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7S Series - Relay module with forcibly guided contacts 6 A

Features

Relay module with forcibly guided contacts

7S.12 with 2 pole (1NO + 1 NC)
7S.14 with 4 pole (2 NO + 2 NC and 3 NO + 1 NC)
7S.16 with 6 pole (4 NO + 2 NC)

- For safety applications, with class A forcibly guided contact relays (EN 50205)
- For functional reliability in machinery and plant engineering according to EN 13849-1
- For railway applications; materials compliant with fire and smoke characteristics (UNI 11170-3); mechanical and climatic characteristics compliant with EN 61373 and EN 50155
- DC and AC supply versions
- 24 and 110 V DC versions with extended operating range (0.7....1.25) U_N
- Coil status visual indication with LED
- 35 mm rail (EN 60715) mount

Screwless terminal

* Single contact current ≤ 6 A,
total NO contacts current ≤ 12 A

For outline drawing see page 6

NEW 7S.12.....5110	NEW 7S.14.....0220/0310	NEW 7S.16.....0420
		
• 2 pole (1 NO + 1 NC)	• 4 pole (2 NO + 2 NC and 3 NO + 1 NC)	• 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*/12	6*/12
Rated switching voltage		V AC (50/60 Hz)	250	250	250
Rated load AC1		VA	1,500	1,500	1,500
Rated load AC15 (230 V AC)		VA	700	500	500
Breaking capacity DC1: 30/110/220 V		A	6/0.6/0.2	6/0.6/0.3	6/0.6/0.3
Breaking capacity DC13: 24 V		A	1	1	1
Minimum switching load		mW (V/mA)	60 (5/5)	60 (5/5)	60 (5/5)
Standard contact material			AgNi + Au (5 µm)	AgNi with notched crown	AgNi with notched crown
Coil specification					
Nominal voltage (U_N)		V AC (50/60 Hz)	110...125 - 230...240	110...125 - 230...240	110...125 - 230...240
		V DC	12 - 24	12 - 24 - 110	12 - 24 - 110
Rated power		VA (50 Hz) / W	2.3/1	2.3/1	2.3/1
Operating range		AC	(0.85...1.1) U_N	(0.85...1.1) U_N	(0.85...1.1) U_N
		DC	(0.8...1.2) U_N	(0.8...1.2) U_N	(0.8...1.2) U_N
	DC extended range (24 and 110 V only)		(0.7....1.25) U_N	(0.7....1.25) U_N	(0.7....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 µs)		kV	6	6 (4 against 13-14)	6 (4 against 13-14)
Dielectric strength between open contacts		V AC	1,500	1,500	1,500
Ambient temperature		°C	–40....+70	–40....+70	–40....+70
Protection category			IP 20	IP 20	IP 20
Approvals (according to type)			CE cULus		

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Ordering information

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

7 S . 1 6 . 9 . 0 2 4 . 0 4 2 0

Series

Type
1 = 22.5 mm wide, cage-clamp terminals

Output
2 = 2 contacts
4 = 4 contacts
6 = 6 contacts

Supply version
8 = AC (50 /60 Hz)
9 = DC

Supply voltage
See page 5

Special versions
0 = Standard

NO and NC contatcs
11 = 1 NO + 1 NC
22 = 2 NO + 2 NC
31 = 3 NO + 1 NC
42 = 4 NO + 2 NC

Contact material
0 = AgNi
5 = AgNi+Au 5 µm

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

7S.12.9.012.5110	7S.14.9.012.0220	7S.16.9.012.0420
7S.12.9.024.5110	7S.14.9.012.0310	**7S.16.9.024.0420**
7S.12.8.120.5110	**7S.14.9.024.0220**	7S.16.9.110.0420
7S.12.8.230.5110	**7S.14.9.024.0310**	7S.16.8.120.0420
	7S.14.9.110.0220	7S.16.8.230.0420
	7S.14.9.110.0310	
	7S.14.8.120.0220	
	7S.14.8.120.0310	
	7S.14.8.230.0220	
	7S.14.8.230.0310	

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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 *	Basic *	Reinforced *
Overvoltage category			III	III	II
Rated impulse voltage		kV (1.2/50 µs)	6	4	4
Dielectric strength		V AC	4,000	2,500	2,500
Insulation between adjacent contacts				
Type of Insulation			Reinforced *	Basic*	Reinforced *
Overvoltage category			III	III	II
Rated impulse voltage		kV (1.2/50 µs)	6	4	4
Dielectric strength		V AC	4,000	2,500	2,500
Insulation between open contacts				
Type of disconnection			Micro-disconnection	
Dielectric strength		V AC / kV (1.2/50 µs)	1,500 / 2.5	

* Tables below indicate, for each 7S type, those contacts (R) meeting Reinforced Insulation Overvoltage category III, those contacts (R2) meeting Reinforced Insulation Overvoltage category II, and those contacts (B) meeting Basic Insulation Overvoltage category III.

EMC specifications			**Reference standard**		
Burst (5/50 ns)	on supply terminals		EN 61000-4-4	4 kV	
Surge (1.2/50 µs) on supply terminals	differential mode		EN 61000-4-5	1.5 kV	
Terminals			**solid cable**	**stranded cable**	
Max. wire size		mm^2	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 (10…200) Hz: NO/NC		g	10/5	15/4	15/4
Shock resistance: NO/NC		g	20/6	25/13	25/13
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

Type of insulation between coil and contacts and between adjacent contacts

Code		
Type of Insulation		Overvoltage category
R	Reinforced	III
B	Basic	III
R2	Reinforced	II

7S.12....5110			
	Coil	13-14	21-22
Coil	—	R	R
13-14		—	B/R2
21-22			—

7S.14....0310					
	Coil	13-14	21-22	33-34	43-44
Coil	—	B	R	R	R
13-14		—	B	R	R
21-22			—	R	R
33-34				—	B/R2
43-44					—

7S.16....0420							
	Coil	13-14	21-22	31-32	43-44	53-54	63-64
Coil	—	B	R	R	R	R	R
13-14		—	B	R	R	R	R
21-22			—	R	R	R	R
31-32				—	B/R2	R	R
43-44					—	B/R2	R
53-54						—	B/R2
63-64							—

7S.14....0220					
	Coil	11-12	21-22	33-34	43-44
Coil	—	R	R	R	R
11-12		—	R	R	R
21-22			—	R	R
33-34				—	B/R2
43-44					—

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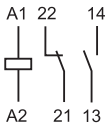
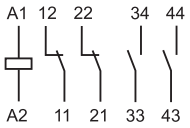
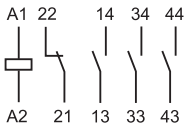
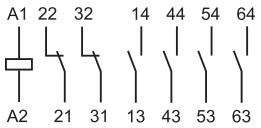
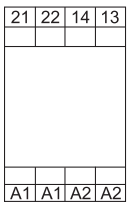
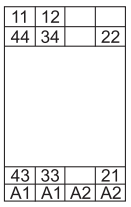
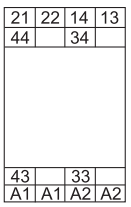
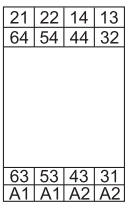
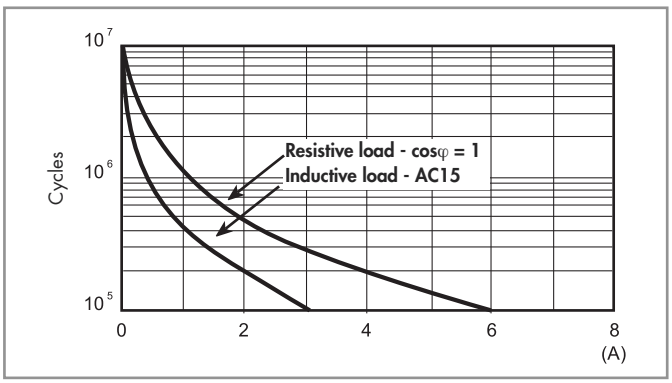
Contact specifications

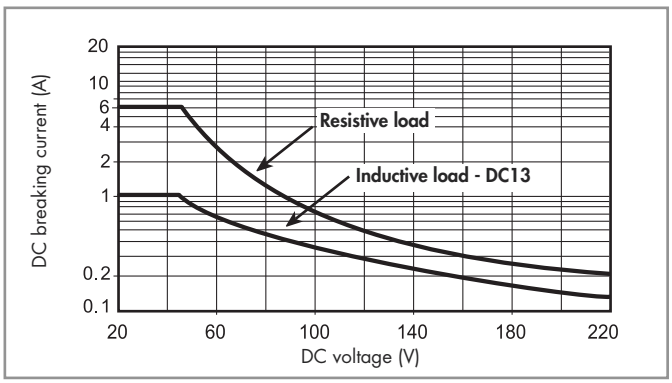
Contact diagrams

7S.12	7S.14...0220	7S.14...0310	7S.16
			
			

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

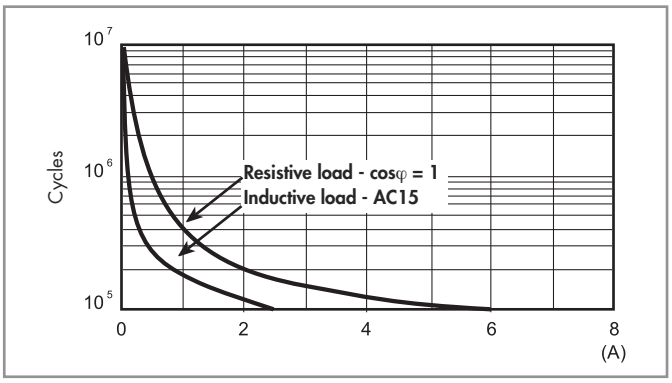


H 7S12 - Maximum DC breaking capacity - 7S.12

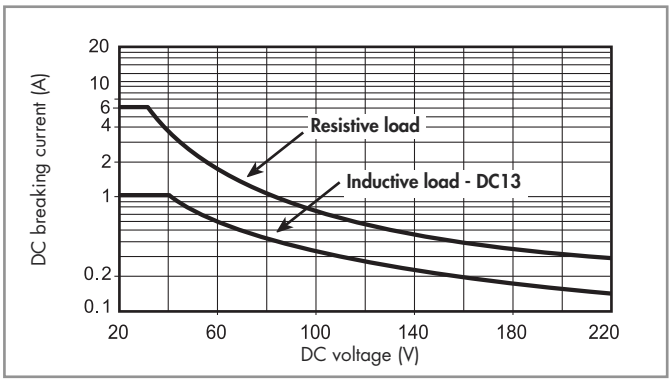


- When switching a load having voltage and current values under the curve, an electrical life of ≥ $100 \cdot 10^3$ can be expected.

F 7S16 - Electrical life (AC) v contact current - 7S.14 / 7S.16



H 7S16 - Maximum DC breaking capacity - 7S.14 / 7S.16



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

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Coil specifications

DC coil data - type 7S.12

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated input current at U_N I_N	Rated power at U_N
V		V	V	mA	W
12	**9**.012	9.6	14.4	55	0.7
24	**9**.024	16.8	30	38.2	0.9

AC coil data - type 7S.12

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated input current at U_N I_N	Rated power at U_N
V		V	V	mA	VA/W
110...125	**8**.120	93	138	9.5	1.1/1
230...240	**8**.230	195	264	9	2/0.8

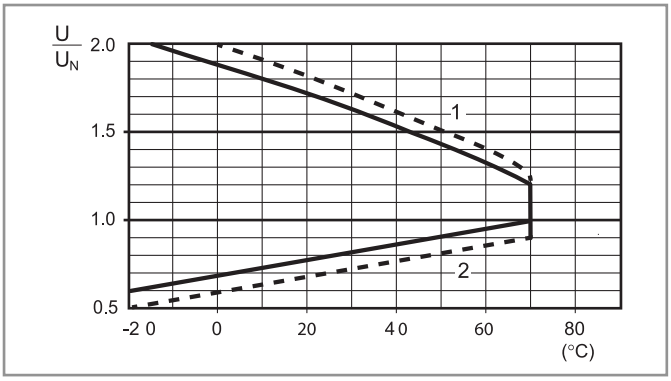
DC coil data - type 7S.14 / 7S.16

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated input current at U_N I_N	Rated power at U_N
V		V	V	mA	W
12	**9**.012	9.6	14.4	56	0.7
24	**9**.024	16.8	30	28	0.7
110	**9**.110	77	138	9.2	0.7

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

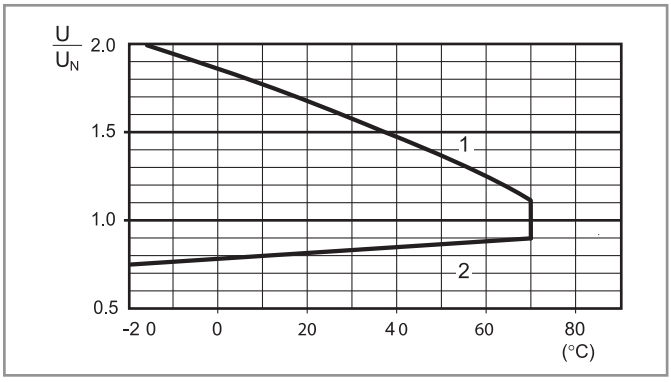
Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated input current at U_N I_N	Rated power at U_N
V		V	V	mA	VA/W
110...125	**8**.120	93	138	8.9	1.1/0.9
230...240	**8**.230	195	264	8.5	2/0.8

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.

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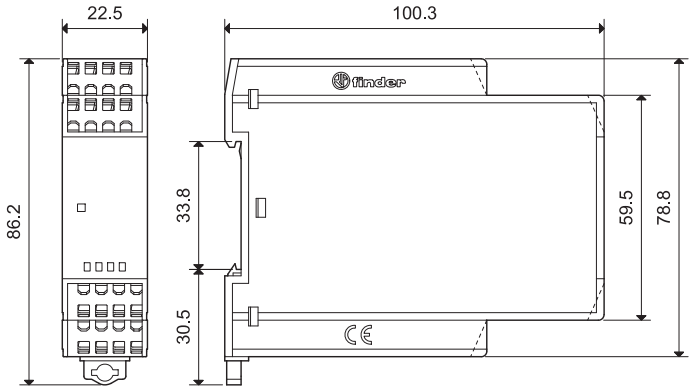
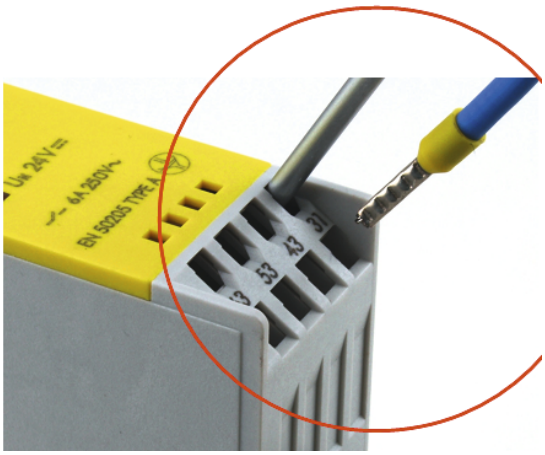
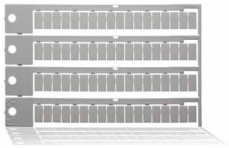
Outline drawings

7S
Screwless terminal





Accessories



060.72

Sheet of marker tags, plastic, 72 tags, 6x12 mm	060.72