

Command and signalling devices - CLICFIX

PRODUCT INFORMATION



SCHMERSAL

Safe solutions for your industry

Introduction



Heinz and Philip Schmersal, managing directors of the Schmersal Group and
Michael Mandel, managing director of K.A. Schmersal GmbH & Co. KG

Safety in system – Protection for man and machine

Often, it is unavoidable that people have to intervene with the workings of a machine. When this is done the safety of the operator is imperative. This demands the responsibility of the machine operator, which is also required by the world's standards and guidelines for machine safety.

The Schmersal Group has concentrated for many years on safety at work with our products and solutions; today we can offer the industry the world's largest range of safety switchgear and systems for the protection of man and machine.

Under the guiding principle "Safety with system – protection for man and machine" we develop and produce products that carry the system concept and can be optimally integrated into the work processes. Because we are convinced that safety does not contradict higher productivity.

In our fields of activity we have a leading position due to our expertise, our innovative power and our comprehensive range of products. With this we follow a central theme: Together with you, we want to make the world a little safer. Talk to us – we look forward to working with you.

Heinz Schmersal

Philip Schmersal

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Wuppertal



K.A. Schmersal GmbH & Co. KG

- Founded in 1945
- ARound 600 employees

Focal points

- Headquarters of the Schmersal Group
- Development and manufacture of switchgears and switching systems for safety, automation and lift engineering
- Accredited test laboratory
- Central research and development
- Logistics centre for European markets

Wettenberg



K.A. Schmersal GmbH & Co. KG

- Founded in 1952 (1997)
- ARound 150 employees

Focal points

- Development and manufacture of switchgears for operation and monitoring, safety-related relay modules and controls as well as switchgears for explosion protection

Mühldorf / Inn



Safety Control GmbH

- Founded in 1994 (2008)
- ARound 30 employees

Focal points

- Development and manufacture of optical electronic components for safety and automation engineering

Bergisch Gladbach



Böhnke + Partner Steuerungssysteme GmbH

- Founded in 1991 (2012)
- ARound 70 employees

Focal points

- Development and manufacture of components, controls and remote diagnostic systems for the lift industry

() = entry of Schmersal Group

Boituva / Brasil



ACE Schmersal

- Founded in 1974
- ARound 350 employees

Focal points

- Manufacture of eletromechanical and electronic switchgears
- Customer-specific control systems for the North and South American market

Xangai / China



Schmersal Industrial Switchgear Co. Ltd

- Founded in 1999
- ARound 165 employees

Focal points

- Development and manufacture of switchgears for safety, automation and lift engineering in the Asian market

Ranjangaon / Índia



Schmersal India Private Limited

- Founded in 2013
- ARound 45 employees

Focal points

- Development and manufacture of switchgears for safety, automation and lift engineering for the Indian market

Command and signalling devices

CLICFIX

CLICFIX Range

The push buttons and the pilot lights are part of the panel design. Schmersal has developed a system to incorporate the design of the buttons/lights with the modern machines.

Through study and analysis we developed a new concept in design where we can utilize maximum adaptation of the equipment (aesthetics and ergonomics).

Technical advantages

The features of the CLICFIX is not only due to its design. Additionally there are a range of constructive and functional benefits, some ergonomic, some functional, which highlight and emphasize the exclusiveness of the design.

Included here for example is an installation depth of less than 40 mm behind the front plate, a push button stroke of only 3.5 mm, also a flexible and installation friendly element system.

With the CLICFIX program, all commercially available device types are offered with the design of a modern command and signalling device program, which includes illuminated selector switches and switches in different colours. The devices comply with all relevant norms and reach the protection class IP65.

Command and signalling devices - CLICFIX

EMERGENCY STOP control devices

Design and operating principle

Push button with patented shape (DE 197 30 680 C 1)

The special form of the button and in connection with an actuating stroke of only 3.5 mm and a lower actuating force in comparison to many other devices, allow an ergonomic and tireless actuation of the push buttons, illuminated push buttons and similar. Also long finger nails are not a problem or better still are protected (keyword: "fingernail safe").

Time saving device installation

The installation of the device requires an installation height of only 22.3 mm using coupling nuts and snap-contact elements and a minimum of time.

Modular element system

Equipping: Up to a maximum of 5 contacts, with illuminated devices up to a maximum of 4 contact elements and with EMERGENCY STOP devices up to a maximum of 3 contact elements using the safety plate to secure the contacts. Both NC and NO contact elements are available with screw clamps.

Low installation depth

Installation compatibility even with limited space behind the front plate. Installation depth with a maximum of three elements: < 40mm. Can be installed in many commercially available command boxes (recommended overall depth: minimum 57 mm).

Command and signalling devices - CLICFIX

EMERGENCY STOP control devices



Key features

■ CLE2 40

General description	EMERGENCY STOP command device
Area of application	Industrial applications
Mounting-Ø	22.3 mm
Housing material	
Material of operating element	Thermoplastic
Material front ring	Thermoplastic

Other versions are available

Mounted in housing	BC 331 CX ABS 80x82x55 MONT
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Technical features

Mechanical data	
Colour	
Design	Round
Front panel thickness	1... 6 mm
Unlocking type	Pull-to-unlatch mechanism
Snap-action mechanism	
Integrated	
Externally via additional module	-
Mounting	
Connection	Knurled nut, central mounting
Mounting position	Any
Ambient conditions	
Ambient temperatures	-25 °C... +60 °C
IP Protection class	IP65

Command and signalling devices - CLICFIX

EMERGENCY STOP control devices

Safety classification

Standards	EN ISO 13850
B _{10d} (NC contact)	100,000 operations
Certificates	
Note	cULus in conjunction with the corresponding contact elements only

Type	Unlocking	Snap-action mechanism	A	B	C	Type designation	Material number
EMERGENCY-STOP push buttons	Pull-to-unlatch mechanism	Integrated	38	22.3	40	CLE2 40	137001
EMERGENCY-STOP complete housing	Pull-to-unlatch mechanism	Integrated	93	-	40	BC 331 CX ABS 80x82x55 MONT - 2NC/1NO	168228

All dimensions in mm.

Key

A	Height	Height of command device in front of the front panel
B	Mounting-Ø	Installation diameter for the command device head
C	Key Ø	Width of command device head

EMERGENCY STOP complete housing



Command and signalling devices - CLICFIX

Illuminated signal



Key features

■ CLV 2

■ CLVS 2

General description	Flatter indicator light	Higher indicator light
Area of application	Industrial applications	Industrial applications
Mounting-Ø	22.3 mm	22.3 mm
Housing material		
Material of operating element	Thermoplastic	Thermoplastic
Material front ring	Thermoplastic	Thermoplastic

Other versions are available

With symbols	-	-
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Technical features

Mechanical data		
Colour		
Design	Round	Round
Front panel thickness	1... 6 mm	1... 6 mm
Illumination*	■	■
Mounting		
Connection	Knurled nut, central mounting	Knurled nut, central mounting
Mounting position	any	any
Ambient conditions		
Ambient temperatures	-25 °C... +60 °C	-25 °C... +60 °C
IP Protection class	IP65	IP65

Command and signalling devices - CLICFIX

Illuminated signal

Safety classification

Standards	IEC 60947-5-1; IEC 60947-1	IEC 60947-5-1; IEC 60947-1
B _{10d} (NC contact)	-	-
Certificates		
Note	cULus in conjunction with the corresponding contact elements only	cULus in conjunction with the corresponding contact elements only

Type	Unlocking	Snap-action mechanism	A	B	C	Type designation	Material number
Illuminated signal	Without integrated illuminant	Flat collar	10.3	22.3	29	CLV 2/10	13701510
			10.3	22.3	29	CLV 2/13	13701513
			10.3	22.3	29	CLV 2/14	13701514
			10.3	22.3	29	CLV 2/15	13701515
			10.3	22.3	29	CLV 2/16	13701516
		High collar	13.8	22.3	29	CLVS 2/10	13701410
			13.8	22.3	29	CLVS 2/13	13701413
			13.8	22.3	29	CLVS 2/14	13701414
			13.8	22.3	29	CLVS 2/15	13701415
			13.8	22.3	29	CLVS 2/16	13701416

Abbreviations of colours: ■ 13 ■ 14 ■ 15 ■ 10 ■ 16

You append the abbreviations of the colours to the type designation.

For details of possible colour combinations, refer to the technical data on the previous page.

All dimensions in mm.

Key

A	Height	Height of command device in front of the front panel
B	Mounting-Ø	Installation diameter for the command device head
C	Key Ø	Width of command device head

Command and signalling devices - CLICFIX

Pushbuttons and illuminated pushbuttons



Key features

	■ CLB2	■ CLBD	■ CLBS2
General description	Pushbutton	Double pushbutton	Illuminated pushbutton
Area of application	Industrial applications	Industrial applications	Industrial applications
Mounting-Ø	22.3 mm	22.3 mm	22.3 mm
Housing material			
Material of operating element	Thermoplastic	Thermoplastic	Thermoplastic
Material front ring	Thermoplastic	Thermoplastic	Thermoplastic

Other versions are available

With high edge	On request	-	On request
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Technical features

Mechanical data			
Colour			
Design	Round	Round	Round
Front panel thickness	1... 6 mm	1... 6 mm	1... 6 mm
Illumination*	-	optionally in the middle	
Mounting			
Connection	Knurled nut, central mounting	Knurled nut, central mounting	Knurled nut, central mounting
Mounting position	Any	Any	Any
Ambient conditions			
Ambient temperatures	-25 °C... +60 °C	-25 °C... +60 °C	-25 °C... +60 °C
IP Protection class	IP65	IP65	IP65

Safety classification

Standards	IEC 60947-5-1; IEC 60947-1	IEC 60947-5-1; IEC 60947-1	IEC 60947-5-1; IEC 60947-1
Mechanical life	5,000,000 operations	5,000,000 operations	5,000,000 operations
Certificates			
Note	cULus in conjunction with the corresponding contact elements only		

Command and signalling devices - CLICFIX

Pushbuttons and illuminated pushbuttons

Type	Unlocking	Snap-action mechanism	A	B	C	Type designation	Material number
Pushbutton	Standard	Standard	10.3	22.3	29	CLB2/01	1370120140
			10.3	22.3	29	CLB2/02	1370120240
			10.3	22.3	29	CLB2/03	1370120340
			10.3	22.3	29	CLB2/04	1370120440
			10.3	22.3	29	CLB2/05	1370120540
			10.3	22.3	29	CLB2/06	1370120640
		With high button	13.3	22.3	29	CLBS2/01	1370170140
			13.3	22.3	29	CLBS2/02	1370170240
			13.3	22.3	29	CLBS2/03	1370170340
			13.3	22.3	29	CLBS2/04	1370170440
			13.3	22.3	29	CLBS2/05	1370170540
			13.3	22.3	29	CLBS2/06	1370170640
Illuminated pushbutton	Standard	Standard	10.3	22.3	29	CLB2/10	13701210
			10.3	22.3	29	CLB2/13	13701213
			10.3	22.3	29	CLB2/14	13701214
			10.3	22.3	29	CLB2/15	13701215
			10.3	22.3	29	CLB2/16	13701216
		With high button	13.3	22.3	29	CLBS2/10	13701710
			13.3	22.3	29	CLBS2/13	13701713
			13.3	22.3	29	CLBS2/14	13701714
			13.3	22.3	29	CLBS2/15	13701715
			13.3	22.3	29	CLBS2/16	13701716
Double pushbutton	2 button surfaces	Without illumination	10.3	22.3	29 x 57	CLBD 01 03/05	13711801
		With illumination	13.3	22.3	29 x 57	CLBD 10 03/05	13711810
			13.3	22.3	29 x 57	CLBD 14 03/05	13711814

Abbreviations of colours for pushbutton:  01  03  04  05  02  06

Abbreviations of colours for illuminated pushbutton:  13  14  15  10  16

You append the abbreviations of the colours to the type designation.

For details of possible colour combinations, refer to the technical data on the previous page.

All dimensions in mm.

Key

A	Height	Height of command device in front of the front panel
B	Mounting-Ø	Installation diameter for the command device head
C	Key Ø	Width of command device head

Command and signalling devices - CLICFIX

Mushroom head impact button



Key features

■ CLC2-36

■ CLC2-55

General description	Mushroom button without latching function	Mushroom button without latching function
General description	-	Actuating force 7 N
Area of application	Industrial applications	Industrial applications
Mounting-Ø	22.3 mm	22.3 mm
Housing material		
Material of operating element	Thermoplastic	Thermoplastic
Material front ring	Thermoplastic	Thermoplastic

Other versions are available

With symbols	■	■
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Technical features

Mechanical data		
Colour	■ ■ ■ ■ ■ ■	■
Design	Round	Round
Front panel thickness	1... 6 mm	1... 6 mm
With latching	-	-
Mounting		
Connection	Knurled nut, central mounting	Knurled nut, central mounting
Mounting position	any	any
Ambient conditions		
Ambient temperatures	-25 °C... +60 °C	-25 °C... +60 °C
IP Protection class	IP65	IP65

Command and signalling devices - CLICFIX

Mushroom head impact button

Safety classification

Standards	IEC 60947-5-1; IEC 60947-1	IEC 60947-5-1; IEC 60947-1
B _{10d} (NC contact)	-	-
Certificates		
Note	cULus in conjunction with the corresponding contact elements only	

Type	Unlocking	Snap-action mechanism	A	B	C	Type designation	Material number
Mushroom button without latching function	Palm form	approx. 9 N	31.3	22.3	33	CLC2 33/01	13701301
			31.3	22.3	33	CLC2 33/03	13701303
			31.3	22.3	33	CLC2 33/05	13701305
	Flatter wider mushroom	7N	36	22.3	55	CLC2 55/01	13702801

Abbreviations of colours for pushbutton: 01 03 05

You append the abbreviations of the colours to the type designation.

For details of possible colour combinations, refer to the technical data on the previous page.

All dimensions in mm.

Key

A	Height	Height of command device in front of the front panel
B	Mounting-Ø	Installation diameter for the command device head
C	Key Ø	Width of command device head

Command and signalling devices - CLICFIX

Selector switch / button



Key features

■ CLA2 / CLAA2 / CLK2 / CLKK2

■ CLA2 / CLAA2

General description	Selector switch / button	Illuminated selector switch / button
Area of application	Industrial applications	Industrial applications
Mounting-Ø	22.3 mm	22.3 mm
Housing material		
Material of operating element	Thermoplastic	Thermoplastic
Material front ring	Thermoplastic	Thermoplastic

Other versions are available

With long toggles	■	-
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Technical features

Mechanical data		
Colour	■ ■ ■ ■ ■ ■	■ ■ ■ ■ ■ ■
Design	Round	Round
Front panel thickness	1... 6 mm	1... 6 mm
Illumination*	-	■
Maintained switching positions	2... 3 positions	2... 3 positions
Mounting		
Connection	Knurled nut, central mounting	Knurled nut, central mounting
Mounting position	Any	Any
Ambient conditions		
Ambient temperatures	-25 °C ... +60 °C	-25 °C ... +60 °C
IP Protection class	IP65	IP65

Safety classification

Standards	IEC 60947-5-1; IEC 60947-1	IEC 60947-5-1; IEC 60947-1
Mechanical life	100,000 operations	100,000 operations
Certificates		
Note	cULus in conjunction with the corresponding contact elements only	

Command and signalling devices - CLICFIX

Selector switch / button

Type	Maintained and momentary positions	Switching angle	Actuator	A	B	C	Type designation	Material number
Selector switch	2 maintained positions		Short toggle / Illuminated short toggle	25.8	22.3	29	CLA2 45R/**	137002**
			Long toggle	25.8	22.3	40	CLK2 45R/**	137008**
	3 maintained positions		Short toggle / Illuminated short toggle	25.8	22.3	29	CLAA2 45R/**	137005**
			Long toggle	25.8	22.3	40	CLKK2 45R/**	137011**
Illuminated selector switch	2 maintained positions		Short toggle / Illuminated short toggle	25.8	22.3	29	CLA2 45/**	137003**
			Long toggle	25.8	22.3	40	CLK2 45/**	137009**
	3 maintained positions		Short toggle / Illuminated short toggle	25.8	22.3	29	CLAA2 45/**	137004**
			Long toggle	25.8	22.3	40	CLKK2 45/**	137010**

**** Abbreviations of colours for Selector switch:**  01  03  04  05  02  06

**** Abbreviations of colours for Illuminated selector switch:**  13  14  15  10  16

You append the abbreviations of the colours to the type designation.

For details of possible colour combinations, refer to the technical data on the previous page.

Key

A	Height	Height of command device in front of the front panel
B	Mounting-Ø	Installation diameter for the command device head
C	Key Ø	Width of command device head

Command and signalling devices - CLICFIX

Key-operated selector switch



Key features

■ CLYP / CLYYP

General description	Key-operated selector switch
Area of application	Industrial applications
Mounting-Ø	22.3 mm
Housing material	
Material of operating element	Thermoplastic
Material front ring	Thermoplastic

Other versions are available

Other closure possibilities	On request
Other removal positions	On request

Technical features

Mechanical data	■
Colour	
Design	Round
Front panel thickness	1... 6 mm
Maintained switching positions	2... 3 positions
Mounting	
Connection	Knurled nut, central mounting
Mounting position	Any
Ambient conditions	
Ambient temperatures	-25 °C ... +60 °C
IP Protection class	IP65

Safety classification

Standards	EN ISO 13850
Mechanical life	100,000 operations
Certificates	
Note	cULus in conjunction with the corresponding contact elements only

Command and signalling devices - CLICFIX

Key-operated selector switch

Type	Maintained and momentary positions	Switching angle	Key-withdrawal position	A	B	C	Type designation	Material number
Key-operated selector switch	2 maintained positions		O	50	22.3	29	CLYP2 45R RTC	1370533115
			O + I	50	22.3	29	CLYP2 45R	137006
	3 maintained positions		I + O + II	50	22.3	29	CLYYP2 45R	137007

All dimensions in mm.

Key

A	Height	Height of command device in front of the front panel
B	Mounting-Ø	Installation diameter for the command device head
C	Key Ø	Width of command device head

Command and signalling devices - CLICFIX

Contact and lighting elements

Area of application

The command and signalling devices from the CLICFIX range are specially designed for the needs of industrial applications. Quick efficient installation of the device with a knurled nut.

No further mounting flange or contact bracket is required. These are directly integrated on the command device so that the contact elements are simply pushed on the command device and click into position. Also the contact elements are easy to install with a screwdriver or to remove with the removing tool. This reduces expensive installation time to a minimum.

Design and way of functioning

The contact element of the type CLP is specially designed for time-saving device installation through the recessed guide rails, which allows them to be connected directly to the command device without a contact bracket or similar item.

As mounting or installation flanges are no longer required a very low installation depth of less than 40 mm is sufficient (emergency stop 47 mm).

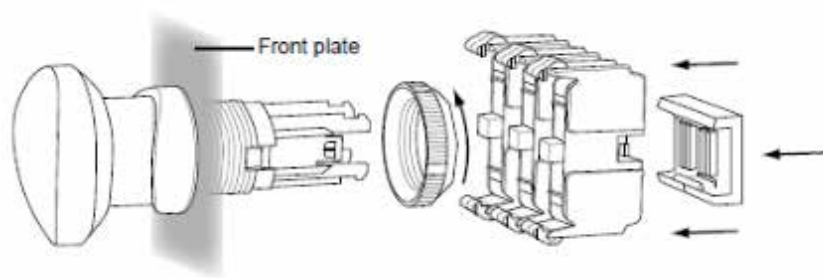
Also the CLP contact system is a modular contact system, that due to the doubling of the contacts can accept up to 5 contact elements (different with emergency stop). This offers the machine and plant manufacturer the possibility to decide how many NO or NC contacts are to be used and installed. This modular contact system also contributes to a reduction in costs.

EMERGENCY STOP command devices can accept up to 3 contact elements. These are secured against popping off with an additional safety plate.

Command and signalling devices - CLICFIX

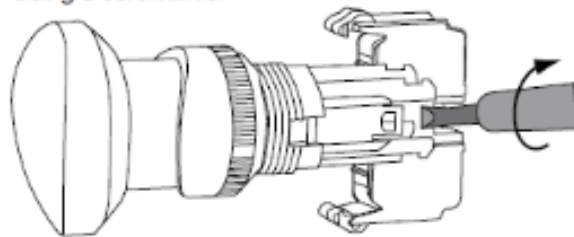
Contact and lighting elements

Timesaving, easy to install

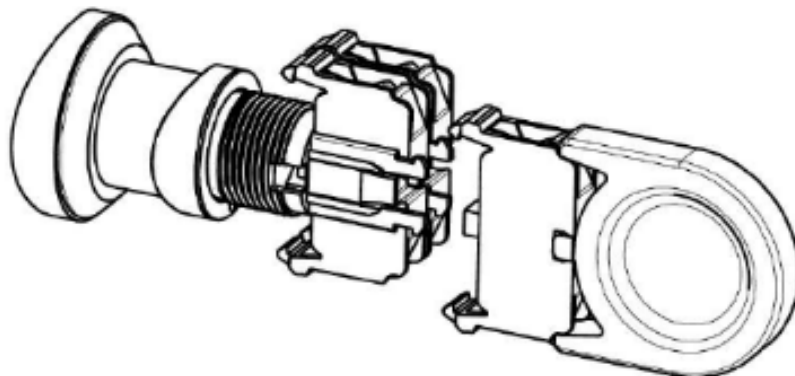


Disassembly

Using a screwdriver



without any removal tools



Command and signalling devices - CLICFIX

Contact and lighting elements



Key Features

■ CLP110 / CLP101

■ CLP001

General description	Contact elements	Light terminal block
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Technical features

Design	CLP101 / CLP 110	CLP001
Material		
Material of the enclosure	Plastic, self-extinguishing	Plastic, self-extinguishing
Material of the contacts	Fine-silver, phosphor bronze or brass carrier	-
Utilisation category AC-15; DC-13	250 V / 6 A; 24 V / 3 A	-
Rated insulation voltage U_i	400 V	-
Rated impulse withstand voltage U_{imp}	2.5 kV	-
Thermal test current I_{the}	6A	-
Max. fuse rating	gG 6 A	Appropriate to the respective version
Switching frequency	1200 s/h	-
Mechanical life	5,000,000 operations	-
Resistance to shock	30 g / 18 ms	30 g / 18 ms (Note lamp value!)
Resistance to vibration	20 g / 10 ... 150 Hz	-
Ambient temperature	-25 °C ... +60 °C	-25 °C ... +40 °C
Connection		
Screw terminals	■	■
Cable section		
Solid / stranded wire	2 x 1.5 mm ²	2 x 1.5 mm ²
Protection class terminals/switch rooms	IP20 / IP40	IP20 / IP40

Command and signalling devices - CLICFIX

Contact and lighting elements

Safety classification

Standards	IEC 60947-5-1; IEC 60947-1	IEC 60947-5-1; IEC 60947-1
B _{10d}	100,000 operations	-
Certificates		

Type	Application	Function	Position	Connection	Plunger colour	Contact labelling	Type designation	Material number
Contact element	Standard and emergency stop	1 NC	1, 2 and 3	Screw terminals	red	1, 2	CLP101	139007
		1 NO	1, 2 and 3	Screw terminals	green	3, 4	CLP110	139006

Type	Illuminant	Diagram	Position	Connection	Contact labelling	Type designation	Material number
Lighting element	Without*		3	Screw terminals	X1 - X2	CLP001	139009

*The right lamp with the size Ba9S has to be ordered separately.

Command and signalling devices - CLICFIX

Accessories

CLPIN 22	137023	CLZ 422	137018	CLZ 522	137020
 ■ Identification label ■ Aluminium plate with black anodised labelling area ■ Depending on version, 1 to 2 lines can be written		 ■ Blanking plug ■ Plastic ■ For installation diameter 22.3 mm		 ■ Dust shield cap for lamps and push buttons	
CLZ 123	137019	Z224/60 EMERGENCY	120285	CLS 100	296208
 ■ Installation tool for knurled nut		 ■ EMERGENCY STOP Sign ■ Plastic		 ■ Removal tool for contact elements	
S1LS191743					
 ■ For Ba9S socket ■ 24VAC/DC					

Up-to-date without fail.
The online product catalogue



For detailed information, check out
www.schmersal.net

Sede

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Schmersal group

Schmersal corporate group is engaged for a long time with the pursuit of safety solutions in productive process. With the most varied products, command modules of mechanical actuation and without contact, the greater line of the world in systems and solutions of commutation and safety was created to protect man and machine. Over 1,500 employees in more than 50 countries worldwide work together with our customers for developing innovative solutions and, thus, make the world safer.

Motivated by the vision of a safe work environment, Schmersal group engineers are constantly working for the development of new devices and systems for each imaginable application and requirement of different industries. New safety concepts require new solutions and it is required to integrate new principles of detection and find out new ways for transmitting and evaluating the information provided for this principles. In addition, the increasingly complex standards, rules and directives set related to machine safety also require a change of thinking by the machine manufacturers and users. These are the challenges that Schmersal Group, in partnership with the machine manufacturers, are facing and will continue to face in the future.

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- Equipment safety
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The information and specifications detailed above have been carefully verified. Technical changes reserved, subject to ambiguity.

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