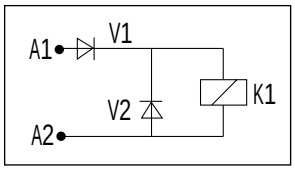
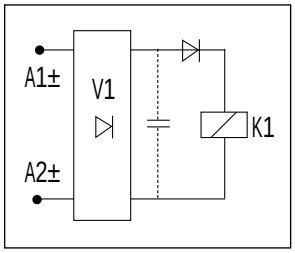
General information

- Single relays housed in slim, rail mounting enclosures taking up the minimum of space.
- Multiple relays (up to 24) in compact rail mounting enclosures with plug-in option. Termination via screw terminal or ribbon cable.
- Input voltages from 24…240 volts. AC and DC options.
- Coil suppression to prevent interference with and damage to associated electronic devices.
- LED indication that the coil is energized.
- Electrical isolation between input (coil) and output (contacts) forms an effective barrier to electro-magnetic interference passing in either direction.
- Single and multiple contacts.
- Various contact materials for the best possible performance in each application.
- Rising-clamp screw terminals for efficient wiring. Each terminal can be given an alpha-numeric identification.
- Label facility for module identification.
- All modules fit onto 35 mm DIN-rail. Many also fit onto assymmetrical G-rail.
- Some modules have manual override facility.

Relay input side (coil)

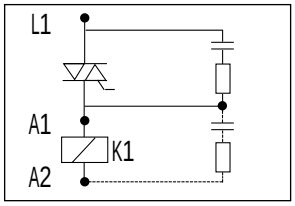


DC input: The supply must be connected with A1 positive and A2 negative. Diode V1 prevents damage if the supply is connected with the reverse polarity. Diode V2 is a flywheel diode which suppresses the back e.m.f. voltage transient at switch-off. The LED indicator will be connected either in series with the coil or in parallel, in which case a current limiting resistor will be used.



AC or DC input:
The bridge rectifier V1 enables the relay to be used on DC of either polarity or on AC. Two diodes in the bridge will suppress the back e.m.f. voltage transient at switch-off. The LED indicator will be connected in series or parallel with the coil.

The operation of sensitive AC relays can be sometimes impaired by inductive or capacitive coupling of stray signals into the input wiring.



A resistor can be fitted across the coil to bypass these stray signals. Alternatively, an RC-network will be effective and will dissipate less power when energized.

Contact material	Typical properties	Typical applications	Voltage and current levels
Silver-nickel 0,15 gold flashed (AgNi 0,15 hv)	Widely used general purpose material.	General purpose. Suitable for inductive loads.	≥ 12 V ≥ 10 mA
Silver, gold plated (Ag htv)	Gold plating resists contamination but switching loads greater than 30 V / 0,2 A removes the gold. Performance reverts to silver.	General purpose. For low to mid-range loads.	≥ 100 mV ≥ 1 mA
Silver-cadmium oxide (AgCdO)	Resists welding and burn-out at high voltages. Hardly used because of environmental reasons	For heavy inductive or capacitive loads.	≥ 12 V ≥ 100 mA
Palladium silver, Gold / Rhodium (PdAg-AuRh)	high resistance against oxidation; hard material; stable transfer resistance	Low level signals to mid-range loads.	1 mV…125 V 1 mA…1 A
Silver Tin oxide (AgSnO)	Resists welding and burn-out at high voltages. minimal material erosion	Switching circuits with high on off loading	≥ 12 V ≥ 10 mA
Silver Tin oxide, gold plated (AgSnO htv)	Gold plating resists contamination but switching loads greater than 30 V / 50 mA removes the gold. Performance reverts to AgSnO contacts	General purpose. Suitable for small and large loads.	≥ 100 mV ≥ 1 mA

Output side (contacts)

When choosing contact material for a particular application, many factors have to be taken into account, for example:
voltage, current, nature of the load and the effect on the contact lifetime.

Contact life / no. of operations

Each load comprises a resistive, capacitive and an inductive component. It is mainly the inductive component which affects the lifetime. Inductive loads such as solenoids, motors and contactors produce a voltage when switched off which is many times greater than supply voltage. This can quickly burn out the contact. In order to increase the lifetime of the contact, the load must be suppressed. In theory, a varistor or resistor / capacitor network (RC) across the contact is possible,

but dangerous leakage currents may flow to the load when the contact is open. In practice, it is better to fit the suppressor across the load, where it is not only safer but is closer to the source of interference. Murrelektronik can supply many types of universal or made-to-measure suppressors. These suppressors dampen the high voltage transient and reduce the arc at the contacts. Contact life depends upon voltage, current and the nature of the load.

Switching capabilities of the various categories

The categories are defined by EN 60946, VDE 0660 and IEC 947 and these list the maximum approved current in exactly defined criteria.

Category	Voltage type	Typical application
AC 12	AC voltage	Switching from resistive load
AC 15	AC voltage	Switching from inductive load
DC 13	DC voltage	Switching from inductive load

The standards require a minimum lifespan of 6060 cycles in the defined environment. Using EMC suppression modules when switching inductive loads, the lifespan and the allowed current loading of the contact can be greatly increased. This is shown in the table below.

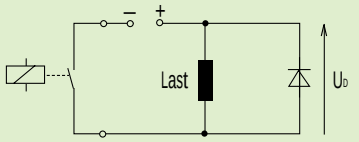
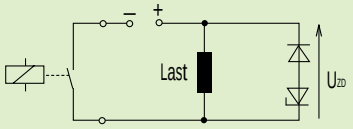
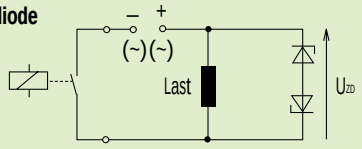
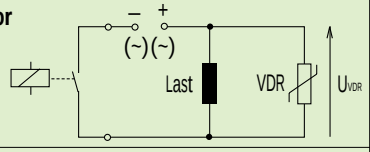
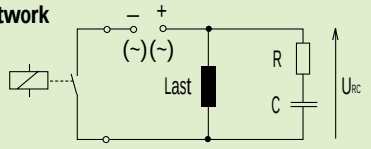
Contact material, silver gold flashed

Switched voltage V	Switched current A	Electrical life No. of operations	Type of load	Lifetime multiplication factor
24–	8	$0{,}5 \times 10^6$	Resistive	1
30–	4	2×10^6	Resistive	1
60–	0,8	4×10^6	Resistive	1
250–	0,4	6×10^6	Resistive	1
24–	0,5	10^6	Inductive τ = 40 ms	0,1
24–	1,0	2×10^5	Inductive τ = 40 ms	0,1
48–	0,5	2×10^5	Inductive τ = 40 ms	0,1
48–	0,2	10^6	Inductive τ = 40 ms	0,1
220~	1	5×10^5	Inductive cos φ = 0,4	0,1
220~	0,5	2×10^6	Inductive cos φ = 0,4	0,1
220~	0,4	4×10^6	Inductive cos φ = 0,4	0,1
220~	0,1	8×10^6	Inductive cos φ = 0,4	0,1

Typical values for standard relay contacts

Wiring techniques

When several relays are installed side by side on a rail, common terminals can be joined by means of a linking bar. This eliminates extra wiring and terminals.
Some screw terminals have a double entry point enabling 2 wires to be held in one terminal.
These features simplify wiring techniques. For example, 2 or 3 wire sensors can be connected directly to their relay interfaces without the need for an intermediate terminal rail.

Suppression of the load	Additional switch-off delay	Precise clamping of transient	Bipolar suppression	Advantage / Disadvantage
Diode 	large	yes (U_D)	no	Advantages: • simple • inexpensive • reliable • suitable for any load • very low back e.m.f. Disadvantages: • DC only • increased release time
Diode / Zener diode combination 	medium to small	yes (U_{ZD})	no	Advantages: • suitable for any load • reliable Disadvantages: • no damping below U_{ZD}
Zener diode 	medium to small	yes (U_{ZD})	yes	Advantages: • inexpensive • suitable for any load • precise clamping voltage • AC or DC Disadvantages: • no damping below U_{ZD}
Varistor 	medium to small	yes (U_{VDR})	yes	Advantages: • high energy absorption for size • suitable for any load • AC or DC Disadvantages: • no damping below U_{VDR} • limited lifespan
RC-network 	medium to small	no	yes	Advantages: • HF damping • AC or DC • no minimum damping voltage Disadvantages: • must be matched to load • limited lifespan

MIRO

The modules are offered in two sizes:
6.2 mm module housing with integrated relay with 1 C/O contact and common bridges
12.4 mm module housing with integrated relay with 2 C/O contact and common bridges
Connection is via cage clamp terminals or screw terminal. The minus plug link saves space and wiring time.
Snaps on to DIN-rail to EN 50022.

From page 3.7.5

RMM, RMME, RMMDE

Width12 mm. Attractive and functional design.
Separation between input and outputs is clearly defined. Each module can be individually labelled.
LED indicator. Snaps on to DIN-rail to EN 50022 or EN 50035.
Versions with plug link on the input side simplify wiring, because no loop in of the A2 common is then necessary.

From page 3.7.16

RMMD / RMMDH

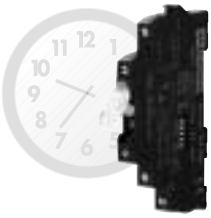
Compact design incorporating clever features. 1 relay with 1 C/O contact or 2 N/O contact with a width of only 12 mm.
Up to 50 modules can be linked using the plug link.
The RMMDH also has a switch with 3 settings «HAND-O-AUTO» which allows manual operation or simulations to be carried out.
Snaps on to DIN-rail to EN 50022 (35 mm) and EN 50 035 (32 mm).

From page 3.7.19

RM, RME

Width 22.5 mm. There are up to 4 relays in each housing. Each can be individually labelled.
The modules are offered with screw terminal or plug in screw terminals. This allows them to be replaced in maintenance very quickly.
Positive guided contacts are also on offer.
Snaps on to DIN and C-rail.

From page 3.7.23



MIRO Timers

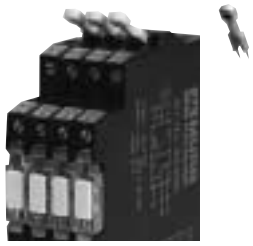
Compact form 6,2 mm resp. 12,4 mm.
Modules are available as switch on delay, switch off delay and multi-function.
Snaps on to DIN-rail to EN 50022.
Connection is via cage clamp terminals or screw terminal.
The minus plug link saves space and wiring time.

Page 3.7.27

Small, smaller and smallest

Murrelektronik was the first manufacturer of slimline relay modules years ago.
Murrelektronik is now the first manufacturer of the terminal row module.

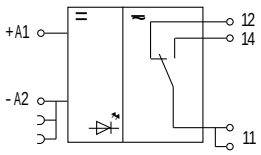
- 6.2 mm module housing with integrated relay with 1 C/O contact and common bridges
- 12.4 mm module housing with integrated relay with 2 C/O contact and common bridges



Murrelektronik sets trends

The minus plug link, a idea from Murreletronik, saves both space and wiring time.

- no additional common minus terminals
- no time consuming wiring of the common minuses
- cost reduction



Safe separation, sealed relay

The wide range, which can be used in numerous applications, offer a high degree of security.
Whether relay or opto-coupler, the module offer the perfect solution.
Safe separation to VDE 0106 and a sealed relay housing are further advantages.
The MIRO opto coupler range offer high switching frequencies and noise free operation.

Clearly defined technical data from Murrelektronik

Both modules and terminals are clearly and permanently labelled. Terminal labelling is to EN 50005.
Each module also has a module label plate for self marking.
LED-Status indicator is standard.
The max. current specifications shown for the relay are 6 A, although the exact current is given dependent on usage and type.
(see page 3.7.2)

Individual connection technology

Whether you want to use screw terminal or cage clamp terminals Murrelektronik offer a solution.

- The connection can easily be made because of the user friendly design.
- The units are also suitable for use in the building installation industry.
- The building management industry is offered a further advantage with the HAND-0-AUTO switch, which can act as a circuit breaker.

MIRO

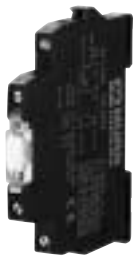
Murrelektronik
Interface
Terminal relays
Output relay

MR 6,2 mm

Output relay
1 C/O contact
with enhanced features

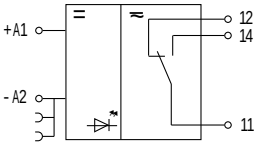
MR 6,2 mm

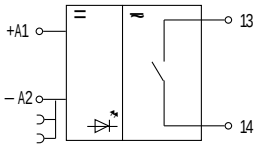
Output relay
1 N/O contact
with enhanced features



Circuit diagram

Common connection up to max. 50 V DC





Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
12 V DC	**6652050**	**52050**		
24 V DC	**6652000**	**52000**	**6652002**	**52002**
24 V AC/DC	**6652001**	**52001**	**6652015**	**52015**
48 V DC	**6652020**	**52020**		
110 V AC/DC	**6652030**	**52030**		
230 V AC/DC	**6652040**	**52040**		

Technical data	Input (coil)	
Input voltage/current	12 V DC	10 … 15 V DC / approx. 18 mA
	24 V DC	19,2 … 30 V DC / approx. 20 mA
	24 V AC/DC	19,2 … 30 V AC/DC / approx. 20 mA
	48 V DC	40 … 53 V DC / approx. 15 mA
	110 V AC/DC	95 …125 V AC/DC / approx. 5 mA
	230 V AC/DC	195 …253 V AC/DC / approx. 5 mA
Status indicator		LED green

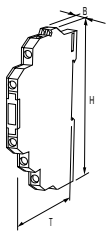
Technical data	Output (contact)	
Max. switched voltage		250 V AC/DC
Max. switched current		6 A (see table)
Min. load current		10 mA/12 V DC
Max. power rating (voltage dependent)		1500 VA/120 W
Contact material		Ag Sn O_2
Energise/release/contact bounce time		10/15/1,5 ms

General data		
Mech./elect. life		2 x 10^7/load dependent
Max. switching frequency		10 Hz
Test isolation voltage		4 kV/AC; safe separation to VDE 0106/VDE 0160
Air and creepage distance		6/8 mm
Temperature range		-20…+55 °C
Mounting method		DIN-rail mounting to EN 50022
Dimensions H x B x T		90 x 6,2 x 65 mm / 78 x 6,2 x 65 mm

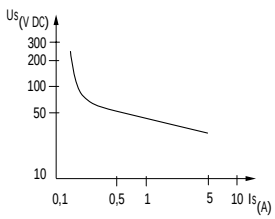
Accessories

Bridging link max. 2 A	Art.-No. 90961
Bridging comb 10-pole, red	Art. No. 90976
Bridging comb 10-pole, blue	Art.-No. 90975
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

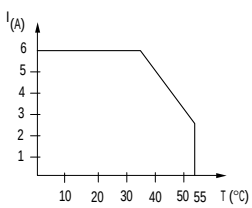
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
Accessories can be found in chapter 3.16

MIRO

Murrelektronik
Interface
Terminal relays
Input relay

MR 6,2 mm

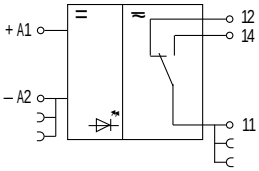
Input relay
1 relay / 1 C/O contact
with enhanced features

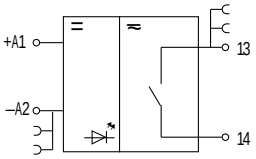
MR 6,2 mm

Input relay
1 relay / 1 N/O contact
with enhanced features

Circuit diagram

Common connection up to max. 50 V DC





Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC	**6652005**	**52005**	**6652004**	**52004**
24 V AC/DC	**6652003**	**52003**		
48 V DC	**6652021**	**52021**		
110 V AC/DC	**6652031**	**52031**		
230 V AC/DC	**6652041**	**52041**		

Technical data	Input (coil)	
Input voltage/current	24 V DC	19,2 …30 V DC / approx. 20 mA
	24 V AC/DC	19,2 …30 V AC/DC / approx. 20 mA
	48 V DC	40 …53 V DC / approx. 15 mA
	110 V AC/DC	95 …125 V AC/DC / approx. 5 mA
	230 V AC/DC	195 …253 V AC/DC / approx. 5 mA
Status indicator		LED yellow

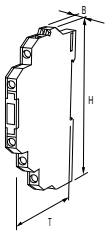
Technical data	Output (contact)	
Max. switched voltage		30 V AC/36 V DC *
Max. switched current		50 mA *
Min. load current		1 mA/12 V DC
Max. power rating (voltage dependent)		1500 VA/120 W
Contact material		Ag Sn O_2 / Ag Sn O_2 gold plated
Energise/release/contact bounce time		10/15/1,5 ms

General data	
Mech./elect. life	2 x 10^7/load dependent
Max. switching frequency	10 Hz
Test isolation voltage	4 kV/AC; safe separation to VDE 0106/VDE 0160
Air and creepage distance	6/8 mm
Temperature range	-20…+55 °C
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	90 x 6,2 x 65 mm / 78 x 6,2 x 65 mm

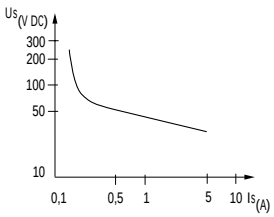
Accessories

Bridging link max. 2 A	Art.-No. 90961
Bridging comb 10-pole, red	Art. No. 90976
Bridging comb 10-pole, blue	Art.-No. 90975
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

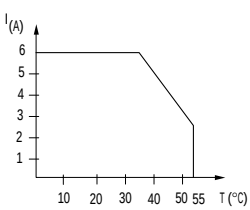
Dimension drawing



Load limit curve



De-rating curve



Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page 3.7.5

MIRO

Murrelektronik
Interface
Terminal relays
with manual switch
to VDI 3814

MR 6,2 mm

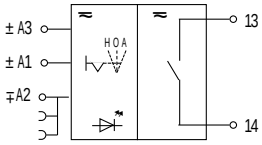
Output relay
1 relay / 1 N/O contact
with H-O-A switch

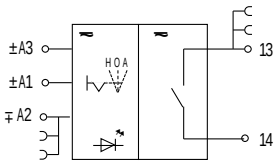
MR 6,2 mm

Input relay
1 relay / 1 N/O contact
with H-O-A switch

Circuit diagram

Common connection up to max. 50 V DC





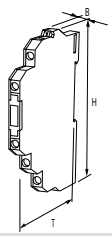
Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC				
24 V AC/DC	**6652007**	**52007**	**6652009**	**52009**
48 V DC				
110 V AC/DC				
230 V AC/DC				

Technical data	Input (coil)		
Input voltage/current	24 V DC		
	24 V AC/DC	19,2 …30 V AC/DC / approx. 20 mA	
	48 V DC		
	110 V AC/DC		
	230 V AC/DC		
Status indicator		LED green	LED yellow
Technical data	**Output (contact)**		
Max. switched voltage		250 V AC/DC	30 V AC/36 V DC *
Max. switched current		6 A (see table)	50 mA *
Min. load current		10 mA/12 V DC	1 mA/12 V DC
Max. power rating (voltage dependent)		1500 VA/120 W	1500 VA/120 W
Contact material		Ag Sn O_2	Ag Sn O_2 gold plated
Energise/release/contact bounce time		10/15/1,5 ms	
General data			
Mech./elect. life		2 x 10^7/load dependent	
Max. switching frequency		10 Hz	
Test isolation voltage		4 kV/AC; safe separation to VDE 0106/VDE 0160	
Air and creepage distance		6/8 mm	
Temperature range		-20…+55 °C	
Mounting method		DIN-rail mounting to EN 50022	
Dimensions H x B x T		90 x 6,2 x 65 mm	

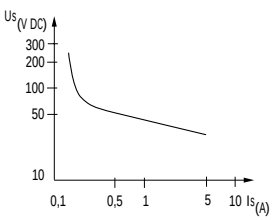
Accessories

Bridging link max. 2 A	Art.-No. 90961
Bridging comb 10-pole, red	Art. No. 90976
Bridging comb 10-pole, blue	Art.-No. 90975
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

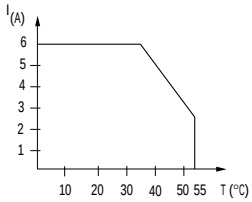
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page 3.7.5

MIRO

Murrelektronik
Interface
Terminal relays
with opposite common and
for 3-wire initiators

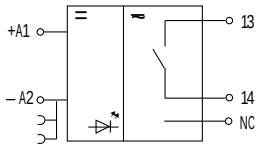
MR 6,2 mm

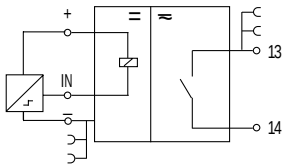
Output relay
1 N/O contact
with integrated looping terminal

MR 6,2 mm

Input relay
1 N/O contact
for 3-wire NPN sensors

Circuit diagram





Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC	**6652006**	**52006**	**6652008**	**52008**
24 V AC/DC				
48 V DC				
110 V AC/DC				
230 V AC/DC			**6652048**	**52048**

Technical data	Input (coil)		
Input voltage/current	24 V DC	19,2 …30 V DC / approx. 20 mA	
	24 V AC/DC		
	48 V DC		
	110 V AC/DC		
	230 V AC/DC	195 …253 V AC/DC / approx. 5 mA	
Status indicator		LED green	LED yellow

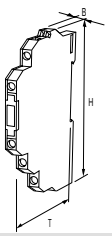
Technical data	Output (contact)	
Max. switched voltage	250 V AC/DC	30 V AC/36 V DC *
Max. switched current	6 A (see table)	50 mA *
Min. load current	10 mA/12 V DC	1 mA/12 V DC
Max. power rating (voltage dependent)	1500 VA/120 W	1500 VA/120 W
Contact material	Ag Sn O_2	Ag Sn O_2 gold plated
Energise/release/contact bounce time	10/15/1,5 ms	

General data	
Mech./elect. life	2 x 10^7/load dependent
Max. switching frequency	10 Hz
Test isolation voltage	4 kV/AC; safe separation to VDE 0106/VDE 0160
Air and creepage distance	6/8 mm
Temperature range	-20…+55 °C
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	90 x 6,2 x 65 mm

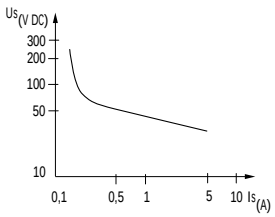
Accessories

Bridging link max. 2 A	Art.-No. 90961
Bridging comb 10-pole, red	Art. No. 90976
Bridging comb 10-pole, blue	Art.-No. 90975
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

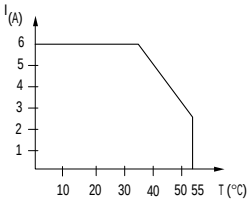
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page 3.7.5

MIRO

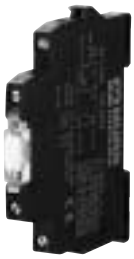
Murrelektronik
Interface
Terminal relays
with contact isolation link
on the output

MR 6,2 mm

Isolation link relay module
1 C/O contact with isolation function

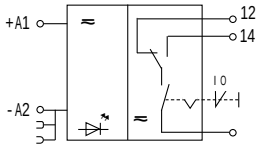
MR 6,2 mm

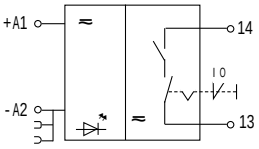
Isolation link relay module
1 N/O contact with isolation function



Circuit diagram

Common connection up to max. 50 V DC





Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC				
24 V AC/DC	**6652010**	**52010**	**6652011**	**52011**
48 V DC				
110 V AC/DC				
230 V AC/DC				

Technical data	Input (coil)	
Input voltage/current	24 V DC	
	24 V AC/DC	19,2 …30 V AC/DC / approx. 20 mA
	48 V DC	
	110 V AC/DC	
	230 V AC/DC	
Status indicator		LED green

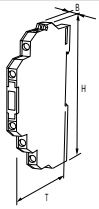
Technical data	Output (contact)	
Max. switched voltage		250 V AC/DC
Max. switched current		6 A (see table)
Min. load current		10 mA/12 V DC
Max. power rating (voltage dependent)		1500 VA/120 W
Contact material		Ag Sn O_2
Energise/release/contact bounce time		10/15/1,5 ms

General data		
Mech./elect. life		2 x 10^7/load dependent
Max. switching frequency		10 Hz
Test isolation voltage		4 kV/AC; safe separation to VDE 0106/VDE 0160
Air and creepage distance		6/8 mm
Temperature range		-20…+55 °C
Mounting method		DIN-rail mounting to EN 50022
Dimensions H x B x T		90 x 6,2 x 65 mm / 78 x 6,2 x 65 mm

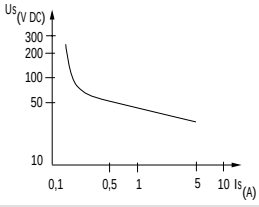
Accessories

Bridging link max. 2 A	Art.-No. 90961
Bridging comb 10-pole, red	Art. No. 90976
Bridging comb 10-pole, blue	Art.-No. 90975
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

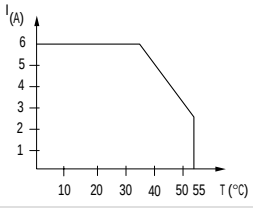
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
Accessories can be found in chapter 3.16

MIRO

Murrelektronik
Interface
Terminal relays

MR 12,4 mm

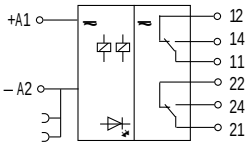
Output relay
1 relay / 2 C / O contacts
with enhanced features

MR 12,4 mm

Input relay
1 relay / 2 C / O contacts
with enhanced features

Circuit diagram

Common connection up to max. 50 V DC



Ordering data		Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage		spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC		**6652102**	**52102**	**6652110**	**52110**
24 V AC / DC		**6652103**	**52103**	**6652111**	**52111**
48 V DC		**6652120**	**52120**	**6652126**	**52126**
110 V AC / DC		**6652130**	**52130**	**6652136**	**52136**
230 V AC / DC		**6652140**	**52140**	**6652146**	**52146**
Technical data	**Input (coil)**				
Input voltage / current	24 V DC	19,2 …30 V DC / approx. 20 mA			
	24 V AC / DC	19,2 …30 V AC / DC / approx. 20 mA			
	48 V DC	40 …53 V DC / approx. 15 mA			
	110 V AC / DC	95 …121 V AC / DC / approx. 7 mA			
	230 V AC / DC	195 …253 V AC / DC / approx. 5 mA			
Status indicator		LED green			
Technical data	**Output (contact)**				
Max. switched voltage		250 V AC / DC		30 V AC / 36 V DC *	
Max. switched current		6 A (see table)		50 mA *	
Min. load current		10 mA / 12 V DC			
Max. power rating (voltage dependent)		1500 VA / 120 W			
Contact material		Ag Sn O_2		Ag Sn O_2 gold plated	
Energise / release / contact bounce time		10 / 15 / 1,5 ms			
General data					
Mech. / elect. life		2 x 10^7 / load dependent			
Max. switching frequency		10 Hz			
Test isolation voltage		4 kV / AC; safe separation to VDE 0106 / VDE 0160			
Air and creepage distance		6 / 8 mm			
Temperature range		-20…+55 °C			
Mounting method		DIN-rail mounting to EN 50022			
Dimensions H x B x T		90 x 12,4 x 65 mm			

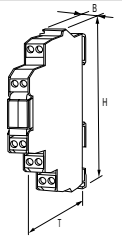
Accessories

Bridging link max. 2 A — Art.-No. 90961

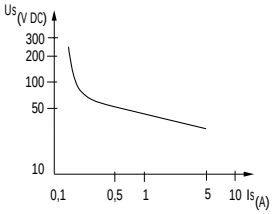
Wire chain 16-pole — Art.-No. 90977

Label plate — Art.-No. 90901

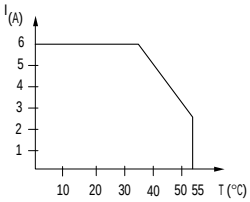
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.

* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page 3.7.5

MIRO

Murrelektronik
Interface
Terminal relays

MR 12,4 mm

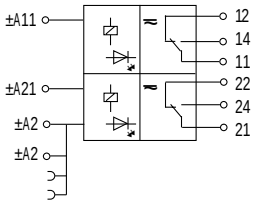
Output relay
2 relays / each 1 C / O contact
with enhanced features

MR 12,4 mm

Input relay
2 relays / each 1 C / O contact
with enhanced features

Circuit diagram

Common connection up to max. 50 V DC



Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC	**6652100**	**52100**	**6652115**	**52115**
24 V AC / DC	**6652101**	**52101**	**6652116**	**52116**
48 V DC	**6652125**	**52125**	**6652127**	**52127**
110 V AC / DC	**6652135**	**52135**	**6652137**	**52137**
230 V AC / DC	**6652145**	**52145**	**6652147**	**52147**

Technical data	Input (coil)		
Input voltage / current	24 V DC	19,2 …30 V DC	/ approx. 20 mA
	24 V AC / DC	19,2 …30 V AC / DC	/ approx. 20 mA
	48 V DC	40 …53 V DC	/ approx. 10 mA
	110 V AC / DC	95 …121 V AC / DC	/ approx. 5 mA
	230 V AC / DC	195 …253 V AC / DC	/ approx. 5 mA
Status indicator		LED green	

Technical data	Output (contact)		
Max. switched voltage		250 V AC / DC	30 V AC / 36 V DC *
Max. switched current		6 A (see table)	50 mA *
Min. load current		10 mA / 12 V DC	
Max. power rating (voltage dependent)		1500 VA / 120 W	
Contact material		Ag Sn O_2	Ag Sn O_2 gold plated
Energise / release / contact bounce time		10 / 15 / 1,5 ms	

General data	
Mech. / elect. life	2 x 10^7 / load dependent
Max. switching frequency	10 Hz
Test isolation voltage	4 kV / AC; safe separation to VDE 0106 / VDE 0160
Air and creepage distance	6 / 8 mm
Temperature range	-20…+55 °C
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	90 x 12,4 x 65 mm

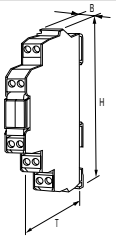
Accessories

Bridging link max. 2 A — Art.-No. 90961

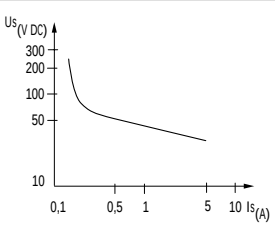
Wire chain 16-pole — Art.-No. 90977

Label plate — Art.-No. 90901

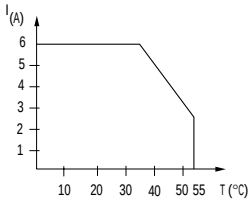
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page 3.7.5

MIRO

Murrelektronik
Interface
Terminal relays

with manual switch
to VDI 3814

CE

MR 12,4 mm

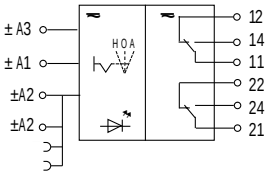
Output relay
1 relay / 2 C / O contacts
with H-O-A switch

MR 12,4 mm

Input relay
1 relay / 2 C / O contacts
with H-O-A switch

Circuit diagram

Common connection up to max. 50 V DC



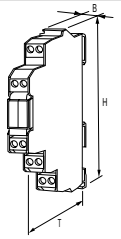
Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC				
24 V AC / DC	**6652107**	**52107**	**6652109**	**52109**
48 V DC				
110 V AC / DC				
230 V AC / DC				

Technical data	Input (coil)		
Input voltage / current	24 V DC		
	24 V AC / DC	19,2 …30 V AC / DC / approx. 20 mA	
	48 V DC		
	110 V AC / DC		
	230 V AC / DC		
Status indicator		LED green	
Technical data	**Output (contact)**		
Max. switched voltage		250 V AC / DC	30 V AC / 36 V DC *
Max. switched current		6 A (see table)	50 mA *
Min. load current		10 mA / 12 V DC	
Max. power rating (voltage dependent)		1500 VA / 120 W	
Contact material		Ag Sn O_2	Ag Sn O_2 gold plated
Energise / release / contact bounce time		10 / 15 / 1,5 ms	
General data			
Mech. / elect. life		2 x 10^7 / load dependent	
Max. switching frequency		10 Hz	
Test isolation voltage		4 kV / AC; safe separation to VDE 0106 / VDE 0160	
Air and creepage distance		6 / 8 mm	
Temperature range		-20…+55 °C	
Mounting method		DIN-rail mounting to EN 50022	
Dimensions H x B x T		90 x 12,4 x 65 mm	

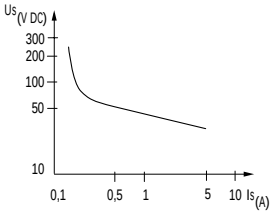
Accessories

Bridging link max. 2 A	Art.-No. 90961
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

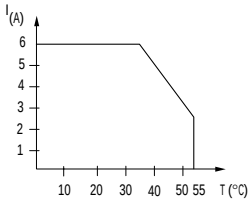
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page 3.7.5

MIRO

Murrelektronik
Interface
Terminal relays

MR 12,4 mm

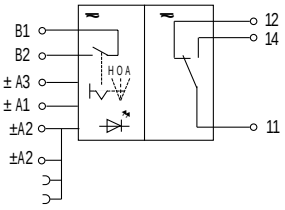
Output relay
1 relay / 1 C / O contact
with H-O-A switch and CTL contact

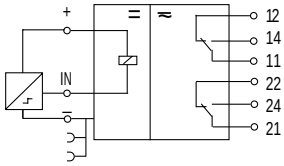
MR 12,4 mm

Input relay
1 relay / 2 C / O contacts
for 3-wire NPN sensors

Circuit diagram

Common connection up to max. 50 V DC





Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC				
24 V AC / DC	**6652150**	**52150**	**6652108**	**52108**
48 V DC				
110 V AC / DC				
230 V AC / DC				

Technical data	Input (coil)	
Input voltage / current	24 V DC	
	24 V AC / DC	19,2 …30 V AC / DC / approx. 20 mA
	48 V DC	
	110 V AC / DC	
	230 V AC / DC	
Status indicator		LED green

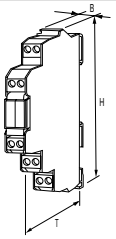
Technical data	Output (contact)		
Max. switched voltage	250 V AC / DC	30 V AC / 36 V DC *	
Max. switched current	6 A (see table)	50 mA *	
Min. load current	10 mA / 12 V DC		
Max. power rating (voltage dependent)	1500 VA / 120 W		
Contact material	Ag Sn O_2	Ag Sn O_2 gold plated	
Energise / release / contact bounce time	10 / 15 / 1,5 ms		

General data	
Mech. / elect. life	2 x 10^7 / load dependent
Max. switching frequency	10 Hz
Test isolation voltage	4 kV / AC; safe separation to VDE 0106 / VDE 0160
Air and creepage distance	6 / 8 mm
Temperature range	-20…+55 °C
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	90 x 12,4 x 65 mm

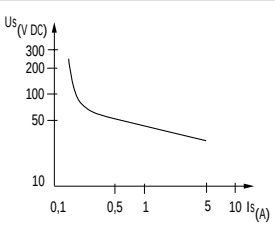
Accessories

Bridging link max. 2 A	Art.-No. 90961
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

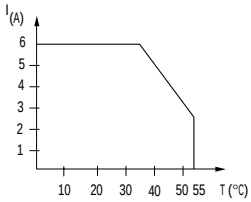
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page 3.7.5

MIRO

Murrelektronik
Interface
Terminal relays

CE

MR 12,4 mm

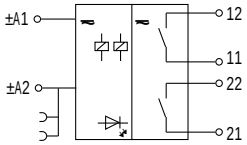
Output relay
1 relay / 2 N/O contacts
with enhanced features

MR 12,4 mm

Input relay
1 relay / 2 N/O contacts
with enhanced features

Circuit diagram

Common connection up to max. 50 V DC



Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC				
24 V AC/DC	**6652104**	**52104**	**6652112**	**52112**
48 V DC				
110 V AC/DC				
230 V AC/DC				

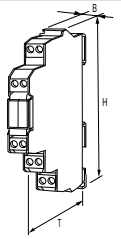
Technical data	Input (coil)		
Input voltage / current	24 V DC		
	24 V AC/DC	19,2 …30 V AC/DC / approx. 20 mA	
	48 V DC		
	110 V AC/DC		
	230 V AC/DC		
Status indicator		LED green	
Technical data	**Output (contact)**		
Max. switched voltage		250 V AC/DC	30 V AC/36 V DC *
Max. switched current		6 A (see table)	50 mA *
Min. load current		10 mA/12 V DC	
Max. power rating (voltage dependent)		1500 VA/120 W	
Contact material		Ag Sn O_2	Ag Sn O_2 gold plated
Energise / release / contact bounce time		10/15/1,5 ms	

General data	
Mech. / elect. life	2 x 10^7 / load dependent
Max. switching frequency	10 Hz
Test isolation voltage	4 kV/AC; safe separation to VDE 0106/VDE 0160
Air and creepage distance	6/8 mm
Temperature range	-20…+55 °C
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	90 x 12,4 x 65 mm

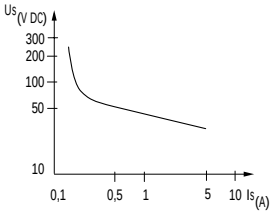
Accessories

Bridging link max. 2 A	Art.-No. 90961
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

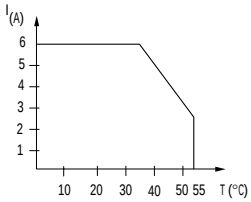
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
* When the listed values are exceeded the gold plating is destroyed, the values of the output relay are then valid i.e. on page S. 3.7.5

MIRO

Murrelektronik
Interface
Terminal relays
for use in building installations

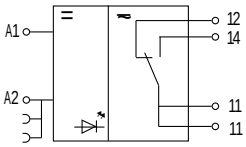
MR 12,4 mm

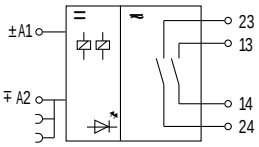
for long cables
1 Output relay / 1 C/O contact
for use in control cabinets in building installations

MR 12,4 mm

Output relay
2 N/O contacts
for use in control cabinets in building installations

Circuit diagram





Ordering data	Art.-No.	Art.-No.	Art.-No.	Art.-No.
Input voltage	spring clamp terminals	screw terminals	spring clamp terminals	screw terminals
24 V DC				
24 V AC/DC			**6652106**	**52106**
48 V DC				
110 V AC/DC				
230 V AC/DC	**6652141**	**52141**		

Technical data	Input (coil)	
Input voltage / current	24 V DC	
	24 V AC/DC	19,2 …30 V AC/DC / approx. 20 mA
	48 V DC	
	110 V AC/DC	
	230 V AC/DC	195 …253 V AC/DC / approx. 5 mA (Hold voltage ≥ 70 V / Hold current ≥ 0,3 mA)
Status indicator		LED green

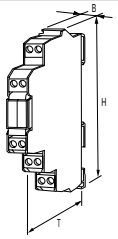
Technical data	Output (contact)	
Max. switched voltage		250 V AC/DC
Max. switched current		6 A (see table)
Min. load current		10 mA/12 V DC
Max. power rating (voltage dependent)		1500 VA/120 W
Contact material		Ag Sn O_2
Energise / release / contact bounce time		10/15/1,5 ms

General data	
Mech. / elect. life	2 x 10^7 / load dependent
Max. switching frequency	10 Hz
Test isolation voltage	4 kV / AC; safe separation to VDE 0106 / VDE 0160
Air and creepage distance	6 / 8 mm
Temperature range	-20…+55 °C
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	90 x 12,4 x 65 mm

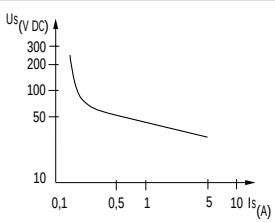
Accessories

Bridging link max. 2 A	Art.-No. 90961
Wire chain 16-pole	Art.-No. 90977
Label plate	Art.-No. 90901

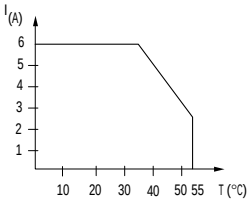
Dimension drawing



Load limit curve



De-rating curve



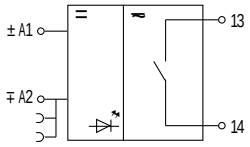
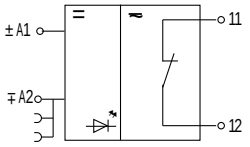
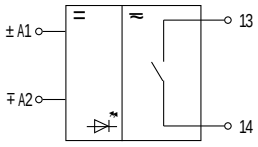
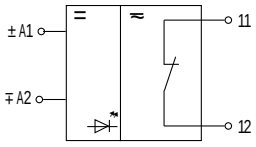
Switching capabilities to EN 60947

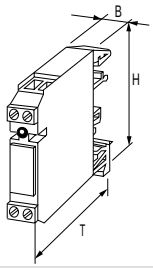
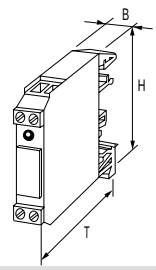
	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

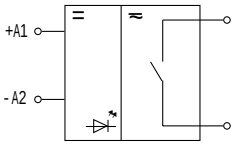
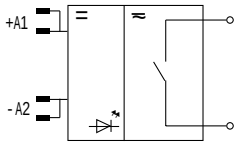
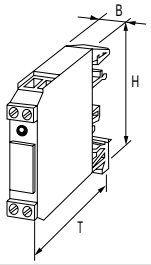
When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan.
Accessories can be found in chapter 3.16

Mini-Relay modules

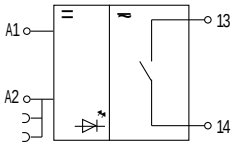
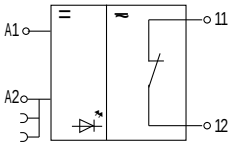
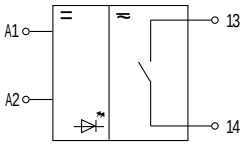
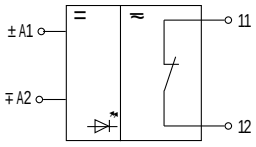
	RMM Output relay with minus plug link		RMM Output relay without minus plug link	
				
Circuit diagram				
				
Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/C contact	1 relay; 1 N/O contact	1 relay; 1 N/C contact
24 V DC	**51851**	**51808**	**51551**	**51508**
48 V DC	**51850**	**51864**	**51550**	**51564**
110 V AC			**51552**	**51563**
230 V AC			**51515**	**51562**

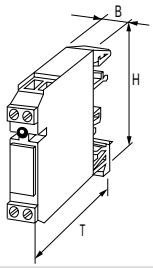
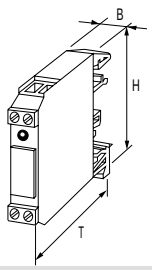
Technical data **Input (coil)**		
Input voltage/current	24 V DC ±10 %/30 mA (24 V AC -5 %, +10 % at $\vartheta_{U\,max.} \leq 40$ °C)	
	48 V DC ±10 %/20 mA (48 V AC -5 %, +10 % at $\vartheta_{U\,max.} \leq 40$ °C)	
	110 V AC +10 % -15 %/7 mA	
	230 V AC +10 % -15 %/7 mA	
Plug link	Art.-No. 90960 (included with relay)	–
Status indicator	LED red	
Technical data **Output (contact)**		
Max. switched voltage	250 V AC/300 V DC	
Max. switched current	5 A	
Min. load current	100 mA	
Max. power rating (voltage dependent)	1250 VA/240 W	
Contact material	Ag Ni 0,15 hv; Ag hv	
Energise/release/contact bounce time	10/15/1,5 ms	
General data		
Mech./elect. life	2 x 10^7/load dependent	
Max. switching frequency	10 Hz	
Test isolation voltage	4 kV/AC; safe separation to VDE 0106/VDE 0160	
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 50022 or EN 50035	
Dimensions H x B x T	56 x 12 x 64 mm	
Dimension drawing		
		
Notes		
	Accessories can be found in chapter 3.16	

Mini-Relay modules with green LED

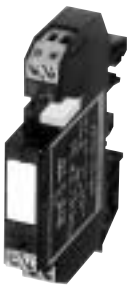
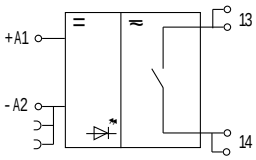
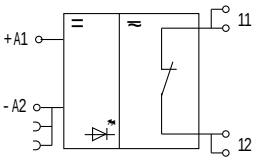
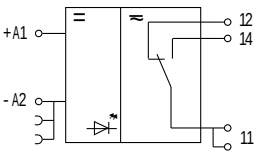
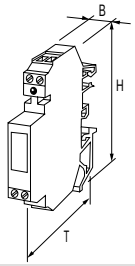
	RMM Output relay	RMM Output relay
		
Circuit diagram		
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/O contact
24 V DC	**512764**	**512774**
48 V DC		
110 V AC		
230 V AC		
Technical data Input (coil)		
Input voltage/current	24 V DC ±10 %/20 mA	24 V DC ±10 %/20 mA
Status indicator	LED green	LED green
Connection	screw terminal	coil connection: Faston 2 x 2,8 x 0,8 mm
Technical data Output (contact)		
Max. switched voltage	250 V AC/300 V DC	
Max. switched current	5 A	
Min. load current	100 mA	
Max. power rating (voltage dependent)	1250 VA/240 W	
Contact material	Ag Ni 0,15 hv; Ag hv	
Energise/release/contact bounce time	10/15/1,5 ms	
Connection	screw terminal	
General data		
Mech./elect. life	2 x 10^7/load dependent	
Max. switching frequency	10 Hz	
Test isolation voltage	4,0 kV AC	
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 50022 or EN 50035	
Dimensions H x B x T	56 x 12 x 64 mm	
Dimension drawing		
		
Notes		
	Accessories can be found in chapter 3.16. VW Id.No.: A 232252 (512764) and A 598191 (512774)	

Mini-Relay modules

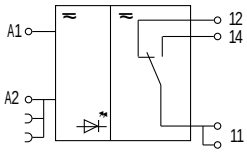
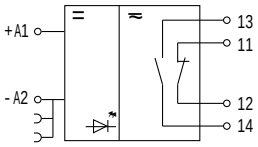
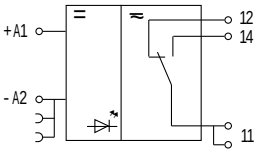
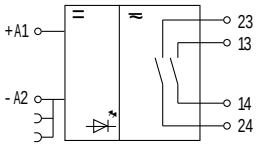
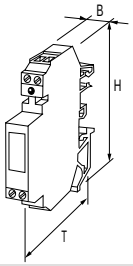
	RMME Input relay with minus plug link		RMME Input relay without minus plug link	
				
Circuit diagram				
Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/C contact	1 relay; 1 N/O contact	1 relay; 1 N/C contact
24 V AC/DC	**51860**	**51871**	**51560**	**51571**
48 V AC/DC	**51853**		**51553**	
110 V AC			**51526**	
230 V AC			**51517**	**51572**

Technical data **Input (coil)**		
Input voltage/current	24 V AC/DC ±10 %/7 mA	
	48 V AC/DC ±10 %/7 mA	
	110 V AC +10 % -15 %/7 mA	
	230 V AC +10 % -15 %/7 mA	
Plug link	Art.-No. 90960 (included with relay)	–
Status indicator	LED yellow	
Technical data **Output (contact)**		
Max. switched voltage	125 V AC/150 V DC	
Max. switched current	1 A	
Min. load current	1 mA	
Max. power rating (voltage dependent)	60 VA/30 W	
Contact material	Pd Ni-Au Rh	
Energise/release/contact bounce time	10/10/1 ms	
General data		
Mech./elect. life	1 x 10^8/load dependent	
Max. switching frequency	15 Hz	
Test isolation voltage	1,5 kV AC	
Temperature range	-20…+60 °C	
Mounting method	DIN-rail mounting to EN 50022 or EN 50035	
Dimensions H x B x T	56 x 12 x 64 mm	
Dimension drawing		
		
Notes		
	Accessories can be found in chapter 3.16	

RMMD-Relay modules with minus plug link

	RMMD Output relay with minus plug link	RMMD Output relay with minus plug link	RMMD Output relay with minus plug link
			
Circuit diagram			
Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/C contact	1 relay; 1 C/O contact
24 V DC	[1] **51100**	[1] **51110**	[1] **51120**
48 V AC/DC			
110 V AC			
230 V AC	**51108**		
Technical data Input (coil)			
Input voltage/current	24 V DC ±10 %/20 mA		
	230 V AC +10 % -15 %/10 mA (without plug link)		
Plug link	Art.-No. 90960 (included with relay) plug link not possible with 230 V version		
Status indicator	LED red		
Technical data Output (contact)			
Max. switched voltage	250 V AC/DC		
Max. switched current	8 A (6 A at 230 V-Type)		
Min. load current	100 mA		
Max. power rating (voltage dependent)	2000 VA/240 W		
Contact material	Ag Ni 0,15 hv; Ag hv;		
Energise/release/contact bounce time	10/15/2 ms		
General data			
Mech./elect. life	2 x 10^7/load dependent		
Max. switching frequency	10 Hz		
Test isolation voltage	5 kV AC; at Art.-No. 51108: 4,0 kV AC		
Temperature range	-20…+50 °C		
Mounting method	DIN-rail mounting to EN 50022 or EN 50035		
Dimensions H x B x T	82 x 12 x 68 mm		
Dimension drawing			
			
Notes			
	Accessories can be found in chapter 3.16. [1] Units with safe separation to VDE 0106, part 101/VDE 0160		

MURR ELEKTRONIK

RMMD-Relay modules with minus plug link	**RMMD** Output relay with low connection current	**RMMDE** Input relay with enhanced features	**RMMDE** Input relay with enhanced features	**RMMDE** Input relay with enhanced features
				
Circuit diagram				
Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 C/O contact	1 relay; 1 N/O contact/1 N/C contact	1 relay; 1 C/O contact	1 relay; 2 N/O contacts
24 V AC/DC	[1] **51125**			
24 V DC		**516014**	**51130**	**51140**
110 V AC				
230 V AC			**51138**	
Technical data Input (coil)				
Input voltage/current	24 V AC/DC ±10 %/max. 10 mA			
		24 V DC ±10 %/max. 20 mA	24 V DC ±10 %/max. 15 mA	24 V DC ±10 %/max. 15 mA
			230 V AC +10 % -15 %/10 mA	
Plug link	Art.-No. 90960 (included with relay) plug link not possible with 230 V version			
Status indicator	LED red		LED yellow	
Technical data Output (contact)				
Max. switched voltage	250 V AC/DC	250 V AC/DC	125 V AC/150 V DC	250 V AC/DC
Max. switched current	8 A	3 A	1 A	2 A
Min. load current	100 mA	1 mA	1 mA	5 mA
Max. power rating (voltage dependent)	2000 VA/240 W	90 W/VA	60 VA/30 W	250 VA/150 W
Contact material	Ag Ni 0,15 hv; Ag hv	Ag-htv	Pd Ni-Au Rh	Ag Au-Pd Ag
Energise/release/contact bounce time	10/15/2 ms	6/3/2 ms	10/10/1 ms	10/10/1 ms
General data				
Mech./elect. life	2 x 10^7/load dependent	2 x 10^7/load dependent	1 x 10^8/load dependent	2 x 10^7/load dependent
Max. switching frequency	10 Hz	10 Hz	15 Hz	15 Hz
Test isolation voltage	5 kV AC	1,5 kV AC	1,5 kV AC	1 kV AC
Temperature range	-20…+50 °C	-20…+60 °C	-20…+60 °C	-20…+50 °C
Mounting method	DIN-rail mounting to EN 50022 or EN 50035			
Dimensions H x B x T	82 x 12 x 68 mm			
Dimension drawing				
				
Notes				
	Accessories can be found in chapter 3.16. [1] Units with safe separation to VDE 0106, part 101/VDE 0160			

RMMD-Relay modules with HAND-OFF-AUTO for use in Building Management Systems

CE

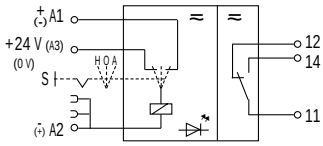
RMMDH

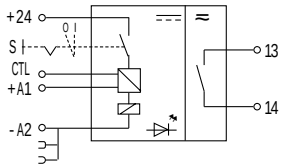
Output relay with negative plug-in and toggle switch for HAND-O-AUTO control

RMMDH

Output relay with negative plug-in and toggle switch for HAND-O-AUTO control
Has auxiliary alarm contact when in "HAND" position

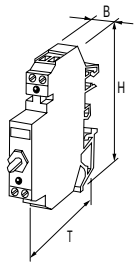
Circuit diagram





Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 C/O contact	1 relay; 1 C/O contact	1 relay; 1 N/O contact
24 V DC			**51150**
24 V AC/DC	**51152**	[1] **516061**	
110 V AC			
230 V AC			
Technical data Input (coil)			
Input voltage/current			24 V DC ±10 %/8 mA
	24 V AC/DC ±10 %/20 mA		
Plug link	Art.-No. 90960 (included with relay)		
Status indicator	LED red		
Technical data Output (contact)			
Max. switched voltage	250 V AC/DC		250 V AC/DC
Max. switched current	8 A		5 A
Min. load current	100 mA		10 mA
Max. power rating (voltage dependent)	2000 VA/240 W		750 VA/75 W
Contact material relay (switch)	Ag Ni 0,15 hv		Ag Ni 0,15 hv
Energise/release/contact bounce time	10/10/2 ms		10/10/2 ms
General data			
Mech./elect. life	3 x 10^7/load dependent		2 x 10^7/load dependent
Max. switching frequency	15 Hz		10 Hz
Test isolation voltage	3 kV AC		3 kV AC
Temperature range	-20…+50 °C		-20…+50 °C
Mounting method	DIN-rail mounting to EN 50022 or EN 50035		DIN-rail mounting to EN 50022 or EN 50035
Dimensions H x B x T	82 x 12 x 82 mm		82 x 12 x 82 mm

Dimension drawing/description

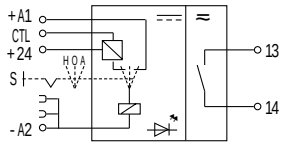
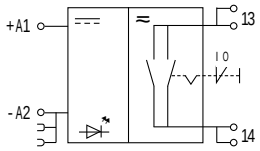
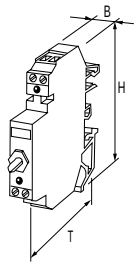


This relay enables the load to be controlled by a PLC with the added facility to manually switch the load on or off using the toggle switch.

Notes

[1] with Art.-No. 516061 the toggle switch must be held in the HAND position.
Accessories can be found in chapter 3.16

RMMD-Relay modules with HAND-OFF-AUTO

	RMMDH	RMMDH
	Output relay with negative plug-in and toggle switch for HAND-O-AUTO control Has auxiliary alarm contact when in "HAND" position	Output relay with negative plug-in and toggle switch for HAND-O-AUTO control. Output relay with negative plug link and toggle switch to bridge working contact.
		
Circuit diagram		
		
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/O contact
24 V DC	**51153**	**51101**
48 V DC		
110 V AC		
230 V AC		
Technical data Input (coil)		
Input voltage/current	24 V DC ±10 %/20 mA	24 V DC ±10 %/10 mA
Plug link	Art.-No. 90960 (included with relay)	
Status indicator	LED red	
Technical data Output (contact)		
Max. switched voltage	250 V AC/DC; CTL-Alarm signal 24 V DC	250 V AC/30 V DC
Max. switched current	8 A; CTL-Alarm signal 10 mA	3 A
Min. load current	100 mA	100 mA
Max. power rating (voltage dependent)	2000 VA/240 W	750 VA/90 W
Contact material relay (switch)	Ag Ni 0,15 hv	Ag Cd O (Ag)
Energise/release/contact bounce time	10/10/2 ms	10/10/2 ms
General data		
Mech./elect. life	3 x 10^7/load dependent	3 x 10^7/load dependent
Max. switching frequency	15 Hz	15 Hz
Test isolation voltage	1,5 kV AC	3 kV AC
Temperature range	-20…+50 °C	-20…+50 °C
Mounting method	DIN-rail mounting to EN 50022 or EN 50035	DIN-rail mounting to EN 50022 or EN 50035
Dimensions H x B x T	82 x 12 x 82 mm	82 x 12 x 82 mm
Dimension drawing		
		This relay enables the load to be controlled by a PLC with the added facility to manually switch the load on or off using the toggle switch. Art.-No. 51101 differs in that the relay contact is bridged by the hand operated switch.
Notes		
	Accessories can be found in chapter 3.16	

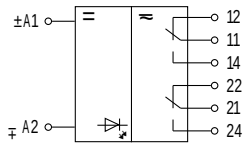
MCVO-Relay modules

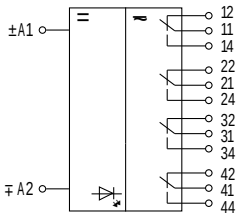
RM

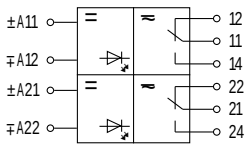
Output relay

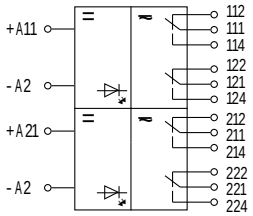
CE

Circuit diagram





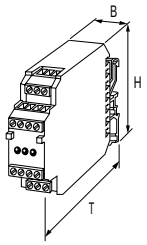




Terminal layout different for Art.-No. 510676

Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 2 C/O contacts	1 relay; 4 C/O contacts	2 relay; each 1 C/O contact	2 relay; each 2 C/O contacts
24 V DC	**51540**	**51410**	**51485**	**51465**
48 V DC		**51441**		
110 V AC		**51442**	**51406**	
230 V AC		**51413**	**51412**	**510676**
Technical data Input (coil)				
Input voltage/current	24 V DC ±10 %/35 mA		24 V DC ±10 %/30 mA	24 V DC ±10 %/30 mA
	48 V DC ±10 %/20 mA			
	110 V AC +10 % -15 %/15 mA		110 V AC +10 % -15 %/10 mA	
	230 V AC +10 % -15 %/15 mA		230 V AC +10 % -15 %/10 mA	230 V AC +10 % -15 %/20 mA
Status indicator	LED red			
Technical data Output (contact)				
Max. switched voltage	250 V AC/DC	250 V AC/DC	250 V AC/300 V DC	250 V AC/DC
Max. switched current	5 A	2 A	5 A	4 A
Min. load current	100 mA	100 mA	100 mA	100 mA
Max. power rating (voltage dependent)	1250 VA/120 W	100 VA/75 W	1250 VA/240 W	1000 VA/100 W
Contact material	Ag Ni 0,15	Ag hv	Ag Ni 0,15 hv; Ag hv	Ag Ni 0,15
Energize/release/contact bounce time	10/10/2 ms	10/20/2 ms	10/10/2 ms	10/10/2 ms
General data				
Mech./elect. life	5 x 10^7/load dependent	5 x 10^7/load dependent	2 x 10^7/load dependent	
Max. switching frequency	10 Hz	10 Hz	10 Hz	
Test insulation voltage	4 kV AC	1,0 kV AC	1,5 kV AC	
Temperature range	-20…+50 °C			
Mounting method	DIN-rail mounting to EN 50022 or EN 50035			
Dimensions H x B x T	75 x 22,5 x 102 mm			

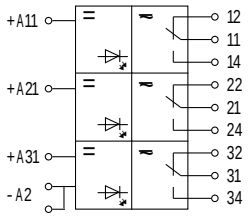
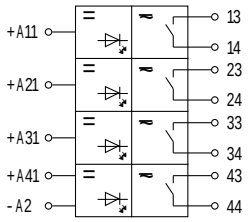
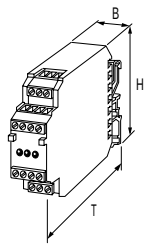
Dimension drawing



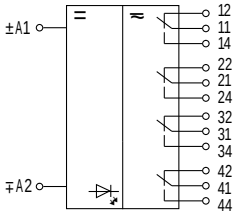
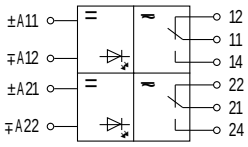
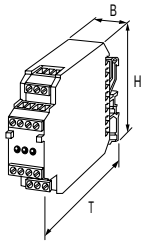
Notes

Accessories can be found in chapter 3.16

MCVO-Relay modules

	RM Output relay	RM Output relay
		
Circuit diagram		
	 Common minus potential for all inputs = - A2	 Common minus potential for all inputs = - A2
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	3 relay; each 1 C/O contact	4 relay; each 1 N/O contact
24 V DC	**51403**	**512498**
48 V DC	**51495**	
110 V AC		
230 V AC		
Technical data Input (coil)		
Input voltage/current	24 V DC ±10 %/20 mA	
	48 V DC ±10 %/10 mA	
Status indicator	LED red	
Technical data Output (contact)		
Max. switched voltage	250 V AC/300 V DC	
Max. switched current	5 A	
Min. load current	100 mA	
Max. power rating (voltage dependent)	1250 VA/240 W	
Contact material	Ag Ni 0,15 hv; Ag hv	
Energize/release/contact bounce time	10/10/2 ms	
General data		
Mech./elect. life	2 x 10^7/load dependent	5 x 10^7/load dependent
Max. switching frequency	10 Hz	
Test insulation voltage	1,5 kV AC	
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 50022 or EN 50035	
Dimensions H x B x T	75 x 22,5 x 102 mm	
Dimension drawing		
	 	
Notes		
	Accessories can be found in chapter 3.16	

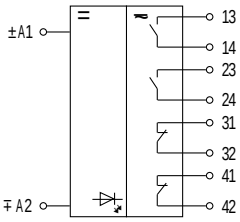
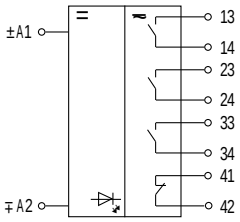
MCVO-Relay modules

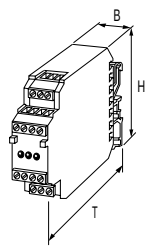
	RME Input relay	RME Input relay
		
Circuit diagram		
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 4 C/O contacts	2 relay; each 1 C/O contact
24 V DC	**516001**	**51404**
48 V DC		
110 V AC		
230 V AC		**51402**
Technical data Input (coil)		
Input voltage/current	24 V DC ±10 %/20 mA	24 V DC ±10 %/20 mA
		230 V AC +10 % -15 %/8,5 mA
Status indicator	LED yellow	LED yellow
Technical data Output (contact)		
Max. switched voltage	250 V AC/DC	125 V AC/150 V DC
Max. switched current	2 A	1 A
Min. load current	1 mA	1 mA
Max. power rating (voltage dependent)	125 VA/60 W	60 VA/30 W
Contact material	Ag hv	Pd Ni-Au Rh
Energize/release/contact bounce time	10/10/1 ms	10/10/1 ms
General data		
Mech./elect. life	1 x 10^8/load dependent	
Max. switching frequency	15 Hz	
Test insulation voltage	1,5 kV AC	
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 50022 or EN 50035	
Dimensions H x B x T	75 x 22,5 x 102 mm	
Dimension drawing		
		
Notes		
	Accessories can be found in chapter 3.16	

MCVO-Relay modules with positive displacement contact

RM
Output relay
with positive displacement contact

RM
Output relay
with positive displacement contact

Circuit diagram		
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 2 N/O contacts/2 N/C contacts	1 relay; 3 N/O contacts/1 N/C contact
24 V DC	**51300**	**51301**
48 V DC		
110 V AC		
230 V AC		

Technical data Input (coil)	
Input voltage/current	24 V DC ±10 %/50 mA
Status indicator	LED red
Technical data Output (contact)	
Max. switched voltage	250 V AC/80 V DC
Max. switched current	4 A
Min. load current	100 mA
Max. power rating (voltage dependent)	1000 VA/50 W
Contact material	Ag hv; Ag Sn O_2
Energize/release/contact bounce time	15/15/2 ms
General data	
Mech./elect. life	1 x 10^6/load dependent
Max. switching frequency	1 Hz
Test insulation voltage	2,5 kV AC
Temperature range	-20…+50 °C
Mounting method	DIN-rail mounting to EN 50022 or EN 50035
Dimensions H x B x T	75 x 22,5 x 102 mm
Dimension drawing	
Notes	
	Accessories can be found in chapter 3.16

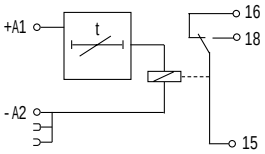
MIRO Timer module

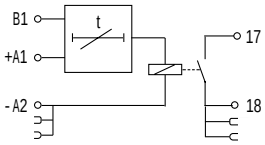
Terminal relay with timer function

MR 6,2 mm
Timer
switch on delay function

MR 6,2 mm
Timer
switch off delay function

Circuit diagram

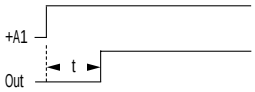


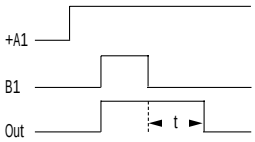


Ordering data		Art.-No.	Art.-No.
Time ranges		spring clamp / screw terminals	spring clamp / screw terminals
0,1 … 10 sec		6652300	6652310
3 … 300 sec		6652301	6652311

Technical data	Input (coil)	
Input voltage / current	A	24 V DC / +10…–15 % / 20 mA
Control voltage / current	B	24 V DC / +10…–15 % / 5 mA
Technical data	**Output (contact)**	
Switching element		relay
Max. switched voltage		250 V AC / DC
Max. switched current		6 A (see table)
Min. load current		10 mA / 12 V DC
Max. power rating (voltage dependent)		1500 VA / 120 W
Contact material		Ag Sn O_2
Energize / release / contact bounce time		10 / 15 / 1,5 ms
Switch on delay		–
General data		
Mech. / elect. life		2 x 10^7 / load dependent
Max. switching frequency		10 Hz
Test insulation voltage		4 kV / AC; safe separation to VDE 0106 / VDE 0160
Temperature range		0…+55 °C
Mounting method		DIN-rail mounting to EN 50022
Dimensions H x B x T		90 x 6,2 x 65 mm

Function diagram

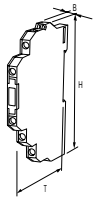




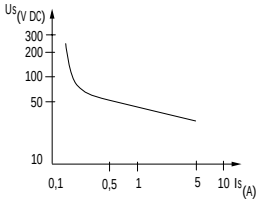
Accessories

Label plate	Art.-No. 90901
Wire chain 16-pole	Art.-No. 90977
Only for 6,2 mm modules	
Bridging link max. 2 A	Art.-No. 90961
Bridging comb 10-pole red	Art. No. 90976
Bridging comb 10-pole blue	Art.-No. 90975

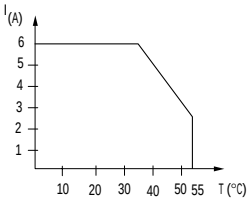
Dimension drawing



Load limit curve



De-rating curve



Switching capabilites to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

To order screw terminal option omit the 66 from the part number. When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan. Accessories can be found in chapter 3.16

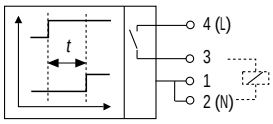
MIRO Timer module

Solid state relais with switch on delay

MR 6,2 mm

Triac output
switch on delay function

Circuit diagram

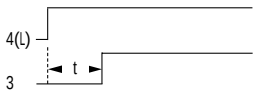


Ordering data		Art.-No.
Time ranges		spring clamp / screw terminals
0,5 sec		6652558

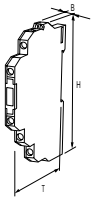
Technical data	Input (coil)	
Input voltage / current	A	–
Control voltage / current	B	230 V AC / +10…-10 %
Technical data	**Output (contact)**	
Switching element		triac
Max. switched voltage		250 V AC / DC
Max. switched current		1 A (see table)
Min. load current		100 mA
Max. power rating (voltage dependent)		250 VA
Switch on delay		0,5 sec +25…-10 %

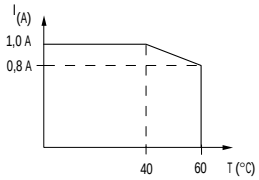
General data	
Max. switching frequency	0,5 Hz
Temperature range	- 20…+60 °C
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	78 x 6,2 x 65 mm

Function diagram



Accessories		Dimension drawing	Derating curve
Label plate	Art.-No. 90901		
Wire chain 16-pole	Art.-No. 90977		
Only for 6,2 mm modules			
Bridging link max. 2 A	Art.-No. 90961		
Bridging comb 10-pole red	Art. No. 90976		
Bridging comb 10-pole blue	Art.-No. 90975		



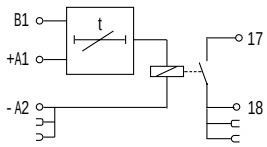
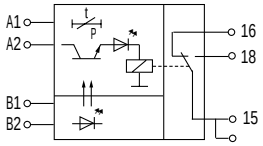


Notes

To order screw terminal option omit the 66 from the part number. When switching inductive loads,
we suggest using a suppression module to reduce interference and improve the relay lifespan. Accessories can be found in chapter 3.16

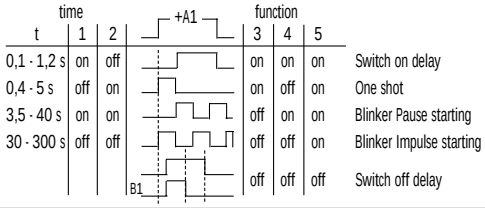
MIRO Timer module

Terminal relay with timer function

	MR 6,2 mm Timer Multifunction	**MR 12,4 mm** Timer Multifunction
		
Circuit diagram		
Ordering data	**Art.-No.**	**Art.-No.**
Time ranges	spring clamp / screw terminals	spring clamp terminals
0,1 … 300 sec	[1] 6652350	**6652370**
Technical data **Input (coil)**		
Input voltage / current A	24 V DC / +10…–15 % / 20 mA	24 V AC / DC; 230 V AC / 20 mA
Control voltage / current B	24 V DC / +10…–15 % / 5 mA	24…230 V AC / DC / 5 mA
Technical data **Output (contact)**		
Switching element	relay	
Max. switched voltage	250 V AC / DC	
Max. switched current	6 A (see table)	
Min. load current	10 mA / 12 V DC	
Max. power rating (voltage dependent)	1500 VA / 120 W	
Contact material	Ag Sn O_2	
Energize / release / contact bounce time	10 / 15 / 1,5 ms	
General data		
Mech. / elect. life	2 x 10^7 / load dependent	
Max. switching frequency	10 Hz	
Test insulation voltage	4 kV / AC; safe separation to VDE 0106 / VDE 0160	
Air and creepage distance	6 / 8 mm	
Temperature range	0…+55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x B x T	90 x 6,2 x 65 mm	90 x 12,4 x 65 mm

Function diagram

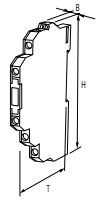
DIP-switches



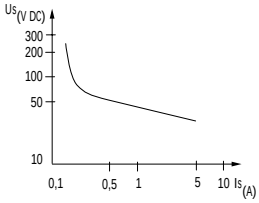
Accessories

Label plate	Art.-No. 90901
Wire chain 16-pole	Art.-No. 90977
Only for 6,2 mm modules	
Bridging link max. 2 A	Art.-No. 90961
Bridging comb 10-pole red	Art. No. 90976
Bridging comb 10-pole blue	Art.-No. 90975

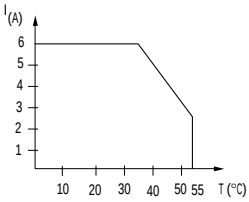
Dimension drawing



Load limit curve



De-rating curve



Switching capabilites to EN 60947

	AC 12	AC 15	DC 13
24 V	6 A	3 A	1 A
110 V	6 A	3 A	0,2 A
230 V	6 A	3 A	0,1 A

Notes

To order screw terminal option omit the 66 from the part number. When switching inductive loads, we suggest using a suppression module to reduce interference and improve the relay lifespan. Accessories can be found in chapter 3.16

Relay socket modules

MKS-K
Sockets for cradle relays with wiring method via screw terminals.
Integrated LED and suppression.
Snaps onto DIN-rail to EN 50 022 (35 mm).

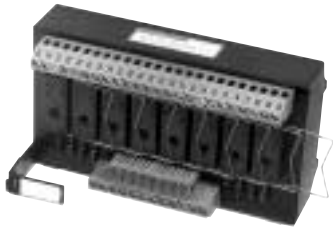
Page 3.7.31

MKS-J
Sockets for industrial relay with wiring method via screw terminals.
Integrated LED and suppression.
Snaps onto DIN-rail to EN 50 022 (35 mm).

Page 3.7.32

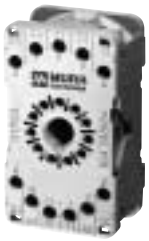
IR 4
Sockets for industrial relay with wiring method via screw terminals.
Snaps onto DIN-rail to EN 50 022 (35 mm).
Versions in IP 40 and IP 20.

Page 3.7.33



RT
Sockets for 3 or 8 card relays with wiring method via screw terminals.
Snaps onto DIN-rail to EN 50 022 (35 mm).

Page 3.7.34



RP
Sockets for universal relays in 8- and 11-pole versions with wiring method via screw terminals.
Snaps onto DIN-rail to EN 50 022 (35 mm).

Page 3.7.35

MRB
Socket for plug-in relays with 1 or 2 C/O.
Snaps onto DIN-rail to EN 50 022 (35 mm).
Suitable for all plug-in relays and can be fitted with a suppressor

Page 3.7.36

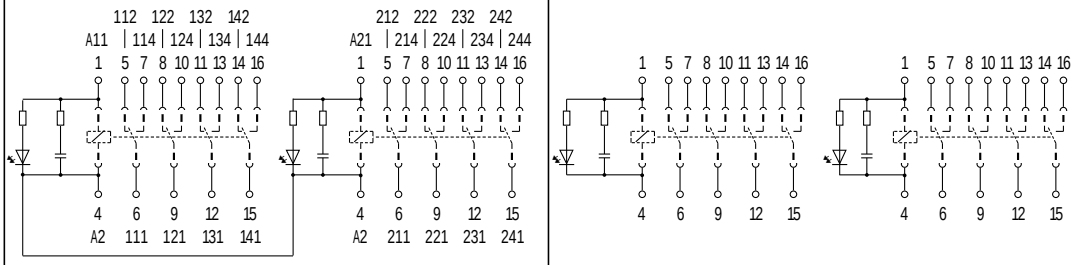
Sockets for cradle relays

MKS-K

4 C/O contacts

CE

Circuit diagram

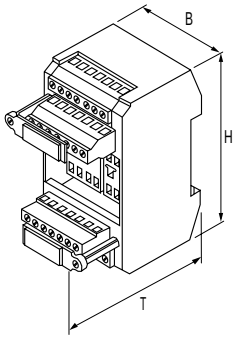


Ordering data		Art.-No.	Art.-No.
Coil voltage	Suppression		
24 V DC	LED + Diode	**67030**	**67000**
110 …230 V AC	LED + RC	**67032**	**67001**
24 …230 V AC/DC	No suppression	**67033**	**67003**

Technical data

Relay socket	for cradle relays
Max. switched voltage	125 V AC/150 V DC
Max. switched current	2 A
Wiring method	screw terminals max. 4 mm²
Test-Insulation voltage	2,5 kV AC
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	85 x 45 x 64 mm

Dimension drawing



Accessories		Art.-No.
Plug-in relays	24 V DC	**61422**
Plug-in relays	230 V AC	**61440**
Holding clip	24 V	**61428**
Holding clip	230 V	**61441**

Notes

Accessories can be found in chapter 3.16

Relay socket modules

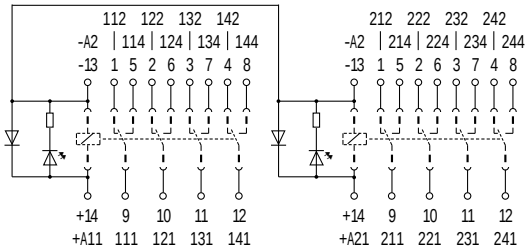
Sockets for industrial relays

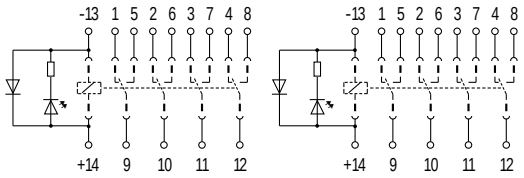
MKS-J

4 C/O contacts

CE

Circuit diagram

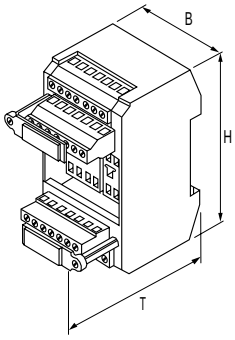




Ordering data		Art.-No.	Art.-No.
Coil voltage	Suppression		
24 V DC	LED + Diode	**67035**	**67010**
110 …230 V AC	LED + RC	**67037**	**67011**
24 …230 V AC/DC	No suppression	**67038**	**67013**

Technical data	
Relay socket	for industrial relays
Max. switched voltage	250 V AC/110 V DC
Max. switched current	3 A
Wiring method	screw terminals max. 4 mm²
Test-Insulation voltage	2,5 kV AC
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	85 x 45 x 64 mm

Dimension drawing



Accessories		Art.-No.
Plug-in relays	24 V DC	**61402**
Plug-in relays	230 V AC	**61401**
Holding clip	24 V	**61406**
Holding clip	230 V	**61406**

Notes

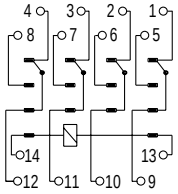
Accessories can be found in chapter 3.16

Sockets for industrial relays with 4 C/O contacts

IR 4

CE

Circuit diagram

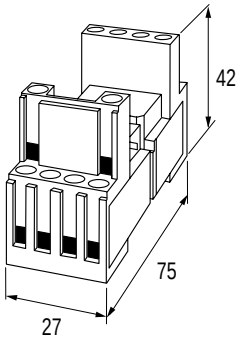


Ordering data		Art.-No.
Input voltage	Suppression	
…230 V AC/DC	No suppression	**61300**

Technical data

Relay socket	for industrial relays
	suppressor + LED + label plate
Max. switched voltage	250 V AC/110 V DC
Max. switched current	5 A
Wiring method	screw terminals
Mounting method	DIN-rail mounting to EN 50022
Proofing	IP 40

Dimension drawing



Accessories		Art.-No.
Plug-in relays	24 V DC	**61402**
Plug-in relays	230 V AC	**61401**
Holding clip		**61301**
Label plate		**61302**
Suppression module + LED (green)	6 … 24 V AC/DC	**61303**
	110 … 230 V AC/DC	**61304**

Notes

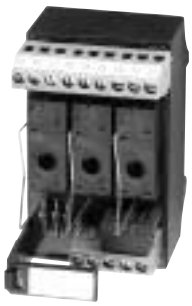
Accessories can be found in chapter 3.16

Relay socket modules

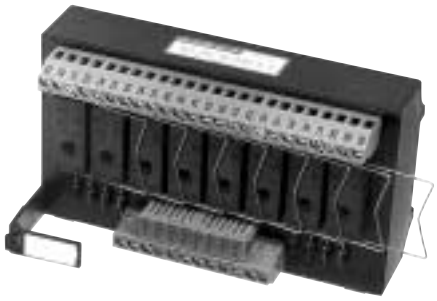
Sockets for card relays

CE

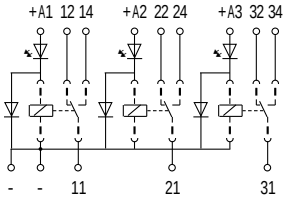
RT
Sockets
with 3 relay mounts

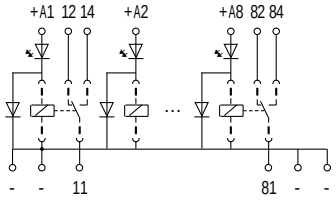


RT
Sockets
with 8 relay mounts



Circuit diagram

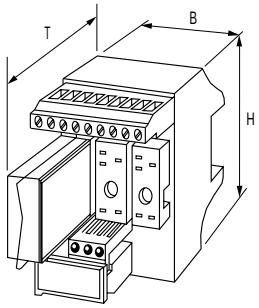




Ordering data		Art.-No.	Art.-No.
Input voltage	Suppression	3 relay socket	8 relay socket
24 V DC	LED + Diode	**53010**	**53011**

Technical data		
Relay socket	3 relay sockets	8 relay sockets
Max. switched voltage	250 V AC/DC	250 V AC/DC
Max. switched current	5 A	5 A
Wiring method	screw terminals, max. 4 mm²	screw terminals, max. 4 mm²
Test-Insulation voltage input output	4,0 kV AC	4,0 kV AC
Mounting method	DIN-rail mounting to EN 50022	DIN-rail mounting to EN 50022
Dimensions H x B x T	76 x 45 x 70 mm (with plugged relays)	76 x 135 x 70 mm (with plugged relays)

Dimension drawing



Accessories		Art.-No.
Plug-in relays	24 V DC	**61410**
Holding clip	supplied	

Notes

Accessories can be found in chapter 3.16

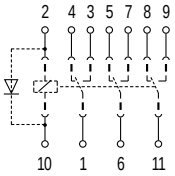
Sockets for universal relays

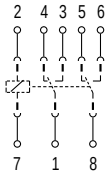
RP
for 11-pole universal relay
3 C/O contacts

RP
for 8-pole universal relay
2 C/O contacts

CE

Circuit diagram



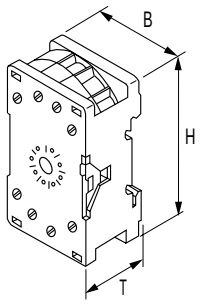


Ordering data		**Art.-No.**	**Art.-No.**
Input voltage	Suppression		
…230 V DC	Diode	**61168**	
…230 V AC/DC	No suppression	**61169**	**61179**

Technical data

Relay socket	for universal-relays
Max. switched voltage	250 V AC/DC
Max. switched current	10 A
Wiring method	screw terminals, max. 4 mm²
Test-Insulation voltage	1,5 kV AC
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	68 x 38 x 27 mm (without relay)

Dimension drawing



Accessories		**Art.-No.**	**Art.-No.**
Plug-in relays	24 V DC	**61472**	**61452**
Plug-in relays	24 V AC	**61478**	
Plug-in relays	230 V AC	**61482**	**61462**

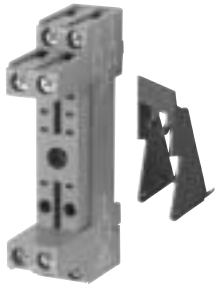
Notes

Accessories can be found in chapter 3.16

Relay socket modules

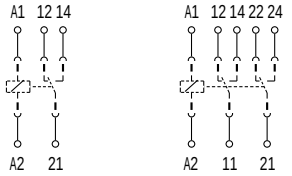
Socket module for Plug-in relays

MRB
1 or 2 C/O contacts



CE

Circuit diagram



1 C/O contacts | 2 C/O contacts

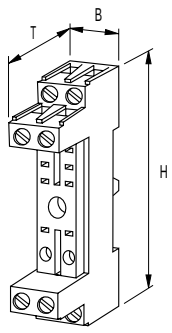
Ordering data

Input voltage	Suppression	Art.-No.
…230 V AC		**51353**

Technical data

Relay socket	for plug-in relays see page 3.7.34
Additional suppressor	plug-in suppressor module see page 3.7.34
Max. switched voltage	250 V AC
Max. switched current	16 A
Wiring method	screw terminals, max. 4 mm²
Guidelines	touch protected to VBG 4 and VDE 0106 part 100 and 101
Test-Insulation voltage	5 kV AC
Mounting method	DIN-rail mounting to EN 50022
Dimensions H x B x T	75 x 15,5 x 42,5 mm

Dimension drawing



Accessories

		Art.-No. plug-in relays with 1 C/O contact	Art.-No. plug-in relays with 2 C/O contacts	Art.-No. suppression module
Coil voltage	24 V DC	**61352**	**61353**	**61340**
	24 V AC	**61354**	**61355**	**61343**
	110 V AC	**61356**	**61357**	**61341, 61342**
	230 V AC	**61358**	**61359**	**61341, 61342**
Holding clip for plug-in relays (Switching module)		supplied		

Notes

Accessories suppression module see chapter 3.16

Cradle relay
Plug-in Cradle relay for base socket with 2 or 4 C/O contacts.

Page 3.7.38

Industry relay
Plug-in Industrial relay for base socket with 4 C/O contacts.

Page 3.7.38

Universal relay
Plug-in Universal relay, 8- or 11-pole, for base socket with
2 or 3 C/O contacts.
with manual operation and LED.

Page 3.7.39

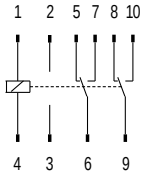
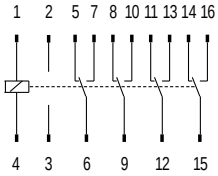
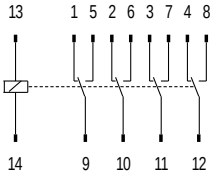
Card relays
Plug-in Card relays for base socket with 1 C/O contact.

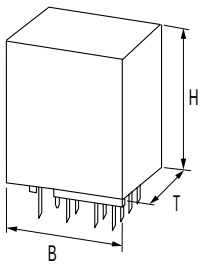
Page 3.7.39

Plug-in relays
Plug-in relay available in 1 or 2 contacts.
For use with MRB relay.
Coupler relays seperate the load and logic side of the control system.
They stop unwanted signals reaching the input side of the controller.

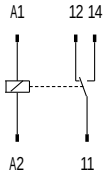
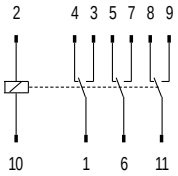
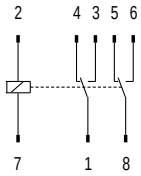
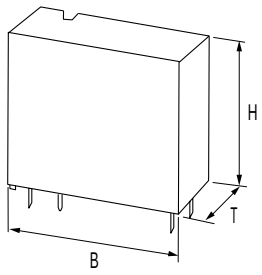
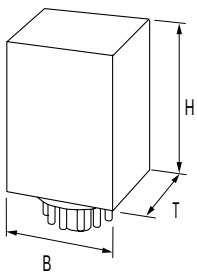
Page 3.7.40

MURR ELEKTRONIK

Plug-in relays for base socket	**Cradle relay** with 2 C/O contacts	**Cradle relay** with 4 C/O contacts	**Industrial relay** with 4 C/O contacts
			
Circuit diagram			
			

Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	2 C/O contacts	4 C/O contacts	4 C/O contacts
24 V DC	**61436**	**61422**	**61402**
24 V DC			with suppressor and LED **61413**
24 V AC	**61420**		**61400**
48 V DC		**61423**	**61403**
48 V AC			**61408**
230 V AC	**61421**	[1] **61440**	**61401**
Technical data			
Contact	Ag Ni 0,15 hv; Ag hv	Ag Ni 0,15 hv; Ag hv	Ag Ni; Ag hv
Max. voltage range	125 V AC/150 V DC	125 V AC/150 V DC	250 V AC/110 V DC
Max. current	2 A	2 A	5 A
Max. power rating (voltage dependent)	50 VA/35 W	50 VA/35 W	1250 VA/100 W
Coil hold-on rating	2,2 VA/0,7 W	2,2 VA/0,9 W	1,4 VA/0,9 W
Switch-on time	6 ms	7,5 ms	18 ms
Dimensions H x B x T	30 x 24 x 19 mm	30 x 30 x 19 mm [1] 40 x 30 x 19 mm	36 x 28 x 21 mm
Dimension drawing			
			
Accessories	**Art.-No.**	**Art.-No.**	**Art.-No.**
Holding clip 24 V	**61427**	**61428**	**61406**
Holding clip 48 V	**61427**	**61428**	**61406**
Holding clip 230 V	**61427**	**61441**	**61406**
Notes			
	Relays in other voltages on request.		

MURR ELEKTRONIK

Plug-in relays for base socket	**Card relay** with 1 C/O contact	**Universal relay** with 3 C/O contacts, 11-pole with manual operation and LED	**Universal relay** with 2 C/O contacts, 8-pole with manual operation and LED
CE			
Circuit diagram			
			
Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 C/O contacts	3 C/O contacts	2 C/O contacts
24 V DC	**61410**	**61472**	**61452**
24 V AC		**61478**	
48 V DC		**61473**	
48 V AC		**61479**	
230 V AC		**61482**	**61462**
Technical data			
Contact	Ag Ni 0,15 hv	Ag Ni	
Max. voltage range	400 V AC/300 V DC	250 V AC/220 V DC	
Max. current	8 A	10 A	
Max. power rating (voltage dependent)	2000 VA/250 W	2500 VA/240 W	
Coil hold-on rating	0,5 W	2,2 VA/1,3 W	
Switch-on time	8/8/2 ms	20 ms	
Dimensions H x B x T	30 x 29 x 10 mm	37 x 35 x 57 mm	
Dimension drawing			
			
Notes			

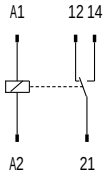
Plug-in relays for base socket

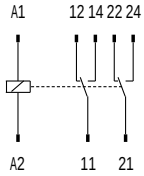
CE

Plug-in relays MRS
with 1 C/O contact

Plug-in relays MRS
with 2 C/O contacts

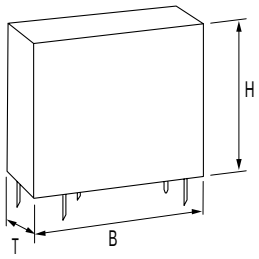
Circuit diagram





Ordering data		**Art.-No.**		**Art.-No.**
Input voltage	1 C/O contact		2 C/O contacts	
24 V DC		**61352**		**61353**
24 V AC		**61354**		**61355**
48 V DC				
48 V AC				
110 V AC		**61356**		**61357**
230 V AC		**61358**		**61359**
Technical data				
Contact	Ag Cd O		Ag Ni	
Max. voltage range	250 V AC/DC			
Min. load current	12 V/100 mA			
Max. current	16 A		5 A	
Max. power rating (voltage dependent)	4000 VA/300 W		1250 VA/110 W	
Suppression	see accessories			
Coil hold-on rating	1,6 VA/0,65 W			
Switch-on time	15/20 ms			
Dimensions H x B x T	25 x 29 x 12,4 mm			

Dimension drawing



Accessories		**Art.-No.**
Suppression module 24 V DC	MRE-Module with LED-indicator and free wheeling diode	**61340**
24 V AC	MRE-Module with LED-indicator without suppression	**61343**
110…230 V AC	MRE-Modul with varistor-suppression	**61341**
110…230 V AC	MRE-Modul with LED-indicator without suppression	**61342**
Socket with holding clip		**51353**

Notes

Accessories can be found in chapter 3.16