

Compact Load Break Switches

16A to 125A



SCHMERSAL

Safe solutions for your industry

Foreword



Qualified Eng. Heinz Schmersal and Ind. Qualified Eng. Philip Schmersal
Partner-managers of K.A. Schmersal GmbH & Co. KG

How does one present a portfolio of more than 25,000 different products and services to a new customer or interested engineer?

It's a challenge for our sales consultants when they present our company, products and services.

The purpose of this catalog is provide an overview of what we have to offer. We present the company and each product group, with which, we have been developing increasingly comprehensive solutions in safety in equipment in the recent years. One area that is increasingly more important is that of the qualified services we offer, with which we follow the same central goal as with our products and solutions: working with the customer to develop innovative solutions in safety, thereby making the world a safe place.

A handwritten signature in black ink, appearing to read 'Heinz Schmersal'.

Heinz Schmersal

A handwritten signature in black ink, appearing to read 'Philip Schmersal'.

Philip Schmersal

Schmersal Group the world over

Installations in Germany

Wuppertal



K.A. Schmersal GmbH & Co. KG

- Established: 1945
- Employees: approx. 600

Highlights

- Schmersal Group central headquarters
- Development and manufacture of switching devices and systems for safety, automation, and elevator technology
- Licensed testing laboratory
- Pre-development and research center
- Logistics center of European markets

Wettenberg



K.A. Schmersal GmbH & Co. KG

- Established: 1952 (1997)
- Employees: approx. 150

Highlights

- Development and manufacture of devices for operating and monitoring safety and command relay modules, as well as devices for protecting against explosion

Mühl Dorf / Inn



Safety Control GmbH

- Established: 1994 (2008)
- Employees: approx. 30

Highlights

- Development and manufacture of optoelectronic components for safety and automation

Bergisch Gladbach



Böhnke + Partner Steuerungssysteme GmbH

- Established: 1991 (2012)
- Employees: approx. 70

Highlights

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

() = entry into the Schmersal Group

International installations

Boituva / Brasil



ACE Schmersal

- Established: 1968 (1974)
- Employees: approx. 350

Highlights

- Development and manufacture of devices for safety, automation, and elevator technology
- Control systems for the South and North American markets

Shanghai / China



Schmersal Industrial Switchgear Co. Ltd

- Established: 1999
- Employees: approx. 150

Highlights

- Development and manufacture of devices for safety, automation, and elevator technology in the Asian market

Ranjangaonn / India



Schmersal India Private Limited

- Established: 2013
- Employees: approx. 30

Highlights

- Development and manufacture of devices for safety, automation, and elevator technology in the Indian market



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Load Break Switches



Switch Technology

Compact Load Break Switches are developed in accordance with current standards and NR12 requirements, and in compliance with international IEC regulations 60947-1 and 3. The manufacture and design make these switches compact, safe, and highly reliable, reducing the maintenance frequency. Using modern manufacturing techniques, these switches are made of polyamide, so they have excellent tensile strength and insulation in order to prevent arcing between phases. Moreover, they withstand short-circuit currents in the most severe conditions.



Features

- Protection against contact with fingers in the energized parts, avoiding electrical shock.
- All contacts are double self-cleaning, ensuring safer activations.
- Option of mounting on the DIN track, with easy installation.
- Different assembly options for a wide array of applications.
- Compact – little space is required for their installation.
- Option of adding auxiliary contacts onto both sides of the switch – ideal for more complex systems.



Areas of Applications

- Circuit isolator.
- On/off Switches.
- Main Switch.
- Control Switch.
- Switch for system selectivity.
- Ideal for chemical, food, cement, and other industries.



Enclosed Switches

The structure of the enclosed switches consists of durable materials designed to withstand various applications, mainly in industrial environments. These switches meet all the requirements in terms of safety, ease of installation and operation, as well as the ability to save space. These switches guarantee the absolute safety of the operator, since they can withstand short-circuits. Boxes with base fastening switches can only be opened with the switch in the OFF position, with the option of locking the mechanism with up to 3 locks, eliminating possible closing of the circuit in the event of local maintenance.



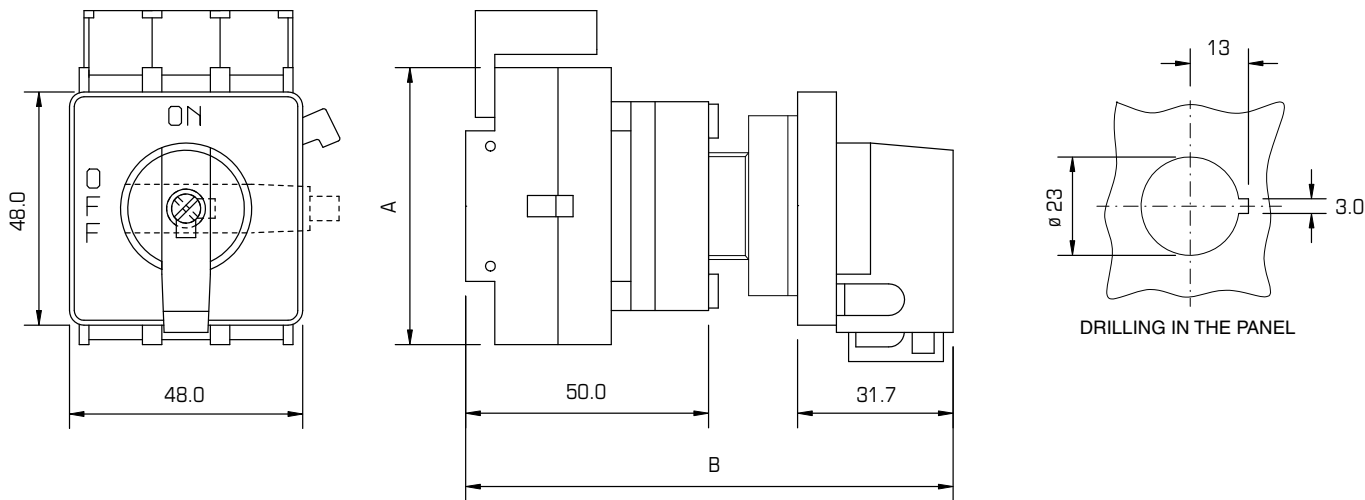
B19 – Front Mounting Ø 22 mm



COMPACT LOAD BREAK SWITCHES			
Code	Description	Current (A)	Poles
162048	LB 120 B19 YR TOP	20	3
162051	LB 225 B19 YR TOP	25	3
162052	LB 263 B19 YR TOP	63	3

- Only one Ø 22.5mm, single hole panel mounting.
- Protection Class: Front IP 55.
- Knob with space for lock, to avoid that it be turned on by unauthorized persons.
- Max. 1 padlock.
- Up to 2 auxiliary contact modules may be attached.
- Front plate – ON/OFF engraved.

16A – 63A



Current (A)	A	B
20A	57	100
25-63A	72	110

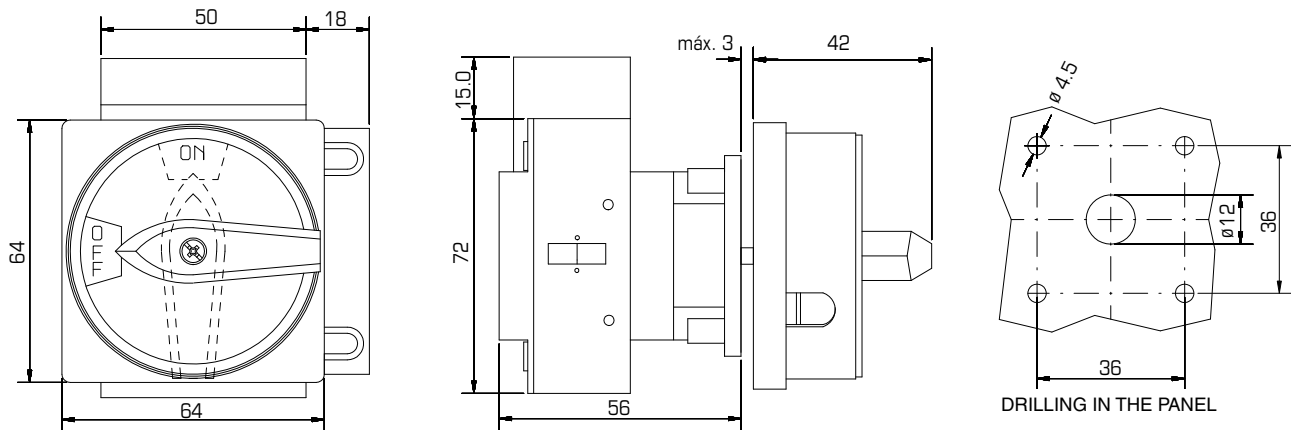
B33 – Front Mouting



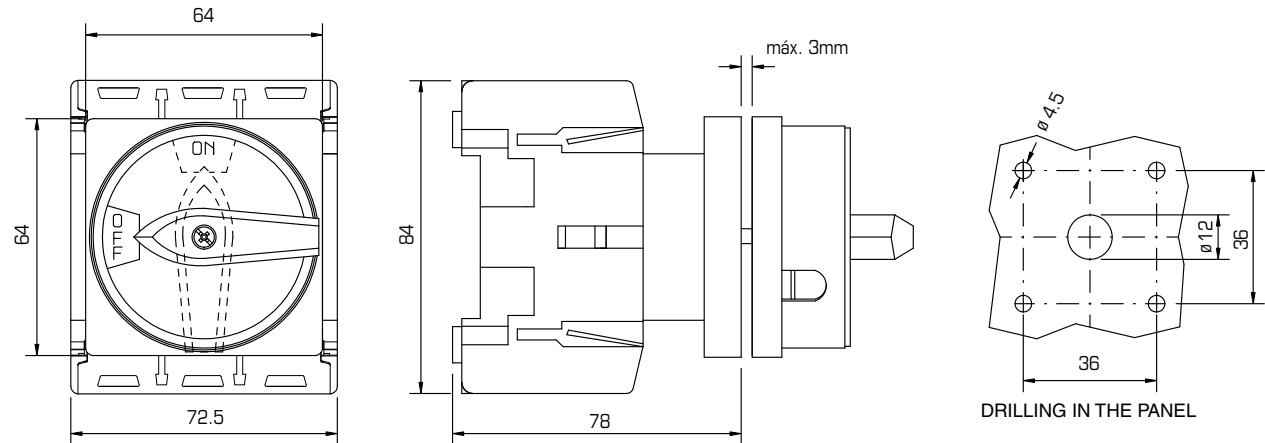
COMPACT LOAD BREAK SWITCHES			
Code	Description	Current (A)	Poles
162001	LB 225 B33 YR TOP	25	3
162003	LB 240 B33 YR TOP	40	3
162005	LB 263 B33 YR TOP	63	3
150061	LB 125 B33 YR TOP	125	3

- 4 holes front panel mouting.
 - Protection Class - IP 65.
 - Front with space for lock, to avoid that it be turned on by unauthorized persons.
- Max. 3 padlocks.
 - Up to 2 auxiliary contact modules may be attached.
 - Front plate – ON/OFF engraved.

25A – 63A



125A

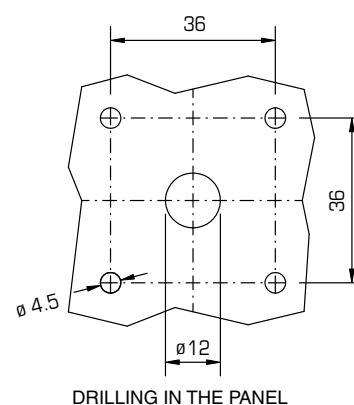
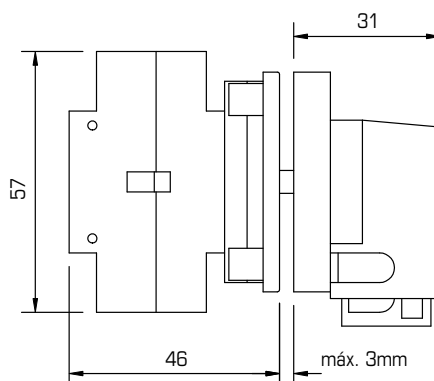
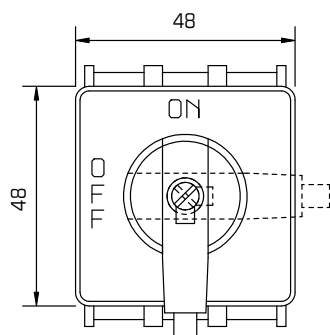


B40 – Front Mounting



COMPACT LOAD BREAK SWITCHES			
Code	Description	Current (A)	Poles
162036	LB 116 B40 YR TOP	16	3
162037	LB 120 B40 YR TOP	20	3

- 4 holes front panel mounting.
- Protection Class: Front IP 55.
- Knob with space for lock, to avoid that it be turned on by unauthorized persons.
- Max. 1 padlock.
- Up to 2 auxiliary contact modules may be attached.
- Front plate – ON/OFF engraved.



NHS – Load Break Switches IP67/IP 69K



COMPACT LOAD BREAK SWITCHES			
Code	Description	Current (A)	Poles
11929005	NHSNH40/O.VA-PL	40	3
119296	NHSNH63/O.VA-PL	63	3

- Product applies mainly to electrical panels, machinery, and equipment in the dairy and frozen food industries, which require constant cleaning with the use of high-pressure jet cleaners.

Features:

- Protection Class: Front IP 67 / IP69K.
- No sharp edges.
- Integrated seal – water jets up to 100bar.
- High resistance to cleaning agents.
- Front Mounting.

Information and technical descriptions available online at:
www.schmersal.net

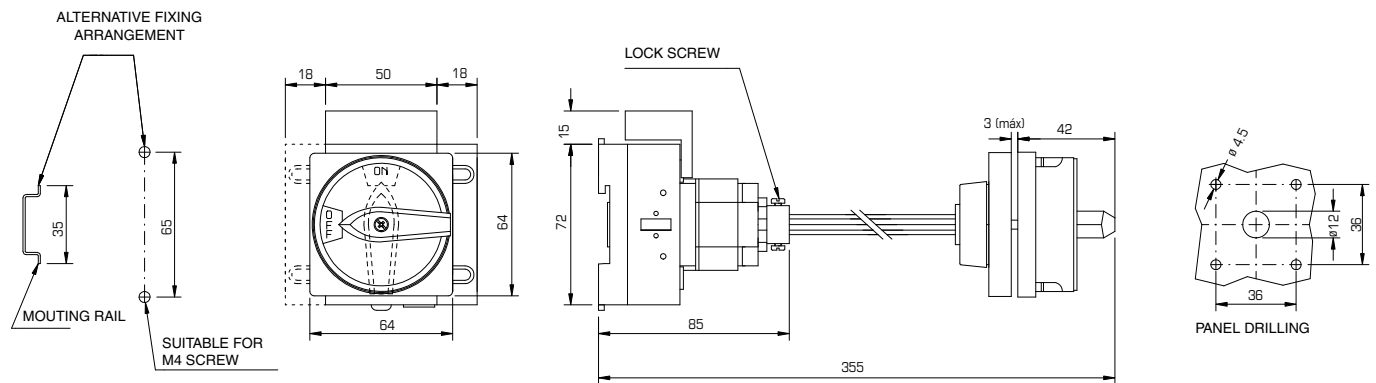
MB34 – Rear Mounting



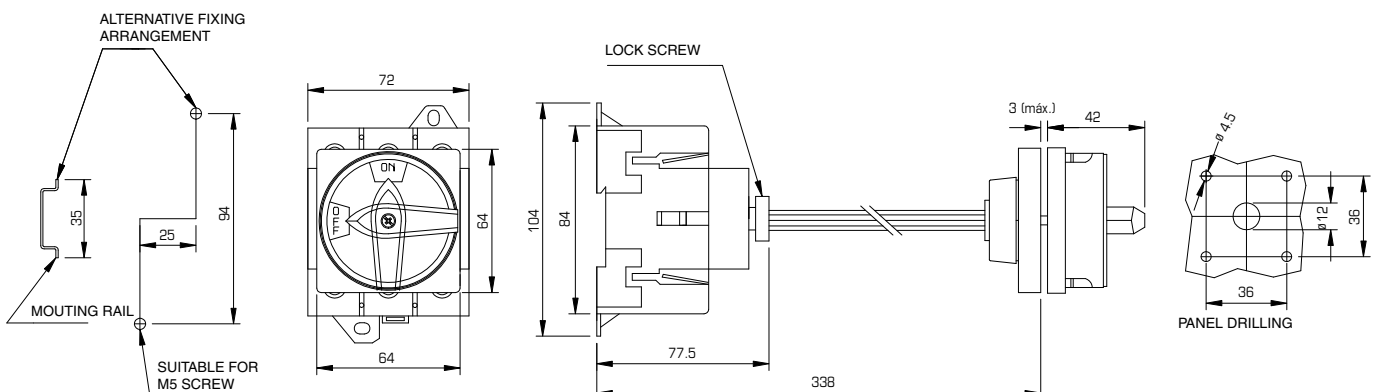
COMPACT LOAD BREAK SWITCHES			
Code	Description	Current (A)	Poles
162002	LB 225 MB34 YR BASE	25	3
162004	LB 240 MB34 YR BASE	40	3
162006	LB 263 MB34 YR BASE	63	3
162007	LB 080 MB34 YR BASE	80	3
162008	LB 100 MB34 YR BASE	100	3
162009	LB 125 MB34 YR BASE	125	3

- Two options for mounting the base – using a DIN track or screws.
- Door lock (will open only in the OFF position).
- Protection Class: IP 65.
- Front with space for lock, to avoid that it be turned on by unauthorized persons.
- Actuator set / Rigid metal extender.
- Max. 3 padlocks.
- Adjustable mounting by cutting the line to the desired length, depending on the height of the panel.
- Up to 2 auxiliary contact modules may be attached.

25A – 63A



80A – 125A



Load Break Switch Mounted in ABS Enclosure

Front Mounting – 16A to 20A



LOAD BREAK SWITCH MOUNTED IN GREY ABS ENCLOSURE				
Code	Description	Enclosure Dimensions W x L x H (mm)	Current (A)	Auxiliary Contact
14402988	LB 116 B40 C/ CX ABS	80x120x85	16	-
14402618	LB 116 B40+FAC20 C/ CX ABS	120x160x90	16	1NO/1NC
14402392	LB 120 B40 C/ CX ABS	80x120x85	20	-
14402337	LB 120 B40+FAC20 C/ CX ABS	120x160x90	20	1NO/1NC

Front Mounting – 25A to 125A

LOAD BREAK SWITCH MOUNTED IN GREY ABS ENCLOSURE				
Code	Description	Enclosure Dimensions W x L x H (mm)	Current (A)	Auxiliary Contact
14402528	LB 225 B33 C/ CX ABS	120x160x90	25	-
14402192	LB 225 B33+FAC32 C/ CX ABS	140x240x100	25	1NO/1NC
14402378	LB 240 B33 C/ CX ABS	140x240x100	40	-
14402193	LB 240 B33+FAC63 C/ CX ABS	140x240x100	40	1NO/1NC
14402090	LB 263 B33 C/ CX ABS	140x240x100	63	-
14402194	LB 263 B33+FAC63 C/ CX ABS	140x240x100	63	1NO/1NC
14402987	LB 125 B33 C/ CX ABS	160x360x100	125	-
14402224	LB 125 B33+FAC 125 C/ CX ABS	160x360x100	125	1NO/1NC

Rear Mounting – 25A to 125



LOAD BREAK SWITCH MOUNTED IN GREY ABS ENCLOSURE				
Code	Description	Enclosure Dimensions W x L x H (mm)	Current (A)	Auxiliary Contact
168530	LB 225 MB34 C/CX ABS	120x160x140	25	-
175090	LB 225 MB34+RAC32 C/CX ABS	140x240x140	25	1NO/1NC
175088	LB 240 MB34 C/CX ABS	140x240x140	40	-
175091	LB 240 MB34+RAC63 C/CX ABS	140x240x140	40	1NO/1NC
175089	LB 263 MB34 C/CX ABS	140x240x140	63	-
175092	LB 263 MB34+RAC63 C/CX ABS	140x240x140	63	1NO/1NC
168944	LB 080 MB34 C/CX ABS	200x360x150	80	-
175148	LB 080 MB34+RAC80 C/CX ABS	200x360x150	80	1NO/1NC
168945	LB 100 MB34 C/CX ABS	200x360x150	100	-
175149	LB 100 MB34+RAC125 C/CX ABS	200x360x150	100	1NO/1NC
168946	LB 125 MB34 C/ CX ABS	200x360x150	125	-
14402740	LB 125 MB34+RAC125 C/CX ABS	200x360x150	125	1NO/1NC

Accessories

Knobs



REPOSITIONING KNOB		
Code	Description	Switch
162016	RD Y/R B33	Top – B33
162030	RD Y/R MB34	Base – MB34
162058	FP Y/R B40	Top – B40
162059	FP Y/R B19	Top – B19

Extension Line



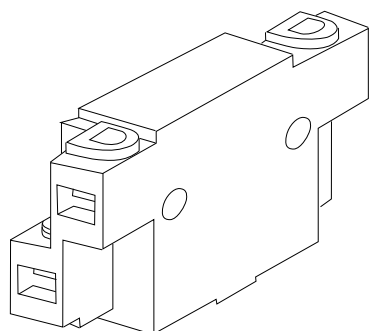
400 MM EXTENSION LINE		
Code	Description	Switch
506088	400 mm Extender	Base – MB34

Acrylic Protection



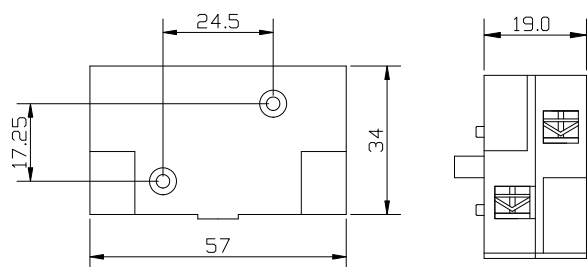
ACRYLIC PROTECTION		
Code	Description	Switch
297338	Protective Acrylic Cover	25A to 63A

Auxiliary Contact



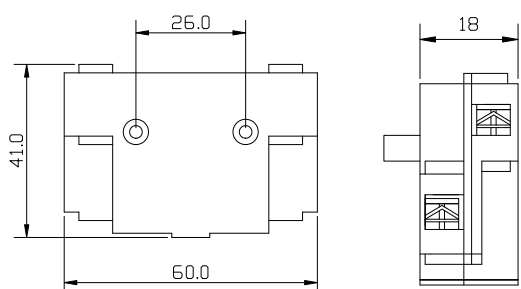
Switch	Auxiliary Contact 1NO/1NC Front Mounting Switch B19/B33/B40	Code for Front Switch	Auxiliary Contact 1NO/1NC Rear Mounting Switch MB 34	Code for Rear Switch
LB 116	FAC20	162041	-	-
LB 120				
LB 225	FAC32	162028	RAC32	162029
LB 240	FAC63	162038	RAC63	162039
LB 263				
LB 080	-	-	RAC80	162040
LB 100	-	-	RAC125	162027
LB 125	FAC125	162026		

LB 116 – LB 120



RATING		
IEC / EN	16A	500V
AC - 15	220-240V	6A
	380-440V	4A

LB 225 – LB 263



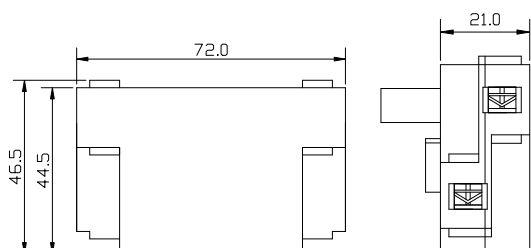
TERMINAL CROSS SECTION		
Cable solid/ multi	Mín. (mm²)	1.0
	Máx. (mm²)	1.5

Use

- The auxiliary contact module has 2 contacts, 1NO and 1NC.
- The NO contact is the early break, late make contact.
- It is used to trigger any auxiliary circuit.

Can be fitted on either side of the Switch.

LB 080 – LB 125



Technical Data

UL STANDARD	UL 508
EUROPEAN STANDARD	IEC 60947-1 e 3; EN 60947-3

Technical Data			LB 116	LB 120	LB 225	LB 240	LB 263	LB 080	LB 100	LB 125
Rated operational voltage (Ue)										
IEC/EN	Volts	V	690	690	690	690	690	690	690	690
UL	Volts	V	600	600	600	600	600	600	600	600
Isolation voltage (Upto)	Volts	V	750	750	750	750	750	750	750	750
Resistance to surge pulse voltage (Uimp)	Volts	Kv	6	6	6	6	6	6	6	6
Uninterrupted current (Ith)	Amp	A	16	20	25	40	63	80	100	125
Rated operational current Ie IEC/EN										
AC 22	Amp	A	16	20	25	40	63	80	100	125
AC 21-A	Amp	A	20	25	32	63	80	80	100	125
AC 1	Amp	A	20	25	32	63	80	80	100	125
Rated operational power at 50 to 60Hz										
IEC/EN										
AC-23A, IEC/EN 3 Phase, 3 Pole	220-240V	kW	7,5	7,5	11	22	30	37	44	60
	380-440V	kW	15	15	22	45	45	90	90	90
	500-690V	kW	15	15	22	45	45	90	90	90
AC-3 IEC/EN 3 Phase, 3 Pole	220-240V	kW	4	5,5	8	15	22	30	37	44
	380-440V	kW	5,5	11	15	30	30	55	55	55
	500-690V	kW	11	11	15	30	30	55	55	55
Short Circuit Capacity (IEC/EN)										
Max. Fuse size (type gG)	Amp	A	20	20	32	63	63	125	125	125
Rated fused short circuit current	Amp	kA	5	5	30	30	30	30	30	30
UL Rating (POWER)										
3 Phase, 3 Pole	120V	hp	1,5	1,5	3	5	7,5	5	7,5	7,5
	240V	hp	3	3	7,5	10	15	20	20	30
	480V	hp	7,5	7,5	15	20	25	30	30	40
	600V	hp	10	10	20	30	30	40	40	50
1 Phase	120V	hp	0,5	0,5	1,5	3	3	3	3	3
	240V	hp	1,5	1,5	2	5	7,5	7,5	7,5	7,5
Short Circuit Capacity (UL)										
Fuse			Rk5	Rk5	J	J	J	J	J	J
Maximum Fuse Size	Amp	A	20	20	45	70	70	125	125	125
Rated fused short circuit current	Amp	kA	10	10	10	10	10	10	10	10
Terminal Cross section										
Solid/multiple strand wire	Min. - mm ²		1	1	2,5	2,5	2,5	2,5	2,5	2,5
	Max. - mm ²		4	4	10	25	25	50	50	50
Fine-Strand Wire with sleeve	Min. - mm ²		0,5	0,5	0,75	2,5	2,5	4	4	4
	Max. - mm ²		4	4	6	10	10	50	50	50
Thread Dimension for Terminal Screw			M3,5	M3,5	M4	M4	M4	M6	M6	M6
Recommended Tightening Torque for terminals	Nm		0,8	0,8	1,7	2	2	2,5	2,5	2,5
Certifications	CE/UL									
NHS SWITCHES/ Switch-Disconnecter IP67/IP69K	Information and technical descriptions available online at: www.schmersal.net									

Detailed information of our line of products are also available on the internet on www.schmersal.net



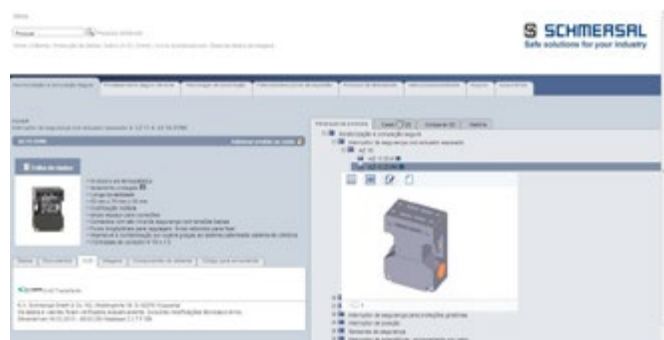
Online catalogue

Designers and purchasers of companies who work together with Schmersal Group do not need to keep and update constantly an extensive documentation in paper: they found all information and data required updated daily at the online catalogue on www.schmersal.net



Online documentation available in 13 languages

The offer of online information for our customers is updated permanently. Our product catalogue may be consulted online in 13 different languages. They are available 24 hours a day, not only the technical data of the complete line of products, but also the compliance statements, testing certificates, assembly manuals, and connection instructions can be consulted and downloaded.



Designers services

Product technical drawings are also filed at the online catalogue – a service targeted specially to the designer. Thus, he/she can download the drawings directly to their CAD system. CAE data for a comfortable electric project creation is available for download on the Internet. In addition, the designer also finds at Schmersal homepage current information about comprehensive subjects – e.g., technical papers on machine safety, as well as notifications about training courses and events. Visit our page!



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.

Product divisions



Commutation and safety monitoring

- Safety keys for ports monitoring
- Command equipment with safety functions
- Equipamentos de segurança táteis
- Tactile safety equipment

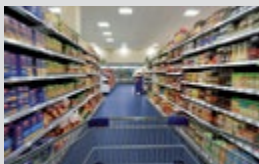
Signal processing safety

- Safety monitoring modules
- Safety controllers
- Safety fieldbus systems

Automation

- Position detection
- Equipment of command and signaling

Sectors



- Mechanical lifts and stairs
- Packages
- Food
- Tool-machine
- Heavy industry

Services



- Application consultancy
- Compliance evaluation CE and NR12
- Risk analysis as per machine directive
- Measurement of remaining working time
- Courses and training
- Schmersal Academy

Skills



- Machine safety
- Automation
- Protection against explosion
- Hygienic conception

Data and specifications mentioned were criteriously verified. Technical changes reserved, subject to misconceptions.

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SCHMERSAL
Safe solutions for your industry