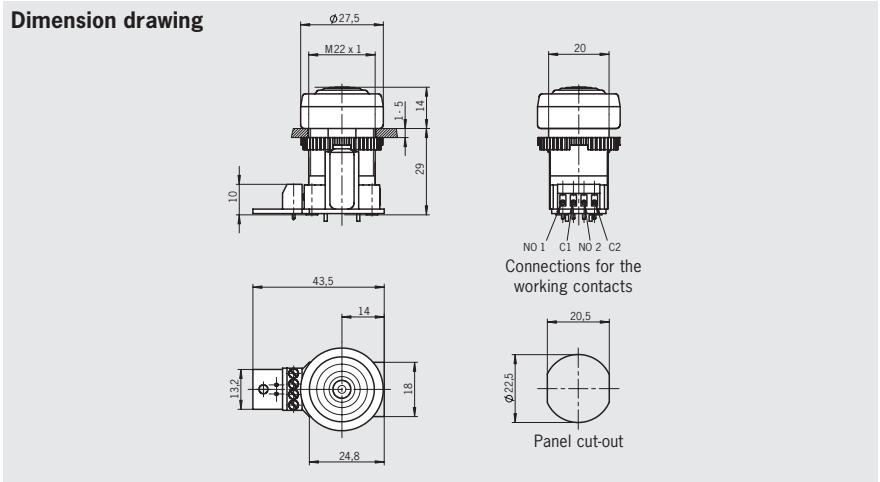
### Notes

- ▶ Enabling switch ZXE-091336 for use in housing HBA/HBM (see page 31/35/37)

### Switching elements

- ▶ **2202** 2 NO contacts

### Dimension drawing



## Enabling switch ZXE-104833 with a click, 3-stage, 2 NO contacts

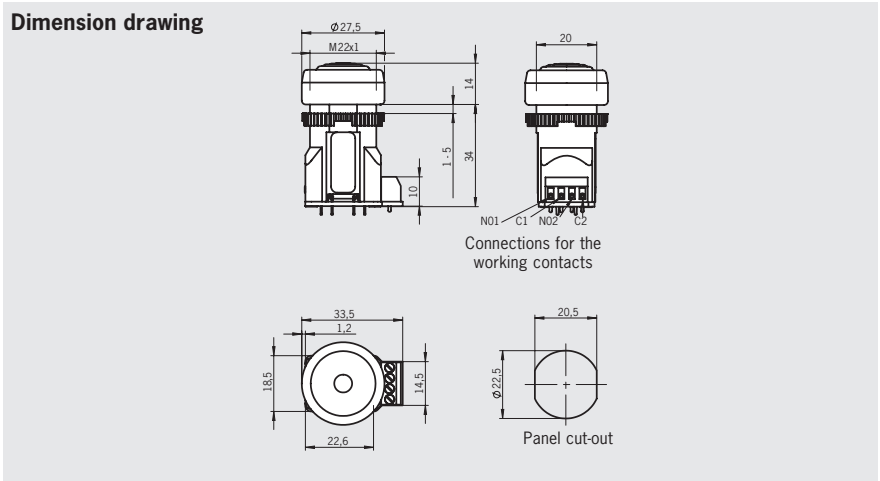
### Notes

- ▶ Enabling switch ZXE-104833 for use in housing HBA/HBM (see page 31/35/37)
- ▶ A clicking sounds when changing from stage 1 to stage 2 and when the button is released back from stage 2 to stage 1.

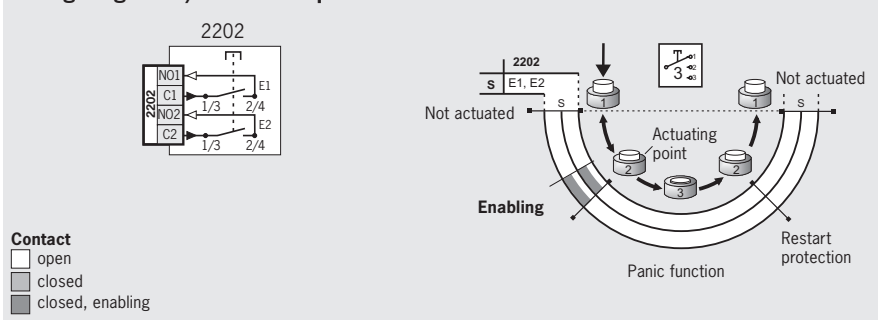
### Switching elements

- ▶ **2202** 2 NO contacts

### Dimension drawing



### Wiring diagram/function sequence ZXE



### Technical data

Parameter	Value	Unit
Housing material	Polyamide, black	
Material protective cap	CR (neoprene), black	
Degree of protection to IEC 529	IP 65 on front	
Ambient temperature	- 5 ... + 60	°C
Switching principle	Slow-action contact element	
Utilization category to IEC 947-5-1	DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 0.1 A	
Weight	ca. 0.03	kg

### Ordering table

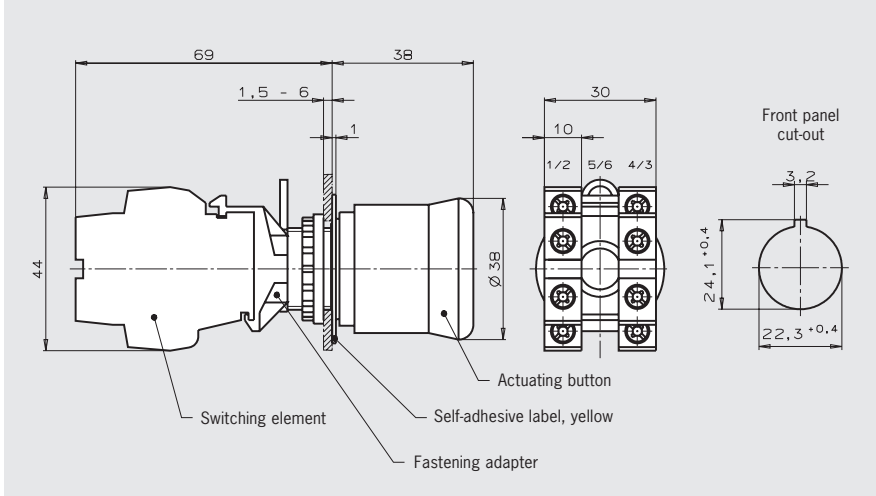
Item	Feature	Contact elements	Switch type	Order No.
ZXE-091336	-	2 NO contacts	Dual-channel	<b>091336</b>
ZXE-104833	Clicking noise with actuation	2 NO contacts	Dual-channel	<b>104833</b>

## EMERGENCY STOP device, 22 mm with pull release according to EN ISO 13850

### Notes

- ▶ The EMERGENCY STOP device engages when actuated by pressing, unlocks when pulled, and is overload-proof
- ▶ Use only for following housings:  
HBL-072631  
HBL-072983  
HBL-073113  
HBL-083484

### Dimension drawing



### Technical data

Parameter	Value	Unit
Color of actuating button	Red	
Color self-adhesive label	Yellow	
Switching element	2 NC contacts	
Utilization category to IEC 947-5-1	DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 2.75 A	

### Ordering table

Item	Order No.
EMERGENCY STOP device, complete with switching elements (2 x NC contacts), 1 pull release	073985
Blanking plug for fastening hole for EMERGENCY STOP device	059622



## Enabling switch ZSE2-2, 3-stage, 1 positively driven contact

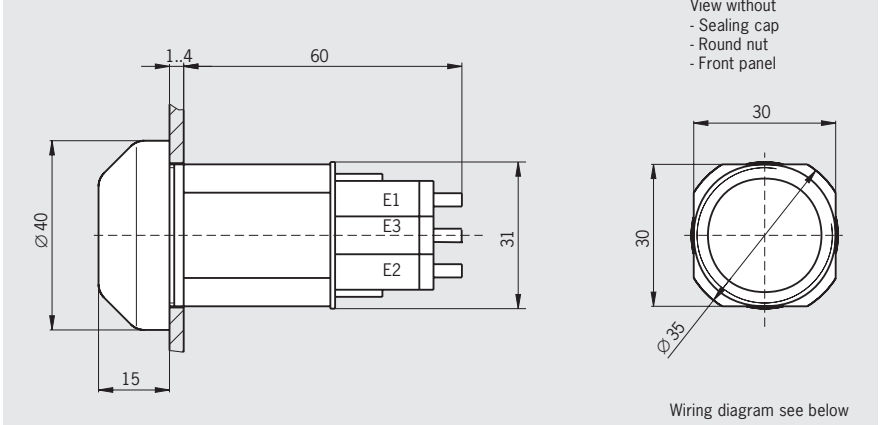
### Notes

- ▶ Enabling switch ZSE2-2 C1692 for use in housing HBL-073109 and HBL-072632 (see page 42)

### Switching elements

- ▶ **210** 2 NO contacts + 1 NC contact ⊖

### Dimension drawing



## Enabling switch ZSE2-4, 3-stage, 2 positively driven contacts

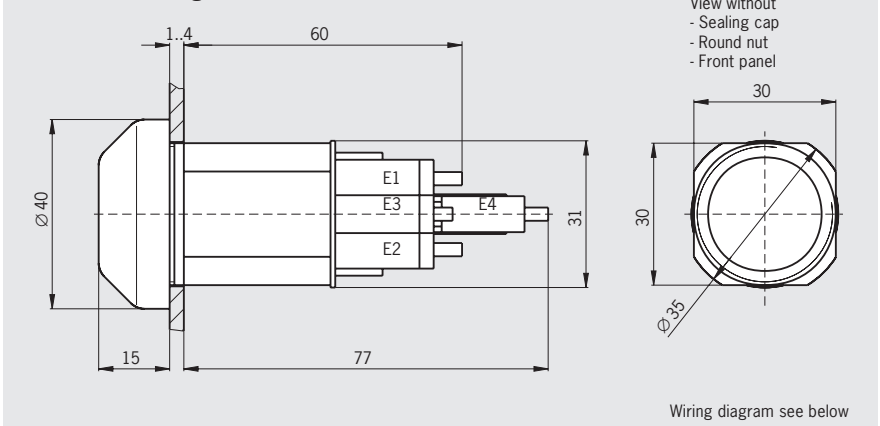
### Notes

- ▶ Enabling switch ZSE2-4 C1943 for use in housing HBL-072983 and HBL-083484 (see page 42)

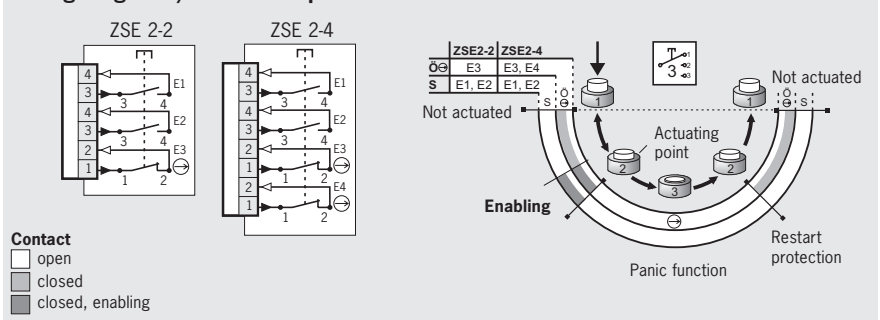
### Switching elements

- ▶ **220** 2 NO contacts + 2 NC contacts ⊖

### Dimension drawing



### Wiring diagrams/function sequence ZSE 2-2 and ZSE 2-4



### Technical data

Parameter	Value	Unit
Housing material	Plastic	
Fastening hole	∅ 30.5 <sup>+0.5</sup>	mm
Degree of protection according to IEC 529	IP65 on front	
Ambient temperature	- 5 ... + 60	°C
Switching principle	Slow-action contact element	
Utilization category to IEC 947-5-1	AC-15 U <sub>e</sub> 24 V I <sub>e</sub> 4 A DC-13 U <sub>e</sub> 24 V I <sub>e</sub> 3 A	
Weight	Approx. 0.1	kg

### Ordering table

Item	Contact elements	Switch type	Order No.
ZSE2-2 C 1692	2 NO contacts + 1 positively driven contact	Single-channel	<b>070752</b>
ZSE2-4 C 1943	2 NO contacts + 2 positively driven contacts	Dual-channel	<b>083477</b>

## Holder HBA

### Technical data

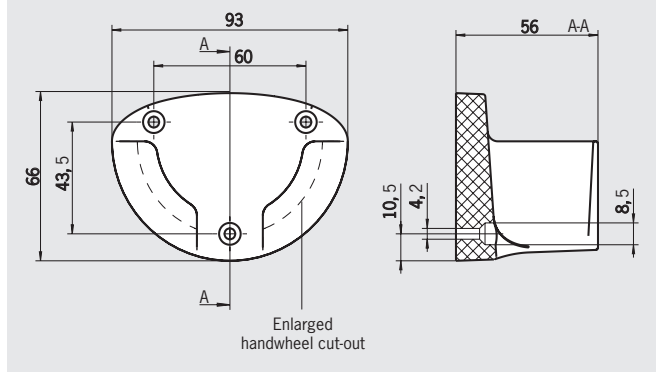
Parameter	Value	Unit
Housing material	Plastic	
Fixing system	Screws	
Ambient temperature	-5 to +60	°C
Weight	Approx. 0.1	kg

### Ordering table

Item	Order No.
Holder HBA gray	<b>072828</b>
Holder HBA black	<b>100221</b>
Holder HBA gray, enlarged handwheel cut-out *	<b>072935</b>
Holder HBA black, enlarged handwheel cut-out *	<b>109979</b>

\* Operation of the handwheel in the holder possible

### Dimension drawing



## Holder HBM

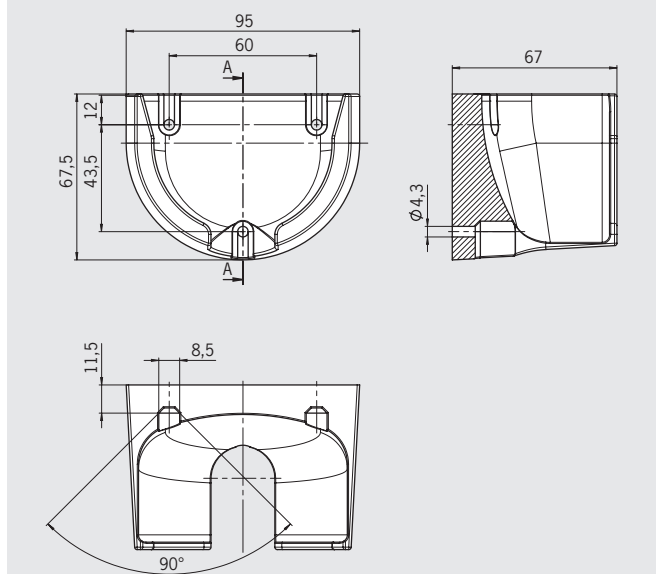
### Technical data

Parameter	Value	Unit
Housing material	Plastic	
Fixing system	Screws	
Ambient temperature	-5 to +60	°C
Weight	Approx. 0.1	kg

### Ordering table

Item	Order No.
Holder HBM	<b>112335</b>

### Dimension drawing



## Holder HBL

### Technical data

Parameter	Value	Unit
Housing material	Plastic	
Fixing system	Screws	
Ambient temperature	-5 to +60	°C
Weight	Approx. 0.1	kg

### Ordering table

Designation	Order No.
Holder HBL	<b>084397</b>

### Dimension drawing

