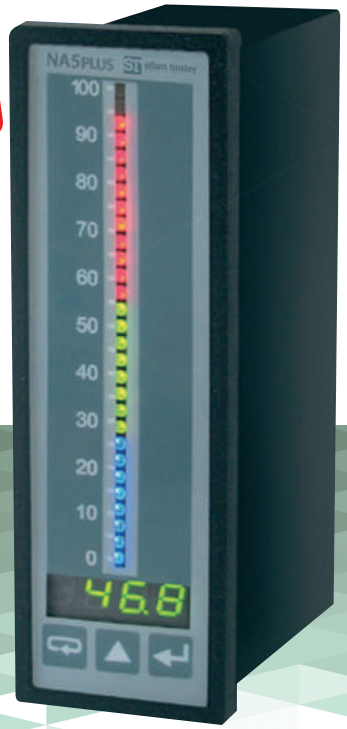
sifam tinsley
PRECISION INSTRUMENTATION

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 porgramed 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 x2, √x.
- Communication in Scada systems (rS485/modbus interfaces).
- Converstion 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This manual superseded all previous versions – please keep for future reference

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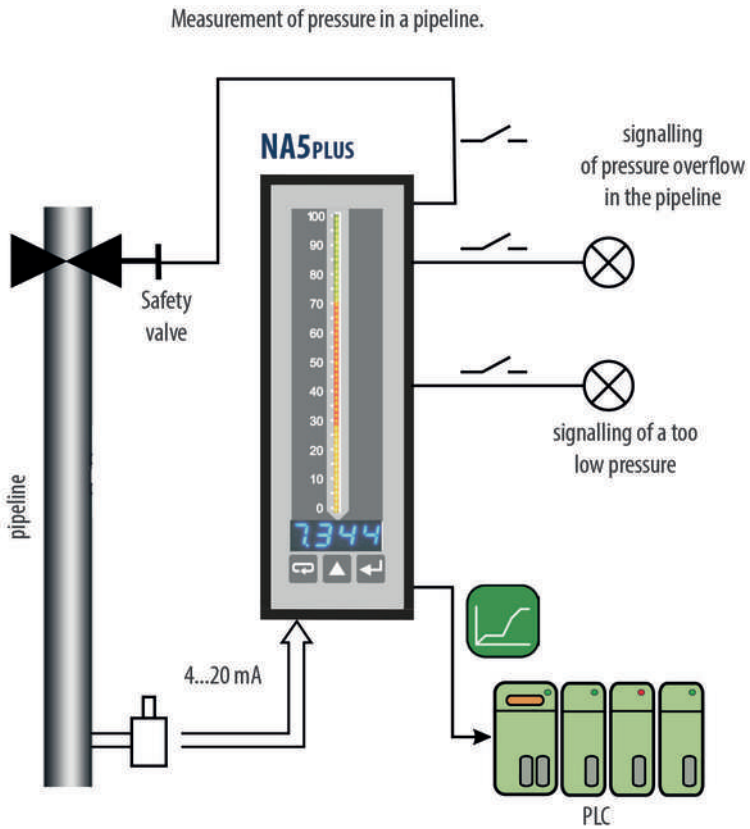
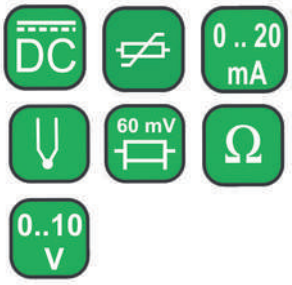
Example of application



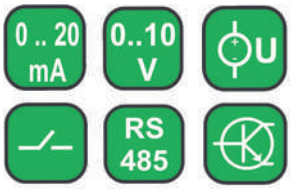
Features



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 compensation of cable resistance changes - when changing the resistance of wires < 10Ω the error is ≤ ±0.5°C - when changing the resistance of wires < 20Ω the error is ≤ ±1°C 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 ± 300 mV, $R_{inp.}$ > 100 kΩ ± 0...600 V, $R_{inp.}$ > 3.5 MΩ		
Current	± 40 mA, $R_{inp.}$ < 4 Ω ± 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, 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...30V d.c. - current: 25mA 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 dispaly	7-segment digits of 7 mm high, measuring range -1999...9999
	bargraph	bargraph of 100 mm lenght: - 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 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

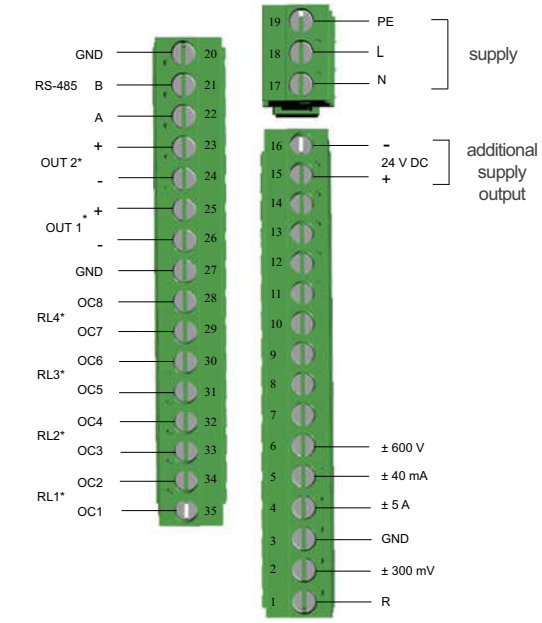
RATED OPERATING CONDITIONS

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 ≤ 13 VA
Temperature	ambient: -10...23...55°C	storage: -25...85°C
Relative humidity	< 95%	Condensation inadmissible

SAFETY AND COMPATIBILITY REQUIREMENTS

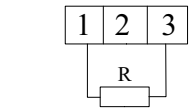
Electromagnetic compatibility	noise immunity	acc. to EN 61000-6-2
	noise emissions	acc. to EN 61000-6-4
Pollution grade	2	acc. to EN 61010-1
Installation category	III	
Maximal phase-to-earth operating voltage	• for input circuit: 600 V • for supply circuit: 300 V • for other circuits: 50 V	
Altitude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

Electrical Connections

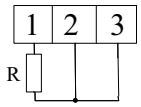


*-optional elements depend on the meter's version

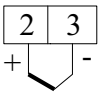
Fig. 1 Description of the terminal strip.



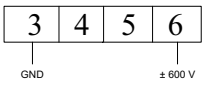
resistance thermometer in a two-wire system or resistance measurement



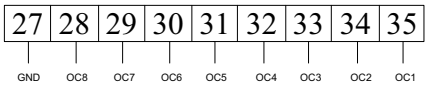
resistance thermometer in a three-wire system



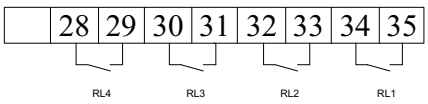
thermocouple or voltage ± 75mV, ±300 mV



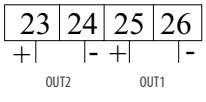
voltage input ± 10 V, ±600 V



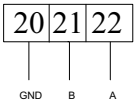
8 open collector outputs (OC)



4 relay outputs

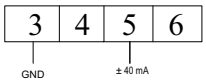


analog outputs (voltage/ current)

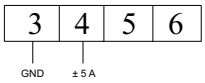


interface RS-485 (Modbus)

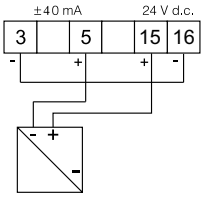
Fig.3. Connection way of output signals depending on the execution code.



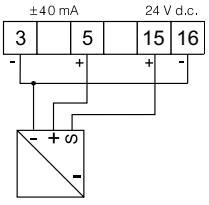
current input ± 40 mA



current input ± 5 A



two-wire object transducer



three-wire object transducer

Fig. 2 Connection way of input signals.

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

Odering 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