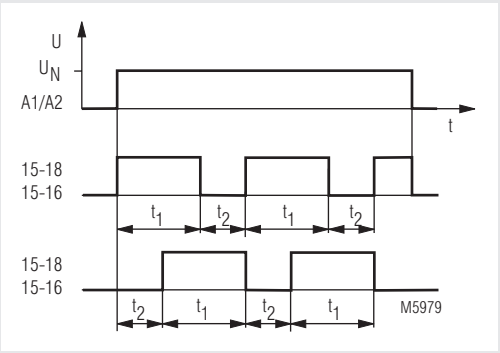
MINITIMER
Cyclic Timer
IK 7854, SK 7854

0239762

- 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 Marking

CE

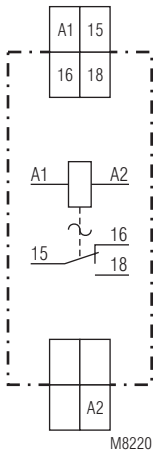
Application

Time-dependent controllers

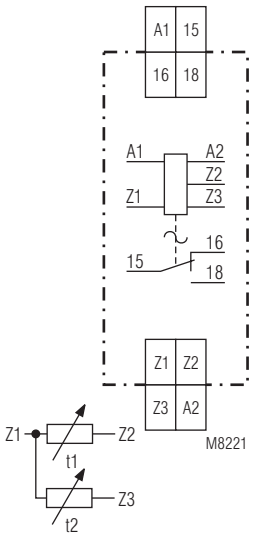
Indicators

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 Diagram



IK 7854.81
SK 7854.81



IK 7854.81/300
SK 7854.81/300

Notes

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 recommendend 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 kΩ	(1 W)

Adjustment assistance
The flashing period of the yellow LED is 1 s ± 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.

Notes

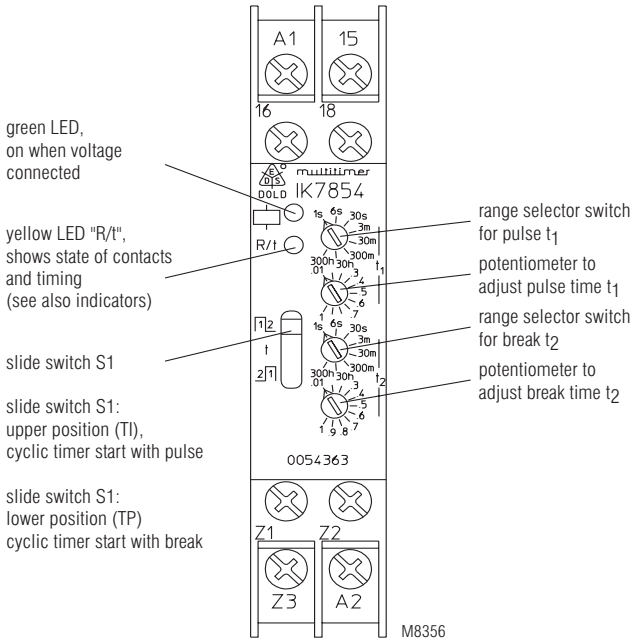
Remote potentiometers
With the variant IK/SK 7854.81/300 both time settings can also be made via remote potentiometers of 10 kOhms:
- Terminals Z1-Z2: potentiometer for pulse time (t1)
- Terminals Z1-Z3: potentiometer for break time (t2)

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 recommendet 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.

Setting



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
Time setting t1, t2:	continuous, 1:100 on relative scale
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

Technical Data

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	
Thermal current I_{th}:	4 A	
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
Mechanical life:	30 x 10^6 switching cycles	

General Data

Operating mode:	Continuous operation	
Temperature range:	- 40 ... + 60°C	
Clearance and creepage distances		
rated impuls voltage / pollution degree:	4 kV / 2	IEC 60 664-1
EMC		
Electrostatic discharge:	8 kV (air)	IEC/EN 61 000-4-2
Fast transients:	2 kV	IEC/EN 61 000-4-4
Surge voltages between		
wires for power supply:	1 kV	IEC/EN 61 000-4-5
HF-wire guided:	10 V	IEC/EN 61 000-4-6
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, frequency10 ... 55 Hz,	IEC/EN 60 068-2-6
Climate resistance:	40 / 060 / 04	IEC/EN 60 068-1
Terminal designation:	EN 50 005	
Wire connection:	2 x 2.5 mm² solid or 2 x 1.5 mm² stranded wire with sleeve DIN 46 228-1/-2/-3/-4	
Wire fixing:	Flat terminals with self-lifting clamping piece	IEC/EN 60 999-1
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

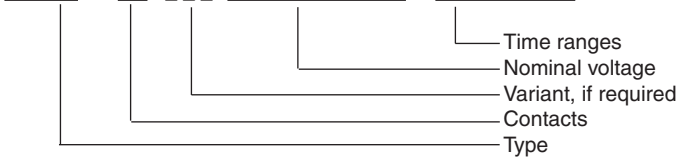
SK 7854.81 AC/DC 12 ... 240 V 0.05 s ... 300 h
Article number:
- Output: 1 changeover contact
- Nominal voltage U_N: AC/DC 12 ... 240 V
- Time ranges: 0.05 s ... 300 h
- Width: 17.5 mm

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



Accessories

AD 3: External potentiometer 10 kΩ

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