Outgas analysis system "Twin-TQCM"

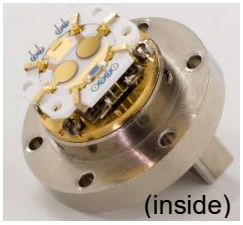
Peltier device controlled QCM sensor for QTGA

Crystal Bridge to the Future

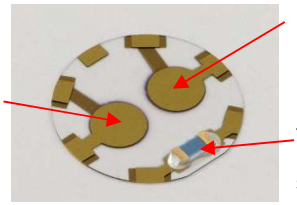
QTGA：QCM Thermogravimetric Gas Analysis

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

CE

※ working with both CQCM & TQCM

■Main Applications

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

■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**
- **Easy crystal sensor replacement by clip structure (Crystal can be replaced by the users)**

■Specifications

Twin-QCM Sensing Unit	PSA-QS-1001	PSA-QS-1002
Number of simultaneous measurement modules	1～4	1
Module control distance	Max20m	
Frequency detection accuracy	≦1ppm	
Frequency measurement resolution	0.01Hz	
Temperature detection accuracy	≦±0.4℃	
Indication temp. range	-199℃～+150℃	
Temperature measurement resolution	0.1℃	
Measurement interval	≧1s(Max60s)	
Operating temperature range	+10～40℃	
Power supply voltage*	AC100V～AC240V（50/60Hz）	
Power consumption	≦120VA	≦100VA
External Dimensions	437(W) x 132(H) x 499(D) mm (Excluding protrusions)	
Weight	≦10kg	

Twin-TQCM Sensor Module	PSA-QM-1002
Output frequency	10.278MHz(Fundamental) 30.833MHz(3ot)
Mass sensitivity	$2.39x10^8$ (Hz/g) cm^2 (Fundamental) $7.17x10^8$ (Hz/g)cm^2 (3ot)
Frequency sensitivity	0.53ng/Hz (Fundamental) 0.18ng/Hz (3ot)
Senor lectrode area	0.1257 cm2(per electrode)
Temperature sensor	Platinum resistance Pt1000 Class F0.3
Operating temperature range	-80 ～ +125℃
Differential frequency temperature characteristic	≦±10ppm +25℃standard(-80℃ ～ +80℃)
External Dimensions	Φ35.0x23.3(H)mm（Excluding protrusions）
Weight	≦50g
Peltier power	≦9W
Peltier cooling performance	⊿T≧55℃(Base fixing temperature -20℃)
Oscillation circuit powe	≦0.5W
Measurement viewing angle	20° (Harf Angle)

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

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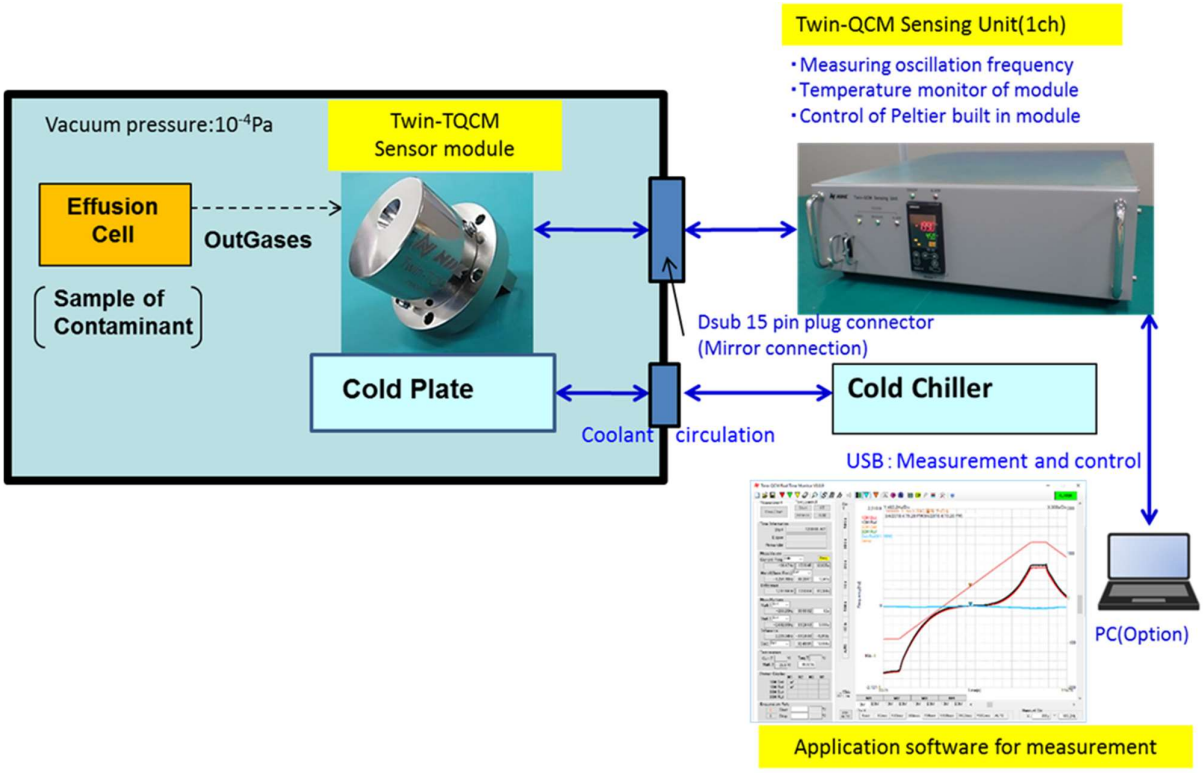
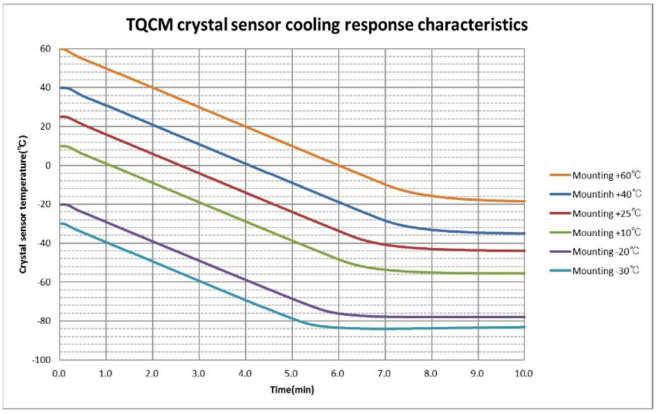
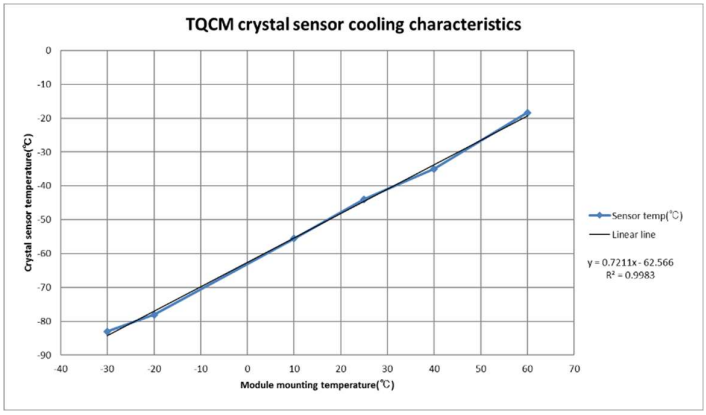
■Mesurement system example

(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℃, crystal oscillator sensor can be cooled to -80℃ or less