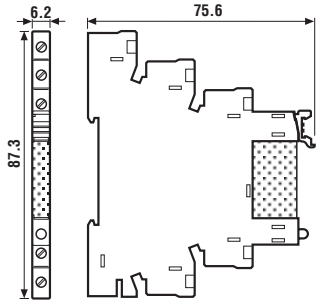
Features

1 Pole - 6 A electromechanical relay interface modules, 6.2 mm wide.

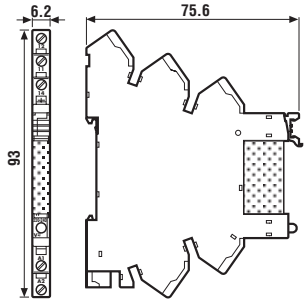
Ideal interface for PLC and electronic systems

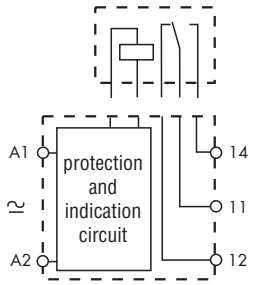
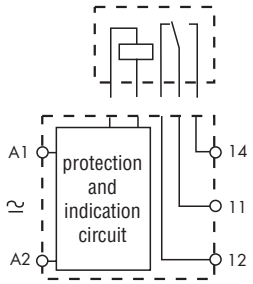
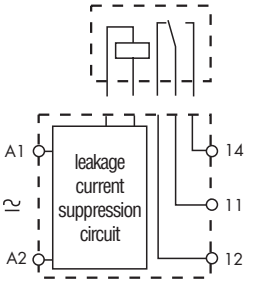
- Sensitive DC coil or AC/DC coil versions
- Integral coil indication and protection circuit
- Instant ejection of relay using plastic retaining clip
- UL Listed
- 35 mm rail (EN 50022) mounting

38.51



38.61



	38.51	38.61	38.51.3 / 38.61.3
			
	• Screw terminal • 1 pole electromechanical relay • 35 mm rail mounting	• Screwless terminal • 1 pole electromechanical relay • 35 mm rail mounting	• Leakage current suppression • 1 pole electromechanical relay • 35 mm rail mounting
			
Contact specification			
Contact configuration	1 CO (SPDT)	1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current A	6/10	6/10	6/10
Rated voltage/Maximum switching voltage V AC	250/400	250/400	250/400
Rated load AC1 VA	1,500	1,500	1,500
Rated load AC15 (230 V AC) VA	300	300	300
Single phase motor rating (230 V AC) kW	0.185	0.185	0.185
Breaking capacity DC1: 30/110/220 V A	6/0.2/0.15	6/0.2/0.15	6/0.2/0.15
Minimum switching load mW (V/mA)	500 (12/10)	500 (12/10)	500 (12/10)
Standard contact material	AgNi	AgNi	AgNi
Coil specification			
Nominal voltage (U_N) V AC/DC	12 - 24 - 48 - 60 - (110...125) - (220...240)		(110...125) / (230...240)AC only
V DC	6 - 12 - 24 - 48 - 60 (non polarized)		—
Rated power AC/DC VA (50 Hz)/W	see page 121	see page 121	1/1 / 0.5/—
Operating range AC/DC	(0.8...1.1)U_N	(0.8...1.1)U_N	(94...138)U_N / (184...264)U_N
DC	(0.8...1.2)U_N	(0.8...1.2)U_N	—
Holding voltage AC/DC	0.6 U_N / 0.6 U_N	0.6 U_N / 0.6 U_N	0.6 U_N / 0.6 U_N
Must drop-out voltage AC/DC	0.1 U_N / 0.05 U_N	0.1 U_N / 0.05 U_N	44 V / 92 V
Technical data			
Mechanical life cycles	$10 \cdot 10^6$	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1 cycles	$60 \cdot 10^3$	$60 \cdot 10^3$	$60 \cdot 10^3$
Operate/release time ms	5/6	5/6	5/6
Insulation between coil and contacts (1.2/50 µs) kV	6 (8 mm)	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts V AC	1,000	1,000	1,000
Ambient temperature range (≤ 60 V/>60 V) °C	–40...+70/–40...+55	–40...+70/–40...+55	—/–40...+55
Protection category	IP 20	IP 20	IP 20
Approvals relay (according to type)			

38

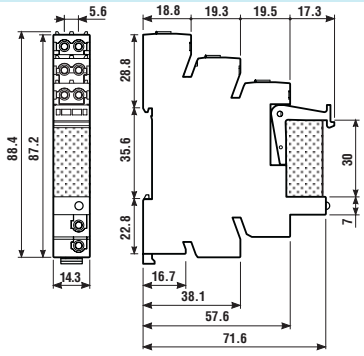
Features

2 Pole - 8 A electromechanical relay interface modules, 14 mm wide.

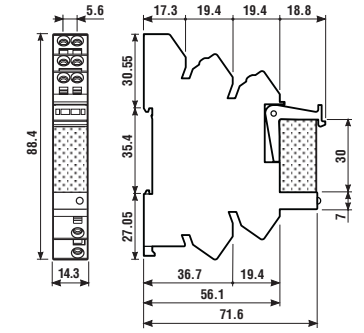
Ideal interface for PLC and electronic systems

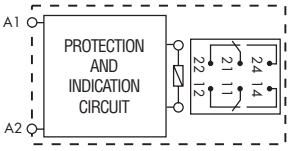
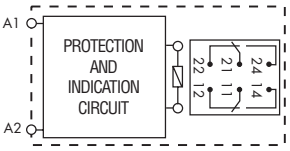
- Sensitive DC coil versions
- Integral coil indication and protection circuit
- Instant ejection of relay using plastic retaining clip
- 35 mm rail (EN 50022) mounting

38.52



38.62



	38.52	38.62
		
	• Screw terminal • 2 pole electromechanical relay • 35 mm rail mounting	• Screwless terminal • 2 pole electromechanical relay • 35 mm rail mounting
		
Contact specification		
Contact configuration	2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current A	8/15	8/15
Rated voltage/Maximum switching voltage V AC	250/400	250/400
Rated load AC1 VA	2,000	2,000
Rated load AC15 (230 V AC) VA	400	400
Single phase motor rating (230 V AC) kW	0.3	0.3
Breaking capacity DC1: 30/110/220 V A	8/0.3/0.12	8/0.3/0.12
Minimum switching load mW (V/mA)	300 (5/5)	300 (5/5)
Standard contact material	AgNi	AgNi
Coil specification		
Nominal voltage (U_N) V AC/DC	—	—
V DC	12 - 24 - 60	12 - 24 - 60
Rated power AC/DC VA (50 Hz)/W	—/0.5	—/0.5
Operating range AC/DC	—	—
DC	(0.8...1.2)U_N	(0.8...1.2)U_N
Holding voltage AC/DC	— / 0.6 U_N	— / 0.6 U_N
Must drop-out voltage AC/DC	— / 0.05 U_N	— / 0.05 U_N
Technical data		
Mechanical life cycles	30 · 10^6	30 · 10^6
Electrical life at rated load AC1 cycles	80 · 10^3	80 · 10^3
Operate/release time ms	—	—
Insulation between coil and contacts (1.2/50 µs) kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts V AC	1,000	1,000
Ambient temperature range °C	–40...+70	–40...+70
Protection category	IP 20	IP 20
Approvals relay (according to type)		

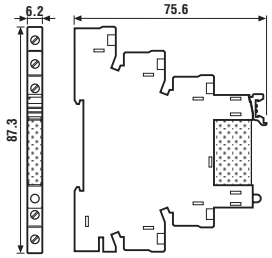
Features

Single output - solid state relay interface modules, 6.2 mm wide

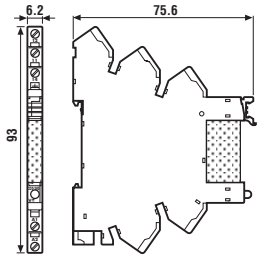
Ideal interface for PLC and electronic systems

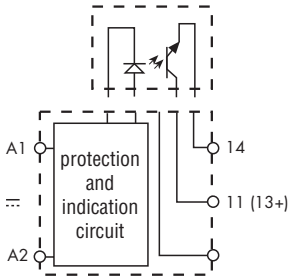
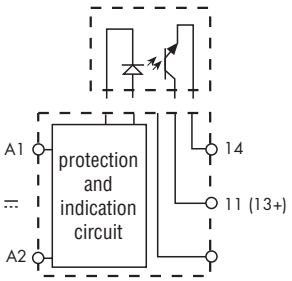
- DC, AC or AC/DC input versions
- Supplied with integral coil indication and protection circuit
- Silent, high switching speed and long electrical life
- Instant ejection of relay using plastic retaining clip
- UL listed
- 35 mm rail (EN 50022) mounting

38.81



38.91



	38.81/38.91	38.81.3/38.91.3
		
	• AC or DC output switching • SSR relay - DC input voltage • 35 mm rail mounting	• AC or DC output - Leakage current suppression • SSR relay - AC or AC/DC input voltage • 35 mm rail mounting
		

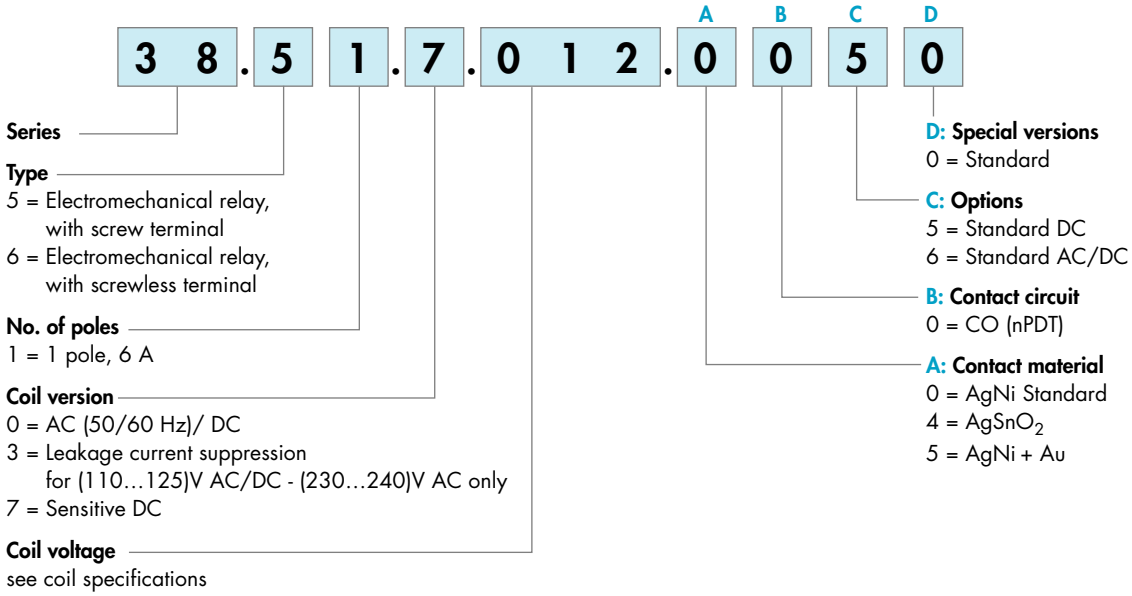
Output circuit							
Rated current/Maximum peak current (10 ms)	A	2/20	0.1/0.5	2/40	2/20	0.1/0.5	2/40
Rated voltage/Maximum blocking voltage	V	24/33 DC	48/60 DC	240/275 AC	24/33 DC	48/60 DC	240/275 AC
Switching voltage range	V	(1.5...24)DC	(1.5...48)DC	(12...240)AC	(1.5...24)DC	(1.5...48)DC	(12...240)AC
Minimum switching current	mA	1	0.05	22	1	0.05	22
Max. "OFF-state" leakage current	mA	0.001	0.001	1.5	0.001	0.001	1.5
Max. "ON-state" voltage drop	V	0.12	1	1.6	0.12	1	1.6
Input circuit							
Nominal voltage (U_N)	V AC	—			230...240		
	V DC	6 - 24 - 60			—		
	V AC/DC	(110...125) - (220...240)			110...125		
Operating range	V DC	See table page 122			See table page 122		
Control current	mA	See table page 122			See table page 122		
Release voltage	V DC	See table page 122			See table page 122		
Impedance	Ω	See table page 122			See table page 122		
Technical data							
Operate/release time	ms	0.1/0.4	0.02/0.11	12/12	0.1/0.4	0.02/0.11	12/12
Dielectric strength between input/output	V	2,500			2,500		
Ambient temperature range	°C	–20...+55			–20...+55		
Environmental protection		IP20			IP20		
Approvals (according to type)		cULus					

Electromechanical Relay

Ordering information

Electromechanical relay 1 Pole

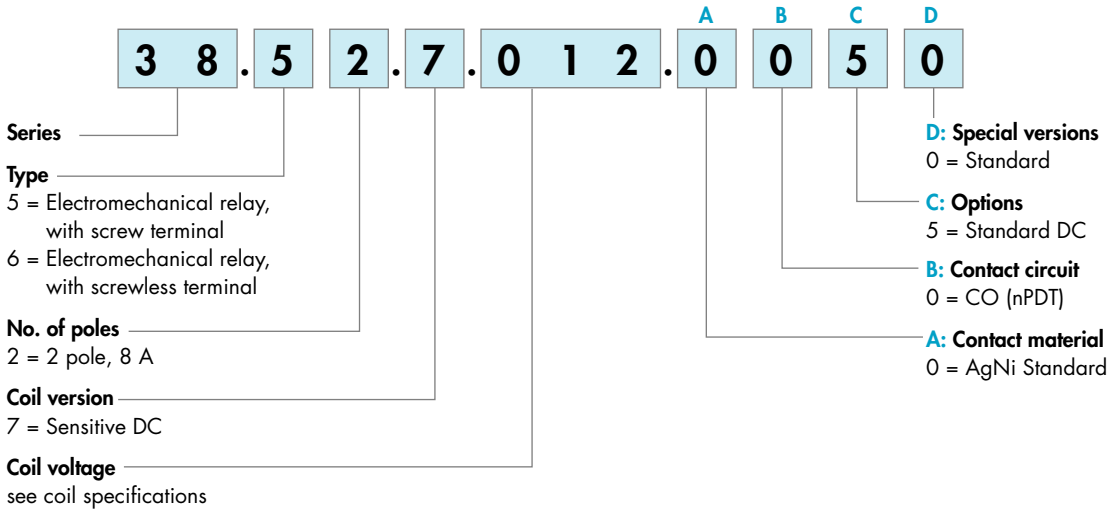
Example: 38 series relay interface module, 1 CO (SPDT), 12 V DC coil.



38

Electromechanical relay 2 Pole

Example: 38 series relay interface module, 2 CO (DPDT), 12 V DC coil.



Solid State Relay

Ordering information

Solid state relay

Example: 38 series SSR relay interface module, 2 A, 24 V DC supply.

3 8 . 8 1 . 7 . 0 2 4 . 9 0 2 4

Series

Type
8 = SSR relay, with screw terminal
9 = SSR relay, with screwless terminal

Output
1 = 1 NO (SPST-NO)

Supply version
0 = AC/DC for (110...125)V and (230...240)V only
3 = Leakage current suppression
for (110...125)V AC/DC and (230...240)V AC only
7 = DC

Supply voltage
see input specifications

Output circuit
9024 = 2 A - 24 V DC
7048 = 0.1 A - 48 V DC
8240 = 2 A - 240 V AC

Electromechanical Relay

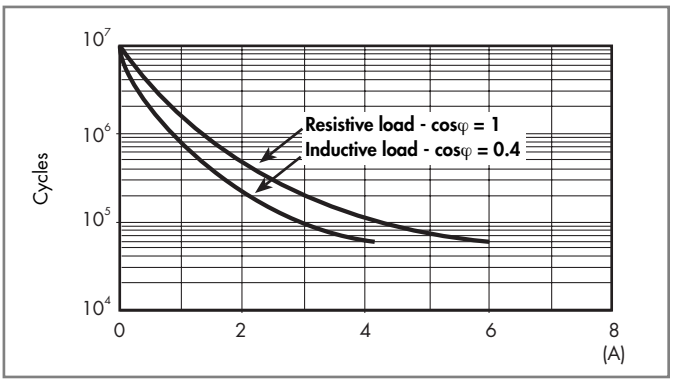
Technical data

Insulation						
Insulation according to EN 61810-1 ed. 2	insulation rated voltage	V	250		400	
	rated impulse withstand voltage	kV	4		4	
	pollution degree		3		2	
	overvoltage category		III		III	
Insulation between coil and contacts (1.2/50 µs)		kV	6 (8 mm)			
Dielectric strength between open contacts		V AC	1,000			
Conducted disturbance immunity						
Burst (5...50)ns, 5 kHz, on A1 - A2			EN 61000-4-4		level 4 (4 kV)	
Surge (1.2/50 µs) on A1 - A2 (differential mode)			EN 61000-4-5		level 3 (2 kV)	
Other data			**1 Pole**		**2 Pole**	
Bounce time: NO/NC		ms	1/6		2/5	
Vibration resistance (10...55)Hz, max. ± 1 mm: NO/NC		g/g	10/5		15/2	
Power lost to the environment	without contact current	W	0.2 (12 V) - 0.9 (240 V)		0.5	
	with rated current	W	0.5 (12 V) - 1.5 (240 V)		1.3	
			38.51/52		**38.61/62**	
Wire strip length		mm	10		10	
⏀ Screw torque		Nm	0.5		—	
Max. wire size			solid cable	stranded cable	solid cable	stranded cable
		mm^2	1x2.5/2x1.5	1x2.5/2x1.5	1x2.5	1x2.5
		AWG	1x14/2x16	1x14/2x16	1x14	1x14

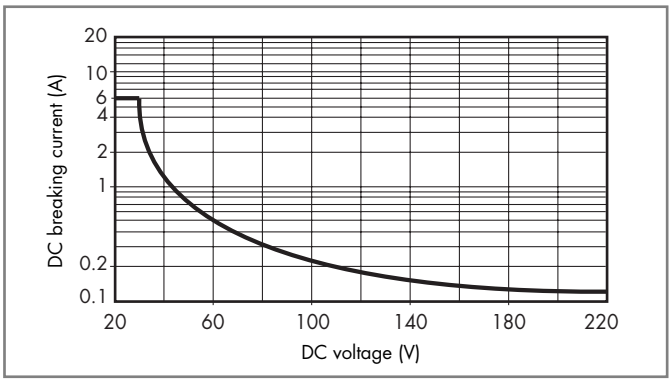
38

Contact specification

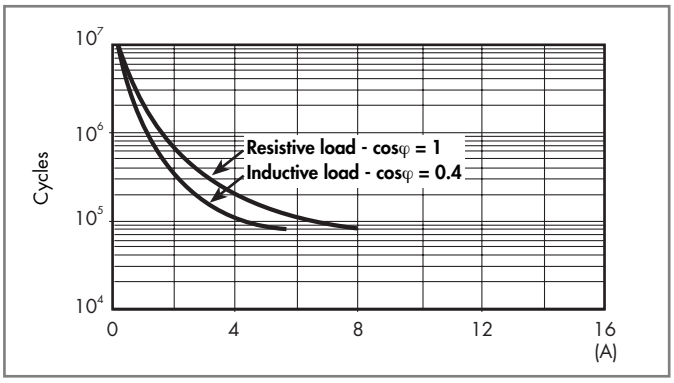
F 38 - Electrical life (AC) v contact current, 1 Pole



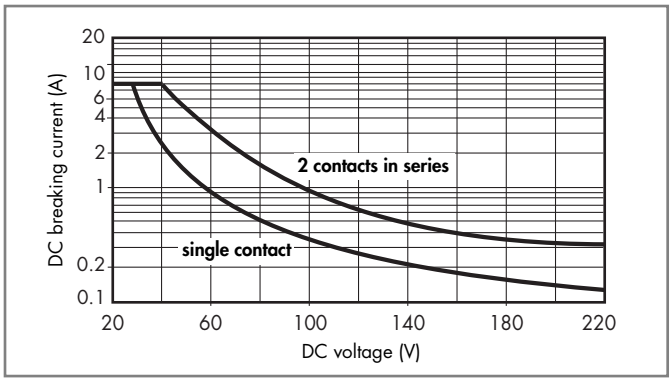
H 38 - Maximum DC1 breaking capacity, 1 Pole



F 38 - Electrical life (AC) v contact current, 2 Pole



H 38 - Maximum DC1 breaking capacity, 2 Pole



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ $60 \cdot 10^3$ (1 Pole) or ≥ $80 \cdot 10^3$ (2 Pole) 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.

Electromechanical Relay 1 Pole

Coil specifications

Coil data AC/DC, 1 Pole

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
V		V	V	mA	W
12	**0**.012	9.8	13.2	16	0.2
24	**0**.024	19.2	26.4	12	0.2
48	**0**.048	38.4	52.8	6.9	0.3
60	**0**.060	48	66	7	0.5
110...125	**0**.125	88	138	5(*)	0.6(*)
220...240	**0**.240	184	264	4(*)	0.9(*)

(*) Rated coil consumption and power consumption values relate to U_N = 125 and 240 V.

Coil data sensitive DC, 1 Pole

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N	Power consumption P at U_N
V		V	V	mA	W
6	**7**.006	5	7.2	35	0.2
12	**7**.012	9.8	14.4	15.2	0.2
24	**7**.024	18.2	28.8	10.4	0.3
48	**7**.048	35	57.6	6.3	0.3
60	**7**.060	43.5	72	7	0.4

Coil data, leakage current suppression types, 1 Pole

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Must drop out U	Rated coil consumption I at U_N	Power consumption P at U_N
V		V	V		mA	W
(110...125) AC/DC	**3**.125	94	138	44	8(*)	1(*)
(230...240) AC	**3**.240	184	264	92	7(*)	0.5(*)

(*) Rated coil consumption and power consumption values relate to U_N = 125 and 240 V.

The 38 Series interface modules (supply version 3) have built-in leakage current suppression to address industry concerns of the contacts not dropping-out when there is residual current in the circuit; at (110...125)V AC and (230...240)V AC.

This problem can occur, for example, when connecting the interface modules to PLC,s with triac outputs or when connecting via relatively long cables.

38

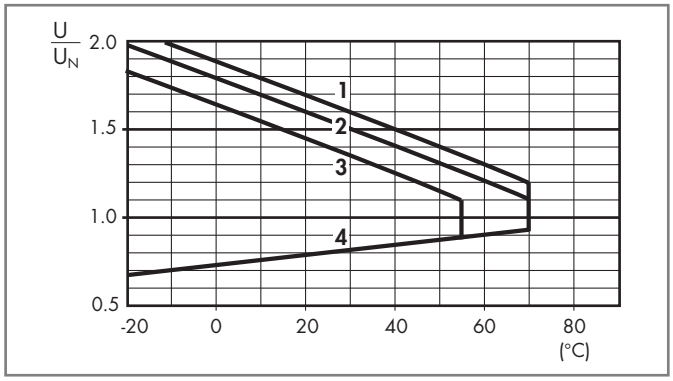
Electromechanical Relay 2 Pole

Coil specifications

Coil data sensitive DC, 2 Pole

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Rated coil consumption I at U_N
V		V	V	mA
12	**7**.012	9.6	14.4	41
24	**7**.024	19.2	28.8	19.5
60	**7**.060	48	72	8

R 38 - DC coil operating range v ambient temperature
1 Pole and 2 Pole



1 - Max. permitted coil voltage at nominal load (DC coil).
2 - Max. permitted coil voltage at nominal load (AC/DC coils ≤ 60 V).
3 - Max. permitted coil voltage at nominal load (AC/DC coils > 60 V).
4 - Min pick-up voltage with coil at ambient temperature.

Solid State Relay

Technical data

Other data						
Power lost to the environment	without output current	W	0.17			
	with rated current	W	0.4			
			38.81		**38.91**	
Wire strip length		mm	10		10	
⏀ Screw torque		Nm	0.5		—	
Max. wire size			solid cable	stranded cable	solid cable	stranded cable
		mm^2	1x2.5 / 2x1.5	1x2.5 / 2x1.5	1x2.5	1x2.5
		AWG	1x14 / 2x16	1x14 / 2x16	1x14	1x14

Input specification

Input data - AC/DC

Nominal voltage U_N	Supply code	Operating range U_{min}	Operating range U_{max}	Release voltage U	Control current I at U_N
V		V	V	V	mA
110...125	**0**.125	88	138	45	5
230...240	**0**.240	184	264	90	4.5

Input data - DC

Nominal voltage U_N	Supply code	Operating range U_{min}	Operating range U_{max}	Release voltage U	Control current I at U_N
V		V	V	V	mA
6	**7**.006	5	7.2	2.4	7
24	**7**.024	16.8	30	10	10.5
60	**7**.060	35.6	72	20	6.5

Input data - Leakage current suppression types

Nominal voltage U_N	Supply code	Operating range U_{min}	Operating range U_{max}	Release voltage U	Rated coil consumption I at U_N	Power consumption P at U_N
V		V	V		mA	W
110...125 AC/DC	**3**.125	94	138	44	8(*)	1(*)
230...240 AC	**3**.240	184	264	72	5.6(*)	0.5(*)

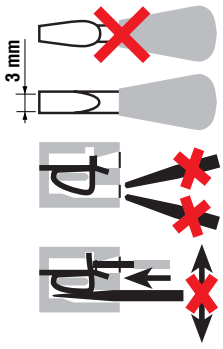
(*) Rated coil consumption and power consumption values relate to U_N = 125 and 240 V.

The 38 Series interface modules (supply version 3) have built-in leakage current suppression to address industry concerns of the contacts not dropping-out when there is residual current in the circuit; at (110...125)V AC and (230...240)V AC.

This problem can occur, for example, when connecting the interface modules to PLC,s with triac outputs or when connecting via relatively long cables.

Approvals (according to type):

Listed: certain relay/ socket combinations



Combination for Electromechanical Relay

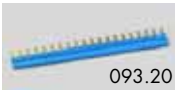
Screw terminal - 1 Pole relay			
Code	**Supply voltage**	**Type of relay**	**Type of socket**
38.51.0.012.0060	12 V AC/DC	34.51.7.012.0010	93.01.0.024
38.51.0.024.0060	24 V AC/DC	34.51.7.024.0010	93.01.0.024
38.51.0.048.0060	48 V AC/DC	34.51.7.048.0010	93.01.0.060
38.51.0.060.0060	60.V AC/DC	34.51.7.060.0010	93.01.0.060
38.51.0.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.01.0.125
38.51.0.240.0060	(220...240)V AC/DC	34.51.7.060.0010	93.01.0.240
38.51.3.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.01.3.125
38.51.3.240.0060	(230...240)V AC	34.51.7.060.0010	93.01.3.240
38.51.7.006.0050	6 V DC	34.51.7.005.0010	93.01.7.024
38.51.7.012.0050	12 V DC	34.51.7.012.0010	93.01.7.024
38.51.7.024.0050	24 V DC	34.51.7.024.0010	93.01.7.024
38.51.7.048.0050	48 V DC	34.51.7.048.0010	93.01.7.060
38.51.7.060.0050	60 V DC	34.51.7.060.0010	93.01.7.060
Screwless terminal - 1 Pole relay			
Code	**Supply voltage**	**Type of relay**	**Type of socket**
38.61.0.012.0060	12 V AC/DC	34.51.7.012.0010	93.51.0.024
38.61.0.024.0060	24 V AC/DC	34.51.7.024.0010	93.51.0.024
38.61.0.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.51.0.125
38.61.0.240.0060	(220...240)V AC/DC	34.51.7.060.0010	93.51.0.240
38.61.3.125.0060	(110...125)V AC/DC	34.51.7.060.0010	93.51.3.125
38.61.3.240.0060	(230...240)V AC	34.51.7.060.0010	93.51.3.240
38.61.7.012.0050	12 V DC	34.51.7.012.0010	93.51.7.024
38.61.7.024.0050	24 V DC	34.51.7.024.0010	93.51.7.024
Screw terminal - 2 Pole relay			
Code	**Supply voltage**	**Type of relay**	**Type of socket**
38.52.7.012.0050	12 V DC	41.52.9.012.0010	93.02.7.024
38.52.7.024.0050	24 V DC	41.52.9.024.0010	93.02.7.024
38.52.7.060.0050	60 V DC	41.52.9.060.0010	93.02.7.060
Screwless terminal - 2 Pole relay			
Code	**Supply voltage**	**Type of relay**	**Type of socket**
38.62.7.012.0050	12 V DC	41.52.9.012.0010	93.52.7.024
38.62.7.024.0050	24 V DC	41.52.9.024.0010	93.52.7.024
38.62.7.060.0050	60 V DC	41.52.9.060.0010	93.52.7.060

Combination for Solid State Relay

Screw terminal			
Code	**Supply voltage**	**Type of relay**	**Type of socket**
38.81.7.006.xxxx	6 V DC	34.81.7.005.xxxx	93.01.7.024
38.81.7.024.xxxx	24 V DC	34.81.7.024.xxxx	93.01.7.024
38.81.7.060.xxxx	60 V DC	34.81.7.060.xxxx	93.01.7.060
38.81.0.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.01.0.125
38.81.0.240.xxxx	(220...240)V AC/DC	34.81.7.060.xxxx	93.01.0.240
38.81.3.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.01.3.125
38.81.3.240.xxxx	(230...240)V AC	34.81.7.060.xxxx	93.01.3.240
Screwless terminal			
Code	**Supply voltage**	**Type of relay**	**Type of socket**
38.91.7.006.xxxx	6 V DC	34.81.7.005.xxxx	93.51.7.024
38.91.7.024.xxxx	24 V DC	34.81.7.024.xxxx	93.51.7.024
38.91.7.060.xxxx	60 V DC	34.81.7.060.xxxx	93.51.7.060
38.91.0.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.51.0.125
38.91.0.240.xxxx	(220...240)V AC/DC	34.81.7.060.xxxx	93.51.0.240
38.91.3.125.xxxx	(110...125)V AC/DC	34.81.7.060.xxxx	93.51.3.125
38.91.3.240.xxxx	(230...240)V AC	34.81.7.060.xxxx	93.51.3.240

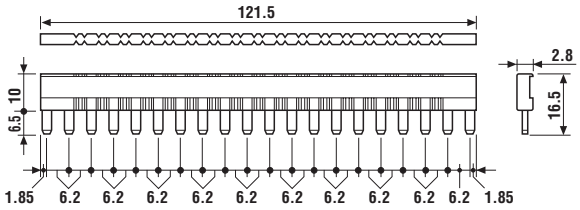
Example: .xxxx
.9024
.7048
.8240

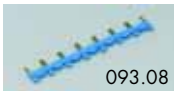
Accessories



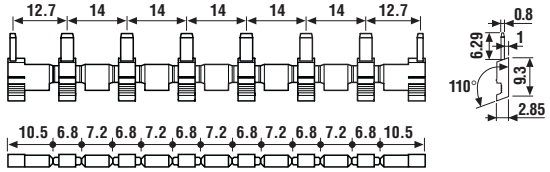
Approvals (according to type):

20-way jumper link for 1 Pole	093.20
Rated values	36 A - 250 V





8-way jumper link for 2 Pole	093.08
Rated values	10 A - 250 V



Plastic separator	093.01

Thickness 2 mm, required at the start and the end of a group of interfaces.
Can be used for visual separation group, must be used for:
- protective separation of different voltages of neighbouring PLC interfaces according to VDE 0106-101
- protection of cut jumper links

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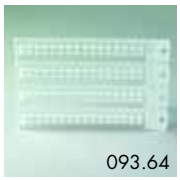

Sheet of marker tags for 38.x1, plastic, 64 tags, 6x10 mm	093.64

Sheet of marker tags for 38.x2, plastic, 72 tags, 6x12 mm	060.72