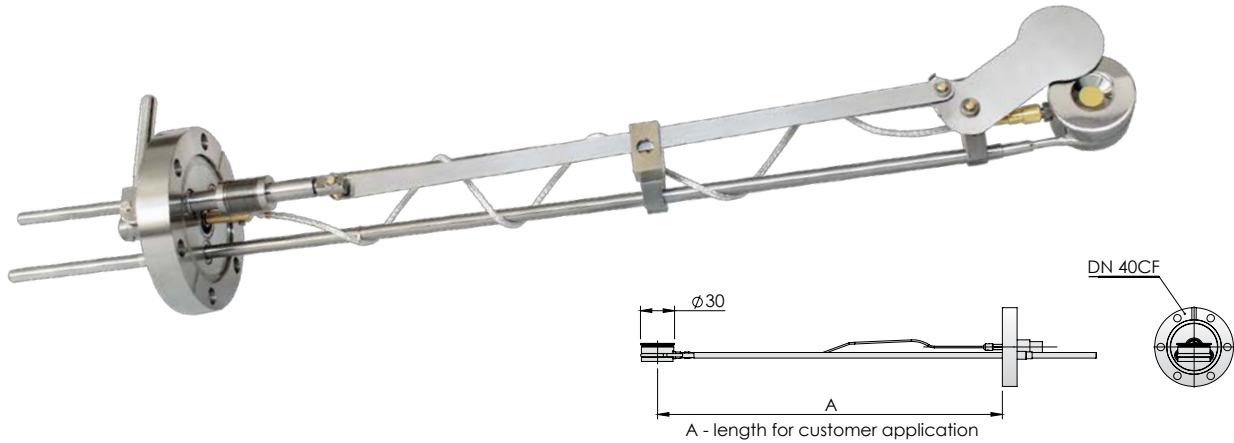


QO 40A1

QUARTZ BALANCE



DESCRIPTION

The Quartz Balance QO 40A1 instrument provides a real-time, continuous indication of coating thickness during deposition, allowing the production of coatings of high accuracy and reproducibility. The thickness of both evaporated and sputter coated films can be monitored. The sensor head placed in non-magnetic housing is water cooled. The crystal face is parallel to the water cooling feedthrough pipes. The Quartz balance QO 40A1 is mounted on a DN 40CF flange with two Ø6 pipes and Microdot S-50 coaxial connector. Customized insertion length 130 - 500 mm (other on request).

FEATURES

- Water-cooled sensor head
- Easy exchangeable quartz

OPTIONS

- Customised insertion length
- With or without integrated manual/electro-pneumatic shutter
- Different mounting flanges (e.g. DN 40 KF)
- Other quartz balance geometries on request (e.g. perpendicular head geometry)
- Linear shift

TECHNICAL DATA

Mounting flange	DN 40 CF (rotatable)
Max operation temperature	up to 300 °C (with water cooling)
Water cooling (required)	water flow > 0.5 l/min temperature: 20 - 30 °C max pressure: 6 bar
Crystal frequency	4.8 - 6 MHz, 14 mm diameter (industry standard)
Insertion length	dependent on specification and geometry of the chamber
Bakeout temperature	up to 150 °C

TMC13 THICKNESS MONITOR CONTROLLER

TMC13 is the newest technology electronics designed for monitoring and controlling any coating and deposition processes. Up to six channel inputs and two additional vacuum gauge channels together with 7" TFT display makes this unit really unique and universal.



PREVAC sp. z o.o. sales@prevac.eu
 Raciborska Str. 61 [+48 32 459 21 30](tel:+48324592130)
 PL44362 Rogów [+48 32 459 20 01](tel:+48324592001)

QO 40A1

TM13 | TM14

THICKNESS MONITOR SENSORS



DESCRIPTION

The TM13 and TM14 devices comprise: quartz oscillator, frequency measuring system and communication interface. It is connected to the input element of a quartz resonator. The measurement results are transmitted via RS232 to the master device: either a PC or TMC13 controller.

Remote control via TMC13 controller or PC.

FEATURES

TM13:

- **Frequency Resolution: 0.1Hz**
- Number of measurements per second: 4 (fixed)
- Maximum frequency of quartz oscillator: 6 MHz
- Stability: 0.5 ppm

TM14:

- **Frequency Resolution: 0.01 Hz**
- Number of measurements per second: 0.5, 1, 2, 4, 10 (selectable)
- Maximum frequency of quartz oscillator: 6 MHz
- Stability: 0.5 ppm

TECHNICAL DATA

Power supply	5V DC	
Current consumption	max 500 mA	
	TM13	TM14
Thickness resolution	0.1 Å	0.01 Å
Rate resolution	0.1 Å/s	0.01 Å/s
Frequency resolution	0.1 Hz	0.01 Hz
Frequency stability	0.5 ppm	0.5 ppm
Number of measurements per second	4	0.5; 1; 2; 4; 10 (selectable)
Communication interface	RS232	
Dimensions	80.0 × 50.0 × 27.0 mm (W×H×D)	
Weight (approx.)	0.1 kg	

OPTIONS

- Communication interface RS485 (specify at order)

TM SENSOR CONTROL APPLICATION



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 PL44362 Rogów [+48 32 459 20 01](tel:+48324592001)

TM13 TM14