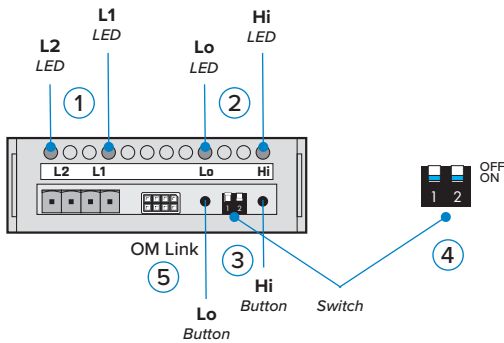


OMX 333DC

Digital signal converter

DC VOLTAGE / CURRENT

- Isolated DC Voltage / Current converter
- Input > ± 500 mA / ± 1 A / ± 5 A
25 / 50 / 100 / 200 / 400 V
- Scaling of measured values
- Output > Analogue / Data / Relays
- Setting from PC via OM Link
- Galvanic isolation 2,5 kVAC
- Easy installation to DIN rail



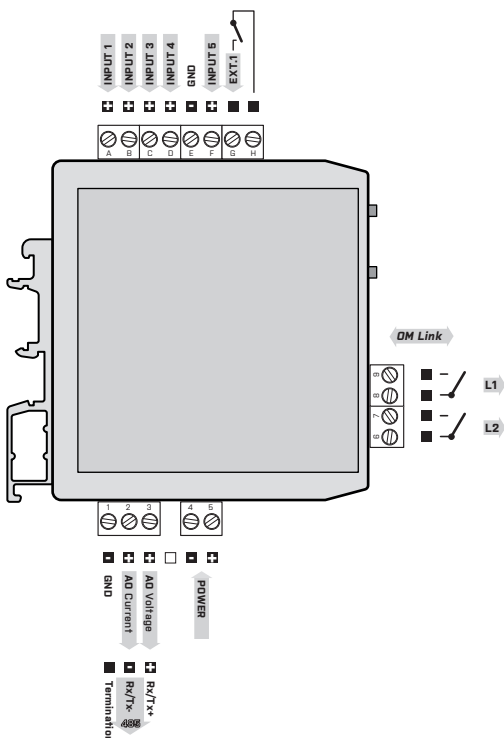
- ① * LED - Limits 1 and 2
- ② * LED - signalization of various states
- ③ Interaction buttons
- ④ Dip switch
- ⑤ OM Link to USB interface connector

Note: There is galvanic connection between OM Link connector and input!

⚠ DANGER ⚠	⚠ WARNING ⚠	⚠ CAUTION
<p>HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH</p> <ul style="list-style-type: none"> - Disconnect all power before servicing equipment and other supply lines <p>Failure to follow this instruction will result in death or serious injury.</p>	<p>EQUIPMENT OPERATION HAZARD</p> <ul style="list-style-type: none"> - Do not use this product in safety critical system. - Do not disassemble, repair or modify this product. - Do not operate beyond the recommended operating environment. <p>Failure to follow these instructions can result in death, serious injury, or equipment damage.</p>	<p>EQUIPMENT OPERATION HAZARD</p> <ul style="list-style-type: none"> - Install 100 mA fuse UL...Class CC ; IEC...gG <p>Failure to follow this instruction can result in injury or equipment damage</p>

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by ORBIT MERRET for any consequences arising out of the use of this material.

2 Product Connection



CONNECTIONS

INPUT	RANGE	CONNECTION
Input 1	$\pm 25 / 50 / 100 / 200 / 400$ V	A + E
Input 5	± 500 mA / ± 1 A / ± 5 A	F + E

EXTERNAL INPUT

	DESCRIPTION	CONTROLS
EXT. 1	controlling input, its function is set in the menu (see. Menu > EXT.1)	upon contact, terminal (G + H)

①	Pitch	3,5 mm	5 mm
②	1,5 Nm 13.2 lb-in	$\varnothing 2,5$ mm / 0.1 in	$\varnothing 3,5$ mm / 0.14 in
③	mm in	6 0.24	7.5 0.3
	mm ² / AWG	0,05...1,5 / 30...14	0,05...2,5 / 30...12

Note: Contactors, high power electric motors, frequency drives and other power devices should not be in a close proximity of the meter. Input signal leads (measured value) should be separated from all power lines and power devices. Even though the meters has been designed and tested according to standards for industrial environment, we strongly advise to adhere to the above presented rules

Selecting a measuring range























1. Switching the switch No. 2 into the **ON** position  enters the programming mode - LED Lo  lights up and LED Hi  by flashing it indicates selected measuring range (table 1)
2. Measuring range selection: LED Lo is red , by repeated pressing of button Lo input types are accessed step by step and LED Hi  by flashing it indicates actual range (table 1)
3. by pressing Hi selected setting is confirmed and dipswitch no.2 can be switched to **OFF** 

Table 1

LED LO 	Measuring range	
LED HI		
	u25.	±25 V
	u50.	±50 V
	100.	±100 V
	200.	±200 V
	400.	±400 V
	i 0.5	±0,5 A
	i 1.	±1 A
	i 5.	±5A

Setting of Limits 1 (2)

1. After pressing button Hi (for Limit 2 it is button Lo) red LED L.1 (L.2) starts flashing  and both LED Lo and Hi flash in cycles   
2. Set dipswitch no.2 (for Limit L.2 it is switch no.1) to **ON** . LED Lo and Hi flash in cycles 
3. On the OMX 333 input set the signal to the level required for the Limit to be actuated
4. Select your setting by pressing the Hi button and switch the dipswitch no.2 to **OFF** 

Setting of Analogue/Data output
















1. By switching the dipswitch no.1 to **ON**  programming mode is accessed - LED Hi  lights up and LED Lo  signals the type of output by flashing (Table 2) or the rate of analogue output (Table 3)
2. By repeated pressing of button Hi the types of analogue output are accessed (rate) and LED Lo  signals the the type of output (Table 2) or the rate of data output (Table 3)
3. By pressing Lo the selected setting is confirmed and a next menu item can be accessed (only for further setting of data output)
4. By repeated pressing of Lo button instrument's address can be set and LED Lo  signals by flashing the address of OMX 333 (Table 3), (this procedure only applies to setting of data output)
5. Our setting is confirmed by pressing Lo button and programming mode is exited by switching dipswitch no. OFF 

Table 2

LED HI 	ANALOGUE OUTPUT	
LED LO	TYPE	
	0...2 V	
	0...5 V	
	0...10 V	
	±10 V	
	4...20 mA (Er)	
	4...20 mA	
	0...20 mA	
	0...5 mA	

Changing analogue output (AO) range























1. The converter is preset at the factory (0 = 4 mA, 50000 = 20 mA)
2. By switching dipswitches no.1 and no.2 to **ON**  programming mode is accessed - LED Lo and Hi flash alternatively 
3. To input terminals of OMX 333 connect signal of requested level which equals to minimum range of AO and by pressing Lo button this value is recorded, LED Lo  flashes twice the normal rate
4. To input terminals of OMX 333 connect signal of requested level which equals to maximum range of AO and by pressing Hi button this value is recorded, LED Hi  flashes twice the normal rate
5. By switching dipswitches no.1 and no.2 to **OFF**  programming mode is exited

Table 3

LED HI			
LED LO	DATA OUTPUT		
	Rate	Address	Address PB
	300	0	0
	600	1	1
	1200	2	2
	2400	3	3
	4800	4	4
	9600	5	5
	19200	6	6
	38400	7	7
	57600	8	8
	115200	9	9
	230400	10	10
		11	11






Restoration of manufacturer's /user settings

1. This is a good way how to return to the original manufacturer's setting especially when making a mistake during the set up process
2. By pressing buttons **Lo** and **Hi** simultaneously for approx 2 s LEDs **Lo** and **Hi** *
3. By switching dipswitches no. 1 and 2 to **ON**  the rate of flashing increases
4. By pressing button **Hi** restoration of manufacturer's setting is executed (linearisation table, if it had been entered, is deleted), by pressing button **Lo** restoration of user settings including those which had been set via OM Link SW is executed, (linearisation table remains)
5. By switching dipswitches no.1 and no.2 to **OFF**  this mode is exited

Note: For an easier unit configuration we recommend using our free PC SW called OM Link and the OM Link-USB II connector cable
www.merret.cz/en/products/software/om-link

Note: If there is a pause during configuration exceeding 60 seconds, the configuration mode closes down automatically and the device is switched into a measuring mode. In such case all unconfirmed selections will be lost.

Table 4

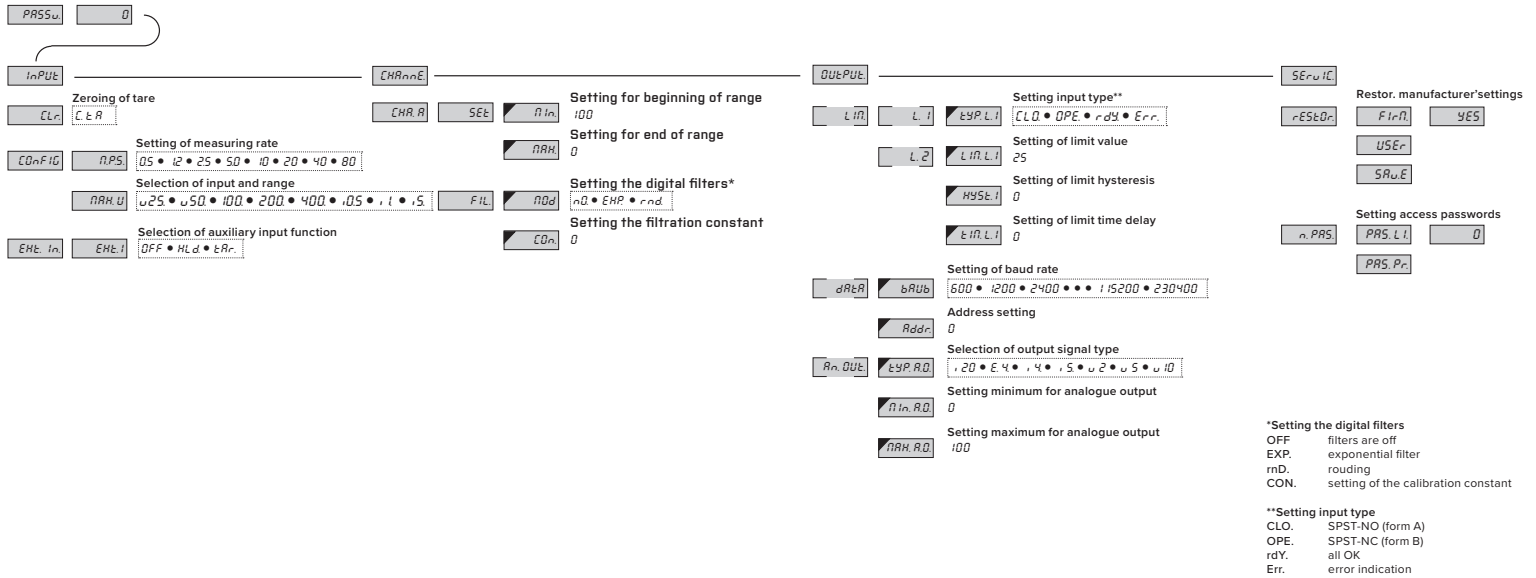
LED SYMBOL LEGEND	
	LED is off
	LED is on
	LED flashes
	LED flashes twice with a short pause
	LED cyklicky bliká zeleně a červeně

4 Error conditions

ERROR	LED LO	LED HI	CAUSE	ELIMINATION
<i>E.d.U.</i>		****	number is too small (large negative) to be displayed	change DP setting, channel constant
<i>E.d.O.</i>		***	number is too large to be displayed	change DP setting, channel constant
<i>E.t.U.</i>	**		number is below the linearization table value; Error table underflow	change input signal value or linearization table
<i>E.t.O.</i>	*		number is above the linearization table value; Error table overflow	change input signal value or linearization table
<i>E.i.U.</i>		****	Input quantity is smaller than permitted input quantity range	change input signal value or input (range) setting
<i>E.i.O.</i>		*	Input quantity is larger than permitted input quantity range	change input signal value or input (range) setting
<i>E.H.U.</i>	**	**	a part of the instrument does not work properly	send the instrument for repair
<i>E.E.E.</i>	**	**	data in EEPROM corrupted	perform restoration of manufacture setting, upon repeated error statement send instrument for repair
<i>E.d.t.</i>	**	**	data v EEPROM mimo rozsah	perform restoration of manufacture setting, upon repeated error statement send instrument for repair
<i>E.C.L.</i>	**	**	memory was empty (presetting carried out)	upon repeated error statement send instrument for repair, possible failure in calibration

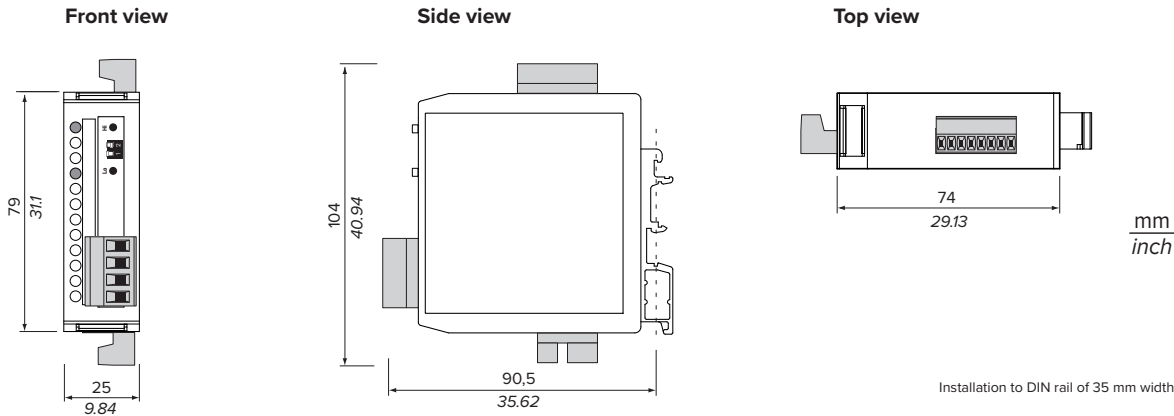
5

Menu structure when setting from PC using OM LINK program



6

Instrument dimensions and installation



7

Technical data

INPUT

Number of inputs	1		
Range	±500 mA	< 15 mV	vstup 5
	±1 A	< 30 mV	vstup 5
	±5 A	> 150 mV	vstup 5
	±25 V	> 10 MΩ	vstup 1
	±50 V	> 10 MΩ	vstup 1
	±100 V	> 10 MΩ	vstup 1
	±200 V	> 10 MΩ	vstup 1
	±400 V	> 10 MΩ	vstup 1

INSTRUMENT ACCURACY

TC	50 ppm/°C
Accuracy	±0,15% of the range, (for 20 measurements/s)
Rate	0,5...80 measurements/s
Overload capacity	10x (t < 30 ms), 2x
Digital filters	exponential filter, rounding
External inputs	1, with the possibility of assigning various functions in the instrument's menu Hold - freezing the measured value (upon contact) Tare - (upon contact)
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

COMPARATOR

Type	digital, setting in v menu
Limits	±999999
Hysteresis	±999999
Delay	0...99,9 s
Output	2x relays with switch-on contact (Form A), (250 VAC/30 VDC, 3 A)* 2x open collector, (30 VDC/100 mA)*
Reaction speed	< 50 ms
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Duty D300

* hodnoty platí pro odporovou zátěž

DATA OUTPUT

Protocol	ASCII
Data format	8 bit + no parity + 1 stop bit
Rate	600...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)

ANALOG OUTPUT

Typ	isolated, programmable with 16-bit D/A converter, type and range are selectable in menu
Non-linearity	0,1% of range
TC	15 ppm/°C
Rate	response to change of value < 1 ms
Output	0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA (comp. < 500 Ω/12 V), Detection of broken loop (3,6 mA)
Ripple	5 mV residual ripple at output voltage of 10 V

POWER SUPPLY

Power	10...30 VDC/24 VAC, ±10 %, 2 VA, PF ≥ 0,4, I _{typ} < 40 A/1 ms, isolated
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MECHANIC PROPERTIES

Material	PA66, incombusible UL 94 V-0, blue
Dimensions	90,5 x 79 x 25 mm
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1,5/2,5 mm ²
Stabilization period	within 5 minutes after switch-on
Working temp.	-20°...60°C
Storage temp.	-20°...85°C
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2,5 kVAC after 1 min. between power and input 2,5 kVAC after 1 min. between input and output 4 kVAC after 1 min. between input and relays
Insulation resist.*	for pollution degree II, measurement cat. III power supply > 300 V (ZI), 255 V (DI) input/output > 300 V (ZI) input/output - relé > 300 V (DI)
EMC	EN 61326-1 (Průmyslová oblast)

* ZI - Základní izolace, DI - Dvojitá izolace



Measuring instruments of the OMX 333 series conform to the European regulation 2014/30/EU and 2014/35/EU

This product must be installed, connected and used in compliance with prevailing standards and/or installation regulations. As standards, specifications and designs develop from time to time, always ask for confirmation of the information given in this publication.



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