



DATASHEET

Issue 1.0



**NEW
PRODUCT**



Multifunction Meters

Transducers & Isolators

Temperature Controllers

Converters & Recorders

Digital Panel Meters

Current Transformers

Analogue Panel Meters

Shunts

Digital Multimeters

Clamp Meters

Insulation Testers

NA5PLUS DIGITAL METER WITH BARGRAPH

Features

- 3 or 7-colour bargraph with programmable colour switching over.
- Logging of the measured signal in programmed time intervals (800 samples).
- Universal measuring 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.
- Arithmetical functions $\times 2$, $\sqrt{x}$.
- Communication in Scada systems (RS485/modbus interfaces).
- Conversion of any measured value into a current or voltage analog signal.

SUBJECT TO CHANGE WITHOUT NOTICE

This manual superseded all previous versions – please keep for future reference

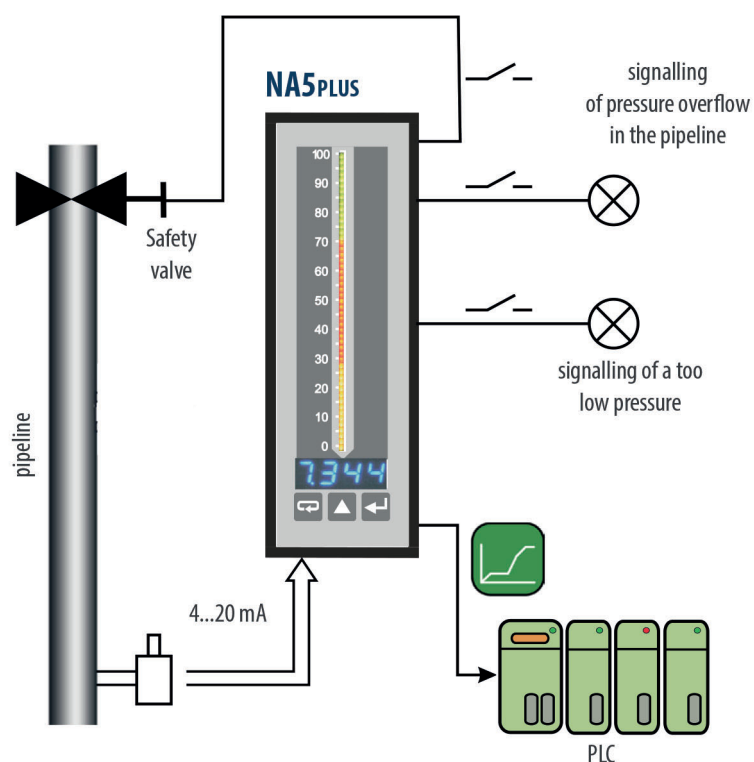
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Example of application

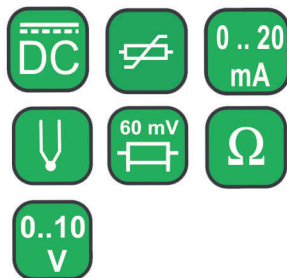
Measurement of pressure in a pipeline.



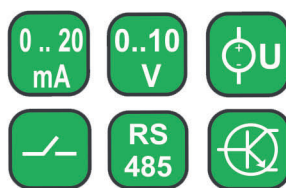
Features



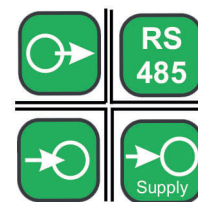
Inputs



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 $\leq \pm 1^\circ\text{C}$
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	0.2%	compensation of cable resistance changes - when changing the resistance of wires $< 10\Omega$ the error is $\leq \pm 0.5^\circ\text{C}$ - when changing the resistance of wires $< 20\Omega$ the error is $\leq \pm 1^\circ\text{C}$
R (PtRh13-Pt)	0...1760°C		
S (PtRh10-Pt)	0...1760°C		
T (Cu-CuNi)	-50...400°C		
Resistance	0...10 k Ω	0.1%	change in ambient temperature $\leq \pm 0.1\%$ of the range
Voltage	$\pm 75\text{ mV}$, $R_{\text{imp.}} > 100\text{ k}\Omega$ $\pm 300\text{ mV}$, $R_{\text{imp.}} > 100\text{ k}\Omega$ $\pm 0...600\text{ V}$, $R_{\text{imp.}} > 3.5\text{ M}\Omega$		
Current	$\pm 40\text{ mA}$, $R_{\text{imp.}} < 4\Omega$ $\pm 5\text{ A}$, $R_{\text{imp.}} = 10\text{ m}\Omega \pm 10\%$		

Intensity of current flowing through the resistance thermometer: $< 400\text{ }\mu\text{A}$

Resistance of wires connecting the resistance thermometer with the meter: $< 20\Omega/1\text{ wire}$

OUTPUTS

Output type	Features
Current analog output	1 or 2 programmable 0/4...20 mA; load resistance $\leq 500\Omega$
Voltage analog output	1 or 2 programmable 0-10 V; load resistance $\geq 500\Omega$
Relay output	4 relays; NOC voltageless contacts, maximal load: - voltage: 250 V a.c., 150 V d.c. - current: 5 A 30 V d.c., 250 V a.c.
Open collector (OC) type	8 outputs of OC type: maximal load: - voltage: 5...30 V d.c. - current: 25 mA d.c.
Digital interface	interface type: RS-485; transmission protocol: MODBUS, RTU (8N2, 8E1, 8O1, 8N1) 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	4-digits LED display	7-segment digits of 7 mm high, measuring range -1999...9999
	bargraph	bargraph of 100 mm length: - 55 segments in three-colour version - 28 segments in seven-colour version Bargraph resolution: programmable
Overall dimensions	48 x 144 x 100 mm	
Weight	$< 0.4\text{ kg}$	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

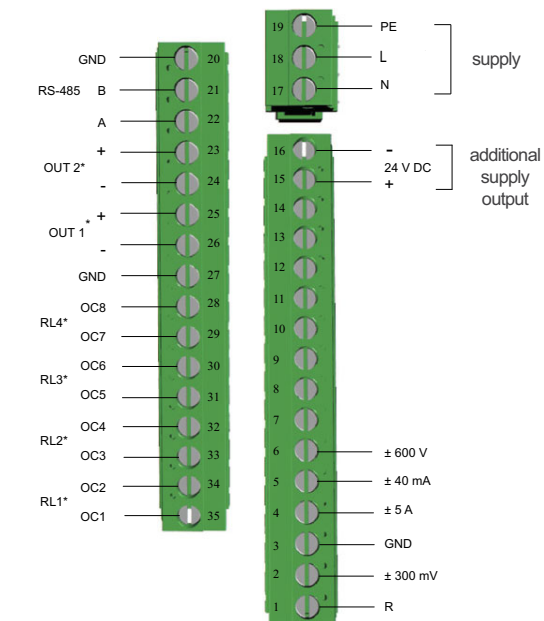
RATED OPERATING CONDITIONS

Supply voltage	95...253 V a.c. 40...400 Hz; 90...300 V d.c. 20...40 V a.c. 40...400 Hz, 20...60 V d.c.	power consumption $\leq 13\text{ VA}$
Temperature	ambient: -10...23...55°C	storage: -25...85°C
Relative humidity	$< 95\%$	Condensation inadmissible

SAFETY AND COMPATIBILITY REQUIREMENTS

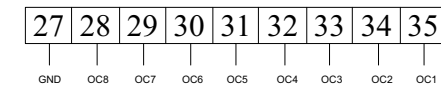
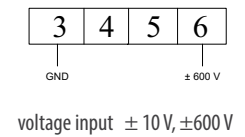
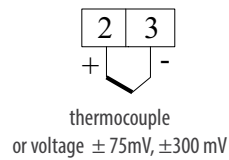
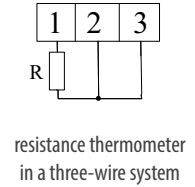
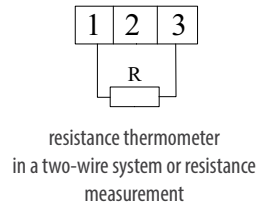
Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Pollution grade	2	acc. to EN 61010-1
Installation category	III	
Maximal phase-to-earth operating voltage	- for input circuit: 600 V - for supply circuit: 300 V - for other circuits: 50 V	
Altitude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

Electrical Connections

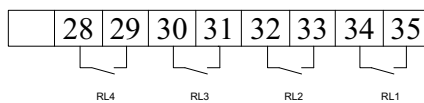


*-optional elements depend on the meter's version

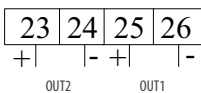
Fig. 1 Description of the terminal strip.



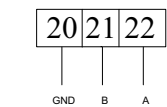
8 open collector outputs (OC)



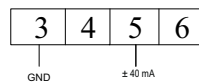
4 relay outputs



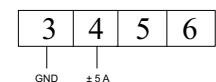
analog outputs
(voltage/ current)



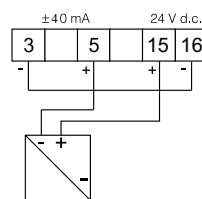
interface RS-485 (Modbus)



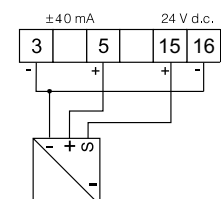
current input $\pm 40\text{ mA}$



current input $\pm 5\text{ A}$



two-wire object transducer



three-wire object
transducer

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

Fig. 2 Connection way of input signals.

Ordering

NA5PLUS -	X	X	X	X	X	X	X	XX	X	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:										
red	R									
green	G									
custom-made*	X									
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.	2									
20...40 V a.c., 20...60 V d.c.	4									
Kind of terminals:										
screwed plug-in sockets	0									
Version:										
standard	00									
custom-made*	XX									
Language:										
English	U									
other*	X									
Acceptance tests:										
without extra requirements	0									
with an extra quality inspection certificate	1									
acc. to customer's request	X									

* - after agreeing with the manufacturer

Ordering example:

The code **NA5PLUS- TGU18200E0** means:

NA5PLUS - NA5PLUS meter

T - bargraph RG

G - green display colour

U - universal inputs

1 - current output 0/4...20 mA

8 - 8 outputs of OC type

2 - supply 95...253V a.c./ 90...300 V d.c.

00 - standard version

E - english version

0 - without extra requirements