



SERVING  
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Mors Smitt Industrial Technology

# General purpose relays





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# General purpose relays

## Mors Smitt - Industrial Technology

Mors Smitt has been manufacturing relays since 1902. Our wide relay portfolio is focused on markets sectors like; power generation & distribution, factory automation, petro-chemical and water treatment plants and general industrial requirements. Production is flexible, standards unforgiving. Many units are tailored to specific client requirements. All products go through extensive testing processes with both hardware and production methodology approved to the highest standards.

### General purpose relays

Our high quality general purpose relays are applied mainly in industrial and power automation systems, in signalling and protection systems, and in other control and electric drive systems. They are also suitable for more common controlling applications like building automation or HVAC systems.

The main products of Mors Smitt have been successfully applied in industrial automation for many years. Their reliability and quality have been acknowledged by the Customers' satisfaction.

Mors of the relays are recognized and certified by: CE, Loyds, UL and VDE and meet the requirements of the RoHS directive.

### Reliability

Worldwide availability is assured by a network of professional, trained and dedicated subsidiaries, distributors and agents, offering local service and support.

Mors Smitt has certified quality and environmental management systems according the leading international standards. ISO 9001:2008 and ISO 14001 are obtained.

Mors Smitt not only has a clear eye directed at reliability, dependability, safety and cost-effectiveness, but also to the demands of our planet. Environmental consciousness is woven closely into design, manufacturing and commercial operations. The company is contributing to the safety of the world in more ways than one.



Mors Smitt is part of Wabtec Corporation, the NYSE stock exchange listed, global supplier of highly engineered components and solutions for rail and selected industrial markets. Operations in 17 countries and world wide sales in over 100 countries. Wabtec Corporation holds over 1.200 patents and has world class internal processes based on lean manufacturing and continuous improvement principles (Wabtec Performance System).

Within the Wabtec group Mors Smitt has its own name & identity and is focused on satisfying the needs of customers in the power grid, industry and installation sectors.

Utrecht, January 2016

Mors Smitt B.V. continuous to improve its products and services. Specifications can be changed without prior notice. No rights can be derived from specifications in this brochure. Changes and printed errors reserved.



## General purpose relays

### Industrial relays

- S-relays** Miniature plug-in / PCB relays, suitable for switching up to 16 A.
- 1 or 2 changeover contacts
  - Optional LED indication module
  - Plug-in / PCB connection possibilities
  - Various options possible

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- M-relays** Universal plug-in / PCB relay, suitable for switching up to 12 A.
- 2, 3 or 4 changeover contacts
  - Manual test button
  - Mechanical status indication
  - Optional LED indication
  - Various options possible

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- G-relays** Universal plug-in relay, suitable for switching of load up to 10 A.
- 3 changeover contacts
  - Manual test button
  - Mechanical status indication
  - Various options possible

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- L-relays** Universal plug-in / PCB relay, suitable for switching up to 12 A.
- 2 changeover contacts
  - LED indication

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- I-relays** Interface relay, suitable for switching load up to 16 A.
- Built-in diode
  - LED indication

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- XT-relays** Universal relay, suitable for switching up to 16 A.
- 1 or 3 changeover contacts
  - Built-in diode
  - Clear LED indication

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### Time relays

- XT-relays** Time relays, suitable for switching up to 16 A.
- 1, 2 or 3 changeover contacts
  - Adjustable time delay
  - LED indication

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### Monitoring relays

- XM-relays** Measure and monitoring relays.
- 1 or 2 changeover contacts
  - 1 or 3 phase protection
  - Adjustable time delay
  - LED indication
  - Suitable for rail mounting

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# Standards & approvals

## Standards & approvals



are designed and manufactured with utmost care for reability and durability. The relays are in compliance with the leading international standards.

EN 60255	Relay design, specifications and environmental conditions. Electrical relays.
EN 61810	Relay design, specifications and environmental conditions. Basic relays.
EN 60947	Low voltage switch gear and control gear.
EN 60947-4-1	Electromechanical contact and motor starters.
EN 60947-5-1	Electromechanical components for control applications. This standard examines both coil and contact specifications in depth.
VDE 0435	German standard specifies regulations for electrical relays in control applications, which are related to EN 60947 and EN60255.
EN 60529	European standard describes the protection class (IP code). This standard corresponds to VDE 0470 and DIN 40050.
EN 50205	European standard specifying weld no transfer contacts.
Approvals	Are mentioned at each specific relay series (VDE, UL, CSA, CCC, Lloyd's, etc.).

## General specifications

- All contact specifications in the brochure are for switching resistive loads in AC voltage
- The M-, G- and L-relais pinning is according the world wide industry standards

## Contact descriptions

	International	USA	ANSI
Normally open contact	N/O	SPST-NO	form A
Normally closed contact	N/C	SPST-NC	form B
1 changeover contact	1 C/O	SPDT	form C
2 changeover contacts	2 C/O	DPDT	form C
3 changeover contacts	3 C/O	3PDT	form C
4 changeover contacts	4 C/O	4PDT	form C
1 double break / double make contact	1 C/O DB/DM	SPDT (DB/DM)	form Z
4 double break / double make contact	4 C/O DB/DM	4PDT (DB/DM)	form Z



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## Industrial relays

Our high quality general purpose relays are applied mainly in industrial and power automation systems, in signalling and protection systems, and in other control and electric drive systems. They are also suitable for more common controlling applications like building automation or HVAC systems.

# Industrial relays Selector

## Industrial relays

The basic features of general purpose relays are:

- Contact number: from 1 to 4
- Rated contact switching currents up to 16 A, depending on the relay type
- Versions with coil overvoltage suppression
- Versions with flag indicators and manual relay test pushbuttons with the possibility of latching the normally open contacts closed
- Mounting sockets for 35 mm rail or PCB soldering
- Rail sockets equipped with screw terminals or spring terminals

The main products of Mors Smitt have been successfully applied in industrial automation for many years. Their reliability and quality have been acknowledged by the customers' satisfaction.

Visit [www.morssmitt.com](http://www.morssmitt.com) for more information.

## Relay selection

Type	Coil voltage	Changeover contact(s)	Rated continuous current	Contact material	Gold contacts	Diode	Mechanical indicator	LED indication	Manual testbutton	Plug-in	PCB	35 mm rail mounting	Page
S1	Various	1	16 A	AgNi		*		*		o	o		11
S2	Various	2	8 A	AgNi		*		*		o	o		12
M2	Various	2	12 A	AgNi	*	*	o	*	o	o			16
M3	Various	3	10 A	AgNi	*	*	o	*	o	o			17
M4	Various	4	6 A	AgNi	*	*	o	*	o	o			18
G08	Various	2	10 A	AgNi		*		*	o	o			22
G11	Various	3	10 A	AgNi		*		*	o	o			23
L2	Various	2	12 A	AgNi				o		o			26
I1	Various	1	6 A	AgSnO <sub>2</sub>		o		o				o	28
XT-17M-161	230 VAC	1	16 A	AgSnO <sub>2</sub>				o				o	30
XT-17M-163	230 VAC	3	8 A	AgNi				o				o	31
XT-17M-316/24	24 VAC/DC	3	16 A	AgSnO <sub>2</sub>				o				o	32
XT-17M-316/230	230 VAC	3	16 A	AgSnO <sub>2</sub>				o				o	33

\* Optional feature

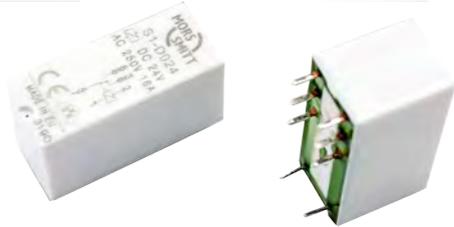
# S1

## Plug-in / PCB-relay

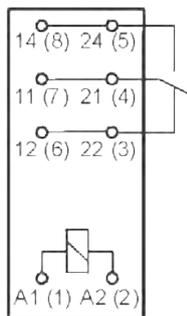
### 16 A, 1 changeover contact

Universal miniature relay with 1 changeover contact. Optional the relay can be equipped with LED indication or diode module

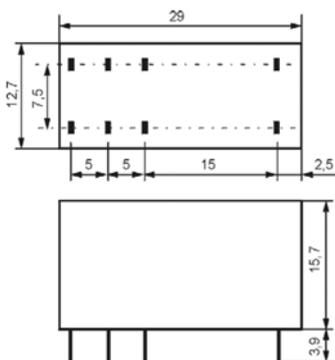
- Available in different voltage
- 1 changeover contact 16 A
- AgNi contacts (AgSnO<sub>2</sub> optional)
- Wide voltage range
- Plug-in & PCB sockets available



### Connection diagram



### Dimensions



### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	440 VAC
Min. switching voltage	10 V
Min. switched current	10 mA

### Coil specifications

Nominal voltage (Un DC)	12...24 VDC
Nominal voltage (Un AC)	230 VAC
Power consumption (DC/AC)	0.9 W / 1.6 VA
Operating range	AC 0.8...1.2 Un AC 0.7...2.55 Un

### Technical data

Mechanical life cycles	≥ 30 x 10 <sup>7</sup>
Ambient temperature	DC: -40 °C...+85 °C AC: -40 °C...+70 °C
Protection category	IP40
Connection	Plug-in / PCB
Dimensions	29 x 15.7 x 12.7 mm
Weight	14 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

### Ordering codes

S1-D012	12 VDC	321000751
S1-D024	24 VDC	321000752
S1-A230	230 VAC	321000759

# Industrial relays

## S-relays

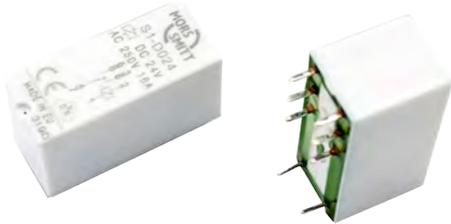
### S2

## Plug-in / PCB-relay

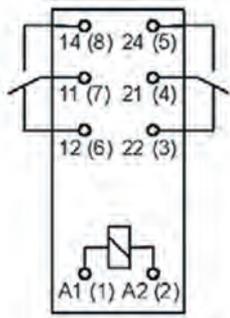
### 8 A, 2 changeover contacts

Universal miniature relay with 2 changeover contacts. Optional the relay can be equipped with LED indication or diode module

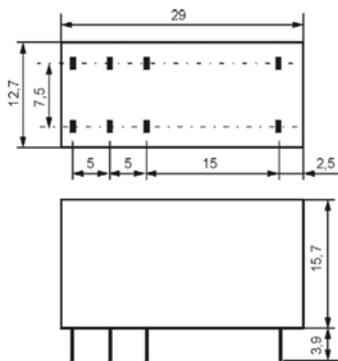
- Available in different voltage
- 2 changeover contacts 8 A
- AgNi contacts (AgSnO<sub>2</sub> optional)
- Wide voltage range
- Plug-in & PCB sockets available



#### Connection diagram



#### Dimensions



#### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current	8 A
Max. inrush current	15 A / < 3 s
Max. switching voltage	440 VAC
Min. switching voltage	10 V
Min. switched current	10 mA

#### Coil specifications

Nominal voltage (Un DC)	12...24 VDC
Nominal voltage (Un AC)	230 VAC
Power consumption (DC/AC)	0.48 W / 0.75 VA
Operating range	AC 0.8...1.2 Un AC 0.7...2.55 Un

#### Technical data

Mechanical life cycles	≥ 30 x 10 <sup>7</sup>
Ambient temperature	DC: -40 °C...+85 °C AC: -40 °C...+70 °C
Protection category	IP40
Connection	Plug-in / PCB
Dimensions	29 x 15.7 x 12.7 mm
Weight	14 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Ordering codes

S2-D012	12 VDC	321000771
S2-D024	24 VDC	321000772
S2-A230	230 VAC	321000779

## Ordering codes

### S1-relays

Coil voltage	Type	Article number
12 VDC	S1-D012	321000751
24 VDC	S1-D024	321000752
230 VAC	S1-A230	321000759

*Other voltages on request*

### S2-relays

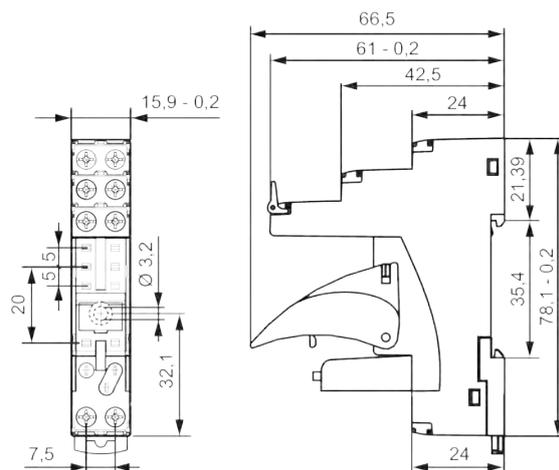
Coil voltage	Type	Article number
12 VDC	S2-D012	321000771
24 VDC	S2-D024	321000772
230 VAC	S2-A230	321000779

*Other voltages on request*

## Sockets



<b>Type</b>	<b>VS-2L</b>
Applicable for	S1 & S2 relays
Contact rating	12 A
Connection	Screw
Mounting	35 mm rail
Dimensions	75.3 x 61 x 15.5 mm
Weight	42 g
Article number	321000559



# Industrial relays

## S-relays

### Accesories



Type	MS-2L	CS-1	DPS-1	S-connect-5
Description	Retaining clip	Retaining clip	Description plate	Interconnection strip
Mounting	VS-sockets	VS-sockets	VS-sockets	VS-sockets
Applicable for	S1 & S2 relay	S1 & S2 relays	S1 & S2 relays	S1 & S2 relays
Material	Plastic	Metal	Plastic	Plastic
Article number	321000560	321000563	321000564	321000562

Type	Schematic	Voltage	Colour	Article Nr.
<b>DM-1</b> Limits overvoltage on DC coils.		6 - 230 VDC		321000507
<b>DM-2</b> Limits overvoltage on DC coils		6 - 230 VDC		321000524
<b>DLM-3R</b> Limits overvoltage on DC coils Coil energizing indication		6 - 12 VDC	Red	321000525
<b>DLM-3G</b> Limits overvoltage on DC coils Coil energizing indication		24 - 60 VDC	Red	321000526
		110 - 230 VDC	Red	321000527
		6 - 12 VDC	Green	321000528
		24 - 60 VDC	Green	321000529
		110 - 230 VDC	Green	321000530
<b>DLM-4R</b> Limits overvoltage on DC coils Coil energizing indication		6 - 12 VDC	Red	321000531
<b>DLM-4G</b> Limits overvoltage on DC coils Coil energizing indication		24 - 60 VDC	Red	321000532
		110 - 230 VDC	Red	321000533
		6 - 12 VDC	Green	321000534
		24 - 60 VDC	Green	321000535
		110 - 230 VDC	Green	321000536
<b>RCM-5</b> Protection against EMC disturbance Limits overvoltage		6 - 24 VAC		321000537
		24 - 60 VAC		321000538
		110 - 230 VAC		321000539
<b>LM-6R</b> Coil energizing indication		6 - 12 VAC/DC	Red	321000540
<b>LM-6G</b> Coil energizing indication		24 - 60 VAC/DC	Red	321000541
		110 - 230 VAC/DC	Red	321000542
		6 - 12 VAC/DC	Green	321000543
		24 - 60 VAC/DC	Green	321000544
		110 - 230 VAC/DC	Green	321000545
<b>LVM-7R</b> Limits overvoltage on AC and DC coils Coil energizing indication		6 - 12 VAC/DC	Red	321000546
<b>LVM-7G</b> Limits overvoltage on AC and DC coils Coil energizing indication		24 - 60 VAC/DC	Red	321000547
		110 - 230 VAC/DC	Red	321000548
		6 - 12 VAC/DC	Green	321000549
		24 - 60 VAC/DC	Green	321000550
		110 - 230 VAC/DC	Green	321000551
<b>VM-8</b> Limits overvoltage on AC coils No indication		24 VAC		321000552
		130 VAC		321000553
		230 VAC		321000554
<b>RM-9</b> Limits overvoltage on AC coils		110 - 230 VAC		321000555



## M2

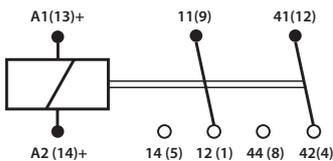


### Miniature, universal, 2-pole 12 A, 2 changeover contacts

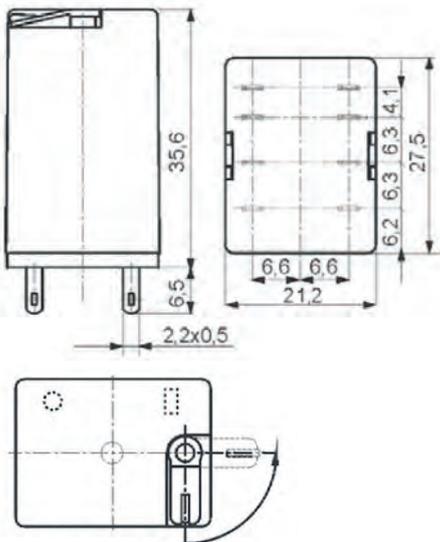
Miniature, universal relay, supplied with 2 changeover contacts. Standard supplied with mechanical indication and manual test button. LED-indication and a pluggable diode module optional.

- Various coil voltages
- 2 changeover contacts 12 A
- AgNi contacts (AgNi/Au 0.2 μm optional)
- Mechanical indicator
- Manual test button
- Diode module optional
- LED-indicator optional
- PCB-connection optional
- Plug-in connection

#### Connection diagram



#### Dimensions



#### Ordering codes

M2-D012	12 VDC	321000301
M2-D024	24 VDC	321000302
M2-D048	48 VDC	321000303

#### + LED-indication

M2-L-D012	12 VDC	321000351
M2-L-D024	24 VDC	321000352
M2-L-D048	48 VDC	321000353

More ordering codes page 18

#### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	12 A
Rated load (capacity) AC1	12 A / 250 VAC
Rated load (capacity) DC1	12 A / 24 VDC
Max. inrush current	24 A
Max. switching voltage	440 VAC
Min. switching voltage	10 V
Min. switched current	5 mA

#### Coil specifications

Nominal voltage (Un DC)	12-24-48-60-110-125-220 VDC
Nominal voltage (Un AC)	12-24-48-110-230 VAC
Power consumption (DC/AC)	0.9 W / 1.6 VA
Operating range	0.8...1.1 Un

#### Technical data

Mechanical life cycles	$\geq 2 \times 10^7$
Pull-in time DC/AC	10/13 ms
Release time DC/AC	8/3 ms
Ambient temperature	DC: -40 °C...+70 °C, AC: -40 °C...+55 °C
Protection category	IP40
Connection	Plug-in
Dimensions	27.5 x 21.2 x 35.6 mm
Weight	35 g

#### Remarks

Standard AC coil is 50/60 Hz  
Available as PCB-version or with  
PCB-sockets on request

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Industrial relays

## M-relays

### M3

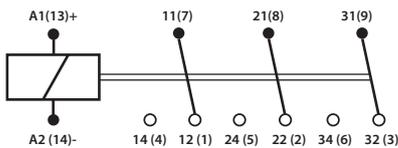


## Miniature, universal, 3-pole 10 A, 3 changeover contacts

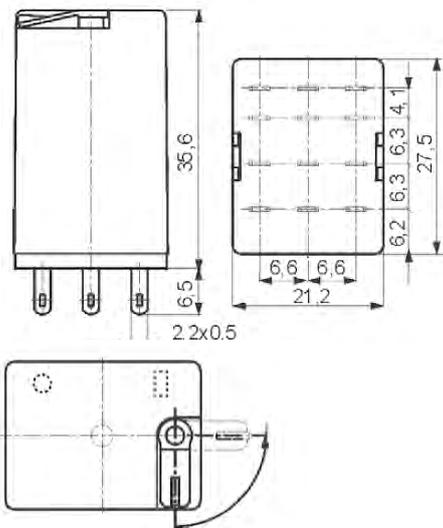
Miniature, universal relay, supplied with 3 changeover contacts. Standard supplied with mechanical indication and manual test button. LED indication and a pluggable diode module optional.

- Various coil voltages
- 3 changeover contacts 10 A
- AgNi contacts (AgNi/Au 0.2 µm optional)
- Mechanical indicator
- Manual test button
- Diode module optional
- LED-indicator optional
- PCB-connection optional
- Plug-in connection

### Connection diagram



### Dimensions



### Contact specifications

Contact material	AgNi
Number & configuration	3 C/O
Rated continuous current (ACI, IEC 60947)	10 A
Rated load (capacity) AC1	10 A / 250 VAC
Rated load (capacity) DC1	10 A / 24 VDC
Max. inrush current	20 A
Max. switching voltage	440 VAC
Min. switching voltage	10 V
Min. switched current	5 mA

### Coil specifications

Nominal voltage (Un DC)	12-24-48-110-125-220 VDC
Nominal voltage (Un AC)	12-24-48-110-120-230 VAC
Power consumption (DC/AC)	0.9 W / 1.6 VA
Operating range	0.8...1.1 Un

### Technical data

Mechanical life cycles	$\geq 2 \times 10^7$
Pull-in time DC/AC	10/13 ms
Release time DC/AC	8/3 ms
Ambient temperature	DC: -40 °C...+70 °C, AC: -40 °C...+55 °C
Protection category	IP40
Connection	Plug-in
Dimensions	27.5 x 21.2 x 35.6 mm
Weight	35 g

### Remarks

Standard AC coil is 50/60 Hz  
Available as PCB-version or with  
PCB-sockets on request

### Ordering codes

M3-D012	12 VDC	321000001
M3-D024	24 VDC	321000002
M3-D048	48 VDC	321000003

### + LED-indication

M3-L-D012	12 VDC	321000151
M3-L-D024	24 VDC	321000152
M3-L-D028	48 VDC	321000153

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

More ordering codes page 18

## M4

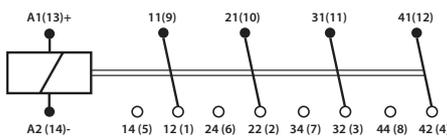
### Miniature, universal, 4-pole 6 A, 4 changeover contacts



Miniature, universal relay, supplied with 4 changeover contacts. Standard supplied with mechanical indication and manual test button. LED-indication and a pluggable diode module optional.

- Various coil voltages
- 4 changeover contacts 6 A
- AgNi contacts (AgNi/Au 0.2 µm optional)
- Mechanical indicator
- Manual test button
- Diode module optional
- LED-indicator optional
- PCB-connection optional
- Plug-in connection

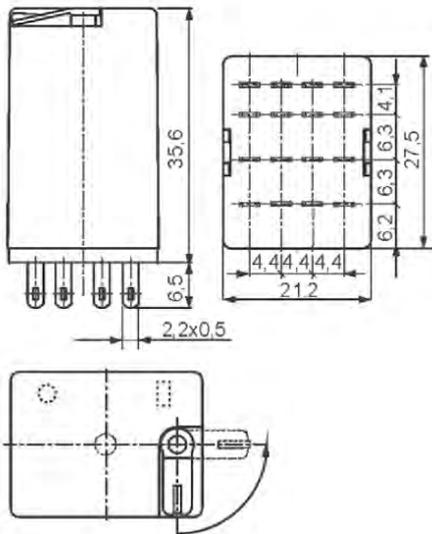
#### Connection diagram



#### Contact specifications

Contact material	AgNi
Number & configuration	4 C/O
Rated continuous current (ACI, IEC 60947)	6 A
Rated load (capacity) AC1	6 A / 250 VAC
Rated load (capacity) DC1	6 A / 24 VDC
Max. inrush current	12 A
Max. switching voltage	250 VAC
Min. switching voltage	10 V
Min. switched current	5 mA

#### Dimensions



#### Coil specifications

Nominal voltage (Un DC)	12-24-48-110-125-220 VDC
Nominal voltage (Un AC)	12-24-48-110-230 VAC
Power consumption (DC/AC)	0.9 W / 1.6 VA
Operating range	0.8...1.1 Un

#### Technical data

Mechanical life cycles	$\geq 2 \times 10^7$
Pull-in time DC/AC	10/13 ms
Release time DC/AC	8/3 ms
Ambient temperature	DC: -40 °C...+70 °C, AC: -40 °C...+55 °C
Protection category	IP40
Connection	Plug-in
Dimensions	27.5 x 21.2 x 35.6 mm
Weight	35 g

#### Remarks

Standard AC coil is 50/60 Hz  
Available as PCB-version or with PCB-sockets on request

#### Ordering codes

M4-D012	12 VDC	321000401
M4-D024	24 VDC	321000402
M4-D048	48 VDC	321000403

#### + LED-indication

M4-D012	12 VDC	321000451
M4-D024	24 VDC	321000452
M4-D048	48 VDC	321000453

More ordering codes page 18

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Industrial relays

## M-relays

### Ordering codes

#### M2-relays

Coil voltage	Type	Article number	+ LED-indication	Article Number
12 VDC	M2-D012	321000301	M2-L-D012	321000351
24 VDC	M2-D024	321000302	M2-L-D024	321000352
48 VDC	M2-D048	321000303	M2-L-D048	321000353
110 VDC	M2-D110	321000304	M2-L-D110	321000354
125 VDC	M2-D125	321000310	M2-L-D125	321000360
220 VDC	M2-D220	321000311	M2-L-D220	321000361
12 VAC 50/60Hz	M2-A012	321000305	M2-L-A012	321000355
24 VAC 50/60Hz	M2-A024	321000306	M2-L-A024	321000356
48 VAC 50/60Hz	M2-A048	321000307	M2-L-A048	321000357
110 VAC 50/60Hz	M2-A110	321000308	M2-L-A110	321000358
230 VAC 50/60Hz	M2-A230	321000309	M2-L-A230	321000359

*Other voltages on request*

#### M3-relays

Coil voltage	Type	Article number	+ LED-indication	Article Number
12 VDC	M3-D012	321001001	M3-L-D012	321001151
24 VDC	M3-D024	321001002	M3-L-D024	321001152
48 VDC	M3-D048	321001003	M3-L-D048	321001153
110 VDC	M3-D110	321001004	M3-L-D110	321001154
125 VDC	M3-D125	321001010	M3-L-D125	321001160
220 VDC	M3-D220	321001011	M3-L-D220	321000361
12 VAC 50/60Hz	M3-A012	321001005	M3-L-A012	321001155
24 VAC 50/60Hz	M3-A024	321001006	M3-L-A024	321001156
48 VAC 50/60Hz	M3-A048	321001007	M3-L-A048	321001157
110 VAC 50/60Hz	M3-A110	321001008	M3-L-A110	321001158
230 VAC 50/60Hz	M3-A230	321001009	M3-L-A230	321001159

*Other voltages on request*

#### M4-relays

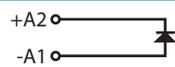
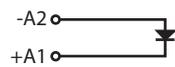
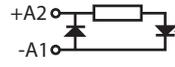
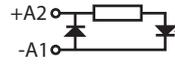
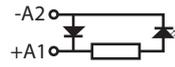
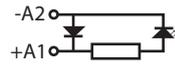
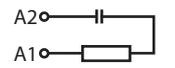
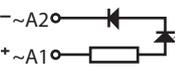
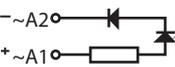
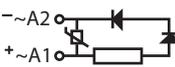
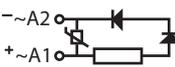
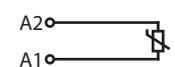
Coil voltage	Type	Article number	+ LED-indication	Article Number
12 VDC	M4-D012	321000401	M4-L-D012	321000451
24 VDC	M4-D024	321000402	M4-L-D024	321000452
48 VDC	M4-D048	321000403	M4-L-D048	321000453
110 VDC	M4-D110	321000404	M4-L-D110	321000454
125 VDC	M4-D125	321000410	M4-L-D125	321000460
220 VDC	M4-D220	321000411	M4-L-D220	321000461
12 VAC 50/60Hz	M4-A012	321000405	M4-L-A012	321000455
24 VAC 50/60Hz	M4-A024	321000406	M4-L-A024	321000456
48 VAC 50/60Hz	M4-A048	321000407	M4-L-A048	321000457
110 VAC 50/60Hz	M4-A110	321000408	M4-L-A110	321000458
230 VAC 50/60Hz	M4-A230	321000409	M4-L-A230	321000459

*Other voltages on request*

## Accessories



Type	MS-35	CM-1	DPM-1	M-connect-5
Name	Relay retaining clip	Relay retaining clip	Description plate	Interconnection strip
Mounting on	VM-sockets	VM-sockets	VM-sockets	VM-sockets
Applicable for	M2-, M3-, M4 relays	M2-, M3-, M4 relays	M2-, M3-, M4 relays	M2-, M3-, M4 relays
Material	Plastic	Metal	Plastic	
Weight	4 g			
Article number	321000509	321000503	321000522	321000523

Type	Schematic	Voltage	Colour	Article Nr.
<b>DM-1</b> Limits overvoltage on DC coils.		6 - 230 VDC		321000507
<b>DM-2</b> Limits overvoltage on DC coils		6 - 230 VDC		321000524
<b>DLM-3R</b> Limits overvoltage on DC coils Coil energizing indication		6 - 12 VDC	Red	321000525
		24 - 60 VDC	Red	321000526
		110 - 230 VDC	Red	321000527
<b>DLM-3G</b> Limits overvoltage on DC coils Coil energizing indication		6 - 12 VDC	Green	321000528
		24 - 60 VDC	Green	321000529
		110 - 230 VDC	Green	321000530
<b>DLM-4R</b> Limits overvoltage on DC coils Coil energizing indication		6 - 12 VDC	Red	321000531
		24 - 60 VDC	Red	321000532
		110 - 230 VDC	Red	321000533
<b>DLM-4G</b> Limits overvoltage on DC coils Coil energizing indication		6 - 12 VDC	Green	321000534
		24 - 60 VDC	Green	321000535
		110 - 230 VDC	Green	321000536
<b>RCM-5</b> Protection against EMC disturbance Limits overvoltage		6 - 24 VAC 24 - 60 VAC 110 - 230 VAC		321000537 321000538 321000539
<b>LM-6R</b> Coil energizing indication		6 - 12 VAC/DC	Red	321000540
		24 - 60 VAC/DC	Red	321000541
		110 - 230 VAC/DC	Red	321000542
<b>LM-6G</b> Coil energizing indication		6 - 12 VAC/DC	Green	321000543
		24 - 60 VAC/DC	Green	321000544
		110 - 230 VAC/DC	Green	321000545
<b>LVM-7R</b> Limits overvoltage on AC and DC coils Coil energizing indication		6 - 12 VAC/DC	Red	321000546
		24 - 60 VAC/DC	Red	321000547
		110 - 230 VAC/DC	Red	321000548
<b>LVM-7G</b> Limits overvoltage on AC and DC coils Coil energizing indication		6 - 12 VAC/DC	Green	321000549
		24 - 60 VAC/DC	Green	321000550
		110 - 230 VAC/DC	Green	321000551
<b>VM-8</b> Limits overvoltage on AC coils No indication		24 VAC 130 VAC 230 VAC		321000552 321000553 321000554
<b>RM-9</b> Limits overvoltage on AC coils		110 - 230 VAC		321000555



# Industrial relays

## M-relays

### Sockets



Type	VM-2R	VM-3R	VM-4R
Applicable for	M2	M3	M4
Contact rating AC1	12 A	10 A	6 A
Terminals	Screw	Screw	Screw
Mounting	35 mm rail	35 mm rail	35 mm rail
Standards	CE, EN 60715	CE, EN 60715	CE, EN 60715
Dimensions	76.3 x 27 x 42.5 mm	76.3 x 27 x 42.5 mm	76.3 x 27 x 42.5 mm
Weight	61 g	61 g	61g
Article number	321000520	321000510	321000519

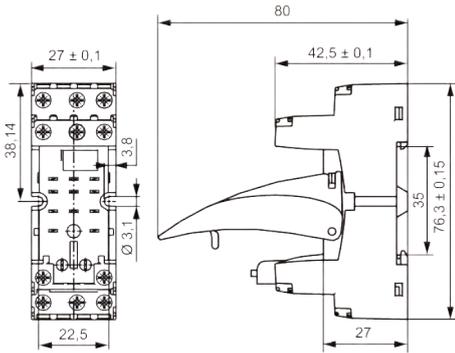


Type	VM-2L	VM-3L	VM-4L
Applicable for	M2	M3	M4
Contact rating AC1	12 A	10 A	6 A
Terminals	Screw	Screw	Screw
Mounting	35 mm rail	35 mm rail	35 mm rail
Standards	CE, EN 60715	CE, EN 60715	CE, EN 60715
Dimensions	75 x 27 x 61 mm	75 x 27 x 61 mm	75 x 27 x 61 mm
Weight	71 g	71 g	71g
Article number	321000521	321000511	321000512

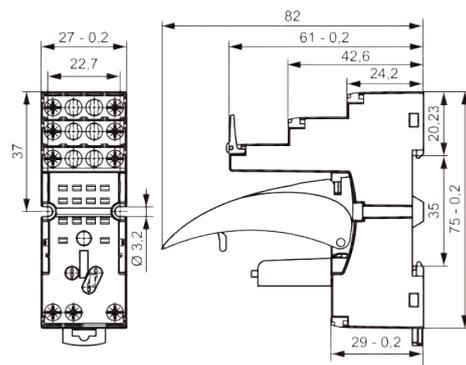


Type	VM-4	VM-4CC	VM-2PCB	VM-4PCB
Applicable for	M4	M4	M2	M4
Contact rating AC1	12 A	6 A	12 A	6 A
Terminals	Screw	Spring	Soldering	Soldering
Mounting	35 mm rail	35 mm rail	PCB	PCB
Standards	CE, EN 60715	CE, EN 60715	CE	CE
Dimensions	66.4 x 29.5 x 29 mm	95 x 31 x 29 mm	29.2 x 21.6 x 11.2 mm	29.2 x 21.6 x 11.2 mm
Weight	55 g	74 g	6 g	6 g
Article number	321000516	321000513	321000514	321000515

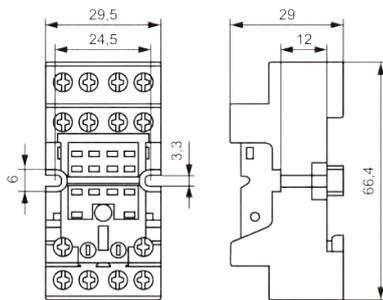
### Dimensions



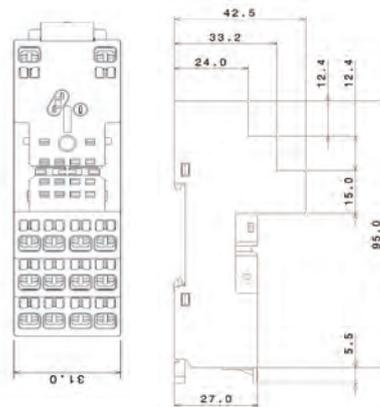
VM-2R, VM-3R, VM-4R



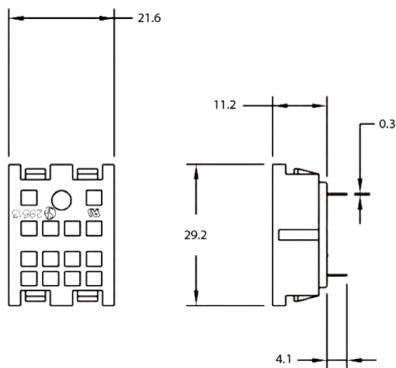
VM-2L, VM-3L, VM-4L



VM-4



VM-4CC



VM-2PCB, VM-4PCB

# Industrial relays

## G-relays

### G08

## Universal, 2-pole

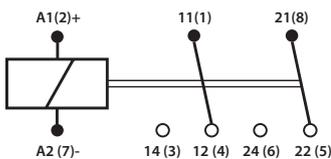
### 10 A, 2 changeover contacts



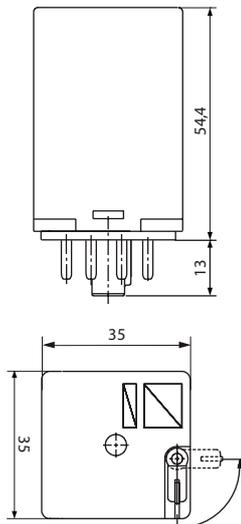
Universal relay, supplied with 2 changeover contacts. Standard supplied with mechanical indication and manual test button. LED-indication and a pluggable diode module optional.

- Various coil voltages
- 2 changeover contacts 10 A
- AgNi contacts (AgNi/Au 0.2 μm optional)
- Mechanical indicator
- Manual test button
- Diode module optional
- LED-indicator optional
- Plug-in connection, octal pinning

#### Connection diagram



#### Dimensions



#### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	10 A
Rated load (capacity) AC1	10 A / 250 VAC
Rated load (capacity) DC1	10 A / 24 VDC
Max. inrush current	20 A
Min. switching voltage	10 V
Min. switched current	5 mA

#### Coil specifications

Nominal voltage (Un DC)	12-24-48-60-110-120-220 VDC
Nominal voltage (Un AC)	12-24-48-110-230 VAC
Power consumption (DC/AC)	1.5 W / 2.8 VA
Operating range	0.8...1.1 Un

#### Technical data

Mechanical life cycles	$\geq 2 \times 10^7$
Pull-in time DC/AC	18/12 ms
Release time DC/AC	7/10 ms
Ambient temperature	-40 °C...+55 °C
Protection category	IP40
Connection	Plug-in
Dimensions	35 x 35 x 54.4 mm
Weight	83 g

**Remarks** Standard coil is 50/60 Hz

#### Ordering codes

G08-D012	12 VDC	321000001
G08-D024	24 VDC	321000002
G08-D048	48 VDC	321000003

#### + LED-indication

G08-L-D012	12 VDC	321000051
G08-L-D024	24 VDC	321000052
G08-L-D048	48 VDC	321000053

More ordering codes page 24

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

## G11



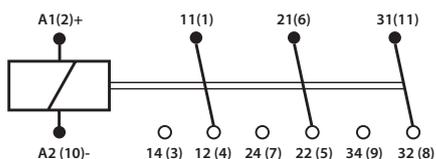
## Universal, 3-pole

### 10 A, 3 changeover contacts

Universal relay, supplied with 3 changeover contacts.  
Standard supplied with mechanical indication and manual test button.  
LED-indication and a pluggable diode module optional

- Various coil voltages
- 3 changeover contacts 10 A
- AgNi contacts (AgNi/Au 0.2 µm optional)
- Mechanical indicator
- Manual test button
- Diode module optional
- LED-indicator optional
- Plug-in connection, octal pinning

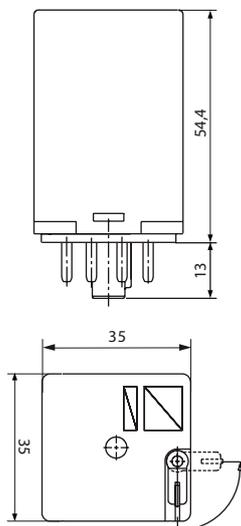
### Connection diagram



### Contact specifications

Contact material	AgNi
Number & configuration	3 C/O
Rated continuous current (ACI, IEC 60947)	10 A
Rated load (capacity) AC1	10 A / 230 VAC
Rated load (capacity) DC1	10 A / 24 VDC
Max. inrush current	20 A
Min. switching voltage	10 V
Min. switched current	5 mA

### Dimensions



### Coil specifications

Nominal voltage (Un DC)	12-24-30-48-110-120-220 VDC
Nominal voltage (Un AC)	12-24-48-110-230 VAC
Power consumption (DC/AC)	1.5 W / 2.8 VA
Operating range	0.8...1.1 Un

### Technical data

Mechanical life cycles	$\geq 2 \times 10^7$
Pull-in time DC/AC	18/12 ms
Release time DC/AC	7/10 ms
Ambient temperature	-40 °C...+55 °C
Protection category	IP40
Connection	Plug-in
Dimensions	35 x 35 x 54.4 mm
Weight	83 g

### Remarks

Standard coil is 50/60 Hz

### Ordering codes

G11-D012	12 VDC	321000101
G11-D024	24 VDC	321000102
G11-D030	30 VDC	321000111

#### + LED-indication

G11-L - D012	12 VDC	321000151
G11-L - D024	24 VDC	321000152
G11-L - D048	48 VDC	321000153

More ordering codes page 24

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Industrial relays

## G-relays

### Ordering codes

#### G08-relays

Coil voltage	Type	Article number	+ LED indication	Article Number
12 VDC	G08-D012	321000001	G08-L-D012	321000051
24 VDC	G08-D024	321000002	G08-L-D024	321000052
48 VDC	G08-D048	321000003	G08-L-D048	321000053
110 VDC	G08-D110	321000004	G08-L-D110	321000054
125 VDC	G08-D125	321000010	G08-L-D125	on request
220 VDC	G08-D220	321000011	G08-L-D220	321000060
12 VAC 50/60Hz	G08-A012	321000005	G08-L-A012	321000055
24 VAC 50/60Hz	G08-A024	321000006	G08-L-A024	321000056
48 VAC 50/60Hz	G08-A048	321000007	G08-L-A048	321000057
110 VAC 50/60Hz	G08-A110	321000008	G08-L-A110	321000058
230 VAC 50/60Hz	G08-A230	321000009	G08-L-A230	321000059

*Other voltages on request*

#### G11-relays

Coil voltage	Type	Article number	+ LED indication	Article Number
12 VDC	G11-D012	321000101	G11-L-D012	321000151
24 VDC	G11-D024	321000102	G11-L-D024	321000152
30 VDC	G11-D030	321000111	G11-L-D030	on request
48 VDC	G11-D048	321000103	G11-L-D048	321000153
110 VDC	G11-D110	321000104	G11-L-D110	321000154
125 VDC	G11-D125	321000110	G11-L-D125	321000160
220 VDC	G11-D220	321000112	G11-L-D220	321000160
12 VAC 50/60Hz	G11-A012	321000105	G11-L-A012	321000155
24 VAC 50/60Hz	G11-A024	321000106	G11-L-A024	321000156
48 VAC 50/60Hz	G11-A048	321000107	G11-L-A048	321000157
110 VAC 50/60Hz	G11-A110	321000108	G11-L-A110	321000158
230 VAC 50/60Hz	G11-A230	321000109	G11-L-A230	321000159

*Other voltages on request*

## Accessories



Type Name	T-21	CG-1	Com-3TP
Applicable for	G08-, G11 relays	G08-, G11 relays	G08-, G11 relays
Article number	321000208	321000203	321000205

**8 time ranges (0.05 s...240 h)**  
**8 different time functions**  
 Function and time setting by dipswitch for fine tuning.

### Functions

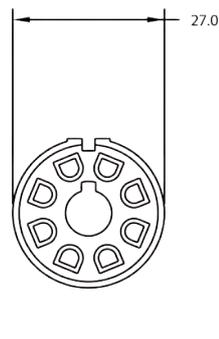
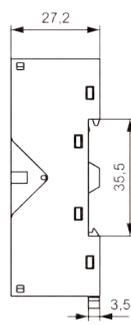
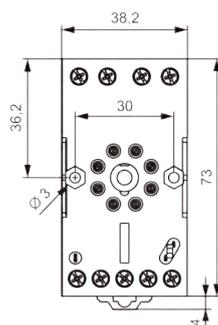
F - Delay- ON  
 R - Delay- OFF (+ control contact)  
 Ws - One shot- ON (+ control contact)  
 Wa - One shot- OFF (+ control contact)  
 Wu - One shot- ON  
 Es - Delay- ON (+ control contact)  
 Bp - Flasher, starting OFF  
 Bi - Flasher, starting ON

## Sockets



Type	VG-8T	VG-11T	VG-8PCB	VG-11PCB
Applicable for	G08	G11	G08	G11
Contact rating AC1	10 A	10 A	10 A	10 A
Terminals	Screw	Screw	Screw	Screw
Mounting	35 mm rail or wall	35 mm rail or wall	PCB	PCB
Standards	EN 60715 / CE	EN 60715 / CE	CE	CE
Dimensions	75 x 38 x 26 mm	75 x 38 x 26 mm	Ø 27 x 19.1 mm	Ø 27 x 19.1 mm
Weight	50 g	62 g	9 g	9 g
Article number	321000206	321000207	321000209	321000210

### Dimensions



# Industrial relays

## L-relays

### L2



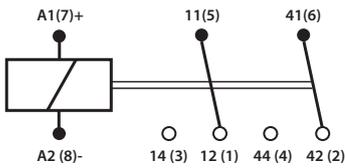
## Miniature, universal

### 12 A, 2 changeover contacts

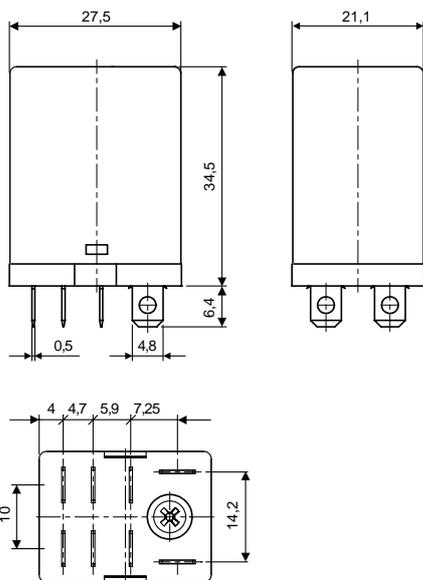
Miniature universal relay, supplied with 2 changeover contacts.  
Standard supplied with back EMF diode (for DC coils) and LED-indication.

- Various coil voltages
- 2 changeover contacts 12 A
- AgNi contacts (AgNi/Au 0.2 µm optional)
- Back EMF diode
- Plug-in connection, faston

#### Connection diagram



#### Dimensions



#### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	12 A
Rated load (capacity) AC1	12 A / 25 VAC
Rated load (capacity) DC1	12 A / 30 VDC
Max. inrush current	20 A
Max. switching voltage	250 VAC
Min. switching voltage	5 V
Min. switched current	5 mA

#### Coil specifications

Nominal voltage (Un DC)	12-24-48-110-125 VDC
Nominal voltage (Un AC)	12-24-48-110-230 VAC
Power consumption (DC/AC)	1.1 W / 1.9 VA
Operating range	0.8...1.1 Un

#### Technical data

Mechanical life cycles	$\geq 10 \times 10^7$
Pull-in time DC/AC	15/15 ms
Release time DC/AC	10/10 ms
Ambient temperature	-40 °C...+55 °C
Protection category	IP40
Connection	Plug-in
Dimensions	21.2 x 27.5 x 34.5 mm
Weight	35 g

#### Remarks

Standard coil is 50/60 Hz

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

## Ordering codes

### L2-relays

Coil voltage	Type	Article number
12 VDC	L2-L-D012	321000601
24 VDC	L2-L-D024	321000602
48 VDC	L2-L-D048	321000603
110 VDC	L2-L-D110	321000604
125 VDC	L2-L-D125	321000610
12 VAC 50/60Hz	L2-L-A012	321000605
24 VAC 50/60Hz	L2-L-A024	321000606
48 VAC 50/60Hz	L2-L-A048	321000607
110 VAC 50/60Hz	L2-L-A110	321000608
230 VAC 50/60Hz	L2-L-A230	321000609

*Other voltage on request*

## Accessories



Type	<b>CL-1</b>
Name	Relay retaining clip
Mounting on	
Applicable for	L2-relays
Material	Metal
Weight	
Article number	321000651

## Sockets



Type	<b>VL-2</b>	<b>VL-2PCB</b>
Applicable for	L2	L2
Contact rating AC1	12 A	12 A
Terminals	Screw	PCB
Mounting	35 mm rail	Solder
Dimensions	66.6 x 25.9 x 30.9 mm	66.6 x 25.9 x 30.9 mm
Weight	37 g	5 g
Article number	321000650	321000650

# Industrial relays

## I-relays

I1



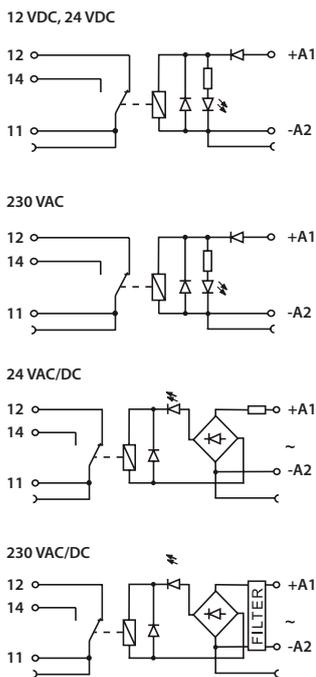
## Interface

### 6 A, 1 changeover contact

Interface relay, supplied with 1 changeover contact. Standard equipped with back EMF diode (for DC-coils) and LED-indication.

- Various coil voltages
- 1 changeover contact 6 A
- AgNi contacts (AgNi/Au 0.2 µm optional)
- Back EMF diode
- 35 mm rail mounting

### Connection diagram



### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	1 C/O
Rated continuous current (ACI, IEC 60947)	6 A
Rated load (capacity) AC1	6 A / 250 VAC
Rated load (capacity) DC1	6 A / 24 VDC
Max. inrush current	15 A
Max. switching voltage AC	230 V
Max. switching voltage DC	125 V
Min. switched current	100 mA

### Coil specifications

Nominal voltage	12 VDC-24 VDC-24 VAC/DC-230 VAC-230 VAC/DC
Power consumption (DC/AC)	0.3...1.6 W / 0.3...1.6 VA

### Technical data

Mechanical life cycles	≥ 20 x 10 <sup>6</sup>
Pull-in time DC/AC	6/7 ms
Release time DC/AC	8/15 ms
Ambient temperature	-40 °C...+55 °C
Protection category	IP20
Dimensions	80 x 93.8 x 6.2 mm
Weight	40 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

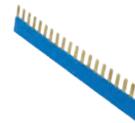
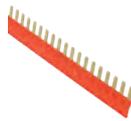
## Ordering codes

### I1-relays

Coil voltage	Type	Article number
12 VDC	I1-L-D012R	321000800
24 VDC	I1-L-D024R	321000801
24 VAC/DC	I1-L-U024R	321000802
230 VAC	I1-L-A230R	321000803
230 VAC/DC	I1-L-U230R	321000804

*Other voltages on request*

## Accessories



Type	I-connect-20 Red	I-connect-20 Black	I-connect-20 Blue
Name	Interconnection strip	Interconnection strip	Interconnection strip
Applicable for	I1-relays	I1-relays	I1-relays
Article number	321000820	321000821	321000822

# Industrial relays

## XT-relays

### XT-17M-161

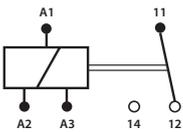


## Universal, 24 VAC/DC, 230 VAC 16 A, 1 changeover contact

Universal relay with 1 C/O contact and clear LED-status indication. Suitable for 24 VAC/DC as well 230 VAC.

- 24 VAC/DC & 230 VAC
- 1 changeover contact 16 A
- AgSnO<sub>2</sub> contacts
- Clear LED-indication
- Built-in diode
- Screw connection
- Suitable for 35 mm rail mounting

### Connection diagram



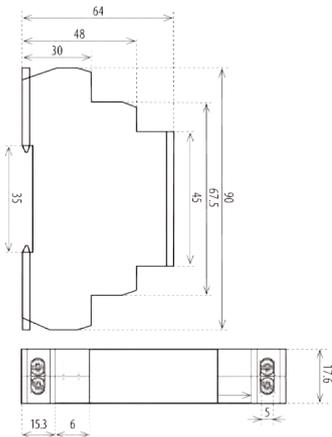
### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	1 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	250 VAC / 24 VDC
Max. breaking capacity	4000 VA / AC1 / 384 W DC

### Supply and function

Nominal voltage (A1-A2)	230 VAC (50/60 Hz)
Nominal voltage (A1-A3)	24 VAC/DC (50/60 Hz)
Supply voltage tolerance	0.85...1.1 Un

### Dimensions



### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	54 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

### Ordering code

XT-17M-161 326001007

## XT-17M-163

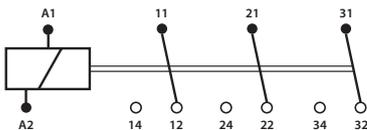
### Universal, 24 VAC/DC, 230 VAC 8 A, 3 changeover contacts

Universal relay with 3 C/O contacts and clear LED-status indication.  
Suitable for 24 VAC/DC as well 230 VAC.

- 24 VAC/DC & 230 VAC
- 3 changeover contact 8 A
- AgNi contacts
- Clear LED-indication
- Built-in diode
- Screw connection
- Suitable for 35 mm rail mounting



#### Connection diagram



#### Contact specifications

Contact material	AgNi
Number & configuration	3 C/O
Rated continuous current (ACI, IEC 60947)	8 A
Max. inrush current	10 A / < 3 s
Max. switching voltage	250 VAC / 24 VDC
Max. breaking capacity	2000 VA / AC1 / 384 W DC

#### Supply and function

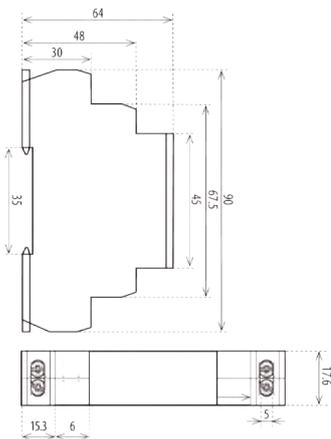
Nominal voltage (A1-A2)	230 VAC (50/60 Hz)
Nominal voltage (A1-A3)	24 VAC/DC (50/60 Hz)
Supply voltage tolerance	0.85...1.1 Un

#### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	52 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Dimensions



#### Ordering code

XT-17M-163 326001008

# Industrial relays

## XT-relays

### XT-17M-316/24



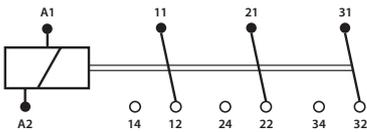
## Universal, 24 VAC/DC

### 16 A, 3 changeover contacts

Universal relay with 3 C/O contacts and clear LED-status indication.  
Suitable for 24 VAC/DC.

- 24 VAC/DC
- 3 changeover contacts 16 A
- AgSnO<sub>2</sub> contacts
- Clear LED-indication
- Built-in diode
- Screw connection
- Suitable for 35 mm rail mounting

#### Connection diagram



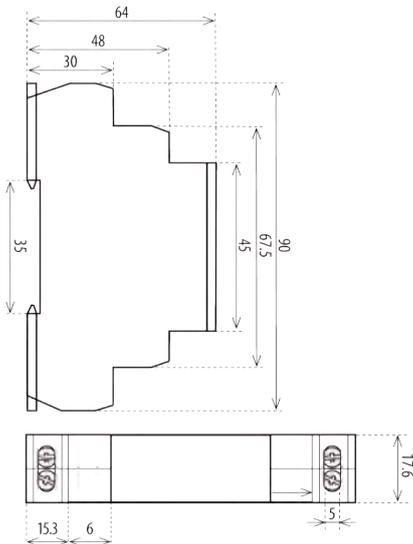
#### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	3 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	250 VAC / 24 VDC
Max. breaking capacity	4000 VA / AC1 / 384 W DC

#### Supply and function

Nominal voltage (A1-A2)	24 VAC (50/60 Hz)
Supply voltage tolerance	0.85...1.1 Un

#### Dimensions



#### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	90 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Ordering code

XT-17M-316/24 326001023

## XT-17M-316/230



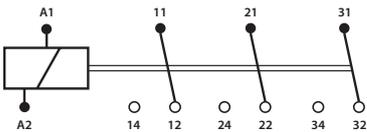
### Universal, 230 VAC

### 16 A, 3 changeover contacts

Universal relay with 3 C/O contacts and clear LED-status indication.  
Suitable for 230 VAC.

- 230 VAC
- 3 changeover contact 16 A
- AgNi contacts
- Clear LED-indication
- Built-in diode
- Screw connection
- Suitable for 35 mm rail mounting

#### Connection diagram



#### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	3 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	250 VAC / 24 VDC
Max. breaking capacity	4000 VA / AC1 / 384 W DC

#### Supply and function

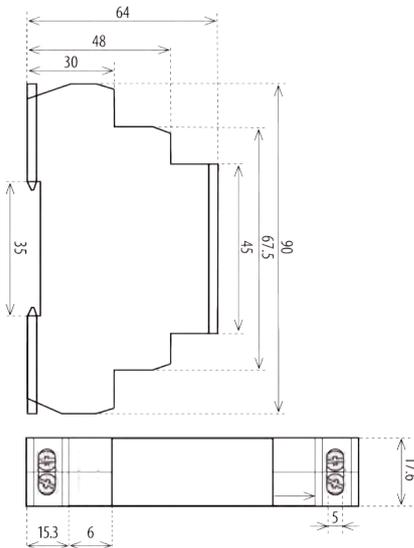
Nominal voltage (A1-A2)	230 VAC (50/60 Hz)
Supply voltage tolerance	0.85...1.1 U <sub>n</sub>

#### Technical data

Electrical life	1 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	92 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Dimensions



#### Ordering code

XT-17M-316/230 326001024

# Notes



## Time relays

### XT-relays

A time relay is a relay that switches after a time-delay. All time relays of Mors Smitt have one or more unique characteristics to make them suitable for numerous applications. Via the selection guide a quick selection can be made of the relay for an specific installation.

The XT-relays of Mors Smitt are equipped with a clear LED indication and are easy to mount on 35 mm rail. For additional specifications and datasheets visit [www.morssmitt.com](http://www.morssmitt.com)

# Selector XT-relays

## Time relays

Modular electronic timer relays with single, dual and multifunction models. For general purpose, industrial applications, switching of AC or low DC voltages / resistive loads.

All XT-relays are equipped with LED-indication, easy to mount 35 mm rail connection.

## Manuals

For all XT-relays datasheets and manuals are available with additional information about connections and program details.

Visit [www.morssmitt.com](http://www.morssmitt.com) for more information.

## Relay selection

Type	Supply voltage	Changeover contact(s)	Continuous current	Latching	Delay-on	Delay-off	Delay-on and delay-off	Delay-on via signalling contact	Delay-on / delay off after switch off supply	Delay-on Star/Delta	Delay-off after impulse off	Impulse generator	Symmetrical cycler starting with delay	Symmetrical cycler starting with impulse	Asymmetrical cycler starting with delay	Asymmetrical cycler starting with impulse	Page
XT-17M-L	12-240 VAC/DC	2	16 A	o													38
XT-17M-A	12-240 VAC/DC	1	16 A		o												39
XT-17M-B	12-240 VAC/DC	1	16 A			o											40
XT-17M-D	12-240 VAC/DC	2	8 A						o								41
XT-17M-2XA	12-240 VAC/DC	2x 1	16 A		o												42
XT-17M-S	12-240 VAC/DC	2	16 A							o							43
XT-17M-P	12-240 VAC/DC	1	16 A												o	o	44
XT-17M-C1	12-240 VAC/DC	1	16 A	o	o	o	o				o	o	o	o			45
XT-17M-C3	12-240 VAC/DC	3	8 A	o	o	o	o				o	o	o	o			46
XT-17M-C1/6	24-240 VAC/DC	1	8 A		o	o		o			o			o			47

## Digital

Type	Supply voltage	Changeover contact(s)	Continuous current	Memory locations	Twilight sensor	Day - week program	Realtime switching	Page
XT-35M-DC2	12-240 VAC/DC	2	16 A	100		o	o	48
XT-35M-DCL1	230 VAC	1	8 A	100	o	o	o	49

### Function description

#### Latching relay

Input voltage must be applied continuously. The output contacts change state with every trigger switch S closure. When input voltage is removed/dropped off, the relay contacts return to their shelf state.

#### Delay-on

When the input voltage is applied, the timing delay begins. Relay contacts change state after time delay is complete. When input voltage is removed/dropped off, the relay contacts return to their shelf state.

#### Delay-off

When the input voltage is removed/drops off, the timing delay begins. Relay contacts change state after time delay is complete. When input voltage is removed/dropped off, the relay contacts return to their shelf state.

#### Delay-on (via signalling contact)

Input voltage must be applied continuously. When trigger switch S is closed, timing delay begins and contacts will switch after this period. When input voltage is removed/dropped off, the relay contacts return to their shelf state.

#### Delay-off (via signalling contact)

Input voltage must be applied continuously.  
When trigger switch S is closed, the relay contacts change state.  
When trigger switch S is opened, delay begins.  
When delay is complete, contacts return to their shelf state.  
When the trigger switch S is closed before time delay is complete, then time is reset.  
When trigger switch S is opened, the delay begins again, the relay contacts remain in their energized state.  
When input voltage is removed/dropped off, the relay contacts return to their shelf state.

#### Delay-on / delay-off (after switching off supply)

Input voltage must be applied continuously. When the input voltage is removed/dropped off, the timing delay begins. Relay contacts change state after time delay is complete.

#### Delay-on (Star/Delta)

When the input voltage is applied, the timing delay of T1 and T2 begin (separate timing possible). Relay contacts change state after time delay is complete. When input voltage is removed/dropped off, the relay contacts return to their shelf state.

#### Cycle pause starting

When input voltage is applied, time delay begins. When time delay is complete, the relay contacts change state for time delay. This cycle will repeat until input voltage is removed/dropped off.

#### Cycle pulse starting

When input voltage is applied, relay contacts change state immediately and adjusted time delay begins. When time delay is complete, contacts return to their shelf state for time delay. This cycle will repeat until input voltage is removed/dropped off.

#### Pulse generator

Upon application of input voltage a single output pulse of 0.5 seconds is delivered to the relay after the time delay. The power must be removed and re-applied to repeat pulse.

# Latching XT-relays

## XT-17M-L

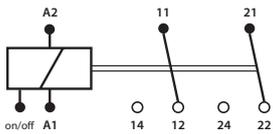


## Latching 16 A, 2 changeover contacts

Single function latching relay with signalling contact. Via the signalling contact (S) it is possible to control the relay remotely.

- Latching
- Adjustable timedelay 0.1 s...10 h
- Universal supply voltage 12...240 VAC/DC
- 2 change over contacts, 16 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

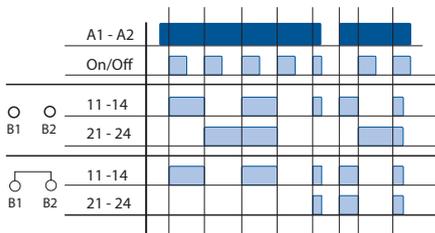
### Connection diagram



### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

### Function



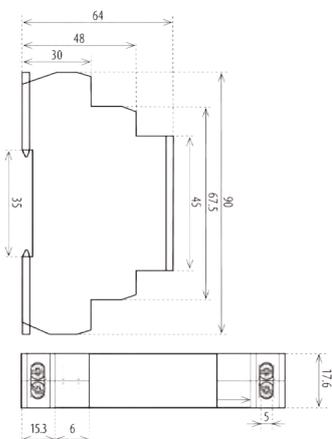
### Supply and function

Nominal voltage	12 ... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Function	Latching

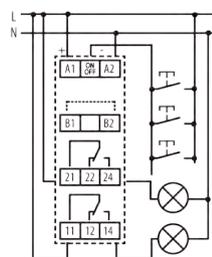
### Technical data

Electrical life (AC1)	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	89 g

### Dimensions



### Application example



Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

### Ordering code

XT-17M-L 326001020

# Single function XT-relays



## XT-17M-A

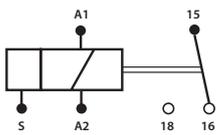


### Delay-on 16 A, 1 changeover contact

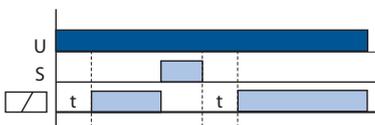
Single function delay-on time relay with signalling contact. Via the signalling contact (S) it is possible to control the relay remotely.

- Delay-on
- Adjustable time delay 0.1 s...10 h (6 ranges)
- Universal supply voltage 12...240 VAC/DC
- 1 changeover contact 16 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

#### Connection diagram



#### Timing diagram



#### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	1 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

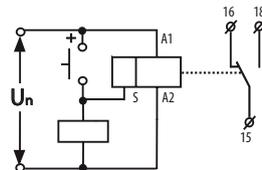
#### Supply and function

Nominal voltage	12 ... 240 VAC/DC 50/60 Hz	
Supply voltage tolerance	0.85...1.1 Un	
Adjustable time delay-on	XT-17M-A1	0.1...1 s
	XT-17M-A2	1...10 s
	XT-17M-A3	6...60 s
	XT-17M-A4	1...10 min
	XT-17M-A5	6...60 min
	XT-17M-A6	1...10 h

#### Technical data

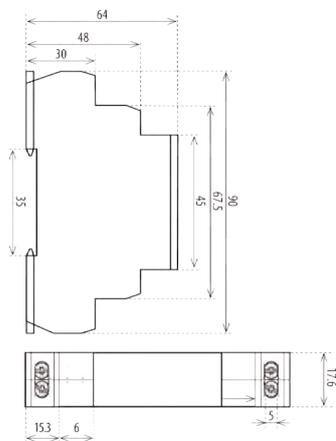
Electrical life	30 x 10 <sup>6</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	62 g

#### Application example



Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Dimensions



#### Ordering codes

XT-17M-A1	0.1-1s	326001001
XT-17M-A2	1-10 s	326001009
XT-17M-A3	6-60 s	326001010
XT-17M-A4	1-10 min	326001011
XT-17M-A5	6-60 min	326001012
XT-17M-A6	1-10 h	326001013

# Single function XT-relays

## XT-17M-B

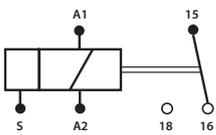


## Delay-off 16 A, 1 changeover contact

Single function delay-off time relay with signalling contact. Via the signalling contact (S) it is possible to control the relay remotely.

- Delay-off
- Adjustable time delay 0.1 s...10 h (6 ranges)
- Universal supply voltage 12...240 VAC/DC
- 1 changeover contact 16 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

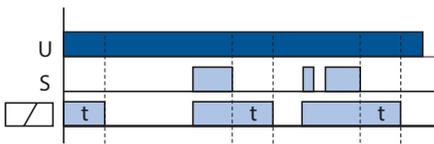
### Connection diagram



### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

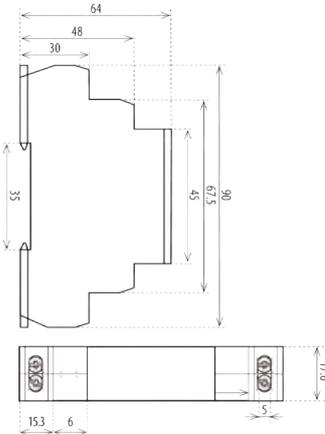
### Timing diagram



### Supply and function

Nominal voltage	12 ... 240 VAC/DC 50/60 Hz	
Supply voltage tolerance	0.85...1.1 Un	
Adjustable time delay-on	XT-17M-B1	0.1...1 s
	XT-17M-B2	1...10 s
	XT-17M-B3	6...60 s
	XT-17M-B4	1...10 min
	XT-17M-b5	6...60 min
	XT-17M-B6	1...10 h

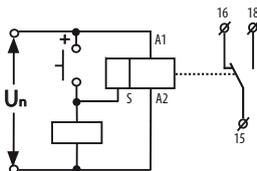
### Dimensions



### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	62 g

### Application example



Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

### Ordering codes

XT-17M-B1	0.1-1 s	326001002
XT-17M-B2	1-10 s	326001014
XT-17M-B3	6-60 s	326001015
XT-17M-B4	1-10 min	326001016
XT-17M-B5	6-60 min	326001017
XT-17M-B6	1-10 h	326001018

## XT-17M-D

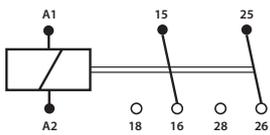
### Delay-on / delay-off (without auxiliary supply) 8 A, 2 changeover contacts



Single function delay-on / delay-off time relay that can switch with an adjustable time delay without auxiliary supply.

- Delay-on / delay-off
- Adjustable time delay 0.1 s...10 min
- Universal supply voltage 12...240 VAC/DC
- 2 changeover contacts 8 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

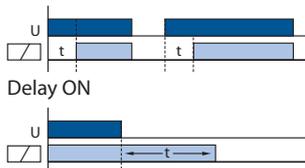
#### Connection diagram



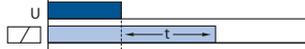
#### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	8 A
Inrush current	10 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	2000 VA / AC1 / 192 W DC

#### Timing diagram



Delay ON



Delay OFF

No auxiliary supply  
Min. activated time 0.5 s

#### Supply and function

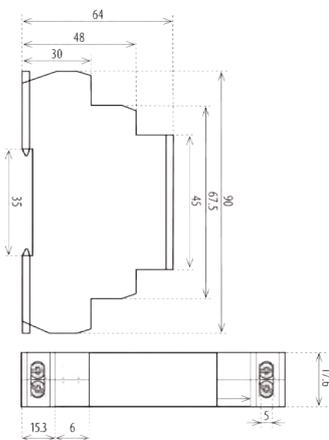
Nominal voltage	12 ... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Adjustable time delay	0.1 s...10 min

#### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	93 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Dimensions



#### Ordering code

XT-17M-D 326001019

# Single function XT-relays

## XT-17M-2XA

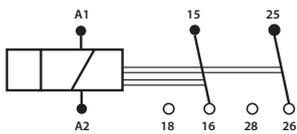


## Delay-on 2x 16 A, 2x 1 changeover contact

Single function delay-on time relay equipped with 2x 1 changeover contacts. For each contact a separate time delay can be set as delay-on.

- Delay-on
- Adjustable time delay 0.1 s...10 d
- Universal supply voltage 12...240 VAC/DC
- 2x 1 changeover contact 16 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

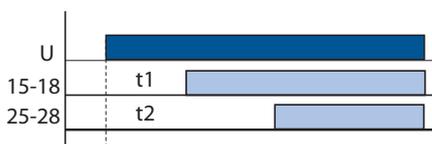
### Connection diagram



### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

### Timing diagram



### Supply and function

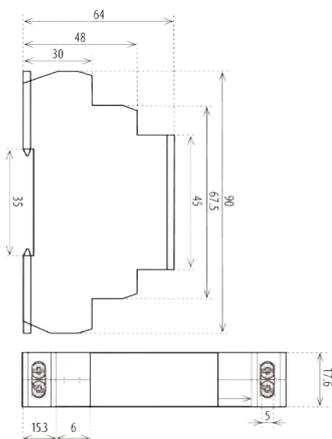
Nominal voltage	12 ... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Adjustable time delay-on T1	0.1 s...1 d
Adjustable time delay-on T2	0.1 s...1 d

### Technical data

Electrical life	$7 \times 10^4$
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.5 x 64 mm
Weight	88 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

### Dimensions



### Ordering code

XT-17M-2XA 326001021

## XT-17M-S



## Delay-on Star / Delta 16 A, 2 changeover contacts

Single function delay-on time relay, suitable for star/delta engines. Via the adjustable time delay a star/delta motor can be switch on safely.

- Delay-on
- Adjustable time delay T1 0.1 s...100 d
- Adjustable time delay T2 0.1...1 s (  $\Delta$  /  $\star$  )
- Universal supply voltage 12...240 VAC/DC
- 2 changeover contacts 16 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

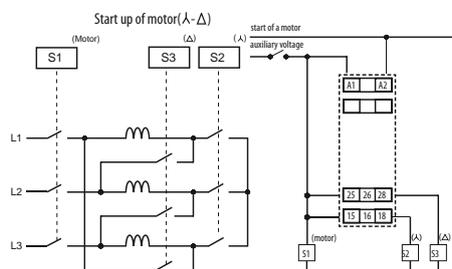
### Supply and function

Nominal voltage	12 ... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Adjustable time delay T1	0.1 s...100 d
Adjustable time delay T2	0.1...1 s

### Technical data

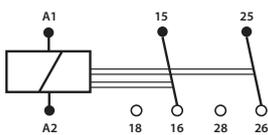
Electrical life (AC1)	$7 \times 10^4$
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	84 g

### Application example

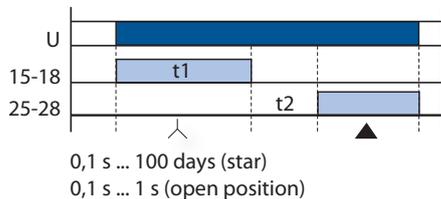


Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

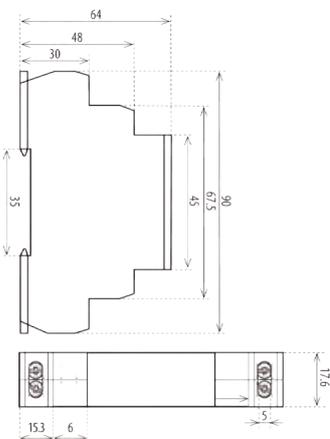
### Connection diagram



### Timing diagram



### Dimensions



### Ordering code

XT-17M-S 326001006

# Single function XT-relays

## XT-17M-P

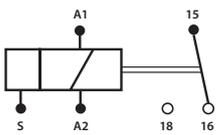


### Asymmetric cycler 16 A, 1 changeover contact

Single function pulse time relay with adjustable start function, cycler starts with impulse or with pause.

- Cycler starting with impulse or with pause
- Adjustable time delay 0.1 s...100 d
- Universal supply voltage 12...240 VAC/DC
- 1 changeover contact 16 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

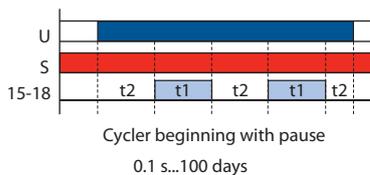
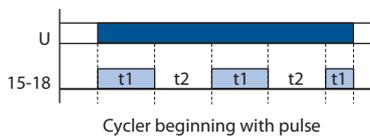
#### Connection diagram



#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

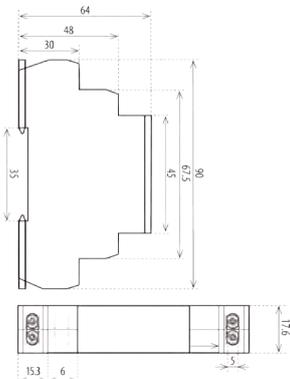
#### Timing diagrams



#### Supply and function

Nominal voltage	12 ... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Adjustable function	Impulse start / pause start
Adjustable time delay	0.1s...100 d
Adjustable time delay T2	0.1s...1 s

#### Dimensions



#### Technical data

Electrical life	$7 \times 10^4$
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.5 x 64 mm
Weight	65 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Ordering code

XT-17M-P 326001005

## XT-17M-C1

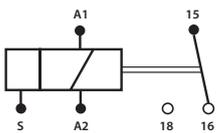


## Multifunction, 10 functions 16 A, 1 changeover contact

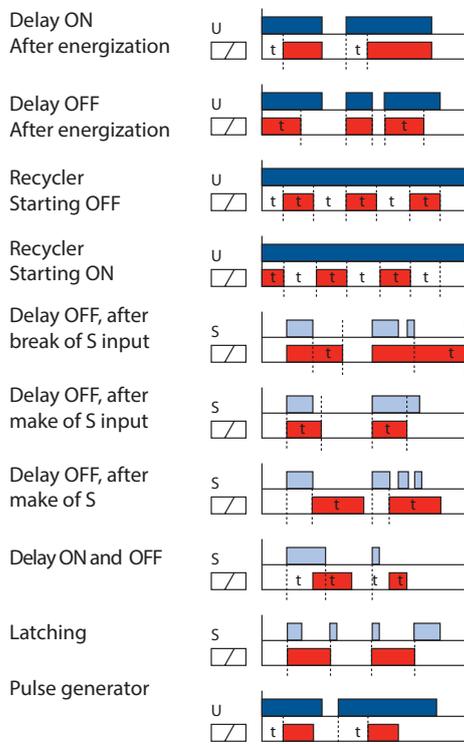
Multifunction time relay equipped with 10 functions, adjustable time delay and universal supply voltage. A few functions of the relay can be controlled remotely via the signalling contact (S).

- 10 functions
- Adjustable time delay 0.1 s...10 d
- Universal supply voltage 12...240 VAC/DC
- 1 changeover contact 16 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

### Connection diagram



### Timing diagrams



### Ordering code

XT-17M-C1 326001003

### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

### Supply and function

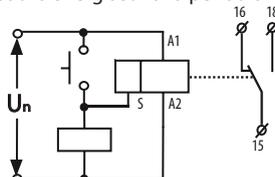
Nominal voltage	12 ... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Adjustable functions	Delay-on Delay-off Recycler starting on Recycler starting off Delay-on after break of S contact Delay-off after make of S contact Delay-off after make of S contact Delay-on / off Latching Pulse generator
Adjustable time delay	0.1s...10 d

### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.5 x 64 mm
Weight	64 g

### Application example

Load between S-A2 in parallel possible without disturbing proper operation of the relay. The load is energised for a period of time when a button is pressed.



Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Multifunction XT-relays

## XT-17M-C3

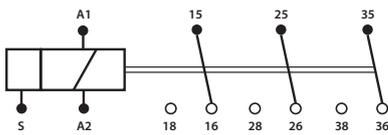


## Multifunction, 10 functions 8 A, 3 changeover contacts

Multifunction time relay equipped with 10 selectable functions, adjustable time delays and universal supply voltage. A few functions of the relay can be controlled remotely via the signalling contact (S).

- 10 functions
- Adjustable time delay 0.1 s...10 d
- Universal supply voltage 12...240 VAC/DC
- 3 changeover contact 8 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

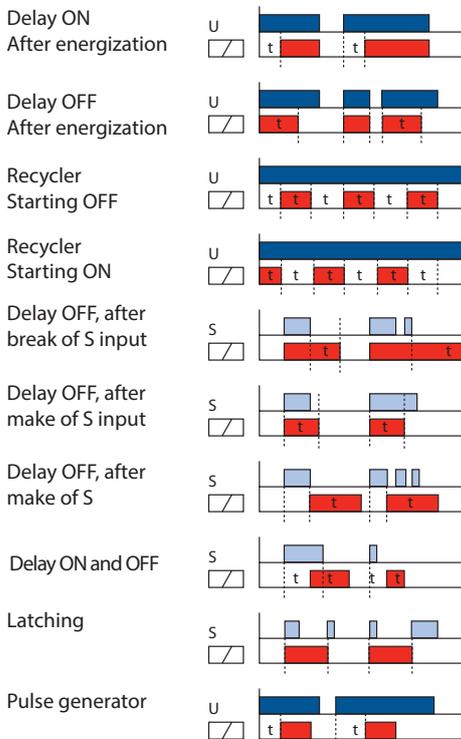
### Connection diagram



### Contact specifications

Contact material	AgNi
Number & configuration	3 C/O
Rated continuous current (ACI, IEC 60947)	8 A
Inrush current	10 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	2000 VA / AC1 / 192 W DC

### Timing diagrams



### Supply and function

Nominal voltage	12 ... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Adjustable functions	Delay-on Delay-off Recycler starting on Recycler starting off Delay-on after break of S contact Delay-off after make of S contact Delay-off after make of S contact Delay-on / off Latching Pulse generator
Adjustable time delay	0.1 s...10 d

### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	89 g

### Application example

Load between S-A2 in parallel possible without disturbing proper operation of the relay. The load is energised for a period of time when a button is pressed.

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

### Ordering code

XT-17M-C3 326001004

## XT-17M-C1/6



## Multifunction, 6 functions 8 A, 1 changeover contact

Multifunction time relay equipped with 6 selectable functions, adjustable time delays and universal supply voltage. A few functions of the relay can be controlled remotely via the signalling contact (S).

- 6 functions
- Adjustable time delay 0.1 s...10 h
- Universal supply voltage 24...240 VAC / 24 VDC
- 1 changeover contact 8 A
- Screw connection
- LED indication
- Suitable for 35 mm rail mounting

### Contact specifications

Contact material	AgNi
Number & configuration	3 C/O
Rated continuous current (ACI, IEC 60947)	8 A
Inrush current	10 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	2500 VA / AC1 / 240 W DC

### Supply and function

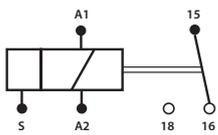
Nominal voltage	24... 240 VAC/DC 50/60 Hz / 24 VDC
Supply voltage tolerance	0.85...1.1 Un
Adjustable functions	Delay-on Delay-off Recycler starting on Delay-on after break of S contact Delay-on / off Impulse relay with delay
Adjustable time delay	0.1 s...10 h

### Technical data

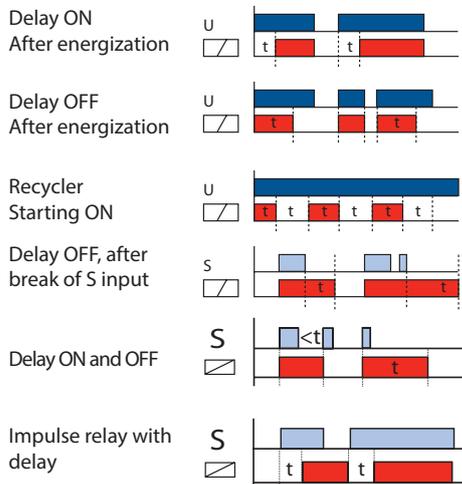
Electrical life	10 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	69 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

### Connection diagram



### Timing diagrams



### Ordering code

XT-17M-C6 326001025

## XT-35M-DC2

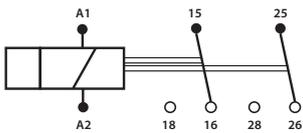
### Digital, programmable 16 A, 2 changeover contacts



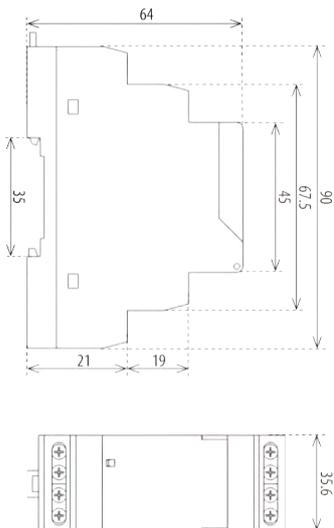
Digital, programmable time relay with 100 memory locations. Equipped with a sealable cover, universal supply voltage and easy programming.

- Day / week programming
- 100 memory locations
- Automatic summer/winter time setting
- Supply voltage 12-240 VAC/DC
- 2 changeover contact 16 A
- Screw connection
- Suitable for 35 mm rail mounting

#### Connection diagram



#### Dimensions



#### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	2 C/O
Rated continuous current (ACI, IEC 60947)	16 A
Inrush current	30 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	4000 VA / AC1 / 384 W DC

#### Supply and function

Nominal voltage	12... 240 VAC/DC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Memory	100 locations

#### Technical data

Electrical life	7 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 35.6 x 64 mm
Weight	143 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Ordering code

XT-35M-DC2 326001026

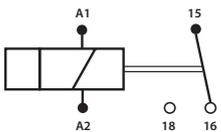
## XT-35M-DCL1

### Digital, programmable, with twilight sensor 8 A, 1 changeover contact

Digital, programmable time relay with 100 memory locations. Equipped with a sealable cover, 230 VAC supply voltage and easy programming.

- Day / week programming
- 100 memory locations
- Automatic summer/winter time setting
- Supply voltage 230 VAC
- 1 changeover contact 8 A
- Screw connection
- Suitable for 35 mm rail mounting

#### Connection diagram



#### Contact specifications

Contact material	AgSnO <sub>2</sub>
Number & configuration	1 C/O
Rated continuous current (ACI, IEC 60947)	8 A
Inrush current	10 A / < 3 s
Max. switching voltage	24 VDC1 / 250 VAC1
Max. breaking capacity	2500 VA / AC1 / 240 W DC

#### Supply and function

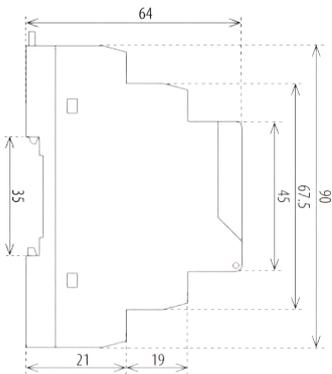
Nominal voltage	230 VAC 50/60 Hz
Supply voltage tolerance	0.85...1.1 Un
Memory	100 locations

#### Technical data

Electrical life	1 x 10 <sup>4</sup>
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 35.6 x 64 mm
Weight	Relay: 110 g Sensor : 20g

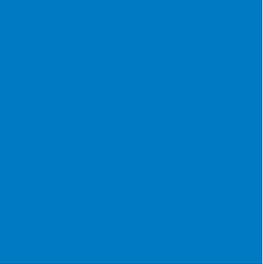
Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Dimensions



#### Ordering code

XT-35M-DCL1 326001028





## Measuring and monitoring relay

The XM-relays cover a wide range of models with LED indication and 35 mm rail mounting.

- Voltage monitoring models (1-phase, 3-phase)
- Phase failure, sequence and asymmetry models
- Current monitoring models (AC, DC)

With a contact rating up to 16 A and an S contact to external control the relay make these relays suitable for various industrial applications.

# Selector XM-relays

## Measuring and monitoring relays

Measuring and monitoring relays are suitable for various applications. The adjustable time delay makes these relays suitable for specific requirements for an application and makes the relay insensitive for short voltage peaks and failures.

There are 3 groups:

- 1-phase measure/monitoring relays
- 3-phase measure/monitoring relays
- Current measure/monitoring relays

All XM-relays are equipped with LED indication, easy to mount 35 mm rail connection.

## Manuals

For all XM-relays datasheets and manuals are available with additional information about connections and program details.

Visit [www.morssmitt.com](http://www.morssmitt.com) for more information.

## Relay selection

Type	Measuring range	Changeover contacts	Current	Supply voltage	Undercurrent	Overcurrent	Phase fail	Phase sequence	Phase asymmetry	Current	page
XM-17M-VA230	160...276 VAC	1	16 A	-	o	o					54
XM-17M-VD24	6...30 VDC	1	16 A	-	o	o					55
XM-17M-2xVA230	160...276 VAC	2	16 A	-	o	o					56
XM-52M-VA500	10...500 VAC	2	16 A	230 VAC	o	o					57
XM-17M-M400L	3x 400 VAC	1	16 A	-	o	o	o	o			58
XM-17M-M400LN	3x 400 VAC	1	16 A	-	o	o	o	o			59
XM-52M-M400L	3x 400 VAC	2	16 A	230 VAC	o	o	o	o	o		60
XM-52M-M400LN	3x 400 VAC	2	16 A	230 VAC	o	o	o	o	o		61
XM-17M-VA400LN	3x 400 VAC	1	8 A	-	o	o	o	o	o		62
XM-17M-IA25U	1...25 A AC	1	8 A	-						o	63



### Functie beschrijving

#### Under voltage protection

Adjustable undervoltage. If the measured voltage drops below the set value the relay will trip. A adjustable time delay prevents the relay from tripping from short voltage drops and failures.

#### Over voltage protection

Adjustable overvoltage. If the measured voltage exceeds the set value the relay will trip. A adjustable time delay prevents the relay from tripping from short voltage peaks and failures.

#### Phase protection

Protection against phase failure. If one of the phases or N drops the relay will trip.

#### Phase sequence protection

Protects the phase sequence. If the phase sequence / rotation changes the relay will trip.

#### Phase assymetry

In case the set assymetry is exceeded, output relay breaks.

#### Current protection

If the measured current exceeds the set value the relay will trip.

# Measuring and monitoring

## XM-relays

### XM-17M-VA230



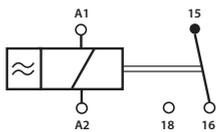
## Voltage monitoring relay, 48...276 VAC

### 1-phase, 16 A, 1 changeover contact

Voltage monitoring relay, suitable for 1 phase protection against under- & overvoltage.

- Under- & overvoltage protection
- Measuring range 48...276 VAC
- Monitored voltage serves as supply voltage
- 1 C/O contact 16 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35 mm rail mounting

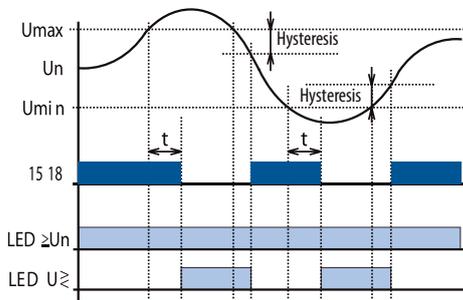
#### Connection diagram



#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	24 VDC / 250 VAC
Max. breaking capacity	4000 VA / AC1 / 384 W DC

#### Function diagram



#### Supply and measuring range

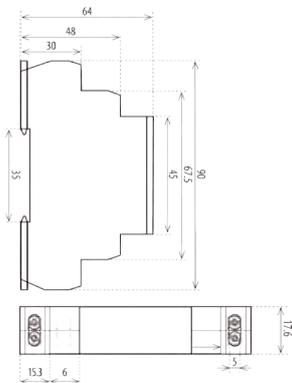
Nominal voltage	48 ... 276 VAC 50 Hz
Adjustable overvoltage ( $U_{max}$ )	160 ... 276 VAC
Adjustable undervoltage ( $U_{min}$ )	30-95 % van $U_{max}$
Adjustable time delay	0...10 s

#### Technical data

Mechanical life cycles	$30 \times 10^6$
Settings accuracy (mechanical)	5 %
Time delay	Adjustable 0...10 s
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	61 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Dimensions



#### Ordering code

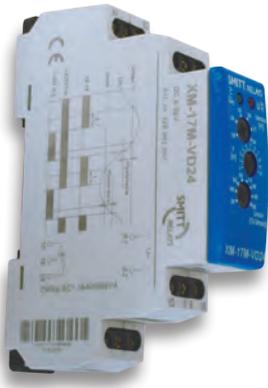
XM-17M-VA230 326002000

# Measuring and monitoring XM-relays



## XM-17M-VD24

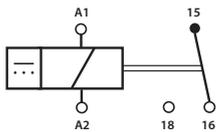
### Voltage monitoring relay, 6...30 VDC 1-phase, 16 A, 1 changeover contact



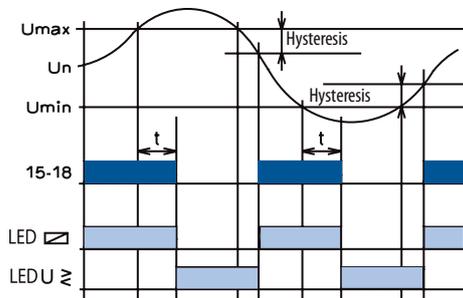
Voltage monitoring relay, suitable for 1 phase protection against under- & overvoltage.

- Under & overvoltage protection
- Measuring range 6...30 VDC
- Monitored voltage serves as supply voltage
- 1 C/O contact 16 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35 mm rail mounting

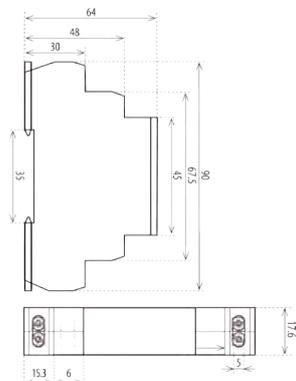
#### Connection diagram



#### Function diagram



#### Dimensions



#### Ordering code

XM-17M-VD24 326002001

#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	24 VDC / 250 VAC
Max. breaking capacity	4000 VA / AC1 / 384 W DC

#### Supply and measuring range

Nominal voltage	6...30 VDC
Adjustable overvoltage ( $U_{max}$ )	18...30 VDC
Adjustable undervoltage ( $U_{min}$ )	30-95 % van $U_{max}$
Adjustable time delay	0...10 s

#### Technical data

Mechanical life cycles	$30 \times 10^6$
Settings accuracy (mechanical)	5 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	73 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Measuring and monitoring

## XM-relays

### XM-17M-2XVA230

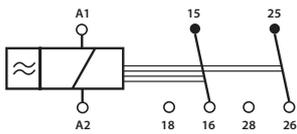
### Voltage monitoring relay, 160...276 VAC 1-phase, 16 A, 2 changeover contacts



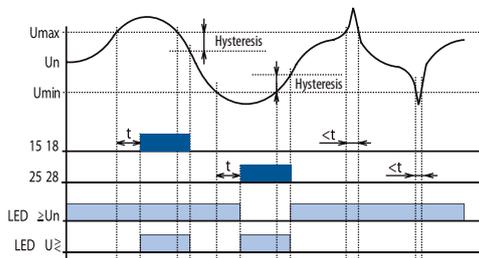
Voltage monitoring relay, suitable for 1 phase protection against under- and overvoltage. Supplied with 2 C/O contacts which switch separately. 1 C/O contact for an overvoltage, 1 C/O contact for an undervoltage

- Under- & overvoltage protection
- Measuring range 160...276 VAC
- Monitored voltage serves as supply voltage
- 1 C/O contact overvoltage 16 A
- 1 C/O contact undervoltage 16 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35mm rail mounting

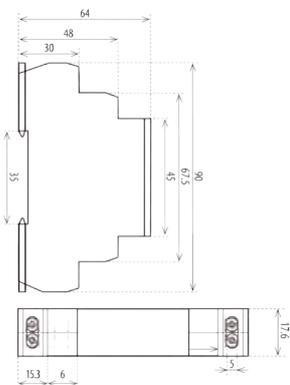
#### Connection diagram



#### Function diagram



#### Dimensions



#### Ordering code

XT-17M-2XVA230 326002002

#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O undervoltage, 1 C/O overvoltage
Rated continuous current (AC1, IEC 60947)	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	24 VDC / 250 VAC
Breaking capacity	4000 VA / AC1 / 384 W DC

#### Supply and measuring range

Nominal voltage	48 ... 276 VAC 50 Hz
Adjustable overvoltage ( $U_{max}$ )	160 ... 276 VAC
Adjustable undervoltage ( $U_{min}$ )	30-95 % van $U_{max}$
Adjustable time delay	0...10 s

#### Technical data

Mechanical life cycles	$30 \times 10^6$
Settings accuracy (mechanical)	5 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	85 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Measuring and monitoring XM-relays



## XM-52M-VA500

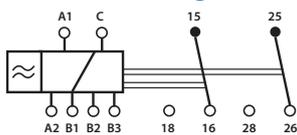
### Voltage monitoring relay, 10...500 VAC 1-phase, 16 A, 2 changeover contacts



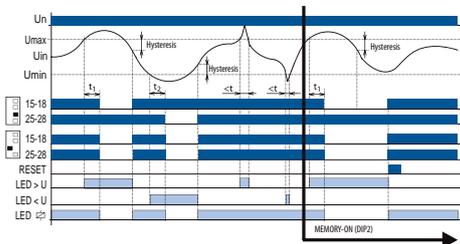
Voltage monitoring relay, suitable for 1 phase protection against under- and overvoltage with an measuring range of 10-500 VAC. Supplied with 2 C/O contact which switch parallel or separately.

- Under- & overvoltage protection
- Measuring range 10...500 VAC
- Window function
- Supply voltage 230 VAC
- 2 C/O contacts 16 A
- Adjustable time delay undervoltage 0...10 s
- Adjustable time delay overvoltage 0...10 s
- LED indication
- Suitable for 35mm rail mounting

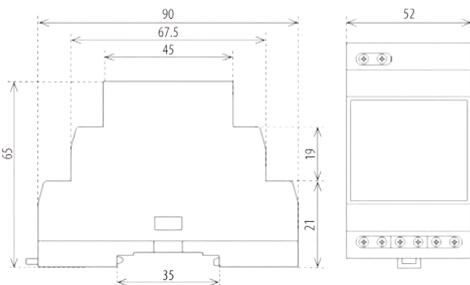
#### Connection diagram



#### Function diagram



#### Dimensions



#### Ordering code

XM-52M-VA 326002005

#### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current (AC1, IEC 60947)	16 A
Max. inrush current	30 A / (< 3 s)
Max. switching voltage	24 VDC / 250 VAC
Breaking capacity	4000 VA / AC1 / 384 W DC

#### Supply and measuring range

Supply voltage	230 VAC
Nominal voltage	10...500 VAC (in 3 ranges)
Adjustable overvoltage ( $U_{max}$ )	20...100% of chosen range
Adjustable undervoltage ( $U_{min}$ )	30-95 % van $U_{max}$
Adjustable time delay ( $U_{max}$ )	0...10 s
Adjustable time delay ( $U_{min}$ )	0...10 s

#### Technical data

Mechanical life cycles	$30 \times 10^6$
Hysteresis	5 % / 10 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 52 x 64 mm
Weight	250 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Measuring and monitoring

## XM-relays

### XM-17M-M400L



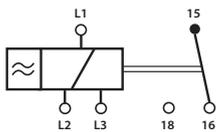
### Phase, phase sequence and voltage monitoring

#### 3-phase, 8 A, 1 changeover contact

Phase fail, phase sequence and voltage monitoring relay, suitable for 3-phase systems. Preset under- and overvoltage ( $U_{\min} 75\% U_n$ ,  $U_{\max} 125\% U_n$ ). Supplied with 1 C/O contact and multiple LED indication.

- Phase protection
- Phase sequence protection
- Under- & overvoltage protection
- Measuring range 400 VAC
- Monitored voltage serves as supply voltage
- 1 C/O contact 8 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35mm rail mounting

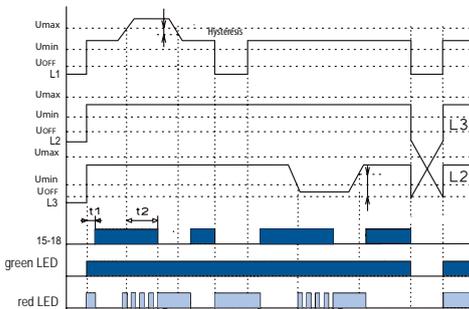
#### Connection diagram



#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current	8 A
Max. inrush current	10 A
Max. switching voltage	24 VDC / 250 VAC
Breaking capacity	2500 VA / AC1 / 240 W DC

#### Function diagram



#### Supply and measuring range

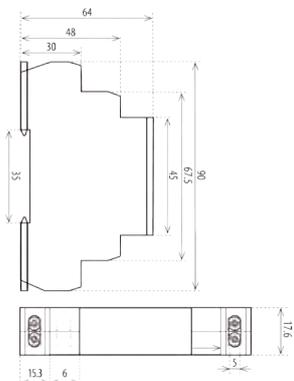
Phase protection	L1, L2, L3
Measuring range	400 VAC
Overvoltage ( $U_{\max}$ )	75 % $U_n$
Undervoltage ( $U_{\min}$ )	125 % $U_n$
Time delay T1	500 ms
Adjustable time delay T2	0...10 s

#### Technical data

Mechanical life cycles	$10 \times 10^6$
Settings accuracy (mechanical)	5 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	67 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Dimensions



#### Ordering code

XT-17M-M400L 326002003

# Measuring and monitoring XM-relays



## XM-17M-M400LN

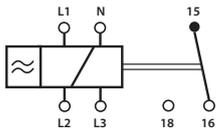
### Phase, phase sequence and voltage monitoring 3-phase, 8 A, 1 changeover contact



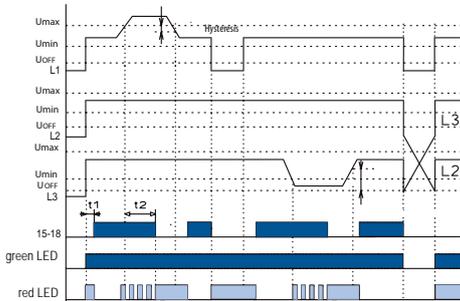
Phase fail, phase sequence and voltage monitoring relay, suitable for 3-phase +N systems. Preset under- and overvoltage ( $U_{\min}$  75 %  $U_n$ ,  $U_{\max}$  125 %  $U_n$ ). Supplied with 1 C/O contact and multiple LED indication.

- Phase protection
- Phase sequence protection
- Under- & overvoltage protection
- Measuring range 400 VAC
- Monitored voltage serves as supply voltage
- 1 C/O contact 8 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35mm rail mounting

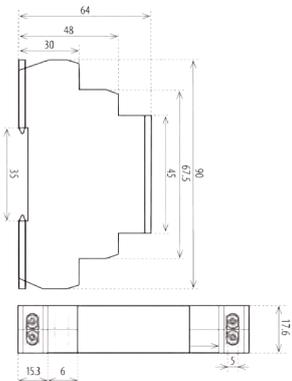
#### Connection diagram



#### Function diagram



#### Dimensions



#### Ordering code

XT-17M-M400LN 326002004

#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current	8 A
Max. inrush current	10 A
Max. switching voltage	24 VDC / 250 VAC
Breaking capacity	2500 VA / AC1 / 240 W DC

#### Supply and measuring range

Phase protection	L1, L2, L3
Measuring range	L1, N
Measuring range	400 VAC
Overvoltage ( $U_{\max}$ )	75 % $U_n$
Undervoltage ( $U_{\min}$ )	125 % $U_n$
Time delay T1	500 ms
Adjustable time delay T2	0...10 s

#### Technical data

Mechanical life cycles	$10 \times 10^6$
Settings accuracy (mechanical)	5 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	66 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Measuring and monitoring XM-relays

## XM-52M-M400L



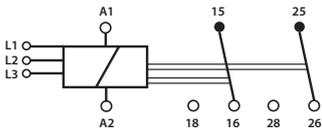
## Phase, phase sequence, phase asymmetry and voltage monitoring

### 3-phase, 16 A, 2 changeover contacts

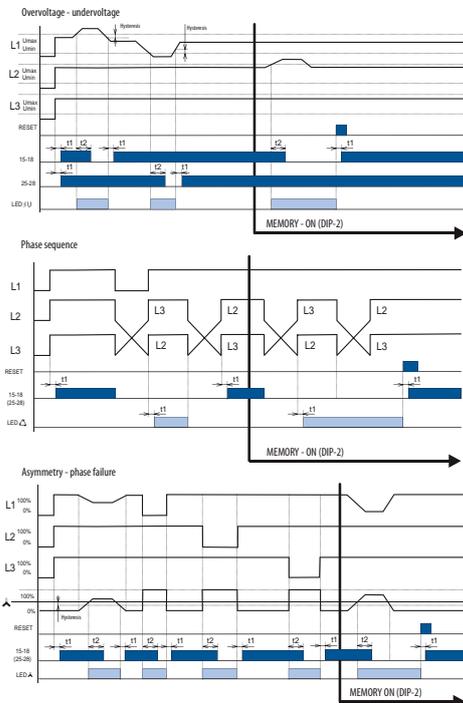
Phase fail, phase sequence, phase asymmetry and voltage monitoring relay, suitable for 3-phase systems. Supplied with 2 C/O contacts and multiple LED indication.

- Phase protection
- Phase sequence protection
- Phase asymmetry protection
- Under & overvoltage protection
- Measuring range 3x 400 VAC
- Supply voltage 230 VAC
- 2 C/O contacts 16 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35mm rail mounting

#### Connection diagram



#### Function diagrams



#### Contact specifications

Contact material  
Number & configuration  
Rated continuous current (AC1, IEC 60947)  
Max. inrush current  
Max. switching voltage  
Breaking capacity

AgNi  
2 C/O  
16 A  
30 A / < 3 s  
24 VDC / 250 VAC  
4000 VA / AC1 / 384 W DC

#### Supply and measuring range

Phase protection  
Supply voltage  
Measuring range  
Adjustable overvoltage ( $U_{max}$ )  
Adjustable undervoltage ( $U_{min}$ )  
Time delay T1  
Adjustable time delay T2

L1, L2, L3  
230 VAC 50/60 Hz (A1 & A2)  
400 VAC  
240...480 V  
35-99 % of  $U_{max}$   
Max 200 ms  
0...10 s

#### Technical data

Mechanical life cycles  
Accuracy  
Ambient temperature  
Protection category  
Connection  
Dimensions  
Weight

30 x 10<sup>6</sup>  
5 % / 10 %  
-20 °C...+55 °C  
IP40  
Screw 2.5 mm<sup>2</sup>  
90 x 52 x 64 mm  
239 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Ordering code

XM-52M-M400L 326002006

# Measuring and monitoring XM-relays



## XM-52M-M400LN

### Phase, phase sequence, phase asymmetry and voltage monitoring

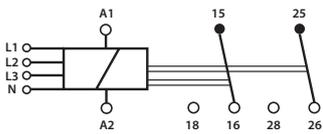
### 3-phase + N, 16 A, 2 changeover contacts

Phase fail, phase sequence, phase asymmetry and voltage monitoring relay, suitable for 3-phase +N systems. Supplied with 2 C/O contacts and multiple LED indication.

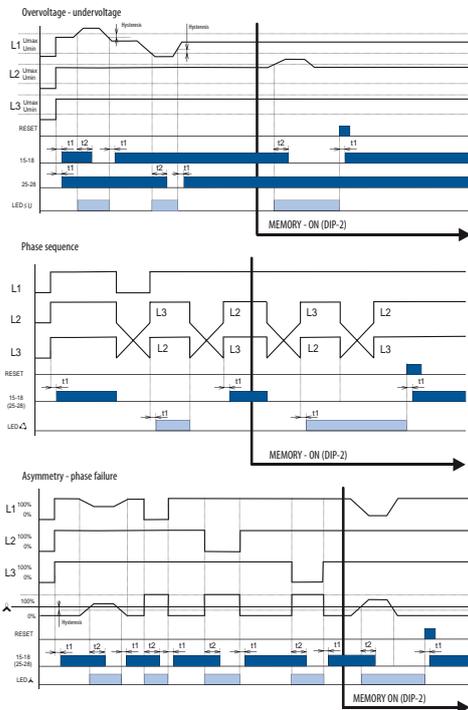
- Phase protection
- Phase sequence protection
- Phase asymmetry protection
- Under & overvoltage protection
- Measuring range 3x 400 VAC
- Supply voltage 230 VAC
- 2 C/O contacts 16 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35mm rail mounting



#### Connection diagram



#### Function diagrams



#### Ordering code

XM-52M-M400LN 326002007

#### Contact specifications

Contact material	AgNi
Number & configuration	2 C/O
Rated continuous current	16 A
Max. inrush current	30 A / < 3 s
Max. switching voltage	24 VDC / 250 VAC
Breaking capacity	4000 VA / AC1 / 384 W DC

#### Supply and measuring range

Phase protection	L1, L2, L3, N
Supply voltage	230 VAC 50/60 Hz (A1 & A2)
Measuring range	400 VAC / 230 VAC
Adjustable overvoltage ( $U_{max}$ )	138...276 V
Adjustable undervoltage ( $U_{min}$ )	35-99 % of $U_{max}$
Time delay T1	Max 200 ms
Adjustable time delay T2	0...10 s

#### Technical data

Mechanical life cycles	$30 \times 10^6$
Accuracy	5 % / 10 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 52 x 64 mm
Weight	239 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Measuring and monitoring

## XM-relays

### XM-17M-VA400LN

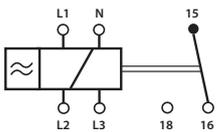
### Phase, phase sequence and voltage monitoring 3-phase +N, 8 A, 1 changeover contact



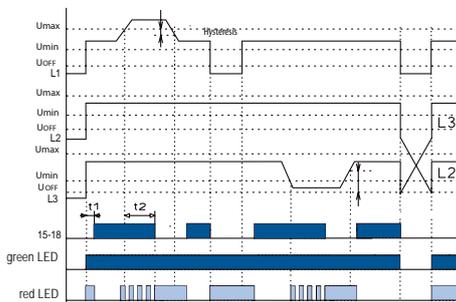
Phase fail, phase sequence and voltage monitoring relay, suitable for 3-phase +N systems. Supplied with 1 C/O contacts and multiple LED indication.

- Phase +N protection
- Phase sequence protection
- Under & overvoltage protection
- Measuring range 400 VAC / 230 VAC
- Monitored voltage serves as supply voltage
- 1 C/O contact 8 A
- Adjustable time delay 0...10 s
- LED indication
- Suitable for 35 mm rail mounting

#### Connection diagram



#### Function diagram



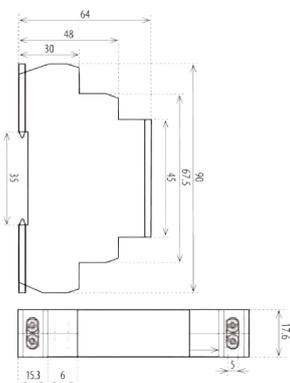
#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current	8 A
Max. inrush current	10 A
Max. switching voltage	24 VDC / 250 VAC
Breaking capacity	2500 VA / AC1 / 240 W DC

#### Supply and measuring range

Phase protection	L1, L2, L3
Supply contact	L1, N
Measuring range	400 VAC / 230 VAC
Adjustable overvoltage ( $U_{max}$ )	105-125 % $U_n$
Adjustable undervoltage ( $U_{min}$ )	75-95 % $U_n$
Time delay T1	Max 500 ms
Adjustable time delay T2	0...10 s

#### Dimensions



#### Technical data

Mechanical life cycles	$10 \times 10^6$
Hysteresis	5 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	67 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Ordering code

XT-17M-VA400LN 326002011

## XM-17M-IA25U

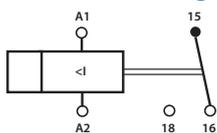
### Current monitoring 1-phase, 8 A, 1 changeover contact



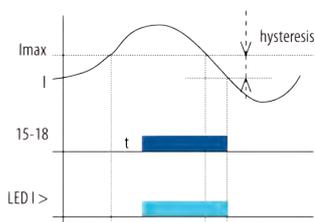
Current monitoring relay, suitable for 1-phase systems.  
Range 0.5...25 A, via an optional current transformer extendable to 600 A. Supplied with 1 changeover contact and LED indication.

- Current monitoring
- Measuring range 1...25 A AC
- Supply voltage 230 VAC
- 1 change over contact 8 A
- Max. conductor size 5.8 mm
- LED indication
- Suitable for 35mm rail mounting

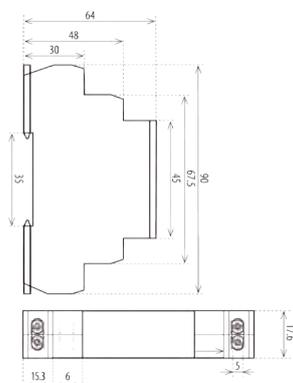
#### Connection diagram



#### Function diagram



#### Dimensions



#### Ordering code

XM-17M-IA25U 326001027

#### Contact specifications

Contact material	AgNi
Number & configuration	1 C/O
Rated continuous current	8 A
Breaking capacity	2500 VA / AC1 / 240 W DC

#### Supply and measuring range

Supply	230 VAC 50/60 Hz
Measuring range	1...25 A, extendable to 600 A
Max. conductor size	5.8 mm

#### Technical data

Mechanical life cycles	10 x 10 <sup>6</sup>
Hysteresis	5 %
Ambient temperature	-20 °C...+55 °C
Protection category	IP40
Connection	Screw 2.5 mm <sup>2</sup>
Dimensions	90 x 17.6 x 64 mm
Weight	64 g

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

# Current transformer

## XM-relays

### XM-CT

## Current transformer

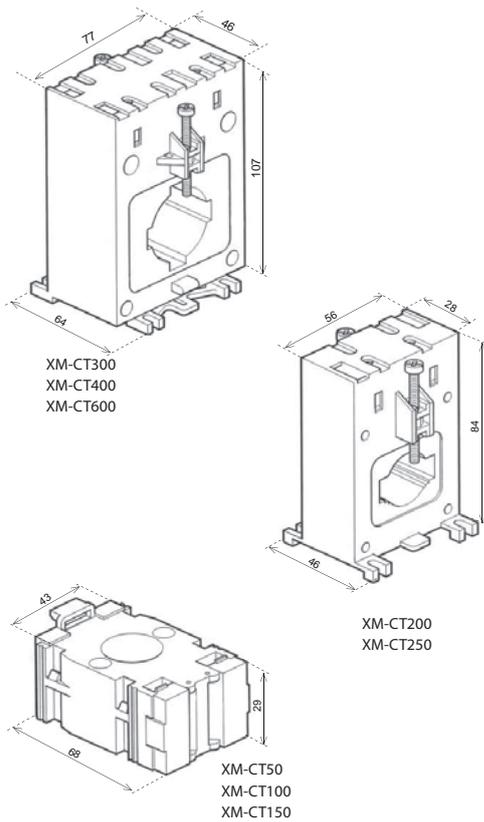
### 1-phase, 50 A - 600 A

Current transformer for XM-17M-IA relays (only), to extend the maximum controlled current up to 600 A.

- Multiple ranges
- Suitable for 35 mm rail mounting
- Suitable for busbar and cable
- Installable on panel or rail mounting
- Busbar to max. dimension 40 x 10 mm



#### Dimensions



	XM-CT50	XM-CT100	XM-CT150	XM-CT200
Max. wire diameter	22 mm	22 mm	22 mm	23 mm
Max busbar profile	-	-	-	30 x 10
Primary current	50 A	100 A	150 A	200 A
Accuracy class 0.5	-	2	3	4
Accuracy class 1	1.25	2.5	4	7
Accuracy class 3	1.5	3.5	5	8.5

	XM-CT250	XM-CT300	XM-CT400	XM-CT600
Max. wire diameter	23 mm	35 mm	35 mm	35 mm
Max bus-bar profile	30 x 10	40 x 10	40 x 10	40 x 10
Primary current	250 A	300 A	400 A	600 A
Accuracy class 0.5	6	4	8	12
Accuracy class 1	9	8	12	15
Accuracy class 3	11	12	15	15

#### Technical data

Cable size solid conductor	Max 6 mm <sup>2</sup>
Cable size wire	Max 4 mm <sup>2</sup>
Output current	0...5 A
Frequency	50/60 Hz
Constant overload capacity	1.2 x I <sub>n</sub>
Ambient temperature	-20 °C...+55 °C

Detailed information and datasheets are available on [www.morssmitt.com](http://www.morssmitt.com)

#### Ordering codes

XM-CT50	-
XM-CT100	-
XM-CT150	-
XM-CT200	-
XM-CT250	-
XM-CT300	-
XM-CT400	-
XM-CT600	-

Mors Smitt brochures are also available on our website: [www.morssmitt.com](http://www.morssmitt.com)



Heavy duty relays



General purpose relays



Actus relays



Surge protection devices



Industrial sensors

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Instruments 1



Instruments 2



SERVING  
SAFETY

**Mors Smitt Industrial Technology**

# General purpose relays



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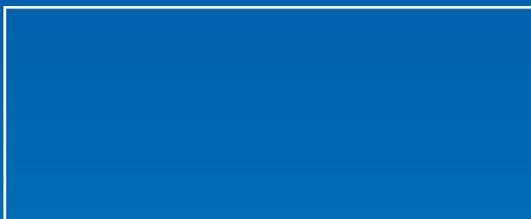
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