

Modular relays with forcibly guided contacts 6 - 10 A



Chemical and
petrolchemical



Hoists and cranes



Wood-
processing
machines



Carousel
warehouses



Escalators



Elevators
and lifts



Process
Industry



Automatic
car-washes



Modular relays with forcibly guided contacts

Type 7S.12/32

- 2 pole 6 A (1 NO + 1 NC)

Type 7S.14/34

- 4 pole 6 A (2 NO + 2 NC and 3 NO + 1 NC)

Type 7S.16/36

- 6 pole 6 A (4 NO + 2 NC and 5 NO + 1 NC)

- For safety applications, with class A forcibly guided contact relays EN 61810-3 (previously EN 50205)
- SIL2 evaluated according to EN 61508, for use in functional safety application according to EN 62061 up to SIL2 and according to IEC 13849-1 up to PL d (instead of For functional reliability in machinery and plant engineering according to EN 13849-1)
- For functional reliability in machinery and plant engineering according to EN 13849-1
- For railway applications; materials compliant with fire and smoke characteristics EN 45545; mechanical and climatic characteristics compliant with EN 61373 and EN 50155
- DC and AC supply versions
- 24 and 110 V DC versions with extended operating range $(0.7 \dots 1.25)U_N$
- Coil status visual indication with LED
- 35 mm rail (EN 60715) mount

Screwless terminal

Screw terminal



For outline drawing see page 12

Contact specification

| | | | | |
|-------------------------------------|-----------------|-------------|--------------------------|------------------------|
| Contact configuration | | 1 NO + 1 NC | 2 NO + 2 NC, 3 NO + 1 NC | 4 NO + 2 NC |
| Rated current/Max. peak current | A | 6/15 | 6/15 | 6/15 |
| Rated switching voltage | V AC (50/60 Hz) | 250 | 250 | 250 |
| Rated load AC1 | VA | 1500 | 1500 | 1500 |
| Rated current AC15 (230 V AC) | A | 5 | 5 | 5 |
| Rated current AC15 (400 V AC) | A | 2 | — | — |
| Breaking capacity DC1: 30/110/220 V | A | 6/0.6/0.2 | 6/0.9/0.3 | 6/0.9/0.3 |
| Breaking capacity DC13: 24 V | A | 1 | 3 | 3 |
| Minimum switching load | mW (V/mA) | 60 (5/5) | 60 (5/10) | 60 (5/10) |
| Standard contact material | | AgNi + Au | AgSnO ₂ | AgSnO ₂ +Au |

Coil specification

| | | | | |
|---------------------------|---------------------------------------|-----------------------|-----------------------|-----------------------|
| Nominal voltage (U_N) | V AC (50/60 Hz) | 110...125 - 230...240 | 110...125 - 230...240 | 110...125 - 230...240 |
| | V DC | 12 - 24 | 12 - 24 - 110 | 12 - 24 - 110 |
| Rated power | VA (50 Hz)/W | 2.3/1 | 2.3/1 | 2.3/1 |
| Operating range | AC | $(0.85 \dots 1.1)U_N$ | $(0.85 \dots 1.1)U_N$ | $(0.85 \dots 1.1)U_N$ |
| | DC | $(0.8 \dots 1.2)U_N$ | $(0.8 \dots 1.2)U_N$ | $(0.8 \dots 1.2)U_N$ |
| | DC extended range (24 and 110 V only) | $(0.7 \dots 1.25)U_N$ | $(0.7 \dots 1.25)U_N$ | $(0.7 \dots 1.25)U_N$ |
| Holding voltage | AC/DC | $0.45 U_N / 0.45 U_N$ | $0.55 U_N / 0.55 U_N$ | $0.55 U_N / 0.55 U_N$ |
| Must drop-out voltage | AC/DC | $0.1 U_N / 0.1 U_N$ | $0.1 U_N / 0.1 U_N$ | $0.1 U_N / 0.1 U_N$ |

Technical data

| | | | | |
|---|--------|------------------|------------------|------------------|
| Mechanical life | cycles | $10 \cdot 10^6$ | $10 \cdot 10^6$ | $10 \cdot 10^6$ |
| Electrical life at rated load AC1 | cycles | $100 \cdot 10^3$ | $100 \cdot 10^3$ | $100 \cdot 10^3$ |
| Operate/release time | ms | 7/11 | 12/10 | 12/10 |
| Insulation between coil and contacts (1.2/50 μ s) | kV | 6 | 6 | 6 |
| Dielectric strength between open contacts | V AC | 1500 | 1500 | 1500 |
| Ambient temperature | °C | -40...+70 | -40...+70 | -40...+70 |
| Protection category | | IP 20 | IP 20 | IP 20 |

Approvals (according to type)



7S.12/32...5110 NEW



- 2 pole (1 NO + 1 NC)

7S.14/34...4xx0 NEW



- 4 pole :
(2 NO + 2 NC) type
7S.xx.x.xxx.4220
(3 NO + 1 NC) type
7S.xx.x.xxx.4310

7S.16/36...5xx0 NEW



- 6 pole:
(4 NO + 2 NC) type
7S.xx.x.xxx.5420
(5 NO + 1 NC) type
7S.xx.x.xxx.5510

Modular relays with forcibly guided contacts**Type 7S.23**

- 3 pole (2 NO + 1 NC)





- For safety applications, with class A forcibly guided contact relays EN 61810-3 (previously EN 50205)
- SIL2 evaluated according to EN 61508, for use in functional safety application according to EN 62061 up to SIL2 and according to IEC 13849-1 up to PL d (instead of For functional reliability in machinery and plant engineering according to EN 13849-1)
- For functional reliability in machinery and plant engineering according to EN 13849-1
- DC coil
- Cadmium free contacts
- 17.5 mm wide
- Coil status visual indication with LED
- 35 mm rail (EN 60715) mount

Screw terminal

**7S.23****NEW**

- 3 pole (2 NO + 1 NC)

For outline drawing see page 12

| Contact specification | | |
|---|-----------------|---|
| Contact configuration | | 2 NO + 1 NC |
| Rated current/Max. peak current | A | 10/20 |
| Rated switching voltage | V AC (50/60 Hz) | 250 |
| Rated load AC1 | VA | 2500 |
| Rated current AC15 (230 V AC) | A | 5 |
| Breaking capacity DC1: 30/110/220 V | A | 6/0.6/0.2 |
| Breaking capacity DC13: 24 V | A | 5 |
| Minimum switching load | mW (V/mA) | 60 (5/5) |
| Standard contact material | | AgNi + Au |
| Coil specification | | |
| Nominal voltage (U_N) | V DC | 12 - 24 - 48 - 110 |
| Rated power | W | 1 |
| Operating range | DC | (0.8...1.2) U_N |
| Holding voltage | DC | 0.45 U_N |
| Must drop-out voltage | DC | 0.1 U_N |
| Technical data | | |
| Mechanical life | cycles | $10 \cdot 10^6$ |
| Electrical life at rated load AC1 | cycles | $100 \cdot 10^3$ |
| Operate/release time | ms | 7/11 |
| Insulation between coil and contacts (1.2/50 μ s) | kV | 6 |
| Dielectric strength between open contacts | V AC | 1500 |
| Ambient temperature | $^{\circ}$ C | -40...+70 |
| Protection category | | IP 20 |
| Approvals (according to type) | |     |

Modular relays with forcibly guided contacts for SIL3 safety applications

Type 7S.43/63

- 2 NO safety contacts
- 1 NC feedback contact
- 1 auxiliary signalling contact
- For safety application, with class A forcibly guided contact relays EN 61810-3 (previously EN 50205) for safety application up to SIL 3
- SIL 3 evaluated according to EN 61508, for use in functional safety application according to EN 62061 up to SIL 3 and according to IEC 13849-1 up to PL e
- Double channel architecture (1oo2) with 2 NO contact, 1 feedback contact and 1 auxiliary contact
- From 12 up to 110 V DC version with operating range $(0.85 \dots 1.1)U_N$
- DC coil
- Coil status visual indication with LED
- 35 mm rail (EN 60715) mount

7S.43/63...0211 NEW



- 3 pole (2 NO + 1 NC)
- 1 auxiliary contact

Screwless terminal

Screw terminal



For outline drawing see page 12

Contact specification

| | | |
|-------------------------------------|-----------------|------------------------------|
| Contact configuration | | 2 NO + 1 NC + 1 AUX |
| Rated current/Max. peak current | A | 6/15 |
| Rated switching voltage | V AC (50/60 Hz) | 250 |
| Rated load AC1 | VA | 1500 |
| Rated current AC15 (230 V AC) | A | 5 |
| Breaking capacity DC1: 30/110/220 V | A | 6/0.6/0.2 |
| Breaking capacity DC13: 24 V | A | 3 |
| Minimum switching load | mW (V/mA) | 60 (5/10) |
| Standard contact material | | AgSnO ₂ & AgNi+Au |

Coil specification

| | | |
|-----------------------------------|------|-----------------------|
| Nominal voltage (U _N) | V DC | 12 - 24 - 48 - 110 |
| Rated power | W | 1.7 |
| Operating range | DC | $(0.85 \dots 1.1)U_N$ |
| Holding voltage | DC | 0.55 U _N |
| Must drop-out voltage | DC | 0.1 U _N |

Technical data

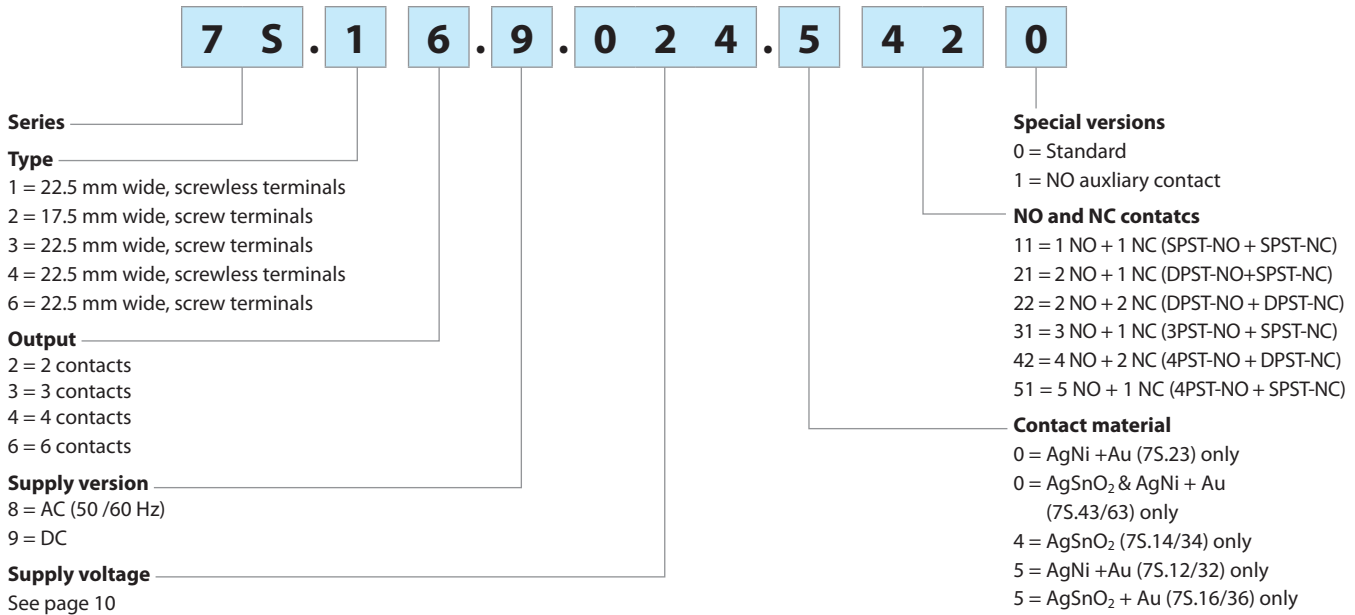
| | | |
|--|--------|-----------------------|
| Mechanical life | cycles | 10 · 10 ⁶ |
| Electrical life at rated load AC1 | cycles | 100 · 10 ³ |
| Operate/release time of NO contacts | ms | 10/7 |
| Operate/release time of NC contacts | ms | 5/30 |
| Insulation between coil and contacts (1.2/50 μs) | kV | 6 |
| Dielectric strength between open contacts | V AC | 1500 |
| Ambient temperature | °C | -40...+70 |
| Protection category | | IP 20 |

Approvals (according to type)



Ordering information

Example: 7S series Modular relay with forcibly guided contacts, 6 contact (4 NO + 2 NC) 6 A, supply voltage 24 V DC.



Codes, Preferred selections for best availability are shown in **bold**.

| | | |
|-------------------------|-------------------------|-------------------------|
| 7S.12.9.012.5110 | 7S.14.9.012.4220 | 7S.16.9.012.5420 |
| 7S.12.9.024.5110 | 7S.14.9.012.4310 | 7S.16.9.024.5420 |
| 7S.12.8.120.5110 | 7S.14.9.024.4220 | 7S.16.9.024.5510 |
| 7S.12.8.230.5110 | 7S.14.9.024.4310 | 7S.16.9.110.5420 |
| | 7S.14.9.110.4220 | 7S.16.8.120.5420 |
| 7S.32.9.012.5110 | 7S.14.9.110.4310 | 7S.16.8.230.5420 |
| 7S.32.9.024.5110 | 7S.14.8.120.4220 | |
| 7S.32.8.120.5110 | 7S.14.8.120.4310 | 7S.36.9.012.5420 |
| 7S.32.8.230.5110 | 7S.14.8.230.4220 | 7S.36.9.024.5420 |
| | 7S.14.8.230.4310 | 7S.36.9.024.5510 |
| 7S.43.9.012.0211 | | 7S.36.9.110.5420 |
| 7S.43.9.024.0211 | 7S.34.9.012.4220 | 7S.36.8.120.5420 |
| 7S.43.9.048.0211 | 7S.34.9.012.4310 | 7S.36.8.230.5420 |
| 7S.43.9.110.0211 | 7S.34.9.024.4220 | |
| | 7S.34.9.024.4310 | 7S.23.9.012.0210 |
| 7S.63.9.012.0211 | 7S.34.9.110.4220 | 7S.23.9.024.0210 |
| 7S.63.9.024.0211 | 7S.34.9.110.4310 | 7S.23.9.048.0210 |
| 7S.63.9.048.0211 | 7S.34.8.120.4220 | 7S.23.9.110.0210 |
| 7S.63.9.110.0211 | 7S.34.8.120.4310 | |
| | 7S.34.8.230.4220 | |
| | 7S.34.8.230.4310 | |

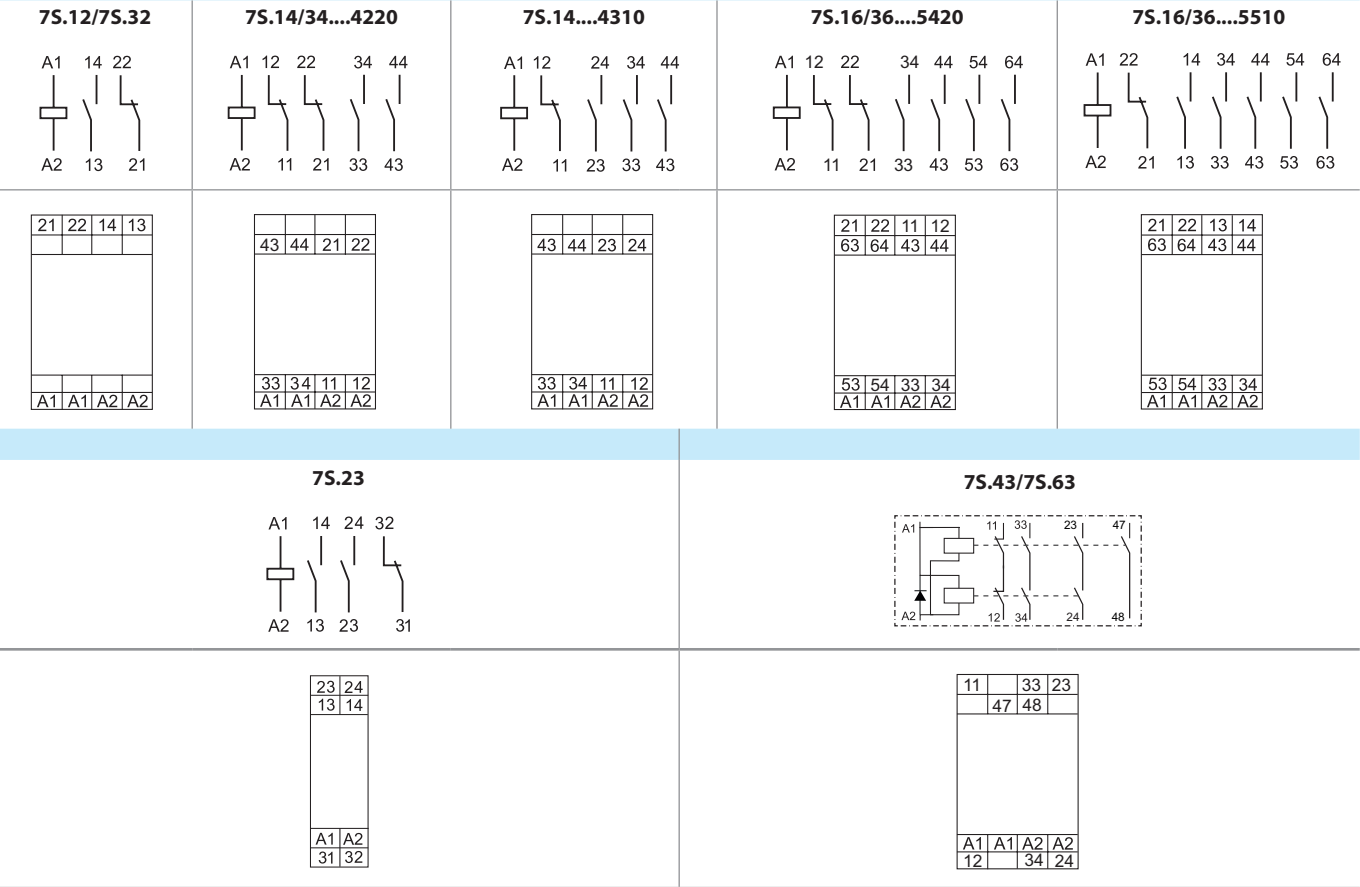
Technical data

| Insulation according to EN 61810-1 | | |
|---|---------------------|---------------------|
| Nominal voltage of supply system | V AC | 230/400 |
| Rated insulation voltage | V AC | 250 |
| Pollution degree | | 2 |
| Insulation between coil and contact set | | |
| Type of Insulation | | Reinforced |
| Overtoltage category | | III |
| Rated impulse voltage | kV (1.2/50 μs) | 6 |
| Dielectric strength | V AC | 4000 |
| Insulation between adjacent contacts | | |
| Type of Insulation | | Basic |
| Overtoltage category | | III |
| Rated impulse voltage | kV (1.2/50 μs) | 4 |
| Dielectric strength | V AC | 2500 |
| Insulation between open contacts | | |
| Type of disconnection | | Micro-disconnection |
| Dielectric strength | V AC/kV (1.2/50 μs) | 1500/2.5 |

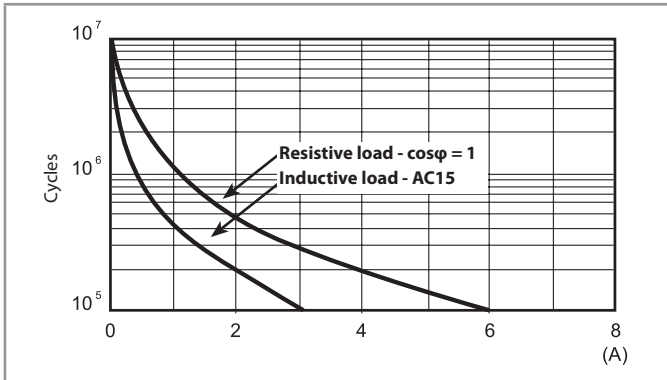
| Insulation between coil terminals | | | | | | |
|---|-------------------------|-----------------|-----------------|--------------------|----------------|----------|
| Rated impulse voltage (surge) differential mode (according to EN 61000-4-5) | kV (1.2/50 μs) | 1.5 | | | | |
| Terminals | | Screw Terminal | | Screwless Terminal | | |
| Min. wire size | | solid cable | stranded cable | solid cable | stranded cable | |
| | mm ² | 0.5 | 0.5 | 0.5 | 0.5 | |
| | AWG | 21 | 21 | 21 | 21 | |
| Max. wire size | | solid cable | stranded cable | solid cable | stranded cable | |
| | mm ² | 1 x 6 / 2 x 2.5 | 1 x 4 / 2 x 2.5 | 1 x 1.5 | 1 x 1.5 | |
| | AWG | 1 x 10 / 2 x 14 | 1 x 12 / 2 x 14 | 1 x 14 | 1 x 16 | |
| Wire strip length | mm | 9 | | | | |
| Other data | | 7S.12/32 | 7S.14/34 | 7S.16/36 | 7S.23 | 7S.43/63 |
| Bounce time: NO/NC | ms | 2/8 | 2/10 | 2/10 | 2/15 | 1/8 |
| Vibration resistance (10...200)Hz: NO/NC | g | 10/5 | 20/6 | 20/6 | 10/2 | 10/2 |
| Shock resistance: NO/NC | g | 20/6 | 20/5 | 20/5 | 20/6 | 20/5 |
| Power lost to the environment | without contact current | W | 0.8 | 0.8 | 0.8 | 1.7 |
| | with rated current | W | 1.4 | 2.3 | 2.8 | 3.8 |

Contact specifications

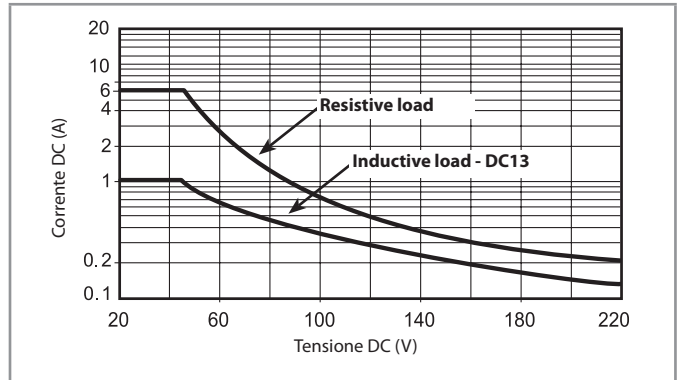
Contact diagrams



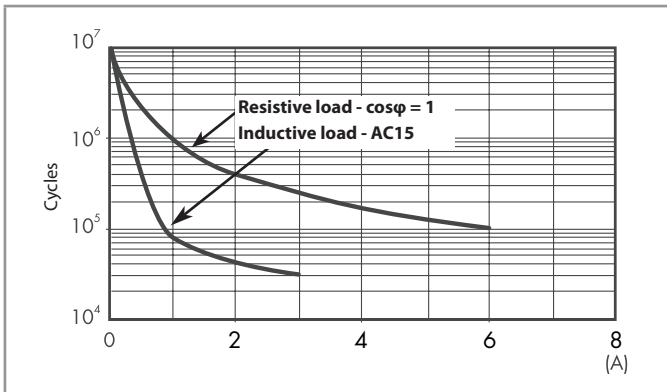
F 7S12 - Electrical life (AC) v contact current - 7S.12



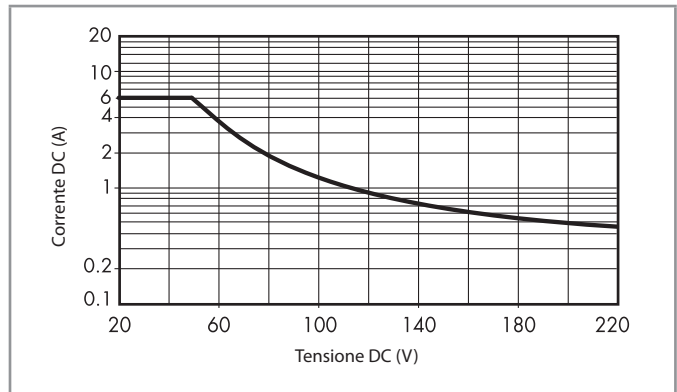
H 7S12* - Maximum DC breaking capacity - 7S.12



F 7S14 - Electrical life (AC) v contact current - 7S.14/34



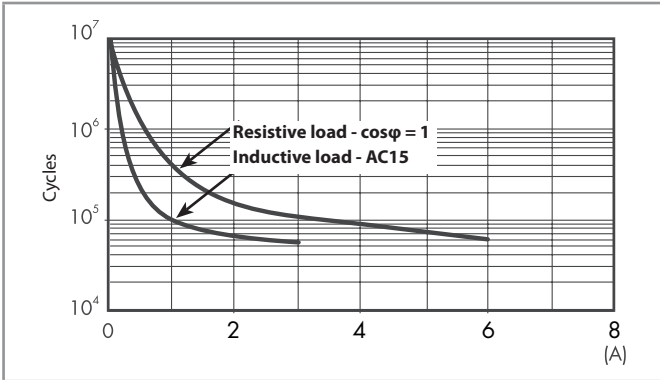
H 7S14* - Maximum DC breaking capacity - 7S.14/34



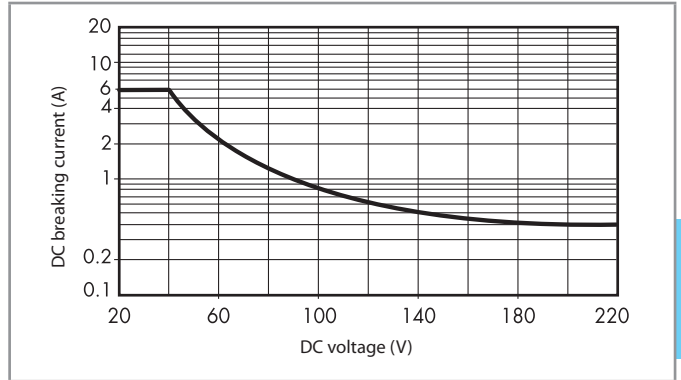
* When switching a load having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.

Contact specifications

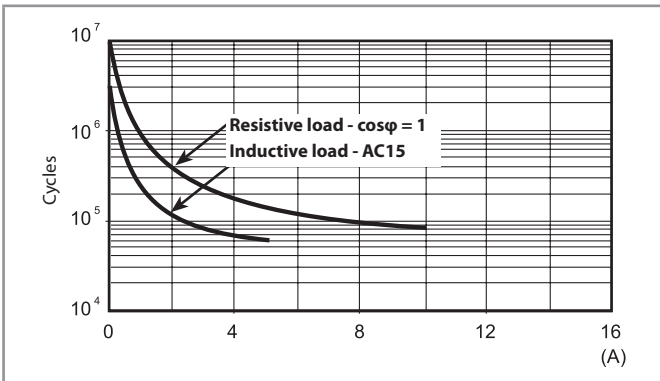
F 7S16 - Electrical life (AC) v contact current - 7S.16/36



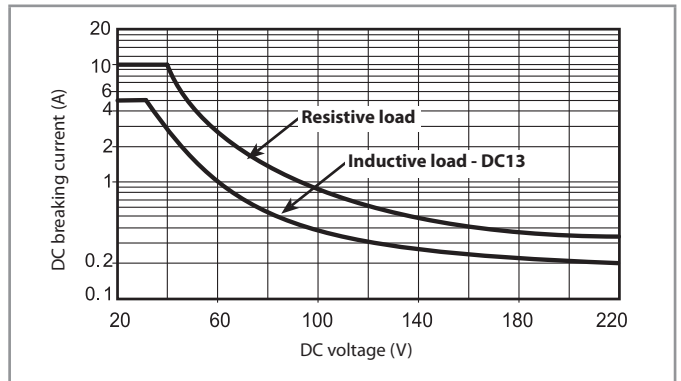
H 7S16* - Maximum DC breaking capacity - 7S.16/36



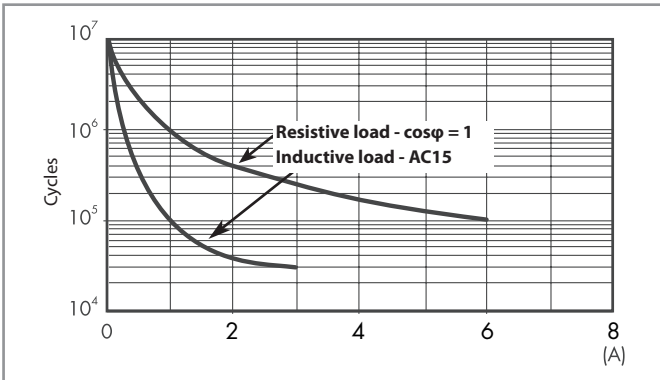
F 7S23 - Electrical life (AC) v contact current - 7S.23



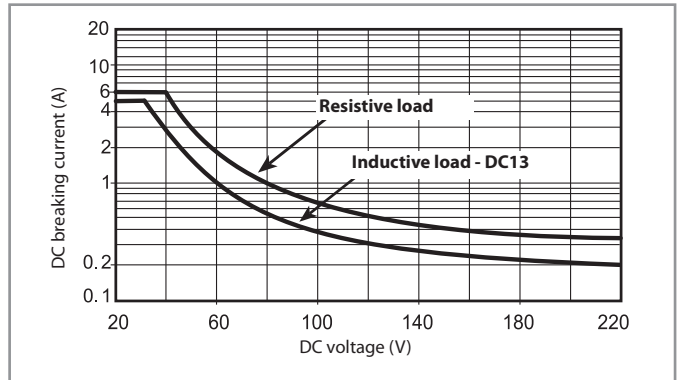
H 7S23* - Maximum DC breaking capacity - 7S.23



F 7S43 - Electrical life (AC) v contact current - 7S.43/63



H 7S43* - Maximum DC breaking capacity - 7S.43/63



* When switching a load having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.

Coil specifications

DC coil data - type 7S.12/32

| Nominal voltage | Coil code | Operating range | | Rated input current at U_N | Rated power at U_N |
|-----------------|-----------|-----------------|-----------|------------------------------|----------------------|
| | | U_{min} | U_{max} | | |
| U_N | | V | V | I_N | W |
| V | | V | V | mA | W |
| 12 | 9.012 | 9.6 | 14.4 | 55 | 0.7 |
| 24 | 9.024 | 16.8 | 30 | 38.2 | 0.9 |

AC coil data - type 7S.12/32

| Nominal voltage | Coil code | Operating range | | Rated input current at U_N | Rated power at U_N |
|-----------------|-----------|-----------------|-----------|------------------------------|----------------------|
| | | U_{min} | U_{max} | | |
| U_N | | V | V | I_N | VA/W |
| V | | V | V | mA | VA/W |
| 110...125 | 8.120 | 93 | 138 | 9.8 | 1.2/1.1 |
| 230...240 | 8.230 | 195 | 264 | 11.8 | 2.8/1.2 |

DC coil data - type 7S.14/34 / 7S.16/36

| Nominal voltage | Coil code | Operating range | | Rated input current at U_N | Rated power at U_N |
|-----------------|-----------|-----------------|-----------|------------------------------|----------------------|
| | | U_{min} | U_{max} | | |
| U_N | | V | V | I_N | W |
| V | | V | V | mA | W |
| 12 | 9.012 | 9.6 | 14.4 | 64.7 | 0.8 |
| 24 | 9.024 | 16.8 | 30 | 42.2 | 1 |
| 110 | 9.110 | 77 | 138 | 11.6 | 1.4 |

AC coil data - type 7S.14/34 / 7S.16/36

| Nominal voltage | Coil code | Operating range | | Rated input current at U_N | Rated power at U_N |
|-----------------|-----------|-----------------|-----------|------------------------------|----------------------|
| | | U_{min} | U_{max} | | |
| U_N | | V | V | I_N | VA/W |
| V | | V | V | mA | VA/W |
| 110...125 | 8.120 | 93 | 138 | 10.2 | 1.3/1.1 |
| 230...240 | 8.230 | 195 | 264 | 11.8 | 2.9/1.2 |

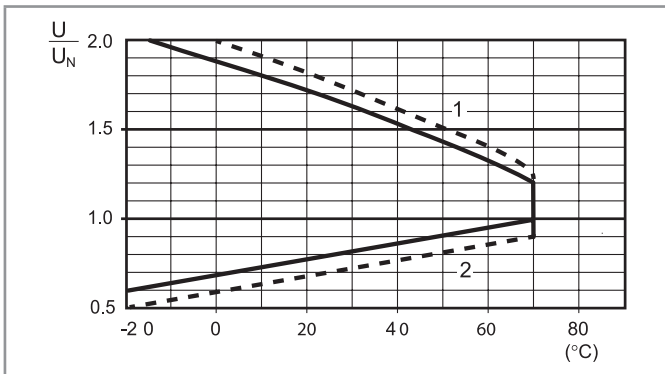
DC coil data - type 7S.23

| Nominal voltage | Coil code | Operating range | | Rated input current at U_N | Rated power at U_N |
|-----------------|-----------|-----------------|-----------|------------------------------|----------------------|
| | | U_{min} | U_{max} | | |
| U_N | | V | V | I_N | W |
| V | | V | V | mA | W |
| 12 | 9.012 | 9.6 | 14.4 | 47.1 | 0.6 |
| 24 | 9.024 | 16.8 | 30 | 26.6 | 0.6 |
| 48 | 9.048 | 33.6 | 60 | 16.2 | 0.8 |
| 110 | 9.110 | 77 | 138 | 8.8 | 1 |

DC coil data - type 7S.43/63

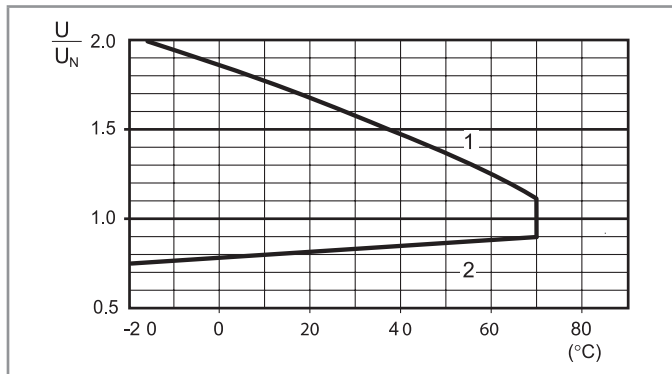
| Nominal voltage | Coil code | Operating range | | Rated input current at U_N | Rated power at U_N |
|-----------------|-----------|-----------------|-----------|------------------------------|----------------------|
| | | U_{min} | U_{max} | | |
| U_N | | V | V | I_N | W |
| V | | V | V | mA | W |
| 12 | 9.012 | 10.2 | 13.2 | 105 | 1.3 |
| 24 | 9.024 | 20.4 | 26.4 | 60 | 1.45 |
| 48 | 9.048 | 40.8 | 52.8 | 36 | 1.6 |
| 110 | 9.110 | 93.5 | 121 | 20 | 1.7 |

R 7S - DC coil operating range v ambient temperature - 7S.12/32 / 7S.23 / 7S.14/34 / 7S.16/36



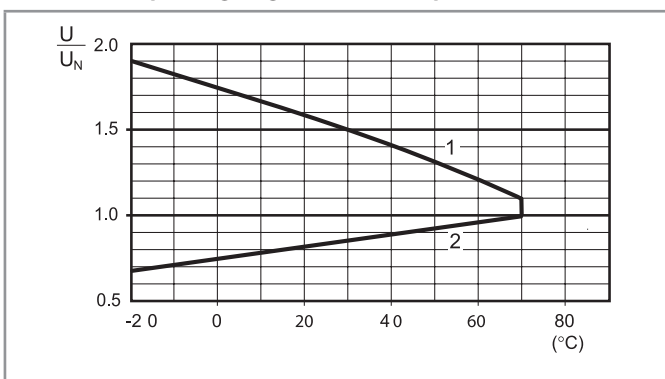
- 1 - Max. permitted coil voltage.
- 2 - Min. pick-up voltage with coil at ambient temperature.
- 24 and 110 V DC coils only (extended range) excluding 7S.23

R 7S - AC coil operating range v ambient temperature - 7S.12/32 / 7S.14/34 / 7S.16/36



- 1 - Max. permitted coil voltage.
- 2 - Min. pick-up voltage with coil at ambient temperature.

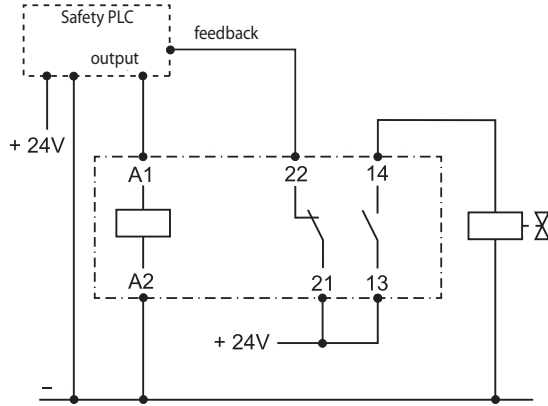
R 7S - DC coil operating range v ambient temperature - 7S.43/63



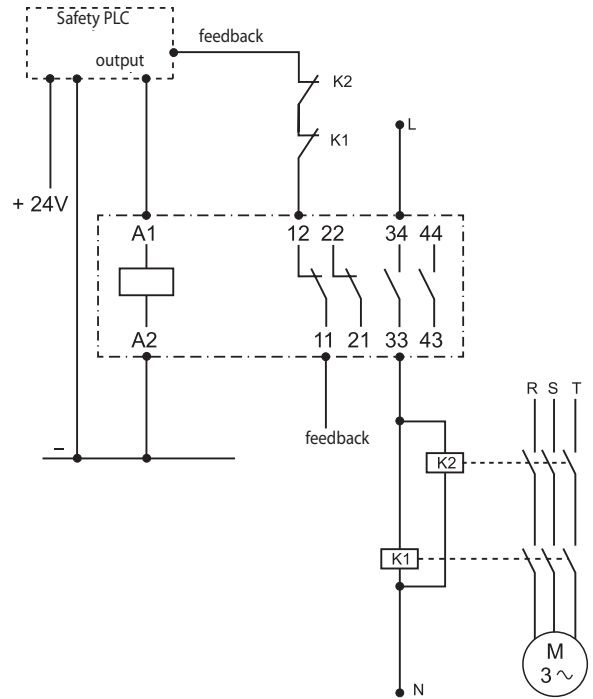
- 1 - Max. permitted coil voltage.
- 2 - Min. pick-up voltage with coil at ambient temperature.

Example wiring diagrams

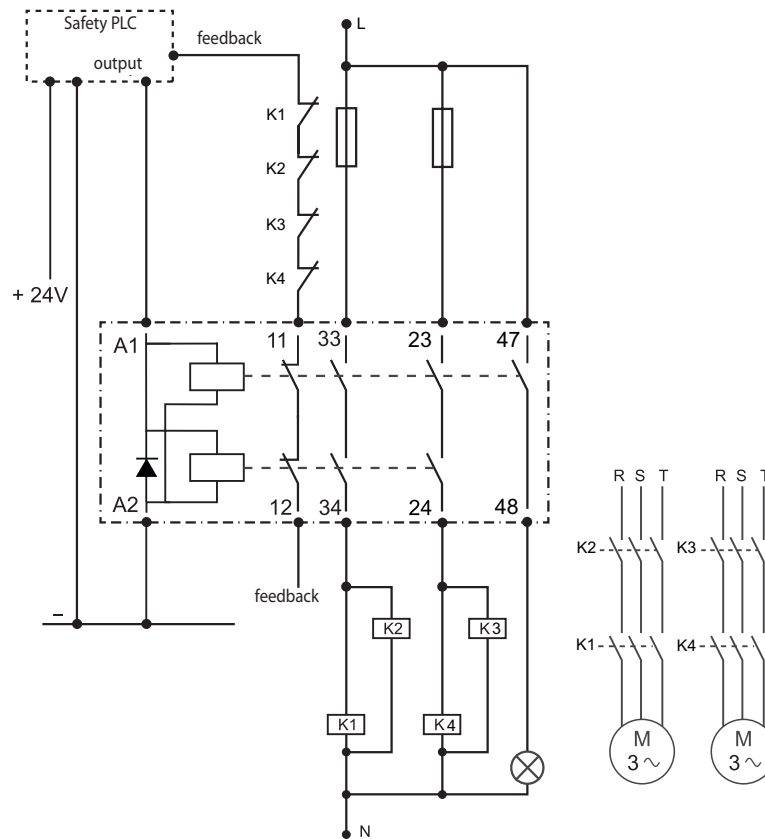
Type 75.x2



Type 75.x4....4220

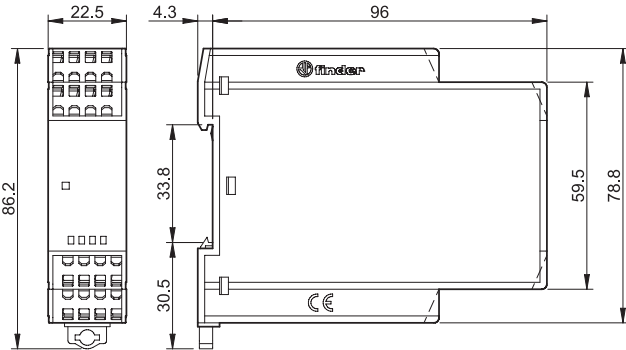


Type 75.43

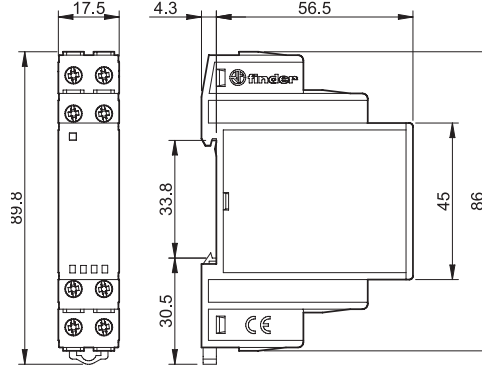


Outline drawings

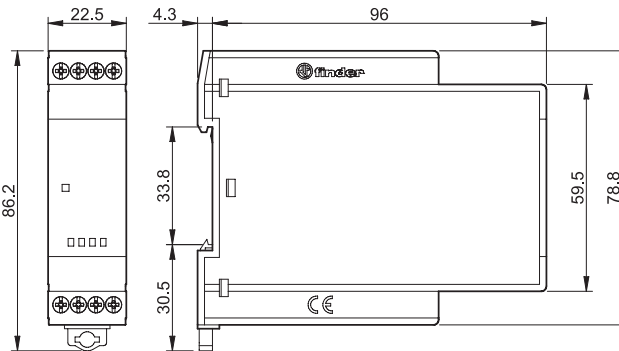
Types 75.12/14/16/43
Screwless terminal



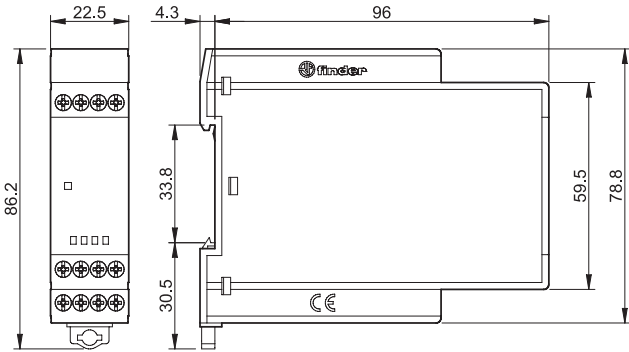
Type 75.23
Screw terminal



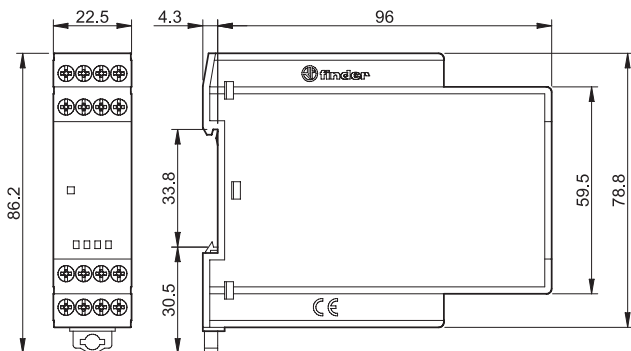
Type 75.32
Screw terminal



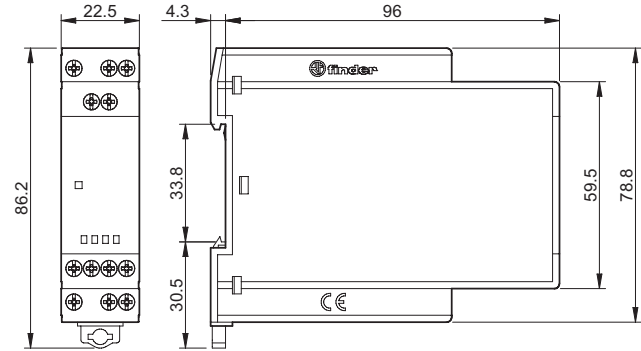
Type 75.34
Screw terminal



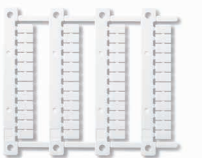
Type 75.36
Screw terminal



Type 75.63
Screw terminal



Accessories



060.48

Sheet of marker tags, plastic, 48 tags, 6 x 12 mm, for CEMBRE thermal transfer printers

060.48