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 minimumand maximum measured value and a remote data display function (over the MODBUS-RTU protocol)
- digital LED readout with programmable color and illumination brightnes
- 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
- sparameter 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:

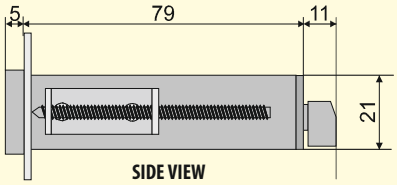
- regulator with handles mounting in the window
- user manual
- warranty card

Available accessories:

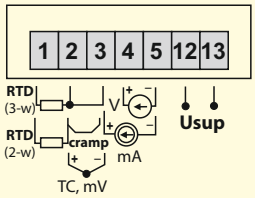
- programmer AR955/GP

DIMENSIONS, INSTALATTION DATA

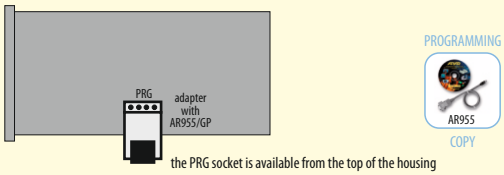
Enclosure dimensions	MULTIBOX 482408, dimensions 48x24x84 mm
Panel window	44x21 mm
Fixing methods	panel, grips on the side of the enclosure
Material	elf-extinguishing NORYL 94V-0



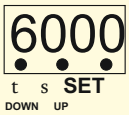
TERMINAL STRIPS, ELECTRICAL CONNECTIONS



Programming



Keyboard



How to order

AR500 / ☐

display color	Code
red	R
green	G
blue	B

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

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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 Ω)		0/4 ÷ 20 mA
- voltage (R_{we} = 110 kΩ)		0 ÷ 10 V
- voltage (R_{we} > 2 MΩ)		0 ÷ 60 mV
- resistance (3- or 2-wire)		0 ÷ 2500 Ω
- remote data display (through the RS485 port or PRG, MODBUS-RTU)		-1999 ÷ 9999
Number of measurement inputs		1
Response time for measurements (10 ÷ 90%)		0,25 ÷ 3 s (programmable)
Resistance of leads (RTD, Ω)		R_d < 25 Ω (for each line)
Resistance current (RTD, Ω)		400 µA (Pt100, Ni100), 200 µA (remaining)
Processing errors (at 25°C ambient temperature):		
- basic	- for RTD, mA, V,mV, Ω	0,1 % of measuring range ±1 digit
	- for thermocouple	0,2 % of measuring range ±1 digit
- additional for thermocouples		<2 °C (cold ends temperature)
- additional caused by ambient temperature changes		< 0,003 % of input range /°C
Resolution of measured temperature		0,1 °C
Communication interface	- 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)
7-segment LED display		4 digits, height10 mm, red, blue, green
Signaling of alarms, messages, and errors		LED display
Power supply (Usup)		20 ÷ 50 Vac/ 3VA, 20 ÷ 72 Vdc/ 3W
Rated operating conditions		0 ÷ 50°C, <90 %RH (non-condesing)
Working environment		air and neutral gases
Protection rating		IP54 front, IP20 of the connections side
Weight		~60g
Electromagnetic compatibility (EMC)		- immunity: acc. to PN-EN 61000-6-2
		- emission: acc. to PN-EN 61000-6-4

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