



UNIVERSAL COUNTER

- 4/6-digit programmable projection
- Counter/Frequency/Clock/Timer
- Three-color or highly luminous LED
- Digit height 57; 100; 125 mm, IR operation
- Digital filters, Tare, Linearization
- Power supply 10...30 V AC/DC; 80...250 V AC/DC
- Option
Excitation • Comparators • Data output • Analog output

OMD 202UQC



The OMD 202 model series are large programmable displays for indoor and outdoor use with IP64 protection.

Type OMD 202UQC is universal 6-digit two-channel programmable panel impulse counter/frequency meter/signal evaluation from IRC sensors and timer/clock.

The instrument is based on a single-chip microcontroller and a powerful programmable gate array, which secures high accuracy, stability and easy operation of the instrument.

Displays are suitable for projection of measured data in production lines and manufacture with good legibility up to 80 m.

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OPERATION

The instrument is set and controlled by an IR remote control. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

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

The measured units can be displayed on the 6-digit display.

OPTION

EXCITATION for feeding sensors and transmitters. It is continuously adjustable in the range of 5 ... 24 VDC.

COMPARATORS are assigned to monitor 1 - 4 limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. 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 RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Input: NPN, PNP, on contact, IRC, line

Measuring modes: counter/frequency meter/UP-DW counter + frequency/counter for IRC + frequency

Calibration: in menu you can set calibration coefficient, time base and projection

Measur. channels: A and B, two independent functions can be evaluated

Time base: 0,05/0,5/1/2/5/10/20 s /1/2/5/10/15 min

Projection: -999...9999/-99999...999999 with stabile or floating DT in format 10/24/60

FUNCTIONS

Linearization: non-linear signals can be linearized by the means of a linearization table (up to 50 points)

Tare: designed to reset display upon non-zero input signal

Min./max. value: registration of min./max. value reached during measurement

Peak value: the display shows only max. or min. value

Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x and operations between inputs

Preset: initial nonzero value that is always read after resetting the device

Current value: one-off setting of the initial value

Summation: registration of figures upon shift operation

Time backup: time is running even when the power supply is turned off (the display is off)

DIGITAL FILTERS

Input filter: transmits input signal up to 1 MHz...10 min

Floating/Exp./Arithm. average: from 2...30/100/100 measurements

Rounding: setting the projection step for display

EXTERNAL CONTROL

Lock: control keys blocking

Hold: display/instrument blocking

Tare: tare activation

Resetting MM: resetting min./max. value

Resetting: counter resetting

Start/Stop: timer/clock control

TECHNICAL DATA

INPUT	
Number of inputs	1
UQC Input	on contact, TTL, NPN/PNP, Line 0...60 V, comparison levels are adjustable in the menu
Input frequency	0.002 Hz...1 MHz 0.002 Hz...100 kHz (Mode STRIDA) 0.002 Hz...500 kHz (Mode QUADR. a UP/DW)
Measuring mode	SINGLE counter/frequency A * B counter/frequency with function AND xNOR counter/frequency with function NOR STRIDA duty cycle measurement QUADR counter/frequency for IRC sensors UP/DW UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequency UP - DW UP - DW counter/frequency - measures on inputs A (UP), B (DW) and can display numbers/frequency TIME Timer RTC Clock
Time base	0.05/1/2/3/5/10/20 s 1/2/5/10 min
Calibration constant	0.00001...999999
Preset	0...999999
Input filter	off 1/10/100/250/500/1000 kHz 1/10/45/55/65/100 Hz 2/5/10 s 1/10 min
Functions	Preset Summation Time backup (Timer/clock)
Ext. inputs	3 inputs, on contact The following functions can be assigned: OFF input off LOCK control keys blocking HOLD display stop TARE tare activation SUMA sum showing NLSUM. sum reset CL. M.M. resetting min/max value CL. T. tare resetting

PROJECTION
Display: -999...9999 or -99999...999999
single color - highly luminous individ. LED
three-color - segment LED
Digit number: 4 (100/125 mm) or 5 (57/100/125 mm)
Digit height: 57, 100 or 125 mm
Display color: red or green (highly luminous - 1200 mcd)
red/green/orange
Description: the last two digits for a 6-digit display can be used to describe the measured quantities (menu adjustable)
Decimal point: adjustable - in menu
Brightness: adjustable - in menu

INSTRUMENT ACCURACY
TC: 50 ppm/°C
Accuracy: ±0.01% of range + 1 digit (frequency)
Overload capacity: 2x; 10x (t < 30 ms)
Input filters: filtration constant, rounding, digital filters
Linearization: linear interpolation in 50 points (only via OM Link)
Digital filters: Exp./Floating/Arithm. average, Rounding
Functions: Offset, Min/max value, Tare, Peak value, Mat. operations
OM Link: company communication interface for operation, setting and update of instruments
Watch-dog: reset after 400 ms
Calibration: at 25°C and 40 % r.h.

COMPARATOR
Type: digital, menu adjustable, contact switch-on < 30 ms
Hysteresis mode: switching limit, hysteresis band (Lim and ±1/2 Hys.) and time (±99.9 s) determining the switching delay
Mode From-To: switching on and switching off interval
Mode Batch: period, its multiples and time (0...99.9 s), within which the output is active
Output: 1...4x Form A relays (250 VAC/50 VDC, 3 A)

DATA OUTPUTS
Protocol: ASCII, MESSBUS, MODBUS RTU, PROFIBUS DP
Data format: 8 bit + no parity + 1 stop bit (ASCII)
7 bit + even parity + 1 stop bit (Messbus)
Rate: 600...230 400 Baud, 0.0096...12 Mbaud (PROFIBUS)
RS 232: isolated
RS 485: isolated, addressing (max. 31 instruments)

ANALOG OUTPUTS
Type: isolated, programmable with a 16-bit D/A converter, output type and range are optional in the menu
Non-linearity: 0.1% of range
TC: 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 or 1 000 Ω/24 V)

EXCITATION
Adjustable: 5...24 VDC/max. 1.2 W, separated

POWER SUPPLY
Range: 10...30 V AC/DC, ±10 %, PF≥0.4, I_{STP} < 75 A/1 ms, isolated
80...250 V AC/DC, ±10 %, PF≥0.4, I_{STP} < 45 A/1 ms, isolated
Consumption: < 22 W/22 VA
Power supply is protected by a fuse inside the instrument.

MECHANICAL PROPERTIES
Material: Anodized aluminium, black
Dimensions: see picture

OPERATING CONDITIONS
Connection: connector terminal blocks, section < 1.5/2.5 mm²
Stabilization period: within 5 minutes after switch-on
Working temperature: -20°...60°C
Storage temperature: -20°...85°C
Protection: IP64
Dielectric strength: 4 kVAC per 1 min test between supply and input
4 kVAC per 1 min test between supply and data/analog output
4 kVAC per 1 min test between input and relay output
2.5 kVAC per 1 min test between input and data/analog output
El. safety: EN 61010-1, A2
Insulation resistance: for pollution degree II, measuring cat. III
power supply > 670 V (PI), 300 V (DI)
input, output, PN > 300 V (PI), 150 V (DI)
EMC: EN 61326-1

ACCESSORIES
• holder for wall/ceiling installation

PI - Primary insulation, DI - Double insulation

DIMENSIONS

Front view
X mm
Y mm

Side view
88 mm
4 mm
Panel thickness: 0.5...50 mm

Panel cut
X1 mm
Y1 mm

Height	X	Y	X1	Y1
57-6	376	119	367	111
100-4	465	181	457	173
100-6	651	181	643	173
125-4	539	237	531	228
125-6	754	237	746	228

ORDER CODE

OMD 202UQC		-				-			
Power supply	10...30 VDC/24 VAC 80...250 V AC/DC	0							
Input	standard Line	1							
Comparators	none 1x relay 2x relays 3x relays 4x relays		A						
Analog output	no yes (compensation < 600 Ω/12 V) yes (compensation < 1 000 Ω/24 V)		C						
Data output	none RS 232 RS 485 MODBUS PROFIBUS			0					
Excitation	no yes			1					
Digit height	57 mm 100 mm 125 mm				1				
Number of digits	4 digits (100/125 mm) 6 digits					1			
Color/Display type	red (highly luminous LED) green (highly luminous LED) red/green/orange (7-segment LED)						1		
Specification	customized version, do not fill in							1	00

Basic configuration of the instrument is indicated in bold.