



## General Data

Type Reference:	MT...
Approvals:	CCC, CSA, ENEC05, KEMA, CE, GOST-R, TÜV_SÜD, CE, UkrSepro, UL
Protection class:	II (protective insulation)
Operation travel:	6 mm
Connection type:	screw connection 2x2.5mm <sup>2</sup>
Contact material:	AgNi
Max. storage temperature:	-50°C ... 85°C
Max. operating temperature:	-30°C ... 85°C, without illumination -30°C ... 55°C, using incandescent lamps -30°C ... 65°C, using LED's
Mechanical life:	1 m operations
Electrical life (rated load):	1 m operations at rated load
Contact resistance NO:	< 20 mOhm
Contact resistance NC:	< 20 mOhm
Min. current:	1 mA (under laboratory conditions)
Min. voltage:	5 V
Bouncing time NO:	< 10ms
Bouncing time NC:	< 10ms
Positive opening contact:	acc. to EN60947-5-1, appendix. K

## Electrical data acc. to IEC/EN 60947-5-1 (VDE 0660 Sect. 200)

	alternate current	direct current
Utilisation category:	AC15 A600	DC13 Q600
Rated insulation voltage Ui:	600 V	600 V
Rated operating voltage Ue:	250V / 440V	440V / 250V / 125V / 60V / 24V
Rated operating current Ie:	3A / 1.6A	0.12A / 0.2A / 0.4A / 1A / 2A
Breaking capacity:	10Ie	1.1Ie
Continuous thermal current:	16 A	

## Electrical data acc. to IEC/EN 61058-1 (VDE 0630 Sect. 1)

Rated voltage Ue:	250 V~ / 440 V~
Rated current Ie:	16(10) A / 10(6) A

## Technical Data - Lamp

Lamp socket:	BA9s
Max. lamp voltage:	250 V / (CSA max. 150V)
Max. lamp output:	2 W
Definition:	X1...anode, X2...cathode

## Electrical Features - 5µm gold-plating, type addition ...AU

Switching voltage:	20mV ... 42V AC/DC
Switching current:	1mA ... 250mA
Contact resistance (new state):	< 50 mOhm

## Note

### Electrical Data acc. to UL 508

Ratings:	A600, 600 V AC
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## Mounting Instructions

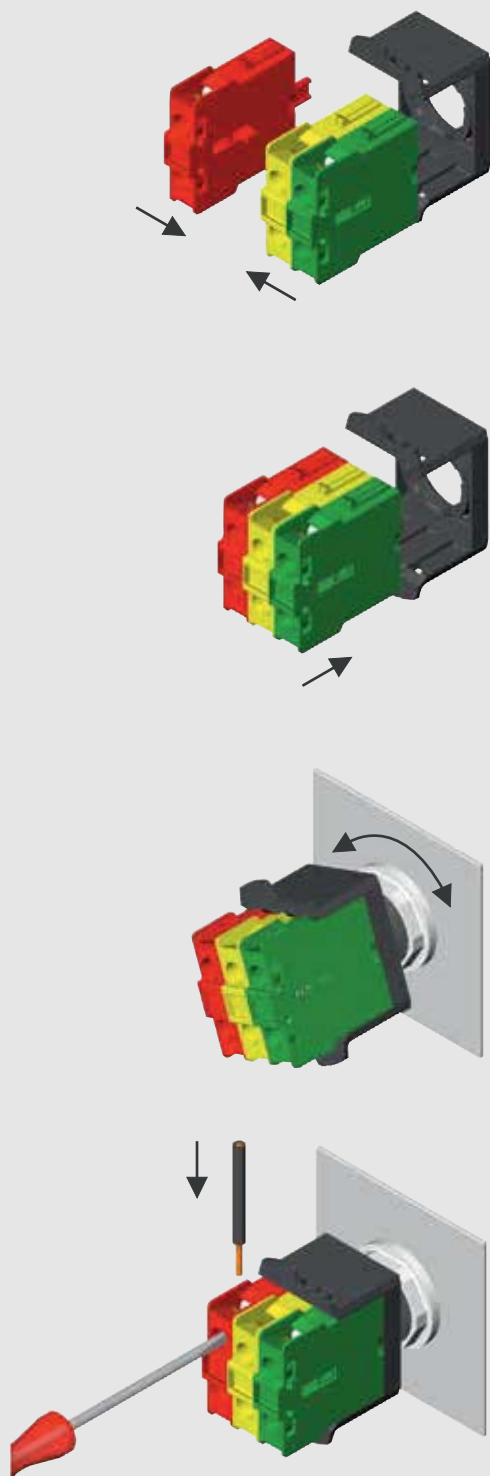


Illustration	Description	Type
  	<p><b>Modular Contact, momentary 1NC</b> screw connection 2x2.5mm<sup>2</sup></p> <p>suitable actuators</p>  <p>contact material AgNi</p>	<p><b>MT0</b></p>
  	<p><b>Modular Contact, momentary 1NC late break</b> screw connection 2x2.5mm<sup>2</sup></p> <p>suitable actuators</p>  <p>contact material AgNi</p>	<p><b>MT0N</b></p>
  	<p><b>Modular Contact, momentary 1NO</b> screw connection 2x2.5mm<sup>2</sup></p> <p>suitable actuators</p>  <p>contact material AgNi</p>	<p><b>MTI</b></p>
  	<p><b>Modular Contact, momentary 1NO early make</b> screw connection 2x2.5mm<sup>2</sup></p> <p>suitable actuators</p>  <p>contact material AgNi</p>	<p><b>MTIV</b></p>
  	<p><b>Modular Contact, momentary 1NO + 1NO early make</b> screw connection 2x2.5mm<sup>2</sup> with action point after the early make contact closes</p> <p>suitable actuators</p>  <p>contact material AgNi</p>	<p><b>MT97</b></p>
  	<p><b>Modular Contact 1NC + 1NO + 1centre contact</b> screw connection 2x2.5mm<sup>2</sup></p> <ul style="list-style-type: none"> <li>- to be used with 3-position actuators with 1 plunger</li> <li>- one contact is closed in each position</li> <li>- no contact overlapping</li> </ul> <p>contact material AgNi</p>	<p><b>MHW3I</b></p>

# Contact Blocks

screw connection 2x2.5mm<sup>2</sup>

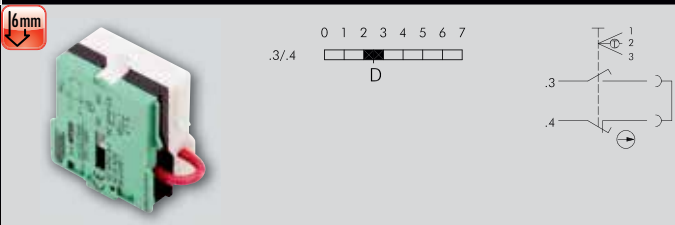

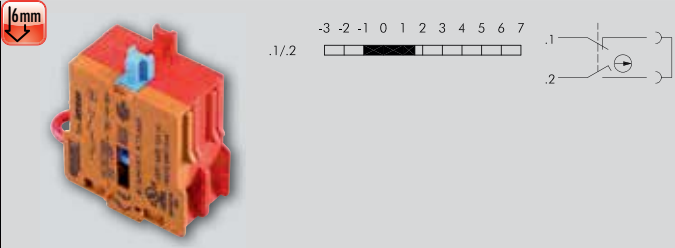

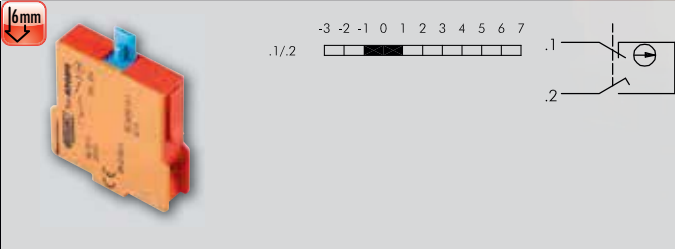
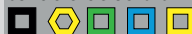




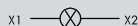
Illustration	Description	Type
	<p><b>Modular Contact, momentary, with real enabling function 1 permissive contact (1NC + 1NO)</b>                      screw connection 2x2.5mm<sup>2</sup>                      3-position enabling contact block acc. to EN 60947-5-8</p> <p>suitable actuators  </p> <p>contact material AgNi</p>	<p><b>MTZU</b></p>
	<p><b>Self-monitoring Emergency Contact Block* 1NC + 1NO early make</b>                      screw connection 2x2.5mm<sup>2</sup>                      *) 1 NC, 1NO and 1 safety contact consisting of 1 emergency NC connected in series to 1 NO which is always closed during operation and disconnects automatically on separation of the actuator from the modular contact.</p> <p>suitable actuators  </p> <p>contact material AgNi</p>	<p><b>MTOSF</b></p>
	<p><b>Self-monitoring Emergency Contact Block, requires only one place in the module holder 1NC (+ 1NO)</b>                      screw connection 2x2.5mm<sup>2</sup>                      The safety contact permanently monitors the proper connection between the emergency-stop button and the contact element. If, due to a negligent assembly or mechanical damage, the emergency-stop button is separated from the contact element, the safety contact disconnects immediately and the machine is stopped.</p> <p>suitable actuators  </p> <p>contact material AgNi</p>	<p><b>MTOSFE</b></p>
	<p><b>Latch-type Module</b>                      when used as center element in the module holder it provides a maintained unit with the adjacent momentary-type modules</p> <p>suitable actuators  </p> <p>colour grey</p>	<p><b>MF</b></p>

Illustration	Description	Type										
 	<p><b>Latch-type Lamp Module</b> screw connection 2x2.5mm<sup>2</sup> max. 250V 2W lamp socket BA9S</p> <p>suitable actuators  </p> <p>colour yellow/green</p>	<p><b>MFL</b></p>										
 	<p><b>Lamp Module</b> screw connection 2x2.5mm<sup>2</sup> max. 250V 2W lamp socket BA9S</p> <p>suitable actuators/pilot light heads  </p> <p>colour yellow</p>	<p><b>ML</b></p>										
	<p><b>Connection Module</b> screw connection 2x2.5mm<sup>2</sup> serves to connect the illuminated emergency stops via a screw terminal. The connection module is snapped into the module holders MHR3 or MHR5 12-30V, AC/DC, max. 44mA</p> <p>suitable actuators  </p> <p>colour white</p>	<p><b>MAL</b></p>										
 	<p><b>Lamp Module with LED</b> screw connection 2x2.5mm<sup>2</sup> with ultra-bright LED rendering intensive and brilliant colours, finger-protected screw connections and integrated bridge rectifier. - operating temperature: -25...70 °C - degree of protection IEC/EN 60529: IP20</p> <p>for 12-120V AC/DC, 8-12mA</p> <p>suitable actuators/pilot light heads  </p> <p>LED colour</p> <table data-bbox="1034 1630 1417 1794"> <tr><td>blue</td><td><b>MLED12-120B</b></td></tr> <tr><td>green</td><td><b>MLED12-120G</b></td></tr> <tr><td>red</td><td><b>MLED12-120R</b></td></tr> <tr><td>white</td><td><b>MLED12-120W</b></td></tr> <tr><td>yellow</td><td><b>MLED12-120Y</b></td></tr> </table>	blue	<b>MLED12-120B</b>	green	<b>MLED12-120G</b>	red	<b>MLED12-120R</b>	white	<b>MLED12-120W</b>	yellow	<b>MLED12-120Y</b>	
blue	<b>MLED12-120B</b>											
green	<b>MLED12-120G</b>											
red	<b>MLED12-120R</b>											
white	<b>MLED12-120W</b>											
yellow	<b>MLED12-120Y</b>											

Illustration

Description

Type



### Lamp Module with LED

screw connection  
with ultra-bright LED rendering intensive and brilliant colours,  
finger-protected screw connections and integrated bridge rectifier.

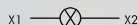
- operating temperature: -25...70 °C
- protection degree IEC/EN 60529: IP20
- approvals: cCSAus, CE, GOST-R

for 18-30V AC/DC, 8-14 mA

suitable actuators/pilot light heads



LED colour	blue	<b>MLED24B</b>
	green	<b>MLED24G</b>
	red	<b>MLED24R</b>
	white	<b>MLED24W</b>
	yellow	<b>MLED24Y</b>



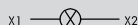
### Latch-type Lamp Module

screw connection 2x2.5mm<sup>2</sup>  
same as MLED24...but with latching function

suitable actuators/pilot light heads



LED colour	blue	<b>MFLED24B</b>
	green	<b>MFLED24G</b>
	red	<b>MFLED24R</b>
	white	<b>MFLED24W</b>
	yellow	<b>MFLED24Y</b>



### Lamp Module with LED

screw connection 2x2.5mm<sup>2</sup>  
with ultra-bright LED rendering intensive and brilliant colours, finger-protected screw connections and integrated bridge rectifier.

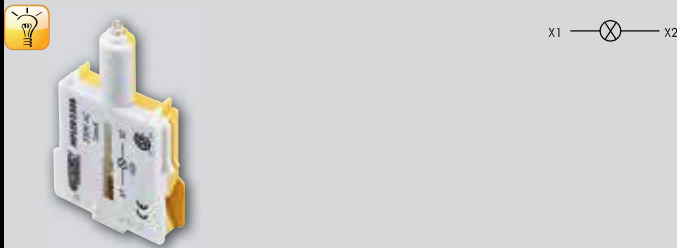



- operating temperature: -25...70 °C
- protection degree IEC/EN 60529: IP20
- approvals: cCSAus, CE, GOST-R

for 230V AC, 16 mA (50Hz)

suitable actuators/pilot light heads



LED colour	blue	<b>MLED230B</b>
	green	<b>MLED230G</b>
	red	<b>MLED230R</b>
	white	<b>MLED230W</b>
	yellow	<b>MLED230Y</b>

Illustration	Description	Type										
	<p><b>Latch-type Lamp Module</b> screw connection 2x2.5mm<sup>2</sup> same as MLED230...but with latching function</p> <p>suitable actuators/pilot light heads</p>  <p>LED colour</p> <table border="0"> <tr><td>blue</td><td><b>MFLED230B</b></td></tr> <tr><td>green</td><td><b>MFLED230G</b></td></tr> <tr><td>red</td><td><b>MFLED230R</b></td></tr> <tr><td>white</td><td><b>MFLED230W</b></td></tr> <tr><td>yellow</td><td><b>MFLED230Y</b></td></tr> </table>	blue	<b>MFLED230B</b>	green	<b>MFLED230G</b>	red	<b>MFLED230R</b>	white	<b>MFLED230W</b>	yellow	<b>MFLED230Y</b>	
blue	<b>MFLED230B</b>											
green	<b>MFLED230G</b>											
red	<b>MFLED230R</b>											
white	<b>MFLED230W</b>											
yellow	<b>MFLED230Y</b>											
	<p><b>Module Holder for 3 elements</b> with bayonet mount, to combine the modular contacts with the actuators</p>	<b>MHR_3</b>										
	<p><b>Module Holder for 5 elements</b> with bayonet mount, to combine the modular contacts with the actuators</p>	<b>MHR_5</b>										





# Contact Blocks

screw connection 2x2.5mm<sup>2</sup>

Illustration

Description

Type



### Ultra-bright LED BA9s

with integrated bridge rectifier for 24V AC/DC, 15mA

colour	blue	<b>LD9-24UB</b>
	green	<b>LD9-24UG</b>
	red	<b>LD9-24UR</b>
	white	<b>LD9-24UW</b>
	yellow	<b>LD9-24UY</b>



### Mega-bright LED, BA9s

with integrated bridge rectifier for 24V .. 28V AC/DC, 15.5mA

colour	blue	<b>LD9-24MB</b>
	green	<b>LD9-24MG</b>
	red	<b>LD9-24MR</b>
	white	<b>LD9-24MW</b>
	yellow	<b>LD9-24MY</b>



### Ultra-bright LED, BA9s

with integrated single-wave rectifier for 230V AC, 3mA

colour	blue	<b>LD9-230UB</b>
	green	<b>LD9-230UG</b>
	red	<b>LD9-230UR</b>
	white	<b>LD9-230UW</b>
	yellow	<b>LD9-230UY</b>



### Flashing LED, BA9s

for 24V

colour	green	<b>LB9-24G</b>
	red	<b>LB9-24R</b>
	yellow	<b>LB9-24Y</b>



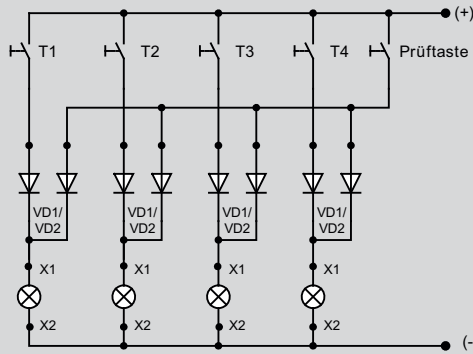
### Incandescent Lamp BA9s

Technical Data	12V / 2,0W (166mA)	<b>FZR9-12</b>
	24V / 2,0W (80mA)	<b>FZR9-24</b>
	30V / 2,0W (66mA)	<b>FZR9-30</b>
	36V / 2,0W (55mA)	<b>FZR9-36</b>
	48V / 2,0W (40mA)	<b>FZR9-48</b>
	60V / 1,2W (20mA)	<b>FZR9-60-1</b>
	110 ... 130V / 2,6W (20mA)	<b>FZR9-130</b>

Illustration

Description

Type



### DC Lamp Testing Unit

entirely sealed, with two screw connections for 2.5 mm<sup>2</sup>, with two integrated diodes 400 V/1A isolating the lamp line from the test line. For DC only.

**VD2**



Control Units

Bus Technology

Relays

Limit Switches

Push Buttons

Terminal Blocks