GUARANTEE 5 YEARS

OMB 300UNI

30-POINT BARGRAHP

PROCESS MONITOR
OHMMETER
THERMOMETER FOR PT 1 000
THERMOMETER FOR NI 1 000
DISPLAYS FOR LIN. POTENTIOMETERS

SAFETY INSTRUCTIONS

Please, read the enclosed safety instructions carefully and observe them!
These instruments should be safeguarded by isolated or common fuses (breakers)!
For safety information the EN 61 010-1 + A2 standard must be observed.
This instrument is not explosion-safe!

TECHNICAL DATA

Measuring instruments of the OMB 300 series conform to the European regulation 89/336/EWG.

The instruments are up to the following European standards:
EN 61010-1 Electrical safety
EN 61326-1 Electronic measuring, control and laboratory devices – Requirements for EMC "Industrial use"

The instruments are applicable for unlimited use in agricultural and industrial areas.

CONNECTION

Supply of energy from the main line has to be isolated from the measuring leads.

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2. INSTRUMENT DESCRIPTION

2.1 DESCTRIPTION

The OMB 300UNI bargraph is a 30 point panel programmable instruments designed for maximum pragmatics and convenience of the user.

Type OMB 300UNI is a multifunction instrument with the option of configuration for 4 various input options, easily configurable in the instrument menu

The instrument is based on a microcontroller with 10-bit converter, which secures good precision, stability and easy operation of the instrument.

TYPES AND RANGES

UNI	PM:	0/4...20 mA; 0...2/5 /10 V
	OHM:	0...100 kΩ
	RTD-Pt:	Pt 1000; KTY
	RTD-Ni:	Ni 1 000
	RTD:	KTY 81-210, Thermistor R25 - 2200
	DU:	Linear potentiometer (min. 500 Ω)

PROGRAMMABLE PROJECTION

Selection:	of type of input and measuring range
Measuring range:	adjustable
Setting:	manual, optional display projection may be set for both limit values of the input signal in the menu
Projection:	30 LED, red/green/orange

LINEARIZATION

Linearization:	by linear interpolation in 25 points (solely via OM Link)

DIGITAL FILTERS

Exponen.average:	from 2...100 measurements (solely via OM Link)
Rounding:	setting the projection step for display (solely via OM Link)

EXTERNAL CONTROL

Hold:	display/instrument blocking
Lock:	control keys blocking

2.2 OPERATION

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

LIGHT **Simple programming menu**
- contains solely items necessary for instrument setting

PROFI **Complete programming menu**
- contains complete instrument menu
- solely via OM Link

All programmable parameters are stored in the EEPROM memory (they hold even after the instrument is switched off).

OMLINK Complete instrument operation and setting may be performed via OM Link communication interface, which is a standard equipment of all instruments.
The operation program is freely accessible (www.orbit.merret.eu) and the only requirement is the purchase of OML cable to connect the instrument to PC. It is manufactured in version RS 232 and USB and is compatible with all ORBIT MERRET instruments.

The program OM LINK in „Basic" version will enable you to connect one instrument with the option of visualization and archiving in PC. The OM Link „Standard" version has no limitation of the number of instruments connected.

2.3 OPTIONS

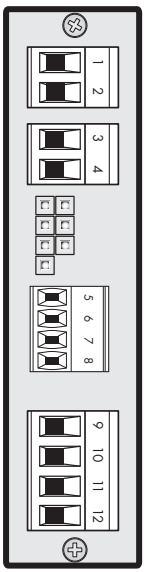
Comparators are assigned to monitor one, two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99,9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.
When bi-stable relays are used, they stay in the „On" position even when the instrument's power supply is switched off.

3. INSTRUMENT CONNECTION

The instrument supply leads should not be in proximity of the incoming low-potential signals.
Contactors, motors with larger input power should not be in proximity of the instrument.
The leads into the instrument input (measured quantity) should be in sufficient distance from all power leads and appliances.
Provided this cannot be secured it is necessary to use shielded leads with connection to ground (bracket E).
The instruments are tested in compliance with standards for use in industrial area, yet we recommend to abide by the above mentioned principles.

MEASURING RANGES

TYPE	INPUT 1	INPUT 2
PM	0...20 mA/4...20 mA	0...2/5/10 V
OHM	0...100 kΩ	
RTD-Pt	Pt 1 000	
RTD-Ni	Ni 1 000	
RTD	KTY 81-210	
RTD	Thermistor R25-2200	
OU	Linear potentiometer (min. 500 Ω)	


1
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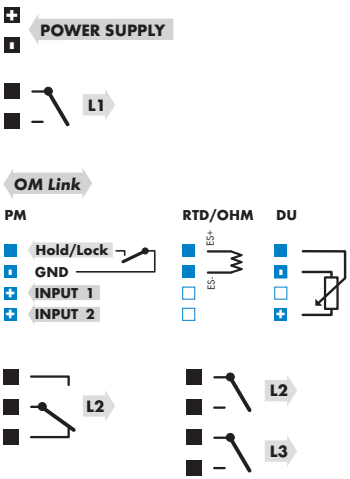

POWER SUPPLY
L1
OM Link
PM
RTD/OHM
DU
Hold/Lock
GND
INPUT 1
INPUT 2
ES+
ES-
L2
L2
L3

SETTING **PROFI**

For expert users
Complete instrument menu
Access is password protected
Tree menu structure
Solely via OM Link

SETTING **LIGHT**

For trained users
Only items necessary for instrument setting
Access is password protected
Linear menu structure

4.1 SETTING

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

LIGHT **Simple programming menu**
- contains solely items necessary for instrument setting

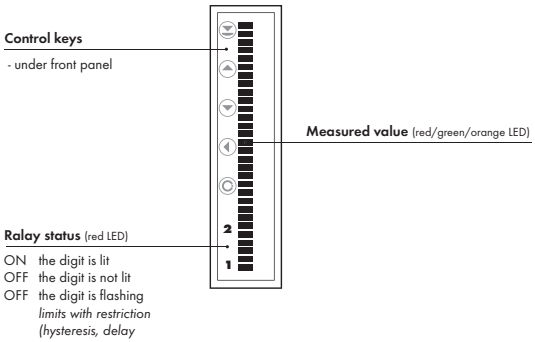
PROFI **Complete programming menu**
- contains complete instrument menu
- solely via OM Link

All programmable parameters are stored in the EEPROM memory (they hold even after the instrument is switched off).

Complete instrument operation and setting may be performed via OM Link communication interface, which is a standard equipment of all instruments.

4. INSTRUMENT SETTING

Setting and controlling the instrument is performed by means of 5 control keys located under the front panel. With the aid of these keys it is possble to browse through the operation menu and to select and set required values.



Symbols used in the instructions

PM DU RTD OHM indicates the setting for given type of instrument

DEF values preset from manufacture

after pressing the key the set value will not be stored

after pressing the key the set value will be stored

Control keys functions

KEY	MEASUREMENT	MENU	SETTING NUMBERS/SELECTION
	selection of measuring range	exit menu without save	quit editing without save
	setting limits	back to previous level	move to higher decade
	setting the projection gange - begin	move to previous item	move down
	setting the projection gange - end	move to next item	move up
	setting display projection	confirm selection	confirm setting/selection
	restoring manufacture setting		

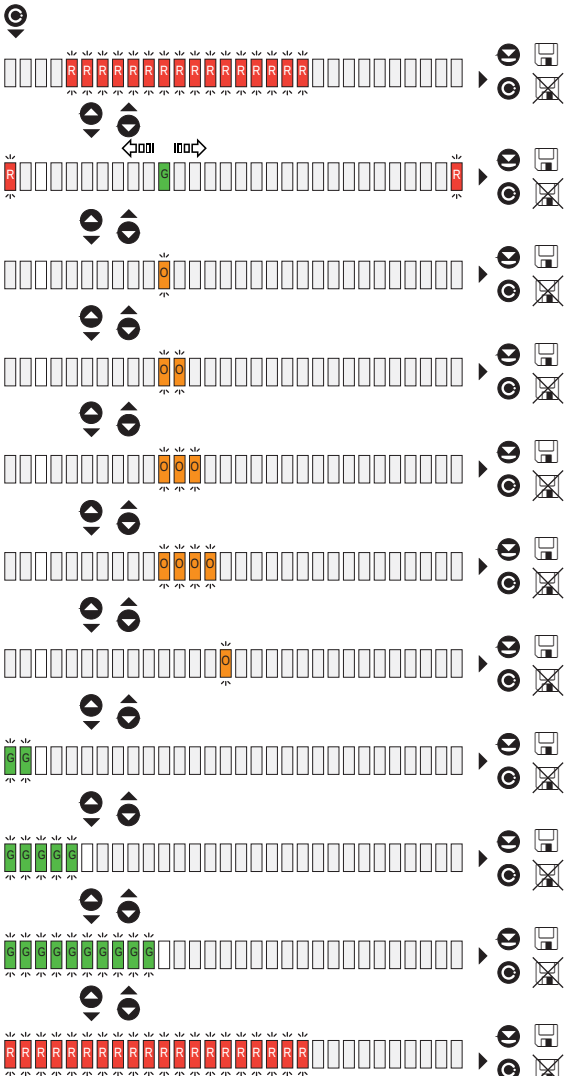
SETTING **LIGHT**

For trained users
Only items necessary for instrument setting
Access is password protected
Linear menu structure

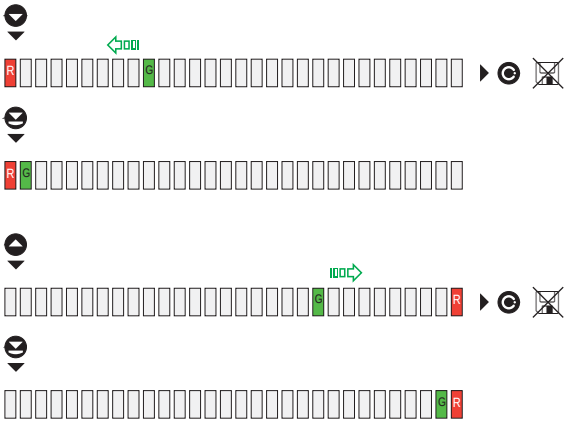
!

Upon delay exceeding 60 s the programming mode is automatically discontinued and the instrument itself restores the measuring mode

Selection of measuring range



Setting the projection range



Setting - min

Prompt to connect input signal corresponding with the beginning of projection range

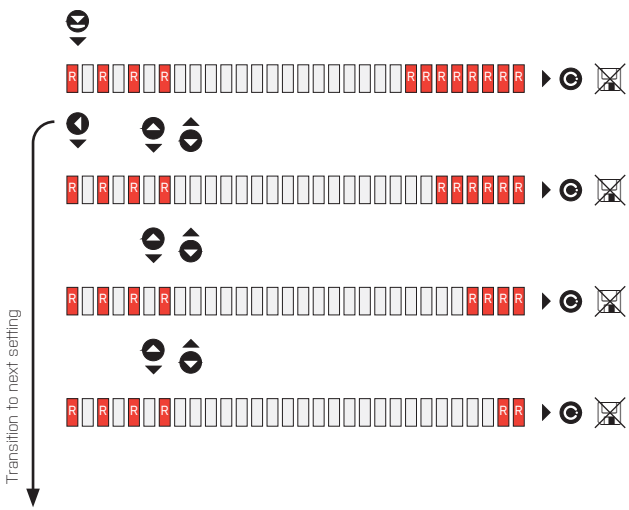
Confirmation of the setting with automatic transition back to measuring mode

Setting - max

Prompt to connect input signal corresponding with the end of projection range

Confirmation of the setting with automatic transition back to measuring mode

Setting the projection



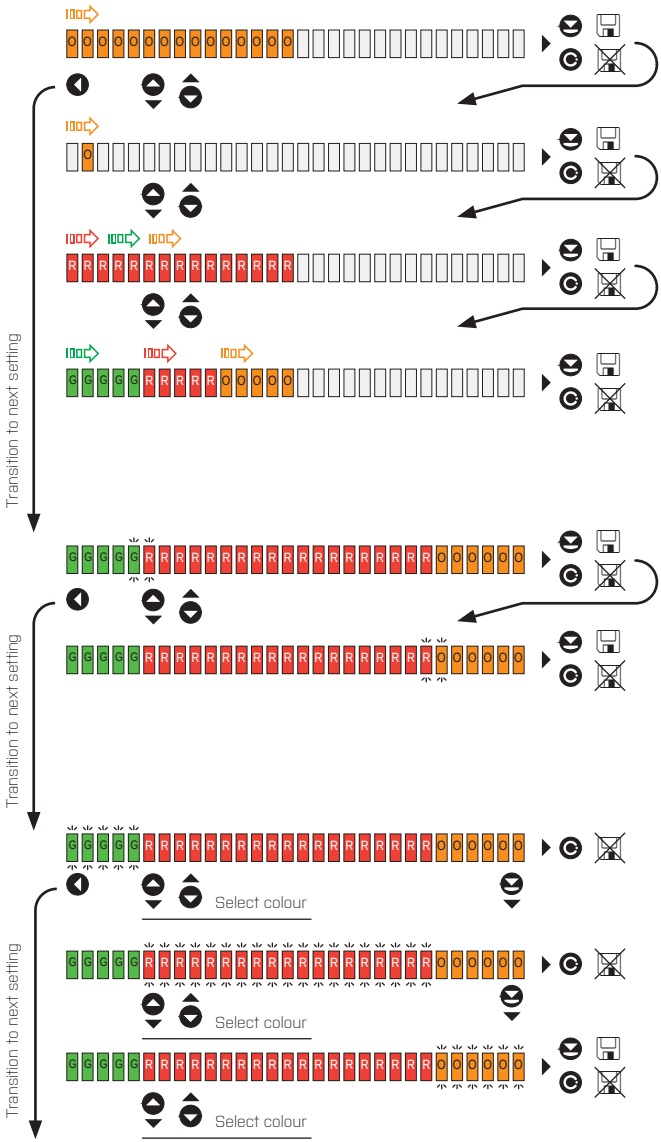
Select display brightness

Display brightness > 100 %

Display brightness > 75 %

Display brightness > 50 %

Display brightness > 25 %



Select bargraph mode

Column projection

Point projection

3- colour column

3- colour band

Changing band colour

Only for mode > 3 colour/3 band

Setting limit 1

Setting limit 2

Select display colour

Select the colour for 1st band

Select colour for 2nd band

Select colour for 3rd band

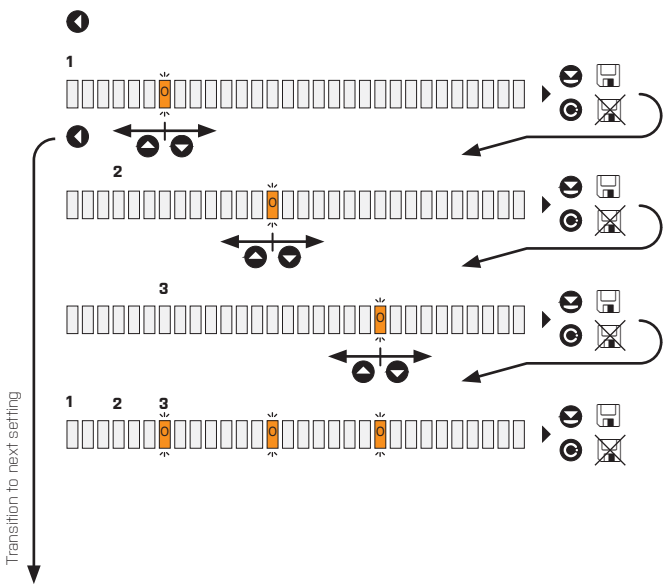
Inverse 1st band

Only for mode > 3 colour/3 band

Standard projection

Inverse projection of 1st band

Setting Limits



Setting Limits

Setting limit L1

Setting limit L2

Setting limit L3

Projection limit in column LED

/ yes/no

6. ERROR STATEMENTS

ERROR	CAUSE	ELIMINATION
	Number is too small (large negative) to be displayed (by 1.5 display units)	change DP setting, channel constant setting
	Number is too large to be displayed (by 1.5 display units)	change DP setting, channel constant setting
	Number is outside the table range	increase table values, change input setting (channel constant setting)
	Number is outside the table range	increase table values, change input setting (channel constant setting)
	Input quantity is smaller than permitted input quantity range	change input signal value or input (range) setting
	Input quantity is larger than permitted input quantity range	change input signal value or input (range) setting
	A part of the instrument does not work properly	send the instrument for repair
	Data in EEPROM corrupted	perform restoration of manufacture setting, upon repeated error statement send instrument for repair
	Data in EEPROM outside the range	perform restoration of manufacture setting, upon repeated error statement send instrument for repair
	Memory was empty (presetting carried out)	upon repeated error statement send instrument for repair, possible failure in calibration

7. TECHNICAL DATA

INPUT

range is adjustbale **PM**

0/4...20 mA	< 1,2 V (56 Ω)	Input 1
0...2 V	182 kΩ	Input 2
0...5 V	182 kΩ	Input 2
0...10 V	182 kΩ	Input 2

RTD

Pt 1 000	-50°...450°C
Ni 1 000	-50°...250°C
KTY 81-210	-55°...150°C
Therm. R25-2200	-30°...70°C
Typ Pt:	Pt 1 000 Ω with 3850 ppm
Typ Ni:	Ni 1 000 with 5000 ppm
Connection:	2 wire

OHM

Range:	0...100 kΩ
Connection:	2 wire

DU

Voltage of lin. pot.	2,5 VDC/6 mA min. potentiometer resistance is 500 Ω

PROJECTION

Display:	30 LED, intensive red/green/orange
Brightness:	adjustbale - in menu

INSTRUMENT ACCURACY

TK:	50 ppm/°C	
Accuracy:	±1% of range + 1 digit	**PM, DU**
	±1°C + 1 digit	**Pt 1 000**
	±1°C + 1 digit	**Ni 1 000**
	±0,5°C + 1 digit	**KTY 81-210**
	±0,2°C + 1 digit	**R25-2200**
	±1% of value + 1 digit - for range 500 Ω...50 kΩ, else 2 %	**OHM**
Rate:	0,5 - 5 - 50 - Maximum measurements/s	
Overload capacity:	10x (t < 100 ms), 2x (long-term)	
Linearisation:	by linear interpolation in 25 points - solely via OM Link	
Digital filters:	Exponential filter, Rounding	
Functions:	Hold - stop measuring (at contact) Lock - control key locking	
OM Link:	company communication interface for setting, operation and update of instrument SW	
Watch-dog:	reset after 25 ms	
Calibration:	at 25°C and 40% of r.h.	

COMPARATOR

Type:	digital, adjustable in menu
Mode:	Hysteresis, From, Dose
Limita:	999
Hysteresis:	0...999
Delay:	0...99,9 s
Outputs:	1 - 3x bistabil relays with switch-on contact (Form A) (230 VAC/30 VDC, 3 A)* 1x bistabil relays with switch-off contact (Form C) (230 VAC/50 VDC, 3 A)*
Relay:	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

POWER SUPPLY

Option:	10...30 V DC/24 VAC, ±10 %, 3 VA, PF ≥ 0,4, I_{STP}< 45 A/1,1 ms

MECHANIC PROPERTIES

Material:	Noryl GFN2 SE1, incombustible UL 94 V-I
Dimensions:	24 x 96 x 100 mm
Panel cut-out:	22,5 x 92 mm

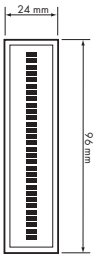
OPERATING CONDITIONS

Connection:	connector terminal board, conductor cross-section <1,5 mm² /<2,5 mm²
Stabilisation period:	within 15 minutes after switch-on
Working temp.:	-20°...60°C
Storage temp.:	-20°...85°C
Cover:	IP40 (front panel only)
Construction:	safety class I
Overvoltage ca.:	EN 61010-1, A2
Insulation resist.:	for pollution degree II, measurement category III instrum.power supply > 300 V (PI), 150 V (DI) input/output > 300 V (PI), 150 (DI)
EMC:	EN 61326-1

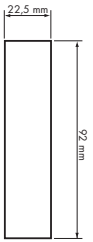
* values apply for resistance load

PI - Primary insulation, DI - Double insulation

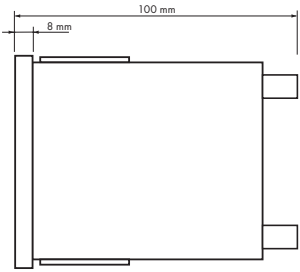
Front view



Panel cut



Side view



Panel thickness: 0,5...20 mm

Product **OMB 300UNI**

Type . . . . . .

Manufacturing No. . . . . .

Date of sale . . . . . .

GUARANTEE

A guarantee period of 60 months from the date of sale to the user applies to this instrument.
Defects occuring during this period due to manufacture error or due to material faults shall be eliminated free of charge.

For quality, function and construction of the instrument the guarantee shall apply provided that the instrument was connected and used in compliance with the instructions for use.

The guarantee shall not apply to defects caused by:

- mechanic damage
- transportation
- intervention of unqualified person incl. the user
- unavoidable event
- other unprofessional interventions

The manufacturer performs guarantee and post.guarantee repairs unless provided for otherwise.

YEARS

Stamp, signature

ES DECLARATION OF CONFORMITY

Company: **ORBIT MERRET, spol. s r.o.**
Klánova 81/141, 142 00 Prague 4, Czech Republic, IDNo: 00551309

Manufactured: **ORBIT MERRET, spol. s r.o.**
Vodňanská 675/30, 198 00 Prague 9, Czech Republic

declares at its explicit responsibility that the product presented hereunder meets all technical requirements, is safe for use when utilised under the terms and conditions determined by ORBIT MERRET, spol.s r.o. and that our company has taken all measures to ensure conformity of all products of the types referred-to hereunder, which are being brought out to the market, with technical documentation and requirements of the appurtenant Czech statutory orders.

Product: Programmable panel instrument

Type: **OMB 200/300/500**

Version: UNI, RS

Thas been designed and manufactured in line with requirements of:

Statutory order no. 17/2003 Coll., on low-voltage electrical equipment (directive no. 73/23/EHS)
Statutory order no. 616/2006 Coll., on electromagnetic compatibility (directive no. 2004/108/EHS)

The product qualities are in conformity with harmonized standard:

El. safety: EN 61010-1
EMC: EN 61326-1
Electronic measuring, control and laboratory devices – Requirements for EMC "Industrial use"
EN 50131-1, chap. 14 and chap. 15, EN 50130-4, chap. 9 (EN 61000-4-2), EN 50130-4, chap. 10 (EN 61000-4-3, ed. 2), EN 50130-4, chap. 11 (EN 61000-4-6), EN 50130-4, chap. 12 (EN 61000-4-4, ed. 2), EN 50130-4, chap. 13 (EN 61000-4-5), EN 61000-4-8, EN 61000-4-9, EN 61000-6-1, EN 61000-6-2, EN 55022, chap. 5 and chap. 6

The product is furnished with CE label issued in 2012

As documentation serve the protocoles of authorized and accredited organizations:

EMC MO ČR, Testing institute of technical devices, protocol no. 164/11-144/2012 of 24/08/2012
MO ČR, Testing institute of technical devices, protocol no. 164/11-145/2012 of 24/08/2012

Place and date of issue: Praha, 1. october 2012

Miroslav Hackl v.r.
Company representative

Assessment of conformity pursuant to §22 of Act no. 22/1997 Coll. and changes as amended by Act no.71/2000 Coll. and 205/2002 Coll