

# 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 45545-2:2020 (protection against fire of materials), EN 61373 (resistance against random vibrations and shock, Category 1, Class B), EN 50155 (resistance to temperature and humidity, OT4/ST1 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**

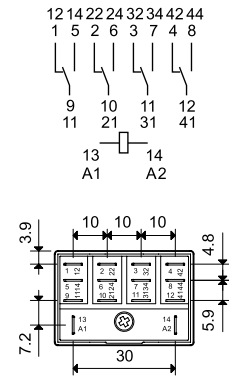
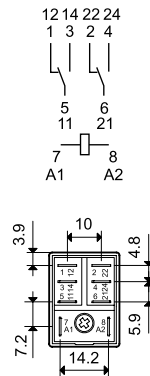


- 2 Pole CO, 12 A
- Plug-in/Faston 187

**56.34T**



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



\* Short term (10 min) +85°C

For outline drawing see page 5

**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: 24/110/220 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 <sub>N</sub> )	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...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	(0.70...1.25)U <sub>N</sub>	(0.70...1.25)U <sub>N</sub>
Holding voltage		0.6 U <sub>N</sub>	0.6 U <sub>N</sub>
Must drop-out voltage		0.1 U <sub>N</sub>	0.1 U <sub>N</sub>

**Technical data**

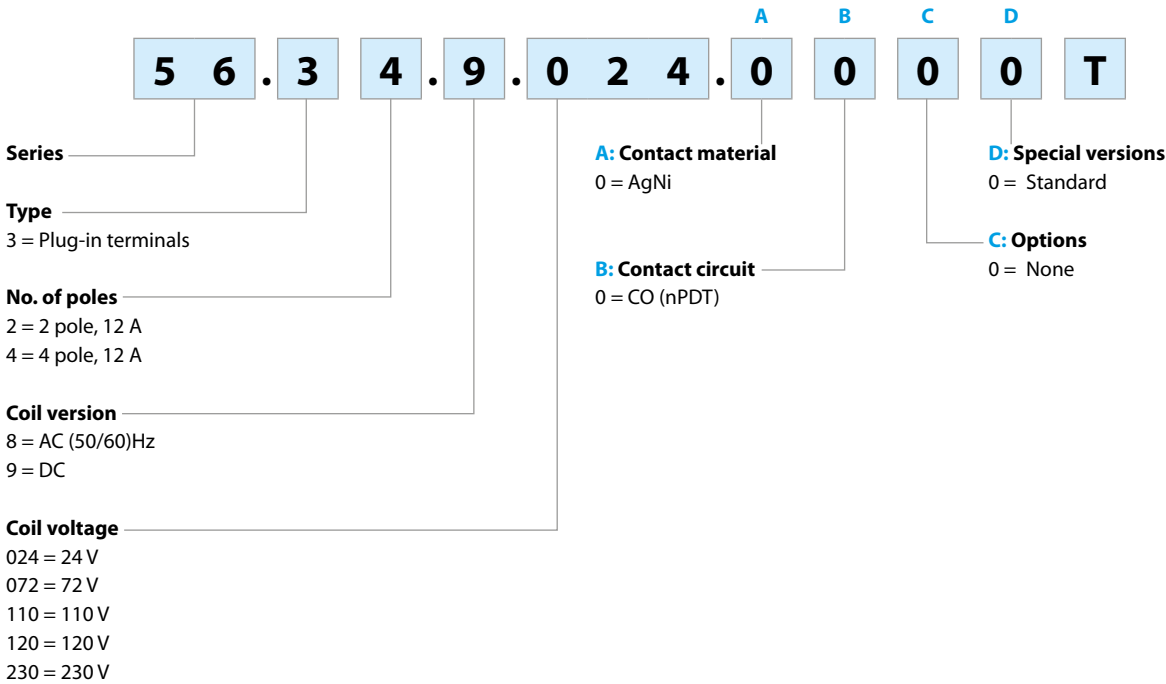
Mechanical life DC	cycles	10 · 10 <sup>6</sup>	10 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	100 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>
Operate/release time	ms	8/8	8/8
Insulation between coil and contacts (1.2/50 µs)	kV	4	4
Dielectric strength between open contacts	V AC	1000	1000
Ambient 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, AgNi 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

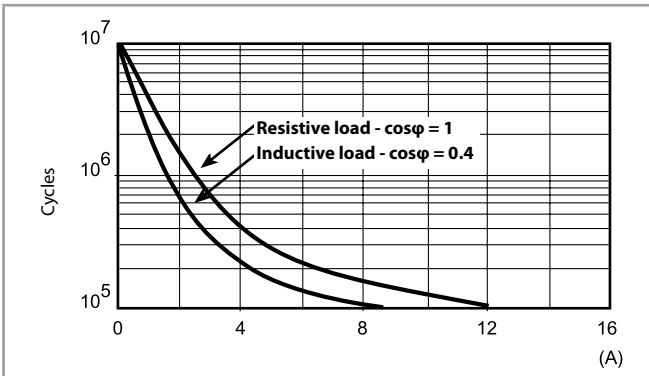
Rated impulse voltage (surge) differential mode (according to EN 50121)	kV (1.2/50 μs)	4
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### Other data

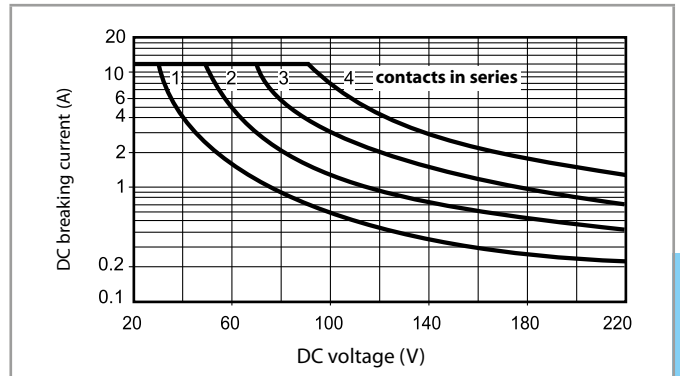
Bounce time: NO/NC	ms	1/3
Vibration resistance: NO/NC		According to EN 61373
Shock resistance		According to EN 61373
Power lost to the environment	without contact current	W 1 (56.32T)/1.3 (56.34T)
	with rated current	W 3.8 (56.32T)/6.9 (56.34T)

### 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 $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ mA
		$U_{min}$ V	$U_{max}$ V		
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 $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ mA
		$U_{min}$ V	$U_{max}$ V		
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

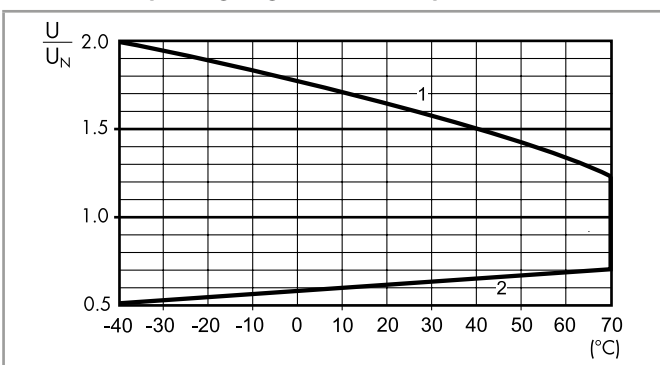
AC coil data, 2 CO - Type 56.32T

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

AC coil data, 4 CO - Type 56.34T

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

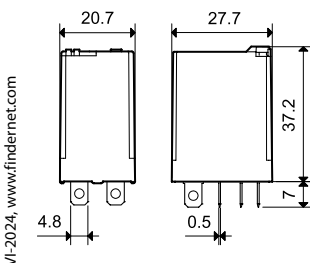
R 56 - DC coil operating range v ambient temperature



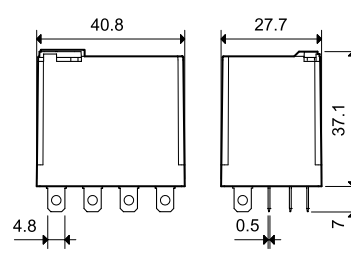
- 1 - Max. permitted coil voltage.
- 2 - Min. pick-up voltage with coil at ambient temperature.

### Outline drawings

Type 56.32T



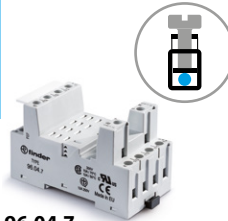
Type 56.34T





96.02.7

Approvals (according to type):



96.04.7

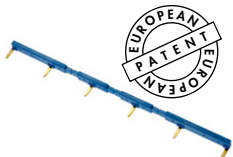
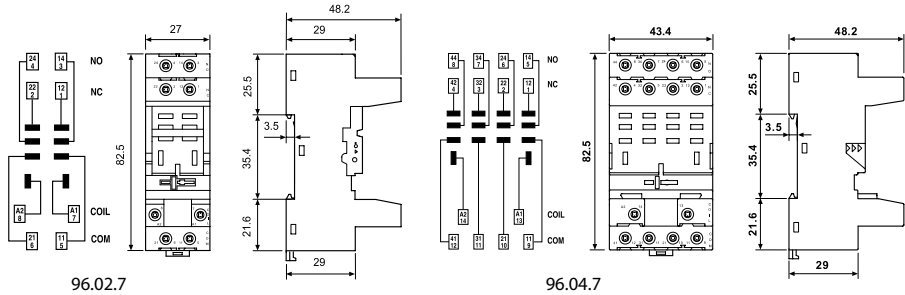
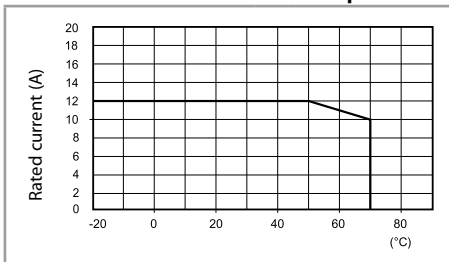
Approvals (according to type):



Screw terminal (Box clamp) socket panel or 35 mm rail mount (EN 60715)	96.02.7 SMA*	96.04.7 SMA*
For relay type	56.32T	56.34T
<b>Accessories</b>		
Metal 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
<b>Technical data</b>		
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
	mm <sup>2</sup>	1 x 6 / 2 x 2.5
	AWG	1 x 10 / 2 x 14

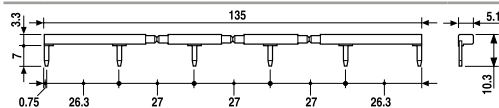
\* Complies with **EN 45545-2:2020** (protection against fire of materials), **EN 61373** (resistance against random vibrations and shock, Category 1, Class B), **EN 50155** (resistance to temperature and humidity, **OT4/ST1** class)

L 96 - Rated current vs ambient temperature



094.06

6-way jumper link for 96.02.7 socket	094.06
Rated values	10 A - 250 V



86.00



86.30

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

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.