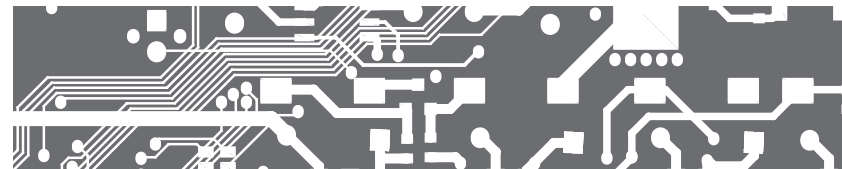


# OMX 333UQC

## SETTING



### Selection of measuring input/mode

- by switching dipswitch no. 2 to position „ON“ programming mode is accessed - LED „Lo“ lights up and LED „Hi“ signals the type of measuring mode (tab. 1)
- change of input type - LED „Lo“ is green by repeated pressing of button „Lo“ measuring modes are accessed step by step and LED „Hi“ signals the type of mode by flashing (table 1)
- by pressing button „Hi“ our selection is confirmed and a next menu item can be accessed
- setting of type/level for inputs A and B - LED „Lo“ is red - by repeated pressing of button „Lo“ menu items are accessed step by step and LED „Hi“ signals by flashing selected type/voltage level (table 2)
- confirm your selection by pressing button „Hi“ and a next menu item can be accessed (if it exists for the given type), otherwise there is return to type
- setting for mode „STOPWATCH“ only (stopwatch control) - LED „Lo“ does not light up by repeated pressing of button „Lo“ menu items are accessed step by step and LED „Hi“ signals by flashing selected item (table 3)
- setting for mode „STOPWATCH“ (zeroing of stopwatch) - LED „Lo“ does not light up - by repeated pressing of button „Lo“ menu items are accessed step by step and LED „Hi“ signals by flashing selected item (table 4)
- setting of external input „EXT. 1“ - LED „Lo“ does not light up - by repeated pressing of button „Lo“ menu items are accessed step by step and LED „Hi“ signals by flashing selected item (table 4)
- confirm your selection by pressing the „Hi“ button and switch the dipswitch no. 2 to „OFF“

Table 2

LED „Lo“	LED „Hi“	TYPE/COMPARATIVE LEVELS
		NPN - contact
		PNP - 4.5 V
		PNP - 10 V
		PNP - 15 V
		PNP - 20 V
		PNP - 25 V
		PNP - 30 V
		PNP - 35 V
		PNP - 40 V
		PNP - 45 V
		PNP - 50 V
		PNP - 55 V

### Setting of Limits 1 [2]

- 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
- set dipswitch no. 2 (for Limit L2 it is switch no. 1) to „ON“ LEDs „Lo“ and „Hi“ flash in cycles
- connect input signal to input terminals which exceeds the levels required for the Limit(s) to be actuated
- confirm your selection by pressing the „Hi“ button and switch the dipswitch no. 2 to „OFF“

### Setting of Analogue/Data output

- 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 5) or the rate of data output (table 6)
- by repeated pressing of button „Lo“ types of analogue output (speed) are accessed step by step and LED „Lo“ signals by flashing the type of output (table 5) or the speed of analogue output (table 6)
- confirm your selection by pressing „Hi“ and the next menu item can be accessed (only for further setting of data output)
- by repeated pressing of „Lo“ button instrument's address can be set and LED „Lo“ signals by flashing the address of OMX 333 (table 6) (this procedure only applies to setting of data output)
- confirm your settings by pressing the „Hi“ button and exit the programming mode by switching dipswitch no. 1 to „OFF“

### Changing analogue output [AO] range

- default setting of the analogue output is 0 = 4 mA, 50000 = 20 mA
- by switching dipswitches no. 1 and no 2 to „ON“ programming mode is accessed - LED „Lo“ and „Hi“ flash alternatively
- to input terminals of OMX 333 connect signal of requested level which equals to minimum range of AO (for example 4 mA) and by pressing „Lo“ button this value is recorded, LED „Lo“ flashes twice the normal rate
- to input terminals of OMX 333 connect signal of requested level which equals to maximum range of AO (for example 20 mA) and by pressing „Hi“ button this value is recorded, LED „Hi“ flashes twice the normal rate
- programming mode is exited by switching dipswitches no. 1 and 2 to „OFF“

### Restoration of manufacturer's /user settings

- this is a good way how to return to the original manufacturer's setting especially when making a mistake during the set-up process
- by pressing buttons „Lo“ and „Hi“ simultaneously for approx 2 s LEDs „Lo“ and „Hi“ start flashing alternatively
- by switching dipswitches no. 1 and 2 to „ON“ the rate of flashing increases
- by pressing button „Hi“ restoration of manufacturer's setting is executed (linearization 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, (linearization table remains)
- this mode is exited by switching dipswitches no. 1 and 2 to „OFF“

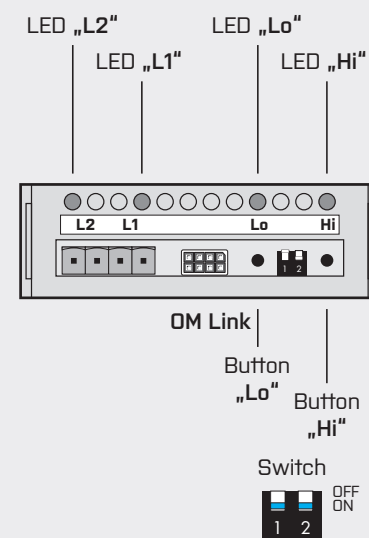


Table 1

LED „Lo“	LED „Hi“	MEASURING MODE
		SINGLE - COUNTER Counter
		SINGLE - FREQUENCY Frequency meter
		QVADR - COUNTER Counter for IRC encoders
		QVADR - FREQUENCY Frequency meter for IRC encoders
		UP/DW - COUNTER UP/DW Counter*
		UP/DW - FREQUENCY UP/DW Frequency meter*
		UP + DW - COUNTER UP - DW Counter**
		UP + DW - FREQUENCY UP - DW Frequency meter**
		TIME Stopwatch

\* inputs A & C are used (directional)  
\*\* inputs A (UP), C (DW) are used

Table 3

LED „Lo“	LED „Hi“	SELECTION OF STOPWATCH CONTROL
		CONTIN. Stopwatch/clock runs continuously for as long as the device is switched on
		CONTAC. Stopwatch/clock runs when the contact is closed
		EDGE Stopwatch/clock is triggered by the edge of the start signal - time is triggered by the edge (signal level exceeding comparative level) and stopped by the following edge
		RUN.ST.C. Stopwatch/clock is controlled and zeroed by the edge of the start signal - time is triggered by the edge (signal level exceeding comparative level) and stopped and zeroed by the following edge
		C.RUN.ST. Stopwatch/clock is controlled and zeroed by the edge of the start signal - time is zeroed and triggered by the edge (signal level exceeding comparative level) and stopped by the following edge.
		CLR.RUN. Stopwatch/clock is zeroed and triggered by the edge of the start signal (provided it had not already been running)
		CLR.RUN. Stopwatch/clock is zeroed and then triggered by the edge of the start signal this cycle is repeated with every new edge coming
		START Stopwatch/clock is only triggered by the edge of the start signal

Table 4

LED „Lo“	LED „Hi“	FUNCTIONS OF INPUTS
		INPUT „B“ EXT. 1
		CLEAR STOP + CLEAR
		STOP + CLEAR CLEAR
		STOP STOP + CLEAR

Table 5

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

Table 6

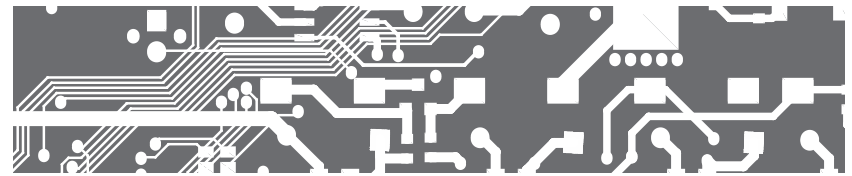
LED „Hi“	LED „Lo“	LED „Lo“	DATA OUTPUT
			RATE ADDRESS ADDRESS PROFIBUS
			300 0 0
			600 1 1
			1200 2 2
			2400 3 3
			4800 4 4
			9600 5 5
			19200 6 6
			38400 7 7
			57600 8 8
			115200 9 9
			230400 10 10
			11 11

Table 7

LED SYMBOL LEGEND	DESCRIPTION
	LED is off
	LED is on
	LED flashes
	LED flashes twice followed by a short pause
	LED flashes in cycles in green and red

# OMX 333UQC

SETTING PROFI FROM PC VIA SOFTWARE OM LINK



The screenshot displays the configuration software for the OMX 333UQC instrument. It is organized into several main sections:

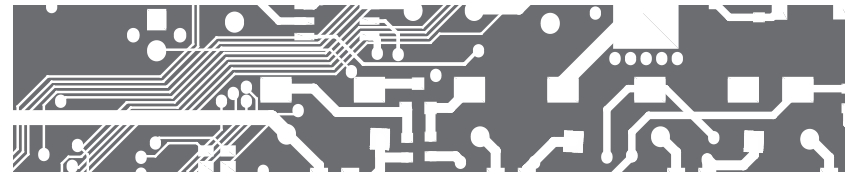
- Input Channel (InPUL):** Includes settings for zeroing (CLEAR), initial value (CONFIG), measuring mode (MODE), time base (TIME), digital filter (FILT), stopwatch/clock control (STOP), zeroing for stopwatch/clock (ZRO), input A type (TYPE A) and level (LEV A), input B type (TYPE B) and level (LEV B), active edge/level (EDGE), backup (BACKUP), and auxiliary input function (EHL).
- Channel Counter (CHANN):** Settings for multiplying constant (SCAL C), division constant (DIV C), additive constant (OFF C), digital filters (FILT C), filter constant (CON F), and time projection format (FDR).
- Channel Frequency (CH.F):** Settings for multiplication constant (SCAL F), division constant (DIV F), additive constant (OFF F), digital filters (FILT F), and filter constant (CON F).
- Output Channel (OUTPUL):** Settings for limit evaluation (LIMIT), limit mode (MODE), limit value (VAL), limit hysteresis (HYS), limit time delay (TDY), baud rate (BAUD), address (ADDR), input value for AD processing (INP AD), output type (TYPE), min. for analogue output (MIN), max. for analogue output (MAX), and input value for projection (INP DIS).
- Security (SEVIC):** Options for restoring manufacturer's settings (RESET), user access (USER), and setting access passwords (PASS).

### ERROR MESSAGES

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

# OMX 333UQC

CONNECTION AND CONTROLLING OF INSTRUMENT / TECHNICAL DATA



MEASURING INPUT	
Type	on contact, TTL, NPN/PNP
Measurement	1x counter/frequency UP or DOWN 1x counter/frequency UP/DOWN 1x counter/frequency for IRC encoders 1x stopwatch/clock - measuring range can be set
Input frequency	0.1..50 kHz [Mode SINGLE] 0.1..20 kHz [Mode UP/DW] 0.1..20 kHz [Mode UP-DW] 0.1..20 kHz [Mode QUADR. - frequency] 0.1..10 kHz [Mode QUADR. - counter]
Input voltage levels	9,7 - 14,4 - 19,2 - 23,9 - 28,7 - 33,5 - 38,3 V
INSTRUMENT'S ACCURACY	
TC	50 ppm/°C
Accuracy	±0,01% of the range + 1 digit (frequency)
Time base	0,5/1/5/10 s
Multiplication constant	±0,00001...999999
Dividing constant	±0,00001...999999
Filter constant	sets the max. frequency which is processed (OFF/5...1000 Hz)
Digital filters	exponential filter, rounding, 1/frequency, measurement of the whole number of revolutions (dividing constant)
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 the 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 0300

\* Values are valid for resistive load

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

ANALOGUE OUTPUT	
Type	galvanic isolated, programmable with 12-bit D/A converter, type and range are selectable in menu
Non-linearity	0,1 % of the range
TC	15 ppm/°C
Response time	< 1 ms
Output	0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA (comp. < 500 Ω/12 V), Broken loop detection
Ripple	5 mV residual ripple at output voltage of 10 V

POWER SUPPLY	
Type	12...30 VDC/24 VAC, ±10 %, 3 VA, PF ≥ 0,4, I <sub>50%</sub> < 40 A/1 ms, not galvanic isolated 10...30 VDC/24 VAC, ±10 %, 3 VA, PF ≥ 0,4, I <sub>50%</sub> < 40 A/1 ms, galvanic isolated

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

OPERATING CONDITIONS	
Connection	connector terminal board, cross section < 1,5/2,5 mm <sup>2</sup>
Stabilization period	within 15 minutes after switch-on
Operating temperature	-20°...60°C
Storage temperature	-20°...85°C
IP rating	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

The connection diagram shows the physical layout of the instrument's terminals:

- Terminal Block 1 (Top):** INPUT A (0-300V), INPUT B/Reset (0-300V), INPUT C/Reset (0-30V), INPUT D (0-30V), GND, EXC1.
- Terminal Block 2 (Bottom):** AO-voltage, AO-current, Power supply, GND, R27/488, R27/488 termination.
- OM Link (Right):** L1, L2.

CONNECTION		
TYPE	DESCRIPTION	CONNECTION
INPUT A	input signal < 30 V	GND + input A/Zeroing
INPUT B	input signal > 30 V	GND + input B/Zeroing

EXTERNAL INPUT		
EXT. 1	DESCRIPTION	ACTION
EXT. 1	control input, functionality according to setting in the menu (see Menu > EXT.1)	upon contact, terminals marked N + 0

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!



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