

NGM 1003

Multi-function multi-range time relay

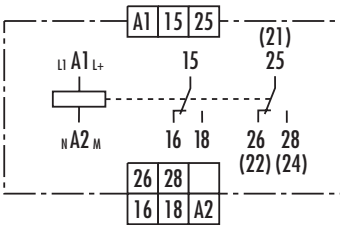
- Multi-voltage for AC/DC 24 to 240 V
- 10 function
- Setting range from 0.1 s to 300 h divided into 16 switchable time ranges
- 2 changeover contacts or 1 instantaneous changeover contact and one timed changeover contact (function-dependent)
- 3 LEDs for function display

Time ranges

Setting range from 0.1 s to 300 h divided into:

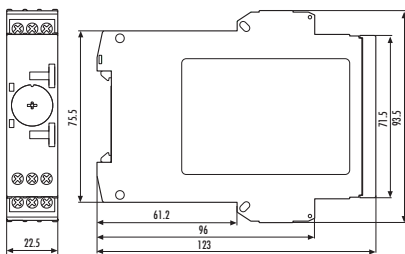
≤ 0.1 to 1 s	1.5 to 30 min
0.15 to 3 s	3 to 60 min
0.5 to 10 s	5 to 100 min
1.5 to 30 s	0.15 to 3 h
5 to 100 s	0.5 to 10 h
15 to 300 s	1.5 to 30 h
0.5 to 10 min	5 to 100 h
50 to 1000 s	15 to 300 h

Connection diagram



KS 250-29

Dimensions



K 3-3

Ordering designation

NGM 1003

Price code: 26.1

Features

Setting the Function

The function is set with the MODE selector switch and displayed by the function code in the window next to it. The code designation for the function can be found in the "Functions" column.

Setting the time delay

The time range is set with the RANGE selector switch and displayed in the window next to it. The required delay time is set with a setting wheel.

LEDs show the state of the excitation input and the position of the contacts. You can monitor the countdown on a flashing LED.

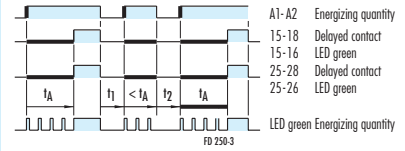
Note

The device is designed for multi-voltage. Connect phase L1 or L+ to terminal A1 and neutral N or M to terminal A2.

You can change the function or the delay time during operation. The change is effective immediately.

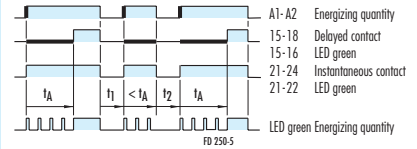
Functions

Function code 11 = ON-delay



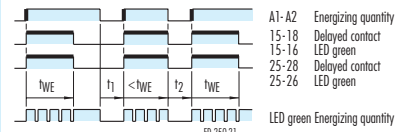
t_A = Operating time
 t_1 = Break time, must be > recovery time 1
 t_2 = Break time, must be > recovery time 2

Function code 11-ON = ON-delay



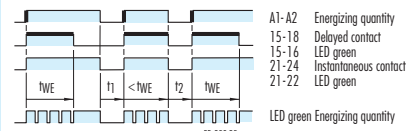
t_A = Operating time
 t_1 = Break time, must be > recovery time 1
 t_2 = Break time, must be > recovery time 2

Function code 21 = interval ON



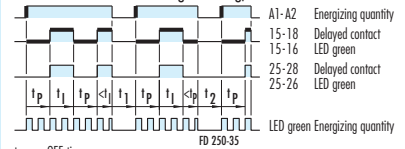
t_{WE} = Interval ON time
 t_1 = Break time, must be > recovery time 1
 t_2 = Break time, must be > recovery time 2

Function code 21-ON = interval ON



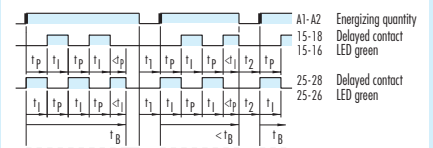
t_{WE} = Interval ON time
 t_1 = Break time, must be > recovery time 1
 t_2 = Break time, must be > recovery time 2

Function code 41 = clock-generating, starts OFF



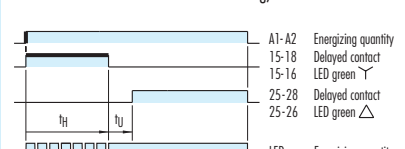
t_P = OFF time
 t_1 = ON time
 t_2 = Break time, must be > recovery time 1
 t_2 = Break time, must be > recovery time 2

Function code 43-44 = clock-generating, 0.5 s fixed OFF and ON time, starts OFF and ON, with cycle time setting range



t_B = Cycle time
 t_P = Fixed OFF time
 t_1 = Fixed ON time
 t_1 = Break time, must be > recovery time 1
 t_2 = Break time, must be > recovery time 2

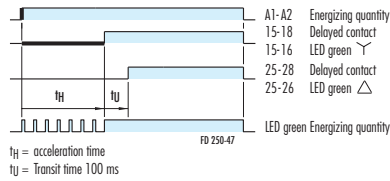
Function code 51 = Star-delta switching, interval ON



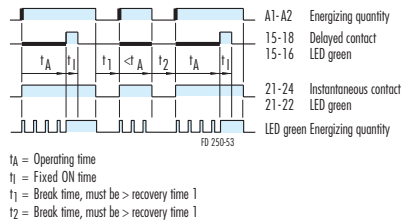
t_H = acceleration time
 t_U = Transit time 100 ms

Functions

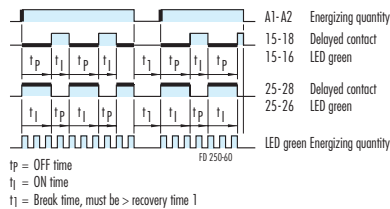
Function code 52 = Star-delta switching, 2-fold ON-delay



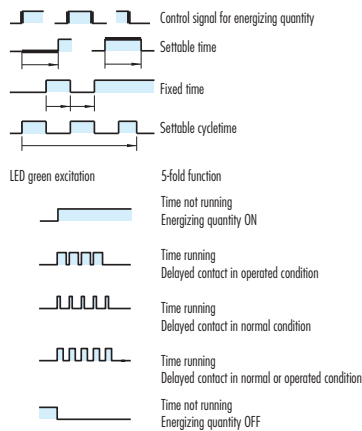
Function code 81 - 1 s-ON = ON-delay, pulse-generating, 1 s fixed ON time



Function code 83-84-1 s = pulse-generating, 1 s fixed ON or OFF time



Legend



Technical data

Device type

Product norm (Time relays)

Relay function according to IEC 60050 (445)
Function diagram
Function display
Ambient operating temperature range

Input circuit

Rated voltage A1 - A2
Rated power AC
Rated power DC
Rated voltage limits
Rated frequency f_n
Release value of input voltage (line capacitance approx. 150 pF/m)
Parallel load permitted
Internal one-way rectifier

Time circuit

Time setting / number of time ranges
Setting ranges for time delay

Recovery time 1/2/3
Minimum ON time 1/2
Setting tolerance
Repeatability (to set value)
Influence of temperature (within range)
Influence of voltage (within range)

Output circuit

Contact equipment
Contact material
Rated operating voltage
Rated value for limiting continuous current I_{th}
Minimum contact load
Utilization category according to IEC 60947 - 5 - 1
Permissible switching frequency
Mechanical service life
Electrical service life
20/2 A, AC 250 V, $\cos \varphi = 0.3$
Operate time / release time for excitation A1 - A2

Other data

Clearance/creepage distances to IEC 60664 - 1
Contamination level
Overvoltage category
Rated voltage
Protection class housing / terminals acc. to IEC 60529
Interference immunity acc. to IEC 61000 - 4
Dimensions (housing)
Terminal connection diagram
Connection cross sections single or fine wire
fine wire with connector sleeve
Weight

General Technical Specification

NGM 1003

EN 61812 - 1:1999-08

Multi-function relay with multi-time-range
See "Functions" column
3 LEDs green
-25 to + 60 °C

AC/DC 24 to 240 V
3.5 VA/1.7 W
1.6 W
70 to 110 %
50 to 60 Hz ± 5 %
 \geq AC/DC 10 V; permissible line capacitance 0.2 μ F
A1 - A2 yes
A1 - A2 no

analog/16
from ≤ 0.1 s to 300 h divided into:

≤ 0.1 to 1 s	1.5 to 30 min
0.15 to 3 s	3 to 60 min
0.5 to 10 s	5 to 100 min
1.5 to 30 s	0.15 to 3 h
5 to 100 s	0.5 to 10 h
15 to 300 s	1.5 to 30 h
0.5 to 10 min	5 to 100 h
50 to 1000 s	15 to 300 h

See table 3
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 $\leq \pm 5$ %
 $\leq \pm 0.01$ % + ± 10 ms
 $\leq \pm 0.002$ %
 $\leq \pm 0.002$ %

2 changeover contacts
AgNi 90/10
AC/DC 24 to 240 V
5 A
 \geq AC/DC 5 V/ ≥ 10 mA
AC-15 U_e AC 230 V, I_e 3 A
DC-13 U_e DC 24 V, I_e 2 A
 ≤ 3600 switching cycles/h
30 x 10^6 switching cycles
0.12 x 10^6 switching cycles AC-15
40 ms

3 outside, 2 inside
III
AC/DC 275 V
IP 40/IP 20

Test level 3
K 3-3
KS 250 - 29
1 x 0,2 to 6 or 2 x 0,2 to 2,5 mm²
1 x 0,4 to 4 or 2 x 0,2 to 1,5 mm²
0.13 kg

NGG Catalogue