

MINITIMER Star-Delta Timer MK 7853N

Translation
of the original instructions



- Star-delta relay according to IEC/DIN EN 61812-1
- Time delay up to 100 s
- Repeat accuracy $< \pm 0.5\%$
- Wire connection: also $2 \times 1.5 \text{ mm}^2$ stranded ferruled, or $2 \times 2.5 \text{ mm}^2$ solid DIN 46228-1/-2/-3/-4
- As option with pluggable terminal blocks for easy exchange of devices
 - With screw terminals
 - Or with cage clamp terminals
- Width 22.5 mm

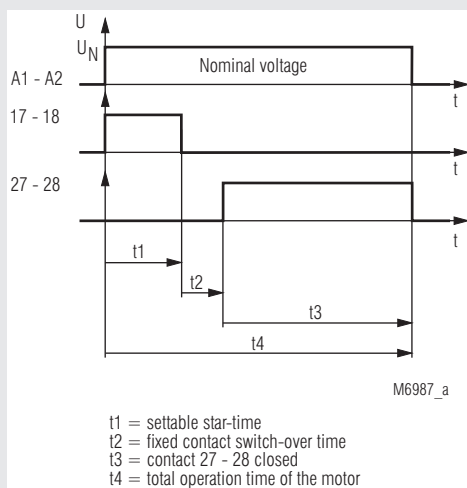
Product Description

The MK 7853N is a static star-delta-timer with 2 separate output relays. As soon as the operating voltage is applied, relay 1 will be energized and falls back after time delay. After elapse of the contact changeover time, the second relay switches on and remains in active position, as long as the star-delta-timer is energized.

Approvals and Markings



Function Diagram



Applications

Star-delta-starting circuit for squirrel cage motors

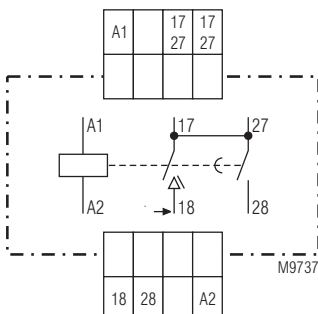
Connection Terminals

Terminal designation	Signal description
A1, A2	Voltage supply AC/DC
17, 18	NO contacts for star contactor
27, 28	NO contacts for delta contactor

Indicators

1 yellow LED each: On, when Υ -Rel1 e.g. Δ -Rel2 energized

Circuit Diagram



Technical Data

Time circuit

Time ranges: 0.5 ... 10 s 1.5 ... 30 s
3.0 ... 60 s 5.0 ... 100 s

Contact changeover time: Approx. 100 ms
approx. 35 ms
please state when ordering
Stepless on absolute scale

Time setting:

Recovery time

tw 50 / 100: 40 ms

Repeat accuracy: $\leq \pm 0.5\%$ of the max. scale value

Voltage influence: $\leq 1\%$

Temperature influence: 0.1 % / K

Input

Nominal voltage U_N : AC/DC 24 V; AC/DC 42 V; AC/DC 48 V
AC 110 ... 127 V; AC 220 ... 240 V;
AC 380 ... 400 V

Voltage range: 0.8 ... 1,1 U_N

Nominal consumption: AC 230 V AC/DC 24 V
7 VA 0.6 W

Nominal frequency: 50 / 60 Hz

Frequency range: $\pm 5\% f_N$

Output

Contacts: 1 fleeting on make
1 NO contact delay on

Contact material: AgSnO₂ + 0,2 μ m Au

Measured nominal voltage: AC 250 V

Release time: 40 ms

Thermal current I_{th} : 5 A

Switching capacity

To AC 15:

NO contact: 3 A / AC 230 V IEC/EN 60947-5-1

NC contact: 1 A / AC 230 V IEC/EN 60947-5-1

Electrical life IEC/EN 60947-5-1

To AC 15 at 3 A, AC 230 V: 5 x 10⁵ switching cycles

Permissible switching

frequency: 6 000 switching cycles / h

Short-circuit strength

Max. fuse rating: 6 A gG / gL IEC/EN 60947-5-1

Mechanical life: 20 x 10⁶ switching cycles

General Data

Operating mode Continuous operation

Temperature range

Operation: - 20 ... + 60 °C

Storage: - 45 ... + 60 °C

Relative air humidity: 93 % at 40 °C

Altitude: ≤ 2000 m

Clearance and creepage distances

Rated impulse voltage / pollution degree: 4 kV / 2 IEC 60664-1

EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61000-4-2

HF irradiation

80 MHz ... 1 GHz: 10 V / m IEC/EN 61000-4-3

1 GHz ... 2 GHz: 3 V / m IEC/EN 61000-4-3

2 GHz ... 2.7 GHz: 1 V / m IEC/EN 61000-4-3

Fast transients: 2 kV IEC/EN 61000-4-4

Surge voltages

Between wires for power supply: 1 kV IEC/EN 61000-4-5

Between wire and ground: 2 kV IEC/EN 61000-4-5

HF-wire guided: 10 V IEC/EN 61000-4-6

Interference suppression: Limit value class B EN 55011

Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

Housing: Thermoplastic with V0 behaviour

according with UL Subj. 94

Vibration resistance: Amplitude 0.35 mm

frequency 10 ... 55 Hz IEC/EN 60068-2-6

Climate resistance: 20 / 060 / 04 IEC/EN 60068-1

Technical Data

Terminal designation: EN 50005

Wire connection DIN 46228-1/-2/-3/-4

Screw terminals (integrated): 1 x 4 mm² solid or
1 x 2.5 mm² stranded ferruled or
2 x 1.5 mm² stranded ferruled or
2 x 2.5 mm² solid

Insulation of wires or sleeve length: 8 mm

Plug in with screw terminals

Max. cross section for connection: 1 x 2.5 mm² solid or
1 x 2.5 mm² stranded ferruled

Insulation of wires or sleeve length: 8 mm

Plug in with cage clamp terminals

Max. cross section for connection: 1 x 4 mm² solid or
1 x 2.5 mm² stranded ferruled

Min. cross section for connection: 0.5 mm²

Insulation of wires or sleeve length: 12 ± 0.5 mm

Wire fixing: Plus-minus terminal screws M 3.5

box terminals with wire protection or cage clamp terminals

Fixing torque: 0.4 Nm

Mounting: DIN rail IEC/EN 60715

Weight: 140 g

Dimensions

Width x height x depth:

MK 7853N: 22.5 x 90 x 97 mm

MK 7853N PC: 22.5 x 111 x 97 mm

MK 7853N PS: 22.5 x 104 x 97 mm

Standard Type

MK 7853N AC 220 ... 240 V 30 s / 35 ms

Article number: 0061017

• Output: 1 fleeting on make
1 NO contact delay on

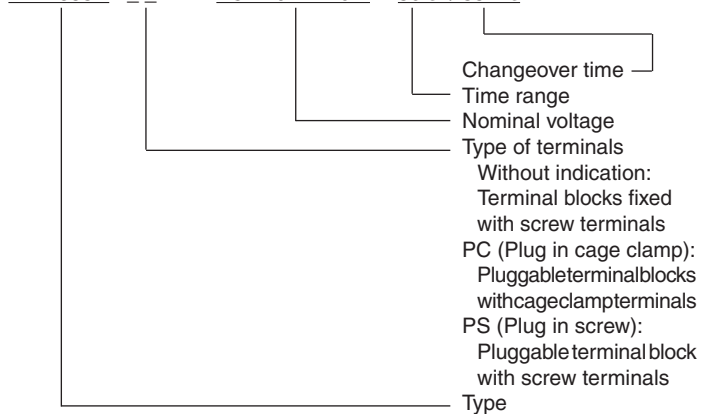
• Nominal voltage U_N : AC 220 ... 240 V

• Time range / changeover time: 1.5 ... 30 s / 35 ms

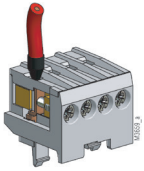
• Width: 22.5 mm

Ordering Example

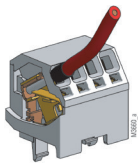
MK 7853N AC 220 ... 240 V 30 s / 35 ms



Options with Pluggable Terminal Blocks



Screw terminal
(PS/plugin screw)

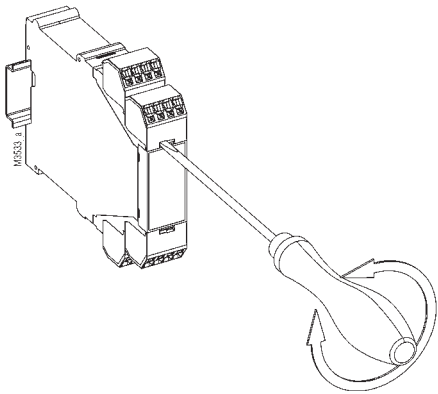


Cage clamp
(PC/plugin cage clamp)

Notes

Removing the terminal blocks with cage clamp terminals

1. The unit has to be disconnected.
2. Insert a screwdriver in the side recess of the front plate.
3. Turn the screwdriver to the right and left.
4. Please note that the terminal blocks have to be mounted on the belonging plug in terminations.



Connection Examples

