PROGRAMMABLE BARGRAPH OMB 300

Owner's Manual

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BARGRAPH OMB 300

OMB 300 is a programmable Bargraph for visualising of process analogue signals. The instrument has 30 LED red, orange and green. The colour can be free selected and combined across the entire display length. The Bargraph is designed for panel mount. Two Set Point relays are optionally available. The programming of the signal input, the measuring range, the display mode and the set points is accessible via five keys bellow the front lens.

A variety of process signals can be connected:

PM	Process Monitor	0/4-20mA, 2V, 5V and 10V DC
RTD	RTD Platinum Thermometer	Pt-1000
RTD-Ni	RTD Nickel Thermometer	Ni-1000
POT	Linear Potentiometer	> 500 Ohm

The instrument is supplied from 10…30VDC or optionally from 10 … 30V AC and is enclosed in a 24x96mm DIN cabinet for panel mount. It confirms with EMC regulations.

1. SPECIFICATIONS OMB 300

INPUTS

Ranges   0/4-20mA < 400mV   Input 1
                             ± 2V   1MOhm   Input 2
                             ± 5V   1MOhm   Input 2
                             ± 10V   1MOhm   Input 2

Pt- xxx	- 200 … 850 ºC
Ni- xxx	-30.0 … 199.9 ºC
Type Pt-	1000 Ohm, 3850 ppm/K
Type Ni-	1000 Ohm, 5000 ppm/K
Termination	Two wire terminals

Potentiometer   Excitation 2.5V/6mA

SCALING

Bargraph	30 LED, red-green-orange
Intensity	programmable in steps 25, 50, 75, 100%

OC-LINK   Communication Port for setting parameters from a PC. This option contains a SW program and a OCL connecting cable for USB.

ACCURACY

TC	100 ppm/K
Accuracy	± 1 LED
Overload	10x during < 100ms, 2x continuous

SET POINTS

Limit	999
Hysterese	0 … 999
Time Delay	0 … 99.9 sec.
Outputs	One Relay with a closing contact 230V-3A AC or 50VDC
	One Relay with a changing contact 230V-3A AC or 50VDC

SUPPLY

Standard	10 …30V DC isolated
Option	10 … 30V AC isolated

MECHANICAL

Material	Noryl GFN2 SE1 according to UL 94 V-I
Dimensions	24 x 96 x 100mm
Panel cut-out	22.5 x 92mm

OPERATION

Terminals	Pluggable Screw Terminals
Warm-up Time	15 minutes
Temperature	Working: 0 … 60 ºC
	Storing: -10 … 85 ºC
Cover	IP40 (front panel)
El. Class	Security Class 1, EN 61010-1, A2
EMC	EN 61000-3-2+A12; EN 61000-4-2, 3, 4, 5, 8,11;
	EN 550222, A1, A2.

2.   KEYBOARD - Behind the Front Lens
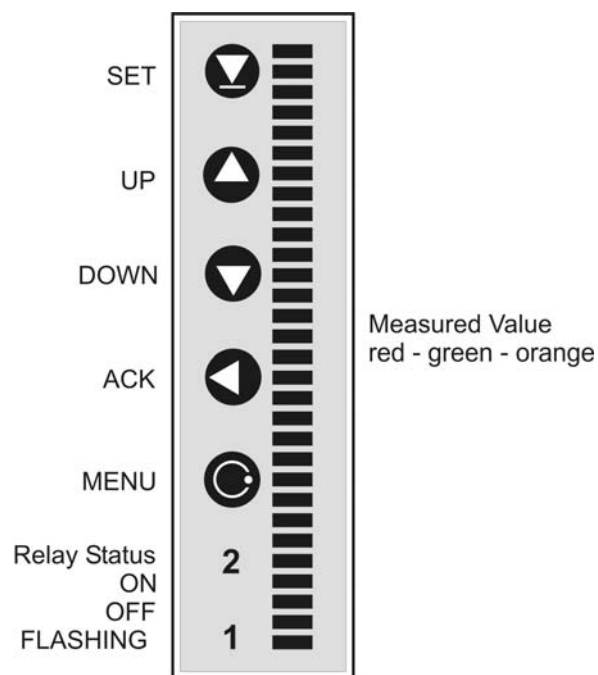
KEY	MMODE of OPERATION	MENU MODE	SELECTION
MENU	Measuring Range	End of Menu	End of entry
ACK	Selection of Set Points	One Step backwards	Step to upper level
DOWN	Selection of the min. value	One Step backwards	Backwards
UP	Selection of the max. value	One Step forwards	Forwards
SET	Selection of the Range	Confirmation	Confirmation
MENU+DOWN+ACK	Original Factory Settings		

3.   TERMINALS - Rear of the Instrument

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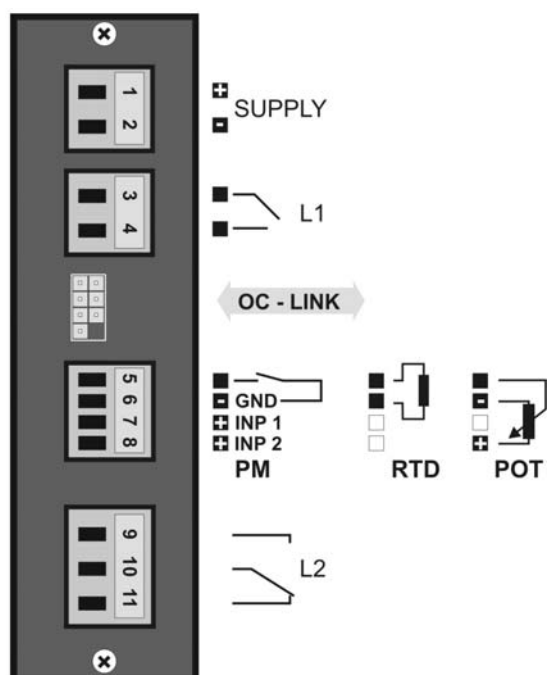
4. INPUTS and RANGES

TYP		INPUT 1	INPUT 2
PM	Process Monitor	0-20mA / 4-20mA	0…2V, 0…5V, 0…10V
RTD	RTD Thermometer	Pt-1000, KTY 210, Thermistor	
RTD-Ni	RTD Thermometer	Ni 1000	
POT	Potentiometer	Linear Potentiometer (min. 500 Ohm)	

Variety of Signals can be connected and measured. Two Signal Inputs *INPUT1* (7) and *INPUT 2* (8) are available against the terminal *GND* (6).

The Ranges will be selected:

Press ⊙ and select the Range with ▲ or ▼. Terminate with ▼

5.   CALIBRATION

The input signal will be assigned to the length of the bargraph with the keyboard bellow the front lens.

Zero Value of the input signal will be set, e.g. 4mA. The green point will be positioned with UP or DOWN, with MENU confirmed and with SET memorized.
The Zero Value of the Bargraph has been calibrated.

Maximum Value of the input signal will be set, e.g. 20mA. The green point will be positioned with UP or DOWN, with MENU confirmed and with SET stored.
The Maximum Value of the Bargraph has been calibrated.

6.   DISPLAY MODE

The display with 30 LED can be set as a solid Bar or as a single moving Point. The Bar colours can be selected in red, orange or green. When a multicolour Bar is programmed, the changing points can individually be selected such as one section is green, the second is orange and the third is red.
The solid Bar can also change the colour depending of the length. The Bar is green e.g. up to 30% of the length, changes into orange up to 80% and turns into red up to 100% in the entire length. The colour changing points can be free selected.

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6.1   BAR - One Colour Display

The Bargraph can be set for green, orange or red.

Press ⊻ and ◁. Press △ or ▽ to select the display mode. Confirm with ⊻. The colour can be selected with △ and confirmed with ⊻ .

6.2   POINT - Moving Single Point

The single point can be selected green, orange or red.

Press ⊻ and ◁. Press △ or ▽ to select the single point. Confirm with ⊻. The colour can be selected with △ and confirmed with ⊻ .

6.3   3 COLOUR BAR

The Bargraph can contain all three colours, e.g. green from 0 to 30%, orange from 30% to 80% and red from 80% to 100%. The colour changing points are programmable.

6.4   COLOUR CHANGING BAR

The Bargraph can change the colour over the entire length. It can be e.g. green from 0-30%, change into orange from 30-80% and change into red from 80-100%. The colour changing points are programmable.

Setting of the colour changing points, Limit 1 and 2
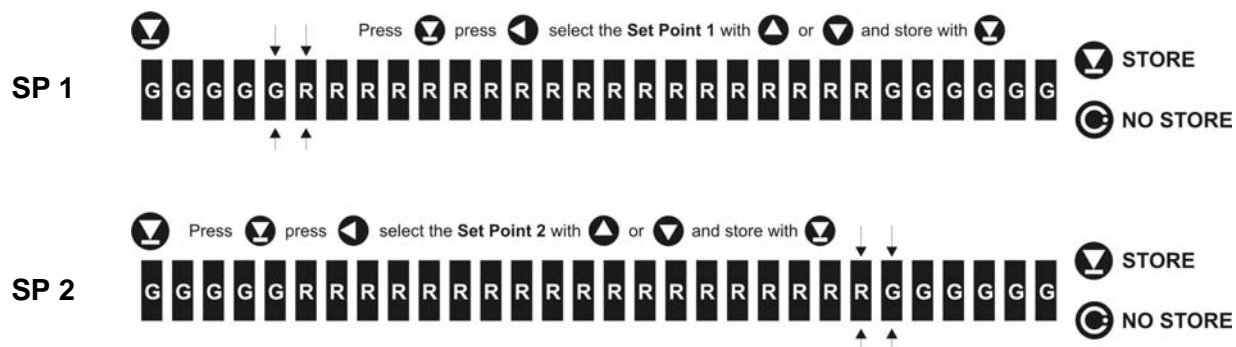
Press ⊻ and ◁. Select the three colour Bargraph with △ or ▽ and confirm with ⊻. The segments contain all three colours. The flashing LED determines the lower changing point, which can be set with the key △ or ▽. After setting confirm with ⊻. After this define the middle changing point in the same way and confirm with ⊻.

The colour of the lower part of the Bargraph will be set with △ and confirmed with ⊻. The middle and the upper parts can be set similarly. After the setting the whole Bargraph appear in the desired colours for control only. Confirm with ⊻ for terminating the settings.

7. SET POINTS - Option

Two Set points with relay outputs are options. They can be set within the entire Bargraph range.
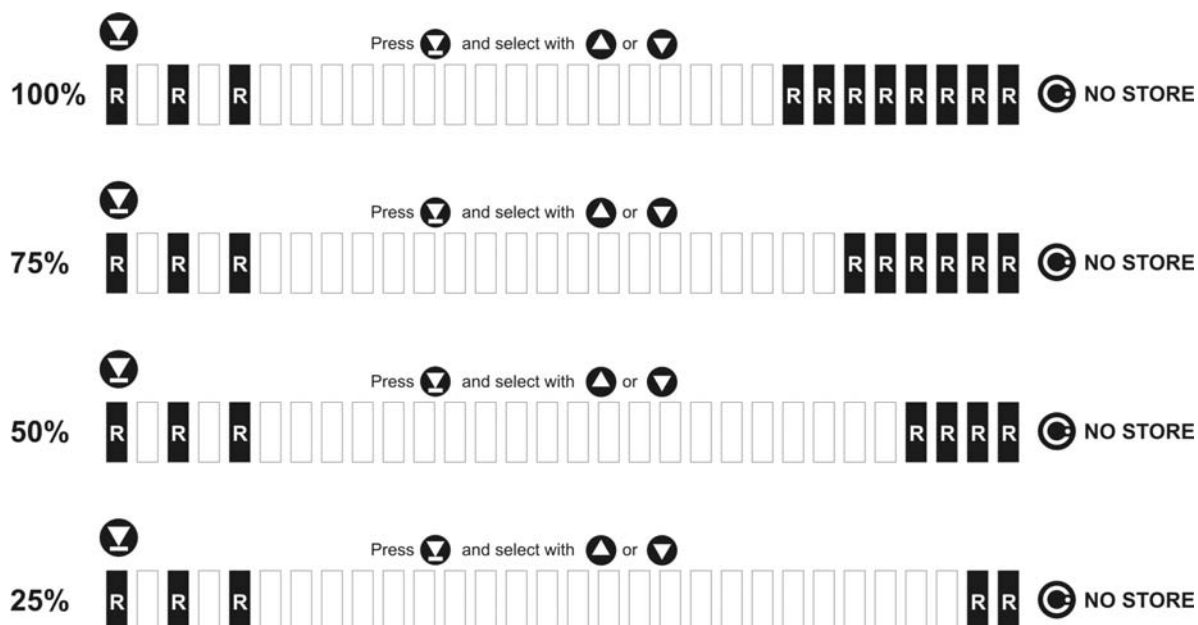
SP 1

Press ▼ press ◀ select the **Set Point 1** with ▲ or ▼ and store with ▼

▼ STORE

◉ NO STORE

GGGGG RRRRRRRRRRRRRRRRRRR GGGGG

SP 2

Press ▼ press ◀ select the **Set Point 2** with ▲ or ▼ and store with ▼

▼ STORE

◉ NO STORE

GGGGG RRRRRRRRRRRRRRRRRRRRRRR GGGGG

SELECTION of SP1 and SP2

Press ▼ and ◀. Select the flashing LED to the required position with ▲ or ▼. Confirm with ▼.

8. DISPLAY INTENSITY

The intensity can be selected in steps:

Press ▼ and select with ▲ or ▼

100%   R R R   R R R R R R R R   ◉ NO STORE

Press ▼ and select with ▲ or ▼

75%   R R R   R R R R R R   ◉ NO STORE

Press ▼ and select with ▲ or ▼

50%   R R R   R R R R   ◉ NO STORE

Press ▼ and select with ▲ or ▼

25%   R R R   R R   ◉ NO STORE

9. ERRORS

Errors will be displayed when the instrument is non-correctly operated or damaged.

Display value too small (negative value too large).
Select the DP or perform a new calibration.

Display value too large. Select the DP or perform a new calibration.

Display value out of Table range. Enlarge the table or change the range.

Display value out of Table range. Enlarge the table or change the range.

Input signal smaller than the permitted range.
Change the input signal or the range.

Input signal larger than the permitted range.
Change the input signal or the range.

Part of the electronic circuitry is not correctly operational. The instrument has to be send for repair.

Data in the Memory are damaged. The instrument has to be send for repair.

Data in the Memory are out of range. Perform the Factory Setting or send the instrument for repair.

The memory is empty, possibly due to the calibration. The instrument has to be send for repair.