



## 22.5 mm DIN rail mounting TUR1 Part number 88865105



- Multi-function or mono-function
- Multi-range
- Multi-voltage
- Screw or spring terminals
- LED status indicator
- Option of connecting an external power supply to the control input
- 3-wire sensor control option

### Part numbers

|            | Type  | Functions                                  | Timing     | Output                           | Nominal rating | Connections      | Supply voltage         |
|------------|-------|--------------------------------------------|------------|----------------------------------|----------------|------------------|------------------------|
| 88 865 105 | TUR1  | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 115 | TAR1  | A - At                                     | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 125 | TBR1  | B                                          | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 135 | TCR1  | C                                          | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 145 | THR1  | H - Ht                                     | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 155 | TLR1  | Li - L                                     | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 175 | TQR1  | Q                                          | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 100 | TUR4  | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 12 V AC / DC           |
| 88 865 103 | TUR3  | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h  | 1 changeover relay               | 8 A            | Screw terminals  | 12 →240 V AC / DC      |
| 88 865 503 | TURc3 | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h  | 1 changeover relay               | 8 A            | Spring terminals | 12 →240 V AC / DC      |
| 88 865 185 | TXR1  | Ad - Ah - N - O - P - Pt - TL - Tt - W     | 0,1s→100h  | 1 change over relay              | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 305 | TU2R1 | A - At - B - C - H - Ht - Di - D - Ac - Bw | -          | 2 timed changeover relays        | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 215 | TA2R1 | A - At                                     | 0,1s→100h  | 2 changeover relays              | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 265 | TK2R1 | K                                          | 0,6s→160 s | 2 change over relays             | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88 865 300 | TU2R4 | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h  | 2 timed relays changeover relays | 8 A            | Screw terminals  | 12 V AC / DC           |
| 88 865 176 | TQR6  | Q : Star / Delta                           | 0,1s→100h  | 1 change over relays             | 8 A            | Screw terminals  | 230 V →440 V AC        |
| 88 865 303 | TU2R3 | A, B, C, H, Di, Ac, BW + (At, Ht, D)       | 0,1s→100h  | 2 timed changeover relays        | 8 A            | Screw terminals  | 12 →230 V AC/DC        |
| 88 865 385 | TX2R1 | Ad - Ah - N - O - P - Pt - TL - Tt - W     | 0,1s→100h  | 2 timed changeover relays        | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |

### Specifications

#### Timing

|                                                                       |                                                                                       |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Timing ranges (7 ranges)                                              | 1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h<br>TK2R1 : 0.6s - 2.5s - 20s - 160 s |
| Repetition accuracy with constant parameters                          | ± 0.5 % (IEC/EN 1812-1)                                                               |
| Drift Temperature                                                     | ± 0,05 % / °C                                                                         |
| Drift Voltage                                                         | ± 0.2 % / V                                                                           |
| Display accuracy according to IEC/EN 61812-1                          | ± 10 % / 25 °C                                                                        |
| Minimum pulse duration typically (relay version)                      | 30 ms                                                                                 |
| Minimum pulse duration typically (solid state version)                | 50 ms                                                                                 |
| Minimum pulse duration typically (relay version under load)           | 100 ms                                                                                |
| Maximum reset time by de-energisation typically (relay version)       | 100 ms                                                                                |
| Maximum reset time by de-energisation typically (solid state version) | 350 ms                                                                                |
| Immunity from micro power cuts : typical                              | > 10 ms                                                                               |
| Supply                                                                |                                                                                       |
| Multi-voltage power supply                                            | Depending on version                                                                  |
| Frequency (Hz)                                                        | 50 / 60                                                                               |
| Operating range                                                       | 85 to 110 % Un<br>(85 to 120 % Un for 12V AC/DC)                                      |
| Operator factor                                                       | 100 %                                                                                 |
| Max. absorbed power                                                   | 0,6 W 24 V AC/DC<br>1,5 W 230 V AC<br>32 VA 230 V AC                                  |

#### Output specification

|                                               |                                                |
|-----------------------------------------------|------------------------------------------------|
| 1 or 2 changeover relays, AgNi (cadmium-free) | 2000 VA/80 W                                   |
| Rated power                                   | 2000 VA/80 W                                   |
| Maximum breaking current                      | 8 A AC 8A DC                                   |
| Minimum breaking current                      | 10 mA / 5 V DC                                 |
| Voltage breaking capacity                     | 250 V AC/ DC                                   |
| Electrical life (operations)                  | 10 <sup>5</sup> operations 8 A 250 V resistive |

|                                                        |                                                                                                               |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Mechanical life (operations)                           | 5x10 <sup>6</sup>                                                                                             |
| Breakdown voltage acc. to IEC/EN 61812-1               | 2.5 kV /1 min / 1 mA / 50 Hz                                                                                  |
| Impulse voltage acc. to IEC/EN 60664-1, IEC/EN 61812-1 | 5 kV, wave 1.2 / 50 µs                                                                                        |
| <b>Solid state output</b>                              |                                                                                                               |
| Rated power                                            | 0,7 A AC/DC<br>20 °C (0,5 A UL)                                                                               |
| Derating                                               | 5 mA / °C                                                                                                     |
| Maximum admissible current                             | 20 A ≤ 10 ms                                                                                                  |
| Minimum breaking current                               | 10 mA                                                                                                         |
| Leakage current                                        | < 5 mA                                                                                                        |
| Voltage breaking capacity                              | 250 V AC/ DC                                                                                                  |
| Maximum voltage drop at terminals                      | 3 wire 4V - 2 wire 8V                                                                                         |
| Electrical life (operations)                           | 10 <sup>8</sup>                                                                                               |
| Mechanical life (operations)                           | 10 <sup>8</sup>                                                                                               |
| Breakdown voltage acc. to IEC/EN 60664-1, IEC 60255-5  | 2.5 kV to 1 mA / 1 min                                                                                        |
| Input type                                             | Volt-free contact<br>3-wire PNP output control option residual voltage : 0.4V whatever the timer power supply |

### General characteristics

|                                                                                              |                                                                                                |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Conformity to standards                                                                      | IEC/EN 61812-1<br>IEC/EN 61000-6-1<br>IEC/EN 61000-6-2<br>IEC/EN 61000-6-3<br>IEC/EN 61000-6-4 |
| Certifications                                                                               | CE, UL, cUL, CSA, GL                                                                           |
| Temperature limits use (°C)                                                                  | -20 →+60                                                                                       |
| Temperature limits stored (°C)                                                               | -30 →+60                                                                                       |
| Installation category<br>(acc. to IEC/EN 60664-1 )                                           | Voltage surge category                                                                         |
| Creepage distance and clearance acc. to IEC/EN 60664-1                                       | 4 kV / 3                                                                                       |
| Protection (IEC/EN 60529)                                                                    | IP 20<br>IP 40                                                                                 |
| Degree of protection acc. to IEC/EN 60529 Front face<br>(except Tk2R1)                       | IP 50                                                                                          |
| Vibration resistance<br>acc. to IEC/EN 60068-2-6                                             | f = 10 ■ 55 Hz<br>A = 0,35 mm                                                                  |
| Relative humidity no condensation acc. to IEC/EN 60068-2-30                                  | 93 % sans condensation                                                                         |
| Electromagnetic compatibility - Immunity to electrostatic discharges acc to IEC/EN 61000-4-2 | Level III (Air 8 KV / Contact 6 KV)                                                            |
| Immunity to radiated, radio-frequency, electromagnetic field acc. CEI/EN 61000-4-3           | Level III 10V/m (80 M Hz to 1 G Hz)                                                            |
| Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4                                  | Level III (direct 2kV / Capacitive coupling clamp 1 KV)                                        |
| Immunity to shock waves on power supply acc. to IEC/EN 61000-4-5                             | Level III (2 KV / common mode 2 KV/residual current mode 1KV)                                  |
| Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6                          | Level III (10V rms : 0.15 M Hz to 80 M Hz)                                                     |
| Immunity to voltage dips and breaks acc. to IEC/EN 61000-4-11                                | 30 %/10 ms<br>60 %/100 ms ><br>95 %/5 s                                                        |
| Mains-borne and radiated emissions acc. to EN 55022 (CISPR22), EN55011 (CISPR11)             | Class B                                                                                        |
| Fixing : Symmetrical DIN rail                                                                | 35 mm                                                                                          |
| Connection capacity - without ferrule                                                        | 2 x 2,5 mm <sup>2</sup>                                                                        |
| Connection capacity - with ferrule                                                           | 2 x 1,5 mm <sup>2</sup>                                                                        |
| Spring terminals, 2 terminals per connection point - flexible wire                           | 1,5 mm <sup>2</sup>                                                                            |
| Spring terminals, 2 terminals per connection point - rigid wire                              | 2,5 mm <sup>2</sup>                                                                            |
| Housing material                                                                             | Self-extinguishing                                                                             |
| Weight : casing 17,5 mm                                                                      | 60 g                                                                                           |
| Weight : casing 22,5 mm                                                                      | 90 g                                                                                           |
| Weight : plug-in casing                                                                      | 80 g                                                                                           |

### Display

State displayed by 2 LEDs

- Flashing green when on
- Relay LED yellow during timing

Green LED operation indicator

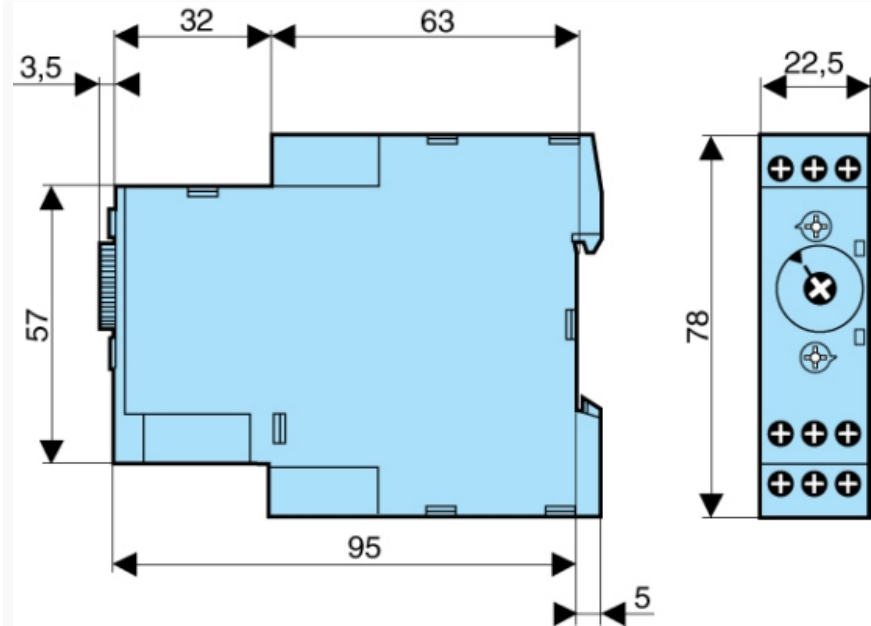
Pulsing :

- Timer on, no timing in process

Permanently lit :

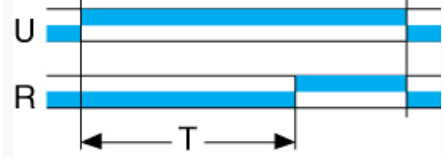
- Relay waiting, no timing in process

### Dimensions (mm)



Curves

Function A - 1 relay output



|                       |
|-----------------------|
| Function A            |
| Delay on energisation |

Curves

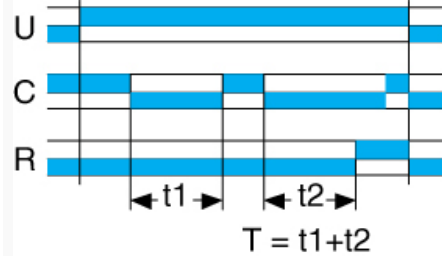
Function Ac - 1 relay output



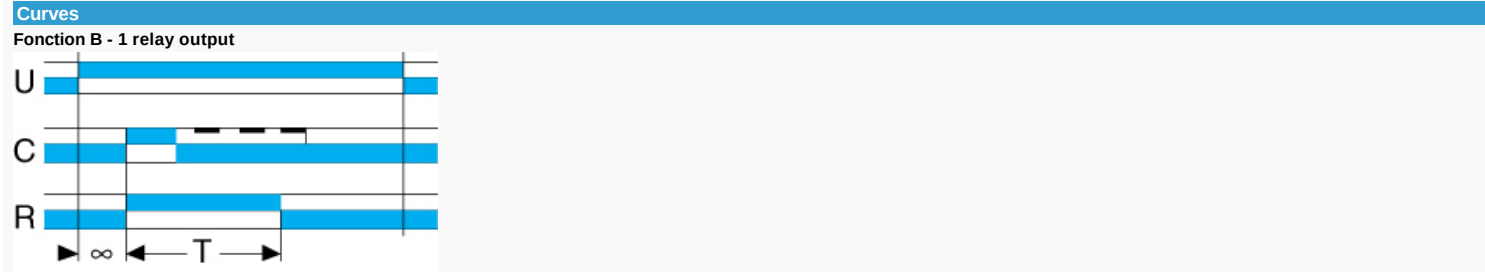
|                                                     |
|-----------------------------------------------------|
| Function Ac                                         |
| Timing after closing and opening of control contact |

Curves

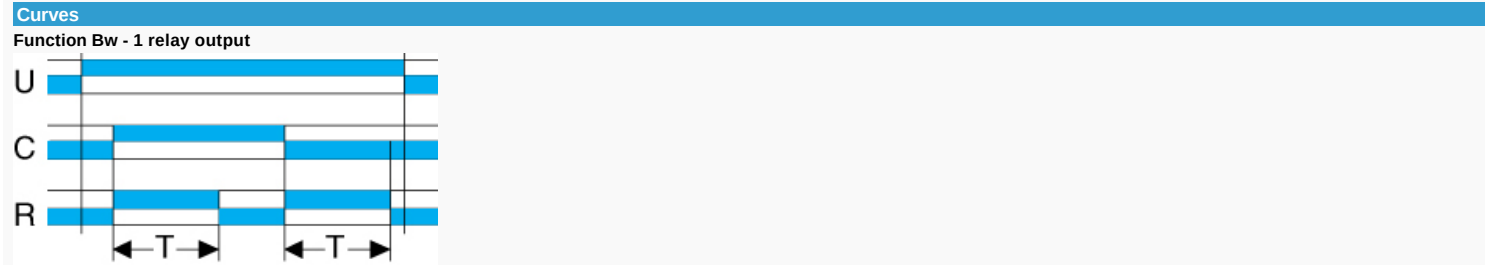
Function At - 1 relay output



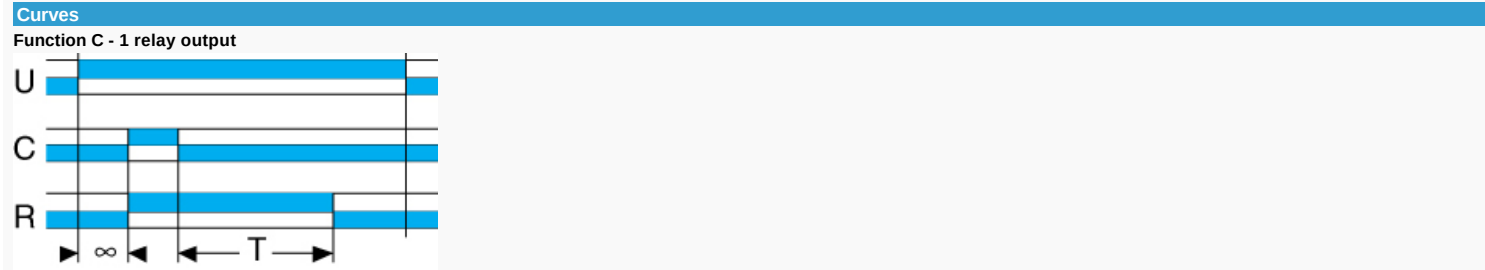
|             |
|-------------|
| Function At |
|-------------|



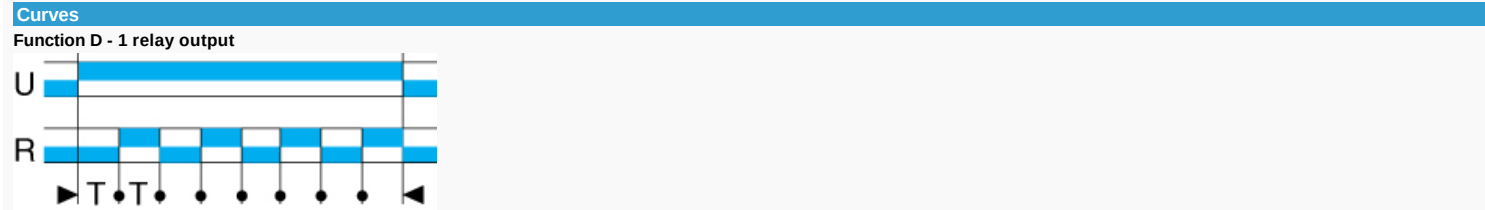
|                            |
|----------------------------|
| Function B                 |
| Timing on impulse one shot |



|                           |
|---------------------------|
| Function Bw               |
| Pulse output (adjustable) |



|                      |
|----------------------|
| Function C           |
| Timing after impulse |



|                          |
|--------------------------|
| Function D               |
| Flip-flop<br>Pause start |





|                          |
|--------------------------|
| Function Di              |
| Flip-flop<br>Pulse start |

Curves

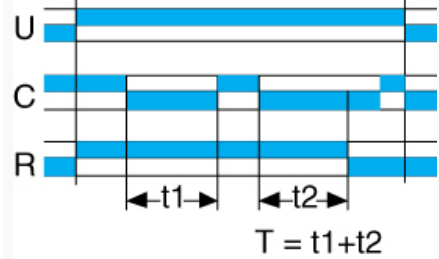
Function H - 1 relay output



|                        |
|------------------------|
| Function H             |
| Timing on energisation |

Curves

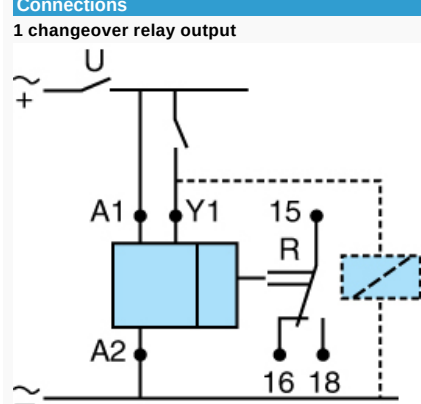
Function Ht - 1 relay output



|                                   |
|-----------------------------------|
| Function Ht                       |
| Delay on energisation with memory |

Connections

1 changeover relay output



|                                                                                      |
|--------------------------------------------------------------------------------------|
| Functions                                                                            |
| A - At - B - C - H - Ht - Di - D - Ac - Bw<br>Ad - Ah - N - O - P - Pt - TL - Tt - W |