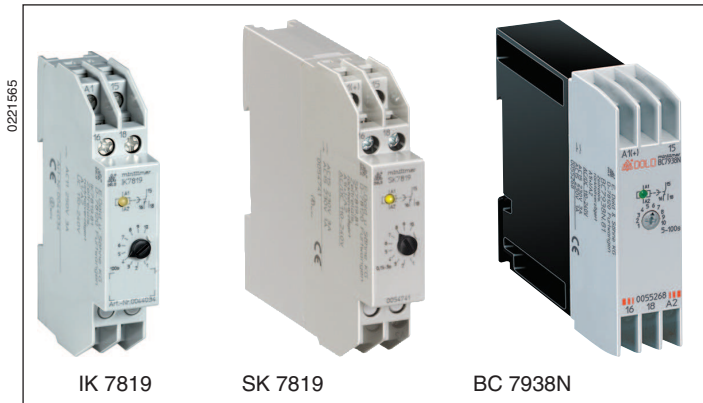


## MINITIMER

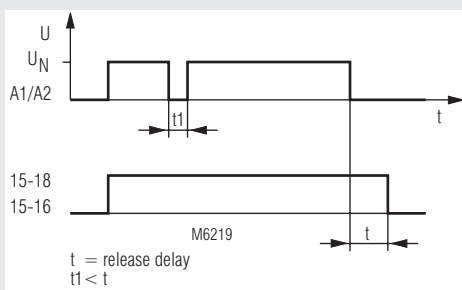
Timer, Release Delay

IK 7819, SK 7819, BC 7938N



- According to IEC/EN 61 812-1
- 1 changeover contact
- Delay of 0.05 ... 300 s
- Wide voltage range
- Repeat accuracy  $\leq 1\%$
- Without auxiliary voltage
- 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 mounting plate and cable duct
- IK/SK 7819: width 17.5 mm
- BC 7938N: width 22.5 mm

### Function Diagram



### Approvals and Markings



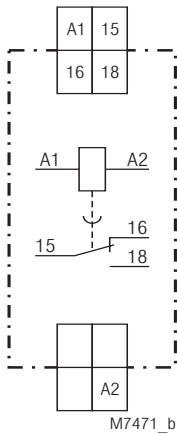
### Application

Time-dependent controllers

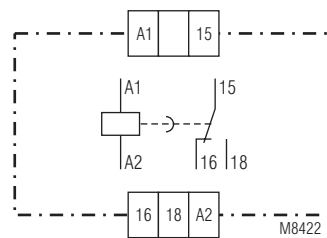
### Notes

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 designation
A1	L / +
A2	N / -
15, 16, 18	Changeover contact

Technical Data	
<b>Time ranges:</b>	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 5 ... 100 s 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 AC/DC 42 V - 250 ms 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 AC/DC 42 ... 60 V AC/DC 110 ... 240 V
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### Voltage range:

for AC/DC 24 V: with 48 % residual ripple with ≤ 10 % residual ripple	AC / DC 20.5 ... 27 V
for AC/DC 42 ... 60 V: with 48 % residual ripple with ≤ 10 % residual ripple	AC / DC 30 ... 66 V DC 30 ... 80 V
with AC/DC 110 ... 240 V: with 48 % residual ripple with ≤ 10 % residual ripple	AC / DC 60 ... 264 V DC 60 ... 300 V
<b>Release voltage:</b>	> 10 % $U_N$

### Nominal consumption

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

### Nominal frequency:

50/60 Hz

### Frequency range:

± 5 %

### Switch-on current

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 DC see limit curve for arc-free operation
<b>Thermal current <math>I_{th}</math>:</b>	5 A
<b>Switching capacity to AC 15</b>	
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 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 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

### EMC

Electrostatic discharge: 6 kV (contact) IEC/EN 61 000-4-2  
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

### Degree of protection

Housing: IP 40 IEC/EN 60 529  
Terminals: IP 20 IEC/EN 60 529

### Housing:

Thermoplastic with V0 behaviour according to UL subject 94  
**Vibration resistance:** Amplitude 0.35 mm frequency 10 ... 55 Hz IEC/EN 60 068-2-6  
20 / 060 / 04 IEC/EN 60 068-1

### Climate resistance:

### Terminal designation:

### Wire connection:

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

### Wire fixing:

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

### Fixing torque:

0.8 Nm

### Mounting:

DIN rail IEC/EN 60 715

### Weight

IK 7819: 70 g

SK 7819: 89 g

BC 7938N: 105 g

### Dimensions

### Width x height x depth

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

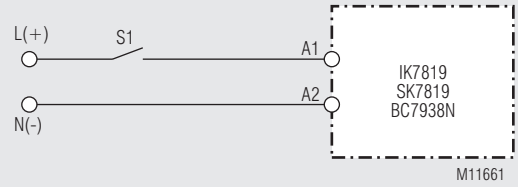
### Standard Type

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

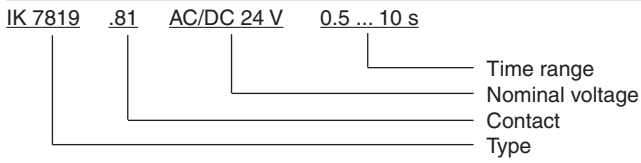
SK 7819.81 AC/DC 110 ... 240 V 0.15 ... 3 s  
 Article number: 0054741  
 • Output: 1 changeover contact  
 • Nominal voltage  $U_N$ : AC/DC 110 ... 240 V  
 • Time range: 0.15 ... 3 s  
 • Width: 17.5 mm

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

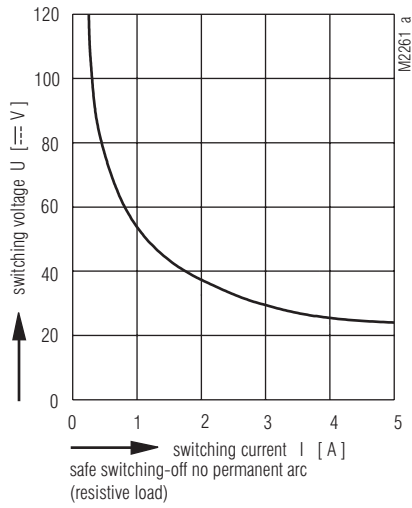
### Connection Example



### Ordering Example



### Characteristic



Limit curve for arc-free operation

