



- 6-DIGIT PROGRAMMABLE PROJECTION
- COUNTER/FREQUENCY/TIMER/CLOCK
- UP/DW COUNTER, IRC
- DIGITAL FILTER, TARE, LINEARIZATION, SUM
- SIZE OF DIN 96 x 48 MM
- POWER SUPPLY 80...250 V AC/DC
- Option
 - Comparators • Data output • Analog output
 - Three-color display - 20 mm • Power supply 10...30 V AC/DC

OM 653UQC

OMLINK

The OM 653UQC type is a universal low-cost counter/frequencymeter/evaluation of signal from IRC sensor/stopwatch/timer.

The instrument is based on an 8-bit microcontroller, which ensures good accuracy, stability and easy operation of the instrument.

OM 653UQC
UNIVERSAL COUNTER

OPERATION

The instrument is set and controlled by five control keys located on the front panel. 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 perform 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 (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 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 and its type and range are selectable in menu.

TIME BACKUP is suitable where time needs to be measured even in case of supply voltage 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/UP-DW counter/frequency/counter for IRC

Measuring channels: A and B, from one measuring input two independent functions may be evaluated (counter/frequency)

Projection: -9999...999999

EXCITATION

Range: 5...24 VDC, for feeding of sensors and transmitters

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: transmits input signal up to 5...1 000 Hz

FUNCTIONS

Preset: initial non-zero value, which is always read after resetting the instrument to zero

Setting current value: initial value, e.g. the amount currently passed-through

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

EXTERNAL CONTROL

Hold: display/instrument blocking

Lock: control keys blocking

Resetting: counter resetting

Start/Stop: stopwatch/timer control

TECHNICAL DATA

PROJECTION

Display: 999999, red or green 7-segment LED, digit height 14 mm, -999...9999, red/green/orange 7-segment LED, digit height 20 mm
Decimal point: setting - in menu
Brightness: setting - in menu

INSTRUMENT ACCURACY

TK: 50 ppm/°C
Accuracy: ±0,02% of value + 1 digit
 ±0,02% of value ±2ms (stopwatch)
 ±0,02% of value ±130ms (RTC)
Overload capacity: 2x; 10x (t < 30 ms) - not for 300 V
Watch-dog: reset after 500 ms
Functions: HOLD, LOCK, Digital filters, Tare
Functions: Data backup, Time backup, Preset
Input filters: Filtration constant, Rounding
Time base: 0,5/1/5/10 s
Calibration constant: 0,00001...999999
Filtration constant: 0/5/40/100/1000 Hz
PRESET: 0...999999
DM 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: -99999...999999; ; -999...9999
Hysteresis: 0...999999; -999...9999
Delay: 0...99,9 s
Output: 2x Form A relays (250 VAC/30 VDC, 3 A), 2x open collectors

DATA OUTPUT

Protocol: ASCII, PROFIBUS DP
Data format: 8 bit + no parity + 1 stop bit (ASCII)
Rate: 300...230 400 Baud
 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232: isolated
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 0/12 V]

EXCITATION

Adjustable: 5...24 VDC/max. 2,5 W, isolated

POWER SUPPLY

10...30 V AC/DC, ±10%, max. 13,5 VA, PF ≥ 0,4, I_{STP} < 40 A/1 ms
 80...250 V AC/DC, ±10%, max. 13,5 VA, PF ≥ 0,4, I_{STP} < 40 A/1 ms
Power supply is protected by a fuse inside the instrument

MECHANICAL PROPERTIES

Material: Noryl GFN2 SE1, incombustible UL 94 V-1
Dimensions: 96 x 48 x 120 mm
Panel cutout: 90,5 x 45 mm

OPERATING CONDITIONS

Connection: connector terminal board, section < 1,5/2,5 mm²
Stabilization period: within 15 minutes after switch-on
Working temperature: -20°...60°C
Storage temperature: -20°...85°C
Cover: IP64 (front panel only)
El. safety: EN 61010-1, A2
Dielectric strength: 4 kVAC after 1 min between supply and input
 4 kVAC after 1 min between supply and data/analog output
 4 kVAC after 1 min between supply and relay output
 2,5 kVAC after 1 min between input and data/analog output
Insulation resistance: for pollution degree II, measuring cat. III.
 Power supply > 670 V (ZI), 300 V (DI)
 input, output, Exc. > 300 V (ZI), 150 V (DI)
EMC: EN 61326-1

PI - Primary insulation, DI - Double insulation

MEASURING RANGES

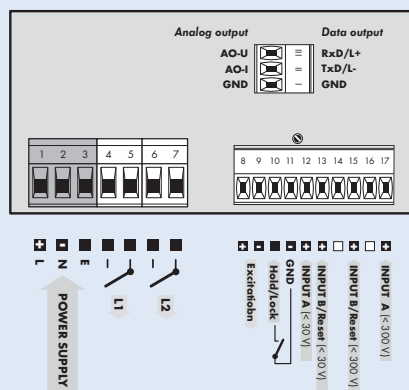
DM 653 is a multifunction instrument available in following types

UQC: 0...30/300 V, comparison 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)

Measuring modes

SINGLE Counter/Frequencymeter
QUADR Counter/Frequencymeter for IRC sensors
UP/DW UP/DW Counter/Frequencymeter
 - used in inputs A, B (direction) and can display count/frequency
UP - DW UP - DW Counter/Frequencymeter
 - used in inputs A (UP), B (DW) and can display count/frequency
TIME Stopwatch
RTC Timer

CONNECTION



ORDER CODE

OM 653UQC

		1					
Power supply	10...30 V AC/DC	0					
	80...250 V AC/DC	1					
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 output		2				
	RS 232		3				
	RS 485		4				
	PROFIBUS		6				
Excitation	yes			1			
Time backup	no				0		
	yes <small>Only for measuring mode „Watch“</small>				1		
Display color	red (14 mm)					1	
	green (14 mm)					2	
	red/green (20 mm)					3	
Other	customer version, do not fill in						00

Default execution is shown in bold

* Launch for sale has not been set