

SemiQCM™ CR Sensor

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INFICON SemiQCM CR sensors, installed on the foreline of a semiconductor chamber, offer a proven solution as part of a precursor delivery fault detection system. By connecting to FabGuard® via an IMM-200, the SemiQCM CR sensor becomes an integrated part of the tool. The sensor is installed via a ISO KF cross or KF16 Tee to the foreline and actively monitors excess precursor and precursor derivatives for each wafer run. The failure to deliver precursor to a wafer can be detected in as little as one wafer.

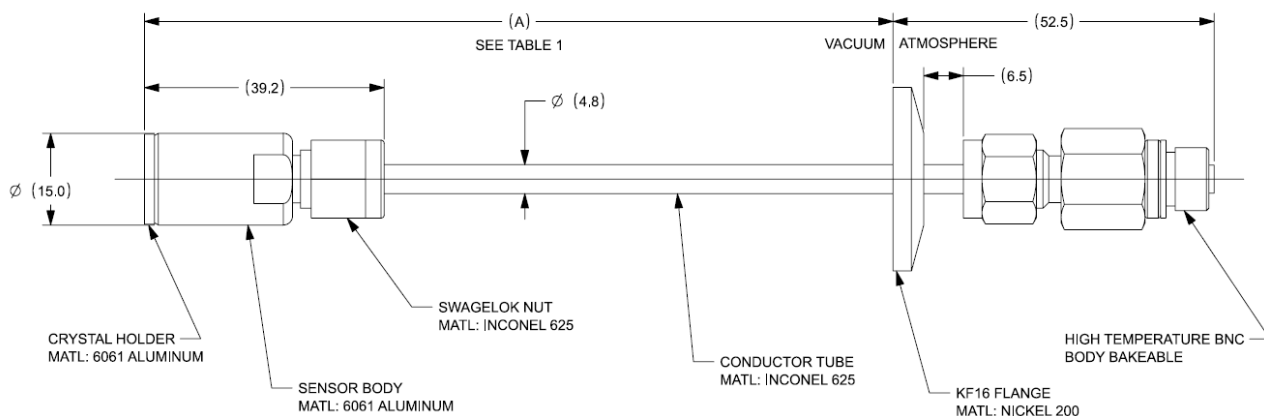
Specifications

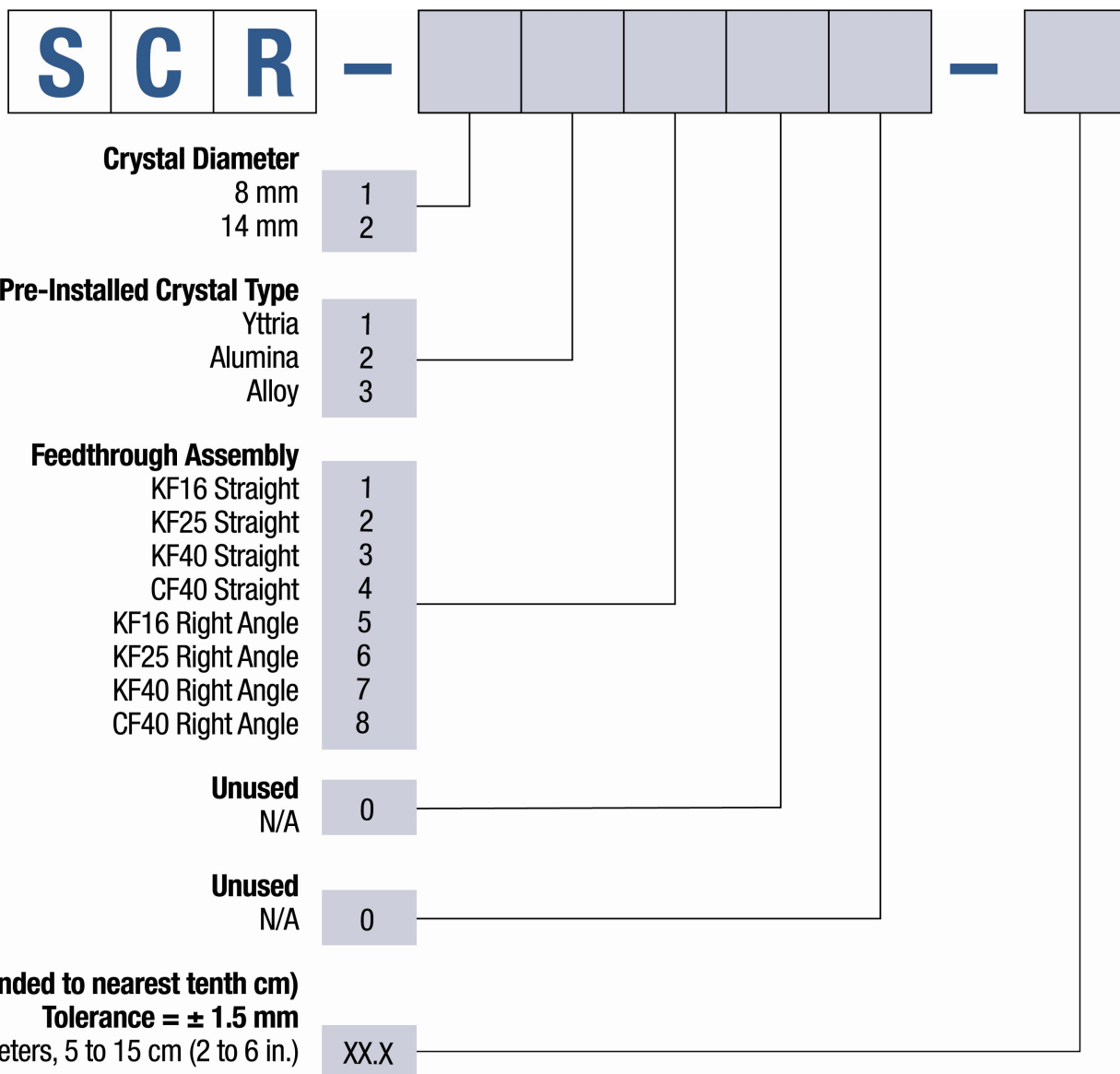
Maximum temperature	200°C
Sensor head size (maximum envelope)	15 mm O.D. x 39.2 mm (0.59 in. O.D. x 1.54 in.)
Mounting feedthrough	ISO KF flange

Materials

Body and holder	Aluminum
Springs	Beryllium nickel
Coax line	5 mm (1.88 in.) O.D. Inconel 625
Other mechanical parts	Nickel 200, aluminum, or Inconel 625
Insulators	>99% Alumina in vacuum: Teflon® used elsewhere
Wire	1. Ni (in vacuum) 2. Ni plated Cu (elsewhere)
Braze	Vacuum process high temperature NiCr alloy
Crystal	8 mm (0.309 in.) diameter

Dimensions





Note 1: Sensor lengths are measured from center of the crystal to the vacuum side (sealing surface) of the feedthrough.

Spare Parts List

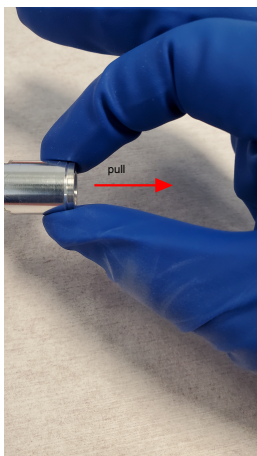
P/N	Description
750-7055-G1S	Crystal holder with retainer spring and crystal finger spring
750-1089-G10	Sensor crystals, 6 MHz, alloy, 8 mm
750-1127-G5	Sensor crystals, 6 MHz, alumina, 8 mm
750-1128-G5	Sensor crystals, 6 MHz, yttria, 8 mm
750-7053-G1S	Crystal holder assembly with alloy crystal installed
750-7053-G2S	Crystal holder assembly with alumina coated crystal installed
750-7053-G3S	Crystal holder assembly with yttria coated crystal installed

Crystal Replacement



Avoid touching the crystal. Only handle the quartz crystal with Teflon tweezers and only handle the outer edge of the crystal.

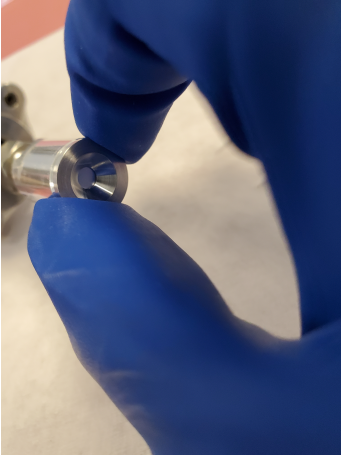
1. Remove the QCM sensor from the foreline by releasing the ISO KF clamp.
2. Pull the crystal holder straight out of the QCM sensor body.



3. Invert the crystal holder and apply pressure on the face of the crystal to dislodge it from the crystal holder. Use one leg of the tweezers to pull the crystal out of the holder.
4. Orient the crystal so that the single nib pattern is facing the direction of the deposition and the fully coated side of the crystal is facing the sensor connection.
5. Using plastic tweezers, grasp the edge of the new crystal. Gently insert the edge of the crystal seated securely inside the crystal holder. Release the crystal and ensure the crystal has seated horizontally in the crystal holder.
 - Use one leg of the tweezers to push on the crystal edge and ensure that the crystal is pushed in and seated horizontally in the crystal holder.



6. Reinstall the crystal holder into the sensor body by pressing the crystal holder straight in, making certain that the crystal holder is completely seated in the sensor body. Some force may be required.



7. Install the QCM sensor back on the foreline with a ISO KF clamp and the appropriate centering ring.