

CATALOGUE

Railways



finder®

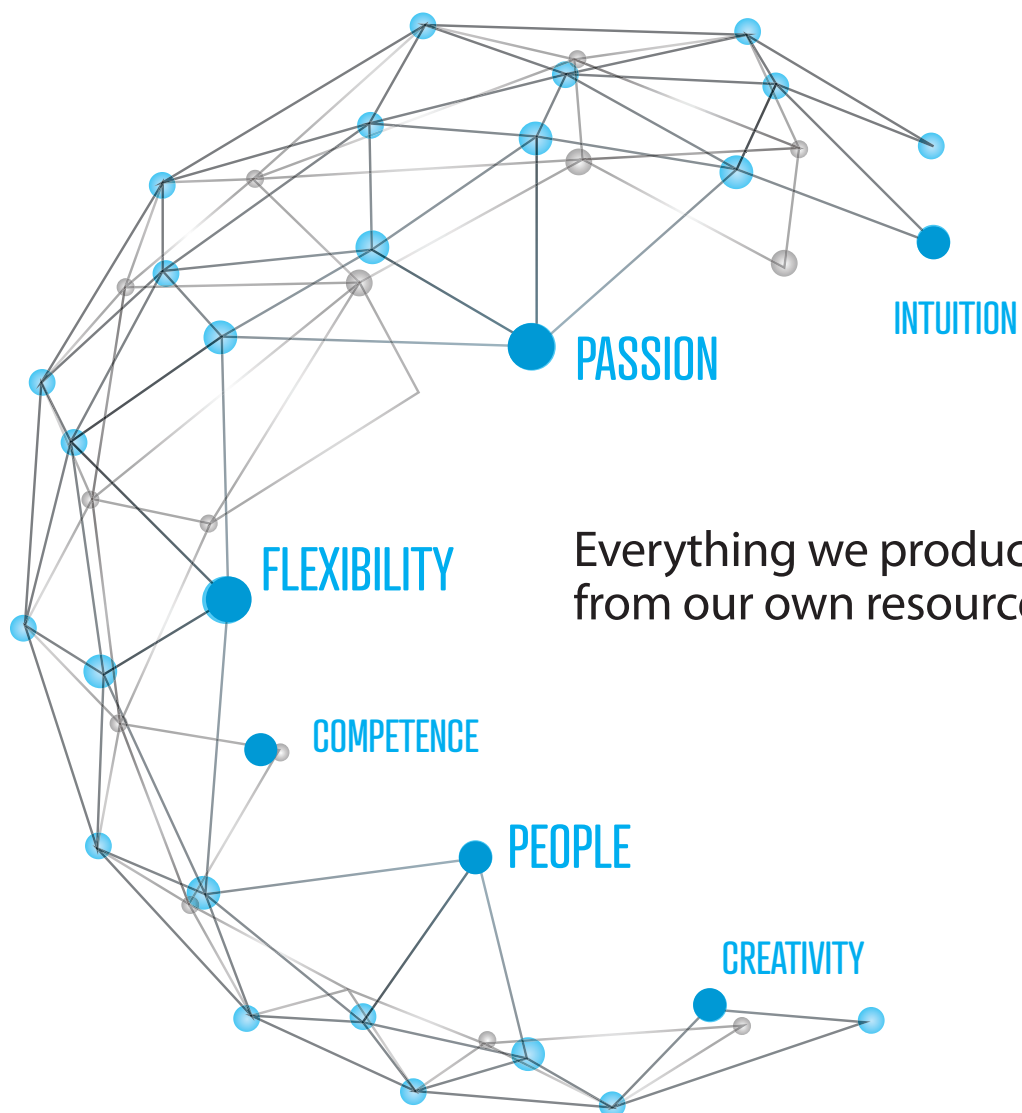
SWITCH TO THE FUTURE

- Relays
- Timer modules
- Monitoring relays
- Relay modules with forcibly guided contacts
- Modular timers
- Modular Light dependent relay
- Modular contactors





finder[®]
SWITCH TO THE FUTURE



COMPETENCE

People are at the heart of
Finder's company values



Finder has the widest range of quality approvals of any relay manufacturer.

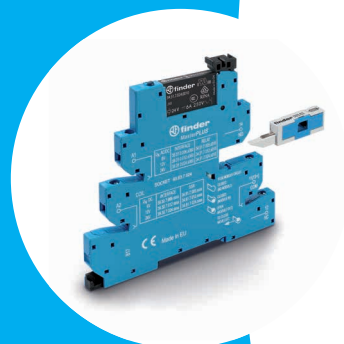
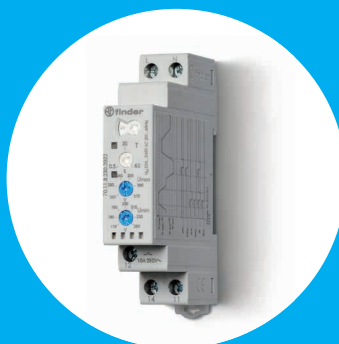
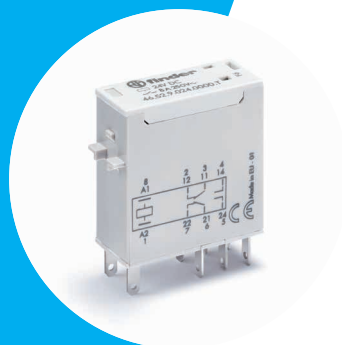
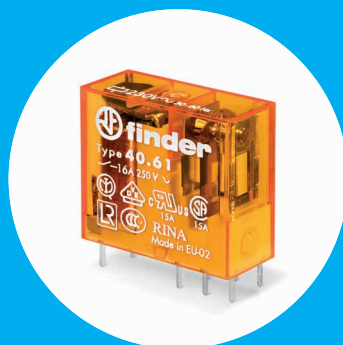
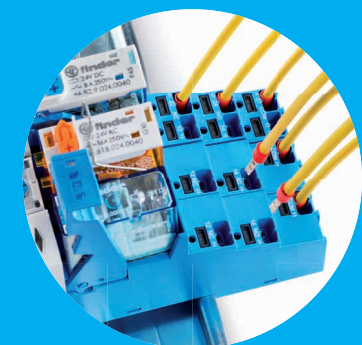
Our four factories produce relays manufactured on assembly lines designed and built at our headquarters by a team of experts in the design of industrial automation systems.

Finder makes over 12,500 different types of products and has one of the widest offerings available today, specializing in step relays; light dependent relays; industrial relays; miniature relays; relay interface modules; power relays; timers; sockets and accessories.





12,500 different types of products



PRODUCTS



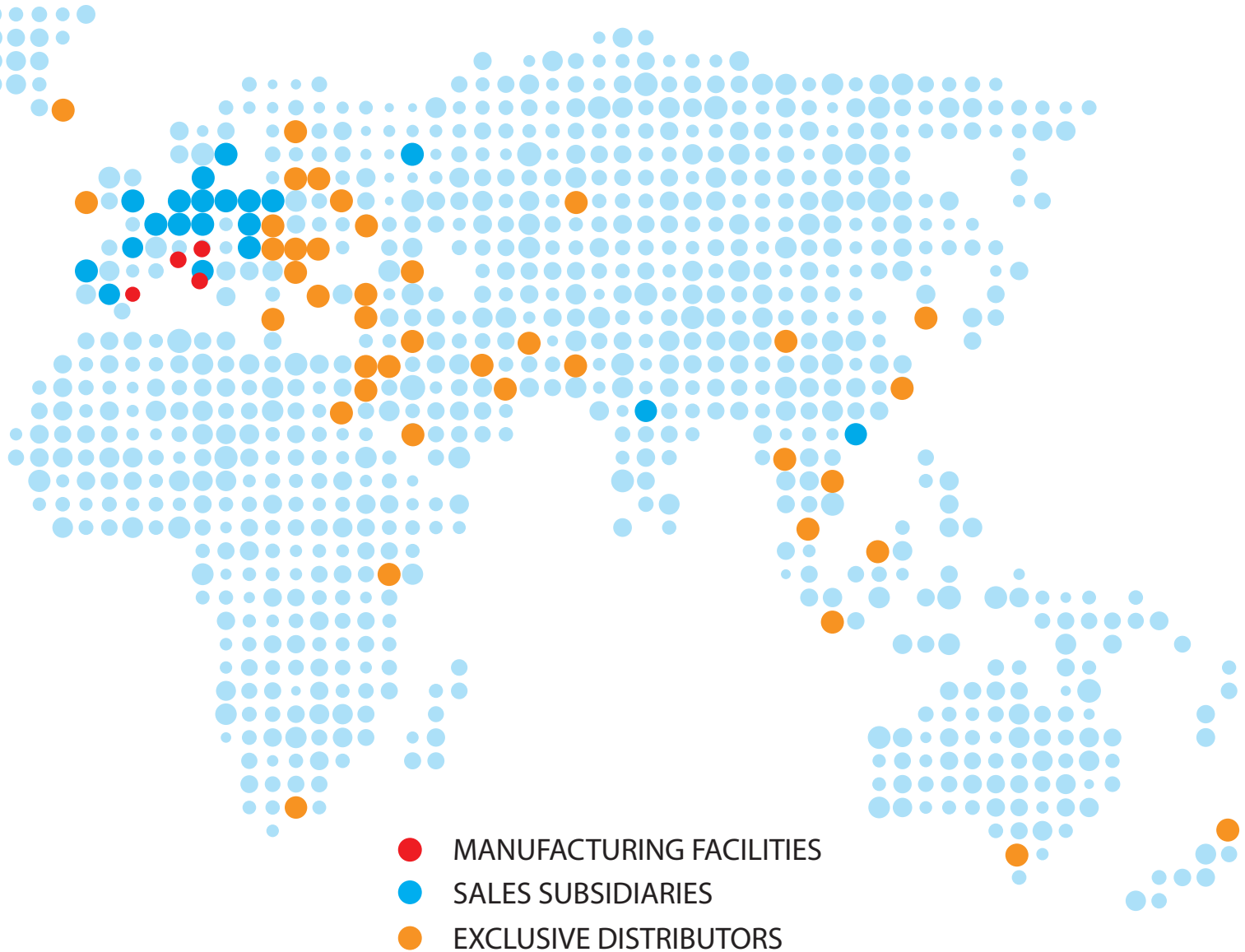
for every type of application



An Italian brand
with global presence



FINDER WORLDWIDE



EUROPE

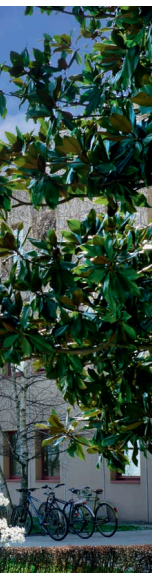
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|--|---|---|--|--|
| ● Almese Headquarters | ● Staffordshire | ● Malmö | ● Amsterdam | ● Wiener Neudorf |
| ● Sanfront | ● Prague | ● Dielsdorf | ● Bever | ● Poznań |
| ● ● St. Jean de Maurienne | ● Langå | ● Moscow | ● Turda | ● Maia |
| ● ● Valencia | ● Budapest | ● Vilnius | ● Trebur Astheim | |

AMERICA

- Suwanee - Georgia
- São Caetano do Sul - São Paulo
- Buenos Aires
- Chipilo - Puebla
- Zonamerica - Uruguay

ASIA

- Delhi
- Hong Kong





Relays used for railway rolling stock are subject to increasingly higher technical demands – such as the need for wider operating ranges; higher resistance to shock and vibration; operation over a wider range of temperature and humidity ; and above all, the fire resistance properties of the relay's constituent parts.

Fire and smoke characteristics of the materials

The relays and their sockets and accessories are manufactured using specific insulating materials, which satisfy the requirement **R26** of fire protection prescribed by the standard **EN 45545-2 +A1:2016** for product category **EL10**.

The requirement **R26**, for Hazardous levels **HL1** to **HL3**, is the conformity to V0 class following vertical small flame test according to **EN 60695-11-10**.

Mechanical and climatic characteristics














The resistance against random vibrations and shock of the relays and their sockets and accessories is in compliance with the prescription of **EN 61373** standard for Category 1, **Class B** products.

Their resistance to temperature and humidity is in compliance with the prescription of **EN 50155** standard, **TX class** (for relay and sockets) or **T1 class** (for timers and control relays).



- Air Conditioning
- Door control systems
- Train Light Control
- Signal control
- Control Board
- Traffic management



	Features	Rated current	No. of contacts	Sockets	Page
	46 Series - Relays <ul style="list-style-type: none"> Plug-in mounting AC coils or DC coils with extended range Complies with EN 45545-2 + A1:2016 (flammability of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, TX class) Coil EMC suppression modules 	16 A	1 CO	97 Series 	1
		8 A	2 CO		
	55 Series - Relays <ul style="list-style-type: none"> Plug-in mounting DC coils with extended range Complies with EN 45545-2 + A1:2016 (flammability of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, TX class) Coil EMC suppression modules 	7 A	4 CO	94 Series 	7
	56 Series - Relays <ul style="list-style-type: none"> Plug-in mounting AC coils or DC coils with extended range Complies with EN 45545-2 + A1:2016 (flammability of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, TX class) Coil EMC suppression modules 	12 A	2 CO	96 Series 	13
			4 CO		
	86 Series - Timer modules <ul style="list-style-type: none"> Multi-function or Bi-function Multi-voltage Time scale from 0.05s to 100h Wide supply range in AC or DC coils Timers for 94, 96, 97 series sockets 	—	—	94 - 96 - 97 Series 	17
	70 Series - Monitoring relays <ul style="list-style-type: none"> Universal voltage monitoring (208...480 V AC) Phase rotation Phase loss 1 or 2 CO versions 	6 A	1 CO		25
		8 A	2 CO		
	75 Series - Relay modules with forcibly guided contacts <ul style="list-style-type: none"> Extended operating range (0.7...1.25) U_N For safety applications, with class A forcibly guided contact relays EN 61810 (ex EN 50205) For railway applications; materials compliant with fire and smoke characteristics EN 45545-2 + A1:2016; mechanical and climatic characteristics compliant with EN 61373 and EN 50155 Coil status visual indication with LED 	6 A	1 NO + 1 NC		29
			2 NO + 2 NC		
	80 Series - Modular timers <ul style="list-style-type: none"> Six time scale from 0.1 s to 24 h Multi-voltage / Multi-function / Mono-function High input/output isolation 1 pole Relay output, 16 A 17.5 mm wide 	8 A	1 CO		35
		16 A			
	83 Series - Modular timers <ul style="list-style-type: none"> Six time scale from 0.1s to 10 days Multi-voltage / Multi-function / Mono-function 1 pole Special version: 2 timed contacts or 1 timed + 1 instantaneous contact 22.5 mm wide 	8 A	2 CO		41
		12 A			
	11 Series - Modular Light dependent relay <ul style="list-style-type: none"> 1 NO contact Sensitivity adjustment from 1 to 100 lux 24 V AC/DC 17.5 mm wide 35 mm rail (EN 60715) mount 	16 A	1 NO		49

A

B

C

D

E

F

G

H

I

J

**Features****Rated
current****No. of
contacts****Page****22 Series - Modular contactors**

- Complies with **EN 45545-2 +A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, T1 class)
- AC/DC silent coils
- 2 or 4 contacts
- 17.5 or 35 mm wide
- 35 mm rail (EN 60715) mount

25 A**2 NO
4 NO****53**

Relays for railway applications 8 - 16 A



Exterior light control



Driver's control console



Pantograph management



Door control



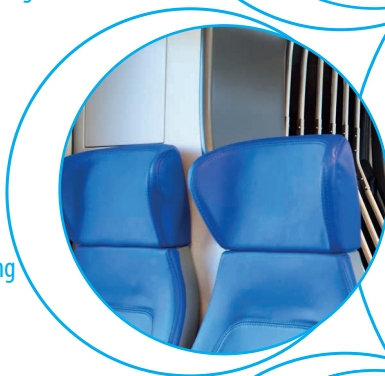
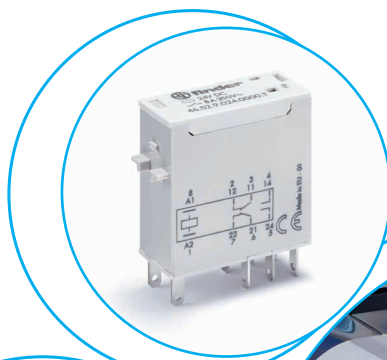
Doors
opening / closing



Internal light
management



Message
panels
infotainment



Plug-in power relays**Type 46.52T**

- 2 pole 8 A

Type 46.61T

- 1 pole 16 A

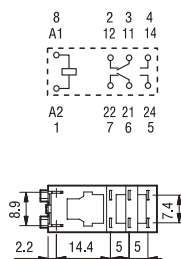
- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, TX class)
- AC coils or DC coils with extended range
- Cadmium Free contacts (standard version)
- Contact material options
- 97 series sockets
- Coil EMC suppression modules
- Accessories (Sockets and Timer modules)

* Short term (10 min) +85°C

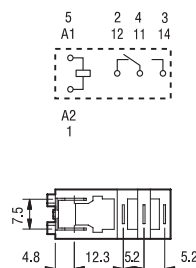
For outline drawing see page 5

46.52T

- 2 Pole CO, 8 A
- Plug-in

**46.61T**

- 1 Pole CO, 16 A
- Plug-in

**Contact specification**

Contact configuration		2 CO (DPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	8/15	16/80
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2000	4000
Rated load AC15 (230 V AC)	VA	350	750
Single phase motor rating (230 V AC)	kW	0.37	0.55
Breaking capacity DC1: 30/110/220 V	A	6/0.5/0.15	12/0.5/0.25
Minimum switching load	mW (V/mA)	300 (5/5)	300 (10/5)
Standard contact material		AgNi	AgSnO ₂

Coil specification

Nominal voltage (U _N)	V AC (50/60 Hz)	230	230
	V DC	24 - 72 - 110	24 - 72 - 110
Rated power	VA/W	1.2/0.5	1.2/0.5
Operating range	AC	(0.80...1.1)U _N	(0.80...1.1)U _N
	DC	(0.70...1.25)U _N	(0.70...1.25)U _N
Holding voltage		0.4 U _N	0.4 U _N
Must drop-out voltage		0.1 U _N	0.1 U _N

Technical data

Mechanical life DC	cycles	10 · 10 ⁶	10 · 10 ⁶
Electrical life at rated load AC1	cycles	100 · 10 ³	100 · 10 ³
Operate/release time	ms	10/3	15/5
Insulation between coil and contacts (1.2/50 µs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range	°C	-40...+70*	-40...+70*
Environmental protection		RT II	RT II

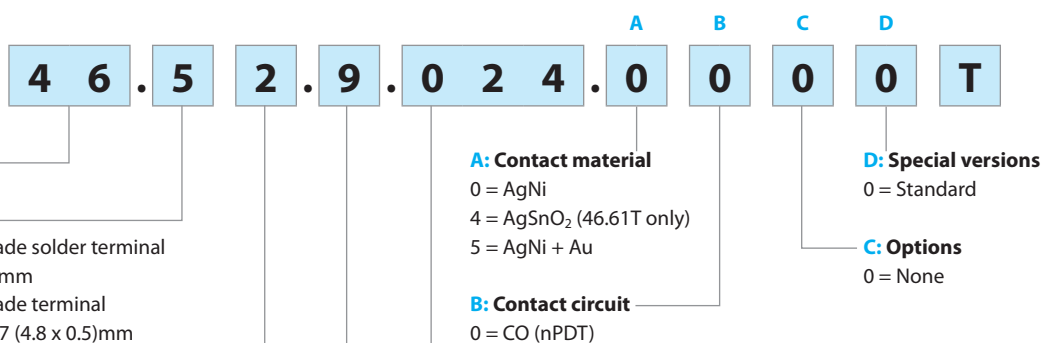
Approvals (according to type)



Ordering information

Example: 46 series plug-in relay, 2 poles, 24 V DC coil, AgNi contacts.

A



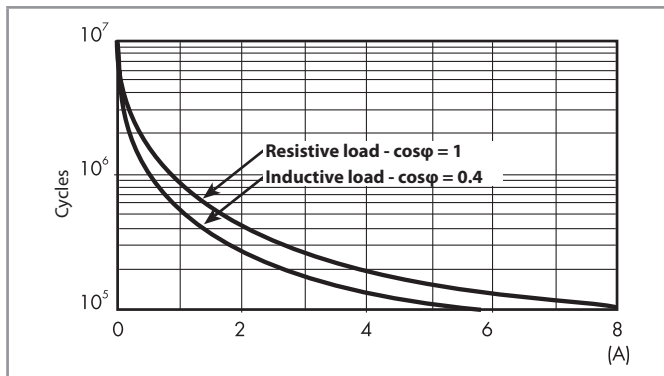
Technical data

Insulation according to EN 61810-1

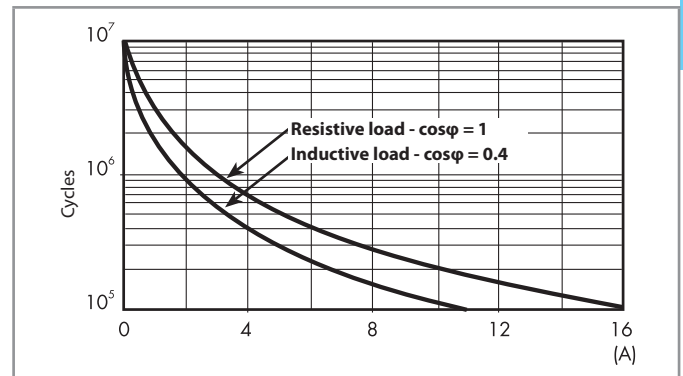
		46.61T		46.52T	
Nominal voltage of supply system	V AC	230/400		230/400	
Rated insulation voltage	V AC	250	400	250	400
Pollution degree		3	2	3	2
Insulation between coil and contact set					
Type of Insulation		Reinforced (8 mm)		Reinforced (8 mm)	
Overvoltage category		III		III	
Rated impulse voltage	kV (1.2/50 μs)	6		6	
Dielectric strength	V AC	4000		4000	
Insulation between adjacent contacts					
Type of insulation		—		Basic	
Overvoltage category		—		III	
Rated impulse voltage	kV (1.2/50 μs)	—		4	
Dielectric strength	V AC	—		2000	
Insulation between open contacts					
Type of disconnection		Micro-disconnection		Micro-disconnection	
Dielectric strength	V AC/kV (1.2/50 μs)	1000/1.5		1000/1.5	
Insulation between coil terminals					
Rated impulse voltage (surge) differential mode (according to EN 50121)		kV (1.2/50 μs)	2		
Other data					
Bounce time: NO/NC	ms	2/6		1/4	
Vibration resistance: NO/NC		According to EN 61373			
Shock resistance		According to EN 61373			
Power lost to the environment	without contact current	W	0.6		0.6
	with rated current	W	1.6		2

Contact specification

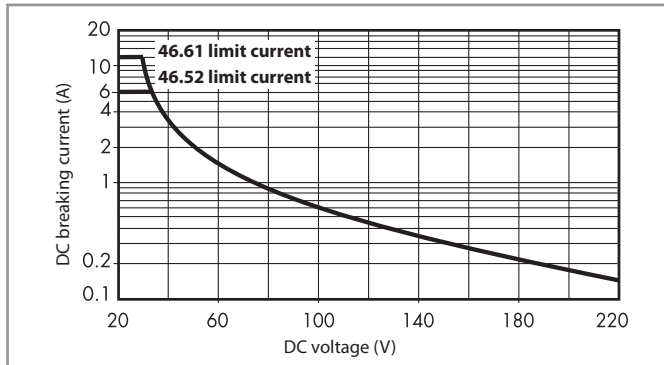
F 46 - Electrical life (AC) v contact current
Type 46.52T



F 46 - Electrical life (AC) v contact current
Type 46.61T



H 46 - Maximum DC1 breaking capacity



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.
 - In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
- Note: the release time for the load will be increased.

Coil specifications

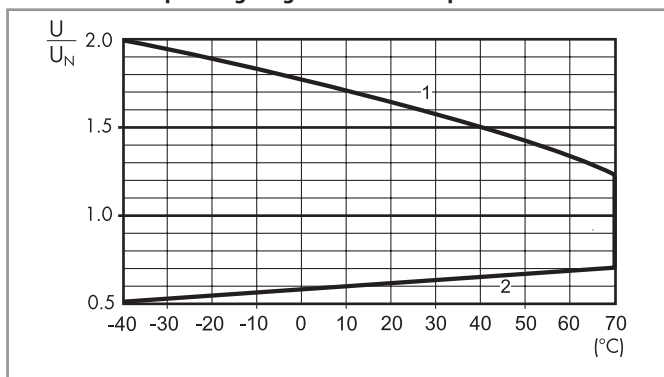
DC coil data

Nominal voltage U_N	Coil code	Operating range		Resistance R	Rated coil consumption I at U_N
V		U_{min} V	U_{max} V	Ω	mA
24	9.024	16.8	30	1200	20
72	9.072	50.4	90	3400	7
110	9.110	77	137.5	23500	4.7

AC coil data

Nominal voltage U_N	Coil code	Operating range		Resistance R	Rated coil consumption I at U_N
V		U_{min} V	U_{max} V	Ω	mA
230	8.230	184	253	28000	5

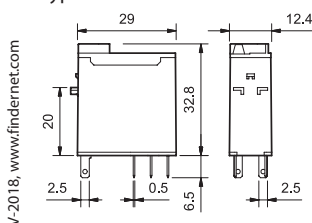
R 46T - DC coil operating range v ambient temperature



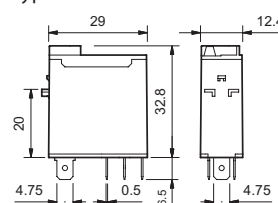
- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Outline drawings

Type 46.52T



Type 46.61T



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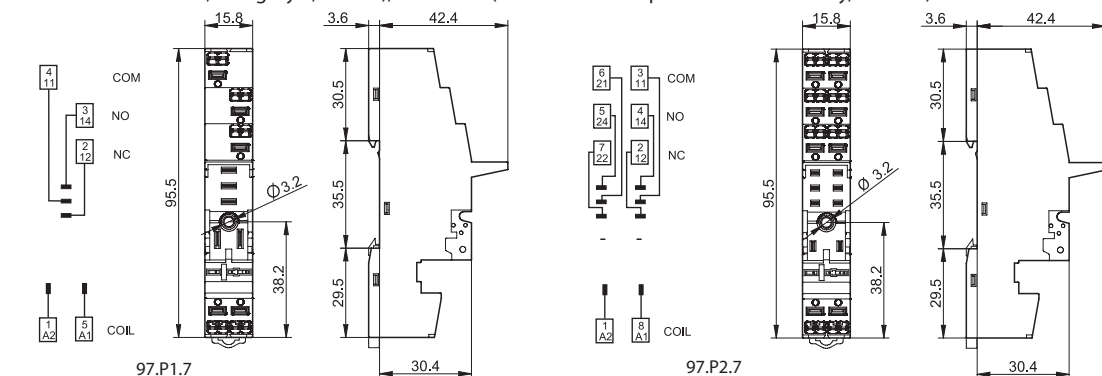
97.P1.7

Approvals
(according to type):



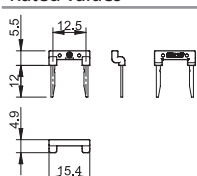
Push-in terminal socket panel or 35 mm rail (EN 60715) mount		97.P1.7 SMA*	97.P2.7 SMA*
For relay type		46.61T	46.52T
Accessories			
Metal retaining clip (supplied with socket - packaging code SMA)			097.71
2-way jumper link			097.52
2-way jumper link			097.42
Modules (see table below)			99.02
Timer modules (see table below)			86.30T
Technical data			
Rated values		10 A - 250 V AC	8 A - 250 V AC
Dielectric strength		6 kV (1.2/50 µs) between coil and contacts	
Protection category		IP 20	
Ambient temperature		°C -40...+70	
Wire strip length		mm 8	
Min. wire size for 97.P1.7 and 97.P2.7 socket		solid wire	stranded wire
		mm ² 0.5	0.5
		AWG 21	21
Max. wire size for 97.P1.7 and 97.P2.7 sockets		solid wire	stranded wire
		mm ² 2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
		AWG 2 x 18 / 1 x 14	2 x 18 / 1 x 14

* Complies with **EN 45545-2 +A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)



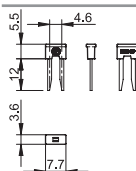
097.52

2-way jumper link for 97.P1.7 and 97.P2.7 sockets	097.52
Rated values	10 A - 250 V



097.42

2-way jumper link for 97.P1.7 and 97.P2.7 sockets	097.42
Rated values	10 A - 250 V



86.30

86 series timer modules	
(12...24)V AC/DC; Bi-function: AI, DI; (0.05 s...100 h)	86.30.0.024.0000T
Approvals (according to type):	AI: ON-delay DI: Interval



99.02

99.02 coil indication and EMC suppression modules	
Diode (+A1, standard polarity)	(6...220)V DC 99.02.3.000.00
LED + Diode (+A1, standard polarity)	(6...24)V DC 99.02.9.024.99
LED + Diode (+A1, standard polarity)	(28...72)V DC 99.02.9.060.99
LED + Diode (+A1, standard polarity)	(110...220)V DC 99.02.9.220.99
LED + Varistor	(6...24)V DC/AC 99.02.0.024.98
LED + Varistor	(28...72)V DC/AC 99.02.0.060.98
LED + Varistor	(110...240)V DC/AC 99.02.0.230.98

Approvals (according to type): DC Modules with non-standard polarity (+A2) on request.

Relays for railway applications 7 A



Exterior light control



Air conditioning



Ancillary equipment



Doors opening / closing



Internal light management



Message panels infotainment



Plug-in mount, general purpose

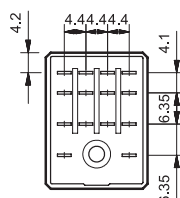
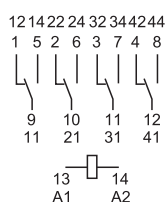
4 Pole relays, 7 A

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, TX class)
- DC coils with extended range
- Cadmium Free contacts (standard version)
- 94 series sockets
- Coil EMC suppression modules
- Accessories (Sockets and Timer modules)

55.34T



- 4 pole, 7 A
- Plug-in 94 series sockets



* Short term (10 min) +85°C

For outline drawing see page 13

Contact specification

Contact configuration		4 CO (4PDT)
Rated current/Maximum peak current	A	7/15
Rated voltage/Maximum switching voltage	V AC	250/250
Rated load AC1	VA	1750
Rated load AC15 (230 V AC)	VA	350
Single phase motor rating (230 V AC)	kW	0.125
Breaking capacity DC1: 30/110/220 V	A	7/0.25/0.12
Minimum switching load	mW (V/mA)	300 (5/5)
Standard contact material		AgNi

Coil specification

Nominal voltage (U_N)	V AC (50/60 Hz)	—
	V DC	24 - 72 - 110
Rated power DC	W	1
Operating range	AC	—
	DC	(0.70...1.25) U_N
Holding voltage	DC	0.5 U_N
Must drop-out voltage	DC	0.1 U_N

Technical data

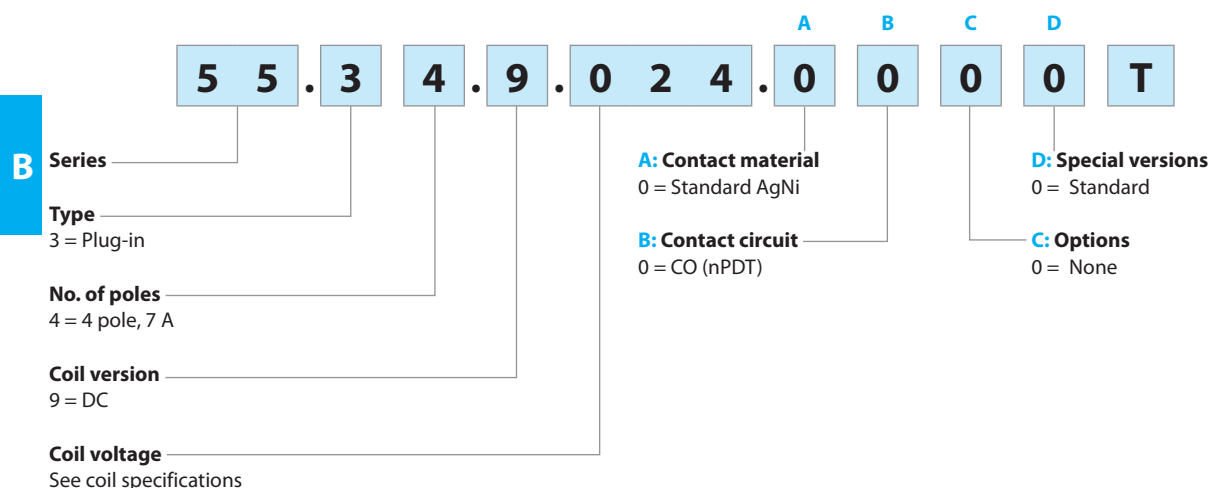
Mechanical life AC/DC	cycles	50 · 10 ⁶
Electrical life at rated load AC1	cycles	150 · 10 ³
Operate/release time	ms	11/3
Insulation between coil and contacts (1.2/50 μ s)	kV	4
Dielectric strength between open contacts	V AC	1000
Ambient temperature range	°C	-40...+70*
Environmental protection		RT I

Approvals (according to type)



Ordering information

Example: 55 series plug-in relay, 4 CO (4PDT), 24 V DC coil.

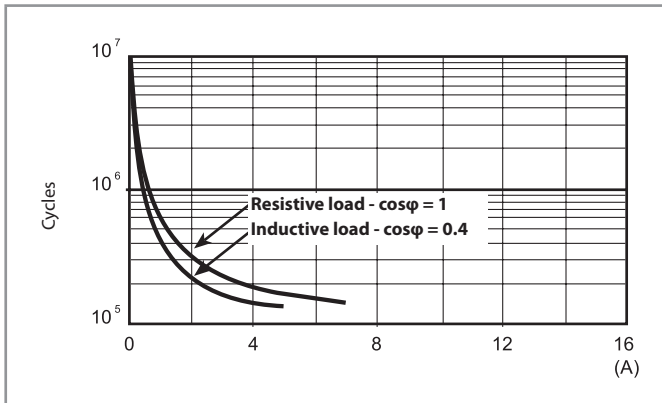


Technical data

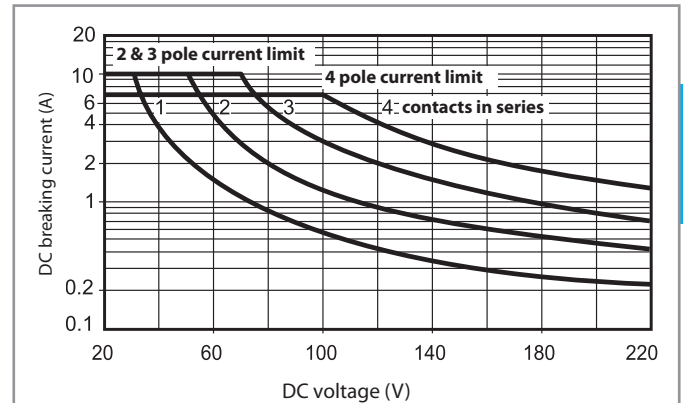
Insulation according to EN 61810-1			
Nominal voltage of supply system	V AC	230	
Rated insulation voltage	V AC	250	
Pollution degree		2	
Insulation between coil and contact set			
Type of Insulation		Basic	
Overvoltage category		III	
Rated impulse voltage	kV (1.2/50 µs)	4	
Dielectric strength	V AC	2000	
Insulation between adjacent contacts			
Type of insulation		Basic	
Overvoltage category		II	
Rated impulse voltage	kV (1.2/50 µs)	2.5	
Dielectric strength	V AC	2000	
Insulation between open contacts			
Type of disconnection		Micro-disconnection	
Dielectric strength	V AC/kV (1.2/50 µs)	1000/1.5	
Insulation between coil terminals			
Rated impulse voltage (surge) differential mode (according to EN 50121)	kV (1.2/50 µs)	4	
Other data			
Bounce time: NO/NC	ms	1/3	
Vibration resistance: NO/NC		According to EN 61373	
Shock resistance		According to EN 61373	
Power lost to the environment	without contact current	W	1
	with rated current	W	3
Recommended distance between relays mounted on PCB	mm	≥ 5	

Contact specification

F 55 - Electrical life (AC) v contact current



H 55 - Maximum DC1 breaking capacity



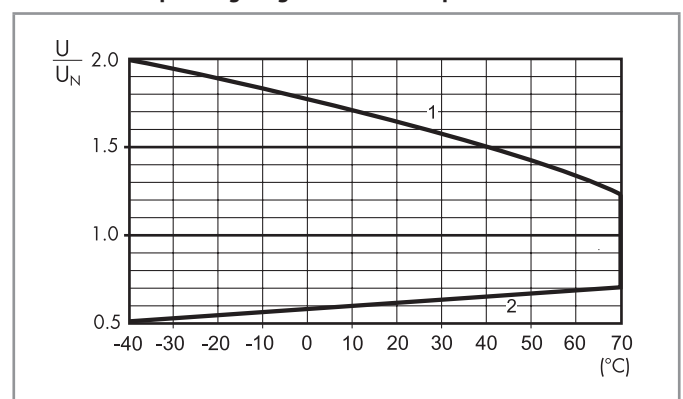
- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
Note: the release time of the load will be increased.

Coil specifications

DC coil data

Nominal voltage U_N	Coil code	Operating range		Resistance	Rated coil consumption
V		U_{min} V	U_{max} V	R Ω	I at U_N mA
24	9.024	16.8	30	600	40
72	9.072	50.4	90	4000	15
110	9.110	77	137.5	12500	8.8

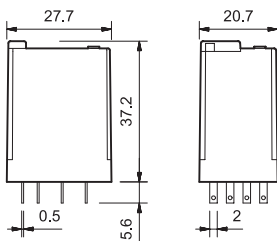
R 55 - DC coil operating range v ambient temperature



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

Outline drawing


Type 55.34T



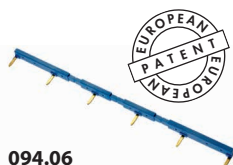
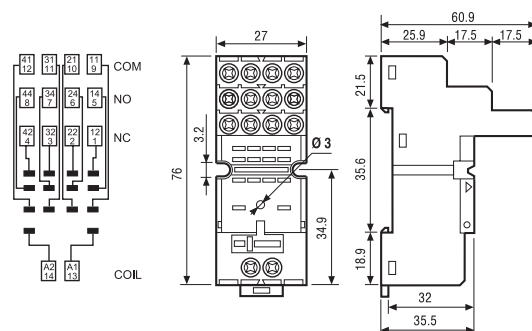


94.04.7

Approvals
(according to type):

Screw terminal (Box clamp) socket panel or 35 mm (EN 60715) rail mount	94.04.7 SMA*		
For relay type	55.34T		
Accessories			
Metal retaining clip	094.71		
6-way jumper link	094.06		
Identification tag	094.00.4		
Modules (see table below)	99.02		
Timer modules (see table below)	86.30T		
Technical data			
Rated values	10 A - 250 V		
Dielectric strength	2 kV AC		
Protection category	IP 20		
Ambient temperature	°C	−40...+70	
 Screw torque	Nm	0.5	
Wire strip length	mm	8	
Max. wire size for 94.04.7 sockets		solid wire	stranded wire
	mm²	1 x 6 / 2 x 2.5	1 x 4 / 2 x 2.5
	AWG	1 x 10 / 2 x 14	1 x 12 / 2 x 14

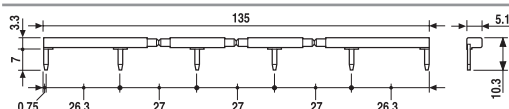
* Complies with **EN 45545-2 +A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)



094.06



6-way jumper link for 94.04.7 socket	094.06
Rated values	10 A - 250 V




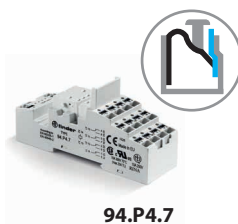
86.30

86 series timer modules	
(12...24)V AC/DC; Bi-function: AI, DI; (0.05 s...100 h)	86.30.0.024.0000T
Approvals (according to type):	AI: ON-delay DI: Interval



99.02

99.02 coil indication and EMC suppression modules for 94.04.7 socket		
Diode (+A1, standard polarity)	(6...220)V DC	99.02.3.000.00
LED + Diode (+A1, standard polarity)	(6...24)V DC	99.02.9.024.99
LED + Diode (+A1, standard polarity)	(28...72)V DC	99.02.9.060.99
LED + Diode (+A1, standard polarity)	(110...220)V DC	99.02.9.220.99
LED + Varistor	(6...24)V DC/AC	99.02.0.024.98
LED + Varistor	(28...72)V DC/AC	99.02.0.060.98
LED + Varistor	(110...240)V DC/AC	99.02.0.230.98
Approvals (according to type): 		DC Modules with non-standard polarity (+A2) on request.



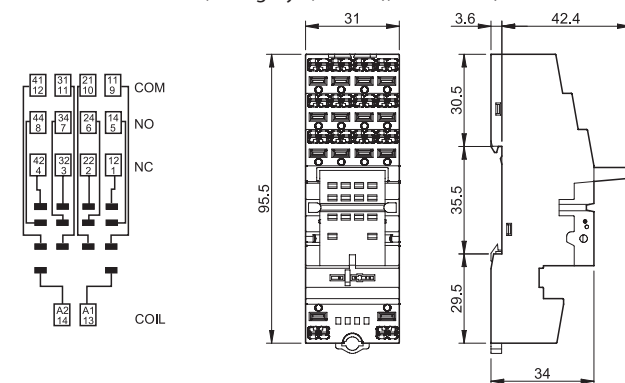
94.P4.7

Approvals
(according to type):



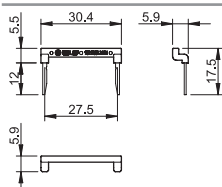
Push-in terminal socket 35 mm rail (EN 60715) mount		94.P4.7 SMA*	
For relay type		55.34T	
Accessories			
Metal retaining clip		094.71	
2-way jumper link		094.52.1	
2-way jumper link		097.52	
Modules (see table below)		99.02, 86.30T	
Technical data			
Rated values		10 A - 250 V	
Dielectric strength		2 kV AC	
Protection category		IP 20	
Ambient temperature	°C	−40...+70	
Wire strip length	mm	10	
Min. wire size for 94.P4.7 sockets		solid wire	stranded wire
	mm²	0.5	0.5
	AWG	21	21
Max. wire size for 94.P4.7 sockets		solid wire	stranded wire
	mm²	2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
	AWG	2 x 18 / 1 x 14	2 x 18 / 1 x 14

* Complies with **EN 45545-2 + A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)



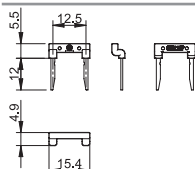
094.52.1

2-way jumper link for 94.P4.7 sockets	094.52.1
Rated values	10 A - 250 V



097.52

2-way jumper link for 94.P4.7 sockets	097.52
Rated values	10 A - 250 V



86.30

86 series timer modules	
(12...24)V AC/DC; Bi-function: AI, DI; (0.05 s...100 h)	86.30.0.024.0000T

Approvals (according to type): **CE ENEC cULus**

AI: ON-delay
DI: Interval



99.02

99.02 coil indication and EMC suppression modules for 94.P4.7 socket		
Diode (+A1, standard polarity)	(6...220)V DC	99.02.3.000.00
LED + Diode (+A1, standard polarity)	(6...24)V DC	99.02.9.024.99
LED + Diode (+A1, standard polarity)	(28...72)V DC	99.02.9.060.99
LED + Diode (+A1, standard polarity)	(110...220)V DC	99.02.9.220.99
LED + Varistor	(6...24)V DC/AC	99.02.0.024.98
LED + Varistor	(28...72)V DC/AC	99.02.0.060.98
LED + Varistor	(110...240)V DC/AC	99.02.0.230.98

Approvals (according to type): **ENE CULus**

DC Modules with non-standard polarity (+A2) on request.

Relays for railway applications 12 A



Pantograph
management



Bogie
monitoring



Internal light
management



Mobile device
charging



Plug-in power relays - 12 A, 2 and 4 pole

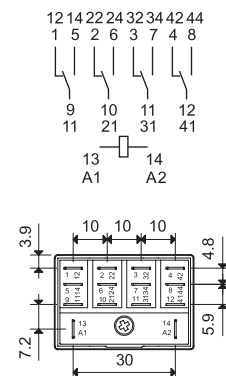
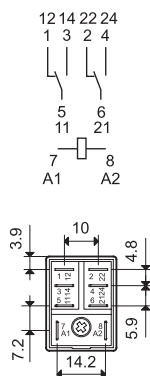
- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, TX class)
- AC coils or DC coils with extended range
- Cadmium Free contacts (standard version)
- Contact material options
- 96 series sockets
- Coil EMC suppression modules
- Accessories (Sockets and Timer modules)

56.32T

- 2 Pole CO, 12 A
- Plug-in/Faston 187

56.34T

- 4 Pole CO, 12 A
- Plug-in/Faston 187



* Short term (10 min) +85°C

For outline drawing see page 21

Contact specification

Contact configuration		2 CO (DPDT)	4 CO (4PDT)
Rated current/Maximum peak current	A	12/20	12/20
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	3000	3000
Rated load AC15 (230 V AC)	VA	700	700
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 30/110/220 V	A	12/0.5/0.25	12/0.5/0.25
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi

Coil specification

Nominal voltage (U_N)	V AC (50/60 Hz)	120 - 230	120 - 230
	V DC	24 - 72 - 110	24 - 72 - 110
Rated power	VA (50 Hz)/W	1.5/1	2/1.3
Operating range	AC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
	DC	$(0.70 \dots 1.25) U_N$	$(0.70 \dots 1.25) U_N$
Holding voltage		$0.6 U_N$	$0.6 U_N$
Must drop-out voltage		$0.1 U_N$	$0.1 U_N$

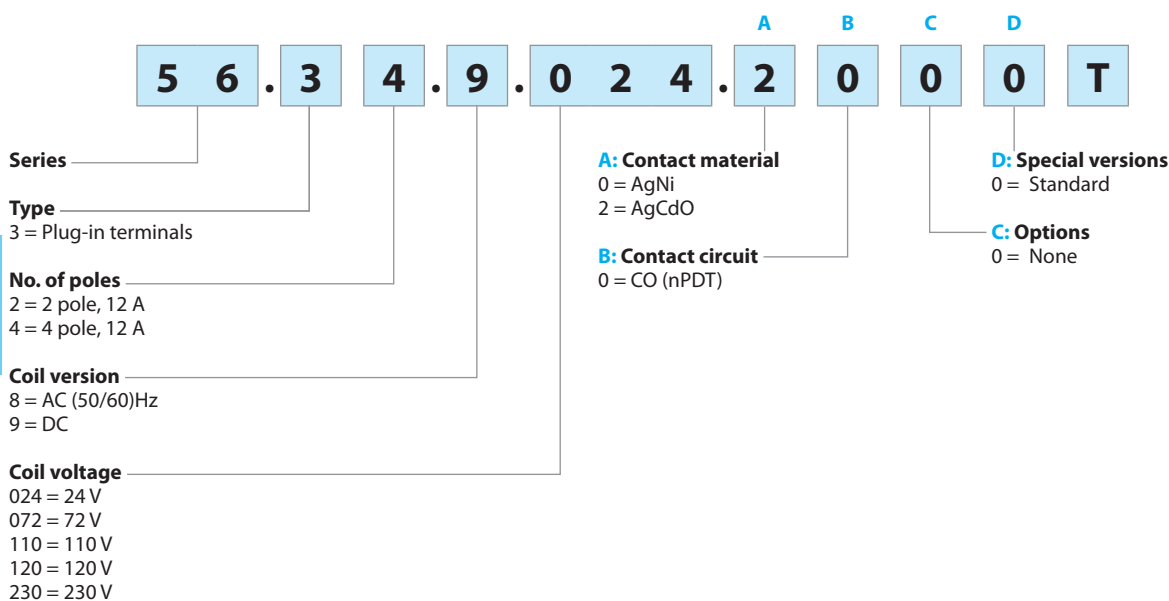
Technical data

Mechanical life DC	cycles	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$100 \cdot 10^3$
Operate/release time	ms	8/8	8/8
Insulation between coil and contacts (1.2/50 μ s)	kV	4	4
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range	°C	-40...+70*	-40...+70*
Environmental protection		RT I	RT I

Approvals (according to type)

Ordering information

Example: 56 series plug-in relay, 4 poles, 24 V DC coil, AgCdO contacts.



Technical data

Insulation according to EN 61810-1

Nominal voltage of supply system	V AC	230/400	
Rated insulation voltage	V AC	250	400
Pollution degree		3	2

Insulation between coil and contact set

Type of Insulation		Basic
Overvoltage category		III
Rated impulse voltage	kV (1.2/50 µs)	4
Dielectric strength	V AC	2500

Insulation between adjacent contacts

Type of insulation		Basic
Overvoltage 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)	1000/1.5

Insulation between coil terminals

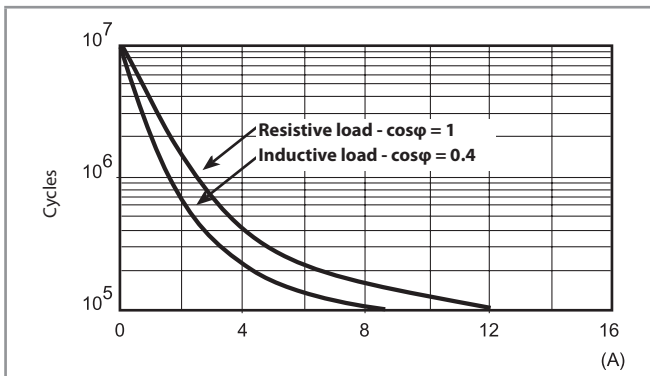
Rated impulse voltage (surge) differential mode (according to EN 50121)	kV (1.2/50 µs)	4
---	----------------	---

Other data

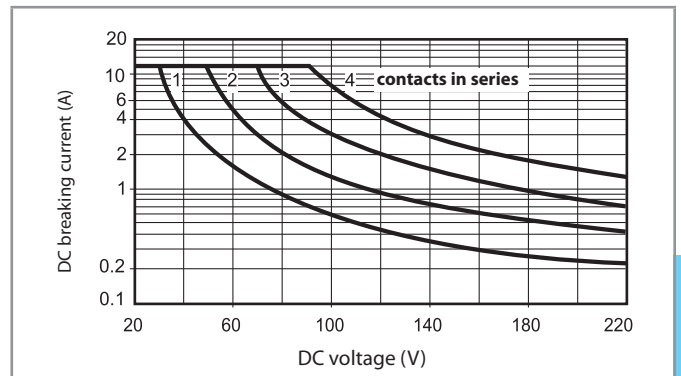
Bounce time: NO/NC	ms	1/3
Vibration resistance: NO/NC		According to EN 61373
Shock resistance		According to EN 61373
Power lost to the environment	without contact current	W 1 (56.32T)/1.3 (56.34T)
	with rated current	W 3.8 (56.32T)/6.9 (56.34T)

Contact specification

F 56 - Electrical life (AC) v contact current



H 56 - Maximum DC1 breaking capacity



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
Note: the release time of the load will be increased.

Coil specifications

DC coil data, 2 CO - Type 56.32T

Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption
U_N		U_{min}	U_{max}	R	I at U_N
V		V	V	Ω	mA
24	9.024	16.8	30	600	40
72	9.072	50.4	90	5100	14
110	9.110	77	137.5	12500	8.8

DC coil data, 4 CO - Type 56.34T

Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption
U_N		U_{min}	U_{max}	R	I at U_N
V		V	V	Ω	mA
24	9.024	16.8	30	490	49
72	9.072	50.4	90	4000	18
110	9.110	77	137.5	10400	10.5

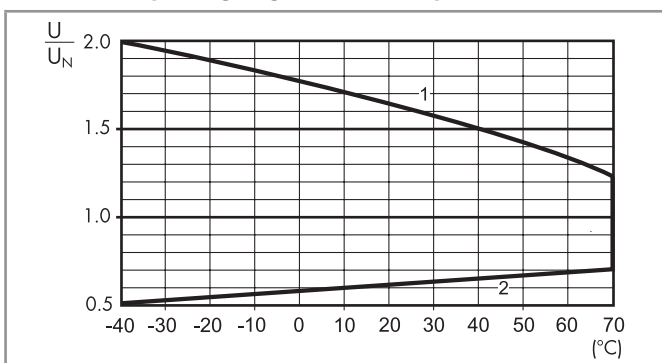
AC coil data, 2 CO - Type 56.32T

Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption
U_N		U_{min}	U_{max}	R	I at U_N
V		V	V	Ω	mA
120	8.120	96	132	4700	12
230	8.230	184	253	17000	6

AC coil data, 4 CO - Type 56.34T

Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption
U_N		U_{min}	U_{max}	R	I at U_N
V		V	V	Ω	mA
120	8.120	96	132	2560	13.4
230	8.230	184	253	7700	9

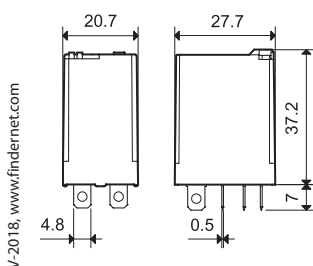
R 56 - DC coil operating range v ambient temperature



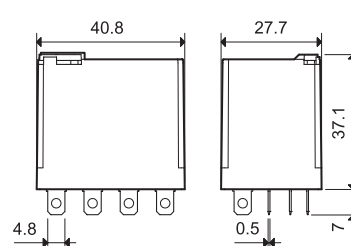
- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Outline drawings

Type 56.32T



Type 56.34T





96.02.7

Approvals
(according to type):

96.04.7

Approvals
(according to type):**Screw terminal (Box clamp) socket**
panel or 35 mm rail mount (EN 60715)

For relay type

96.02.7 SMA*

56.32T

96.04.7 SMA*

56.34T

AccessoriesMetal retaining clip
(supplied with socket - packaging code SMA)

094.71

096.71

6-way jumper link

094.06

—

Identification tag

095.00.4

090.00.2

Modules (see table below)

99.02

99.02

Timer modules (see table below)

86.30T

86.00T, 86.30T

Technical data

Rated values

12 A - 250 V

Dielectric strength

2 kV AC

Protection category

IP 20

Ambient temperature

°C -40...+70 (see diagram L96)

Screw torque

Nm 0.8

Wire strip length

mm 8

Max. wire size for 96.02.7 and 96.04.7 socket

solid wire

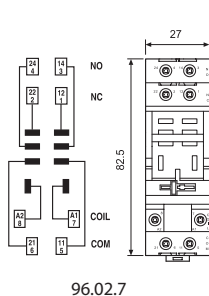
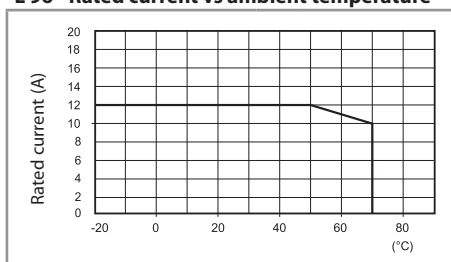
stranded wire

mm² 1 x 6 / 2 x 2.5

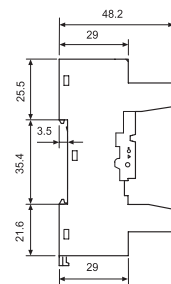
1 x 4 / 2 x 2.5

AWG 1 x 10 / 2 x 14

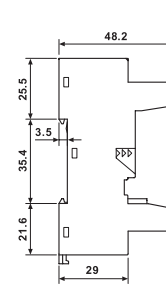
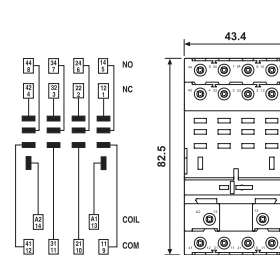
1 x 12 / 2 x 14

* Complies with **EN 45545-2 +A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)**L 96 - Rated current vs ambient temperature**

96.02.7



96.04.7



094.06



86.00



86.30



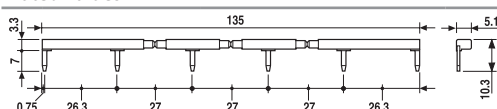
99.02

6-way jumper link for 96.02.7 socket

Rated values

094.06

10 A - 250 V

**86 series timer modules**

Multi-voltage: (12...240)V AC/DC;

Multi-functions: AI, DI, SW, BE, CE, DE, EE, FE; (0.05 s...100 h)

86.00.0.240.0000T

(12...24)V AC/DC; Bi-function: AI, DI; (0.05 s...100 h)

86.30.0.024.0000T

Approvals (according to type):



AI: ON-delay

DI: Interval

SW: Symmetrical flasher (starting pulse on)

BE: Off-delay with control signal

CE: On- and off-delay with control signal

DE: Interval with control signal on

EE: Interval with control signal off

FE: Interval with control signal on and off

99.02 coil indication and EMC suppression modules

Diode (+A1, standard polarity)

(6...220)V DC

99.02.3.000.00

LED + Diode (+A1, standard polarity)

(6...24)V DC

99.02.9.024.99

LED + Diode (+A1, standard polarity)

(28...72)V DC

99.02.9.060.99

LED + Diode (+A1, standard polarity)

(110...220)V DC

99.02.9.220.99

LED + Varistor

(6...24)V DC/AC

99.02.0.024.98

LED + Varistor

(28...72)V DC/AC

99.02.0.060.98

LED + Varistor

(110...240)V DC/AC

99.02.0.230.98

Approvals (according to type):



DC Modules with non-standard polarity (+A2) on request.

Timer modules

86
SERIES



Door control



Ancillary
equipment



Driver's control
console



Message panels
infotainment



Timer modules for use in conjunction with relay & socket.

86.00T - Multi-function & multi-voltage timer module

86.30T - Bi-function & multi-voltage timer module

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- Timer module:
 - type 86.00T for 96 series sockets
 - type 86.30T for 94, 96, 97 series sockets
- Wide supply voltage range:
 - type 86.00T: 12...240 V AC/DC
 - type 86.30T: 12...24 V AC/DC
- LED indicator

* Short term (10 min) +70°C

For outline drawing see page 26

Contact specification

Contact configuration	
Rated current/Maximum peak current	A
Rated voltage/Maximum switching voltage	V AC
Rated load AC1	VA
Rated load AC15 (230 V AC)	VA
Single phase motor rating (230 V AC)	kW
Breaking capacity DC1: 30/110/220 V	A
Minimum switching load	mW (V/mA)
Standard contact material	

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)
	V DC
Rated power AC/DC	W
Operating range	V AC (50/60 Hz)
	DC

Technical data

Specified time range	(0.05...1)s, (0.5...10)s, (5...100)s, (0.5...10)min, (5...100)min, (0.5...10)h, (5...100)h		
Repeatability	%	± 1	± 1
Recovery time	ms	≤ 50	≤ 50
Minimum control impulse	ms	50	—
Setting accuracy full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	See 56T series relays	See 46T, 55T and 56T series relays
Ambient temperature range	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20

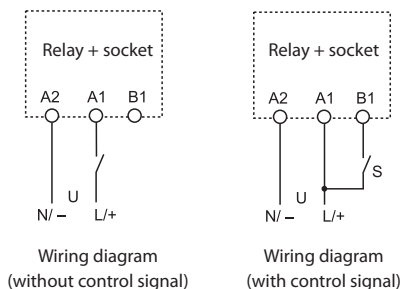
Approvals (according to type)

86.00T



- Time scale: from 0.05 s to 100 h
- Multi-function
- Plug-in for use with 96 series sockets

AI: On-delay
DI: Interval
SW: Symmetrical flasher (starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with control signal
DE: Interval with control signal on
EE: Interval with control signal off
FE: Interval with control signal on and off



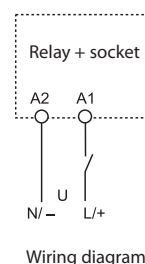
See 56T series relays

86.30T



- Time scale: from 0.05 s to 100 h
- Bi-function
- Plug-in for use with 94, 96 and 97 series sockets

AI: On-delay
DI: Interval



See 46T, 55T, 56T series relays

Ordering information

Example: 86 series multi-function timer module, (12...240)V AC/DC supply voltage.

8 6 . 0 0 . 0 . 2 4 0 . 0 0 0 0 T

Series

Type

0 = Multi-function timer (AI, DI, SW, BE, CE, DE, EE, FE)

3 = Bi-function timer (AI, DI)

No. of poles

See 46T, 55T, 56T series relays

Poles for chosen relay/socket combination -
according to chart below

Supply voltage

024 = (12...24)V AC/DC (86.30T only)

240 = (12...240)V AC/DC (86.00T only)

Supply version

0 = AC (50/60 Hz)/DC

D Combinations

Number of poles	Relay type	Socket type	Timer module
1	46.61T	97.01.7/97.P1.7	86.30T
2	46.52T	97.02.7/97.P2.7	86.30T
4	55.34T	94.04.7/94.P4.7	86.30T
2	56.32T	96.02.7	86.30T
4	56.34T	96.04.7	86.00T/86.30T

Technical data

EMC specifications

Type of test	Reference standard	86.00T	86.30T
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV
	air discharge	EN 61000-4-2	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)	EN 61000-4-3	10 V/m	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals	EN 61000-4-4	4 kV	2 kV
Surges (1.2/50 µs) on Supply terminals	common mode	EN 61000-4-5	4 kV
	differential mode	EN 61000-4-5	4 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals	EN 61000-4-6	10 V	10 V
Radiated and conducted emission	EN 55022	class B	class B
Other data		86.00T	86.30T
Current absorption on signal control (B1)	mA	1	—
Power lost to the environment	without contact current	W	0.1 (12 V) - 1 (230 V)
	with rated current	See 56T series relays	See 46T, 55T, 56T series relays

Times scales

1 2 3 □ □ □ (0.05...1)s	1 2 3 □ □ □ (0.5...10)s	1 2 3 □ □ □ (5...100)s	1 2 3 □ □ □ (0.5...10)min	1 2 3 □ □ □ (5...100)min	1 2 3 □ □ □ (0.5...10)h	1 2 3 □ □ □ (5...100)h
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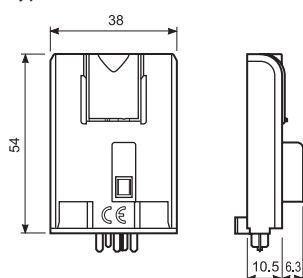
NOTE: Time scales and functions must be set before energising the timer.

To achieve the minimum time setting of 0.05 seconds it is necessary to use one of the functions with control signal.

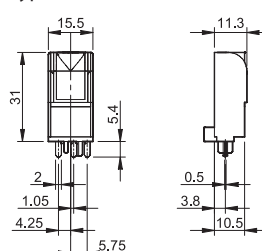
When setting very short times it may be necessary to take into account the operate time of the relay used.

Outline drawings

Type 86.00T



Type 86.30T











Functions

U = Supply voltage

S = Control signal

 = Output contact

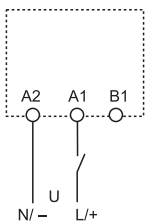
LED Type 86.00T	LED Type 86.30T	Supply voltage	NO output contact
		OFF	Open
		ON	Open
		ON	Open (Timing in Progress)
		ON	Closed

Without control signal = Start via contact in supply line (A1).

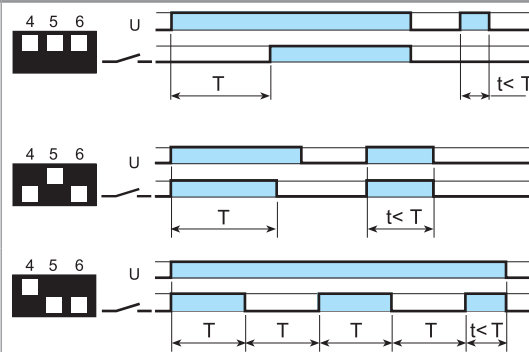
With control signal = Start via contact into control terminal (B1).

Wiring diagram

Without control signal



Type 86.00T



(AI) On-delay.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

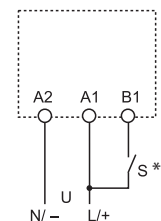
(DI) Interval.

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

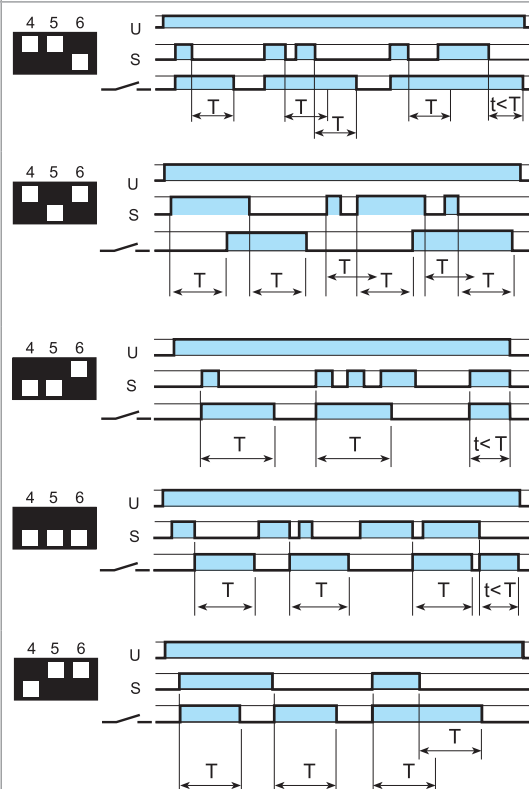
(SW) Symmetrical flasher (starting pulse on).

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

With control signal



* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1). Switch S should be exclusively used to provide the control signal to terminal B1. (Do not connect any other load at this point).



(BE) Off-delay with control signal.

Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.

(CE) On- and off-delay with control signal.

Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.

(DE) Interval with control signal on.

Power is permanently applied to the timer. On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

(EE) Interval with control signal off.

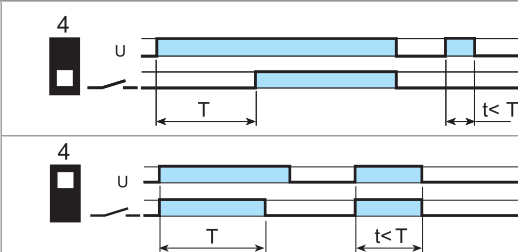
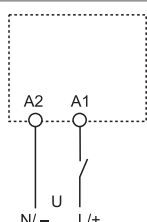
Power is permanently applied to the timer. On opening of the Signal Switch (S) the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

(FE) Interval with control signal on and off.

Power is permanently applied to the timer. Both the opening and closing of the Signal Switch (S) initiates the transfer of the output contacts. In both instances the contacts reset after the delay period has elapsed.

Wiring diagram

Type 86.30T



(AI) On-delay.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

(DI) Interval.


Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.



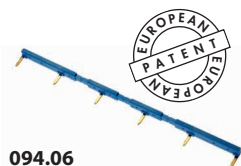
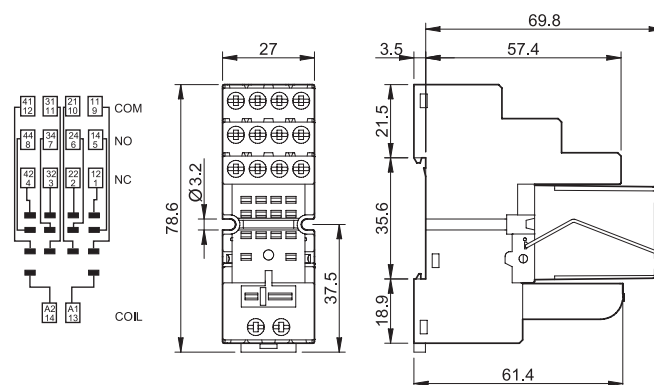
94.04.7

Approvals
(according to type):



Screw terminal (Box clamp) socket panel or 35 mm (EN 60715) rail mount		94.04.7 SMA*	
For relay type		55.34T	
Accessories			
Metal retaining clip		094.71	
6-way jumper link		094.06	
Identification tag		094.00.4	
Timer modules		86.30T	
Technical data			
Rated values		10 A - 250 V	
Dielectric strength		2 kV AC	
Protection category		IP 20	
Ambient temperature		°C	−40...+70
 Screw torque	Nm	0.5	
Wire strip length		mm	8
Max. wire size for 94.04.7 sockets		solid wire	stranded wire
		mm²	1 x 6 / 2 x 2.5 1 x 4 / 2 x 2.5
		AWG	1 x 10 / 2 x 14 1 x 12 / 2 x 14

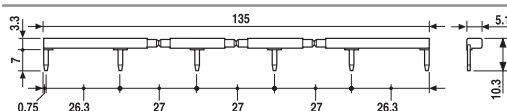
* Complies with **EN 45545-2 +A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)

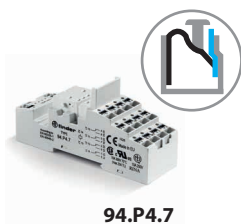


094.06



6-way jumper link for 94.04.7 socket		094.06	
Rated values		10 A - 250 V	





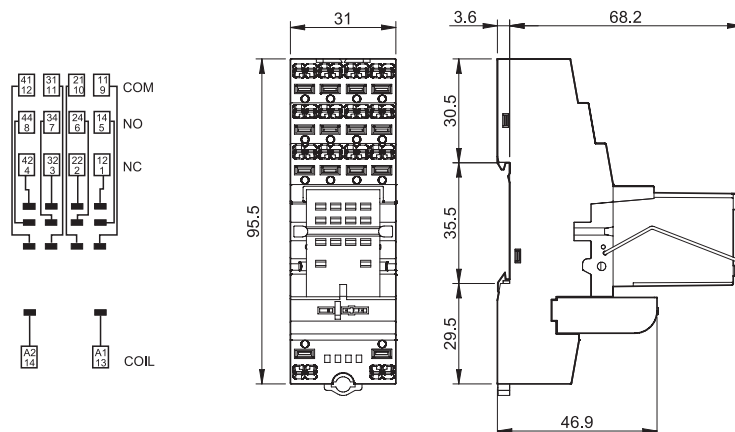
94.P4.7

Approvals
(according to type):



Push-in terminal socket 35 mm rail (EN 60715) mount		94.P4.7 SMA*		
For relay type		55.34T		
Accessories				
Metal retaining clip		094.71		
2-way jumper link		094.52.1		
2-way jumper link		097.52		
Timer modules		86.30T		
Technical data				
Rated values		10 A - 250 V		
Dielectric strength		2 kV AC		
Protection category		IP 20		
Ambient temperature		°C −40...+70		
Wire strip length		mm	10	
Min. wire size for 94.P4.7 sockets			solid wire	stranded wire
		mm²	0.5	0.5
		AWG	21	21
Max. wire size for 94.P4.7 sockets			solid wire	stranded wire
		mm²	2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
		AWG	2 x 18 / 1 x 14	2 x 18 / 1 x 14

* Complies with **EN 45545-2 +A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)





96.02.7

Approvals
(according to type):

96.04.7

Approvals
(according to type):**Screw terminal (Box clamp) socket**
panel or 35 mm rail (EN 60715) mount

For relay type

96.02.7 SMA*

56.32T

96.04.7 SMA*

56.34T

AccessoriesMetal retaining clip
(supplied with socket - packaging code SMA)

094.71

096.71

6-way jumper link

094.06

—

Identification tag

095.00.4

090.00.2

Timer modules

86.30T

86.00T, 86.30T

Technical data

Rated values

12 A - 250 V

Dielectric strength

2 kV AC

Protection category

IP 20

Ambient temperature

°C -40...+70

Screw torque

Nm

0.8

Wire strip length

mm

8

Max. wire size for 96.02.7 and 96.04.7 socket

solid wire

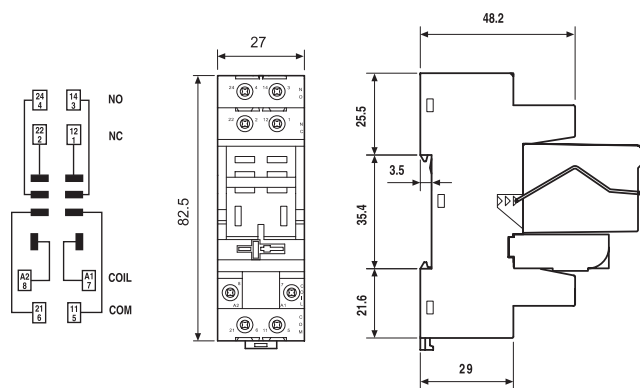
stranded wire

mm² 1 x 6 / 2 x 2.5

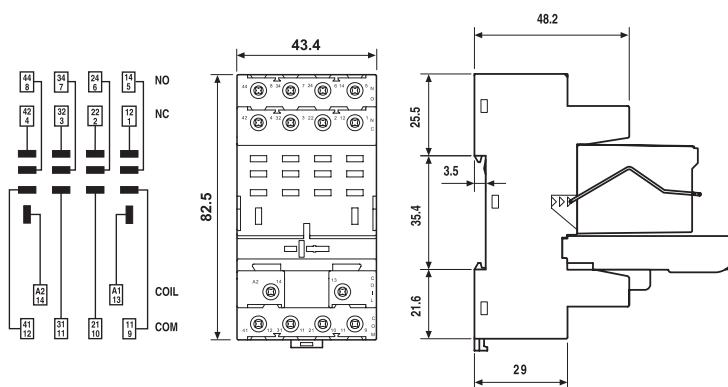
1 x 4 / 2 x 2.5

AWG 1 x 10 / 2 x 14

1 x 12 / 2 x 14

* Complies with **EN 45545-2 + A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)

96.02.7 + 56.32T + 094.71 + 86.30T



96.04.7 + 56.34T + 096.71 + 86.00T / 86.30T



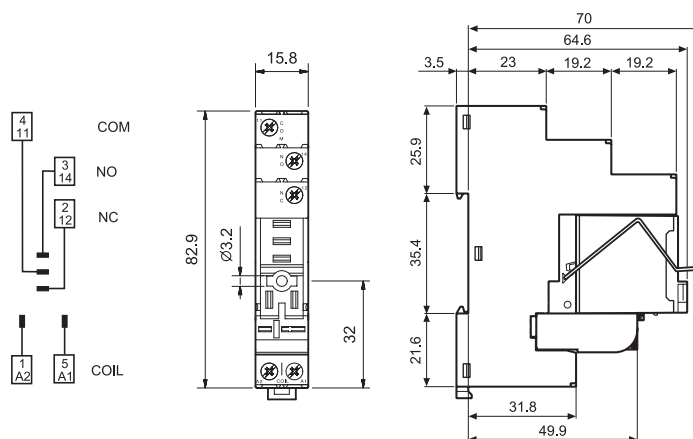
97.01.7

Approvals
(according to type):

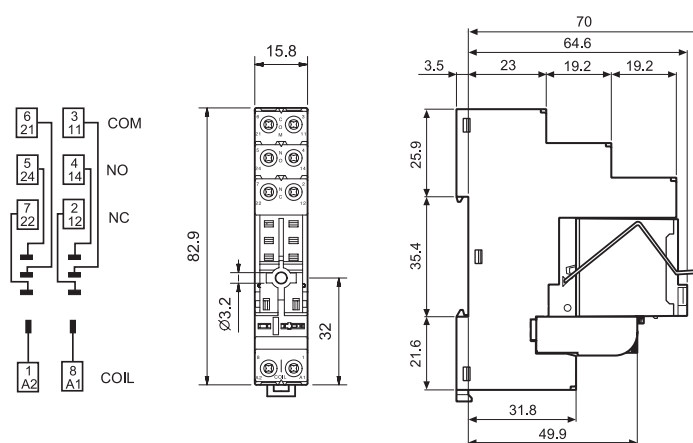


Screw terminal socket		97.01.7 SMA*	97.02.7 SMA*
panel or 35 mm rail (EN 60715) mount			
For relay type		46.61T	46.52T
Accessories			
Metal retaining clip (supplied with socket - packaging code SMA)			097.71
8-way jumper link			095.18
Identification tag			095.00.4
Timer modules			86.30T
Technical data			
Rated current		16 A - 250 V AC	8 A - 250 V AC
Dielectric strength		6 kV (1.2/50 µs) between coil and contacts	
Protection category		IP 20	
Ambient temperature		°C -40...+70	
Screw torque		Nm 0.8	
Wire strip length		mm 8	
Max. wire size for 97.01.7 and 97.02.7 sockets		solid wire	stranded wire
		mm ² 1 x 6 / 2 x 2.5	1 x 4 / 2 x 2.5
		AWG 1 x 10 / 2 x 14	1 x 12 / 2 x 14

* Complies with **EN 45545-2 + A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)



97.01.7 + 46.61T + 097.71 + 86.30T



97.02.7 + 46.52T + 097.71 + 86.30T



97.P1.7

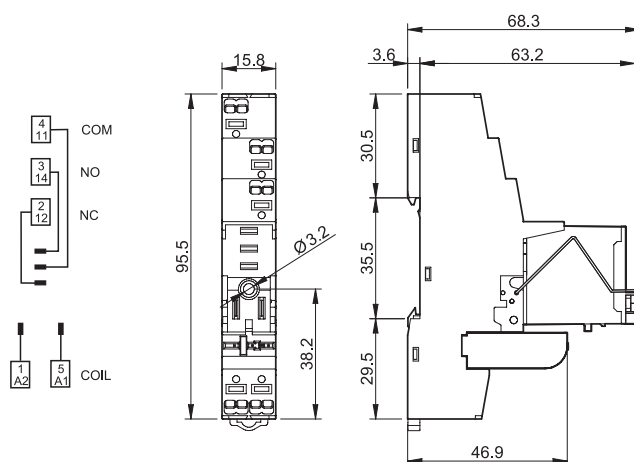
Approvals

(according to type):

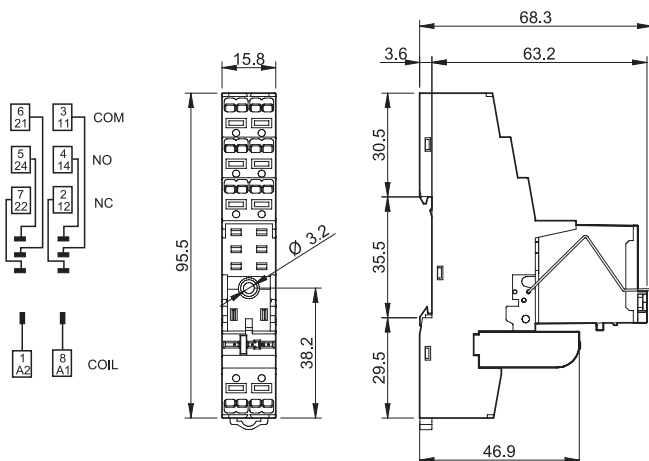


Push-in terminal socket		97.P1.7 SMA*	97.P2.7 SMA*
panel or 35 mm rail (EN 60715) mount			
For relay type		46.61T	46.52T
Accessories			
Metal retaining clip (supplied with socket - packaging code SMA)		097.71	
2-way jumper link		097.52	
2-way jumper link		097.42	
Timer modules		86.30T	
Technical data			
Rated current		10 A - 250 V AC	8 A - 250 V AC
Dielectric strength		6 kV (1.2/50 μ s) between coil and contacts	
Protection category		IP 20	
Ambient temperature		°C -40...+70	
Wire strip length		mm 8	
Min. wire size for 97.P1.7 and 97.P2.7 socket		solid wire	stranded wire
		mm ² 0.5	0.5
		AWG 21	21
Max. wire size for 97.P1.7 and 97.P2.7 sockets		solid wire	stranded wire
		mm ² 2 x 1.5 / 1 x 2.5	2 x 1.5 / 1 x 2.5
		AWG 2 x 18 / 1 x 14	2 x 18 / 1 x 14

* Complies with **EN 45545-2 +A1:2016** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, TX class)



97.P1.7 + 46.61T + 097.71 + 86.30T



97.P2.7 + 46.52T + 097.71 + 86.30T

Monitoring relays 6 - 8 A

70
SERIES



Air conditioning



Couplers



Ancillary
equipment



3 Phase - Rotation and phase loss monitoring relay

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- Universal voltage monitoring (U_N from 208 V to 480 V, 50/60 Hz)
- Phase loss monitoring, under phase regeneration
- Positive safety logic - make contact opens if the relay detects an error
- 2 versions:
 - 1 CO, 6 A (width 17.5 mm)
 - 2 CO, 8 A (width 22.5 mm)
- 35 mm rail (EN 60715) mount
- European patent pending for the innovative principle at the root of the 3 phase monitoring and error survey system

Screw terminal



* Short term (10 min) +70°C

For outline drawing see page 37

70.61T



Three-phase (208...480)V voltage monitoring:

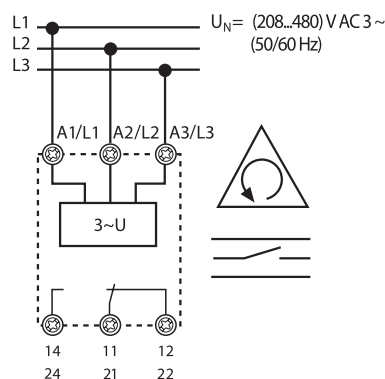
- Phase loss
- Phase rotation

70.62T



Three-phase (208...480)V voltage monitoring:

- Phase loss
- Phase rotation



Contact specification

		1 CO (SPDT)	2 CO (DPDT)
Contact configuration		1 CO (SPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	6/15	8/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	1500	2000
Rated load AC15 (230 V AC)	VA	250	400
Single phase motor rating (230 V AC)	kW	0.185	0.3
Breaking capacity DC1: 30/110/220 V	A	3/0.35/0.2	8/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	300 (5/5)
Standard contact material		AgCdO	AgNi

Supply specification

Nominal system voltage (U_N)	V AC 3 ~	208...480	208...480
Frequency	Hz	50/60	50/60
Rated power	VA (50 Hz)/W	8/1	11/0.8
Operating range	V AC 3 ~	170...500	170...520

Technical data

Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$60 \cdot 10^3$
Switch-off/reaction time	s	<0.5/<0.5	<0.5/<0.5
Ambient temperature	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20

Approvals (according to type)

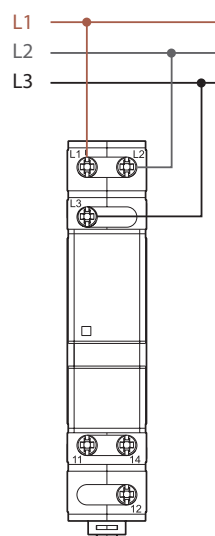


Ordering information

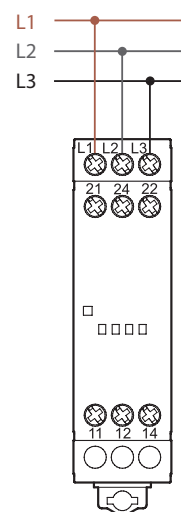
Example: 70 series, three-phase voltage monitoring relay, 1 output, supply voltage 208...480 V AC.

	7	0	.	6	1	.	8	.	4	0	0	.	A	0	.	B	0	.	C	0	.	D	0	T
Series																								
Type																								
6 = 3 phase loss and rotation monitoring																								
No. of poles																								
1 = 1 pole																								
2 = 2 pole																								
Supply version																								
8 = AC (50/60 Hz)																								
Supply voltage																								
400 = 208...480 V AC 3~																								

Wiring diagrams



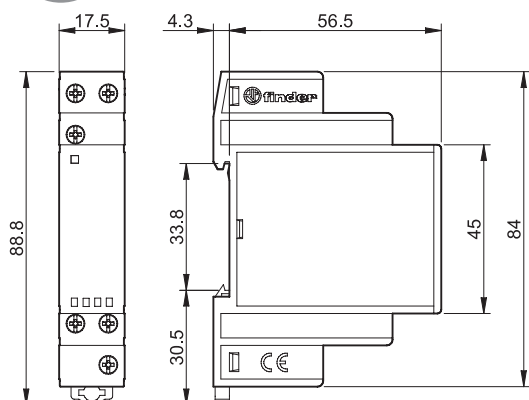
Type 70.61T



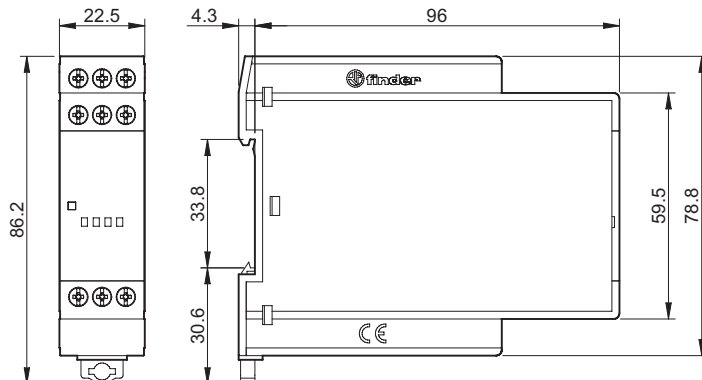
Type 70.62T

Outline drawings

70.61T
Screw terminal



70.62T
Screw terminal



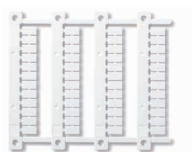
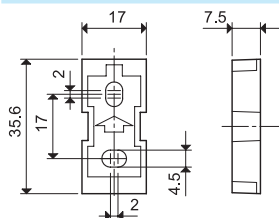
Accessories



020.01

Adaptor for panel mounting, plastic, 17.5 mm wide

020.01



060.48

Sheet of marker tags, plastic, 48 tags, 6 x 12 mm, for CEMBRE's thermal transfer printers for type 70.62

060.48



020.24

Sheet of marker tags, plastic, 24 tags, 9 x 17 mm for type 70.61

020.24

Relay modules with forcibly guided contacts 6 A

7S
SERIES



Door control



Signalling



Doors
opening / closing



Relay module 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)

- For railway application; materials compliant with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, TX class)
- For safety applications, with class A forcibly guided contact relays EN 61810-3 (ex EN 50205)
- For functional reliability in machinery and plant engineering according to EN 13849-1
- 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



* Short term (10 min) +85°C

For outline drawing see page 46

7S.12....5110



• 2 pole (1 NO + 1 NC)

7S.14....4220/4310



• 4 pole (2 NO + 2 NC and 3 NO + 1 NC)

7S.16....5420



• 6 pole (4 NO + 2 NC)

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 load AC15 (230 V AC) VA	700	700	700
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	5
Minimum switching load mW (V/mA)	60 (5/5)	60 (5/5)	60 (5/5)
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	24	24 - 110	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	—	—	—
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

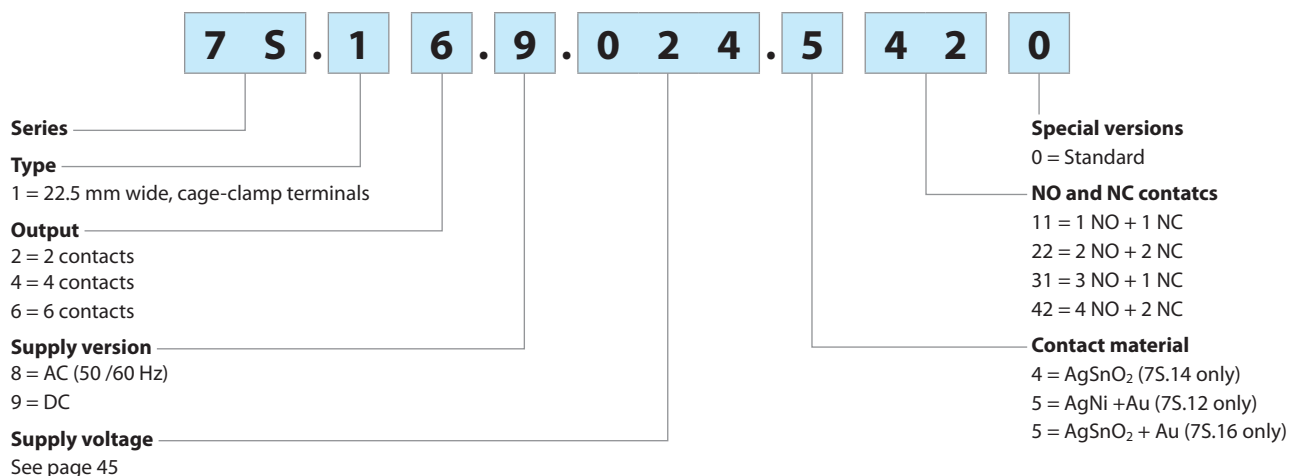
Mechanical life cycles		$10 \cdot 10^6$	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1 cycles		$100 \cdot 10^3$	$100 \cdot 10^3$	$100 \cdot 10^3$
Operate/release time ms		7/11	12/10	12/10
Insulation between coil and contacts (1.2/50 μ s) kV		6	6	6
Dielectric strength between open contacts 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)



Ordering information

Example: 7S series Relay module 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.16.9.110.5420
7S.12.8.230.5110	7S.14.9.024.4310	7S.16.8.120.5420
	7S.14.9.110.4220	7S.16.8.230.5420
	7S.14.9.110.4310	
	7S.14.8.120.4220	
	7S.14.8.120.4310	
	7S.14.8.230.4220	
	7S.14.8.230.4310	

Technical data

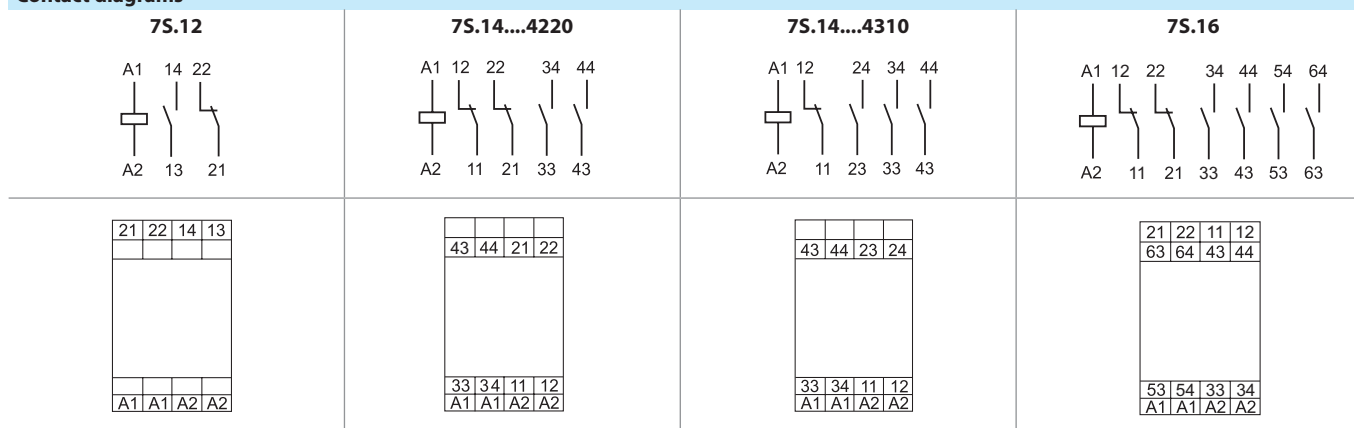
Insulation according to EN 61810-1		
Nominal voltage of supply system	V AC	230/400
Rated insulation voltage	V AC	250
Pollution degree		2
Insulation between coil and contact set		
Type of Insulation		Reinforced
Overvoltage category		III
Rated impulse voltage	kV (1.2/50 µs)	6
Dielectric strength	V AC	4000
Insulation between adjacent contacts		
Type of Insulation		Basic
Overvoltage 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 50121)		kV(1.2/50 μs)	1.5		
Terminals		solid cable		stranded cable	
Max. wire size	mm²	1 x 1.5		1 x 1.5	
	AWG	1 x 14		1 x 16	
Wire strip length	mm	9			
Other data		7S.12	7S.14	7S.16	
Bounce time: NO/NC	ms	2/8	1/20	1/20	
Vibration resistance: NO/NC		According to EN 61373			
Shock resistance		According to EN 61373			
Power lost to the environment	without contact current	W	0.8	0.8	0.8
	with rated current	W	1.4	2.3	2.8

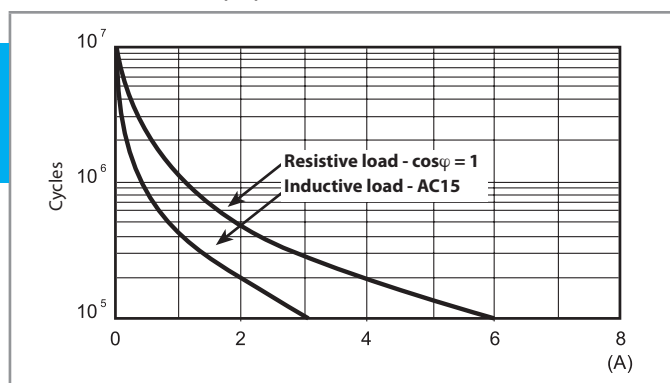
F

Contact specifications

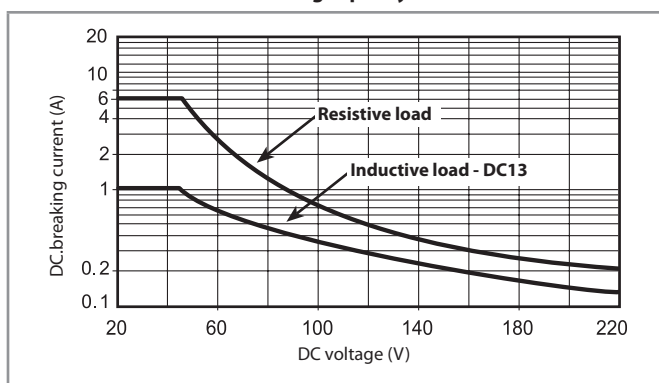
Contact diagrams



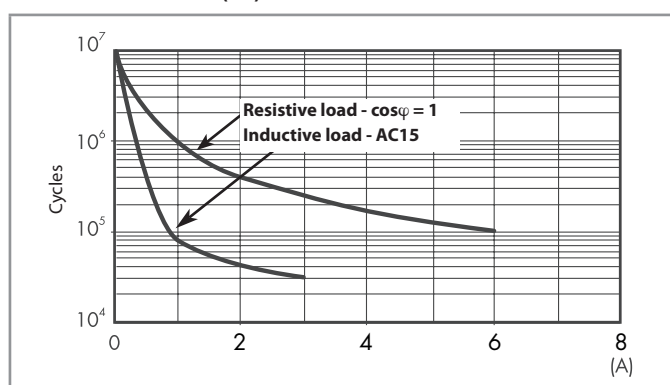
F 7S12 - Electrical life (AC) v contact current - 7S.12



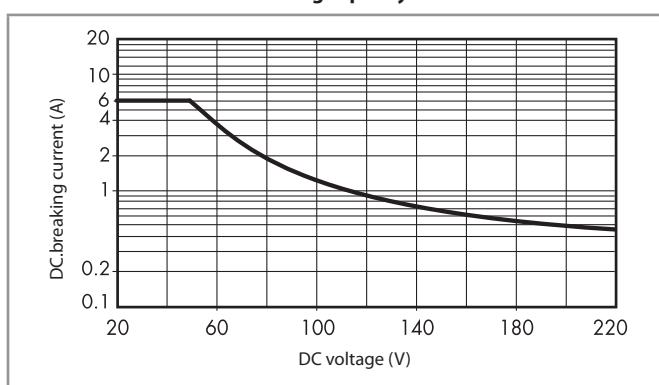
H 7S12* - Maximum DC breaking capacity - 7S.12



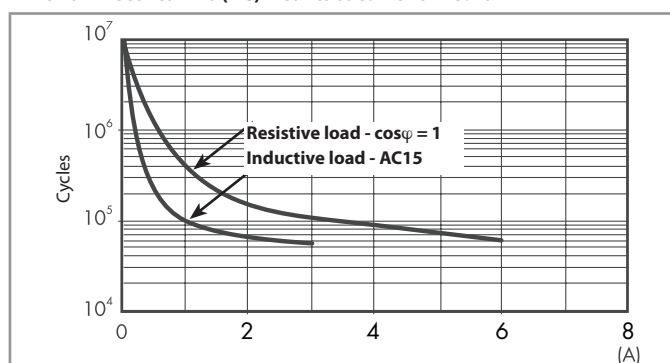
F 7S14 - Electrical life (AC) v contact current - 7S.14



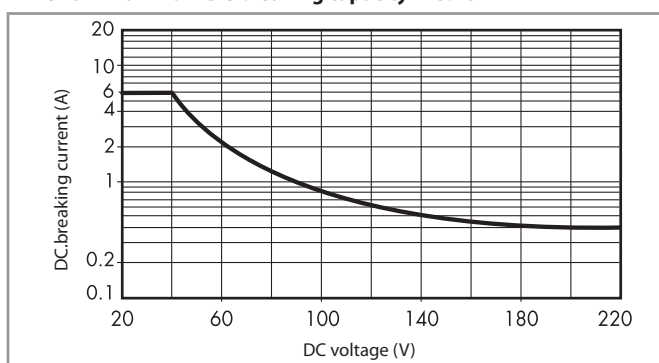
H 7S14* - Maximum DC breaking capacity - 7S.14



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



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



* 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

Nominal voltage	Coil code	Operating range		Rated input current at U_N	Rated power at U_N
U_N		U_{min}	U_{max}	I_N	
V		V	V	mA	W
24	9.024	16.8	30	38.2	0.9

AC coil data - type 7S.12

Nominal voltage	Coil code	Operating range		Rated input current at U_N	Rated power at U_N
U_N		U_{min}	U_{max}	I_N	
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

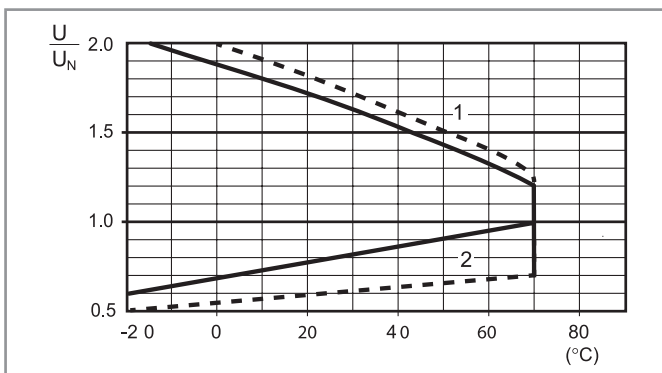
DC coil data - type 7S.14 / 7S.16

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

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

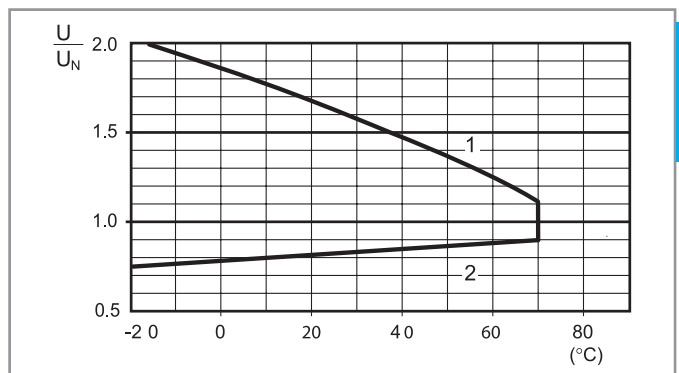
Nominal voltage	Coil code	Operating range		Rated input current at U_N	Rated power at U_N
U_N		U_{min}	U_{max}	I_N	
V		V	V	mA	VA/W
110...125	8.120	93	138	10.2	1.3/1.1
230...240	8.230	195	264	11.8	2.9/1.2

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



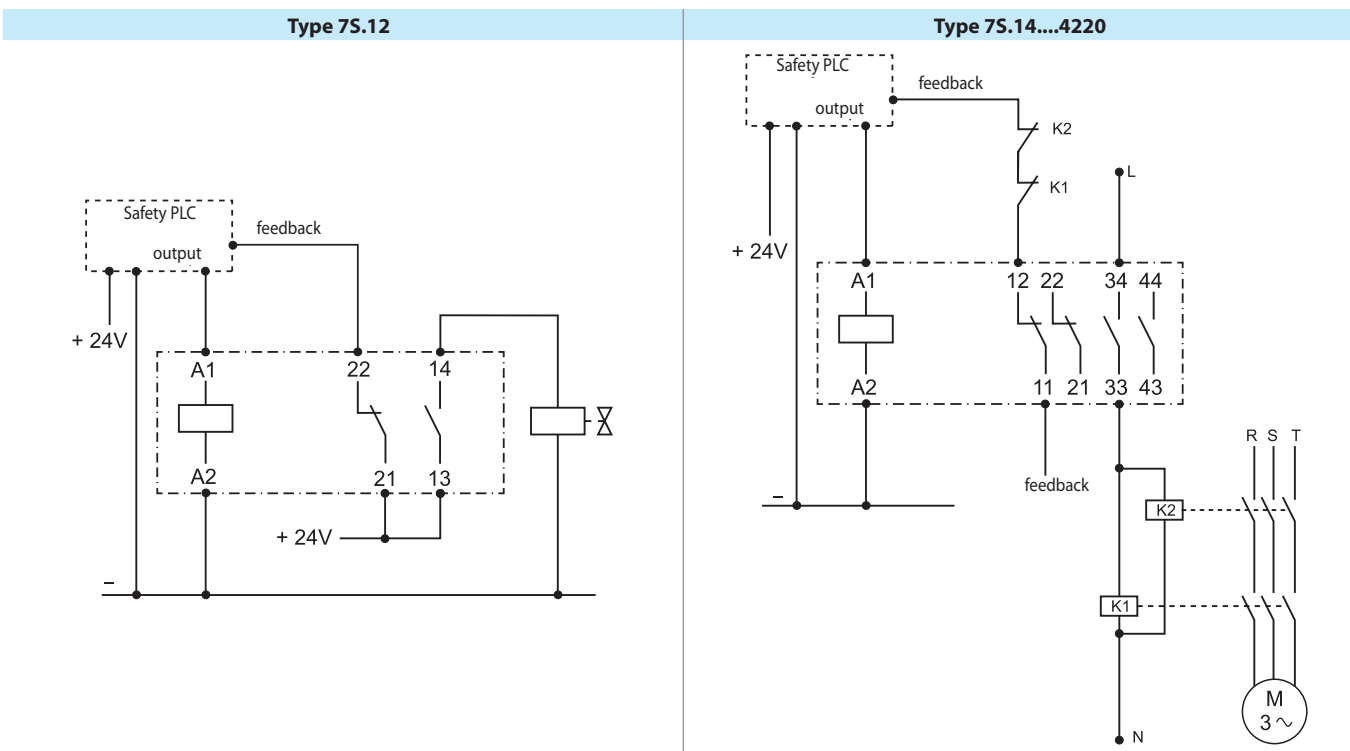
- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.
----- 24 and 110 V DC coils only (extended range)

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

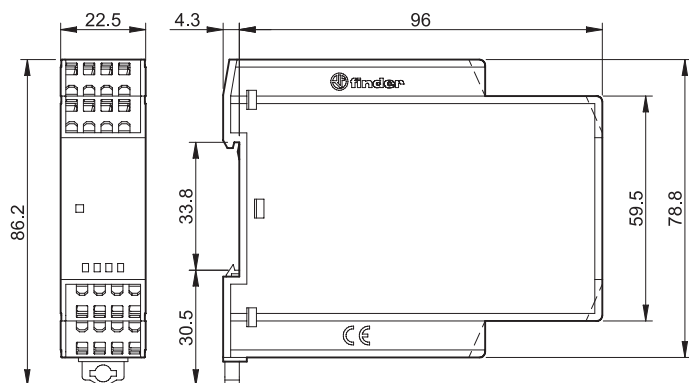


- 1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

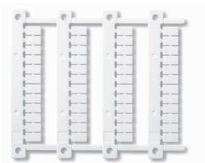
Wiring diagrams



Outline drawings

7S
Screwless terminal

Accessories



060.48

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

060.48

Modular timers 16 A

80
SERIES



Doors
opening / closing



Message panels
infotainment



Driver's control
console



Multi-function and mono-function timer range

80.01T - Multi-function & multi-voltage

80.11T - On-delay, multi-voltage

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- 17.5 mm wide
- Six time scales from 0.1 s to 24 h
- High input/output isolation
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- New multi-voltage versions with "PWM clever" technology
- 35 mm rail (EN 60715) mount

80.01T / 80.11T
Screw terminal



* Short term (10 min) +70°C

For outline drawing see page 54

Contact specification

Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	16/30	16/30
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	4000	4000
Rated load AC15 (230 V AC)	VA	750	750
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12	16/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	12...240	24...240
	V DC	12...240	24...240
Rated power AC/DC	VA (50 Hz)/W	< 1.8/< 1	< 1.8/< 1
Operating range	V AC	10.8...265	16.8...265
	V DC	10.8...265	16.8...265

Technical data

Specified time range		(0.1...2)s, (1...20)s, (0.1...2)min, (1...20)min, (0.1...2)h, (1...24)h	
Repeatability	%	± 1	± 1
Recovery time	ms	≤ 50	≤ 50
Minimum control impulse	ms	50	—
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	100 · 10 ³	100 · 10 ³
Ambient temperature range	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20

Approvals (according to type)



80.01T



- Multi-voltage
- Multi-function

AI: On-delay

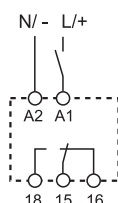
DI: Interval

SW: Symmetrical flasher (starting pulse on)

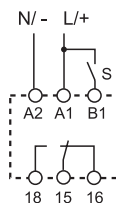
BE: Off-delay with control signal

CE: On- and off-delay with control signal

DE: Interval with control signal on



Wiring diagram
(without control signal)



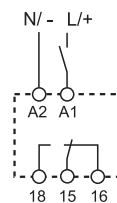
Wiring diagram
(with control signal)

80.11T



- Multi-voltage
- Mono-function

AI: On-delay



Wiring diagram
(without control signal)

Mono-function timer range**80.41T - Off-delay with control signal, multi-voltage****80.61T - Power off-delay (True off-delay), multi-voltage**

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- 17.5 mm wide
- Type 80.41T: six time scales from 0.1 s to 24 h
- Type 80.61T: four time scales from 0.05 s to 3 min
- High input/output isolation
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- New multi-voltage versions with "PWM clever" technology
- 35 mm rail (EN 60715) mount

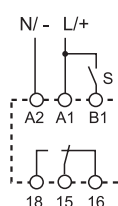
80.41T / 80.61T
Screw terminal

* Short term (10 min) +70°C

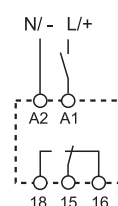
For outline drawing see page 54

80.41T

- Multi-voltage
- Mono-function

BE: Off-delay with control signalWiring diagram
(with control signal)**80.61T**

- Multi-voltage
- Mono-function

BI: Power off-delay (True off-delay)Wiring diagram
(without control signal)**Contact specification**

Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	16/30	8/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	4000	2000
Rated load AC15 (230 V AC)	VA	750	400
Single phase motor rating (230 V AC)	kW	0.55	0.3
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12	8/0.3/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	300 (5/5)
Standard contact material		AgNi	AgNi

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240
	V DC	24...240	24...220
Rated power AC/DC	VA (50 Hz)/W	< 1.8/< 1	< 0.6/< 0.6
Operating range	V AC	16.8...265	16.8...265
	V DC	16.8...265	16.8...242

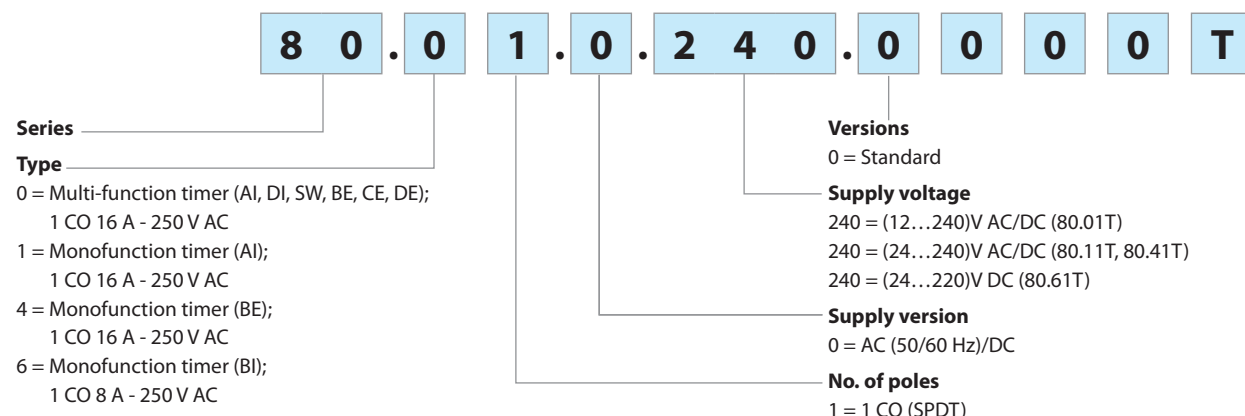
Technical data

Specified time range		(0.1...2)s, (1...20)s, (0.1...2)min, (1...20)min, (0.1...2)h, (1...24)h	(0.05...2)s, (1...16)s, (8...70)s, (50...180)s
Repeatability	%	± 1	± 1
Recovery time	ms	≤ 50	—
Minimum control impulse	ms	50	500 (A1-A2)
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	100 · 10 ³	100 · 10 ³
Ambient temperature range	°C	-25...+55*	-25...+55*
Protection category		IP 20	IP 20


Approvals (according to type)

Ordering information

Example: 80 series, modular timers, 1 CO (SPDT) - 16 A, supply rated at (12...240)V AC/DC.



Technical data





Insulation				
Dielectric strength			80.01T/11T/41T	80.61T
	between input and output circuit	V AC	4000	2500
	between open contacts	V AC	1000	1000
Insulation (1.2/50 µs) between input and output			kV	6
EMC specifications				
Type of test			Reference standard	
Electrostatic discharge	contact discharge		EN 61000-4-2	4 kV
	air discharge		EN 61000-4-2	8 kV
Radio-frequency electromagnetic field (80 ÷ 1000 MHz)			EN 61000-4-3	10 V/m
Fast transients (burst) (5-50 ns, 5 kHz) on Supply terminals			EN 61000-4-4	4 kV
Surges (1.2/50 µs) on Supply terminals	common mode		EN 61000-4-5	4 kV
	differential mode		EN 61000-4-5	4 kV
	on start terminal (B1)	common mode	EN 61000-4-5	4 kV
		differential mode	EN 61000-4-5	4 kV
Radio-frequency common mode (0.15 ÷ 80 MHz) on Supply terminals			EN 61000-4-6	10 V
Radiated and conducted emission			EN 55022	class B
Other data				
Current absorption on signal control (B1)			< 1 mA	
Power lost to the environment	without contact current	W	1.4	
	with rated current	W	3.2	
 Screw torque		Nm	0.8	
Max. wire size			solid cable	stranded cable
		mm ²	1 x 6 / 2 x 4	1 x 4 / 2 x 2.5
		AWG	1 x 10 / 2 x 12	1 x 12 / 2 x 14

Functions

U = Supply voltage

S = Signal switch

 = Output contact

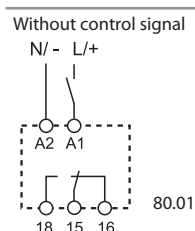
LED*	Supply voltage	NO output contact	Contacts	
			Open	Closed
	OFF	Open	15 - 18	15 - 16
	ON	Open	15 - 18	15 - 16
	ON	Open (Timing in Progress)	15 - 18	15 - 16
	ON	Closed	15 - 16	15 - 18

*The LED on type 80.61T is illuminated only when the supply voltage is applied to the timer; during the timing period the LED is not illuminated.

Wiring diagram

Without control signal = Start via contact in supply line (A1).

With control signal = Start via contact into control terminal (B1).

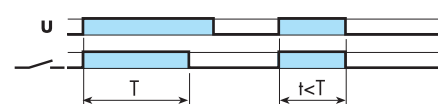


**Type
80.01T**



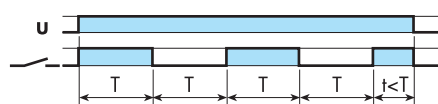
(AI) On-delay.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.



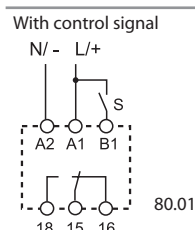
(DI) Interval.

Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

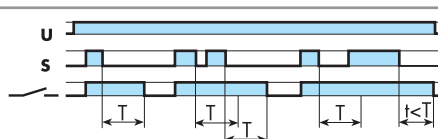


(SW) Symmetrical flasher (starting pulse on).

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

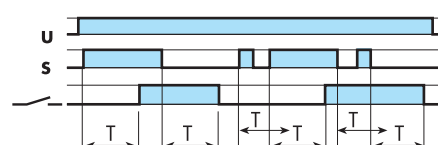


80.01T



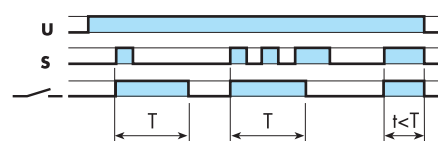
(BE) Off-delay with control signal.

Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.



(CE) On- and off-delay with control signal.

Power is permanently applied to the timer. Closing the Signal Switch (S) initiates the preset delay, after which time the output contacts transfer. Opening the Signal switch initiates the same preset delay, after which time the output contacts reset.



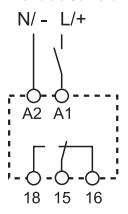
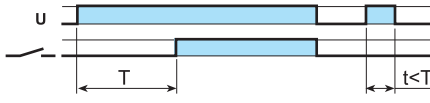
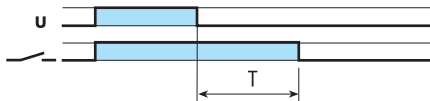
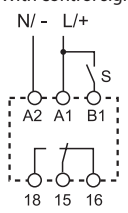
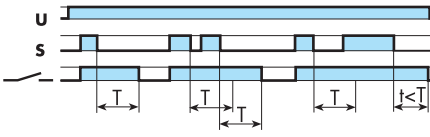
(DE) Interval with control signal on.

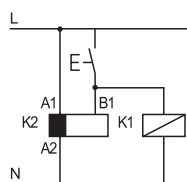
Power is permanently applied to the timer. On momentary or maintained closure of Signal Switch (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

NOTE: The function must be set before energising the timer.

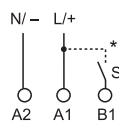
Functions

Wiring diagram

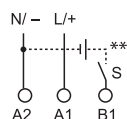
<p>Without control signal</p>  <p>80.11/21/61</p>	<p>Type 80.11T</p> <p>80.61T</p>	 <p>(AI) On-delay. Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.</p>  <p>(BI) Power off-delay (True off-delay). Apply power to timer (minimum 300 ms). Output contacts transfer immediately. Removal of power initiates the preset delay, after which time the output contacts reset.</p>	
<p>With control signal</p>  <p>80.41</p>	<p>80.41T</p>	 <p>(BE) Off-delay with control signal. Power is permanently applied to the timer. The output contacts transfer immediately on closure of the Signal Switch (S). Opening the Signal Switch initiates the preset delay, after which time the output contacts reset.</p>	



• Possible to control an external load, such as another relay coil or timer, connected to the control signal terminal B1.



* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1).



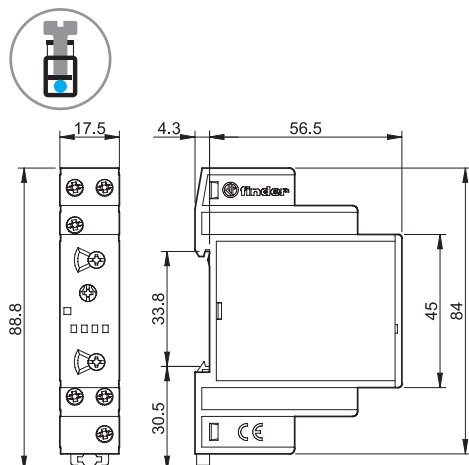
** A voltage other than the supply voltage can be applied to the command Start (B1), example:

A1 - A2 = 230 V AC

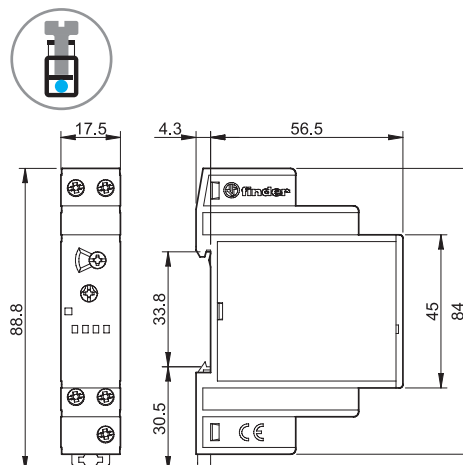
B1 - A2 = 12 V DC

Outline drawings

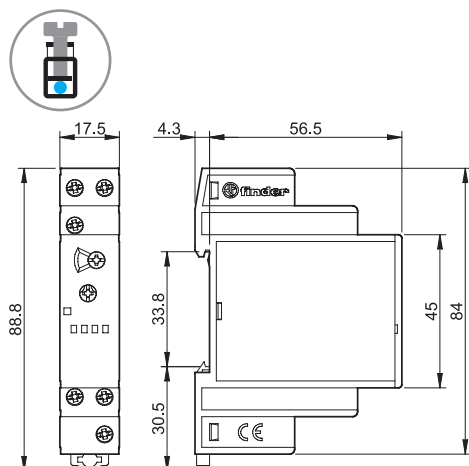
80.01T
Screw terminal



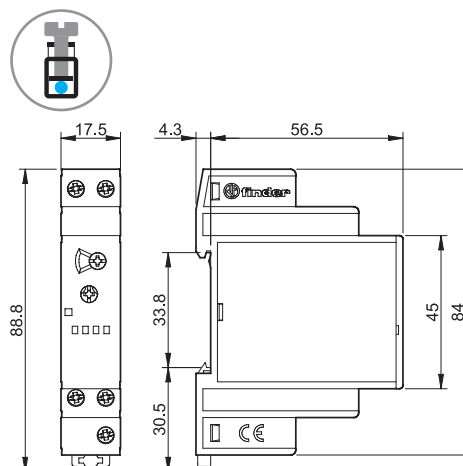
80.11T
Screw terminal



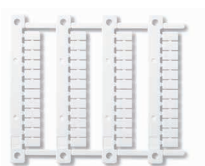
80.41T
Screw terminal



80.61T
Screw terminal



Accessories



060.48

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

060.48

Modular timers 8 - 12 - 16 A

83
SERIES



Doors
opening /
closing



Couplers



Driver's control
console



Multi-function and Mono-function timer range

Type 83.02

- Multi-function & multi-voltage
- 2 Pole (timed + instantaneous options), external time setting potentiometer option

Type 83.62

- Power off-delay, multi-voltage, 2 Pole
- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- 22.5 mm wide
- 83.02: eight time scales from 0.05 s to 10 days
- 83.62: four time scales from 0.05 s to 3 minutes
- High input/output isolation
- Wide supply range (24...240) V AC/DC
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- Multi-voltage versions with "PWM clever" technology
- 35 mm rail (EN 60715) mount

83.02 / 83.62

Screw terminal



* (0.05...1)s, (0.5...10)s, (0.05...1)min, (0.5...10)min, (0.05...1)h, (0.5...10)h, (0.05...1)d, (0.5...10)d

** Short term (10 min) + 70°C

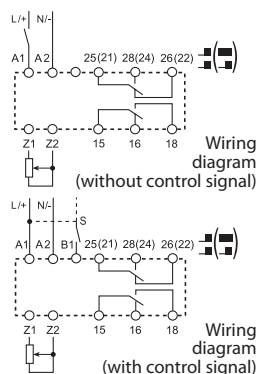
For outline drawing see page 60

83.02



- Multi-voltage
- Multi-function
- Timing can be regulated using ext. Potentiometer
- 2 timed contacts or 1 timed + 1 instantaneous contact

AI: On-delay
DI: Interval
GI: Pulse delayed
SW: Symmetrical flasher (starting pulse on)
BE: Off-delay with control signal
CE: On- and off-delay with control signal
DE: Interval with control signal on
WD: Watchdog (Retriggerable interval with control signal on)

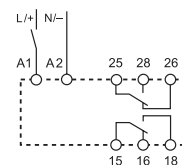


83.62



- Multi-voltage
- Mono-function
- 2 pole

BI: Power off-delay (True off-delay)



Wiring diagram
(without control signal)

Contact specification			
Contact configuration		2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	12/30	8/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	3000	2000
Rated load AC15 (230 V AC)	VA	750	400
Single phase motor rating (230 V AC)	kW	0.5	0.3
Breaking capacity DC1: 30/110/220 V	A	12/0.3/0.12	8/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi
Supply specification			
Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240
	V DC	24...240	24...240
Rated power AC/DC	VA (50 Hz)/W	< 2/< 2	< 1.5/< 2
Operating range	V AC	16.8...265	16.8...265
	V DC	16.8...265	16.8...242
Technical data			
Specified time range		*	(0.05...2)s, (1...16)s, (8...70)s, (50...180)s
Repeatability	%	± 1	± 1
Recovery time	ms	200	—
Minimum control impulse	ms	50	500 ms (A1 - A2)
Setting accuracy-full range	%	± 5	± 5
Electrical life at rated load in AC1	cycles	60 · 10 ³	100 · 10 ³
Ambient temperature range	°C	-25...+55**	-25...+55**
Protection category		IP 20	IP 20
Approvals (according to type)			

Mono-function timer range**Type 83.11**

- ON-delay, multi-voltage

Type 83.41

- Off-delay with control signal, multi-voltage

Type 83.91

- Asymmetrical flasher, multi-voltage, 1 Pole

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- 22.5 mm wide
- Eight time scales from 0.05 s to 10 days
- High input/output isolation
- Wide supply range (24...240)V AC/DC
- "Blade + cross" - both flat blade and cross head screw drivers can be used to adjust the range and function selectors, the timing trimmer, and to disengage the rail mounting clip
- Multi-voltage versions with "PWM clever" technology
- 35 mm rail (EN 60715) mount

83.11 / 83.41 / 83.91
Screw terminal



* Short term (10 min) + 70°C

For outline drawing see page 60

Contact specification

Contact configuration		1 CO (SPDT)	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	16/30	16/30	16/30
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400	250/400
Rated load AC1	VA	4000	4000	4000
Rated load AC15 (230 V AC)	VA	750	750	750
Single phase motor rating (230 V AC)	kW	0.5	0.5	0.5
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.12	16/0.3/0.12	16/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi	AgNi

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	24...240	24...240	24...240
	V DC	24...240	24...240	24...240
Rated power AC/DC	VA (50 Hz)/W	< 1.5/< 2	< 1.5/< 2	< 1.5/< 2
Operating range	V AC	16.8...265	16.8...265	16.8...265
	V DC	16.8...265	16.8...265	16.8...265

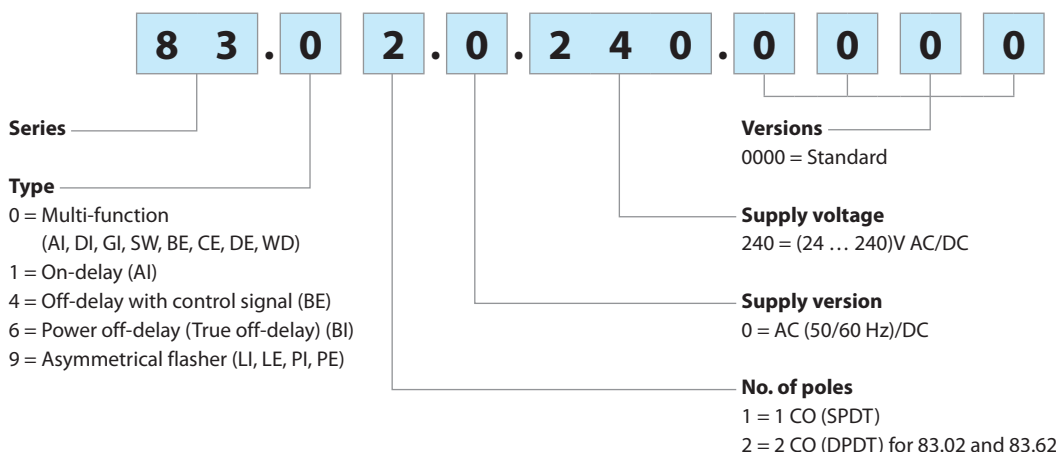
Technical data

Specified time range		(0.05...1)s, (0.5...10)s, (0.05...1)min, (0.5...10)min, (0.05...1)h, (0.5...10)h, (0.05...1)d, (0.5...10)d		
Repeatability	%	± 1	± 1	± 1
Recovery time	ms	200	200	200
Minimum control impulse	ms	—	50	50
Setting accuracy-full range	%	± 5	± 5	± 5
Electrical life at rated load in AC1	cycles	50 · 10 ³	50 · 10 ³	50 · 10 ³
Ambient temperature range	°C	-25...+55*	-25...+55*	-20...+60
Protection category		IP 20	IP 20	IP 20


Approvals (according to type)

Ordering information

Example: 83 series, modular timers, 2 CO (DPDT) - 12 A, supply rated at (24...240)V AC/DC.



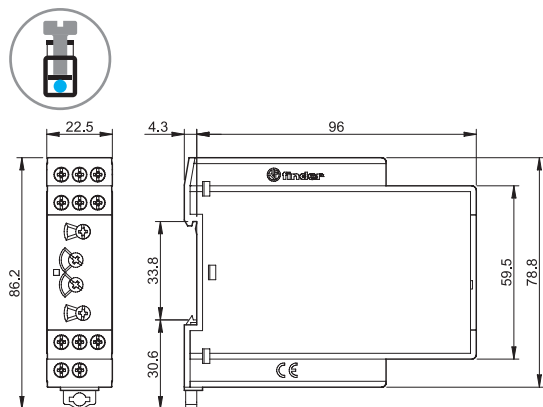
Technical data

Insulation				
Dielectric strength	between input and output circuit	V AC	4000	
	between open contacts	V AC	1000	
Insulation (1.2/50 μs) between input and output		kV	6	
EMC specifications				
Type of test		Reference standard	83.02/11/41/91	83.62
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV	4 kV
	air discharge	EN 61000-4-2	8 kV	8 kV
Radio-frequency electromagnetic field	(80 ÷ 1000 MHz)	EN 61000-4-3	10 V/m	10 V/m
	(1000 ÷ 2700 MHz)	EN 61000-4-3	3 V/m	3 V/m
Fast transients (burst) (5-50 ns, 5 and 100 kHz)	on Supply terminals	EN 61000-4-4	7 kV	6 kV
	on control signal terminal (B1)	EN 61000-4-4	7 kV	6 kV
Surges (1.2/50 μs) on Supply terminals	common mode	EN 61000-4-5	6 kV	6 kV
	differential mode	EN 61000-4-5	6 kV	4 kV
	on control signal terminal (B1) common mode	EN 61000-4-5	6 kV	6 kV
	differential mode	EN 61000-4-5	4 kV	4 kV
Radio-frequency common mode	(0.15 ÷ 80 MHz)	EN 61000-4-6	10 V	10 V
on Supply terminals	(80 ÷ 230 MHz)	EN 61000-4-6	10 V	10 V
Radiated and conducted emission		EN 55022	class A	class A
Other data				
Current absorption on control signal (B1)		< 1 mA		
	- max cable length (capacity of ≤ 10 nF/100 m)	150 m		
	- when applying a control signal to B1, which is different from the supply voltage at A1/A2	B1 is isolated from A1 and A2 by an opto-coupler, and can therefore be operated at a voltage other than the supply voltage. If using a control signal of between (24...48)V DC and a supply voltage of (24...240)V AC, ensure that the signal - is connected to A2 and the + is applied to B1, and that L is applied to B1 and N to A2.		
External potentiometer for 83.02		Use a 10 kΩ / ≥ 0.25 W linear potentiometer. Maximum cable length 10 m. When using an external potentiometer, the timer automatically use its setting in place of the internal setting. Consider the voltage potential at the potentiometer to be the same as the timer supply voltage.		
Power lost to the environment	without contact current	W	1.4	
	with rated current	W	3.2	
 Screw torque		Nm	0.8	
Max. wire size		solid cable	stranded cable	
	mm²	1 x 6 / 2 x 4	1 x 4 / 2 x 2.5	
	AWG	1 x 10 / 2 x 12	1 x 12 / 2 x 14	

Outline drawings

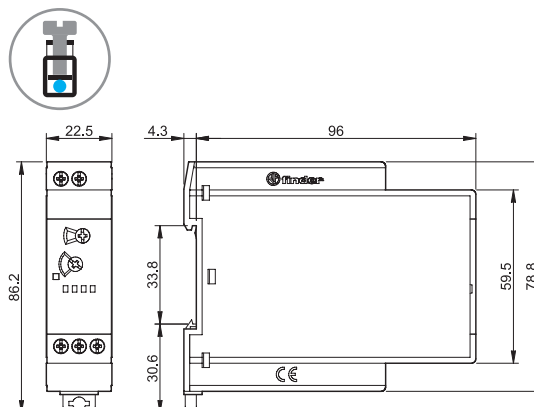
83.02

Screw terminal



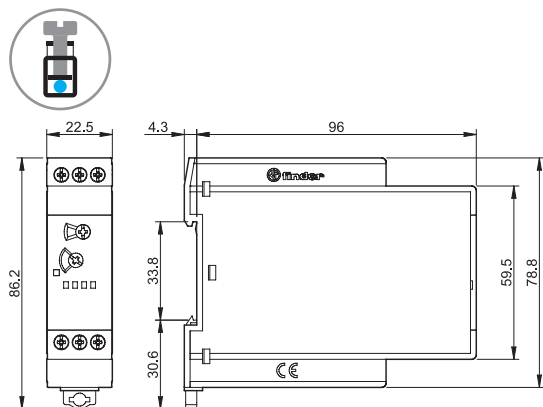
83.11

Screw terminal



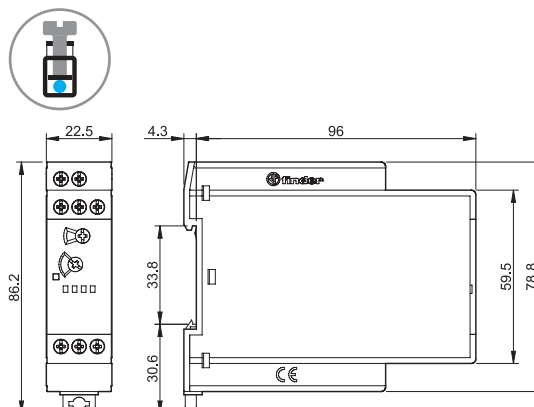
83.41

Screw terminal



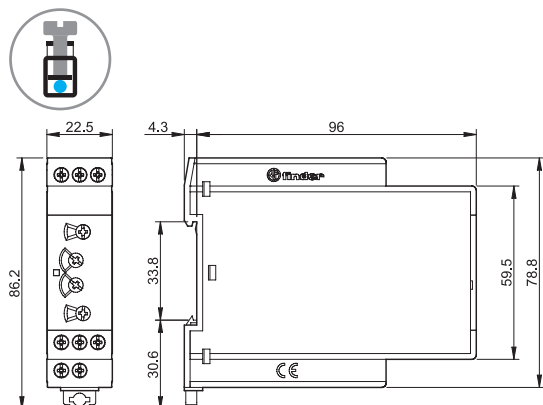
83.62

Screw terminal

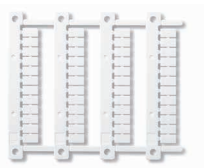


83.91

Screw terminal



Accessories



060.48

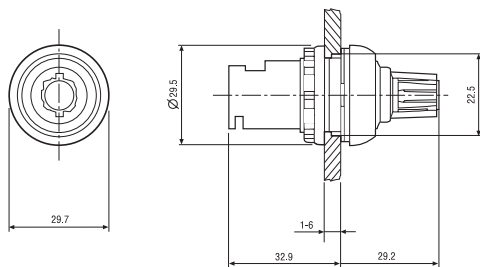
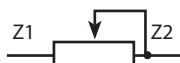
Sheet of marker tags, plastic, 48 tags, 6 x 12 mm, for CEMBRE's thermal transfer printers 060.48



087.02.2

Potentiometer usable as external potentiometer for type 83.02/52
10 k Ω / 0.25 W linear, IP 66

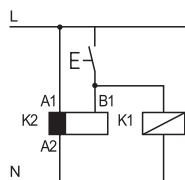
087.02.2



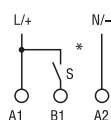
Functions

LED*	Supply voltage	NO output contact	Contacts	
			Open	Closed
	OFF	Open	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Open	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Open (Timing in Progress)	15 - 18 25 - 28	15 - 16 25 - 26
	ON	Closed	15 - 16 25 - 26	15 - 18 25 - 28

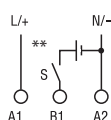
* The LED on type 83.62 is illuminated when supply voltage is supplied to timer.



• Possible to control an external load, such as another relay coil or timer, connected to the control signal terminal B1.



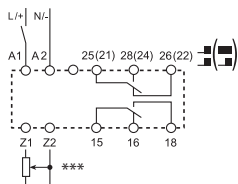
* With DC supply, positive polarity has to be connected to B1 terminal (according to EN 60204-1).



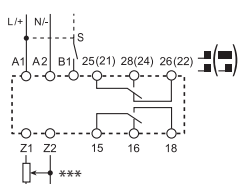
** A voltage other than the supply voltage can be applied to the control signal (B1), example:
A1 - A2 = 230 V AC
B1 - A2 = 12 V DC

Functions

Wiring diagram

Multi-function
without control signal

with control signal

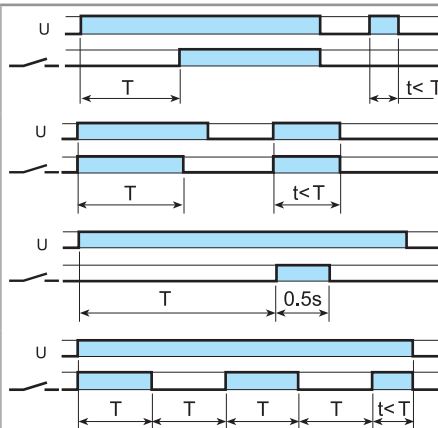


*** Type 83.02: regulated using an external potentiometer (10 kΩ - 0.25 W).

U = Supply voltage

S = Signal switch

— = Output contact

Type
83.02**(AI) On-delay.**

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.

(DI) Interval.

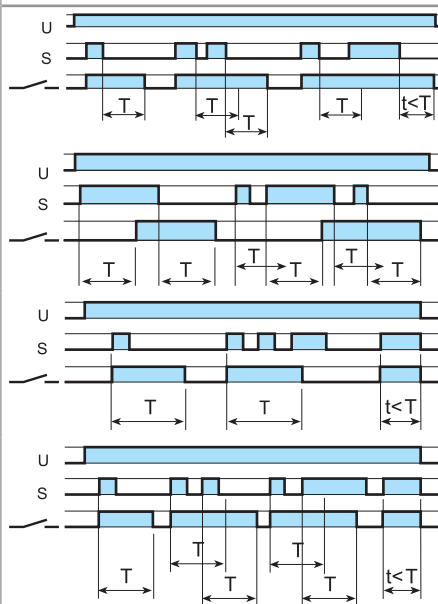
Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.

(GI) Pulse delayed.

Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs after a fixed time of 0.5s.

(SW) Symmetrical flasher (starting pulse on).

Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ratio is 1:1 (time on = time off).

**(BE) Off-delay with control signal.**

Power is permanently applied to the timer. The output contacts transfer immediately on closure of the control signal (S). Opening the control signal initiates the preset delay, after which time the output contacts reset.

(CE) On- and off-delay with control signal.

Power is permanently applied to the timer. Closing the control signal (S) initiates the preset delay, after which time the output contacts transfer. Opening the control signal initiates the same preset delay, after which time the output contacts reset.

(DE) Interval with control signal on.

Power is permanently applied to the timer. On momentary or maintained closure of control signal (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset.

(WD) Watchdog (Retriggerable interval with control signal on).

Power is permanently applied to the timer. On momentary or maintained closure of control signal (S), the output contacts transfer, and remain so for the duration of the preset delay, after which they reset; subsequent closures of control signal during the delay will extend the time. If the closure of the control signal (S) is longer than the preset time (T) then the output contacts reset.

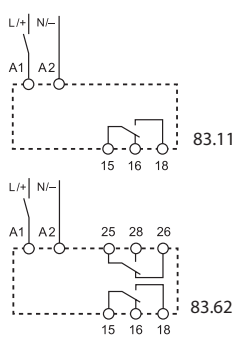
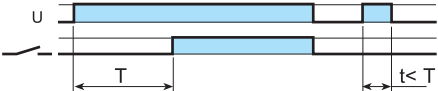
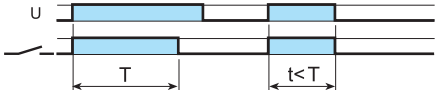
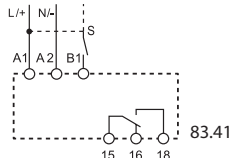

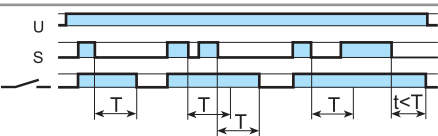
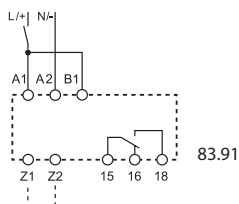


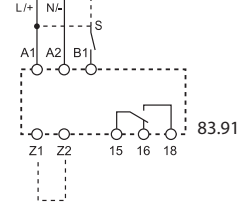
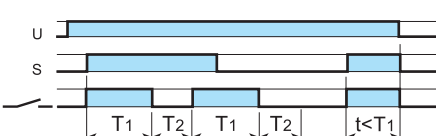
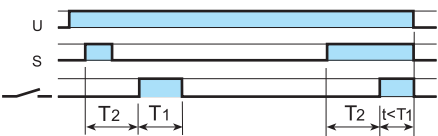
NOTE: The timing function must be set when the timer is de-energised. Or for the 83.02, when the contact mode selector is in the OFF position.

83.02 type

Contact mode selector	Functions without control signal (example: AI)	Functions with control signal (example: BE)
2 timed contacts 	<p>Both output contacts (15-18 and 25-28) follow the timing function</p>	<p>Both output contacts (15-18 and 25-28) follow the timing function</p>
OFF 	<p>Both output contacts [15-18 and 25(21)-28(24)] stay permanently open</p>	<p>Both output contacts [15-18 and 25(21)-28(24)] stay permanently open</p>
1 timed + 1 instantaneous contact 	<p>The output contact 15-18 follows the timing function The output contact 21-24 follows the power supply (U)</p>	<p>The output contact 15-18 follows the timing function The output contact 21-24 follows the control signal (S)</p>

Functions

Wiring diagram

		U = Supply voltage	S = Signal switch	— = Output contact
Mono-function without control signal 	Type 83.11		(AI) On-delay. Apply power to timer. Output contacts transfer after preset time has elapsed. Reset occurs when power is removed.	
	83.62		(DI) Interval. Apply power to timer. Output contacts transfer immediately. After the preset time has elapsed, contacts reset.	
with control signal (S) 	83.41		(BI) Power off-delay (True off-delay). Apply power to timer (minimum 500 ms). Output contacts transfer immediately. Removal of power initiates the preset delay, after which time the output contacts reset.	
	83.41		(BE) Off-delay with control signal. Power is permanently applied to the timer. The output contacts transfer immediately on closure of the control signal (S). Opening the control signal initiates the preset delay, after which time the output contacts reset.	
Asymmetrical recycler without control signal 	83.91		(LI) Asymmetrical flasher (starting pulse on) - (Z1-Z2 open). Apply power to timer. Output contacts transfer immediately and cycle between ON and OFF for as long as power is applied. The ON and OFF times are independently adjustable.	
	83.91		(PI) Asymmetrical flasher (starting pulse off) - (Z1-Z2 linked). Apply power to timer. Output contacts transfer after time T1 has elapsed and cycle between OFF and ON for as long as power is applied. The ON and OFF times are independently adjustable.	
with control signal 	83.91		(LE) Asymmetrical flasher (starting pulse on) with control signal - (Z1-Z2 open). Power is permanently applied to the timer. Closing control signal (S) causes the output contacts to transfer immediately and cycle between ON and OFF, until opened.	
	83.91		(PE) Asymmetrical flasher (starting pulse off) with control signal - (Z1-Z2 linked). Power is permanently applied to the timer. Closing the control signal (S) initiates delay T1 after which the output contacts transfer and continue to cycle between OFF and ON, until the control signal is opened.	

Light dependent relay 16 A

11
SERIES



Exterior light
control



Driver's control
console



Internal light
management



Relays for automatic control of lighting according to ambient light level - with separate light sensor

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- Sensitivity adjustment from 1 to 100 lux
- One module, 17.5 mm wide
- Low energy consumption
- 24 V DC/AC version
- For the first 3 working cycles the delay time (On and Off) is reduced to zero in order to aid installation
- LED status indication
- SELV separation between contact and supply circuit
- Double insulation between supply and light sensor
- Delay Time: 1 sec ON
6 sec OFF
- 35 mm rail (EN 60715) mount
- Cadmium free contact material
- Cadmium free light sensor (IC photo diode)

* Short term (10 min) +70°C

For outline drawing see page 69

11.31



- 1 pole
- 17.5 mm wide

Contact specification

Contact configuration		1 NO (SPST-NO)
Rated current/Maximum peak current	A	16/30 (120 - 5 ms)
Rated voltage/ Maximum switching voltage	V AC	250/400
Rated load AC1	VA	4000
Rated load AC15 (230 V AC)	VA	750
Nominal lamp rating:		
230 V incandescent/halogen W		2000
fluorescent tubes with electronic ballast W		1000
fluorescent tubes with electromechanical ballast W		750
CFL W		400
230 V LED W		400
LV halogen or LED with electronic ballast W		400
LV halogen or LED with electromechanical ballast W		800
Minimum switching load	mW (V/mA)	1000 (10/10)
Standard contact material		AgSnO ₂

Supply specification

Nominal voltage (U _N)	V AC (50/60 Hz)	24
	DC	24
Rated power	VA (50 Hz)/W	2.5/0.9
Operating range	V AC (50 Hz)	16.8...28.8
	DC	16.8...32

Technical data

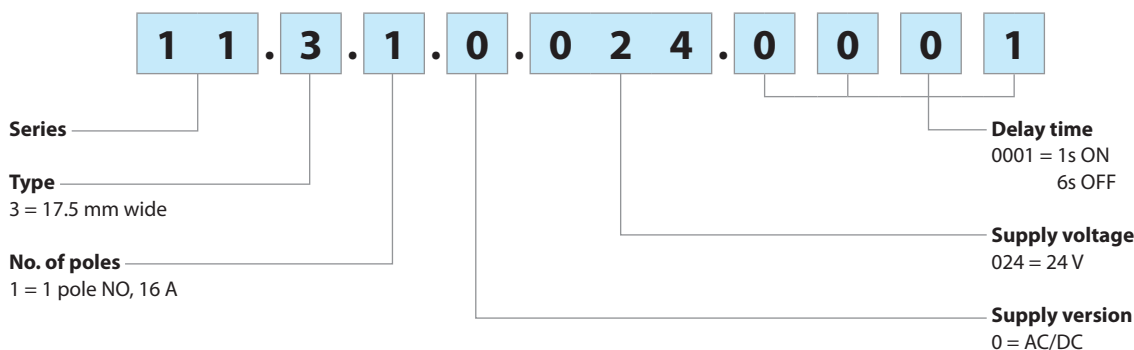
Electrical life at rated load in AC1	cycles	100 · 10 ³
Threshold setting:	Standard range lx	1...100
	High range lx	—
Hysteresis (switching Off/On ratio)		1.25
Delay time: switching On/Off	s	1/6
Ambient temperature range	°C	-25...+55*
Protection category: light dependent relay/light sensor		IP 20/IP 54

Approvals (according to type)




Ordering information




Example: 11 series light dependent relay, 1 NO (SPST-NO) 16 A contact, 24 V AC/DC supply.



Technical data

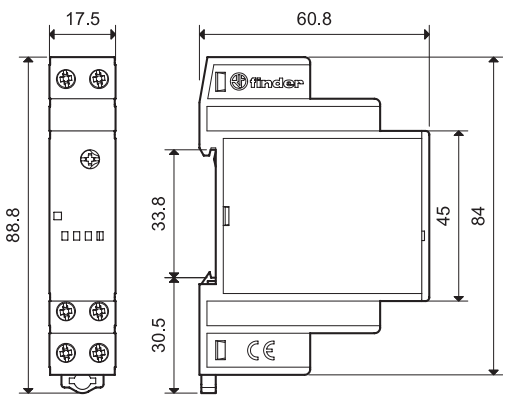
Insulation		Dielectric strength	Impulse (1.2/50 μs)
	between supply and contacts	4000 V AC	6 kV
	between supply and light sensor	2000 V AC	4 kV
	between open contacts	1000 V AC	1.5 kV
EMC specifications			
Type of test		Reference standard	
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV
	air discharge	EN 61000-4-2	8 kV
Radiated electromagnetic field (80...1000 MHz)		EN 61000-4-3	10 V/m
Fast transients	on supply terminals	EN 61000-4-4	3 kV
(burst 5/50 ns, 5 and 100 kHz)	on light sensor connection	EN 61000-4-4	3 kV
Voltage pulses on supply terminals (surge 1.2/50 μs)	common mode	EN 61000-4-5	4 kV
	differential mode	EN 61000-4-5	3 kV
Radiofrequency common mode voltage (0.15...80 MHz)	on supply terminals	EN 61000-4-6	10 V
	on light sensor	EN 61000-4-6	3 V
Voltage dips	70% U _N , 40% U _N	EN 61000-4-11	10 cycles
Short interruptions		EN 61000-4-11	10 cycles
Radio frequency conducted emissions	0.15...30 MHz	EN 55014	class B
Radiated emissions	30...1000 MHz	EN 55014	class B
Terminals			
 Screw torque	Nm	0.8	
Max. wire size	solid cable	1 x 6 / 2 x 4 mm²	1 x 10 / 2 x 12 AWG
	stranded cable	1 x 4 / 2 x 2.5 mm²	1 x 12 / 2 x 14 AWG
Wire strip length	mm	9	
Other data			
Cable grip of light sensor	mm	7.5...9	
Maximum cable length relay to light sensor	m	50 (2 x 1.5 mm²)	
Preset threshold	lx	10	
Power lost to the environment			
	in stand-by W	0.3	
	without contact current W	0.9	
	with rated current W	1.7	

LED functions

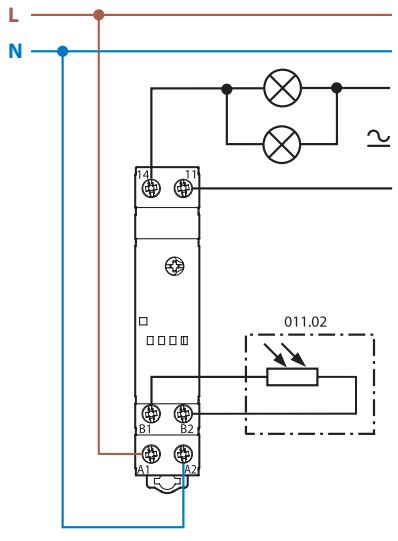
LED	Supply voltage	NO output contact 11.31
	OFF	Open
	ON	Open
	ON	Closed

Outline drawings

11.31
Screw terminal



Wiring diagrams



Accessories

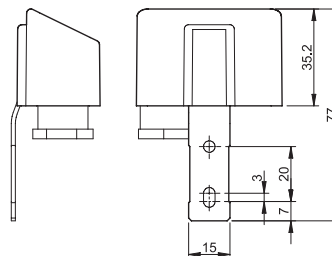
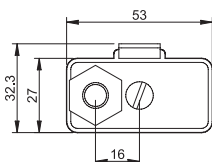


011.02

Light sensor (supplied with light dependent relay)

011.02

- Ambient temperature range: $-40...+70\text{ }^{\circ}\text{C}$
- Cadmium free
- Non polarized
- Double insulated with respect to light dependent relay supply
- Not compatible with type 11.71.0.024.1001



011.03

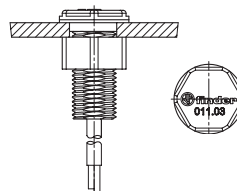
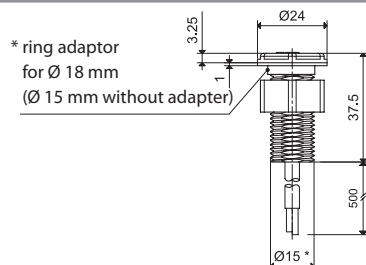
Flush-mounted light sensor (protection category: IP66/67)

011.03

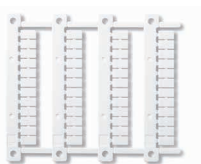
- Ambient temperature range: $-40...+70\text{ }^{\circ}\text{C}$
- Cadmium free
- Non polarized
- Double insulated with respect to light dependent relay supply
- Not compatible with type 11.71.0.024.1001
- Supplied with light dependent relay (packaging code POA)

Connection cable

Material	PVC, flame retardant
Conductor size	mm ² 0.5
Cable length	mm 500
Cable diameter	mm 5.0
Working voltage	V 300/500
Test voltage, cable	kV 2.5
Max. temperature	$^{\circ}\text{C}$ +90



* ring adaptor
for Ø 18 mm
(Ø 15 mm without adaptor)



060.48

Sheet of marker tags, plastic, 48 tags, 6x12 mm, for CEMBRE's thermal transfer printers

060.48

Modular contactors 25 A



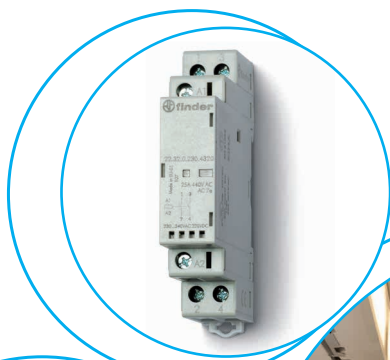
Internal light
management



Ancillary
equipment



Mobile device
charging



22
SERIES

25 A modular contactor - 2 pole or 4 pole

- Complies with EN 45545-2 +A1:2016 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, T1 class)
- 17.5 or 35 mm wide
- NO contact gap ≥ 3 mm, double break
- Continuous duty for the coil and contacts
- AC/DC silent coil (with varistor protection)
- Protective separation (reinforced insulation) between coil and contacts
- Mechanical and LED indicators
- Compliant with EN 61095: 2009
- Auxiliary contact module available, quick-assembly with the main contactor (1 NO + 1 NC and 2 NO versions)
- 35 mm rail (EN 60715) mount

22.32...4x20/22.34...4x20

Screw terminal



* Contact gap ≥ 3 mm for NO contacts only;
NC contacts ≥ 1.5 mm

For outline drawings see page 77

Contact specification

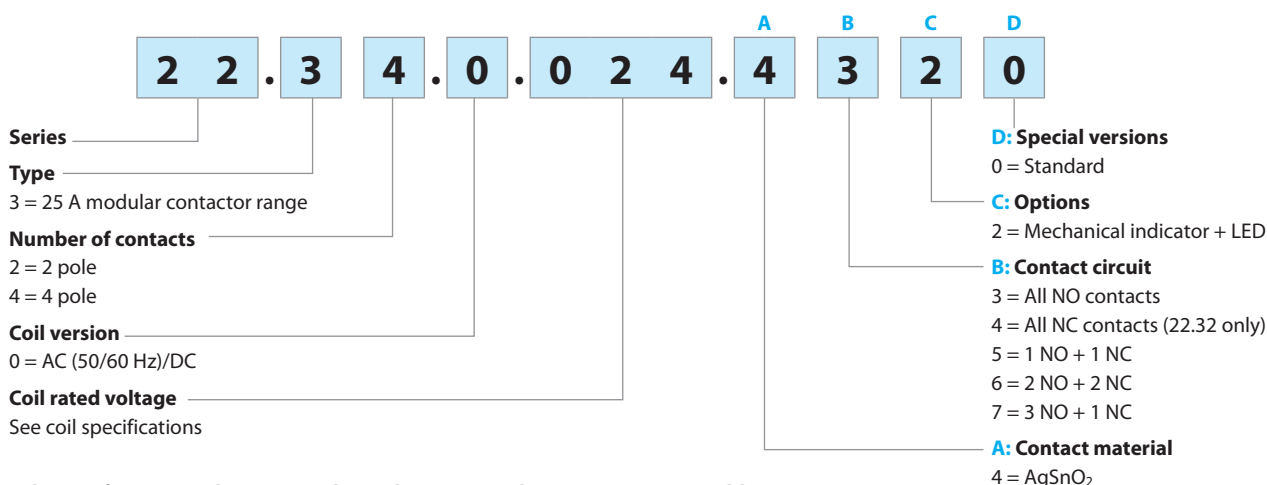
Contact configuration	2 NO, 3 mm* (or 1 NO + 1 NC or 2 NC)	4 NO, 3 mm* (or 3 NO + 1 NC or 2 NO + 2 NC)
Rated current/Maximum peak current	A 25/120	25/120
Rated voltage	V AC 250/440	250/440
Rated load AC1 / AC-7a (per pole @ 250 V)	VA 6250	6250
Rated current AC3 / AC-7b	A 10	10
Rated load AC15 (per pole @ 230 V)	VA 1800	1800
Single-phase motor rating (230 V AC)	kW 1	4
Three-phase motor rating (400 - 440 V AC)	A 15	15
Rated current AC-7c	A 10	10
Nominal lamp rating:		
230 V incandescent/halogen W	2000	2000
fluorescent tubes with electronic ballast W	800	800
fluorescent tubes with electromechanical ballast W	500	500
CFL W	200	200
230 V LED W	200	200
LV halogen or LED with electronic ballast W	200	200
LV halogen or LED with electromechanical ballast W	800	800
Breaking capacity DC1: 30/110/220 V	A 25/5/1	25/5/1
Minimum switching load	mW (V/mA) 1000 (10/10)	1000 (10/10)
Contact material	AgSnO ₂	AgSnO ₂
Coil specification		
Nominal voltage (U _N)	V DC/AC (50/60 Hz) 12 - 24 - 48 - 60 - 120 - 230	12 - 24 - 48 - 60 - 120 - 230
Rated power AC/DC	VA (50 Hz)/W 2/2.2	2/2.2
Operating range	DC/AC (50/60 Hz) (0.8...1.1)U _N	(0.8...1.1)U _N
Holding voltage	DC/AC (50/60 Hz) 0.4 U _N	0.4 U _N
Must drop-out voltage	DC/AC (50/60 Hz) 0.1 U _N	0.1 U _N
Technical data		
Mechanical life AC/DC	cycles 2 · 10 ⁶	2 · 10 ⁶
Electrical life at rated load AC-7a	cycles 30 · 10 ³	30 · 10 ³
Operate/release time	ms 30/20	18/40
Insulation between coil and contacts (1.2/50 µs)	kV 6	6
Ambient temperature range	°C -20...+50	-20...+50
Protection category	IP 20	IP 20

Approvals (according to type)



Ordering information

Example: 22 series, modular contactor 25 A, 4 NO contacts, coil 24 V AC/DC, AgSnO₂ contacts, mechanical indicator + LED.



Selecting features and options: only combinations in the same row are possible.

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

Type	Coil version	A	B	C	D
22.32	AC/DC	4	3 - 4 - 5	2	0
22.34	AC/DC	4	3 - 6 - 7	2	0

Technical data

Insulation		22.32/22.34	
Rated insulation voltage	V AC	250	440
Pollution degree		3	2
Insulation between coil and contact set		Reinforced	
Type of insulation		Reinforced	
Overvoltage category		III	
Rated impulse voltage	kV (1.2/50 µs)	6	
Dielectric strength	V AC	4000	
Insulation between adjacent contacts		Basic	
Type of insulation		Basic	
Overvoltage category		III	
Rated impulse voltage	kV (1.2/50 µs)	4	
Dielectric strength	V AC	2500	
Insulation between open contacts		NO contact	NC contact
Contact gap	mm	3	1.5
Overvoltage category		III	II
Rated impulse voltage	kV (1.2/50 µs)	4	2.5
Dielectric strength	V AC/kV (1.2/50 µs)	2500/4	2000/3
Insulation between coil terminals		4	
Rated impulse voltage (surge) differential mode (according to EN 50121)	kV (1.2/50 µs)	4	
Short circuit protection		3	
Rated conditional short circuit current	kA	3	
Back-up fuse	A	32 (gL/gG type)	
Terminals		Solid and stranded cable	
Max. wire size – contact terminals	mm ²	1 x 6 / 2 x 4	
	AWG	1 x 10 / 2 x 12	
Max. wire size – coil terminals	mm ²	1 x 4 / 2 x 2.5	
	AWG	1 x 12 / 2 x 14	
Min. wire size – contact and coil terminals	mm ²	1 x 0.2	
	AWG	1 x 24	
Screw torque	Nm	0.8	
Wire strip length	mm	9	
Other data		22.32	22.34
Vibration resistance		According to EN 61373	
Shock resistance		According to EN 61373	
Power lost to the environment	without contact current	W	2
	with rated current	W	4.8
			6.3

NOTE: It is suggested an air gap of 9 mm between adjacent relays for installations and working conditions close to the limit (that is, ambient temperature > 40 °C, coil operated for a prolonged period of time, all contacts loaded with current > 20 A).

Contact specification

Ratings and utilization categories according to EN 61095: 2009

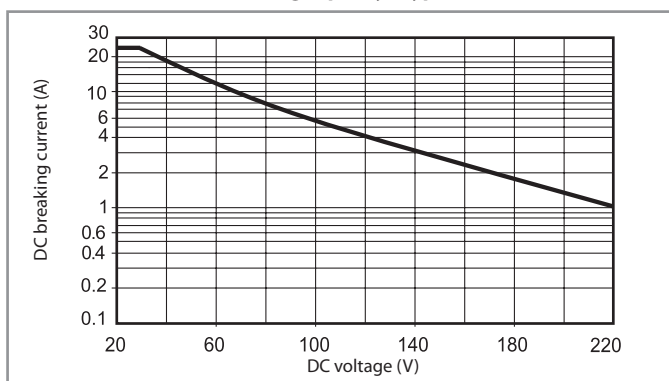
Type	Utilization category					
	AC-7a		AC-7b		AC-7c	
	Rated current (A)	Rated electrical life (Cycles)	Rated current (A)	Rated electrical life (Cycles)	Rated current (A)	Rated electrical life (Cycles)
22.32...4xx0 (AgSnO ₂ contacts)	25	30 · 10 ³	10	30 · 10 ³	10	30 · 10 ³
22.34...4xx0 (AgSnO ₂ contacts)	25	30 · 10 ³	10	30 · 10 ³	10	30 · 10 ³

Utilization category: **AC-7a** = Slightly inductive loads ($\cos \varphi = 0.8$)

AC-7b = Motor loads; ($\cos \varphi = 0.45$, $I_{\text{making}} = 6 \times I_{\text{breaking}}$)

AC-7c = Compensated electric discharge lamps ($\cos \varphi = 0.9$, $C = 10 \text{ mF/A}$)

H 22 - Maximum DC1 breaking capacity - Type 22.32/22.34



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of $\geq 100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
Note: the release time for the load will be increased.

Coil specifications

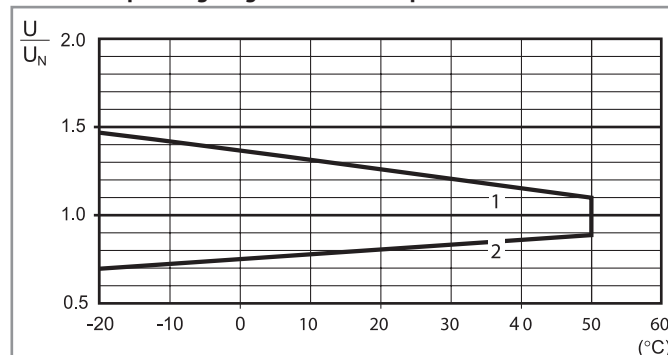
AC/DC version data (type 22.32)

Nominal voltage U_N V	Coil code	Operating range		Rated coil consumption I_N at U_N (AC) mA
		U_{\min} V	U_{\max} V	
12	0.012	9.6	13.2	165
24	0.024	19.2	26.4	83
48	0.048	38.4	52.8	42
60	0.060	48	66	33
120 (110...125)	0.120	88	138	16.5
230 (230...240 AC) (220 DC)	0.230	184 (AC) 176 (DC)	264 (AC) 242 (DC)	8.7

AC/DC version data (type 22.34)

Nominal voltage U_N V	Coil code	Operating range		Rated coil consumption I_N at U_N (AC) mA
		U_{\min} V	U_{\max} V	
12	0.012	9.6	13.2	165
24	0.024	19.2	26.4	83
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230 (230...240 AC) (220 DC)	0.230	184 (AC) 176 (DC)	264 (AC) 242 (DC)	8.7

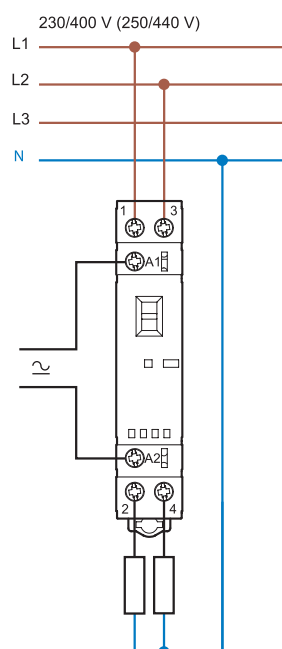
R 22 - Coil operating range v ambient temperature



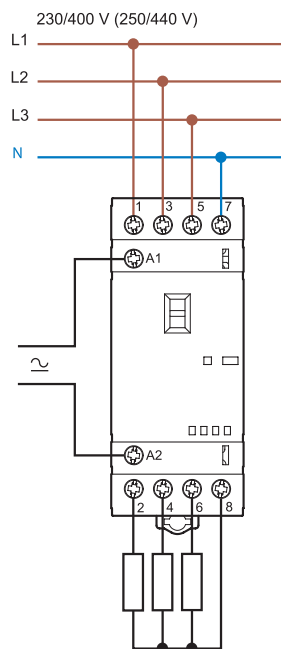
1 - Max. permitted coil voltage.

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

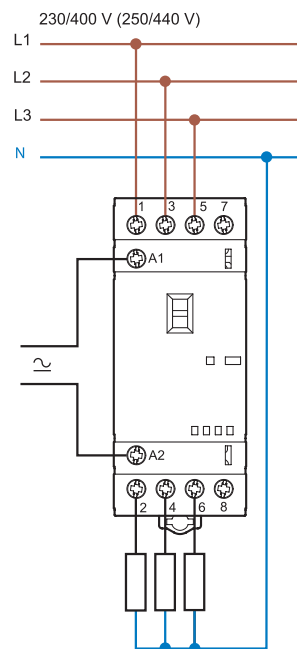
Wiring diagrams



Line and neutral switched

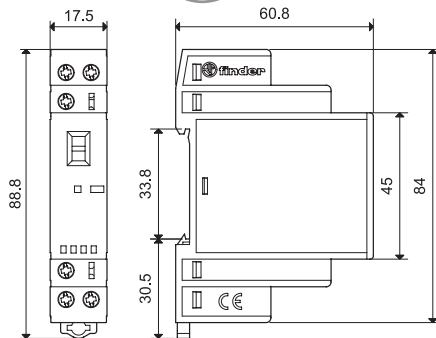


Line only switched

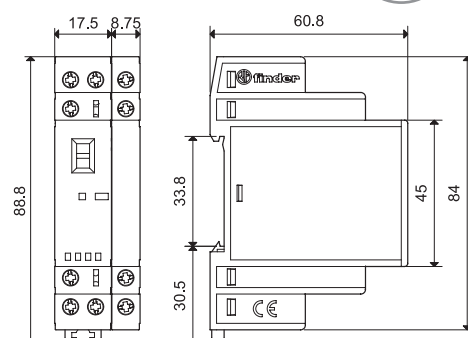


Outline drawings

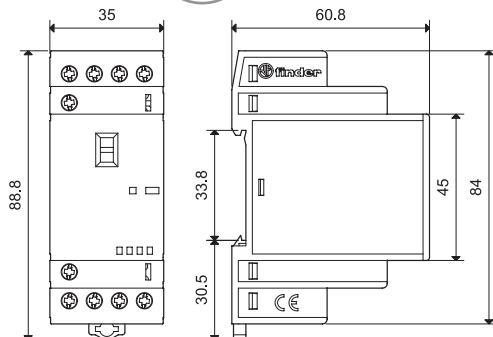
Type 22.32
Screw terminal



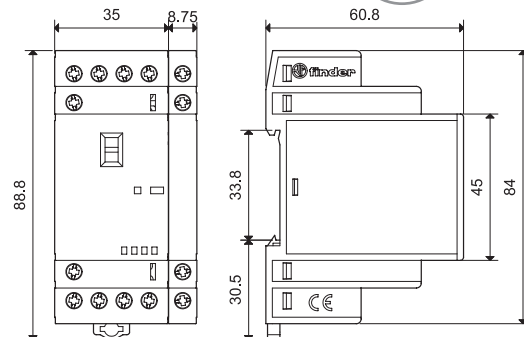
Type 22.32 + 022.33/022.35
Screw terminal



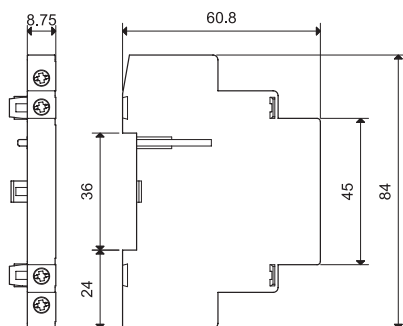
Type 22.34
Screw terminal



Type 22.34 + 022.33/022.35
Screw terminal

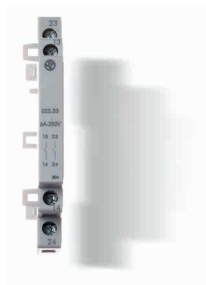


Type 022.33/022.35
Screw terminal

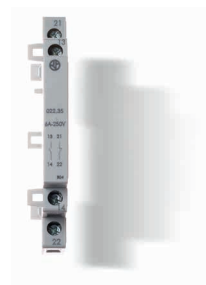







Auxiliary modules

022.33



022.35

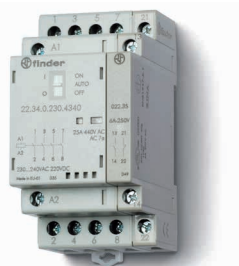


Type of contactor	Type 22.32 Type 22.34	Type 22.32 Type 22.34
Contact specification		
Contact configuration	2 NO	1 NO + 1 NC
Conventional free air thermal current I_{th} A	6	6
Rated power AC15 (230 V) VA	700	700
Electrical life at rated load cycles	$30 \cdot 10^3$	$30 \cdot 10^3$
Contact material	AgNi	AgNi
Short circuit protection		
Rated conditional short circuit current kA	1	1
Back-up fuse A	6 (gL/gG type)	6 (gL/gG type)
Terminals		
Solid and stranded cable		
Max. wire size mm^2	1 x 4 / 2 x 2.5	1 x 4 / 2 x 2.5
AWG	1 x 12 / 2 x 14	1 x 12 / 2 x 14
Min. wire size mm^2	1 x 0.2	1 x 0.2
AWG	1 x 24	1 x 24
 Screw torque Nm	0.8	0.8
Wire strip length mm	9	9
Power lost to the environment		
without contact current W	—	—
with rated current W	0.5	0.5
Approvals (according to type)	   	

NOTE: It is not possible to assembly the auxiliary module on 22.32.0.xxx.x4x0 (2 NC versions).



22.32 + 022.33/022.35



22.34 + 022.33/022.35

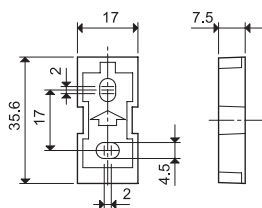
Accessories



020.01

Adaptor for panel mounting (for 22.32 type), plastic, 17.5 mm wide

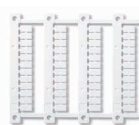
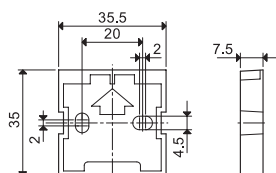
020.01



011.01

Adaptor for panel mounting (for 22.34 type), plastic, 35 mm wide

011.01



060.48

Sheet of marker tags, plastic, 48 tags, 6x12 mm, for CEMBRE's thermal transfer printers

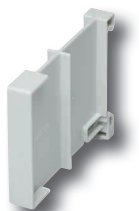
060.48



019.01

Identification tag, plastic, 1 tag, 17x25.5 mm

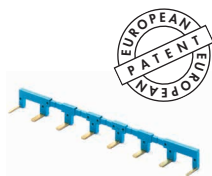
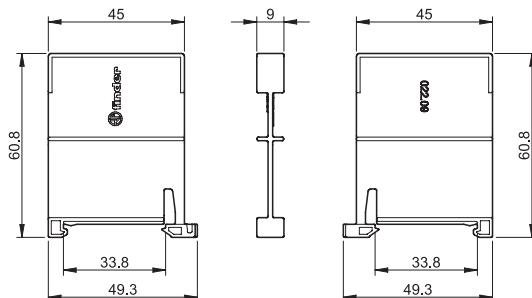
019.01



022.09

Separator for rail mounting, plastic, 9 mm wide

022.09



022.18

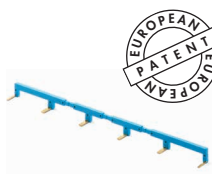
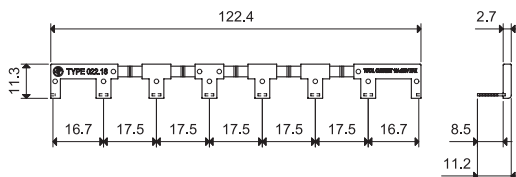


8-way jumper link for type 22.32, 17.5 mm wide

022.18 (blue)

Rated values

10 A - 250 V



022.26

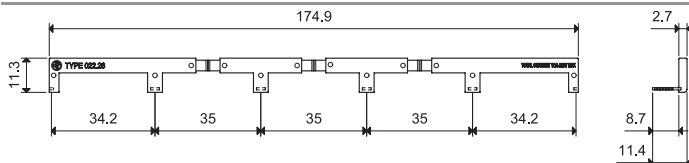


6-way jumper link for type 22.34, 35 mm wide

022.26 (blue)

Rated values

10 A - 250 V




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