

# Product data sheet

Specifications



## current control relay, Harmony Control Relays, 4mA...1 A, 2CO, 24...240V AC DC

RM22JA31MR

**Product availability: Stock - Normally stocked in distribution facility**

### 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 type	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 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 IEC 60947-5-1 DC-13 IEC 60947-5-1 AC-1 IEC 60947-4-1 DC-1 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 E1-M terminals 0.5 Ohm E2-M terminals 0.1 Ohm 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

Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

<b>Switching threshold drift</b>	<= 0.05 % per degree centigrade depending permissible ambient air temperature <= 1 % within the supply voltage range
<b>Setting accuracy of time delay</b>	10 P
<b>Time delay drift</b>	<= 0.05 % per degree centigrade depending permissible ambient air temperature <= 1 % within the supply voltage range
<b>Hysteresis</b>	5...50 % adjustable threshold setting 3 % fixed full scale for window mode
<b>delay at power up</b>	0.3 s
<b>Repeat accuracy</b>	+/- 0.5 % input and measurement circuit +/- 0.2 % time delay
<b>Measurement error</b>	< 1 % over the whole range with voltage variation 0.05 %/°C with temperature variation
<b>Response time</b>	<= 500 ms
<b>Threshold setting</b>	10...100 %
<b>Overvoltage category</b>	III conforming to IEC 60664-1 III conforming to UL 508
<b>Insulation resistance</b>	> 100 MOhm 500 V DC IEC 60255-27
<b>Insulation</b>	Between supply and measurement
<b>Connections - terminals</b>	Screw terminals, 2 x 0.5...2 x 2.5 mm <sup>2</sup> 20 AWG...14 AWG) solid without cable end Screw terminals, 2 x 0.2...2 x 1.5 mm <sup>2</sup> 24 AWG...16 AWG) flexible with cable end Screw terminals, 1 x 0.5...1 x 3.3 mm <sup>2</sup> 20 AWG...12 AWG) solid without cable end Screw terminals, 1 x 0.2...1 x 2.5 mm <sup>2</sup> 24 AWG...14 AWG) flexible with cable end
<b>Tightening torque</b>	5.3...8.9 lbf.in (0.6...1 N.m) IEC 60947-1
<b>Housing material</b>	Polycarbonate
<b>Local signalling</b>	LED (yellow) for relay ON LED (green) for power ON
<b>Mounting support</b>	35 mm DIN rail conforming to IEC 60715
<b>Electrical durability</b>	100000 cycles
<b>Mechanical durability</b>	10000000 cycles
<b>[Us] rated supply voltage</b>	24...240 V AC/DC 50/60 Hz, non self-powered
<b>Safety reliability data</b>	MTTFd = 296.8 years B10d = 270000
<b>Contacts material</b>	Cadmium free
<b>Width</b>	0.9 in (22.5 mm)
<b>Control Type</b>	With test button
<b>Product Weight</b>	0.24 lb(US) (0.11 kg)

## Environment

<b>Immunity to microbreaks</b>	50 ms
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<b>Electromagnetic compatibility</b>	<p>Immunity for residential, commercial and light-industrial environments conforming to IEC 61000-6-1</p> <p>Immunity for industrial environments conforming to IEC 61000-6-2</p> <p>Emission standard for residential, commercial and light-industrial environments conforming to IEC 61000-6-3</p> <p>Emission standard for industrial environments conforming to IEC 61000-6-4</p> <p>Electrostatic discharge - test level: 6 kV level 3 (contact discharge) conforming to IEC 61000-4-2</p> <p>Electrostatic discharge - test level: 8 kV level 3 (air discharge) conforming to IEC 61000-4-2</p> <p>Radiated radio-frequency electromagnetic field immunity test - test level: 10 V/m level 3 conforming to IEC 61000-4-3</p> <p>Electrical fast transient/burst immunity test - test level: 4 kV level 4 (direct) conforming to IEC 61000-4-4</p> <p>Electrical fast transient/burst immunity test - test level: 2 kV level 4 (capacitive coupling) conforming to IEC 61000-4-4</p> <p>Surge immunity test - test level: 4 kV level 4 (common mode) conforming to IEC 61000-4-5</p> <p>Surge immunity test - test level: 2 kV level 4 (differential mode) conforming to IEC 61000-4-5</p> <p>Conducted and radiated emissions class B group 1 conforming to CISPR 11</p> <p>Conducted and radiated emissions class B conforming to CISPR 22</p>
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<b>Standards</b>	IEC 60255-1
<b>Product Certifications</b>	<p>CSA</p> <p>CE</p> <p>EAC</p> <p>CCC</p> <p>GL</p> <p>RCM</p> <p>UL</p>
<b>Ambient Air Temperature for Storage</b>	-40...158 °F (-40...70 °C)
<b>Ambient air temperature for operation</b>	-4...122 °F (-20...50 °C) 60 Hz -4...140 °F (-20...60 °C) 50 Hz
<b>Relative humidity</b>	93...97 % 77...131 °F (25...55 °C) IEC 60068-2-30
<b>Vibration resistance</b>	<p>0.075 mm 10...58.1 Hz) not in operation IEC 60068-2-6</p> <p>1 gn 10...58.1 Hz) not in operation IEC 60068-2-6</p> <p>0.035 mm 58.1...150 Hz) in operation IEC 60068-2-6</p> <p>0.5 gn 58.1...150 Hz) in operation IEC 60068-2-6</p>
<b>Shock resistance</b>	<p>15 gn 11 ms) not in operation IEC 60068-2-27</p> <p>5 gn 11 ms) in operation IEC 60068-2-27</p>
<b>IP degree of protection</b>	<p>IP20 IEC 60529 terminals)</p> <p>IP40 IEC 60529 housing)</p> <p>IP50 IEC 60529 front panel)</p>
<b>Pollution degree</b>	<p>3 IEC 60664-1</p> <p>3 UL 508</p>
<b>Dielectric test voltage</b>	2.5 kV AC 50 Hz, 1 min IEC 60255-27

## Ordering and shipping details

<b>Category</b>	US10CP222380
<b>Discount Schedule</b>	0CP2
<b>GTIN</b>	3606480792298
<b>Returnability</b>	Yes
<b>Country of origin</b>	ID

## Packing Units

<b>Unit Type of Package 1</b>	PCE
<b>Nbr. of units in pkg.</b>	1
<b>Package 1 Height</b>	1.02 in (2.6 cm)

<b>Package 1 Width</b>	3.2 in (8.2 cm)
<b>Package 1 Length</b>	3.7 in (9.5 cm)
<b>Package weight(Lbs)</b>	4.3 oz (121.0 g)
<b>Unit Type of Package 2</b>	S02
<b>Number of Units in Package 2</b>	40
<b>Package 2 Height</b>	5.9 in (15.0 cm)
<b>Package 2 Width</b>	11.8 in (30.0 cm)
<b>Package 2 Length</b>	15.7 in (40.0 cm)
<b>Package 2 Weight</b>	11.678 lb(US) (5.297 kg)
<b>Unit Type of Package 3</b>	P06
<b>Number of Units in Package 3</b>	640
<b>Package 3 Height</b>	19.7 in (50.0 cm)
<b>Package 3 Width</b>	31.5 in (80.0 cm)
<b>Package 3 Length</b>	23.6 in (60.0 cm)
<b>Package 3 Weight</b>	204.10 lb(US) (92.58 kg)

## Contractual warranty

<b>Warranty (in months)</b>	18
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## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)



### Environmental footprint

Total lifecycle Carbon footprint	44 kg CO2 eq.
Carbon footprint of the manufacturing phase [A1 to A3]	3 kg CO2 eq.
Carbon footprint of the distribution phase [A4]	0.1 kg CO2 eq.
Carbon footprint of the installation phase [A5]	0 kg CO2 eq.
Carbon footprint of the use phase [B2, B3, B4, B6]	41 kg CO2 eq.
Carbon footprint of the end-of-life phase [C1 to C4]	0.3 kg CO2 eq.
Environmental Disclosure	<a href="#">Product Environmental Profile</a>

## Use Better



### Materials and Substances

Packaging made with recycled cardboard	Yes
Packaging without single use plastic	Yes
SCIP Number	5e3fdf99-611b-4d07-ad17-6eba84ab488b
EU RoHS Directive	<a href="#">Compliant By Exemption</a>
REACH Regulation	<a href="#">Reference contains Substances of Very High Concern above the threshold</a>
California proposition 65	<b>WARNING:</b> This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>

## Use Longer



### Lifetime extension

Repair	No
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## Use Again



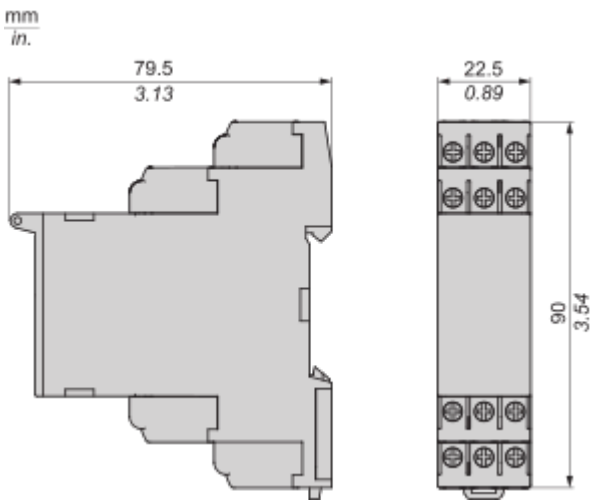
### Repack and remanufacture

Recyclability potential, in %	18
Circularity Profile	<a href="#">End of Life Information</a>
Take-back	No

Dimensions Drawings

Dimensions

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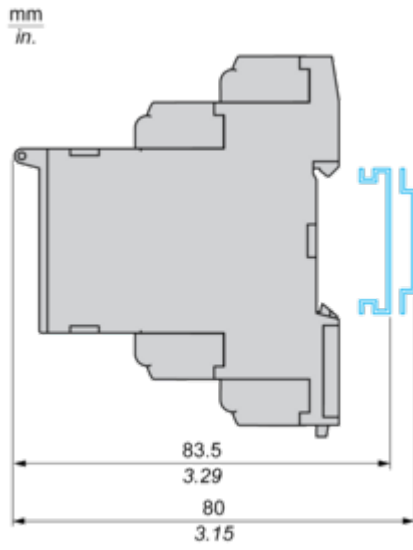


Mounting and Clearance

Mounting and Clearance

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Rail Mounting

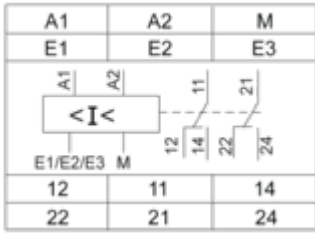


Connections and Schema

Current Measurement Relay

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Wiring Diagram



A1,A2 : Supply voltage

E1,E2,E3,M : Currents to be measured

11-14,12 : 1st C/O contact of output relay

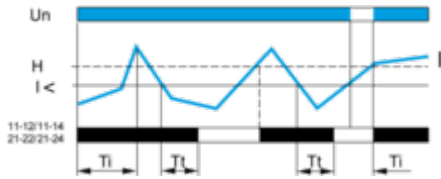
21-24,22 : 2nd C/O contact of output relay

Technical Description

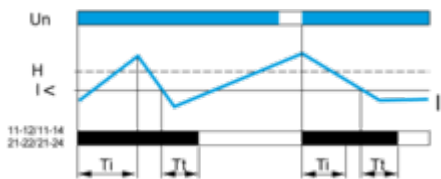
Function Diagrams

Undercurrent Detection

Without memory ("No Memory" mode)

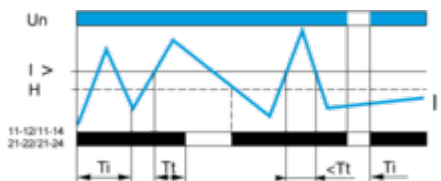


With memory ("Memory" mode)

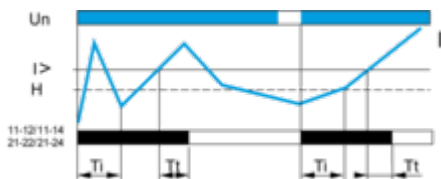


Overcurrent Detection

Without memory ("No Memory" mode)



With memory ("Memory" mode)



Legend

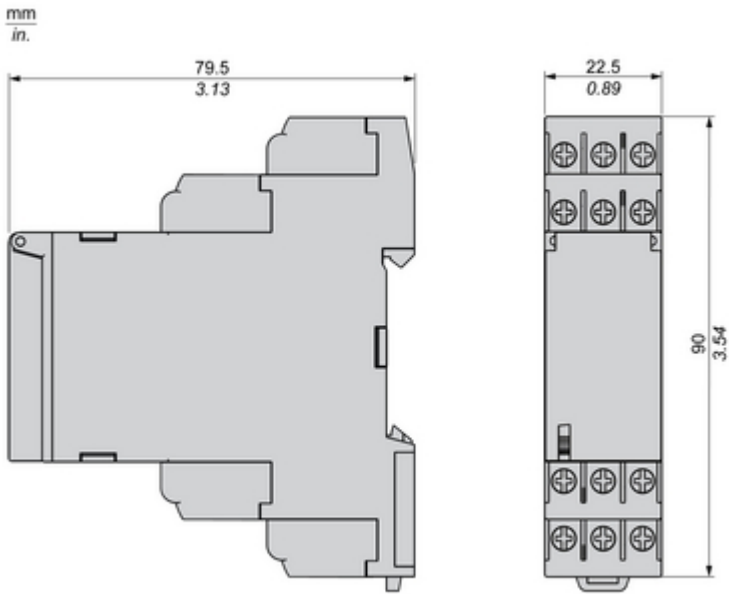
- Ti Starting inhibition time delay
- Tt Time delay after crossing of threshold
- Un Supply voltage
- I Monitored current
- H Hysteresis
- I> Overcurrent threshold
- I< Undercurrent threshold
- 11-12/11-14, 21-22/21-24 Output relay connections
- Relay status: black color = energized.

**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.

Technical Illustration

Dimensions

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Offer Marketing Illustration

Product benefits / Features

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## Technical Benefits

### Harmony Control Relay

Compliant with IEC 60255-1 standard, and a wide array of product certifications such as UL, CE, CSA, EAC.

Dust and unintended human intervention avoided thanks to the IP50 lead-sealable settings protection cover.

Different product width to meet your needs:  
17.5 mm/0.69 in.,  
22.5 mm/0.88 in.,  
35 mm/1.38 in.

Diagnostic button to check downstream circuit immediately, shorten the commission and troubleshooting time


A Dial-Pointer LED indicator that enhances ease of operation in difficult environments such as dusty or low-light conditions



Offer Marketing Illustration

Product benefits / Features

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### Features

#### Harmony Control Relay

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Wide monitoring parameters (phase, current, voltage, liquid level, frequency, speed, temperature, and pump control) to meet your application needs.
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True RMS measurement that minimizes the possibility of unexpected trips from highly polluted networks (except RM17TG and RM22TG)
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Experience unprecedented accuracy, predictive maintenance, and superior security.
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Green Premium labelled products, promising compliance with the latest regulations, transparency on environmental impacts, as well as circular and low-CO<sub>2</sub> product
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Compatible with a wide range of applications, such as hoisting, packaging, lifts, textile, pumping, and water.

Image of product / Alternate images

Alternative

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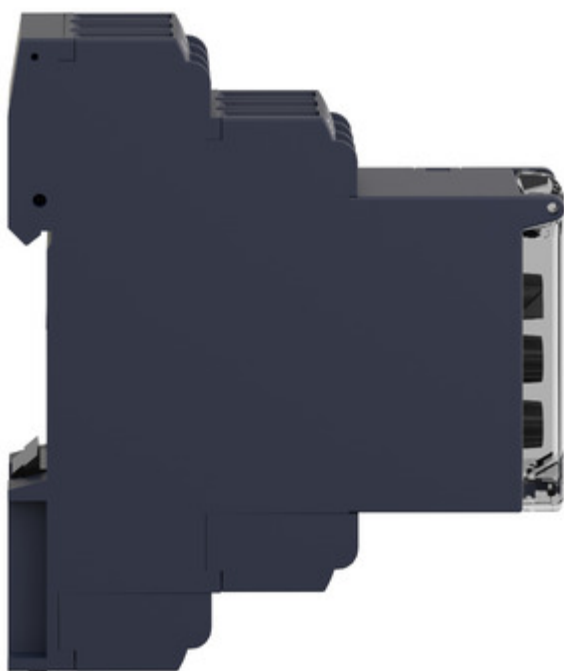




Image of product in real life situation

