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RELEQUICK

Relequick™ is a Spanish brand working since 2003 with 100% Spanish capital, dedicated to the design, manufacture and sales of systems and electrical and electronic components, as well as state of the art software for the control of their products, mainly in the market for industrial automation. Currently, it has a wide range of over 900 different products developed and manufactured according to the highest international standards and approved by the appropriate agencies within each sector in which we operate, in particular, IEC, VDE, CE , RoHS, ISO-9000, etc..

Innovation is one of the basic pillars of Relequick™ culture that deeply marks all its business areas to achieve the highest levels of efficiency, quality and respect for the environment.

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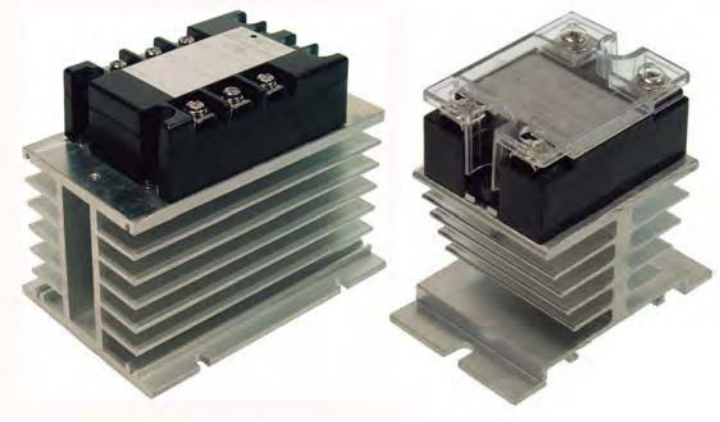


Implementation Rules

In the design and fabrication of Relequick® products described in this catalog it has been taken into account the European and International standards (International Electronic Commission) applicable in each case:
IEC/EN 61810-1, IEC/EN 61810-2, IEC/EN 61810-7 (relays);
IEC/EN 61812-1 (timers);
IEC/EN 60669-1 and IEC/EN 60669-2-1 (control relays, etc);
IEC/EN 50178 (Industrial Use);
IEC/EN 61810-1(thermal conditions, etc.)

Quick-clamp quick connection: The conductor is clamped by force of a spring made of steel plate without the need for screws.

Compliance with RoHS Directive: RoHS is the acronym for "Restriction of Hazardous Substances"), European Directive 2002/95/EC of 27.01.2003 regulating substances under restrictions: Lead, Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polibromobifeniléteres (PBDEs), Cadmium (Having exceptions on contact materials).

Electromechanical relays

General characteristics

Continuous Operation: Permanent connection of the coil up to balance thermal relay.

Electrical life: Represents the duration of normal use of the relay with a rated resistive load at nominal current AC1 specified for that relay and a voltage of 250 VAC.

Mechanical life: If the load on the relay contacts is very low electrical life can approach to mechanical life.

Operating time: Average time (once the coil is energized) until the closing of NO contact.

Release time: Average time (once the coil has been de-energized) to the NC contact closure relay changeover contacts, or up to the opening of NO contact on a open contacts relay.

Ambient temperature: The temperature of the environment in which the relay can work.

Storage temperature: Room temperature with upper and lower limits extended by about 10 ° C.

Protection category: according to EN 60529.
IP 00 = No protection.
IP40 = Protected against solid foreign objects of Ø 1 mm or greater. No protection against the entry of water.
IP50 = Dust protection in an amount or in some places that may impair the proper functioning of the relay.
No protection against the entry of water.
IP54 = As IP 50, but protected against splashing water (limited penetration is allowed).
IP67 = Total protection against dust and protected against the effects of temporary immersion in water.

Isolation areas: For electromechanical relays isolation areas to consider are according to IEC 61810-1:
• The isolation between the coil and all contacts.
• The separation between adjacent contacts in a multipolar relay.

Pollution degree: The EN50178 imposes a pollution degree of 2 to electronic equipment in power installations. The degree of pollution 2 and 3 are normally required to relays:

1 Without pollution or dry non-conductive pollution.
2 There is only non-conductive pollution.
3 Conductive pollution occurs or dry pollution that becomes conductive due to condensation.
4 Pollution generates conductivity which is maintained due to dust that is conductive or atmospheric agents.

Vibration Resistance: According To IEC 60068-2-6 The maximum value of acceleration g can be applied to an relay without opening contact.

Torque: According to EN 60999 refers to the maximum torque supported by terminal screws connection on Nm.

Contact specifications

Nomenclature of contacts:
Contatc normally open (Europe = NO, GB = A, USA = n * PST-NO)
Contact normally closed (Europe = NC, GB = B, USA = n * PST-NC)
Changeover contact (Europe = CO, GB = C, USA = n * PDT)
n* = number of poles (single = 1, double = 2, etc)

Nominal current: Is the highest current that a contact can lead permanently without exceeding the heating limits and coincides with the maximum operating current.

Maximum peak current: Is the higher current than the contact can make for less than ½ second and with a lower RI intermittence 10% without any degradation.

Nominal voltage: Is the switching voltage associated with the rated current that determines the rated load AC1.

Maximum switching voltage: The maximum voltage level that can switch contacts and that can ensure the isolation distances specified by the rules.

Rated load AC1: The maximum power switchable by contact, for a resistive load on AC that is able to connect and disconnect repeatedly. It is used in the tests on electrical life.

Contact resistance: The Ohmic resistance measured between the contacts of the relay.

Contact material: The alloy of which are made of relay contacts, normally usually AgNi (PlataNiquel) AgCdO (Silver Cadmium Oxide), AgSnO2 (Silver Tin Oxide).

Characteristics of the coils

Nominal supply voltage: Voltage planned to be supplied in the coil of the relay design.

Rated power: Is the DC power on W or the AC apparent power on VA consumed by coil when is energized with the nominal voltage at an ambient temperature of 25 °C.

Operating range: According to EN 61810-1 our relays are classified into Class 1: (0.8 ... 1.1) A, both relays with AC coils, like DC, within the temperature range covered by the standard.

Rated coil resistance: Is the ohmic resistance of the coil (within a tolerance of ± 10%) at 25 °C ambient temperature.

Solid state relays

General characteristics

Description: A solid state relay (SSR) is an electronic switch, that doesn't contains any moving parts. The charging current is conducted by one or more semiconductors such as transistors and thyristors or triacs in substitution of metal contacts. Used for controlling high power loads signals starting from low voltage control and intensity. Solid state relays are widely used in test instruments, monitors, appliances, cars, etc.

In comparison to electromechanical relays are lighter, quieter, faster and more reliable, do not wear, are immune to shock and vibration, generate very little interference, switch high currents and voltages without producing arcs, provide several kilovolts of isolation between input and output.

Opto-coupler: The opto-coupler in all our solid state relays, ensures electrical isolation between input and output circuits.

Minimum switching current: Is the minimum current required to make a proper load switching.

Maximum load current: Maximum current that can continuously pass through output terminals using a specific heatsink.

Zero crossing: Circuit which starts the operation when the voltage at the AC load has a value close to zero.

Control current: Is the nominal input current at 23 °C for the rated voltage.

Timers

General characteristics

Timing Adjustment: These are the values that can be established specific timed using timescales of the product or making a program on it.

Repeatability: Is the maximum difference between two results obtained by making a sufficient sample time measurements on specific conditions that can be attributed to the accuracy of the test method, and that it is given as mean value.

Time precision Is the absolute percentage error is expressed in % of the peak value it measures the instrument, and also expressed in % with respect to the difference between maximum and minimum value measurable.

Reestablishment time The minimun time necesary before re.starting the timer function.

Control modules

Three phase monitoring module

Voltage reading range: Is the read range of voltage that the module can detect and monitor.

Percentage of asymmetry: It Is given in % and represents the theoretical phase shift distance of 120° between the phase-phase phasors voltage on a three-phase.

Hysteresis: Is a % of the value which has been established below which the control module is reset.

Current monitoring module.

Current reading range: Is the read range of current that the module can detect and monitor.

Lock Time: Is the delay time of alarm activation after current exceeded the set threshold.

Switch-on delay: this refers to the time taken for the output relay to energise, following the detection of conditions requiring this.

Key references

Relays

RQ S 4 0 L 230 AC D T

Product series
Type
Contact's number
Contact's material
Led
Coil voltaje
Coil circuit
Series executions

Details of the references for relays

M series	RMS2	universal 8 pins	2 contacts	8 pins
M series	RMS3	universal 11 pins	3 contacts	11 pins
Q series	RQS1	miniature	1 contact	8 faston
Q series	RQS2	miniature	2 contacts	8 faston
Q series	RQS4	miniature	4 contacts	14 faston
F series	RFS1	interface	1 contact	5 faston
F series	RFS2	interface	2 contacts	8 faston

Type	Contact material	Luminous indication	Circuit connected to coil	Special executions
S: Change-over Standard fol all models	Silver alloy	L: with led N without led	0: without circuit D: with diode, only DC	0: without special T: T series

Slimline relay

RVS10N(--)V000	PCB relay *
SVB10D010(---)	interface socket 6,2mm **
SVB10D010000V	PCB socket weld-on 6,2mm
SVB10D000000V	Separator accesory
AVP	Connection bridge for SVG sockets
MTV	Label for laser marking

* (--) 5/6/9/12/24/48/60 coil voltage
** (---)012/024/110/240 Input voltage

Sockets

SQ B 4 0 D 0 0 0

Product series
Model
Contact's number
Colour
Montage type
Form
Module insertion
Range

Details of the references for sockets

M series	SMS2	universal 8 pins	2 contacts	8 pins
M series	SMS3	universal 11 pins	3 contacts	11 pins
Q series	SQS2	miniature	1-2 contacts	8 faston
Q series	SQS4	miniature	4 contacts	14 pins
F series	SFS1	Interface	1 contacts	5 faston or pins
F series	SFS2	Interface	2 contacts	8 faston or pins

Model	Colour	Montage type	Form	Module insertion	Range
B: screw terminal R: Quick Clamp C: PCB	0: Relequick grey colour 1: Black	D: DIN rail 35 mm C: weld-on PCB	0: Interface 1: Standard	0: yes 1: No	0: Standard T: T series

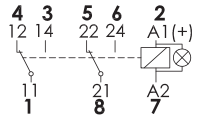
Modules

SVT10D010024V	SlimLine programmable timer
MQPMM	Programmable multifunction & mulltivoltage module Q series
MMA10	Module interface to connect the MQPMM in the SM sockets
M(--)Q	Indication and protection modules Q series
M(--)F	Indication and protection modules F series
RFS1SL028(---)	Programmable solid state relay
MCU(--)R2	Current control module
MPH(--)R1	Three phase control module

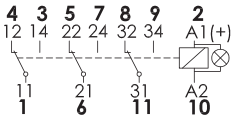
RMS2-T Relay 8 pins 2 contacts

RMS3-T Relay 11 pins 3 contacts

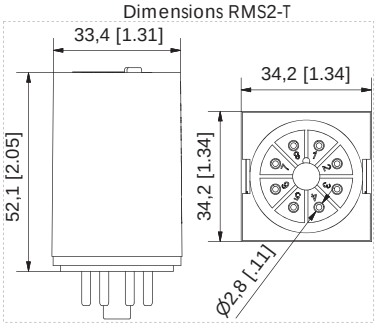
Wiring diagram RMS2-T



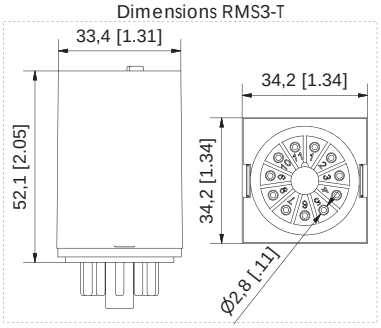
Wiring diagram RMS3-T



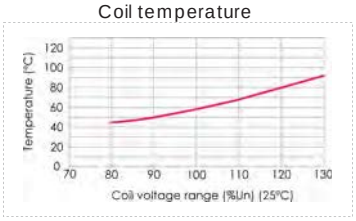
Dimensions RMS2-T



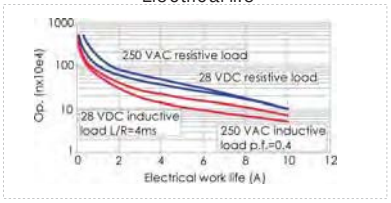
Dimensions RMS3-T



Coil temperature



Electrical life



Features

Universal power relay for general applications.
Available in 2 & 3 change-over contacts with max. current 10 A - 250 VAC1 / 28 VDC1.
Nominal power 1,5 W(DC) & 2,7 VAC.
Available with and without LED for AC/DC relays. Diode only available for DC.
Socket terminals, 8 pins plug-in for 2 contacts and 11 pins plug in for 3 contacts.
Insulation: IEC61810-1 - 2,5 KV/3.
Pollution degree: 2.
Approvals: CE
Protection class: IP40.
European Patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**60**	**115**	**220**
Resistance (Ω ±15%)	28,4	100	430	1,5k	2,33K	8,1K	32,6K
Nominal voltage VAC	**6**	**12**	**24**	**48**	**60**	**120**	**230**
Resistance (Ω ±15%)	4.2	19,5	73,6	284	-	1,5K	6,3K

Coil values at 25ºC

	VDC	VAC 50HZ
Operating range	0,8 -1,1 Un	0,8 -1,1 Un
Max. drop-out voltaje	≥15% Un	≥30% Un

Contacts

Contact arrangement: 2C & 3C.
Max. contact power: 2500 VA / 280 W.
Max. voltage: 250 VAC / 220 DC1.
Max. current:10A (250 VAC1 / 28VDC1).
Maximum breaking capacity: 110V DC ---> 0,4A
220V DC ---> 0,15-0,20A
Contact resistance: ≤50 mΩ.
Contact material: Silver alloy (AgNi).

Specification RM

Electrical life	$\geq 10^5$ cycles
Mechanical life	$\geq 10^7$ cycles
Insulation resistance	≤1000MΩ(500VDC)
Operation time	≤30ms
Operation frequency	1200op/h at nominal load
Release time	≤20ms
Dielectric strength at 1mA	2.500VAC/min(between coil and contacts) 1.000VAC/min(between contacts)
Vibration resistance	10 - 50Hz (Double width 1,5mm)
Shock resistance	10g
Room temperature	-40 ºC +65 ºC
Room humidity	35% -85% RH
Atmospheric pressure	86 - 106 KPa
Weight	80 gr
Pack units	20

References RM-T relays

Example: Relay RM. 3 contacts, 230VAC coil voltage, with LED.

RM E 3 0 L 230 AC D T

Product series
RM: RM relays series

Type
E: without button
S: with button

Contacts number
2: 2 contacts
3: 3 contacts

Contact material
0: silver alloy

Led
L: with LED
N: without LED

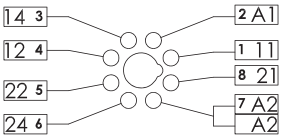
Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
220: 220V (only DC)
230: 230V (only AC)

Coil version
AC: VAC voltage
DC: VDC voltage

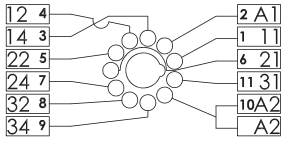
Circuit connect to coil
0: without circuit
D: with diode (only DC)

Series features
T: T series

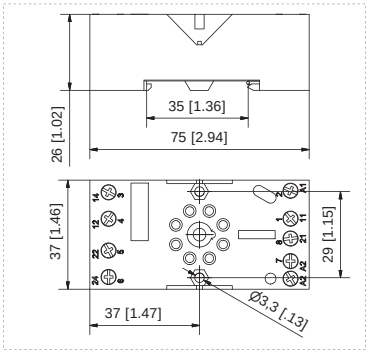
SMB2-T Socket
Wiring diagram SMB2-T



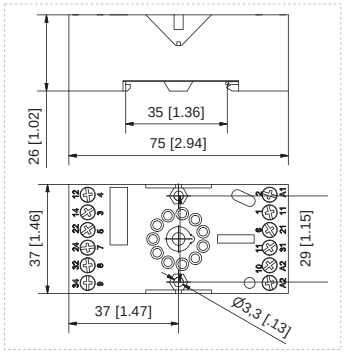
SMB3-T Socket
Wiring diagram SMB3-T

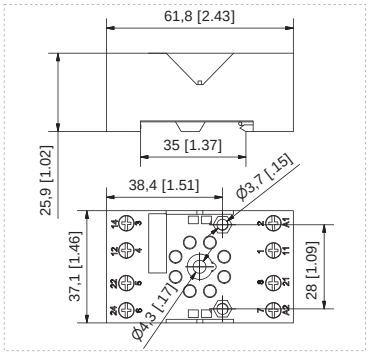


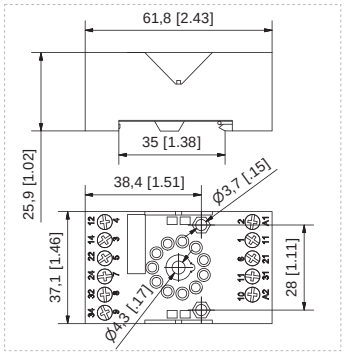
Dimensions SMB2-T



Dimensions SMB3-T







References socket SMB-T

SMB21D10T	Long sockets for RM2 black
SMB21D11T	Short sockets for RM2 black
SMB20D11T	Short sockets for RM2 grey
SMB31D10T	Long sockets for RM3 black
SMB31D11T	Short sockets for RM3 black
SMB30D11T	Short sockets for RM3 grey

Accesories for relays

Mechanical indication and a wide window.
3-sequential-position test button (free, check, lock).
With colours for an easier identification of coil voltage (DC Blue, AC Red).
Technical information and coil voltage in frontal side printed.

Features

DIN rail (35 mm, t35) or panel mounting (EN 60715).
DIN/EN sequential numbering.
IEC / EN 61812/1/4 compliant.
Clip and label included.
Electronic modules allowed.

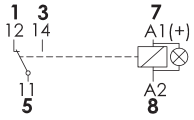
Specifications SMB2-T and SMB3-T

Nominal load	10 A / 400 VAC
Dielectric strength (Vrms/1min)	2,5 KV
Max. screw torque	1,2 Nm
Screws	M3 Steel. Pozi drive
Wire in lets capacity: solid wire	4 mm^2 or 2 x 2,25 mm^2
Wire in lets capacity: multi-core	22 – 14 AWG MAX (1X12 /2X14 AWG)
Weight	≤60gr
Room temperature	-40ºC to 70ºC
Pack Units	10
Protection category	IP 20

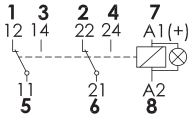
SMB2-T & SMB3-T (short sockets)

Weight	≤50gr

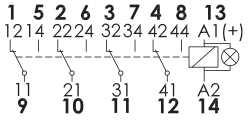
RQS1-T Relay 1 contact
Wiring diagram RQS1-T



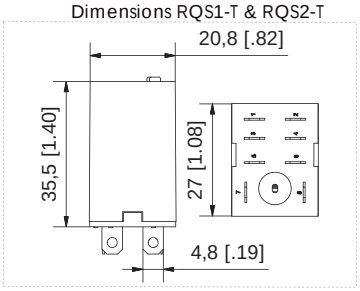
RQS2-T Relay 2 contacts
Wiring diagram RQS2-T



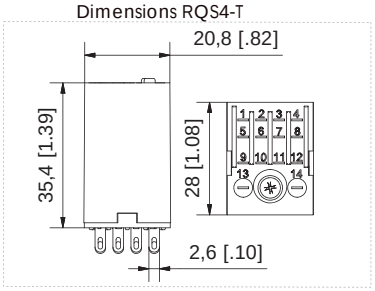
RQS4-T Relay 4 contacts
Wiring diagram RQS4-T



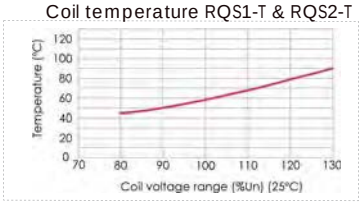
Dimensions RQS1-T & RQS2-T



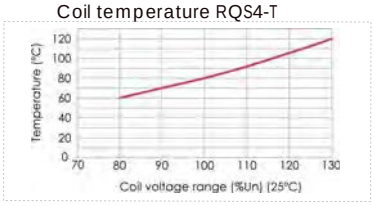
Dimensions RQS4-T



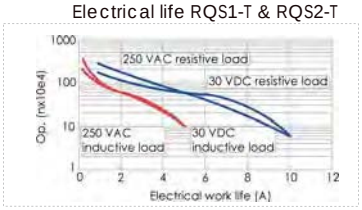
Coil temperature RQS1-T & RQS2-T



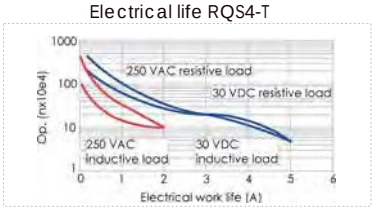
Coil temperature RQS4-T



Electrical life RQS1-T & RQS2-T



Electrical life RQS4-T



Features

Miniature power relays for general and industrial applications. Available in 1 and 2 change-over contacts with max. current 16 A - 250 VAC/30 VDC and 10 A - 250 VAC/30 VDC and in 4 change-over with max. current 5 A - 250 VAC/30 VDC (AC1/DC1), (1, 2, 4 PDT) contacts.
Nominal coil power 0,9 W(DC) & 1.5 VAC.
Available with and without LED for AC and DC. Diode only available for DC.
Insulation: IEC61810-1 - 2,5 Kv/3.
Pollution degree 2.
Plug-in terminal faston 1 and 2 contacts (4,8 mm). 4-contact version with plug-in faston (2,6 mm).
Approvals: CE
Protection class : IP40
European Patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**60**	**115**	**220**
Resistance (Ω ±15%)	40	160	650	2,6K	3,2K	13,8K	52,3K
Nominal voltage VAC	**6**	**12**	**24**	**48**	**60**	**120**	**230**
Resistance (Ω ±15%)	11,5	40	160	700	1,06K	3,6K	12,4K

Coil values at 25ºC

	VDC	VAC 50HZ
Operating range	0,75 -1,1 Un	0,8 -1,1 Un
Max. drop-out voltage	≥10% Un	≥30% Un

Contacts

Contact arrangement: 1C, 2C and 4C.
Maximum contact power:(230 VAC1/25VDC1)
1C: 4.000 VA / 480 W 1C (1PDT)
2C: 2.500 VA / 300 W 2C (DPDT)
4C: 1.250 VA / 150 W 4C (4PDT)
Maximum voltage: 250VAC, 220VDC.
Maximum current: 16A(1C), 10A(2C), 5A(3C) (250VAC1/28VDC1)
Maximum breaking capacity: 110V DC ---> 0,4A
220V DC ---> 0,15-0,20A
Contact resistance: ≤50mΩ.
Contact material: Silver alloy(AgNi).

Specifications RQ-T

Electrical life ..... $\geq 10^5$ cycles
Mechanical life ..... $\geq 10^7$ cycles
Insulation resistance ..... ≤1000MΩ(500VDC)
Operation time ..... ≤20ms
Operation frequency ..... 1200op/h at nominal load
Release time ..... ≤20ms
Dielectric strength at 1mA in 1 & 2 contacts
2.000VAC/min(between coil and contacts)
1.200VAC/min(between contacts)
Dielectric strength at 1mA in 4 contacts
1.800VAC/min(between coil and contacts)
1.000VAC/min(between contacts)
Vibration resistance ..... 10 - 50Hz (Double width 1,5mm)
Shock resistance 10g
Room temperature ..... -40 ºC +65 ºC
Room humidity ..... 35% -85% RH
Armospheric pressure ..... 86 - 106 KPa
Weight ..... ≤35gr
Pack units 20

References RQ-T relays

Example: Relay RQS 4 contacts, 230VAC coil voltage, with LED.

RQ E 4 0 L 230 AC 0 T

Product series
RQ: RQ relays series

Type
E: without button
S: with button

Contacts number
2: 2 contacts
3: 3 contacts
4: 4 contacts

Contact material
0: silver alloy

Led
L: with LED
N: without LED

Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
220: 220V (only DC)
230: 230V (only AC)

Coil version
AC: VAC voltage
DC: VDC voltage

Circuit connect to coil
0: without circuit
D: with diode (only DC)

Series features
T: T series

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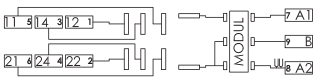
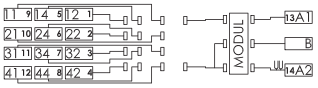
SQB2-T Socket

Wiring diagram SQB2-T

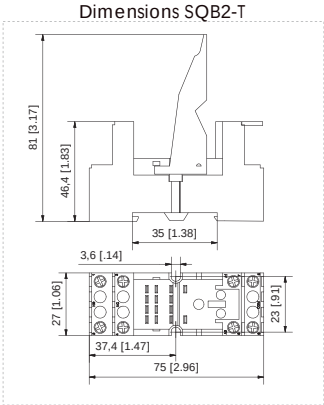


SQB4-T Socket

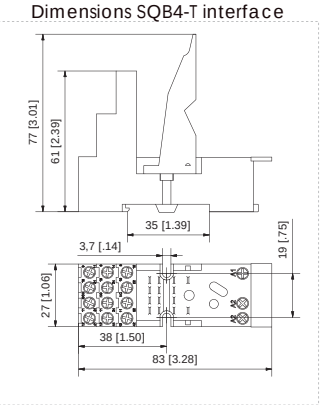
Wiring diagram SQB4-T



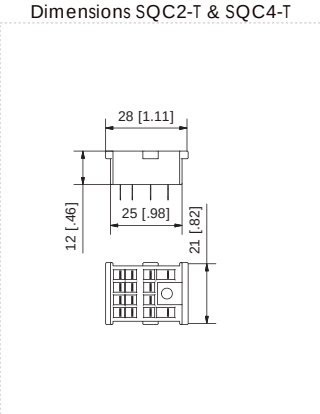
Dimensions SQB2-T



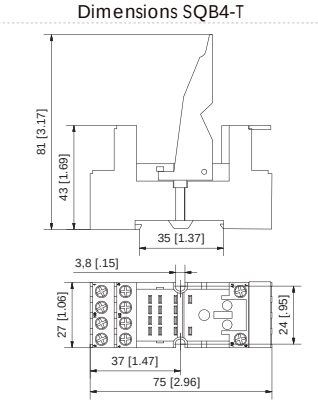
Dimensions SQB4-T interface



Dimensions SQC2-T & SQC4-T



Dimensions SQB4-T



References

SQB21D10T	Socket for relays 1-2 contacts black
SQB20D10T	Socket for relays 1-2 contacts grey
SQB41D10T	Socket for relays 4 contacts black
SQB40D10T	Socket for relays 4 contacts grey
SQB41D00T	Interface socket for relays 4 contacts black
SQB40D00T	Interface socket for relays 4 contacts grey
SQC21C11T	Weld-on PCB socket for relays 2 contacts black
SQC41C11T	Weld-on PCB socket for relays 4 contacts black

Accessories for relays

Led and Mechanical indication and a wide window.
3-sequential-position test button (free, check, lock).
With colours for an easier identification of coil voltage (DC Blue, AC Red).
Technical information and coil voltage printed in frontal side.

Features

Interface I/O (Input/Output).
Interchangeable marked labels and clip integrated.
DIN rail (35 mm, T35) or panel mount (EN 60715).
Connection bridges for A2 terminals.
Electronic modules connection.
3-position clip for the subjection to DIN rail.
DIN and sequential numbering(optional).
IEC/EN 61812/1/4 compliant.

Specifications SQB20-T and SQB40-T

The SQ-T sockets are produced with module insertion.

Nominal load	16A (SQB2-T); 10A (SQB4-T) 250V
Dielectric strength Vrms/1min	2,5 KV
Max. screw torque	1,2 Nm
Screws	M3 Steel. Pozi drive
Wire in lets capacity: solid wire	4 mm^2 or 2 x 2,25 mm^2
Wire in lets capacity: multi-core	22 – 14 AWG
Weight	≤ 71gr
Room temperature	-40ºC to 70ºC
Pack Units	10
Protection category	IP 20

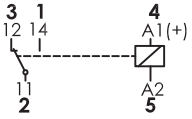
Weld-on PCB socket SQC

Weight	≤ 1gr
Pack Units	30

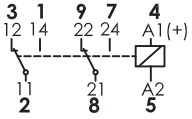
RFS1-T Relay 1 contact

RFS2-T Relay 2 contacts

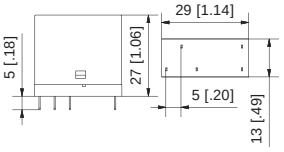
Wiring diagram RFS1-T



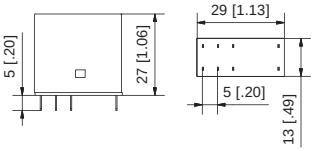
Wiring diagram RFS2-T



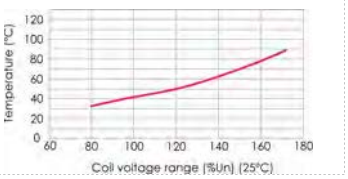
Dimensions RFS1-T



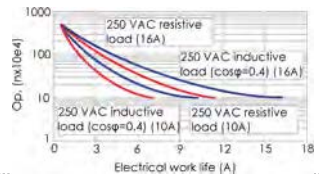
Dimensions RFS2-T



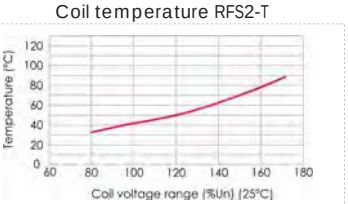
Coil temperature RFS1-T



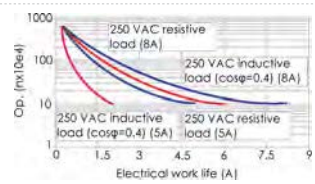
Electrical life RFS1-T



Coil temperature RFS2-T



Electrical life RFS2-T



Features

Industrial interface relay for general applications. Available in 1 & 2 change-over contacts with max. current 10 &16 A - 250VAC1/30VDC1 and 5A & 8 A - 250 VAC1/30VDC1.
Coil nominal power DC 0,53 W & AC 1,1 VA.
Available with or without led for AC/DC relays.
Diode only available in DC.
Insulation: IEC61810-1 - 2,5 Kv/3.
Pollution degree 2.
Socket 187 (4,75 mm)terminals.
Approvals: CE
Protection class: IP40.
European Patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**115**	**-**
Resistance (Ω ±10%)	68	259	939	4,2K	20,9K	-
Nominal voltage VAC	**6**	**12**	**24**	**48**	**120**	**230**
Resistance (Ω ±10%)	17	63	250	1,1K	5,17K	20K

Coil values at 25 ºC

	VDC	VAC 50HZ
Operating range	0,75 -1,1 Un	0,8 -1,1 Un
Max. drop-out voltage	≥10% Un	≥30% Un

Contacts

Contact arrangement: 1C and 2C.
Maximum contact power(230VAC1/28VDC1): 1C:2.500 VA / 300 W, 2C: 1.250VA / 150W.
Maximum voltage: 250 VAC / 220 VDC.
Maximum current: 10 A & 16A 1C and 8 A & 5A 2C AC1/DC1
Maximum breaking capacity: 110V DC ---> 0,4A
220V DC ---> 0,15-0,20A
Contact resistance: ≤50 mΩ.
Contact material: Silver alloy (AgNi).

Specifications RF-T

Electrical life	$\geq 10^5$ cycles
Mechanical life	$\geq 10^7$ cycles
Insulation resistance	≤1000MΩ(500VDC)
Operation time	≤20ms
Operation frequency	1200op/h at nominal load
Release time	≤10ms
Dielectric strength at 1mA	5.000VAC/min(between coil and contacts) 1.000VAC/min(between contacts)
Vibration resistance	10 - 50Hz (Double width 1,5mm)
Shock resistance	10g
Room temperature	-40 ºC +65 ºC
Room humidity	35% -85% RH
Armospheric pressure	86 - 106 KPa
Weight	20gr
Pack units	50

References RF-T relays

Example: Relay RF. 2 contacts, 230VAC coil voltage, without LED.

RF S 2 0 N 230 AC 0 T

Product series
RF: RF relays series

Type
S: change-over
standard for all models

Contacts number
1: 1 contact
2: 2 contacts

Contact material
0: silver alloy

Led
N: without led

Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
230: 230V (only AC)

Coil version
AC: VAC voltage
DC: VDC voltage

Power Version
0: standard power (10A - 5A)
H: hight power (16A - 8A)

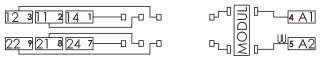
Series features
T: T series

SFB1-T Socket

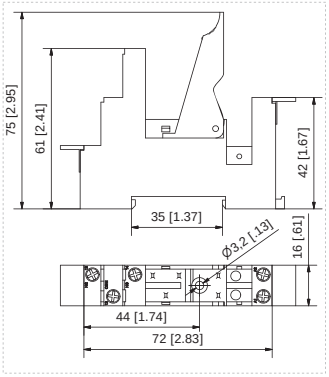
SFB2-T Socket

Wiring diagram SFB1-T

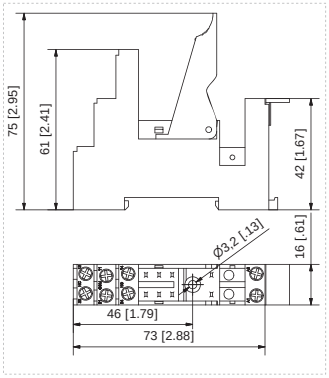
Wiring diagram SFB2-T



Dimensions SFB1-T



Dimensions SFB2-T



Features

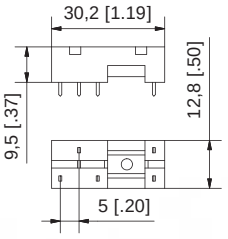
Interface I/O (Input/Output)
DIN rail (35 mm, T35) or panel mount (EN 60715)
PCB relays and electronic modules allowed
According to IEC(EN 61812/1/4)
DIN/EN sequential numbering

Specifications

Nominal load	1C: 16A (250 V); 2C: 8A (250V)
Dielectric strength Vrms/1min	2,5 KV
Max. screw torque	1,2 Nm
Screws	M3 Steel. Pozi drive
Quick Clamp	Stainless steel
Wire in lets capacity: solid wire	4 mm^2 or 2 x 2,25 mm^2
Wire in lets capacity: multi-core	22 – 14 AWG
Weight	≤46gr
Room Temperature	-40ºC to 70ºC
Pack Units	20
Protection Category	IP 20

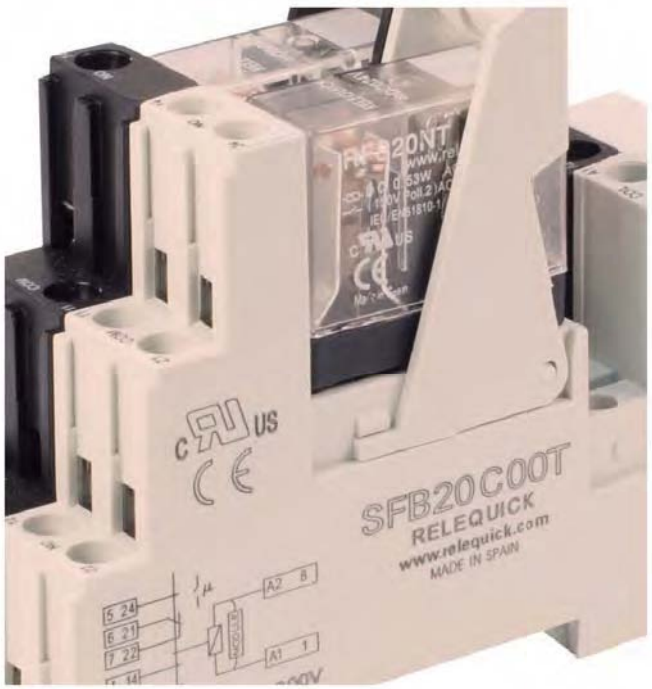
Weld-ong PCB sockets SFC

Weight	3gr
Pack Units	100

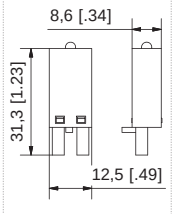


References

Reference	Contacts	Connection
SFB11C00T	1	Socket for relays 1 contact black
SFB10C00T	1	Socket for relays 1 contact grey
SFC11C11T	1	Weld-on PCB sockets 1 contact relay black
SFB21C00T	2	Socket for relays 2 contacts black
SFB20C00T	2	Socket for relays 2 contacts grey
SFC21C11T	2	Weld-on PCB sockets 2 contacts relays black

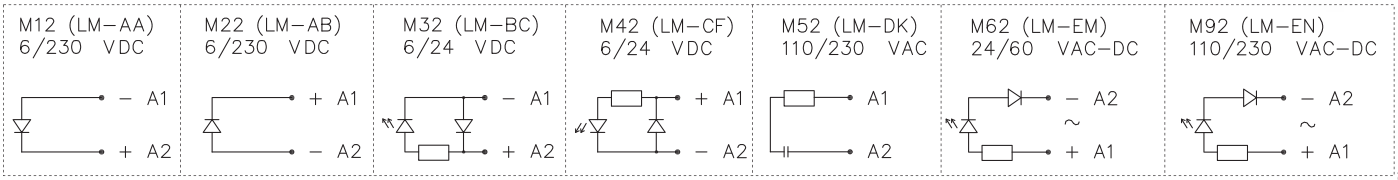


Series - T modules



M12-LM-AA	6/230 VDC protection diode (A1-)
M22-LM-AB	6/230 VDC protection diode (A1+)
M32-LM-BC	6/24 VDC protection diode & led (A1-)
M32-LM-BC	6/24 VDC protection diode & led (A1+)
M52-LM-DK	110/230 VAC RC supressor
M62-LM-EM	24/60 VAC/DC with led
M92-LM-EN	110/230 VAC/DC with led

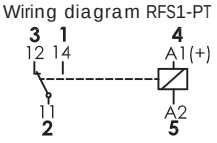
Series - T modules - diagrams



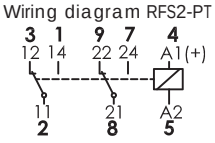
RFS1-PT Relay 1 contact

RFS2-PT Relay 2 contacts

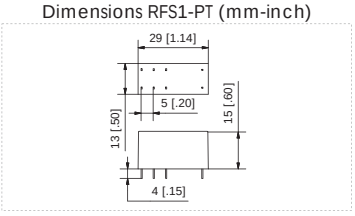
Wiring diagram RFS1-PT



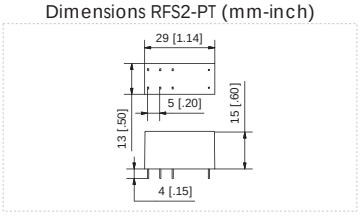
Wiring diagram RFS2-PT



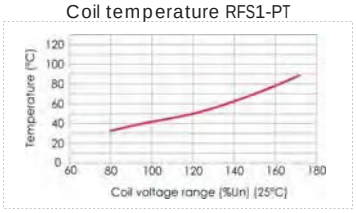
Dimensions RFS1-PT (mm-inch)



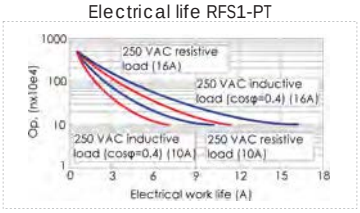
Dimensions RFS2-PT (mm-inch)



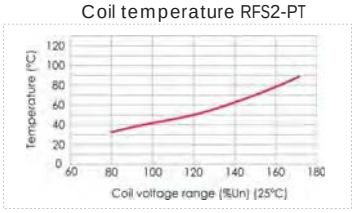
Coil temperature RFS1-PT



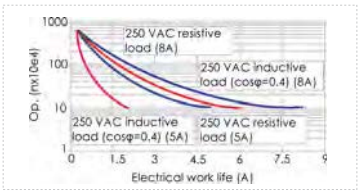
Electrical life RFS1-PT



Coil temperature RFS2-PT



Electrical life RFS2-PT



Features

Industrial interface relay for general applications.
Available in 1 and 2 change-over contacts with max. current 16 A - 250VAC1/30VDC1 and 8 A - 250 VAC1/30VDC1.
Coil nominal power DC 0,4 W.
Insulation: IEC61810-1 - 2,5 Kv/3.
Pollution degree 2.
Socket 187 (4,75 mm)terminals.
Approvals: CE
Protection class: IP67
European Patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**115**	**-**
Resistance (Ω ±10%)	60	353	1,37K	4,3K	22,8K	-
Nominal voltage VAC	**6**	**12**	**24**	**48**	**120**	**230**
Resistance (Ω ±10%)	16	63	240	1K	6,7K	21K

Coil values (at 25 ºC)

	VDC	VAC 50Hz
Operating range	0,75 -1,1 Un	0,8 -1,1 Un
Max. drop-out voltage	≥10% Un	≥30% Un

Contacts

Contact arrangement: 1C and 2C. (230 VAC1/28VDC1)
Maximum contact power: 1C:2.500 VA / 300 W, 2C: 1.250VA / 150W.
Maximum voltage: 250 VAC / 220 VDC.
Maximum current: 16A 1C and 8 A 2C AC1/DC1
Maximum breaking capacity: 110V DC ---> 0,4A
220V DC ---> 0,15-0,20A

Contact resistance: ≤50 mΩ.
Contact material: Silver alloy (AgNi).

Specifications RF-PT

Electrical life	$\geq 10^5$ cycles
Mechanical life	$\geq 10^7$ cycles
Insulation resistance	≤1000 MΩ(500VDC)
Operation time	≤20 ms
Operation frequency	1200 op/h at nominal load
Release time	≤10 ms
Dielectric strength at 1mA	5.000VAC/min(between coil and contacts) 1.000VAC/min(between contacts)
Vibration resistance	10 - 50 Hz (Double width 1,5mm)
Shock resistance	10 g
Room temperature	-40 ºC +70 ºC
Room humidity	35% -85% RH
Armospheric pressure	86 - 106 KPa
Weight	12 gr
Pack units	100

The sockets for these relays are the “SF SERIES” page 10.

References RF-PT relays

Example: Relay RF. 1 contact, 24VDC coil voltage.

RF S 1 0 N 024 DC P T

Product series
RF: RF relays series

Type
S: change-over
standard for all models

Contacts number
1: 1 contact
2: 2 contacts

Contact material
0: silver alloy

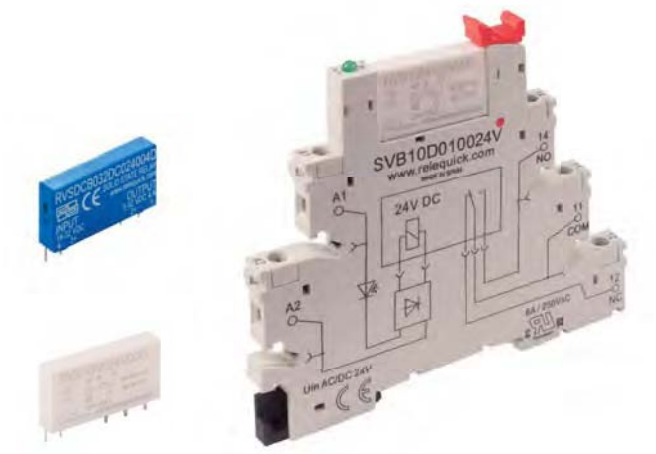
Led
N: without led

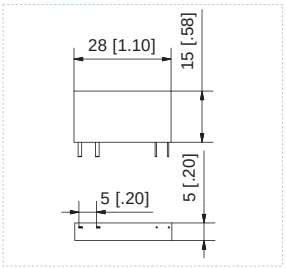
Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
230: 230V (only AC)

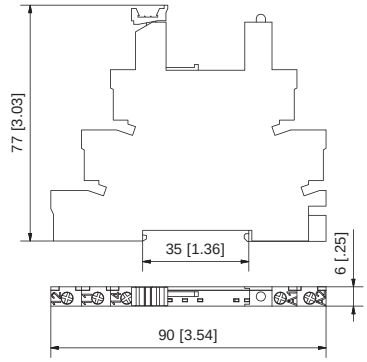
Coil version
AC: VAC voltage
DC: VDC voltage

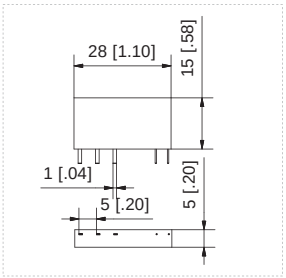
Type
P: power and sealed version

Series features
T: T series









Contacts

Control voltage	Reference
32VDC	RVSDCB032DC240004D
32VDC	RVSACB032DC240002Z
12VDC	RVS10N012V000
24VDC	RVS10N024V000
60VDC	RVS10N060V000

The relay voltage 5,6,9,18 and 48VDC are under request

SVB sockets Features

Interface I/O (Input/Output) & weld on sockets.
Diferent types depending on the input voltage.
Protection and indication circuit.
Rail DIN (35 mm) and PCB.
DIN / EN secuential numbering.
Protection class: IP20

SVB sockets specifications

Nominal load ..... 6 A / 300 VAC
Dielectric strength ..... > 3 KV
Screws ..... M3 Steel. Pozi drive
Wire in lets capacity solid wire ..... 1 x 2,5 mm^2
Weight 24gr
Pack units 20

Features

Miniature relay for PCB.
Available in 1 change-over contact with max. current 6A(AC1 / 250V; DC1 / 30V).
Nominal power: 5, 6, 9, 12, 18, 24 VDC (170mW); 48 VDC & 60 VDC (210mW).
Miniature, low comsumption, high response and sensitivity relay.
PCB terminals.
Approvals: CE
Protection class (RVS): IP67
IEC 60664

Coil ratings

Nominal voltage VDC	5	6	9	12	18	24	48	60
Resistance (Ω ±10%)	141	212	476	816	1,9K	3,3K	10,6K	16.6K
Socket input voltage	24 VDC/AC						60 VDC/AC	

Coil values at 25 ºC

	VDC
Operating range	0,75 -1,3 Un
Max. drop-out voltage	≥5% Un

Contacts

Contact arrangement: 1C and 2C open contacts.
Maximum contact power: 1.500 VA (AC1 LOAD) 250 VAC.
Maximum voltage: 250 VAC.
Maximum current: 30A(AC1 250V), 9A-250VAC3, DC1 load 24V/220V, 140W/40W.
Contact resistance: ≤50 mΩ.
Contact material: Silver alloy (AgNi).

Specifications RVS

Electrical life ..... ≥10^5 cycles
Mechanical life ..... ≥10^7 cycles
Insulation resistance ..... ≤1000 MΩ(500VDC)
Operation time ..... ≤8ms
Operation frequency ..... 1200op/h at nominal load
Release time ..... ≤4ms
Dielectric strength at 1mA ..... 4.000VAC/min(between coil and contacts)
1.000VAC/min(between contacts)
Vibration resistance ..... 10 - 55Hz (Double width 1,0mm)
Shock resistance 5g
Room temperature ..... -40 ºC +85 ºC
Room humidity ..... 5% -85% RH
Atmospheric pressure ..... 86 - 106 KPa
Pollution degree 3
Weight 5,4gr
Pack units 50

Sockets' references

Sockets reference	SVB10D010024V*	SVB10D010024V	SVB10D010060V	SVB10D010110V	SVB10D010240V
Sockets input voltage	12 VAC/DC	24VAC/DC	60VAC/DC	100-110VAC/DC	220-240 VAC/DC
Relay reference	RVS10N012V000	RVS10N024V000	RVS10N060V000	RVS10N060V000	RVS10N060V000

*The SVB0D010024V socket is also usefull for the 12V

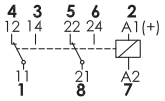
Accesories

Reference	Description	Observations
SVB10D01000V	PCB socket- weld on 6,2mm	-
SVB10D000000V	Separator accesory	-
AVP	Connection bridge for SVB sockets	1bridge (20 pins) per unit
MTV	Labels set for laser marking	1 set 64 labels

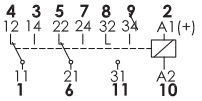
RM2-FT Relay 2 contacts

RM3-FT Relay 3 contacts

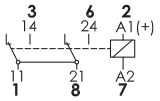
Wiring diagram RME20N
2 change-over contact



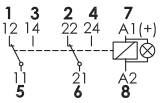
Wiring diagram RME30N
3 change-over contact



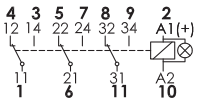
Wiring diagram RMED1
1 contact double make



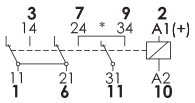
Wiring diagram RMS20L
2 change-over w. button



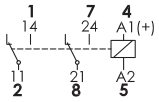
Wiring diagram RMS30L
3 change-over w. button



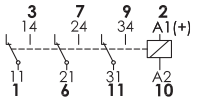
Wiring diagram RMET1
1 contact triple make



Wiring diagram RME2AN
2 open contact



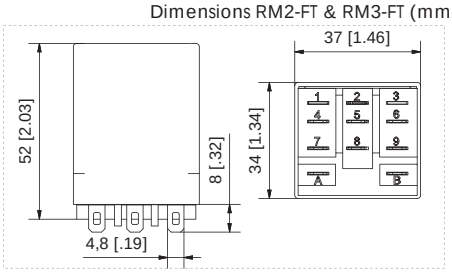
Wiring diagram RME3AN
3 open contact



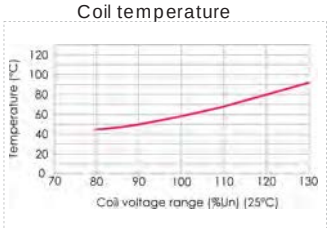
In 1 contact triple make is absolutely necesary use the socket

* SMB31D11TFT

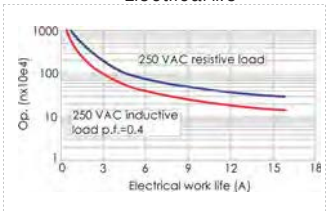
Dimensions RM2-FT & RM3-FT (mm-inch)



Coil temperature



Electrical life



Features

Universal power relays for general applications with faston terminals, specially designed to have a high resistance to the wearing down in inductive load applications, for DC current.
Nominal power 1,5W(DC) & 2,4 VAC.
Low consumption and high response.
Protection class: IP40.
Insulation: IEC61810-1 - 2,5 Kv/3.
Pollution degree: 2.
Contact material: (Ag+ Ni)
European Patent.
Approvals: CE

RME2-FT & RME3-FT change-over contacts

Available in 2 & 3 change-over contacts with max. current 16 A - 250 VAC / 30 VDC

RMS2-FT & RMS3-FT change-over contacts with LED & button

Available in 2 & 3 change-over contacts with max. current 16 A - 250 VAC / 30 VDC

RMEA2-FT & RMEA3-FT open contacts

Power relay faston terminals, special designed for DC charge Applications with 1,5 mm GAP.
Available in 2 & 3 open contacts with max. current 16A - 250 VAC / 30 VDC & 1A - 220 VDC

RMED-FT 1 open contact with double and triple make

universal power relay faston 1 open contact double and triple make, designed with higher GAP to obtain more switching capacity for DC current in inductive charges.

RMED 1 Double make

1 open contact with double make 3A/220 VDC1 - GAP ≥ 3mm.
Available in 1 contact with max. current 16A (250VAC/30VDC)

RMET 1 Triple make

1 open contact with triple make 3A/220 VDC1 - GAP ≥ 4,5mm.
Available in 1 contact with max. current 16A (250VAC/30VDC)

*Triple make use with socket SMB31D11TFT only.

Coil ratings

Nominal voltage VDC	6	12	24	48	115	220
Resistance (Ω ±15%)	23,5	96	430	1,6K	9,8K	39,7K
Nominal voltage VAC	6	12	24	48	120	230
Resistance (Ω ±15%)	3,9	17	78	305	1,2K	6,4K

Coil values (at 25 ºC)

	VDC	VAC 50HZ
Operating range	0,8 -1,1 Un	0,8 -1,1 Un
Max. drop-out voltaje	≥15% Un	≥30% Un

Contacts

	RME Change over contacts	RMS Change over contacts with led and button	RMEA Open contacts	RMED Contact double make	RMET Contact triple make
Change over contacts	2C and 3C	2C and 3C	2C and 3C	1C	1C
Gap	≥ 1,5mm	≥ 1,5mm	≥ 1,5mm	≥ 3,5mm	≥ 4,5mm
Max. contact power	4.000VA / 480W	4.000VA / 480W	4.000VA / 480W	4.000VA / 480W	4.000VA / 480W
Max. current	16A (250VAC1/30VDC1)	16A (250VAC1/30VDC1)	16A (250VAC1) 1A (220 VDC1)	16A (250VAC1) 3A (220 VDC1)	16A (250VAC1) 5A (220 VDC1)
Maximum breaking capacity	110V DC -> 0,4A 220V DC -> 0,15-0,20A	110V DC -> 0,4A 220V DC -> 0,15-0,20A	110V DC -> 0,4A 220V DC ->0,15-0,20A	110V DC -> 0,4A 220V DC -> 0,15-0,20A	110V DC -> 0,4A 220V DC->0,15-0,20
Contact resistance	≤30mΩ	≤30mΩ	≤30mΩ	≤30mΩ	≤30mΩ
Contact material	Silver alloy	Silver alloy	Silver alloy	Silver alloy	Silver alloy

Specifications RF-PT

Electrical life	$\geq 10^5$ cycles
Mechanical life	$\geq 10^7$ cycles
Insulation resistance	≤1000MΩ(500VDC)
Operation time	≤30ms
Operation frequency	1200op/h at nominal load
Release time	≤20ms
Dielectric strength at 1mA	4.200VAC/min(between coil and contacts) 1.200VAC/min(between contacts)
Vibration resistance	10 - 50Hz (Double width 1,5mm)
Shock resistance	10g
Room temperature	-40 ºC +65 ºC
Room humidity	35% -85% RH
Armospheric pressure	86 - 106 KPa
Weight	72gr
Pack units	20

References RM-FT relays

Example: Relay RM-FT. 3 contacts, 230VAC coil voltage, with LED.

RM S 3 0 L 230 AC FT

Product series
RM: RM relays series

Type
S: with button
E: without button

Contacts number
1: 1 contact double or triple make
2: 2 contacts
3: 3 contacts

Contact material
A: open contacts
D: double make one contact
T: triple make one contact
0: change over contact

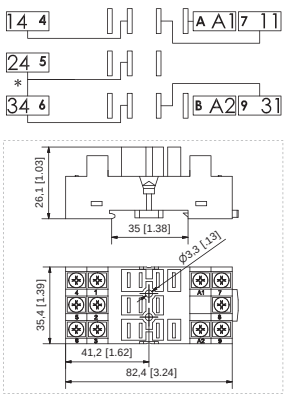
LED
L: witht LED
N: without LED

Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
220: 220V (only DC)
230: 230V (only AC)

Coil version
AC: VAC voltage
DC: VDC voltage

Series features
FT: FT series power relays

Sockets SMB-FT



References sockets SMB-FT

SMB31D11FT000	Long black socket for 2 & 3 contacts relays
SMB31D11TFT00	Long black socket special for triple make

Features

DIN rail (35 mm) or panel mounting, T35 (EN 60715).
DIN/EN sequential numbering.
IEC / EN 61812/1/4 compliant.
Clip and label included.
Electronic modules allowed.

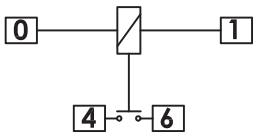
Specifications SMB-FT

Nominal load	10A / 400VAC
Dielectric strenght	2,5KV
Max. screw torque	1,2Nm
Screws	M3 Steel. Pozi drive
Wire in lets capacity: solid wire	4 mm^2 or 2 x 2,25 mm^2
Wire in lets capacity: multi-core	22 – 14 AWG
Weight	67gr
Pack units	10

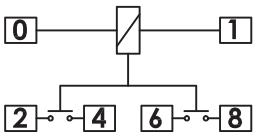
RPA1 Relay 1 contact

RPA2 Relay 2 contacts

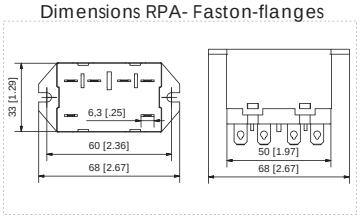
Wiring diagram RPA1



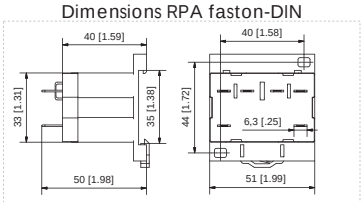
Wiring diagram RPA2



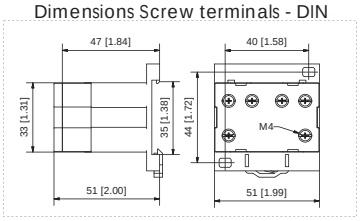
Dimensions RPA- Faston-flanges



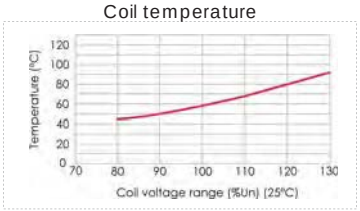
Dimensions RPA faston-DIN



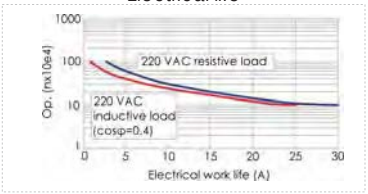
Dimensions Screw terminals - DIN



Coil temperature



Electrical life



Features

High power relay designed for strong current load applications.
1 & 2 open contacts used for up to 30A / 25A.
Available with flanges for panel or DIN rail, and faston or screw terminals.
Nominal power 1,9 W(DC) & 2,5 VAC.
Insulation: IEC61810-1 - 2,5 Kv/3.
Pollution degree: 2
Approvals: CE
Protection class: IP20.
European patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**115**	-
Resistance (Ω ±10%)	19	75	300	1,2K	6,4K	-
Nominal voltage VAC	**6**	**12**	**24**	**48**	**120**	**230**
Resistance (Ω ±10%)	17	65	275	1,1K	4,7K	21K

Coil values (at 25 ºC)

	VDC	VAC 50HZ
Operating range	0,75 -1,1 Un	0,8 -1,1 Un
Max. drop-out voltage	≥15% Un	≥30% Un

Contacts

Contact arrangement: 1C and 2C open contacts.
Maximum contact power: 7.500 & 6.250 VAC (AC1).
Maximum voltage: 250 VAC.
Maximum current: 30A (1C) & 25A (2C)
AC1 250V-9A-250VAC3
Maximum breaking capacity: 7500 VA/840W, AC1 250/ DC1 30V
Contact resistance: ≤50 mΩ.
Contact material: Silver alloy (AgNi).

Specifications RF-PT

Electrical life	$\geq 10^5$ cycles
Mechanical life	$\geq 5x10^6$ cycles
Insulation resistance	≤1000MΩ(500VDC)
Operation time	≤30ms
Operation frequency	1200op/h at nominal load
Release time	≤30ms
Dielectric strength at 1mA	4.000VAC/min(between coil and contacts) 1.000VAC/min(between contacts)
Vibration resistance	10 - 50Hz (Double width 1,5mm)
Shock resistance	10g
Room temperature	-40 ºC +65 ºC
Room humidity	35% - 85% RH
Armospheric pressure	86 - 106 KPa
Weight	91gr faston terminals 123gr screw terminals
Pack units	10

References RPA relays

Example: Relay RPA 1 contact, 24VDC coil voltage, faston and DIN rail

RPA 1 A N 024 DC H T

Product series
RF: RF relays series

Contacts number
1: 1 contact
2: 2 contacts

Contact
A: open contacts for all models

Led
N: without led

Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
115: 115V (only DC)
120: 120V (only AC)
230: 230V (only AC)

Coil version
AC: VAC voltage
DC: VDC voltage

Connection features
F: faston terminals & flanges
H: faston terminal & DIN rail
T: screw terminal & DIN rail

Series features
T: T series

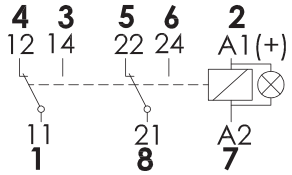
RELEQUICK

STANDARD SERIES RELAYS

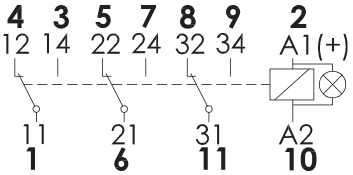
RMS2 Relay 8 pins 2 contacts

RMS3 Relay 11 pins 3 contacts

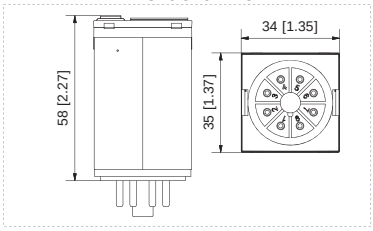
Wiring diagram RMS2



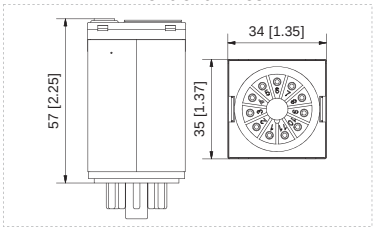
Wiring diagram RMS3



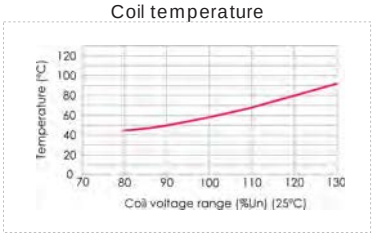
Dimensions RMS2



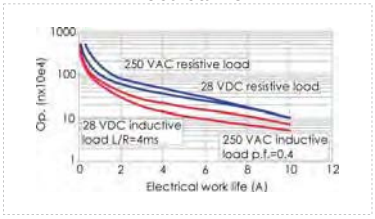
Dimensions RMS3



Coil temperature



Electrical life



Features

Universal power relay for general applications.
Available in 2 & 3 change-over contacts with max. current 10 A - 250 VAC1 / 28 VDC1.
Nominal power 1,5 W(DC) & 2,7 VAC.
Available with and without led for AC/DC relays.
Diode only available for DC.
Socket terminals, 8 pins plug-in for 2 contacts and 11 pins plug-in for 3 contacts.
Insulation: IEC61810-5 - 2,5 KV.
Approvals: CE
Class protection: IP40
European patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**115**	**220**
Resistance (Ω ±15%)	23,9	96	430	1,6K	7,4K	29K
Nominal voltage VAC	**6**	**12**	**24**	**48**	**120**	**230**
Resistance (Ω ±15%)	3,9	17	62,5	305	1,2K	5,1K

Coil values at 25ºC

	VDC	VAC 50HZ
Operating range	0,8-1,1 Un	0,8 -1,1 Un
Max. drop-out voltage	≥15% Un	≥30% Un

Contacts

Contact arrangement: 2C & 3C.
Max. contact power: 2.500 VA / 280 W.
Max. voltage: 250 VAC / 220 DC1.
Max. current:10A - 250 VAC1 / 28VDC1
Maximum breaking capacity: 110V DC ---> 0,4A
220V DC ---> 0,15-0,20A
Contact resistance: ≤50 mΩ.
Contact material: Silver alloy.

Specifications RM

Electrical life	$\geq 10^5$ cycles
Mechanical life	$\geq 10^7$ cycles
Insulation resistance	≤1000MΩ(500VDC)
Operation time	≤30ms
Operation frequency	1200op/h at nominal load
Release time	≤20ms
Dielectric strength at 1mA	2.500VAC/min(between coil and contacts) 1.000VAC/min(between contacts)
Vibration resistance	10 - 50Hz (Double width 1,5mm)
Shock resistance	10G
Room temperature	-40 ºC +65 ºC
Room humidity	35% -85% RH
Armospheric pressure	86 - 106 KPa
Weight	80gr
Pack units	10

References RM relays

Example: Relay RM. 3 contacts, 230VAC coil voltage, with LED, and with diode.

RM S 3 0 L 230 AC D 0

Product series
RM: RM relays series

Type
S: change-over
standard for all models

Contacts number
2: 2 contacts
3: 3 contacts

Contact material
0: silver alloy

Led
N: without led
L: with led

Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
220: 220V (only DC)
230: 230V (only AC)

Coil version
AC: VAC voltage
DC: VDC voltage

Circuit connect to coil
0: without circuit
D: with diode (only DC)

Series features
0: without special feature

Features

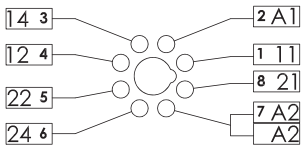
DIN rail (35 mm,T35) or panel mounting (EN 60715).
DIN/EN sequential numbering.
IEC / EN 61812/1/4 compliant.
Clip and label included.
Electronic modules allowed.

Specifications SMB2 and SMB3

Nominal load	10A / 400VAC
Dielectric strenght	2,5KV
Max. screw torque	1,2Nm
Screws	M3 Steel. Pozi drive
Wire in lets capacity: solid wire	4 mm^2 or 2 x 2,25 mm^2
Wire in lets capacity: multi-core	22 – 14 AWG
Protection class	IP20
Room temperature	-40º to 70º
Weight	59gr
Pack units	10

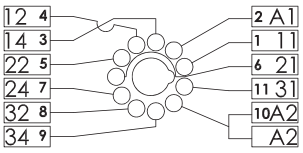
SM2 Socket

Wiring diagram SM2

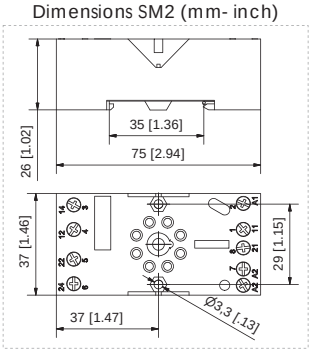


SM3 Socket

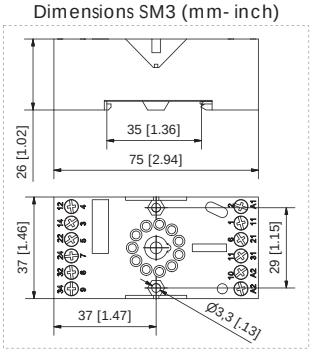
Wiring diagram SM3



Dimensions SM2 (mm- inch)



Dimensions SM3 (mm- inch)



References sockets SM

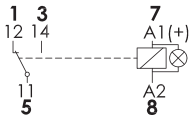
SMB20D1000000	Long grey socket for 2 contacts relays
SMB30D1000000	Long grey socket for 3 contacts relays

Accesories

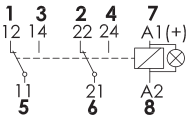
Mechanical indication and a wide window.
3-sequential-position test button (free, check, lock).
Colours for an easier identification of coil voltage (DC Blue, AC red).
Technical information and coil voltage in frontal side, laser printed.
Interchangeable marking labels.

AME

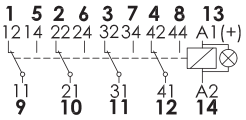
RQS1 Relay 1 contact
Wiring diagram RQS1



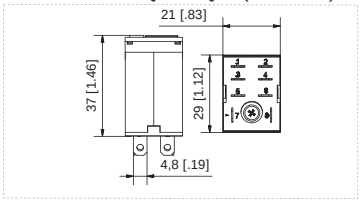
RQS3 Relay 2 contacts
Wiring diagram RQS2



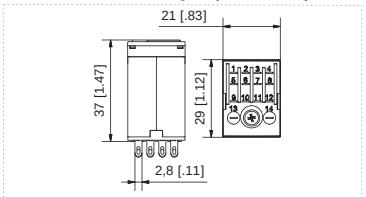
RQS4 Relay 4 contacts
Wiring diagram RQS4



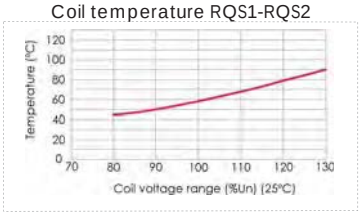
Dimensions RQS1 -RQS2 (mm-inch)



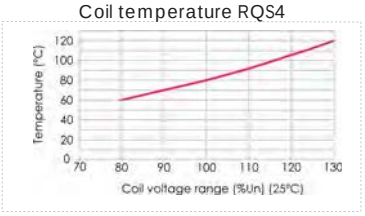
Dimensions RQS4 (mm- inch)



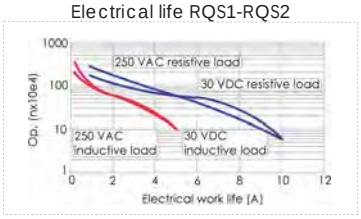
Coil temperature RQS1-RQS2



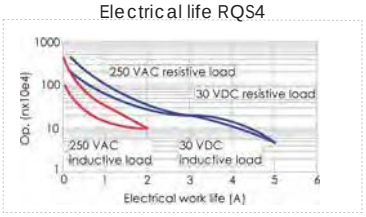
Coil temperature RQS4



Electrical life RQS1-RQS2



Electrical life RQS4



Features

Miniature power relays for general and industrial applications.
Available in 1 and 2 change-over contacts with max. current 16A - 250 VAC/30 VDC and 10A - 250 VAC/30 VDC and in 4 change-over with max. current 5A - 250 VAC/30 VDC (AC1/DC1).
Nominal coil power 0,9 W(DC) & 1.5 VAC.
Available with and without LED for AC and DC. Diode only available for DC.
Pollution degree: 2.
Insulation: IEC61810-1 - 2,5 Kv/3.
Protection class: IP40.
Plug-in terminal faston 1 and 2 contacts (4,8 mm). 4-contact version with plug-in faston (2,6 mm).
Approvals: CE
European patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**115**	**220**
Resistance (Ω ±10%)	40	160	650	2,5K	13,2K	52K
Nominal voltage VAC	**6**	**12**	**24**	**48**	**120**	**230**
Resistance (Ω ±10%)	11,5	40	160	600	3k	12,4K

Coil values at 25ºC

	VDC	VAC 50HZ
Operating range	0,7 - 1,1 Un	0,8 -1,1 Un
Max. drop-out voltage	≥10% Un	≥30% Un

Contacts

Contact arrangement: 1C, 2C and 4C.
Maximum contact power: (230 VAC1 / 28VDC1)
1C: 4000VA / 480 W. 1C (1PDT)
2C: 2500VA / 300 W. 2C (DPDT)
4C: 1250VA / 150 W. 4C (4PDT)
Maximum voltage: 250 VAC, 220 VDC.
Maximum current: 16A, 10A, 5A. (250 VAC1/ 30 VDC1)
Maximum breaking capacity: 110V DC ---> 0,4A
220V DC ---> 0,15-0,20A
Contact resistance: ≤50mΩ.
Contact material: Silver alloy (AgNi).

Specifications RQ

Electrical life ..... ≥10^5 cycles
Mechanical life ..... ≥10^7 cycles
Insulation resistance ..... ≤1000MΩ(500VDC)
Operation time ..... ≤20ms
Operation frequency ..... 1200op/h at nominal load
Release time ..... ≤20ms
Dielectric strength at 1mA in 1 & 2 contacts
2.000VAC/min(between coil and contacts)
1.200VAC/min(between contacts)
Dielectric strength at 1mA in 4 contacts
1.800VAC/min(between coil and contacts)
1.000VAC/min(between contacts)
Vibration resistance ..... 10 - 50Hz (Double width 1,5mm)
Shock resistance 10g
Room temperature ..... -40 ºC +65 ºC
Room humidity ..... 35% -85% RH
Armospheric pressure ..... 86 - 106 KPa
Weight 35gr
Pack units 10

References RQ relays

Example: Relay RQS 4 contacts, 230VAC coil voltage, with LED, and with diode.

RQ S 4 0 L 230 AC D 0

Product series
RQ: RQ relays series

Type
S: change-over
standard for all models

Contacts number
1: 1 contact
2: 2 contacts
4: 4 contacts

Contact material
0: silver alloy

LED
N: without LED
L: with LED

Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
220: 220V (only DC)
230: 230V (only AC)

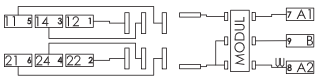
Coil version
AC: VAC voltage
DC: VDC voltage

Circuit connect to coil
0: without circuit
D: with diode (only DC)

Series features
0: without special feature

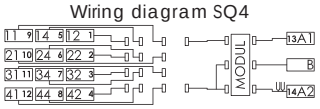
SQ2 Socket

Wiring diagram SQ2

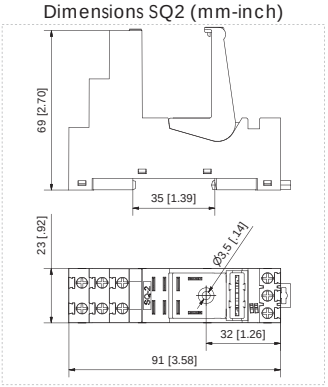


SQ4 Socket

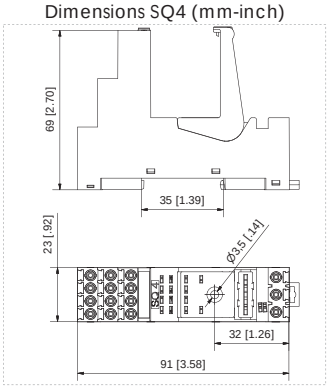
Wiring diagram SQ4



Dimensions SQ2 (mm-inch)



Dimensions SQ4 (mm-inch)



Features

Interface I/O (Input/Output).
Interchangeable marked labels and clip integrated.
DIN rail (35 mm, T35) or panel mount (EN 60715).
Connection bridges for A2 terminals.
Electronic modules connection.
3-position clip for DIN rail subjection.
DIN and sequential numbering(optional).
IEC/EN 61811/2/4 compliant.

Specifications SQ

The SQ sockets are produced in 2 versions with or without MQ-series module insertion (see modules pages).

Nominal load	16A (SQB2,SQR2); 10A (SQB4, SQR4) 250V
Dielectric strenght	2,5KV
Max. screw torque	1,2Nm
Screws	M3 Steel. Pozi drive
Wire in lets capacity: solid wire	4mm^2 or 2 x 2,25mm^2
Wire in lets capacity: multi-core	22 – 14 AWG
Protection class	IP20
Room humidity	-40º to 70º
Weight	72gr
Pack units	10

References sockets SQ

Reference	Contacts	Connection	Module
SQB20D010	1 or 2	Screw terminals	No
SQR20D010	1 or 2	Quick Clamp	No
SQB20D000	1 or 2	Screw terminals	Yes
SQR20D000	1 or 2	Quick Clamp	Yes
SQB40D010	4	Screw terminals	No
SQR40D010	4	Quick Clamp	No
SQB40D000	4	Screw terminals	Yes
SQR40D000	4	Quick Clamp	Yes

Accesories

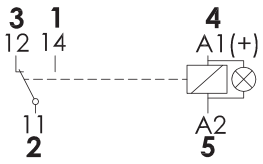
Mechanical indication and a wide window.
3-sequential-position test button (free, check, lock).
Colours for an easier identification of coil voltage (DC blue, AC red).
Technical information and coil voltage in frontal part, laser printed.
Interchangeable marking labels. They can be easily interchanged or replaced, enabling the relays and sockets identification.
Connection bridges allow the connection of A2 coil terminal contacts in Q & F series, thus reducing wiring time and effort.

AQE

AQP

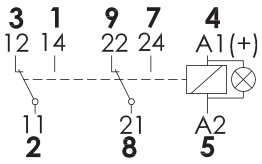
RFS1 Relay 1 contact

Wiring diagram RFS1

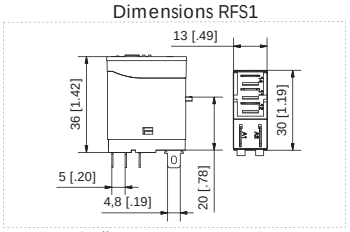


RFS2 Relay 2 contacts

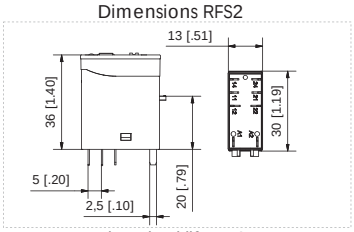
Wiring diagram RFS2



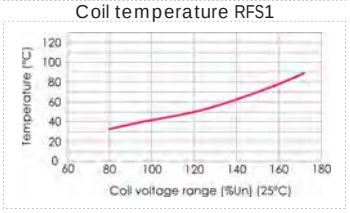
Dimensions RFS1



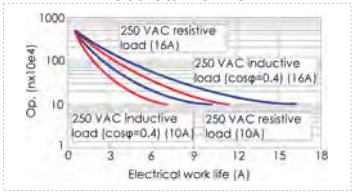
Dimensions RFS2



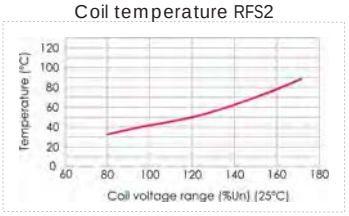
Coil temperature RFS1



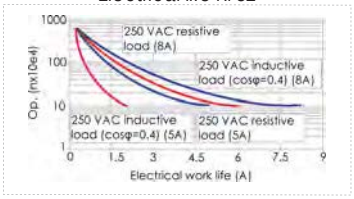
Electrical life RFS1



Coil temperature RFS2



Electrical life RFS2



Features

Industrial interface relay for general applications. Available in 1 & 2 change-over contacts with max. current 10 A - 250VAC1/30VDC1 and 5 A - 250 VAC1/30VDC1.
Coil nominal power 0,53 W(DC) & 1,1 VAC.
Available with or without LED for AC/DC relays.
Diode only available in DC.
Insulation: IEC61810-1 - 2,5 Kv/3.
Pollution degree 2.
Socket 187 (4,75 mm)terminals.
Protection class: IP40
Approvals: CE
European Patent.

Coil ratings

Nominal voltage VDC	**6**	**12**	**24**	**48**	**115**	
Resistance (Ω ±10%)	68	270	1,1K	4,1K	22,4K	
Nominal voltage VAC	**6**	**12**	**24**	**48**	**120**	**230**
Resistance (Ω ±10%)	16	63	240	1,06K	5,37K	21,18K

Coil values at 25ºC

	VDC	VAC 50HZ
Operating range	0,75-1,1 Un	0,8 -1,1 Un
Max. drop-out voltage	≥10% Un	≥30% Un

Contacts

Contact arrangement: 1C and 2C.
Maximum contact power (230BAC1 / 28 VDC1):
1C: 2.500VA / 300W
2C: 1.250VA / 150W
Maximum voltage: 250VAC / 220VDC.
Maximum current: 10A and 5A. (250AC1/30DC1)
Maximum breaking capacity: 110VDC ---> 0,4A
220VDC ---> 0,15-0,20A

Contact resistance: ≤50 mΩ.
Contact material: Silver alloy (AgNi).

Specifications RM

Electrical life	$\geq 10^5$ cycles
Mechanical life	$\geq 10^7$ cycles
Insulation resistance	≤1000MΩ(500VDC)
Operation time	≤20ms
Operation frequency	1200op/h at nominal load
Release time	≤10ms
Dielectric strength at 1mA	5.000VAC/min(between coil and contacts) 1.000VAC/min(between contacts)
Vibration resistance	10 - 55Hz (Double width 1,5mm)
Shock resistance	10g
Room temperature	-40 ºC +65 ºC
Room humidity	35% -85% RH
Armospheric pressure	86 - 106 KPa
Weight	22gr
Pack units	10

References RF relays

Example: Relay RF. 2 contacts, 230VAC coil voltage, with LED, and with diode.

RF S 2 0 L 230 AC D 0

Product series
RF: RF relays series

Type
S: change-over
standard for all models

Contacts number
1: 1 contacts
2: 2 contacts

Contact material
0: silver alloy

Led
N: without led
L: with led

Coil voltage
006: 6V
012: 12V
024: 24V
048: 48V
060: 60V
115: 115V (only DC)
120: 120V (only AC)
230: 230V (only AC)

Coil version
AC: VAC voltage
DC: VDC voltage

Circuit connect to coil
0: without circuit
D: with diode (only DC)

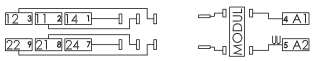
Series features
0: without special feature

SF1 Socket

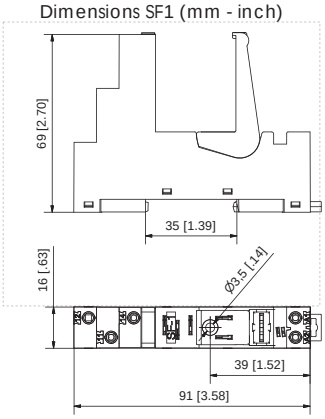
Wiring diagram SF1

SF2 Socket

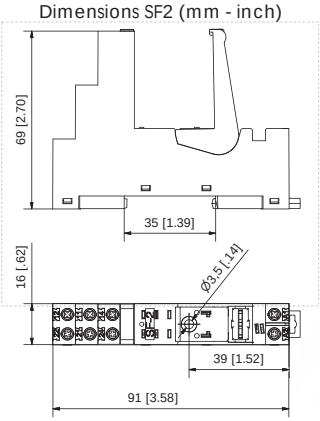
Wiring diagram SF2



Dimensions SF1 (mm - inch)



Dimensions SF2 (mm - inch)



Features

Interface I/O (Input/Output).
Interchangeable marked labels option, and clip integrated DIN rail (35 mm, T35) or panel mount (EN 60715).
Connection Bridges for A2 terminals.
Industrial faston or PCB relay mount.
3-position clip for subjection to DIN Rail.
DIN/EN sequential numbering (optional).
According to IEC/EN61810.

Specifications SFB10–SFR10, SFB20–SFR20

The SF sockets are produced in 2 versions with or without MF-series module insertion (see the modules pages).

Nominal load	1C;16A (250V); 2C: 8A (250V)
Dielectric strenght	2,5KV
Max. screw torque	1,2Nm
Screws	M3 Steel. Pozi drive
Quick Clamp	Stainless steel
Wire in lets capacity: solid wire	4mm^2 or 2 x 2,25mm^2
Wire in lets capacity: multi-core	22 – 14 AWG
Protection class:	IP20
Room Humidity	-40º to 70º
Weight	49gr
Pack units	10

References

Reference	Contacts	Connection
SFB10D010	1	Screw terminals (Faston or PCB)
SFR10D010	1	Quick Clamp (Faston or PCB)
SFC11C110	1	Pin terminals (Faston)
SFB20D010	2	Screw terminals (Faston or PCB)
SFR20D010	2	Quick Clamp (Faston or PCB)
SFC21C110	2	Pin terminals (Faston)

Accessories for relays

Mechanical indication and a wide window.
3-sequential-position test button (free, check, lock).
Colours for an easier identification of coil voltage (DC blue, AC red).
Technical information and coil voltage in frontal part, laser printed.
Interchangeable marking labels.
They can be easily interchanged or replaced, enabling the relays and sockets identification.
Connection bridges allow the connection of A2 coil terminal contacts in the Q & F series, thus reducing wiring time and effort.

AFE

AFP

RELEQUICK

SOLID STATE RELAYS

» Single phase 2 input ranges: 3-32VDC and 90-250VAC.
» Maximum load current (AC1 at 25º C): 25, 60, 80, 100A.
» Operational ratings: 40 - 440 VAC.
» Frequency range: 50- 60 Hz.
» Maximum non-repetitive peak voltage: 930 Vp.
» LED indicator.
» Clip on protective cover for greater safety (IP 20).

References

Control voltage	Operational voltage	Operational current	Reference	Reference heat sink
3 - 32 VDC	40 - 440 VAC	25 A	RS1A0P032DC440025Z	RSH-061
		60 A	RS1A0P032DC440060Z	RSH-038
		80 A	RS1A0P032DC440080Z	RSH-038
		100 A	RS1A0P032DC440100Z	RSH-039
90 - 250 VAC		25 A	RS1A0P250AC440025Z	RSH-061
		60 A	RS1A0P250AC440060Z	RSH-038
		80 A	RS1A0P250AC440080Z	RSH-038
		100 A	RS1A0P250AC440100Z	RSH-039

Over 10 A load a heat sink must be used. The use of a heat sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A.

General specifications

Dielectric insulation (between input & output)	2,500 VAC
Operating temperature	-25 ºC to 70 ºC
Storage temperature	-35 ºC to 85 ºC
Rth junction to case	2,5º C/W (25 A) 0,65º C/W (60 A) 0,5º C/W (80 A) 0,3º C/W (100 A)
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

	VDC input	VAC input
Control voltage range	3 - 32 VDC	90 - 250 VAC
Input current (max)	10/16 mA @= 5 V/24 V	29 mA @= 220 VAC
Pick-up voltage	1,9 VDC	70 VAC
Drop-out voltage	1,9 VDC	70 VAC
Maximum reverse voltage	32 VDC	-
Max. response time pick-up	½ cycle	1 cycle
Max. response time drop-out	½ cycle	2 cycles

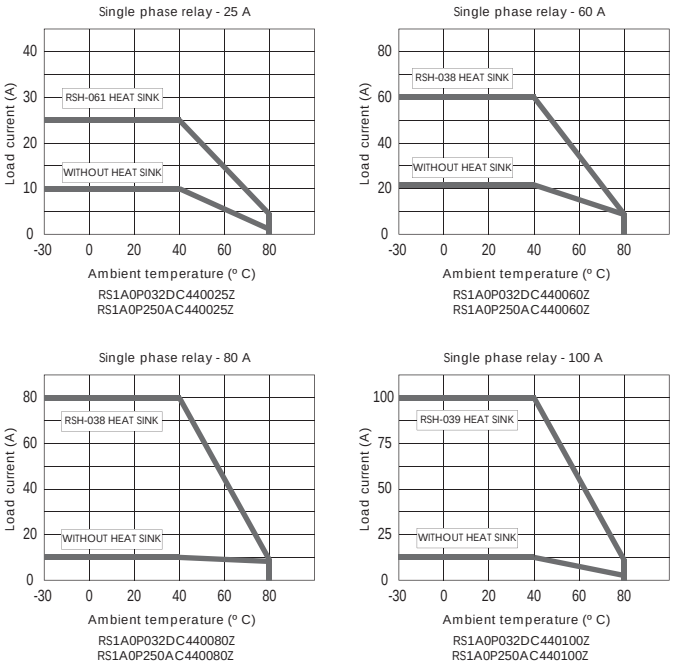
Output specifications

Maximum load current (AC51 @ Ta = 25º C) (AC53a @ Ta = 25º C)	25, 60, 80, 100 A 5, 15, 18, 20 A	
Load voltage range	40 - 440 VAC	
Frequency range	50 - 60 Hz	
Max. non-repetitive peak voltage	930 Vp	
Max. non-repetitive peak current (t=10ms)	350 Ap / 25 A 630 Ap / 60 A	910 Ap / 80 A 1100 Ap / 100 A
Maximum off state leakage current	10 mArms	
Minimum off state dv / dt	200 V / µseg	
Maximum on state voltage	<1,6 VAC	
Minimum load current	0,1 Arms	
I^2t (10 ms) (orientative data)	625 A^2s (25 A) 2.025 A^2s (60A)	4.225 A^2s (80 A) 6.050 A^2s (100A)

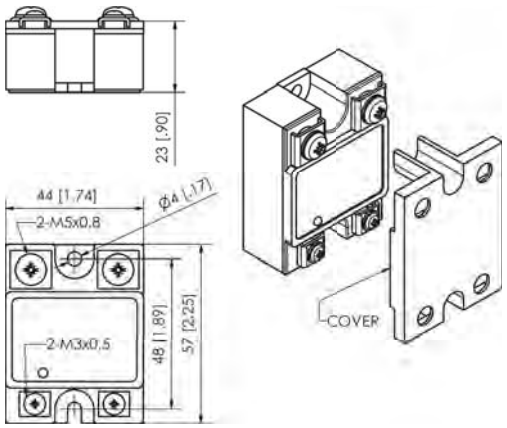
Housing specifications

Dimensions (L x W x H mm)	57 x 44 x 23
Weight	150 gr max.
Baseplate	Aluminum, nickel-plated
Control terminal (M3x6) torque	1,2 Nm
Power terminal (M5x9) torque	2,4 Nm

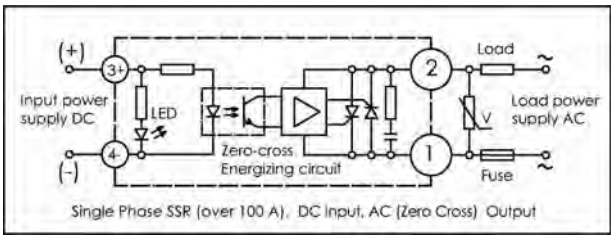
Load current vs. ambient temperature

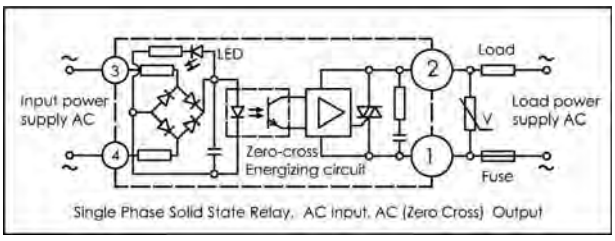


Dimensions (mm-inch)



Diagrams





» Two input ranges: 3-32 VDC and 90-280 VAC.
» Maximum load current (AC1 at 25º C): 25, 60, 80, 100A.
» Operational ratings: 40 - 480 VAC.
» Frequency range: 50- 60 Hz.
» Maximum non-repetitive peak voltage: 930 Vp.
» LED indicator.
» Clip on protective cover for greater safety (IP 20).

References

Control voltage	Operational voltage	Operational current	Reference	Reference heat sink
3 - 32 VDC	40 - 480VAC	25 A	RS1A0P032DC480025R	RSH-061
		60 A	RS1A0P032DC480060R	RSH-038
		80 A	RS1A0P032DC480080R	RSH-038
		100 A	RS1A0P032DC480100R	RSH-039
90 - 280 VAC		25 A	RS1A0P280AC480025R	RSH-061
		60 A	RS1A0P280AC480060R	RSH-038
		80 A	RS1A0P280AC480080R	RSH-038
		100 A	RS1A0P280AC480100R	RSH-039

Over 10 A load a heat sink must be used. The use of a heat sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A.

General specifications

Dielectric insulation (between input & output)	2,500 VAC
Operating temperature	-30 ºC to 80 ºC
Storage temperature	-35 ºC to 85 ºC
Rth junction to case	2,5º C/W (25 A) 0,65º C/W (60 A) 0,5º C/W (80 A) 0,3º C/W (100 A)
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

	VDC input	VAC input
Control voltage range	3 - 32 VDC	90 - 280 VAC
Input current (max)	13/16 mA @= 5 V/24 V	29 mA @= 220 VAC
Pick-up voltage	1,9 VDC	70 VAC
Drop-out voltage	1,9 VDC	70 VAC
Maximum reverse voltage	32 VDC	-
Max. response time pick-up	1 ms	-
Max. response time drop-out	½ cycle	-

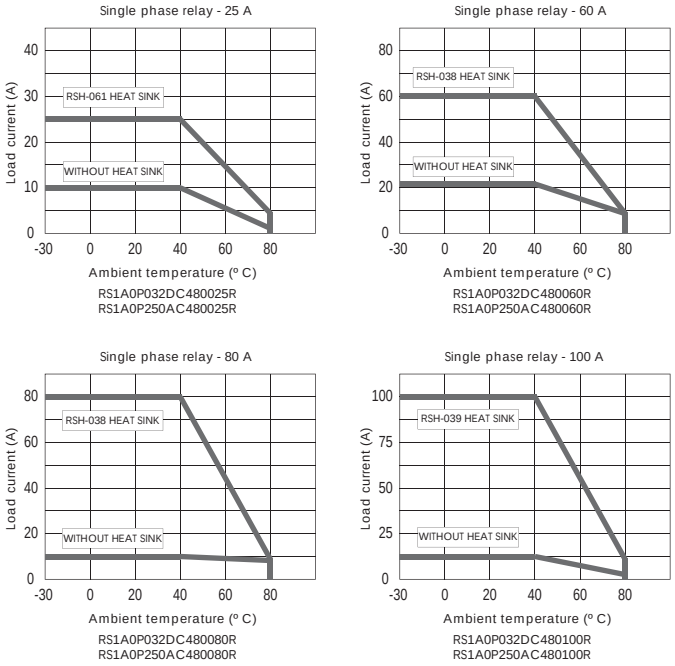
Output specifications

Maximum load current	(AC51 @ Ta = 25º C)	25, 60, 80, 100 A	
	(AC53a @ Ta = 25º C)	5, 15, 18, 20 A	
Load voltage range		40 - 480 VAC	
Frequency range		50 - 60 Hz	
Max. non-repetitive peak voltage		930 Vp	
Max. non-repetitive peak current (t=10ms)		350 Ap / 25 A 630 Ap / 60 A	910 Ap / 80 A 1100 Ap / 100 A
Maximum off state leakage current		8 mArms	
Minimum off state dv / dt		200 V / µseg	
Maximum on state voltage		1,6 VAC	
Minimum load current		0,05 Arms	
I^2t (10 ms) (orientative data)		625 A^2s (25 A) 2.025 A^2s (60A)	4.225 A^2s (80 A) 6.050 A^2s (100A)

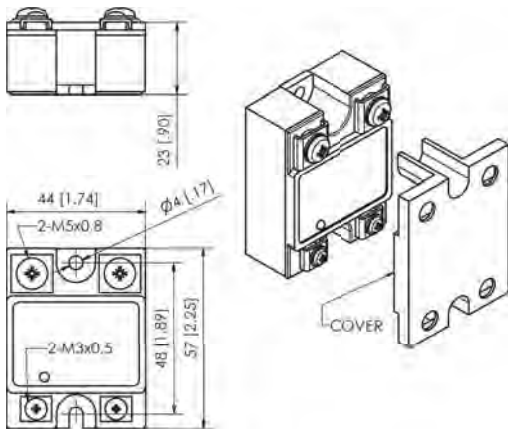
Housing specifications

Dimensions (L x W x H mm)	57 x 44 x 23
Weight	150 gr max.
Baseplate	Aluminum, nickel-plated
Control terminal (M3x6) torque	1,2 Nm
Power terminal (M5x9) torque	2,4 Nm

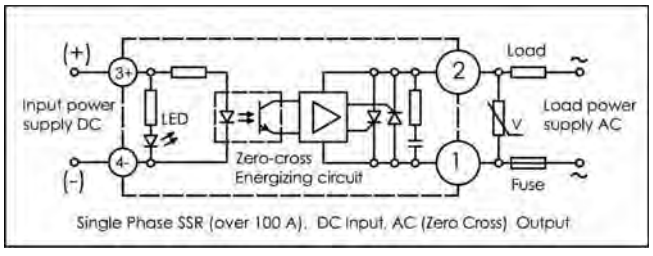
Load current vs. ambient temperature



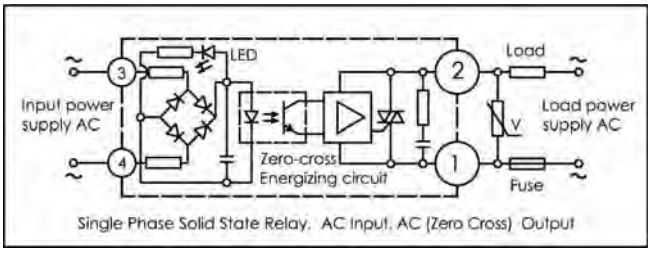
Dimensions (mm-inch)



Diagrams



Single Phase SSR (over 100 A). DC Input, AC (Zero Cross) Output



Single Phase Solid State Relay. AC Input, AC (Zero Cross) Output

» DC solid state relay.
» Input range: 3 - 15 VDC.
» Maximum load current (AC1 at 25º C): 25, 40, 60, 80A.
» Operational ratings: 12 - 600 VDC.
» LED indicator.
» Clip on protective cover for greater safety (IP 20).

References

Control voltage	Operational current	Reference	Reference heat sink
3 - 15 VDC	25 A	RS1D0P015DC600025D	RSH-061
	40 A	RS1D0P015DC600040D	RSH-036
	60 A	RS1D0P015DC600060D	RSH-038
	80 A	RS1D0P015DC600080D	RSH-038

Over 10 A load a heat sink must be used. The use of a heat sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A.

General specifications

Dielectric insulation (between input & output)	1,500 VDC
Operating temperature	-40 ºC to 80 ºC
Storage temperature	-45 ºC to 85 ºC
Rth junction to case	2,5º C/W (25 A) 0,65º C/W (60 A) 0,5º C/W (80 A)
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

Control voltage range	3 - 15 VDC
Input current (max)	2/30mA@= 3 V/15 V
Pick-up voltage	1,5 VDC
Drop-out voltage	1,5 VDC
Maximum reverse voltage	15 VDC
Max. response time pick-up	5ms
Max. response time drop-out	0,2ms

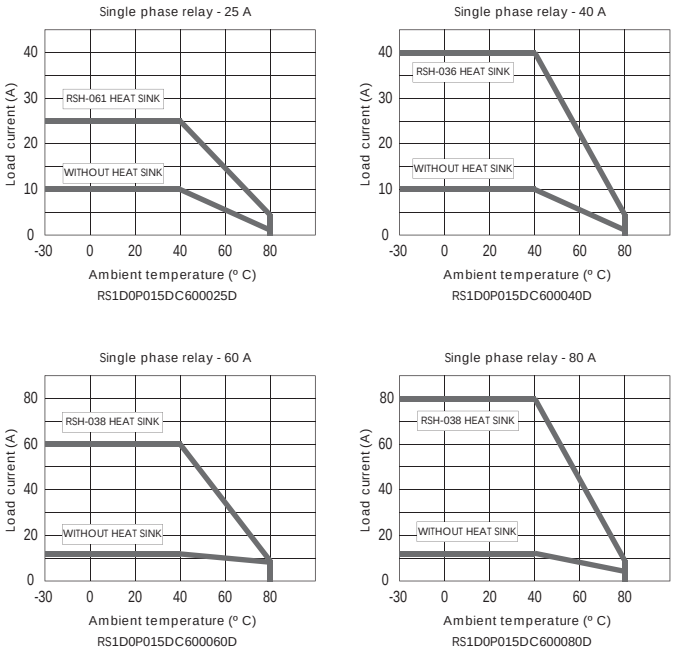
Output specifications

Maximum load current (AC51 @ Ta = 25º C) (AC53a @ Ta = 25º C)	25, 40, 60, 80A 5, 10, 15, 18A
Load voltage range	12 - 600 VDC
Maximum off state leakage current	1mA
Minimum off state dv / dt	200V / µseg
Maximum on state voltage	1,4 VDC
Minimum load current	0,1A

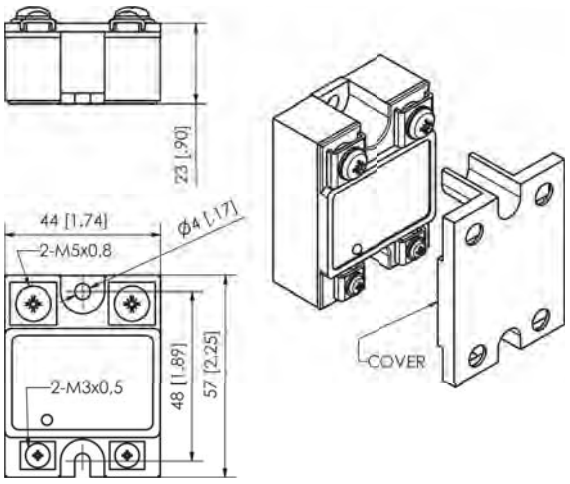
Housing specifications

Dimensions (L x W x H mm)	60 x 45 x 22
Weight	150gr max.
Baseplate	Aluminum, nickel-plated
Control terminal (M3x6) torque	1,2Nm
Power terminal (M5x9) torque	2,4Nm

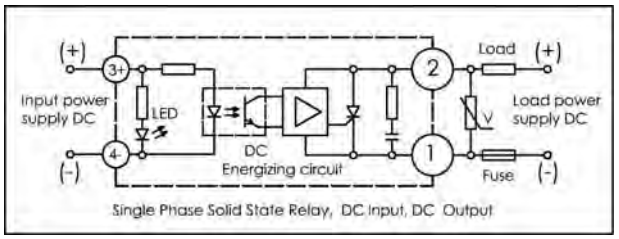
Load current vs. ambient temperature



Dimensions (mm-inch)



Diagrams



» Analog switching AC solid state relay.
» Two input ranges: 4 - 20 mA and 2 - 10 VDC.
» Maximum load current (AC1 at 25º C): 25, 40, 60, 80, 100 A.
» Operational ratings: 0 - 380 VAC.
» Frequency range: 50 - 60 Hz.
» Maximum non-repetitive peak voltage: 850 Vp.
» Clip on protective cover for greater safety (IP 20).

References

Control voltage	Operational voltage	Operational current	Reference	Ref. heatsink
2 - 10VDC	240 VAC	25 A	RS1APV010DC240025R	RSH-060
		40 A	RS1APV010DC240040R	RSH-061
	380 VAC	60 A	RS1APV010DC380060R	RSH-038
		80 A	RS1APV010DC380080R	RSH-038
		100 A	RS1APV010DC380100R	RSH-039
4 - 20mA	240 VAC	25 A	RS1API420mA240025R	RSH-060
		40 A	RS1API420mA240040R	RSH-061
	380 VAC	60 A	RS1API420mA380060R	RSH-038
		80 A	RS1API420mA380080R	RSH-038
		100 A	RS1API420mA380100R	RSH-039

General specifications

Dielectric insulation (between input & output)	2.500 VAC
Operating temperature	-40 ºC to 80 ºC
Storage temperature	-45 ºC to 85 ºC
Rth junction to case	2,5º C/W(25A) 0,5º C/W(80A) 1,25º C/W(40A) 0,3º C/W(100A) 0,65º C/W(60A)
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

	VDC input	Current
Control voltage range	2 - 10 VDC	4 - 20 mA
And control mA range	13/16 mA @= 5 V/24 V	29 mA @= 220 VAC
Pick-up voltage	1,9 VDC	70 VAC
Drop-out voltage	1,9 VDC	70 VAC
Maximum reverse voltage	32 VDC	-
Max. response time pick-up	1 ms	-
Max. response time drop-out	½ cycle	-

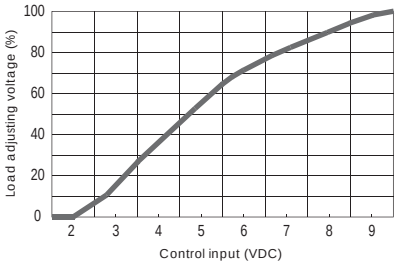
Output specifications

Maximum load current	(AC51 @ Ta = 25º C)	25, 40, 60, 80, 100 A	
	(AC53a @ Ta = 25º C)	5, 15, 18, 20 A	
Load voltage range		0 - 240VAC / 0 - 380 VAC	
Frequency range		50 - 60 Hz	
Max. non-repetitive peak voltage		850 Vp	
Max. non-repetitive peak current (t=10ms)		350 Ap / 25 A 500 Ap / 40 A 630 Ap / 60 A	910 Ap / 80 A 1100 Ap / 100 A
Maximum off state leakage current		8 mArms	
Minimum off state dv / dt		200 V / µseg	
Maximum on state voltage		1,6 VAC	
Minimum load current		0,15 - 0,25Arms	
I^2t (10 ms) (orientative data)		625 A^2s (25 A) 1.250 A^2s (40A) 2.025 A^2s (60A)	4.225 A^2s (80 A) 6.050 A^2s (100A)

Housing specifications

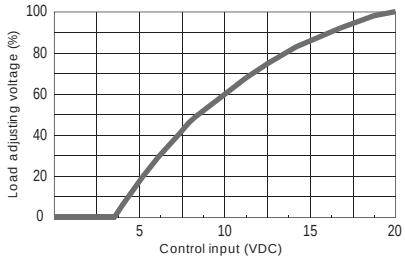
Dimensions (L x W x H mm)	57 x 44 x 23
Weight	160 gr max.
Baseplate	Aluminum, nickel-plated
Control terminal (M3x6) torque	1,2 Nm
Power terminal (M5x9) torque	2,4 Nm

Load adjusting voltage (%) Vs. Control input



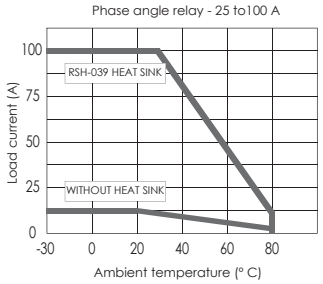
RS1APV010DC240025R
RS1APV010DC240040R
RS1APV010DC380060R
RS1APV010DC380080R
RS1APV010DC380100R

Over 10 A load a heat sink must be used. The use of a heat sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A.



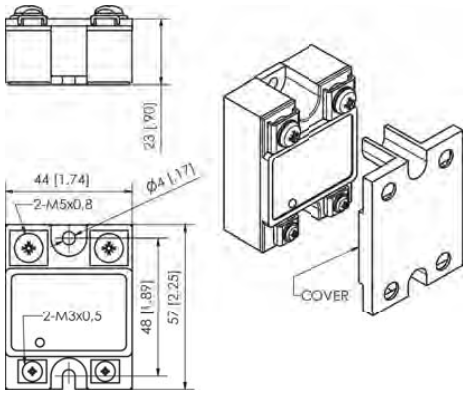
RS1API420mA240025R
RS1API420mA240040R
RS1API420mA380060R
RS1API420mA380080R
RS1API420mA380100R

Load current vs. ambient temperature

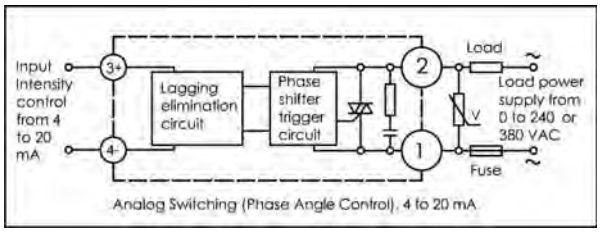


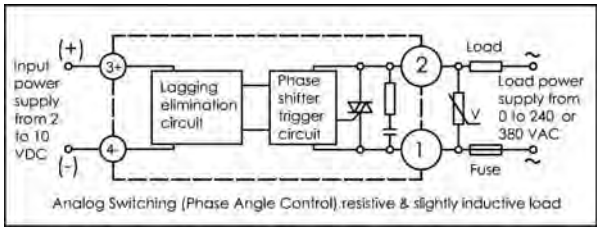
RS1APV010DC240025R
RS1APV010DC240040R
RS1APV010DC380060R
RS1APV010DC380080R
RS1APV010DC380100R
RS1API420mA240025R
RS1API420mA240040R
RS1API420mA380060R
RS1API420mA380080R
RS1API420mA380100R

Dimensions (mm-inch)



Diagrams

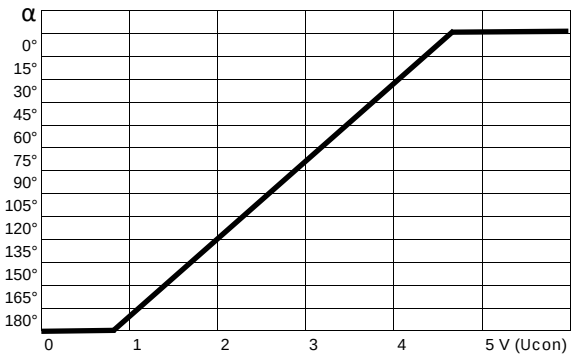




Voltage regulator (DIMMER)

»Dimmer regulator by phase start cut
»3 control ranges: 0 - 5 Vdc, 0 - 10 Vdc, 4 - 20 mA
»Maximum current according to model: 60, 80, 100, 200, 300, 400A.
»Operating range output: 20 - 480 VAC.
»Frequency range: 50 - 60 Hz.
»Maximum non-repetitive voltage peak: 850 Vp.
»IP20

Resistive load ratio curve, waveform



References

Control Voltage	Operacional Voltaje	Operacional Current	Reference	Heatsink Reference
0 - 5 Vdc 0 -10 Vdc 4 - 20 mA	480 VAC	25 A	RS1APIV5MIX480025R	RSH-060
		40 A	RS1APIV5MIX480040R	RSH-061
		60 A	RS1APIV5MIX480060R	RSH-038
		80 A	RS1APIV5MIX480080R	RSH-038
		100 A	RS1APIV5MIX480100R	RSH-039
		200 A	RS1APIV5MIX480200R	RSH-039
		300 A	RS1APIV5MIX480300R	RSH-039 VENT
		400 A	RS1APIV5MIX480400R	RSH-039 VENT

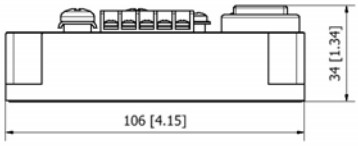
RS1APIV5MIX480025R RS1APIV5MIX480040R
RS1APIV5MIX480060R RS1APIV5MIX480080R
RS1APIV5MIX480100R RS1APIV5MIX480200R
RS1APIV5MIX480300R RS1APIV5MIX480400R

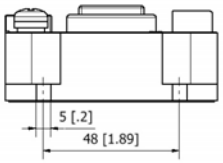
For currents greater than 10 A, a heatsink should be used. However, even if the load current does not exceed 10 A, the use of a heatsink will extend the life of the relay to a duration four times longer.

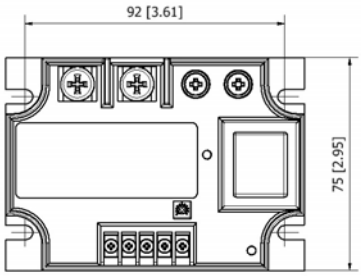
General specifications

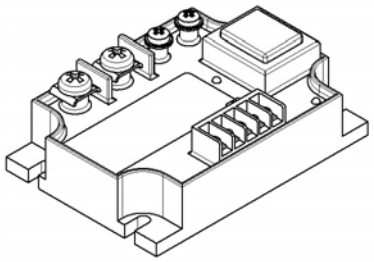
Dielectric isolation between input and output	2.500 VAC
Operating temperature	-40 °C a 80 °C
Storage temperature	-45 °C a 85 °C
Thermal resistance between joint and housing	2,5° C/W(25A)
	0,5° C/W(80A)
	1,25° C/W(40A)
	0,3° C/W(100A)
	0,65° C/W(60A)
Operating environmental humidity up to	0,85
CE Marking	Sí

Dimensions (mm-pulgadas)





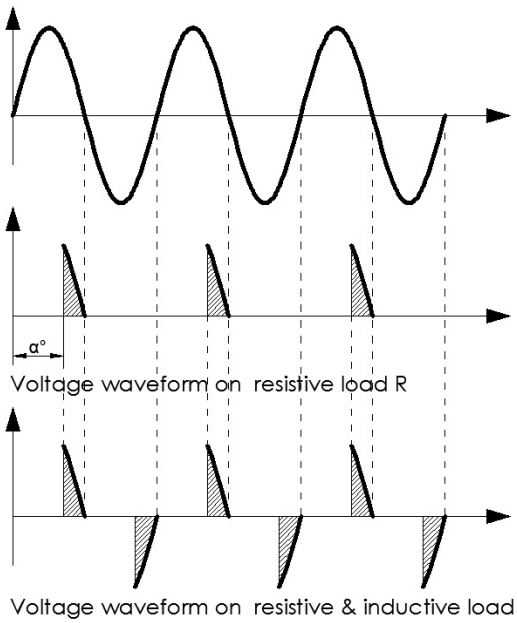




Input specifications

	entrada VDC	Corriente
Control voltage range	0-5 VDC, 0-10 VDC	4 - 20 mA
I mA control	13/16 mA @= 5 V/24 V	29 mA @= 220 VAC
Tension to the connection	1,9 VDC	-
Tension to the desconnection	1,9 VDC	-
Maximum reverse voltage	32 VDC	-
Max. delay to the connection	1 ms	-
Max. delay to desconnection	½ ciclo	-

Diagrams



Output specifications

Maximum load current	(AC51 @ Ta = 25° C)	25, 40, 60, 80, 100, 200, 300, 400 A	
	(AC53a @ Ta = 25° C)	5, 15, 18, 20, 40, 60, 80 A	
Load voltage range		20 - 480 VAC	
Frequency range		50 - 60 Hz	
Maximum non-repetitive voltage peak		850 Vp	
Maximum non-repetitive current peak (t = 10ms)		350 Ap / 25 A 500 Ap / 40 A 630 Ap / 60 A	910 Ap / 80 A 1100 Ap / 100 A
Maximum leakage current		8 mArms	
dv / dt minimum at disconnection		200 V / µseg	
Max. voltage drop in operation		1,6 VAC	
Minimum load current		0,15 - 0,25 Arms	
I^2t (10 ms) (indicative data)		625 A^2s (25 A) 1.250 A^2s (40A) 2.025 A^2s (60A)	4.225 A^2s (80 A) 6.050 A^2s (100A)

Cover

Dimensions (L x W x H mm)	106 x 75 x 34
Weight	600 gr máx.
Metallic base	Aluminio niquelado
Max. torque: control terminal(M3x6)	1,2 Nm
Max. torque: power terminal(M5x9)	2,4 Nm

» AC zero crossing solid state relay.
» Input range: 5 - 24 VDC.
» Maximum load current (AC1 at 25º C): 25, 60 A.
» Operational ratings: 48 - 480 VAC.
» Frequency range: 50 - 60 Hz.
» Maximum non-repetitive peak voltage: 1.000 Vp.
» Two LEDs indicators (input / output).
» Clip on protective cover for greater safety (IP 20).
» Heat sink included.
» Can be mounted directly on a DIN-rail with a clip for DIN-rail.

References

Control voltage	Operational voltage	Operational current	Reference
5 - 24 VDC	48 - 480 VAC	25 A	RS1A0R024DC480025Z
		60 A	RS1A0P024DC480060Z

General specifications

Dielectric insulation (between input & output)	2.500 VAC
Operating temperature	-40 ºC to 80 ºC
Storage temperature	-45 ºC to 85 ºC
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

Control voltage range	5 - 24 VDC
Input current (max)	16/18 mA @= 5 V/24 V
Pick-up voltage	2,2 VDC
Drop-out voltage	2,2 VDC
Maximum reverse voltage	24 VDC
Max. response time pick-up	10 ms
Max. response time drop-out	10 ms

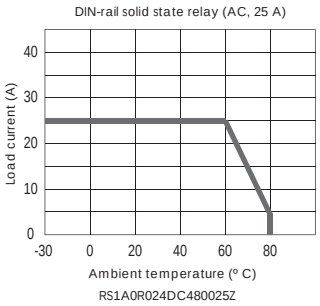
Output specifications

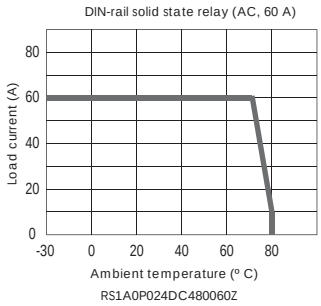
Maximum load current (AC51 @ Ta = 25º C) (AC53a @ Ta = 25º C)	25, 60 A 5, 15 A
Load voltage range	48 - 480 VAC
Frequency range	50 - 60 Hz
Max. non-repetitive peak voltage	1.000 Vp
Max. non-repetitive peak current (t=10ms)	350 Ap / 25 A 630 Ap / 60 A
Maximum off state leakage current	3 mArms
Minimum off state dv / dt	500 V / µseg
Maximum on state voltage	<1,2 VAC
Minimum load current	0,1 Arms
I^2t(10 ms) (orientative data)	625 A^2s (25 A) 2.025 A^2s (60A)

Housing specifications

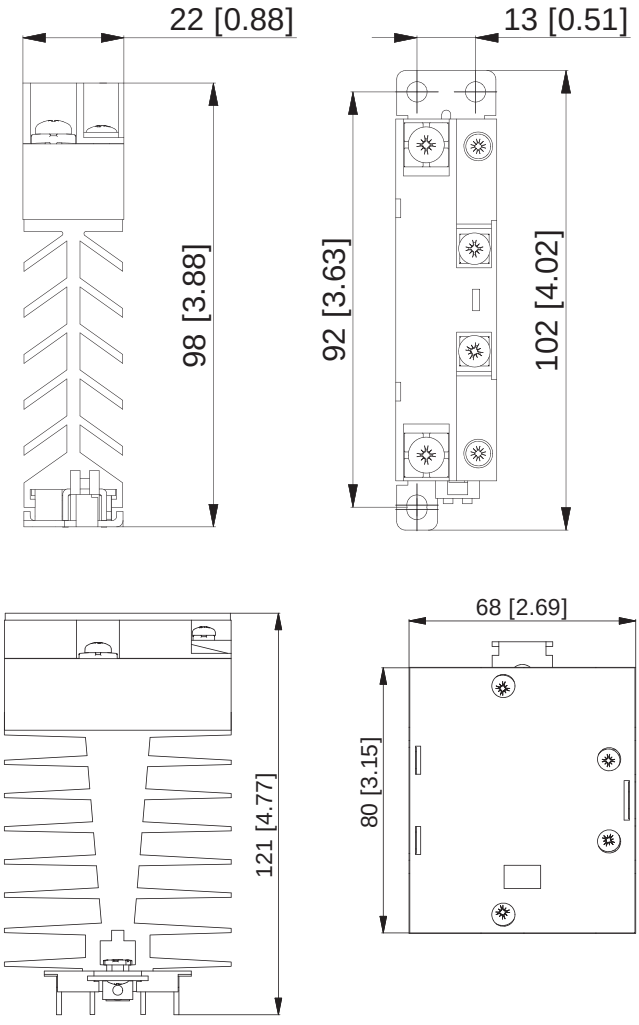
Dimensions (L x W x H mm)	75 x 35 x 100	80 x 70 x 105
Weight	200 gr	340 gr
Baseplate	Aluminum, nickel-plated	
Control terminal (M3x6) torque	1,2 Nm	
Power terminal (M5x9) torque	2,4 Nm	

Load current vs. ambient temperature

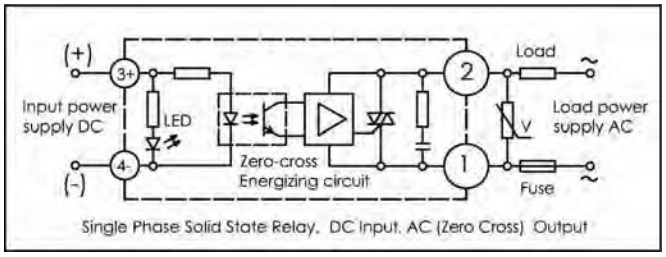




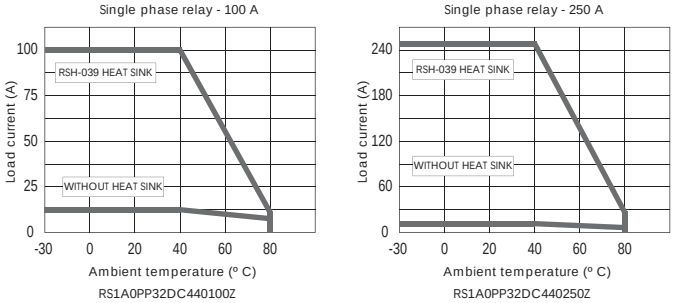
Dimensions (mm. inch)



Diagram

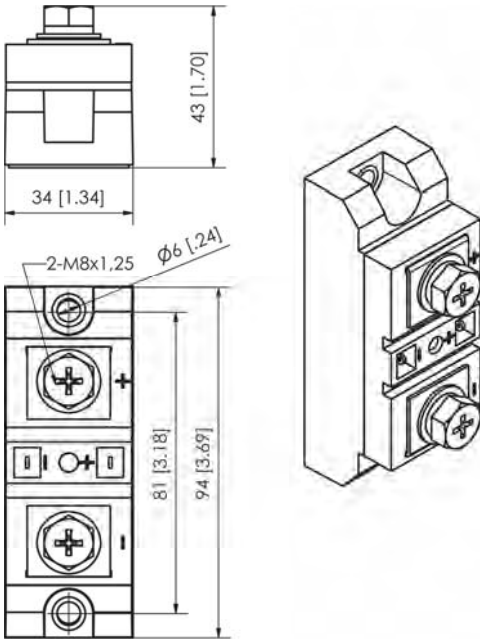


Load current vs. ambient temperature



» AC Solid state relay, zero crossing.
» Input range: 3 - 32 VDC.
» Maximum load current (AC1 at 25º C): 100, 150, 250 A.
» Operational ratings: 40 - 400 VAC.
» Frequency range: 50 - 60 Hz.
» Maximum non-repetitive peak voltage: 930 Vp.
» LED indicator.

Dimensions (mm. inch)



References

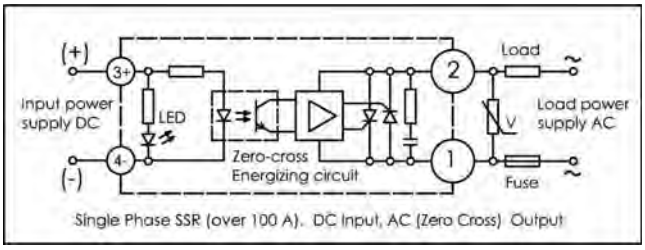
Control voltage	Operational voltage	Operational current	Reference	Reference heat sinks
3 - 32 VDC	40 - 440 VAC	100 A	RS1A0PP32DC440100Z	RSH-039
		150 A	RS1A0PP32DC440150Z	RSH-039
		250 A	RS1A0PP32DC440250Z	RSH-039

Over 10 A load a heat sink must be used. The use of a heat sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A.

General specifications

Dielectric insulation (between input & output)	2.500 VAC
Operating temperature	-30 ºC to 80 ºC
Storage temperature	-45ºC to 85 ºC
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Diagram



Input specifications

Control voltage range	3 - 32 VDC
Input current (max)	6/35 mA @= 3 V / 32 V
Pick-up voltage	3 VDC
Drop-out voltage	1 VDC
Maximum reverse voltage	32 VDC
Max. response time pick-up (50Hz)	10 ms
Max. response time drop-out (50Hz)	10 ms

Output specifications

Maximum load current (AC51 @ Ta = 25º C) (AC53a @ Ta = 25º C)	100, 150, 250 A 5, 15, 18, 20 A	
Load voltage range	40 - 440 VAC	
Frequency range	50 - 60 Hz	
Max. non-repetitive peak voltage	930 Vp	
Max. non-repetitive peak current (t=10ms)	1.100 Ap/100 A 1450 Ap/150 A	2.200 Ap/250 A
Maximum off state leakage current	10 mArms	
Minimum off state dv / dt	500 V / µseg	
Maximum on state voltage	1,6 VAC	
Minimum load current	0,05 Arms	
I^2t (10 ms) (orientative data)	6.050 A^2s (100A) 10.500 A^2s (150A)	24.200 A^2s (250A)

Housing specifications

Dimensions (L x W x H mm)	94 x 34 x 43
Weight	235 gr
Baseplate	Aluminum, nickel-plated
Control terminal (M3x6) torque	1,0 Nm
Power terminal (M5x9) torque	2,4 Nm

» AC Solid state relay, zero crossing.
» Input range: 3 - 32 VDC.
» Maximum load current (AC1 at 25º C): 4, 5 A.
» Operational ratings: 40 - 400 VAC.
» Frequency range: 50 - 60 Hz.
» Maximum non-repetitive peak voltage: 1.200 Vp.

References

Control voltage	Operational voltage	Operational current	Reference
3 - 32 VDC	40 - 440 VAC	4 A	RS1ACB032DC440004Z
			RS1AMB032DC440004Z
		5 A	RS1AMB032DC440005Z

General specifications

Dielectric insulation (between input & output)	500 VAC
Operating temperature	-30 ºC to 80 ºC
Storage temperature	-30 ºC to 85 ºC
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

Control voltage range	3 - 32 VDC
Input current (max)	9/16 mA @= 5 V/24 V
Pick-up voltage	1,5 VDC
Drop-out voltage	1,5 VDC
Maximum reverse voltage	32 VDC
Max. response time pick-up (50Hz)	<1 ms
Max. response time drop-out (50Hz)	<1 ms

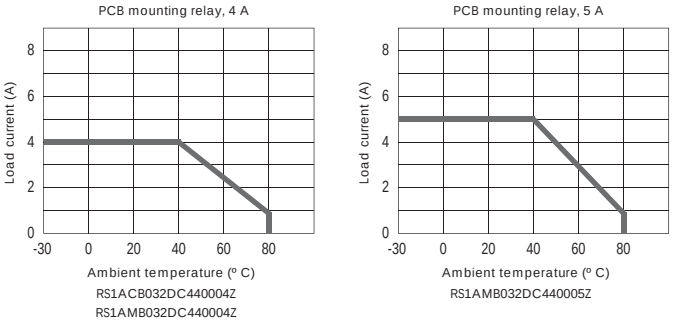
Output specifications

Maximum load current (AC51 @ Ta = 25º C)	4A, 5A
Load voltage range	40 - 440 VAC
Frequency range	50 - 60 Hz
Max. non-repetitive peak voltage	1.200 Vp
Max. non-repetitive peak current (t=10ms)	7 Ap / 5 A
Maximum off state leakage current	10mA
Minimum off state dv / dt	200 V / µseg
Maximum on state voltage	<1,6 VAC
Minimum load current	0,1 Arms

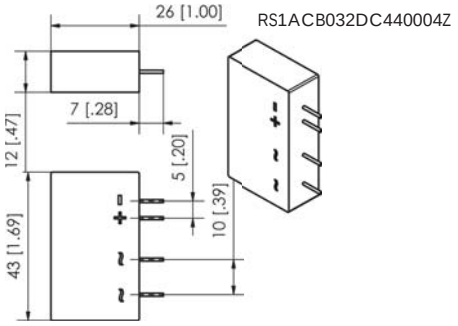
Housing specifications

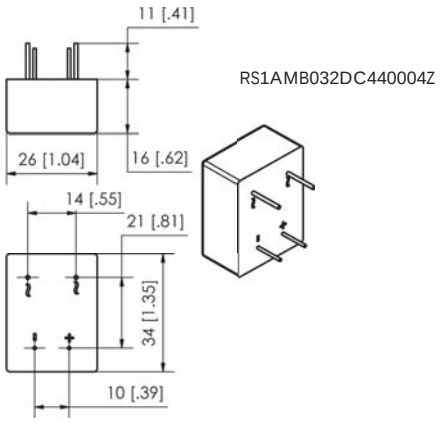
Dimensions (L x W x H mm)	43 x 26 x 12	34x26x16	43 x 31 x 20
Weight	22 gr	34 gr	78 gr
Baseplate	Aluminum, nickel-plated		

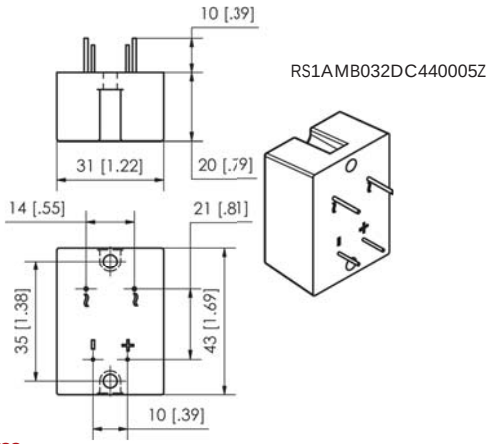
Load current vs. ambient temperature



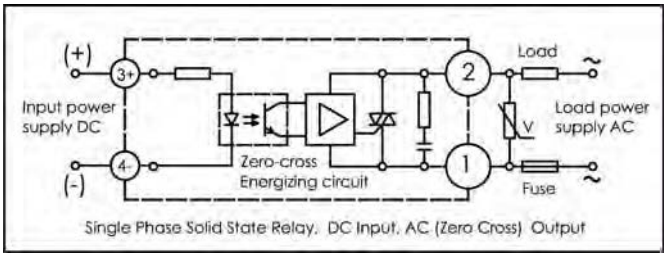
Dimensions (mm. inch)



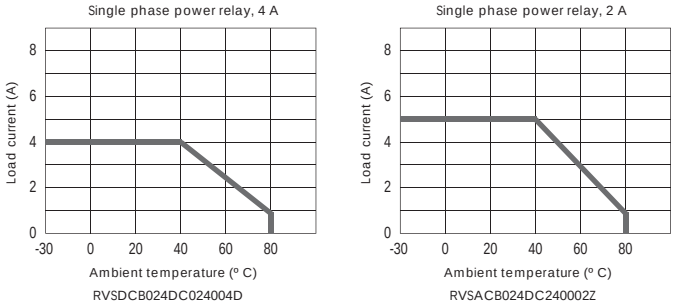




Diagram



Load current vs. ambient temperature



- » Optically Isolated
- » Low On-state Resistance
- » Low Input Power Consumption
- » TTL and CMOS compatible
- » RC networks (VAC)
- » UL requested

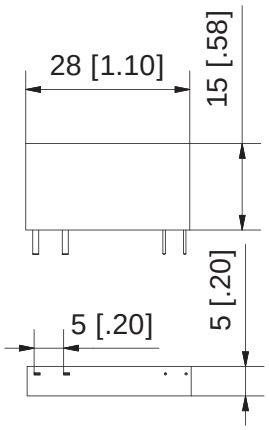
Housing specifications

Dimensions (L x W x H mm)	22x5x15
Weight	4g
Baseplate	-

General specifications

	AC	DC
Dielectric insulation (between input & output)	4KVrms, 1min	3750Vrms
Operating temperature	-20 ºC to 80 ºC	
Storage temperature	-40 ºC to 100 ºC	-25 ºC to 80 ºC
Ambient humidity	Operating: up to 85%	
Maximum Soldering Heat	220 ºC (10sec)	
CE marking	Yes	

Dimensions (mm. inch)



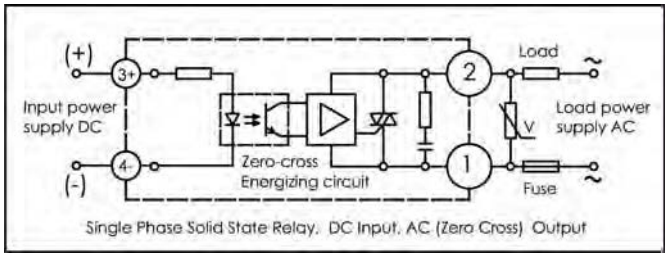
Input specifications

Nominal Voltage	24VDC
Control voltage range	18 - 32VDC
Input current (max)	9/16 mA @= 5V/24V
Control current	7,7mA
Impedance	3000Ω
Release voltage	1V
Maximum reverse voltage	32VDC

Output specifications

	AC	DC
Maximum load current (AC51 @ Ta = 25º C)	4A, 2A	
Load voltage	24V	
Frequency range	50 - 60Hz	
Max. non-repetitive peak voltage	600V	60V
Max. non-repetitive peak current (t=10ms)	80A	7A
Maximum off state leakage current	<1,5mA	<1mA
Minimum off state dv / dt	500V/µs	-
Maximum on state voltage	1,2V	0.24V (at IL=2A)
Minimum load current	50mA	1mA
Turn On Time (at nominal voltage)	100µs	50µs
Turn Off Time (at nominal voltage)	1/2 cicle +1ms	600µs
Breakdown voltage	36V	-
Static output on- Resistance (at IL=2A)	-	50µs
Peak power dissipation	-	600W

Diagram



References

RVS AC B 032 DC 240 002 Z

Product series
RVS: RVS relays series

Output voltage type
AC: VAC voltage
DC: VDC voltage

Printed circuit

Control voltage

Control voltage type

Output voltage
24: 24V (only DC)
48: 48V (only DC)
100: 100V (only DC)
240: 240V (only AC)

Relay type
Z: zero crossing
R: random
D: DC

Amps
002: 2A (only AC)
004: 4A (only DC)

» Three phase AC solid state relay, zero crossing.
» Two input ranges: 3 - 32 VDC and 90 - 250 VAC.
» Maximum load current (AC1 at 25º C): 25, 60, 80, 100, 120 A.
» Operational ratings: 40 - 440 VAC.
» Frequency range: 50- 60 Hz.
» Maximum non-repetitive peak voltage: 930 Vp.
» LED indicator.
» Clip on protective cover for greater safety (IP 20).

References

Control voltage	Operational voltage	Operational current	Reference	Reference heat sink
3 - 32 VDC	40 - 440 VAC	25 A	RS3A0P032DC440025Z	RSH-035
		60 A	RS3A0P032DC440060Z	RSH-038
		80 A	RS3A0P032DC440080Z	RSH-038
		120 A	RS3A0P032DC440120Z	RSH-039
90 - 250 VAC		25 A	RS3A0P250AC440025Z	RSH-035
		60 A	RS3A0P250AC440060Z	RSH-038
		80 A	RS3A0P250AC440080Z	RSH-038
		100 A	RS3A0P250AC440100Z	RSH-039

General specifications

Dielectric insulation (between input & output)	2.500 VAC
Operating temperature	-25 ºC to 70 ºC
Storage temperature	-35 ºC to 85 ºC
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

	VDC input	VAC input
Control voltage range	3 - 32 VDC	90 - 250 VAC
Input current (max)	5/25 mA @= 3 V/32 V	5/30 mA @= 90/250 V
Pick-up voltage	3 VDC	70 VAC
Drop-out voltage	1 VDC	70 VAC
Maximum reverse voltage	32 VDC	-
Max. response time pick-up	-	10 ms
Max. response time drop-out	-	10 ms

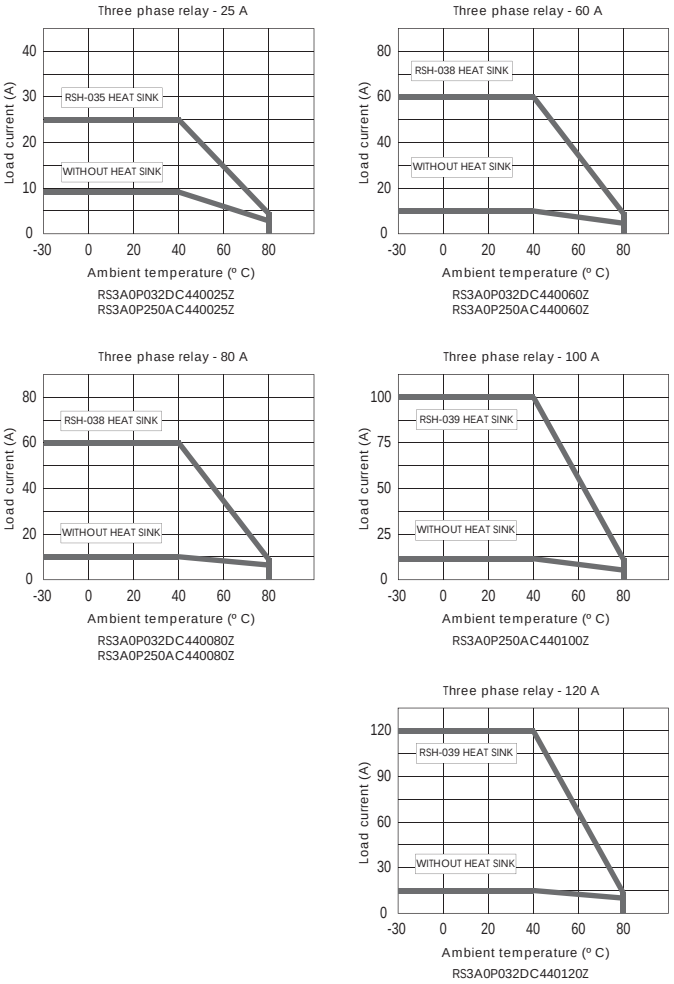
Output specifications

Maximum load current (AC51 @ Ta = 25º C) (AC53a @ Ta = 25º C)	25, 60, 80, 100, 120 A 5, 15, 18, 20, 21 A	
Load voltage range	40 - 440 VAC	
Frequency range	50 - 60 Hz	
Max. non-repetitive peak voltage	930 Vp	
Max. non-repetitive peak current (t=10ms)	350 Ap/ 25 A 630 Ap/ 60 A 910 Ap/ 80 A	1.100 Ap/100 A 1.400 Ap/120 A
Maximum off state leakage current	10 mArms	
Minimum off state dv / dt	300 V / µseg	
Maximum on state voltage	1,6 VAC	
Minimum load current	0,1 Arms	
I^2t (10 ms) (orientative data)	625 A^2s (25 A) 2.025 A^2s (60A) 4.225 A^2s (80 A)	6.050 A^2s (100A) 9.800 A^2s (120A)

Housing specifications

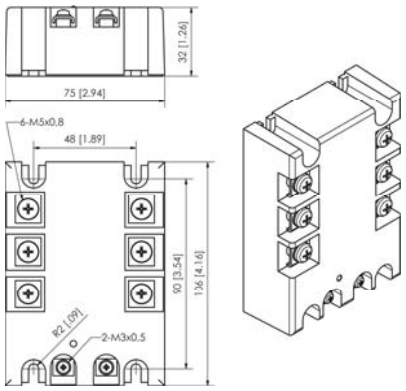
Dimensions (L x W x H mm)	106 x 75 x 32
Weight	150 gr max.
Baseplate	Aluminum, nickel-plated
Control terminal (M3x6) torque	1,2 Nm
Power terminal (M5x9) torque	2,4 Nm

Load current vs. ambient temperature

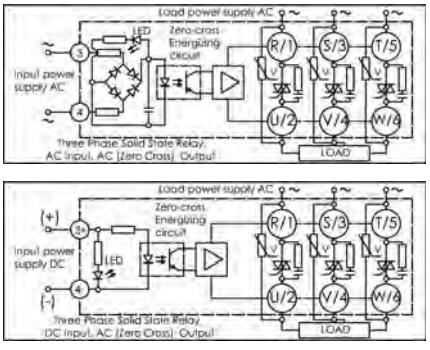


Over 10 A load a heat sink must be used. The use of a heat sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A.

Dimensions (mm. inch)



Diagrams



» Motor reversing solid state relay, AC.
» Two input ranges: 10 - 30 VDC and 90 - 115 VAC.
» Maximum load power: 1 KW and 5 KW.
» Operational ratings: 24 - 530 VAC.
» Frequency range: 50- 60 Hz.
» Maximum non-repetitive peak voltage: 1.200 Vp.
» LED indicator (green: forward; yellow: reverse).

This relay is used to invert the turn direction of an engine, which will depend on the input circuit.
If the system is powered between the terminals F and GND, the triphase network will work in a direct way; if it is powered between R and GND, the direction of the engine will be inverted.

Input control	Output connection
GND - F	R → U S → V T → W
GND - R	R → W S → V T → U

References

Control voltage	Operational voltage	Max. Load Power	Reference	Reference heat sink
10 - 30 VDC	24 - 530 VAC	1 KW	RS1ARP030DC5301K3Z	RSH-38
90 - 115 VAC		5 KW	RS1ARP030DC5305K3Z	RSH-39
			RS1ARP115AC5305K3Z	RSH-39

General specifications

Dielectric insulation (between input & output)	2,500 VAC
Operating temperature	-30ºC to 80 ºC
Storage temperature	-35ºC to 85 ºC
Rth junction to case	0,25º C/W 0,22º C/W
Ambient humidity	Operating: up to 85 %
CE marking	Yes

Input specifications

	VDC	VAC
Control voltage range	10 - 30 VDC	90 - 115 VAC
Input current (max)	30 mA	35 mA
Pick-up voltage	8 VDC	85 VAC
Drop-out voltage	4 VDC	30 VAC
Maximum reverse voltage	30 VDC	-
Max. response time pick-up	½ cycle	-
Max. response time drop-out	½ cycle	-

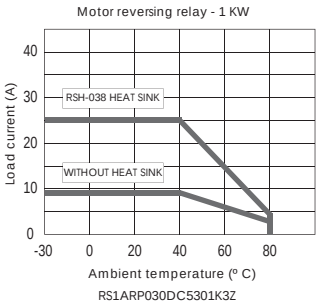
Output specifications

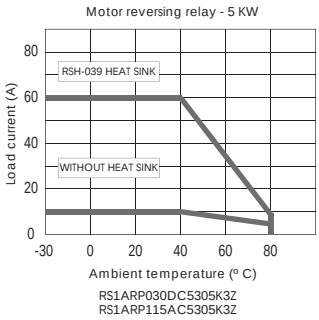
	VDC 1 KW 25 A	VAC 5 KW 60 A
Maximum load current		
Load voltage range	24 - 530 VAC	
Frequency range	50 - 60 Hz	
Max. non-repetitive peak voltage	1.200 Vp	
Max. non-repetitive peak current (t=10ms)	350 Ap / 25 A 850 Ap / 60 A	
Maximum off state leakage current	8 mArms	
Minimum off state dv / dt	500 V / µseg	
Maximum on state voltage	1,6 VAC	1,8 VAC
Minimum load current	0,1 A	
I^2t (10 ms) (orientative data)	625 A^2s (25 A) 3.600 A^2s (60A)	

Housing specifications

Dimensions (L x W x H mm)	106 x 75 x 32
Weight	430 gr Max.
Baseplate	Aluminum, nickel-plated
Control terminal (M3x6) torque	1,2 Nm
Power terminal (M5x9) torque	2,4 Nm

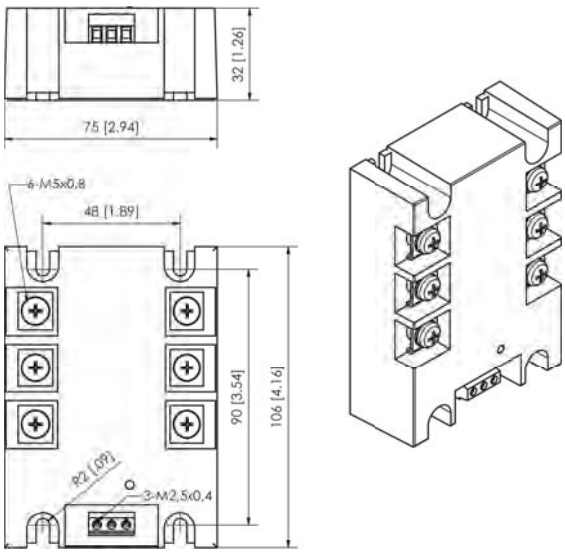
Load current vs. ambient temperature



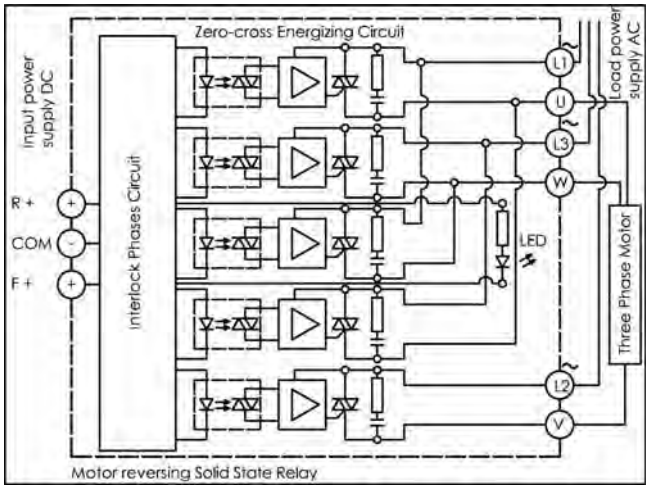


Over 10 A load a heat sink must be used. The use of a heat sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A.

Dimensions (mm. inch)



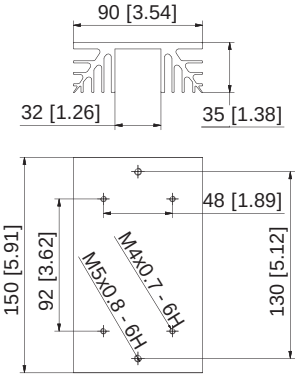
Diagram



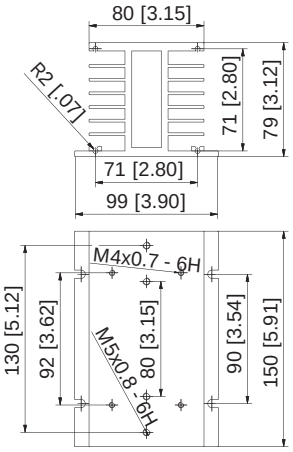
Over 10 A load a heat-sink must be used. The use of a heat-sink will make the lifetime of the relay up to four times longer, even when using it with load currents lower than 10 A. The following is a list of Relequick's available heat-sinks, a full range that covers the requirements of all our solid state relays.

(Notation on mm-inch)

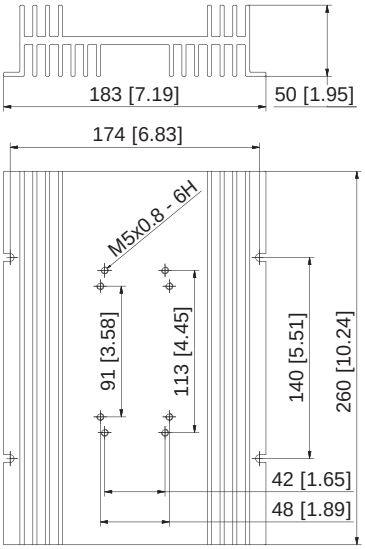
RSH-035
Current < 35A
Rh=1,7 K/W



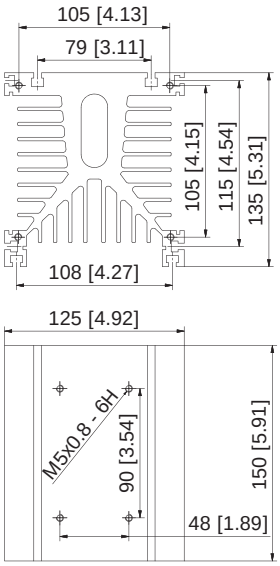
RSH-036
Current < 50A
Rh=1,25 K/W



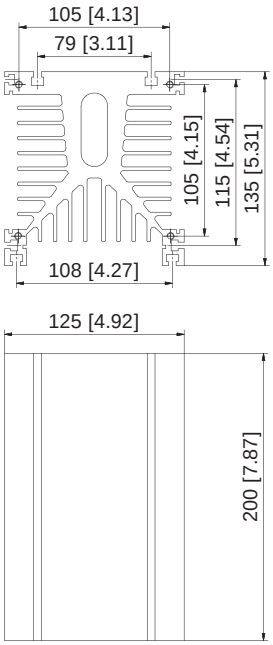
RSH-037
Current < 55A
Rh=1,15 K/W



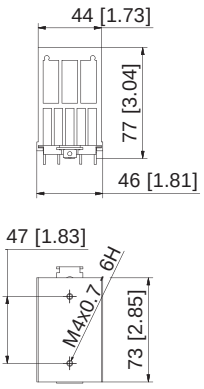
RSH-038
Current < 80A
Rh=0,9 K/W



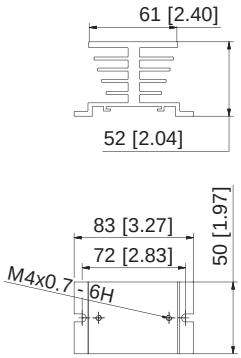
RSH-039
Current < 180A
Rh=0,6 K/W



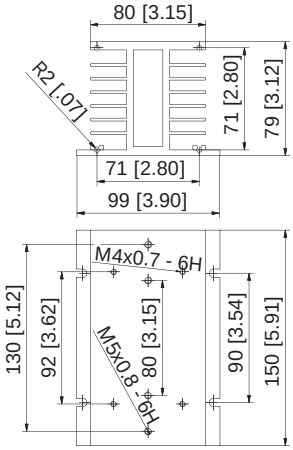
RSH-059
Current < 20A
Rh=2,9 K/W



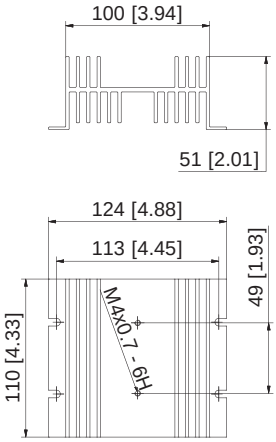
RSH-060
Current < 25A
Rh=2,15 K/W



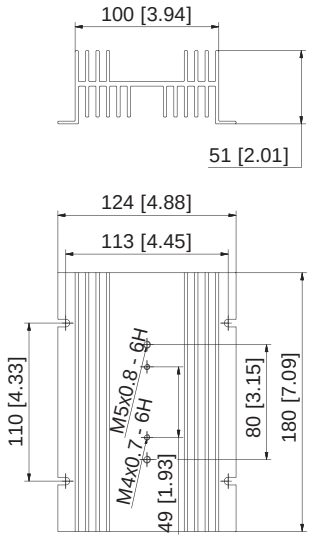
RSH-061
Current < 40A
Rh=1,42 K/W



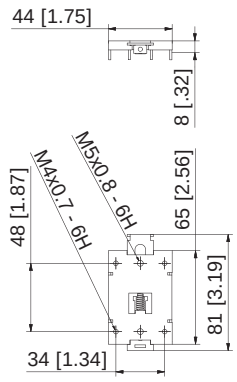
RSH-062
Current < 45A
Rh=1,38 K/W



RSH-063
Current < 50A
Rh=1,32 K/W



RSH-MR
Current ≤ 5A



RELEQUICK

MODULES

RFS1SL Programmable solid state relay

This electronic module (plug and play in our sockets SF) is a solid state relay that can be programmed with diferent time functions and PWM.

References

Reference	Polarity output	Output voltage
RFS1SL028DC0P	DC positive common	5 - 50VDC
RFS1SL028DCNP	DC negative common	
RFS1SL028AC0P	AC random	1,5 - 250VAC
RFS1SL028ACZP	AC zero cross switching	

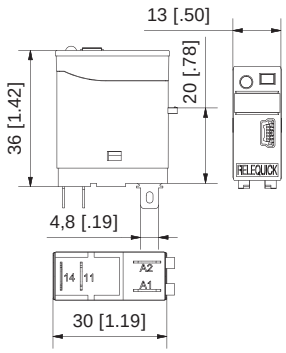
Functions

The RFS1 have different functions easy to program:

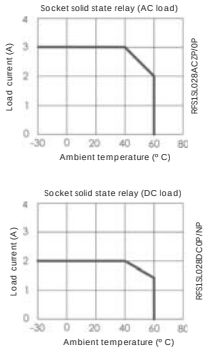
- Timing functions: simple or cycles.
- Control PWM.

For more information look the page 48.

Dimensions



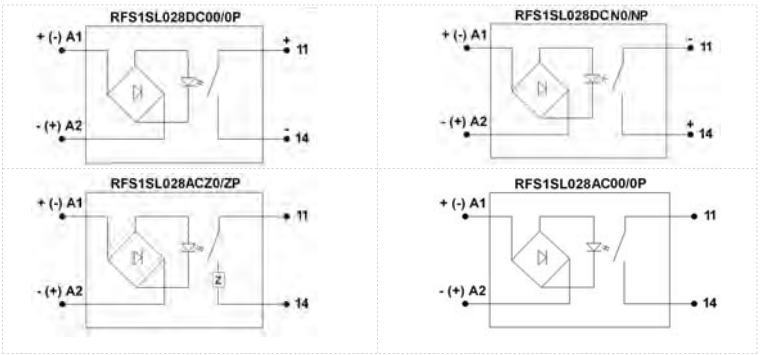
Load current / temperature



Uses and applications

All program timing functions at very fast switching time, because it is a Solid state relay, with relay output 250VAC (3A) or 50VDC (2A).

Circuit diagrams



Accesories

To program by usb is required cable ref CPCD01.

Features

This module have 9 different time functions. The program range is from 0,1 second to 999 hours timing.
There are RFS1 modules in VAC output (zero crossing and random) and other in VDC output (with different polarities).
The led allows to see the relay status.
Our free software "DEVICES PROGRAMMER"* allows to make a chain of time and PWM functions in a very easy way.

Nominal values

Supply voltage	5 - 28 VDC
Programming time range	1ms - 999Hours
Time precision	±0,05% of set time
Repeatability	±0,01% of set time
Reestablishment time	>300ms
Indicator(indicates the state relay output)	Green led

Input ratings

Input current (max)	10 - 20 mA
Pick-up voltage	5 VDC
Drop-out voltage	3 VDC
Max. reverse voltage	28 VDC
Max. response time pick-up	1 ms
Max. response time drop-out	2 ms

Specifications

Room temperature	Working Tº	-20º C to 60º C
	Storage Tº	-20º C to 100º C
Room humidity	5% to 85 %	
Supply frecuency (AC)	50 - 60 Hz	
Output relay	Maximum load current (AC51 @ Ta = 25º C)	3 A(AC) 2 A(DC)
	Load voltage range	1.5 - 250 VAC 5 - 50 VDC
	Maximum non-repetitive peak voltage	250 VAC 150 VDC
	Maximum non-repetitive peak current (t = 5 ms)	20 Ap
	Maximum off state leakage current	1 mA
	Min. off state dA / dt	5 A / 350 µs
	Max. on state voltage	<1.5 VAC <1.5 VDC
	Min. load current	≥0.1 A
	I^2t (5 ms) (orientative data)	1 A^2s
Insulation dielectric strength (between input & output)	3,750 KV	
Mounting	Faston standard form	
Dimensions	29x13x40	
Weight	23 gr	
CE- marking	yes	
Protection class	IP20	
Pack Units	10	

MQPMM Timer and counter module

This electronic module (plug and play in our sockets SQ and SM) can be programmed to control the relay that is connected in the socket and work according with the program working in many ways.

It allows that one standard relay works like an output miniPLC with a wide range of current and voltages.

Reference

Reference	Type
MQPMM (easy control)	plugin timer module

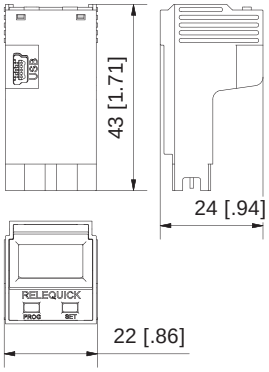
Functions

The MQPMM has different functions easy to program:

- Timing functions: simple or cycles.
- Counter: simple or cycles.
- External signal: timing or counting according with the program.

For more information look at the pages 49 and 50.

Dimensions (mm-inch)



Uses and applications

Switching and programming the module in our socket, you get more advantages in your applications.

Example: you can have a timer and a counter for resistive or inductive charges with a relay output 230VAC, 16A only switching our MQPMM in the SQ socket with the adecuate relay.

Accesories

- It is necessary to program, use the cable ref: CPCD01.
- Interface MMA10 to use the MQPMM in the socket SM.

Features

This module has 21 programmable functions, the timing range is from 0,1 second to 999 hours and a counting capacity until 999 cycles with high precission.

It can be used with different relay models because the MQPMM has a wide range of charges (24-230VAC, 12-115VDC). The LCD allows to see the program status and the relay activity.

Our free software “DEVICES PROGRAMMER”* allows to make a chain of time and count in a very easy way.

It is possible to program the MQPMM with the buttons without the PC.

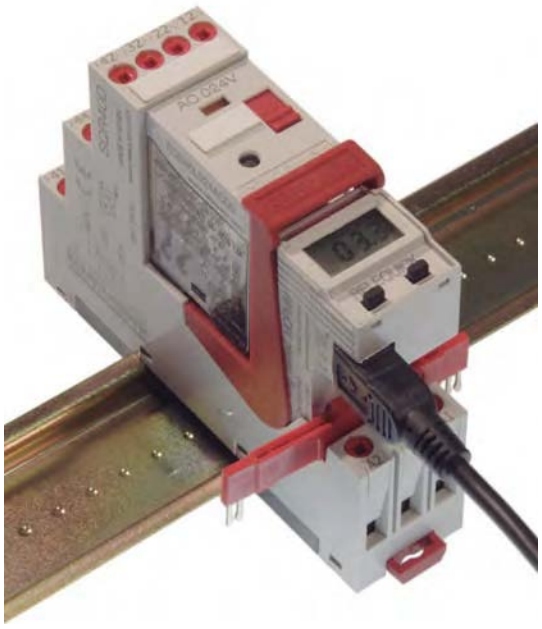
The B conection in the socket allows a external signal, from a PC, sensor, push button etc... allowing to change the relay status.

Nominal values

Supply voltage (U)	VAC (50 / 60 Hz) VDC	24 - 230 12 - 115
Timing range	0,1seconds - 999 hours	
Counter range	1 - 1000000	
Timing precision	± 0.05 % of set time	
Repeatability	± 0.01 % of set time	
Reestablishment time	≥ 300 ms	
Minimum B signal duration	≥ 23 ms (VDC) - 50 ms (VAC)	
Maximum counter frequency	21Hz (VDC)-10 Hz (VAC) (125 Hz under request)	
Indicator(LCD)	program mode and relay output state	

Specifications

Room temperature	Working Tº Storage Tº	-10º C to 60º C -20º C to 60º C
Room humidity	5% to 85 %	
Supply frecuency (AC)	50 - 60 Hz	
Nominal power AC/DC (W)	0.1 W (12 VDC) - 0.5 W (115 VDC)	
Mounting	Interface in SQ series and SM series sockets	
Dimensions	43,5x24x21,8mm	
Weight	11gr	
CE - marking	Yes	
Protection class	IP20	
Pack Units	1	

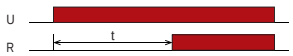
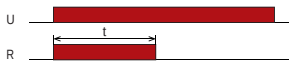
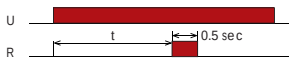
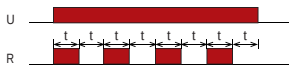
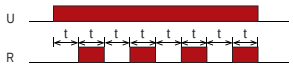
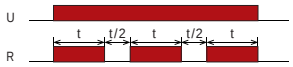


SVT10D010024V SlimLine timer

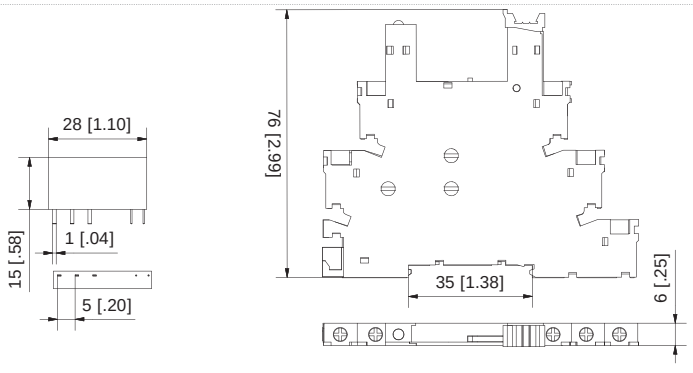
the electronic programmable module has been specifically designed for timing and controlling 5,08 mm PCB relays. The module can be mounted on a DIN-rail and thanks to its 6,22 mm width and compact design it will take up minimum space on any control panel.

With its 6 different functions and the wide timing range available (from 0,05 seconds to 10 hours) the module offers great control versatility within a reduced space.

Functions

Function	Diagram
On delay (switch-on delay)	
On pulse (switch-off delay)	
Fixed pulse	
Symmetrical cycle (start ON)	
Symmetrical cycle (start OFF)	
Asymmetrical cycle (start ON)	

Dimensions (mm-inch)



Features

Programmable multi function electronic device. Up to 6 functions can be configured with 3 trimmers and using 6 different time scales:

[0,05 - 1] [0,5 - 10] [5 - 100] seconds
[0,5 - 10] [5 - 100] minutes
[0,5 - 10] hours

Compact design (6,22 mm), easy mounting and wiring.
SPDT 1-relay output with switching capacity of 6A.
Rail DIM 35mm (T35).
Timing range: 0,05 seconds to 10 hours.
LED indication of relay excitation.
One model covers the whole tension range 12 - 24AC/DC.
Easy programming: This timer can be programmed using a lower scale to adjust their values better. Once the value is programmed, the scale can be changed to the adequate level to be used in operating mode.
Numbering identification label relay.
Retaining clip relay, Anti Shake.

Nominal values

Supply voltage	from 0,8 to 1,1Un (12-24 VAC/DC)	
Rated power	0,5W	
Programming timing range	0,05 seconds to 10 hours	
Operation time	0,01 seconds	
Timing precission	± 1% of set time	
Indicators	Relay excited	Green LED
Output relay	1 SPDT relay with 6A switching capacity (AC1 / 250 V - DC1 / 30V)	
Breaking capactity	6/0,2/0,15 (DC1 30/110/220V)	

Uses and applications

It is often useful in all kind of systems, from industrial applications and buildings. With our programmable timer module it is possible to adjust how the system must works, and it's different programmable functions make it useful in a wide range of possible environments.

Specifications

Room temperature	Working T°	-10° C to 60° C
	Storage T°	-20° C to 70° C
Room humidity	5% to 85 %	
Supply frecuency (AC)	50 - 60 Hz	
Output relay	Resistive load	6A at 250VAC (cosϕ =1)
		6A at 30VDC (L/R = 0 ms)
	Inductive load	1A at 250VAC (cosϕ=0.4)
		1A at 30VDC (L/R = 7 ms)
	Electrical life	≥10^4 cycles
	Mechanical life	≥10^7 cycles
Max. screw torque	0.6Nm	
Mounting	DIN-rail	
Dimensions	6,22 x 90 x 76 mm	
Weight	23 gr	
CE - marking	Yes	
Protection class	IP20	
Pack Unit	20	

This timer can be used with 12VDC and 24VDC relays.

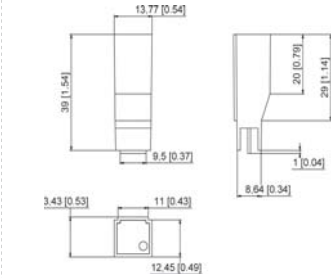
The use of indication and protection modules increases the relays life and verifies their state.

Use them to avoid the destructive effects from the peaks produced by the variation of current when the relays are used with inductive charges.

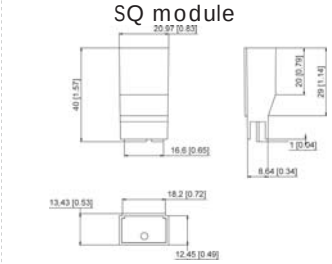
Free-wheeling diodes, varistors, or RC (snubber circuits) are very useful in these cases.

Dimensions (mm-inch)

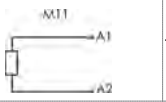
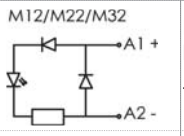
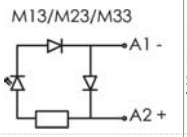
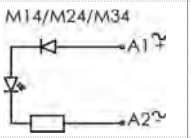
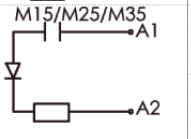
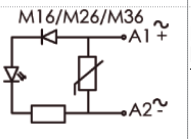
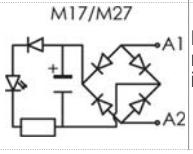
SF module



SQ module



Functions

Function	Operating Range	Code SF	Code SQ	Diagrams	Description
ByPass Module	(110-230VAC)	M11F	M11Q		Bypass module is used between 110-230VAC. The module prevent the residual currents that may arise, affecting the relays coil.
Led + Diode module standard polarity	(6 -24 VDC)	M12F	M12Q		LED + Diode Module is used in VDC, if the led is lit, the relay is energized. The negative peak voltages are shorted by the diode in parallel. The positive is connected to A1 contact.
	(48 - 60 VDC)	M22F	M22Q		
	(110-230VDC)	M32F	M32Q		
Led + Diode module inverse polarity	(6 -24 VDC)	M13F	M13Q		LED + Diode Module is used in VDC, if the led is lit, the relay is energized. The negative peak voltages are shorted by the diode in parallel. The positive is connected to A2 contact.
	(48 - 60 VDC)	M23F	M23Q		
	(110-230VDC)	M33F	M33Q		
Led module	(6 -24 VAC/VDC)	M14F	M14Q		LED Module is used in VAC/VDC, if the led is lit the relay is energized, for the VDC it should be noted that the positive must be connected to A1 contact.
	(48 - 60 VAC/VDC)	M24F	M24Q		
	(110-230VAC/VDC)	M34F	M34Q		
RC module	(6 -24 VAC/VDC)	M15F	M15Q		RC Module is used in VAC/VDC. The RC circuit protect the coil from the voltage spikes.
	(48 - 60 VAC/VDC)	M25F	M25Q		
	(110-230VAC/VDC)	M35F	M35Q		
Led + Varistor module	(6 -24 VAC)	M16F	M16Q		LED + Varistor Module is used in VAC relays, the varistor limits the voltage spikes that can reach the relay coil. The LED indicates if the relay is energized. For VDC be noted that the positive must be connected to A1.
	(48- 60 VAC)	M26F	M26Q		
	(110-230VAC)	M36F	M36Q		
Rectifier + LED module	(6 -24 VAC)	M17F	M17Q		Rectifier + LED Module is used in VDC, The module rectifies the AC input to allow excite coils with currents in DC. The LED indicates if the relay is energized.
	(48- 60 VAC)	M27F	M27Q		

This electronic current monitoring relay has been specially designed to control the intensity on single-phase AC/DC circuits. It compares the set intensity value to the real intensity supported by the circuit, activating the alarms and outputs of the relevant relays in order to protect the system against over and undercurrent between 0,5 and 10A (250 V). For currents greater than 10A a transformer is used (view diagram).

References

Modules Reference	Imput voltage	Output relays
MCU024R2	12/24VAC/DC	2 relay: 6A (250VAC/30VDC)
MCU230R2	110/230VAC/DC	2 relay: 6A (250VAC/30VDC)
Accesories Reference	**Type**	
CPCD01	special cable USB<-->mini-USB	
DEVICES PROGRAMMER	Software	

Functions

Functions 0 to 14 can be configured on a PC with our Devices Programmer software. The user can then load them onto the module with the cable(CPCD01) provided by Relequick, S. A.

Features

The module can be used in two different ways:
Manual mode: configure the function nº 0 only using the trimmer.
Programming mode: With our "Devices Programmer" software* it is possible to program easily up to different functions.
Over, under and window current monitoring with a measuring range from 0,5 to 10A.
Adjustable switch-on/off delay. LED indication of power and alarm.
There are 2 models, with different power supply voltage.

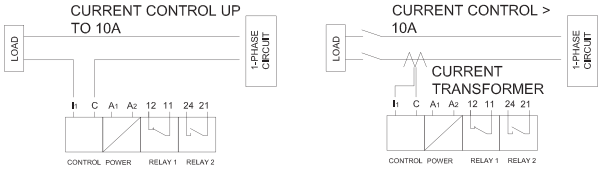
Nominal values

Supply voltage	from 0,8 to 1,1Un12 - 24 VAC/VDC	
	from 0,8 to 1,1Un110 - 230 VAC/VDC	
Current reading range	0,5 - 10 A (AC/DC; without transformer) 20- 200 A with commercial CT	
Current precision	AC	± 5% of full scale
	DC	± 5% of full scale
Switch-on delay	AC	0,02 seconds
	DC	0,2 seconds
Programming time range	0,1 seconds -999 hours	
Time accuracy	± 1% of full scale error	
Repeatability	± 0,01% of set time	
Indicators	Red LED	Alarm
	Green LED	Supply

Specifications

Room Temperature	Working Tº	-10 ºC to 45 ºC (24 V) -10 ºC to 60 ºC (230 V)
	Storage Tº	-40 ºC to 70 ºC
Room humidity	25% to 85%	
Supply frequency (AC)	50 / 60Hz ± 5Hz	
Overcurrent transient (burst) - 100 ms	50A	
Output relays	Resistive load	6 A at 250 VAC (cosϕ =1) 6 A at 30 VDC (L / R = 0 ms)
	Inductive load	1 A at 250 VAC (cosϕ =0,4) 1 A at 30 VDC (L / R = 7 ms)
	Mechanical Life	10^7 cycles
	Electrical Life	3 x 10^4 cycles
Max. screw torque	0,8 Nm	
Mounting	DIN-rail (35 mm)	
Dimensions	22,5 x 76 x 105 mm	
Weight	115 gr	
CE marking	Yes	
Protection class	IP20	

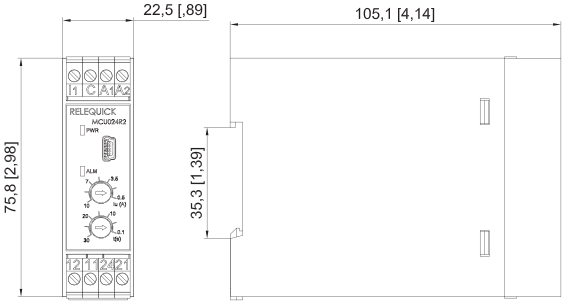
Connection diagrams



Uses and applications

Protection of engines against over- and/or undercurrent.
Detection of resistor failures on heating systems.
Current consumption control.
Security applications for the industry, buildings, lighting etc.

Dimensions (mm-Inch)



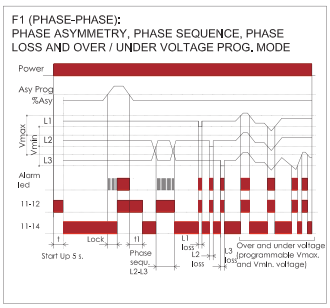
MPH 3-ph loss, asymetry, sequency monitoring

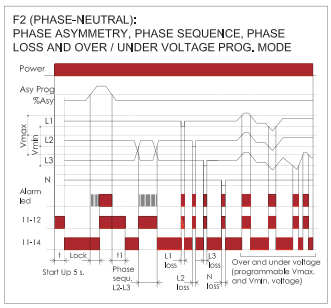
This electronic digital programmable relay has been specially, designed to monitor the voltage asymmetry, loss of phases sequence and loss of phase for three -phase power systems.

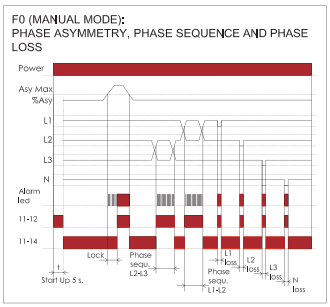
References

Modules Reference	Input and measure voltage
MPH240R1	200 to 240 VAC
MPH480R1	380 to 480 VAC
Accesories Reference	Type
CPCD01	special cable USB<-->mini-USB
DEVICES PROGRAMMER	Software

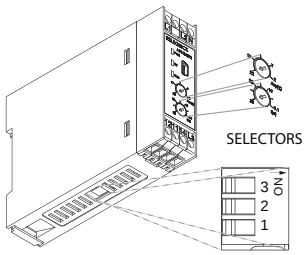
Functions







Functions 0 to 3 can be configured on a PC with our Devices Programmer software. The user can then load them onto the module with the cable (CPCD01) provided by Relequick, S. A.



Uses and applications

The asymmetry, sequence detection and phase loss monitoring has great applications in industry, buildings, and all kinds of electrical installations, both in load monitoring, as in protection of machines or small installations.

Some common applications are the following:

» Protection and prevention due to an imbalance of the asymmetric or one phase loss or the inverse of sequency power in any kind of three phase motors.
» Preventing damages or overheating in the engines.
» Motors, pumps, compressors, forklifts, generators... all of them may be protected with this device in case of phase failures.

Features

The module can be used in two different ways:

Manual mode: configure the function nº 1 only using the trimmer.
Programming mode: With our "Devices Programmer" software it is possible to program easily different functions, as the percentage values of asymmetry and time delay.
The powering of the module is the same three-phase voltage to be monitirized.
The module can detect asymmetry fails from 2% to 22% of nominal voltage, the voltage range from 200 to 480VAC.
Adjustable switch-on/off delay.
Led indications of power, status relay and alarm.
Models with 2 different voltage range of power supply.

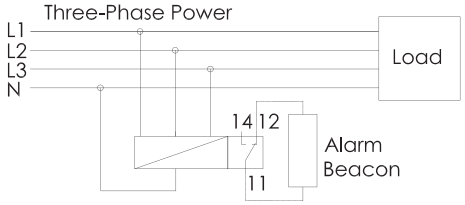
Nominal values

Supply voltage	200 - 240 VAC	
	380 - 480 VAC	
Voltage asymetry range	From 2% until 22% of nominal voltage	
Voltage reading precission	± 2% of full scale	
Switch-on delay	0,02 seconds	
Programming time range	0,1 seconds -145 seconds	
Time accuracy	± 1% of set time	
Repeatability	± 0,01% of set time	
Indicators	Red LED	Alarm
	Green LED	Supply
	Yellow LED	Relay status

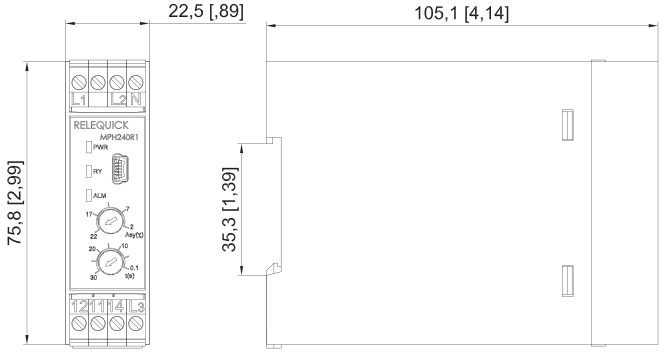
Specifications

Room Temperature	Working Tº	-10 ºC to 60 ºC
	Storage Tº	-40 ºC to 70 ºC
Room humidity	25% to 85%	
Supply frequency (AC)	50 / 60Hz ± 5Hz	
Burst current 100 ms.	400 A, 100 ms max.	
Output relays	Resistive load	6 A at 250 VAC (cos ϕ =1) 6 A at 30 VDC (L / R = 0 ms)
	Inductive load	1 A at 250 VAC (cos ϕ =0,4) 1 A at 30 VDC (L / R = 7 ms)
	Mechanical Life	10^7 cycles
	Electrical Life	3×10^4 cycles
Max. screw torque	0,8 Nm	
Mounting	DIN-rail (35 mm)	
Dimensions	22,5 x 76 x 105 mm	
Weight	150 gr (5.29 Oz)	
CE marking	Yes	
Protection class	IP20	

Connection diagrams



Dimensions mm (Inch)

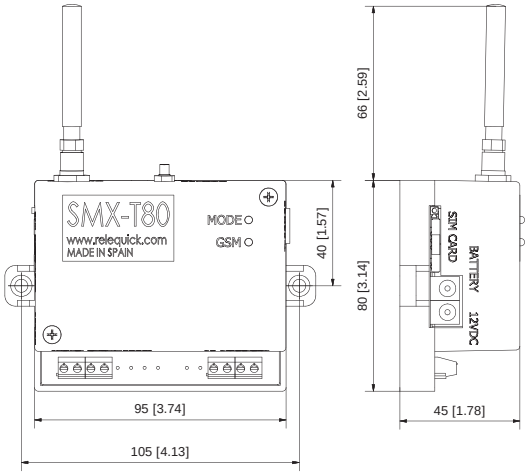


SMX-80 module is the solution for the remote monitoring and control of the temperature.
The SMS temperature information will be received in the mobile phone, also the variations of all values, installation state and fails.
The mobile phone sends a SMS to the module programming the relays output and control the device.
The Kit has SMX-T80 antenna FME and power supply.

Functions

» Output relay control by SMS, (2 output relays).
» Battery supply option to avoid electricity fails. Inform of power supply failure by SMS.
» Inform of the temperature changes according with the program by SMS.
» Inform of connection fail or failure of the temperature sensor by SMS.
» First relay can be programmed to work as a thermostat.
» Second relay can be programmed according with the temperature value setting.

Dimensions (mm-inch)



Accesories

» Temperature sensor “SMX-TEM”.
The external temperature sensor has a range between -25 ºC to 85ºC.

» Battery “SMX-BAT”.
Plum battery of 2V with 800mA, in box format with jack connector for SMX-T80.

» Antennas “SMX-AN1” and “SMX-AN2”.

» Rail DIN accessory “SMX-DIN”.

Features

Programmed by SMS and protected by password.
Information reforwarding without further configuration.
Two switch-buttons for the manual control of the relays.
Manual push button to recharge the temperature advices programmed. Reset push button to return factory program.
Two output relays are prepared for control for Switch-on or off and timing.
One relay can be adjusted as a thermostat (adjustable hysteresis) with two working ways:
» Hot mode: Close when Tº is lower than the Tº programmed.
» Cool mode: Close when Tº is upper than the Tº programmed.
Any change on the relay 2 when there are an advice of temperature change can be made in three ways:
» Automatic: reestablish the alarm when the temperature return to the programmed values.
» Forced: Maintain fix the last advice produced.
» Timing: Avoid a large number of alarm messages (SMS).

Nominal values

Supply voltage	Supply not battery charging		10 - 28V
	Supply battery Charging		17 -28V
Communication	GSM 4 bands 800/900/1.800/1.900 MHz		
	Cinterion modem MC55i		
Modem reboot delay in case of signal failure	10 seconds		
Switch-on delay	0,02 seconds		
Indicators	Led Status	Yellow regular	System switch on
		Yellow	System without alarm
		Yellow blinking	Waiting program
		Green alarm	Lower temperature
		Red alarm	Temperature alarm
		Green led	GSM communication

Specifications

Room Temperature	Working Tº	-5ºC to 50 ºC
	Storage Tº	-10ºC to 60 ºC
Room humidity	Working	5% to 85%
	Storage	5% to 85%
Power supply	Max. comsuption (during Battery charge) 5 W	
	1-4 terminals allows 12VDC of supply for other device	
Supply frequency (AC)	50 / 60 Hz	
Output relays	Resistive load	5 A at 250 VAC (cosϕ = 1) 5 A at 30 VDC (L / R = 0 ms)
	Inductive load	1 A at 250 VAC (cosϕ = 0,4) 1 A at 30 VDC (L / R = 7 ms)
	Mechanical Life	10^7 cycles
	Electrical Life	3×10^4 cycles
Mounting	Pannel mounting with accesory for rail DIN SMX-DIN	
Dimensions	146 x 105 x 45 mm	
Weight	166 gr	
IP protection	IP 40	
CE marking	Yes	

Uses and applications

Monitoring in real time and programming the temperature.
Food warehouses.
Heating and freezing systems.
Cold stores.
Computer installations.
Laboratories.
In every place where the temperature is important to control.

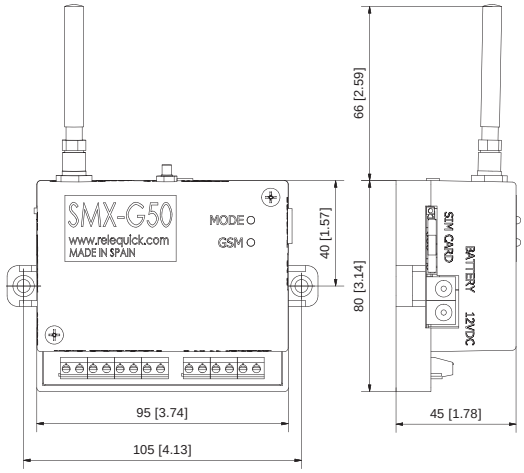
SMX-G50 GSM module

SMX-G50 module is the solution for the remote monitoring and control the temperature.
The SMS temperature information will be received in the mobile phone, also the variations of all values, installation state and fails.
The mobile phone sends a SMS to the module programming the relays output and control the device.
The Kit has SMX-G50, antenna FME, RS232 cable, and power supply.

Functions

» Output relay control by SMS, (Two output relays).
» Battery supply option to avoid electricity fails. Inform of power supply failure by SMS.
» Inform of the temperature changes according with the program by SMS.
» Inform of connection fail or failure of the temperature sensor by SMS.
» Two alarms input that advice by SMS when they open or close according with the program.
» Control the output realy using X10 module.
» The relays 2 and 3 can be controlled for switch-on or switch-off and timing.
» It can send orders to any X10 device.

Dimensions (mm-inch)



Accesories

» Temperature sensor “SMX-TEM”.
The external temperature sensor has a range between -25 ºC to 85ºC.

» Battery “SMX-BAT”.
Plum battery of 2V with 800mA, in box format with jack connector for SMX-G50.

» Antennas “SMX-AN1” and “SMX-AN2”.

» Rail DIN accessory “SMX-DIN”.

Features

Programmable by SMS and Gplus software free. Protected by password.
Information return without programming necessities.
Two digital Inputs one to connect a external thermostat.
Connection with X10 devices.
Three output relays are controlled for Switch-on or off and timing.
Manual push button control the relay 1 allowing pass from switch--on to switch-off only pushing time to time.
Reset push button to return factory program.
Control the relay 1 output to X10 adress working like a heatting system according with the thermostat input allowing switch-on or switch-off and timing and fix a value with the external thermostat.
Alarm of Max and Min. temperature.
the alarms can be sent to 3 mobile phones.
Indication LED state of the heating system and GSM communication.

Nominal values

Supply voltage	Supply not battery charging 10 - 28 V		
	Supply battery Charging 17 -28 V		
Communication	GSM 4 bands 800/900/1.800/1.900 MHz		
	Cinterion modem MC55i		
Modem reboot delay in case of signal failure	10 seconds		
Switch-on delay	0,02 seconds		
Indicators	Led Status	Yellow regular	System switch on
		Yellow	System without alarm
		Yellow blinking	Waiting program
		Green alarm	Lower temperature
		Red alarm	Temperature alarm
		Green led	GSM communication

Specifications

Room Temperature	Working Tº	-5ºC to 50 ºC
	Storage Tº	-10ºC to 60 ºC
Room humidity	Working	5% to 85%
	Storage	5% to 85%
Power supply	Max. comsuption (during Battery charge) 5 W	
	1-4 terminals allows 12VDC of supply for other device	
Supply frequency (AC)	50 / 60 Hz	
Output relays	Resistive load	5 A at 250 VAC (cosϕ = 1) 5 A at 30 VDC (L / R = 0 ms)
	Inductive load	1 A at 250 VAC (cosϕ = 0,4) 1 A at 30 VDC (L / R = 7 ms)
	Mechanical Life	10^7 cycles
	Electrical Life	3×10^4 cycles
Mounting	Pannel mounting with accesory for rail DIN SMX-DIN	
Dimensions	146 x 105 x 45 mm	
Weight	166 gr	
IP protection	IP 40	
CE marking	Yes	

Uses and applications

This remote control module can be used in all the industrial and domotic instalations in special cases that the electrical system needs to be controlled in an easy way and in distance.

Garage doors.
External control of temperature systems.
Cooling and heating systems.
Domotic and industrial automation.

In every place where the temperature is important to control.

Devices Programmer is a software for easy configuration to use with a friendly graphic in which can be selected the different functions for each module.

Devices Programmer is a tool that allows to edit, compile and download the implemented program into the module’s memory.

» To create a program is simple and intuitive in that software, allowing the development of complex programs with our modules.

» You can save the program in your computer, so you can load the program developed in all the modules you want.

» The software has a main menu and each function has a short description about it.

» It is possible to select the language among English, French, Spanish and German.

» The software can be downloaded from our website www.relequick.com, freely.

» Always to program our modules, you need to use our cable converter series - USB CPCD01.

» Easy selection among the different modules.

This software can be use to program the following modules: MQPMM, RFS1, MCU and MPH. Sooner in more modules.

Note: you must disconnect the power supply of the module before connecting it with the PC.

Programming modules RFS1 and MQPMM

» The program allows you to select the appropriate functions in an easy way through various windows and drawings for each function.

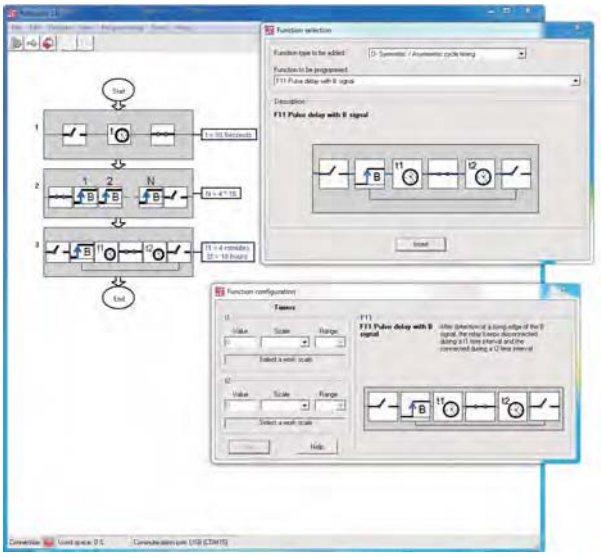
» All functions are placed in the main window in order to easily see the program that you are editing.

» The program is developed as a “flow diagram” in the workspace for an easy understanding

» "Devices Programmer" allows to program many functions in the same module making chains of functions and jumping between them.

» Allows to change the functions programmed only with a “Click”.

» The flow diagram of the program finalizes with the word “End” or with a flowchart jump making a loop.



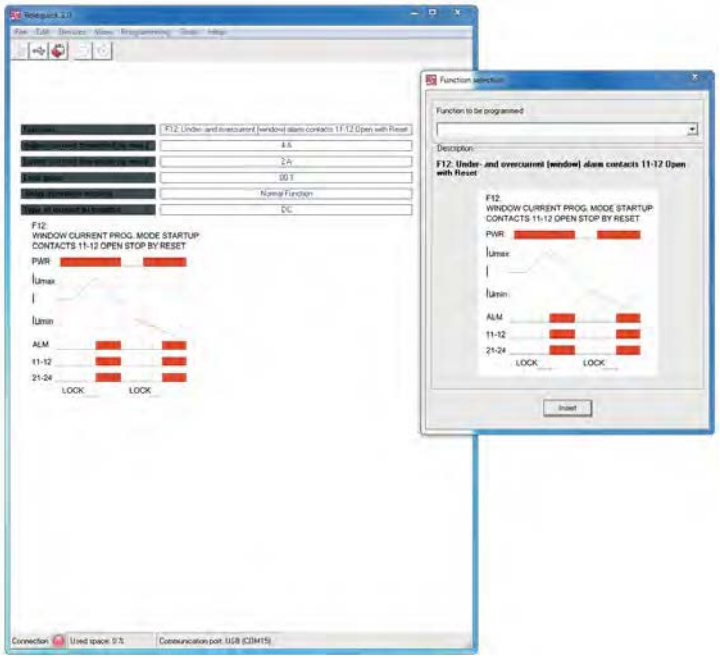
Programming modules MCU and MPH

-The module has a factory program installed that may be programmed by selectors. The sofware allows program different functions by the USB cable. It also allows back to factory mode.

- The function programmed by the software gets more accuracy than the program made by the potentiometers.

- The programs of these modules are shown so that understanding is easy and intuitive .

- Allows to change the functions programmed only with a “Click”



Programming the modules

Once the program is finished, it can be donwloaded into the module in three very easy steps:

1. Create a connection with the module:
   - Choice the USB communications port in “Programming > Port”.
   - Establish the communication “Click” in the icon and the signal of the connection will change to green.

2. Compile the program.
   - Compile the program “Click” in the next icon:
3. Download the program in the module memory.
   - Download the program “Click in the next icon:

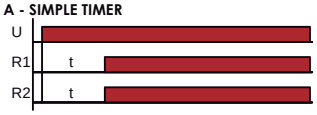
Note: you must turn-off the power supply of the module before to connect the module with the PC.

Functions of RFS1 solid state relay programmable

	Function name	Initial state	Diagram	Description
Simple timer	Switch-on delay	CO NO	U R t	Delay timing (t time) to the connection of the relay.
	Switch-off delay	CO NO	U R t	Delay timing (t time) to the disconnection of the relay.
Symmetric and asymmetric cycle timing functions	Pulse delay	CO NO	U R t1 t2 t1 t2	After a t1 delay the relay is switched on, and keeps on for a t2 lapse. The delay begins when the module is powered.
	Symmetric timing cycle (starting closed)	CO NO	U R t t t t	Once the module is powered a symmetric cycle begins, being the relay closed for a t timelapse and open during the next t interval.
	Symmetric timing cycle (starting open)	CO NO	U R t t t t	Once the module is powered a symmetric cycle begins, being the relay open for a t timelapse and closed during the next t interval.
	Asymmetric timing cycle (starting closed)	CO NO	U R t1 t2 t1 t2 t1	Once the module is powered an asymmetric cycle begins, being the relay closed for a t1 timelapse and open during a t2 interval.
	Asymmetric timing cycle (starting open)	CO NO	U R t1 t2 t1 t2 t1	Once the module is powered an asymmetric cycle begins, being the relay open for a t1 timelapse and closed during a t2 interval.
DC load regulation	PWM progressive connection ramp (for DC loads)	CO NO	U R t	The relay is connected slowly as a progressive connection ramp (PWM). It is completed during the specified time t.
	PWM progressive disconnection ramp (for DC loads)	CO NO	U R t	The relay is disconnected slowly as a progressive disconnection ramp (PWM). It is completed during the specified time t.

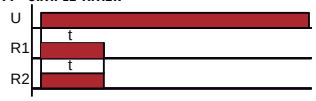
Functions MQPMM timer and counter module

A - SIMPLE TIMER



F0:CONNECTION DELAY
Once the system is supplied with a voltage U, after a time t, the relays R1 and R2 will be activated simultaneously. (the relay R2 is only available for models MTIR2 and MTIR2 MODBUS)

A - SIMPLE TIMER

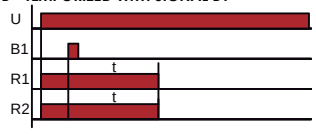


F1:DISCONNECTION DELAY
Once the system is supplied with a voltage U, after a time t, the relays R1 and R2 will be deactivated simultaneously. (the relay R2 is only available for models MTIR2 and MTIR2 MODBUS)

B - TEMPORIZED WITH SIGNAL B1

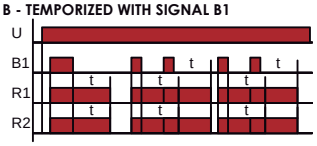
F2:CONNECTION DELAY BY FLANK
Once the system is supplied with a voltage U, when an up flank of the signal B1 is produced, the relays R1 and R2 will be activated simultaneously after a time t. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function. (the relay R2 is only available for models MTIR2 and MTIR2 MODBUS).

B - TEMPORIZED WITH SIGNAL B1



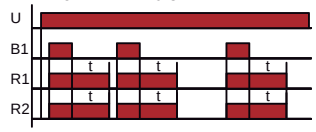
F3:ACTIVATION WITH U AND DISCONNECTION DELAY BY FLANK EDGE OF SIGNAL B1
Once the system is supplied with a voltage U, the relays R1 and R2 will be activated. When an up flank of the signal B1 is produced, the relays R1 and R2 will be deactivated simultaneously after the programmed time t. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function. (the relay R2 is only available for models MTIR2 and MTIR2 MODBUS).

B - TEMPORIZED WITH SIGNAL B1



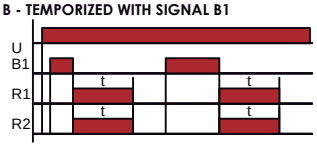
F4:DISCONNECTION DELAY BY DOWN FLANK , WITH RELAY CONNECTION BY UP FLANK OF SIGNAL B1
Once the system is supplied with a voltage U, When an up flank of the signal B1 is produced,the relays R1 and R2 will be activated simultaneously. With the flank down of the same pulse, a time t starts and at the end of that time the relays R1 and R2 will be deactivated simultaneously. If before the end of time t there is a new pulse of the signal B1, a new time t will begin with the down flank of the second B1 and at the end ot this time t the relays R1 and R2 will be deactivated simultaneously and so forth. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function. (the relay R2 is only available for models MTIR2 and MTIR2 MODBUS).

B - TEMPORIZED WITH SIGNAL B1



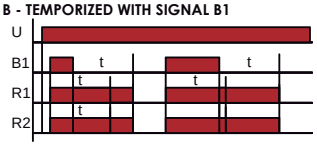
F5:DISCONNECTION DELAY BY UP FLANK OF SIGNAL B1
Once the system is supplied with a voltage U, When an up flank of the signal B1 is produced, the relays R1 and R2 will be activated simultaneously for a time t. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function. (the relay R2 is only available for models MTIR2 and MTIR2 MODBUS).

B - TEMPORIZED WITH SIGNAL B1



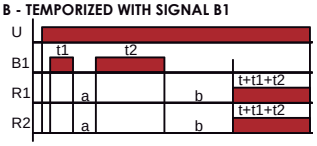
F6:DISCONNECTION DELAY BY FLANK DOWN OF SIGNAL B1
Once the system is supplied with a voltage U, When a down flank of the signal B1 is produced, the relays R1 and R2 will be activated simultaneously for a time t. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function. (the relay R2 is only available for models MTIR2 and MTIR2 MODBUS).

B - TEMPORIZED WITH SIGNAL B1



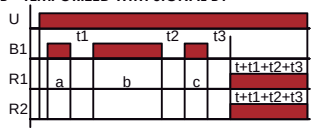
F7:DISCONNECTION DELAY BY UP OR DOWN FLANK OF SIGNAL B1
Once the system is supplied with a voltage U, When a up flank of the signal B1 is produced, the relays R1 and R2 will be activated simultaneously for a time t. If before the end of time t there is a down flank of the signal B1, the relays R1 and R2 will remain active again a time t from the down flank of the signal B1. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

B - TEMPORIZED WITH SIGNAL B1



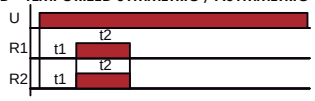
F8:DISCONECTION DELAY INTERRUPTIBLE BY UP FLANK OF SIGNAL B1
Once the system is supplied with a voltage U, and after the programmed time t, the system will start to count the time of duration t1 when the firt pulse of B1 is finished. It will count for a time “a”, it will be interrupted by a second pulse of B1 of duration t2 and at the end of the second pulse the system will start to count for a time “b”, once the time “b” is finished Ithe relays R1 and R2 will be activated simultaneously and remain active while power is supplied. So the total delay will be the sum of t + t1 + t2 etc., also t will be the sum of a+b+c...+n interruptions. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

B - TEMPORIZED WITH SIGNAL B1



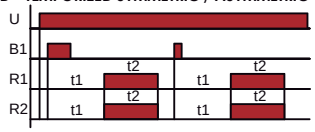
F9:CONNECTION DELAY INTERRUPTIBLE BY DOWN FLANK OF SIGNAL B1
Once the system is supplied with a voltage U, and after a programmed time delay t, this shall begin with the start of the first pulse duration B1 "a", will be interrupted by the down flank of the first pulse B1, it will be stopped a time t1 to start again with the second pulse duration B1 "b", will be interrupted by the down flank of the second pulse B1 and it will be stopped a time t2 to start again with the third pulse duration B1 "c", and elapsed a time t3 relays R1 and R2 will be activated until supply termination. The total retarded time will be the sum of t+t1+t2+t3 etc., also t will be the sum of a+b+c...+n pulse times. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

D - TEMPORIZED SYMMETRIC / ASYMMETRIC



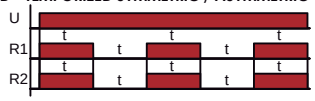
F10:PULSE DELAY
Once the system is supplied with a voltage U, after a programmed time delay t1, the relays R1 and R2 will be activated simultaneously for a time t2.

D - TEMPORIZED SYMMETRIC / ASYMMETRIC



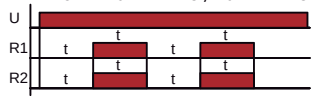
F11:PULSE DELAY WITH SIGNAL B1
Once the system is supplied with a voltage U, after an up flank of the signal B1, It starts a delay time t1 after which the relays R1 and R2 will be activated simultaneously for a time t2. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

D - TEMPORIZED SYMMETRIC / ASYMMETRIC



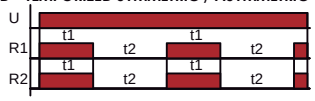
F12:SYMMETRIC TIMING CYCLE (INITIALLY ACTIVATED)
Once the system is supplied with a voltage U, a symmetric timing cycle starts with time value “t” for the activation and time t for the deactivation until supply termination. The relays R1 and R2 are initialy activated.

D - TEMPORIZED SYMMETRIC / ASYMMETRIC



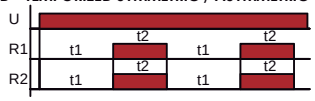
F13:SYMMETRIC TIMING CYCLE (INITIALLY DEACTIVATED)
Once the system is supplied with a voltage U, a symmetric timing cycle starts with time value “t” for the activation and time t for the deactivation until supply termination. The relays R1 and R2 are initialy deactivated.

D - TEMPORIZED SYMMETRIC / ASYMMETRIC



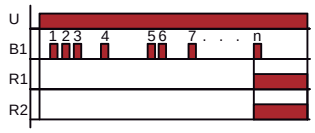
F14:ASYMMETRIC TIMING CYCLE (INITIALLY ACTIVATED)
Once the system is supplied with a voltage U, an asymmetric timing cycle starts with time value “t1” for the activation and time “t2” for the deactivation until supply termination. The relays R1 and R2 are initialy activated.

D - TEMPORIZED SYMMETRIC / ASYMMETRIC



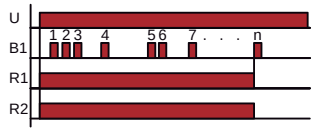
F15:ASYMMETRIC TIMING CYCLE (INITIALLY DEACTIVATED)
Once the system is supplied with a voltage U, an asymmetric timing cycle starts with time value “t1” for the activation and time “t2” for the deactivation until supply termination. The relays R1 and R2 are initialy deactivated.

E - SIMPLE COUNTING



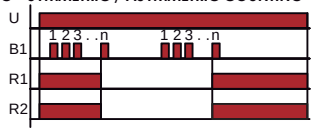
F16:COUNTER TO CONNECTION BY "N" UP FLANKS OF SIGNAL B1
Once the system is supplied with a voltage U, when the system recieves n pulses of the signal B1 the relays R1 and R2 will be activated in the up flank of the n pulse of the signal B1 and will remain ativated until supply termination. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

E - SIMPLE COUNTING



F17:COUNTER TO DISCONNECTION BY "N" UP FLANKS OF B1
Once the system is supplied with a voltage U, when the system recieves n pulses of the signal B1 the relays R1 and R2 will be deactivated in the up flank of the n pulse of the signal B1. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

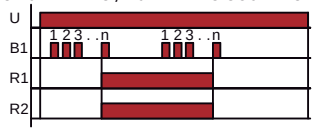
G - SYMMETRIC / ASYMMETRIC COUNTING



F18:SYMMETRIC COUNTER CYCLE BY "N" UP FLANKS BY B1(INITIALY ACTIVATED)
Once the system is supplied with a voltage U, the relays R1 and R2 will remain active until the arrival of “n” pulses of signal B1. When the up flank of the pulse n of the signal B1 arrives, the relay R1 and R2 will be disconnected. The relays will remain on that state until the arrival of new n pulses of signal B1, activating the relays with the up flank of the pulse n of the signal B1 arrives. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

Index category	Category description	Index category	Category description
A	Simple timer	E	Simple counter
B	Temporized functions with signal B1	F	Complex counter
C	Temporized functions with signal B1 and B2	G	Counter Asymmetric /Symmetric
D	Temporized symmetric/asymmetric	H	Load controls DC (pwm)

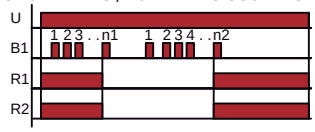
G - SYMMETRIC / ASYMMETRIC COUNTING



F19:SYMMETRIC COUNTER CYCLE BY "N" UP FLANKS BY SIGNAL B1(INITIALY DEACTIVATED)

Once the system is supplied with a voltage U, the relays R1 and R2 will remain inactive until the arrival of “n” pulses of signal B1. When the up flank of the pulse n of the signal B1 arrives, the relays R1 and R2 will be activated. The relays will remain on that state until the arrival of new n pulses of signal B1, deactivating the relays with the up flank of the pulse n of the signal B1 arrives. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

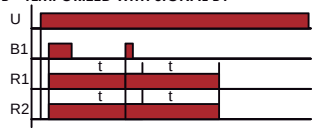
G - SYMMETRIC / ASYMMETRIC COUNTING



F20:ASYMMETRIC COUNTER CYCLE BY "N1" AND “N2" UP FLANKS OF SIGNAL B1(INITIALY ACTIVATED)

Once the system is supplied with a voltage U, the relays R1 and R2 will remain active until the arrival of n1 pulses of signal B1. When the up flank of the pulse n1 of the signal B1 arrives, the relays R1 and R2 will be deactivated. The relays will remain on that state until the arrival of new n2 pulses of signal B1, activating the relays with the up flank of the pulse n2 of the signal B1 arrives. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

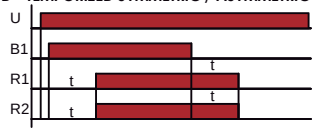
B - TEMPORIZED WITH SIGNAL B1



F21: UP FLANK DELAY NEST-ABLE BY SIGNAL B1

Once the system is supplied with a voltage U, with the up flank of a signal B1 is initiated a disconnection delay of the relay R1 and R2 with time t. If before the end of it is received another pulse of signal B1, then the relays will be activated a time t from the flank edge of this second pulse of signal B1. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

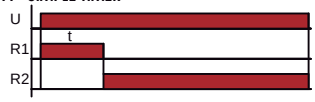
D - TEMPORIZED SYMMETRIC / ASYMMETRIC



F22:LOCKING AND CUTTING CYCLE WITH SIGNAL B1

Once the system is supplied with a voltage U, when an up flank of the signal B1 a connection delay with time t is initiated for the relays R1 and R2, after de up flank of the signal B1, a disconnection delay with time t is initiated for the relays R1 and R2. In the modules that have input B2, as MTIR2, the state of this signal B2 is irrelevant in this function.

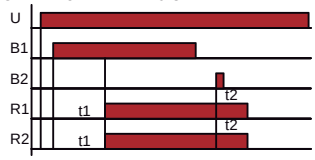
A - SIMPLE TIMER



F23: CONNECTION DELAY BETWEEN RELAYS R1 AND R2

Once the system is supplied with a voltage U, the relay R1 will be activated, after a time t, the relay R1 will be deactivated and the relay R2 will remain activated until supply termination. This function is available for MTIR2.

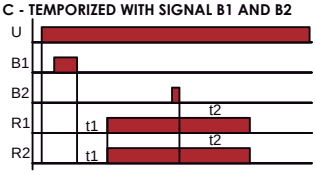
C - TEMPORIZED WITH SIGNAL B1 AND B2



F24:CONNECTION DELAY BY UP FLANK OF SIGNAL B1 AND DISCONNECTION DELAY BY UP FLANK OF SIGNAL B2

Once the system is supplied with a voltage U, with the up flank of signal B1 is initiated a connection delay of the relays R1 and R2 with time t1. The relays will remain active until the arrival of a up flank of signal B2, which it will start a disconnection delay of the relays R1 and R2 with time t2. This function is available for MTIR2.

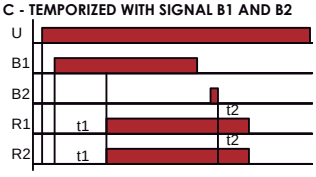
C - TEMPORIZED WITH SIGNAL B1 AND B2



F25:CONNECTION DELAY BY DOWN FLANK OF SIGNAL B1 AND DISCONNECTION DELAY BY DOWN FLANK OF SIGNAL B2

Once the system is supplied with a voltage U, with the down flank of signal B1 is initiated a connection delay of the relays R1 and R2 with time t1. The relays will remain active until the arrival of a down flank of signal B2, which it will start a disconnection delay of the relays R1 and R2 with time t2. This function is available for MTIR2.

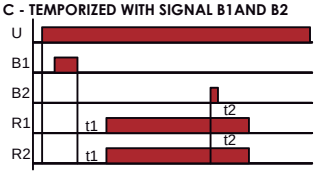
C - TEMPORIZED WITH SIGNAL B1 AND B2



F26:CONNECTION DELAY BY UP FLANK OF SIGNAL B1 AND DISCONNECTION DELAY BY DOWN FLANK OF SIGNAL B2

Once the system is supplied with a voltage U, with the up flank of signal B1 is initiated a connection delay of the relays R1 and R2 with time t1. The relays will remain active until the arrival of a down flank of signal B2, which it will start a disconnection delay of the relays R1 and R2 with time t2. This function is available for MTIR2.

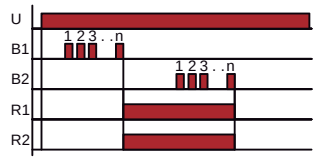
C - TEMPORIZED WITH SIGNAL B1AND B2



F27:CONNECTION DELAY BY DOWN FLANK OF SIGNAL B1 AND DISCONNECTION DELAY BY UP FLANK OF SIGNAL B2

Once the system is supplied with a voltage U, with the down flank of signal B1 is initiated a connection delay of the relays R1 and R2 with time t1. The relays will remain active until the arrival of an up flank of signal B2, which it will start a disconnection delay of the relays R1 and R2 with time t2. This function is available for MTIR2.

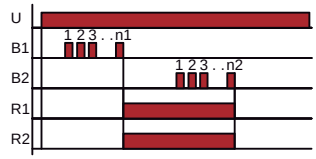
F - COMPLEX COUNTING



F28:SYMMETRIC COUNTING FOR "N" DOWN FLANKS OF SIGNAL B1(INITIALY DEACTIVATED) AND "N" DOWN FLANKS OF SIGNAL B2

Once the system is supplied with a voltage U, the relays R1 and R2 will remain inactive until the arrival of n pulses of the signal B1. With the down flank of the pulse number n of the signal B1 the relays R1 and R2 will be activated. The relays will remain activated until the arrival of an up flank of signal B2. With the arrival of the up flank of the pulse n of the signal B2, the relays R1 and R2 will be deactivated. This function is available for MTIR2.

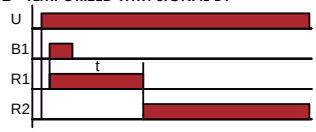
F - COMPLEX COUNTING



F29:ASYMMETRIC COUNTING FOR "N1" DOWN FLANKS OF SIGNAL B1(INITIALY DEACTIVATED) AND "N2" DOWN FLANKS OF SIGNAL B2

Once the system is supplied with a voltage U, the relays R1 and R2 will remain inactive until the arrival of n1 pulses of the signal B1. With the down flank of the pulse number n1 of the signal B1 the relays R1 and R2 will be activated. The relays will remain activated until the arrival of an up flank of signal B2. With the arrival of the up flank of the pulse n2 of the signal B2, the relays R1 and R2 will be deactivated. This function is available for MTIR2.

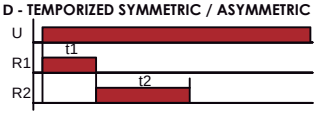
B - TEMPORIZED WITH SIGNAL B1



F30:UP FLANK DELAY OF SINGAL B1 BETWEEN RELAY CONNECTIONS OF R1 AND R2

Once the system is supplied with a voltage U, with the up flank of a signal B1 the relay R1 will be activated for a programmed time t. Elapsed this time, the relay R1 will be deactivated and the relay R2 will be activated until supply termination. the state of this signal B2 is irrelevant in this function. This function is available for MTIR2.

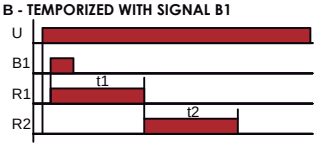
D - TEMPORIZED SYMMETRIC / ASYMMETRIC



F31: PULSE DELAY (R1 INTIALY ACTIVATED AND R2 INTIALY DEACTIVATED)

Once the system is supplied with a voltage U, a connection delay of the relays R1 with programmed time t1 is initiated. Elapsed this time, the relay R1 will be deactivated and the relay R2 will be activated, then a disconnection delay with programmed time t2 will be initiated for relay R2. This function is available for MTIR2.

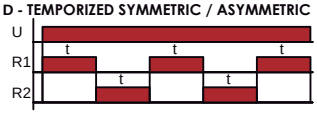
B - TEMPORIZED WITH SIGNAL B1



F32:PULSE DELAY FOR UP FLANK OF B1 (INITIALY R1 ACTIVATED AND R2 INITIALY DEACTIVATED)

Once the system is supplied with a voltage U, after the up flank of the signal B1, a connection delay of the relays R1 with programmed time t1 is initiated. Elapsed this time, the relay R1 will be deactivated and the relay R2 will be activated, then a disconnection delay of the relay R2 with programmed time t2 will be initiated. the state of this signal B2 is irrelevant in this function. This function is available for MTIR2.

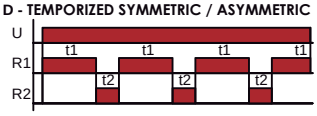
D - TEMPORIZED SYMMETRIC / ASYMMETRIC



F33: SYMMETRIC CYCLE TIMED(R1 INITIALY ACTIVATED)

Once the system is supplied with a voltage U, a symmetric cycle timed is initiated with a programmed time t. The first relay to be activated is the relay R1. This function is available for MTIR2.

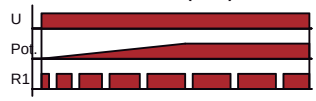
D - TEMPORIZED SYMMETRIC / ASYMMETRIC



F34: ASYMMETRIC CYCLE TIMED(R1 INITIALY ACTIVATED)

Once the system is supplied with a voltage U, an asymmetric cycle timed is initiated with programmed times t1 and t2. The first relay to be activated is the relay R1. This function is available for MTIR2.

H - LOADS CONTROL DC (PWM)



F35: LOAD CONTROLS ON DC WITH POTENTIOMETER REGULATOR

Once the system is supplied with a voltage U, when you insert the potentiometer regulator in the RFS1LS connector, you can control the DC load with a generated PWM signal.

H - LOADS CONTROL DC (PWM)

F36:PWM EDGE OF PULSE WIDTH FOR DC LOADS

Once the system is supplied with a voltage U, a modulation connection pulse width starts in relay R1, increasing the pulse width on ramp edge during a t time.

H - LOADS CONTROL DC (PWM)

F37:PWM DOWN OF PULSE WIDTH FOR DC LOADS

Once the system is supplied with a voltage U, a modulation connection pulse width starts in relay R1, decreasing the pulse width on ramp edge during a t time.

Index category	Category description	Index category	Category description
A	Simple timer	E	Simple counter
B	Temporized functions with signal B1	F	Complex counter
C	Temporized functions with signal B1 and B2	G	Counter Asymmetric /Symmetric
D	Temporized symmetric/asymmetric	H	Load controls DC (pwm)