OMX 333UNI
SETTING

Selection of measuring type/mode

1. by switching dipswitch no.2 to position „ON" programming mode is accessed - LED „Lo" ● lights up and LED „Hi" ❋ signals the type of input by flashing (table 1)
2. change of input type, LED „Lo" is green ● - by repeated pressing of button „Lo" input types are accessed step by step and LED „Hi" ❋ signals the type of input by flashing (table 1)
3. by pressing button „Hi" our selection is confirmed and a next menu item can be accessed
4. setting the measuring range - LED „Lo" is red ● - by repeated pressing of button „Lo" measuring ranges are accessed step by step and LED „Hi" ❋ signals the type of measuring range (table 2)

Tab. 2

LED „LO" ●							
LED „HI"	**MODE**						
	PM	DC	T/C	OHM	Pt	Ni	Cu
❋	±2 V	±30 mV	B	0...100 Ω	Pt 100 - Eu	Ni 1 000/5 000	Cu 50/4285
❋ ❋	±5 V	±60 mV	E	0...300 Ω	Pt 500 - Eu	Ni 1 000/6 000	Cu 100/4285
❋ ❋ ❋	±10 V	±1 V	J	0...1,5 KΩ	Pt 1 000 - Eu	Ni 10 000/5 000	Cu 50/4260
❋ ❋ ❋ ❋	0...20 mA	±20 V	K	0...3 KΩ	Pt 100 - Us	Ni 10 000/6 000	Cu 100/4260
❋	4...20 mA	±40 V	N	0...24 KΩ	Pt 50 - Ru		
❋ ❋	4...20 mA (Er)	±80 V	R	0...30 KΩ	Pt 100 - Ru		
❋ ❋ ❋		±90 mA	S				
❋ ❋ ❋ ❋		±180 mA	T				
❋ ❋			L				

5. by pressing button „Hi" our selection is confirmed and a next menu item can be accessed (if it exists for the given type), otherwise there is return to type
6. setting of connection (only for type OHM, Pt, Ni, Cu, T/C) - LED „Lo" does not light up ○ - by repeated pressing of button „Lo" types of connection are accessed and LED „Hi" ❋ signals the type of connection (table 3)
7. by pressing „Hi" selected setting is confirmed and dipswitch no.2 can be switched to „OFF"

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" an "Hi" flash in cycles ❋ ❋
3. on the OMX 333 input set the sinal 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

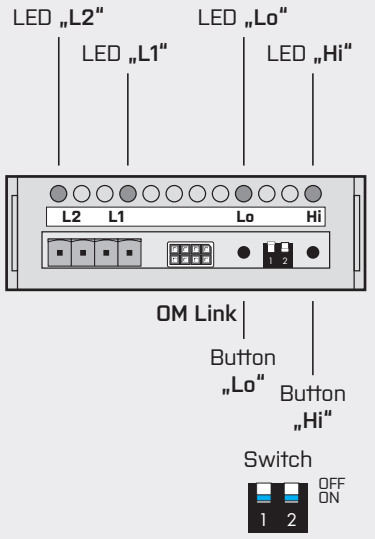
1. by switching the dipswitch no.1 to „ON" programming mode is accessed - LED „Hi" ● lights up and LED „Lo" ❋ signals the type of output by flashing (table 4) or the rate of analogue output (table 5)
2. by repeated pressing of button „Hi" the types of analogue output are accessed (rate) and LED „Lo" ❋ signals the the type of output (tab. 4) or the rate of data output (tab. 5)
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 „Hi" button instrument's address can be set ang LED „Lo" ❋ signals by flashing the address of OMX 333 (table 5) (this procedure only applies to setting of data output)
5. our setting is confirmed by pressing „Lo" button and progarmming mode is exited by switching dipswitch no.1 to „OFF"

Changing analogue output (AO) range

1. OMX 333 AO is set by manufacturer. This procedure is for experienced users.
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 (for example 4 mA) or for input type „DU" it is the setting of minimum (slider must be stationary) 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 (for example 20 mA) or for type „DU" setting the maximum (slider must be stationary) 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 exitted

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" ❋ ❋ start flashing alternatively
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 exitted



Tab. 1

LED „LO" ●	
LED „HI"	**TYPE**
❋	PM
❋ ❋	DC
❋ ❋ ❋	T/C
❋ ❋ ❋ ❋	DU
❋	OHM
❋ ❋	Pt
❋ ❋ ❋	Ni
❋ ❋ ❋ ❋	Cu

Tab. 3

LED „LO" ○		
LED „HI"	**CONNECTION**	
	OHM/RTD	T/C
❋		Int. 1
❋ ❋	2-wire	Int. 2
❋ ❋ ❋	3-wire	Ext. 1
❋ ❋ ❋ ❋	4-wire	Ext. 2

Cold junction compensation (CJC)

Int. 1 measurement of CJC on instrument's terminals
Int. 2 measurement of CJC on instrument's terminals and anti-serial connection of referential T/C
Ext. 1 the entire system wokrs in a uninamous and constant temperature
Ext. 2 with a compensation box and referential T/C

Tab. 4

LED „HI" ●	
LED „LO"	**ANALOGUE OUTPUT**
	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

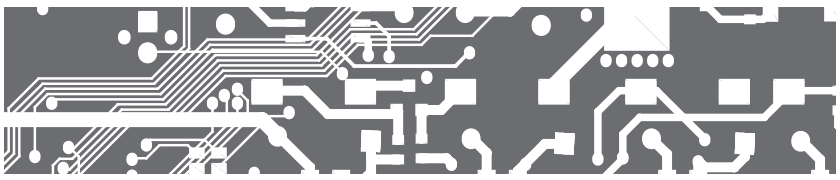
Tab. 5

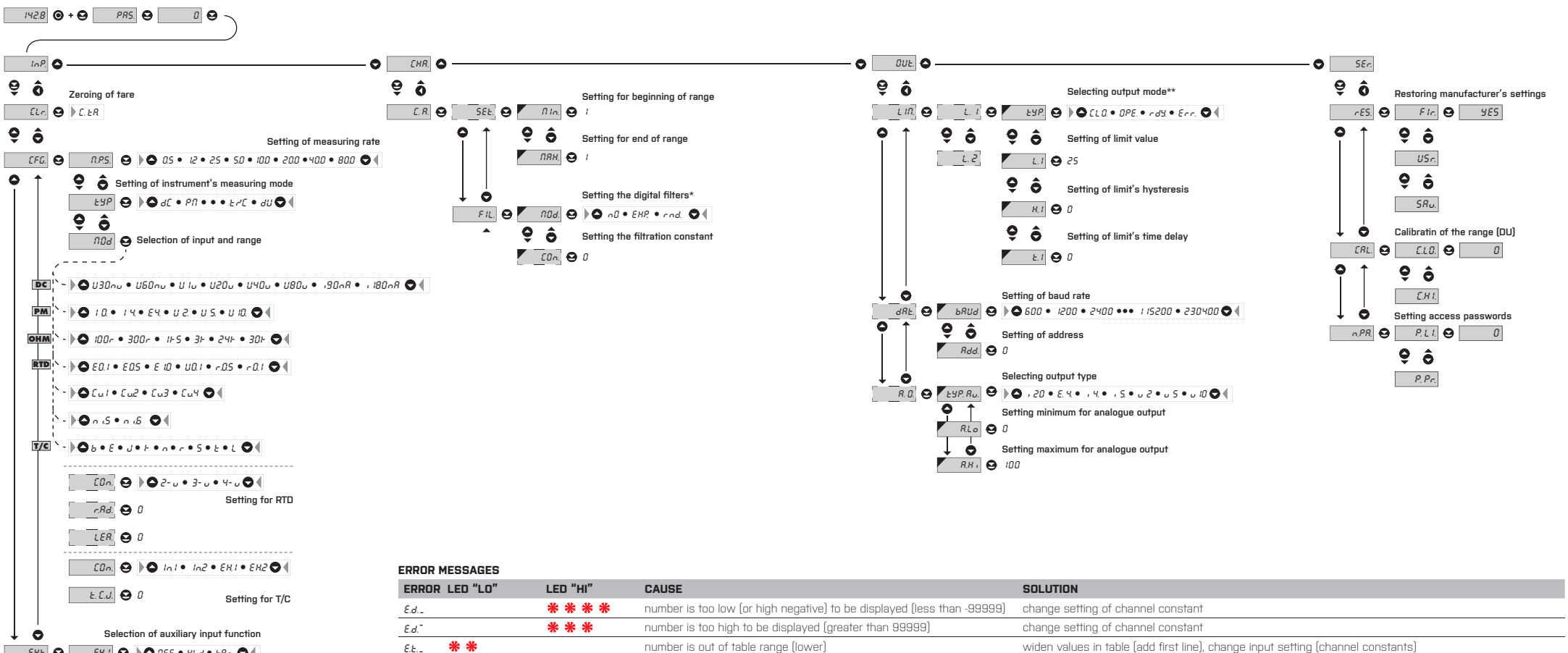
LED „HI"	●	●	○
LED „LO"	**DATA OUTPUT**		
	RATE	ADDRESS	ADDRESS PB
❋	300	0	0
❋ ❋	600	1	1
❋ ❋ ❋	1200	2	2
❋ ❋ ❋ ❋	2400	3	3
❋	4800	4	4
❋ ❋	9600	5	5
❋ ❋ ❋	19200	6	6
❋ ❋ ❋ ❋	38400	7	7
❋ ❋	57600	8	8
❋ ❋ ❋ ❋	115200	9	9
❋ ❋ ❋ ❋ ❋ ❋	230400	10	10
❋ ❋ ❋ ❋ ❋ ❋ ❋ ❋		11	11

Tab. 6

LED SYMBOL LEGEND	
○	LED is off
● / ●	LED is on
❋ / ❋	LED flashes
❋ ❋	LED flashes twice with a shotr pause

OMX 333UNI
SETTING **PROFI** FROM PC VIA SOFTWARE **OM LINK**





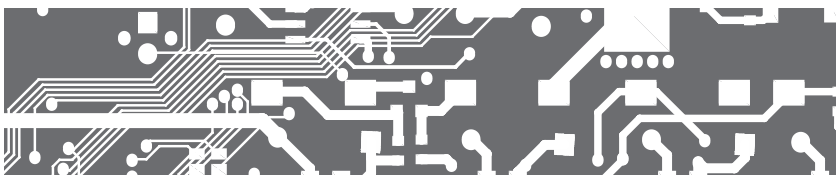
***Setting the digital filters**
OFF filters are off
EXP. exponential filter
rnd. rouding
COn. setting of the calibration constant

****Selecting output mode**
CLO. closing relay (normally open)
OPE. opening relay (normally closed)
rnY. all OK
Err. error indication

ERROR MESSAGES

ERROR	LED "LO"	LED "HI"	CAUSE	SOLUTION
E.d._		✱ ✱ ✱ ✱	number is too low (or high negative) to be displayed (less than -99999)	change setting of channel constant
E.d.¯		✱ ✱ ✱	number is too high to be displayed (greater than 99999)	change setting of channel constant
E.t._	✱ ✱		number is out of table range (lower)	widen values in table (add first line), change input setting (channel constants)
E.t.¯	✱		number is out of table range (greater)	widen values in table (add last line), change input setting (channel constants)
E.i._		✱ ✱	input value is lower than permitted input range	change value of input signal or change settings of input range
E.i.¯		✱	input value is greater than permitted input range	change value of input signal or change settings of input range
E.Hu.	✱ ✱	✱ ✱	a part of the instrument is not functioning properly	send to manufacturer to be serviced
E.EE.	✱ ✱ ✱	✱ ✱ ✱	data in EEPROM corrupted	restore manufacturer's settings, if error message reoccures, send to manufacturer to be serviced
E.d.t.	✱ ✱ ✱ ✱	✱ ✱ ✱ ✱	data in EEPROM out of range	restore manufacturer's settings, if error message reoccures, send to manufacturer to be serviced
E.CL.	✱ ✱ ✱ ✱ ✱	✱ ✱ ✱ ✱ ✱	memory was empty (pre-setting had taken place)	if error message reoccures, send to manufacturer to be serviced, possibilty of corrupted calibration data
E.In.		●	input leads disconnected	check leads and their connection
E.OU.	●		output leads disconnected	check leads and their connection

OMX 333UNI
CONNECTION AND CONTROLLING OF INSTRUMENT / TECHNICAL DATA



MEASURING INPUT

INPUT	DC	Ranges	±90 mA	< 1 V	Input 5
			±180 mA	< 2 V	Input 5
			±30 mV	> 10 MΩ	Input 3
			±60 mV	> 10 MΩ	Input 3
			±1 V	> 10 MΩ	Input 3
			±20 V	1 MΩ	Input 1
			±40 V	1 MΩ	Input 1
			±80 V	1 MΩ	Input 1
	PM	Ranges	±20 mA	< 200 mV	Input 5
			4...20 mA	< 200 mV	Input 5
			±2 V	1 MΩ	Input 1
			±5 V	1 MΩ	Input 1
			±10 V	1 MΩ	Input 1
	OHM	Ranges	0...100 Ω		
			0...300 Ω		
			0...1,5 kΩ		
			0...3 kΩ		
			0...24 kΩ		
			0...30 kΩ (only for 2- or 4-wire)		
		Connection	2-, 3- or 4-wire		
	RTD	Type	EU > 100/500/1 000 Ω, w. 3 850 ppm		-50°...450°C
			US > 100 Ω, with 3 920 ppm/°C		-50°...450°C
			RU > 50/100 Ω with 3 910 ppm/°C		-200°...1 100°/450°C
		Connection	2-, 3- or 4-wire		
	Ni	Type	Ni 1 000/ Ni 10 000 w. 5 000 ppm/°C		-50°...250°C
			Ni 1 000/ Ni 10 000 w. 6 180 ppm/°C		-200°...250°C
		Connection	2-, 3- or 4-wire		
	Cu	Type	Cu 50/Cu 100 with 4 260 ppm/°C		-50°...200°C
			Cu 50/Cu 100 with 4 280 ppm/°C		-200°...200°C
		Connection	2-, 3- or 4-wire		
	T/C	Type	J (Fe-CuNi)		-200°...900°C
			K (NiCr-Ni)		-200°...1 300°C
			T (Cu-CuNi)		-200°...400°C
			E (NiCr-CuNi)		-200°...690°C
			B (PtRh30-PtRh6)		300°...1 820°C
			S (PtRh10-Pt)		-50°...1 760°C
			R (Pt13Rh-Pt)		-50°...1 740°C
			N (Omegalloy)		-200°...1 300°C
			L (Fe-CuNi)		-200°...900°C
	DU	Supply of linear potentiometer	2,5 VDC/6 mA, min. resistance of potentiometer is 500 Ω		

INSTRUMENT'S ACCURACY

TK	50 ppm/°C
Accuracy	±0,15 % of the range + 1 digit (for 20 measurements/s) ±0,3 % of the range + 1 digit (for "T/C)
Accuracy of cold junction measurement	±1,5°C
Rate	0,5...80 measurements/s
Overload capacity	10x (t < 30 ms), 2x
Digital filtres	exponencialn filter, rounding
Function	Hold - "freezing the measured value", Tare (upon contact)
External input	1, with the possibility of assigning various functions in the instrument's menu
OM Link	Company communication interface for operating, setting and updating of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40% r.h.

COMPARATOR

Type	digital, setting in v menu
Limits	0...999999
Hysteresis	0...999999
Delay	0...99,9 s
Outputs	up to 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
Relay	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply to resistive load

DATA OUTPUT

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

ANALOG OUTPUT

Type	isolated, programmable with 16-bit D/A converter, type and range are selectable in menu
Non-linearity	0,1 % of range
TK	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
Ripple	5 mV residual ripple at output voltage of 10 V

POWER SUPPLY

	10...30 VDC/24 VAC, ±10 %, 3 VA, PF≥ 0,4, I_{STP}< 40 A/1 ms, isolated

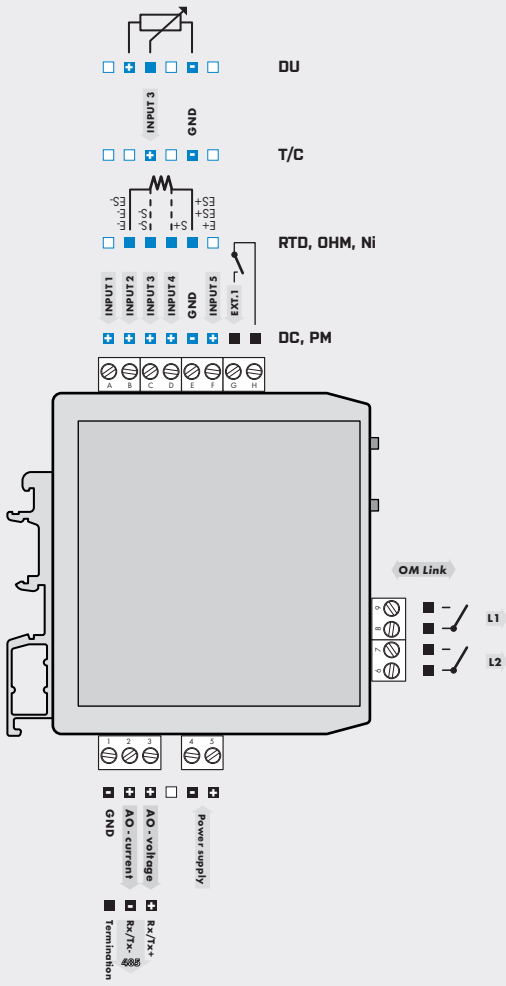
MECHANIC PROPERTIES

Material	PA 66, incombustible UL 94 V-0, blue
Dimensions	90,5 x 79 x 25 mm
Installation	to DIN rail, wide 35 mm

OPERATING CONDITIONS

Connection	connector terminal board, cross section < 1,5/2,5 mm²
Stabilization period	within 15 minutes after switch-on
Working temperature	-20°...60°C
Storage temperature	-20°...85°C
Cover	IP20
Execution	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2,5 kVAC after 1 min between supply/input 2,5 kVAC after 1 min between supply/outputs 4 kVAC after 1 min between input/relays output
Insulation resistance*	for pollution degree II, measuring cat. III. power supply > 300 V (PI), 255 V (DI) input/output > 300 V (PI) input/output - relay > 300 V (DI)
EMC	EN 61326-1 (Industrial environment)

* PI - Primary insulation, DI - Double insulation



MEASURING RANGES - CONNECTION

TYPE	INPUTS 1	INPUTS 2	INPUTS 3	INPUTS 4	INPUTS 5
DC	±20/±40/±80 V		±30/60 mV/±1 V		±90/±180 mA
PM	±2/±5/±10 V				0/4...20 mA
OHM	0...100/300 Ω/0...1,5/3/24/30 kΩ				
RTD-PT	Pt 100/500/1 000				
RTD-CU	Cu 50/100				
RTD-NI	Ni 1 000/10 000				
T/C			J/K/T/E/B/S/ R/N/L		
DU	Linear potentiometr (min. 500 Ω)				

EXTERNAL INPUT

	DESCRIPTION	ACTION
EXT. 1	control input, functionality according to setting in the menu (see Menu > EXT.1)	upon contact, terminal (no. N + O)

Instrument's power supply leads should not be in vicinity of low level input signals. Contactors, medium and high power electrical motors must not be used in vicinity of the instrument. Input signal leads (measured value) need to be separated from all high power leads and devices. Instruments are tested in accordance with standards for industrial use, however we strongly advise you to adhere to the above mentioned precaution measures.

In order to ensure proper functionality of this instrument it is absolutely essential to connect the input leads shielding to the junction box' frame.

MINI-TECHBOOK - OMX 333UNI - 2013 - 1v4 - en

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