

# AR601

## Temperature controller



### Single-channel temperature controller



- 1 universal measuring input (supporting thermometer, thermocouple or digital probes of temperature AR182 and AR183)
- programmable BIN input for changing the controller's operating mode: control start/stop, keyboard lock
- 1 output, relay or SSR, ON-OFF with hysteresis, PID, PID AUTOTUNING
- advanced function of selecting PID parameters
- LED display with adjustable brightness
- line resistance compensation for resistive sensors
- temperature compensation of cold ends of thermocouples
- programmable input type, regulation and access options and other configuration parameters
- access to configuration parameters protected by a user's password
- methods of parameters configuration:
  - from the keypad on the controller front panel
  - via RS485 or AR955 programming device and ARSOFT-WZ1 freeware (Windows 2000/XP/Vista/7)
- software and programmer device which allows viewing the measured value and a quick configuration of single or ready-to-use parameter sets previously saved in the computer to be reused, for example in other controllers of the same type (configuration duplication)
- panel housing, IP65 from the front
- high accuracy, long-term stability and immunity to disturbance
- wide range of supply voltages: 15 ÷ 250 Vac (alternating voltage 50/60 Hz), 20 ÷ 350 Vdc (direct voltage)

#### Contents of set:

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

#### Available accessories:

- AR955 programmer
- digital temperature probes AR182, AR183

#### How to order:

AR601 / □

Output 1	Code
relay	P
SSR	S

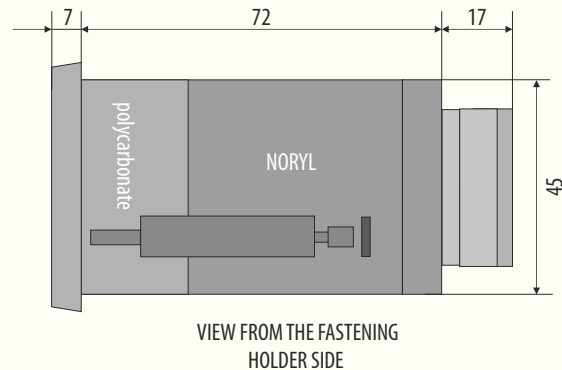
#### For example:

AR601 / P

AR601, 1 relay output

#### DIMENSIONS, INSTALATTION DATA

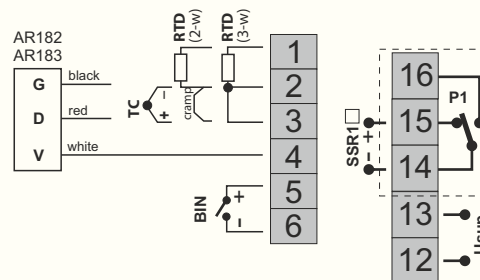
Enclosure dimensions	48x48x79 mm
Panel window	46x46 mm
Fixing methods	panel, grips on the side of the enclosure
Material	self-extinguishing polycarbonate NORYL 94V-0
Leads cross sections	2,5mm <sup>2</sup> (power and output 1), 1,5mm <sup>2</sup> (remaining)



#### TERMINAL STRIPS, ELECTRICAL CONNECTIONS



PRG socket is accessible from top of the enclosure



Technical Data		
<b>Universal inputs</b> (programmable)		<b>measurement rangese</b>
- Pt100 (RTD, 3- or 2-wire)		-100 ÷ 850 °C
- thermocouple J (TC, Fe-CuNi)		0 ÷ 880 °C
- thermocouple K (TC, NiCr-NiAl)		0 ÷ 1200 °C
- thermocouple S (TC, PtRh 10-Pt)		0 ÷ 1750 °C
- thermocouple B (TC, PtRh30PtRh6)		300 ÷ 1800 °C
- thermocouple R (TC, PtRh13-Pt)		0 ÷ 1600 °C
- thermocouple T (TC, Cu-CuNi)		0 ÷ 380 °C
- thermocouple E (TC, NiCr-CuNi)		0 ÷ 700 °C
- thermocouple N (TC, NiCrSi-NiSi)		0 ÷ 1300 °C
- AR182 digital temperature probe		-50 ÷ 120 °C
- AR183 digital temperature probe		-50 ÷ 80 °C
<b>Number of measurement inputs</b>		1
<b>Response time</b> (10 ÷ 90%)		0,5 ÷ 2 s (programmable)
<b>Resistance of leads</b> (RTD)		R <sub>c</sub> < 30 Ω (for each line)
<b>Resistance current</b> (RTD)		~250 μA (Pt100)
<b>Processing errors</b> (at 25°C ambient temperature):		
- basic	- for Pt100	0,2 % of measuring range ±1 digit
	- for thermocouples	0,3 % of measuring range ±1 digit
- additional for thermocouples		<2 °C (temperature of cold ends)
<b>Resolution of measured temperature</b>		0,1 °C or 1 °C
<b>Binary inputs</b> (contact or voltage <24V), standard		bistable, active level: short-circuit or < 0,8 V
<b>Communication interface</b>	- PRG programming link (no separation) for AR955 programmer	- bitrate 2,4 kb/s, - format 8N1 (8 data bit, 1 bit stop, no parity bit), - MODBUS-RTU protocol (SLAVE)
<b>Two-state output</b> (relay or SSR)	- relay (P1), standard - SSR (SSR1), option	8A / 250Vac (for resistive loads), SPDT transistor type NPN OC, 11V, internal resistance 440 Ω
<b>7-segment LCD display with brightness control</b>		red, 4 digits, height 9mm
<b>Signalling</b>	- relays active - messages and errors	LED's, red LED display
<b>Power supply</b> (Usup)	- universal, compliant with 24V and 230V standards	15 ÷ 250 Vac, <2VA (alternating voltage, 50/60Hz) 20 ÷ 350 Vdc, <2W (direct voltage)
<b>Rated operating conditions</b>		0 ÷ 50°C, <90 %RH (non-condensing)
<b>Working environment</b>		air and neutral gases
<b>Protection rating</b>		IP65 front, IP20 of the connections side
<b>Weight</b>		~125g
<b>Electromagnetic compatibility (EMC)</b>		- immunity: acc. to PN-EN 61000-6-2 - emission: acc. to PN-EN 61000-6-4
<b>Safety requirements accordin to PN-EN 61010-1</b>		- installation category - II - pollution degree - 2 - value of voltage to earth for the power supply circuit, output - 300V - value of voltage to earth for input circuit - 50V - insulation resistance >20 MΩ - altitude above the sea level <2000 m

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