

# RE8YG31BUTQ

industrial timing relay - 0.3..30 s - type Qc - 24 V AC/DC, 110..240 V AC - 1C/O



## Main

|                               |                                 |
|-------------------------------|---------------------------------|
| Range of product              | Zelio Time                      |
| Product or component type     | Optimum industrial timing relay |
| Component name                | RE8                             |
| Time delay type               | Qc                              |
| Time delay range              | 0.3...30 s                      |
| Sale per indivisible quantity | 10                              |

## Complementary

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrete output type                        | Relay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Contacts material                           | 90/10 silver nickel contacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Width pitch dimension                       | 22.5 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| [Us] rated supply voltage                   | 24 V AC/DC at 50/60 Hz<br>110...240 V AC at 50/60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Voltage range                               | 0.9...1.1 Us                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Connections - terminals                     | Screw terminals 2 x 2.5 mm <sup>2</sup> , flexible cable without cable end<br>Screw terminals 2 x 1.5 mm <sup>2</sup> , flexible cable with cable end                                                                                                                                                                                                                                                                                                                                                                            |
| Tightening torque                           | 0.6...1.1 N.m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Setting accuracy of time delay              | +/- 20 % of full scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Repeat accuracy                             | < 1 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Voltage drift                               | < 2.5 %/V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Temperature drift                           | < 0.2 %/°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Minimum pulse duration                      | 60 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Reset time                                  | 50 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Maximum switching voltage                   | 250 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Mechanical durability                       | 20000000 cycles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| [Ith] conventional free air thermal current | 8 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| [Ie] rated operational current              | <= 0.2 A at 115 V, DC-13 for 70 °C conforming to VDE 0660<br><= 0.2 A at 115 V, DC-13 for 70 °C conforming to IEC 60947-5-1/1991<br><= 0.1 A at 250 V, DC-13 for 70 °C conforming to VDE 0660<br><= 0.1 A at 250 V, DC-13 for 70 °C conforming to IEC 60947-5-1/1991<br><= 3 A at 24 V, AC-15 for 70 °C conforming to VDE 0660<br><= 3 A at 24 V, AC-15 for 70 °C conforming to IEC 60947-5-1/1991<br><= 2 A at 24 V, DC-13 for 70 °C conforming to VDE 0660<br><= 2 A at 24 V, DC-13 for 70 °C conforming to IEC 60947-5-1/1991 |
| Minimum switching capacity                  | 10 mA at 12 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Marking                                     | CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Overvoltage category                        | III conforming to IEC 60664-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| [Ui] rated insulation voltage               | 300 V conforming to CSA<br>250 V conforming to IEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Supply disconnection value                  | > 0.1 Uc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Operating position                          | Any position without derating factor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Surge withstand                             | 2 kV conforming to IEC 61000-4-5 level 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Power consumption in VA                     | 2.5 VA at 110 V<br>0.9 VA at 24 V<br>13 VA at 240 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Power consumption in W                      | 0.5 W at 24 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

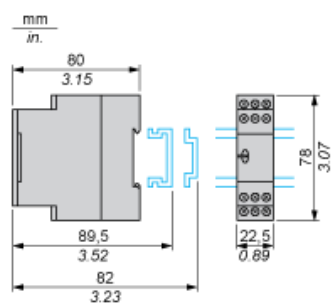
|                      |                                      |
|----------------------|--------------------------------------|
| Terminal description | (15-16-18)OC_OFF<br>(A1-B1)CO<br>ALT |
| Height               | 78 mm                                |
| Width                | 22.5 mm                              |
| Depth                | 80 mm                                |
| Product weight       | 0.11 kg                              |

## Environment

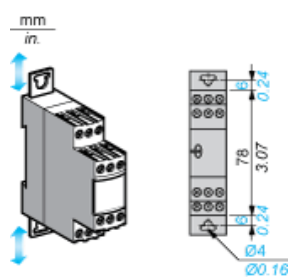
|                                       |                                                                                                        |
|---------------------------------------|--------------------------------------------------------------------------------------------------------|
| Immunity to microbreaks               | 3 ms                                                                                                   |
| Standards                             | EN/IEC 61812-1                                                                                         |
| Product certifications                | CSA<br>GL<br>UL                                                                                        |
| Ambient air temperature for storage   | -40...85 °C                                                                                            |
| Ambient air temperature for operation | -20...60 °C                                                                                            |
| Relative humidity                     | 15...85 % 3K3 conforming to IEC 60721-3-3                                                              |
| Vibration resistance                  | 0.35 mm 10...55 Hz conforming to IEC 60068-2-6                                                         |
| IP degree of protection               | IP50 (casing)<br>IP20 (terminals)                                                                      |
| Pollution degree                      | 3 conforming to IEC 60664-1                                                                            |
| Dielectric test voltage               | 2.5 kV                                                                                                 |
| Non-dissipating shock wave            | 4.8 kV                                                                                                 |
| Resistance to electrostatic discharge | 8 kV in air conforming to IEC 61000-4-2 level 3<br>6 kV in contact 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 11 group 1 - class A<br>CISPR 22 - class A                                                       |

Width 22.5 mm

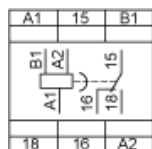
### Rail Mounting



### Screw Fixing

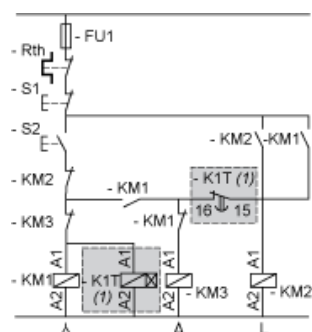


## Internal Wiring Diagram



## Recommended Application Wiring Diagram

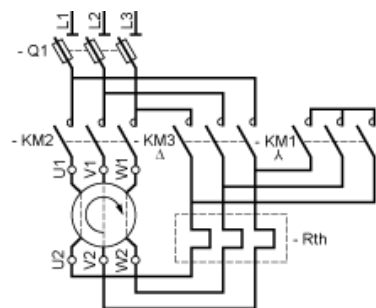
### Control



K1T Timing relay for star-delta starters.

NOTE: Correct operation of the star-delta starter associated with the relay is only possible if the wiring diagram is strictly complied with.

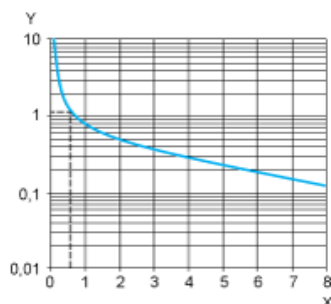
### Power



## Performance Curves

### A.C. Load Curve 1

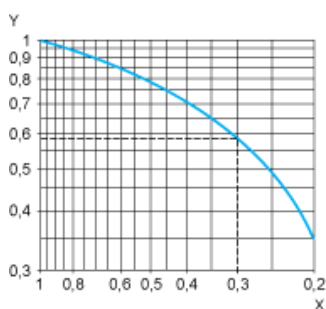
Electrical durability of contacts on resistive loading millions of operating cycles



X Current broken in A  
Y Millions of operating cycles

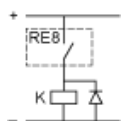
### A.C. Load Curve 2

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

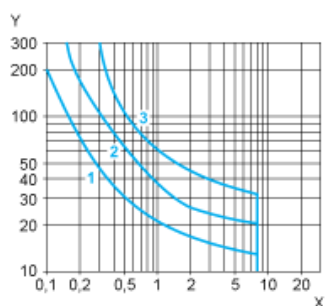


X Power factor on breaking ( $\cos \phi$ )  
Y Reduction factor k

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:  $1.5 \times 10^6$  operating cycles  $\times 0.6 = 900\,000$  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

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## Function Qc: Star-Delta Timing

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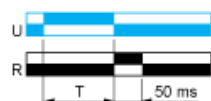
### Description

On energisation, the star contact closes instantaneously and timing starts.

At the end of the timing period, the star contact opens.

After a 50 ms pause, the delta contact closes and remains in this position.

### Function: 1 Output



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## Legend

 Relay de-energised

 Relay energised

 Output open

 Output closed

C Control contact

G Gate

R Relay or solid state output

R1/ 2 timed outputs

R2

The second output is instantaneous if the right position is selected

inst.

T Timing period

Ta Adjustable On-delay

-

Tr Adjustable Off-delay

-

U Supply