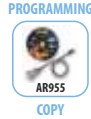


# AR662

## Universal controller with double reading



### Single-channel universal regulator with elements fuzzy logic PID



- control and monitoring of temperature and other physical values (humidity, pressure, level, speed, etc.) processed to a standard electrical signal (0/4÷20mA, 0÷10V, 0÷60mV, 0÷2,5kΩ)
- 1 universal input (thermometer, thermocouple and analogue)
- BIN programmable digital input for changing operational mode of the controller: control start/stop, manual/automatic mode for outputs, two-position switching of the set value (day/night), keyboard lock
- 2 or 3 outputs of ON/OFF type with the following characteristics:
  - output 1 (main): ON-OFF with hysteresis, PID, fuzzy logic (auto-tuning) PID
  - output 2, 3 (auxiliary/alarm): ON-OFF with hysteresis
- analogue output 0/4÷20mA or 0/2÷10V (constant-control, retransmission)
- advanced function of selecting PID parameters with fuzzy logic elements
- available for binary and analogue outputs, for setting the value of the output signal in the range of 0 ÷ 100%
- programmable operation characteristics (process controller, ramping)
- built-in 24 Vdc power supply for supplying on-site transducers
- two-line LED digital readout with adjustable brightness:
  - Upper display - measured value,
  - Bottom display - setpoint of output 1
- RS485 serial interface, galvanically isolated, MODBUS-RTU
- compensation of line resistance for resistance sensors
- temperature compensation of thermocouple cold ends
- programmable input, range of indications (for analogue inputs), options for adjustment, alarms, communication, access and other configuration parameters
- access to configuration parameters protected with a user password
- methods for configuring parameters:
  - 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)
- enclosure for the DIN35 rail, IP20
- 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, digital input BIN and interface RS485

#### Contents of set:

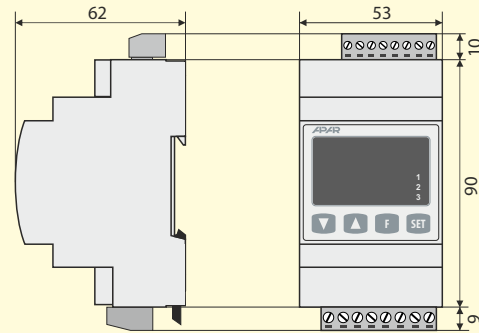
- regulator
- user manual
- warranty card

#### Available accessories:

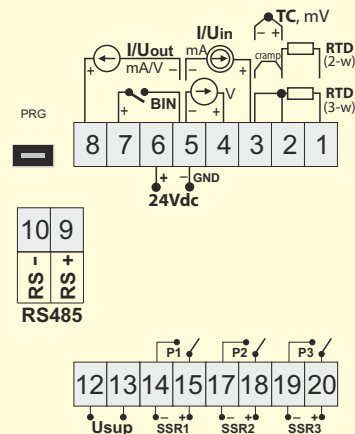
- AR955/GP or AR956 programmer
- RS485 to USB converter

### DIMENSIONS, INSTALLATION DATA

|                          |   |
|--------------------------|---|
| Enclosure dimensions     | Modulbox 3MH53, 53x90x62 mm   |
| Fixing methods           | on a TS35 rail (DIN EN 50022-35)  |
| Material                 | ABS/PC  |
| Conductor cross-sections | 2,5mm <sup>2</sup> (supply, bi-state outputs), 1,5mm <sup>2</sup> (other) |



### TERMINAL STRIPS, ELECTRICAL CONNECTIONS



### How to order

|                               |  |                 |       |
|-------------------------------|--|-----------------|-------|
| AR662 / □ / □ / □ / □ / □ / □ |  | Output 3        | Code  |
|                               |  | relay           | P     |
|                               |  | SSR             | S     |
|                               |  | Analog output   | Code  |
|                               |  | 0/4÷20mA        | WA    |
|                               |  | 0/2÷10V         | WU    |
|                               |  | Interface RS*   | Code  |
|                               |  | interface RS485 | RS485 |

\* option for an extra fee

#### For example:

AR662 / S1 / S / P / RS485 / P

AR662, supply 230 Vac, main output (1) SSR, auxiliary output (2 i 3) relays, interface RS485

**TECHNICAL DATA**

| <b>Universal inputs</b> (programmable)                                       |  | <b>measurement ranges</b>   |
|--|--|---|
| - 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 ( $R_{in} = 50 \Omega$ )   |  | 0/4 ÷ 20 mA   |
| - voltage ( $R_{in} = 110 k\Omega$ )   |  | 0 ÷ 10 V  |
| - voltage ( $R_{in} > 2 M\Omega$ )   |  | 0 ÷ 60 mV   |
| - resistance (3- or 2-wire)  |  | 0 ÷ 2500 $\Omega$   |
| <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 (remaning)  |
| <b>Processing errors</b> (at 25°C ambient temperature):                      |  |   |
| - basic  | - for RTD, mA, V,mV, $\Omega$                    | 0,1 % of measuring range $\pm$ 1 digit  |
|  | - for thermocouples                              | 0,2 % of measuring range $\pm$ 1 digit  |
| - additional for thermocouples   |  | <2 °C (cold ends temperature)   |
| - additional caused by ambient temperature changes                           |  | < 0,003 % of input range /°C  |
| <b>Resolution of measured temperature</b>                                    |  | 0,1 °C  |
| <b>Binary inputs</b> (contact or voltage <24V)                               |  | bistable, active level: short-circuit or < 0,8 V  |
| <b>Communication interface</b><br>(RS485 i PRG, do not use at the same time) | - RS485 (galvanically separated), option         | - bitrate 2,4 ÷ 115,2 kb/s,<br>- format 8N1 (8 data bit, 1 bit stop, no parity bit),<br>- MODBUS-RTU protocol (SLAVE) |
|  | - PRG programming link (no separation), standard |   |
| <b>Outputs</b><br>(3 relays or SSR)  | - relay (P1, P2, P3), standard                   | 5A / 250Vac (for resistive loads), SPST-NO  |
|  | - SSR (SSR1, SSR2, SSR3), option                 | transistor type NPN OC, 11V, internal resistance 440 $\Omega$   |
| <b>Analogue outputs</b><br>(1 current or voltage)                            | - current 0/4 ÷ 20 mA (standard)                 | maximum resolution 1,4 $\mu$ A (14 bit)<br>output load $R_o < 350 \Omega$   |
|  | - voltage 0/2 ÷ 10 V (option)                    | maximum resolution 0,7 mV (14 bit)<br>output load $I_o < 3,7$ mA ( $R_o > 2,7 k\Omega$ )                              |
|  | - output basic error                             | < 0,1 % of output range   |
| <b>7-segment LCD display with brightness control</b>                         | - top  | red 4 digits, height 10mm   |
|  | - bottom   | green 4 digits, height 7 mm   |
| <b>Signalling</b>  | - relays active                                  | LED's red   |
|  | - messages and errors                            | LED dispaly   |
| <b>Power supply</b> (Usup)   | - 230Vac (standard)                              | 85 ÷ 260 Vac/ 3VA   |
|  | - 24Vac/dc (option)                              | 20 ÷ 50 Vac/ 3VA, 20 ÷ 72 Vdc/ 3W   |
| <b>Power supply to filed transmitters</b>                                    |  | 24Vdc / 30mA  |
| <b>Rated operating conditions</b>  |  | 0 ÷ 50°C, <100 %RH (non-condensing)   |
| <b>Working environment</b>   |  | air and neutral gases   |
| <b>Protection rating</b>   |  | on a TS35 rail, 53x90x58mm, IP40(enclosure), IP20 (of the connections side)   |
| <b>Weight</b>  |  | ~160g   |
| <b>Electromagnetic compatibility</b> (EMC)                                   |  | - immunity: acc. to PN-EN 61000-6-2   |
|  |  | - emission: acc. to PN-EN 61000-6-4   |