

# NGM 1004

## Multi-function multi-range time relay

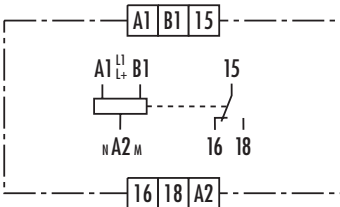
- Multi-voltage for AC/DC 24 to 240 V
- 10 functions
- Setting range from 0.1 s to 300 h divided into 16 switchable time ranges
- 1 changeover contact
- 2 LEDs for function display

### Time ranges

Setting range from 0.1 s to 300 h divided into:

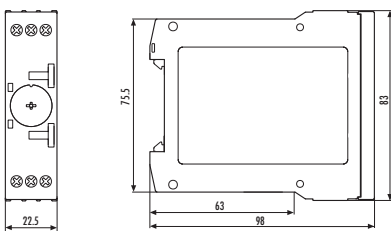
|               |               |
|---------------|---------------|
| ≤ 0.1 to 1 s  | 1.5 to 30 min |
| 0.15 to 3 s   | 3 to 60 min   |
| 0.5 to 10 s   | 5 to 100 min  |
| 1.5 to 30 s   | 0.15 to 3 h   |
| 5 to 100 s    | 0.5 to 10 h   |
| 15 to 300 s   | 1.5 to 30 h   |
| 0.5 to 10 min | 5 to 100 h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

### Connection diagram



KS 250-30

### Dimensions



K 3-1

### Ordering designation

**NGM 1004**

Price code: 24.1

### 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.

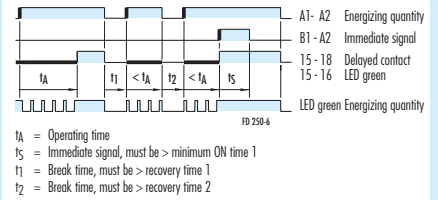
### Note

The device is designed for multi-voltage. Connect phase L1 or L+ to terminal A1 and B1 and neutral N and/or M to terminal A2.

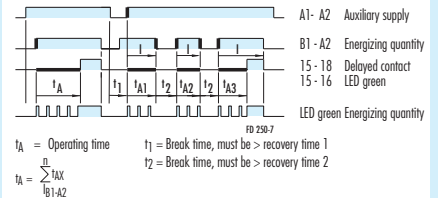
You can change the function or the delay time during operation. The change is effective immediately.

## Functions

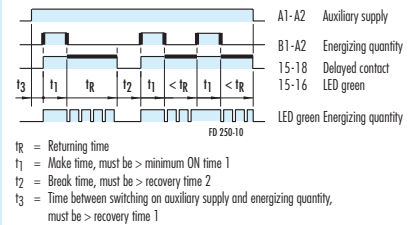
Function code 11 = ON-delay, also immediate operation



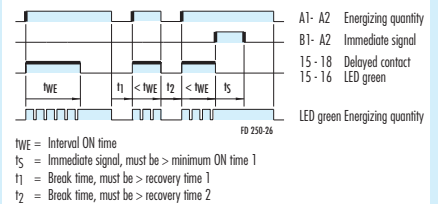
Function code 11C = ON-delay, accumulative y/n, with auxiliary supply



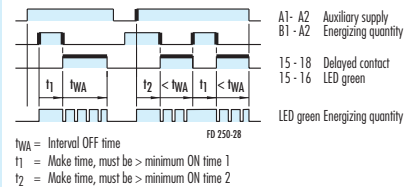
Function code 12 = OFF-delay, with auxiliary supply



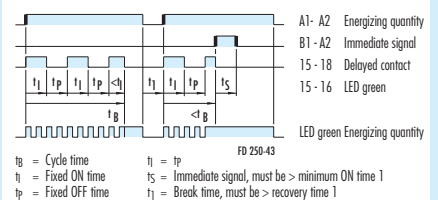
Function code 21 = ON-delay, also immediate release



Function code 22 = interval OFF, with auxiliary supply

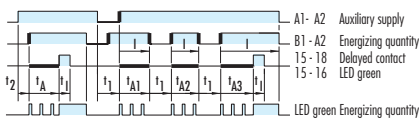


Function code 44 = clock-generating, 0.5 s fixed ON and OFF time, ON start, with cycle time setting range, also immediate release



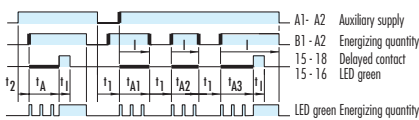
## Functions

**Function code 81C-1 s = ON-delay, accumulative  $\gamma/n$ , pulse-generating, 1 s fixed ON time, with auxiliary supply**



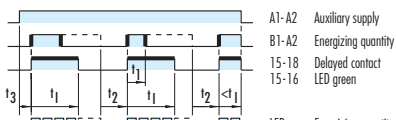
$t_A$  = Operating time  $t_1$  = Break time, must be > recovery time 1  
 $t_2$  = Time between switching on auxiliary supply and energizing quantity, must be > recovery time 2  
 $t_A = \sum_{i=1}^n t_{A1-A2}$   
 $t_1$  = Fixed ON time

**Function code 81C-2 s = ON-delay, accumulative  $\gamma/n$ , pulse-generating, 2 s fixed ON time, with auxiliary supply**



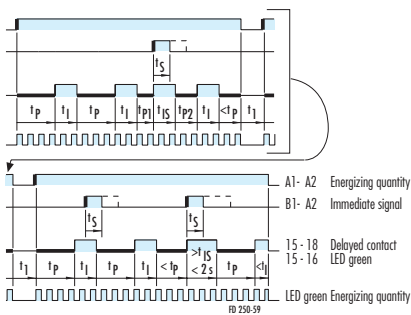
$t_A$  = Operating time  $t_1$  = Break time, must be > recovery time 1  
 $t_2$  = Time between switching on auxiliary supply and energizing quantity, must be > recovery time 2  
 $t_A = \sum_{i=1}^n t_{A1-A2}$   
 $t_1$  = Fixed ON time

**Function code 82 = pulse-shaping, with auxiliary supply**



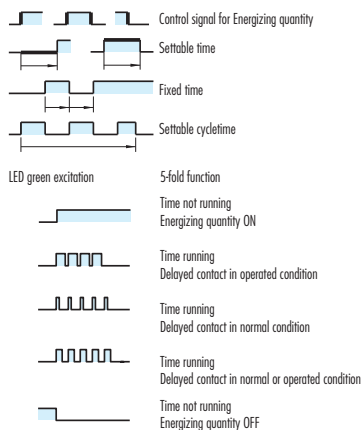
$t_1$  = ON time  
 $t_2$  = Make time, must be > minimum ON time 1  
 $t_3$  = Break time, must be > recovery time 1  
 $t_3$  = Time between switching on auxiliary supply and Energizing quantity, must be > recovery time 2

**Function code 83-1 s = pulse-generating, 1 s fixed ON time, OFF start, also immediate pulse generation**



$t_p$  = Off time  $t_s$  = Immediate signal, must be > minimum ON time 1  
 $t_{p-} = t_{p1} + t_{p2}$   $t_1$  = Break time, must be > recovery time 1  
 $t_{1-}$  = Fixed ON time  
 $t_{s-}$  = Fixed immediate pulse 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, B1 - 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)  
 Rated current on control connection (B1 - A2)  
 Rated power on control connection (B1 - A2)  
 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  
 Operate time / release time for excitation A1 - A2  
 Operate time / release time for excitation B1 - 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

### NGM 1004

EN 61812 - 1:1999 - 08

Multi-function relay with multi-time-range  
 See "Functions" column  
 2 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  $\pm 5$  %  
 $\geq$  AC/DC 10 V; permissible line capacitance 0.2  $\mu$ F  
 1 mA  
 $< 0.25$  W  
 A1 - A2 yes/B1 - A2 yes  
 A1 - A2 no/B1 - A2 yes

analog/16  
 from  $\leq 0.1$  s to 300 h divided into:  
 $\leq 0.1$  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 2  
 See table 2  
 $\leq \pm 5$  %  
 $\leq \pm 0.01$  % +  $\pm 10$  ms  
 $\leq \pm 0.002$  %  
 $\leq \pm 0.002$  %  
 1 changeover contacts  
 AgNi 90/10  
 AC/DC 24 to 240 V  
 5 A  
 $\geq$  AC/DC 5 V/ $\geq 10$  mA  
 AC-15  $U_e$  AC 230 V,  $I_e$  3 A  
 DC-13  $U_e$  DC 24 V,  $I_e$  2 A  
 $\leq 3600$  switching cycles/h  
 30 x  $10^6$  switching cycles  
 0.12 x  $10^6$  switching cycles AC-15  
 40 ms  
 20 ms

3 outside, 2 inside  
 III  
 AC/DC 275 V  
 IP 40/IP 20  
 Test level 3  
 K 3 - 1  
 KS 250 - 30  
 1 x 0,2 to 6 or 2 x 0,2 to 2,5 mm<sup>2</sup>  
 1 x 0,4 to 4 or 2 x 0,2 to 1,5 mm<sup>2</sup>  
 0.1 kg

### General Technical Specification

NGG Catalogue