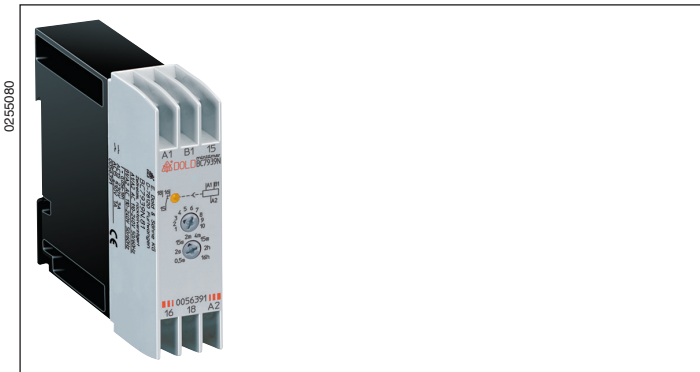


Time Control Technique

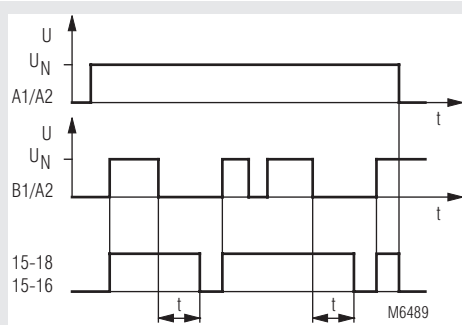
MINITIMER
Timer, Off-delay
BC 7939N

Translation
of the original instructions



- OFF-delay relay with control signal according to EN 61812-1
- 8 settable time ranges between 0.05 s and 10 h
- Settable release delay
- With auxiliary voltage
- Wide voltage range AC 110 ... 240 V
- Control input operated with nominal voltage, No voltage free contact necessary
- LED indicator for status of contact
- 1 changeover contact
- Wire connection: also 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
- Width 22.5 mm

Function Diagram



Approvals and Markings



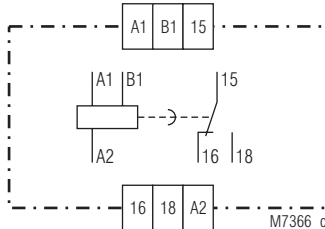
Applications

Time-dependent control circuits

Indicators

Yellow LED: On, when output relay activated (contact 15 - 18 closed)

Circuit Diagram



Notes

The relay needs a supply voltage continuously connected to A1-A2. At relays with auxiliary supply < AC 180 V the control input must not be operated before the auxiliary supply is present for at least 150 ms. In this case also the recovery time after time delay is 150 ms.

Connection Terminals

Terminal designation	Signal description
A1, A2	Operating voltage
B1	Control input
15, 16, 18	Changeover contact

Technical Data

Time Circuit

Time ranges:	8 settable time ranges:
	0.05 ... 1 s 0.5 ... 10 m
	0.15 ... 3 s 1.5 ... 30 m
	0.5 ... 10 s 0.15 ... 3 h
	1.5 ... 30 s 0.5 ... 10 h
	5 ... 100 s
	15 ... 300 s
Time setting:	Infinitely variable 1:10
Min. closing time:	(Control input B1) AC: 15 ms DC: 5 ms
Recovery time:	< 50 ms
Repeat accuracy:	≤ 0.5 % + 10 ms
Voltage influence:	≤ 1 %
Temperature influence:	≤ 0.25 % / K

Input

Nominal voltage U_N (Operating voltage):	(A1/A2 and B1/A2) AC 110 ... 240 V AC 42 ... 48 V / DC 48 V AC/DC 24 V
Voltage range:	AC: 0.8 ... 1.1 U_N DC: 0.9 ... 1.25 U_N
Nominal consumption:	AC: 4 VA DC: 0.4 W
Nominal frequency:	AC: 50 / 60 Hz
Frequency range:	AC: 45 ... 65 Hz
Reset voltage:	(Control input B1) ≥ 15 % U_N

Output

Contacts:	BC 7939N.81:	1 changeover contact
Contact material:		AgNi
Measured nominal voltage:		AC 250 V
Thermal current I_{th}:		4 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 contact life		IEC/EN 60947-5-1
To AC 15 at 1 A, AC 230 V:	1.5 x 10 ⁵ switching cycles	
Permissible switching frequency:	36000 switching cycles / h	
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:	- 25 ... + 70 °C	
Relative air humidity:	95 % at 40 °C	
Altitude:	≤ 2000 m	
Clearance and creepage distances		
Overvoltage category / pollution degree:	4 kV / 2 (basis insulation)	IEC 60664-1
Overvoltage category:	III	
Insulation test voltage, type test:	2.5 kV; 1 min	
EMC		
Electrostatic discharge:	4 kV (contact) 8 kV (air)	IEC/EN 61000-4-2 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 A1/A2:	1 kV	IEC/EN 61000-4-5
Between B1/A2:	1 kV	IEC/EN 61000-4-5
Between A1, A2/PE:	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

Technical Data

Degree of protection

Housing:	IP 40	IEC/EN 60529
Terminals:	IP 20	IEC/EN 60529
Housing:	Thermoplastic with V0 behaviour according to UL subject 94	
Vibration resistance:	Amplitude 0.35 mm	IEC/EN 60068-2-6
	frequency 10 ... 55 Hz	
Climate resistance:	20 / 060 / 04	IEC/EN 60068-1
Terminal designation:	EN 50005	
Wire connection:		
Cross section:	1 x 4 mm ² solid or 1 x 2.5 mm ² stranded ferruled (isolated) or 2 x 1.5 mm ² stranded ferruled (isolated) DIN 46228-1/-2/-3/-4 or 2 x 2.5 mm ² stranded ferruled DIN 46228-1/-2/-3	
Insulation of wires or sleeve length:	10 mm	
Wire fixing:	Terminal screws M 3.5 Box terminal with wire protection	
Fixing torque:	0.8 Nm	
Mounting:	DIN rail	IEC/EN 60715
Weight:	80 g	

Dimensions

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

BC 7939N.81	AC 110 ... 240 V	50/60 Hz	16 h
Article number:	0056391		
• Front colour grey, with box terminals			
• Output:	1 changeover contact		
• Nominal voltage U_N :	AC 110 ... 240 V		
• Time range:	0.05 ... 16 h		
• Width:	22.5 mm		

Ordering Example

BC 7939N	.81	AC 110 ... 240 V	50 / 60 Hz	0.05 ... 16 h
				Time delay
				Nominal frequency
				Nominal voltage
				Contact
				Type

Connection Examples

