AR518

Universal meter with single reading

APAR

Single channel universal digital meter

- digital meter 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)
- programmable digital input (except for AR500) for changing the operation mode of the meter:manual/automatic mode for the analog output, keypad block, stopping the display indications (HOLD function)
- analog output (except for AR500) 0/4÷20 mA or 0/2÷10 V (retransmission,alarm/control, manual)
- manual mode for the analog output (open control loop) enabling setting the output signal value in the range of 0-100%
- digital LED readout with programmable illumination brightnes
- integrated 24 V DC power supply supplying the field transmitter
- RS485 serial interface (galvanically isolated, MODBUS-RTU protocol)
- compensation of line resistance for resistance sensors
- temperature compensation of thermocouple cold end
- 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)
- ingress protection rating: IP54 from the front
- high accuracy, long-term stability and immunity to interference
- optional to choose (in the ordering method): power supply 24Vac/dc, output SSR, analog output 0/2÷10V and interface RS485
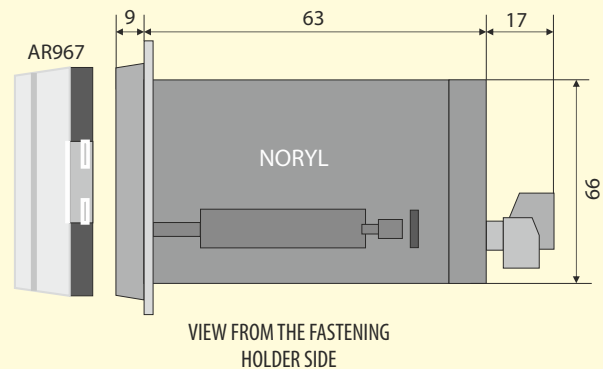
Contents of set:
- regulator with handles mounting in the window
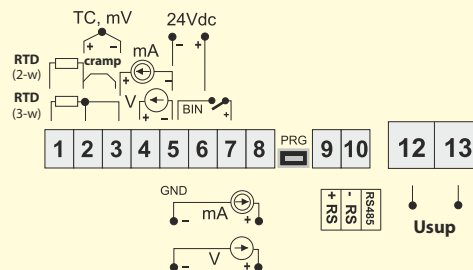- user manual
- warranty card

Available accessories:
- programmer AR955/GP
- RS485 to USB converter
- protective cover AR967 (IP54)

Dimensions, Installation data

Enclosure dimensions	144 x 72 x 72 mm (S x W x G)
Panel window	138 x 67 mm (S x W)
Fixing methods	panel, grips on the side of the enclosure
Material	self-extinguishing polycarbonate NORYL 94V-0
Protective cover	IP54 protection, order code AR967

VIEW FROM THE FASTENING HOLDER SIDE

Terminal strips, Electrical connections

How to order

AR518 / ☐ / ☐ / ☐

Suppy	Code	Analog output	Code	Interface RS*	Code
230 Vac	S1	0/4÷20mA**	WA	interface RS485	RS485
24 Vac/dc	S2	0/2÷10 V	WU		

* option for an extra fee
**standard option

For example:
AR518 / S1 / WA / RS485
AR518, supply 230 Vac, output 0/4÷20mA, interface RS485

Technical Data

Universal inputs (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):	

Processing errors		
- 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 or 1 °C, programmable
Binary inputs (contact or voltage <24V)	bistable, active level: short-circuit or < 0,8 V

Communication interface (RS485 i PRG, do not use at the same time)	- RS485 (galvanically separated), option	- bitrate 2,4 ÷ 115,2 kb/s, - format 8N1 (8 data bit, 1 bit stop, no parity bit), - MODBUS-RTU protocol (SLAVE)
	- PRG programming link (no separation), standard	

Analogue outputs (1 current or voltage)	- current 0/4÷20 mA (standard)	maximum resolution 1,4 µA (14 bit)
		output load Ro < 350 Ω
	- voltage 0/2÷10 V (option)	maximum resolution 0,7 mV (14 bit)
		output load Io < 3,7 mA (Ro > 2,7 kΩ)
	- output basic error	< 0,1 % of output range

7-segment LED display (programmable brightness)	4 digits, height 25 mm, red
Signaling of alarms, messages, and errors	LED display, variable display color

Power supply (Usup)	- 230Vac (standard)	85 ÷ 260 Vac/ 3VA
	- 24Vac/dc (option)	20 ÷ 50 Vac/ 3VA, 20 ÷ 72 Vdc/ 3W

Power supply to filed transmitters	24Vdc / 30mA
Rated operating conditions	0 ÷ 50°C, <90 %RH (non-condesing)
Working environment	air and neutral gases
Protection rating	IP65 front, IP20 of the connections side
Weight	~295g

Electromagnetic compatibility (EMC)	- immunity: acc. to PN-EN 61000-6-2
	- emission: acc. to PN-EN 61000-6-4