OMB 301RTD/OMB 311RTD

OMB 301

OMB 311

2003 - 3 - en

- **1 x 30/25 LED + auxiliary display**
- **Pt 100; 500; 1 000; Ni 1 000; 10 000**
- **-99,9 ° ... 399,9 ° C**
- **Digital filter**
- **Size of DIN 96 x 48 mm**
- **Power supply 230 VAC**

Options

Comparators • Data output • Universal analog output
Power supply 24 VAC, 110 VAC, 10...30 VDC

Description

The OMB 301RTD resp. OMB 311RTD model is a three-color panel thermometer for sensors Pt 100; 500; 1 000; Ni 1 000; 10 000.
The instrument is based on an 8-bit controller with precise A/D converter, that secures high accuracy, stability and easy operation of the instrument.

Standard functions

Programmable display projection

Type	Pt 100; 500; 1 000, Ni 1 000; 10 000
Projection	-99.9°...399.9°C OMB 301 > 30 LED + 6-digit auxiliary display OMB 311 > 25 LED + 3-digit auxiliary display

Compensation

Conduct	for 2-wire connection
Probes	internal connection (conduct resistance in the measuring head)

Digital filters

Radius of insensitiv.	band of suppressed change of measured value

External control

Hold	display/instrument blocking
Lock	control keys blocking

Operation

The instrument is set and controlled by five control keys located on the front panel. All programmable settings of the instrument are realised in two adjusting modes.

Configuration menu	(hereinafter referred to as CM) is protected by an optional number code and contains complete instrument setting
User menu	may contain arbitrary programming settings defined in „CM“ with another selective restriction (see, change)

All programmable parameters are stored in the EEPROM memory (they hold even after the instrument is switched off). The display shows the measured units (°C).

Options

Comparators serve to monitor two limit values with relay output. Reaching the preset limits is signalled by LED and at the same time by the switch-on of the relevant relay.
Data outputs are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII protocol.
Analog outputs will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data and its type and range are selectable in CM.

Technical data

MEASURING RANGE

Pt	-99,9°...399,9°C
Ni	-30°...250°C
Type:	Pt 100; 500; 1 000 - 3 860 ppm/°C (EU) Pt 100 - 3 920 ppm/°C (US) Ni 1 000; 10 000 - 5 000 ppm/°C Ni 1 000; 10 000 - 6 180 ppm/°C
Connection:	2, 3 or 4 wire

PROJECTION

Display:	1x 30 LED - three-color and 6-digit auxiliary display with LED height 9 mm 1x 25 LED - three-color and 3-digit auxiliary display with LED height 9 mm
Brightness:	adjustable

INSTRUMENT ACCURACY

Tempco:	60 ppm/°C
Accuracy:	±0,2 % of range + 1 digit
Rate:	1,3 - 2,5 - 5 - 10 - 20 - 40 measurements/s
Resolution:	0,1°C
Watch-dog:	reset after 1,2 s
Function:	Hold - stop measuring (upon contact) Lock - control keys blocking (upon contact), not simultaneously with Hold function Digital filter - adjustable in Configuration menu
Calibration:	at 25°C and 40 % r.h.

COMPARATOR

Type:	digital, adjustable in programming mode, contact switch-on < 30 ms
Limit 1 and 2	-999...3999
Hysteresis:	0...999
Delay:	0...99,9 s
Outputs:	2 relays with switch-on (switch-off) contact (250 VAC/30 VDC, 3 A) *upon request SSR (250 VAC, 1 A) or open collector may be fitted*

DATA OUTPUTS

Data format:	rate 150...115 200 Baud, 8 bit + no parity + 1 stop bit (ASCII)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

ANALOG OUTPUTS

Type:	isolated, programmable with resolution max. 10 000 points, analog output corresponds with the displayed data, output type and range are selectable in CM
Non-linearity:	0,2 % of range
Tempco:	100 ppm/°C
Rate:	response to change of value < 40 ms
Voltage:	0...2 V/5 V/10 V
Current:	0...5 mA/0/4...20 mA (compensation of conduct up to 600 Ohm)

POWER SUPPLY

24; 110; 230 VAC, 50/60 Hz, ±10 %, 5 VA
10...30 VDC/max. 300 mA, (24 VDC/150 mA), isolated
- power supply is protected by a fuse inside the instrument

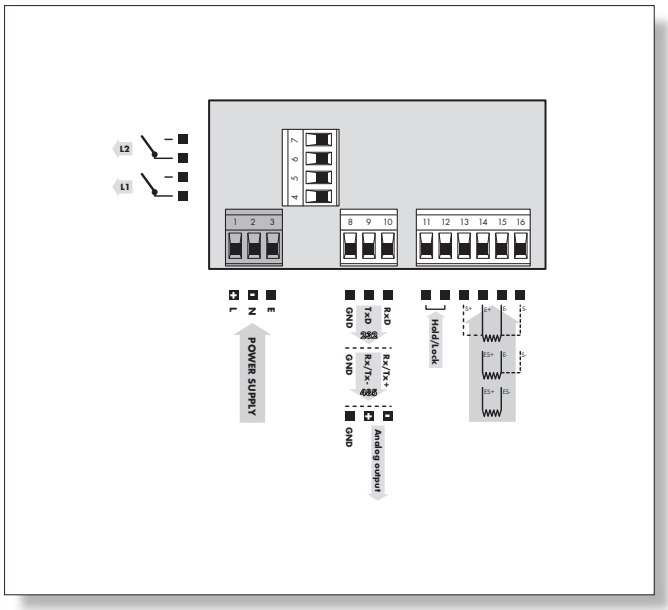
MECHANIC PROPERTIES

Material:	Noryl GFN2 SE1, incombustible UL 94 V-I
Dimensions:	96 x 48 x 120 mm
Panel cut:	90,5 x 45 mm

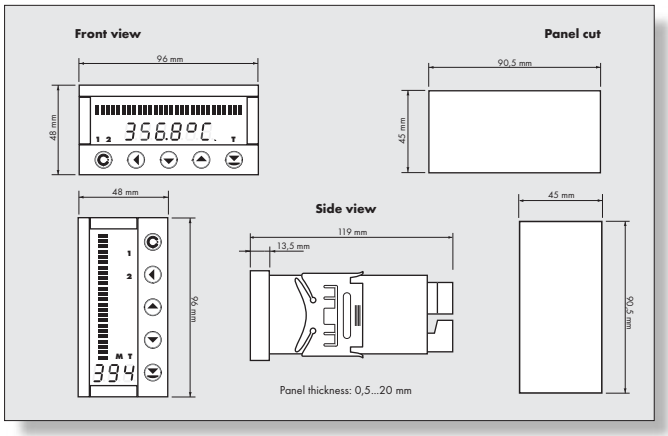
OPERATING CONDITIONS

Connection:	connector terminal board, conductor section up to 2,5 mm^2
Stabilization period:	within 15 minutes after switch-on
Working temperature:	0°...60°C
Storage temperature:	-10°...85°C
Covering:	IP65 (front panel only)
Construction:	safety class I
Electrical safety:	EN 61010-1, A2
Overvoltage category:	for pollution degree II III. - instrument power supply, relay outputs (300 V) II. - input, output (300 V)
EMC:	EN 61000-3-2+A12; EN 61000-4-2, 3, 4, 5, 8, 11; EN 550222, A1, A2

Connection



Dimensions



Order code

OMB xxxRTD - xxxxx

Type
301 Horizontal
311 Vertical

Power supply
0: 24 VAC/50 Hz
1: 230 VAC/50 Hz
3: 110 VAC/50 Hz
4: 10...30 VDC, isolated

Input
1: Pt 100
2: Pt 500
3: Pt 1 000/Ni 1 000
4: Ni 10 000
5: Pt 100 - (US - 3920 ppm/°C)

Display color
1: red
2: green

Output
0: no
1: Analog
2: Data - RS 232
3: Data - RS 485

Comparators
0: no
1: yes

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