

PROGRAMMABLE DIGITAL PANEL INDICATOR

N12B Type



1. APPLICATION

N12B programmable digital panel indicators are destined to be installed in synoptic panel boards and display the value transmitted through the RS-485 interface. The 5 or 4-digit read-out field (14 or 20 mm high digits) in red or green colour, ensures a good legibility at a long distance.

N12B meters realize following functions:

- signalling of the set value exceeding,
- signalling of the measuring range exceeding,
- recounting of the transmitted value into any optional quantity on the base of an individual, linear characteristic,
- programming of the indication resolution,
- programming of the averaging number of transmitted values,
- storage of maximal and minimal values,
- monitoring of set up parameter values,
- blocking of the parameter introduction by means of a password,
- highlighting of any optional measuring unit for the displayed value acc. the order,
- conversion of the measured quantity into any optional quantity on the base of an individual linear characteristic,
- interface handling in the MODBUS protocols, both ASCII and RTU,
- conversion of the transmitted value into a standard-programmable current or voltage signal,
- Master - asking the device connected to the bus.

We deliver together with the indicator:

- a guarantee card,
- 2 holders to fix the indicator,
- 2 plugs with screw or self-locking connections (as per order),
- a service manual,
- a set of stickers with units.

2. TECHNICAL DATA

Rated operation conditions:

- supply voltage depending on the code version

85... 253 V a.c. d.c.
20... 40 V a.c.
and 20... 50 V d.c.
- frequency of the supply a.c. voltage

40... 440 Hz

- ambient temperature

0... 50°C

- relative humidity

< 75% (inadmissible water vapour condensation)
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- Power consumption**

max 5 VA

- Storage temperature**

- 20...+85°C

Read-out field:

- N12B4

7 segment LED, 4 displays and 2 alarm diodes
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- N12B5

7 segment LED, 5 displays, 2 alarm diodes and 2 diodes to highlight the unit
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Indication range of the digital display:

- N12B4

-1999...9999

- N12B5

-19999...99999

Servicing by means of 4 keys



Relay outputs:

- programmable alarm thresholds,
- three types of alarm,
- hysteresis defined by means of the lower and upper alarm thresholds,
- signalling of the alarm operation by means of diodes,
- programmable time lag of alarm operation,
- two relay outputs,
- voltageless make contacts
- max. load capacity:

- voltage	250 V a.c., 150 V d.c.
- current	5 A, 30 V d.c., 250 V a.c.
- max. resistance load	1250 VA, 150 W

Analogue output:

- programmed current output

0/4...20 mA	
load resistance	≤ 500 Ω
- programmed voltage output

0...10 V	
load resistance	≥ 500 Ω
- galvanically insulated output
- resolution

0.01% of the range

- basic error

± (0.2% of the range)

Digital output:

- RS-485 interface
- MODBUS transmission protocol:
 - ASCII: 8N1, 7E1, 7O1
 - RTU: 8N2, 8E1, 8O1
- baud rate

2400, 4800, 9600 bit/sec.

- maximal response time

600 ms

Resistance against voltage decays

acc. EN 61000-6-2

Electromagnetic compatibility:

- immunity

acc. EN 61000-6-2

- emission

acc. EN 61000-6-4

Safety requirements:

- installation category

III

- pollution degree

2

- working voltage in relation to the earth

300 V a.c.

Protection level:

- ensured by the housing

IP 50

- ensured from the terminal side

IP 20

External dimensions:

96 × 48 × 93 mm

Cut-out dimensions in the panel

(92^{+0.6} × 45^{+0.6}) mm

Weight:

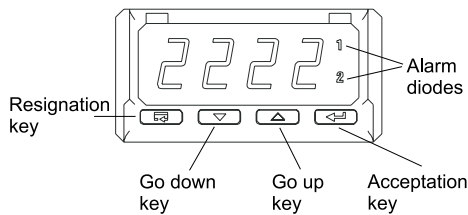
200 g

3. FRONTAL VIEW AND HANDLING

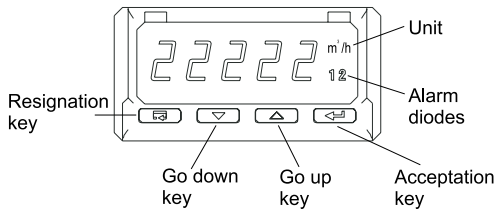
After switching the indicator on, the N12B indicator displays its own type and next the programme version. After ca 10 sec., the indicator automatically transits into the display mode of the transmitted value through the RS-485 interface.

The meter automatically blanks insignificant zeros. The exceeding of the alarm threshold is signalled by means of alarm diodes 1 and 2. The indicator automatically highlights the basic unit of the displayed value (this function does not exist in the execution with 20 mm high displays).

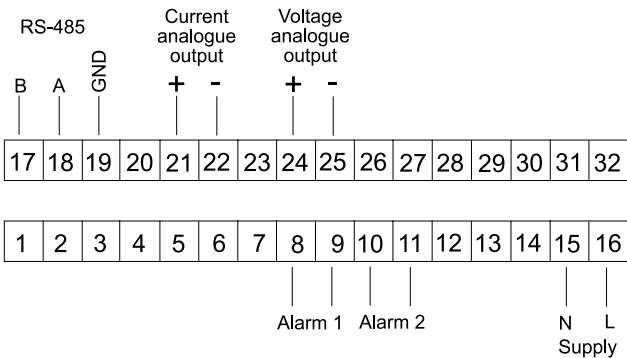
a) 4-digit version



b) 5-digit version



4. CONNECTION OF INPUT SIGNALS TO TERMINALS



5. ORDERING CODES

N12 DIGITAL METERS	X	X	X	X	XX	X	XXX
Inputs:							
indicator for synoptic pannels.....	B						
acc. order*.....	X						
Kind of displays:							
4-digit display field (20 mm).....		4					
5-digit display field (14 mm).....			5				
Display colour:							
red.....					0		
green.....						1	
Supply voltage:							
85...230...253 V a.c./d.c.....						1	
20...24...40 V a.c. and 20... 50 V d.c.....							2
Kind of terminals:							
socket-plug with screw connections.....						0	
socket-plug with self-locking connections.....							1
Version:							
standard.....							00
custom-made.....							XX
Acceptance tests:							
without a quality inspection certificate.....							8
with a quality inspection certificate.....							7
acc. customer's agreement*.....							X
Unit field - Introduce the highlighted unit symbol							

* The number code is established by the manufacturer

ORDERING EXAMPLE:

Code **N12B 4 1 1 0 00 8 m³/h** means: indicator for synoptic panel board with 4 displays of green colour, voltage supply: 230 V a.c., d.c., socket plug terminals with screw connections, standard version, without a quality inspection certificate. The meter is destined to measure m³/h.