LABOR – ASTER

INDUSTRIAL AUTOMATION

Certyfikat nr QS/14/07

AC 083
QMS

MANUAL SETTING DEVICE type As 550

Setting controlling signal 4÷20mA with 3, 5 or 10-turn potentiometer

- **Configurable PV indicator in physical units.**
- **Indicator of real output current OUT for A and M operation mode.**
- **Accuracy of A/C and C/A converters 12 bits.**
- **Balancing signals during switching M → A i A → M**
- **Indication of operation mode on front panel and back to computer system**
- **Emergency switch to BACKUP operation mode**

APPLICATION

Manual setting device **As 550** is designed to operate in measurement systems and automatic regulation of industrial processes, especially for executing continuous controls of an executive element in computer automation systems.
The device is "transparent" for external automatic control signal when the device is not powered. The construction of the device is adapted to be installed in a panel. It can be also located in control room, control closet or on a board on the site.

BASIC TECHNICAL PARAMETERS

1.	Dimensions of the device	-	72 x 72 x 116.5 mm
2.	Board cut dimensions	-	68 x 68 mm
3.	Power supply	-	24Vdc or 230Vac
4.	Output signal **"YO"**	-	4 ÷ 20 mA
	a. real control signal	-	3 ÷21 mA
	b. range margin	-	1 mA
	c. load	-	< 750 Ω
	d. accuracy class	-	0.25 %
	e. resolution	-	< 0.025 %
	f. opto-electrical separation		
5.	Measurement input "**PV**"	-	0/4 ÷ 20mA / 100Ω
	a. accuracy class	-	0.25%
	b. resolution	-	< 0.025%
	c. differential input		
	d. high-resistance separation		
	e. max common signal	-	±60V
	f. additional error from the common signal voltage value	-	0.04% /V
6.	Measurement input "**YA** / **YM**" parameters as for "**PV**"	-	4÷20mA / 100Ω
7.	Input "**BU**"	-	option 03
	resistance	-	"0" < 500Ω
		-	"1" > 10kΩ
		-	12V / 6mA
8.	Indication output		option 03, OC
	operation mode **"DO"**	-	4.5÷32Vdc / 100mA
	max. voltage drop on OC	-	< 2V
9.	Digital displays	-	**LED** - 10mm
	a. „**PV**"	-	4 digits
	b. „**OUT**"	-	3 digits, direct signal or reversed [%]
		-	resolution 0.1 %
10.	Object power supply output "Uz"	-	24Vdc / 60mA
11.	Object cables connection	-	0.5 ...1.5mm^2 6 pairs of disconnectable terminals type ARK950
12.	Interface for configuration	-	RS232, connector RJ6
13.	Operation conditions	-	

Ambient temperature - storing: -30°C...+60°C
Ambient temperature - working: -25°C...+60°C
Relative humidity: max 90%, no water vapor condensation
Ambient atmosphere: free from dust and aggressive fumes

Safety requirements	-	**PN-EN 61010-1:2002**
EMC requirements	-	**PN-EN 61000-6-1**
	-	**PN-EN 61000-6-3**

CONSTRUCTION OF AS550

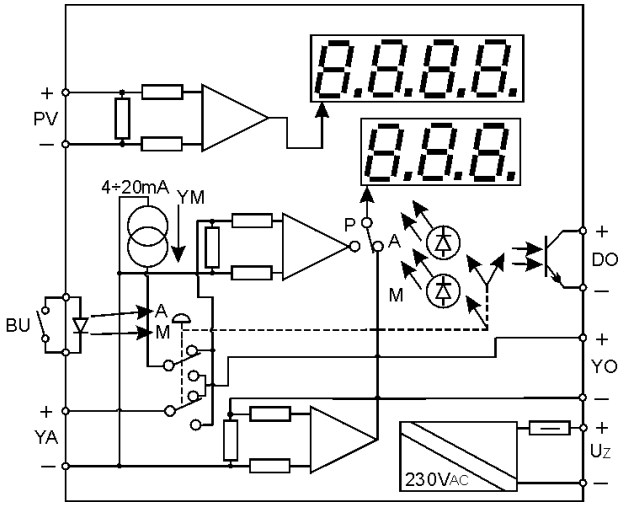
The device is to be mounted on a board.

Window cut dimensions should be $68^{+0,7}$ x $68^{+0,7}$mm. The recommended distance between adjacent windows should be 76 mm. Fixing the device in the board is done with two pressure screws.

In the front panel of the device are the following controls and indicators:

- potentiometer of the internal control signal regulator for **M** type of operation
- **A / M** operation mode switching button
- balancing button **P**
- 4-digit indicator of the measured value **PV**
- 3-digit indicator of control value **OUT**
- two lights (LED) **A** and **M** which indicates type of operation mode
- filed for marking the PiA circuit

On the rear panel of the device are six pairs of disconnectable terminals (type ARK950) for connecting field cables, RS232 interface and power supply cable.



Schemat ideowy stacyjki

OPERATION DESCRIPTION

Type of operations:

- Automatic mode **A** – external control signal **YA** is connected to output **YO** (LED A is ON).
- **BACKUP** mode is operating when in mode **A** input **BU** is set **BU⇒„0”** (e.g. PLC controller failure).
  Then occurs automatic switch to signal **YM** (safe control value) and LED is blinking. When signal **BU** disappears the device is set back to automatic mode **A**.
- Manual mode **M** – signal **YM** from internal current source is connected to output **YO**.

Operation type is indicated by LEDs **A** and **M** on the front panel of the device and by bistate **OC** type output back to a digital system (state of OC output can be set in AsSETUP program).

Displaying and balancing of control signals:

On display **OUT** is always active control signal **YO** (**YA** for **A** mode, **YM** for **M** mode).

Pressing button **P** causes displaying inactive signal in field **PV** for about 1 minute allowing adjusting signal **YM** to signal **YA**.

Balancing function can be used (but does not have to be) while switching **A → M** and **M → A**.

Signals values are displayed in range 0÷100% or reversed 100÷0% (e.g. for valves NO valve opening level) depending on configuration parameter.

Note:

Real value of current flowing in line is displayed.

Measured value PV displaying:

4-digit indicator allows displaying measured value in physical units. Its ranges and dot position can be set in AsSETUP program.

Lack of power state:

When power supply of the device is off, automatic control signal **YA** is connected to output **YO** and all displays and switchers are inactive.

CONFIGURABLE PARAMTERS IN PROGRAM AsSETUP:

- Lower range of measured value **PV**: **-999...9999**
- Upper range of measured value **PV**: **-999...9999**
- Dot position of display **PV**:
  0 – no dot ; **1** – XXX.X ; **2** – XX.XX ; **3** – X.XXX
- Filter value of measured signal / time constant /

0 – no filtration	**2** – 1s	**4** – 4 s	**6** – 16 s	**8** – 64 s
1 – 0.5 s	**3** – 2 s	**5** – 8 s	**7** – 32 s	

- Indication of operation state of bistate output
  0 – active OC indicates **M**
  1 – active OC indicates **A**
- Reversing displaying control signal
  0 – signal displayed directly
  1 – reversed signal (4mA = 100%, 20mA = 0%)

Viewing programmed parameters:

- Pressing button **P** for ~3s switches the device to parameters viewing mode
- In field **OUT** parameter number is displayed
- In field **PV** parameter value is displayed
- Pressing button **A/M** increases parameter number
- Pressing button **P** sets the device in basic mode

HOW TO ORDER: **Manual Setting Device type As 550 – X – X**

Potentiometer type
0 – three-turn (after agreement) ; **1** – five-turn ; **2** – ten-turn
Power supply options:
230Vac
24Vdc

Cable for programming should be bought separately, link: Cable RS232 DB9-RJ11 (labor-automatyka.pl).

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