

# AR603, AR613

## Temperature controller with timer



### PROGRAMMING



COPY



- controller with time functions activated automatically or manually
- 1 universal measuring input (supporting thermo-resistance, thermocouple sensors or digital probes of temperature AR182 and AR183)
- binary input START / STOP to control the time function
- 2 control outputs, relay or SSR control:
  - output 1: ON-OFF with hysteresis, PID, AUTOTUNING PID
  - output 2: ON-OFF with hysteresis
- automatic selection of PID parameters function
- programmable work characteristics (process controller, ramping)
- two-line LED display with adjustable brightness
- line resistance compensation for resistive sensors
- temperature compensation of cold ends of thermocouples
- programmable input type, digital filtration, regulation and access options and other configuration parameters
- access to configuration parameters protected by a user's password
- methods to parameters configuration:
  - from the foil keyboard and tuning knob (encoder) located on the front panel of the device
  - via PRG port (AR955/AR956 programmer) and the free ARSOFT-CFG
- software and programmer enabling the preview of the measured value and fast configuration of single or ready parameter sets previously stored in the computer for the purpose re-use, for example in other controllers of the same type (duplication of configuration)
- panel housings, IP40 from the front, IP20 from the connectors
- high accuracy, long-term stability and resistance to noise
- wide supply voltage range: 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:

- programmer AR955
- digital temperature probes AR182, AR183

### How to order:

AR603, AR613 /  /

Output 1	Output 2	Code
relay	relay	P
SSR	SSR	S

### For example:

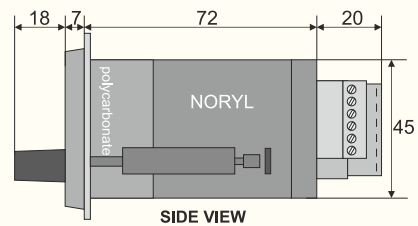
AR613 / P / P

Ar613, 1 relay output, 2 relay output

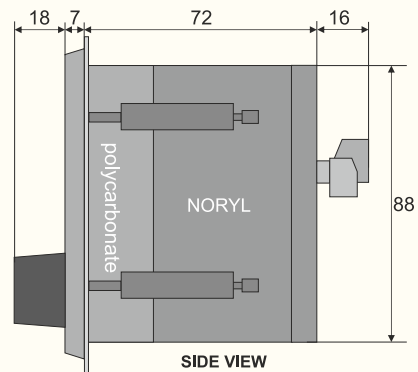
### DIMENSIONS, INSTALATTION DATA

Enclosure dimensions	48x48x79 mm (AR603), 96x96x79mm (AR613)
Panel window	46x46 mm (AR603), 92x89mm (AR613)
Fixing methods	panel, grips on the side of the enclosure
Material	self-extinguishing polycarbonate NORYL 94V-0
Leads cross sections (separable connectors)	2,5mm <sup>2</sup> (power i outputs 1), 1,5mm <sup>2</sup> (remaining)

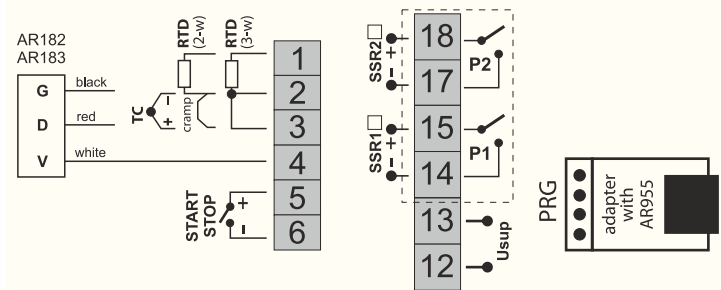
AR603



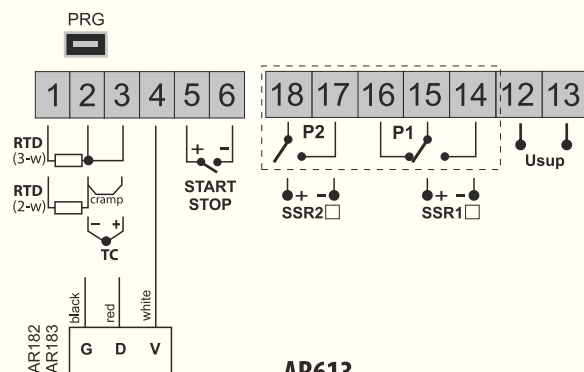
AR613



### TERMINAL STRIPS, ELECTRICAL CONNECTIONS



AR603



AR613

Technical Data		
<b>Universal inputs</b> (programmable)		<b>measurement ranges</b>
- Pt100 (RTD, 3- or 2-wires)		-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
- digital temperature probe AR182		-50 ÷ 120 °C
- digital temperature probe AR183		-50 ÷ 80 °C
<b>Number of measurement inputs</b>		1
<b>Response time for measurements</b> (10 ÷ 90%)		0,5 ÷ 2 s (programmable)
<b>Resistance of leads</b> (RTD)		$R_L < 30 \Omega$ (for each line)
<b>Resistance current</b> (RTD)		~250 $\mu$ A (Pt100)
<b>Processing errors</b> (at 25°C ambient temperature):		
- basic	- for Pt100	0,2 % of measuring range $\pm$ 1 digit
	- for thermocouples	0,3 % of measuring range $\pm$ 1 digit
- additional for thermocouples		<2 °C (cold ends temperature)
<b>Resolution of measured temperature</b>		0,1 °C or 1 °C
<b>Accuracy of time measurement</b>		<2 %
<b>Binary inputs</b> (contact or voltage <24V)		bistable, active level: short-circuit or < 0,8 V
<b>Communication interface</b>	- PRG programming link (no separation) for programmer AR955	- bitrate 2,4 kb/s, - format 8N1 (8 data bit, 1 bit stop, no parity bit), - MODBUS-RTU protocol (SLAVE)
<b>Outputs</b> (relay or SSR)	- relay (P1), standard - relay (P1), standard - SSR (SSR1, SSR2), option	8A / 250Vac (for resistive loads), SPDT AR603: 5A / 250Vac, AR613: 8A / 250Vac (for resistive loads) transistor type NPN OC 10,5 ÷ 11V, with current limitation to ~25mA
<b>7-segment LED display with brightness control</b>		
		- top, red 20mm (AR613), 7mm (AR603) - bottom, green 14mm (AR613), 7mm (AR603)
<b>Signalling</b>	- relays active - edited set value - messages and errors	LED's, red LED's, red (under the display window) LED display
<b>Power supply</b> (Usup)	- universal, compliant with 24 V and 230 V standards	15 ÷ 250 Vac, <3VA (alternating voltage, 50/60Hz) 20 ÷ 350 Vdc, <3W (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>		IP40 front, IP20 of the connections side
<b>Weight</b>		~135g (AR603), ~245g (AR613)
<b>Electromagnetic compatibility (EMC)</b>		- immunity: acc. to PN-EN 61000-6-2 - emission: acc. to PN-EN 61000-6-4
<b>Safety requirements according to PN-EN 61010-1</b>		- installation category - II - pollution degree - 2 - value of voltage to earth for the power supply circuit, output - 300 V - value of voltage to earth for input circuits - 50 V - insulation resistance >20 M $\Omega$ - altitude above the sea level <2000 m

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