

DIGITAL PANEL METER

N20Z Type



1. APPLICATION

The N20Z meter is a digital programmable panel instrument destined for measurements of a.c. voltages, a.c. currents, or frequency.

The readout display is a LED display which enables the exposition of results in red, green or orange colour.

The LPCon program is destined for the configuration of the N20Z meter. The meter must be connected with the PC computer through a PD14 converter.

Parameters which can be reprogrammed are as follows:

- display colour, individually in three intervals,
- thresholds of displayed overflows,
- display precision of the result (decimal point),
- highlight of the unit,
- kind of the measured signal a.c. or a.c. + d.c. (True RMS),
- averaging time of the measurement,
- recounting of indications (individual characteristic),
- two alarms of OC type operating in six working modes.

The switching of the output alarm on is signaled by the highlight of the triangular alarm index, at the left side of the display for the suitable alarm digit

The highlight colour is always different from the colour of the displayed (measured) value. The protection level from the frontal side is IP 65.

Meter overall dimensions: 96 × 48 × 64 mm (including terminals).

The meter housing is made of a self-extinguishing plastic.

2. TECHNICAL DATA

Measuring ranges

INPUTS:

Measuring range of voltage Un:

1...100...120 V	} input resistance > 2 MΩ
2.5... 250...300 V	
4... 400...480 V	

Measuring range of current In:

0.01... 1...1.2 A	input resistance 50 mΩ ± 10%
0.05... 5...6 A	input resistance 10 mΩ ± 10%

Frequency measurement: 20... 500 Hz

(in voltage range 24... 480 V) input resistance > 2 MΩ

Preheating time	30 min.
Intrinsic error (at manufacturer settings):	
- voltage and current	± (0.5% of the range ±1 digit) in the frequency interval 20... 500 Hz
- frequency	± (0.02% of the range ±1 digit)
Additional errors in rated operating conditions:	
- from ambient temperature changes	(50% of the intrinsic error/10K)
Averaging time:	
- voltage, current (programmable)	min 0.5s (1s by default)
- frequency (not programmable)	1s
Alarm outputs	outputs of O/C type (30 V, 20 mA), Passive outputs acc. to EN 62053-31
Rated operating conditions:	
- supply voltage	85...253 V a.c. (45...65 Hz) or d.c. 20...40 V a.c. (45...65 Hz) or d.c.
- ambient temperature	- 10...23...55°C
- storage temperature	- 25... + 85°C
- relative air humidity	< 95% (condensation inadmissible)
- working position	any
Sustained overload capacity	120% Un, 120% In
Short duration overload capacity (3 s):	
- voltage input	2 Un (< 1000 V)
- current input	10 In
Readout field	5 three-colour LED displays: - digit height: 14 mm, - colours: green, orange, red, - indication range: -19999...99999
Ensured protection level from frontal side	IP 65 acc. to EN 60529
Dimensions	96 × 48 × 64 mm (with terminals)
Wymiary otworu w tablicy	92 ^{+0.6} × 45 ^{+0.6} mm
Weight	< 0.25 kg
Power consumption	< 6 VA
Electromagnetic compatibility:	
- immunity against electromagnetic interference	acc. to EN 61000-6-2
- emission of electromagnetic interference	acc. to EN 61000-6-4
Safety requirements acc. to PN-EN 61010-1:	
- isolation between circuits	basic
- installation category	III (for 400 V execution - category II)
- pollution degree	2
- maximal phase-to-earth working voltage:	
- for supply circuit	300 V
- for measuring input	600 V
- for input destined for programming	50 V
- altitude above sea level	< 2000 m

3. CONNECTION DIAGRAMS

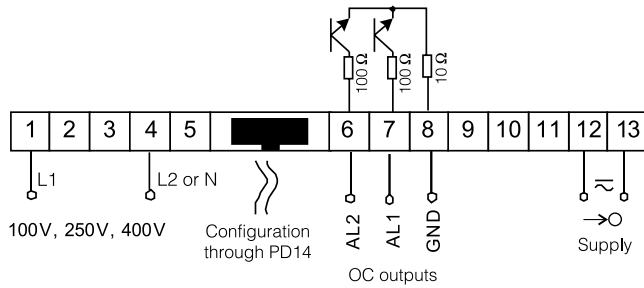


Fig. 1 Electrical connections of the N20Z meter for voltage and frequency measurements

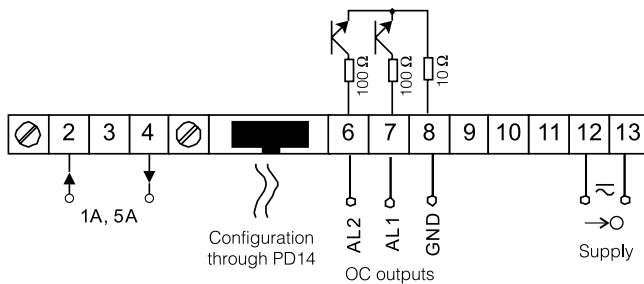


Fig. 2 Electrical connections of the N20Z meter for current measurements

4. CONNECTION DIAGRAMS

Execution codes of the N20Z digital meter

Table 1

DIGITAL PANEL METER	N20Z -	X	X	XX	XX	X
Input:						
100 V	1					
250 V	2					
400 V	3					
1 A	4					
5 A	5					
frequency 20... 500 Hz	6					
Supply voltage:						
85... 253 V a.c. (45...65 Hz) or d.c.	1					
20... 40 V a.c. (45...65 Hz) or d.c.	2					
Unit:						
Code number of the unit acc. table 2				XX		
Kind of execution:						
standard					00	
special execution					XX	
custom-made					99	
Acceptance tests:						
without extra additional requirements						8
with an extra quality inspection certificate						7
acc. to customer's agreement*						X

* - After agreeing with the manufacturer

Code of highlighted unit

Table 2

Code	Unit	Code	Unit
00	without unit	24	l/h
01	V	25	ms
02	A	26	s
03	mV	27	h
04	kV	28	N
05	MV	29	kN
06	mA	30	Pa
07	kA	31	hPa
08	MA	32	kPa
09	°C	33	MPa
10	°F	34	bar
11	K	35	rad
12	Hz	36	Ω
13	kHz	37	kΩ
14	Ah	38	%
15	kAh	39	°
16	m/s	40	rev
17	μm	41	rps
18	mm	42	rpm
19	cm	43	rph
20	m	44	m/h
21	km	45	km/h
22	l	46	imp
23	l/s	XX	on order ¹⁾

¹⁾ After agreeing with the manufacturer

ORDERING EXAMPLES:

Example 1

The code: **N20Z - 3 1 01 00 8** means:

- N20Z** - panel digital meter
- 3** - with a 400 V a.c. input
- 1** - supply voltage: 85... 253 V a.c. (4...65 Hz) or d.c.
- 01** - displayed unit: V
- 00** - standard execution
- 8** - without an extra quality inspection certificate

Example 2

The code: **N20Z - 3 2 04 99 8 (+ description)** means:

- N20Z** - panel digital meter
- 3** - with a 400 V a.c. input
- 2** - supply voltage: 20... 40 V a.c. (4...65 Hz) or d.c.
- 04** - displayed unit: kV
- 99** - custom-made execution, with the description like in the table 3 (below),
- 8** - without an extra quality inspection certificate

Custom-made execution description

Table 3

Parameter	Range/value
Colour of displayed measured upper value	red
Colour of displayed measured middle value	green
Colour of displayed measured lower value	orange
Upper threshold - KpH	44.00
Lower threshold - KpL	40.00
Decimal point	000.00
Highlight of measured value	enabled
Input type	AC
Averaging time	5 s
Overflow of upper measurement	99999
Overflow of lower measurement	- 19999
Individual characteristic	enabled
Parameter a of individual characteristic	0.1
Parameter b of individual characteristic	0
Operation kind of alarm output 1	on
Upper value of alarm 1 switching - Aon	40.00
Lower value of alarm 1 switching - Aoff	0.00
Operation kind of alarm output 2	n-on
Upper value of alarm 2 switching - Aon	44.00
Lower value of alarm 2 switching - Aoff	40.00