



- Star-delta relay according to IEC/EN 61812-1
- Time ranges up to 100 s
- Repeat accuracy $\leq 0.5\% + 10\text{ ms}$
- 2-voltage design
- LED indicators for contact position
- 1 NO contact fleeting make
1 NO contact operate delayed
- Width 22.5 mm

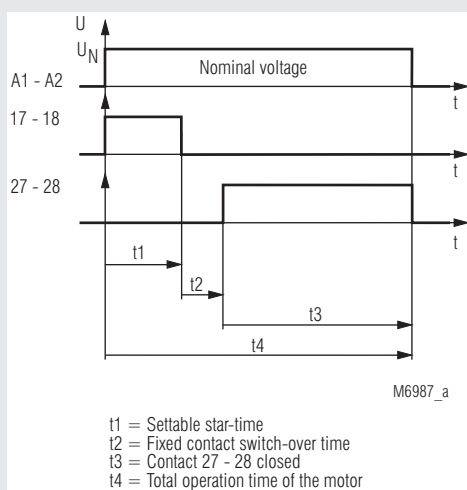
Product Description

The BC 7936N star-delta timing relay is used for start-up control of three-phase motors. The time in star operation is continuously adjustable in the respective time range. As standard, the device is offered in 4 time ranges and 3 contact changeover times.

Approvals and Markings



Function Diagram



Applications

Star-delta starting of 3-phase motors

Indicators

- Upper LED: On, when output relay activated (contacts 17-18 are closed)
- Lower LED: On, when output relay activated (contacts 27-28 are closed)

Technical Data

Time Circuit

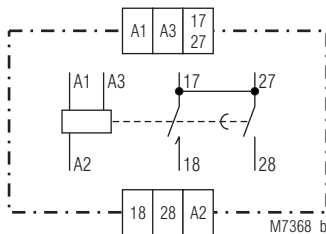
- Time ranges:** 0.5 ... 10 s 1.5 ... 30 s
3.0 ... 60 s 5.0 ... 100 s
- Time setting:** Infinitely variable 1 : 20
- Contact switch-over time:** 35 ms
80 ms
100 ms
- Recovery time:** $\leq 100\text{ ms}$
- Repeat accuracy:** $\leq 0.5\% + 10\text{ ms}$
- Voltage influence:** $\leq 1\%$
- Temperature influence:** 0.25 % / K

Input

- Operating voltage U_N :** AC/DC 24 V¹⁾ + AC/DC 42 ... 48 V²⁾
AC/DC 24 V¹⁾ + AC 110 ... 127 V²⁾
AC/DC 24 V¹⁾ + AC 220 ... 240 V²⁾
- ¹⁾ on terminals A3-A2
²⁾ on terminals A1-A2
- Voltage range:** AC 0.8 ... 1.1 U_N
DC 0.9 ... 1.25 U_N

- Nominal consumption:** AC 230 V: 3.6 VA
DC 24 V: 0.35 W
- Nominal frequency:** 50 / 60 Hz
- Release voltage:** $\geq 15\% U_N$

Circuit Diagram



Connection Terminals

Terminal designation	Signal description
A1, A2, A3	Operating voltage
17, 18	1 NO contact fleeting on make
27, 28	1 NO contact operate delayed

Technical Data

Output

Contacts:	1 NO contact fleeting on make 1 NO contact operate delayed 4 A
Thermal current I_{th}:	
Switching capacity	
To AC 15:	3 A / AC 230 V IEC/EN 60947-5-1
Electrical life	IEC/EN 60947-5-1
To AC 15 at 1 A, AC 230 V:	5 x 10 ⁵ switching cycles
Short-circuit strength	
Max. fuse rating:	4 A gG / gL IEC/EN 60947-5-1
Mechanical life:	10 ⁸ switching cycles

General Data

Operating mode:	Continuous operation
Temperature range	
Operation:	- 20 ... + 60 °C
Storage:	- 40 ... + 70 °C
Altitude:	≤ 2000 m

Clearance and creepage distances

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

Electrostatic discharge:	8 kV (contact)	IEC/EN 61000-4-2
HF irradiation		
80 MHz ... 1 GHz:	10 V / m	IEC/EN 61000-4-3
1 GHz ... 2.5 GHz:	3 V / m	IEC/EN 61000-4-3
2.5 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		
150 kHz ... 80 MHz:	10 V / m	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

to UL subject 94

Amplitude 0.35 mm IEC/EN 60068-2-6

frequency 10 ... 55 Hz

20 / 060 / 04 IEC/EN 60068-1

EN 50005

1 x 4 mm² solid or

1 x 2.5 mm² stranded ferruled (isolated)

or

2 x 1.5 mm² stranded ferruled (isolated)

DIN 46228-1/-2/-3/-4 or

2 x 2.5 mm² stranded ferruled

DIN 46228-1/-2/-3

Terminal screws M 3.5

Box terminal with wire protection

0.8 Nm

DIN rail IEC/EN 60715

Weight: 85 g

Dimensions

Width x height x depth: 22.5 x 84 x 97 mm

Standard Type

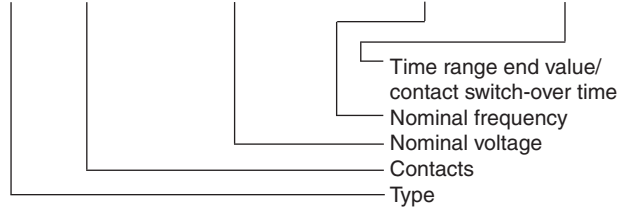
BC 7936N.38 AC/DC 24 V + AC 220 V ... 240 V 50/60 Hz 30 s 35 ms

Article number: 0052779

- Front colour grey, with box terminals
- Operating voltage U_N : AC/DC 24 V + AC 220 V ... 240 V, 50/60 Hz
- Time range: 1.5 ... 30 s
- Contact switch-over time: 35 ms
- Width: 22.5 mm

Ordering Example

BC 7936N .38 AC/DC 24 V + AC 220 ... 240 V 50 / 60 Hz 100 s / 35 ms



Connection Examples

