Product datasheet

Specifications

current control relay, Harmony Control Relays, 4mAâ€¦1 A, 2CO, 24â€¦240V AC DC

RM22JA31MR

Main

Range of product	Harmony Control Relays
Relay type	Current control relay
Product or component type	Current control relay
Relay name	RM22JA
Relay monitored parameters	Overcurrent or undercurrent detection Overcurrent or undercurrent in window mode
time delay	Adjustable 0.1...30 s, +/- 10 % of the full scale value Tt- time delay upon fault
Switching capacity in VA	2000 VA
Minimum switching current	10 mA at 5 V DC
Maximum switching current	8 A AC
Maximum power consumption in VA	3.5 VA
Measurement range	4 mA...1 A current AC/DC 50/60 Hz
Utilisation category	AC-15 conforming to IEC 60947-5-1 DC-13 conforming to IEC 60947-5-1 AC-1 conforming to IEC 60947-4-1 DC-1 conforming to IEC 60947-4-1
Contacts type and composition	2 C/O

Complementary

Reset time	1500 ms at maximum voltage
Maximum switching voltage	250 V AC
Supply voltage limits	20.4…264 V AC/DC
operating voltage tolerance	- 15 % + 10 % Un
Maximum power consumption in W	1.5 W DC
Resistance across terminals	2.5 Ohm at E1-M terminals 0.5 Ohm at E2-M terminals 0.1 Ohm at E3-M terminals
Output contacts	2 C/O
Nominal output current	8 A
Maximum measuring cycle	100 ms measurement cycle as true rms value
Internal input resistance	0.5 Ohm 2.5 Ohm 0.1 Ohm
Setting accuracy of the switching threshold	+/- 10 % of the full scale

Switching threshold drift	<= 0.05 % per degree centigrade depending permissible ambient air temperature <= 1 % within the supply voltage range
Setting accuracy of time delay	10 P
Time delay drift	<= 0.05 % per degree centigrade depending permissible ambient air temperature <= 1 % within the supply voltage range
Hysteresis	5…50 % adjustable of threshold setting 3 % fixed of full scale for window mode
delay at power up	0.3 s
Repeat accuracy	+/- 0.5 % for input and measurement circuit +/- 0.2 % for time delay
Measurement error	< 1 % over the whole range with voltage variation 0.05 %/°C with temperature variation
Response time	<= 500 ms
Threshold setting	10...100 %
Overvoltage category	III conforming to IEC 60664-1 III conforming to UL 508
Insulation resistance	> 100 MOhm at 500 V DC conforming to IEC 60255-27
Insulation	Between supply and measurement
Connections - terminals	Screw terminals, 2 x 0.5...2 x 2.5 mm² (AWG 20...AWG 14) solid without cable end Screw terminals, 2 x 0.2...2 x 1.5 mm² (AWG 24...AWG 16) flexible with cable end Screw terminals, 1 x 0.5...1 x 3.3 mm² (AWG 20...AWG 12) solid without cable end Screw terminals, 1 x 0.2...1 x 2.5 mm² (AWG 24...AWG 14) flexible with cable end
Tightening torque	0.6…1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Local signalling	LED (yellow) for relay ON LED (green) for power ON
Mounting support	35 mm DIN rail conforming to IEC 60715
Electrical durability	100000 cycles
Mechanical durability	10000000 cycles
[Un] rated nominal voltage	24...240 V AC/DC 50/60 Hz, non self-powered
Safety reliability data	MTTFd = 296.8 years B10d = 270000
Contacts material	Cadmium free
Width	22.5 mm
Control type	With test button
Net weight	0.11 kg

Environment

Immunity to microbreaks	50 ms

Electromagnetic compatibility	Immunity for residential, commercial and light-industrial environments conforming to IEC 61000-6-1 Immunity for industrial environments conforming to IEC 61000-6-2 Emission standard for residential, commercial and light-industrial environments conforming to IEC 61000-6-3 Emission standard for industrial environments conforming to IEC 61000-6-4 Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2 Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2 Radiated radio-frequency electromagnetic field immunity test - test level: 10 V/m level 3 conforming to IEC 61000-4-3 Electrical fast transient/burst immunity test - test level: 4 kV level 4 (direct) conforming to IEC 61000-4-4 Electrical fast transient/burst immunity test - test level: 2 kV level 4 (capacitive coupling) conforming to IEC 61000-4-4 Surge immunity test - test level: 4 kV level 4 (common mode) conforming to IEC 61000-4-5 Surge immunity test - test level: 2 kV level 4 (differential mode) conforming to IEC 61000-4-5 Conducted and radiated emissions class B group 1 conforming to CISPR 11 Conducted and radiated emissions class B conforming to CISPR 22
Standards	IEC 60255-1
Product certifications	CSA CE EAC CCC GL RCM UL
Ambient air temperature for storage	-40…70 °C
Ambient air temperature for operation	-20…50 °C at 60 Hz -20…60 °C at 50 Hz
Relative humidity	93…97 % at 25…55 °C conforming to IEC 60068-2-30
Vibration resistance	0.075 mm (f= 10…58.1 Hz) not in operation conforming to IEC 60068-2-6 1 gn (f= 10…58.1 Hz) not in operation conforming to IEC 60068-2-6 0.035 mm (f= 58.1…150 Hz) in operation conforming to IEC 60068-2-6 0.5 gn (f= 58.1…150 Hz) in operation conforming to IEC 60068-2-6
Shock resistance	15 gn (duration = 11 ms) for not in operation conforming to IEC 60068-2-27 5 gn (duration = 11 ms) for in operation conforming to IEC 60068-2-27
IP degree of protection	IP20 (terminals) conforming to IEC 60529 IP40 (housing) conforming to IEC 60529 IP50 (front panel) conforming to IEC 60529
Pollution degree	3 conforming to IEC 60664-1 3 conforming to UL 508
Dielectric test voltage	2.5 kV, 1 min AC 50 Hz conforming to IEC 60255-27

Packing Units

Unit Type of Package 1	PCE
Number of Units in Package 1	1
Package 1 Height	2.6 cm
Package 1 Width	8.2 cm
Package 1 Length	9.5 cm
Package 1 Weight	121.0 g
Unit Type of Package 2	S02
Number of Units in Package 2	40
Package 2 Height	15.0 cm
Package 2 Width	30.0 cm

Package 2 Length	40.0 cm
Package 2 Weight	5.297 kg
Unit Type of Package 3	P06
Number of Units in Package 3	640
Package 3 Height	50.0 cm
Package 3 Width	80.0 cm
Package 3 Length	60.0 cm
Package 3 Weight	92.58 kg

Sustainability

Green Premium^{TM} label is Schneider Electric's commitment to delivering products with best-in-class environmental performance. Green Premium promises compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO_2 products.

Guide to assessing product sustainability is a white paper that clarifies global eco-label standards and how to interpret environmental declarations.

Learn more about Green Premium >

Guide to assess a product's sustainability >

Transparency

RoHS/REACh

Well-being performance

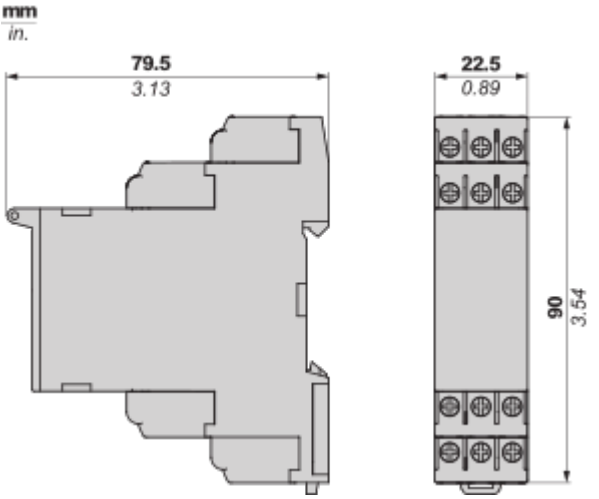
Mercury Free	
Rohs Exemption Information	Yes

Certifications & Standards

Reach Regulation	REACh Declaration
Eu Rohs Directive	Pro-active compliance (Product out of EU RoHS legal scope)
China Rohs Regulation	China RoHS declaration
Environmental Disclosure	Product Environmental Profile
Weee	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins
Circularity Profile	End of Life Information

Dimensions Drawings

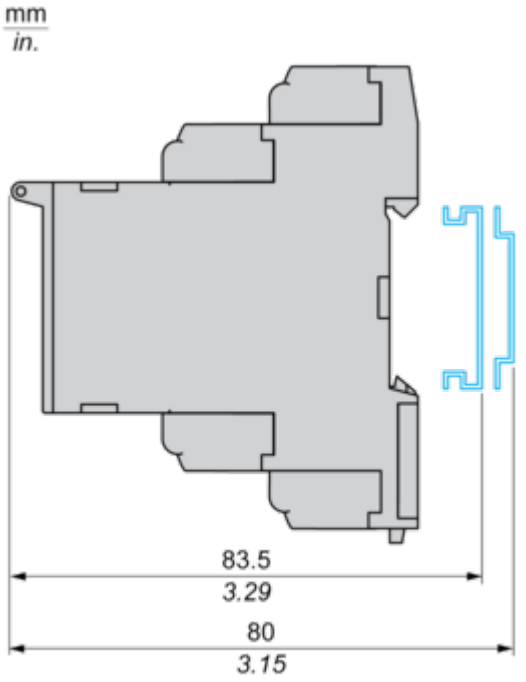
Dimensions



Mounting and Clearance

Mounting and Clearance

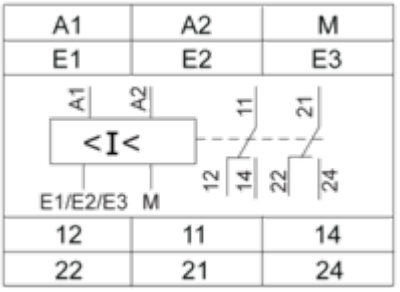
Rail Mounting



Connections and Schema

Current Measurement Relay

Wiring Diagram



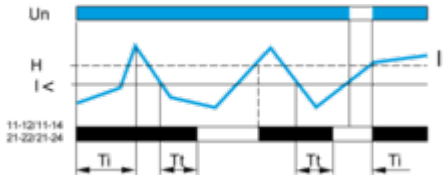
A1,A2 : Supply voltage
E1,E2,E3,M : Currents to be measured
11-14,12 : 1st C/O contact of output relay
21-24,22 : 2nd C/O contact of output relay

Technical Description

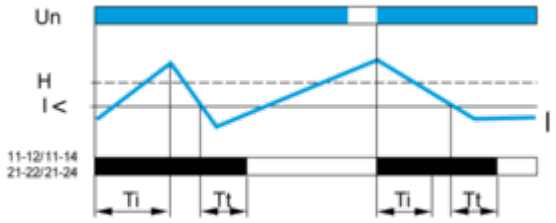
Function Diagrams

Undercurrent Detection

Without memory ("No Memory" mode)

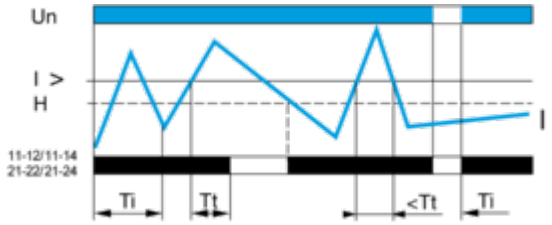


With memory ("Memory" mode)

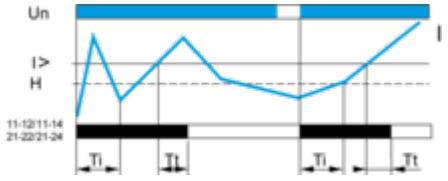


Overcurrent Detection

Without memory ("No Memory" mode)



With memory ("Memory" mode)



Legend

Ti Starting inhibition time delay
Tt Time delay after crossing of threshold
Un Supply voltage
I Monitored current
H Hysteresis
I> Overcurrent threshold
I< Undercurrent threshold
11-12/11-14, 21-22/21-24 Output relay connections
Relay status: black color = energized.

NOTE: In "Memory" mode, the relay opens when crossing of the threshold is detected and then stays in that position. The power supply voltage must be switched off to reset the product.