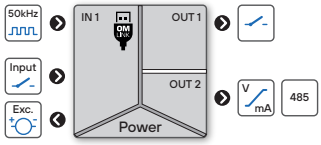
# OMX 333UQC

- Counter/Frequency/Clock/Timer
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Digital filters, Tare, Linearization, Sum
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC / 24 VAC

## Option

Comparators ● Data output

DIGITAL ISOLATED TRANSMITTER




The OMX 333 model series are simple DIN rail mountable adjustable trasmitters.

Type OMX 333UQC is a universal transmitter - counter/frequency meter/timer/clock adjustable in the instrument´s menu.

The instrument is based on a microcontroller, which provides good stability and ease of use.

## 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 instrument'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 instruments 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 OUTPUTS** 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 ASCII protocol.

## STANDARD FUNCTIONS

**PROGRAMMABLE INPUT**
**Setting:** measuring mode counter/frequency with adjustable calibration coefficient and time base
**Teach-In:** Min and Max values can be assigned to any two values of (unknown) input signal

**ANALOG OUTPUT**
**Type:** isolated, programmable with a resolution of 16 bit, rate < 1 ms
**Ranges:** 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

**FUNCTIONS**
**Linearization:** non-linear signal is converted by a 25-point linear interpolation
**Tare:** designed to reset display upon non-zero input signal
**Preset:** initial nonzero value that is always read after resetting the device

**DIGITAL FILTERS**
**Exponential average:** from 2...100 measurements
**Rounding:** setting a „shorter" number for further signal processing
**Input filter:** passes the input signal up to 5...1 000 Hz

**EXTERNAL CONTROL**
**Hold:** display/instrument blocking
**Lock:** control keys blocking
**Tare:** activation and tare resetting
**Rounding:** setting a „shorter" number for further signal processing

## TECHNICAL DATA

### INPUT

| | | |
|---|---|---|
| No. of inputs | 1<br>The range is adjustable in the instrument menu | |
| UQC Input | on contact, TTL, NPN/PNP<br>0...30 / 300 V, comparation levels are adjustable in the menu or automatic | |
| Input frequency | 0.1 Hz...50 kHz<br>0.1 Hz...20 kHz<br>0.1 Hz...20 kHz<br>0.1 Hz...20 kHz<br>0.1 Hz...10 kHz | SINGLE<br>UP/DW<br>UP-DW<br>QUADR., frequency<br>QUADR., counter, duty cycle 50 % |
| Measuring mode | SINGLE<br>QUADR<br>UP/DW<br><br><br>UP-DW<br><br><br>TIME<br>RTC | counter/frequency<br>counter/frequency for IRC sensors<br>UP/DW counter/frequency<br>- measures on inputs A, B (direction)<br>and can display numbers/frequenc<br>UP - DW counter/frequency<br>- measures on inputs A (UP), B (DW)<br>and can display numbers/frequency<br>Timer<br>Clock |
| Time base | 0.5 / 1 / 5 / 10 s | |
| Multiplication constant | 0.00001...999999 | |
| Dividing constant | 0.00001...999999 | |
| Preset | 0...999999 | |
| Input filter | 0 / 5 / 40 / 100 / 1000 Hz | |
| Functions | Offset<br>Tare<br>Preset<br>Summation<br>One time setting of the initial value | |

### EXTERNAL INPUT

| | |
|---|---|
| No. of inputs | 1, on contact |
| Function | OFF no function assigned<br>HOLD measurement paused<br>LOCK control keys blocking<br>TARE tare activation<br>CL. TA. tare resetting<br>CLEAR display reseting<br>SUMA sum showing<br>CLR.ST. counter/timer reset and preset<br>CL.SUM. sum reset |

### INSTRUMENT SPECIFICATION

| | |
|---|---|
| TC | 50 ppm/°C |
| Accuracy | ±0.05 % of value + 1 digit<br>±0.01 % of value ±2 ms TIME<br>±0.01 % of value ±130 ms RTC |
| Overload | 10x (t < 30 ms), 2x<br>*not valid for 300 V range* |
| Functions | tare |
| Digital filters | exponential average, rouding, 1/Fr. |
| Linearization | linear interpolation in 25 points<br>*setup only via OM Link* |
| 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. |

### RELAYS / OC OUTPUT

| | |
|---|---|
| No. of outputs | up to 2 |
| Type | digital, menu adjustable |
| Mode | HYSTER. active above set value<br>C-PULS automatic counter resetting at the set value (L1)<br>ONCE switching limit, which will switch off only after the counter has been reset (L1)<br>ON RUN output is active when the timer is running (L2) |
| Function Relays/OC | CLOSE is closed in active mode<br>OPEN is open in active mode<br>READY output indicates error-free status |
| Limits | -99999...999999 |
| Hysteresis | 0...999999 |
| Delay | 0...99.9 s |
| Outputs | 1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)*<br>1...2x open collector (30 VDC/100 mA) |
| Relays | 1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300 |

* values apply for resistance load

### ANALOG OUTPUTS

| | |
|---|---|
| No. of outputs | 1 |
| Type | isolated, adjustable with 16-bit DAC, output type and range is selectable |
| TC | 15 ppm/°C |
| Non-linearity | 0.1 % from FS |
| Accuracy | ±0.02 % of FS |
| Rate | response to change of value < 1 ms |
| Ranges | 0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ<br>0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V<br>Indication of error message (output < 3.2 mA) |

### DATA OUTPUTS

| | |
|---|---|
| No. of outputs | 1 |
| Protocol | ASCII |
| Data format | 8 bit + no parity + 1 stop bit |
| Rate | 300...230 400 Baud |
| RS 485 | isolated, addressing (max. 31 instruments) |

### POWER SUPPLY

| | |
|---|---|
| Range | 10...30 V AC/DC, ±10 %, PF ≥ 0.4, $I_{STP}$ < 40 A / 1 ms, isolated<br>*Protection by fuse inside the device.* |
| Consumption | < 2 W / 2 VA |

### MECHANIC PROPERTIES

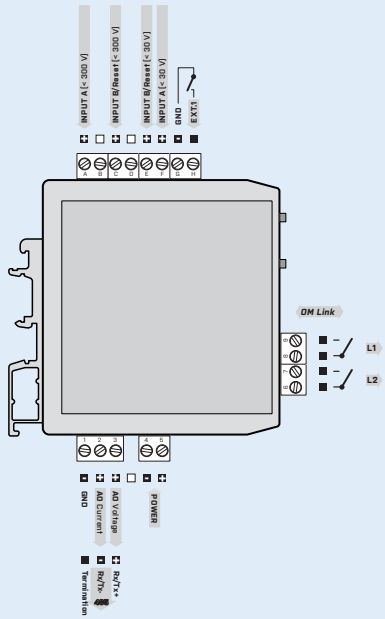
| | |
|---|---|
| Material | PA 66, incombustible UL 94 V-I, blue |
| Dimensions | 25 x 79 x 90.5 mm (w x h x d) |
| Installation | on DIN rail, width 35 mm |

### OPERATING CONDITIONS

| | |
|---|---|
| Connection | connector terminal blocks, section < 1.5 / 2.5 mm² |
| Stabilization period | within 5 minutes after switch-on |
| Working temperat. | -20°...60°C |
| Storage temperat. | -20°...85°C |
| Working humidity | < 95 % r.v., non condensing |
| Protection | IP20 |
| Construction | safety class I |
| El. safety | EN 61010-1, A2 |
| Dielectric strength | 2.5 kVAC per 1 min test between supply and input<br>2.5 kVAC per 1 min test between supply and analog output |
| Insulation resist.* | for pollution degree II, measuring cat. III<br>power supply > 300 V (PI), 255 (DI)<br>input, output > 300 V (PI) |
| EMC | EN 61326-1, Industrial area |
| Seismic qualification | IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9 |
| Mechanical resistance | EN 60068-2-6 ed. 2:2008 |

* PI - Primary insulation, DI - Double insulation

## CONNECTION




## ORDER CODE

**OMX 333UQC** - [ ][ ][ ] - [ ]

| | | | | | |
|---|---|---|---|---|---|
| **Power supply** | 10...30 VDC / 24 VAC | **0** | | | |
| | 10...30 VDC / 24 VAC, isolated | **1** | | | |
| **Comparators** | no | | **0** | | |
| | 1x relay (Form A) | | **1** | | |
| | 2x relay (Form A) | | **2** | | |
| | 1x open collector | | **3** | | |
| | 2x open collector | | **4** | | |
| **Output** | none | | | **0** | |
| | analog | | | **1** | |
| | RS 485 | | | **2** | |
| **Specification** | customized version, do not fill in | | | | **00** |

Basic configuration of the instrument is indicated in bold.