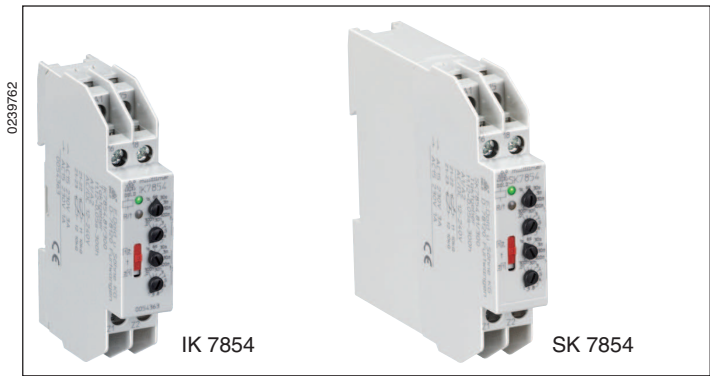
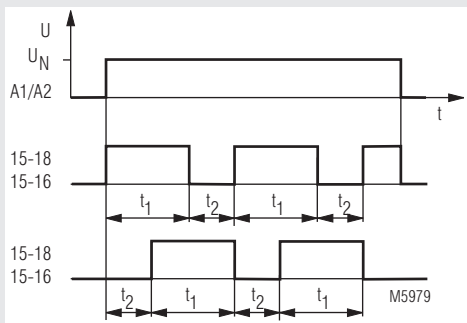


MINITIMER Cyclic Timer IK 7854, SK 7854



- According to IEC/EN 61 812-1
- 8 time ranges from 0.05 s to 300 h selectable via rotational switches
- Impulse and break time separately adjustable
- Selectable start with impulse or break
- Voltage range AC/DC 12 ... 240 V
- Adjustment aid for quick setting of long time values
- Suitable for 2-wire proximity sensor control
- LED indicators for operation, contact position and time delay
- 1 changeover contact
- As option connection of 2 remote potentiometers 10 kΩ
- Devices available in 2 enclosure versions:
IK 7854: depth 59 mm, with terminals at the bottom for installation systems and industrial distribution systems according to DIN 43 880
SK 7854: depth 98 mm, with terminals at the top for cabinets with mounting plate and cable duct
- 17.5 mm width

Function Diagram



Approvals and Markings



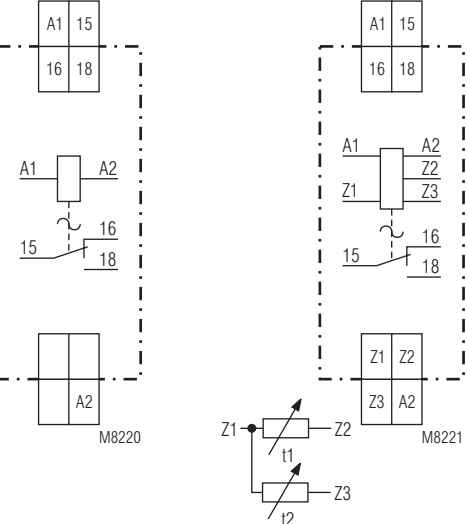
Application

Time-dependent controllers

Indicators

- green LED: on when voltage connected
- yellow LED "R/t": shows status of output relay and time delay:
 - Flashing (short on, long off) output relay not active; time delay t2 (break time)
 - Flashing (long on, short off) output relay active; time delay t1 (pulse time)

Circuit Diagrams



IK 7854.81
SK 7854.81

IK 7854.81/300
SK 7854.81/300

Connection Terminals

Terminal designation	Signal designation
A1	L / +
A2	N / -
15, 16, 18	Changeover contact
Z1, Z2, Z3 (only at /300)	Input to connect two remote potentiometer for time setting t1 and t2

Control of A1-A2 with proximity sensors

The input can be controlled by DC 3 wire or AC/DC 2 wire proximity sensors. For operating voltage > 24 V and usage of sensors without built-in short circuit protection a protection resistor on A1 is recommended to reduce the inrush current. The dimension is as follows:

$R_v \approx$ operating voltage / max. switching current of sensor

The series resistor must not be selected higher than necessary.

Max. values are:

Operating voltage:	48 V	60 V	110 V	230 V
Series resistor R_v max:	270 Ω	390 Ω	680 Ω	1.8 k Ω (1 W)

Setting

A change of the settings for time range and time 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.

Adjustment assistance

The flashing period of the yellow LED is $1 \text{ s} \pm 4\%$ and can be used to adjust the time. Especially on the lower end of scale and for long times it is suitable as the multiplication factors between the different time ranges are exact without tolerance.

Example:

The required time is 40 min. It has to be adjusted within the range 3 ... 300 min. The time check takes too long as several timing cycles would be necessary for a precise value.

For faster adjustment the setting is made to 0.03 ... 3 min. On this range the potentiometer should be set to 0.4 min. (= 24 sec). With the right potentiometer setting the LED must show 24 flashing cycles. After that the time range is switched over to 3 ... 300 min and the setting is complete.

Remote potentiometers

With the variant IK/SK 7854.81/300 both time settings can also be made via remote potentiometers of 10 kOhms:

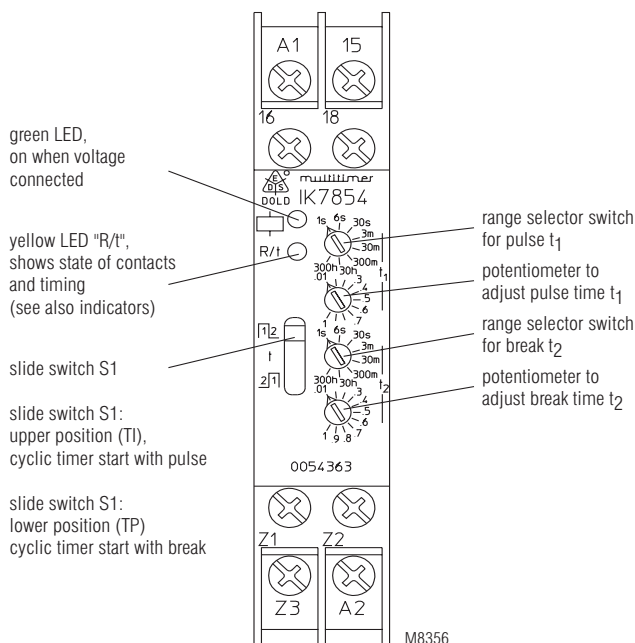
- Terminals Z1-Z2: potentiometer for pulse time (t_1)
- Terminals Z1-Z3: potentiometer for break time (t_2)

When connecting a remote potentiometer, the corresponding potentiometer has to be set to min. If no remote potentiometers are required the terminals Z1-Z2 resp. Z2-Z3 have to be linked.

The wires to the remote potentiometers should be installed separately from the lines with mains voltage. If this is not possible, a screened cable is recommended where the shield is connected to Z1.

To terminals Z1, Z2 and Z3 no external voltage must be connected, as the unit might be damaged.

Terminals Z1, Z2 and Z3 do not have a galvanic separation to terminals A1/A2!



Technical Data	
Time circuit	
Time ranges:	8 time ranges for pulse and break time, settable via rotational switch: 0.05 ... 1 s 0.3 ... 30 min. 0.06 ... 6 s 3 ... 300 min. 0.3 ... 30 s 0.3 ... 30 h 0.03 ... 3 min. 3 ... 300 h continuous, 1:100 on relative scale
Time setting t1, t2:	
Recovery time:	
at DC 24 V:	approx. 15 ms
at DC 240 V:	approx. 50 ms
at AC 230 V:	approx. 80 ms
Repeat accuracy:	± 0.5 % of selected end scale value
Voltage and Temperature influence:	< 1 % with the complete operating range
Input	
Nominal voltage U_N:	AC/DC 12 ... 240 V
Voltage range:	0.8 ... 1.1 U _N
Frequency range (AC):	45 ... 400 Hz
Nominal consumption	
at AC 12 V:	approx. 1.5 VA
at AC 24 V:	approx. 2 VA
at AC 230 V:	approx. 3 VA
at DC 12 V:	approx. 1 W
at DC 24 V:	approx. 1 W
at DC 230 V:	approx. 1 W
Release voltage (A1/A2)	
AC 50 Hz:	approx. 7.5 V
DC:	approx. 7 V
Max. permitted residual current with 2-wire proximity sensor control (A1-A2)	
up to AC/DC 150 V:	AC resp. DC 5 mA
up to AC/DC 264 V:	AC resp. DC 3 mA
Output	
Contacts:	
IK/SK 7854.81:	1 changeover contact
Contact material:	AgNi
Measured nominal voltage:	AC 250 V
Thermal current I_{th}:	4 A (see see quadratic total current limit curve)
Switching capacity	
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
to DC 13:	1 A / DC 24 V
Electrical life	
at AC 15 to 1 A, AC 230 V:	1.5 x 10 ⁵ switching cycles IEC/EN 60 947-5-1
Permissible switching frequency:	36 000 switching cycles / h
Short circuit strength	
max. fuse rating:	4 A gL IEC/EN 60 947-5-1

Technical Data	
Mechanical life:	30 x 10 ⁶ switching cycles
General Data	
Operating mode:	Continuous operation
Temperature range:	
Operation:	- 40 ... + 60 °C (higher temperature with limitations see quadratic total current limit curve)
Storage:	- 40 ... + 70 °C
Relative air humidity:	93 % at 40 °C
Altitude:	< 2.000 m
Clearance and creepage distances	
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
EMC	
Electrostatic discharge:	8 kV (air) IEC/EN 61 000-4-2
HF irradiation	
80 MHz ... 1 GHz:	20 V / m IEC/EN 61 000-4-3
1 GHz ... 2.7 GHz:	10 V / m IEC/EN 61 000-4-3
Fast transients:	
A1/A2:	4 kV IEC/EN 61 000-4-4
Z1/Z2/Z3:	2 kV IEC/EN 61 000-4-4
Surge voltages between wires for power supply:	2 kV IEC/EN 61 000-4-5
between wire and ground:	4 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 55011
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 40 / 060 / 04 IEC/EN 60 068-1
Climate resistance:	
Terminal designation:	EN 50 005
Wire connection:	DIN 46 228-1/-2/-3/-4
Cross section:	2 x 2.5 mm ² solid or 2 x 1.5 mm ² stranded wire with sleeve
Stripping length:	10 mm
Wire fixing:	Flat terminals with self-lifting clamping piece IEC/EN 60 999-1
Fixing torque:	0.8 Nm
Mounting:	DIN rail IEC/EN 60 715
Weight:	
IK 7854:	approx. 65 g
SK 7854:	approx. 84 g
Dimensions	
Width x height x depth:	
IK 7854:	17.5 x 90 x 59 mm
SK 7854:	17.5 x 90 x 98 mm

Standard Type

IK 7854.81 AC/DC 12 ... 240 V 0.05 s ... 300 h
 Article number: 0054362
 • Output: 1 changeover contact
 • Nominal voltage U_N : AC/DC 12 ... 240 V
 • Time ranges: 0.05 s ... 300 h
 • Width: 17.5 mm

SK 7854.81 AC/DC 12 ... 240 V 0.05 s ... 300 h
 Article number: 0059557
 • Output: 1 changeover contact
 • Nominal voltage U_N : AC/DC 12 ... 240 V
 • Time ranges: 0.05 s ... 300 h
 • Width: 17.5 mm

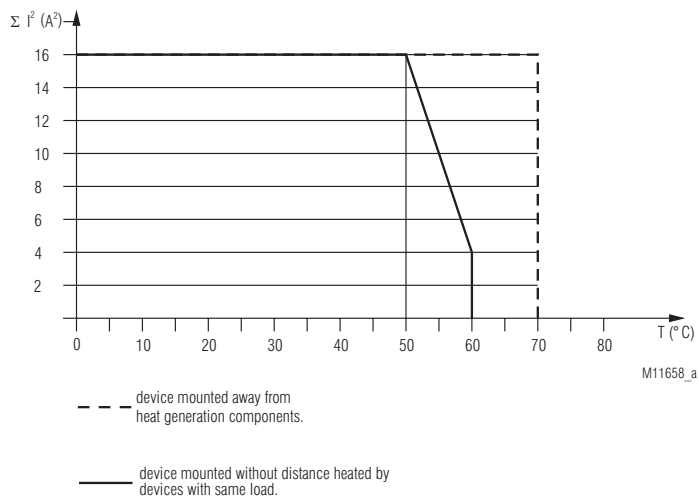
Variant

IK 7854.81/300: - Connection facility for 2 remote potentiometers 10 kOhms to adjust pulse and break time

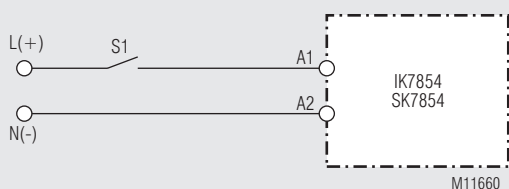
Ordering example for variant

IK 7854 .81 / _ _ _ AC/DC 12 ... 240 V 0.05 s ... 300 h
 Type Variant, if required Nominal voltage Time ranges Contacts

Characteristics



Connection Example



Accessories

AD 3:

External potentiometer 10 kΩ
 Article number: 0028962

The external potentiometer is used for remote setting of the time delay. The internal potentiometer of the timer must be set to min. time delay.

Degree of protection front side:

IP 60

