General information

Active interface modules are located in every system and available in several versions. Relay interface modules are meant to separate 2 different potential levels. The control side is galvanically isolated from the load and contact side to protect inadmissible voltage. Interfaces are able to adjust various signal levels for every occasion.

With the help of active modules expensive PLC output cards can be reduced into smaller output ratings. Separation level can be realized with single or multiple modules as relay or opto-coupler. They are used as amplifier- and protection modules for switched control electronics, as well as for level adaption. EMC problems at the load side of the relay modules wont be transmitted to the input side because of the galvanically isolation. Modular modules with a minus plug link and a potential rail comb allows a quick installation on the coupler level.

Murrelektronik offers simple modules, which are used as row terminals, modules for building management systems with "HAND-O-AUTO" switches, as well as pluggable relay- and time modules with a wide time range.

Relay features

Electromechanically relays are preferably used as interface modules between PLC and periphery components such as control,- alarm- and regulated installtions. A level and load adaption, as well as a galvanically isolation takes place at the same time.

At various possibilities, in different industrial areas, it is necessary to match a suitable contact material of the output side. Several contact loads denial the usage of universal materials. Dependent on the contact load different contact materials are corresponding to the "Contact material table".

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.

More details about suppression of inductive loads in chapter 3.2

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
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

Relay

MIRO

The modules are offered in two sizes:
6.2 mm module housing with integrated relay with 1 C/O contact and common bridge.
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-in jumper saves space and wiring time.
Snaps on to DIN-rail to EN 60715.

from page 3.3.4

MIRO 6.2 pluggable

6.2 mm module housing with integrated relay with 1 C/O contact and common bridge.
Connection is via spring clamp terminals. The common bridges saves space and wiring time.
Snap on to DIN-rail EN 60715.

page 3.3.7

RMM, RMME

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 60715 (TH35) or (G32).
Versions with plug-in jumper on the input side simplify wiring, because no loop in of the A2 common is then necessary.

from page 3.3.10

RMMD/RMMDE/RMMDH

Compact design incorporating clever features. 1 relay with 1 C/O contact or 2 N/O contacts with a width of only 12 mm.
Switching current of up to 8 A possible.
Up to 50 modules can be linked using the plug-in jumper.
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 60715 (TH35) or (G32).

from page 3.3.13

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-rail to EN 60715 (TH35) or (G32).

from page 3.3.17

Relay socket

MKS-K

For cradle relays with wiring method via screw terminals.
Integrated LED and suppression.
Snaps onto DIN-rail to EN 60715 (TH35).

page 3.3.21

MKS-J

For industrial relays with wiring method via screw terminals.
Integrated LED and suppression.
Snaps onto DIN-rail to EN 60715 (TH35).

page 3.3.22

Relay socket

IR 4
For industrial relays with wiring method via screw terminals.
Snaps onto DIN-rail to EN 60715 (TH35).
Versions in protection IP40 and IP20.

page 3.3.23

RM
For plug in relays with 2, 4 or 8 plugged SNR-relays. Optionally with semiconductor relays.
Snaps onto DIN-rail to EN 60715 (TH35).

page 3.3.24

MRB
For plug-in relays with 1 or 2 C/O.
Snaps onto DIN-rail to EN 60715 (TH35).
Suitable for all plug-in relays and can be fitted with a suppressor.

page 3.3.25

Plug-in relays

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

page 3.3.26

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

page 3.3.26

Plug-in relay
Plug-in relay available in 1 or 2 contacts.
For use with MRB relay.

page 3.3.27

Plug-in relay
5 mm small, pluggable SNR-relay modules for MIRO 6.2 pluggable and RM base socket.

page 3.3.27

MURR ELEKTRONIK

Terminal relays

Manual switch VDI 3814

with enhanced features

MIRO 6.2

Output relay
1 C/O contact

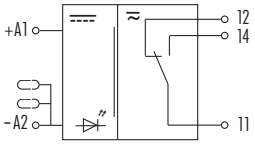
MIRO 6.2

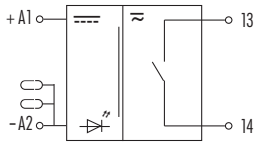
Output relay
1 N/O contact

Circuit diagram

Common connection up to max. 50 V AC/DC

At connection voltages of 110 and 230 V, A2 does not feature potetial sockets

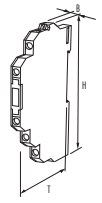




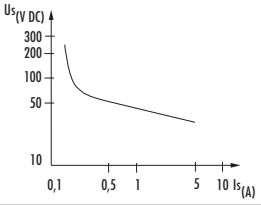
Ordering data		Art.-No.		Art.-No.
Input voltage		spring clamp/screw terminals		spring clamp/screw terminals
12 V DC		cUL	**6652050**	
24 V DC		UL + CSA	**6652000**	UL + CSA **6652002**
24 V AC/DC		UL + CSA	**6652001**	cUL **6652015**
48 V DC		UL + CSA	**6652020**	
110 V AC/DC		UL + CSA	**6652030**	
230 V AC/DC		UL + CSA	**6652040**	
Input				
Input voltage/-current	12 V DC	10 … 15 V DC / approx. 20 mA		
	24 V DC	19.2 … 30 V DC / approx. 14 mA		
	24 V AC/DC	19.2 … 30 V AC/DC / approx. 17 mA		
	48 V DC	40 … 53 V DC / approx. 12 mA		
	110 V AC/DC	95 … 121 V AC/DC / approx. 4 mA		
	230 V AC/DC	195 … 253 V AC/DC / approx. 3 mA		
Status indicator		green LED		
Output				
Max. switched voltage		250 V AC/DC		
Max. switched current		6 A (see table, switching capabilities to EN 60947-5-1)		
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 (for inductive loads we recommend interference suppression components connected parallel to the coil)		
Max. switching frequency		10 Hz		
Test isolation voltage		4 kV/AC; safe separation to EN 60947-1		
Air and creepage distance		6/8 mm		
Temperature range		-20…+55 °C		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		
Dimension H x B x T		90 x 6.2 x 65 mm		78 x 6.2 x 65 mm

Accessories	Art.-No.
Bridging link max. 2 A	**90961**
Bridging comb 10-pole, red	**90976**
End caps, 1 pair, red	**90982**
Bridging comb 10-pole, blue	**90975**
End caps, 1 pair, blue	**90980**
Wire chain 16-pole	**90977**
Label plate	**90901**

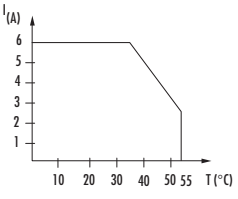
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 1	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

For screw-type terminal connection, the item number changes from 6652... to 52... (i.e. the prefix 66 is dropped).

1) When the listed values are exceeded the gold plating is destroyed. The relay will then take on the properties of an output type.

Terminal relays

Input relays

with enhanced features

MIRO 6.2

Input relays
1 C/O contact

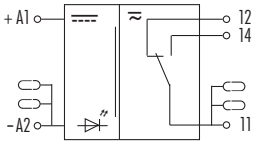
MIRO 6.2

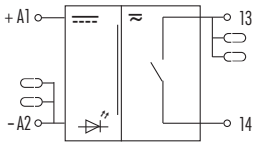
Input relays
1 N/O contact

Circuit diagram

Common connection up to max. 50 V AC/DC

At connection voltages of 110 and 230 V, A2 does not feature potetial sockets

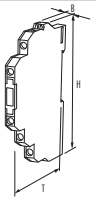




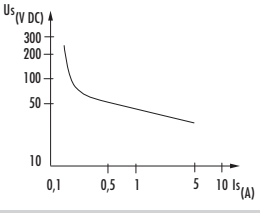
Ordering data		**Art.-No.**		**Art.-No.**
Input voltage		spring clamp/screw terminals	spring clamp/screw terminals	
12 V DC				
24 V DC		UL + CSA **6652005**	UL + CSA	**6652004**
24 V AC/DC		UL + CSA **6652003**		
48 V DC		UL + CSA **6652021**		
110 V AC/DC		UL + CSA **6652031**		
230 V AC/DC		UL + CSA **6652041**		
Input				
Input voltage/-current	12 V DC	10 … 15 V DC / approx. 20 mA		
	24 V DC	19.2 … 30 V DC / approx. 14 mA		
	24 V AC/DC	19.2 … 30 V AC/DC / approx. 17 mA		
	48 V DC	40 … 53 V DC / approx. 12 mA		
	110 V AC/DC	95 … 121 V AC/DC / approx. 4 mA		
	230 V AC/DC	195 … 253 V AC/DC / approx. 3 mA		
Status indicator		yellow LED		
Output				
Max. switched voltage		30 V AC/36 V DC [1]		
Max. switched current		50 mA [1]		
Min. load current		1 mA/12 V DC		
Max. power rating (voltage dependent)		1500 VA/120 W		
Contact material		Ag Sn O_2 gold plated		
Energize/release/contact bounce time		10/15/1.5 ms		
General data				
Mech./elect. life		2 x 10^7/load dependent (for inductive loads we recommend interference suppression components connected parallel to the coil)		
Max. switching frequency		10 Hz		
Test isolation voltage		4 kV/AC; safe separation to EN 60947-1		
Air and creepage distance		6/8 mm		
Temperature range		-20…+55 °C		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		
Dimension H x B x T		90 x 6.2 x 65 mm	78 x 6.2 x 65 mm	

Accessories	**Art.-No.**
Bridging link max. 2 A	**90961**
Bridging comb 10-pole, red	**90976**
End caps, 1 pair, red	**90982**
Bridging comb 10-pole, blue	**90975**
End caps, 1 pair, blue	**90980**
Wire chain 16-pole	**90977**
Label plate	**90901**

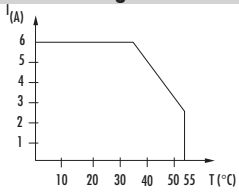
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 1	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

For screw-type terminal connection, the item number changes from 6652... to 52... (i.e. the prefix 66 is dropped).

[1] When the listed values are exceeded the gold plating is destroyed. The relay will then take on the properties of an output type

MURR ELEKTRONIK

Terminal relays

with enhanced features

MIRO 6.2
Output relay
1 N/O contact
with protected H-O-A switch

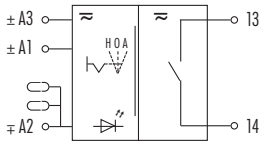
MIRO 6.2
Output relay
1 C/O contact
with isolation function

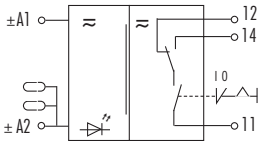
MIRO 6.2
Output relay
1 N/O contact
with soldering terminal

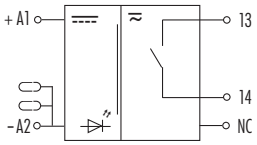
Circuit diagram

Common connection up to max. 50 V AC/DC

At connection voltages of 110 and 230 V, A2 does not feature potential sockets







common return for NC

Ordering data		Art.-No.	Art.-No.	Art.-No.
Input voltage		spring clamp/screw terminals	spring clamp/screw terminals	spring clamp/screw terminals
24 V DC				UL + CSA **6652006**
24 V AC/DC		UL + CSA **6652007**	UL + CSA **6652010**	
48 V DC				
110 V AC/DC				
230 V AC/DC				

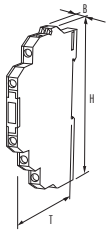
Input		
Input voltage/-current	24 V DC	19.2 … 30 V DC / approx. 14 mA
	24 V AC/DC	19.2 … 30 V AC/DC / approx. 17 mA
	48 V DC	
	110 V AC/DC	
	230 V AC/DC	
Status indicator		green LED

Output	
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

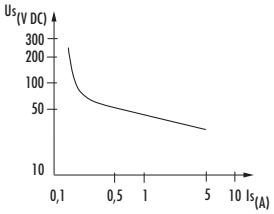
General data	
Mech./elect. life	2 x 10^7/load dependent (for inductive loads we recommend interference suppression components connected parallel to the coil)
Max. switching frequency	10 Hz
Test isolation voltage	4 kV/AC; safe separation to EN 60947-1
Air and creepage distance	6/8 mm
Temperature range	-20…+55 °C
Mounting method	DIN-rail mounting to EN 60715 (TH35)
Dimension H x B x T	90 x 12.4 x 65 mm

Accessories	Art.-No.
Bridging link max. 2 A	**90961**
Bridging comb 10-pole, red	**90976**
End caps, 1 pair, red	**90982**
Bridging comb 10-pole, blue	**90975**
End caps, 1 pair, blue	**90980**
Wire chain 16-pole	**90977**
Label plate	**90901**

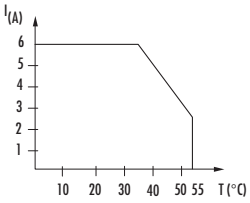
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 1	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

For screw-type terminal connection, the item number changes from 6652... to 52... (i.e. the prefix 66 is dropped).

1) When the listed values are exceeded the gold plating is destroyed. The relay will then take on the properties of an output type

Terminal relays

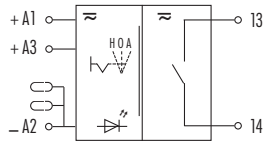
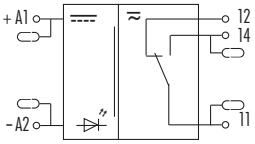
with enhanced features

MIRO 6.2

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

MIRO 6.2 pluggable

Output relay
1 C/O contact

Circuit diagram		
Common connection up to max. 50 V AC/DC		

Ordering data		**Art.-No.**		**Art.-No.**
Input voltage		screw terminals	spring clamp terminals	
24 V DC			UL + CSA	[1] **3000-16013-2100010**
24 V AC/DC		UL + CSA **526010**	UL + CSA	[1] **3000-16013-3100020**
48 V DC				
110 V AC/DC				
230 V AC/DC			UL + CSA	[2] **3000-16013-3100030**
Input				
Input voltage/-current	24 V DC		19.2…26.8 V AC/DC/approx. 10 mA	
	24 V AC/DC	19.2…28 V AC/DC /approx. 7 mA	19.2…28.8 V AC/DC/approx. 12 mA	
	48 V DC			
	110 V AC/DC			
	230 V AC/DC		184…264 V AC/DC/approx. 4 mA	
Status indicator		green LED for relay activation	green LED	
		red LED for manual made		
Output				
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		8/20/2 ms		
General data				
Mech./elect. life		2×10^7/load dependent (for inductive loads we recommend interference suppression components connected parallel to the coil)		
Max. switching frequency		10 Hz		
Test isolation voltage		4 kV/AC; safe separation to EN 60947-1		
Air and creepage distance		6/8 mm		
Temperature range		-20…+55 °C		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		
Dimension H x B x T		90 x 6.2 x 65 mm	93 x 6.2 x 75.6 mm	

Accessories	**Art.-No.**		**Art.-No.**
Bridging link max. 2 A	**90961**	Bridging link, blue	**3000-90000-0300010**
Bridging comb 10-pole, red	**90976**	Bridging link, black	**3000-90000-0300020**
End caps, 1 pair, red	**90982**	Removable relay	[1] **3000-16023-2100010**
Bridging comb 10-pole, blue	**90975**		[2] **3000-16023-2100020**
End caps, 1 pair, blue	**90980**	Isolation plate	**3000-90000-0300030**
Wire chain 6-pole	**90977**		
Label plate	**90901**		

Notes	
	For screw-type terminal connection, the item number changes from 6652… to 52… (i.e. the prefix 66 is dropped). Load limit curve, de-rating curve and switching capabilities see page 3.3.6

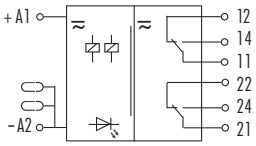
MURR ELEKTRONIK

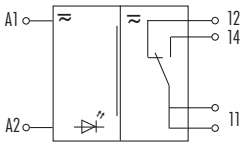
Terminal relays

	MIRO 12.4	MIRO 12.4	MIRO 12.4
	Output relay 2 C/O contact with enhanced features	Input relays 2 C/O contact with enhanced features	Input relays 1 C/O contact Multi-voltage input

Circuit diagram

At connection voltages of 110 and 230 V, A2 does not feature potential sockets

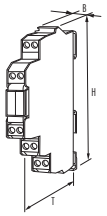




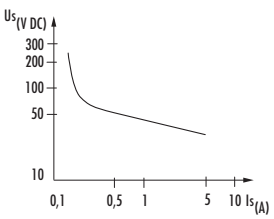
Ordering data		Art.-No.	Art.-No.	Art.-No.
Input voltage		spring clamp/screw terminals	spring clamp/screw terminals	screw terminals
24 V DC		cUL **6652102**	cUL **6652110**	**52160**
24 V AC/DC		cUL **6652103**	cUL **6652111**	**52160**
48 V DC		cUL **6652120**	cUL **6652126**	**52160**
110 V AC/DC		cUL **6652130**	cUL **6652136**	**52160**
230 V AC/DC		cUL **6652140**	cUL **6652146**	**52160**
Input				
Input voltage/-current	24 V DC	19.2 … 30 V DC / approx. 18 mA		
	24 V AC/DC	19.2 … 30 V AC/DC / approx. 20 mA		min. 21.6 V AC/DC/appr. 6 mA max. 12 mA for 1 s)
	48 V DC	40 … 53 V DC / approx. 14 mA		approx. 27 mA (max. 60 mA for 180 s)
	110 V AC/DC	95 … 121 V AC/DC / approx. 7 mA		approx. 10 mA (max. 300 mA for 60 s)
	230 V AC/DC	195 … 253 V AC/DC / approx. 5 mA		max. 253 V AC/DC/appr. 6 mA (max. 900 mA for 15 ms)
Status indicator		green LED		
Output				
Max. switched voltage		250 V AC/DC	30 V AC/36 V DC [1]	
Max. switched current		6 A (see table)	50 mA [1]	
Min. load current		10 mA/12 V DC	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	
Energize/release/contact bounce time		10/15/1.5 ms		
General data				
Mech./elect. life		2 x 10^7/load dependent (for inductive loads we recommend interference suppression components connected parallel to the coil)		
Max. switching frequency		10 Hz		
Test isolation voltage		4 kV/AC; safe separation to EN 60947-1		
Air and creepage distance		6/8 mm		
Temperature range		-20…+55 °C		
Mounting method		DIN-rail mounting to EN 60715 (TH35)		
Dimension H x B x T		90 x 12.4 x 65 mm		

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

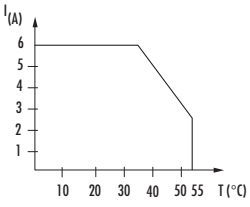
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 1	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

For screw-type terminal connection, the item number changes from 6652…to 52… (i.e. the prefix 66 is dropped).

[1] When the listed values are exceeded the gold plating is destroyed. The relay will then take on the properties of an output type.

Terminal relays

with enhanced features

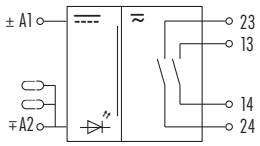
MIRO 12.4

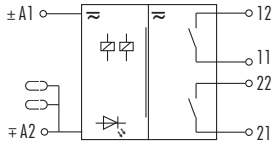
Output relay
2 N/O contact/with enhanced features
for use in control cabinets in builng installations

MIRO 12.4

Output relay
2 N/O contacts

Circuit diagram

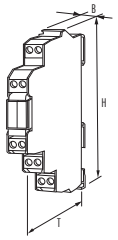




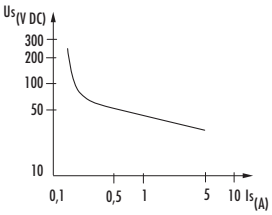
Ordering data		**Art.-No.**	**Art.-No.**
Input voltage		spring clamp/screw terminals	spring clamp/screw terminals
24 V DC			
24 V AC/DC		**6652106**	**6652104**
48 V DC			
110 V AC/DC			
230 V AC/DC			
Input			
Input voltage/-current	24 V DC		
	24 V AC/DC	19.2 … 30 V AC/DC /approx. 17 mA	
	48 V DC		
	110 V AC/DC		
	230 V AC/DC	195 … 253 V AC/DC /approx. 3 mA (hold voltage ≥ 70 V/hold current ≥ 0.3 mA)	
Status indicator		green LED	
Output			
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 (for inductive loads we recommend interference suppression components connected parallel to the coil)	
Max. switching frequency		10 Hz	
Test isolation voltage		4 kV/AC; safe separation to EN 60947-1	
Air and creepage distance		6/8 mm	
Temperature range		-20…+55 °C	
Mounting method		DIN-rail mounting to EN 60715 (TH35)	
Dimension H x B x T		90 x 12.4 x 65 mm	

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

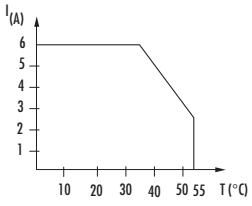
Dimension drawing



Load limit curve



De-rating curve



Switching capabilities to EN 60947

	AC 1	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

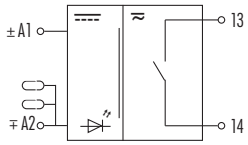
For screw-type terminal connection, the item number changes from 6652… to 52… (i.e. the prefix 66 is dropped).

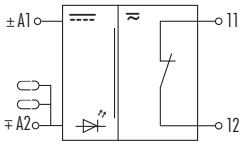
Mini relay modules

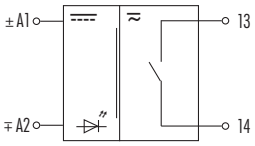
RMM
Output relay
with minus plug-in jumper

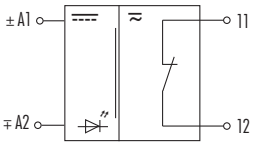
RMM
Output relay
without minus plug-in jumper

Circuit diagram



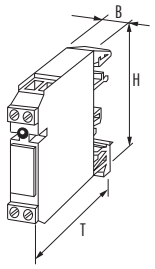


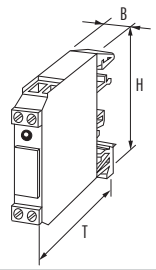




Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/C contact	1 relay; 1 N/O contact	1 relay; 1 N/C contact
24 V DC	**51851**	**51808**	**51551**	**51508**
48 V DC	**51850**		**51550**	
110 V AC			**51552**	
230 V AC			**51515**	**51562**

Input		
Input voltage/-current	24 V AC/DC ±10 %/15 mA	
	48 V AC/DC ±10 %/10 mA	
	110 V AC +10 % -15 %/3.5 mA	
	230 V AC +10 % -15 %/3.5 mA	
Plug-in jumper	Art.-No. 90960 (included with relay)	–
Status indicator	red LED	
Output		
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	10/15/1.5 ms	
General data		
Mech./elect. life	2 x 10^7/load dependent	
Max. switching frequency	10 Hz	
Test isolation voltage	4 kV/AC	
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 60715 (TH35) or (G32)	
Dimension H x B x T	56 x 12 x 64 mm	
Dimension drawing		





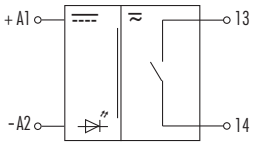
Notes	
	Accessories can be found in chapter 3.13

Mini relay modules

RMM

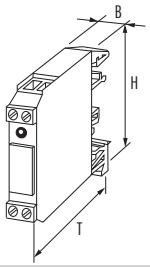
Output relay

Circuit diagram



Ordering data		**Art.-No.**
Input voltage	1 relay; 1 N/O contact	
24 V DC		**512764**
48 V DC		
110 V AC		
230 V AC		
Input		
Input voltage/-current	24 V DC ±10 %/15 mA	
Status indicator	green LED	
Connection	screw terminals	
Output		
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	10/15/1.5 ms	
Connection	screw terminals	
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 60715 (TH35) or (G32)	
Dimension H x B x T	56 x 12 x 64 mm	

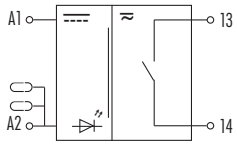
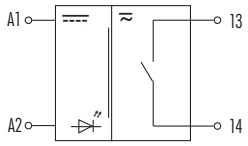
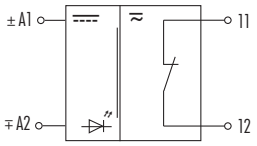
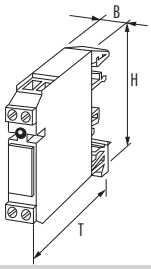
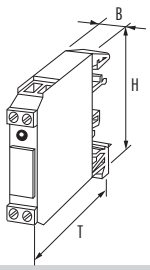
Dimension drawing



Notes

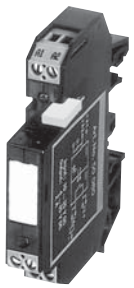
Accessories can be found in chapter 3.13
VW Id.Nr.: 1 232252

Mini relay modules

	RMME Input relays with minus plug-in jumper	RMME Input relays without minus plug-in jumper	
			
Circuit diagram			
Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/O contact	1 relay; 1 N/C contact
24 V AC/DC	**51860**	**51560**	**51571**
48 V AC/DC		**51553**	
110 V AC		**51526**	
230 V AC		**51517**	
Input			
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-in jumper	Art.-No. 90960 (included with relay)	–	
Status indicator	yellow LED		
Output			
Max. switched voltage	125 V AC/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		
Energize/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 60715 (TH35) or (G32)		
Dimension H x B x T	56 x 12 x 64 mm		
Dimension drawing			
			
Notes			
	Accessories can be found in chapter 3.13		

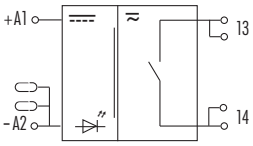
Relay modules with minus plug-in jumper

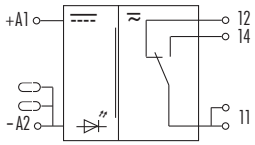
RMMD
Output relay
with minus plug-in jumper



RMMD
Output relay
with minus plug-in jumper

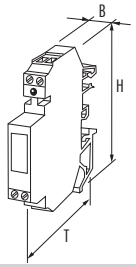
Circuit diagram





Ordering data	Art.-No.	Art.-No.
Input voltage	1 relay; 1 N/O contact	1 relay; 1 N/C contact
24 V DC	[1] **51100**	[1] **51120**
48 V AC/DC		
110 V AC		
230 V AC	**51108**	

Input	
Input voltage/-current	24 V DC ±10 %/17 mA
	230 V AC +10 % -15 %/5 mA (without Plug-in jumper)
Plug-in jumper	Art.-No. 90960 (included with relay) plug-in jumper not possible with 230 V version
Status indicator	red LED
Output	
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
Energize/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 60715 (TH35) or (G32)
Dimension H x B x T	82 x 12 x 68 mm
Dimension drawing	

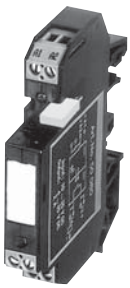
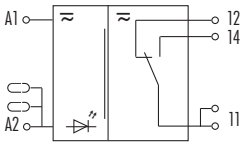
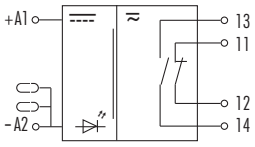
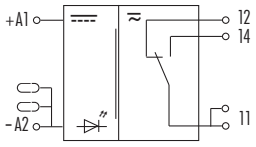
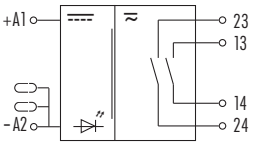
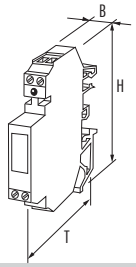


Notes

Accessories can be found in chapter 3.13

[1] Units with safe separation to VDE 0106, part 101/VDE 0160

MURR ELEKTRONIK

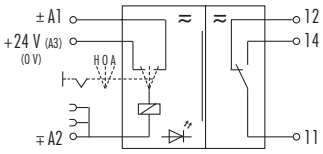
Minus plug-in jumper	**RMMD** Output relay with low connection current	**RMMDE** Input relays with enhanced features	**RMMDE** Input relays with enhanced features	**RMMDE** Input relays with enhanced features
				
Circuit diagram				
Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 C/O contact	1 relay; 1 N/O conact/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**	
Input				
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 %/5 mA	
Plug-in jumper	Art.-No. 90960 (included with relay) plug-in jumper not possible with 230 V version			
Status indicator	red LED		yellow LED	
Output				
Max. switched voltage	250 V AC/DC	250 V AC/DC	250 V AC/DC	250 V AC/DC
Max. switched current	8 A	3 A	5 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	Ag Ni 0.15 hv; Ag hv	Ag Au
Energize/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	2.5 kV AC	4 kV AC	1.5 kV AC
Temperature range	-20…+50 °C	-20…+60 °C	-20…+60 °C	-20…+50 °C
Mounting method	DIN-rail mounting to EN 60715 (TH35) or (G32)			
Dimension H x B x T	82 x 12 x 68 mm			
Dimension drawing				
				
Notes				
	Accessories can be found in chapter 3.13 [1] Units with safe separation to VDE 0106, part 101/VDE 0160			

for use in Building Management Systems

RMMDH

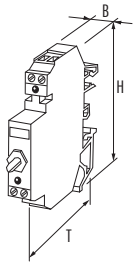
Output relay with negative plug-in jumper and toggle switch for HAND-0-AUTO control

Circuit diagram



Ordering data	**Art.-No.**
Input voltage	1 relay; 1 C/O contact
24 V DC	
24 V AC/DC	**51152**
110 V AC	
230 V AC	
Input	
Input voltage/-current	
	24 V AC/DC ±10 %/16 mA
Plug-in jumper	Art.-No. 90960 (included with relay)
Status indicator	red LED
Output	
Max. switched voltage	250 V AC/DC
Max. switched current	8 A
Min. load current	100 mA
Max. power rating (voltage dependent)	2000 VA/240 W
Contact material relay (switch)	Ag Ni 0.15 hv
Energize/release/contact bounce time	10/10/2 ms
General data	
Mech./elect. life	3 x 10^7/load dependent
Max. switching frequency	15 Hz
Test isolation voltage	3 kV AC
Temperature range	-20…+50 °C
Mounting method	DIN-rail mounting to EN 60715 (TH35) or (G32)
Dimension H x B x T	82 x 12 x 82 mm

Dimension drawing/description



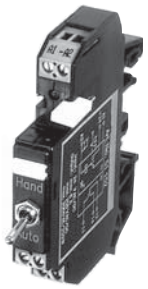
Notes

Accessories can be found in chapter 3.13

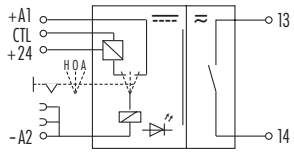
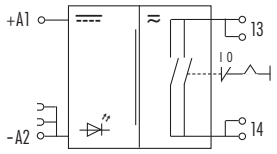
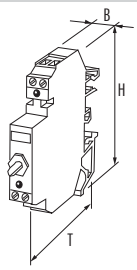
MURR ELEKTRONIK

with HAND-O-AUTO

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



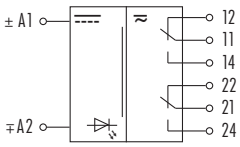
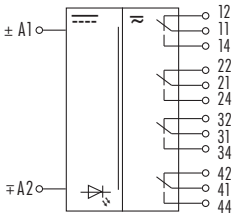
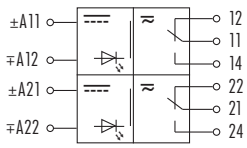
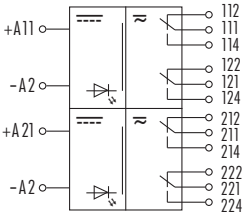
RMMDH
Output relay with negative plug-in jumper and toggle switch to bridge working contact.

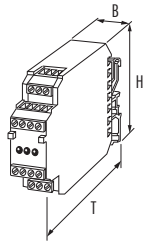
Circuit diagram		
		
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 1 C/O contact	1 relay; 1 C/O contact
24 V DC	**51153**	**51101**
48 V DC		
110 V AC		
230 V AC		
Input		
Input voltage/-current	24 V DC ±10 %/16 mA	24 V DC ±10 %/10 mA
Plug-in jumper	Art.-No. 90960 (included with relay)	
Status indicator	red LED	
Output		
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	6 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)
Energize/release/contact bounce time	10/10/2 ms	
General data		
Mech./elect. life	3 x 10^7/load dependent	
Max. switching frequency	15 Hz	
Test isolation voltage	4 kV AC	3 kV AC
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 60715 (TH35) or (G32)	
Dimension H x B x T	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 3.13	

MCVO Relays

RM

Output relay

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 relays; each 1 C/O contact	2 relays; each 2 C/O contacts
24 V DC	**51540**	**51410**	**51485**	**51465**
48 V DC				
110 V AC				
230 V AC		**51413**	**51412**	
Input				
Input voltage/-current	24 V DC ±10 %/28 mA		24 V DC ±10 %/10 mA	24 V DC ±10 %/14 mA
	230 V AC +10 % -15 %/15 mA		230 V AC +10 % -15 %/10 mA	
Status indicator	red LED			
Output				
Max. switched voltage	250 V AC/DC	250 V AC/DC	250 V AC/DC	250 V AC/DC
Max. switched current	5 A	2 A	5 A	5 A
Min. load current	100 mA			
Max. power rating (voltage dependent)	1250 VA/240 W	125 VA/60 W	1250 VA/240 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	
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 isolation voltage	4 kV AC	1.0 kV AC	4 kV AC	
Temperature range	-20…+50 °C			
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)			
Dimensions H x B x T	75 x 22.5 x 102 mm			
Dimension drawing				

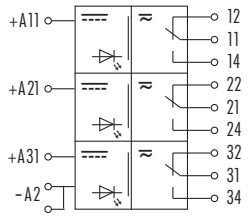
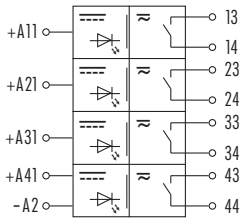
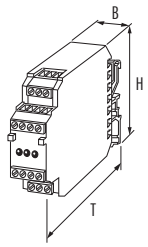


Notes	
	Accessories can be found in chapter 3.13

MCVO Relays

RM
Output relay

RM
Output relay

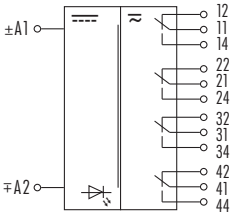
Circuit diagram		
	 Common minus potential for all inputs = -A2	 Common minus potential for all inputs = -A2
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	3 relays; each 1 C/O contact	4 relays; each 1 N/O contact
24 V DC	**51403**	**512498**
48 V DC		
110 V AC		
230 V AC		
Input		
Input voltage/-current	24 V DC ±10 %/16 mA	
Status indicator	red LED	
Output		
Max. switched voltage	250 V AC/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 isolation voltage	4 kV AC	
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)	
Dimensions H x B x T	75 x 22.5 x 102 mm	
Dimension drawing		
		
Notes		
	Accessories can be found in chapter 3.13	

MCVO Relays

RME
Input relay

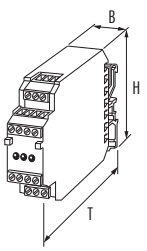
RME
Input relay

Circuit diagram



Ordering data		Art.-No.
Input voltage	1 relays; 4 C/O contacts	
24 V DC		**516001**
48 V DC		
110 V AC		
230 V AC		
Input		
Input voltage/-current	24 V DC ±10 %/20 mA	
Status indicator	yellow LED	
Output		
Max. switched voltage	250 V AC/DC	
Max. switched current	2 A	
Min. load current	1 mA	
Max. power rating (voltage dependent)	125 VA/60 W	
Contact material	Ag hv	
Energize/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…+50 °C	
Mounting method	DIN-rail mounting to EN 60715 (TH 35) or (G 32)	
Dimensions H x B x T	75 x 22.5 x 102 mm	

Dimension drawing



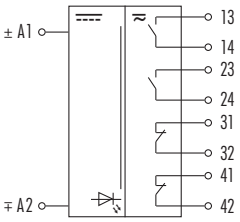
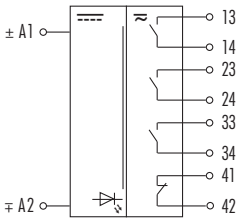
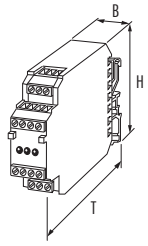
Notes

Accessories can be found in chapter 3.13

MURR ELEKTRONIK

MCVO Relays

with positive displacement contact

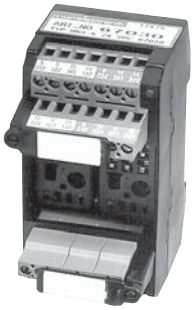
	RM Output relay with positive displacement contact	**RM** Output relay with positive displacement contact
		
Circuit diagram		
		
Ordering data	**Art.-No.**	**Art.-No.**
Input voltage	1 relay; 2 N/O contacts/2 N/C contacts	1 relay; 3 N/O contacts/1 N/C contact
24 V DC	**51300**	**51301**
48 V DC		
110 V AC		
230 V AC		
Input		
Input voltage/-current	24 V DC ±10 %/17 mA	
Status indicator	red LED	
Output		
Max. switched voltage	250 V AC/DC	
Max. switched current	5 A	
Min. load current	300 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 isolation voltage	2.5 kV AC	
Temperature range	-20…+50 °C	
Mounting method	DIN-rail mounting to EN 60715 (TH35) or (G32)	
Dimensions H x B x T	75 x 22.5 x 102 mm	
Dimension drawing		
		
Notes		
	Accessories can be found in chapter 3.13	

MURR ELEKTRONIK

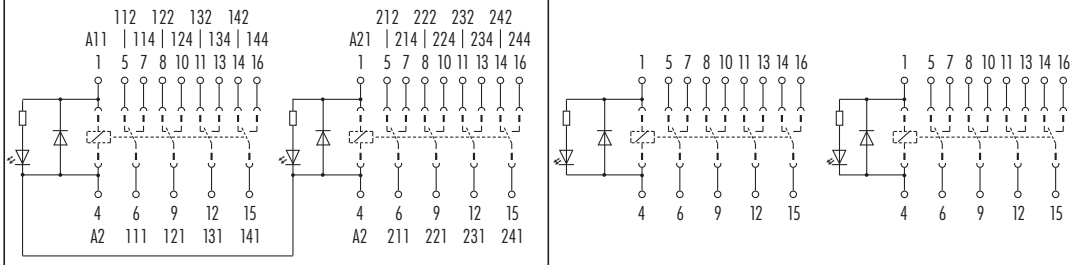
Sockets for cradle relays

MKS-K

4 C/O contacts



Circuit diagram

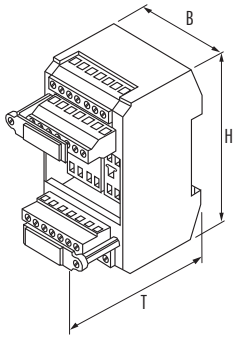


Ordering data		Art.-No.	Art.-No.
Coil voltage	Suppression		
24 V DC	LED + Diode	**67030**	**67000**

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 isolation voltage	2.5 kV AC
Mounting method	DIN-rail mounting to EN 60715
Dimensions H x B x T	85 x 45 x 64 mm

Dimension drawing



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

Notes

Accessories can be found in chapter 3.13

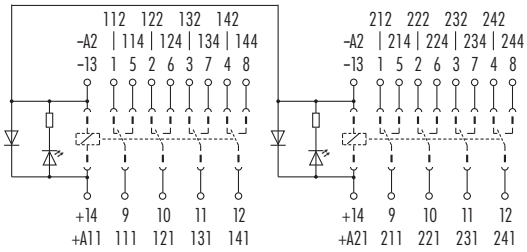
MURR ELEKTRONIK

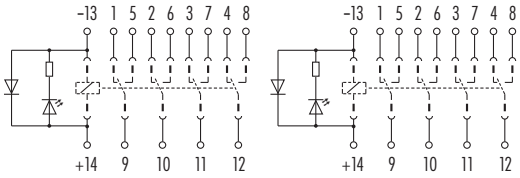
Sockets for industrial relays

MKS-J

4 C/O contacts

Circuit diagram

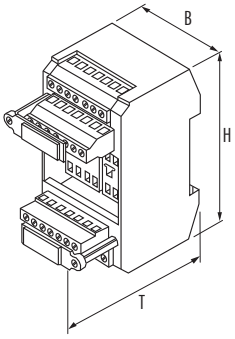




Ordering data		Art.-No.	Art.-No.
Coil voltage	Suppression		
24 V DC	LED + Diode	**67035**	**67010**
110 …230 V AC	LED + RC		**67011**

Technical data	
Relay socket	for industrial relays
Max. switched current	250 V AC/110 V DC
Max. current	3 A
Wiring method	screw terminals max. 4 mm²
Test isolation voltage	2.5 kV AC
Mounting method	DIN-rail mounting to EN 60715
Dimensions H x B x T	85 x 45 x 64 mm

Dimension drawing



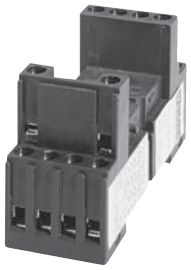
Accessories		Art.-No.
Plug-in relays	24 V DC	**61402**
Plug-in relays	230 V AC	**61401**
Holding clip	24 V	**61406**
Holding clip	230 V	**61406**

Notes

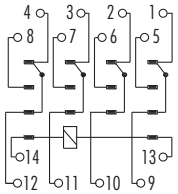
Accessories can be found in chapter 3.13

Sockets for industrial relays with 4 C/O contacts

IR 4



Circuit diagram

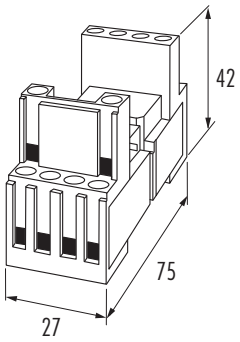


Ordering data		Art.-No.
Input voltage	Suppression	
…230 V AC/DC	No suppression	**61300**

Technical data

Relay socket	for industrial relays
	suppressor + LED + label plate
Max. switched current	250 V AC/110 V DC
Max. current	5 A
Wiring method	screw terminals
Mounting method	DIN-rail mounting to EN 60715
Proofing	IP40

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**
Suppressor module + LED (green)	6 … 24 V AC/DC	**61303**
	110 … 230 V AC/DC	**61304**

Notes

Accessories can be found in chapter 3.13

Sockets with plug-in relays

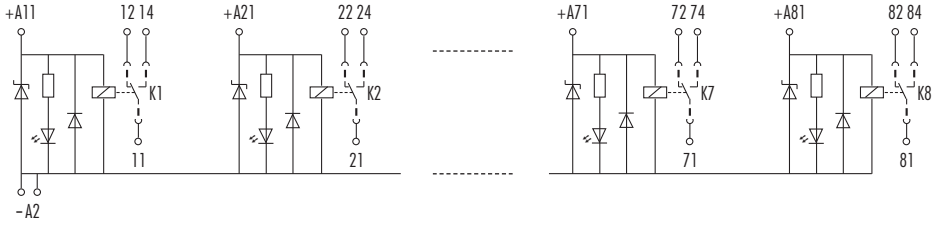
Compact size

RM
sockets
with 2 plugged relays

RM
sockets
with 4 plugged relays

RM
sockets
with 8 plugged relays

Circuit diagram

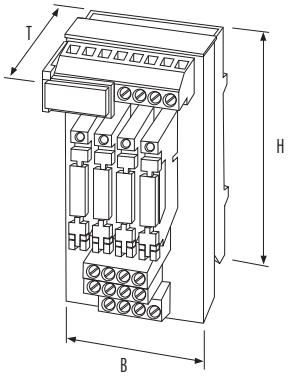


Art.-No. 53025 (schematic) [1)]

Ordering data		Art.-No.	Art.-No.	Art.-No.
Input voltage	Suppression	2 relays, each 1 C/O contact	4 relays, each 1 C/O contact	8 relays, each 1 C/O contact
24 V DC	LED + Diode	**53019**	**53020**	**53025**

Technical data			
Max. switched current / min. switched voltage	250 / 12 V AC/DC		
Max. current / min. load current	6 A / 10 mA		
Wiring method	screw terminals, max. 4 mm²		
Test isolation voltage	4.0 kV AC		
Mounting method	DIN-rail mounting to EN 60715		
Dimensions H x B x T	86 x 22.5 x 75 mm	86 x 45 x 75 mm	86 x 67.5 x 75 mm

Dimension drawing



Switching capabilites to EN 60947

	AC 1	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

Accessories			Art.-No.
Relays (SNR)	24 V DC	max. switched current 6 A (included in the above listed part numbers)	**61513**
Electronic load relay (ELR)	24 V DC	max. 2 A at 24 V DC for non mechanical switching	**61506**

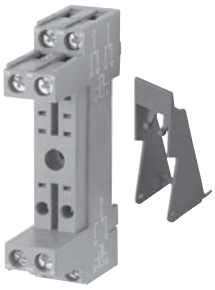
Notes

[1)] Art.-No. 53019 and 53020 with individually – A2 connections

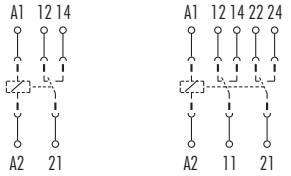
Sockets with plug-in relays

MRB

1 or 2 C/O contacts



Circuit diagram

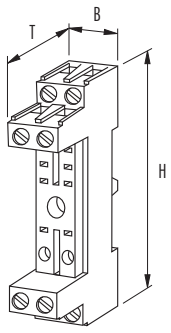


1 C/O contact 2 C/O contacts

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

Technical data	
Relay socket	for plug-in relays MRS see page 3.3.27
Max. switched voltage	plug-in suppressor MRE
Max. switched current	250 V AC
Max. current	16 A
Wiring method	screw terminals, max. 4 mm²
Guidlines	touch protected to VBG 4 and VDE 0106 part 100 and 101
Test isolation voltage	5 kV AC
Mounting method	DIN-rail mounting to EN 60715
Dimensions H x B x T	75 x 15.5 x 42.5 mm

Dimension drawing



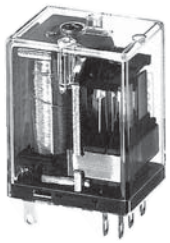
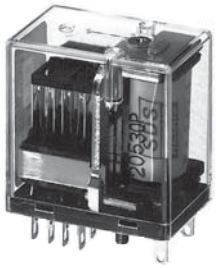
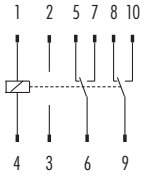
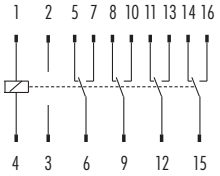
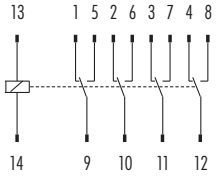
Accessories		**Art.-No.** plug-in relays with 1 C/O contact	**Art.-No.** plug-in relays with 2 C/O contacts	**Art.-No.** suppressor
Coil voltage	24 V DC	**61352**	**61353**	**61340**
	24 V AC	**61354**	**61355**	**61343**
	110 V AC	**61356**	**61357**	**61341, 61342**
	230 V AC	**61358**	**61359**	**61341,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

Notes

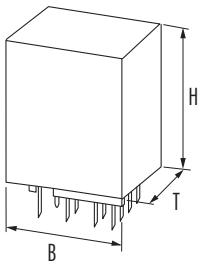
Accessories suppressor see chapter 3.13

MURR ELEKTRONIK

Plug-in relays for sockets

	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 suppression and LED **61413**
24 V AC			**61400**
230 V AC			**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. switched 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	36 x 28 x 21 mm
Dimension drawing			



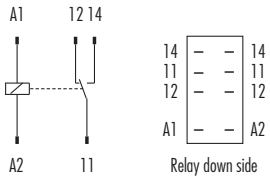
Accessories	**Art.-No.**	**Art.-No.**	**Art.-No.**
Holding clip 24 V	**61427**	**61428**	**61406**
Holding clip 230 V			**61406**

Notes

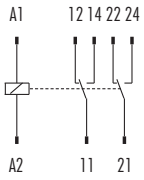
Relays in other voltage on request.

Plug-in relays for sockets

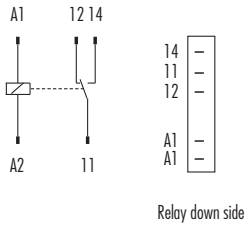
MRS
with 1 C/O contact



MRS
with 2 C/O contacts

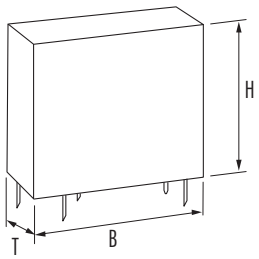


SNR
with 1 C/O contact
for MIRO 6.2 pluggable



Ordering data	**Art.-No.**	**Art.-No.**	**Art.-No.**
Input voltage	1 C/O contact	2 C/O contacts	
24 V DC	**61352**	**61353**	**3000-16023-2100010**
60 V DC			**3000-16023-2100020**
110 V AC	**61356**	**61357**	
230 V AC	**61358**	**61359**	
Technical data			
Contact	Ag Sn O_2	Ag Ni	Ag Sn O_2
Max. voltage range	250 V AC/DC		
Min. load current	12 V DC/100 mA		12 V DC/10 mA
Max. switched current	16 A	5 A	6 A
Max. power rating (voltage dependent)	4000 VA/300 W	1250 VA/110 W	1500 VA/120 W
Suppression	see accessories		
Coil hold-on rating	1.6 VA/0.65 W		
Switch-on time	15/20 ms		10/15 ms
Dimensions H x B x T	25 x 29 x 12.4 mm		15 x 28 x 5 mm

Dimension drawing



Notes

Accessories can be found in chapter 3.13