

Станции управления (Ех е) из армированного стекловолокном полиэстера (GRP) GR.CS

Технические характеристики

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Control Stations Ex e, Glass-Fiber Reinforced Polyester (GRP)

GR.CS*

- Carbon loaded, antistatic glass-fiber reinforced polyester
- Installation in Zone 1, Zone 2, Zone 21 and Zone 22
- Ex de, Ex ib and Ex tb certified
- Up to 68 operators per control station
- 7 enclosure size options
- Customizable configuration of operators, cable entry quantities and cable gland types as per specification
- Wide range of labels and accessories available
- Modern design with high impact resistance
- Easy installation due to easily accessible mounting points
- Wide ambient temperature range

Control Stations Ex e, Glass-Fiber Reinforced Polyester (GRP)



Function

The GR.CS* series is a purposely designed range of control stations that can be equipped with operators, contact blocks, terminals and entry devices to meet your exact specification. Pepperl+Fuchs solution engineering teams provide any custom configurations including combinations of terminals and control elements.

The standardized GR* enclosure series for all Pepperl+Fuchs products consists of carbon-loaded, glass-fiber reinforced polyester with stainless steel cover screws. This series provides an anti-static, UV stabilized and corrosion resistant solution. Many features provide for easy installation and handling.

Technical Data

Electrical specifications

Operating voltage	400 V AC max.
Operating current	16 A max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm

Mechanical specifications

Enclosure cover	fully detachable
Cover fixing	see data table
Screws	stainless steel combination Phillips and slotted screw
Cover seal	foamed silicone
Degree of protection	IP66
Cable entry	cable glands as per specification
Material	
Enclosure	carbon loaded, antistatic glass-fiber reinforced polyester (GRP)
Finish	inherent color black
Grounding plate	2 mm brass optional
Mass	see data table valid for empty enclosure, will increase according to integrated components
Dimensions	see data table
Mounting	see data table
Grounding	none as standard optional M6 or M8 internal/external brass nickel-plated grounding bolt optional M6 or M8 internal/external stainless steel grounding bolt

Ambient conditions

Ambient temperature	-40 ... 55 °C (-40 ... 131 °F) optional -50 ... 55 °C (-58 ... 131 °F) depending on integrated components
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Technical Data

Data for application in connection with hazardous areas

EU-type examination certificate	CML 16 ATEX 3009X
Marking	Ex II 2 GD Ex db eb mb IIC T* Gb Ex ib IIC T* Gb Ex db eb ib mb op pr IIC T* Gb Ex eb op pr IIC T* Gb Ex tb IIC T** °C Db T6/T80 °C @ Ta +40 °C T5/T95 °C @ Ta +55 °C T4/T130 °C @ Ta +55 °C
International approvals	
IECEx approval	IECEx CML 16.0008X
UKCA approval	CML 22 UKEX 2550X
ECAS approval	22-10-53256/E22-09-052316/NB0002
IA approval	MASC S/18-0003X
CCC approval	2020322304002545
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Ordering information	This device will be delivered completely configured and assembled ready for use. For configuration details please contact Customer Service.
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.
Accessories	
Optional accessories	M6 or M8 internal/external brass nickel-plated grounding bolts M6 or M8 internal/external stainless steel grounding bolts grounding plate, brass Grounding Rail hinges, polyamide mounting block for DIN mounting rail, polyamide engraved traffolyte tag label engraved AISI 316L stainless steel tag label color in-fill stainless steel tag label
Indicators/operating means	
Control elements	small footprint max. 68 see data table all NC contacts have a direct opening action for emergency stop functions

Type Code

1	2	3	4	5	6	7	8
GR	.	***	.	**	.	*	****
GR	.	CSE	18	24	10	B	S 0001

Example: GR.CSE.18.24.10.B-S0001

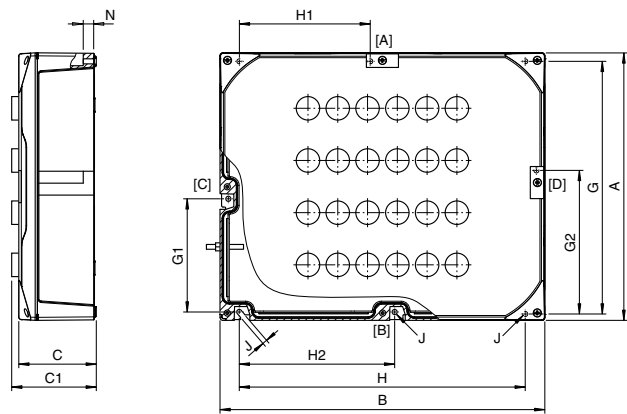
Control Station increased safety, material GRP, size 18x24x10 cm, landscape orientation with face B at bottom, standard product

1	Enclosure type
GR	glass faser reinforced polyester (GRP)
2	Type of solution
CSE	control station (Ex e)
CSI	control station (Ex i)
CSM	control station, various types of explosion protection, e.g. (Ex e, Ex i) or (Ex e, Ex op pr)
3	Height [cm]
n	see dimensions data table
4	Width [cm]
n	see dimensions data table
5	Depth [cm]
n	see dimensions data table

Type Code

6	Cable entry face orientation
B	face [B] at bottom
D	face [D] at bottom
7	Variant
S	standard product
C	configured product
CA	configured and adapted product
Y	engineered product
8	Variant number
xxxx	consecutive item number

Dimensions and Enclosure Details



Type	External dimensions [mm]										Mounting screws qty.	Mass approx. [kg]	Cover screws		
	A	B	C	C1 max.	G	H	H1	H2	J	N			Mx	qty.	Torque [Nm]
GR.CS*.18.18.10	179	179	104	169	126	156	-	-	7	18	2	1.4	M6	4	3.5
GR.CS*.18.24.10	179	239	104	169	156	186	-	-	7	18	2	1.7	M6	4	3.5
GR.CS*.18.36.10	179	359	104	169	156	306	-	-	7	18	4	2.4	M6	4	3.5
GR.CS*.18.36.17	179	359	166.5	231.5	156	306	-	-	7	18	4	3.1	M6	4	3.5
GR.CS*.36.36.10	359	359	104	169	306	336	-	-	7	18	4	3.7	M6	4	3.5
GR.CS*.36.36.17	359	359	166.5	231.5	306	336	-	-	7	18	4	4.6	M6	4	3.5
GR.CS*.36.72.17	359	719	166.5	231.5	336	666	316.5	349.5	7	18	6	8.3	M6	6	3.5

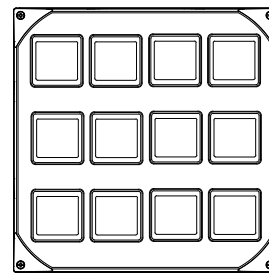
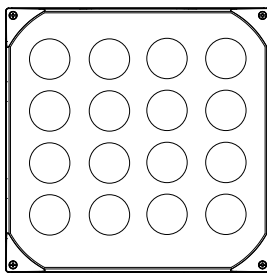
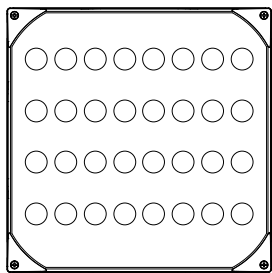
Mass is valid for empty enclosure, it will increase according to integrated components and cable glands

Control Elements max. Quantity per Enclosure Type

Type	Control elements quantity max.		
	small footprint	large footprint	viewing windows
GR.CS*.18.18.10	6	2	2
GR.CS*.18.24.10	8	4	2
GR.CS*.18.36.10	14	6	4
GR.CS*.18.36.17	14	6	4
GR.CS*.36.36.10	32	16	12
GR.CS*.36.36.17	32	16	12
GR.CS*.36.72.17	68	32	24

Quantities are based on landscape enclosure orientation with horizontal DIN mounting rails, they may vary with vertical rails

Operating Elements Configuration



Example based on GR.CS*.36.36.10

Left (small footprint):

Small operators with small label holder and 2 pole contact blocks

Small operators include all pushbuttons, small switching actuators, LED indicators and potentiometers

Middle (large footprint):

Large switching actuators and all operators fitted with 4 pole contact modules, protective lid or padlockable shroud

Right:

Viewing windows with ammeter or voltmeter and operators with large label holders

Notes:

The use of label holders depends on operating elements configuration

The position of the grounding bolt can vary depending on configuration

All NC contacts have a direct opening action for emergency stop functions

For further configurations please contact Pepperl+Fuchs

Pushbuttons and Emergency Stops

Pushbuttons Actuator Heads			
Type	Color	Labeling	Image
CFP.PA	red	none	
CFP.PR	red	0	
CFP.PC	red	STOP	
CFP.PD	red	OFF	
CFP.PE	green	none	
CFP.PG	green	I	
CFP.PI	green	II	
CFP.PF	green	START	
CFP.PH	green	ON	
CFP.PY	yellow	none	
CFP.PO	amber	none	
CFP.PW	white	none	
CFP.PB	blue	none	
CFP.PJ	blue	RESET	
CFP.PK	black	none	
CFP.PL	black	0	
CFP.PN	black	I	
CFP.PP	black	II	
CFP.PQ	black	III	
CFP.PT	black	IV	
CFP.PU	black	arrow up	
CFP.PV	black	arrow down	
CFP.PZ*	see individual datasheets		

Actuator Heads - Technical Data

Mechanical specifications	
Dimensions	see data table
Mounting	use with base-mounted and lid-mounted contact modules
Degree of protection	IP66
Mass	see data table
Material	
Housing	Polyamide (PA)
Finish	inherent color black
Washer gasket	silicone
Ambient conditions	
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Service temperature	-40 ... 65 °C (-40 ... 149 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 GD Ex e IIC Gb Ex tb IIIC Db
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.
Enclosure type	LC*, LR* FXL*.CS, SR.CS* GR.CS*

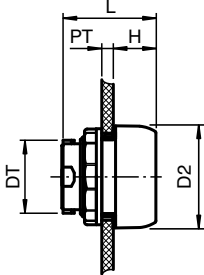
Pushbuttons and Emergency Stops

Emergency Stops Actuator Heads							
Type	Function	Color	Labeling	Operator action	Actuator head diameter	Switching diagram	Image
CFP.E4	mushroom button	red	none	latching, twist to release	40 mm		
CFP.E5	mushroom button	red	none	latching, twist to release	55 mm		
CFP.JR	mushroom button	red	none	latching, key release	39 mm		

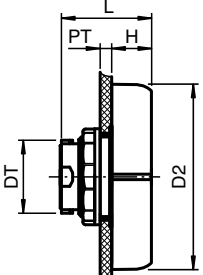
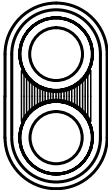
Other Pushbuttons Actuator Heads							
Type	Function	Color	Labeling	Operator action	Actuator head diameter	Switching diagram	Image
CFP.DM	pushbutton	red / green	0 - I	spring return	70 mm x 39 mm		
CFP.MK	mushroom button	black	none	spring return	39 mm		
CFP.MR	mushroom button	red	none	spring return	39 mm		
CFP.MG	mushroom button	green	none	spring return	39 mm		

Pushbuttons and Emergency Stops

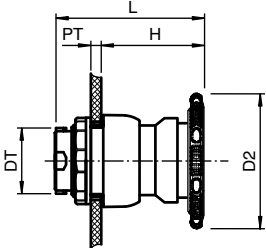
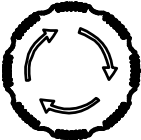
Pushbuttons and Emergency Stops - Dimensions							
Type	Function	Actuator head diameter [mm]	Panel wall thickness [mm]	Diameter thru-hole [mm]	Length outside enclosure [mm]	Total length [mm]	Mass [g]
		D2	PT	DT	H	L	
CFP.P*	pushbutton	39	1 ... 6	30.6	15.5	35.4	25
CFP.DM*	double pushbutton	70 x 39	1 ... 6	30.6	15.5	35.4	38
CFP.E4	emergency stop	40	1 ... 6	30.6	41.8	62.1	52
CFP.E5	emergency stop	55	1 ... 6	30.6	41.8	62.1	58
CFP.JR	key release mushroom button	39	1 ... 6	30.6	49.5	70	65
CFP.M*	mushroom button	37	1 ... 6	30.6	41.2	60.7	46



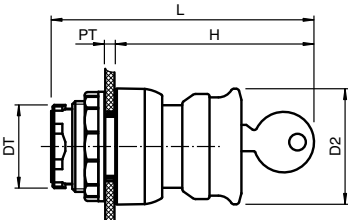
CFP.P*



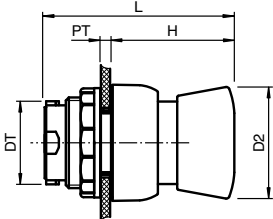
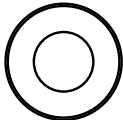
CFP.DM*



CFP.E*



CFP.J*



CFP.M*

Pushbuttons and Emergency Stops

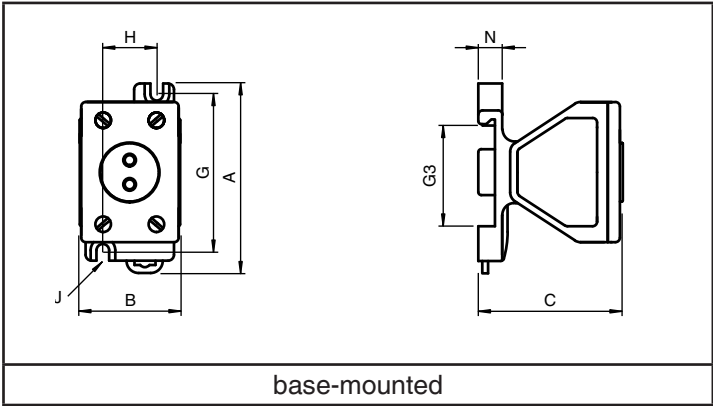
Contact Blocks					
Type	Mounting	Number of poles	Contact configuration	Switching diagram see overview	Image
CFPM	base-mounted	2	1x NO / 1x NC		
CFPC	base-mounted	2	2x NC		
CFPO	base-mounted	2	2x NO		

Contact Blocks - Technical Data	
Electrical specifications	
Operating voltage	250 V max.
Operating current	16 A max.
Terminal capacity	2.5 mm²
Terminal torque	0.8 Nm
Usage category	AC12: 12 ... 250 V AC - 16 A AC15: 12 ... 250 V AC - 10 A DC13: 12 ... 110 V DC - 1 A DC13: 12 ... 24 V DC - 1 A
Mechanical specifications	
Mechanical life	1000000 switching operations
Degree of protection	IP20
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-40 ... 90 °C (-40 ... 194 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	II 2 G Ex de IIC Gb

Contact Blocks - Technical Data continued	
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
Usage category	IEC / EN 60947
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

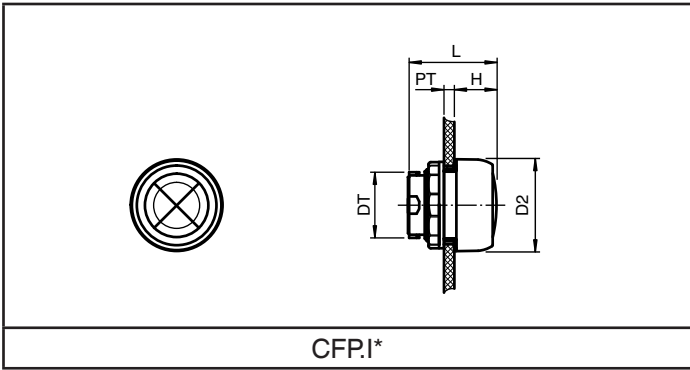
Pushbuttons and Emergency Stops

Contact Blocks - Dimensions										
Mounting	External dimension [mm]			Mounting holes [mm]			Mounting brackets [mm]	DIN mounting rail receptacle [mm]	Mass [g]	Enclosure type
	A	B	C	G	H	Diam. J	N	G3		
base-mounted	63	33.4	50	52	18	4.2	8	35.6	68	LC*, LR* GR.CS* SR.CS*



Illuminated Pushbuttons

Illuminated Pushbuttons Actuator Heads				
Type	Lens color	Operator action	Switching diagram	Image
CFP.IR	red	spring return	E-----	
CFP.IG	green	spring return	E-----	
CFP.IO	amber	spring return	E-----	
CFP.IW	white	spring return	E-----	
CFP.IB	blue	spring return	E-----	



Actuator Heads - Technical Data	
Mechanical specifications	
Degree of protection	IP66
Material	
Housing	Polyamide (PA)
Finish	inherent color black
Washer gasket	silicone
Ambient conditions	
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Service temperature	-40 ... 65 °C (-40 ... 149 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 GD Ex e IIC Gb Ex tb IIIC Db
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

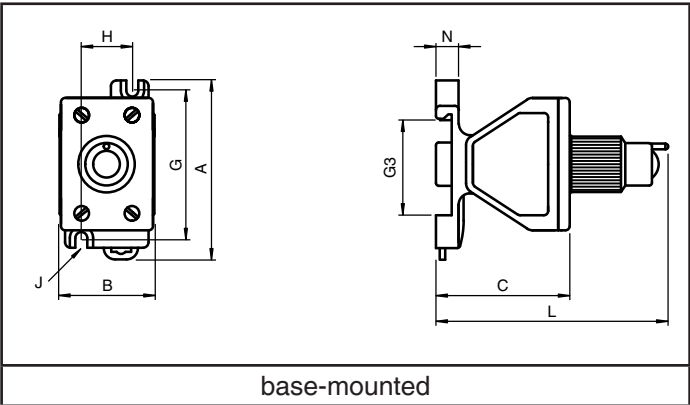
Illuminated Pushbuttons Actuator Heads - Dimensions							
Actuator head diameter [mm]	Panel wall thickness [mm]	Diameter thru-hole [mm]	Length outside enclosure [mm]	Total length [mm]	Mass [g]	Mounting	Enclosure type
D2	PT	DT	H	L			
39	1 ... 6	30.6	17.5	36.8	21	use with base-mounted and cover-mounted contact modules	LC*, LR* FXL*.CS GR.CS* SR.CS*

Illuminated Pushbuttons

LED Contact Modules						
Type	Mounting	Operating voltage [V]	Number of poles	Contact configuration	Switching diagram	Image
CFP.IL	base-mounted	10 ... 28 V AC/DC	1	1x NO		
CFP.I	base-mounted	30 ... 250 V AC	1	1x NO		
CFP.II	base-mounted	10 ... 28 V AC/DC Ex ia	1	1x NO		
CFP.JL	base-mounted	10 ... 28 V AC/DC	1	1x NC		
CFP.J	base-mounted	30 ... 250 V AC	1	1x NC		
CFP.JI	base-mounted	10 ... 28 V AC/DC Ex ia	1	1x NC		

Illuminated Pushbuttons

LED Contact Modules - Dimensions											
Mounting	External dimension [mm]				Mounting holes [mm]			Mounting brackets [mm]	DIN rail receptacle [mm]	Mass [g]	Enclosure type
	A	B	C	L	G	H	Diam. J	N	G3		
base-mounted	63	33.4	47	82	52	18	4.2	8	35.6	72	LC*, LR* GR.CS* SR.CS*



LED Modules - Technical Data	
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

LED Modules - Technical Data	
Electrical specifications	
Operating voltage	250 V max.
Operating current	10 A max.
Power consumption	1 W max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Usage category	AC15: 10 ... 250 V AC - 10 A DC13: 10 ... 24 V DC - 1 A
Mechanical specifications	
Mechanical life	1000000 switching operations
Degree of protection	IP20
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-55 ... 90 °C (-67 ... 194 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 G Ex de IIC Gb
Intrinsically safe variants	
Marking	 II 1 G Ex ia IIC Ga
Voltage U _i	28 V
Current I _i	93 mA
Power P _i	0.651 W
Internal capacitance C _i	0 µF
Internal inductance L _i	0 mH
International approvals	
IECEX approval	IECEX CML 16.0114U
Conformity	
Degree of protection	EN 60529
Usage category	IEC / EN 60947-3
CE marking	0102

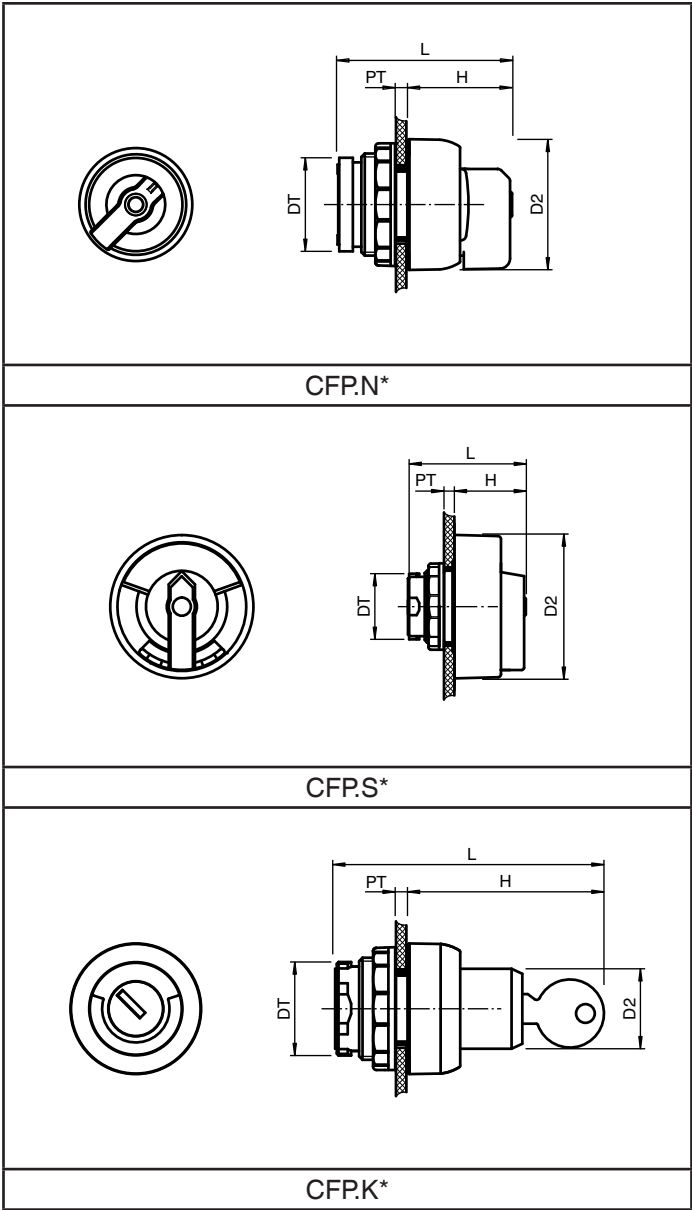
Control Switches Actuator Heads, for use with GR.CS* and SR.CS*

Control Switch Actuator Heads								
Type	Function	Dia- meter [mm]	Switching configuration	Switching diagram	Opera- tor action	Labeling	Lock- able	Image
CFP.N6	rotary actuator	39	2 position changeover with left OFF		L - L	0 - I	-	
CFP.N7	rotary actuator	39	2 position changeover		L - L	I - II	-	
CFP.N8	rotary actuator	39	3 position changeover with center OFF		L - L - L	I - 0 - II	-	
CFP.N8S	rotary actuator	39	3 position changeover with center OFF		S - L - S	I - 0 - II	-	
CFP.N9	rotary actuator	39	3 position changeover with left OFF		L - L - L	0 - I - II	-	
CFP.S6	rotary actuator	60	2 position changeover with left OFF		L - L	0 - I	yes	
CFP.S7	rotary actuator	60	2 position changeover		L - L	I - II	-	
CFP.S8	rotary actuator	60	3 position changeover with center OFF		L - L - L	I - 0 - II	yes	
CFP.S8S	rotary actuator	60	3 position changeover with center OFF		S - L - S	I - 0 - II	yes	
CFP.S9	rotary actuator	60	3 position changeover with left OFF		L - L - L	0 - I - II	yes	
CFP.K6	key switch rotary actuator	39	2 position changeover with left OFF		L - L	0 - I	yes	
CFP.K6S	key switch rotary actuator	39	2 position changeover with left OFF		L - S	0 - I	yes	
CFP.K8	key switch rotary actuator	39	3 position changeover with center OFF		L - L - L	I - 0 - II	yes	
CFP.K8S	key switch rotary actuator	39	3 position changeover with center OFF		S - L - S	I - 0 - II	yes	

Operator action: L = latching, S = spring return

Control Switches Actuator Heads

Actuator Heads - Dimensions



Actuator Heads - Technical Data	
Mechanical specifications	
Dimensions	see data table
Mounting	use with base-mounted and lid-mounted contact modules
Degree of protection	IP66
Mass	see data table
Material	
Housing	Polyamide (PA)
Finish	inherent color black
Washer gasket	silicone
Ambient conditions	
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Service temperature	-40 ... 65 °C (-40 ... 149 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	⚡ II 2 GD Ex e IIC Gb Ex tb IIIC Db
International approvals	
IECEX approval	IECEX CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Type	Actuator head diameter [mm]	Panel wall thickness [mm]	Diameter thru-hole [mm]	Length outside enclosure [mm]	Total length [mm]	Mass [g]	Image example
	D2	PT	DT	H	L		
CFP.N*	39	1 ... 6	30.6	30.5	50.5	30	
CFP.S*	60	1 ... 6	30.6	30.5	50.5	46	
CFP.K*	39	1 ... 6	30.6	49.5	70	46	

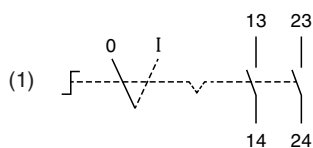
Control Switches, 2 Pole Contact Blocks, for use with GR.CS* and SR.CS*

Combination of 2 Pole Contact Blocks and Actuator Heads									
Actuator head function	Actuator head diameter [mm]	Switching configuration	Contact block	Contacts	Switching diagram see overview	Operator action	Labeling	Lockable	Actuator type
rotary actuator	39	2 position changeover with left OFF	O	2x NO	(1)	L - L	0 - I	-	N6
rotary actuator	39	2 position changeover	M	1x NO / 1x NC	(2)	L - L	I - II	-	N7
rotary actuator	39	3 position changeover with center OFF	O	2x NO	(4)	L - L - L	I - 0 - II	-	N8
rotary actuator	39	3 position changeover with center OFF	O	2x NO	(4)	S - L - S	I - 0 - II	-	N8S
rotary actuator	39	3 position changeover with left OFF	M	1x NO / 1x NC	(3)	L - L - L	0 - I - II	-	N9
rotary actuator	60	2 position changeover with left OFF	O	2x NO	(1)	L - L	0 - I	yes	S6
rotary actuator	60	2 position changeover	M	1x NO / 1x NC	(2)	L - L	I - II	-	S7
rotary actuator	60	3 position changeover with center OFF	O	2x NO	(4)	L - L - L	I - 0 - II	yes	S8
rotary actuator	60	3 position changeover with center OFF	O	2x NO	(4)	S - L - S	I - 0 - II	yes	S8S
rotary actuator	60	3 position changeover with left OFF	M	1x NO / 1x NC	(3)	L - L - L	0 - I - II	yes	S9
key switch rotary actuator	39	2 position changeover with left OFF	O	2x NO	(1)	L - L	0 - I	yes	K6
key switch rotary actuator	39	2 position changeover with left OFF	O	2x NO	(1)	L - S	0 - I	yes	K6S
key switch rotary actuator	39	3 position changeover with center OFF	O	2x NO	(4)	L - L - L	I - 0 - II	yes	K8
key switch rotary actuator	39	3 position changeover with center OFF	O	2x NO	(4)	S - L - S	I - 0 - II	yes	K8S

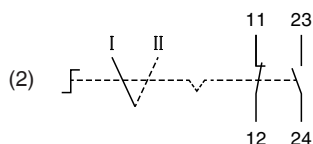
Operator action: L = latching, S = spring return

Contact Blocks					
Type	Mounting	Number of poles	Contact configuration	Switching diagram	Image
CFP.M	base-mounted	2	1x NO / 1x NC		
CFP.C	base-mounted	2	2x NC		
CFP.O	base-mounted	2	2x NO		

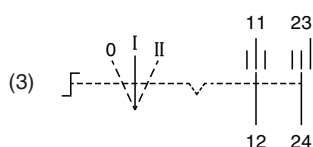
Switching Diagrams



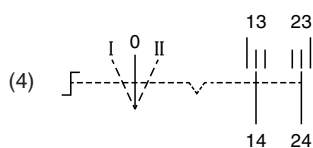
	13	23
0		
I	X	X
	14	24



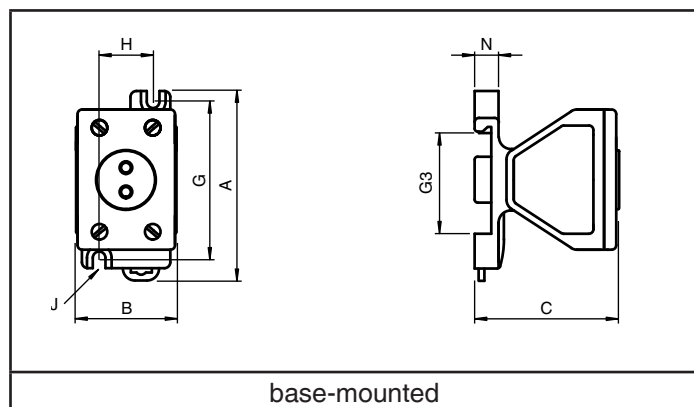
	11	23
I	X	
II		X
	12	24



	11	23
0		
I	X	
II		X
	12	24



	13	23
I	X	
0		
II		X
	14	24



Electrical specifications

Operating voltage	250 V max.
Operating current	16 A max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Usage category	AC12: 12 ... 250 V AC - 16 A AC15: 12 ... 250 V AC - 10 A DC13: 12 ... 110 V DC - 1 A DC13: 12 ... 24 V DC - 1 A

Mechanical life	1000000 switching operations
Degree of protection	IP20

Material	
Housing	Polyamide (PA)

Service temperature	-40 ... 90 °C (-40 ... 194 °F)
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EU-Type Examination Certificate	CML 16 ATEX 3339U
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Marking	 II 2 G Ex de IIC Gb
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IECEx approval	IECEx CML 16.0114U
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Conformity

Degree of protection	EN 60529
Usage category	IEC / EN 60947
CE marking	0102

General information

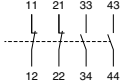
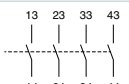
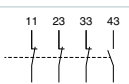
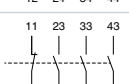
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.
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Mounting	External dimension [mm]			Mounting holes [mm]			Mounting brackets [mm]	DIN mounting rail receptacle [mm]	Mass [g]	Enclosure type
	A	B	C	G	H	Diam. J	N	G3		
base-mounted	63	33.4	50	52	18	4.2	8	35.6	68	GR.CS* SR.CS*

Control Switches, 4 Pole Contact Blocks, for use with GR.CS* and SR.CS*

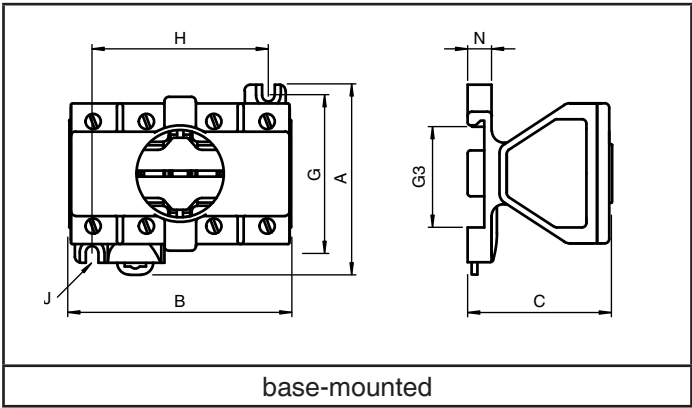
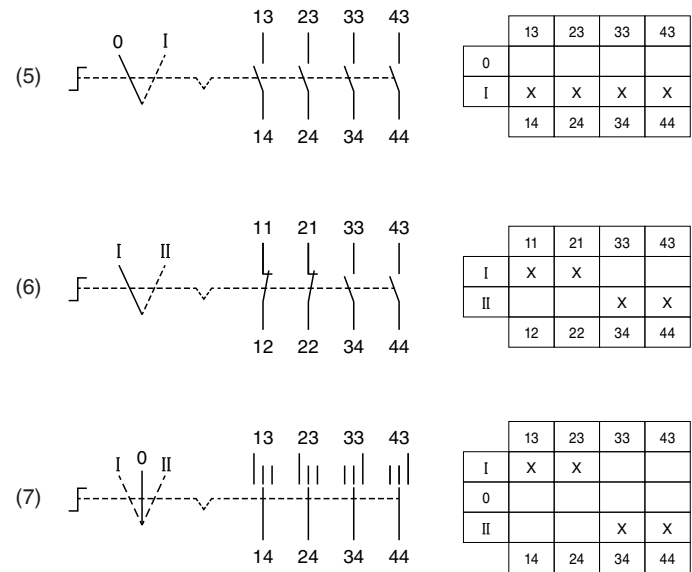
Combination of 4 Pole Contact Blocks and Actuator Heads									
Actuator head function	Actuator head diameter [mm]	Switching configuration	Contact block	Contacts	Switching diagram see overview	Operator action	Labeling	Lockable	Actuator type
rotary actuator	60	2 position changeover with left OFF	03	4x NO	(5)	L - L	0 - I	yes	S6
rotary actuator	60	2 position changeover	01	2x NO / 2x NC	(6)	L - L	I - II	-	S7
rotary actuator	60	3 position changeover with center OFF	03	4x NO	(7)	L - L - L	I - 0 - II	yes	S8
rotary actuator	60	3 position changeover with center OFF	03	4x NO	(7)	S - L - S	I - 0 - II	yes	S8S

Operator action: L = latching, S = spring return

Contact Blocks					
Type	Mounting	Number of poles	Contact configuration	Switching diagram	Image
CFP.01	base-mounted	4	2x NO / 2x NC		
CFP.02	base-mounted	4	4x NC		
CFP.03	base-mounted	4	4x NO		
CFP.04	base-mounted	4	1x NO / 3x NC		
CFP.05	base-mounted	4	3x NO / 1x NC		

Control Switches, 4 Pole Contact Blocks, for use with GR.CS* and SR.CS*

Switching Diagrams



Contact Blocks - Technical Data

Electrical specifications	
Operating voltage	250 V max.
Operating current	16 A max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Usage category	AC12: 12 ... 250 V AC - 16 A AC15: 12 ... 250 V AC - 10 A DC13: 12 ... 110 V DC - 1 A DC13: 12 ... 24 V DC - 1 A
Mechanical specifications	
Mechanical life	1000000 switching operations
Degree of protection	IP20
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-40 ... 90 °C (-40 ... 194 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	II 2 G Ex de IIC Gb
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
Usage category	IEC / EN 60947
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Contact Blocks - Dimensions

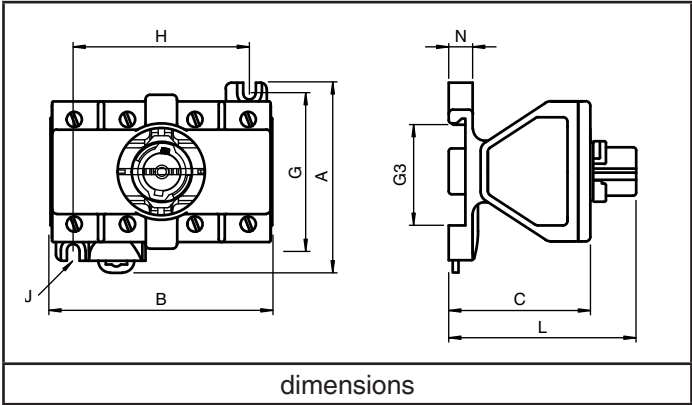
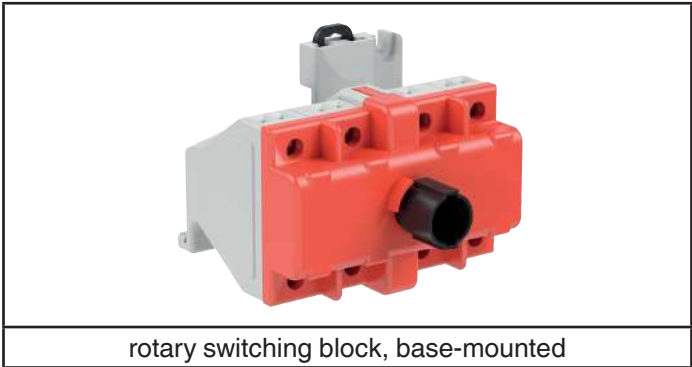
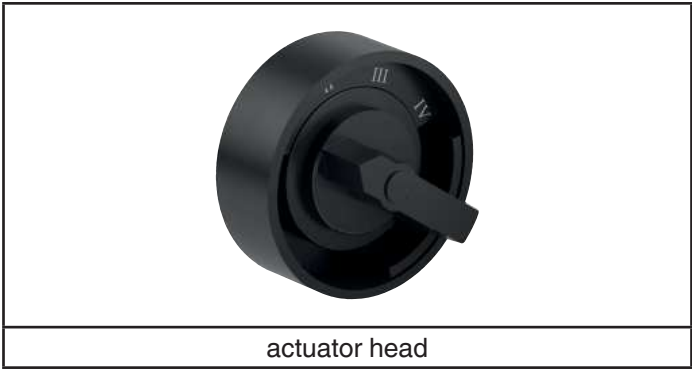
Mounting	External dimension [mm]			Mounting holes [mm]			Mounting brackets [mm]	DIN mounting rail receptacle [mm]	Mass [g]	Enclosure type
	A	B	C	G	H	Diam. J	N	G3		
base-mounted	63	74	58.6	52	58	4.2	8	35.6	165	GR.CS* SR.CS*

Control Switches, 4 Pole Rotary Switching Blocks, for use with GR.CS* and SR.CS*

Combination of 4 Pole Rotary Switching Blocks and Actuator Heads							
Switching configuration	Switching block	Contacts	Switching diagram see overview	Operator action	Labeling	Lockable	Actuator type
2 position changeover, left OFF	10	4x NO	(10)	L - L	0 - I	yes	T6
2 position changeover	11	2x NO / 2x NC	(11)	L - L	I - II	-	T7
2 position changeover	17	3x NO / 1x NC	(17)	L - L	I - II	-	T7
2 position changeover	18	1x NO / 3x NC	(18)	L - L	I - II	-	T7
3 position changeover, center OFF	12	4x NO	(12)	L - L - L	I - 0 - II	yes	T8
3 position changeover, center OFF	14	4x NO	(14)	L - L - L	I - 0 - II	yes	T8
3 position changeover, center OFF, both sides spring return	13	4x NO	(13)	S - L - S	I - 0 - II	yes	T8
3 position changeover	22	4x NO	(22)	L - L - L	I - 0 - II	-	T8
3 position changeover	23	4x NO	(23)	L - L - L	0 - I - II	-	T0
3 position changeover, right spring return	19	2x NO / 2x NC	(19)	L - L - S	0 - I - II	-	T0
3 position changeover, right spring return	16	3x NO / 1x NC	(16)	L - L - S	0 - I - II	-	T0
4 position changeover	15	3x NO / 1x NC	(15)	L - L - L - L	I - II - III - IV	-	T9
4 position changeover, right spring return	20	4x NO	(20)	L - L - L - S	I - II - III - IV	-	T9
4 position changeover	21	4x NO	(21)	L - L - L - L	I - II - III - IV	-	T9

Control Switches, 4 Pole Rotary Switching Blocks, for use with GR.CS* and SR.CS*

Dimensions



Switching Blocks - Technical Data

Electrical specifications	
Operating voltage	250 V max.
Operating current	16 A max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Usage category	AC12: 12 ... 250 V AC - 16 A AC15: 12 ... 250 V AC - 10 A DC13: 12 ... 110 V DC - 1 A DC13: 12 ... 24 V DC - 1 A
Mechanical specifications	
Mechanical life	1000000 switching operations
Degree of protection	IP20
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-40 ... 90 °C (-40 ... 194 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 G Ex de IIC Gb
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
Usage category	IEC / EN 60947
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Switching Blocks - Dimensions

Mounting	External dimension [mm]			Mounting holes [mm]			Mounting brackets [mm]	DIN mounting rail receptacle [mm]	Mass [g]	Enclosure type
	A	B	C	G	H	Diam. J				
base-mounted	63	74	72	52	58	4.2	8	35.6	171	GR.CS* SR.CS*

Control Switches, 4 Pole Rotary Switching Blocks, Switching diagrams

(10)

	13	23	33	43
0				
I	X	X	X	X
	14	24	34	44

(11)

	13	23	31	41
I			X	X
II	X	X		
	14	24	32	42

(12)

	13	23	33	43
I	X	X		
0				
II			X	X
	14	24	34	44

(13)

	13	23	33	43
I	X	X		
0				
II			X	X
	14	24	34	44

(14)

	13	23	33	43
I	X	X	X	X
0				
II	X	X	X	X
	14	24	34	44

(15)

	11	23	33	43
I	X			
II		X		
III			X	
IV				X
	12	24	34	44

(16)

	11	23	33	43
0	X			
I		X		
II			X	X
	12	24	34	44

(17)

	11	23	33	43
I	X			
II		X	X	X
	12	24	34	44

(18)

	11	23	33	43
I	X	X	X	
II				X
	12	24	34	44

(19)

	11	21	33	43
0	X	X		
I				
II			X	X
	12	22	34	44

(20)

	11	23	33	43
I	X			
II				
III			X	
IV			X	X
	12	24	34	44

(21)

	11	23	33	43
I	X			
II				
III		X		X
IV			X	X
	12	24	34	44

(22)

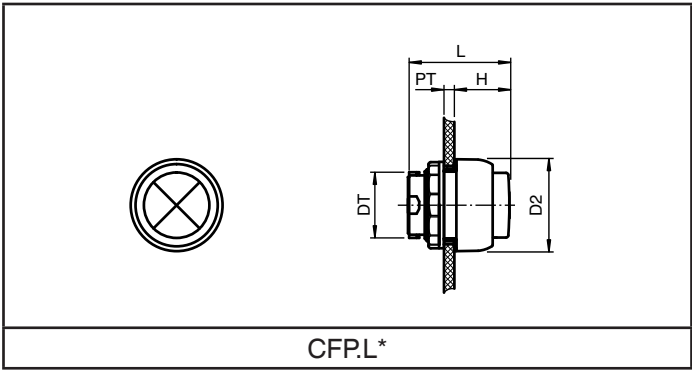
	13	23	31	43
I	X		X	
0			X	
II	X	X		
	14	24	32	44

(23)

	13	23	33	43
0				
I	X		X	
II		X		X
	14	24	34	44

LED Indicators

LED Indicators Lenses		
Type	Lens color	Image
CFP.LR	red	
CFP.LG	green	
CFP.LO	amber	
CFP.LW	white	
CFP.LB	blue	

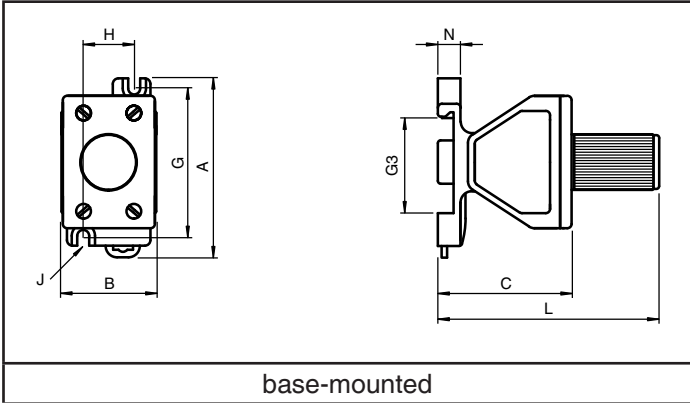


LED Heads - Technical Data	
Mechanical specifications	
Degree of protection	IP66
Material	
Housing	Polyamide (PA)
Finish	inherent color black
Washer gasket	silicone
Ambient conditions	
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Service temperature	-40 ... 65 °C (-40 ... 149 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 GD Ex e IIC Gb Ex tb IIIC Db
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

LED Heads - Dimensions							
Diameter [mm]	Panel wall thickness [mm]	Diameter thru-hole [mm]	Length outside enclosure [mm]	Total length [mm]	Mass [g]	Mounting	Enclosure type
D2	PT	DT	H	L			
39	1 ... 6	30.6	23.6	43	20	use with base-mounted and cover-mounted LED modules	LC*, LR* FXL*.CS GR.CS* SR.CS*

LED Indicators

LED Modules			
Type	Mounting	Rated operating voltage [V AC/DC]	Image
CFP.NI	base-mounted	10 ... 28, Ex ia	
CFP.NE	base-mounted	10 ... 28	
CFP.L	base-mounted	30 ... 250	

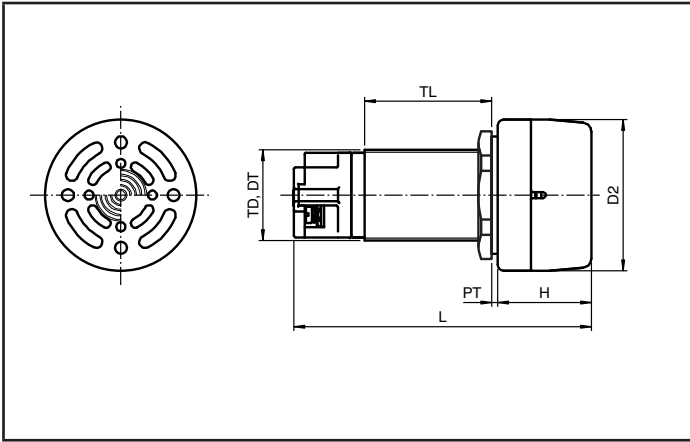


LED Modules - Technical Data	
Electrical specifications	
Operating voltage	250 V max.
Power consumption	2 W max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Mechanical specifications	
Degree of protection	IP20
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-40 ... 90 °C (-40 ... 194 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 G Ex de IIC Gb
Intrinsically safe variants *.NI, *.GI	
Marking	 II 1 G Ex ia IIC Ga
Voltage U _i	28 V
Current I _i	93 mA
Power P _i	0.651 W
Internal capacitance C _i	0 µF
Internal inductance L _i	0 mH
International approvals	
IECEX approval	IECEX CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

LED Modules - Dimensions											
Mounting	External dimension [mm]				Mounting holes [mm]			Mounting brackets [mm]	DIN rail receptacle [mm]	Mass [g]	Enclosure type
	A	B	C	L	G	H	Diam. J	N	G3		
base-mounted	63	33.4	47	84	52	18	4.2	8	35.6	61	LC*, LR* GR.CS* SR.CS*

Buzzer

Buzzer Modules				
Type	Function	Color	Rated operating voltage [V AC/DC]	Image
CFP. BUZRF1	flashing buzzer	red	10 ... 28	
CFP. BUZRF2	flashing buzzer	red	30 ... 250	
CFP. BUZKS1	buzzer	black	10 ... 28	
CFP. BUZKS2	buzzer	black	30 ... 250	



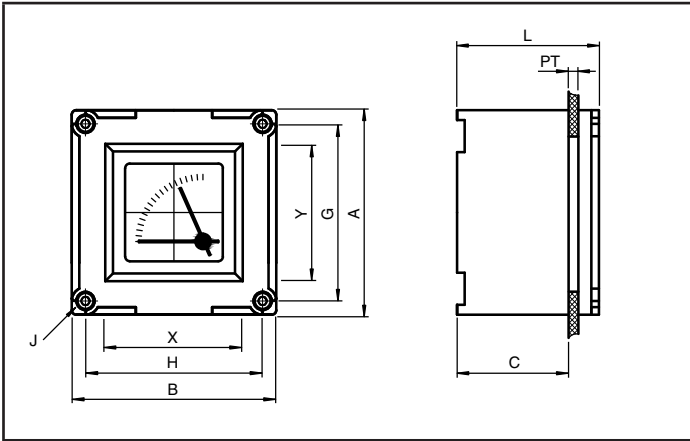
Buzzer - Technical Data	
Electrical specifications	
Operating voltage	250 V max.
Power consumption	1 W max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Sound level	60 dB at 30 cm
Mechanical specifications	
Degree of protection	IP66
Material	
Housing	Polyamide (PA)
Ambient conditions	
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Service temperature	-40 ... 90 °C (-40 ... 194 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	Ex II 2 GD Ex e ib mb IIC Gb Ex ib tb IIIC Db
International approvals	
IECEX approval	IECEX CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Buzzer - Dimensions									
Actuator head diameter [mm]	Panel wall thickness [mm]	Diameter thru-hole [mm]	Length outside enclosure [mm]	Total length [mm]	Thread size	Thread length [mm]	Mass [g]	Mounting	Enclosure type
D2	PT	DT	H	L	TD	TL			
50	1 ... 35	30.6	31	98.5	M30 x 1.5	42	125	cover-mounted	LC*, LR* GR.CS* SR.CS* FXL*.CS

Ammeters

Ammeter Modules			
Type	Rated operating current	Scales see table	Image
CFP.AA	0 ... 1 A	scale per specification	
CFP.AB	0 ... 5 A	scale per specification	
CFP.AC	4 ... 20 mA	scale 4 ... 20 / 40 mA	
CFP.AD	0 ... 20 mA	scale 0 ... 20 / 40 mA	

Ammeter Scales			
Scales	Type Code	Scales	Type Code
0 ... 1 / 5 A	SA	0 ... 150 / 750 A	SM
0 ... 2.5 / 12.5 A	SB	0 ... 200 / 1000 A	SN
0 ... 5 / 25 A	SC	0 ... 250 / 1250 A	SO
0 ... 10 / 50 A	SD	0 ... 300 / 1500 A	SP
0 ... 15 / 75 A	SE	0 ... 400 / 2000 A	SQ
0 ... 20 / 100 A	SU	0 ... 500 / 2500 A	SR
0 ... 25 / 125 A	SF	0 ... 600 / 3000 A	SS
0 ... 30 / 150 A	SG	0 ... 1000 / 5000 A	ST
0 ... 40 / 200 A	SH	Scale as per specification	SZ
0 ... 50 / 250 A	SI		
0 ... 60 / 300 A	SJ		
0 ... 75 / 375 A	SK		
0 ... 100 / 500 A	SL		



Ammeter Modules - Dimensions											
External dimension [mm]				Viewing window [mm]		Panel wall thickness [mm]	Mounting holes [mm]			Mass [g]	Enclosure type
A	B	C	L	X	Y	PT	G	H	Diam. J		
70	70	59	75	54	50	1 ... 6	63	63	3.5	186	LC*, LR* FXL*.CS, SR.CS* GR.CS

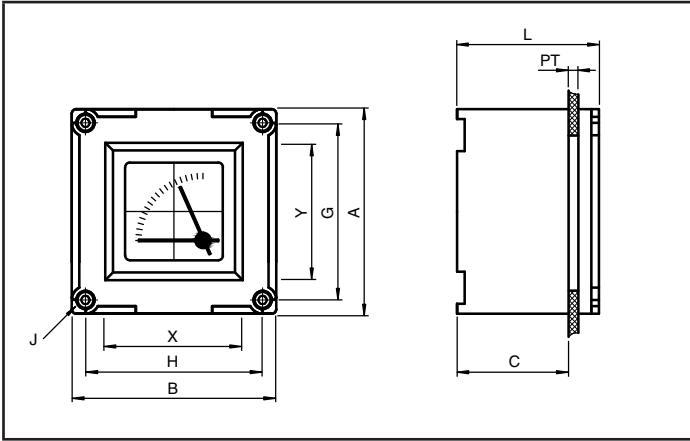
Ammeter Modules - Technical Data	
Electrical specifications	
Operating voltage	500 V AC
Operating current	5 A max.
Accuracy class	1.5
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Mechanical specifications	
Degree of protection	IP66
Mounting	Meter window mounting kit
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-40 ... 95 °C (-40 ... 203 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	Ex II 2 G Ex e IIC Gb
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity and instructions have to be observed where applicable.

Meter Window Mounting Kits		
Type	Window including	Enclosure type
CFP.WB	base mounting kit	L*, GR.CS*
CFP.WL	cover mounting kit	FXL*.CS, SR.CS*

Voltmeters

Voltmeter Modules		
Type	Rated operating voltage	Image
CFP.V6	0 ... 10 V	
CFP.V1	0 ... 25 V	
CFP.V2	0 ... 40 V	
CFP.V7	0 ... 50 V	
CFP.V8	0 ... 100 V	
CFP.V9	0 ... 120 V	
CFP.V3	0 ... 150 V	
CFP.V4	0 ... 250 V	
CFP.V5	0 ... 500 V	

Voltmeter Scales
included in module



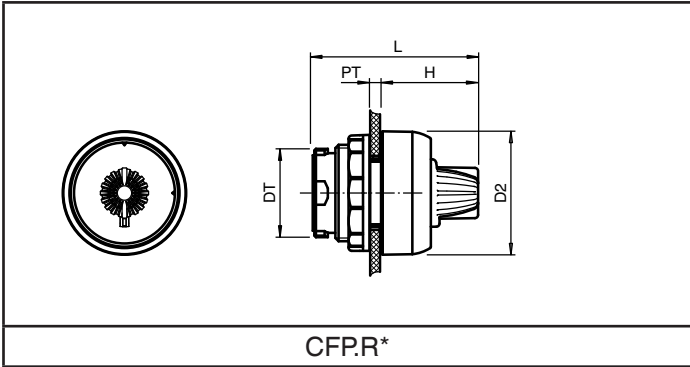
Voltmeter Modules - Dimensions											
External dimension [mm]				Viewing window [mm]		Panel wall thickness [mm]	Mounting holes [mm]			Mass [g]	Enclosure type
A	B	C	L	X	Y	PT	G	H	Diam. J		
70	70	59	75	54	50	1 ... 6	63	63	3.5	186	LC*, LR* FXL*.CS, SR.CS* GR.CS*

Voltmeter Modules - Technical Data	
Electrical specifications	
Operating voltage	500 V AC
Accuracy class	1.5
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Mechanical specifications	
Degree of protection	IP66
Mounting	Meter window mounting kit
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-40 ... 95 °C (-40 ... 203 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	Ex II 2 G Ex e IIC Gb
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Meter Window Mounting Kits		
Type	Window including	Enclosure type
CFP.WB	base mounting kit	L*, GR.CS*
CFP.WL	cover mounting kit	FXL*.CS, SR. CS*

Potentiometers

Potentiometer Actuator Heads			
Type	Enclosure type	Labeling	Image
CFP.R2	GR.CS*	0 ... 10	

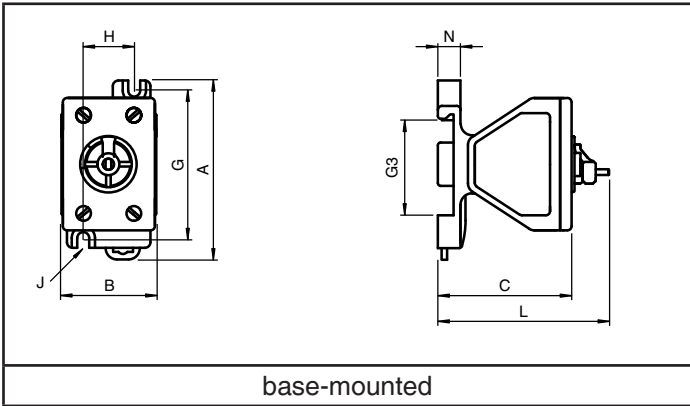


Actuator Heads - Technical Data	
Mechanical specifications	
Degree of protection	IP66
Material	
Housing	Polyamide (PA)
Finish	inherent color black
Washer gasket	silicone
Ambient conditions	
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F)
Service temperature	-40 ... 65 °C (-40 ... 149 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 GD Ex e IIC Gb Ex tb IIIC Db
International approvals	
IECEX approval	IECEX CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0102
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Potentiometer Actuator Heads - Dimensions						
Actuator head diameter [mm]	Panel wall thickness [mm]	Diameter thru-hole [mm]	Length outside enclosure [mm]	Total length [mm]	Mass [g]	Mounting
D2	PT	DT	H	L		
39	1 ... 6	30.6	30.5	50.5	27	use with base-mounted and cover-mounted potentiometer modules

Potentiometers

Potentiometer Modules			
Type	Mounting	Range [kΩ]	Image
CFP.3	base-mounted	0 ... 0.5	
CFP.1	base-mounted	0 ... 1	
CFP.2	base-mounted	0 ... 2	
CFP.5	base-mounted	0 ... 5	
CFP.0	base-mounted	0 ... 10	



Potentiometer Modules - Technical Data	
Electrical specifications	
Operating voltage	200 V max.
Power consumption	0.1 W max.
Terminal capacity	2.5 mm ²
Terminal torque	0.8 Nm
Mechanical specifications	
Degree of protection	IP20
Material	
Housing	Polyamide (PA)
Ambient conditions	
Service temperature	-55 ... 90 °C (-67 ... 194 °F)
Data for application in connection with hazardous areas	
EU-Type Examination Certificate	CML 16 ATEX 3339U
Marking	 II 2 G Ex de IIC Gb
International approvals	
IECEx approval	IECEx CML 16.0114U
Conformity	
Degree of protection	EN 60529
CE marking	0575
General information	
Supplementary information	EC-Type Examination Certificate, Statement of Conformity, Declaration of Conformity, Attestation of Conformity and instructions have to be observed where applicable.

Potentiometer Modules - Dimensions											
Mounting	External dimension [mm]				Mounting holes [mm]			Mounting brackets [mm]	DIN rail receptacle [mm]	Mass [g]	Enclosure type
	A	B	C	L	G	H	Diam. J	N	G3		
base-mounted	63	34	50	60	52	18	4.2	8	35.6	69	GR.CS* SR.CS*

Operating Elements Accessories

Accessory		
Type	Description	Image
CFP.BK	Blanking plug	
CFP.ZT	Extra small label holder with printed label as per specification	
CFP.ZS	Small label holder with printed label as per specification	
CFP.ZL	Large label holder with printed label as per specification	
CFP.ZEB	Emergency stop label, yellow, round	
CFP.ZEB.V2	Emergency stop label, yellow, round, engraved NOT HALT EMERGENCY STOP	
CFP.TP	Locknut spanner, plastic	

Accessory		
Type	Description	Image
CFP.ZB CFP.ZBR (1) (8)	Protective flap for small actuators, plastic, padlockable	
CFP.ZJ CFP.ZJR (1) (8)	Protective pushbutton flap with continuous operation, plastic, padlockable	
CFP.ZH (3)	Protective flap for double pushbutton, stainless steel, padlockable	
CFP.ZA CFP.ZAR (4) (8) (9)	Protective flap, plastic	
CFP.ZP CFP.ZPR (5) (8)	Emergency stop shroud, plastic, padlockable, supplied with padlock and 2 keys	
CFP.ZDT (6) (9)	Protective flap, stainless steel	
CFP.ZCT (7)	Protective flap, stainless steel, padlockable	

- (1) CFP.ZB* are designed for use with CFP.P* pushbuttons, CFI.I* illuminated pushbuttons, CFP.N* small switches, CFP.R* potentiometer actuators
- (2) CFP.ZJ* are designed for use with CFP.P* pushbuttons
- (3) CFP.ZH is designed for use with CFP.D* double pushbuttons
- (4) CFP.ZA* are designed for use with CFP.S* large switches, CFP.E* emergency stops
- (5) CFP.ZP* are designed for use with CFP.E4 emergency stop buttons, the shroud can either be used without the bar to avoid accidental operation or with the bar to padlock in the operated position
- (6) CFP.ZDT is designed for use with both CFP.E4 and CFP.E5 emergency stop buttons
- (7) CFP.ZCT is designed for use with both CFP.E4 and CFP.E5 emergency stop buttons. The shroud is used to padlock the emergency stop in the operated position and when not in use, the flap should be left open
- (8) Accessories that have two options, use a R at the end of the typecode for use with rail mounted contact blocks and those without R are used for cover mounted contact blocks only
- (9) Shrouds and flaps potentially prevent free and unimpaired access to an emergency stop button. These products may therefore only be used in applications where their use has been assessed and not found to cause unacceptable risk to health and safety of persons or damage to the protected machinery.

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