

# AR500

## UNIVERSAL DIGITAL METER

### Single channel universal digital meter



- measurement of temperature and other physical quantities (humidity, pressure, level, speed, etc.) converted into a standard electrical signal (0/4÷20mA, 0÷10V, 0÷60mV, 0÷2.5 kΩ)
- 1 universal measurement input (thermoresistance, thermocouple, and analog) with memory of the minimum and maximum measured value and a remote data display function (over the MODBUS-RTU protocol)
- digital LED readout with programmable color and illumination brightness
- compensation of line resistance for resistance sensors
- temperature compensation of thermocouple cold ends
- programmable type of input, range of indications (for analog inputs), alarm, display, communication, and access options, and other configuration parameter
- access to configuration parameters protected with a user password
- parameter configuration methods:
  - via membrane keyboard (IP65) located on the front panel of the device
  - via RS485 or PRG AR955/GP programmer and freeware: ARsoft-LOG (Windows 7/8/10)
- software and programmer allow you to view the measured value and quickly configure single or few sets of parameters previously saved in the computer for re-use, e.g. in other controllers of the same type (duplicate configuration)
- panel housing, IP54 from the front
- high accuracy, long-term stability and immunity to interference
- optional to choose (in the ordering method): display color (red, blue or green)

#### Contents of set:

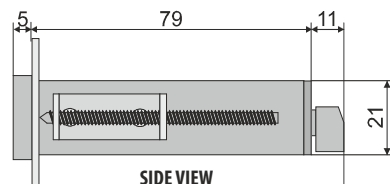
- regulator with handles mounting in the window
- user manual

#### Available accessories:

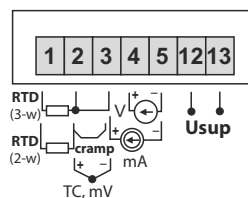
- programmer AR955/GP

### DIMENSIONS, INSTALATTION DATA

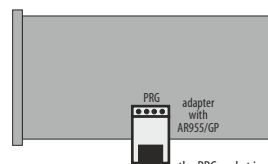
Enclosure dimensions	MULTIBOX 482408, dimensions 48x24x84 mm
Panel window	44x21 mm
Fixing methods	panel, grips on the side of the enclosure
Material	elf-extinguishing NORYL 94V-0



### TERMINAL STRIPS, ELECTRICAL CONNECTIONS

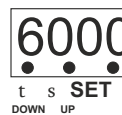


### PROGRAMMING



the PRG socket is available from the top of the housing

### KEYBOARD



### Ordering procedure

AR500 / □

display color	Code
red	<b>R</b>
green	<b>G</b>
blue	<b>B</b>

For example: AR500/R - AR500/R with red display

## TECHNICAL DATA

Universal input (programmable)	measurement ranges
- Pt100 (RTD, 3- or 2-wire)	-200 ÷ 850 °C
- Ni100 (RTD, 3- or 2-wire)	-50 ÷ 170 °C
- Pt500 (RTD, 3- or 2-wire)	-200 ÷ 620 °C
- Pt1000 (RTD, 3- or 2-wire)	-200 ÷ 520 °C
- thermocouple J (TC, Fe-CuNi)	-40 ÷ 800 °C
- thermocouple K (TC, NiCr-NiAl)	-40 ÷ 1200 °C
- thermocouple S (TC, PtRh 10-Pt)	-40 ÷ 1600 °C
- thermocouple B (TC, PtRh30PtRh6)	300 ÷ 1800 °C
- thermocouple R (TC, PtRh13-Pt)	-40 ÷ 1600 °C
- thermocouple T (TC, Cu-CuNi)	-25 ÷ 350 °C
- thermocouple E (TC, NiCr-CuNi)	-25 ÷ 820 °C
- thermocouple N (TC, NiCrSi-NiSi)	-35 ÷ 1300 °C
- current ( $R_{we} = 50 \Omega$ )	0/4 ÷ 20 mA
- voltage ( $R_{we} = 110 k\Omega$ )	0 ÷ 10 V
- voltage ( $R_{we} > 2 M\Omega$ )	0 ÷ 60 mV
- resistance (3- or 2-wire)	0 ÷ 2500 $\Omega$
- remote data display (through the RS485 port or PRG, MODBUS-RTU)	-1999 ÷ 9999
<b>Number of measurement inputs</b>	1
<b>Response time for measurements</b> (10 ÷ 90%)	0,25 ÷ 3 s (programmable)
<b>Resistance of leads</b> (RTD, $\Omega$ )	$R_L < 25 \Omega$ (for each line)
<b>Resistance current</b> (RTD, $\Omega$ )	400 $\mu$ A (Pt100, Ni100), 200 $\mu$ A (remaining)
<b>Processing errors</b> (at 25°C ambient temperature):	
- basic	- for RTD, mA, V, mV, $\Omega$ - for thermocouple
	0,1 % of measuring range $\pm$ 1 digit
	0,2 % of measuring range $\pm$ 1 digit
- additional for thermocouples	<2 °C (thermocouple cold junction temperature compensation)
- additional caused by ambient temperature changes	< 0,003 % of input range /°C
<b>Resolution of measured temperature</b>	0,1 °C
<b>Communication interface</b>	- PRG programming link (no separation) for programmer AR955/GP set - bitrate 2,4 ÷ 115,2 kb/s, - format 8N1 (8 data bit, 1 bit stop, no parity bit), - MODBUS-RTU protocol (SLAVE)
<b>7-segment LED display</b>	4 digits, height 10 mm, red, blue, green
<b>Signaling of alarms, messages, and errors</b>	LED display
<b>Power supply</b> ( $U_{sup}$ )	20 ÷ 50 Vac/ 3VA, 20 ÷ 72 Vdc/ 3W
<b>Rated operating conditions</b>	0 ÷ 50°C, <90 %RH (non-condensing)
<b>Working environment</b>	air and neutral gases
<b>Protection rating</b>	IP54 front, IP20 of the connections side
<b>Weight</b>	~60g
<b>Electromagnetic compatibility (EMC)</b>	- immunity: acc. to PN-EN 61000-6-2 - emission: acc. to PN-EN 61000-6-4