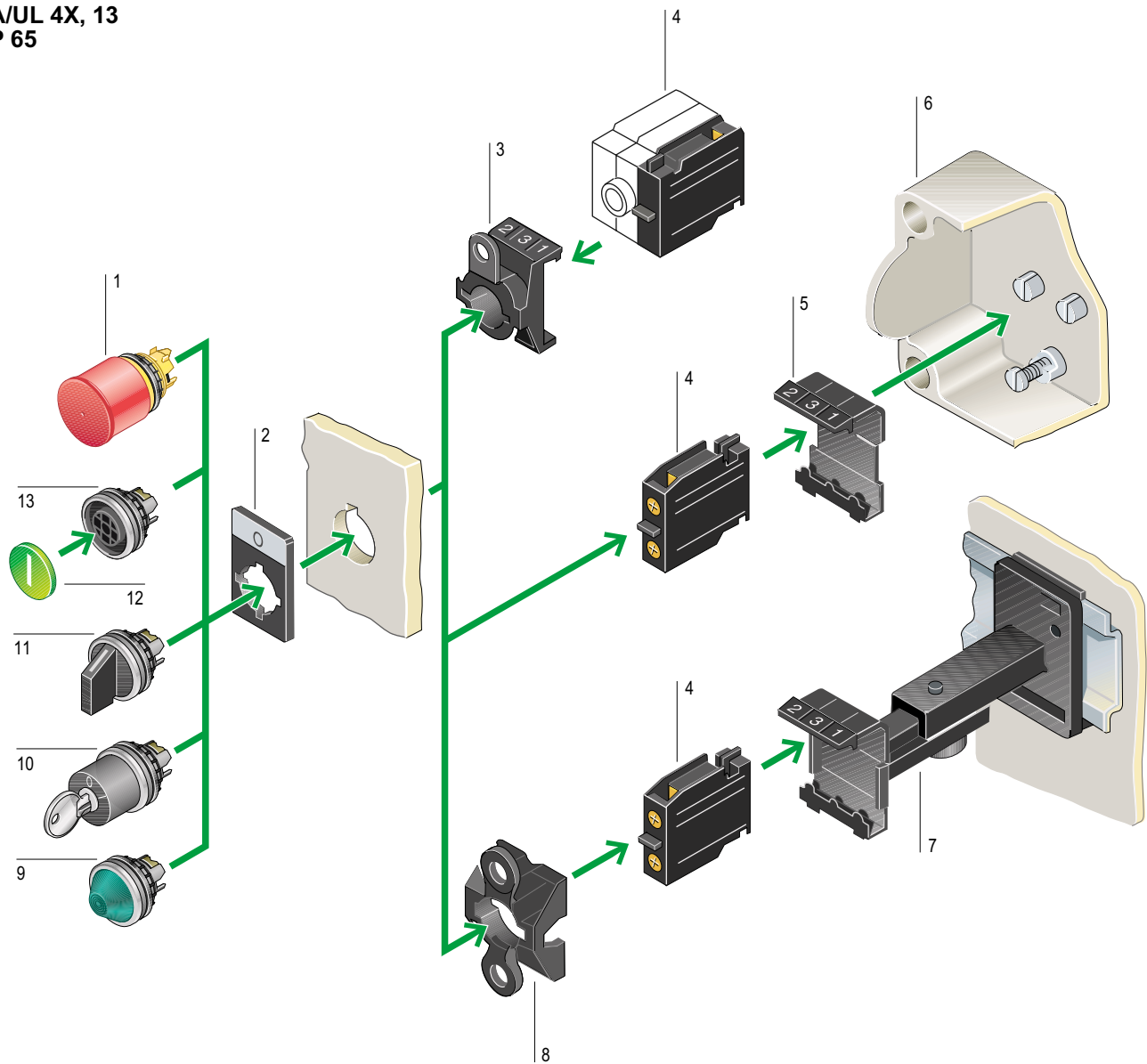


	<p>Overview (RMQ 16) Pushbuttons Illuminated Pushbuttons Contact Elements</p>	
	<p>Selector Switches (2 and 3 position) Key operated Selector Switches (2 and 3 position) Illuminated Selector Switches (2 and 3 position) Indicating Lights Emergency-Stop Pushbuttons</p>	
	<p>Interface/enclosures Marking plates Legend plates Accessories</p>	
	<p>Overview (RMQ 22) Mounting Instructions Complete Surface Mounting Stations Complete Units for Cover Mounting Foot and Palm Switches</p>	
	<p>Pushbutton Operators Double Pushbuttons/Emergency-Stop Pushbuttons</p>	
	<p>Two position Selector Switches Three position Selector Switches Illuminated Selector Switches Key-operated Selector Switches Illuminated Pushbuttons/Indicating Lights Digital Display Operating Block</p>	
	<p>Contact Elements Contact Blocks Lamp Socket Elements Lamp Socket Blocks</p>	
	<p>Marking Plates/Legend Plates Empty Enclosures, Flush Mounting Plates, Shrouds Accessories Key Locking Systems Ordering Nonstandard Versions</p>	
	<p>Overview (SL Stack Lights) Complete Units Modules Accessories</p>	
	<p>Overview (AT0) Compact Oiltight Limit Switches Operating Heads Overview (AT0...ZB) Safety Limit Switches Accessories</p>	
	<p>Technical Data Dimensions</p>	

NEMA/UL 4X, 13
IEC IP 65

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5



- Snap together modular system, up to six contacts per operator.
- Easy "One Person" mounting
- Round or round on square style
- Black or chromed front ring
- Mounting diameter: 22.5 mm
- Minimum grid dimensions 30 x 40 mm
- Environmental Rating: UL/NEMA 3R, 12, 4X, 13, IP 65
- UL Listed, CSA Certified
- Global Conformity: IEC/EN 60 947-5-1, CE
- Safety feature. N.C. contacts have positive opening operation per IEC/EN 60 947-5-1. Watch for the symbol! ⊖
- Tamper-Proof Emergency-Off button to EN 418, suitable for machinery built in accordance with the Machinery Directive (CE).

1 Operators

Tamper proof to EN 418, suitable for CE Machinery
Can be viewed through sealable shroud
Available in push/pull, key release, and foot/palm versions


2 Legend Plates

For insert plates with or without text
Colors: grey, black

3 Mounting Adapter

For cover or door mounting
Used to mount contact and lamp socket elements

4 Contact Elements

Heavy duty contacts also suitable for PLC electronic circuits
With one or two contacts.
N.C. contacts with positive opening operation 
per IEC/EN 60 947-5-1

4 Lamp Socket Elements

For filament bulbs, neon bulbs and LED's
Integral lamp test
Lamp transformers primary voltage: 115-500 V AC

5 Mounting Adapter

For surface or base mounting
Used to mount contact and lamp socket elements

6 Enclosures

Surface mounting enclosure with a maximum of five mounting locations, UL indoor 4X, IP 65
Flush mounting plate with a maximum of eight mounting locations, IP 54
Shrouds for mounting plate, IP 40
Operator diaphragms for increased protection to IP 67

7 Telescopic bracket/telescopic clip

For depth adjustment of rear-mounting devices in CI enclosures and panels
Bracket for mounting depths of 116-147 mm
Clip for mounting depths of 125-157 mm

8 Centering Adapter

For centering operators and indicating devices using telescopic bracket and telescopic clip

9 Indicating Lights

Flush and conical versions
For filament bulbs, neon bulbs, and LED's
Colors: white, green, red, yellow, blue
Digital display lens assemblies

10 Key-operated Selector Switches

Two or three position
Programmable maintained/spring return function and key removal
Suitable for master key systems

11 Selector Switches

Two or three position
Available with rotary head, thumb-grip handle, rotary lever and as a toggle switch
Programmable maintained/spring return function
Available in illuminated version with transparent thumb-grip handle
Color: white, green, red, yellow, blue

12 Marking Plates/Insert Plates

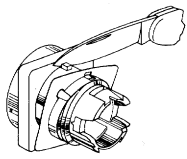
With standard text and symbols
Abrasion proof plates for pushbuttons, selector switches and double actuators
Transparent plates for illuminated pushbuttons and flush indicator lights

13 Pushbuttons

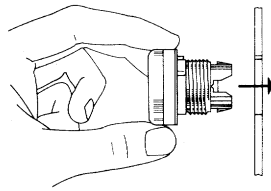
Maintained or momentary operation
Available as flush, extended, mushroom and double pushbuttons
With or without guard ring
Available in illuminated versions with transparent insert plate
Color: white, green, red, yellow, blue

Control Circuit Devices RMQ 22 – Mounting Instructions

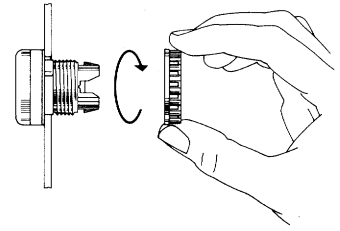
Easy Mounting Front Elements



Front elements have a locating lug which can be cut off, if required, to allow them to be fitted into mounting apertures of 22 mm diameter with or without locating slots.



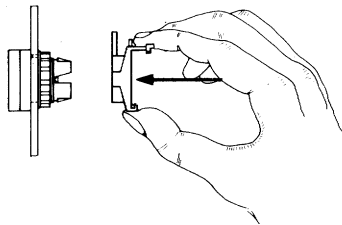
The front element has a notch on the back, to identify the top when fitting, while the lug on the sealing ring holds the element in place in the mounting aperture.



The milled nut can then be positioned and tightened, without needing to hold the front element.

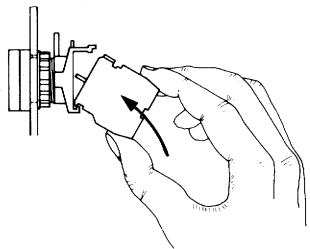
Easy Mounting Function Modules

The mounting adapter snaps securely in place by simply pushing it straight onto the front element.

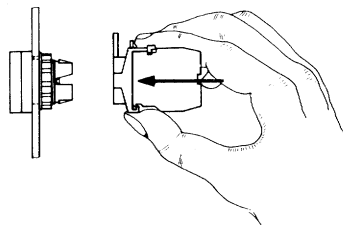


Contact Element/Blocks

Installation

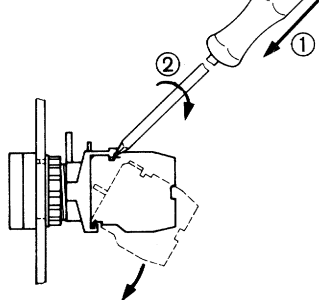


Hook the bottom of the contact element into the mounting adapter and clip into place.

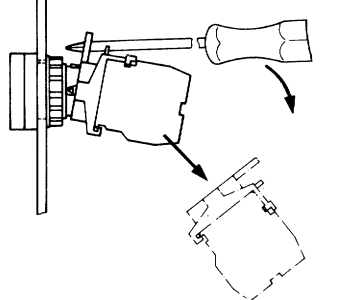


Contact blocks are installed in the same manner as mounting adapters.

Removal



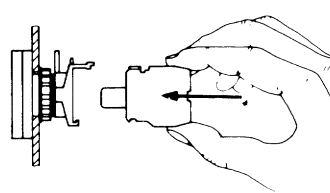
Insert a screwdriver under the lip of the mounting adapter and rotate the screwdriver.



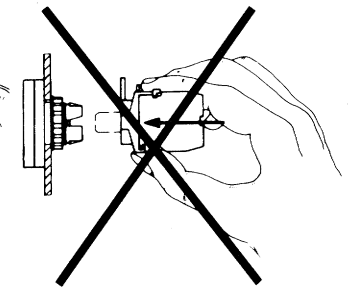
Insert a screwdriver into the hole in the top of the mounting adapter and push down the handle of the screwdriver.

Lamp Socket Elements/Blocks

Installation

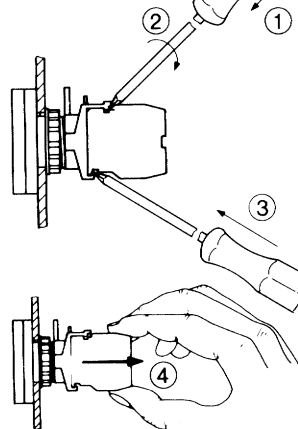


With bulb already installed, simply push the lamp socket element straight onto the mounting adapter.

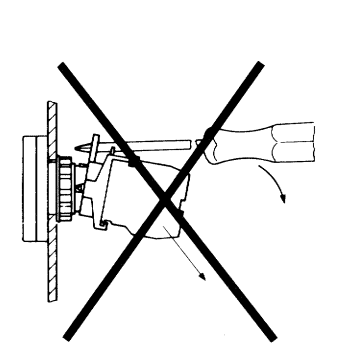


Do not install bulbs into lamp socket blocks prior to mounting on the front element.

Removal



Insert a screwdriver under the lip of the mounting adapter as shown, to loosen the lamp socket element. Pull straight out to remove.

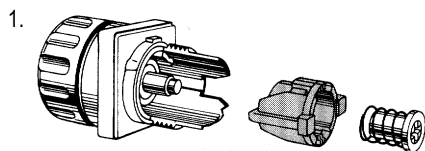


Remove bulbs from lamp socket elements before removing lamp socket blocks.

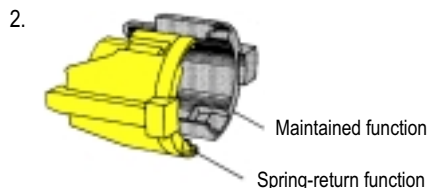
Conversion of selector switches and key-operated selector switches

It is possible to convert between maintained and spring-return functions on selector switches, and change the position in which the key can be removed on key-operated selector switches, simply by changing the coding adapters. Yellow coding adapters are used for the spring-return function and black for the maintained function. Using a red coding adapter on a key-operated selector switch prevents removal of the key. On three-position switches, the switch positions to the right and left of the OFF position can be modified independently of each other.

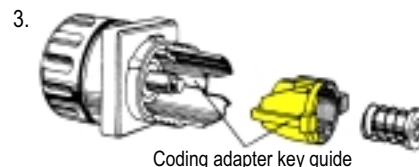
Changing the coding adapters



1. The retaining screw is loosened and the coding adapters removed.



2. A new coding combination is selected (for a three-position switch, in the case illustrated).




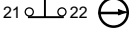

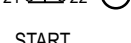


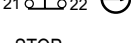

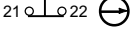


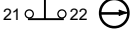

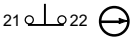




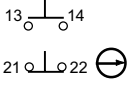

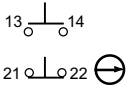



3. The keys on the coding adapters are simply inserted into the grooves in the body. A spring on the retaining screw then holds them in place until the screw is tightened.

Bulb Selection Chart


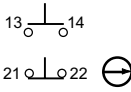

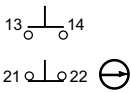
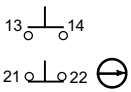

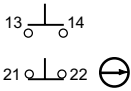
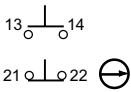

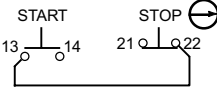
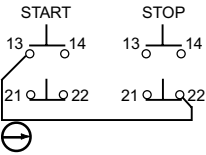

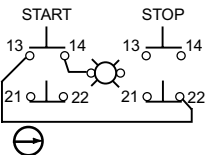

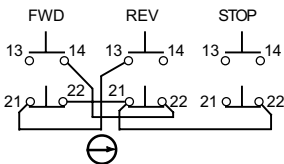
Filament Bulbs, Neon Bulbs, LED's Selection Guide

Type of Bulb	Rated Life-span in hours	Color Fidelity	Illuminating Power	Temperature Rise	Immunity to Vibration
<p>Filament Bulbs (GL) 6 V 12 V 24 V 48 V 60 V 130 V</p>	<p>~ 5,000 ~ 5,000 ~ 5,000 ~ 5,000 ~ 5,000 ~ 2,000</p>	<p>good good good</p>	<p>good good good</p>	<p>high high high</p>	<p>good good fair</p>
<p>Neon Bulbs (GIL) 110 V 220 V</p>	<p>~ 20,000 ~ 20,000</p>	<p>fair</p>	<p>weak</p>	<p>low</p>	<p>very good</p>
<p>New! All voltage types Single chip LED's 18 - 30 V AC/DC</p>	<p>~ 100,000</p>	<p>good</p>	<p>Newly improved!</p>	<p>low</p>	<p>Excellent</p>
<p>24 V DC (LED...24 B) (flashing)</p>	<p>~ 20,000</p>	<p>good</p>	<p>good</p>	<p>low</p>	<p>Excellent</p>

1	2	3	4	5	6
	Number of locations	Contact Arrangement Positive Opening Contact  IEC/EN 60 947-5-1	Color	Type Front ring Matt chromed	Price \$
Complete units for surface mounting, UL Indoor 4X enclosures					
Pushbuttons					
Flush					
	1	START  21 	Green	RD-111/KC/I	See Price List
	1	STOP  21 	Red	RD-110/KC/I	See Price List
Extended					
	1	START  21 	Green	RDH-GN 111/KC/I	See Price List
	1	STOP  21 	Red	RDH-RT 110/KC/I	See Price List
Mushroom head buttons					
	1	START  21 	Green	RP-GN 111/KC/I	See Price List
	1	STOP  21 	Red	RP-RT 110/KC/I	See Price List
Double pushbuttons					
	2	START  STOP 	Green/ Red	QDD-111/110/K 11C/I	See Price List
Emergency-stop buttons Tamper- proof, non-tease operation to EN 418, suitable per Machinery Directive (CE). Red mushroom cap, yellow body with snap-action and positive opening. Pull to release.					
	1		Red	RPV/KC/I	See Price List
Selector switches					
					
2-position, maintained	1		Black	RWKIV/KC/I	See Price List
3-position, maintained	1		Black	RWK3R/K20C/I	See Price List

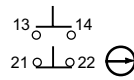
Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

1	2	3	4	5	6	
	Number of locations	Contact Arrangement Positive Opening Contact \ominus IEC/EN 60 947-5-1	Color	Type Front ring Matt chromed	Price	
Complete units for surface mounting, UL Indoor 4X enclosures						
Key-release mushroom head buttons With two keys, KMS 1 lock mechanism						
	1		Red	RPSR/KC/I	See Price List See Price List	
Key-operated selector switches With two keys, KMS 1 lock mechanism						
	Two-position, maintained	1		Black	RS/KC/I	See Price List See Price List
	Three-position, maintained	1		Black	RS 3/K 20C/I	See Price List See Price List
Enclosures With contact elements, without operator						
	1		Grey cover	1M/I	See Price List See Price List	
	1		Yellow cover	1M/IGE	See Price List See Price List	
Two-unit pushbutton stations						
	2		Green/ Red	R2 M/11/I	See Price List See Price List	
	2		Green/ Red	R2 M/I	See Price List See Price List	
Two-unit pushbutton stations With indicating light, 2.4 W, 130 V filament bulb						
	2		Green/ White lens/ Red	R3 M-L/I	See Price List See Price List	
Three-unit pushbutton stations						
	3		Green/ Red/ Green	R3 M/I	See Price List See Price List	

1	2	3	4	5	6
	Contact Arrangement	Button plate	Plunger	Type Front ring Matt chromed	Price
	Positive Opening Contact IEC/EN 60 947-5-1	Style/Type	Color		

Complete units for cover mounting
Double Pushbuttons



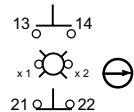
START /111D
STOP /110D

Green
Red

QDD-111/110/K 11

Double Pushbuttons

With indicator lights, 130 V filament bulb



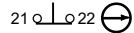
START /111D
STOP /110D

Green
White lens
Red

QDDL-111/110/K 11/F1

Emergency-stop buttons

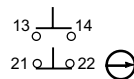
Tamper-proof, non-tease operation to EN 418, suitable per Machinery Directive (CE). Red mushroom cap, yellow body. With snap-action and positive opening. Pull to release.



—

Red

RPV/K 01



—

Red

RPV/K 11

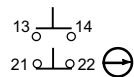
Selector switches
2-position maintained



—

Black

RWK 1V/K 10



—

Black

RWK 1V/K 11

3-position maintained



—

Black

RWK 3R/K 20

Key-operated selector switches

With two keys, KMS 1 lock mechanism

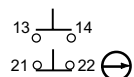
2-position maintained



—

Black

RS/K 10



—

Black

RS/K 11

3-position maintained



—

Red

RS 3/K 20

See Price List See Price List See Price List See Price List See Price List See Price List See Price List See Price List See Price List See Price List

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

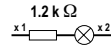
5

1	2	3	4	5
	Arrangement	Indicating light lens	Type Front ring Matt chromed	Price
		Color		\$

Complete units for cover mounting
Indicating lights, full voltage

Conical

With BA 9's filament bulb, 2.4 W/130 V



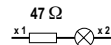
● Green

RL-GN/F1

● Red

RL-RT/F1

With BA 9's filament bulb, 2.0 W/24 V



● Green

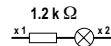
RL-GN/F0

● Red

RL-RT/F0

Low profile

With BA 9's filament bulb, 2.4 W/130 V



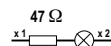
● Green

RLF-GN/F1

● Red

RLF-RT/F1

With BA 9's filament bulb, 2.0 W/24 V



● Green

RLF-GN/F0

● Red

RLF-RT/F0

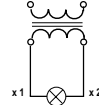
Indicating lights, transformer type

Conical

With BA 9's filament bulb, 2.0 W/6 V



Specify primary voltage
125, 220, 500



● Green

RL-GN/FT.../6

● Red

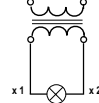
RL-RT/FT.../6

Low profile

With BA 9's filament bulb, 2.0 W/6 V



Specify primary voltage
125, 220, 500



● Green

RLF-GN/FT.../6

● Red

RLF-RT/FT.../6

[See Price List](#) [See Price List](#) [See Price List](#) [See Price List](#) [See Price List](#) [See Price List](#) [See Price List](#) [See Price List](#) [See Price List](#) [See Price List](#)

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

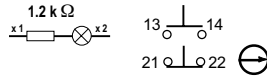
5

1	2	3	4	5
	Arrangement	Illuminated Pushbutton	Type Front ring Matt chromed	Price
	Positive Opening Contact IEC/EN 60 947-5	Color/Type of plate		

**Complete units for cover mounting
Illuminated pushbuttons, full voltage**

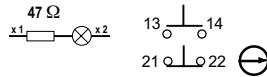
Flush

With BA 9's filament bulb, 2.4 W/130 V



- Green / 01 LT Green RLT-GN/K11/F1
- Red / 01 LT Red RLT-RT/K11/F1

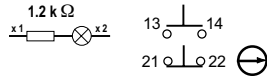
With BA 9's filament bulb, 2.0 W/24 V



- Green / 01 LT Green RLT-GN/K11/F0
- Red / 01 LT Red RLT-RT/K11/F0

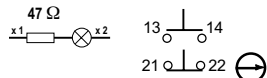
Extended

With BA 9's filament bulb, 2.4 W/130 V



- Green / 01 LT Green RLTH-GN/K11/F1
- Red / 01 LT Red RLTH-RT/K11/F1

With BA 9's filament bulb, 2.0 W/24 V



- Green / 01 LT Green RLTH-GN/K11/F0
- Red / 01 LT Red RLTH-RT/K11/F0

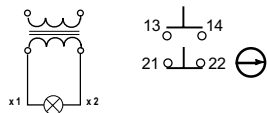
Indicating lights, transformer type

Flush

With BA 9's filament bulb, 2.0 W/6 V
Two contact elements are installed 1 NO, 1 NC



Specify primary voltage
125, 220, 500

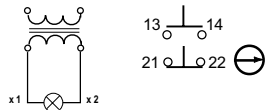


- Green / 01 LT Green RLT-GN/K11/FT.../6
- Red / 01 LT Red RLT-RT/K11/FT.../6

Extended

With BA 9's filament bulb, 2.0 W/6 V
Two contact elements are installed 1 NO, 1 NC










Specify primary voltage
125, 220, 500



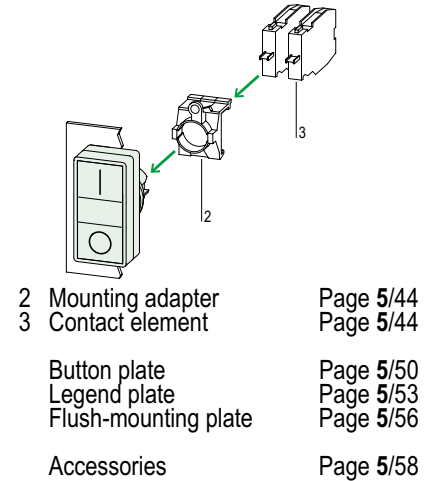
- Green / 01 LT Green RLTH-GN/K11/FT.../6
- Red / 01 LT Red RLTH-RT/K11/FT.../6

See Price List See Price List See Price List See Price List See Price List See Price List See Price List See Price List See Price List See Price List

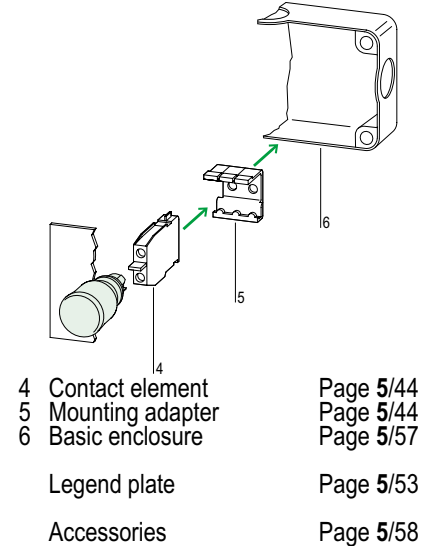
Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

1	2	3	4	5	6
	Button plate	Type Front ring Matt chromed	Type Front ring Matt black	Price	
	Style/Type			\$	
Double pushbuttons					
	 /111D	QDD-111/110	QDD-111/110-S	See Price List	See Price List
	 /110D			See Price List	See Price List
	Without	QDD-X	QDD-X-S	See Price List	See Price List
With indicating lights White lens, for LED's, neon and filament bulbs up to 2 W					
	 /111D	QDDL-111/110	QDDL-111/110-S	See Price List	See Price List
				See Price List	See Price List
	 /110D			See Price List	See Price List
	Without	QDDL-X	QDDL-X-S	See Price List	See Price List
Emergency-stop buttons In conformity with SUVA and CE machinery directive, tamper-proof to EN 418 Mushroom head - red body, yellow collar with snap-action and positive opening. Button remains in the actuated position. Pull to release.					
		RPV	—	See Price List	See Price List
	Transparent with "collapse" point, reusable after emergency-stop operation. For RPV emergency-stop buttons and RPSR key-release mushroom head buttons			See Price List	See Price List
		PL-RPV	—	See Price List	See Price List
				See Price List	See Price List

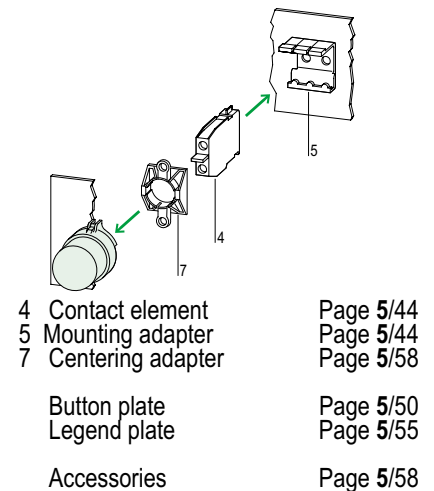
Mounting form: Cover mounting
























Mounting form: Surface mounting



Mounting form: Base mounting



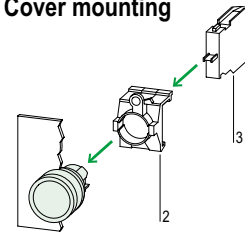
1	2	3	4	5	6	7	
	Plunger	Button plate		Round style		Price	
	Color	Style/Type		Type Front ring Matt chromed	Type Front ring Matt black	\$	
Operators							
Flush							
—		 /111T		RD-111	RD-111-S	See Price List See Price List	
—		 /110T		RD-110	RD-110-S		
—		 /01T		RD-01	RD-01-S		
—		Without		RD-X	RD-X-S		
Extended							
	Green	 /111T		RDH-GN111	RDH-GN111-S	See Price List See Price List	
	Red	 /110T		RDH-RT110	RDH-RT110-S		
	Black	 /01T		RDH-SW01	RDH-SW01-S		
	Green	Without		RDH-GNX	RDH-GNX-S		
	Red	Without		RDH-RTX	RDH-RTX-S		
	Black	Without		RDH-SWX	RDH-SWX-S		
With guard ring							
		Without		RDK-X	RDK-X-S		
With rubber protective cap For severe environmental conditions With button plates Red/Green/Blue							
		Without		—	RD-M-D		
Mushroom head operators							
	Green	 /111T		RP-GN111	RP-GN111-S	See Price List See Price List	
	Red	 /110T		RP-RT110	RP-RT110-S		
	Black	 /01T		RP-SW01	RP-SW01-S		
	Yellow	 /05T		RP-GE05	RP-GE05-S		
	Green	Without		RP-GNX	RP-GNX-S	See Price List See Price List	
	Red	Without		RP-RTX	RP-RTX-S		
	Black	Without		RP-SWX	RP-SWX-S		
	Yellow	Without		RP-GEX	RP-GEX-S		
Key-release mushroom head operators							
With two keys, can be used as emergency stop buttons							
KMS 1 Individual lock mechanism Cannot be used in master key system							
				RPSR	RPSR-S	See Price List See Price List	
KMS 2...10, 201...400 individual lock mechanism Cannot be used in master key system							
				RPSR-KMS...	RPSR-KMS...-S	See Price List See Price List	
Lock mechanism suitable for master key system¹⁾ With CES half-cylinder 17 mm							
Key for individual lock mechanism							
				RPSR-SA(...) ES-KMS...	RPSR-SA(...)-S ES-KMS...		
Keys for master key system							
				NS-SA(...)-...	NS-SA(...)-...	See Price List See Price List	
				HS-SA(...)-...	HS-SA(...)-...		
				GHS-SA(...)-...	GHS-SA(...)-...		

1) Order on Form FO 276, page 5/47

KMS 201...400 and master key systems: delivery 6 to 8 weeks

8		9		10		11		12	
		Round-on-square style 				Price			
		Type Front ring Matt chromed	Type Front ring Matt black			\$			
	MD-111	MD-111-S	MD-111-S	See Price List	See Price List	See Price List	See Price List		
	MD-110	MD-110-S	MD-110-S	See Price List	See Price List	See Price List	See Price List		
	MD-01	MD-01-S	MD-01-S	See Price List	See Price List	See Price List	See Price List		
	MD-X	MD-X-S	MD-X-S	See Price List	See Price List	See Price List	See Price List		
	MDH-GN111	MDH-GN111-S	MDH-GN111-S	See Price List	See Price List	See Price List	See Price List		
	MDH-RT110	MDH-RT110-S	MDH-RT110-S	See Price List	See Price List	See Price List	See Price List		
	MDH-SW01	MDH-SW01-S	MDH-SW01-S	See Price List	See Price List	See Price List	See Price List		
	MDH-GNX	MDH-GNX-S	MDH-GNX-S	See Price List	See Price List	See Price List	See Price List		
	MDH-RTX	MDH-RTX-S	MDH-RTX-S	See Price List	See Price List	See Price List	See Price List		
	MDH-SWX	MDH-SWX-S	MDH-SWX-S	See Price List	See Price List	See Price List	See Price List		
	MDK-X	MDK-X-S	MDK-X-S	See Price List	See Price List	See Price List	See Price List		
	—	MD-M-D	MD-M-D	See Price List	See Price List	See Price List	See Price List		
	MP-GN111	MP-GN111-S	MP-GN111-S	See Price List	See Price List	See Price List	See Price List		
	MP-RT110	MP-RT110-S	MP-RT110-S	See Price List	See Price List	See Price List	See Price List		
	MP-SW01	MP-SW01-S	MP-SW01-S	See Price List	See Price List	See Price List	See Price List		
	MP-GE05	MP-GE05-S	MP-GE05-S	See Price List	See Price List	See Price List	See Price List		
	MP-GNX	MP-GNX-S	MP-GNX-S	See Price List	See Price List	See Price List	See Price List		
	MP-RTX	MP-RTX-S	MP-RTX-S	See Price List	See Price List	See Price List	See Price List		
	MP-SWX	MP-SWX-S	MP-SWX-S	See Price List	See Price List	See Price List	See Price List		
MP-GEX	MP-GEX-S	MP-GEX-S	See Price List	See Price List	See Price List	See Price List			
	MPSR	MPSR-S	MPSR-S	See Price List	See Price List	See Price List	See Price List		
	MPSR-KMS...	MPSR-KMS...-S	MPSR-KMS...-S	See Price List	See Price List	See Price List	See Price List		
	MPSR-SA(...)	MPSR-SA(...)-S	MPSR-SA(...)-S	See Price List	See Price List	See Price List	See Price List		
	ES-KMS...	ES-KMS...	ES-KMS...	See Price List	See Price List	See Price List	See Price List		
	NS-SA(...)-...	NS-SA(...)-...	NS-SA(...)-...	See Price List	See Price List	See Price List	See Price List		
	HS-SA(...)-...	HS-SA(...)-...	HS-SA(...)-...	See Price List	See Price List	See Price List	See Price List		
	GHS-SA(...)-...	GHS-SA(...)-...	See Price List	See Price List	See Price List	See Price List			

Mounting form: Cover mounting

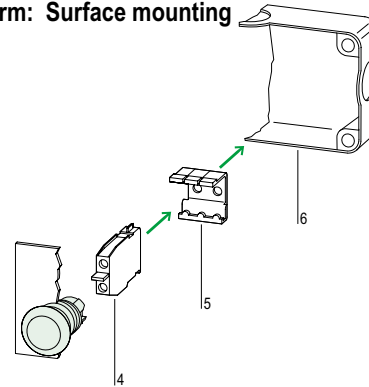


- 2 Mounting adapter Page 5/44
- 3 Contact element Page 5/44

- Button plate Page 5/50
- Legend plate Page 5/53
- Flush-mounting plate Page 5/56

- Accessories Page 5/58

Mounting form: Surface mounting

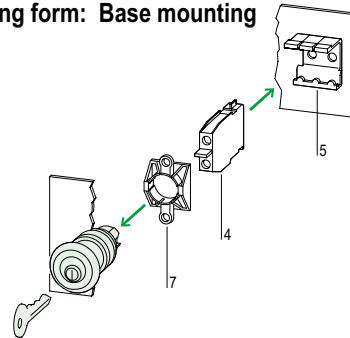


- 4 Contact element Page 5/44
- 5 Mounting adapter Page 5/44
- 6 Basic enclosure Page 5/57

- Button plate Page 5/50
- Legend plate Page 5/53

- Accessories Page 5/58

Mounting form: Base mounting











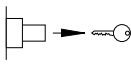




- 4 Contact element Page 5/44
- 5 Mounting adapter Page 5/44
- 7 Centering adapter Page 5/58

- Legend plate Page 5/53
- Telescopic bracket Page 5/58

- Accessories Page 5/58

22.5 mm Control Circuit Devices
RMQ 22 – Selector Switches, 2 Position

NEMA/UL 4/4X/13; IEC IP 65; CE

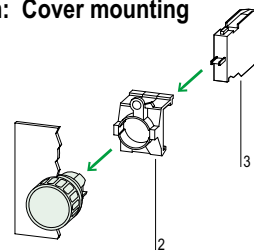
1	2	3	4	5	6	7			
	Function	Button plate		Round style 		Price			
	∨ = Main- tained ∽ = Spring- return	Style/Type		Type Front ring Matt chromed	Type Front ring Matt black	\$			
Selector switches, 2 position									
Rotary head Black Thumb-grip handle Black Rotary lever Black	∨ 60° ∽ 45°	 /96T  /96T			RW1R RW1	RW1R-S RW1-S	See Price List See Price List		
	∨ 60° ∽ 45°	Without Without			RW1R-X RW1-X	RW1R-X-S RW1-X-S	See Price List See Price List		
	∨ 60° ∽ 45°	— —			RWK1R RWK1	RWK1R-S RWK1-S	See Price List See Price List		
	∨ 60° ∽ 45°	— —			RWH1R RWH1	RWH1R-S RWH1-S	See Price List See Price List		
	Coding adapters								
	To convert between maintained and spring-return functions			∨ ∨ ∽	 — —		SP-RMQ-SW SP-RMQ-RT SP-RMQ-GE	SP-RMQ-SW SP-RMQ-RT SP-RMQ-GE	See Price List See Price List See Price List
	Selector switches, 2 position								
	Maintained Coding cannot be changed Thumb-grip handle Black	∨ 90°	—			RWK1V	RWK1V-S	See Price List	
	Rotary lever Black	∨ 90°	—			RWH1V	RWH1V-S	See Price List	
	Toggle switches, 2 position								
	White lever Coding cannot be changed	∨ ∽	— —			RKSR RKS	RKSR-S RKS-S	See Price List See Price List	

Heavy Duty Oiltight Pilot Devices
 Limit Switches, Safety Interlock Switches

5

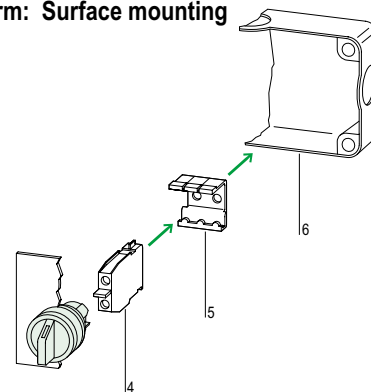
8	9		10	11	12
	Type Front ring Matt chromed	Type Front ring Matt black	Price \$	Price \$	Price \$
	MW1R MW1	MW1R-S MW1-S	See Price List	See Price List	See Price List
	MW1R-X MW1-X	MW1R-X-S MW1-X-S	See Price List	See Price List	See Price List
	MWK1R MWK1	MWK1R-S MWK1-S	See Price List	See Price List	See Price List
	MWH1R MWH1	MWH1R-S MWH1-S	See Price List	See Price List	See Price List
	SP-RMQ-SW	SP-RMQ-SW	See Price List	See Price List	See Price List
	SP-RMQ-RT	SP-RMQ-RT	See Price List	See Price List	See Price List
	SP-RMQ-GE	SP-RMQ-GE	See Price List	See Price List	See Price List
	MWK1V	MWK1V-S	See Price List	See Price List	See Price List
	MWH1V	MWH1V-S	See Price List	See Price List	See Price List
	MKSR	MKSR-S	See Price List	See Price List	See Price List
	MKS	MKS-S	See Price List	See Price List	See Price List

Mounting form: Cover mounting



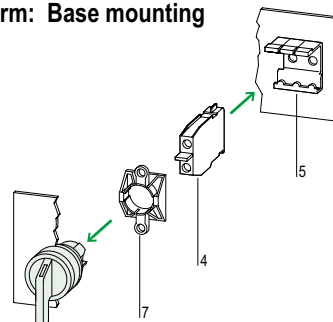
- 2 Mounting adapter Page 5/44
- 3 Contact element Page 5/44
- Button plate Page 5/50
- Legend plate Page 5/53
- Flush-mounting plate Page 5/56
- Accessories Page 5/58

Mounting form: Surface mounting



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- 5 Mounting adapter Page 5/44
- 6 Basic enclosure Page 5/57
- Legend plate Page 5/53
- Accessories Page 5/58




















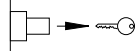

Mounting form: Base mounting



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- 5 Mounting adapter Page 5/44
- 7 Centering adapter Page 5/58
- Legend plate Page 5/53
- Telescopic bracket Page 5/58
- Accessories Page 5/58

22.5 mm Control Circuit Devices
RMQ 22 – Selector Switches, 3 Position

NEMA/UL 4/4X/13; IEC IP 65; CE

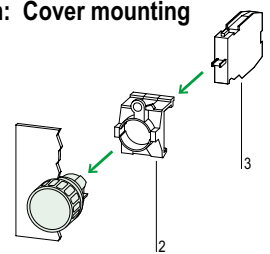
1	2	3	4	5	6	7	
	Function	Button plate		Round style 		Price	
	∨ = Main- tained ∇ = Spring- return	Style/Type		Type Front ring Matt chromed	Type Front ring Matt black	\$	
Selector switches, 3 position One or two contact elements can be mounted							
Rotary head Black	60° ∨ 60°	 /32T		RW3R	RW3R-S	See Price List	
	45° ∇ 45°	 /32T		RW3	RW3-S		See Price List
	60° ∇ 45°	 /32T		RW3R1	RW3R1-S	See Price List	
	45° ∇ 60°	 /32T		RW3R2	RW3R2-S		See Price List
	60° ∨ 60°	Without		RW3R-X	RW3R-X-S	See Price List	
	45° ∇ 45°	Without		RW3-X	RW3-X-S		See Price List
	60° ∇ 45°	Without		RW3R1-X	RW3R1-X-S	See Price List	
	45° ∇ 60°	Without		RW3R2-X	RW3R2-X-S		See Price List
	Thumb-grip handle Black	60° ∨ 60°	—		RWK3R	RWK3R-S	See Price List
		45° ∇ 45°	—		RWK3	RWK3-S	
60° ∇ 45°		—		RWK3R1	RWK3R1-S	See Price List	
45° ∇ 60°		—		RWK3R2	RWK3R2-S		See Price List
Rotary lever Black		60° ∨ 60°	—		RWH3R	RWH3R-S	See Price List
		45° ∇ 45°	—		RWH3	RWH3-S	
	60° ∇ 45°	—		RWH3R1	RWH3R1-S	See Price List	
	45° ∇ 60°	—		RWH3R2	RWH3R2-S		See Price List
Coding adapters To convert between maintained and spring-return functions							
	 BLACK  RED  YELLOW	  	 — —		SP-RMQ-SW SP-RMQ-RT SP-RMQ-GE	SP-RMQ-SW SP-RMQ-RT SP-RMQ-GE	See Price List See Price List See Price List

Heavy Duty Oiltight Pilot Devices
 Limit Switches, Safety Interlock Switches

5

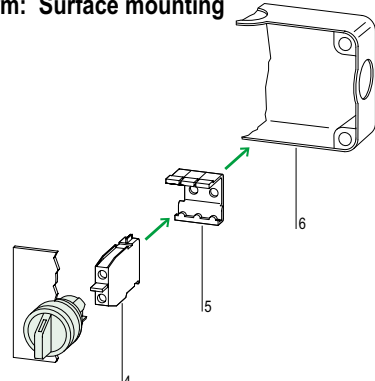
8		9		10		11		12	
		Round-on-square style 				Price			
		Type Front ring Matt chromed	Type Front ring Matt black			\$			
	MW3R	MW3R-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MW3	MW3-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MW3R1	MW3R1-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MW3R2	MW3R2-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MW3R-X	MW3R-X-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MW3-X	MW3-X-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWK3R	MWK3R-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWK3	MWK3-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWK3R1	MWK3R1-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWK3R2	MWK3R2-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWH3R	MWH3R-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWH3	MWH3-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWH3R1	MWH3R1-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	MWH3R2	MWH3R2-S	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	SP-RMQ-SW	SP-RMQ-SW	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	SP-RMQ-RT	SP-RMQ-RT	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List
	SP-RMQ-GE	SP-RMQ-GE	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List	See Price List

Mounting form: Cover mounting



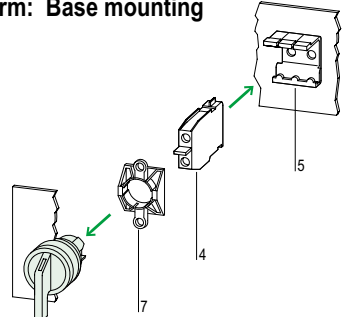
- 2 Mounting adapter Page 5/44
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- Button plate Page 5/50
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- Flush-mounting plate Page 5/56
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Mounting form: Surface mounting



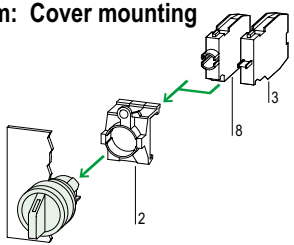

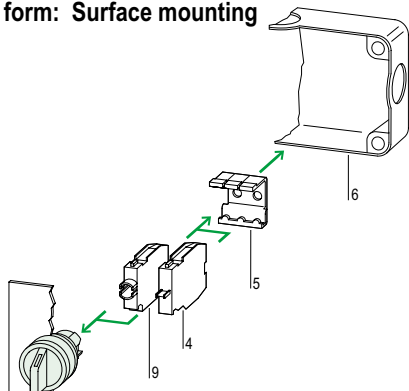

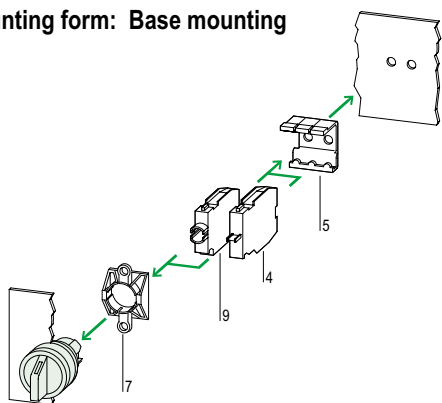





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- 5 Mounting adapter Page 5/44
- 6 Basic enclosure Page 5/57
- Legend plate Page 5/53
- Accessories Page 5/58

Mounting form: Base mounting




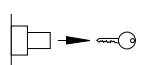
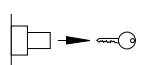

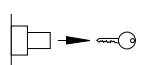




- 4 Contact element Page 5/44
- 5 Mounting adapter Page 5/44
- 7 Centering adapter Page 5/58
- Legend plate Page 5/53
- Telescopic bracket Page 5/58
- Accessories Page 5/58

8		9		10		11		12	
		Round-on-square style 				Price			
		Type Front ring Matt chromed	Type Front ring Matt black			\$			
	MLWK1R-WS	MLWK1R-WS-S	See Price List	See Price List	See Price List	See Price List	See Price List	Mounting form: Cover mounting  2 Mounting adapter Page 5/44 3 Contact element Page 5/44 8 Lamp socket element Page 5/46 Filament or neon bulb/LED Page 5/59 Legend plate Page 5/53 Flush-mounting plate Page 5/56 Accessories Page 5/58	
	MLWK1R-GN	MLWK1R-GN-S	See Price List	See Price List	See Price List	See Price List	See Price List		
	MLWK1R-RT	MLWK1R-RT-S	See Price List	See Price List	See Price List	See Price List	See Price List		
	MLWK1R-GE	MLWK1R-GE-S	See Price List	See Price List	See Price List	See Price List	See Price List		
	MLWK1R-BL	MLWK1R-BL-S	See Price List	See Price List	See Price List	See Price List	See Price List		
	MLWK1-WS	MLWK1-WS-S	See Price List	See Price List	See Price List	See Price List	Mounting form: Surface mounting  4 Contact element Page 5/44 5 Mounting adapter Page 5/44 6 Basic enclosure Page 5/57 9 Lamp socket element Page 5/46 Filament or neon bulb/LED Page 5/59 Legend plate Page 5/53 Accessories Page 5/58		
	MLWK1-GN	MLWK1-GN-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK1-RT	MLWK1-RT-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK1-GE	MLWK1-GE-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK1-BL	MLWK1-BL-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R-WS	MLWK3R-WS-S	See Price List	See Price List	See Price List	See Price List	Mounting form: Base mounting  4 Contact element Page 5/44 5 Mounting adapter Page 5/44 9 Lamp socket element Page 5/46 Filament or neon bulb/LED Page 5/59 Legend plate Page 5/53 Accessories Page 5/58		
	MLWK3R-GN	MLWK3R-GN-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R-RT	MLWK3R-RT-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R-GE	MLWK3R-GE-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R-BL	MLWK3R-BL-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3-WS	MLWK3-WS-S	See Price List	See Price List	See Price List	See Price List	4 Contact element Page 5/44 5 Mounting adapter Page 5/44 6 Basic enclosure Page 5/57 9 Lamp socket element Page 5/46 Filament or neon bulb/LED Page 5/59 Legend plate Page 5/53 Accessories Page 5/58		
	MLWK3-GN	MLWK3-GN-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3-RT	MLWK3-RT-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3-GE	MLWK3-GE-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3-BL	MLWK3-BL-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R1-WS	MLWK3R1-WS-S	See Price List	See Price List	See Price List	See Price List	4 Contact element Page 5/44 5 Mounting adapter Page 5/44 9 Lamp socket element Page 5/46 Filament or neon bulb/LED Page 5/59 Legend plate Page 5/53 Accessories Page 5/58		
	MLWK3R1-GN	MLWK3R1-GN-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R1-RT	MLWK3R1-RT-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R1-GE	MLWK3R1-GE-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R1-BL	MLWK3R1-BL-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R2-WS	MLWK3R2-WS-S	See Price List	See Price List	See Price List	See Price List	4 Contact element Page 5/44 5 Mounting adapter Page 5/44 9 Lamp socket element Page 5/46 Filament or neon bulb/LED Page 5/59 Legend plate Page 5/53 Accessories Page 5/58		
	MLWK3R2-GN	MLWK3R2-GN-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R2-RT	MLWK3R2-RT-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R2-GE	MLWK3R2-GE-S	See Price List	See Price List	See Price List	See Price List		See Price List	
	MLWK3R2-BL	MLWK3R2-BL-S	See Price List	See Price List	See Price List	See Price List		See Price List	

22.5 mm Control Circuit Devices RMQ 22 – Key-operated Selector Switches

NEMA/UL 4/4X/13; IEC IP 65; CE




1	2	3	4	5	6	7									
	Function	Key removable in position:		Round style 		Price									
	√ = Maintained ▷ = Spring-return			Type Front ring Matt chromed	Type Front ring Matt black	\$									
Key-operated selector switches, two position															
Individual lock mechanism not suitable for use with master key systems. With two keys, maintained/spring-return function and removable key position Can be changed using SP-RMQ coding adapters															
KMS 1 Mechanism	√ 60° √ 45° ▷ 45°	0, I 0 0		RS RS-KMS1-A1 RS-KMS1-A2	RS-S RS-KMS1-A1-S RS-KMS1-A2-S	See Price List See Price List See Price List									
KMS 2...10, 201...400	√ 60° √ 45° ▷ 45°	0, I 0 0		RS-KMS... RS-KMS...-A1 RS-KMS...-A2	RS-KMS...-S RS-KMS...-A1-S RS-KMS...-A2-S	See Price List See Price List See Price List									
Key for individual lock mechanism Specify the KMS number e.g. ES-KMS 1, ES-KMS 200 etc...				ES-KMS...	ES-KMS...	See Price List									
To convert between maintained and spring-return functions and change the removable key position. Not suitable for Master Key Systems.	<table border="1"> <tr> <td>BLACK</td> <td>√</td> <td></td> </tr> <tr> <td>RED</td> <td>√</td> <td>—</td> </tr> <tr> <td>YELLOW</td> <td>▷</td> <td>—</td> </tr> </table>	BLACK	√		RED	√	—	YELLOW	▷	—			SP-RMQ-SW SP-RMQ-RT SP-RMQ-GE	SP-RMQ-SW SP-RMQ-RT SP-RMQ-GE	See Price List See Price List See Price List
BLACK	√														
RED	√	—													
YELLOW	▷	—													
Lock mechanism suitable for Master key systems¹⁾	√ 45° ▷ 45°	0 0		RS-SA(...)-A1 RS-SA(...)-A2	RS-SA(...)-A1-S RS-SA(...)-A2-S	See Price List See Price List									
Keys for master key systems				NS-SA(...)-... HS-SA(...)-... GHS-SA(...)-...	NS-SA(...)-... HS-SA(...)-... GHS-SA(...)-...	See Price List See Price List See Price List									

¹⁾ **Master key systems** are custom made arrangements with individualized certificates to insure protection against unauthorized acquisition of keys. When ordering, submit a scheme or plan showing your particular requirements. This "Master key plan" accompanies Moeller Order form **FO 276** (available on request, see sample on p. 5/61) when submitting an order. The back of FO 276 can also be used to sketch out the Master key plan requirements. Each Master key system certificate is assigned an identification number which must be presented when ordering additional keys. For more details, refer to pages 5/60 and 5/61.

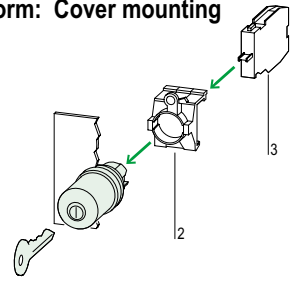
KMS 201...400 and Master key systems: Allow 4 to 6 weeks delivery.

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

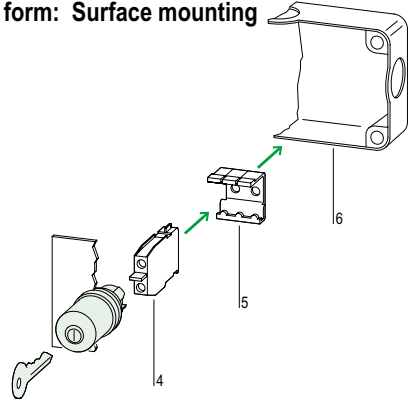
8		9		10		11		12	
		Round-on-square style 				Price			
		Type Front ring Matt chromed	Type Front ring Matt black			\$			
	MS	MS-S	MS-KMS1-A1	MS-KMS1-A1-S	MS-KMS1-A2	MS-KMS1-A2-S	See Price List	See Price List	See Price List
	MS-KMS...	MS-KMS...-S	MS-KMS...-A1	MS-KMS...-A1-S	MS-KMS...-A2	MS-KMS...-A2-S	See Price List	See Price List	See Price List
	ES-KMS...	ES-KMS...					See Price List	See Price List	See Price List
	SP-RMQ-SW	SP-RMQ-SW	SP-RMQ-RT	SP-RMQ-RT	SP-RMQ-GE	SP-RMQ-GE	See Price List	See Price List	See Price List
	MS-SA(...)-A1	MS-SA(...)-A1-S	MS-SA(...)-A2	MS-SA(...)-A2-S			See Price List	See Price List	See Price List
	NS-SA(...)-...	NS-SA(...)-...	HS-SA(...)-...	HS-SA(...)-...	GHS-SA(...)-...	GHS-SA(...)-...	See Price List	See Price List	See Price List

Mounting form: Cover mounting



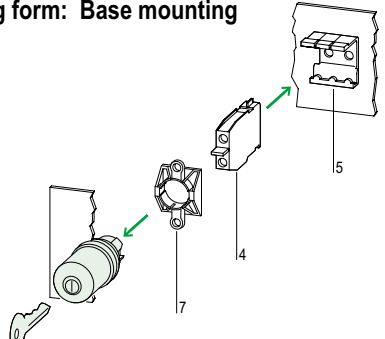
- 2 Mounting adapter Page 5/44
- 3 Contact element Page 5/44
- Legend plate Page 5/53
- Flush-mounting plate Page 5/56
- Accessories Page 5/58

Mounting form: Surface mounting




- 4 Contact element Page 5/44
- 5 Mounting adapter Page 5/44
- 6 Basic enclosure Page 5/57
- Legend plate Page 5/53
- Accessories Page 5/58

Mounting form: Base mounting



- 4 Contact element Page 5/44
- 5 Mounting adapter Page 5/44
- 7 Centering adapter Page 5/58
- Legend plate Page 5/53
- Telescopic bracket Page 5/58
- Accessories Page 5/58

1	2	3	4	5	6	7
	Function	Key removable in position:		Round style 		Price
	∨ = Maintained			Type	Type	
	∩ = Spring-return			Front ring Matt chromed	Front ring Matt black	\$

Key-operated selector switches, 3 position

Individual lock mechanism not suitable for use with master key systems. With two keys, maintained/spring-return function and removable key position can be changed using SP-RMQ coding adapters, one or two contact elements can be mounted

KMS 1 Mechanism

60°	∨	60°	I, 0, II
45°	∨	45°	0
60°	∨	45°	I, 0
45°	∨	60°	0, II
45°	∩	45°	0
60°	∩	45°	I, 0
45°	∩	45°	0
45°	∩	60°	0, II
45°	∩	45°	0



RS3
 RS3-KMS1-A1
 RS3-KMS1-A2
 RS3-KMS1-A3
 RS3-KMS1-A4
 RS3-KMS1-A5
 RS3-KMS1-A6
 RS3-KMS1-A7
 RS3-KMS1-A8

RS3-S
 RS3-KMS1-A1-S
 RS3-KMS1-A2-S
 RS3-KMS1-A3-S
 RS3-KMS1-A4-S
 RS3-KMS1-A5-S
 RS3-KMS1-A6-S
 RS3-KMS1-A7-S
 RS3-KMS1-A8-S

See Price List
 See Price List
 See Price List
 See Price List
 See Price List
 See Price List
 See Price List
 See Price List
 See Price List

KMS 2...10, 201...400

60°	∨	60°	I, 0, II
45°	∨	45°	0
60°	∨	45°	I, 0
45°	∨	60°	0, II
45°	∩	45°	0
60°	∩	45°	I, 0
45°	∩	45°	0
45°	∩	60°	0, II
45°	∩	45°	0

RS3-KMS...
 RS3-KMS...-A1
 RS3-KMS...-A2
 RS3-KMS...-A3
 RS3-KMS...-A4
 RS3-KMS...-A5
 RS3-KMS...-A6
 RS3-KMS...-A7
 RS3-KMS...-A8

RS3-KMS...-S
 RS3-KMS...-A1-S
 RS3-KMS...-A2-S
 RS3-KMS...-A3-S
 RS3-KMS...-A4-S
 RS3-KMS...-A5-S
 RS3-KMS...-A6-S
 RS3-KMS...-A7-S
 RS3-KMS...-A8-S

See Price List
 See Price List
 See Price List
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 See Price List

Key for individual lock mechanism

Specify the KMS number
 e.g. ES-KMS 1, ES-KMS 200 etc...



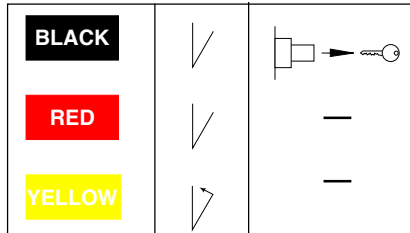
ES-KMS...

ES-KMS...

See Price List
 See Price List

Coding Adapters

To convert between maintained and spring-return functions and change the removable key position.
 Not suitable for Master Key Systems.



SP-RMQ-SW

SP-RMQ-SW

SP-RMQ-RT

SP-RMQ-RT

SP-RMQ-GE

SP-RMQ-GE

See Price List
 See Price List
 See Price List
 See Price List

Lock mechanism suitable for master key systems¹⁾

45°	∩	45°	0
45°	∩	45°	0
45°	∩	45°	0
45°	∩	45°	0



RS3-SA(...)-A1
 RS3-SA(...)-A4
 RS3-SA(...)-A6
 RS3-SA(...)-A8

RS3-SA(...)-A1-S
 RS3-SA(...)-A4-S
 RS3-SA(...)-A6-S
 RS3-SA(...)-A8-S

See Price List
 See Price List
 See Price List
 See Price List

Keys for master key systems

Standard Key
 Master Key
 General Master Key


































NS-SA(...)-...
 HS-SA(...)-...
 GHS-SA(...)-...

NS-SA(...)-...
 HS-SA(...)-...
 GHS-SA(...)-...

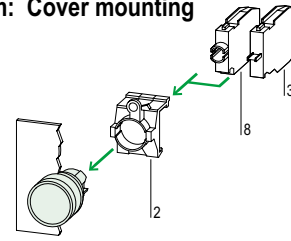
¹⁾ **Master key systems** are custom made arrangements with individualized certificates to insure protection against unauthorized acquisition of keys. When ordering, submit a scheme or plan showing your particular requirements. This "Master key plan" accompanies Moeller Order form **FO 276** (available on request, see sample on p. 5/61 when submitting an order. The back of FO 276 can also be used to sketch out the Master key plan requirements.) Each Master key system certificate is assigned an identification number which must be presented when ordering additional keys. For more details, refer to pages 5/60 and 5/61.

KMS 201...400 mechanisms and Master key systems: Allow 4 to 6 weeks delivery.

1	2	3	4	5	6	
	Illuminated pushbutton and indicating light		Round style 		Price	
	Color		Type Front ring Matt chromed	Type Front ring Matt black	\$	
Illuminated pushbutton operators NEMA/UL 3R, 12; IEC IP 65						
Heavy Duty Oiltight Pilot Devices Limit Switches, Safety Interlock Switches	Flush	 White		RLT-WS	RLT-WS-S	See Price List See Price List See Price List See Price List See Price List See Price List
		 Green		RLT-GN	RLT-GN-S	
		 Red		RLT-RT	RLT-RT-S	
		 Yellow		RLT-GE	RLT-GE-S	
		 Blue		RLT-BL	RLT-BL-S	
	Extended	 White		RLTH-WS	RLTH-WS-S	
		 Green		RLTH-GN	RLTH-GN-S	
		 Red		RLTH-RT	RLTH-RT-S	
		 Yellow		RLTH-GE	RLTH-GE-S	
		 Blue		RLTH-BL	RLTH-BL-S	
Maintained Illuminated pushbutton operators NEMA/UL type 3R, 12; IEC IP 65						
Flush Button remains in the operated position, press again to release.	 White		RLTR-WS	RLTR-WS-S		
	 Green		RLTR-GN	RLTR-GN-S		
	 Red		RLTR-RT	RLTR-RT-S		
	 Yellow		RLTR-GE	RLTR-GE-S		
	 Blue		RLTR-BL	RLTR-BL-S		
	Indicating light lens assemblies NEMA/UL 4/4X/13; IEC IP 65					
Flush Without front ring	 White		—	RLF-WS		
	 Green		—	RLF-GN		
	 Red		—	RLF-RT		
	 Yellow		—	RLF-GE		
	 Blue		—	RLF-BL		
Conical	 White		RL-WS	RL-WS-S		
	 Green		RL-GN	RL-GN-S		
	 Red		RL-RT	RL-RT-S		
	 Yellow		RL-GE	RL-GE-S		
	 Blue		RL-BL	RL-BL-S		

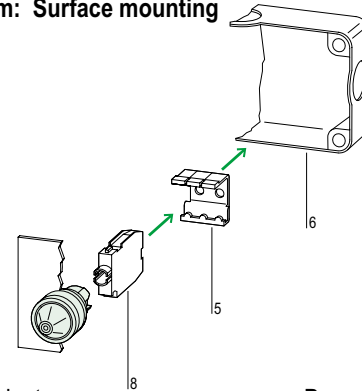
Round-on-square style 		Price
Type Front ring Matt chromed	Type Front ring Matt black	\$
	MLT-WS-S	See Price List
	MLT-GN-S	See Price List
	MLT-RT-S	See Price List
	MLT-GE-S	See Price List
	MLT-BL-S	See Price List
	MLTH-WS-S	See Price List
	MLTH-GN-S	See Price List
	MLTH-RT-S	See Price List
	MLTH-GE-S	See Price List
	MLTH-BL-S	See Price List
	MLTR-WS-S	See Price List
	MLTR-GN-S	See Price List
	MLTR-RT-S	See Price List
	MLTR-GE-S	See Price List
	MLTR-BL-S	See Price List
	MLF-WS	See Price List
	MLF-GN	See Price List
	MLF-RT	See Price List
	MLF-GE	See Price List
	MLF-BL	See Price List
	ML-WS-S	See Price List
	ML-GN-S	See Price List
	ML-RT-S	See Price List
	ML-GE-S	See Price List
	ML-BL-S	See Price List

Mounting form: Cover mounting



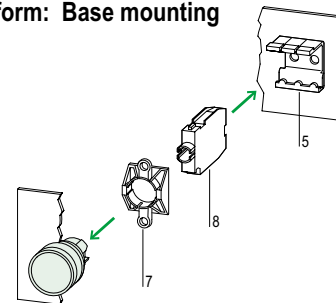
- 2 Mounting adapter Page 5/44
- 3 Contact element Page 5/44
- 8 Lamp socket element Page 5/46
- Filament or neon bulb/LED Page 5/59
- Legend plate Page 5/53
- Flush-mounting plate Page 5/56
- Accessories Page 5/58

Mounting form: Surface mounting





- 5 Mounting adapter Page 5/44
- 6 Basic enclosure Page 5/57
- 8 Lamp socket element Page 5/46
- Filament or neon bulb/LED Page 5/59
- Legend plate Page 5/53
- Accessories Page 5/58

Mounting form: Base mounting






- 5 Mounting adapter Page 5/44
- 7 Centering adapter Page 5/58
- 8 Lamp socket element Page 5/46
- Filament or neon bulb/LED Page 5/59
- Insert plate Page 5/50
- Legend plate Page 5/53
- Telescopic bracket Page 5/58
- Accessories Page 5/58

1	2	3	4	5	6	7
	Color		Round style 		Round-on-square style 	Price
			Type		Type	\$

Digital display assemblies

Single-decade display consisting of seven segments and a decimal point. Height of digits 14.2 mm. Operated via **BCE 24** or **BCEL 24** digital display operating block.

-  Green
-  Red
-  Yellow



- RZA-GN
- RZA-RT
- RZA-GE



- MZA-GN
- MZA-RT
- MZA-GE

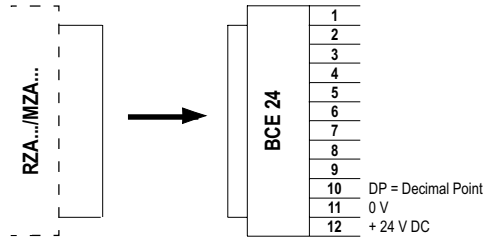
See Price List See Price List See Price List See Price List

Digital display operating block

Without memory
Operates one decade: with integral adapter for front mounting.
Display via **RZA...** or **MZA...** digital display assembly



BCE 24



BCE 24 truth table
(H = high signal, L = low signal)

1 to 10 operation

Inputs									Display
1	2	3	4	5	6	7	8	9	
L	L	L	L	L	L	L	L	L	0
H	L	L	L	L	L	L	L	L	1
L	H	L	L	L	L	L	L	L	2
L	L	H	L	L	L	L	L	L	3
L	L	L	H	L	L	L	L	L	4
L	L	L	L	H	L	L	L	L	5
L	L	L	L	L	H	L	L	L	6
L	L	L	L	L	L	H	L	L	7
L	L	L	L	L	L	L	H	L	8
L	L	L	L	L	L	L	L	H	9

BCD/hexadecimal operation (to F).
Terminals 3, 5, 6, 7 and 9 are not connected.

Inputs					Display	Inputs				Display
1	2	4	8	Display		1	2	4	8	
L	L	L	L	0	L	H	L	H	A	
H	L	L	L	1	H	H	L	H	B	
L	H	L	L	2	L	L	H	H	C	
H	H	L	L	3	H	L	H	H	D	
L	L	H	L	4	L	H	H	H	E	
H	L	H	L	5	H	H	H	H	F	
L	H	H	L	6						
H	H	H	L	7						
L	L	L	H	8						
H	L	L	H	9						

8 9 10 11

Type	Price
	\$

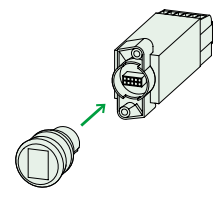
Digital display operating block

With memory
Operates one decade: with integral adapter for front mounting.
Display via **RZA...** or **MZA...** digital display assembly

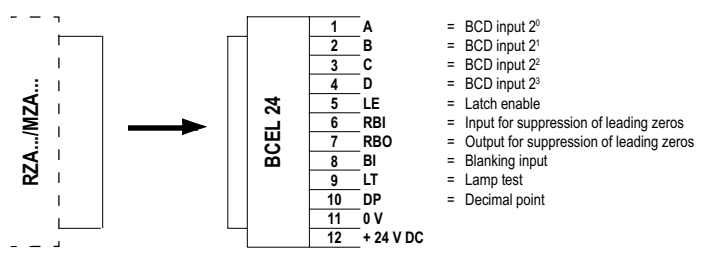
BCEL 24

See Price List See Price List See Price List
See Price List See Price List See Price List

Mounting form: Cover mounting



Legend plate Page 5/53
Flush-mounting plate Page 5/56
Accessories Page 5/58



BCEL 24 truth table
(H = high signal, L = low signal, X = undefined signal, H or L)

Inputs								Outputs	
1	2	3	4	5	8	9	6	7	Display
A	B	C	D	LE	BI	LT	RBI	RBO	
X	X	X	X	X	X	H	X	/	8 (Lamp test)
X	X	X	X	X	H	L	X	/	Dark
L	L	L	L	L	L	L	H	H	Dark (Suppression of leading zeros)
L	L	L	L	L	L	L	L	L	0
L	L	L	L	L	L	L	X	L	1
L	H	L	L	L	L	L	X	L	2
H	H	L	L	L	L	L	X	L	3
L	L	H	L	L	L	L	X	L	4
H	L	H	L	L	L	L	X	L	5
L	H	H	L	L	L	L	X	L	6
H	H	H	L	L	L	L	X	L	7
L	L	L	H	L	L	L	X	L	8
H	L	L	H	L	L	L	X	L	9
L	H	L	H	L	L	L	X	L	Dark
L	L	H	H	L	L	L	X	L	
H	L	H	H	L	L	L	X	L	
L	H	H	H	L	L	L	X	L	
X	X	X	X	H	L	L	X	/	Display of number in memory

Operation of BCEL 24

The BCD code is entered via inputs 1, 2, 3, and 4. The operating blocks of several decades can be controlled via a common bus.

When the "High" signal is at input 5 (LE) the digit on the bus is latched.


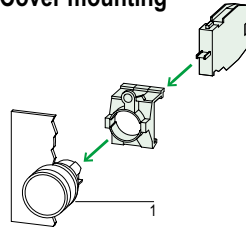




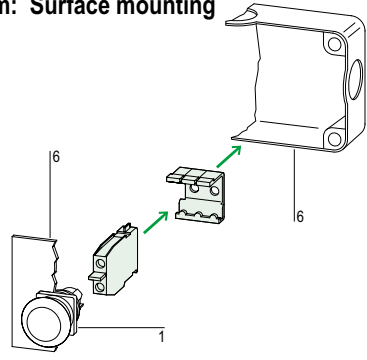




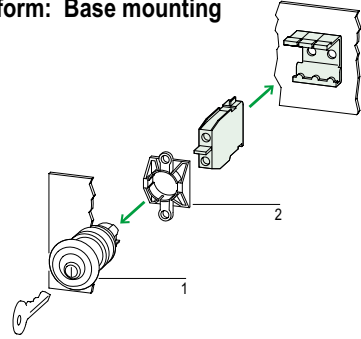


Each operating block must be connected to the + 24 V DC supply voltage.

The leading zero can be suppressed. To do this, the first input for the suppression of leading zeros (RBI) must be connected to the supply voltage and passed through the output for the suppression of leading zeros (RBO).

If input 8 (BI) of the element is set to "High" the display is extinguished.






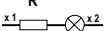

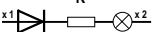

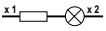

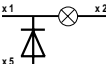

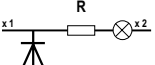




A function test of the display segments can be carried out via input 9 (LT) of the operating blocks.

The decimal point can be operated via input 10 (DP).

8	9	10	11	12			
Surface/Base Mounting		Type	Price				
Position of contact elements on mounting adapter		Base mounting	\$				
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		BE 3C	See Price List See Price List	<p>Mounting form: Cover mounting</p> 
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		EK 10C	See Price List See Price List	1 Operator Page 5/28
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		EK 01C	See Price List See Price List	Button plate Page 5/50 Legend plate Page 5/53 Flush-mounting plate Page 5/56
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		EK 10PC	See Price List See Price List	Accessories Page 5/58
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		EK 01RC	See Price List See Price List	<p>Mounting form: Surface mounting</p> 
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		BK 11C	See Price List See Price List	1 Operator Page 5/28 6 Basic enclosure Page 5/57
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		BK 10C	See Price List See Price List	Button plate Page 5/50 Legend plate Page 5/53
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		BK 01C	See Price List See Price List	Accessories Page 5/58
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		BK 11C	See Price List See Price List	<p>Mounting form: Base mounting</p> 
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		BK 10C	See Price List See Price List	1 Operator Page 5/28 2 Centering adapter Page 5/58
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1		BK 01C	See Price List See Price List	Legend plate Page 5/53 Telescopic bracket Page 5/58
2	3	1					
<table border="1"> <tr> <td>2</td> <td>3</td> <td>1</td> </tr> </table>	2	3	1				Accessories Page 5/58
2	3	1					

22.5 mm Control Circuit Devices RMQ 22 – Mounting Adapters and Lamp Elements - Cover Mounted

UL / CSA / IEC / CE

1	2	3	4	5	6	7																		
		Maximum bulb Wattage/ Resistance	Cover Mounting Position of elements on mounting adapter in accordance with EN 50 013		Type Front fixing	Price \$																		
Mounting adapter For the following elements		Sequence numbers on mounting adapter	1 3 2		BE 3	See Price List																		
Lamp socket elements BA 9's , without bulb For BE 3 and BE 3C mounting adapters																								
	For filament/neon bulbs or multiple LED's	2 W	1 3 2		EF	See Price List																		
	For 130 V filament bulb, for connection to 110 - 130 V for increased lifespan	2.6 W R = 1.2 k Ω	1 3 2		EF 1	See Price List																		
	For 130 V filament bulb, for connection to 220 - 240 V	2.4 W R = 7.5 k Ω	1 3 2		EFR	See Price List																		
	For 130 V filament bulb, for connection to 220 - 240 V AC	2.4 W R = 3.0 k Ω	1 3 2		EF 3	See Price List																		
	For 24 V filament bulb, to limit in-rush peak currents in electronic systems	2 W R = 47 Ω	1 3 2		EF 0	See Price List																		
With lamp test																								
	For filament bulbs, for decoupled lamp test function	2 W	1 3 2		EFD	See Price List																		
	For 130 V filament bulb, for connection to 220 - 240 V for decoupled lamp test function	2.4 W R = 7.5 k Ω	1 3 2		EFDR	See Price List																		
For BE 3 and BE 3C mounting adapter																								
Diode element		For decoupled lamp test function when BA 9's lamp socket elements are mounted separately	1 3 2		ED	See Price List																		
Lamp transformer elements 2 VA, 50...60 Hz, short circuit proof																								
	<table border="1"> <thead> <tr> <th>Primary (V AC)</th> <th>Secondary (V AC)</th> </tr> </thead> <tbody> <tr> <td>115 - 125</td> <td>6</td> </tr> <tr> <td>220 - 240</td> <td>6</td> </tr> <tr> <td>380 - 400</td> <td>6</td> </tr> <tr> <td>415 - 440</td> <td>6</td> </tr> <tr> <td>115 - 125</td> <td>24</td> </tr> <tr> <td>220 - 240</td> <td>24</td> </tr> <tr> <td>380 - 400</td> <td>24</td> </tr> <tr> <td>415 - 440</td> <td>24</td> </tr> </tbody> </table>	Primary (V AC)	Secondary (V AC)	115 - 125	6	220 - 240	6	380 - 400	6	415 - 440	6	115 - 125	24	220 - 240	24	380 - 400	24	415 - 440	24		1 3 2		ET 125/6 ET 220/6 ET 380/6 ET 440/6 ET 125/24 ET 220/24 ET 380/24 ET 440/24	See Price List
Primary (V AC)	Secondary (V AC)																							
115 - 125	6																							
220 - 240	6																							
380 - 400	6																							
415 - 440	6																							
115 - 125	24																							
220 - 240	24																							
380 - 400	24																							
415 - 440	24																							
Bold figures appear in type number at right						See Price List																		

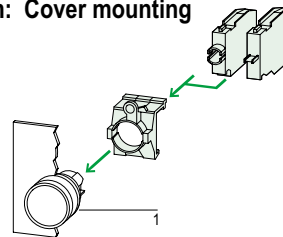
Limit Switches, Safety Interlock Switches

Heavy Duty Oiltight Pilot Devices

5

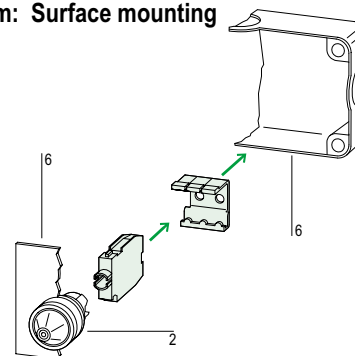
8	9	10	11	12	13
Maximum bulb Wattage/Resistance	Surface/ Base Mounting		Type	Price	
	Position of elements on mounting adapter in accordance with EN 50 013		Base	\$	
			BE 3C	See Price List	See Price List
2 W			EFC	See Price List	See Price List
2.6 W R = 1.2 k Ω			EF 1C	See Price List	See Price List
2.6 W R = 6.8 k Ω			EFRC	See Price List	See Price List
2.6 W R = 2.4 k Ω			EF 3C	See Price List	See Price List
2 W R = 47 Ω			EF 0C	See Price List	See Price List
2 W			EFDC	See Price List	See Price List
2.6 W R = 6.8 k Ω			EFDC	See Price List	See Price List
			ED	See Price List	See Price List
			ET 125/6 ET 220/6 ET 380/6 ET 440/6 ET 125/24 ET 220/24 ET 380/24 ET 440/24	See Price List	See Price List

Mounting form: Cover mounting



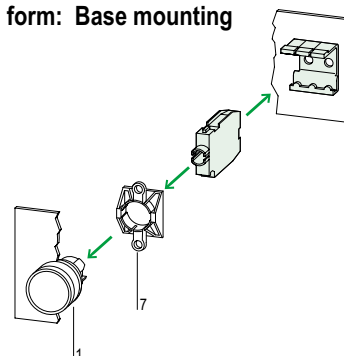
- 1 Illuminated pushbutton operator Page 5/40
- Filament or neon bulb/LED Page 5/59
- Insert plate Page 5/50
- Legend plate Page 5/53
- Flush-mounting plate Page 5/56
- Accessories Page 5/58

Mounting form: Surface mounting



- 2 Indicating light lens assembly Page 5/40
- 6 Basic enclosure Page 5/57
- Filament or neon bulb/LED Page 5/59
- Legend plate Page 5/53
- Accessories Page 5/58

Mounting form: Base mounting



- 1 Indicating light lens assembly Page 5/40
- Filament or neon bulb/LED Page 5/59
- Insert plate Page 5/50
- Legend plate Page 5/53
- Telescopic bracket Page 5/58
- Accessories Page 5/58


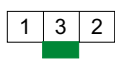

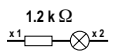
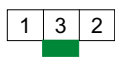

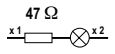
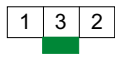


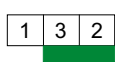

22.5 mm Control Circuit Devices UL / CSA / IEC / CE

RMQ 22 – Lamp Socket/Contact Assemblies, Transformer blocks - Cover mounted

1	2	3	4	5	6	7
		Maximum bulb Wattage	Cover Mounting		Type	Price
			Position of elements on mounting adapter in accordance with EN 50 013 ¹⁾		Front fixing	\$

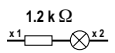
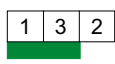


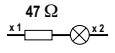
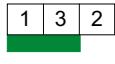


Lamp socket blocks BA 9's, without bulb

Combination of lamp socket element and mounting adapter

	For filament/neon bulbs or multiple LED's	2 W			BF	See Price List
	For 130 V filament bulb, for connection to 110 - 130 V for increased lifespan	2.6 W			BF 1	See Price List
	For 24 V filament bulb, to limit in-rush peak currents in electronic systems	2 W			BF 0	See Price List
With lamp test 	For filament bulbs, for decoupled lamp test function	2 W			BFD	See Price List

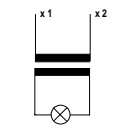
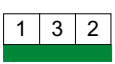

Lamp socket blocks with contacts BA 9's, without bulb

Combination of lamp socket element, contact element and mounting adapter


	For 130 V filament bulb, for connection to 110 - 130 V for increased lifespan	2.6 W			BK 10/F 1	See Price List
	One N.O. contact					See Price List
	For 24 V filament bulb, to limit inrush peak currents in electronic systems	2 W			BK 10/F 0	See Price List
	One N.O. contact					See Price List

Lamp transformer blocks with contacts BA 9's, without bulb

With integral mounting adapter
Two contact elements can be mounted

2 V A, 50...60 Hz, short-circuit proof 	Primary (V AC)	Secondary (V AC)				See Price List
	115 - 125	6				
	220 - 240	6				See Price List
	380 - 400	6				See Price List
	415 - 440	6				See Price List
	480 - 500	6				See Price List
	115 - 125	24				See Price List
	220 - 240	24				See Price List
	380 - 400	24				See Price List
	415 - 440	24				See Price List
	480 - 500	24				See Price List

Bold figures appear in Type number at right

1)  x = Sequence numbers on mounting adapter
y = Function numbers on contact element

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

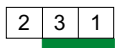
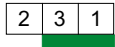
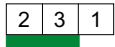
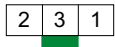
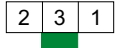
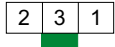
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8 9 10 11 12

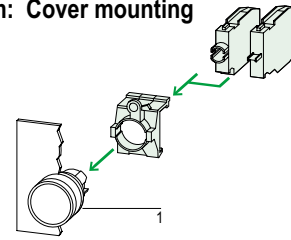
Surface/Base Mounting

Position of elements on mounting adapter in accordance with EN 50 013¹⁾

Type	Price
Base mounting	\$
BFC	See Price List
BF 1 C	See Price List
BF 0 C	See Price List
BFDC	See Price List
BK 10/F 1 C	See Price List
BK 10/F 0 C	See Price List

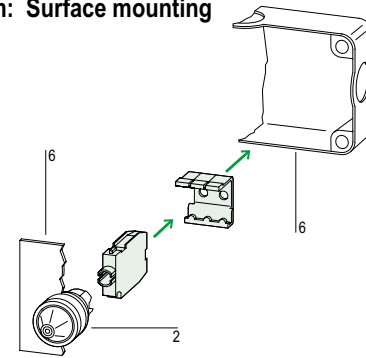


Mounting form: Cover mounting



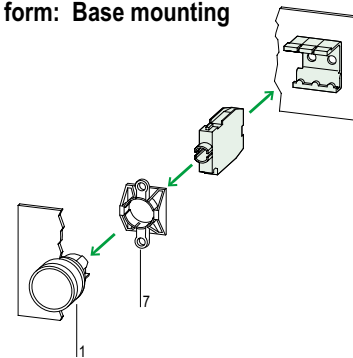
- 1 Indicating light lens assembly Page 5/40
- Filament bulb Page 5/59
- Legend plate Page 5/53
- Flush-mounting plate Page 5/56
- Accessories Page 5/58

Mounting form: Surface mounting



- 2 Indicating light lens assembly Page 5/40
- 6 Basic enclosure Page 5/57
- Filament bulb Page 5/59
- Insert plate Page 5/50
- Legend plate Page 5/53
- Accessories Page 5/58

Mounting form: Base mounting



- 1 Illuminated pushbutton operator Page 5/40
- Filament bulb Page 5/59
- Insert plate Page 5/50
- Legend plate Page 5/53
- Accessories Page 5/58



























































22.5 mm Control Circuit Devices RMQ 22 – Standard Marking Plates

1	2	3	4	5	6	7	8	9
Symbol meaning	Symbol designation	Type Button plates for: Pushbuttons and Selector switches		Type Double pushbuttons		Type Transparent insert plates for: Illuminated pushbuttons		Type Transparent insert plates for: Indicating light lens assembly, flush
Stop		10T		10D		10LT		10L
Start		11T		11D		—		—
		12T		—		—		—
		13T		—		—		—
		14T		—		—		—
		15T		—		—		—
Start or ON		21T		21D		11LT		11L
		22T		—		22LT		22L
		23T		—		23LT		23L
Increase		37T		37D		37LT		37L
Decrease		38T		38D		38LT		38L
Direction		32T		32D		32LT		32L
		36T		—		36LT		36L
Hand		40T		—		40LT		40L
Automatic		41T		—		41LT		41L
Setting		42T		—		42LT		42L
Inch		43T		—		43LT		43L
Fast		46T		—		46LT		46L
Advance		47T		—		47LT		47L
Unlock		52T		—		52LT		52L
Lock		53T		—		53LT		53L
Unclamp		54T		—		54LT		54L
Clamp		55T		—		55LT		55L
Brake		58T		—		58LT		58L
Release brake		59T		—		59LT		59L
Blow		60T		—		60LT		60L
Suck		61T		—		61LT		61L
Fluid pumps, general		62T		—		62LT		62L
Liquid		63T		—		63LT		63L
Horn		66T		—		—		—
Selector switches		90T		—		—		—
		91T		—		—		—
		92T		—		—		—
		93T		—		—		—
		99T		—		—		—
ON OFF		96T		—		—		—
AUTO HAND		97T		—		—		—

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

22.5 mm Control Circuit Devices RMQ 22 – Standard Marking Plates













1	2	3	4	5	6	7	8	9
Text		Type Button plates for: Pushbuttons and Selector switches		Type Double pushbuttons		Type Transparent insert plates for: Illuminated pushbuttons		Type Transparent insert plates for: Indicating light lens assembly, flush
STOP		110T		110D		110LT		—
START		111T		111D		111LT		—
OFF		217T		217D		217LT		217L
ON		221T		221D		221LT		221L
RAISE		232T		—		232LT		—
LOWER		233T		—		233LT		—
LEFT		234T		—		234LT		234L
RIGHT		235T		—		235LT		235L
HAND		140T		—		140LT		140L
AUTO		141T		—		141LT		141L
SET-UP		242T		—		—		—
JOGGING		243T		—		—		—
FAULT		—		—		250LT		250L
OPEN		252T		—		—		—
CLOSE		253T		253D		253LT		253L
BRAKE		258T		—		—		—
FORWARD		270T		—		—		—
REVERSE		271T		—		—		—
UP		272T		272D		272LT		272L
DOWN		273T		—		273LT		273L
HIGH		274T		—		—		—
LOW		275T		—		—		—
FAST		279T		—		—		—
SLOW		280T		—		—		—
RUN		283T		—		283LT		283L
TEST		284T		—		—		—
RESET		287T		—		—		—

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

22.5 mm Control Circuit Devices

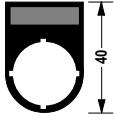
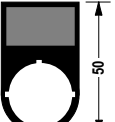
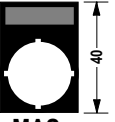
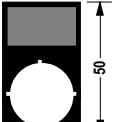
RMQ 22 – Marking Plates and Standard Legend Plates - Blank

1	2	3	4	5	6	7	8
	Color	Type	Type Can be engraved	Price \$	Letter height mm	Lines Number	Letters per line Number
Plates for pushbuttons							
Blank							
...TG for engraving Engraving depth: 0.2 mm (05TG = 0.4 mm)		Black	01T	01TG	See Price List	5	2 max. 6
		White	02T	02TG	See Price List	5	2 max. 6
		Green	03T	03TG	See Price List	5	2 max. 6
		Red	04T	04TG	See Price List	5	2 max. 6
		Yellow	05T	05TG	See Price List	5	2 max. 6
		Blue	06T	06TG	See Price List	5	2 max. 6
Plates for pushbuttons							
Blank							
...DG for engraving		Black	01D	01DG	See Price List	5	2 max. 6
		White	02D	02DG	See Price List	5	2 max. 6
		Green	03D	03DG	See Price List	5	2 max. 6
		Red	04D	04DG	See Price List	5	2 max. 6
Plates for illuminated pushbuttons							
Blank							
User to inscribe Use dry transfer letters or marker pen			01LT	—	See Price List	5	2 max. 6
Plates for indicating lights							
Blank							
User to inscribe Use dry transfer letters or marker pen			01L	—	See Price List	5	2 max. 6

Heavy Duty Oiltight Pilot Devices
 Limit Switches, Safety Interlock Switches

5

22.5 mm Control Circuit Devices RMQ 22 – Marking Plates and Standard Legend Plates- *Engraved*

1	2	3	4	5	6	7	8	9	10
Black legend plates with aluminum colored insert plate, text: black		Type RAS-..., RBS-... Round Design		Type		Type MAS-..., MBS-... Round on Square design		Type	Price \$
0		RAS-10		RBS-10		MAS-10		MBS-10	See Price List
I		RAS-11		RBS-11		MAS-11		MBS-11	
0 I	RAS	RAS-90	RBS	RBS-90	MAS	MAS-90	MBS	MBS-90	See Price List
0 I		RAS-98		RBS-98		MAS-98		MBS-98	See Price List
I 0 II		RAS-93		RBS-93		MAS-93		MBS-93	See Price List
→		RAS-32		RBS-32		MAS-32		MBS-32	See Price List
←		RAS-33		RBS-33		MAS-33		MBS-33	See Price List
STOP		RAS-110		RBS-110		MAS-110		MBS-110	See Price List
START		RAS-111		RBS-111		MAS-111		MBS-111	See Price List
RUN		RAS-283		RBS-283		MAS-283		MBS-283	See Price List
FAULT		RAS-250		RBS-250		MAS-250		MBS-250	See Price List
ON		RAS-221		RBS-221		MAS-221		MBS-221	See Price List
OFF		RAS-217		RBS-217		MAS-217		MBS-217	See Price List
FAST		RAS-279		RBS-279		MAS-279		MBS-279	See Price List
SLOW		RAS-280		RBS-280		MAS-280		MBS-280	See Price List
RIGHT		RAS-235		RBS-235		MAS-235		MBS-235	See Price List
LEFT		RAS-234		RBS-234		MAS-234		MBS-234	See Price List
HAND/AUTO		RAS-195		RBS-195		MAS-195		MBS-195	See Price List
OFF/ON		RAS-296		RBS-296		MAS-296		MBS-296	See Price List
HAND 0 AUTO		RAS-197		RBS-197		MAS-197		MBS-197	See Price List

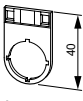
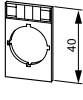
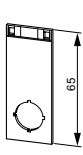
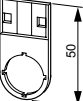
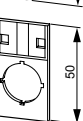
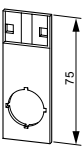
Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

22.5 mm Control Circuit Devices RMQ 22 – Insert Plates, Legend Plates

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

1	2	3	4	5	6	7	8	9
		Type For label mounts ...A...	Type For label mounts ...B...	Price \$			Type	Price \$
Insert plates Aluminum-colored, black text		0 I 0 I 0 I I 0 II → ←	10A 11A 90A 98A 93A 32A 33A	10B 11B 90B 98B 93B 32B 33B	See Price List See Price List See Price List See Price List See Price List See Price List See Price List	Legend plates For insert plates ...A Color Black Grey  RAS-X RAG-X Color Black Grey  MAS-X MAG-X Double pushbutton Color Black Grey  QAS-X QAG-X For insert plates ...B Color Black Grey  RBS-X RBG-X Color Black Grey  MBS-X MBG-X Double pushbutton Color Black Grey  QBS-X QBG-X		
STOP		110A	110B	See Price List				See Price List
START		111A	111B	See Price List				See Price List
RUN		283A	283B	See Price List				See Price List
FAULT		250A	250B	See Price List				See Price List
ON		221A	221B	See Price List				See Price List
OFF		217A	217B	See Price List				See Price List
FAST		279A	279B	See Price List				See Price List
SLOW		280A	280B	See Price List				See Price List
RIGHT		235A	235B	See Price List				See Price List
LEFT		234A	234B	See Price List				See Price List
HAND/AUTO		195A	195B	See Price List				See Price List
OFF/ON		296A	296B	See Price List				See Price List
HAND 0 AUTO		197A	197B	See Price List				See Price List
Blank		XA	XB	See Price List	Order Quantity:			See Price List
Non-standard plates¹⁾ Engraved (0.2 mm depth)		XA-SOND-GV	XB-SOND-GV	See Price List	1 – 24 pcs.			See Price List
Hot-stamped		XA-SOND-HP > 24 XA-SOND-HP > 49 XA-SOND-HP > 499	XB-SOND-HP > 24 XB-SOND-HP > 49 XB-SOND-HP > 499	See Price List	25 – 49 pcs. 50 – 499 pcs. ≥ 500 pcs.			See Price List

1) Special text: Allow 4 to 6 weeks delivery after clarification of order. Refer to table at right for text parameters and guidelines. Additional charges may apply for non-standard symbols and text. Consult Moeller Electric.

Ordering example: 100 pieces type **XA-SOND-HP > 49** 5/ Sander
 Letter height Line 1

	Insert plate Size mm	Letter Height mm	Number of lines max.	Number of characters per line
...A...	8 x 27 mm 8 x 27 mm	3.5 5	1 1	15 10
...B...	18 x 27 mm 18 x 27 mm	3.5 5	3 2	15 10


















1	2	3	4
		Type	Price
Emergency-stop plates			
Yellow, text black Emergency Stop		ZK-299	See Price List
Emergency Stop		1AK-299	See Price List
Yellow, blank		ZK-05	See Price List
Yellow, blank		1AK	See Price List










22.5 mm Control Circuit Devices RMQ 22 – Flush-Mounting Plates, Shrouds, Basic Enclosures

Limit Switches, Safety Interlock Switches

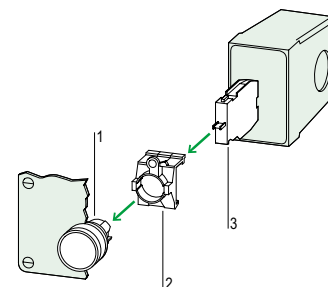
Heavy Duty Oiltight Pilot Devices

5

1	2	3	4	5	6	7	8	9	10
Number of mounting locations for plates and shrouds			Type	Price	Cable entry knock-outs Number x PG...			Type	Price
				\$					\$
Flush-mounting plates, Front IP 54			Shrouds, IP 40						
Aluminum with yellow paint finish, for emergency-stop buttons	1		EGE1M	See Price List	Plastic, light grey	3 x 16		H1M	See Price List
Aluminum light anodized	1		E1M	See Price List	Note: EC... double contact elements and BFT... cover mount transformer blocks cannot be used.				See Price List
Legend plates cannot be used if pushbuttons are mounted in vertical columns	2		E2M	See Price List		4 x 16		H2M	See Price List
Undrilled plates are available	3		E3M	See Price List		4 x 16		H3M	See Price List
	4		E4M	See Price List		4 x 16		H4M	See Price List
	5		E5M	See Price List		5 x 16		H5M	See Price List
	6		E6M	See Price List		6 x 16		H6M	See Price List
	7		E7M	See Price List		6 x 16		H7M	See Price List
	8		E8M	See Price List		7 x 16		H8M	See Price List

1	2	3	4	5	6	7	8
	Number of locations	Cable entry knockouts Bottom/Sides Number x PG...	Max. number of indicating lights ON simultaneously		Type	Price	
						\$	
Basic enclosures UL Indoor 4X/13; IEC IP 65 ¹⁾ (When equipped with 4X/13/IP 65 operators)							
Enclosure cover, yellow for emergency-stop buttons	1X	1 x PG 13.5 3 x PG 16	—		IGE1M	See Price List	See Price List
Enclosure cover light grey Enclosure base charcoal grey	1	1 x PG 13.5 3 x PG 16	1		I1M	See Price List	See Price List
	2	2 x PG 13.5 3 x PG 16	1		I2M	See Price List	See Price List
	3	2 x PG 13.5 4 x PG 16	2		I3M	See Price List	See Price List
	4	2 x PG 13.5 4 x PG 16	3		I4M	See Price List	See Price List
	5	2 x PG 13.5 4 x PG 16	4		I5M	See Price List	See Price List
Basic enclosures IP 65¹⁾ With quick-release fasteners							
Enclosure, light grey	12	Top and bottom each: 2 x PG 29/16 1 x PG 21/16	4		I12M	See Price List	See Price List
Light grey					ES-IM	See Price List	
Yellow					ES-IGE	See Price List	

Mounting form: Cover mounting

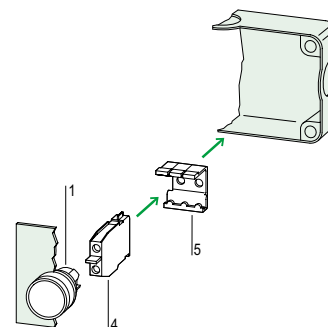


- 1 Operator Page 5/28
- 2 Mounting adapter Page 5/44
- 3 Contact element Page 5/44

Button plate Page 5/50
Legend plate Page 5/53

Accessories Page 5/58

Mounting form: Surface mounting



- 1 Operator Page 5/28
- 4 Contact element Page 5/45
- 5 Mounting adapter Page 5/45









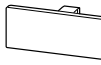
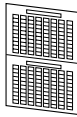
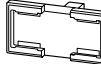

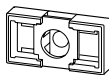
Button plate Page 5/50
Legend plate Page 5/53

Accessories Page 5/58








1) Enclosures cannot be used to mount EC..., BFT..., BCE 24, BCEL 24

22.5 mm Control Circuit Devices

RMQ 22 – Accessories

1	2	3	4
		Type	Price
			€
Hole plug To blank-off spare holes			
Round style	Black Grey	 RB 22S RB 22G	See Price List
Round-on-square style	Black Grey	 MB 22S MB 22G	See Price List
Operator diaphragms Increase environmental rating to IP 67, NEMA 4X IP 67 = Dusttight, Watertight, temporarily immersible Transparent diaphragm for severe environmental conditions			
	For use with		
Round style	RD-... operators RLT-... RLTR-... illuminated operators RLF-... indicating lights	 MT-D	See Price List
QDD, QDDL double operators		 MT-DD	See Price List
Telescopic brackets For depth adjustment of base-mounting devices in corrosion resistant insulated enclosures (type CI) and panels having a mounting depth of 116 mm to 147 mm. Stepless adjustment from 52 mm to 84 mm by means of a scale. Screw mounting. When installing base mounting elements, use BE 3C mounting adapter. Maximum of ten brackets per CI enclosure, of which five can have maintained pushbuttons installed. Not for use with Emergency-Stop operators.		 TW-RMQ	See Price List
Telescopic clips For depth adjustment of base-mounting devices in corrosion resistant insulated enclosures (type CI) and panels having a mounting depth of 126 mm to 157 mm. Stepless adjustment from 64 mm to 95 mm by means of a scale. Screw and snap-on mounting. When installing base mounting elements, use BE 3C mounting adapter. Maximum of ten clips per CI enclosure, of which five can have maintained pushbuttons installed. Not for use with Emergency-Stop operators.		 TC-RMQ	See Price List
Centering adapters Supplied with TW-RMQ and TC-RMQ For centering operators and indicating devices using telescopic bracket and telescopic clip.		 BE3Z	See Price List
Extensions For telescopic clip: for mounting depths up to 207 mm.		 TCV-RMQ	See Price List
Component labelling system Label mounts 8 x 17.5 mm, for use on Moeller equipment with corresponding mounting hole Standard quantity: 500		 XGKS-Z	See Price List
Adhesive labels For inscription using laser printer, plotter, marker pen, photocopier. Standard quantity: Pad of 25 sheets, 240 labels per sheet, perforated and self-adhesive, for use with label plates.		 XGKE-GE	See Price List
Clip-in adapter Secures label type XGKS-T on Moeller equipment with corresponding mounting hole. Standard quantity: 250		 XGKA-Z	See Price List
Label mounts 8 x 10 mm, Clip-in label nameplate can be marked with felt-tip pen or adhesive labels. Standard quantity: 500 label mounts		 KG-10 ¹⁾	See Price List
Universal mounting adapter For mounting XGKS components to non-Moeller devices.		 XGKA-U	See Price List

1) Must be ordered in standard quantity.

1	2	3	4	5	6
	Bulb Average Lifespan (AC)	Color		Type	Price \$
Adapter rings For mounting 22.5 mm diameter buttons in 30.5 mm diameter holes 1 set consists of adapter ring and lock nut		Black Yellow		R 22/30-SW R 22/30-GE	See Price List
Fast-on connectors Blade terminals for 1 x 6.3 up to 25 A or 2 x 2.8 mm up to 6 A ferrules to DIN 46 244 for contact elements and lamp socket elements. Use insulated ferrules. Standard quantity: 100				BT 483 ¹⁾	See Price List
Filament bulbs (BA 9s base) Length 28 mm max., diameter 10 mm Selected high-performance type				GL 130 GL 6 GL 12 GL 24 GL 48 GL 60 GL 24-1.2	See Price List
2.4 W/110 - 130 V	2000 Hrs				
2.0 W/6 V	5000 Hrs				
2.0 W/12 V	5000 Hrs				
2.0 W/24 V	5000 Hrs				
2.0 W/48 V	5000 Hrs				
2.0 W/60 V	5000 Hrs				
1.2 W/24 V	5000 Hrs				
Neon bulbs (BA 9s base) Length 28 mm max., diameter 10 mm				GIL 110K GIL 220K	See Price List
0.1 W/110 - 130 V AC	20,000 Hrs				
0.33 W/220 - 240 V AC	20,000 Hrs				
LED's (BA 9s base) New! Single-chip, universal voltage rated LED's (18 – 30 V, AC & DC) Longer life, Super bright intensity, more colors Length (with diffuser lens) 26 mm, diameter 10 mm (positive pole to X1), protected against polarity reversal				LED-W LED-R LED-G LED-Y LED-B	See Price List
0.5 W/18 – 30 V (AC & DC)	100,000 Hrs	White			
0.5 W/18 - 30 V (AC & DC)	100,000 Hrs	Red			
0.5 W/18 - 30 V (AC & DC)	100,000 Hrs	Green			
0.5 W/18 - 30 V (AC & DC)	100,000 Hrs	Yellow			
0.5 W/18 - 30 V (AC & DC)	100,000 Hrs	Blue			
Blinking LED's (BA 9s base) For DC supply (positive pole to X1), protected against polarity reversal LED blinks at 1.1 Hz (approx.)				LED-GE 24 B LED-GN 24 B LED-RT 24 B	See Price List
0.5 W/24 V DC	20,000 Hrs	Yellow			
0.5 W/24 V DC	20,000 Hrs	Green			
0.5 W/24 V DC	20,000 Hrs	Red			
Combination box wrench For front rings, lock nuts, indicating light lens assemblies and bulb extractors. Two per set				R 22-MS	See Price List

1) Must be ordered in standard quantity.

22.5 mm Control Circuit Devices RMQ 22 – Individual and Master Key Locking Systems, Ordering Sample

Individual lock mechanisms

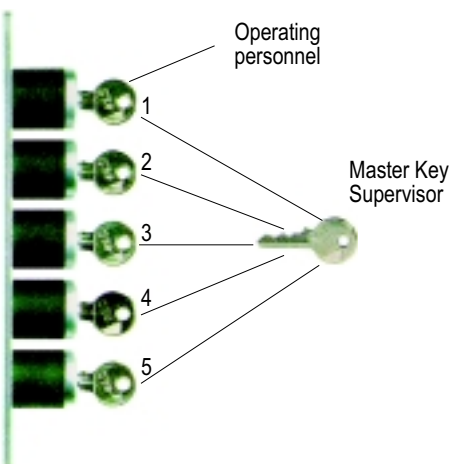
- Over two hundred different versions
- The keys are not interchangeable
- Individual lock mechanisms cannot be incorporated into a master key system, as master keys are not available for different individual lock mechanisms
- Individual lock mechanisms can be used for a wide range of Moeller Electric products, including rotary switches, manual motor starters and control panel doors

Example: it is possible both to open the control panel door and then to actuate the key-operated selector switch using just one key.

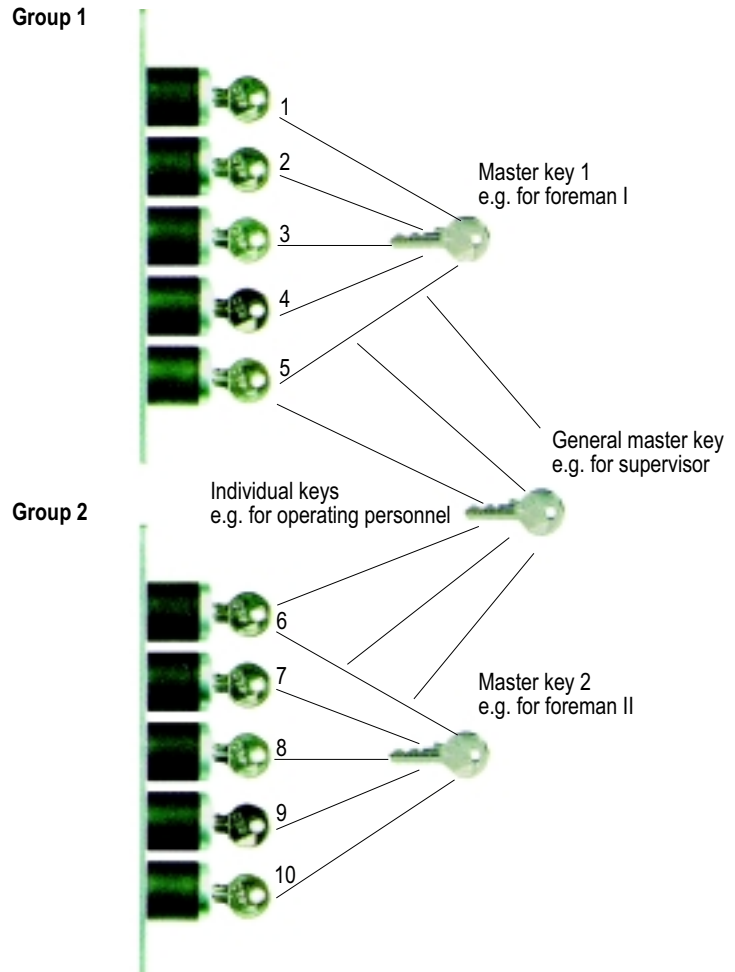
Master key systems

- Eight hundred different lock mechanisms
- Standard keys for individual lock mechanisms
- Master keys for groups consisting of different individual lock mechanisms
- Security certificate ensures protection against unauthorized acquisition of keys
- General master keys for all individual lock mechanisms of all groups
- Special key profile, of which only the lock manufacturer has details
- Domestic locks cannot be included in Moeller Electric master key systems

HS master key system



GHS general master key system

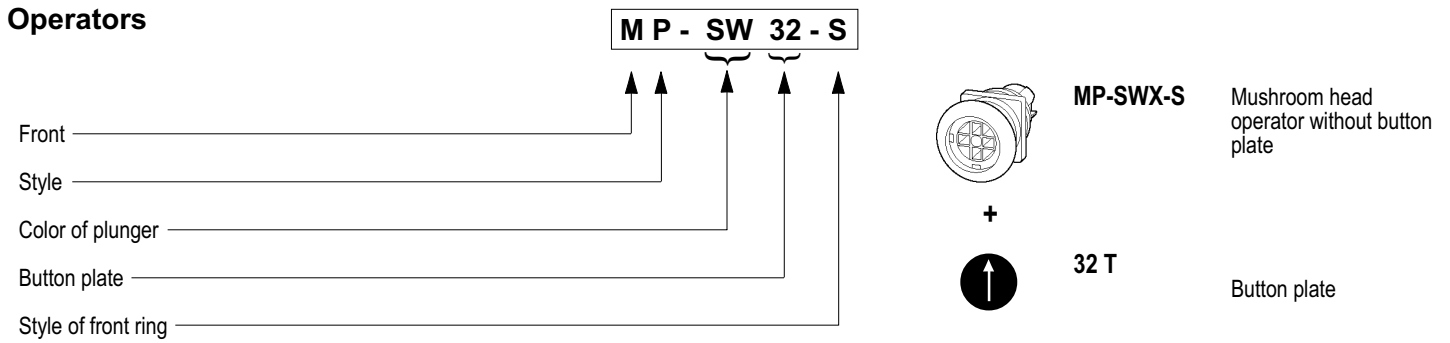


In the HS master key system, there is one key which will operate **all** locks. However, the keys for the individual locks will not operate any lock other than their own, unless this is specifically requested.

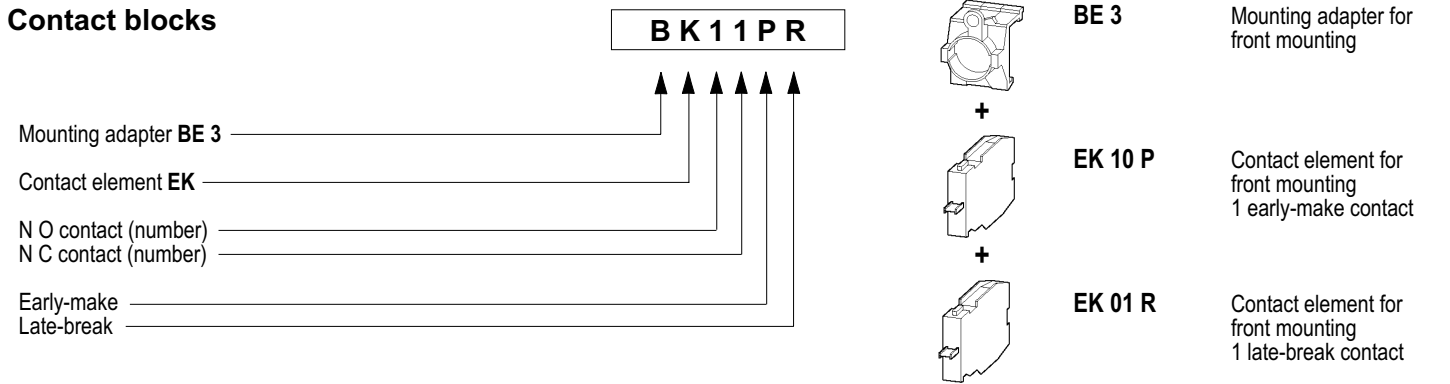
In the GHS general master key system comprises two or more master key systems, also known as groups. The GHS general master key will operate all locks in the entire installation. If required, several master key systems can be combined to give additional levels of supervisory control.

22.5 mm Control Circuit Devices RMQ 22 – Type Number Configurations

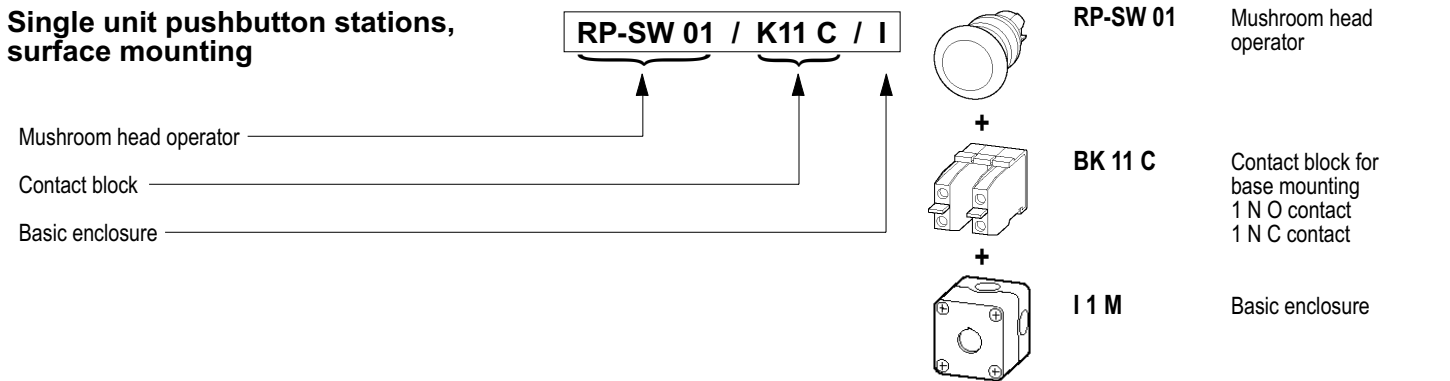
Operators



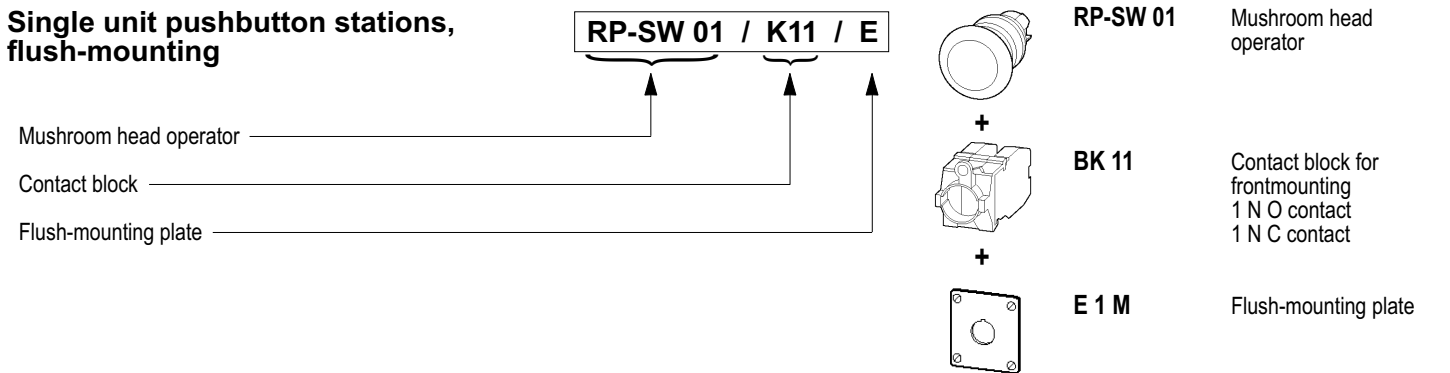
Contact blocks



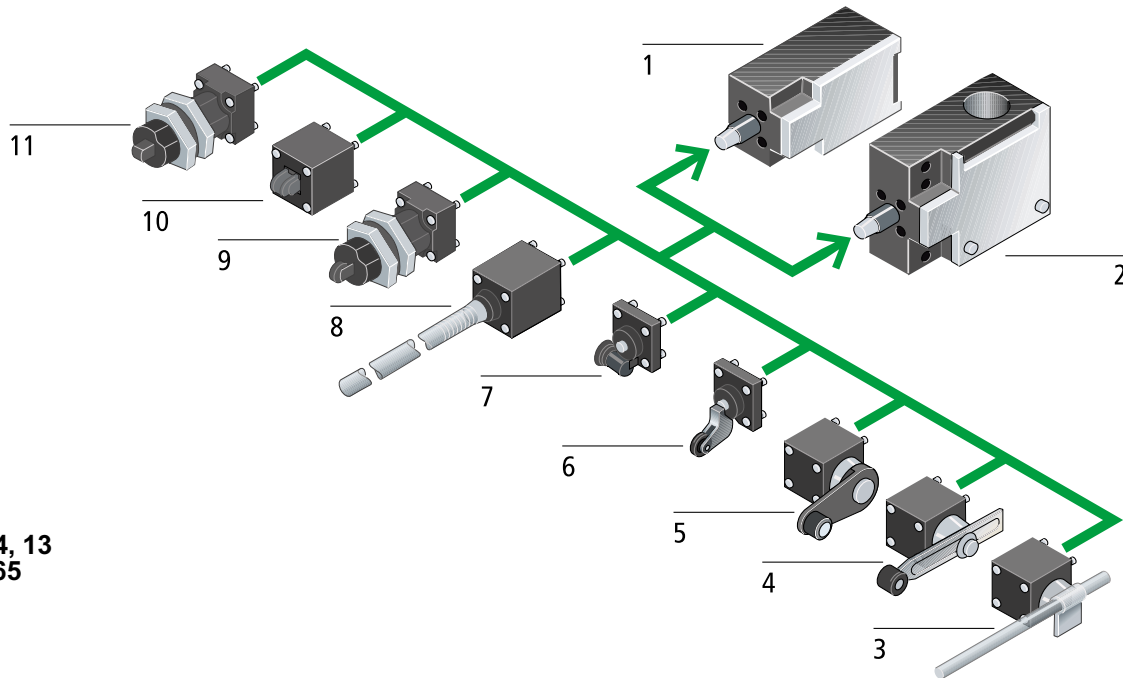
Single unit pushbutton stations, surface mounting



Single unit pushbutton stations, flush-mounting



AT 0 Limit Switches



NEMA 4, 13
IEC IP 65

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

AT 0 Limit Switches

Basic units

1, 2 Page 5/72

- Device for world markets: UL/CSA/IEC/CE
- Two sizes of housing
- Suitable for use in safety circuits, positive opening contacts to IEC/EN 60 947-5-1 ⊖
- NEMA 4/13; IEC IP 65
- Snap-fitting cover
- Multiple contact configurations: 1 N.O/1N.C.; 2 N.O.; 2 N.C.
- Snap or normal actuation contacts.



Standard limit switch with plunger
Narrow enclosure
Type AT 0-...-I



Standard limit switch with plunger
Wide enclosure
Type AT 0-...-IA



Single hole mounting roller plunger
Type RS-AT 0



Roller lever
Type AR-AT 0



Roller plunger
Type RS-AT 0

AT 0 Limit Switches

Operating heads

3, 4, 5, 6, 7, 8, 9, 10, 11 Page 5/77

- Nine different operating heads
- Operating heads can be rotated in 90° stages

- Actuating Rod (Type H-AT 0)** 3
Ideal on conveyor belts for light parts
- Adjustable Roller Lever (Type V-AT 0)** 4
Length adjustment as required
- Side Roller Lever (Type R-AT 0)** 5
Good for lateral and pendulum motion actuation
- Angled Roller Lever (Type WR-AT 0)** 6
For actuation along device's position axis
- Roller Lever (Type AR-AT 0)** 7
For high speed single sided actuation
- Spring-Rod Actuator (Type F-AT 0)** 8
For flexible actuation from all sides
- Plunger for Single Hole mounting (Type ZS-AT 0)** 9
For lateral and axial actuation when mounted in a through-hole
- Roller plunger (Type RS-AT 0)** 10
For lateral actuation with minimal force
- Roller plunger for Single Hole mounting (Type ZRS-AT 0)** 11
For lateral actuation when hole mounted

High Control Circuit Reliability with Universal Contacts

With low control circuit voltage, an increased number of circuit failures can occur in electrical control systems. That is the reason why special universal contacts, with low contact resistance, are used on all Moeller Electric limit switches. It offers a high level of control circuit reliability with low circuit voltages and thus making these limit switches most suitable for use with electronic systems. The galvanically separated contacts permit circuit voltages as high as 300 V (A 300 contact rating).

Contact Types

- normal action contacts
- overlapping contacts
- snap-action contacts

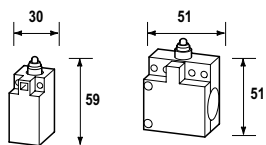
The normal and overlapping break contacts are activated directly by the actuating plunger. This makes these limit switches suitable for safety circuits where the control circuit must safely stop a machine even if the switch is damaged. Snap-action contacts close and open rapidly and are independent of the actuation speed. These are used when the activation speed is very slow (≤ 0.3 m/s), when there is excessive machine vibration, when switching DC voltages or when make and break contacts must be switched simultaneously. Only with snap action contacts can the arc created in breaking a DC circuit be effectively extinguished. The uninterrupted (defined) change-over time of the limit switch make/break contacts makes the snap-action switch suitable for interfaces with electronic systems and assembly lines. The actuating rod or spring rod actuator operating head is only used with the snap-action switches.

Versatile Modular System

Flexibility in Application – Simplified Stocking

The modular system consists of standard and non-standard basic switches, enclosures, actuating heads and levers. This system allows the assembly of the required switch, on the spot, from the modules in stock. Therefore, if many

different model switches are required, the costs in storing assembled switches can be reduced. There are available, however, any standard models completely assembled as required.



Enclosures

The enclosures are made of glass reinforced thermoplast. This enclosure design is totally insulated, corrosion resistant, has high mechanical impact strength and is extremely water, dust and oiltight.

Actuating Heads

All actuating heads can be turned in 90° stops, to the position required. Also, in order to meet more applications, besides the standard actuating heads, other heads such as the angled lever roller, actuating rod and spring actuating rod are available.

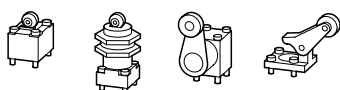
Plunger



The plunger head can be actuated in the direction of the plunger axis and with a drive it can be actuated in every direction perpendicular to the plunger axis.

Roller Plunger, Roller Lever

If the limit switch application has a high speed operating sequence or the drive cam has a long operating stroke, these actuating heads are ideal because of their long wear rollers.

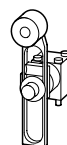


Angled Roller Lever



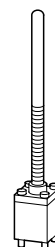
These actuating heads can be operated horizontally as well as vertically.

Actuating Heads with adjustable Lever Length



If the mounting points of the limit switches are known during the planning of an application, but the kind of operation cam or its distance to the limit switch is not yet known, then the actuating heads with the adjustable lever or adjustable rod offer the flexibility for a final adjustment in the field.

Spring Rod Actuator



This model can be actuated from any direction perpendicular to the spring rod axis. The head can be used with objects with irregular shapes; the spring rod absorbs strong vibrations and, therefore, the snap-action switch is actuated only as required.

Limit Switches AT 0 – Compact, Oiltight

NEMA 4/13; IEC IP 65; CE

1	2	3	4	5	6	7	8	9
	Contact Sequence Contact ■ closed □ open Zw = Positive opening clearance to IEC/EN 60 947-5-1	Contacts NO = Normally open NC = Normally closed ⊕ = Positive opening safety function to IEC/EN 60 947-5-1		Plunger EN 50 047 Form B Basic Unit	Price		Plunger Single hole mounting	Price
				Type	\$		Type	\$

Complete units totally insulated

Narrow enclosures



1 NO
1 NC ⊕



AT 0-11-1-I

See Price List

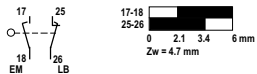
See Price List



AT 0-11-1-I/ZS

See Price List

See Price List



1 NO-EM¹⁾
1 NC-LB¹⁾ ⊕

AT 0-11-2-I

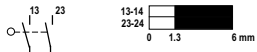
See Price List

See Price List

AT 0-11-2-I/ZS

See Price List

See Price List



2 NO

AT 0-20-1-I

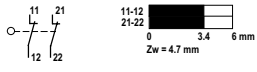
See Price List

See Price List

AT 0-20-1-I/ZS

See Price List

See Price List



2 NC ⊕

AT 0-02-1-I

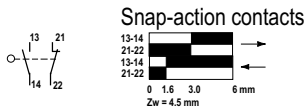
See Price List

See Price List

AT 0-02-1-I/ZS

See Price List

See Price List



1 NO
1 NC ⊕

AT 0-11-S-I

See Price List

See Price List

AT 0-11-S-I/ZS

See Price List

See Price List

Wide enclosures



1 NO
1 NC ⊕



AT 0-11-1-IA

See Price List

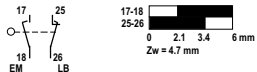
See Price List



AT 0-11-1-IA/ZS

See Price List

See Price List



1 NO-EM¹⁾
1 NC-LB¹⁾ ⊕

AT 0-11-2-IA

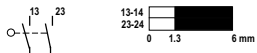
See Price List

See Price List

AT 0-11-2-IA/ZS

See Price List

See Price List



2 NO

AT 0-20-1-IA

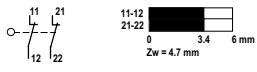
See Price List

See Price List

AT 0-20-1-IA/ZS

See Price List

See Price List



2 NC ⊕

AT 0-02-1-IA

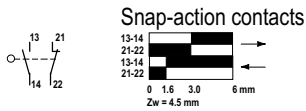
See Price List

See Price List

AT 0-02-1-IA/ZS

See Price List

See Price List



1 NO
1 NC ⊕

AT 0-11-S-IA

See Price List



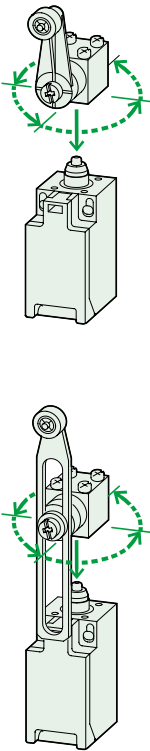


See Price List

AT 0-11-S-IA/ZS

See Price List

See Price List

1) EM = Early make
LB = Late break

10	11	12	13	14	15	16
	Roller plunger EN 50 047 Form C	Price		Roller plunger Single hole mounting	Price	Remarks
	Type	\$		Type	\$	
	AT 0-11-1-I/RS	See Price List		AT 0-11-1-I/ZRS	See Price List	 <p>The operating head can be turned in 90° stages to match the specified direction of actuation. For IP 65 protection use cable entry clamp STB 13.5. For external applications and temperatures down to -40° C, use the sealing membrane RBS-AT 0.</p> <p>Accessories</p> <p>Cable entry clamp STB 13.5 5/83 Sealing membrane RBS-AT 0 5/83</p>
	AT 0-11-2-I/RS	See Price List		AT 0-11-2-I/ZRS	See Price List	
	AT 0-20-1-I/RS	See Price List		AT 0-20-1-I/ZRS	See Price List	
	AT 0-02-1-I/RS	See Price List		AT 0-02-1-I/ZRS	See Price List	
	AT 0-11-S-I/RS	See Price List		AT 0-11-S-I/ZRS	See Price List	
	AT 0-11-1-IA/RS	See Price List		AT 0-11-1-IA/ZRS	See Price List	
	AT 0-11-2-IA/RS	See Price List		AT 0-11-2-IA/ZRS	See Price List	
	AT 0-20-1-IA/RS	See Price List		AT 0-20-1-IA/ZRS	See Price List	
	AT 0-02-1-IA/RS	See Price List		AT 0-02-1-IA/ZRS	See Price List	
	AT 0-11-S-IA/RS	See Price List		AT 0-11-S-IA/ZRS	See Price List	

Limit Switches AT 0 – Compact, Oiltight

NEMA 4/13; IEC IP 65; CE

1	2	3	4	5	6	7	8	9	10
	Contact Sequence Contact ■ closed □ open Zw = Positive opening clearance to IEC/EN 60 947-5-1	Contacts NO = Normally open NC = Normally closed ⊖ = Positive opening safety function to IEC/EN 60 947-5-1		Spring rod actuator head¹⁾ Type	Price \$			Roller lever EN 50 047 Form E Type	Price \$

Complete units totally insulated

Narrow enclosures



1 NO
1 NC ⊖



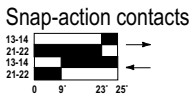
1 NO-EM²⁾
1 NC-LB²⁾ ⊖



2 NO



2 NC ⊖



1 NO
1 NC ⊖



AT 0-11-S-I/F

See Price List

See Price List

See Price List

See Price List

See Price List

See Price List

AT 0-11-1-I/AR

AT 0-11-2-I/AR

AT 0-20-1-I/AR

AT 0-02-1-I/AR

AT 0-11-S-I/AR

Wide enclosures



1 NO
1 NC ⊖



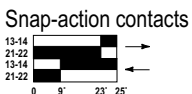
1 NO-EM²⁾
1 NC-LB²⁾ ⊖



2 NO



2 NC ⊖



1 NO
1 NC ⊖



AT 0-11-S-IA/F

See Price List

See Price List

See Price List

See Price List

See Price List

See Price List

AT 0-11-1-IA/AR

AT 0-11-2-IA/AR

AT 0-20-1-IA/AR

AT 0-02-1-IA/AR

AT 0-11-S-IA/AR

- Not to be used as a safety switch. Use only with snap-action contacts.
- EM = Early make
LB = Late break

Heavy Duty Oiltight Pilot Devices
 Limit Switches, Safety Interlock Switches
5

11	12	13	14	15	16	17	18	19
		Angled Roller Lever	Price			Side Roller Lever EN 50 047 Form A	Price	Remarks
		Type	\$			Type	\$	
13-14 21-22		AT 0-11-1-I/WR	See Price List	13-14 21-22		AT 0-11-1-I/R	See Price List	<p>The operating head can be turned in 90° stages to match the specified direction of actuation. For IP 65 protection use cable entry clamp STB 13.5. For external applications and temperatures down to -40 deg. C, use the sealing membrane RBS-AT 0.</p> <p>Accessories</p> <p>Cable entry clamp STB 13.5 5/83</p> <p>Sealing membrane RBS-AT 0 5/83</p>
17-18 25-26		AT 0-11-2-I/WR	See Price List	17-18 25-26		AT 0-11-2-I/R	See Price List	
13-14 23-24		AT 0-20-1-I/WR	See Price List	13-14 23-24		AT 0-20-1-I/R	See Price List	
11-12 21-22		AT 0-02-1-I/WR	See Price List	11-12 21-22		AT 0-02-1-I/R	See Price List	
13-14 21-22 13-14 21-22		AT 0-11-S-I/WR	See Price List	13-14 21-22 13-14 21-22		AT 0-11-S-I/R	See Price List	
			See Price List	13-14 21-22		AT 0-11-1-IA/R	See Price List	
			See Price List	17-18 25-26		AT 0-11-2-IA/R	See Price List	
			See Price List	13-14 23-24		AT 0-20-1-IA/R	See Price List	
			See Price List	11-12 21-22		AT 0-02-1-IA/R	See Price List	
			See Price List	13-14 21-22 13-14 21-22		AT 0-11-S-IA/R	See Price List	

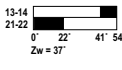
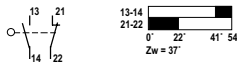
Limit Switches AT 0 – Compact, Oiltight

NEMA 4/13; IEC IP 65; CE

1	2	3	4	5	6	7	8	9
	Contact Sequence Contact ■ closed □ open Zw = Positive opening clearance to IEC EN 60 947-5-1	Contacts NO = Normally open NC = Normally closed ⊖ = Positive opening safety function to IEC/EN 60 947-5-1		Adjustable Roller Lever Type	Price \$		Actuating Rod Type	Price \$

Complete units totally insulated

Narrow enclosures



1 NO
1 NC ⊖



AT 0-11-1-I/V

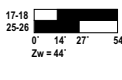
See Price List

See Price List

AT 0-11-1-I/H

See Price List

See Price List



1 NO-EM²⁾
1 NC-LB²⁾ ⊖



AT 0-11-2-I/V

See Price List

See Price List



AT 0-11-2-I/H

See Price List

See Price List



2 NO

AT 0-20-1-I/V

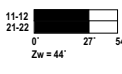
See Price List

See Price List

AT 0-20-1-I/H

See Price List

See Price List



2 NC ⊖

AT 0-02-1-I/V

See Price List

See Price List

AT 0-02-1-I/H

See Price List

See Price List



1 NO
1 NC ⊖

AT 0-11-S-I/V

See Price List

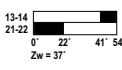
See Price List

AT 0-11-S-I/H

See Price List

See Price List

Wide enclosures



1 NO
1 NC ⊖



AT 0-11-1-IA/V

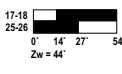
See Price List

See Price List

AT 0-11-1-IA/H

See Price List

See Price List



1 NO-EM²⁾
1 NC-LB²⁾ ⊖



AT 0-11-2-IA/V

See Price List

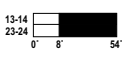
See Price List



AT 0-11-2-IA/H

See Price List

See Price List



2 NO

AT 0-20-1-IA/V

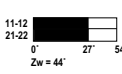
See Price List

See Price List

AT 0-20-1-IA/H

See Price List

See Price List



2 NC ⊖

AT 0-02-1-IA/V

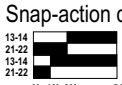
See Price List

See Price List

AT 0-02-1-IA/H

See Price List

See Price List



1 NO
1 NC ⊖

AT 0-11-S-IA/V

See Price List

See Price List

AT 0-11-S-IA/H


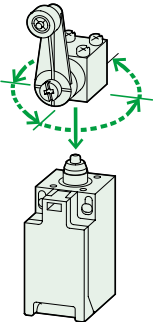
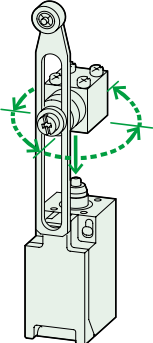








See Price List

See Price List

1) Not to be used as a safety switch.
2) EM = Early make
LB = Late break

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

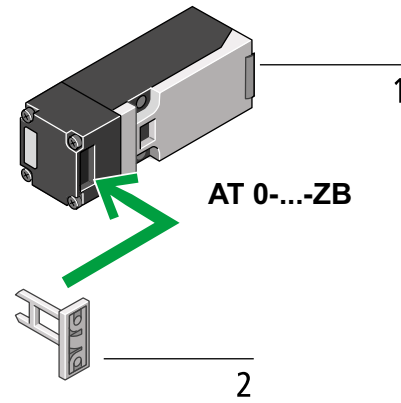
10	11	12	13	14
		Type	Price	Remarks
			\$	
Operating heads				
With Roller Plunger Form C to EN 50 047		RS-AT 0	See Price List	  <p>The operating head can be turned in 90° stages to match the specified direction of actuation. For IP 65 protection use cable entry clamp STB 13.5. For external applications and temperatures down to -40° C, use the sealing membrane RBS-AT 0.</p> <p>Accessories</p> <p>Cable entry clamp STB 13,5 5/83 Sealing membrane RBS-AT 0 5/83</p>
With Roller Plunger (single hole mounting)		ZRS-AT 0	See Price List	
With Plunger (single hole mounting)		ZS-AT 0	See Price List	
With Spring-rod Actuator ¹⁾²⁾		F-AT 0	See Price List	
With Roller Lever Form E to EN 50 047		AR-AT 0	See Price List	
With Angled Roller Lever		WR-AT 0	See Price List	
With Side Roller Lever Form A to EN 50 047		R-AT 0	See Price List	
With Adjustable Roller Lever		V-AT 0	See Price List	
With Actuating Rod ¹⁾		H-AT 0	See Price List	

1) Not to be used as a safety switch.
2) For use only in conjunction with snap-action contacts.

AT 0-...-ZB Safety Interlock Switches
 Door opens...Power OFF!

Base unit 1 [Page 5/82](#)

- Device for world markets: **UL/CSA/IEC/CE**
- In conformity with **EN 1088**, Machinery Directive Safety Standard CE for safety interlocking provisions.
- Suitable for use in safety circuits, positive opening contacts to **IEC/EN 60 947-5-1** ⊖
- **NEMA 12/13; IEC IP 65**
- Multiple contact configurations: **1 N.O/1N.C.; 1 N.C.; 2 N.C.**
- Actuation from 5 different directions possible.
- For higher level of protection for personnel.
- Snap-fitting cover.



NEMA 12, 13
IEC IP 65

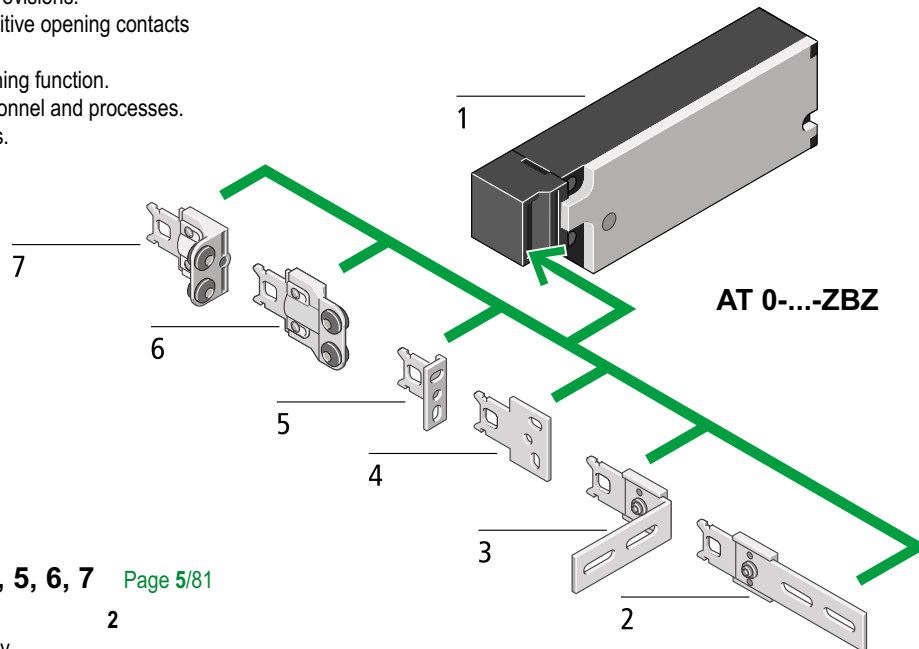
Actuating Element 2 [Page 5/83](#)

Triple-coded Actuator prevents tampering

AT 0-...-ZBZ Safety Interlock Switches with retaining function
 Interlocks with door to prevent opening

Base unit 1 [Page 5/80](#)

- Device for world markets: **UL/CSA/IEC/CE**
- In conformity with **EN 1088**, Machinery Directive Safety Standard CE for safety interlocking provisions.
- Suitable for use in safety circuits, positive opening contacts to **IEC/EN 60 947-5-1** ⊖
- With spring or magnet powered retaining function.
- For higher level of protection for personnel and processes.
- Broad selection of actuating elements.

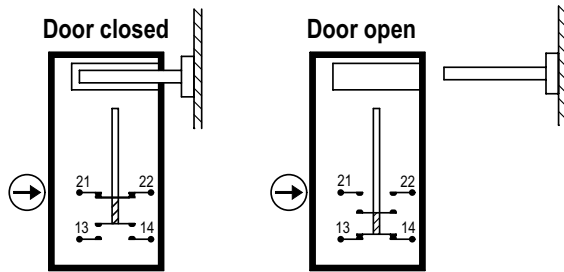


NEMA 4, 12, 13
IEC IP 65

Actuating Elements 2, 3, 4, 5, 6, 7 [Page 5/81](#)

- Straight, flexible Actuator 2**
 For doors which do not close precisely
- Angled, flexible Actuator 3**
 For doors which do not close precisely
- Straight Actuator 4**
 For sliding doors
- Angled Actuator 5**
 For swing doors
- Straight Actuator with overlap 6**
 For increased tolerance in the closing direction of doors which do not close precisely
- Angled Actuator with overlap 7**
 For increased tolerance in the closing direction of doors which do not close precisely

Type: AT 0-...-ZB (Position switch)

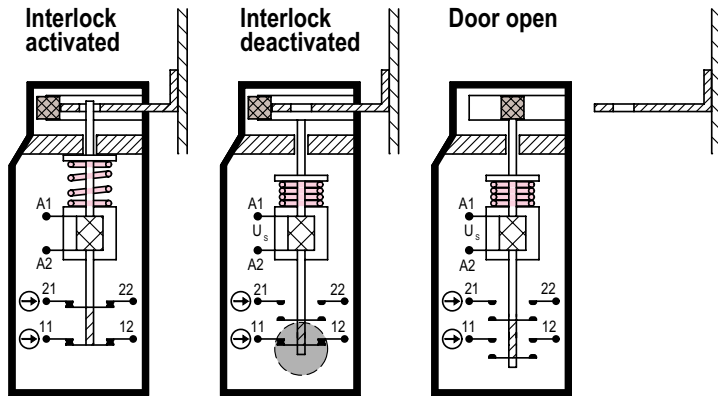


For Personnel safety

- Door is opened → Positive opening N.C. 21-22 contact opens
- Open Door → The N.C. 21-22 contact is safely open, even where attempts are made to tamper using basic tools
- Door is closed → The triple-coded Actuator element re-closes the N.C. contact

Type: AT 0-02-...FT-ZBZ (Spring powered)

Power required to deactivate interlock

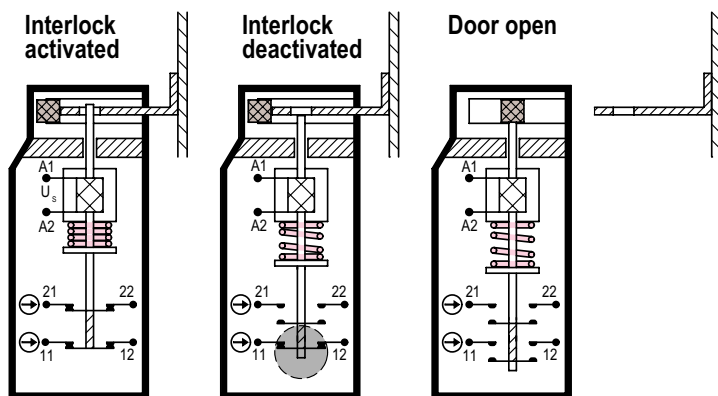


Higher degree of Personnel safety with separate monitoring of the door position

- Door is closed & Interlocked → Requires no power: Interlock also remains active under power loss or wire breakage. Interlocked door = Safe State N.C. enabling contact 21-22 is closed and allows an operation e.g. machine run, to start.
- To release Door → Apply voltage to the coil (A1, A2) e.g. from a motion detector. The N.C. enabling contact 21-22 opens. The N.C. door monitoring contact 11-12 remains closed as long as the door remains closed.
- Opening the door → Only possible once it is released. The N.C. door monitoring contact 11-12 opens to indicate the open door.
- Door is open → Both contacts are blocked open, even where attempts are made to tamper using basic tools
- Re-closing door → Triple-coded actuator removes the block on the N.C. enabling contact 21-22. The N.C. door monitoring contact 11-12 re-closes
- To interlock door → Remove voltage from coil:
 1. Actuator is locked in.
 2. The N.C. enabling contact 21-22 closes.
 → The enabling contact can only close when the door is interlocked

Type: AT 0-02-...MT-ZBZ (Magnet powered)

Power required to activate interlock



Process protection & Personnel safety with separate monitoring of the door position


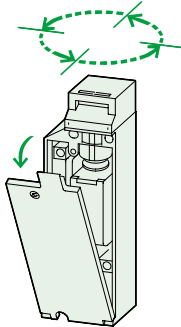
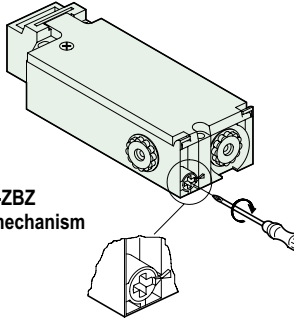


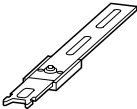


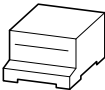
- Door is closed (Activate Interlock) → Requires power: Voltage is applied to the coil to activate interlock: Quicker access possible in the event of a power loss or wire breakage Both the N.C. enabling contact 21-22 and the N.C. door monitoring 11-12 contact are closed
- To release Door → Remove voltage from the coil (A1, A2) e.g. from a motion detector. The N.C. enabling contact 21-22 opens. The N.C. door monitoring contact 11-12 remains closed as long as the door remains closed.
- Opening the door → Only possible once door is released (interlock deactivated). The N.C. door monitoring contact 11-12 opens to indicate the open door.
- Door is open → Both contacts are blocked open, even where attempts are made to tamper using basic tools
- Re-closing door → Triple-coded actuator removes the block on the N.C. enabling contact 21-22. The N.C. door monitoring contact 11-12 re-closes
- To interlock door (Re-Activate Interlock) → Reapply voltage to coil:
 1. Actuator is locked in.
 2. The N.C. enabling contact 21-22 closes.
 → The enabling contact can only close when the door is interlocked

1		2		3		4		5	
Contact Configuration		NO = Normally open NC = Normally closed ⊖ Positive opening clearance to		Control Voltage supply to magnetic coil		Type		Price	
IEC EN 60 947-5-1		(A1-A2)		Without Actuator Element		\$			
<p>AT 0-...FT-ZBZ, Spring-power activated Interlock switch (Power required to deactivate interlock)</p> <ul style="list-style-type: none"> ■ With Interlock monitoring and auxiliary release mechanism ■ With continuous monitoring of door position ■ Overview of additional features, see pages 5/78-79 									
1 NO	1 NC ⊖		24 VDC	AT 0-11-24 DFT-ZBZ/X		See Price List		See Price List	
-	2 NC ⊖		24 VDC	AT 0-02-24 DFT-ZBZ/X		See Price List		See Price List	
1 NO	1 NC ⊖		120 V 50/60 HZ	AT 0-11-120 AFT-ZBZ/X		See Price List		See Price List	
-	2 NC ⊖		120 V 50/60 HZ	AT 0-02-120 AFT-ZBZ/X		See Price List		See Price List	
1 NO	1 NC ⊖		230 V 50/60 HZ	AT 0-11-230 AFT-ZBZ/X		See Price List		See Price List	
-	2 NC ⊖		230 V 50/60 HZ	AT 0-02-230 AFT-ZBZ/X		See Price List		See Price List	
<p>AT 0-...-MT-ZBZ, Electromagnet activated Interlock switch (Power required to activate interlock)</p> <ul style="list-style-type: none"> ■ With Interlock monitoring ■ With continuous monitoring of door position ■ Overview of additional features, see pages 5/78-79 									
1 NO	1 NC ⊖		24 VDC	AT 0-11-24 DMT-ZBZ/X		See Price List		See Price List	
-	2 NC ⊖		24 VDC	AT 0-02-24 DMT-ZBZ/X		See Price List		See Price List	
1 NO	1 NC ⊖		120 V 50/60 Hz	AT 0-11-120 AMT-ZBZ/X		See Price List		See Price List	
-	2 NC ⊖		120 V 50/60 Hz	AT 0-02-120 AMT-ZBZ/X		See Price List		See Price List	
1 NO	1 NC ⊖		230 V 50/60 Hz	AT 0-11-230 AMT-ZBZ/X		See Price List		See Price List	
-	2 NC ⊖		230 V 50/60 Hz	AT 0-02-230 AMT-ZBZ/X		See Price List		See Price List	

Note: Actuator Element supplied separately. See page 5/81 for actuator selection to complete switch.

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

6	7	8	9
	Type	Price	Remarks
		\$	
<p>Actuator Elements To complete the basic switch AT 0...-ZBZ/X</p>			
<p>Straight Actuator for sliding doors</p> 	G-ZBZ	See Price List	<p>Care should be taken during mounting and operation that no foreign particles penetrate the entry point of the actuator element</p>  <p>The operating head can be turned manually in 90° stages to match the specified actuating surface and direction of operation.</p>  <p>AT 0...FT-ZBZ release mechanism</p> <p>The spring-powered AT 0...FT-ZBZ is equipped with a release mechanism which can be accessed with a screw driver to deactivate the interlock in the event of a power loss (e.g. during start-up) The release mechanism should be sealed during normal operation. For IP 65 protection use cable entry clamp STB 13.5</p> <p>Accessories</p> <p>Cable entry clamp STB 13.5 5/83</p>
<p>Angled Actuator for swing doors of width ≥ 250 mm (~ 10 inches)</p> 	W-ZBZ	See Price List	
<p>Angled, flexible Actuator for doors which do not close precisely</p> 	F-ZBZ	See Price List	
<p>Straight, flexible Actuator for doors which do not close precisely</p> 	FG-ZBZ	See Price List	
<p>Straight Actuator with overlap for increased tolerance in the closing direction of doors which do not close precisely</p> 	NG-ZBZ	See Price List	
<p>Angled Actuator with overlap for increased tolerance in the closing direction of doors which do not close precisely</p> 	NW-ZBZ	See Price List	
<p>Dust protection cap prevents foreign particles from getting into the actuator element.</p> 	SK-ZBZ	See Price List	

1	2	3	4	5	6
	Contact Configuration NO = Normally open NC = Normally closed Positive opening \ominus clearance to IEC EN 60 947-5-1		Type	Price	Remarks
			Includes Actuator Element	\$	

AT 0-...-ZB
(Complete switch, Including Actuator Element)



1 NC \ominus



AT 0-01-1-ZB

1NO 1 NC \ominus

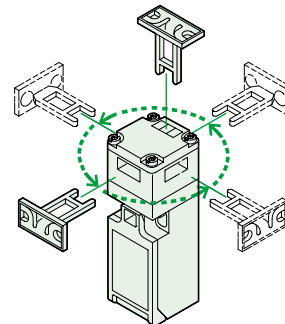


AT 0-11-1-ZB

2 NC \ominus



AT 0-02-1-ZB



The operating head can be turned manually in 90° stages to match the specified actuating surface and direction of operation. Care should be taken during mounting and operation that no foreign particles penetrate the entry point of the actuator element. For IP 65 protection use cable entry clamp **STB 13.5**

Accessories

Cable entry clamp **STB 13.5**

P. 5/83







- Device for world markets: **UL/CSA/IEC/CE**
- In conformity with **EN 1088**, Machinery Directive Safety Standard CE for safety interlocking provisions.
- Suitable for use in safety circuits, positive opening contacts to **IEC/EN 60 947-5-1** \ominus
- Multiple contact configurations: **1 N.O/1N.C.; 1 N.C.; 2 N.C.**
- Actuation from 5 different directions possible.
- For higher level of protection for personnel.
- Snap-fitting cover.

Overview of additional features, see pages 5/78-79.

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

AT 0... Limit Switches, AT 0...-ZB(Z) Safety Interlock Switches Accessories

1 Description	2 For use with Switch type	3 Type	4 Price
Sealing membrane For external applications and temperatures down to -40° C. (Color: Red) 	AT 0-...-...-i(A)	RBS-AT 0	\$ See Price List
Locating plate Useful for laterally actuated switches 	AT 0	FS-AT	See Price List
Cable entry clamp, IP 65 For PG 13.5 cable entries. Made of insulating material. Accommodates conductor diameters of 11 – 13 mm Necessary for IP 65 protection. 	AT 0	STB 13.5	See Price List
Conduit Adapter To adapt PG 13.5 openings to 1/2" conduit hookups. 	AT 0	V 1/2"/PG13.5-NA	See Price List
Threaded Hole plug, white Threads into PG 13.5 opening, self-sealing grommet. Maintains IP 65 protection. 	AT 0	V 13.5	See Price List
Actuator element For AT 0-...-ZB safety interlock switch. 	AT 0-...-ZB	B-AT 0-ZB	See Price List

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

RMQ 16

Technical Data

1	2	3	4	5	6	7	
			Contact elements	Illuminated Pushbutton operators (maintained)	Illuminated selector switches	Indicating lights	
General technical data							
Standards			UL, CSA, IEC/EN 60 947, VDE 0660, CE				
Lifespan, mechanical	Operations	x 10 ⁵	100	30 (3)	3	–	
Maximum operating frequency		Ops/h	3600	3600 (1800)	1800	–	
Operating force		N	3	4	–	–	
Operating torque		Nm	–	–	≤ 0.2	–	
Degree of protection to IEC / EN 60 529			IP20 with ISH 2.8				
Climatic proofing			Damp heat, constant, to IEC 60 068-2-3 Damp heat, cyclical, to IEC 60 068-2-30				
Ambient temperature							
Open	Min./Max.	°C	-25 / +60	-25 / +60	-25 / +60	-25 / +60	
Enclosed	Min./Max.	°C	-25 / +40	-25 / +40	-25 / +40	-25 / +40	
Mechanical shock resistance to IEC 60 068-2-27 (half-sinusoidal shock, duration 11 ms)			g				
			40	40	40	40	
Terminal capacity	Min./Max.	mm ²	0.5 / 1.0	0.5 / 1.0	0.5 / 1.0	0.5 / 1.0	
Blade terminal			2.8 x 0.8 mm to DIN 46 244				
Fast-on Connector			2.8 x 0.8 mm to IEC 60 760 or .110 x .032 fast-on receptacles: AMP # 60197-1, 62050-1 or equivalent UL / CSA listed fast-on receptacle				
Dimensions			See page 5/79	See page 5/78	See page 5/78	See page 5/78	
Contacts							
Rated impulse withstand voltage U _{imp}			V	4000	800	800	800
Rated insulation voltage U _i			V	250	250	250	250
Rated operational voltage max. AC			V	250	24	24	24
Thermal continuous test current			A	2.5	–	–	–
Overvoltage category / pollution degree				III/3	III/3	III/3	III/3
Control circuit reliability at							
24 V DC / 5 mA	Fault probability	H _F	< 10 ⁻⁷ , < 1 fault in 10 ⁷ operations				
5 V DC / 1 mA	Fault probability	H _F	< 5 x 10 ⁻⁶ , < 1 fault in 5 x 10 ⁶ operations				
Use of terminal insulator ISH 2.8							
From U _e			> 24 V AC/DC recommended				
From U _e			> 50 V AC or 120 V DC is mandatory, even on unused blade terminals				
Maximum short-circuit protective device							
Fuseless	Type		FAZ-B6	–	–	–	
Fuse	A gG/gL		10	–	–	–	
Switching capacity							
Rated operational current I _e							
AC-15							
24 V	A		4	–	–	–	
48 V	A		4	–	–	–	
110 V	A		4	–	–	–	
230 V	A		4	–	–	–	
DC-13							
24 V	A		3	–	–	–	
42 V	A		1.0	–	–	–	
60 V	A		0.8	–	–	–	
110 V	A		0.5	–	–	–	
220 V	A		0.2	–	–	–	
UL/CSA data			UL listed file No. E 29 184, Guide No. NKCR CSA certified File No. 46 552 Class No. 321103				
Pilot duty rating							
E10	AC/DC		C300 / Q300	–	–	–	
E01	AC/DC		C300 / R300	–	–	–	

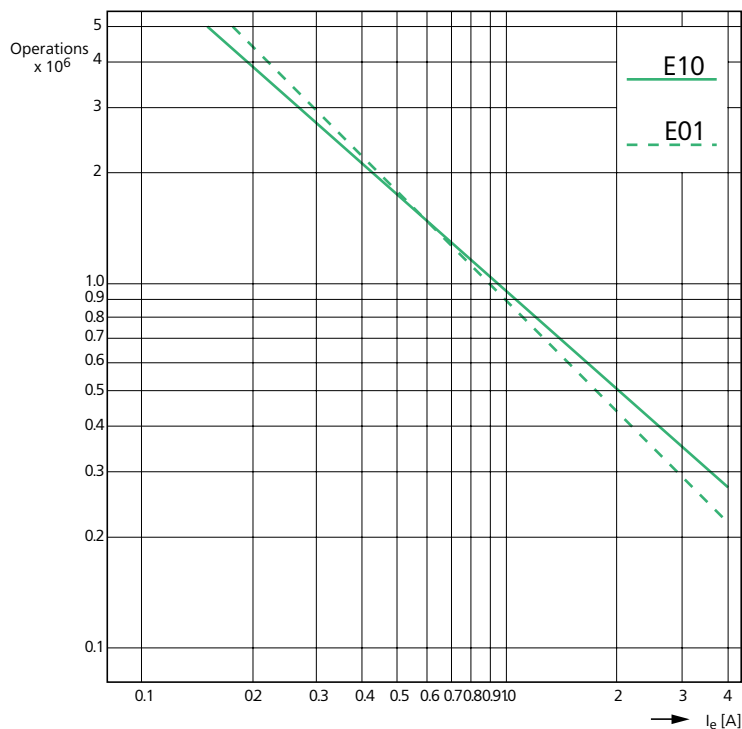
8	9	10	11	12
Pushbutton operators (maintained)	Selector switches	Key-released operators	Emergency-Stop operators	Emergency-Stop operators¹⁾ illuminated
UL, CSA, IEC/EN 60 947, VDE 0660, CE				
30 (3)	3	3	0.5	0.5
3600 (1800)	1800	1800	600	600
4	—	—	25	25
—	≤ 0.2	≤ 0.4	—	—
IP65	IP65	IP65	IP65	IP65
Damp heat, constant, to IEC 60 068-2-3				
Damp heat, cyclical, to IEC 60 068-2-30				
-25 / +60	-25 / +60	-25 / +60	-25 / +60	-25 / +60
-25 / +40	-25 / +40	-25 / +40	-25 / +40	-25 / +40
40	40	40	40	40
—	—	—	—	0.5 / 1.0
—	—	—	—	2.8 x 0.8 mm
—	—	—	—	2.8 x 0.8 mm
See page 5/78	See page 5/78	See page 5/78	See page 5/78	See page 5/78

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

Electrical lifespan AC-15 to IEC/EN 60 947-5-1 at 230 V

I_e = Rated operational current



Notes

- 1) See illuminated selector switches for contact values

22.5 mm Control Circuit Devices

RMQ 22 – Technical Data

Limit Switches, Safety Interlock Switches

5

				Contact Elements	Lamp Socket Elements, Front Mounting	Lamp Transformers	Foot and Palm Switches	
							Spring return	Main-tained
General Specifications				UL, CSA, IEC/EN 60 947, CE, DIN VDE 0660				
Mechanical lifespan		Operations x 10 ⁶		10	—	—	1	0.1
Maximum operating frequency		Ops./h		6000	—	—	3600	600
Operating force		N		≤ 5	—	—	≤ 40	≤ 60
		N		EC 11 : ≤ 7.3	—	—	—	—
		N		EC 20 : ≤ 9	—	—	—	—
		N		EC 02 : ≤ 5.5	—	—	—	—
Operating torque		Nm		—	—	—	—	—
Climatic proofing				Damp heat, constant, to DIN EN 60 068 Part 2-3				
Ambient temperature				Damp heat, cyclic, to DIN EN 60 068 Part 2-30				
	Open	max/min °C		+60/-25	+60/-25	+60/-25	+60/-25	
	Enclosed	max/min °C		+40/-25	+40/-25	+40/-25	+40/-25	
Impact resistance (duration 11 ms, IEC 60 068-2-27)		g		>30	>30	>30	>15	
Terminal capacity, Cu only, 75°C	1 or 2 Wire	AWG		18...12	18...12	18...12	18...12	
Environmental protection rating				NEMA/UL IEC/EN 60 529				
Mounting position				—	—	—	4/4X/13	
Dimensions				IP 20	IP 20	—	IP 67/IP 69K	
				As desired	As desired	As desired	As desired	
				5/92	5/92	5/92	5/92	
Electrical ratings, IEC Data								
Rated Impulse withstand voltage U _{imp}		V		6000	4000 ¹⁾	6000	6000	
Overvoltage Category/Pollution degree				III/3	III/3	III/3	III/3	
Control Circuit Reliability at	24 V DC/5 mA	Error frequency H _F		< 10 ⁻⁷ , < 1 failure per 10,000,000 operations				
	5 V DC/1 mA	Error frequency H _F		< 5 x 10 ⁻⁶ , < 1 failure per 5,000,000 operations				
Max. Short Circuit Protection	Fuseless	Type		PKZM 0-10 or FAZ B6	—	Short-circuit proof	PKZM-10 or FAZ B6	
	Fuses	A gL		10	—	Short-circuit proof	10	
Rated Operational Current I _e								
AC-15	115 V	A		6	—	—	6	
	230 V	A		6	—	—	6	
	400 V	A		4	—	—	4	
	500 V	A		2	—	—	2	
DC-13	24 V	A		6	—	—	6	
	60 V	A		3	—	—	3	
	110 V	A		0.8	—	—	0.8	
	220 V	A		0.3	—	—	0.3	
Electrical Life								
AC-15	230 V/0.5 A	Operations x 10 ⁶		1.6	—	—	1.6	
	230 V/1 A	Operations x 10 ⁶		1.0	—	—	1.0	
	230 V/3 A	Operations x 10 ⁶		0.7	—	—	0.7	
DC-13	12 V/2.8 A	Operations x 10 ⁶		1.2	—	—	1.2	
Electrical ratings, UL/CSA Data								
Pilot Duty ratings				A 600	—	—	—	
				Q 300	—	—	—	
General Use				10 A @ 600 V AC	—	—	—	
				1 A @ 250 V DC	—	—	—	

1) EF 1(C): 2500 V, EF 0(C): 800 V

22.5 mm Control Circuit Devices RMQ 22 – Technical Data

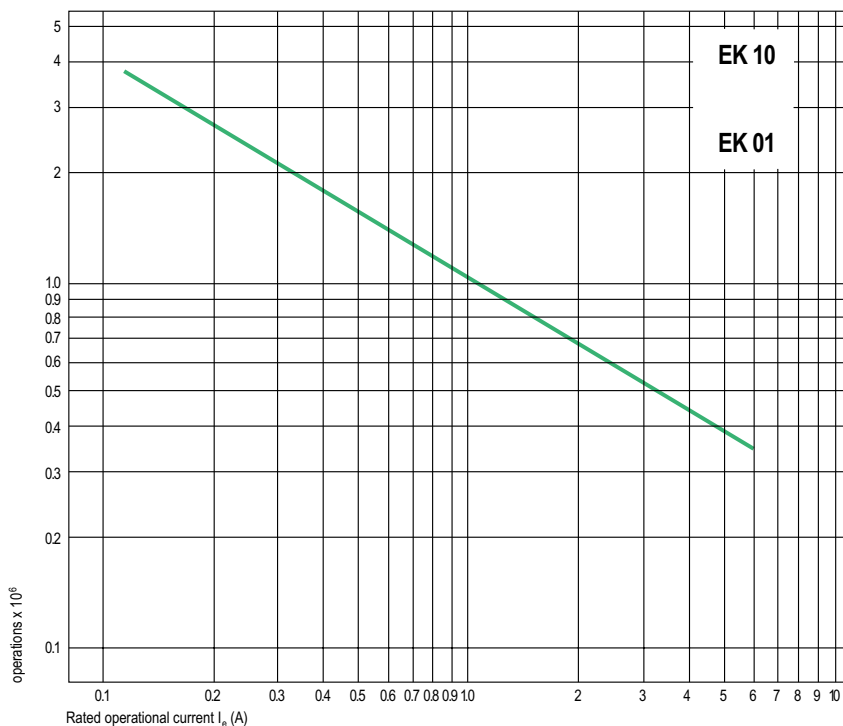
Pushbutton Operators Mushroom Head Operators	Double Pushbutton Operators ²⁾	Selector Switches Illuminated Selector Switches ³⁾	Toggle Switches	Key-operated Switches	Indicator Lights	Illuminated Pushbutton Operators Maintained ³⁾	Key-operated Mushroom Head Operators	Emergency-stop Operators
UL, CSA, IEC/EN 60 947, CE, DIN VDE 0660	60 947, CE, DIN VDE 0660	VDE 0660						
5	0.2	0.1	0.1	0.1	—	3 ⁴⁾	0.1	0.1
6000	6000	2000	2500	100	—	6000	100	600
≤ 5	≤ 5	—	≤ 2	—	—	≤ 5	≤ 7	≤ 50
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	≤ 0.2	—	≤ 0.4	—	—	—	—
Damp heat, constant, to DIN EN 60 068 Part 2-3								
Damp heat, cyclic, to DIN EN 60 068 Part 2-30								
+60/-25	+60/-25	+60/-25	+60/-25	+60/-25	+60/-25	+60/-25	+60/-25	+60/-25
+40/-25	+40/-25	+40/-25	+40/-25	+40/-25	+40/-25	+40/-25	+40/-25	+40/-25
>30	>30	>30	>30	>30	—	>30	>30	>50
—	—	—	—	—	—	—	—	—
4/4X/13	4/4X/13	4/4X/13	4/4X/13	4/4X/13	4/4X/13	3R/12	4/4X/13	4/4X/13
IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65	IP 65
As desired	As desired	As desired	As desired	As desired	As desired	As desired	As desired	As desired
5/92	5/92	5/92	5/92	5/92	5/92	5/92	5/92	5/92

- 2) Suitable for max. 2 W bulbs
- 3) Suitable for max. 2 W bulbs
- 4) 0.3 x 10⁶ operations for **RLTR, MLTR**

Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

Electrical lifespan AC-15 to IEC/EN 60 947-5-1 at 230 V



RMQ 22

Technical Data

				Digital Display Actuating Block (without memory)	Digital Display Actuating Block (with memory)		
General Specifications				EN 50 178	EN 50178		
Degree of protection to IEC/EN 60 529				IP 20	IP 20		
Climatic proofing				Damp heat, constant, to IEC/EN 60 068-2-3			
Ambient temperature				Damp heat, cyclic, to IEC/EN 60 068-2-30			
	Open	Max./Min.	°C	+60/-25	+60/-25		
	Enclosed	Max./Min.	°C	+60/-25	+60/-25		
Mounting Position				As required	As required		
Dimensions				See page 5/93	See page 5/93		
Mechanical shock resistance (shock duration 11 ms) to IEC/EN 60/068-2-27				g	>30		
Terminal capacity				mm ²	2 X 1.5; 1 X 2.5	2 X 1.5; 1 X 2.5	
	Solid		mm ²	2 X 0.5; 1 X 1.5	2 X 0.5; 1 X 1.5		
	Stranded						
UL/CSA Data							
Input ratings				AWG	80 mA max. at 30 V DC max.		
Terminal capacity					12...22		
IEC Voltage ratings							
Rated insulation voltage U _i				V DC	30 (to VDE 0110 group A)		
Rated operational voltage				V DC	24	24	
Permissible range				V DC	18-30	18-30	
Signal voltage ranges				V DC	13-30	13-30	
	H range		V DC	-30 to +4 or not connected			
	L range						
IEC Current ratings							
Operational current				mA DC	80	80	
	at 18 V		mA DC	60	60		
	at 30 V						
Signal current				Input	1 - 10	1 - 6 8 - 10	
	at 4 V		mA DC	1.2	0.03 0.25		
	at 30 V		mA DC	20	0.25 2.30		

Note:
The voltage supply and latch enable signal of the **BCEL 24** must be stabilized. Should an undefined display result from interferences in the voltage supply, the latch enable signal (LE) must be set to "Low", so that the undefined signal does not continue to be displayed.

Heavy Duty Oiltight Pilot Devices
 Limit Switches, Safety Interlock Switches

5

SL... Stack Lights

Technical Data

1	2	3	4
General technical data			
Standards			UL, CSA, IEC/EN 60 947, VDE 0660, CE
Degree of protection to IEC/EN 60 529, NEMA/UL			IP54, Type 12 ¹⁾
Climatic proofing			Damp heat, constant, to IEC 60 068-2-3 Damp heat, cyclical, to IEC 60 068-2-30
Ambient temperature			
Open	Min./Max.	°C	–
Enclosed	Min./Max.	°C	-25 / +50
Mounting position			As required
Mechanical shock resistance to IEC 60 068-2-27 (half-sinusoidal shock, duration 11 ms)		g	15
Terminal capacity			
	Solid	mm ²	2 x 1.5; 1 x 2.5
	Stranded	mm ²	2 x 0.5; 1 x 1.5
Screw terminal		AWG	16...18
Cage Clamp ²⁾		AWG	14...22
Dimensions			See page 5/81
Contacts			
Rated impulse withstand voltage U _{imp}		V	4000
Rated insulation voltage U _i		V	250
Overvoltage category / pollution degree			III/3

Notes

- 1) Ratings increase to NEMA/UL Type 4X and IEC IP65 with the addition of SL-IP65 gasket kit
- 2) Cage Clamp is a registered trademark of Wago Contact Technik GmbH, Minden, Germany

Control Circuit Devices Limit Switches, Safety Interlock Switches – Technical Data

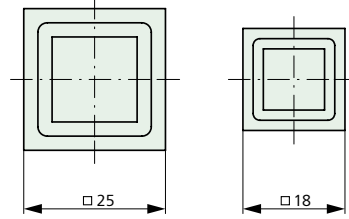
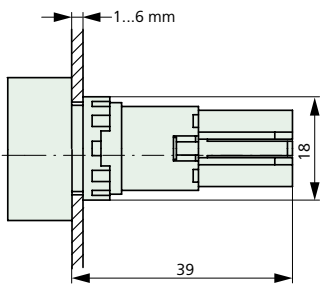
				AT 0...	AT 0...-ZB	AT 0...-ZBZ
General						
Specifications				UL, CSA, IEC 60 947, EN 60 947		
Climatic Proofing				Damp heat, constant, to DIN EN 60 068 Part 2-3 Damp heat, cyclic, to DIN EN 60 068 Part 2-30		
Ambient Temperature	Max./Min.	°C		+70/-25	+70/-25	+40/-25
Mounting				As required	As required	As required
Environmental Protection		NEMA IEC 529		4/12/13 IP 65	12/13 IP 65	4/12/13 IP 65
Terminal Capacity		AWG		12...18	12...18	12...18
Electrical Ratings, IEC						
Rated impulse withstand voltage U_{imp}		V		6000	6000 ¹⁾	4000
Rated insulation voltage U_i		V		500	500 ¹⁾	400
Rated operational voltage U_e		V		500	500	400
Rated operational current I_e						
AC-15	24 V	A	10	10	10	6
	230 V	A	6	6	6	6
	400 V	A	4	4	4	4
	500 V	A	2	2	2	—
DC-13	24 V DC	A	10	10	10	10
	110 V DC	A	1	1	1	1
	220 V DC	A	0.5	0.5	0.5	1.5
Supply Frequency				≤ 400	≤ 400	≤ 400
Short circuit protection in closed position to IEC/EN 60 947-5-1	Fuseless	Type		PKZM 0-10 or FAZN B6	PKZM 0-10 or FAZN B6	PKZM 0-10 or FAZN B6
Short circuit protection to IEC/EN 60 947-5-1	Max. Fuse	A gL	10	10	10	10
Repetition accuracy of switching point	Max. Fuse	A gL	6	6	6	6
		mm	± 0,02	—	—	—
Electrical Ratings, UL/CSA Data						
Pilot duty				A 300/Q 300	A 300/Q 300	A 300/Q 300
General Use				10 A @ 300 V AC	10 A @ 300 V AC	10 A @ 300 V AC
Mechanical Ratings						
Lifespan	Standard contacts	Operations x 10 ⁶	20 ²⁾	10	10	1
	Snap-action contacts	Operations x 10 ⁶	20 ²⁾	—	—	—
Contact temperature of roller head		°C	≤ 100	—	—	—
Mechanical shock resistance (duration 20 ms)						
	Standard contacts	g	25	25	25	10
	Snap-action contacts	g	2	—	—	—
Actuating frequency		Ops./h	6000	1800	1800	800
Dimensions			See page 5/97	See page 5/97	See page 5/97	See page 5/97
Mechanical Actuation						
Operating force at beginning/end of stroke						
	Basic device	N	1.0/8.0	—	—	—
	RS	N	1.0/8.0	—	—	—
	AR (WR)	N	1.0/8.0	—	—	—
	ZB/ZBZ (entry/removal)	N	—	10/5	10/5	25/15
Holding force	ZBZ/G/W	N	—	—	—	2000
	ZBZ/G/NW	N	—	—	—	1000
	ZBZ/FG/NG	N	—	—	—	1800
Actuating torque of rotary drives		Nm	0.2	—	—	—
Max. actuating speed	Approach Angle					
	Basic device	m/s	1/0.5	—	—	—
	R	m/s	1.5	—	—	—
	V	m/s	1.5	—	—	—
	H	m/s	1.5	—	—	—
	AR	m/s	1	—	—	—
	WR	m/s	1	—	—	—
	RS, ZRS	m/s	1/1	—	—	—
	S, ZS	m/s	1/0.5	—	—	—
Electromechanical Actuation						
Electromagnet	AC (50/60 Hz)	V/VA	—	—	—	230/11
		V/VA	—	—	—	120/8
	DC	V/W	—	—	—	24/8
Voltage tolerance range			—	—	—	0.85 - 1.1 x U_s
Duty factor rating of the electromagnet		DF	—	—	—	100 %

1) AT0-02-1-ZB: $U_{imp} = 4$ kV, $U_i = 400$ V

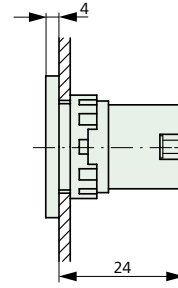
2) AT...-...(IA) with operation from the side: 6×10^6 ; .../WR: 15×10^6 ; .../F: 6×10^6 ; .../ZS: 1×10^6

Pushbutton operators and indicating lights

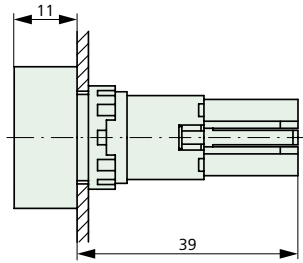
Square style



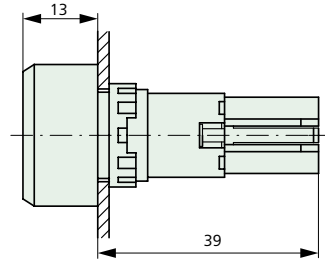
Q...BS



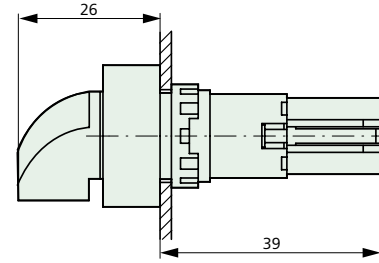
**Q...D-...
Q...DR-...**



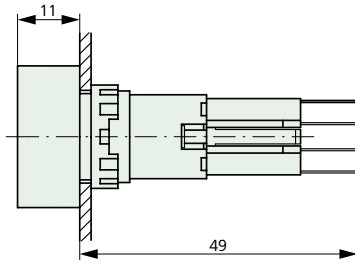
Q...S...



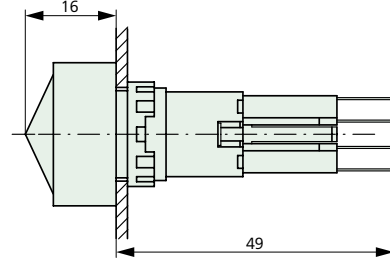
Q...WK...



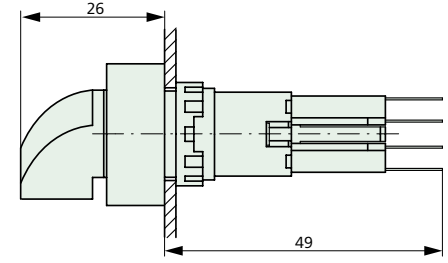
**Q...LT-...
Q...LTR-...
Q...LF-...**



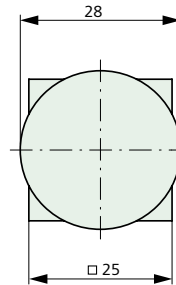
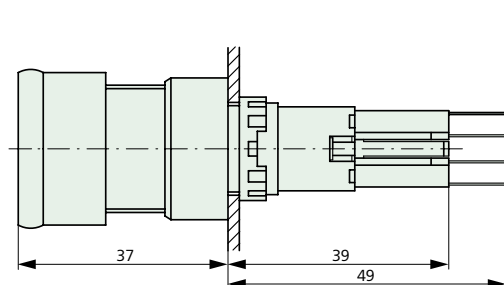
Q...LH-...



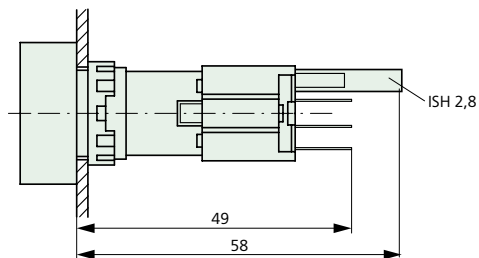
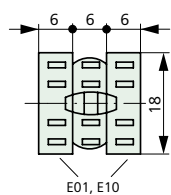
Q...LWK-...



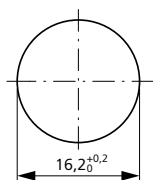
**Q25PV
Q25LPV**



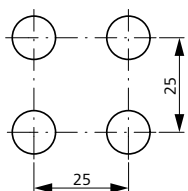
Front mounting



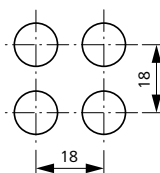
Drilling dimension



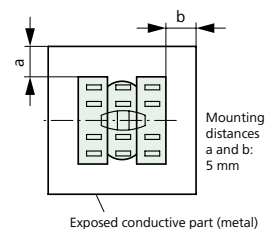
Grid dimensions to IEC/EN 60 947 Q25...



Minimum grid dimensions Q18...

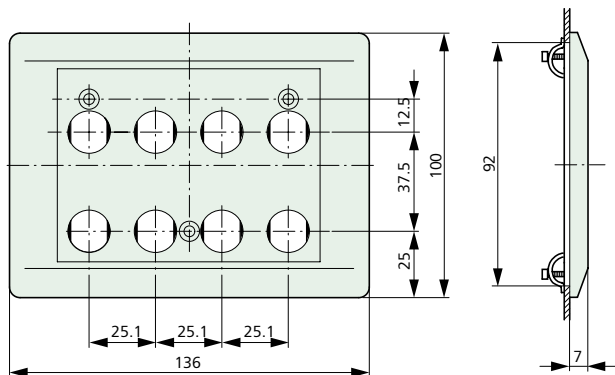


Mounting distances



Flush mounting panels

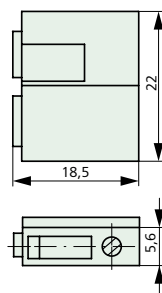
E8/E8-SW



Cutout dimension: 92 x 94 mm

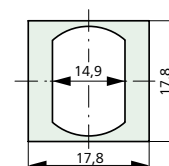
Screw adapter

SRA...



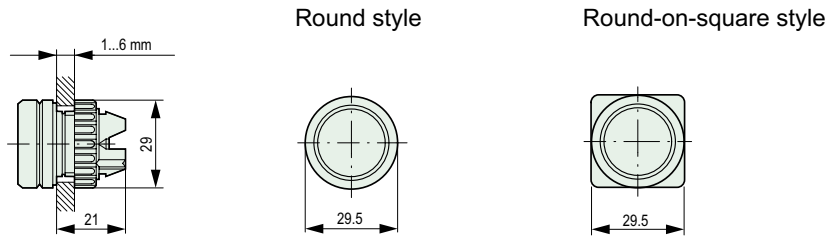
Anti-rotation feature

VS



22.5 mm Control Circuit Devices RMQ 22 - Dimensions (in mm)

Actuators and Indicators



Push-Button Actuators

RD-..., MD-...

RDH-..., MDH-...

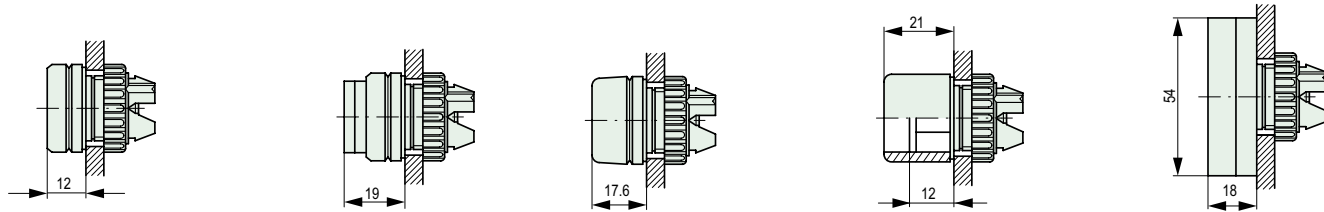
RD-M-D, MD-M-D

RDK-X-..., MDK-X-...

QDD-..., QDDL-...

Digital Display Assembly

RZA-..., MZA-...



Selector Switch Actuators

RW-..., MW-...

RWK-..., MWK-...
RLWK-..., MLWK-...

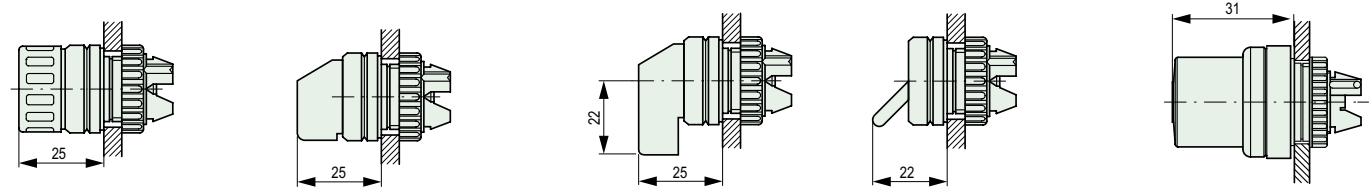
RWH-..., MWH-...

Toggle Switches

RKS-..., MKS-...

Key-Operated Actuators

RS-..., MS-...



Indicator Lights

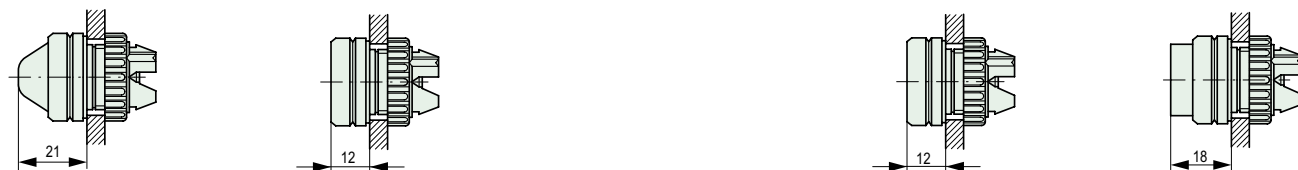
RL-..., ML-...

RLF-..., MLF-...

Illuminated Pushbutton Actuators

RLT-..., MLT-...,
RLTR-..., MLTR-...

RLTH-..., MLTH-...



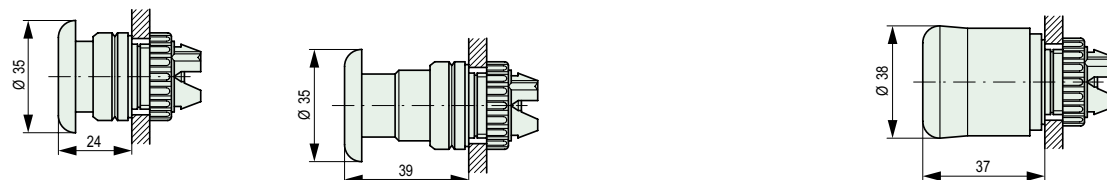
Mushroom Actuators

RP-..., MP-...

RPSR-..., MPSR-...

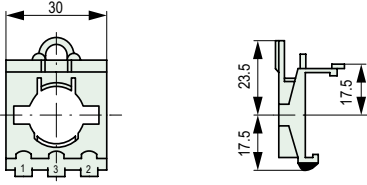
Emergency Stop Actuator

RPV

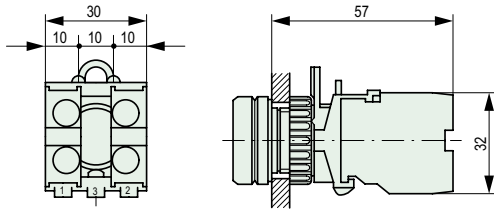


Flush Mounting Fixing Adapter

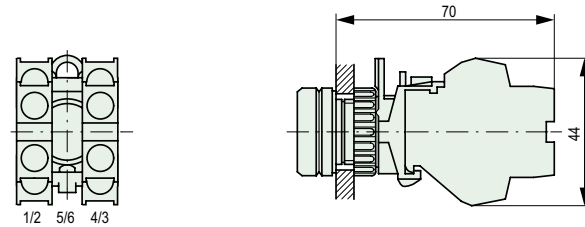
BE 3



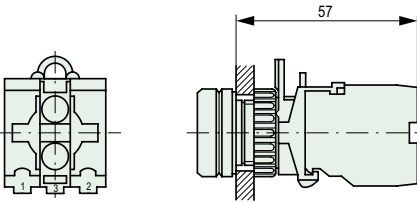
Pushbutton with EK...



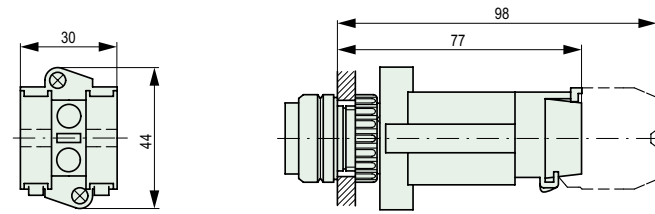
Pushbutton with EC...



Indicator Lights / Illuminated Pushbuttons



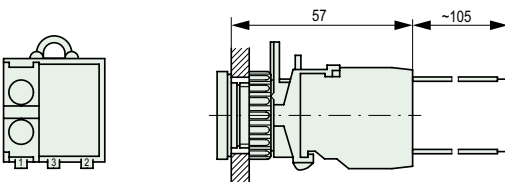
Indicator Lights / Illuminated Pushbuttons with BFT



Lamp Transformers

For mounting with blanking plug

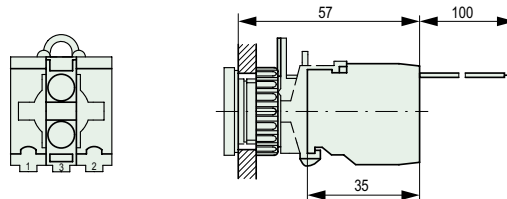
ET



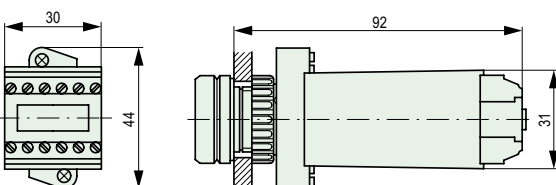
Diode Element

For mounting with blanking plug

ED



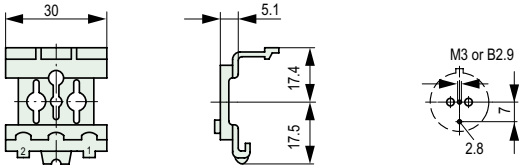
Digital Display with BCE



22.5 mm Control Circuit Devices RMQ 22 - Dimensions (in mm)

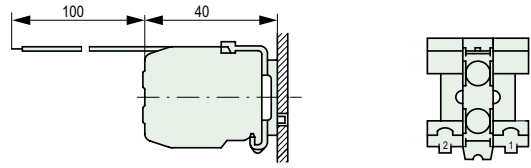
Surface / Rear Mounting Fixing Adapter

BE 3 C



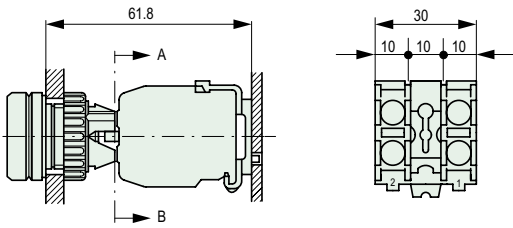
Diode Element

ED



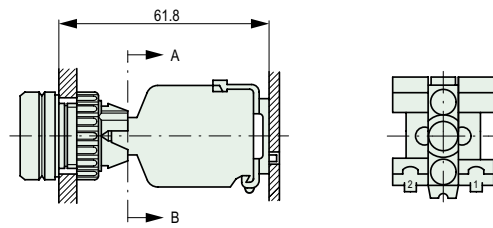
Button

View A-B



Indicator Light / Illuminated Pushbutton

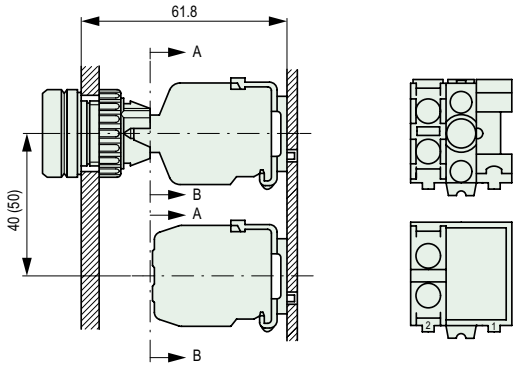
View A-B



Indicator Light / Illuminated Pushbutton

With separate lamp transformer

View A-B

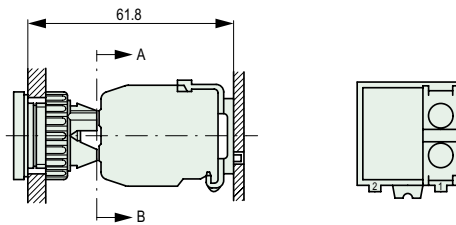


Lamp Transformer

For mounting separately with blanking plug

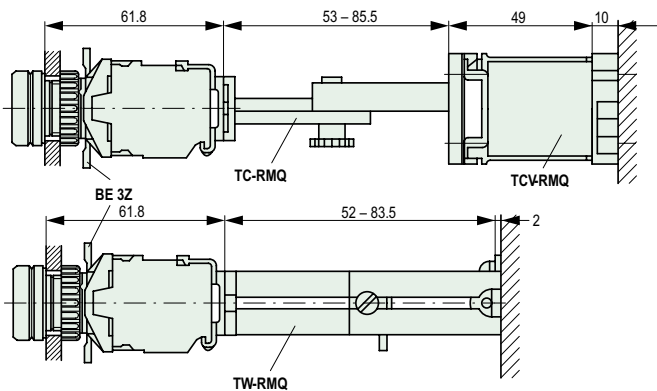
ET

View A-B



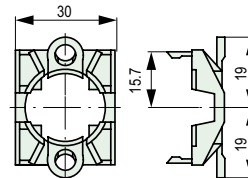
Button, Illuminated Pushbutton, Indicator Light

With telescopic clip or telescopic bracket



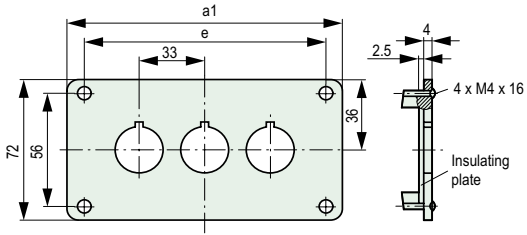
Centering Adapter

BE 3 Z



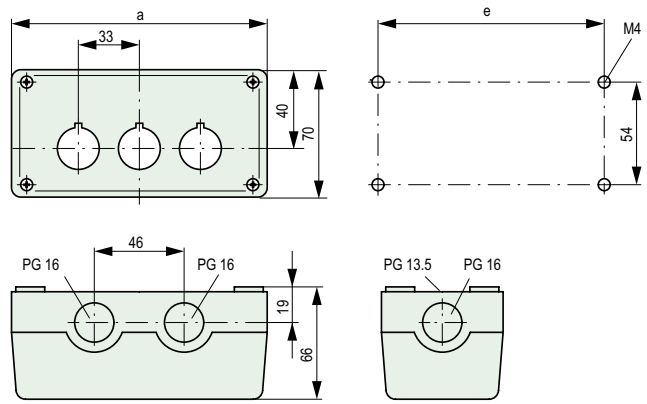
Flush Mounting Plates

E...M



Type	a1	e
E(GE)1 M	72	56
E2M	105	89
E3M	138	122
E4M	171	155
E5M	204	188
E6M	237	221
E7M	270	254
E8M	303	287

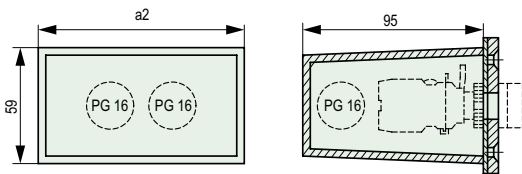
I...M



Type	Number of locations	a	e	Cable entries	
I (GE) 1M	1	72	54	3 x PG 16	1 x PG 13.5
I 2M	2	120	100	3 x PG 16	2 x PG 13.5
I 3M	3	153	133	4 x PG 16	2 x PG 13.5
I 4M	4	186	166	4 x PG 16	2 x PG 13.5
I 5M	5	219	200	4 x PG 16	2 x PG 13.5

Shroud

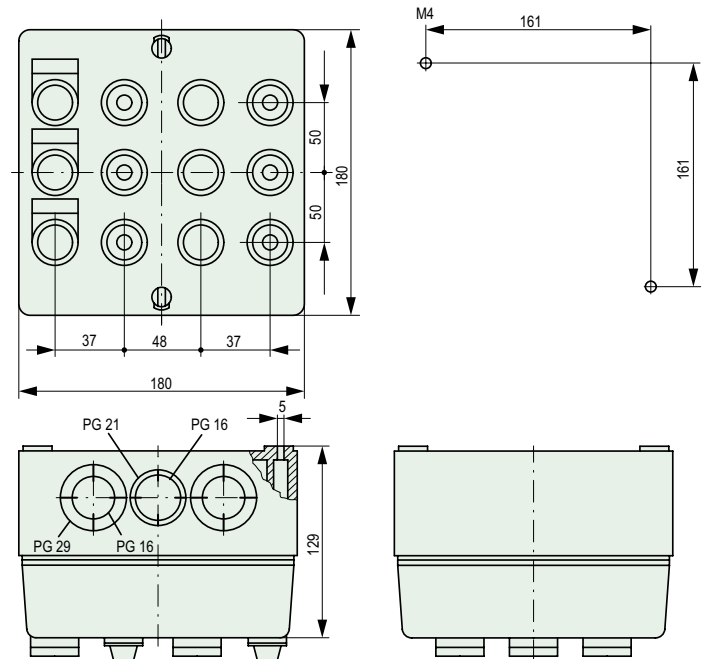
H...M



Type	a2	Cable entries
H 1M	42	3 x PG 16
H 2M	75	4 x PG 16
H 3M	108	4 x PG 16
H 4M	141	4 x PG 16
H 5M	174	5 x PG 16
H 6M	207	6 x PG 16
H 7M	240	6 x PG 16
H 8M	273	7 x PG 16

Surface Mounting Enclosures, 12 Locations

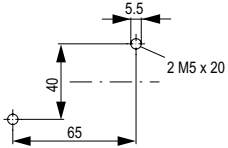
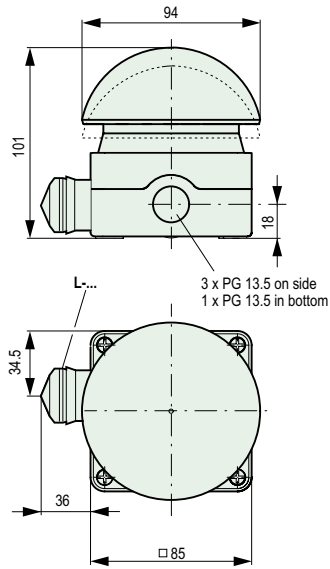
I 12M



22.5 mm Control Circuit Devices RMQ 22 - Dimensions (in mm)

Foot and Palm Switches

FAK...



Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

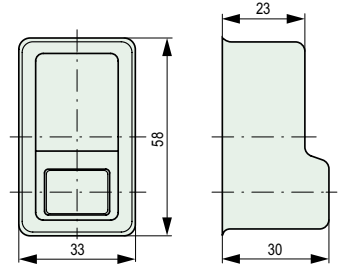
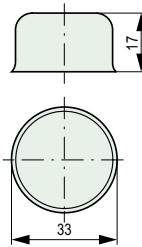
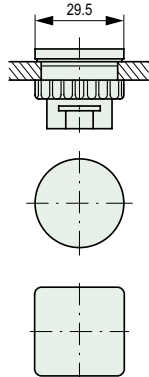
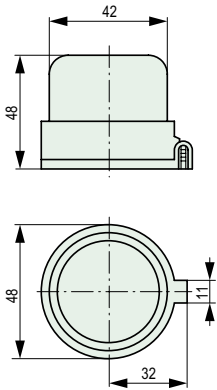
Accessories

PL-RPV

RB22..., MB22...

MT-D

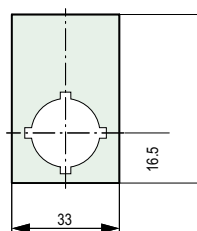
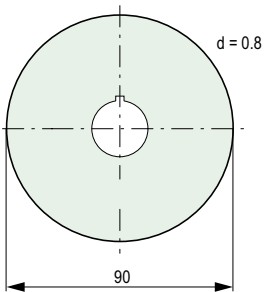
MT-DD



Emergency Stop Label Mount

1 AK...

ZK...



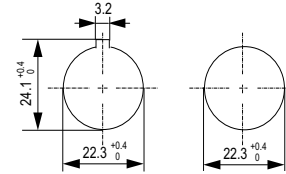
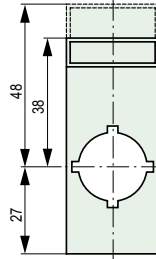
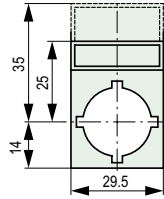
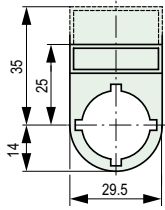
Label Mounts

Mounting Holes with/without Lug Slot

RA..., RB...

MA..., MB...

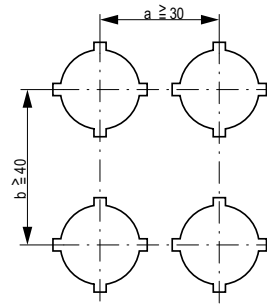
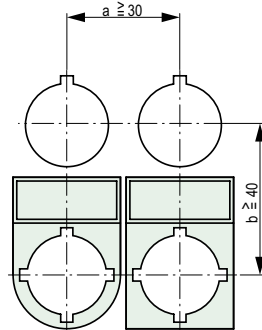
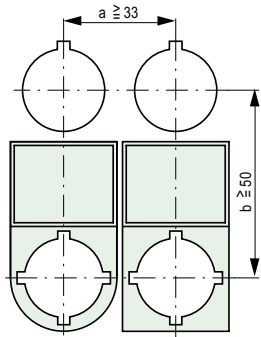
QA..., QB



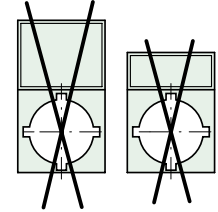
Grid dimension of IEC 947

Minimum grid dimension
(not applicable if EC... is used)

Grid dimension for RD + double actuators
with MT-D diaphragms

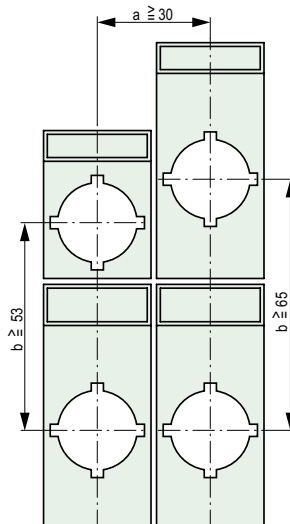
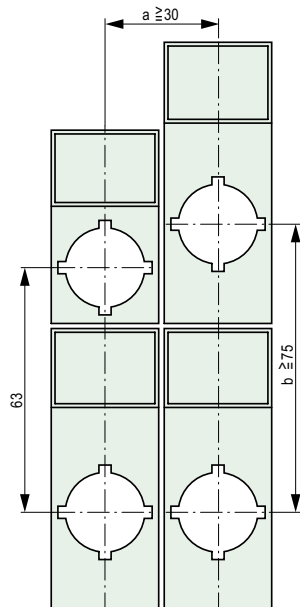


Do not use actuator diaphragm with label mounts since the mounts do not conform to IP 67.

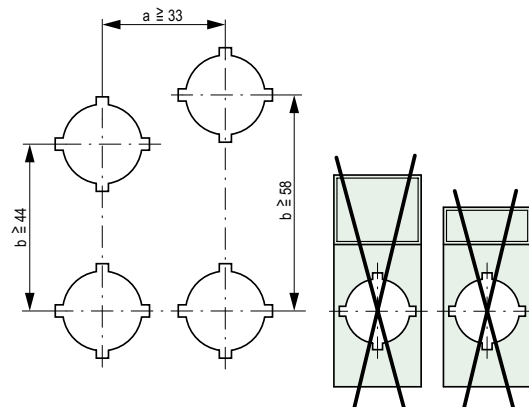


Grid dimension for
QDD...

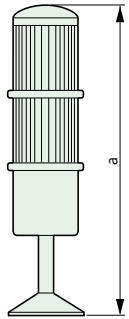
	a ≧	b ≧
IEC 947/EN 50 007	30	50
RMQ 22 min.	30	40
RD + MT-D	33	
RP, MP	35	
RPSR, MPSR	35	
RPV	38	
PL-RPV	48	56
QDD + MT-DD	33	58
QDD, QDDL		54
EC...		50
BCE 24, BCEL 24, BFT...		44



Grid dimension for
QDD + double actuators
with MT-DD diaphragms

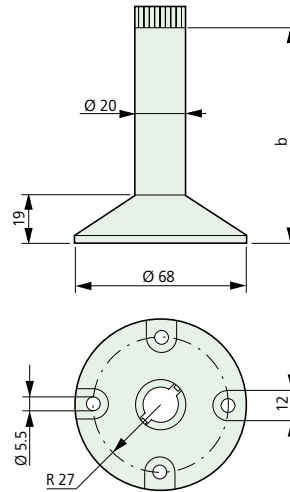


SL-100-... complete units



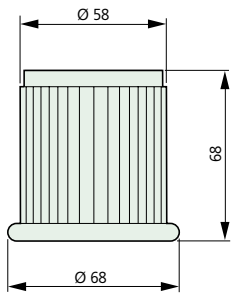
Number of modules	a
1	227
2	289
3	351
4	413
5	475

SL-F... base
With tube

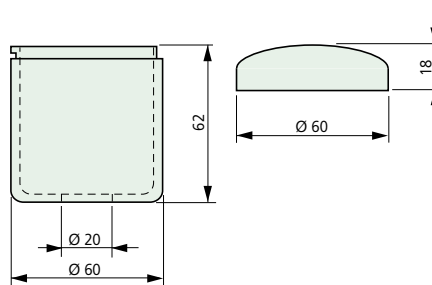


	b
SL-F100	85
SL-F250	235
SL-F400	402
SL-F800	802

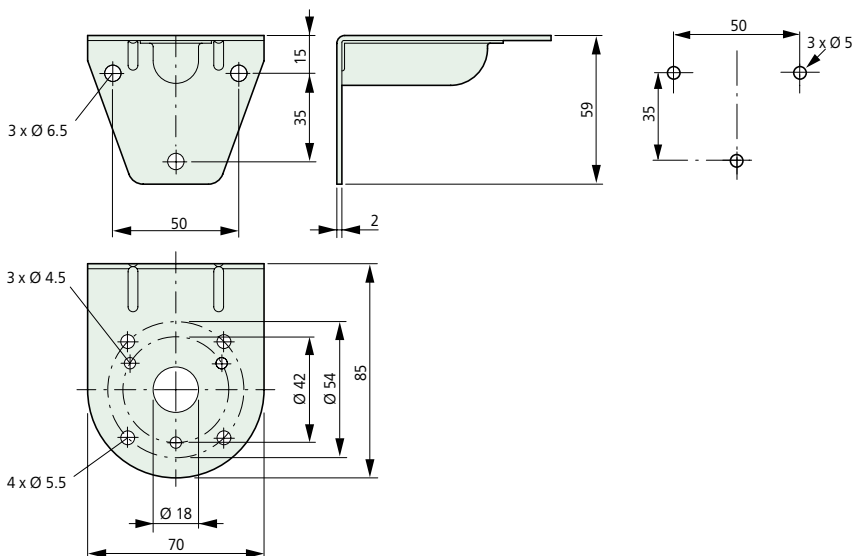
SL-L-..., SL-FL-...
SL-BL-..., SL-A-... modules



SL-B basic module
With top cover

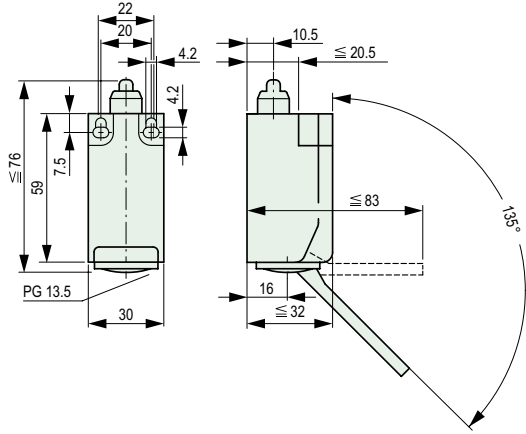


SL-FW mounting bracket

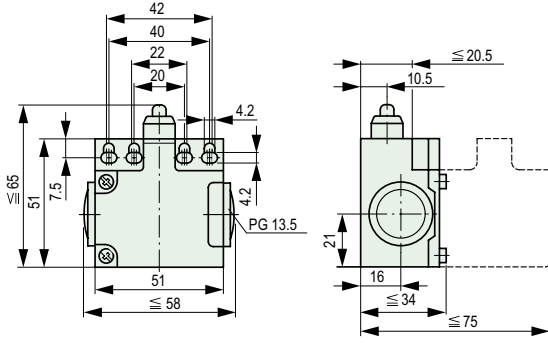


Position Switches

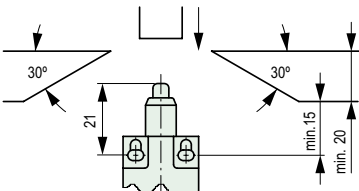
AT 0-...-I



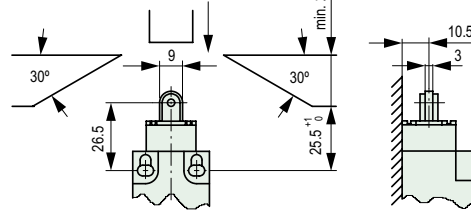
AT 0-...-IA



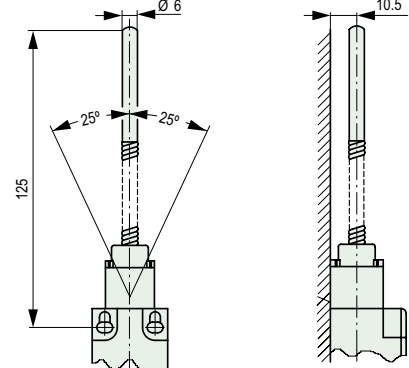
AT 0-...-I(A)



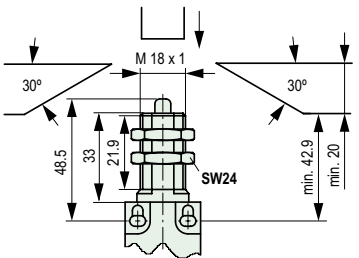
AT 0-...-I(A)/RS



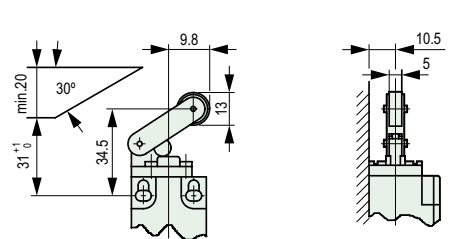
AT 0-11-S-I(A)/F



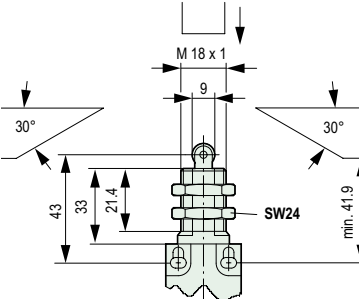
AT 0-...-I(A)/ZS



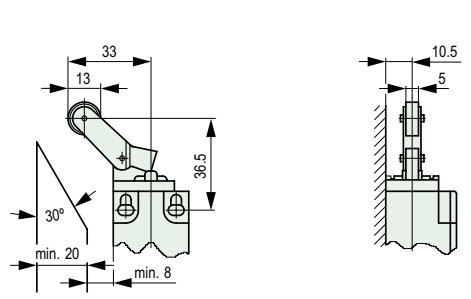
AT 0-...-I(A)/AR



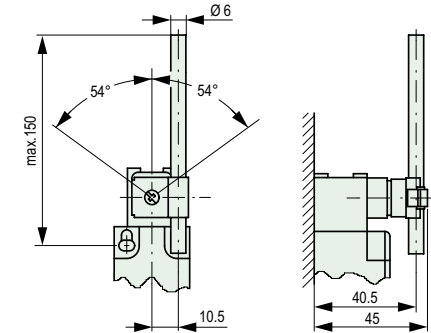
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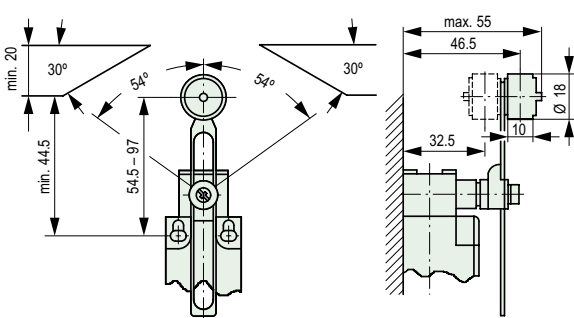
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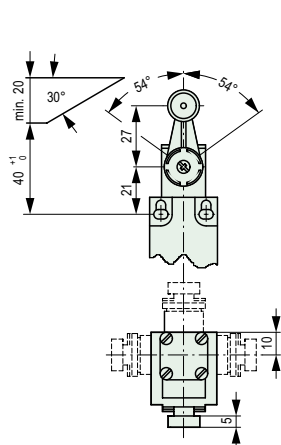
AT 0-...-I(A)/H



AT 0-...-I(A)/V



AT 0-...-I(A)/R



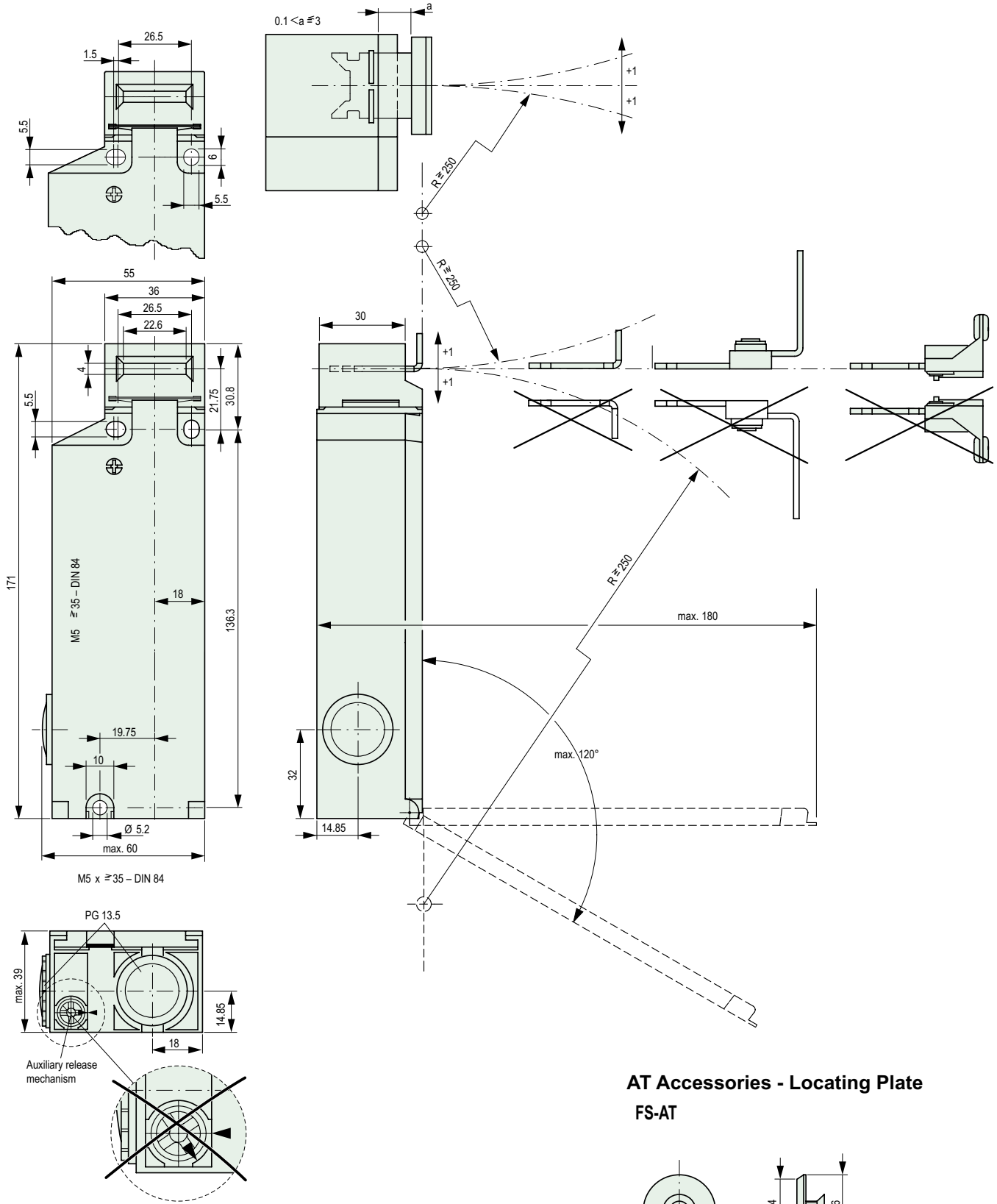
Control Circuit Devices AT 0...-ZBZ Safety Position Switch Dimensions

Safety Position Switches

AT 0...-ZBZ

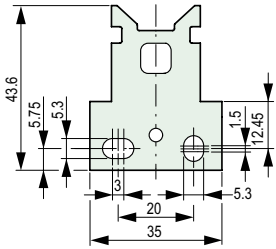
Heavy Duty Oiltight Pilot Devices
Limit Switches, Safety Interlock Switches

5

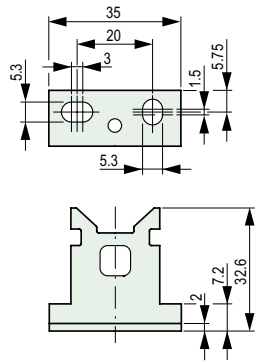


Actuating Fingers for AT0...-ZBZ Safety Position Switches

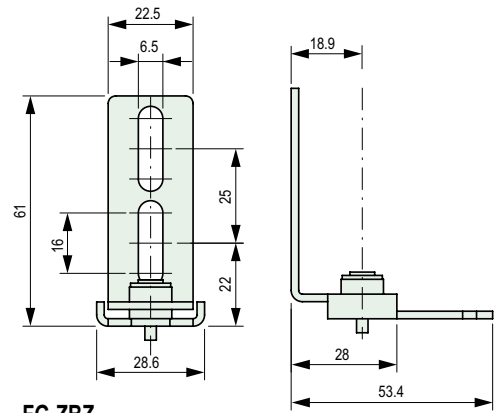
G-ZBZ



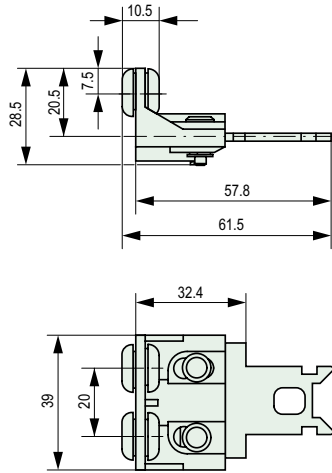
W-ZBZ



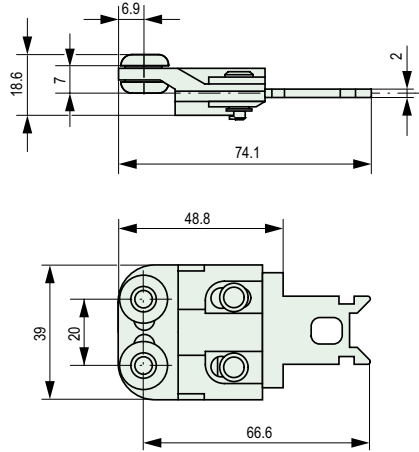
F-ZBZ



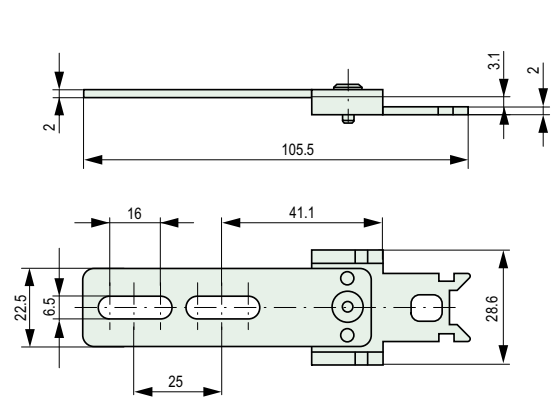
NW-ZBZ



NG-ZBZ



FG-ZBZ



Safety Position Switch

AT 0...-ZB

