OMX 333

OMLINK

Model range OMX 333 are simple DIN rail mountable programmable signal convertors. The range consists of UNI, DC, PWR and UQC versions.

Type OMX 333UNI is a multifunction device which allows for selection from 8 inputs easily configuralbe in the instrument's menu.

OMX 333DC a OMX 333PWR are versions used for measurement of higher DC and AC voltage and current.

This instrument is based on a single-chip microcontroler with a 16bit A/D and D/A convertor, which provides high accuracy, stability and ease of use.

Type OMX 333UQC is a universal counter/frequency meter.

- PROGRAMMABLE ISOLATED TRANSMITTERS
- MULTIFUNCTION INPUT UNI (DC, PM, RTD, T/C, DU)
- TEACH-IN, DIGITAL FILTER, TARE
- OUTPUT: 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- POWER SUPPLY 10...30 V AC/DC
- Option
  Comparators • Data output

OMX 333DC
DC VOLTMETER AND AMMETER

OMX 333UNI
DC VOLTMETER AND AMMETER
PROCESS MONITOR
OHMMETER
THERMOMETER FOR PT/CU/NI/TC
FOR LINEAR POTENTIOMETERS

OMX 333PWR
AC VOLTMETER AND AMMETER
AC NETWORK ANALYSER

OMX 333UQC
UNIVERSAL COUNTER

OPERATION

Instrument can be controlled by two push buttons and a DIP switch located on the front panel. When frequent changes of settings are needed, we recomend the use of OM Link interface, which in conjunction with free control SW alows for modification and storage of all instruemnt's settings and also for firmware upload (using OM Ling cable) from a PC.

The above mentioned SW can also be used for visualisation and archiving of measured values from a number of instruemnts via the RS 485 line.

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

OPTION

COMPARATORS are assigned to monitor 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.

DATA OUTPUT 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 RS485 with the ASCII protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Setting: manual, any type and range of analogue output can be assigned to any min. and max. values of input singal
Setting (UQC): measuring mode counter/frequency with adjustable calibration coefficient and time base

ANALOG OUTPUT
Type: isolated, programmable with resolution of max. 16 bit, rate < 1 ms
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA (comp. < 600 Ω)

COMPENSATION
Of conduct (RTD, OHM): automatic (3- and 4-wire) or manual in menu (2-wire)
of conduct in probe (RTD): internal connection (conduct resistance in measuring head)
of CJC (T/C): manual or automatic, in menu it is possible to perform selection of the type of thermocouple and compensation of cold junctions, which is adjustable or automatic

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

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display
Filtration constant (UQC): transmits input signal up to 10...1 000 Hz

FUNCTIONS
Preset (UQC): initial non-zero value, which is always read after resetting the instrument to zero
Tare: designed to reset display upon non-zero input signal

EXTERNAL CONTROL
Hold: display/instrument blocking
Reseting (UQC): counter resetting
Lock: control keys blocking

TECHNICAL DATA

INSTRUMENT ACCURACY

TK: 50 ppm/°C
Accuracy: ±0,15 % of range (for 20 meas./s)
±0,3 % of range **PWR, T/C**
±0,05 % of value **UQC**
Accuracy of cold junction measurement:: ±1,5°C
Rate: 0,5...100 meas./s
Overload capacity: 2x; 10x (t < 30 ms) - not for > 200 V and 5 A
Watch-dog: reset after 20 ms
Functions: HOLD, LOCK, Digital filters, Tare
Linearization (DC, PM, DU): by linear interpolation in 25 points
Functions (UQC): Preset
Input filters (UQC): Filtration constant, Rounding
Time base (UQC): 0,5/1/5/10/50 s
Calibration constant (UQC): 0,01...9999
Filtration constant (UQC): 0/5/40/100/1000 Hz
PRESET (UQC): 0...999
Measuring modes (PWR): voltage (V_{RMS}), current (A_{RMS}), real power (W), frequency (Hz) and with calculation of Q, S, cos fi
OM Link: Company communication interface for operation, setting and update of instruments
Calibration: at 25°C and 40 % r.h.

COMPARATOR

Type: digital, setting in menu, contact switch-on < 50 ms
Limits: 999999
Hysteresis: 0...999999
Delay: 0...99,9 s
Output: 2x Form A relays (250 VAC/30 VDC, 3 A), 2x open collectors

DATA OUTPUT

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

ANALOG OUTPUT

Type: isolated, programmable with 16-bit D/A converter, type and range are selectable in programming mode
Non-linearity: 0,1 % of range
TK: 15 ppm/°C
Rate: response to change of value < 1 ms
Ranges: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA (comp. < 600 Ω/12 V)
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
10...30 VDC/24 VAC, ±10 %, 3 VA, PF ≥ 0,4, I_{STP} < 40 A/1 ms, isolated

MECHANICAL PROPERTIES

Material: PA 66, incombustible UL 94 V0, blue
Dimensions: 90,5 x 79 x 25 mm
Installation: to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection: connector terminal board, section < 1,5 mm²
Stabilization period: within 15 minutes after switch-on
Working temperature: -20°...60°C
Storage temperature: -20°...80°C
Cover: IP20
El. safety: EN 61010-1, A2
Dielectric strength: 2,5 kVAC after 1 min between supply/input/outputs
Insulation resistance: for pollution degree II, measuring cat. III.
Power supply > 550 V (ZI), 255 V (DI)
EMC: EN 61326-1

PI - Primary insulation, DI - Double insulation

MEASURING RANGES

OMX 333 is a multifunction instrument available in following types and ranges

OMX 333UNI

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

OMX 333DC ±1/±5 A; ±25/±50/±100/±200/±400 V

OMX 333PWR 0...1/5 A; 0...60/300 mV/0...10/120/250 V/450 V

OMX 333UQC 0...30/300 V, comparation levels are adjustable in the menu, input frequency 0,1 Hz...50 kHz (20 kHz for QUADR and UP/DW, 10 kHz for QUADR - counter)

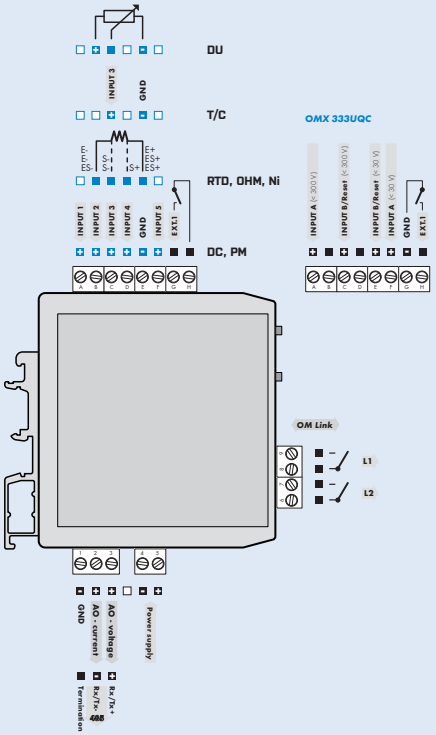
CONNECTING INDIVIDUAL INPUTS

	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5
DC	±20/±40/±80 V		±30/60 mV/±1 V		±90/±180 mA
PM	±2/±5/±10 V				±20 mA, 4...20 mA
T/C			J/K/T/E/B/S/R/N/L		
DC/HI	±25/±50/±100 V ±200/±400 V				±0,5/±1/±5 A
PWR	0...120/450 V		0...10/250 V	0...60/300 mV	0...1/2,5/5 A

ORDER CODE SPECIFICATION

	PWR - U	PWR - I
K		0...60/300 mV
P		0...1/2,5/5 A
S	0...10/120 V	
U	0...250/450 V	

CONNECTION



ORDER CODE

OMX 333 ☐☐☐ - ☐☐☐☐ - ☐

Type	**U**	**N**	**I**	**1**		•	•		
		D	**C**	**1**		•	•		
	P	**W**	**R**	**1**	••	•	•		
Order code shall not include blank spaces!	**U**	**Q**	**C**	•		•	•		
Power supply	10...30 V AC/DC			**0**					
	10...30 V AC/DC, isolated			**1**					
Option, see table „Order code specification"					**?**				
Comparators	**no**					**0**			
	1x relay (Form A)					**1**			
	2x relays (Form A)					**2**			
	1x open collector					**3**			
	2x open collectors					**4**			
Output	none						**0**		
	analog						**1**		
	RS 485						**2**		
Other	**customer version, do not fill in**								**00**

Default execution is shown in bold