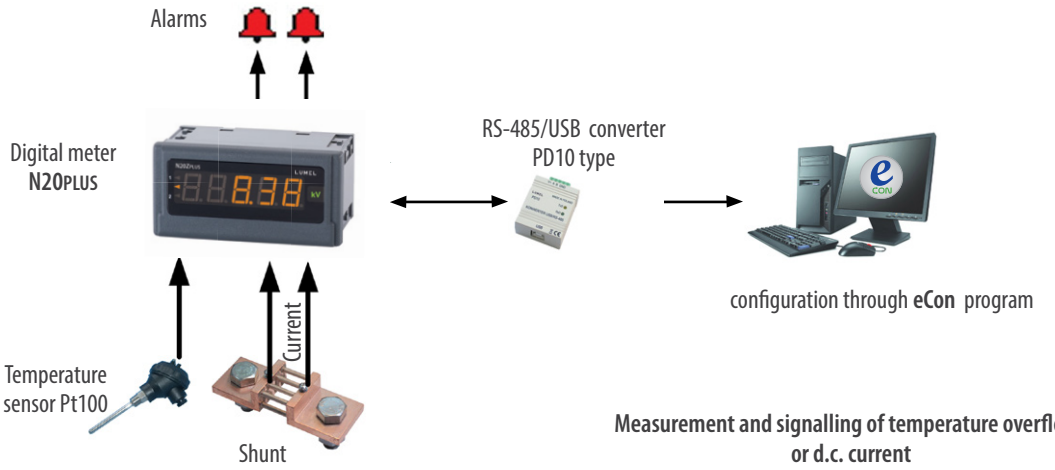



# N20PLUS
## - DIGITAL PANEL METER WITH RS-485

- Measurement of d.c. current or voltage and temperature (Pt100, J, K).
- Three-colour LED display (5 digits, 14 mm high).
- **Digital output RS-485 - Modbus RTU protocol.**
- Two alarm outputs of OC type.
- Programmable parameters through RS-485 interface using the free eCon software:
  - recounting of indications (individual characteristic),
  - two alarms of OC type operating in 6 working modes,
  - display colour programmable in three intervals,
  - thresholds of displayed overflows,
  - highlight of the unit,
  - automatic or manual compensation: temperature of cold ends (for J, K) or wire resistance (for Pt100),
  - measurement averaging time.
- Additional output 24 V d.c. for supplying of object transducers.

## EXAMPLE OF APPLICATION

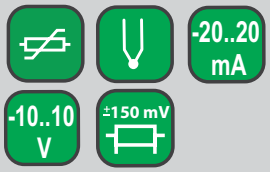



**Measurement and signalling of temperature overflows or d.c. current**

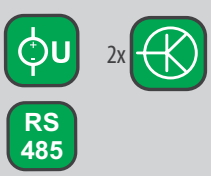
## FEATURES



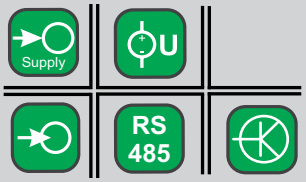

## INPUTS




## OUTPUTS




## GALVANIC ISOLATION



# TECHNICAL DATA

## INPUTS

| Input type | Measuring range | Parametrs | Basic error |
|---|---|---|---|
| Voltage input | -1 mV...0 mV...150 mV...165 mV<br>-82.5 mV...-75 mV...75 mV...82.5 mV<br>-1 mV...0 mV...75 mV...82.5 mV<br>-165 mV...-150 mV. . . 150 mV. . . 165 mV<br>-1...0...10...11 V<br>-11...10...10...11 V | Input resistance: >1 MΩ | ± (0.2% of range + 1 digit) |
| Current input | -1...0...20...22 mA<br>3.6...4...20...22 mA<br>-22...-20...20...22 mA | Input resistance: 10 Ω ± 1%<br>Input resistance: 10 Ω ± 1%<br>Input resistance: 5 Ω ± 1% | |
| Temperature measurement Pt100 | - 50...400°C | | |
| Temperature measurement through J thermocouple | - 50...1200°C | | |
| Temperature measurement through K thermocouple | - 50...1370°C | | |

## OUTPUTS

| Output type | Features |
|---|---|
| Alarm outputs | • 2 alarm outputs of OC type |
| Output for external supply of transducers | • 24 V ± 5%, 30 mA |

## DIGITAL INTERFACE

| Interface type | Transmission protocol | Modes | Baudrate |
|---|---|---|---|
| RS-485 | MODBUS RTU | 8N2, 8E1, 8O1, 8N1 | 4.8, 9.6, 19.2, 38.4, 57.6, 115.2 kbit/s |

## EXTERNAL FEATURES

| | | |
|---|---|---|
| Readout field | 5 digit LED display -<br>indication range: -19999...99999<br>digit height: 14 mm | Three-colour display (changes of colour depend on the displayed value): red, green, orange. |
| Weight | < 0.25 kg | |
| Overall dimensions | 96 x 48 x 64 mm | panel cut-out: $92^{+0.6}$ x $45^{+0.6}$ mm |
| Protection grade (acc. to EN 60529) | from frontal side: IP65 | from terminal side: IP 10 |

## RATED OPERATING CONDITIONS

| | | |
|---|---|---|
| Supply | 85...253 V a.c. (45...65 Hz) or d.c.,<br>20...40 V a.c. (45...65 Hz) / 20..60 V d.c. | Power consumption < 6 VA |
| Temperature | ambient: -10...23...55°C | storage: -25...85°C |
| Relative humidity | < 95% | condensation inadmissible |
| Operating position | any | |

## SAFETY AND COMPATIBILITY REQUIREMENTS

| | | |
|---|---|---|
| Electromagnetic compatibility | noise immunity | acc. to EN 61000-6-2 |
| | noise emissions | acc. to EN 61000-6-4 |
| Safety requirements | | acc. to EN 61010-1 |

# N20PLUS - DIGITAL PANEL METER WITH RS-485

## CONNECTION DIAGRAMS

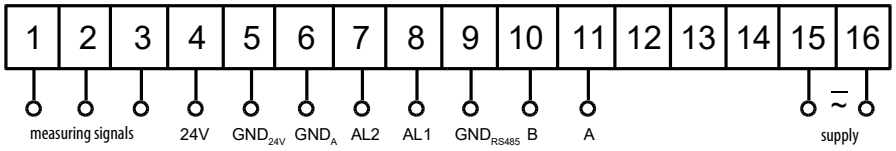



Fig. 1 Electrical connections of the N20PLUS meter.

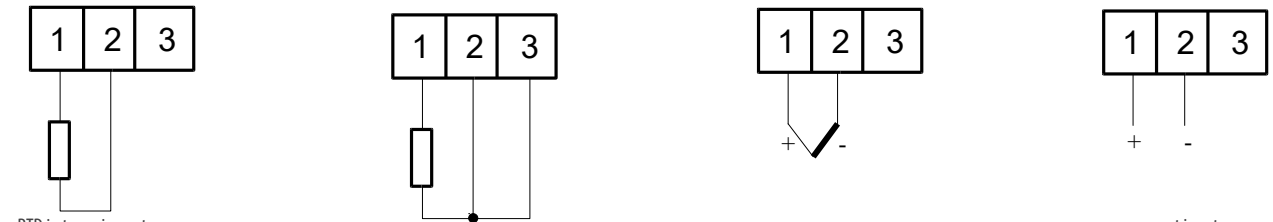



Fig. 2 Connections of measuring signals.

## ORDERING

TABLE 1. ORDERING CODE:

| N20PLUS | X | X | XX | XX | X | X |
|---|---|---|---|---|---|---|
| **Input:** | | | | | | |
| Pt100: -50...400 °C | 1 | | | | | |
| Thermocouple J: -50...1200 °C | 2 | | | | | |
| Thermocouple K: -50...1370 °C | 3 | | | | | |
| 0...20 mA | 4 | | | | | |
| 4...20 mA | 5 | | | | | |
| ± 20 mA | 6 | | | | | |
| 0...75 mV | 7 | | | | | |
| 0...10 V | 8 | | | | | |
| ± 10 V | 9 | | | | | |
| 0...150 mV | A | | | | | |
| ± 75 mV | B | | | | | |
| ± 150 mV | C | | | | | |
| **Supply:** | | | | | | |
| 85...253 V a.c./d.c. | | 1 | | | | |
| 20..40 V a.c./ 20..60 V d.c. | | 2 | | | | |
| **Unit:** | | | | | | |
| unit code number acc. to table 2 | | | XX | | | |
| **Version:** | | | | | | |
| standard | | | | 00 | | |
| custom-made | | | | XX | | |
| **Language:** | | | | | | |
| Polish | | | | | P | |
| English | | | | | E | |
| **Acceptance test:** | | | | | | |
| without additional quality requirements | | | | | | 0 |
| with an extra quality inspection certificate | | | | | | 1 |
| with an extra calibration certificate | | | | | | 2 |
| acc.to customer's request* | | | | | | X |

* only after agreeing with the manufacturer

TABLE 2. CODES OF HIGHLIGHTED UNIT:

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

[1] -only after agreeing with the manufacturer

**ORDERING EXAMPLE:**

The Code N20PLUS_910100E0 - means: N20ZPLUS meter with voltage input on ± 10 V, supply 85... 253 V a.c., standard version, user's manual in English, without aditional quality requirements. Unit„V"


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