DITEL
Made by LUMEL

# NA6PLUS
## - DIGITAL METER WITH BARGRAPH

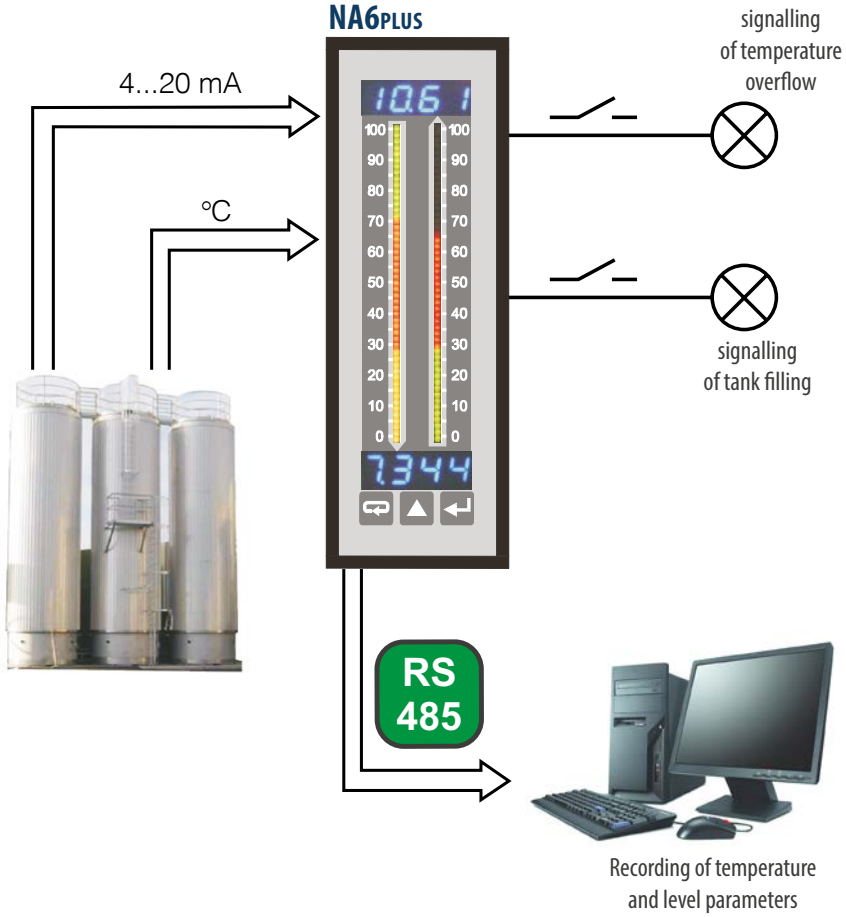
- 3 or 7-colour bargraph with programmable colour switching over.
- Logging of the measured signal in porgramed time intervals (800 samples).
- 2 independent measuring channels with universal input.
- Programmable indication characteristic (21-point rescaling) and bargraph magnifier.
- Up to 8 programmable alarm outputs.
- Alarm triggered by the rate of change of the measured signal over time.
- Mathematical operations on channels.
- Communication in SCADA systems (RS485/Modbus interfaces).
- Converstion of any measured value into a current or voltage analog signal.

Electrical Safety CAT III

CE

## EXAMPLE OF APPLICATION

Level and temperature measurement in the tank.



# NA6PLUS- DIGITAL METER WITH BARGRAPH

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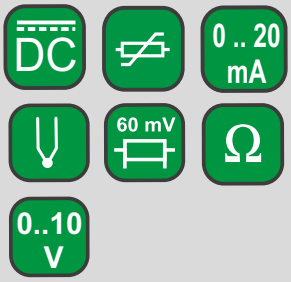
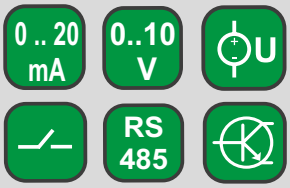
## FEATURES

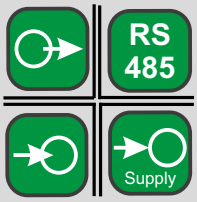

## INPUTS




## OUTPUTS




## GALVANIC ISOLATION




# TECHNICAL DATA

## INPUTS

| Input type | Measurement range | Basic error | Additional error |
|---|---|---|---|
| Pt100 | -200...850°C | 0.1% | compensation of temperature changes of reference welds ≤ ±1°C<br>compensation of cable resistance changes<br>- when changing the resistance of wires < 10Ω the error is ≤ ±0.5°C<br>- when changing the resistance of wires < 20Ω the error is ≤ ±1°C<br>change in ambient temperature ≤ ± 0.1% of the range |
| Pt500 | -200...850°C | | |
| Pt1000 | -200...850°C | | |
| J (Fe-CuNi) | -100...1100°C | | |
| K (NiCr-NiAl) | -100...1370°C | | |
| N (NiCrSi-NiSi) | -100...1300°C | | |
| E (NiCr-CuNi) | -100...850°C | | |
| R (PtRh13-Pt) | 0...1760°C | 0.2% | |
| S (PtRh10-Pt) | 0...1760°C | | |
| T (Cu-CuNi) | -50...400°C | | |
| Resistance | 0...10 kΩ | 0.1% | |
| Voltage | ± 75 mV, $R_{inp.}$ > 100 kΩ<br>± 300 mV, $R_{inp.}$ > 100 kΩ<br>± 0...600 V, $R_{inp.}$ > 3.5 MΩ | | |
| Current | ± 40 mA, $R_{inp.}$ < 4 Ω<br>± 5 A, $R_{inp.}$ = 10 mΩ ± 10% | | |

Intensity of current flowing through the resistance thermometer: < 400 uA
Resistance of wires connecting the resistance thermometer with the meter: < 20 Ω/1 wire

## OUTPUTS

| Output type | Features |
|---|---|
| Current analog output | 1 or 2 programmable 0/4...20 mA; load resistance ≤ 500 Ω |
| Voltage analog output | 1 or 2 programmable 0-10 V; load resistance ≥ 500 Ω |
| Relay output | 4 relays; NOC voltageless contacts,<br>maximal load:<br>- voltage: 250 V a.c., 150 V d.c.<br>- current: 5 A 30 V d.c., 250 V a.c. |
| Open collector (OC) type | 8 outputs of OC type:<br>maximal load:<br>- voltage: 5...30V d.c.<br>- current: 25mA d.c. |
| Digital interface | interface type: RS-485; transmission protocol:<br>MODBUS, RTU (8N2, 8E1, 8O1, 8N1)<br>baud rate: 2400, 4800, 9600, 19200, 57600, 115200 b/s |
| Additional supply output | 24 V d.c., maximal load 30 mA |

## EXTERNAL FEATURE

| | | |
|---|---|---|
| **Readout field** | 2 x 4 -digits LED dispaly | 7-segment digits of 7 mm high, measuring range -1999...9999 |
| | bargraph | bargraph of 100 mm lenght:<br>- 55 segments in three-colour version<br>- 28 segments in seven-colour version |
| | | Bargraph resolution: programmable |
| **Overall dimensions** | 48 x 144 x 100 mm | |
| **Weight** | < 0.4 kg | panel cut-out: 44+0.5 x 137.5+0.5 mm |
| **Protection grade (acc. to EN 60529)** | from frontal side: IP50 | from terminal side: IP20 |

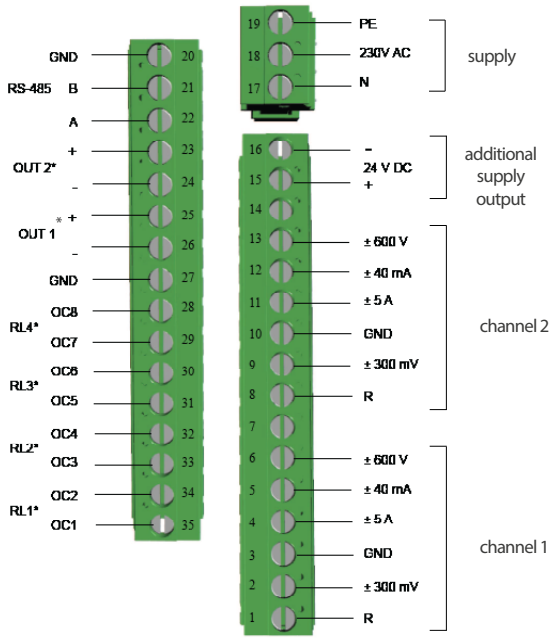
## RATED OPERATING CONDITIONS

| | | |
|---|---|---|
| **Supply voltage** | 95...253 V a.c. 40..400 Hz; 90...300 V d.c.<br>20...40 V a.c. 40...400 Hz, 20...60 V d.c. | power consumption ≤ 13 VA |
| **Temperature** | ambient: -10...23...55°C | storage: -25...85°C |
| **Relative humidity** | < 95% | Condensation inadmissible |

## SAFETY AND COMPATIBILITY REQUIREMENTS

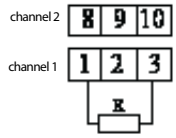
| | | |
|---|---|---|
| **Electromagnetic compatibility** | noise immunity | acc. to EN 61000-6-2 |
| | noise emissions | acc. to EN 61000-6-4 |
| **Pollution grade** | 2 | acc. to EN 61010-1 |
| **Installation category** | III | |
| **Maximal phase-to-earth operating voltage** | • for input circuit: 600 V<br>• for supply circuit: 300 V<br>• for other circuits: 50 V | |
| **Altitude above sea level** | < 2000 m | |

## ELECTRICAL CONNECTIONS

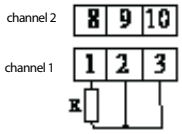



*-optional elements depend on the meter's version

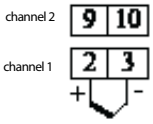
Fig. 1 Description of the terminal strip.



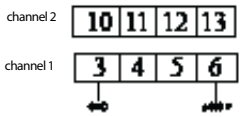

resistance thermometer
in a two-wire system or resistance measurement




resistance thermometer
in a three-wire system

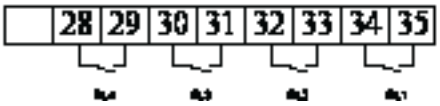



thermocouple
or voltage ± 75mV, ±300 mV

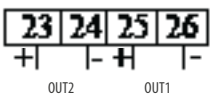



voltage input ± 10 V, ±600 V

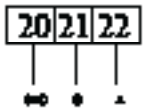

8 open collector outputs (OC)




4 relay outputs

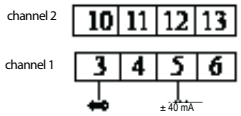



analog outputs
(voltage/ current)

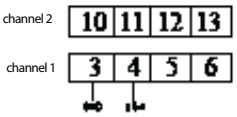



interface RS-485 (Modbus)

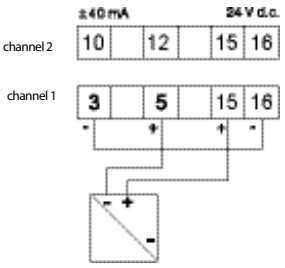
Fig.3. Connection way of output signals depending on the execution code.



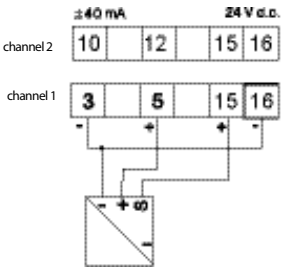

current input ± 40 mA




current input ± 5 A




two-wire object transducer




three-wire object transducer

Fig. 2 Connection way of input signals.

# NA6PLUS- DIGITAL METER WITH BARGRAPH

## ORDERING

| NA6PLUS - | X | XX | X | X | X | X | XX | E | X |
|---|---|---|---|---|---|---|---|---|---|
| **Bargraph colour:** | | | | | | | | | |
| 3-colour(R, G, R+G) | T | | | | | | | | |
| 7-colour (R, G, B, R+G, R+B, G+B, R+G+B) | M | | | | | | | | |
| **Display colour on channels 1 and 2:** | | | | | | | | | |
| red-red | | RR | | | | | | | |
| red-green | | RG | | | | | | | |
| green-red | | GR | | | | | | | |
| green-green | | GG | | | | | | | |
| **Input signal:** | | | | | | | | | |
| universal input | | | U | | | | | | |
| custom-made* | | | X | | | | | | |
| **Analog output:** | | | | | | | | | |
| lack | | | | 0 | | | | | |
| 0/4...20mA | | | | 1 | | | | | |
| 0...10 V | | | | 2 | | | | | |
| 2 x 0/4...20 mA | | | | 3 | | | | | |
| 2 x 0...10 V | | | | 4 | | | | | |
| 1 x 0/4...20 mA, 1 x 0...10 V | | | | 5 | | | | | |
| **Additional output:** | | | | | | | | | |
| lack | | | | | 0 | | | | |
| 4 relays | | | | | 4 | | | | |
| 8 outputs of OC type | | | | | 8 | | | | |
| **Supply voltage:** | | | | | | | | | |
| 95...253 V a.c./d.c. | | | | | | 1 | | | |
| 20...40 V a.c., 20...60 V d.c. | | | | | | 3 | | | |
| **Version:** | | | | | | | | | |
| standard | | | | | | | 00 | | |
| custom-made** | | | | | | | XX | | |
| **Language:** | | | | | | | | | |
| English | | | | | | | | E | |
| **Acceptance tests:** | | | | | | | | | |
| without extra requirements | | | | | | | | | 0 |
| with an extra quality inspection certificate | | | | | | | | | 1 |
| acc. to customer's request** | | | | | | | | | X |

**Odering example:**

The code **NA6PLUS- TRRU18100E0** means:

**NA6PLUS** - NA6PLUS meter
**T** - bargraph RG
**RR** - red display coulr
**U** - universal inputs
**1** - current output 0/4...20 mA
**8** - 8 outputs of OC type
**1** - supply 95...253V a.c./ 90...300 V d.c.
**00** - standard version
**E** - english version
**0** - without extra requirements

* - after agreeing with the manufacturer

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DS-NA6PLUS_EN_20190219

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