

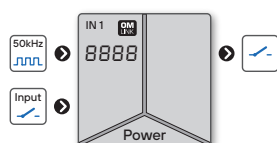


- 6-digit programmable projection
- Counter/Frequency/Clock/Timer
- 0.1 Hz...50 kHz; UP/DW counter, IRC
- Digital filters, Tare, Linearization, Sum
- Size of DIN 96 x 48 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Time backup

UNIVERSAL COUNTER



Type OML 643UQC is an inexpensive 6-digit universal panel counter/frequency meter/timer/clock with a box depth of only 30 mm.

The instrument is based on a single-chip microcontroller, which secures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons accessible from the rear. 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).

OPTION

COMPARATOR is assigned to monitor one limit value 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.

TIME BACKUP is suitable where time needs to be measured even in case of voltage supply outage (upon power supply outage the instrument does not display).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Selection: measuring mode

Setting: Measuring mode counter/frequency/timer/clock with adjustable calibration coefficient, time base and projection

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

Measur. channels: A and B, two independent functions (number/frequency) can be evaluated from one measuring input

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

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

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

Exponential average: from 2...100 measurements

1/Fr.: filter to convert frequency to time

Rounding: setting the projection step for display

Input filter: passes the input signal up to 5...1 000 Hz

EXTERNAL CONTROL

Hold: display/instrument blocking

Lock: control keys blocking

Resetting: counter resetting

Start/Stop: timer/clock control

Magnet: operation of preselected functions

TECHNICAL DATA

INPUT

No. of inputs	1	The range is adjustable in the instrument menu
UQC Input	on contact, TTL, NPN/PNP 0...30 / 300 V, comparison levels are adjustable in the menu or automatic	
Input frequency	0.1 Hz...50 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...10 kHz	SINGLE UP/DW QUADR., frequency QUADR., counter, duty cycle 50 %
Measuring mode	SINGLE counter/frequency QUADR counter/frequency for IRC sensors UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequency TIME Timer RTC 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	Preset Summation One time setting of the initial value Time backup (TIME / RTC)	

EXTERNAL INPUT

No. of inputs	1, on contact
Function	No function assigned Measurement paused Control keys blocking Menu access blocking Activation of Tare Reset of Tare Sum showing Counter/timer reset and preset Sum reset Switching counter/frequency display

PROJECTION

Display	-99999...999999, single color 7-segment LED 99 59 59 hours/minutes/seconds TIME 23 59 59 hours/minutes/seconds TIME 99 59 hours/minutes/seconds TIME 9999 59 hours/minute TIME 9999 59 minute/seconds TIME 59 59 99 minute/seconds/hundredths TIME 99 59 99 minute/seconds/hundredths TIME 9 59 59 9 hours/min/seconds/hundredths TIME
Digit height	9.1 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable or automatically controllable

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.05 % of value ±0.01 % of value ±2 ms ±0.01 % of value ±130 ms TIME RTC
Overload	10x (t < 30 ms), 2x
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points <i>setup only via OM Link</i>
Time backup	Lithium cell CR 2032, 3V/220 mAh
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % rh.

RELAYS / OC OUTPUT

No. of outputs	1
Type	digital, menu adjustable
Mode	HYSTER active above set value C-PULS. automatic counter resetting at the set value ON RUN output is active when the timer is running
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1x 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

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I _{typ} < 45 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

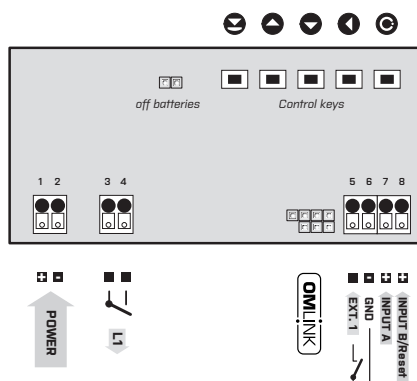
Material	PC, incombustible UL 94 V-1, black
Dimensions	96 x 48 x 30 mm (w x h x d)
Panel cutout	92 x 44 mm (w x h)

OPERATING CONDITIONS

Connection	terminal blocks, section < 1.5 mm ²
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	IP65, front panel only with a gasket
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI) input, output > 300 V (DI)
EMC	EN 61326-1:2021, Industrial area
RoHS	EN IEC 63000:2018
Seismic capacity	IEC 980:1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OML 643UQC

Power supply	10...30 VDC / 24 VAC	0						
	10...30 VDC / 24 VAC, isolated	1						
Comparator	no	0						
	1x relay (Form A)	1						
	1x open collector	2						
Time backup	no		0					
	Only for Measuring mode „Timer/clock“		1					
Display color	red			1				
	green			2				
Gasket	no				0			
	Silicone gasket between instrument and panel				1			
Magnet	no					0		
	For operation of external functions					1		
Specification	customized version, do not fill in						00	

Basic configuration of the instrument is indicated in bold.