Specifications



() Discontinued

# off-delay timing relay with control contact - 0.05..1 s - 24 V AC DC - 10C

RE7RA11BU

() Discontinued on: 20 Oct 2022

# Main

| Range of product          | Zelio Time              |
|---------------------------|-------------------------|
| Product or component type | Industrial timing relay |
| Component name            | RE7                     |
| Time delay type           | C                       |
| Time delay range          | 0.05 s300 h             |

# Complementary

| Complementary                               |                                                                                                                                                                                                                                                                                   |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrete output type                        | Relay                                                                                                                                                                                                                                                                             |
| Contacts material                           | 90/10 silver nickel contacts                                                                                                                                                                                                                                                      |
| Width pitch dimension                       | 22.5 mm                                                                                                                                                                                                                                                                           |
| [Us] rated supply voltage                   | 110240 V AC 50/60 Hz<br>24 V AC/DC 50/60 Hz<br>4248 V AC/DC 50/60 Hz                                                                                                                                                                                                              |
| Voltage range                               | 0.851.1 Us                                                                                                                                                                                                                                                                        |
| Connections - terminals                     | Screw terminals, 2 x 1.5 mm <sup>2</sup> flexible with cable end<br>Screw terminals, 2 x 2.5 mm <sup>2</sup> flexible without cable end                                                                                                                                           |
| Tightening torque                           | 0.61.1 N.m                                                                                                                                                                                                                                                                        |
| Setting accuracy of time delay              | +/- 10 % of full scale                                                                                                                                                                                                                                                            |
| Repeat accuracy                             | +/- 0.2 %                                                                                                                                                                                                                                                                         |
| Temperature drift                           | < 0.07 %/°C                                                                                                                                                                                                                                                                       |
| Voltage drift                               | < 0.2 %/V                                                                                                                                                                                                                                                                         |
| Minimum pulse duration                      | 20 ms                                                                                                                                                                                                                                                                             |
| Reset time                                  | 50 ms                                                                                                                                                                                                                                                                             |
| Maximum switching voltage                   | 250 V AC/DC                                                                                                                                                                                                                                                                       |
| Mechanical durability                       | 2000000 cycles                                                                                                                                                                                                                                                                    |
| [Ith] conventional free air thermal current | 8 A                                                                                                                                                                                                                                                                               |
| Maximum [le] rated operational current      | 2 A DC-13 24 V at 70 °C conforming to IEC 60947-5-1/1991/VDE 0660<br>0.1 A DC-13 250 V at 70 °C conforming to IEC 60947-5-1/1991/VDE 0660<br>0.2 A DC-13 115 V at 70 °C conforming to IEC 60947-5-1/1991/VDE 0660<br>3 A AC-15 at 70 °C conforming to IEC 60947-5-1/1991/VDE 0660 |
| Minimum switching capacity                  | at 12 V 10 mA                                                                                                                                                                                                                                                                     |
| Input voltage                               | < 60 V X1Z2 terminal(s)                                                                                                                                                                                                                                                           |
| Maximum switching current                   | 1 mA (X1Z2)                                                                                                                                                                                                                                                                       |

| Input compatibility               | 3/4 wires sensors PNP/NPN without internal load <50 m X1Z2 terminal(s)                                                                                                                                                                                           |  |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Potentiometer characteristic      | Linear 47 kOhm (+/- 20 %), 0.2 W, cable length <25 m Z1Z2 terminal(s)                                                                                                                                                                                            |  |
| Marking                           | CE                                                                                                                                                                                                                                                               |  |
| Overvoltage category              | III conforming to IEC 60664-1                                                                                                                                                                                                                                    |  |
| [Ui] rated insulation voltage     | 250 V between contact circuit and control inputs IEC certified<br>250 V between contact circuit and power supply IEC certified<br>300 V between contact circuit and control inputs CSA certified<br>300 V between contact circuit and power supply CSA certified |  |
| Supply disconnection value        | > 0.1 Uc                                                                                                                                                                                                                                                         |  |
| Operating position                | Any position without derating                                                                                                                                                                                                                                    |  |
| Surge withstand                   | 2 kV conforming to IEC 61000-4-5 level 3                                                                                                                                                                                                                         |  |
| Power consumption in VA           | 0.7 VA at 24 V<br>1.6 VA at 48 V<br>1.8 VA at 110 V<br>8.5 VA at 240 V                                                                                                                                                                                           |  |
| Maximum power consumption in<br>W | 0.5 W at 24 V<br>1.2 W at 48 V                                                                                                                                                                                                                                   |  |
| Terminal description              | ALT<br>(X1)UNUSED<br>(B1-A2)CO<br>(Z1)UNUSED<br>(15-16-18)OC_OFF<br>(Y1)UNUSED<br>(Z2)UNUSED                                                                                                                                                                     |  |
| Height                            | 78 mm                                                                                                                                                                                                                                                            |  |
| Width                             | 22.5 mm                                                                                                                                                                                                                                                          |  |
| Depth                             | 80 mm                                                                                                                                                                                                                                                            |  |
| Net weight                        | 0.15 kg                                                                                                                                                                                                                                                          |  |
|                                   |                                                                                                                                                                                                                                                                  |  |

# Environment

| Immunity to microbreaks               | 3 ms                                                                                                   |
|---------------------------------------|--------------------------------------------------------------------------------------------------------|
| Standards                             | EN/IEC 61812-1                                                                                         |
| Product certifications                | GL<br>UL<br>CSA                                                                                        |
| Ambient air temperature for storage   | -4085 °C                                                                                               |
| Ambient air temperature for operation | -2060 °C                                                                                               |
| Relative humidity                     | 1585 % 3K3 conforming to IEC 60721-3-3                                                                 |
| Vibration resistance                  | 0.35 mm (f= 1055 Hz) conforming to IEC 60068-2-6                                                       |
| Shock resistance                      | 15 gn for 11 ms conforming to IEC 60068-2-27                                                           |
| IP degree of protection               | IP20 (terminals)<br>IP50 (housing)                                                                     |
| Pollution degree                      | 3 conforming to IEC 60664-1                                                                            |
| Dielectric strength                   | 2.5 kV                                                                                                 |
| Non-dissipating shock wave            | 4.8 kV                                                                                                 |
| Resistance to electrostatic discharge | 6 kV in contact conforming to IEC 61000-4-2 level 3<br>8 kV in air conforming to IEC 61000-4-2 level 3 |
| Resistance to electromagnetic fields  | 10 V/m conforming to IEC 61000-4-3 level 3                                                             |
| Resistance to fast transients         | 2 kV conforming to IEC 61000-4-4 level 3                                                               |

| Disturbance radiated/conducted | CISPR 22 - class A         |
|--------------------------------|----------------------------|
|                                | CISPR 11 group 1 - class A |

# **Packing Units**

| Unit Type of Package 1       | PCE |
|------------------------------|-----|
| Number of Units in Package 1 | 1   |

# Contractual warranty

Warranty

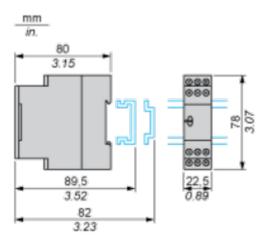
18 months

# **Product datasheet**

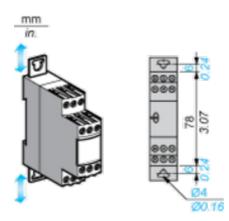
**Dimensions Drawings** 

## Width 22.5 mm

## **Rail Mounting**



## **Screw Fixing**



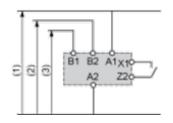
Connections and Schema

# Internal Wiring Diagram

| A1 | 15                   | B1             |
|----|----------------------|----------------|
| 피에 | 되                    | - D2           |
|    | <del>دا</del><br>۲.) | -7             |
| A2 | 16                   | ( <sup>a</sup> |
| X1 | ¥1                   | Z2             |
| 18 | 16                   | A2             |

# **Recommended Application Wiring Diagram**

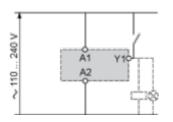
#### Start by External Control



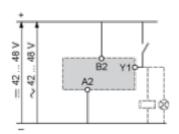
**1** Supply **2** 12...48 V **3** 24 V

# Recommended Application Wiring Diagram

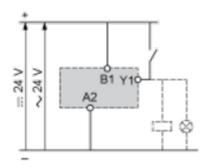
#### Start by External Control



# Start by External Control

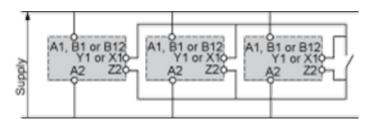


## Start by External Control

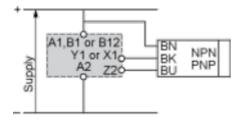


## **Control of Several Relays**

Control of several relays with a single external control contact

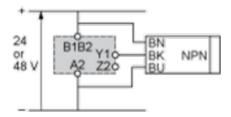


#### Connection 3-Wire NPN or PNP Sensor



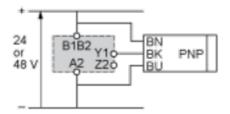
#### Connection 3-Wire NPN or PNP Sensor Without Using Terminal Z2

#### **Connection NPN**



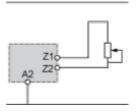
It is advisable to follow the recommended wiring schemes detailed above if the restrictions given are taken into account.

#### **Connection PNP**



It is advisable to follow the recommended wiring schemes detailed above if the restrictions given are taken into account.

# **Connection of Potentiometer**



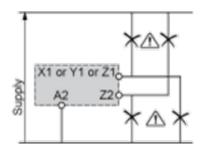
**Connection Precautions** 



# UNEXPECTED EQUIPMENT OPERATION

No galvanic isolation between supply terminals and control inputs.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

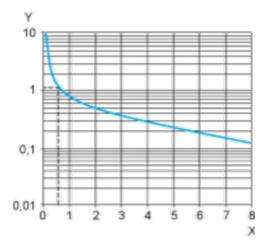


# Performance Curves

#### Performance Curves

## A.C. Load Curve 1

Electrical durability of contacts on resistive loading millions of operating cycles

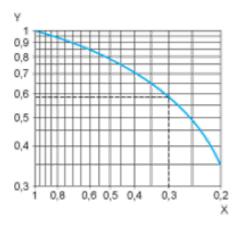


X Current broken in A

Y Millions of operating cycles

#### A.C. Load Curve 2

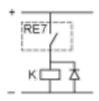
Reduction factor k for inductive loads (applies to values taken from durability curve 1).



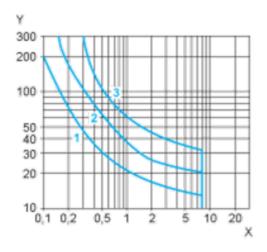
#### **X** Power factor on breaking (cos $\phi$ )

#### Y Reduction factor k

Example: An LC1-F185 contactor supplied with 115 V/50 Hz for a consumption of 55 VA or a current consumption equal to 0.1 A and  $\cos \phi = 0.3$ . For 0.1 A, curve 1 indicates a durability of approximately 1.5 million operating cycles. As the load is inductive, it is necessary to apply a reduction coefficient k to this number of cycles as indicated by curve 2. For  $\cos \phi = 0.3$ : k = 0.6 The electrical durability therefore becomes:1.5  $10^6$  operating cycles x 0.6 = 900 000 operating cycles.



D. C. Load Limit Curve



X Current in A

Y Voltage in V

- **1** L/R = 20 ms
- 2 L/R with load protection diode

3 Resistive load

# **Product datasheet**

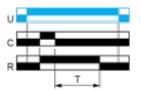
# **Technical Description**

### Function C : Off-Delay Relay with Control Signal

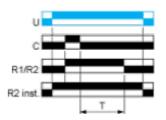
#### Description

After power-up and closing of the control contact C, the output R closes. When control contact C re-opens, timing T starts. At the end of the timing period, the output(s) R revert(s) to its/their initial state. The second output can be either timed or instantaneous.

#### Function: 1 Output



#### Function: 2 Outputs



2 timed outputs (R1/R2) or 1 timed output (R1) and 1 instantaneous output (R2 inst.)

Product datasheet

# Legend

| Relay de-energised<br>Relay energised<br>Output open |                                                                      |
|------------------------------------------------------|----------------------------------------------------------------------|
|                                                      | Output closed                                                        |
| с                                                    | Control contact                                                      |
| G                                                    | Gate                                                                 |
| R                                                    | Relay or solid state output                                          |
| R1/R2                                                | 2 timed outputs                                                      |
| R2 inst.                                             | The second output is instantaneous if the right position is selected |
| т                                                    | Timing period                                                        |
| Ta -                                                 | Adjustable On-delay                                                  |
| Tr -                                                 | Adjustable Off-delay                                                 |
| U                                                    | Supply                                                               |