Heavy duty 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.

Heavy duty relays
The unique D-relay concept is specifically designed to solve demanding applications in the power utility market; high DC breaking capacity and inductive load switching offering long electrical life and low life cycle costs.

The Solve-All relay application concept offers ultimate flexibility to design and supply tailor made D-relay products. Today these relays are used in its millions across the world.

General purpose relays
The general purpose relay portfolio offers solutions for all generic automation application. More details are defined in the ‘General purpose relays’ catalogue.

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 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.
Heavy duty relays

**D-relays**
The industrial plug-in relays are based on the unique Solve-All design concept and can be used in both AC and DC voltage networks.

The relays are able to switch resistive as well as inductive loads in heavy duty demanding applications, depending on the options included.

We offer instantaneous, latching and function relays as well as time, measuring and monitoring relays.

**C-relays**
The miniature, industrial plug-in C-relays can be used in both AC and DC voltage networks.

The relays are able to switch resistive and also inductive loads, depending on the options included.

We offer instantaneous and safety critical models.

**A- & B- relays**
The A 400 and B 400 relays are designed for safety and critical applications.

The A 400 and B 400 relays are standard equipped with double make /double break contacts.
The B 400 relays are standard equipped with weld no transfer contacts (optional for the A 400 relays).

The relays are designed for switching of DC voltages and inductive loads in demanding applications.
Standards & approvals

The relays are designed and manufactured with utmost care for reliability 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
C-, D- and A&B-relays have been developed for more demanding applications and have plug-in bases with flat and silver or tinplated pins for optimum and long lasting contact between relay and socket.

Contact descriptions

<table>
<thead>
<tr>
<th></th>
<th>International</th>
<th>USA</th>
<th>ANSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally open contact</td>
<td>N/O</td>
<td>SPST-NO</td>
<td>form A</td>
</tr>
<tr>
<td>Normally closed contact</td>
<td>N/C</td>
<td>SPST-NC</td>
<td>form B</td>
</tr>
<tr>
<td>1 changeover contact</td>
<td>1 C/O</td>
<td>SPDT</td>
<td>form C</td>
</tr>
<tr>
<td>2 changeover contacts</td>
<td>2 C/O</td>
<td>DPDT</td>
<td>form C</td>
</tr>
<tr>
<td>3 changeover contacts</td>
<td>3 C/O</td>
<td>3PDT</td>
<td>form C</td>
</tr>
<tr>
<td>4 changeover contacts</td>
<td>4 C/O</td>
<td>4PDT</td>
<td>form C</td>
</tr>
<tr>
<td>1 Double break / double make contact</td>
<td>1 C/O DB/DM</td>
<td>SPDT (DB/DM)</td>
<td>form Z</td>
</tr>
<tr>
<td>4 Double break / double make contact</td>
<td>4 C/O DB/DM</td>
<td>4PDT (DB/DM)</td>
<td>form Z</td>
</tr>
</tbody>
</table>
D-relays
The industrial plug-in D-relays are based on the unique Solve-All design concept and can be used in both AC and DC voltage networks.

The relays are able to switch resistive as well as inductive loads in heavy duty demanding applications, depending on the options included.

We offer instantaneous, latching and function relays as well as time, measuring and monitoring relays.
Power generation and distribution operators across the world rely on the *Solve-All* relay concept.
D-relays

Instantaneous

<table>
<thead>
<tr>
<th>Relay</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>4 C/O</td>
<td>Standard relay</td>
</tr>
<tr>
<td>D-B</td>
<td>4 C/O</td>
<td>High DC breaking capacity</td>
</tr>
<tr>
<td>D-R</td>
<td>3 C/O</td>
<td>Very fast switching &lt;7 ms</td>
</tr>
<tr>
<td>D-RB</td>
<td>3 C/O</td>
<td>High DC breaking capacity + extreme fast switching</td>
</tr>
<tr>
<td>D-BV</td>
<td>4 C/O</td>
<td>High DC breaking capacity + wide range</td>
</tr>
<tr>
<td>D-BW</td>
<td>4 contacts</td>
<td>Safety relay + weld no transfer contacts</td>
</tr>
<tr>
<td>D-YB</td>
<td>2 DM/DB</td>
<td>Higher DC breaking capacity</td>
</tr>
<tr>
<td>D-BXS</td>
<td>2 N/O + 2 N/C</td>
<td>Very high DC breaking capacity</td>
</tr>
<tr>
<td>D-BYXS</td>
<td>1 DM/DB</td>
<td>Extreme high DC breaking capacity</td>
</tr>
<tr>
<td>D-E</td>
<td>4 C/O</td>
<td>Low current switching</td>
</tr>
<tr>
<td>DGG</td>
<td>2 C/O</td>
<td>Low on threshold 0.4 Unom</td>
</tr>
<tr>
<td>D-YMBZD</td>
<td>2 DM/DB</td>
<td>Designed for wind generator</td>
</tr>
</tbody>
</table>

Instantaneous D8

<table>
<thead>
<tr>
<th>Relay</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D8-UL</td>
<td>8 C/O</td>
<td>Standard relay</td>
</tr>
<tr>
<td>D8-ULB</td>
<td>8 C/O</td>
<td>High DC breaking capacity</td>
</tr>
<tr>
<td>D8-ULYB</td>
<td>4 DM/DB</td>
<td>Higher DC breaking capacity</td>
</tr>
<tr>
<td>D8-ULBX5</td>
<td>2 N/O + 2 N/C</td>
<td>Very high DC breaking capacity</td>
</tr>
<tr>
<td>D8-ULYBX5</td>
<td>2 DM/DB</td>
<td>Extreme high DC breaking capacity</td>
</tr>
</tbody>
</table>

Latching/bistable

<table>
<thead>
<tr>
<th>Relay</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KDN</td>
<td>8 C/O</td>
<td>Mechanical latching</td>
</tr>
<tr>
<td>KDN-B</td>
<td>8 C/O</td>
<td>Mechanical latching high DC breaking capacity</td>
</tr>
<tr>
<td>BD</td>
<td>3 C/O + 1 N/C</td>
<td>Magnetic latching</td>
</tr>
<tr>
<td>BD-B</td>
<td>3 C/O + 1 N/C</td>
<td>Magnetic latching high DC breaking capacity</td>
</tr>
<tr>
<td>KCD</td>
<td>2 C/O</td>
<td>Magnetic latching high DC breaking capacity</td>
</tr>
</tbody>
</table>

Puls transducing

<table>
<thead>
<tr>
<th>Relay</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOD</td>
<td>2 N/O or N/C</td>
<td>Puls transducing (voltage pulse input)</td>
</tr>
<tr>
<td>EIOD</td>
<td>2 N/O or N/C</td>
<td>Puls transducing (electronic pulse input, DIN 43864)</td>
</tr>
</tbody>
</table>

Time

<table>
<thead>
<tr>
<th>Relay</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDB2</td>
<td>2 C/O timed</td>
<td>Delay-on</td>
</tr>
<tr>
<td>TDB4</td>
<td>4 C/O timed</td>
<td>Delay-on</td>
</tr>
<tr>
<td>TDB8</td>
<td>2 C/O timed</td>
<td>Delay-on</td>
</tr>
<tr>
<td>TDE</td>
<td>2 C/O + 1 N/O timed</td>
<td>Delay-off</td>
</tr>
<tr>
<td>TDE3</td>
<td>3 C/O timed</td>
<td>Delay-off</td>
</tr>
<tr>
<td>TDE4</td>
<td>4 C/O timed</td>
<td>Delay-off</td>
</tr>
<tr>
<td>TDEB</td>
<td>2 C/O timed</td>
<td>Delay-on &amp; off</td>
</tr>
<tr>
<td>FDA</td>
<td>2 C/O timed</td>
<td>Flashing recycler</td>
</tr>
<tr>
<td>FDA4</td>
<td>4 C/O timed</td>
<td>Flashing recycler fixed time</td>
</tr>
<tr>
<td>FDC</td>
<td>2 C/O timed</td>
<td>Flashing recycler fixed time</td>
</tr>
<tr>
<td>WDE4</td>
<td>4 C/O</td>
<td>All one-shot on</td>
</tr>
<tr>
<td>WDE</td>
<td>4 C/O</td>
<td>2 one-shot on, 2 instantaneous</td>
</tr>
<tr>
<td>WDDF</td>
<td>4 C/O</td>
<td>2 one-shot off, 2 instantaneous</td>
</tr>
</tbody>
</table>

Monitoring

<table>
<thead>
<tr>
<th>Relay</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACD</td>
<td>1 C/O + 1 N/O</td>
<td>Battery voltage monitoring</td>
</tr>
<tr>
<td>UMD</td>
<td>1 C/O + 1 N/O</td>
<td>Voltage monitoring</td>
</tr>
<tr>
<td>DI</td>
<td>2 C/O</td>
<td>Current monitoring</td>
</tr>
</tbody>
</table>

Sockets & accessories

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sockets</td>
<td>Options</td>
</tr>
<tr>
<td>Accessories</td>
<td>Options</td>
</tr>
</tbody>
</table>

Example ordering scheme D-relays
The unique D-relay concept is specifically designed to solve demanding applications (for example in the power utility market); high DC breaking capacity and inductive load switching, offering long electrical life and low life cycle costs. The Solve-All relay application concept offers ultimate flexibility to design and supply tailor made D-relays.

**Design features**

- **Solve-All relay concept**
- **Suitable for hazardous areas**
  - Corrosion resistant.
  - Shock & vibration resistant.
  - Integrated snap-lock.
- **Fast switching**
  - Standard pull-in times.
  - DC coil: 20 ms
  - AC coil: 10 ms
  - Including option R
  - D-R coil: <7 ms
- **Switching capacity**
  - 1 mA...10 A (200 A overload).
  - High DC breaking capacity.
  - Can be increased with option B, magnetic arc blowout.
- **Contacts**
  - Up to 4 changeover contacts.
  - Standard, Ag contact material.
  - AgSnO2 or goldplated contact material on request.
  - Calibrated contact pressure.
- **Back EMF diode**
  - Integrated to suppress the back EMF from de-energizing the coil, to protect the external electronic control system connected to the relay.
- **LED indicator**
  - Is especially connected in series with a section of the coil and therefore checking the coil performance besides indicating coil voltage presence.
- **Socket**
  - We offer a wide range of mounting sockets for wall, rail, flush or PCB mounting. Connections with screw, cageclamp, faston, soldering or crimp terminals.
- **Cover**
  - Transparent cover for visual check.
  - On the top clear indication of type, contact arrangement and coil voltage.
- **Joke + springs**
  - The joke + springs system is adjusted to calibrate the contact pressure of the normally closed contacts.
- **Smitt-style pinning**
  - 14 silver plated, flat pins, for excellent, low resistant connection and protection against corrosion.
- **Snap lock**
  - Integrated relay retaining clip for sturdy mounting in the socket and prevents an external clip/spring.
- **Also available with 8 changeover contacts in bigger housing (model D8-UL & KDN).**
Standard relay
10 A, 4 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 4 C/O contacts
- DC (with back EMF diode) and AC coil
- LED indicator (standard)
- Cadmium free contacts

Contact specifications
Contact material
Ag
Number & configuration
4 C/O
Rated continuous current
10 A
Breaking capacity AC 1
10 A / 230 V
Breaking capacity DC 1
1 A / 110 V
Max. make current
16 A
Max. switching voltage
350 VDC / 440 VAC
Min. switching voltage
12 V
Min. switched current
10 mA (Au, 1 μV, 1 μA)
Peak inrush current
200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)

Coil specifications
Nominal voltage (Un DC)
12, 24, 48, 72, 110, 125, 220, 250 VDC
Nominal voltage (Un AC)
12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
Power consumption (AC/DC)
2 VA / 2 W
Operating range
0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
Mechanical life cycles (AC/DC)
10 x 10⁶ / 50 x 10⁶
Dielectric strength, coil-contact
2500 VAC
Dielectric strength contacts
4000 VAC
Isolation class
C 380
Pull-in time DC/AC
≤ 20 / 10 ms
Release time DC/AC
18 / 5 ms
Ambient temperature
-25 °C...+55 °C
Humidity
95% / 40 °C
Salt mist
5% NaCl, 35 °C for 4 days
Weight
125 g
Dimensions
40 x 40 x 53 mm
Protection category
IP40

Options
See page 14.
Remarks
Standard AC coil is 50 Hz, 60 Hz coil on request.
Other voltages on request.

Most common types
D 24 VDC 330219702
D 48 VDC 330219703
D 110 VDC 330219706
D 24 VAC 50 Hz 330219752
D 230 VAC 50 Hz 330219757

For more types check your local sales office, also check example ordering scheme on page 74.
## Options D-relays

*Solve-All* relay concept

The D-relays (and derived models) can be equipped with options mentioned below. This *Solve-All* concept allows composing the D-relay to solution for almost any relay.

Note: Not all options or combinations are possible. Check possible options and combinations with your local distributor or our sales department.

### Contact options

The following options can affect the contact configuration in number contacts and contact specifications:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong></td>
<td><strong>Option B</strong> Magnetic arc blow-out (for DC and inductive loads)</td>
<td>![Diagram B]</td>
</tr>
<tr>
<td><strong>E</strong></td>
<td><strong>Option E</strong> Goldplated contacts (10 μm) Cannot be combined with option M</td>
<td>![Diagram E]</td>
</tr>
<tr>
<td><strong>M</strong></td>
<td><strong>Option M</strong> AgSnO₂ contacts, high resistance to welding Cannot be combined with option E</td>
<td>![Diagram M]</td>
</tr>
<tr>
<td><strong>R</strong></td>
<td><strong>Option R</strong> Fast switching, pull-in time &lt;7 ms for DC coil only Cannot be combined with option L</td>
<td>![Diagram R]</td>
</tr>
<tr>
<td><strong>X4</strong></td>
<td><strong>Option X4</strong> Make before break contacts 2 N/O 2 N/C</td>
<td>![Diagram X4]</td>
</tr>
<tr>
<td><strong>X5</strong></td>
<td><strong>Option X5</strong> Contact gap 2 mm 2 N/O 2 N/C</td>
<td>![Diagram X5]</td>
</tr>
<tr>
<td><strong>Y</strong></td>
<td><strong>Option Y</strong> Double make / double break contacts 2 N/O 2 N/C</td>
<td>![Diagram Y]</td>
</tr>
<tr>
<td><strong>W</strong></td>
<td><strong>Option W</strong> Weld-no-transfer</td>
<td>![Diagram W]</td>
</tr>
<tr>
<td><strong>11</strong></td>
<td><strong>Option 11</strong> Make before break contact 1 C/O 1 N/O 1 N/C (safety application)</td>
<td>![Diagram 11]</td>
</tr>
</tbody>
</table>
## Options D-relays
### Solve-All relay concept

## Options

### Coil options

The following options affect the coil specifications:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>D</strong></td>
<td>Back EMF diode for system protection, BYW45 philips (standard in DC coil)</td>
</tr>
<tr>
<td><strong>H</strong></td>
<td>High burden protection DC 110 VDC 220 VDC, 10 µF, 150% Un</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>Polarisation diode</td>
</tr>
<tr>
<td><strong>Q</strong></td>
<td>Double zener diode over coil</td>
</tr>
<tr>
<td><strong>V</strong></td>
<td>Wider operating range and ambient temperature (DC) Operating range 0.7...1.25 Un DC Ambient temperature -25 °C...+70 °C Power consumption 2.22 W</td>
</tr>
<tr>
<td><strong>X2</strong></td>
<td>Rectifier circuit Universal AC/DC coil.</td>
</tr>
<tr>
<td><strong>X3</strong></td>
<td>Reversed polarity (DC) Contact 1 = negative (-) Contact 2 = positive (+)</td>
</tr>
<tr>
<td><strong>Z</strong></td>
<td>Polarity independent No diode and no LED.</td>
</tr>
</tbody>
</table>
Options D-relays
Solve-All relay concept

Options

General options

The general options are options for better performance and maintenance and do not affect the contacts or the coil.

Option A
Trip indicator
Cannot be combined with option K
Indicates the relay has been energised

Option C
Low temperature (-40 °C )
Max. contact current 8 A
Makes the relay more suitable for operation at extreme low temperatures.

Option K
Cover sealed with sealant
Cannot be combined with options A & T
Cover sealed to make the relay IP50

Option L
LED integrated in coil
LED is standard in all industrial instantaneous relays. When the coil is broken the LED does not illuminate.

Option S
Mechanical position indicator
Cannot be combined with option T
Visual indication of position of the contacts

Option T
Push-to-test button
Cannot be combined with options K & S
To manual operate the contact mechanically

Option X
Bi-directional LED

Option colour coding
Coloured cover (coil voltage coding)

Option keying
Coil coding relay & socket
To prevent wrong installation
A104 - key receptable
A111 - keying pin
High DC breaking capacity

10 A, 4 C/O (7 A, DC 1)

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug in
- 4 C/O contacts
- DC (with back EMF diode) and AC coil
- Flash barriers
- LED indicator (option L standard)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Magnetic arc blow-out (option B, standard)

Contact specifications

Contact material: Ag
Number & configuration: 4 C/O
Rated continuous current: 10 A
Breaking capacity AC 1: 10 A / 230 V
Breaking capacity DC 1: 7 A / 110 V
Max. make current: 16 A
Max. switching voltage: 350 VDC / 440 VAC
Min. switching voltage: 12 V
Min. switched current: 10 mA (Au, 1 μV, 1 μA)
Peak inrush current: 200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)

Coil specifications

Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
Power consumption (AC/DC): 2 VA / 2 W
Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data

Mechanical life cycles (AC/DC): 10 x 10⁶ / 50 x 10⁶
Dielectric strength, coil-contact: 2500 VAC
Dielectric strength contacts: 4000 VAC
Isolation class: C 380
Pull-in time DC/AC: ≤ 20 / 5 ms
Release time DC/AC: 18 / 5 ms
Ambient temperature: -25 °C...+55 °C
Humidity: 95% / 40 °C
Salt mist: 5% NaCl, 35 °C for 4 days
Weight: 140 g
Dimensions: 40 x 40 x 53 mm
Protection category: IP40

Options

See page 14.

Remarks

Standard AC coil is 50 Hz, 60 Hz coil on request. Other voltages on request.
**D-R**

**Fast switching**

**10 A, 3 C/O**

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 3 C/O contacts
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Fast switching <7 ms (for DC only) (option R, standard)

**Standards**
- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810

**Connection diagram**

**Dimensions**

- Fast switching
- 10 A, 3 C/O
- Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 3 C/O contacts
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Fast switching <7 ms (for DC only) (option R, standard)

**Pin arrangement**

**Smitt-style**

**Contact specifications**

- Contact material: Ag
- Number & configuration: 3 C/O
- Rated continuous current: 10 A
- Breaking capacity AC 1: 10 A / 230 V
- Breaking capacity DC 1: 1 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand ±10 x 200 A @ 10 ms, 1 min)

**Coil specifications**

- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Power consumption: 25 W (during pull-in), 1 W (continuous)
- Operating range: 0.8...1.1 Un

**Technical data**

- Mechanical life cycles DC: 50 x 10⁶
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC: ≤ 7 ms
- Release time DC: 10 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 125 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

**Options**

- See page 14.

**Remarks**

- Other voltages on request.

**Most common types**

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-R</td>
<td>24 VDC</td>
<td>334931361</td>
</tr>
<tr>
<td>D-R</td>
<td>48 VDC</td>
<td>334931365</td>
</tr>
<tr>
<td>D-R</td>
<td>110 VDC</td>
<td>334931360</td>
</tr>
<tr>
<td>D-R</td>
<td>220 VDC</td>
<td>334931366</td>
</tr>
</tbody>
</table>

For more types check your local sales office
High DC breaking capacity, fast switching

10 A, 3 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 3 C/O contacts
- Flash barriers
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Magnetic arc blow-out (option B, standard)
- Fast switching <7 ms (for DC only) (option R, standard)

Connection diagram

Contact specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material</td>
<td>Ag</td>
</tr>
<tr>
<td>Number &amp; configuration</td>
<td>3 C/O</td>
</tr>
<tr>
<td>Rated continuous current</td>
<td>10 A</td>
</tr>
<tr>
<td>Breaking capacity AC 1</td>
<td>10 A / 230 V</td>
</tr>
<tr>
<td>Breaking capacity DC 1</td>
<td>7 A / 110 V</td>
</tr>
<tr>
<td>Max. make current</td>
<td>16 A</td>
</tr>
<tr>
<td>Max. switching voltage</td>
<td>350 VDC</td>
</tr>
<tr>
<td>Min. switching voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Min. switched current</td>
<td>10 mA (Au, 1 μV, 1 μA)</td>
</tr>
<tr>
<td>Peak inrush current</td>
<td>200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)</td>
</tr>
</tbody>
</table>

Coil specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage (Un DC)</td>
<td>12, 24, 48, 72, 110, 125, 220, 250 VDC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>25 W (during pull-in), 1 W (continuous)</td>
</tr>
<tr>
<td>Operating range</td>
<td>0.8...1.1 Un</td>
</tr>
</tbody>
</table>

Technical data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical life cycles DC</td>
<td>10 x 10⁶</td>
</tr>
<tr>
<td>Dielectric strength, coil-contact</td>
<td>2500 VAC</td>
</tr>
<tr>
<td>Dielectric strength contacts</td>
<td>4000 VAC</td>
</tr>
<tr>
<td>Isolation class</td>
<td>C 380</td>
</tr>
<tr>
<td>Pull-in time DC</td>
<td>≤ 7 ms</td>
</tr>
<tr>
<td>Release time DC</td>
<td>10 ms</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 °C...+55 °C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% / 40 °C</td>
</tr>
<tr>
<td>Salt mist</td>
<td>5% NaCl, 35 °C for 4 days</td>
</tr>
<tr>
<td>Weight</td>
<td>140 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>40 x 40 x 53 mm</td>
</tr>
<tr>
<td>Protection category</td>
<td>IP40</td>
</tr>
</tbody>
</table>

Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>See page 14.</td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td>Other voltages on request.</td>
</tr>
</tbody>
</table>

Dimensions

Most common types

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-RB</td>
<td>24 VDC</td>
<td>334931370</td>
</tr>
<tr>
<td>D-RB</td>
<td>48 VDC</td>
<td>334931353</td>
</tr>
<tr>
<td>D-RB</td>
<td>110 VDC</td>
<td>334931350</td>
</tr>
<tr>
<td>D-RB</td>
<td>220 VDC</td>
<td>334931351</td>
</tr>
</tbody>
</table>

For more types check your local sales office
D-BV

Wide coil range high DC breaking capacity
10 A, 4 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 4 C/O contacts
- DC (with back EMF diode) and AC coil
- Flash barriers
- LED indicator (option L standard)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Magnetic arc blow-out (option B, standard)
- Wider range (option V, standard)

Connection diagram

Dimensions

---

Contact specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material</td>
<td>Ag</td>
</tr>
<tr>
<td>Number &amp; configuration</td>
<td>4 C/O</td>
</tr>
<tr>
<td>Rated continuous current</td>
<td>10 A</td>
</tr>
<tr>
<td>Breaking capacity AC 1</td>
<td>10 A  / 230 V</td>
</tr>
<tr>
<td>Breaking capacity DC 1</td>
<td>7 A   / 110 V</td>
</tr>
<tr>
<td>Max. make current</td>
<td>16 A</td>
</tr>
<tr>
<td>Max. switching voltage</td>
<td>350 VDC / 440 VAC</td>
</tr>
<tr>
<td>Min. switching voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Min. switched current</td>
<td>10 mA (Au, 1 μV, 1 μA)</td>
</tr>
<tr>
<td>Peak inrush current</td>
<td>200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)</td>
</tr>
</tbody>
</table>

Coil specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage (Un DC)</td>
<td>12, 24, 48, 72, 110, 125, 220, 250 VDC</td>
</tr>
<tr>
<td>Nominal voltage (Un AC)</td>
<td>12, 24, 48, 72, 100, 120, 230, 350, 380 VAC</td>
</tr>
<tr>
<td>Power consumption (AC/DC)</td>
<td>2.5 VA / 2.2 W</td>
</tr>
<tr>
<td>Operating range</td>
<td>0.7...1.25 Un</td>
</tr>
</tbody>
</table>

Technical data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical life cycles (AC/DC)</td>
<td>$10 \times 10^6$ / $50 \times 10^6$</td>
</tr>
<tr>
<td>Dielectric strength, coil-contact</td>
<td>2500 VAC</td>
</tr>
<tr>
<td>Dielectric strength contacts</td>
<td>4000 VAC</td>
</tr>
<tr>
<td>Isolation class</td>
<td>C 380</td>
</tr>
<tr>
<td>Pull-in time DC/AC</td>
<td>≤ 20 / 5 ms</td>
</tr>
<tr>
<td>Release time DC/AC</td>
<td>18 / 5 ms</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 °C...+55 °C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% / 40 °C</td>
</tr>
<tr>
<td>Salt mist</td>
<td>5% NaCl, 35 °C for 4 days</td>
</tr>
<tr>
<td>Weight</td>
<td>140 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>40 x 40 x 53 mm</td>
</tr>
<tr>
<td>Protection category</td>
<td>IP40</td>
</tr>
</tbody>
</table>

Most common types

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-BV</td>
<td>24 VDC</td>
<td>330219800</td>
</tr>
<tr>
<td>D-BV</td>
<td>48 VDC</td>
<td>330219799</td>
</tr>
<tr>
<td>D-BV</td>
<td>110 VDC</td>
<td>330219798</td>
</tr>
<tr>
<td>D-BV</td>
<td>220 VDC</td>
<td>330219797</td>
</tr>
</tbody>
</table>

Options

- See page 14.

Remarks

- Standard AC coil is 50 Hz, 60 Hz coil on request.
- Other voltages on request.
High DC breaking capacity, forced guided contacts 10 A, 4 contacts

Heavy duty safety applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- Various contact configurations
- DC (with back EMF diode)
- Flash barriers
- LED indicator (option L standard)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Magnetic arc blow-out (option B, standard)
- Weld-no-transfer contacts (option W, standard)
- According EN 50205, application type A

Contact specifications
- Contact material: Ag
- Number & configuration: 4 contacts
- Rated continuous current: 10 A
- Breaking capacity AC 1: 10 A / 230 V
- Breaking capacity DC 1: 7 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)

Coil specifications
- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Power consumption (AC/DC): 2 VA / 2 W
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles DC: 10 x 10^6
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC: < 25 ms
- Release time DC: 55 ms
- Ambient temperature: -25 °C...+55 °C (option V)
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 140 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

Options
- See page 14.

Remarks
- Other voltages on request.

Most common types
- D-BW013 110 VDC 330219832
- D-BW013 220 VDC 330219835
- D-BW022 110 VDC 330219833
- D-BW022 220 VDC 330219836
- D-BW031 110 VDC 330219834
- D-BW031 220 VDC 330210837

For more types check your local sales office
Instantaneous

High DC breaking capacity
10 A, 2 DM/DB (8 A, DC1)

2 contacts in series. Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads. Very high DC breaking capacity, long contact life.

- Plug-in
- 2 double make / double break contacts (option Y, standard)
- DC (with back EMF diode) and AC coil
- Flash barriers
- LED indicator (option L, standard)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Magnetic arc blow-out (option B, standard)

Contact specifications
- Contact material: Ag
- Number & configuration: 2 C/O, DM-DB
- Rated continuous current: 10 A
- Breaking capacity AC 1: 10 A / 230 V
- Breaking capacity DC 1: 8 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)

Coil specifications
- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
- Power consumption (AC/DC): 2 VA / 2 W
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles (AC/DC): 10 x 10^6 / 50 x 10^6
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC/AC: < 20 / 5 ms
- Release time DC/AC: 18 / 5 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 140 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

Options

Remarks
See page 14.
Standard AC coil is 50 Hz, 60 Hz coil on request. Other voltages on request.

For more types check your local sales office

D-YB

Most common types
- D-YB 24 VDC 330219873
- D-YB 48 VDC 330219870
- D-YB 110 VDC 330219874
- D-YB 230 VAC 50 Hz 330219872

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

Pin arrangement
Smitt-style

Connection diagram

Dimensions

For more types check your local sales office
**Very high breaking capacity**

**10 A, 2 N/O + 2 N/C (10 A, DC 1)**

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 2 N/O + 2 N/C contacts
- DC (with back EMF diode) and AC coil
- Flash barriers
- LED indicator
- Cadmium free contacts
- Magnetic arc blow-out (option B, standard)
- Contact gap 2 mm (option X5, standard)

**Contact specifications**

- Contact material: Ag
- Number & configuration: 2 N/O + 2 N/C contacts
- Rated continuous current: 10 A
- Breaking capacity AC 1: 10 A / 230 V
- Breaking capacity DC1: 10 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)

**Coil specifications**

- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
- Power consumption (AC/DC): 2 VA / 2 W
- Operating range: 0.8...1.1 Un

**Technical data**

- Mechanical life cycles (AC/DC): 10 x 10⁶ / 30 x 10⁶
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC/AC: ≤ 20 / 5 ms
- Release time DC/AC: 18 / 5 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 140 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

**Options**

- See page 14.

**Remarks**

- Standard AC coil is 50 Hz, 60 Hz coil on request.
- Other voltages on request.
Instantaneous

D-BYX5

Very high DC breaking capacity (12 A, DC1)
10 A, 2 DM/DB

2 contacts in series. Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 1 double make / double break contact (option Y, standard)
- DC (with back EMF diode) and AC coil
- Flash barriers
- LED indicator
- Cadmium free contacts
- Magnetic arc blow-out (option B, standard)
- Contact gap 4 mm (option X5, standard)

Connection diagram

Dimensions

Contact specifications

Contact material Ag
Number & configuration 1 double make / double break contact
Rated continuous current 10 A
Breaking capacity AC 1 10 A / 230 V
Breaking capacity DC1 12 A / 110 V
Max. make current 16 A
Max. switching voltage 350 VDC / 440 VAC
Min. switching voltage 12 V
Min. switched current 10 mA (Au, 1 μV, 1 μA)
Peak inrush current 200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)

Coil specifications

Nominal voltage (Un DC) 12, 24, 48, 72, 110, 125, 220, 250 VDC
Nominal voltage (Un AC) 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
Power consumption (AC/DC) 2 VA / 2 W
Operating range 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data

Mechanical life cycles (AC/DC) 10 x 10⁴ / 30 x 10⁴
Dielectric strength, coil-contact 2500 VAC
Dielectric strength contacts 4000 VAC
Isolation class C 380
Pull-in time DC/AC ≤ 20 / 5 ms
Release time DC/AC 18 / 5 ms
Ambient temperature -25 °C...+55 °C
Humidity 95% / 40 °C
Salt mist 5% NaCl, 35 °C for 4 days
Weight 140 g
Dimensions 40 x 40 x 53 mm
Protection category IP40

Options

Standard AC coil is 50 Hz, 60 Hz coil on request.
Other voltages on request.

For more types check your local sales office
Low current switching

4 C/O

Suitable for low current dry circuit and mixed load switching. Can be used in corrosive environments.

- Plug-in
- 4 C/O contacts
- DC (with back EMF diode) and AC coil
- LED indicator (option L, standard)
- Cadmium free contacts
- Gold plated contacts (option E, standard)

Contact specifications
Contact material: Ag, 10 μm gold plated
Number & configuration: 4 C/O
Max. contact load: 60 V, 400 mA, max 1.6 W
Max. switching voltage: 350 VDC / 440 VAC
Min. switched voltage/current: 1 μV, 1 μA
Peak inrush current: 200 A (withstand ≥10 x 200 A @ 10 ms, 1 min)

Coil specifications
Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
Power consumption (AC/DC): 2 VA / 2 W
Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
Mechanical life cycles (AC/DC): 10 x 10⁶ / 50 x 10⁶
Dielectric strength, coil-contact: 2500 VAC
Dielectric strength contacts: 4000 VAC
Isolation class: C 380
Pull-in time DC/AC: ≤ 20 / 11 ms
Release time DC/AC: 18 / 8 ms
Ambient temperature: -25 °C...+55 °C
Humidity: 95% / 40 °C
Salt mist: 5% NaCl, 35 °C for 4 days
Weight: 125 g
Dimensions: 40 x 40 x 53 mm
Protection category: IP40

Options
See page 14.

Remarks
Standard AC coil is 50 Hz, 60 Hz coil on request. Other voltages on request.
Very wide coil range, 0.4 \( U_{\text{nom}} \) (DC)
10 A, 2 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads. Very wide coil voltage range.

- Plug-in
- 2 C/O contacts
- DC and AC coil
- Cadmium free contacts
- 'Smitt-style' pinning with integrated retaining silver plated clip
- Extreme sensitive coil (pull-in voltage 0.4 x \( U_{\text{nom}} \))

Contact specifications
- Contact material: Ag
- Number & configuration: 2 C/O
- Rated continuous current: 10 A
- Max. make current: 16 A
- Max. switching voltage: 350 VDC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand \( \geq 10 \times 200 \text{ A} \) @ 10 ms, 1 min)

Coil specifications
- Nominal voltage (\( U_{\text{nom}} \) DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Nominal voltage (\( U_{\text{nom}} \) AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
- Power consumption (AC/DC): 2 VA / 2 W
- Operating range: 0.4...1.1 \( U_{\text{nom}} \)

Technical data
- Mechanical life cycles (AC/DC): 10 x \( 10^6 \) / 50 x \( 10^6 \)
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC/AC: \( \leq 20 / 10 \text{ ms} \)
- Release time DC/AC: 18 / 5 ms
- Ambient temperature: \(-25 \degree\text{C}...+55 \degree\text{C}\)
- Humidity: 95% / 40 \degree\text{C}
- Salt mist: 5% NaCl, 35 \degree\text{C} for 4 days
- Weight: 125 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

Options

For more types check your local sales office

Remarks
Standard AC coil is 50 Hz, 60 Hz coil on request.
Other voltages on request.
D-YBMZD

Windpower & solar solutions
10 A, 2 DM/DB

2 contacts in series with AgSnO₂ contacts, highly resistive against welding.
Heavy duty applications, switching of high DC voltages, resistive and inductive loads.

- Plug-in
- 2 double make / double break contacts (option V, standard)
- DC (with back EMF diode) and AC coil
- Flash barriers
- AgSnO₂ contacts (option M, standard)
- Cadmium free contacts
- Magnetic arc blow-out (option B, standard)

Contact specifications
- Contact material: AgSnO₂
- Number & configuration: 2 double make / double break contacts
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 8 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)

Coil specifications
- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
- Power consumption (AC/DC): 2 VA / 2 W
- Operating range: 0.8…1.1 Un (0.7…1.25 Un option V)

Technical data
- Mechanical life cycles (AC/DC): 10 x 10⁶ / 50 x 10⁶
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC/AC: ≤ 20 / 10 ms
- Release time DC/AC: 18 / 5 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 125 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

Options
- See page 14.

Remarks
- Standard AC coil is 50 Hz, 60 Hz coil on request.
- Other voltages on request.

Most common types
- D-YBMZD 12 VDC
- D-YBMZD 24 VDC
- D-YBMZD 48 VDC
- D-YBMZD 110 VDC
- D-YBMZD 220 VDC

For more types check your local sales office
**D8-UL**

**Heavy duty**

**10 A, 8 C/O**

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 8 C/O contacts
- AC/DC coil voltage (rectifier bridge, option U, standard)
- Coil is suitable for AC/DC voltage
- LED indicator (option L, standard)
- Cadmium free contacts

---

**Contact specifications**

- **Contact material**: Ag
- **Number & configuration**: 8 C/O
- **Rated continuous current**: 10 A
- **Breaking capacity AC1**: 10 A / 230 V
- **Breaking capacity DC1**: 1 A / 110 V
- **Max. make current**: 16 A
- **Max. switching voltage**: 350 VDC / 440 VAC
- **Min. switching voltage**: 12 V
- **Min. switched current**: 10 mA (Au, 1 μV, 1 μA)
- **Peak inrush current**: 200 A (withstand ≥ 10 x 200 A @ 10 ms, 1 m)

**Coil specifications**

- **Nominal voltage (Un AC/DC)**: 12, 24, 48, 72, 110, 125, 220, 250 VAC / DC
- **Power consumption (DC/AC)**: 2.5-3.5 W / VA
- **Operating range**: 0.8...1.1 Un (0.7...1.25 Un option V)

**Technical data**

- **Mechanical life cycles**: 10 x 10⁶
- **Dielectric strength, coil-contact**: 2500 VAC
- **Dielectric strength contacts**: 4000 VAC
- **Isolation class**: C 380
- **Pull-in time DC/AC**: ≤ 17 / 18 ms
- **Release time DC/AC**: 12 / 12 ms
- **Ambient temperature**: -25 °C...+55 °C
- **Humidity**: 95% / 40 °C
- **Salt mist**: 5% NaCl, 35 °C for 4 days
- **Weight**: 330 g
- **Dimensions**: 40 x 88 x 53 mm
- **Protection category**: IP40

**Options**

- See page 14.

**Remarks**

- Other voltages on request.

---

**Most common types**

- D8-UL 24-28 VAC/DC 334980502
- D8-UL 42-48 VAC/DC 334980503
- D8-UL 60-70 VAC/DC 334980504
- D8-UL 100-110 VAC/DC 334980506
- D8-UL 220-230 VAC/DC 334980507
- D8-UL 250 VAC/DC 334980512

For more types check your local sales office.
**D8-ULB**

**High DC breaking capacity (7 A, DC1)**

10 A, 8 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 8 C/O contacts
- AC/DC coil voltage (rectifier bridge, option U, standard)
- Coil is suitable for AC/DC voltage
- LED indicator (option L, standard)
- Cadmium free contacts
- Magnetic arc blowout (option B, standard)

**Connection diagram**

**Contact specifications**

- Contact material: Ag
- Number & configuration: 8 C/O
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 7 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand ≥ 10 x 200 A @ 10 ms, 1 m)

**Coil specifications**

- Nominal voltage (Un AC/DC): 12, 24, 48, 72, 110, 125, 220, 250 VAC / DC
- Power consumption (DC/AC): 2.5-3.5 W / VA
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

**Technical data**

- Mechanical life cycles: 10 x 10⁶
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC/AC: ≤ 17 / 18 ms
- Release time DC/AC: 12 / 12 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 330 g
- Dimensions: 40 x 88 x 53 mm
- Protection category: IP40

**Options**

- See page 14.

**Remarks**

- Other voltages on request.

---

For more types check your local sales office.
High DC breaking capacity (8 A, DC1)
10 A, 8 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 4 C/O double make / double break contacts (option Y, standard)
- AC/DC coil voltage (rectifier bridge, option U, standard)
- Coil is suitable for AC/DC voltage
- LED indicator (option L, standard)
- Cadmium free contacts
- Magnetic arc blowout (option B, standard)

Contact specifications
- Contact material: Ag
- Number & configuration: 4 C/O DM/DB
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 8 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand ≥ 10 x 200 A @ 10 ms, 1 m)

Coil specifications
- Nominal voltage (Un AC/DC): 12, 24, 48, 72, 110, 125, 220, 250 VAC / DC
- Power consumption (DC/AC): 2.5-3.5 W / VA
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 10 x 10⁶
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC/AC: ≤ 17 / 18 ms
- Release time DC/AC: 12 / 12 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 330 g
- Dimensions: 40 x 88 x 53 mm
- Protection category: IP40

Options
- See page 14.

Remarks
- Other voltages on request.

Most common types
- D8-ULYB 24-28 VAC/DC
- D8-ULYB 42-48 VAC/DC
- D8-ULYB 100-110 VAC/DC
- D8-ULYB 220-230 VAC/DC 334980703

For more types check your local sales office.
High DC breaking capacity (10 A, DC1)
10 A, 4 N/O + 4 N/C

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 4 N/O + 4 N/C contacts
- AC/DC coil voltage (rectifier bridge, option U, standard)
- Coil is suitable for AC/DC voltage
- LED indicator
- Cadmium free contacts
- Magnetic arc blowout (option B, standard)
- Contact gap 4 mm (option X5, standard)

Contact specifications

<table>
<thead>
<tr>
<th>Contact material</th>
<th>Ag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number &amp; configuration</td>
<td>4 N/O + 4 N/C</td>
</tr>
<tr>
<td>Rated continuous current</td>
<td>10 A</td>
</tr>
<tr>
<td>Breaking capacity AC1</td>
<td>10 A / 230 V</td>
</tr>
<tr>
<td>Breaking capacity DC1</td>
<td>10 A / 110 V</td>
</tr>
<tr>
<td>Max. make current</td>
<td>16 A</td>
</tr>
<tr>
<td>Max. switching voltage</td>
<td>350 VDC / 440 VAC</td>
</tr>
<tr>
<td>Min. switching voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Min. switched current</td>
<td>10 mA (Au, 1 μV, 1 μA)</td>
</tr>
<tr>
<td>Peak inrush current</td>
<td>200 A (withstand ≥ 10 x 200 A @ 10 ms, 1 m)</td>
</tr>
</tbody>
</table>

Coil specifications

| Nominal voltage (Un AC/DC) | 12, 24, 48, 72, 110, 125, 220, 250 VAC / DC |
| Power consumption (DC/AC) | 2.5-3.5 W / VA |
| Operating range | 0.8...1.1 Un (0.7...1.25 Un option V) |

Technical data

| Mechanical life cycles | 10 x 10⁶ |
| Dielectric strength, coil-contact | 2500 VAC |
| Dielectric strength contacts | 4000 VAC |
| Isolation class | C 380 |
| Pull-in time DC/AC | ≤ 17 / 18 ms |
| Release time DC/AC | 12 / 12 ms |
| Ambient temperature | -25 °C...+55 °C |
| Humidity | 95% / 40 °C |
| Salt mist | 5% NaCl, 35 °C for 4 days |
| Weight | 330 g |
| Dimensions | 40 x 88 x 53 mm |
| Protection category | IP40 |

Most common types

D8-ULBX5 24-28 VAC/DC -
D8-ULBX5 42-48 VAC/DC -
D8-ULBX5 100-110 VAC/DC -
D8-ULBX5 220-230 VAC/DC -

For more types check your local sales office
High DC breaking capacity (12 A, DC1)
10 A, 2 DM/DB

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 2 double make / double break contacts (option Y)
- AC/DC coil voltage (rectifier bridge, option U, standard)
- Coil is suitable for AC/DC voltage
- LED indicator
- Cadmium free contacts
- Magnetic arc blowout (option B, standard)
- Contact gap 4 mm (option X5, standard)

Contact specifications
- Contact material: Ag
- Number & configuration: 2 DM/DB
- Rated continuous current: 10 A
- Breaking capacity AC1: 12 A / 230 V
- Breaking capacity DC1: 12 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)
- Peak inrush current: 200 A (withstand ≥ 10 x 200 A @ 10 ms, 1 m)

Coil specifications
- Nominal voltage (Un AC/DC): 12, 24, 48, 72, 110, 125, 220, 250 VAC / DC
- Power consumption (DC/AC): 2.5-3.5 W / VA
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 10 x 10^6
- Dielectric strength, coil-contact: 2500 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Pull-in time DC/AC: ≤ 17 / 18 ms
- Release time DC/AC: 12 / 12 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 330 g
- Dimensions: 40 x 88 x 53 mm
- Protection category: IP40

Options
- See page 14.

Remarks
- Other voltages on request.

Most common types
- D8-ULYBX5 24-28 VAC/DC
- D8-ULYBX5 42-48 VAC/DC
- D8-ULYBX5 100-110 VAC/DC
- D8-ULYBX5 220-230 VAC/DC

For more types check your local sales office.
Heavy duty latching, mechanical
10 A, 8 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 8 C/O contacts
- DC and AC coil
- Cadmium free contacts
- Position indicator (red/green)
- Continuous coil energization permitted

Contact specifications

<table>
<thead>
<tr>
<th>Contact material</th>
<th>Ag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number &amp; configuration</td>
<td>8 C/O</td>
</tr>
<tr>
<td>Rated continuous current</td>
<td>10 A</td>
</tr>
<tr>
<td>Breaking capacity AC1</td>
<td>10 A / 230 V</td>
</tr>
<tr>
<td>Breaking capacity DC1</td>
<td>1 A / 110 V</td>
</tr>
<tr>
<td>Max. make current</td>
<td>16 A</td>
</tr>
<tr>
<td>Max. switching voltage</td>
<td>350 VDC / 440 VAC</td>
</tr>
<tr>
<td>Min. switching voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Min. switched current</td>
<td>10 mA (Au, 1 μV, 1 μA)</td>
</tr>
</tbody>
</table>

Coil specifications

<table>
<thead>
<tr>
<th>Nominal voltage (Un DC)</th>
<th>12, 24, 48, 72, 110, 125, 220, 250 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage (Un AC)</td>
<td>12, 24, 48, 72, 100, 120, 230, 350, 380 VAC</td>
</tr>
<tr>
<td>Power consumption (AC/DC)</td>
<td>3.2 VA / 3.5 W</td>
</tr>
<tr>
<td>Operating range</td>
<td>0.8...1.1 Un (0.7...1.25 Un option V)</td>
</tr>
</tbody>
</table>

Technical data

- Mechanical life cycles | 10 x 10⁶ cycles |
- Dielectric strength, coil-contact | 2500 VAC |
- Dielectric strength contacts | 4000 VAC |
- Isolation class | C 380 |
- Minimum impulse time | 50 ms |
- Ambient temperature | -25 °C...+55 °C |
- Humidity | 95% / 40 °C |
- Salt mist | 5% NaCl, 35 °C for 4 days |
- Weight | 320 g |
- Dimensions | 40 x 88 x 56 mm |
- Protection category | IP40 |

Options

See page 14.

Remarks

Standard AC coil is 50 Hz, 60 Hz coil on request.
Other voltages on request.
≥ 50 ms energization needed to set or reset the relay.

For more types check your local sales office
Heavy duty latching, mechanical
10 A, 8 C/O

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 8 C/O contacts
- DC and AC coil
- Cadmium free contacts
- Position indicator (red/green)
- Continuous coil energization permitted
- Magnetic arc blowout (option B, standard)

Contact specifications
- Contact material: Ag
- Number & configuration: 8 C/O
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 7 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 350 V DC / 440 V AC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)

Coil specifications
- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
- Power consumption (AC/DC): 3.2 W / 3.5 VA
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 10 x 10⁶
- Dielectric strength, coil-contact: 2500 V AC
- Dielectric strength contacts: 4000 V AC
- Isolation class: C 380
- Minimum impuls time: 50 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 320 g
- Dimensions: 40 x 88 x 56 mm
- Protection category: IP40

Options
See page 14.

Remarks
Standard AC coil is 50 Hz, 60 Hz coil on request.
Other voltages on request.
≥ 50 ms energization needed to set or reset the relay

Most common types
- KDN-B 24 VDC 331611002
- KDN-B 48 VDC -
- KDN-B 110 VDC 331611004
- KDN-B 220 VDC 331611003

For more types check your local sales office
Heavy duty latching, magnetic
10 A, 3 C/O + 1 N/C

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 3 C/O + 1 N/C contacts
- DC and AC coil
- Cadmium free contacts
- Puls activated resolving in less heat dissipation and energy consumption
- Continuous coil energization permitted

Contact specifications
- Contact material: Ag
- Number & configuration: 3 C/O + 1 N/C
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 1 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 250 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)

Coil specifications
- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
- Power consumption (AC/DC): 1.7 W / 4 VA
- Operating range: 0.85...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 10 x 10⁶
- Dielectric strength, coil-contact: 2000 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Minimum impulse time: ≤ 25 / 50 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 135 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

Options
- See page 14.

Remarks
- Other voltages on request.
- ≥ 25 ms energization needed to set or reset the relay
- Coil can be permanently energised

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

Pin arrangement
Smitt-style

For more types check your local sales office

www.morssmitt.com
**BD-B**

**Heavy duty latching, magnetic**

**10 A, 3 C/O + 1 N/C**

Heavy duty applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 3 C/O + 1 N/C contacts
- DC and AC coil
- Cadmium free contacts
- Puls activated resolving in less heat dissipation and energy consumption
- Continuous coil energization permitted
- Magnetic arc blowout (option B, standard)

**Contact specifications**

- Contact material: Ag
- Number & configuration: 3 C/O + 1 N/C
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 7 A / 110 V
- Max. make current: 16 A
- Max. switching voltage: 250 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA (Au, 1 μV, 1 μA)

**Coil specifications**

- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125, 220, 250 VDC
- Nominal voltage (Un AC): 12, 24, 48, 72, 100, 120, 230, 350, 380 VAC
- Power consumption (AC/DC): 1.7 W / 4 VA
- Operating range: 0.85...1.1 Un (0.7...1.25 Un option V)

**Technical data**

- Mechanical life cycles: 10 x 10⁶
- Dielectric strength, coil-contact: 2000 VAC
- Dielectric strength contacts: 4000 VAC
- Isolation class: C 380
- Minimum impuls time: ≤ 25 / 50 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 175 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

**Options**

- See page 14.
- Other voltages on request.
- ≥ 25 ms energization needed to set or reset the relay.
- Coil can be permanently energised.

**For more types check your local sales office**
Latching, magnetic
6 A, 2 C/O

Pulse activated applications, resolving in less heat dissipation and energy consumption.

- Plug-in
- 2 C/O contacts
- DC and AC coil
- Flash barriers
- Weld no transfer contacts
- Cadmium free contacts
- ‘Smitt-style' pinning with integrated retaining silver plated clip
- Continuous coil energization permitted

Contact specifications
- Contact material: Ag + 0.2 μm Au
- Number & configuration: 2 C/O
- Rated continuous current: 6 A
- Breaking capacity AC1: 6 A / 230 V
- Breaking capacity DC1: 300 mA / 300 V
- Max. make current: 15 A
- Max. switching voltage: 350 VDC / 440 VAC
- Min. switching voltage: 12 V
- Min. switched current: 10 mA

Coil specifications
- Nominal voltage (Un DC): 12, 24, 48, 72, 110, 125 VAC/DC
- Power consumption (DC/AC): 1.1 W / 0.85 VA
- Operating range: 0.8...1.2 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 30 x 10⁶
- Dielectric strength, coil-contact: 3000 VAC
- Isolation class: C 250
- Pick up time DC/AC: 25 ms
- Ambient temperature: -25 °C...+70 °C
- Weight: 95 g
- Dimensions: 40 x 40 x 76 mm
- Protection category: IP40

Options
- B - Magnetic arc blowout
- E - Gold plated contacts

Remarks
Other voltages on request.
Coil voltages 110, 125 and 220 V has a built-in resistor.

For more types check your local sales office
Pulse transducing

2 solid state contacts

Amplify the electric output pulse from for example electronic energy / kWh meters, activated by voltage pulse.

- Plug-in
- 2 N/O, 2 N/C, 1 N/O or 1 N/C contacts
- Universal
- Solid state contacts
- LED indicator
- ‘Smitt-style’ pinning with integrated retaining silver plated clip

Contact specifications

- Contact material: Solid state
- Number & configuration: 2 N/O, 2 N/C, 1 N/O or 1 N/C
- Rated continuous current (AC1, IEC 60947): 100 mA (max 100 ms)
- Max. switch current: 400 mA (max 100 ms)
- Max. switching voltage: < 230 V + 20% AC/DC

Coil specifications

- Nominal voltage:
  - IOD-1: 110 V
  - IOD-2: 24 V
  - IOD-3: 48/60 V
  - IOD-4: 220 V
- Operating range:
  - VDC: 0.8...1.4 Un
  - VAC: 0.7...1.2 Un

Technical data

- MTBF: 2.3 x 10^6 hrs
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: Solid state, 2 kV in / out
- Pull-in time DC/AC: < 5 ms
- Release time DC/AC: < 1 ms
- Ambient temperature: -10 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 55 g
- Dimensions: 40 x 40 x 53 mm
- Protection category: IP40

Remarks

- Switched voltage, 230 V + 20% DC/AC.
- Switching frequency max 10 Hz.

Standard types

- IOD - 1MM: 110 - 130 VDC/AC 334104100
- IOD - 1MB: 110 - 130 VDC/AC 334104101
- IOD - 1BM: 110 - 130 VDC/AC 334104110
- IOD - 1BB: 110 - 130 VDC/AC 334104111

For more types check your local sales office
Pulse transducing, DIN 43864
2 solid state contacts

Amplify the electric output pulse from for example electronic energy / kWh meters (electronic pulse input)

- Plug in
- 2 N/O, 2 N/C, 1 N/O or 1 N/C contacts
- Electronic pulse input: DIN 43867
- Universal DC and AC coil
- Solid state contacts
- LED indicator
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Separated supply voltage (1.2)

Contact specifications
Contact material: Solid state
Number & configuration: 2 N/O, 2 N/C, 1 N/O or 1 N/C
Rated continuous current: 100 mA (max 100 ms)
Max. switch current: 400 mA (max 100 ms)
Max. switching voltage: < 230 V + 20% AC/DC

Coil specifications
Nominal voltage: EIOD-1 110 V
Power consumption: 0.9 VA
Operating range: VDC 0.8...1.4 Un, VAC 0.7...1.2 Un

Technical data
MTBF: 2.3 x 10^9 hrs
Dielectric strength, coil-contact: 2000 VAC
Isolation class: Solid state, 2 kV in / out
Pull-in time DC/AC: < 5 ms
Release time DC/AC: 5 ms
Ambient temperature: -10 °C...+55 °C
Humidity: 95% / 40 °C
Salt mist: 5% NaCl, 35 °C for 4 days
Weight: 160 g
Dimensions: 40 x 40 x 76 mm
Protection category: IP40

Remarks
Switched voltage, 230 V + 20 % DC/AC. Switching frequency max 10 Hz.

Standard types
EIOD - 1MM 110 VAC 50 Hz 334105100
EIOD - 1MB 110 VAC 50 Hz 334105101
EIOD - 1BM 110 VAC 50 Hz 334105110
EIOD - 1BB 110 VAC 50 Hz 334105111

For more types check your local sales office
Electronic, time delay-on
6 A, 2 C/O

Delay-on time relay for demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 2 C/O contacts
- DC and AC input
- Flash barriers
- 2x LED indicator (presence of supply and energizing of contacts)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob (optional fixed time, no knob)
- Forced contacts, weld no transfer

Available time ranges
0.1 - 1 s  0.3 - 3 s  0.6 - 6 s  1 - 10 s  3 - 30 s  6 - 60 s  0.3 - 3 min  0.6 - 6 min  1 - 10 min  3 - 30 min

Contact specifications
- Contact material: Ag + 0.2 μm Au
- Number & configuration: 2 C/O
- Rated continuous current: 6 A
- Breaking capacity AC1: 2.6 A / 250 V
- Breaking capacity DC1: 300 mA / 300 V
- Max. make current: 15 A
- Max. switching voltage AC/DC: 250 V, 2.6 A / 300 V, 300 mA
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications
- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 0.5-2 W
- Operating range: 0.8...1.2 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 30 x 10^6
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 380
- Pull-in time: Adjustable, fixed possible
- Release time: < 40 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 110 g
- Dimensions: 40 x 40 x 53 mm (66 mm incl. knob)
- Protection category: IP40

Options
- E, K, B, see page 14.

Remarks
- Standard coil is 50 Hz, 60 Hz coil on request.

For more types check your local sales office.
Electronic, time delay-on
10 A, 4 C/O

Delay-on time relay for demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 4 C/O contacts
- DC and AC input
- Double LED indicator (presence of supply and energizing of contacts)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob (optional with fixed time)

Available time ranges

<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 - 1 s</td>
<td>0.3 - 3 s</td>
</tr>
<tr>
<td>0.6 - 6 s</td>
<td>1 - 10 s</td>
</tr>
<tr>
<td>3 - 30 s</td>
<td>6 - 60 s</td>
</tr>
<tr>
<td>0.3 - 3 min</td>
<td>0.6 - 6 min</td>
</tr>
<tr>
<td>1 - 10 min</td>
<td>3 - 30 min</td>
</tr>
<tr>
<td>6 - 60 min</td>
<td></td>
</tr>
</tbody>
</table>

Contact specifications

- Contact material: Ag
- Number & configuration: 4 C/O
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 1 A / 110 V
- Max. make current: 16 A
- Max. switching voltage AC/DC: 110 V, 1 A / 440 V
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications

- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 0.5-2.2 W
- Operating range: 0.8...1.2 Un (0.7...1.25 Un option V)

Technical data

- Mechanical life cycles (AC/DC): 10 x 10^6 / 50 x 10^6
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 380
- Pull-in time: Adjustable, fixed possible
- Release time: < 40 ms
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 140 g
- Dimensions: 40 x 40 x 89 mm (incl. knob)
- Protection category: IP40

Options

- B, E, K, Q, see page 14.

Remarks

Standard coil is 50 Hz, 60 Hz coil on request.

For more types check your local sales office
Electronic, time delay-on
8 A, 4 C/O (2 C/O instantaneous + 2 C/O time delayed)

Delay-on time relay for demanding applications, switching of AC & DC, voltages, resistive and inductive loads.

- Plug-in
- 2 C/O contacts direct and 2 C/O contacts time delayed
- DC and AC input
- Flash barriers
- LED indicator
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob (optional with fixed time)

Available time ranges
0.1 - 1 s 0.3 - 3 s 0.6 - 6 s 1 - 10 s 3 - 30 s 6 - 60 s
0.3 - 3 min 0.6 - 6 min 1 - 10 min 3 - 30 min

Contact specifications
- Contact material: AgNi + 0.15 Au fl.
- Number & configuration: 2 C/O direct + 2 C/O time delayed
- Rated continuous current: 8 A
- Breaking capacity AC1: 2.6 A / 250 V
- Breaking capacity DC1: 300 mA / 300 V
- Max. make current: 14 A
- Max. switching voltage AC/DC: 250 V / 300 V
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications
- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 1.7 W / 1.6 VA
- Operating range: 0.8...1.2 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 20 x 10^6
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 250
- Pull-in time: Adjustable
- Release time: < 15 ms
- Ambient temperature: -25 °C...+70 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 125 g
- Dimensions: 40 x 40 x 76/89 mm (incl. knob)
- Protection category: IP40

Options
- See page 14.

Remarks
- Standard coil is 50 Hz, 60 Hz coil on request.
- An option with two LED, to indicate the presence of supply voltage and energizing or the time delayed contacts is possible at input voltages from 96 V and higher.

For more types check your local sales office
**Electronic, time delay-off**

6 A, 1 C/O + 1 N/O

Delay-off time functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 1 C/O + 1 N/O contact
- DC and AC input flash barriers
- LED indicator (presence of energizing voltage)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob (optional with fixed time, max. 120 sec)
- Forced contacts, weld no transfer
- No auxiliary supply needed

**Available time ranges**

- 0.1 - 1 s
- 0.3 - 3 s
- 1 - 10 s
- 3 - 30 s
- 10 - 100 s

**Contact specifications**

| Contact material | Ag + 0.2 μm Au |
| Number & configuration | 1 C/O + 1 N/O |
| Rated continuous current | 6 A |
| Breaking capacity AC1 | 2.6 A / 250 V |
| Breaking capacity DC1 | 300 mA / 300 V |
| Max. make current | 15 A |
| Max. switching voltage AC/DC | 2.6 A / 300 V, 300 mA |
| Min. switching voltage | 12 V |
| Min. switched current | 10 mA |
| Insulation between contacts | 1 kV, 50 Hz, 1 m |

**Coil specifications**

| Nominal voltage (Un AC/DC) | 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC |
| Power consumption | 3 W / 4 VA |
| Operating range | 0.8...1.2 Un (0.7...1.25 Un option V) |

**Technical data**

| Mechanical life cycles | 30 x 10⁶ |
| Dielectric strength, coil-contact | 2000 VAC |
| Isolation class | C 250 |
| Pull-in time | < 40 ms |
| Release time | Adjustable, fixed possible |
| Ambient temperature | -25 °C...+70 °C |
| Humidity | 95% / 40 °C |
| Salt mist | 5% NaCl, 35 °C for 4 days |
| Weight | 140 g |
| Dimensions | 40 x 40 x 89 mm (incl. knob) |
| Protection category | IP40 |

**Options**

- B, E, Q, see page 14.

**Remarks**

- Standard coil is 50 Hz, 60 Hz coil on request.

---

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810

**Pin arrangement**

- Smitt-style
Electronic, time delay-off
10 A, 3 C/O

Delay-off time functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads. The relay is activated by an external N/O contact.

- Plug-in
- 3 C/O contacts
- DC and AC input
- LED indicator 2x (power / energized)
- Cadmium free contacts
- 'Smitt-style' pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob (optional with fixed time)

Available time ranges

<table>
<thead>
<tr>
<th>Time Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 - 1 s</td>
</tr>
<tr>
<td>0.3 - 3 s</td>
</tr>
<tr>
<td>0.6 - 6 s</td>
</tr>
<tr>
<td>1 - 10 s</td>
</tr>
<tr>
<td>6 - 60 s</td>
</tr>
<tr>
<td>0.3 - 3 min</td>
</tr>
<tr>
<td>0.6 - 6 min</td>
</tr>
<tr>
<td>1 - 10 min</td>
</tr>
<tr>
<td>3 - 30 min</td>
</tr>
<tr>
<td>6 - 60 min</td>
</tr>
</tbody>
</table>

Contact specifications

- Contact material: Ag
- Number & configuration: 3 C/O
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 1 A / 110 V
- Max. make current: 16 A
- Max. switching voltage AC/DC: 250 V / 440 V
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications

- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 2.2 W
- Operating range: 0.8...1.2 Un (0.7...1.25 Un option V)

Technical data

- Mechanical life cycles: 50 x 10⁶
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 250
- Pull-in time: 50 ms
- Release time: Adjustable, fixed possible
- Ambient temperature: -25 °C...+70 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 140 g
- Dimensions: 40 x 40 x 89 mm (incl. knob)
- Protection category: IP40

Options
- V, C, E, B, K, see page 14.

Remarks
- Standard coil is 50 Hz, 60 Hz coil on request.

For more types check your local sales office
Electronic, time delay-off
10 A, 4 C/O

Delay-off time functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads. The energizing voltage must have a step function for correct operating.

- Plug-in
- 4 C/O contacts
- DC and AC input
- LED indicator (power / energized)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob (optional with fixed time)

Available time ranges
0.1 - 1 s  0.3 - 3 s  0.6 - 6 s  1 - 10 s  3 - 30 s  6 - 60 s  10-100 s

Contact specifications
- Contact material: Ag
- Number & configuration: 4 C/O
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 1 A / 230 V
- Max. make current: 16 A
- Max. switching voltage AC/DC: 250 V / 440 V
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications
- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 1...9 W (model depending)
- Operating range: 0.8...1.2 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 10 x 10^6
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 380
- Pull-in time: < 40 ms
- Release time: Adjustable, fixed possible
- Ambient temperature: -25 °C...+70 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 270 g
- Dimensions: 40 x 55 x 89 mm (incl. knob)
- Protection category: IP40

Options: V, C, E, N, K, see page 14.
Remarks: Standard coil is 50 Hz, 60 Hz coil on request.

For more types check your local sales office

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

Pin arrangement
Smitt-style
Electronic plug-in timer, delay on & off
6 A, 2 C/O

Delay on & off timer functions for demanding applications, switching of AC & DC voltages, resistive and inductive loads. The relay is activated by an external N/O contact.

- Plug-in
- 2 C/O contacts
- DC and AC input
- Flash barriers
- LED indicator 2x (supply / energized)
- Cadmium free contacts
- 'Smitt-style' pinning with integrated retaining silver plated clip
- Adjustable with two lockable knobs (optional with fixed time)
- DC control by voltage or contact

Available time ranges
0.1 - 1 s  0.3 - 3 s  0.6 - 6 s  1 - 10 s  3 - 30 s  6 - 60 s
0.3 - 3 min  0.6 - 6 min  1 - 10 min  3 - 30 min  6 - 60 min

Contact specifications
- Contact material: Ag + 0.2 μm Aμ
- Number & configuration: 2 C/O
- Rated continuous current: 6 A
- Breaking capacity AC1: 2.6 A / 250 V
- Breaking capacity DC1: 300 mA / 300 V
- Max. make current: 15 A
- Max. switching voltage AC/DC: 250 V, 2.6 A / 300 V, 300 mA
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications
- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 1.8
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 30 x 10⁶
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 250
- Pull-in time: Adjustable
- Release time: Adjustable
- Ambient temperature: -25 °C…+70 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 140 g
- Dimensions: 40 x 40 x 89 mm (incl. knob)
- Protection category: IP40

Options
- V, E, K, B, Q, see page 14.

Remarks
- Standard coil is 50 Hz, 60 Hz coil on request.
Electronic, pulse, flashing

8 A, 2 C/O

Flashing time functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 2 C/O contacts
- Flash barriers
- LED indicator
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- The pulsing frequency is adjustable with a lockable knob
- Double zener diode (standard, option Q)

Available time ranges

Pulse and interval time are equal
Start with interval time 20...60 flashes/min, 40...120 flashes/min

Contact specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material</td>
<td>AgCdO</td>
</tr>
<tr>
<td>Number &amp; configuration</td>
<td>2 C/O</td>
</tr>
<tr>
<td>Rated continuous current</td>
<td>8 A</td>
</tr>
<tr>
<td>Breaking capacity AC1</td>
<td>2.6 A / 250 V</td>
</tr>
<tr>
<td>Breaking capacity DC1</td>
<td>300 mA / 300 V</td>
</tr>
<tr>
<td>Max. make current</td>
<td>14 A</td>
</tr>
<tr>
<td>Max. switching voltage AC/DC</td>
<td>250 V / 300 V</td>
</tr>
<tr>
<td>Min. switching voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Min. switched current</td>
<td>10 mA</td>
</tr>
<tr>
<td>Insulation between contacts</td>
<td>1 kV, 50 Hz, 1 m</td>
</tr>
</tbody>
</table>

Coil specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage (Un AC/DC)</td>
<td>24, 48, 60, 110, 125, 220, 230, 250 V AC/DC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>1.5 W / 3.2 VA</td>
</tr>
<tr>
<td>Operating range</td>
<td>0.8...1.1 Un (0.7...1.25 Un option V)</td>
</tr>
</tbody>
</table>

Technical data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical life cycles</td>
<td>100 x 10⁶</td>
</tr>
<tr>
<td>Dielectric strength, coil-contact</td>
<td>2000 VAC</td>
</tr>
<tr>
<td>Isolation class</td>
<td>C 250</td>
</tr>
<tr>
<td>Interval time</td>
<td>Adjustable / lockable</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 °C...+55 °C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% / 40 °C</td>
</tr>
<tr>
<td>Salt mist</td>
<td>5% NaCl, 35 °C for 4 days</td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>40 x 40 x 66 mm (incl. knob)</td>
</tr>
<tr>
<td>Protection category</td>
<td>IP40</td>
</tr>
</tbody>
</table>

Options

See page 14.

Remarks

Standard coil is 50 Hz, 60 Hz coil on request.

For more types check your local sales office
Electronic, pulse, flashing
10 A, 4 C/O

Flashing time functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 4 C/O contacts
- DC and AC input
- LED indicator
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob

Available time ranges
Pulse and interval time are equal
20...60 flashes/min, 40...120 flashes/min
Fixed or adjustable on request

Contact specifications
- Contact material: Ag
- Number & configuration: 4 C/O
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 1 A / 110 V
- Max. make current: 16 A
- Max. switching voltage AC/DC: 250 V / 44 V
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications
- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 2.2 W
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 10 x 10⁶ / 50 x 10⁶
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 380
- Interval time: Adjustable
- Ambient temperature: -25 °C...+70 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 225 g
- Dimensions: 40 x 40 x 89 mm (incl. knob)
- Protection category: IP40

Standard types
- FDA4 24 VDC 40-120 imp / min
- FDA4 48 VDC 40-120 imp / min
- FDA4 110 VDC 40-120 imp / min
- FDA4 220 VDC 40-120 imp / min
- FDA4 250 VDC 40-120 imp / min

For more types check your local sales office.

For more types check your local sales office
**FDC**

**Electrical, pulse, flashing**

**6 A, 2 C/O**

Flashing time functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 2 C/O contacts
- Puls / interval different
- Flash barriers
- LED indicator
- Cadmium free contacts
- ’Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob

**Connection diagram**

![Connection diagram](image)

**Available time ranges**

Pulse different from interval time
Start with pulsetime. Standard pulse = 1s, Interval = 30 s

**Time diagram**

![Time diagram](image)

**Contact specifications**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material</td>
<td>Ag + 0.2 μm Au</td>
</tr>
<tr>
<td>Number &amp; configuration</td>
<td>2 C/O</td>
</tr>
<tr>
<td>Rated continuous current</td>
<td>6 A</td>
</tr>
<tr>
<td>Breaking capacity AC1</td>
<td>2.6 A / 250 V</td>
</tr>
<tr>
<td>Breaking capacity DC1</td>
<td>300 mA / 300 V</td>
</tr>
<tr>
<td>Max. make current</td>
<td>15 A</td>
</tr>
<tr>
<td>Max. switching voltage AC/DC</td>
<td>250 V, 2.6 A / 300 V, 300 mA</td>
</tr>
<tr>
<td>Min. switching voltage</td>
<td>12 V</td>
</tr>
<tr>
<td>Min. switched current</td>
<td>10 mA</td>
</tr>
<tr>
<td>Insulation between contacts</td>
<td>1 kV, 50 Hz, 1 m</td>
</tr>
</tbody>
</table>

**Coil specifications**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage (Un AC/DC)</td>
<td>24, 48, 60, 110 VAC/DC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>1.2 W</td>
</tr>
<tr>
<td>Operating range</td>
<td>DC AC</td>
</tr>
<tr>
<td></td>
<td>0.7...1.25 Un</td>
</tr>
<tr>
<td></td>
<td>0.8...1.1 Un (0.7...1.25 Un option V)</td>
</tr>
</tbody>
</table>

**Technical data**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical life cycles</td>
<td>30 x 10⁶</td>
</tr>
<tr>
<td>Dielectric strength, coil-contact</td>
<td>2000 VAC</td>
</tr>
<tr>
<td>Isolation class</td>
<td>C 250</td>
</tr>
<tr>
<td>Interval time</td>
<td>Fixed times</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 °C...+70 °C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% / 40 °C</td>
</tr>
<tr>
<td>Salt mist</td>
<td>5% NaCl, 35 °C for 4 days</td>
</tr>
<tr>
<td>Weight</td>
<td>115 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>40 x 40 x 53 mm (incl. knob)</td>
</tr>
<tr>
<td>Protection category</td>
<td>IP40</td>
</tr>
</tbody>
</table>

**Options**

See page 14.

**Remarks**

Standard coil is 50 Hz, 60 Hz coil on request.

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810

**Pin arrangement**

Smitt-style

---

**Time diagram**

![Time diagram](image)

---

**Connection diagram**

![Connection diagram](image)

---

**Standard types**

- FDC-1 24 VDC 1 s / 30 s 331330100
- FDC-2 100 VDC 1 s / 30 s 331330101

For more types check your local sales office
Electronic, time, one-shot on
10 A, 4 C/O

One-shot pulse functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 4 C/O contacts
- DC and AC input
- LED indicator
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob
- Activates pulse on energization coil

Available time ranges

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 - 1 s</td>
<td>0.3 - 3 s</td>
</tr>
<tr>
<td>0.6 - 6 s</td>
<td>1 - 10 s</td>
</tr>
<tr>
<td>3 - 30 s</td>
<td>6 - 60 s</td>
</tr>
<tr>
<td>0.3 - 3 min</td>
<td>0.6 - 6 min</td>
</tr>
<tr>
<td>1 - 10 min</td>
<td>3 - 30 min</td>
</tr>
<tr>
<td>6 - 60 min</td>
<td></td>
</tr>
</tbody>
</table>

Contact specifications

- Contact material: Ag
- Number & configuration: 4 C/O
- Rated continuous current: 10 A
- Breaking capacity AC1: 10 A / 230 V
- Breaking capacity DC1: 1 A / 110 V
- Max. make current: 16 A
- Max. switching voltage AC/DC: 230 V / 250 V
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications

- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 2.2 W
- Operating range: 0.8...1.2 Un (0.7...1.25 Un option V)

Technical data

- Mechanical life cycles: 30 x 10⁶
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 380
- Interval time: Adjustable
- Ambient temperature: -25 °C...+70 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 140 g
- Dimensions: 40 x 40 x 89 mm (incl. knob)
- Protection category: IP40

Options

- See page 14.

Remarks

- Standard coil is 50 Hz, 60 Hz coil on request.

Standard types

<table>
<thead>
<tr>
<th>Type</th>
<th>Voltage</th>
<th>Time</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDE4</td>
<td>220 V</td>
<td>1 - 10 s</td>
<td>332 040 903</td>
</tr>
</tbody>
</table>

For more types check your local sales office
Electronic, time, one-shot on
8 A, 2 C/O + 2 C/O

One-shot pulse functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 2 C/O instant + 2 C/O timed
- DC and AC input
- Flash barriers
- LED indicator
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Generates a 0.5 s pulse on energization
- Fixed time

Available time ranges
Fixed 0.5 s

Contact specifications
- Contact material: Ag + 0.15 μm Au
- Number & configuration: 2 C/O + 2 C/O
- Rated continuous current: 8 A
- Breaking capacity AC1: 2.6 A / 250 V
- Breaking capacity DC1: 300 mA / 300 V
- Max. make current: 14 A
- Max. switching voltage AC/DC: 300 V / 250 V
- Min. switching voltage: 12 V
- Min. switched current: 10 mA
- Insulation between contacts: 1 kV, 50 Hz, 1 m

Coil specifications
- Nominal voltage (Un AC/DC): 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
- Power consumption: 1.3 W / VA
- Operating range: 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
- Mechanical life cycles: 20 x 10⁶
- Dielectric strength, coil-contact: 2000 VAC
- Isolation class: C 250
- Pulse time DC/AC: 0.5 s
- Ambient temperature: -25 °C...+55 °C
- Humidity: 95% / 40 °C
- Salt mist: 5% NaCl, 35 °C for 4 days
- Weight: 125 g
- Dimensions: 40 x 40 x 76 mm
- Protection category: IP40

Remarks
Other pulses on request.

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

Pin arrangement
Smitt-style
Electronic time, one-shot off
8 A, 2 C/O + 2 C/O

One-shot pulse functions in demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug-in
- 2 C/O instant + 2 C/O timed
- DC and AC coil
- Flash barriers
- LED indicator
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Generates a 0.5 s pulse on de-energization
- Fixed time (other pulse times on request)
- No auxiliary supply needed

Available time ranges
Fixed 0.5 s

Contact specifications
Contact material \( \text{Ag} + 0.15 \mu \text{m Au} \)
Number & configuration \( 2 \text{ C/O} + 2 \text{ C/O} \)
Rated continuous current 8 A
Breaking capacity AC1 2.6 A / 250 V
Breaking capacity DC1 300 mA / 300 V
Max. make current 14 A
Max. switching voltage AC/DC 300 V / 250 V
Min. switching voltage 12 V
Min. switched current 10 mA
Insulation between contacts 1 kV, 50 Hz, 1 m

Coil specifications
Nominal voltage (\( \text{Un AC/DC} \)) 24, 48, 60, 110, 125, 220, 230, 250 VAC/DC
Power consumption 1.3 W / VA
Operating range 0.8...1.1 Un (0.7...1.25 Un option V)

Technical data
Mechanical life cycles \( 20 \times 10^6 \)
Dielectric strength, coil-contact 2000 VAC
Isolation class C 250
Pulse time DC/AC 0.5 s
Ambient temperature -25 °C...+55 °C
Humidity 95% / 40 °C
Salt mist 5% NaCl, 35 °C for 4 days
Weight 125 g
Dimensions 40 x 40 x 76 mm
Protection category IP40

Options
See page 14.

Standard types
WDDF-11 24 VAC/DC 332012102
WDDF-21 48 VAC/DC 332012103
WDDF-71 60 VAC/DC 332012104
WDDF-81 110 VAC/DC 332012105
WDDF-1 220 VAC/DC 332012107

For more types check your local sales office
Measuring & monitoring

Electronic DC voltage monitoring
6 A, 1 C/O + 1 N/O

The relay reacts on the value of a DC voltage with ripple. The pull-in voltage and hysteresis is adjustable by multiturn trimpotentiometers. The pull-in time after crossing the setpoint is < 15 ms and the drop-out time is approx. 20 ms, which can be extended to 250 ms.

- Plug in
- 1 C/O + 1 N/O contact
- DC input
- Flash barriers
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable pull-in & hysteresis
- Triptime, 20 ms (if terminals 6 & 8 connected 0.25 s)

Contact specifications
Contact material Ag + 0.2 μm Au
Number & configuration 1 C/O + 1 N/O
Rated continuous current 6 A
Breaking capacity AC1 2.6 A / 250 V
Breaking capacity DC1 300 mA / 300 V
Max. make current 15 A
Max. switching voltage 300 VAC / 250 VDC
Min. switching voltage 4 V
Min. switched current 2 mA

Coil specifications
Nominal voltage (Un DC) 24, 48, 60, 110, 125 VDC
Operating range 0.9...1.3 Un

Technical data
Mechanical life cycles 30 x 10⁷
Dielectric strength, coil-contact 4000 VAC
Isolation class C 250
Pull-in time DC 15 ms
Release time DC 120 ms
Ambient temperature -25 ºC...+55 ºC
Humidity 95% / 40 ºC
Salt mist 5% NaCl, 35 ºC for 4 days
Weight 120 g
Dimensions 40 x 40 x 76 mm
Protection category IP40

Options See page 14.
Remarks Standard coil is 50 Hz, 60 Hz coil on request.

<table>
<thead>
<tr>
<th>Standard types</th>
<th>ACD-012 12VDC</th>
<th>330402100</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACD-024 24VDC</td>
<td>330402200</td>
<td></td>
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<tr>
<td>ACD-048 48VDC</td>
<td>330402500</td>
<td></td>
</tr>
<tr>
<td>ACD-110 110VDC</td>
<td>330402700</td>
<td></td>
</tr>
</tbody>
</table>

For more types check your local sales office
Electronic voltage monitoring
6 A, 1 C/O + 1 N/O

For demanding AC or DC applications, over and under voltage monitoring. The pull-in voltage is adjustable and lockable with a knob. Fixed settings are possible.

- Plug-in
- 1 C/O + 1 N/O contact
- DC and AC input
- Flash barrier
- 2 LED indicators (energization and contact switching)
- Cadmium free contacts
- ‘Smitt-style’ pinning with integrated retaining silver plated clip
- Adjustable with a lockable knob
- No auxiliary supply required
- Weld no transfer contacts

Contact specifications
Contact material Ag + 0.2 μm Au
Number & configuration 1 C/O + 1 N/O
Rated continuous current 6 A
Breaking capacity AC1 2.6 A / 250 V
Breaking capacity DC1 300 mA / 300 V
Max. make current 15 A
Max. switching voltage AC/DC 300 VAC / 250 VDC
Min. switching voltage 12 V
Min. switched current 10 mA

Coil specifications
Nominal voltage Un DC 24, 110, 220, 240 VDC
Un AC 24, 48, 110, 220 VAC
Operating range 0.7...1.3 Un

Technical data
Mechanical life cycles 30 x 10⁶
Dielectric strength, coil-contact 2000 VAC
Isolation class C 250
Ambient temperature -25 °C...+55 °C
Humidity 95% / 40 °C
Salt mist 5% NaCl, 35 °C for 4 days
Weight 130 g
Dimensions 40 x 40 x 89 mm
Protection category IP40

Options
See page 14.

Measuring range

<table>
<thead>
<tr>
<th>Type</th>
<th>Unom (VAC)</th>
<th>Unom (VDC)</th>
<th>Uadj min (V)</th>
<th>Uadj max (V)</th>
<th>Power consumption</th>
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<tbody>
<tr>
<td>UMD-C1</td>
<td>240</td>
<td>165</td>
<td>260</td>
<td>&lt; 6.0 VA</td>
<td></td>
</tr>
<tr>
<td>UMD-1</td>
<td>220</td>
<td>150</td>
<td>260</td>
<td>&lt; 6.0 VA</td>
<td></td>
</tr>
<tr>
<td>UMD-01</td>
<td>110</td>
<td>80</td>
<td>240</td>
<td>&lt; 1.4 VA</td>
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<tr>
<td>UMD-41</td>
<td>24</td>
<td>18</td>
<td>30</td>
<td>&lt; 0.6 VA</td>
<td></td>
</tr>
<tr>
<td>UMD-91</td>
<td>220</td>
<td>150</td>
<td>260</td>
<td>&lt; 1.6 W</td>
<td></td>
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<td>UMD-81</td>
<td>110</td>
<td>80</td>
<td>140</td>
<td>&lt; 1.0 W</td>
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<tr>
<td>UMD-61</td>
<td>48</td>
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<td>60</td>
<td>&lt; 0.6 W</td>
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<tr>
<td>UMD-31</td>
<td>24</td>
<td>18</td>
<td>30</td>
<td>&lt; 0.3 W</td>
<td></td>
</tr>
</tbody>
</table>

For more types check your local sales office.
Current monitoring
10 A, 2 C/O

Monitoring the status of for example lamps, motors, heating element by connecting the coil of the DI relay in series with the load.

- 2 C/O contacts
- DC or AC current coil
- Cadmium free contacts

Contact specifications
Contact material: Ag
Number & configuration: 2 C/O
Rated continuous current: 10 A
Breaking capacity AC1: 10 A / 230 V
Breaking capacity DC1: 1 A / 110 V
Max. make current (200 A, 10 ms): 16 A
Max. switching voltage: 350 VDC / 440 VAC
Min. switching voltage: 12 V
Min. switched current: 10 mA (Au, 1μV, 1μA)

Coil specifications
Nominal voltage (In): DC 0.018...3.9, AC 0.018...3.9
Power consumption (DC/AC): 0.3 W / 1.5 VA
Operating range: DC 0.8...2 In, AC 0.8...1.4 In

Technical data
Mechanical life cycles (AC/DC): 10 x 10⁶ / 50 x 10⁶
Dielectric strength, coil-contact: 2500 VAC
Dielectric strength contacts: 3500 VAC
Isolation class: C 380
Pulse time DC/AC: ≤ 20 / 10 ms
Release time DC/AC: 5 ms
Ambient temperature: -25 °C...+70 °C
Humidity: 95% / 40 °C
Salt mist: 5% NaCl, 35 °C for 4 days
Weight: 125 g
Dimensions: 40 x 40 x 53 mm
Protection category: IP40

Options
V, E, B, see page 14.

Remarks
Standard AC coil is 50 Hz, 60 Hz coil on request.
V2 & V21

Compact surface / wall and 35 mm rail

Screw terminals

The V2 & V21 compact relay socket has one screw terminal per relay contact suitable for two wires up to 2.5 mm²

Features
- Screw terminals
- Rail mounting 35 mm (V21)
- Touch proof IP20
- Suitable for all D-relays
- Up to 2.5 mm² wire per connection terminal
- Bifurcated

Benefits
- Compact design, space saving
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications
- Suitable for: All D-relays
- Contact rating: 10 A (AC1) IEC 60947
- Protecting category: IP20, IEC 60529
- Mounting: Surface (V2) or 35 mm rail (V21)
- Max. ambient temperature: 80 °C
- Weight: V2 = 48 g, V21 = 70 g
- Dimensions: 58 x 40 x 15.2 mm
- Material: Polyamide 66 / 6% glass
- Socket contacts: Screw
- Wire diameter: 2.5 mm² maximum

Ordering codes
- V2 Surface mounting socket 338000100
- V21 Rail mounting socket 338000200
**V23**

**Surface / wall and 35 mm rail**

**Screw terminals**

The V23 relay socket has one screw terminal per relay contact suitable for two wires up to 2.5 mm², so looping/daisy chaining can be done on the socket and no external connector or terminal is needed.

The V23 has no internal soldering connections which makes it highly reliable. To prevent any faulty relay placement the socket can be equipped with mechanical keying to accept only designated identical keyed relays.

Clear UP arrow for correct 35 mm rail mounting.

**Features**

- Sturdy screw terminals
- No internal solderings / connections
- Rail mounting 35 mm
- Touch proof IP20
- Suitable for all D-relays
- Up to two wires of 2.5 mm² per connection terminal
- Positive mechanical keying
- Trifurcated female receiver for tight grip relay pin
- Clear terminal ID

**Benefits**

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

**Specifications**

- Suitable for: All D-relays
- Contact rating: 10 A (AC1) IEC 60947
- Dielectric strength: 3500 V, 50 Hz, 1 m
- Protecting category: IP20, IEC 60529
- Mounting: 35 mm rail
- Max. ambient temperature: 80 °C
- Weight: 135 g
- Dimensions: 87 x 40 x 40 mm
- Material: Polyamide 66 / 30% glass
- Socket contacts: Screw terminal, 7 mm wide
- Wire diameter: 2.5 mm² maximum

**Ordering code**

V23 Socket 338000580

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810
V22BR & V23BR

Surface / wall and 35 mm rail
Wide screw terminals

The V22BR and V23BR relay socket has one extra wide screw terminal per relay contact suitable for ring terminals, so looping/daisy chaining can be done on the socket and no external connector or terminal is needed.

Clear UP arrow for correct 35 mm rail mounting.

Features
- Sturdy screw terminals
- No internal solderings / connections
- Rail mounting 35 mm
- Suitable for ring terminals
- Positive mechanical keying
- Bifurcated female receiver for tight grip relay pin
- Clear terminal ID

Benefits
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications
- Suitable for: All D-relays
- Contact rating: 10 A (AC1) IEC 60947
- Protecting category: IP20 relay side, IEC 60529
- Mounting: Surface (V22BR) or 35 mm rail (V23BR)
- Max. ambient temperature: 80 °C
- Weight: V22BR = 110 g, V23BR = 125 g
- Dimensions: 80 x 48 x 29 mm
- Material: Polyamide 66 / 35% glass
- Socket contacts: Screw terminal, 9 mm wide
- Wire diameter: 2.5 mm² maximum

Ordering codes
- V22BR: Surface mounting socket 338000302
- V23BR: Rail mounting socket 338000402

Standards
- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810
Surface / wall and 35 mm rail

Spring terminals

The V29 relay socket has two high quality spring terminals per relay contact suitable for two wires up to 2.5 mm² (solid or stranded), so looping/daisy chaining can be done on the socket and no external connector or terminal is needed.

The spring terminal makes quick connection possible by pressing the spring with a flat-bladed screwdriver and inserting the stripped wire. Solid and (fine) stranded wire up to 2.5 mm² can be inserted. This quick & easy wiring method saves up to 75% wiring time compared with classic technology, like screw terminals.

To prevent any faulty relay placement the socket can be equipped with mechanical keying to accept only designated identical keyed relays.

Clear UP arrow for correct 35 mm rail mounting

Features
- Spring terminals
- No internal solderings / connections
- Rail mounting 35 mm
- Touch proof IP20
- Twin connection per contact. Wire up to 2.5 mm²
- Easy & quick installation (75% reduction of wiring time)
- Positive mechanical keying
- Trifurcated female receiver for tight grip relay pin
- Clear terminal ID

Benefits
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications

<table>
<thead>
<tr>
<th>Suitable for</th>
<th>All D-relays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact rating</td>
<td>10 A (AC1) IEC 60947</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>2500 V, 50 Hz, 1 m</td>
</tr>
<tr>
<td>Protecting category</td>
<td>IP20, IEC 60529</td>
</tr>
<tr>
<td>Mounting</td>
<td>35 mm rail</td>
</tr>
<tr>
<td>Max. ambient temperature</td>
<td>80 °C</td>
</tr>
<tr>
<td>Weight</td>
<td>70 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>58 x 40 x 15.2 mm</td>
</tr>
<tr>
<td>Material</td>
<td>Polyamide 66 / 6% glass</td>
</tr>
<tr>
<td>Socket contacts</td>
<td>Screw</td>
</tr>
<tr>
<td>Wire diameter</td>
<td>2.5 mm² maximum</td>
</tr>
</tbody>
</table>

Ordering code

V29 Socket 338000610
Sockets
D-relays

V3

Panel / flush
Soldering connections

The V3 relay socket has soldering connections.

Connection diagram

Features
- Sturdy soldering terminals
- Flush/panel mounting
- Bifurcated female receiver for tight grip relay pin

Benefits
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Dimensions

Specifications
Suitable for All D-relays
Contact rating 10 A (AC1) IEC 60947
Protecting category IP20 relay side, IEC 60529
Mounting Panel
Max. ambient temperature 80 °C
Weight 22 g
Dimensions 40 x 40 x 25 mm
Material Polyamide 66 / 35% glass
Socket connection Soldering

Ordering code
V3 Socket 338100100
V26

Sockets
D-relays

Panel

Crimp terminals

The V26 relay socket is connected with A260 crimp terminals. (A260 crimp terminals to be ordered separate.)

Connection diagram

Features

- Sturdy crimp terminals
- Flush/panel mounting
- Bifurcated female receiver for tight grip relay pin

Benefits

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications

<table>
<thead>
<tr>
<th>Suitable for</th>
<th>All D-relays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact rating</td>
<td>10 A (AC1) IEC 60947</td>
</tr>
<tr>
<td>Protecting category</td>
<td>IP20 relay side, IEC 60529</td>
</tr>
<tr>
<td>Mounting</td>
<td>Panel</td>
</tr>
<tr>
<td>Max. ambient temperature</td>
<td>80 °C</td>
</tr>
<tr>
<td>Weight</td>
<td>40 g incl. 14 crimp contacts</td>
</tr>
<tr>
<td>Dimensions</td>
<td>40 x 10 x 32 mm</td>
</tr>
<tr>
<td>Material</td>
<td>Polyamide 66 / 30% glass</td>
</tr>
<tr>
<td>Socket connection</td>
<td>Crimp terminals A260, to be ordered separate</td>
</tr>
<tr>
<td>Wire diameter</td>
<td>Core 1.3 to 2.0 mm, isolation 3.0 to 4.6 mm</td>
</tr>
<tr>
<td>Strip length isolation</td>
<td>6 mm</td>
</tr>
</tbody>
</table>

Remark

Socket must be ordered with 14 A260 crimp terminals

Ordering code

V26  Socket  328400100

Standards

EN 60255
EN 60947
EN 60947-5-1
IEC 61810

www.morssmitt.com
V31

Panel
Double faston connection

The V31 relay socket has double 4.8 mm faston connections, so looping / daisy chaining can be done.

Features
- Double faston 4.8 mm connection, per terminal
- Flush/panel mounting
- Touch proof IP20
- Trifurcated female receiver for tight grip relay pin

Benefits
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications
- Suitable for: All D-relays
- Contact rating: 10 A (AC1) IEC 60947
- Protecting category: IP20 relay side, IEC 60529
- Mounting: Flush/panel
- Max. ambient temperature: 80 °C
- Weight: 50 g
- Dimensions: 53 x 40 x 34 mm
- Material: Polyamide 66 / 35% glass
- Socket connections: Faston 2 x 4.8 mm per terminal
- Wire diameter: 2 x 4.8 mm² maximum

Connection diagram

Dimensions

Ordering code
V31 Socket 338000560
### V32

#### Soldering connection

The V32 relay socket has PCB soldering connections.

#### Features
- PCB soldering connections
- Flush/panel mounting
- Touch proof IP20
- Bifurcated female receiver for tight grip relay pin

#### Benefits
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

#### Specifications

- **Suitable for**: All D-relays
- **Contact rating**: 10 A (AC1) IEC 60947
- **Protecting category**: IP20 relay side, IEC 60529
- **Mounting**: PCB soldering
- **Max. ambient temperature**: 80 °C
- **Weight**: 24 g
- **Dimensions**: 40 x 40 x 14 mm
- **Material**: Polyamide 66 / 35% glass
- **Socket connections**: PCB

#### Ordering code

- **V32** Socket 338000561

---

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810
Sockets
D-relays

V33

Panel
Spring terminals

The V33 relay socket has two high quality spring terminals per relay contact suitable for two wires up to 2.5 mm² (solid or stranded), so looping / daisy chaining can be done on the socket and no external connector or terminal is needed.

The spring terminal makes quick connection possible by pressing the spring with a flat-bladed screwdriver and inserting the stripped wire. Solid and (fine) stranded wire up to 2.5 mm² can be inserted. This quick & easy wiring method saves up to 75% wiring time compared with classic technology, like screw terminals.

Features
• Spring terminals
• No internal soldering connections
• Flush/panel mounting
• Touch proof IP20
• Twin connection per contact. Wire up to 2.5 mm²
• Easy & quick installation (75% reduction of wiring time)
• Trifurcated female receiver for tight grip relay pin
• Clear terminal ID

Benefits
• Proven reliable
• Long term availability
• Easy to maintain
• Low life cycle cost
• No maintenance

Specifications
Suitable for All D-relays
Contact rating 10 A (AC1) IEC 60947
Protecting category IP20 relay side, IEC 60529
Mounting Flush/panel
Max. ambient temperature 80 °C
Weight 69 g
Dimensions 60 x 40 x 46 mm
Material Polyamide 66 / 30% glass
Socket connection Spring terminal
Wire diameter 0.08-2.5 mm²
Stripping length 5-6 mm

Ordering code
V33 Socket 338000570

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810
V9 & V91

Compact surface / wall and 35 mm rail
Screw terminals

The V9 & V91 compact relay socket has one screw terminal per relay contact suitable for two wires up to 2.5 mm².

Features
- Screw terminals
- Surface/wall mounting (V9)
- 35 mm rail mounting (V91)
- Touch proof IP20
- Up to 2.5 mm² wire per connection terminal
- Bifurcated female receiver for tight grip relay pin

Benefits
- Compact design, space saving
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications
Suitable for All KDN & D8 relays
Contact rating 10 A (AC1) IEC 60947
Protecting category IP20, IEC 60529
Mounting SV9= surface/wal V91 35 mm rail
Max. ambient temperature 80 °C
Weight V9 = 168 g, V91 = 212 g
Dimensions 87 x 40 x 40 mm
Material Polyamide 66 / 30% glass
Socket connection Screw terminal

Ordering codes
V9 Surface socket 338000900
V91 Rail socket 338001900

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810
**Sockets**  
**D-relays**

## V93

### Surface / wall and 35 mm rail

#### Screw terminals

The V93 relay socket has one screw terminal per relay contact suitable for two wires up to 2.5 mm², so looping/daisy chaining can be done on the socket and no external connector or terminal is needed.

Clear UP arrow for correct 35 mm rail mounting.

### Features

- Sturdy screw terminals
- No internal solderings / connections
- Rail mounting 35 mm & surface mounting
- Positive mechanical keying
- Trifurcated female receiver for tight grip relay pin
- Clear terminal ID

### Benefits

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

### Specifications

- **Suitable for**: All KDN & D8 relays
- **Contact rating**: 10 A (AC1) IEC 60947
- **Mounting**: 35 mm rail
- **Max. ambient temperature**: 80 °C
- **Weight**: 60 g
- **Dimensions**: 80 x 88 x 42 mm
- **Material**: Polyamide 66 / 30% glass
- **Socket connection**: Screw terminal, 7 mm wide
- **Wire diameter**: 2.5 mm² maximum

### Connection diagram

#### Dimensions

<table>
<thead>
<tr>
<th>V2 + V21 (V9 + V91 maar dan dubbel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 x 88 x 42 mm</td>
</tr>
</tbody>
</table>

#### Ordering code

V93 Socket 338003900

---

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810
Surface / wall and 35 mm rail

Spring terminals

The V99 relay socket has two high quality spring terminals per relay contact suitable for two wires up to 2.5 mm² (solid or stranded), so looping/daisy chaining can be done on the socket and no external connector or terminal is needed.

The spring terminal makes quick connection possible by pressing the spring with a flat-bladed screwdriver and inserting the stripped wire. Solid and (fine) stranded wire up to 2.5 mm² can be inserted. This quick & easy wiring method saves up to 75% wiring time compared with classic technology, like screw terminals.

Clear UP arrow for correct 35 mm rail mounting

Features

- Spring terminals
- No internal solderings / connections
- Rail mounting 35 mm and surface mounting
- Touch proof IP20
- Twin connection per contact. Wire up to 2.5 mm²
- Easy & quick installation (75% reduction of wiring time)
- Positive mechanical keying
- Trifurcated female receiver for tight grip relay pin
- Clear terminal ID

Benefits

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications

<table>
<thead>
<tr>
<th>Suitable for</th>
<th>All KDN &amp; D8 relays</th>
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</thead>
<tbody>
<tr>
<td>Contact rating</td>
<td>10 A (AC1) IEC 60947</td>
</tr>
<tr>
<td>Protecting category</td>
<td>IP20, IEC 60529</td>
</tr>
<tr>
<td>Mounting</td>
<td>35 mm rail</td>
</tr>
<tr>
<td>Max. ambient temperature</td>
<td>80 °C</td>
</tr>
<tr>
<td>Weight</td>
<td>290 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>87 x 40 x 40 mm</td>
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<tr>
<td>Material</td>
<td>Polyamide 66 / 30% glass</td>
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<tr>
<td>Socket contacts</td>
<td>Spring terminal</td>
</tr>
<tr>
<td>Wire diameter</td>
<td>2.5 mm² maximum</td>
</tr>
</tbody>
</table>

Ordering code

V99  Socket  338003910
**Panel mounting**

**Soldering terminals**

The V96 relay socket has soldering connections.

**Features**
- Sturdy soldering terminals
- Flush/panel mounting
- Bifurcated female receiver for tight grip relay pin

**Benefits**
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

**Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
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<tbody>
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<td>Suitable for</td>
<td>All KDN &amp; D8 relays</td>
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<tr>
<td>Contact rating</td>
<td>10 A (AC1) IEC 60947</td>
</tr>
<tr>
<td>Protecting category</td>
<td>IP20 relay side, IEC 60529</td>
</tr>
<tr>
<td>Mounting</td>
<td>Panel</td>
</tr>
<tr>
<td>Max. ambient temperature</td>
<td>80 °C</td>
</tr>
<tr>
<td>Weight</td>
<td>135 g</td>
</tr>
<tr>
<td>Dimensions</td>
<td>87 x 40 x 40 mm</td>
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<tr>
<td>Material</td>
<td>Polyamide 66 / 35% glass</td>
</tr>
<tr>
<td>Socket connections</td>
<td>Soldering</td>
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**Ordercodes**

<table>
<thead>
<tr>
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<th>Description</th>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>V96</td>
<td>Panel socket</td>
<td>338100200</td>
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</tr>
</tbody>
</table>

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810
**Panel**

**Crimp terminals**

The V97 relay socket is connected with A260 crimp terminals. A260 crimp terminals to be ordered separate.

**Features**

- Sturdy crimp terminals
- Flush/panel mounting
- Bifurcated female receiver for tight grip relay pin

**Benefits**

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

**Specifications**

- **Suitable for**: All D-relays
- **Contact rating**: 10 A (AC1) IEC 60947
- **Protecting category**: IP20 relay side, IEC 60529
- **Mounting**: Panel
- **Max. ambient temperature**: 80 °C
- **Weight**: 135 g
- **Dimensions**: 87 x 40 x 40 mm
- **Material**: Polyamide 66 / 30% glass
- **Socket connections**: Crimp terminals A260, to be ordered separate
- **Wire diameter**: Core 1.3 to 2.0 mm, isolation 3.0 to 4.6 mm
- **Strip length isolation**: 6 mm
- **Remark**: Socket must be ordered with 28 A260 crimp terminals

**Ordercodes**

| V97 | Panel socket | 338400100 |

**Connection diagram**

- [Diagram of the connection diagram]

**Dimensions**

- [Dimensions diagram]

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810

**Ordercodes**

| V97 | Panel socket | 338400100 |

**V97**

**Sockets**

**D-relays**

**Serving Safety**

www.morssmitt.com
**Sockets**

**D-relays**

## V89

### Panel mounting

**Faston terminals**

The V89 relay socket has double 4.8 mm faston connections.

### Connection diagram

[Diagram showing connection points and terminal numbers]

### Features

- Double faston 4.8 mm connection, per terminal
- Flush/panel mounting
- Touch proof IP20
- Trifurcated female receiver for tight grip relay pin

### Benefits

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

### Specifications

- **Suitable for**: All D-relays
- **Contact rating**: 10 A (AC1) IEC 60947
- **Protecting category**: IP20 relay side, IEC 60529
- **Mounting**: Flush/panel
- **Max. ambient temperature**: 80 °C
- **Weight**: 50 g
- **Dimensions**: 53 x 40 x 34 mm
- **Material**: Polyamide 66 / 35% glass
- **Socket connections**: Faston 2 x 4.8 mm per terminal
- **Wire diameter**: 2 x 4.8 mm² maximum

### Ordercodes

- V89
- KDN & D8 socket
- 338001800

---

Standards

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810
Accessories

D-relays

A104 - Selection bus
For sockets:
V23, V25, V29
Article number:
378690100

A260 Crimp terminals
For socket:
V26
Article number:
500220000
Example ordering scheme
D-relays

1. Relay series
2. Options
3. Coil voltage

This example represents a D-YB 220 VDC. Description: D relay, $U_{nom}$: 220 VDC, 2 double make / double break contacts, magnetic arc blow-out.

1. Relay series

D

2. Options

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trip indicator</td>
<td>Magnetic arc blow-out</td>
<td>Low temperature (-40 °C)</td>
<td>Back EMF diode (standard in DC coil)</td>
<td>Gold plated contacts</td>
<td>High Burden protection</td>
<td>Cover sealed</td>
<td>LED integrated coil</td>
<td>AgSnO₂ contacts</td>
<td>Polarisation diode</td>
<td>Double zener diode</td>
<td>Fast switching (&lt;7 ms)</td>
<td>S</td>
<td>Mechanical position indicator</td>
<td>T</td>
<td>Push to test button</td>
<td>V</td>
<td>Wide operating and temperature range</td>
</tr>
</tbody>
</table>

Keying: Coil coding for relay and socket
Colour: Coloured cover for coil voltage

3. Coil voltages

<table>
<thead>
<tr>
<th>5 VDC</th>
<th>6 VDC</th>
<th>6 VAC 50Hz</th>
<th>230-240 VAC 50Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 VDC</td>
<td>7 VDC</td>
<td>12 VAC 50Hz</td>
<td>350 VAC 50Hz</td>
</tr>
<tr>
<td>7 VDC</td>
<td>8 VDC</td>
<td>24 VAC 50Hz</td>
<td>380-400 VAC 50Hz</td>
</tr>
<tr>
<td>8 VDC</td>
<td>10 VDC</td>
<td>42 VAC 50Hz</td>
<td>415 VAC 50Hz</td>
</tr>
<tr>
<td>12 VDC</td>
<td>110 VDC</td>
<td>48 VAC 50Hz</td>
<td></td>
</tr>
<tr>
<td>14 VDC</td>
<td>120 VDC</td>
<td>57 VAC 50Hz</td>
<td>24 VAC 60Hz</td>
</tr>
<tr>
<td>18 VDC</td>
<td>127 VDC</td>
<td>60 VAC 50Hz</td>
<td>42 VAC 60Hz</td>
</tr>
<tr>
<td>20 VDC</td>
<td>135 VDC</td>
<td>63 VAC 50Hz</td>
<td>110-115 VAC 60Hz</td>
</tr>
<tr>
<td>24 VDC</td>
<td>136 VDC</td>
<td>66 VAC 50Hz</td>
<td>215 VAC 60Hz</td>
</tr>
<tr>
<td>28 VDC</td>
<td>140 VDC</td>
<td>100 VAC 50Hz</td>
<td>220 VAC 60Hz</td>
</tr>
<tr>
<td>30-32 VDC</td>
<td>220 VDC</td>
<td>110-115 VAC 50Hz</td>
<td>230-240 VAC 60Hz</td>
</tr>
<tr>
<td>36 VDC</td>
<td>240 VDC</td>
<td>120 VAC 50Hz</td>
<td>380 VAC 60Hz</td>
</tr>
<tr>
<td>42 VDC</td>
<td>250 VDC</td>
<td>127 VAC 50Hz</td>
<td></td>
</tr>
<tr>
<td>60 VDC</td>
<td>220-230 VAC 50Hz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Miniature power relays

The miniature power C-relays can be used in both AC and DC voltage networks. The C-relays are able to switch resistive and also inductive loads, depending on the options included.

<table>
<thead>
<tr>
<th>Relays</th>
<th>Type</th>
<th>Switching Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU-I/J</td>
<td>Instantaneous</td>
<td>1 C/O</td>
</tr>
<tr>
<td>CU-G/W</td>
<td>Instantaneous</td>
<td>2 C/O</td>
</tr>
<tr>
<td>CU-B/C</td>
<td>Instantaneous</td>
<td>2 C/O</td>
</tr>
<tr>
<td>CU-A/D</td>
<td>Instantaneous</td>
<td>1 C/O + 1 N/O</td>
</tr>
<tr>
<td>CU-U/V</td>
<td>Instantaneous</td>
<td>1 DM/DB</td>
</tr>
<tr>
<td>KCS</td>
<td>Bistable/latching</td>
<td>2 C/O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current coil</th>
<th>Standard</th>
<th>High breaking capacity</th>
<th>Standard</th>
<th>Safety critical</th>
<th>Latching (mechanical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU-I/J</td>
<td>CU-G/W</td>
<td>CU-B/C</td>
<td>CU-A/D</td>
<td>CU-U/V</td>
<td>KCS</td>
</tr>
<tr>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
</tr>
<tr>
<td>CU-I/J</td>
<td>CU-G/W</td>
<td>CU-B/C</td>
<td>CU-A/D</td>
<td>CU-U/V</td>
<td>KCS</td>
</tr>
<tr>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
</tr>
<tr>
<td>1 C/O</td>
<td>2 C/O</td>
<td>2 C/O</td>
<td>1 C/O + 1 N/O</td>
<td>1 DM/DB</td>
<td>Bistable/latching 2 C/O</td>
</tr>
<tr>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
<td>Current coil</td>
</tr>
<tr>
<td>CU-I/J</td>
<td>CU-G/W</td>
<td>CU-B/C</td>
<td>CU-A/D</td>
<td>CU-U/V</td>
<td>KCS</td>
</tr>
<tr>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
<td>Instantaneous</td>
</tr>
<tr>
<td>1 C/O</td>
<td>2 C/O</td>
<td>2 C/O</td>
<td>1 C/O + 1 N/O</td>
<td>1 DM/DB</td>
<td>Bistable/latching 2 C/O</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sockets</th>
<th>Accessories</th>
<th>Ordering scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-83</td>
<td>85</td>
<td>86</td>
</tr>
</tbody>
</table>

www.morssmitt.com
Instantaneous

Miniature, current coil
6 A, 1 C/O

Industrial applications, switching of AC & DC voltage, resistive and loads.

- Plug in (CU) or PCB (CP)
- Miniature
- 1 C/O contact
- DC or AC coil
- Cadmium free contacts
- Equiped with keying

Connection diagram

Pin arrangement
Smitt-style

Contact specifications
Contact material          Ag + 0.2 μm Au
Number & configuration   1 C/O
Rated continuous current 6 A
Breaking capacity AC1    2.6 A / 250 V
Breaking capacity DC1    300 mA / 300 V
Max. make current        15 A
Max. switching voltage AC/DC 250 VDC / 250 VAC
Min. switched voltage    12 V
Min. switched current    10 mA

Coil specifications
Nominal current
CU-I    0.072...4.4 ADC
CU-J    0.072...2.4 AAC
Operating range
CU-I    0.4...1.2 Inom
CU-J    0.4...1.5 Inom

Technical data
Mechanical life cycles 10 x 10⁶
Dielectric strength, coil-contact 4000 VAC
Isolation class C 250
Pick up time DC/AC 15 ms
Drop-out time DC/AC 3 ms
Ambient temperature -25 °C...+55 °C
Weight 40 g
Dimensions 20 x 30 x 33 mm
Protection category IP40

Options
E, 6 μm gold plated contacts

Remarks
AC coil: 50/60 Hz

Most common types
CU-J = AC current coil
CU-J22 0.005 AAC 50/60 Hz 334946400
CU-J28 0.01 AAC 50/60 Hz 334946500
CU-J50 0.12 AAC 50/60 Hz 334945800
CU-J58 0.25 AAC 50/60 Hz 334945600
CU-J66 0.60 AAC 50/60 Hz 334945400
CU-J70 1.00 AAC 50/60 Hz 334945300
CU-J74 1.50 AAC 50/60 Hz 334945200
CU-J78 2.40 AAC 50/60 Hz 334945100

CU-I = DC current coil
CU-I32 0.015 ADC 334940960
CU-I42 0.05 ADC 334940950
CU-I50 0.12 ADC 334640800
CU-I58 0.25 ADC 334640600
CU-I70 1.0 ADC 334940300
CU-I74 1.5 ADC 334940200
CU-I78 2.4 ADC 334940100
CU-I83 4.4 ADC 334941001

Other voltages on request.

For more types check your local sales office

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

www.morssmitt.com
**Miniature**

**6 A, 2 C/O (weld-no-transfer)**

Heavy duty miniature power relays for demanding applications, switching of AC & DC voltages, resistive and inductive loads.

- Plug in (CU) or PCB (CP)
- Miniature
- 2 C/O contacts
- DC or AC coil
- Flash barrier
- Cadmium free contacts
- Equipped with keying

**Connection diagram**

**Dimensions**

**Contact specifications**

- Contact material: Ag + 0.2 μm Au
- Number & configuration: 2 C/O
- Rated continuous current: 6 A
- Breaking capacity AC1: 2.6 A / 250 V
- Breaking capacity DC1: 300 mA / 300 V
- Max. make current: 15 A
- Max. switching voltage AC/DC: 300 VDC / 250 VAC
- Min. switched voltage: 12 V
- Min. switched current: 10 mA

**Coil specifications**

- Nominal current: $U_{DC}$ 5...93 VDC
  $U_{AC}$ 24...240 VAC
- Operating range: 0.8...1.1 $U_n$ / 0.7...1.1 $U_n$

**Technical data**

- Mechanical life cycles: $30 \times 10^6$
- Dielectric strength, coil-contact: 3500 VAC
- Isolation class: C 250
- Pick up time DC/AC: 15 / 10 ms
- Drop-out time DC/AC: 4 / 8 ms
- Ambient temperature: -25 °C...+55 °C
- Weight: 40 g
- Dimensions: 20 x 30 x 33 mm
- Protection category: IP40

**Most common types**

- **CU-G** = DC coil
  - CU-G20 110 VDC 617007113
  - CU-G20 125 VDC 617007115
  - CU-G26 48 VDC 617007112
  - CU-G32 24 VDC 617007106

- **CU-W** = AAC coil
  - CU-W34 48 VAC 50/60 Hz 333617304
  - CU-W22 220 VAC 50/60 Hz 333617304

Other voltages on request.

*For more types check your local sales office*
High DC breaking capacity
8 A, 2 C/O (weld no transfer)

Heavy duty miniature power relays for demanding applications, switching of AC & DC voltages, resistive and/or inductive loads. Integrated magnetic arc blow-out function.

- Plug in (CU) or PCB (CP)
- Miniature
- 2 C/O contacts
- DC or AC coil
- Flash barrier
- Magnetic arc blowout
- Cadmium free contacts
- Equipped with keying

For more types check your local sales office

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

Pin arrangement
Smitt-style

Contact specifications
Contact material          Ag
Number & configuration   2 C/O
Rated continuous current 8 A
Breaking capacity AC1    2.6 A / 250 V
Breaking capacity DC1    300 mA / 300 V
Max. make current        10 A
Max. switching voltage AC/DC 300 VDC / 250 VAC
Min. switched voltage    12 V
Min. switched current    10 mA

Coil specifications
Nominal current Un DC 6...125 VDC
Un AC 24...240 VAC
Operating range Un 0.8...1.1 Un

Technical data
Mechanical life cycles CU-B 10 x 10^6
CU-C 5 x 10^6
Dielectric strength, coil-contact 4000 VAC
Isolation class C 250
Pick up time DC/AC 12 / 11 ms
Drop-out time DC/AC 5 / 12 ms
Ambient temperature -25 °C...+55 °C
Weight 40 g
Dimensions 20 x 30 x 33 mm
Protection category IP40

Remarks
AC coil: 50/60 Hz

Most common types
CU-B = DC coil
CU-B48 6 VDC 330220100
CU-B42 12 VDC 330220200
CU-B36 24 VDC 330220300
CU-B30 48 VDC 330220400
CU-B28 60 VDC 330220500
CU-B23 110 VDC 330220600
CU-B22 125 VDC 330220702

CU-C = AC coil
CU-C48 12 V 50/60 Hz 330220800
CU-C42 24 V 50/60 Hz 330220900
CU-C35 48 V 50/60 Hz 330221100
CU-C28 110 V 50/60 Hz 330221300
CU-C22 220 V 50/60 Hz 330221400

Other voltages on request.
Miniature heavy duty
6 A, 1 C/O 1 N/O (weld no transfer)

Heavy duty miniature power relays for demanding applications, switching of AC & DC voltages, resistive and / or inductive loads. Equipped with non welding contacts. Extreme low power consumption.

- Plug in (CU) or PCB (CP)
- Miniature
- 1 C/O 1 N/O contact
- DC or AC coil
- Flash barrier
- Cadmium free contacts
- Equipped with keying

Connection diagram

Dimensions

Contact specifications

- **Contact material:** Ag + 0.2 μm Au
- **Number & configuration:** 1 C/O 1 N/O
- **Rated continuous current:** 6 A
- **Breaking capacity AC1:** 2.6 A / 250 V
- **Breaking capacity DC1:** 300 mA / 300 V
- **Max. make current:** 15 A
- **Max. switching voltage AC/DC:** 300 VDC / 250 VAC
- **Min. switched voltage:** 12 V
- **Min. switched current:** 10 mA

Coil specifications

- **Nominal current**
  - UDC: 6...48 VDC
  - UAC: 24...180 VAC
- **Operating range**
  - CU-A: 0.75...1.1 Un
  - CU-D: 0.85...1.1 Un
- **Power consumption**
  - CU-A: 0.23...0.8 VA
  - CU-D: 0.1 W

Technical data

- **Mechanical life cycles:** 10 x 10⁶
- **Dielectric strength, coil-contact:** 4000 VAC
- **Isolation class:** C 250
- **Pick up time DC/AC:** 11 / 15 ms
- **Drop-out time DC/AC:** 7 / 3 ms
- **Ambient temperature:** -25 °C...+55 °C
- **Weight:** 40 g
- **Dimensions:** 20 x 30 x 33 mm
- **Protection category:** IP40

Options

- E, 6 μm gold plated contacts

Remarks

- AC coil: 50/60 Hz

Most common types

- **CU-A = AC coil**
  - CU-A38 24 VAC 50/60 Hz 334920900
  - CU-A36 30 VAC 50/60 Hz 334921500
  - CU-A32 48 VAC 50/60 Hz 334921000
  - CU-A26 100 VAC 50/60 Hz 334921100
  - CU-A22 150 VAC 50/60 Hz 334921200
  - CU-A20 180 VAC 50/60 Hz 334921700

- **CU-D = DC coil**
  - CU-D38 6 VDC 334920100
  - CU-D36 12 VDC 334920300
  - CU-D26 24 VDC 334920600
  - CU-D20 48 VDC 334921400

Other voltages on request.

For more types check your local sales office
CU - U/V

Safety critical applications
8 A, 1 C/O DM/DB

The CU-U/V is a safety relay used in places where a safe separation between coil and contact circuit is required. The relay, combined with screw socket V12, is used in applications in gas fired installations according to CEE 15/2" edition & approved by KEMA. Equipped with 1 double interrupting change-over contact. Also available is print relay: CP-U.

- Plug in (CU) or PCB (CP)
- Miniature
- 1 DM/DB contact
- DC or AC coil
- Flash barrier
- Cadmium free contact
- Equiped with keying

Connection diagram

Contact specifications
- Contact material: Ag + 0.2 μm Au
- Number & configuration: 1 DM-DB
- Rated continuous current: 8 A
- Max. make current: 15 A
- Max. switching voltage: 300 VDC / 250 VAC
- Min. switched voltage: 18 V
- Min. switched current: 20 mA

Coil specifications
- Nominal voltage: U, DC 6...125 VDC
- Nominal voltage: U, AC 24...240 VAC
- Operating range: CU-U 0.8...1.25 Un
- Operating range: CU-V 0.7...1.1 Un

Technical data
- Mechanical life cycles: 30 x 10⁴
- Dielectric strength, coil-contact: 4500 VAC
- Isolation class: C 250
- Pick up time DC/AC: 15 / 8 ms
- Drop-out time DC/AC: 4 / 8 ms
- Ambient temperature: -25 °C...+55 °C
- Weight: 40 g
- Dimensions: 20 x 30 x 33 mm
- Protection category: IP40

Remarks
- AC coil: 50/60 Hz
- Humidity max 90%

Most common types
- CU-U = DC coil
  - CU-U44 6 VDC 333610100
  - CU-U38 12 VDC 333610200
  - CU-U32 24 VDC 333610300
  - CU-U26 48 VDC 333610400
  - CU-U24 60 VDC 333610500
- CU-V = AC coil
  - CU-V41 24 VAC, 50/60 Hz 333617100
  - CU-V36 42 VAC, 50/60 Hz 333617200
  - CU-V22 220 VAC, 50/60 Hz 333617300
- Other voltages on request.

For more types check your local sales office.
Latching, mechanical
6 A 2 C/O

Heavy duty latching / bistable relay for demanding applications. Equipped with magnetic latch (permanent magnet). Due to pulse activation less heat dissipation and energy consumption than instantaneous relays.

- 2 C/O contacts
- DC coil
- Flash barrier
- Weld no transfer contacts
- Cadmium free contacts
- 2.8 x 0.8 faston connections
- Not plug-in

Contact specifications
Contact material Ag + 0.2 μm Au
Number & configuration 2 C/O
Rated continuous current 6 A
Max. make current 15 A
Max. switching voltage 300 VDC / 250 VAC
Min. switched voltage 12 V
Min. switched current 10 mA

Coil specifications
Nominal voltage $U_n$ DC 12...110 VDC
Power consumption 1.1 W
Operating range 7...1.25 $U_n$

Technical data
Mechanical life cycles $3 \times 10^6$
Dielectric strength, coil-contact 300 VAC
Isolation class C 250
Pick up time DC/AC 25 ms
Ambient temperature -25 ºC...+70 ºC
Weight 68 g
Dimensions 20 x 30 x 55 mm
Protection category IP40

Available types
Check your local sales office

For more types check your local sales office
Sockets
C-relays

V10 & V11

Surface / wall
Screw terminals

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is made easy and cost saving. No maintenance is required for the user.

The V10 & V11 relay socket has one screw terminal per relay contact suitable for wires up to 2.5 mm². The V11 is equipped with internal back EMF diode.

Features
- Sturdy screw terminals
- Surface/wall mounting
- Suitable for 35 mm rail mounting with A109 rail clip (order separate)
- Suitable for all CU series power relays
- Wires up to 2.5 mm² per connection terminal
- Bifurcated female receiver for tight grip relay pin

Benefits
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications
Suitable for All CU relays
Contact rating 8 A (AC1) IEC 60947
Mounting Surface / wall
Max. ambient temperature 80 °C
Weight 31 g
Dimensions 65 x 20 x 23 mm
Material Polyester
Socket contacts Screw terminals
Wire diameter 2.5 mm² maximum

Ordering codes
V10 Socket 338001000
V11 Socket + diode 338001100
V11X Socket + reversed diode 338001101

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810
**V12 & V13**

**Surface / wall**

**Screw terminals**

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is easy and cost saving. No maintenance is required for the user.

The V12 & V13 relay socket is only suitable for the CU-V and CU-U relays. Has no connection for contacts 11 & 12 and is equipped with screw terminals suitable for wires up to 2.5 mm². The V13 is equipped with a LED and internal back EMF diode.

**Features**

- Sturdy screw terminals
- V13 LED and internal back EMF diode
- Surface/wall mounting
- Suitable for 35 mm rail mounting with A109 rail clip (order separate)
- Suitable for CU-V & CU-U relays
- Wires up to 2.5 mm² per connection terminal
- Bifurcated female receiver for tight grip relay pin

**Benefits**

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

**Specifications**

- Suitable for: All CU-U & CU-V relays
- Contact rating: 8 A (AC1) IEC 60947
- Mounting: Surface / wall
- Max. ambient temperature: 80 °C
- Weight: 31 g
- Dimensions: 65 x 20 x 23 mm
- Material: Polyester
- Socket contacts: Screw terminals
- Wire diameter: 2.5 mm² maximum

**Ordering codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>V12</td>
<td>Socket</td>
<td>338001300</td>
</tr>
<tr>
<td>V13</td>
<td>Socket + diode</td>
<td>Depending of coil voltage C-relay</td>
</tr>
</tbody>
</table>

**Standards**

- EN 60255
- EN 60947
- EN 60947-5-1
- IEC 61810
V17 & V17-D

Universal

Spring terminals

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is made easy and cost saving. No maintenance is required for the user.

The V17 & V17-D relay socket has spring terminals. The V17-D is equipped with a diode.

Also available with double zener (Q1-Q5)

Features

• Spring terminals
• 35 mm rail mounting
• Suitable for all CU power relays
• Bifurcated female receiver for tight grip relay pin

Benefits

• Proven reliable
• Long term availability
• Easy to maintain
• Low life cycle cost
• No maintenance

Specifications

Suitable for All CU relays
Contact rating 8 A (AC1) IEC 60947
Mounting 35 mm rail
Max. ambient temperature 80 °C
Weight 50 g
Dimensions 78 x 23 x 60 mm
Material Polyamide 66 / 30% glass
Socket contacts Spring terminals
Wire diameter 2.5 mm² maximum

Ordering codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>V17</td>
<td>Socket</td>
<td>338001400</td>
</tr>
<tr>
<td>V17-D</td>
<td>Socket + diode</td>
<td>338001401</td>
</tr>
</tbody>
</table>

Standards

EN 60255
EN 60947
EN 60947-5-1
IEC 61810
Sockets C-relays

PCB Soldering

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is made easy and cost saving. No maintenance is required for the user.

The V14 relay socket has PCB soldering connections.

Features

- PCB soldering connections
- PCB mounting

Benefits

- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications

Suitable for All CU relays
Contact rating 10 A (AC1) IEC 60947
Mounting PCB soldering
Max. ambient temperature 80 °C
Weight 12 g
Dimensions 36 x 24 x 15 mm
Material Polyester
Socket contacts PCB soldering
Wire diameter 2.5 mm² maximum

Ordering code

V14 Socket 338200100
Sockets

C-relays

V18

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

Connection diagram
**Accessories**

**C-relays**

- **A109**
  - 35 mm rail clip
  - For sockets: V10, V11, V12, V13
  - Article number: 339851100

- **A104**
  - Key receptable
  - For sockets: V10, V11, V12, V13
  - Article number: 378690100

- **A110**
  - Relay retaining clip
  - For sockets: V10, V11, V12, V13
  - Article number: 329851040
## Example ordering scheme

### C-relays

<table>
<thead>
<tr>
<th>1. Relay</th>
<th>2. Type</th>
<th>3. Coil voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>U</td>
<td>G</td>
</tr>
<tr>
<td></td>
<td></td>
<td>110 VDC</td>
</tr>
</tbody>
</table>

This example represents a CU-G 110 VDC.
Description: C relay, plug-in, Unom: 110 VDC, 2 C/O contacts.

### 1. Relay type

| C |

### Relay pinning

- **U** = Plug-in
- **P** = PCB

### 2. Type

<table>
<thead>
<tr>
<th>A</th>
<th>Wide range AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>High breaking capacity DC</td>
</tr>
<tr>
<td>C</td>
<td>High breaking capacity AC</td>
</tr>
<tr>
<td>D</td>
<td>Wide range DC</td>
</tr>
<tr>
<td>G</td>
<td>Standard DC</td>
</tr>
<tr>
<td>I</td>
<td>Current coil DC</td>
</tr>
<tr>
<td>J</td>
<td>Current coil AC</td>
</tr>
<tr>
<td>U</td>
<td>Safety critical DC</td>
</tr>
<tr>
<td>V</td>
<td>Safety / critical AC</td>
</tr>
<tr>
<td>W</td>
<td>Standard AC</td>
</tr>
</tbody>
</table>

### 3. Coil voltages

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 VDC</td>
<td>12 VAC 50Hz</td>
</tr>
<tr>
<td>12 VDC</td>
<td>24 VAC 50Hz</td>
</tr>
<tr>
<td>24 VDC</td>
<td>42 VAC 50Hz</td>
</tr>
<tr>
<td>42 VDC</td>
<td>48 VAC 50Hz</td>
</tr>
<tr>
<td>60 VDC</td>
<td>60 VAC 50Hz</td>
</tr>
<tr>
<td>72 VDC</td>
<td>100 VAC 50Hz</td>
</tr>
<tr>
<td>100 VDC</td>
<td>120 VAC 50Hz</td>
</tr>
<tr>
<td>110 VDC</td>
<td>127 VAC 50Hz</td>
</tr>
<tr>
<td>120 VDC</td>
<td>230-240 VAC 50Hz</td>
</tr>
<tr>
<td>127 VDC</td>
<td>350 VAC 50Hz</td>
</tr>
<tr>
<td>140 VDC</td>
<td>380-400 VAC 50Hz</td>
</tr>
<tr>
<td>220 VDC</td>
<td>415 VAC 50Hz</td>
</tr>
<tr>
<td>240 VDC</td>
<td></td>
</tr>
<tr>
<td>250 VDC</td>
<td></td>
</tr>
</tbody>
</table>
A- & B-relays

The A 400 and B 400 relay series are designed for safety critical applications. The relays are standard equipped with double make / double break contacts.

The B400 relays are also standard equipped with weld no transfer contacts (optional for the A400).

<table>
<thead>
<tr>
<th>Relays</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 400</td>
<td>88</td>
</tr>
<tr>
<td>B 400</td>
<td>89</td>
</tr>
</tbody>
</table>

| Sockets | 90-93 |
A 400

High DC breaking capacity
8 A, 4 C/O DM/DB

Suitable for safety-critical applications, switching of DC voltages, inductive loads.

- Plug-in
- 4 C/O contacts, double make / double break
- Weld-no-transfer contacts (optional)
- Keying in relay / socket
- LED indicator
- Cadmium free contacts
- ‘Mors Smitt-style’ pinning silver plated
- Coil protection

Contact specifications
- Contact material: Ag
- Number & configuration: 4 C/O, DM-DB
- Rated continuous current (AC1, IEC 60947): 8 A
- Max. make current: 20 A
- Max. switching voltage: 440 VDC
- Min. switched voltage: 24 V
- Min. switched current: 20 mA

Coil specifications
- Nominal voltage: Un DC 24...125 VDC, Un AC 115...220 VAC
- Power consumption (DC/AC): 3 W / VA
- Operating range: 0.7...1.25 Un

Technical data
- Mechanical life cycles: $10^6$
- Dielectric strength, coil-contact: 2600 VAC
- Isolation class: C 500
- Pick-up time DC/AC: 40 ms
- Drop-out time DC/AC: 15 ms
- Ambient temperature: -40 °C...+80 °C
- Weight: 300 g
- Dimensions: 45 x 45 x 73 mm
- Protection category: IP40

Options
- C, weld no transfer

Remarks
- Humidity max 93%, 40 °C for 4 days
- Salt mist max 5%, 35 °C for 4 days

For more types check your local sales office
High DC breaking capacity, safety-critical
12 A, 4 C/O DM/DB (weld no transfer)

Suitable for safety and critical applications, switching of DC voltages, inductive loads.

- Plug in
- 4 C/O contacts, double make / double break
- Weld no transfer contacts
- Keying in relay / socket
- LED indicator
- Cadmium free contacts
- ‘Mors Smitt-style’ pinning tin plated
- Coil protection

Contact specifications
Contact material: Ag
Number & configuration: 4 C/O, DM-DB
Rated continuous current (AC1, IEC 60947): 12 A
Max. make current: 30 A
Max. switching voltage: 440 VDC
Min. switched voltage: 24 V
Min. switched current: 20 mA

Coil specifications
Nominal voltage: Un DC 12...700 VDC
Un AC 127...220 VAC
Power consumption (DC/AC): 4 W / VA
Operating range: 0.7...1.25 Un

Technical data
Mechanical life cycles: 100 x 10⁶
Dielectric strength, coil-contact: 2600 VAC
Isolation class: C 660
Pick-up time DC/AC: 55 ms
Drop-out time DC/AC: 25 ms
Ambient temperature: -40 °C...+80 °C
Weight: 450 g
Dimensions: 45 x 45 x 102 mm
Protection category: IP40

Remarks
Humidity max 93%, 40 °C for 4 days
Salt mist max 5%, 35 °C for 4 days
Sockets
A- & B-relays

EA 102 A/B
Flush / panel
Faston terminals

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is made easy and cost saving. No maintenance is required for the user.

The EA 102 A & EA 102 B socket is suitable for flush / panel mounting equipped with rear double faston 4.76 mm connection and locking bracket.

Features
• Flush / panel
• Suitable for A- & B-relays
• Locking bracket

Benefits
• Proven reliable
• Long term availability
• Easy to maintain
• Low life cycle cost
• No maintenance

Specifications
Suitable for A- & B-relays
Contact rating 12 A (AC1) IEC 60947
Mounting Flush panel
Max. ambient temperature 80 °C
Weight 74 g
Dimensions 60 x 46 x 39 mm
Material Polyester melamine
Socket contacts Faston
Faston diameter 4.76 mm

Ordering codes
EA 102 A  A 400 socket  628001059
EA 102 B  B 400 socket  628001060

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

Mors Smitt
A Wabco Company
www.morssmitt.com
Sockets
A- & B-relays

35 mm rail
Screw terminals

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is made easy and cost saving. No maintenance is required for the user.

The EA 103 AFD & EA 103 BFD socket is suitable for 35 mm rail mounting. Equipped with front screw terminal connections and a wire locking spring.

Features
• Screw terminals
• 35 mm rail mounting
• Wire locking spring
• Suitable for A- & B-relays

Benefits
• Proven reliable
• Long term availability
• Easy to maintain
• Low life cycle cost
• No maintenance

Specifications
Suitable for A- & B- relays
Contact rating 12 A (AC1) IEC 60947
Mounting 35 mm rail
Max. ambient temperature 80 °C
Weight 101 g
Dimensions 80 x 46 x 39 mm
Material Polyester melamine
Socket contacts Screw terminal
Wire diameter 2.5 mm² maximum

Ordering code
EA 103 AFD  A 400 socket  628001024
EA 103 BFD  B 400 socket  628001085
Flush / panel
Faston terminals

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is made easy and cost saving. No maintenance is required for the user.

The EA 104 A & EA 104 B socket is suitable for flush / panel mounting. Equipped with rear single faston 5 mm connections and locking bracket.

Features
- Single faston 5 mm connection
- Flush / panel
- Suitable for A & B series power relays
- Locking bracket

Benefits
- Proven reliable
- Long term availability
- Easy to maintain
- Low life cycle cost
- No maintenance

Specifications
- Suitable for: A- & B-relays
- Contact rating: 12 A (AC1) IEC 60947
- Mounting: 35 mm rail
- Max. ambient temperature: 80 °C
- Weight: 82 g
- Dimensions: 62 x 46 x 25 mm
- Material: Polyester
- Socket contacts: Single faston 5 mm
- Faston diameter: 5 mm

Ordering codes
- EA 104 A  A 400 socket  628001253
- EA 104 B  A 400 socket  628001037
Sockets
A- & B-relays

35 mm rail
Screw terminals

For heavy duty, industrial applications, space saving design. Installation and replacement of plug-in relays is made easy and cost saving. No maintenance is required for the user.

The EA 105 AFD & EA 105 BFD sockets are suitable for 35 mm rail mounting. Equipped with front single faston 4.76 mm connections and a wire locking spring.

Features
• Single faston 4.76 connection
• 35 mm rail mounting
• Suitable for A & B series power relays
• Wire locking spring

Benefits
• Proven reliable
• Long term availability
• Easy to maintain
• Low life cycle cost
• No maintenance

Specifications
Suitable for A- & B- relays
Contact rating 12 A (AC1) IEC 60947
Mounting 35 mm rail
Max. ambient temperature 80 °C
Weight 93 g
Dimensions 96 x 46 x 30 mm
Material Polyester
Socket contacts Single faston 4.76
Faston diameter 4.76 mm

Ordering code
EA 105 AFD  A-400 socket  628001255
EA 105 BFD  B 400 socket  628001578

Standards
EN 60255
EN 60947
EN 60947-5-1
IEC 61810

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Instruments 2
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