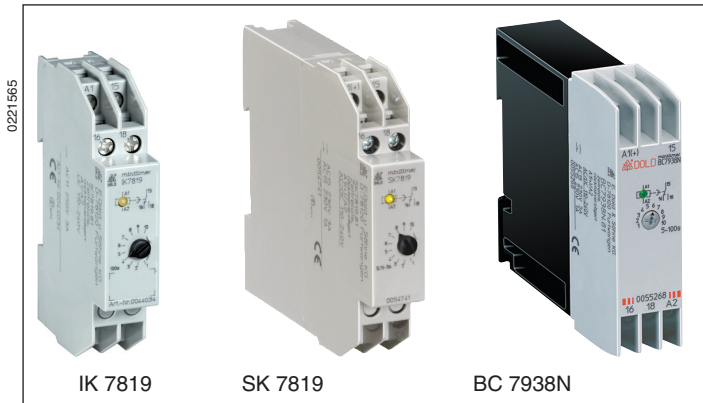


## MINITIMER

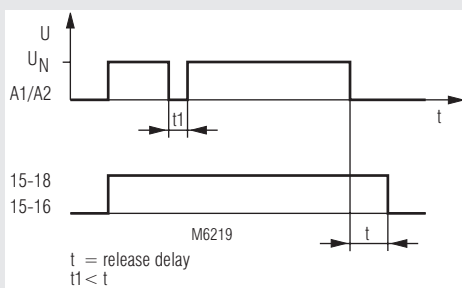
Timer, Release Delay

IK 7819, SK 7819, BC 7938N



- According to IEC/EN 61 812-1
- Release delay, with control signal
- No-voltage safe
- 1 changeover contact
- Delay of 0.05 ... 300 s
- Wide voltage range
- Repeat accuracy  $\leq 1\%$
- LED indicator for operation
- Devices available in 3 enclosure versions:
  - IK 7819: depth 58 mm, with terminals at the bottom for installation systems and industrial distribution systems according to DIN 43 880
  - SK 7819, BC 7938N: depth 98 mm, with terminals at the top for cabinets with mousing plate and cable duct
- IK/SK 7819: width 17.5 mm
- BC 7938N: width 22.5 mm

### Function Diagram



### Approvals and Markings



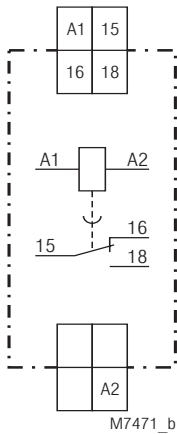
### Application

Time-dependent controllers

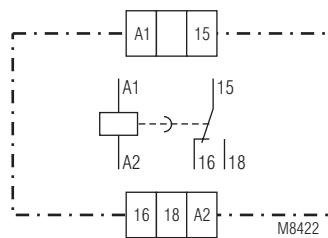
### Notes

A change of the settings for time range will be valid immediately. Please note, that a change of time range or time setting during elapse of time can lead to unintended switching of the output contacts.

### Circuit Diagrams



IK/SK 7819.81



BC 7938N.81

### Connection Terminals

| Terminal designation | Signal description |
|----------------------|--------------------|
| A1                   | L / +              |
| A2                   | N / -              |
| 15, 16, 18           | Changeover contact |

| Technical Data                                  |                                                                                             |
|-------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Time ranges:</b>                             | 0.05 ... 1 s<br>0.15 ... 3 s<br>0.5 ... 10 s<br>1.5 ... 30 s<br>5 ... 100 s<br>15 ... 300 s |
| <b>Time setting:</b>                            | infinite on relative scale                                                                  |
| <b>Recovery time:</b>                           | 100 ms                                                                                      |
| <b>Repeat accuracy:</b>                         | ≤ 1 % of end of scale value                                                                 |
| <b>Min. on-time at time range 15 ... 300 s:</b> | AC/DC 24 V - 300 ms<br>AC/DC 42 V - 250 ms<br>AC/DC 80 V - 200 ms                           |
| <b>Temperature influence:</b>                   | < 0.1 % / K                                                                                 |

### Input

|                                          |                                                        |
|------------------------------------------|--------------------------------------------------------|
| <b>Nominal voltage <math>U_N</math>:</b> | AC/DC 24 V<br>AC/DC 42 ... 60 V<br>AC/DC 110 ... 240 V |
| <b>Voltage range:</b>                    |                                                        |
| for AC/DC 24 V:                          |                                                        |
| with 48 % residual ripple                | AC / DC 20.5 ... 27 V                                  |
| with ≤ 10 % residual ripple              | DC 20.5 ... 30 V                                       |
| for AC/DC 42 ... 60 V:                   |                                                        |
| with 48 % residual ripple                | AC / DC 30 ... 66 V                                    |
| with ≤ 10 % residual ripple              | DC 30 ... 80 V                                         |
| for AC/DC 110 ... 240 V:                 |                                                        |
| with 48 % residual ripple                | AC / DC 60 ... 264 V                                   |
| with ≤ 10 % residual ripple              | DC 60 ... 300 V                                        |
| <b>Release voltage:</b>                  | > 10 % $U_N$                                           |
| <b>Nominal consumption</b>               |                                                        |
| for AC/DC 24 V:                          | 0.05 VA / W                                            |
| for AC/DC 60 V:                          | 0.12 VA / W                                            |
| for AC/DC 240 V:                         | 0.4 VA / W                                             |
| <b>Nominal frequency:</b>                | 50/60 Hz                                               |
| <b>Frequency range:</b>                  | ± 5 %                                                  |
| <b>Switch-on current</b>                 |                                                        |
| for AC/DC 24 V:                          | 0.6 A                                                  |
| for AC/DC 60 V:                          | 0.7 A                                                  |
| for AC/DC 240 V:                         | 1.1 A                                                  |

### Output

|                                             |                                                       |
|---------------------------------------------|-------------------------------------------------------|
| <b>Contacts:</b>                            | 1 changeover contact                                  |
| <b>Contact material:</b>                    | AgNi                                                  |
| <b>Measured nominal voltage:</b>            | AC 250 V<br>DC see limit curve for arc-free operation |
| <b>Thermal current <math>I_{th}</math>:</b> | 5 A                                                   |
| <b>Switching capacity</b>                   |                                                       |
| to AC 15                                    |                                                       |
| NO contact:                                 | 3 A / AC 230 V IEC/EN 60 947-5-1                      |
| NC contact:                                 | 1 A / AC 230 V IEC/EN 60 947-5-1                      |
| <b>Electrical life</b>                      | IEC/EN 60 947-5-1                                     |
| to AC 15 at 1 A, AC 230 V:                  | ≥ 1.5 x 10 <sup>5</sup> switching cycles              |
| <b>Permissible switching frequency</b>      | 72 000 switching cycles / h                           |
| <b>Short circuit strength</b>               |                                                       |
| <b>max. fuse rating:</b>                    | 4 A gG / gL IEC/EN 60 947-5-1                         |
| <b>Mechanical life:</b>                     | > 10 <sup>8</sup> switching cycles                    |

| Technical Data                                |                                                                                                                               |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| <b>General Data</b>                           |                                                                                                                               |
| <b>Operating mode:</b>                        | Continuous operation                                                                                                          |
| <b>Temperature range:</b>                     |                                                                                                                               |
| Operation:                                    | - 20 ... + 60 °C                                                                                                              |
| Storage:                                      | - 25 ... + 65 °C                                                                                                              |
| <b>Relative air humidity:</b>                 | 95 % at 40 °C                                                                                                                 |
| <b>Altitude:</b>                              | < 2.000 m                                                                                                                     |
| <b>Clearance and creepage distances</b>       |                                                                                                                               |
| rated impulse voltage / pollution degree:     | 4 kV / 2 (basis insulation) IEC 60 664-1 III                                                                                  |
| Overvoltage category:                         |                                                                                                                               |
| Insulation test voltage, type test:           | 2.5 kV; 1 min                                                                                                                 |
| <b>EMC</b>                                    |                                                                                                                               |
| Electrostatic discharge:                      | 6 kV (contact) IEC/EN 61 000-4-2<br>8 kV (air) IEC/EN 61 000-4-2                                                              |
| HF-irradiation                                |                                                                                                                               |
| 80 MHz ... 1 GHz:                             | 12 V / m IEC/EN 61 000-4-3                                                                                                    |
| 1 GHz ... 2.7 GHz:                            | 10 V / m IEC/EN 61 000-4-3                                                                                                    |
| Fast transients                               |                                                                                                                               |
| IK / SK 7819:                                 | 4 kV IEC/EN 61 000-4-4                                                                                                        |
| BC 7938N:                                     | 2 kV IEC/EN 61 000-4-4                                                                                                        |
| Surge voltages between wires for power supply |                                                                                                                               |
| IK/SK 7819:                                   | 2 kV IEC/EN 61 000-4-5                                                                                                        |
| BC7938N:                                      | 1 kV IEC/EN 61 000-4-5                                                                                                        |
| between wire and ground                       |                                                                                                                               |
| IK/SK 7819:                                   | 4 kV IEC/EN 61 000-4-5                                                                                                        |
| BC7938N:                                      | 2 kV IEC/EN 61 000-4-5                                                                                                        |
| HF-wire guided:                               | 10 V IEC/EN 61 000-4-6                                                                                                        |
| Interference suppression:                     | Limit value class B EN 55 011                                                                                                 |
| <b>Degree of protection</b>                   |                                                                                                                               |
| Housing:                                      | IP 40 IEC/EN 60 529                                                                                                           |
| Terminals:                                    | IP 20 IEC/EN 60 529                                                                                                           |
| <b>Housing:</b>                               | Thermoplastic with V0 behaviour according to UL subject 94                                                                    |
| <b>Vibration resistance:</b>                  | Amplitude 0.35 mm frequency 10 ... 55 Hz IEC/EN 60 068-2-6 20 / 060 / 04 IEC/EN 60 068-1                                      |
| <b>Climate resistance:</b>                    |                                                                                                                               |
| <b>Terminal designation:</b>                  | EN 50 005                                                                                                                     |
| <b>Wire connection:</b>                       | DIN 46 228-1/-2/-3/-4                                                                                                         |
| Cross section                                 |                                                                                                                               |
| IK/SK 7819:                                   | 2 x 2.5 mm <sup>2</sup> solid or 2 x 1.5 mm <sup>2</sup> stranded ferruled                                                    |
| BC 7938N:                                     | 1 x 4 mm <sup>2</sup> solid or 2 x 1.5 mm <sup>2</sup> stranded ferruled 1 x 2.5 mm <sup>2</sup> stranded ferruled (isolated) |
| Stripping length:                             | 10 mm                                                                                                                         |
| <b>Wire fixing:</b>                           |                                                                                                                               |
| IK/SK 7819:                                   | Flat terminals with self-lifting clamping piece IEC/EN 60 999-1                                                               |
| BC 7938N:                                     | Plus-minus terminal screws M3.5 Box terminal with wire protection                                                             |
| <b>Fixing torque:</b>                         | 0.8 Nm                                                                                                                        |
| <b>Mounting:</b>                              | DIN rail IEC/EN 60 715                                                                                                        |
| <b>Weight</b>                                 |                                                                                                                               |
| IK 7819:                                      | 70 g                                                                                                                          |
| SK 7819:                                      | 89 g                                                                                                                          |
| BC 7938N:                                     | 105 g                                                                                                                         |

### Dimensions

|                               |                   |
|-------------------------------|-------------------|
| <b>Width x height x depth</b> |                   |
| IK 7819:                      | 17.5 x 90 x 58 mm |
| SK 7819:                      | 17.5 x 90 x 98 mm |
| BC 7938N:                     | 22.5 x 84 x 98 mm |

## Standard Type

IK 7819.81 AC/DC 110 ... 240 V 0.15 ... 3 s

- Article number: 0044645
- Output: 1 changeover contact
  - Nominal voltage  $U_N$ : AC/DC 110 ... 240 V
  - Time range: 0.15 ... 3 s
  - Width: 17.5 mm

SK 7819.81 AC/DC 110 ... 240 V 0.15 ... 3 s

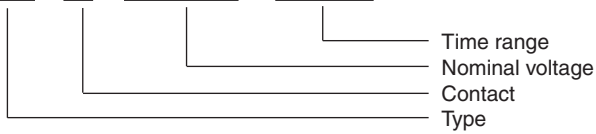
- Article number: 0054741
- Output: 1 changeover contact
  - Nominal voltage  $U_N$ : AC/DC 110 ... 240 V
  - Time range: 0.15 ... 3 s
  - Width: 17.5 mm

BC 7938N.81 AC/DC 110 ... 240 V 0.5 ... 10 s

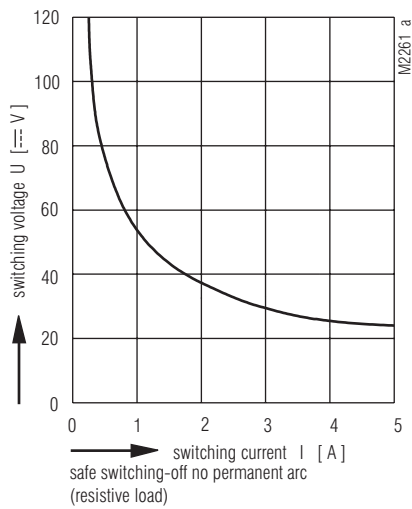
- Article number: 0055774
- Front color grey, with box terminals
  - Output: 1 changeover contact
  - Nominal voltage  $U_N$ : AC/DC 110 ... 240 V
  - Time range: 0.5 ... 10 s
  - Width: 22.5 mm

## Ordering Example

IK 7819 .81 AC/DC 24 V 0.5 ... 10 s



## Characteristic



Limit curve for arc-free operation

## Connection Example

