



Main

Range of product	Zelio Control
Product or component type	Modular measurement and control relays
Relay type	Current control relay
Relay name	RM35JA
Relay monitored parameters	Overcurrent or undercurrent detection
Time delay	Adjustable 1...20 s, 0 + 10 % on energisation T _i Adjustable 0.3...30 s, 0 + 10 % on crossing the threshold T _t
Switching capacity in VA	1250 VA
Minimum switching current	10 mA at 5 V DC
Maximum switching current	5 A AC/DC
Power consumption in VA	<= 3.5 VA AC
Measurement range	0.15...1.5 A E1-M terminals 0.5...5 A E2-M terminals 1.5...15 A E3-M terminals 150 mA...15 A current
Electrical connection	1 conductor cable 0.2...2.5 mm ² AWG24...AWG12 flexible cablewith cable end conforming to IEC 60947-1 1 conductor cable 0.5...4 mm ² AWG20...AWG11 solid cablewithout cable end conforming to IEC 60947-1 2 conductors cable 0.2...1.5 mm ² AWG24...AWG16 flexible cablewith cable end conforming to IEC 60947-1 2 conductors cable 0.5...2.5 mm ² AWG20...AWG14 solid cablewithout cable end conforming to IEC 60947-1
Utilisation category	AC-12 conforming to IEC 60947-5-1 AC-13 conforming to IEC 60947-5-1 AC-14 conforming to IEC 60947-5-1 AC-15 conforming to IEC 60947-5-1 DC-12 conforming to IEC 60947-5-1 DC-13 conforming to IEC 60947-5-1 DC-14 conforming to IEC 60947-5-1

Complementary

Reset time	1500 ms for time delay
Maximum switching voltage	250 V AC/DC
[Us] rated supply voltage	24...240 V AC/DC
Supply voltage limits	20.4...264 V AC/DC
Operating voltage tolerance	- 15 % + 10 % U _n
Power consumption in W	<= 0.6 W DC
Control circuit frequency	40...70 Hz +/- 10 %
Supply frequency	50/60 Hz +/- 10 %
Resistance across terminals	0.005 Ohm E3-M terminals 0.015 Ohm E2-M terminals 0.05 Ohm E1-M terminals
Width	35 mm
Output contacts	2 C/O

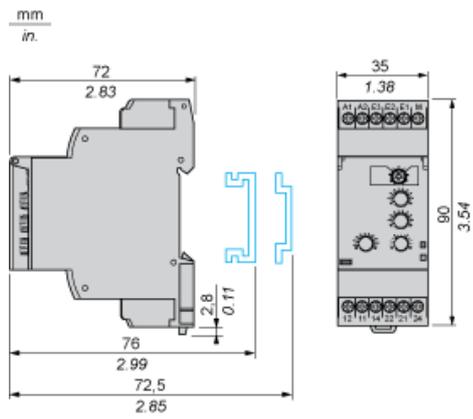
Nominal output current	5 A
Measuring cycle	<= 30 ms measurement cycle as true rms value
Hysteresis	5...50 % of threshold setting
Delay at power up	0.3 s
Measurement accuracy	+/- 10 % of the full scale value
Repeat accuracy	+/- 0.5 % for input and measurement circuit +/- 2 % for time delay
Measurement error	0.05 %/°C with temperature variation 1 by volt over the whole range with voltage variation
Polarity	No DC
Threshold setting	10...100 %
Marking	CE : 73/23/EEC CE : EMC 89/336/EEC
Overvoltage category	III conforming to IEC 60664-1
Insulation resistance	> 500 MOhm at 500 V DC conforming to IEC 60255-5 > 500 MOhm at 500 V DC conforming to IEC 60664-1
[Ui] rated insulation voltage	250 V conforming to IEC 60664-1
Supply measurement isolation	Yes
Operating position	Any position without derating
Tightening torque	0.6...1 N.m conforming to IEC 60947-1
Housing material	Self-extinguishing plastic
Status LED	1 LED green for power ON 1 LED yellow for relay ON
Mounting support	35 mm symmetrical DIN rail conforming to EN/IEC 60715
Electrical durability	100000 cycles
Mechanical durability	30000000 cycles
Operating rate	<= 360 operations/hour under full load
Contacts material	Cadmium - free
Product weight	0.13 kg

Environment

Immunity to microbreaks	50 ms
Electromagnetic compatibility	Emission standard for industrial environments conforming to EN/IEC 61000-6-4 Emission standard for residential, commercial and light-industrial environments conforming to EN/IEC 61000-6-3 Immunity for industrial environments conforming to NF EN/IEC 61000-6-2
Standards	EN/IEC 60255-6
Product certifications	CSA C-Tick GL GOST UL
Ambient air temperature for storage	-40...70 °C
Ambient air temperature for operation	-20...50 °C
Relative humidity	95 % at 55 °C conforming to IEC 60068-2-30
Vibration resistance	0.35 mm (f = 5...57.6 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1 1 gn (f = 57.6...150 Hz) conforming to IEC 60068-2-6/IEC 60255-21-1
Shock resistance	15 gn for 11 ms conforming to IEC 60255-21-1
IP degree of protection	IP20 (terminals) conforming to IEC 60529 IP30 (casing) conforming to IEC 60529
Pollution degree	3 conforming to IEC 60664-1
Dielectric test voltage	2 kV AC 50 Hz, 1 min conforming to IEC 60255-5 2 kV AC 50 Hz, 1 min conforming to IEC 60664-1
Non-dissipating shock wave	4 kV conforming to IEC 60255-5 4 kV conforming to IEC 60664-1 4 kV conforming to IEC 61000-4-5
RoHS EUR status	Compliant
RoHS EUR conformity date	0701

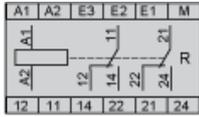
Current Control Relays

Dimensions and Mounting



Current Control Relays

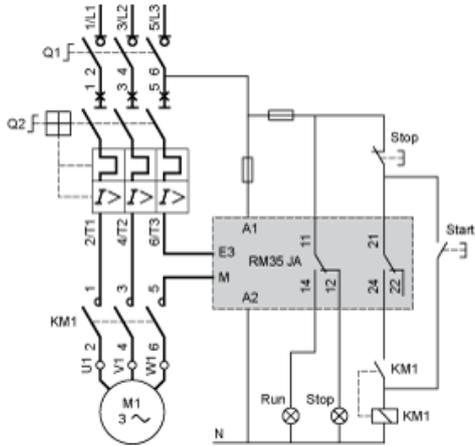
Wiring Diagram



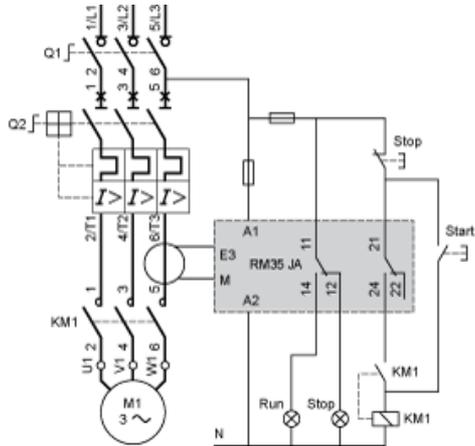
Application Schemes

Example: Detection of Jamming on a Crusher (Overcurrent Function)

Current measured ≤ 15 A



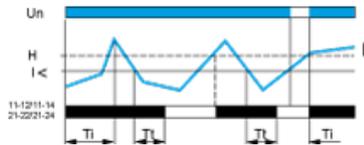
Current measured > 15 A



Function Diagrams

Undercurrent Detection

Without memory ("No Memory" mode)



- Ti Starting inhibition time delay (adjustable on front panel from 1 s to 20 s)
- Tt Time delay after crossing of threshold (adjustable on front panel)
- Un Supply voltage
- I Monitored current
- H Hysteresis adjusted by means of a potentiometer graduated from 5...50% of the threshold setting
- I< Undercurrent threshold (set by means of a potentiometer)
- 11-12/11-14, 21-22/21-24, relays connections (refer to Connections and Schema)

Relay status: black color = energized.

With memory ("Memory" mode)



- Ti Starting inhibition time delay (adjustable on front panel from 1 s to 20 s)
- Tt Time delay after crossing of threshold (adjustable on front panel)
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- 11-12/11-14, 21-22/21-24, relays connections (refer to Connections and Schema)

Relay status: black color = energized.

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.

Overcurrent Detection

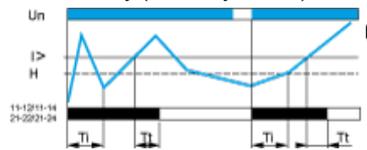
Without memory ("No Memory" mode)



- Ti Starting inhibition time delay (adjustable on front panel from 1 s to 20 s)
- Tt Time delay after crossing of threshold (adjustable on front panel)
- Un Supply voltage
- I Monitored current
- H Hysteresis adjusted by means of a potentiometer graduated from 5...50% of the threshold setting
- I> Overcurrent threshold (set by means of a potentiometer)
- 11-12/11-14, 21-22/21-24, relays connections (refer to Connections and Schema)

Relay status: black color = energized.

With memory ("Memory" mode)



T_i Starting inhibition time delay (adjustable on front panel from 1 s to 20 s)

T_t Time delay after crossing of threshold (adjustable on front panel)

U_n Supply voltage

I Monitored current

H Hysteresis adjusted by means of a potentiometer graduated from 5...50% of the threshold setting

$I >$ Overcurrent threshold (set by means of a potentiometer)

11-12/11-14 Output relays connections (refer to Connections and Schema)

21-22/21-24

Relay status: black color = energized.

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.