

Outgas analysis system "Twin-TQCM"

Peltier device controlled QCM sensor for QTGA



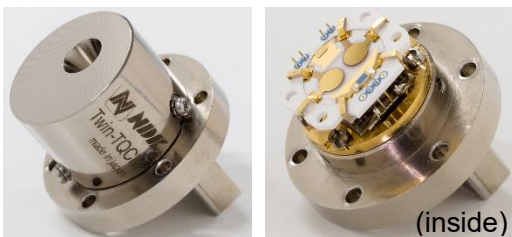
QTGA: QCM Thermogravimetric Gas Analysis



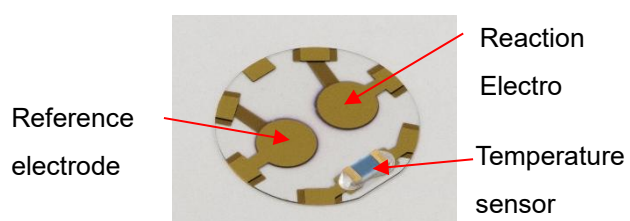
Twin-QCM Sensing Unit (4ch)
Type: PSA-QS-1001



Twin-QCM Sensing Unit (1ch) ※
Type: PSA-QS-1002



Twin-TQCM Sensor Module
Type: PSA-QM-1002



Quartz crystal sensor
Type: PSA-SG-1002T



■ Main Applications

- Monitoring of vacuum environment, clean room environment, etc.
- Quantitative evaluation of outgas generated from materials and equipment

※ working with both
CQCM & TQCM

■ Features

- Since liquid nitrogen is not necessary, running costs can be reduced, and material / environmental evaluation can be provided with a simple system.
- Simultaneous real-time measurement with fundamental wave (wide frequency dynamic range) and 3rd overtone wave (high sensitivity)
- High-precision difference measurement with two electrodes formed on one crystal piece (Twin-TQCM)
- High-precision temperature monitor with a platinum sensor mounted on a crystal piece

■ Specifications

Twin-QCM Sensing Unit	PSA-QS-1001	PSA-QS-1002	Twin-TQCM Sensor Module	PSA-QM-1002
Number of simultaneous measurement modules	1~4	1	Output frequency	10.278MHz(Fundamental) 30.833MHz(3ot)
Module control distance	Max20m		Mass sensitivity	2.39x10 ⁸ (Hz/g) cm ² (Fundamental) 7.17x10 ⁸ (Hz/g)cm ² (3ot)
Frequency detection accuracy	≤1ppm		Frequency sensitivity	0.53ng/Hz (Fundamental) 0.18ng/Hz (3ot)
Frequency measurement resolution	0.01Hz		Sensor electrode area	0.1257 cm ² (per electrode)
Temperature detection accuracy	≤±0.4°C		Temperature sensor	Platinum resistance Pt1000 Class F0.3
Indication temp. range	-199°C~+150°C		Operating temperature range	-80 ~ +125°C
Temperature measurement resolution	0.1°C		Differential frequency temperature characteristic	≤±10ppm +25°C standard(-80°C ~ +80°C)
Measurement interval	≥1s(Max60s)		External Dimensions	Φ35.0x23.3(H)mm (Excluding protrusions)
Operating temperature range	+10~40°C		Weight	≤50g
Power supply voltage*	AC100V~AC240V (50/60Hz)		Peltier power	≤9W
Power consumption	≤120VA	≤100VA	Peltier cooling performance	ΔT≥55°C(Base fixing temperature -20°C)
External Dimensions	437(W) x 132(H) x 499(D) mm (Excluding protrusions)		Oscillation circuit power	≤0.5W
Weight	≤10kg		Measurement viewing angle	20° (Half Angle)

* The power supply voltage may be limited depending on the country or region of use.

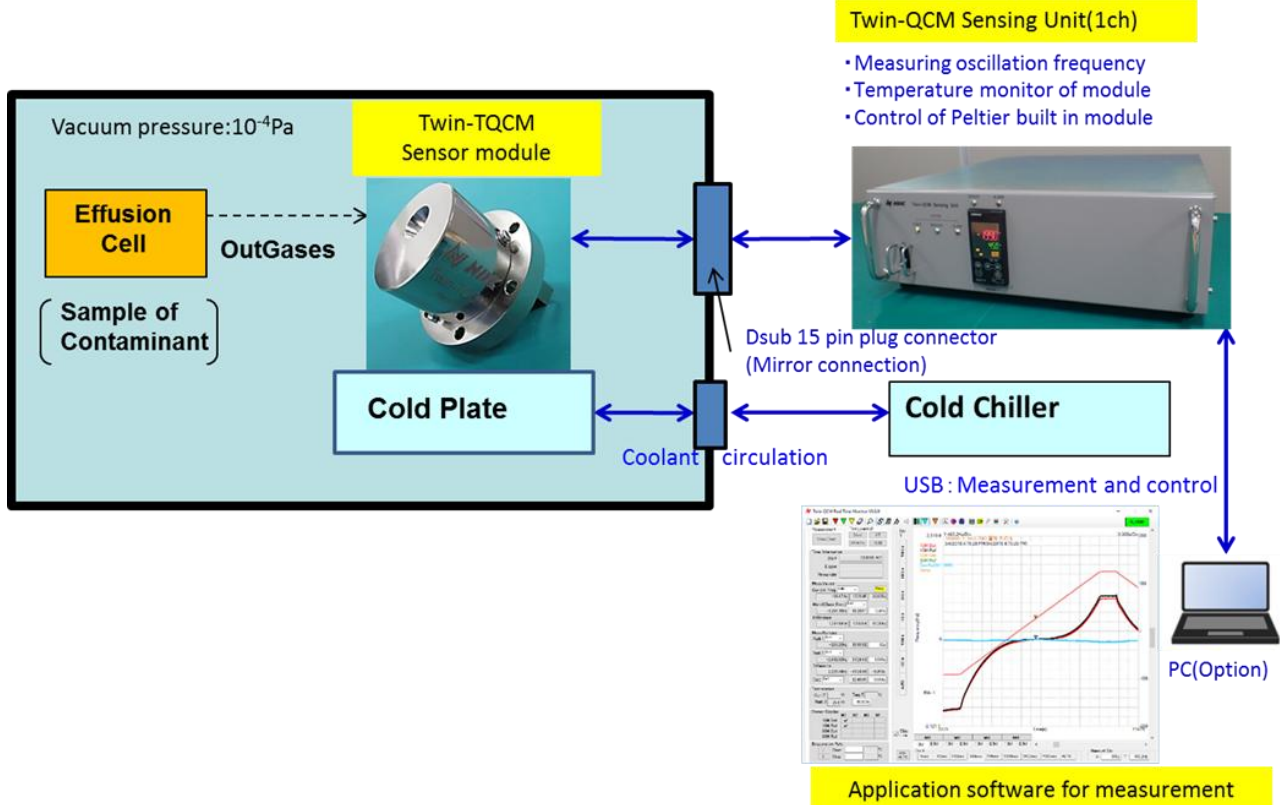
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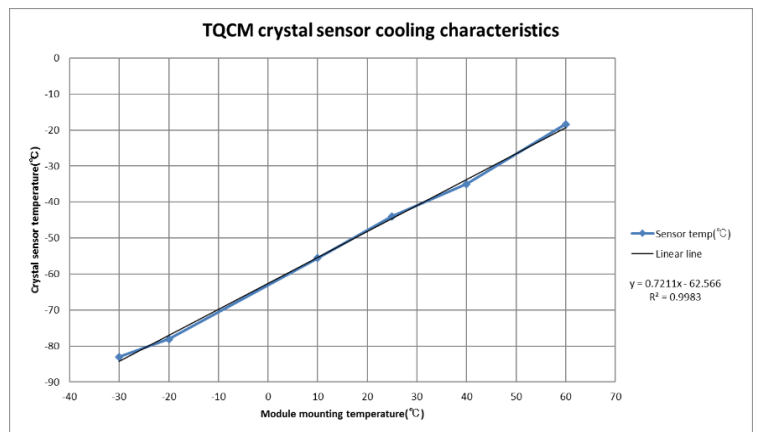
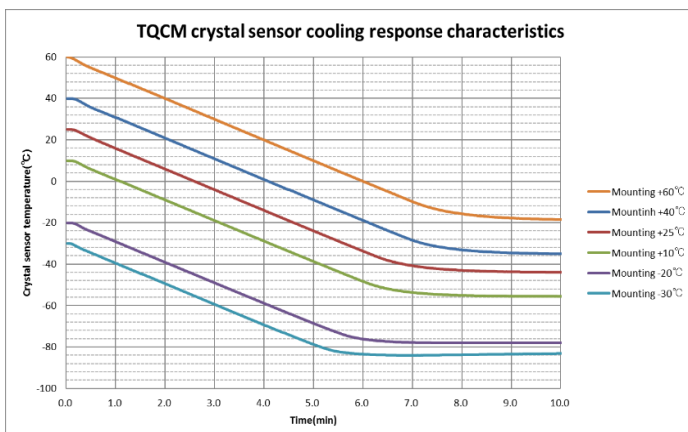


■ Measurement system example

(System configuration example installed in a small vacuum chamber for material evaluation)



■ Cooling performance of crystal oscillator sensor with Twin-TQCM sensor module



By cooling the mounting part (heat dissipation surface) to -30°C , crystal oscillator sensor can be cooled to -80°C or less