

# **Quartz Crystal Microbalance for Spacecraft**



<sup>\*</sup> The covers for upper part and connector are removed when used.

# **Outline**

Quartz Crystal Microbalance (QCM) is a unit for monitoring contamination status around satellites by utilizing the characteristics of oscillating frequencies variation depending on the amount of substances attached over the crystal surface.

## Heritage

ISS Exposed Facility
JAXA Small Demonstration Satellite (SDS-4)

# **Features**

- Compact and lightweight
- Vibration and impact proof against the rocket launch
- Highly accurate measurement with pairs of quartz crystals for monitoring and referencing in order to cancel out the temperature-induced fluctuations of the oscillating frequencies from the quartz crystal
- st This product was developed in support of JAXA (Japan Aerospace Exploration Agency).
- \* Note that, with due to the rights of other relevant parties and/or depending on usage, application and/or delivery place, the product may not be sold, commercially distributed, leased or included in a part of product or system which intends to receive benefits through the inclusion of the product.



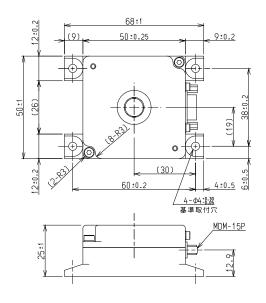
# **Specifications**

Accuracy		1 ng (at constant temperature) 100 ng (over the total temperature range)
Electrical	Frequency	9MHz +/- 20 kHz
	Interface	RS-422 synchronous / asynchronous communication
	Maximum Power	0.5 W
	Power Supply Voltage	+5.2 to +5.5 V
	Connector	Micro D-sub connector 15p
Mechanical	FOV (Field of View)	60° half-angle
	Mass	90 g
	Dimensions	D50 × W50 × H25 mm (protrusions excluded)
	Operating Temperature Range	-40°C to +65°C
	Storage Temperature Range	-40°C to +85°C

\* The specifications will be tailored to suit your needs.

# **Appearance**





## Caution

- Specifications and designs are subject to change without notice.
   Specifications and designs are based on the standard model.
   Please contact us regarding further customization to suit your project's needs.
- This products may be subject to the application of the Foreign Exchange and Foreign Trade Act and other related laws and regulations in Japan. Customer agrees to comply with such regulations and acknowledges that it is their responsibility to obtain any required licenses to export, re-export, or import this products.
- •We shall not be liable for any damages arising out of or in connection with the use of specifications herein, including liability for
- lost profit, business interruption, or any other damages whatsoever.

  The printed colors may appear difficult from the actual product.

### 明星電気株式会社 www.meisei.co.jp/english

For the details please contact E-mail: aerospace@meisei.co.jp

# Headquaters:

2223, Naganuma-Cho, Isesaki, Gunma 372-8585, Japan

## Tokyo Sales Office:

2-5-7, Koishikawa, Bunkyo-ku, Tokyo 112-8511, Japan Tel: +81-3-3814-5129 Fax: +81-3-3815-0761