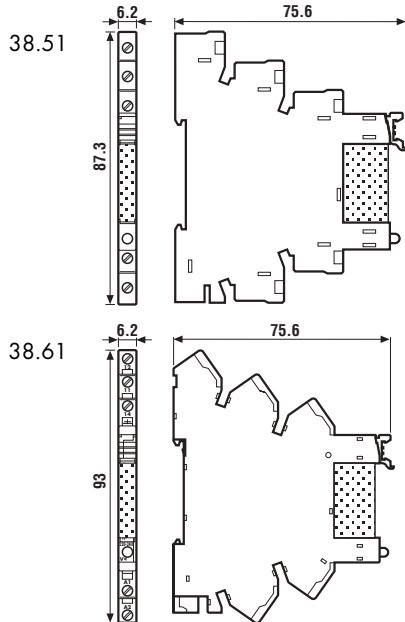


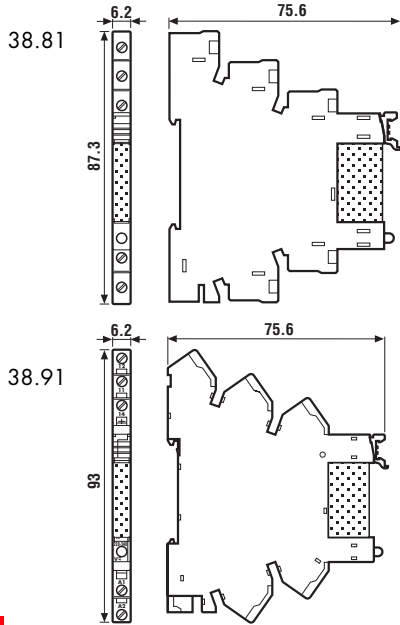
- Relay interface modules for use with PLC systems, 6.2 mm wide
- Sensitive DC coil or AC/DC coil version
- Supplied with integral coil indication and protection circuit
- Instant removal of relay using plastic retaining clip
- 35 mm rail (EN 50022) mounting



* for 400 V applications, requirements for pollution degree 2 are met.

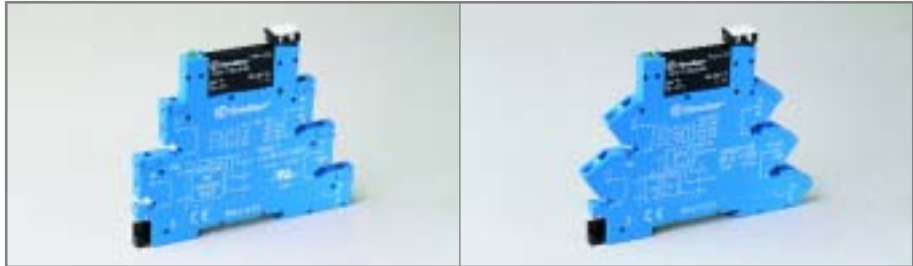
	38.51	38.61	38.51.3 / 38.61.3
	<ul style="list-style-type: none"> - Screw terminal - Electromechanical relay - 35 mm rail mounting 	<ul style="list-style-type: none"> - Screwless terminal - Electromechanical relay - 35 mm rail mounting 	<ul style="list-style-type: none"> - Leakage current suppression - Electromechanical relay - 35 mm rail mounting
Contact specifications			
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 in AC1 VA	1,500	1,500	1,500
Rated load in AC15 (230 V AC) VA	300	300	300
Single phase motor rating (230 V AC) kW	—	—	—
Breaking capacity in 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 specifications			
Nominal voltage (U _N) V DC/AC	12 - 24 - 48 - 60 - (110...125) - (220...240)	12 - 24 - 48 - 60 - (110...125) - (220...240)	(110...125) (230...240)AC only
	6 - 12 - 24 - 48 - 60 (non polarized)	6 - 12 - 24 - 48 - 60 (non polarized)	—
Rated power AC/DC VA (50 Hz)/W	see page 102	see page 102	1/1 0.5/—
Operating range AC/DC	(0.8...1.1)U _N	(0.8...1.1)U _N	(0.8...1.1)U _N (0.8...1.1)U _N AC only
	(0.8...1.2)U _N	(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 AC/DC cycles	—/10 · 10 ⁶	—/10 · 10 ⁶	—/10 · 10 ⁶
Electrical life at rated load AC1 cycles	60 · 10 ³	60 · 10 ³	60 · 10 ³
Operate/release time ms	5/6	5/6	5/6
Insulation according to EN 61810-1 ed. 2	4 kV/3	4 kV/3	4 kV/3
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	IP20	IP20	IP20
Approvals (relay): (according to type)	GOST		

- Relay interface modules for use with PLC systems, 6.2 mm wide
- Sensitive DC coil or AC/DC coil version
- Supplied with integral coil indication and protection circuit
- Instant removal of relay using plastic retaining clip
- 35 mm rail (EN 50022) mounting



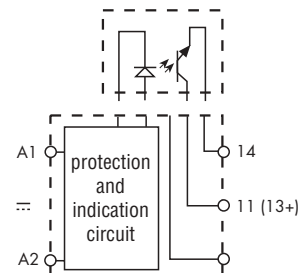
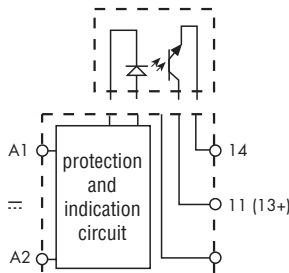
38.81/38.91

38.81.3/38.91.3



- Screw terminal
- SSR relay
- 35 mm rail mounting

- Leakage current suppression
- SSR relay
- 35 mm rail mounting



38

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	(24...240)AC
Minimum switching current	mA	1	0.05	22	1	0.05	22
Max "OFF-state" leakage current	µA	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	V	24 - 60 DC			(120...125)AC/DC - (230...240)AC		
Operating range	V DC	24 V: (16.8...30)V	- 60V: (35.6...62)V		125 V: (94...138)V	- 240 V: (184...264)V	
Control current	mA	24 V: 7 mA	- 60V: 3 mA		125 V: 8 mA	- 240 V: 7 mA	
Release voltage	V DC	24 V: 10 V DC	- 60V: 20 V DC		125 V: 44 V AC	- 240 V: 72 V AC	
Impedance	Ω	24 V: 3.200	- 60V: 21,300		—		
Technical data							
Operate/release time	µs	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)							

ORDERING INFORMATION

ELECTROMECHANICAL RELAY (EMR)

Example: a 38 series relay interface module with 1 CO (SPDT) contact, with coil rated at 12 V DC.

3

8

.

5

1

.

7

.

0

1

2

.

0

A

0

B

0

C

5

D

0

Series _____

Type _____
 5 = Electromechanical relay, with screw terminal
 6 = Electromechanical relay, with screwless terminal

No. of poles _____
 1 = 1 pole, 6 A

Coil version _____
 0 = AC (50/60 Hz)/ DC
 3 = Leakage current suppression for (110...125)V AC/DC - (230...240)V AC only
 7 = Sensitive DC

Coil voltage _____
 see coil specifications

D: Special versions
 0 = Standard

C: Options
 5 = Standard DC
 6 = Standard AC/DC

B: Contact circuit
 0 = CO (nPDT)

A: Contact material
 0 = AgNi Standard
 4 = AgSnO₂
 5 = AgNi + Au

SOLID STATE RELAY (SSR)

Example: a 38 series SSR relay interface module with 2 A, with 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 _____
 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

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.

ELECTROMECHANICAL RELAY

TECHNICAL DATA

INSULATION

Insulation according to EN 61810-1 ed. 2	insulation rated voltage	V	250
	rated impulse withstand voltage	kV	4
	pollution degree		3
	overvoltage category		III

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)

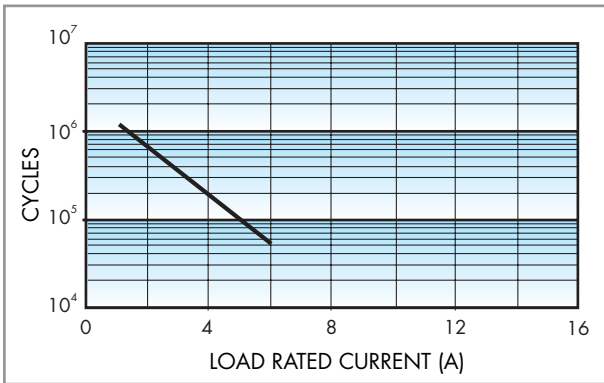
OTHER DATA

Bounce time: NO/NC	ms	1/6			
Vibration resistance (10...55)Hz, max. ± 1 mm: NO/NC	g/g	10/5			
Power lost to the environment	without contact current	W	0.2 (12 V) - 0.9 (240 V)		
	with rated current	W	0.5 (12 V) - 1.5 (240 V)		
Wire strip length	mm	10			
		38.51	38.61		
⊖ 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

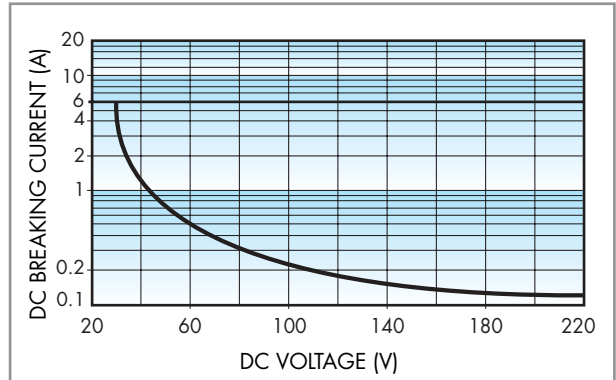
CONTACT SPECIFICATIONS

F 38



Electrical life vs AC1 load.

H 38



Breaking capacity in DC1 load.

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

ELECTROMECHANICAL RELAY

COIL SPECIFICATIONS

AC/DC VERSION DATA

Nominal voltage U_N V	Coil code	Operating range		Rated coil consumption I at U_N mA	Power consumption P at U_N W
		U_{min} V	U_{max} V		
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.

DC VERSION DATA (sensitive)

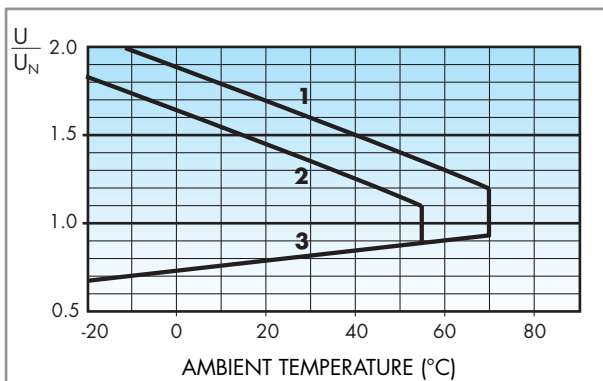
Nominal voltage U_N V	Coil code	Operating range		Rated coil consumption I at U_N mA	Power consumption P at U_N W
		U_{min} V	U_{max} V		
6	7.006	5	7.2	35	0.2
12	7.012	9.8	14.4	15.2	0.2
24	7.024	18.2	28.8	10.4	0.3
48	7.048	35	57.6	6.3	0.3
60	7.060	43.5	72	7	0.4

TYPE 38.51.3/38.61.3 DATA

Nominal voltage U_N V	Coil code	Operating range		Must drop out U	Rated coil consumption I at U_N mA	Power consumption P at U_N W
		U_{min} V	U_{max} V			
(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.

R 38



Operating range Vs ambient temperature.

- 1 - Max coil voltage permitted at nominal load (≤ 60 V versions).
- 2 - Max coil voltage permitted at nominal load (≥ 60 V versions).
- 3 - Min pick-up voltage with coil at ambient temperature.

SOLID STATE RELAY

TECHNICAL DATA

OTHER DATA

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

INPUT SPECIFICATION

DC VERSION DATA

Nominal voltage U_N	Supply code	Operating range		Release voltage U	Control current I at U_N
		U_{min} V	U_{max} V		
24	7.024	16.8	30	10	10.5
60	7.060	35.6	72	20	6.5

TYPE 38.81.3/38.91.3 DATA

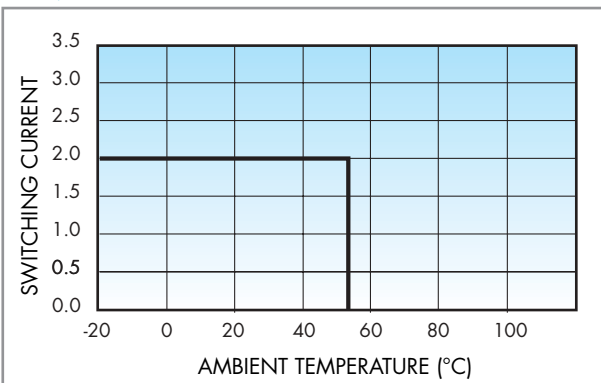
Nominal voltage U_N	Supply code	Operating range		Release voltage U	Rated coil consumption I at U_N	Power consumption P at U_N
		U_{min} V	U_{max} V			
110...125 AC/DC	3.125	94	138	44	8(*)	1(*)
230...240 AC	3.240	184	264	72	5.6(*)	0.5(*)

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

38

OUTPUT SPECIFICATION

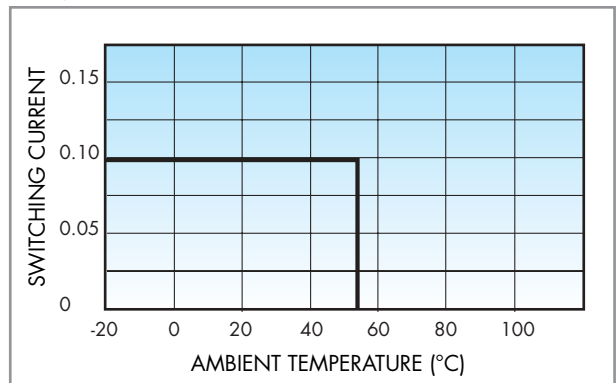
L 38/2A



Type 38.81/91 (2 A - 24 V DC and 2 A - 240 V AC)

Switching current vs ambient temperature.

L 38/0.1A



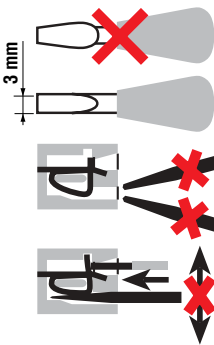
Type 38.81/91 (100 mA - 48 V DC)

Switching current vs ambient temperature.

COMBINATIONS

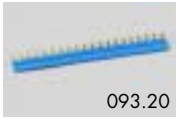


Approvals
(according to type):



COMBINATION FOR ELECTROMECHANICAL 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
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
COMBINATION FOR SSR RELAY			
Code	Supply voltage	Type of relay	Type of socket
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
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

ACCESSORIES



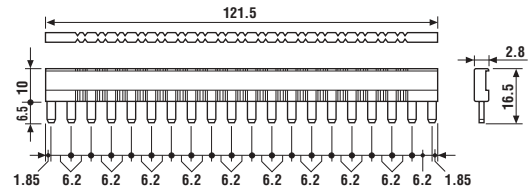
093.20

Approvals
(according to type):



20-way jumper link	093.20
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- Rated values: 36 A - 250 V



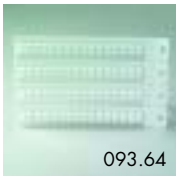
093.01

Plastic separator	093.01
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Thickness 2 mm, required at the start and the end of a group of interfaces.

Can be used for visual separation of groups of interface relays. Must be used for:

- protective separation of different voltages of neighbouring PLC interfaces according to VDE 0106-101
- protection of cut jumper links



093.64

Sheet of marker tags (64 tags), 6x10 mm	093.64
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