Time relay

RXKA 1

1MRK 508 005-BEN
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Data subject to change without notice

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Features

- For protection, control, signal and industrial applications
- On-delay and Off-delay functions
- Continuous and pulse output functions
- Setting range 0.1-320 s
- High accuracy
- Indication of start and operation
- One change-over contact

Application

This time relay is intended for use in relay protection systems, automation, control equipment, industrial processes, and control and signalling systems.

With its wide time setting range, RXKA 1 can replace many other types of time relays. The relay provides solutions to on- or off-delays or pulsing contact applications.

Design

The RXKA 1 is a dc voltage operated, high-precision, digital time relay with an electro-mechanical output relay providing one medium-duty change-over contact.

On the front behind the plastic plug, there is a 4-pole programming switch for making the following selections:

- value of the time scale constant K
- on- or off-delay function
- continuous or pulsed output function.

The time setting is done by two of the pro-gramming-switch poles for the scale constant K and a potentiometer. The product of the scale constant K and the potentiometer setting gives the set operate time for the relay.

The constant K can be programmed to be 0.12 s, 0.5 s, 4 s or 32 s, and the potentiome-ter can be set between 0.8 and 10. Thus the total delay time range is from 0.1 s to 320 s.

The programming switch can be set for on- or off- delayed function and for continuous or pulsed output. The scale constants are the same for all functions.

For on-delay the timing starts when the volt-age supply is connected to terminals 11 and 21.

Design (cont'd)

When the relay is energized in the pulsed function mode, the output relay periodically switches on and off with substantially identical pulse on time and pulse off time, as long as the energising quantity is applied. Thus the relay operates as a flasher relay with the frequency settable from 0.1 to 300 flashes per minute.

For off-delay the voltage shall continuously be connected to terminals 11 and 21. Then the output relay immediately switches to its operate condition when terminal 12 is connected to terminal 11. The timing starts when this connection is opened and the output switches to the release condition after the setting time has elapsed.

When RXKA is used as off-delay time relay and the control input (terminal 12) is open, the relay can be influenced of interruptions in the auxiliary voltage supply, as then the relay is in its operate mode. If the relay in this mode looses the auxiliary voltage for longer time than about 150 ms, the programmable timer used in the relay will automatically get a short reset pulse when the auxiliary voltage returns. Then the output relay instantaneously switches to its operate condition and after set time it return to its release condition.

On the front the relay has one yellow LED for start indication and one red LED for indicating the operate condition of the output relay. The LEDs are automatically reset when the voltage supply to terminals 11 and 21 is disconnected.

The relay occupies one seat (2U 6C).

Technical data

General

Table 1: Energizing quantities, rated values and limits

Function	On-delay or off-delay with continuous or pulsed output function
Measurement	Continuous
Rated voltage U_r	24-48, 110-125 or 220-250 V DC
Time setting	0.8-10 x the scale constant K
Scale constant K	0.12 s 0.5 s 4 s 32 s
Release time	< 20 ms
Recovery time	< 30 ms
Overshoot time	< 30 ms
Nominal operative voltage range	80-110 % of rated voltage
Nominal operative temperature range	-20°C to +55°C
Power consumption at rated voltage 24/48 V DC 125/250 V DC	 0.6/2.5 W 1.3/2.4 W
Repeatibility in operate time	< 0.1% of set value or 5 ms
Change in operate time at voltage change within the nominal operative voltage range	< 0.6% of set value or 10 ms
Change in operate time at temperature change within the nominal operative temperature range	< 2% of set value

Table 2: Electromagnatic compability tests

Power frequency test (SS 436 15 03)	0.5 kV, class PL 4 0.25 kV, class PL 3 for terminal 12
Fast transient test (SS 436 15 03)	4-8 kV, class PL 4
1 MHz burst test (IEC 60255-22-1)	2.5 kV, class 3
Electrostatic test (IEC 60255-22-2) Air discharge Contact discharge Indirect application (IEC 61000-4-2)	 8 kV, class 3 6 kV, class 3 8 kV, level 4
Electromagnetic field test Radiated (IEC 61000-4-3) Radiated pulse (ENV 50140) Conducted (IEC 61000-4-6)	 10 V/m, 26-1000 MHz, level 3 10 V/m, 900 MHz 10 V, 0.15-80 MHz
Fast transient test (IEC 60255-22-4)	4 kV, class 4
Emission tests (EN 55 011) Radiated emission Conducted emission	 30-1000 MHz, class A 0.15-100 MHz class A

Table 3: Insulation tests

Dielectric test (IEC 60255-5)	2.0 kV 50 Hz, 1 min
Impulse voltage test (IEC 60255-5)	5.0 kV, 1.2/50 µs, 0.5 J
Insulation resistance (IEC 60255-5)	> 100 MΩ at 500V

Table 4: Mechanical tests

Vibration test (IEC 60255-21-1) Response test Endurance test	 0.075 mm/1.0 g, 10-150 Hz, Class 2 2.0 g, 10-150 Hz, 20 sweeps, Class .
Shock tests (IEC 60255-21-2) Response test Withstand test	 10 g, 11 ms, 3 pulses, Class 2 30 g, 11 ms, 3 pulses, Class 2
Bump test (IEC 60255-21-2)	20 g, 16 ms, 1000 pulses, Class 2
Seismic test (IEC 60255-21-3) X- and Y-axes Z-axis	 11 mm/3 g, 1-50 Hz, Class 2 extended 7.5 mm/2 g, 1-50 Hz, Class 2 extended

Table 5: Contact data

Max. system voltage within a contact set DC/AC		250 V/250 V
Current carrying capacity (for already closed contact) 200 ms/1 s continuously		 30/15 A 5 A
Making and conducting capacity L/R< 10 ms 200 ms/1 s		30/10 A
Breaking capacity for AC, PF> 0.4, max 25 0V DC, L/R<40 ms	 U = 24 V/48 V U = 110 V/125 V U = 220 V/250 V	 8.0 A 2.0 A/1.0 A 0.4 A/0.3 A 0.2 A/0.15 A

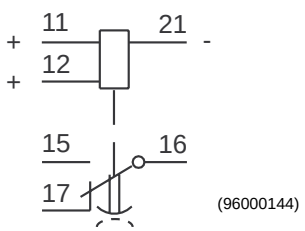
Table 6: Additional general data

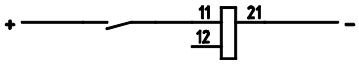
Dimensions	2U 6C
Weight	180 g

Mounting

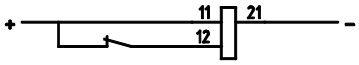
The relay shall be mounted on separately ordered COMBIFLEX bases. For mounting details refer to catalogue for mounting systems and parts.

Diagram





On-delay connection.
The timing starts when the contact closes.



Off-delay connection.
The timing starts when the contact opens.

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Ordering

Specify:

- Time relay RXKA 1
- Quantity
- Ordering No:
  - 1MRK 000 424-AA, for U_r = 24-48 V DC
  - 1MRK 000 424-BA, for U_r = 110-125 V DC
  - 1MRK 000 424-CA, for U_r = 220-250 V DC

References

COMBIFLEX connection and installation components	1MRK 513 003-BEN
Relay mounting systems	1MRK 514 001-BEN

Manufacturer

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