FES SENSOR
TECHNOLOGY GMBH

TC 2x1/4”

www.fes-sensor.com

Test Chamber for Sensors

1. DESCRIPTION

TC 2x1/4” is a 3D printed test chamber with small internal volume and low flow rates. In combination with evaluation kits, TC 2x1/4” enables the characterisation of gas sensors (20 mm diameter, 16 mm height) at defined air composition under flow conditions.

2. SIMPLIFIED SCHEMATICS

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3. REVISION HISTORY

Date	Rev.	
June 6, 2022	1.0	Initial Version

4. TUBING

The two pipe extensions have a diameter of ¼” and are appropriate for corresponding Swagelok® connectors.

5. ASSEMBLING OF 16X1 MM O-RING

The sealing ring should be pressed into the receptacle with little force.

6. ASSEMBLING OF SPACERS

To use the test chamber with the evaluation kits, the three spacers must be screwed into the threaded inserts.

7. ASSEMBLING OF SENSOR AND EVALUATION KIT

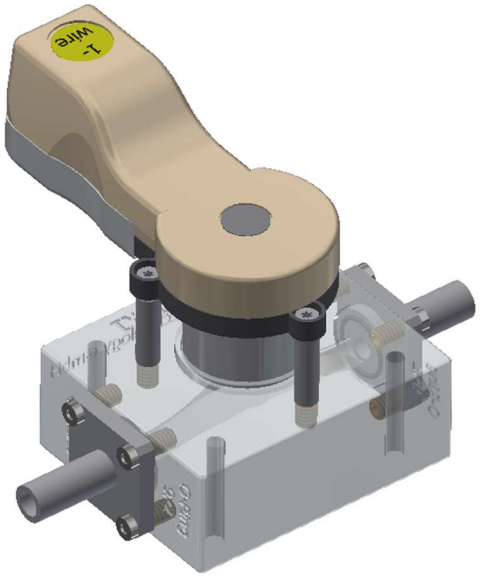
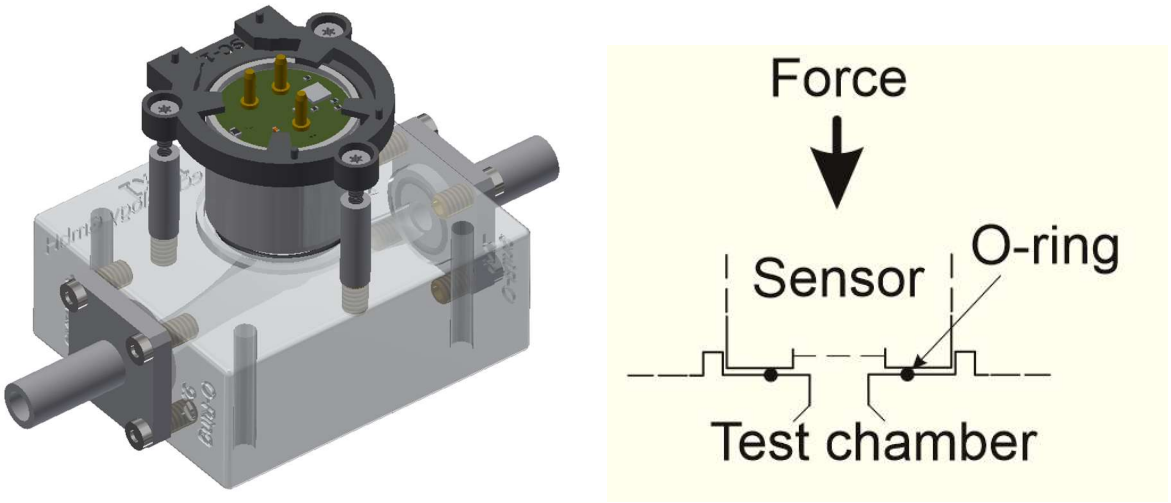


Figure 1: Test chamber with sensor and evaluation kit.

The sensor is inserted into the receptacle and the three screws of the evaluation kit are tightened carefully and cyclically with a Torx® 6 screwdriver (see figure 1 for the configuration). Only light contact pressure is required. Make sure that the screws are tightened evenly in small steps so that the seal between the sensor and the test chamber is loaded evenly. Under no circumstances should the outer edge of the sensor touch the surface of the test chamber only on one side and a gap is formed between the sensor and the sealing ring on the other side. This gap cannot be closed even with an impermissibly high force on the two opposite screws (compare figure 2). You can also use the enclosed sealing ring 18x1, which guarantees an initial gap of 1 mm (instead of 0.5 mm).



(a) (b)

Figure 2: a) Detail of figure 1 that shows how the sealing between sensor and test chamber is achieved by means of the three screws in the black ring of the evaluation kit. b) An appropriate sealing is achieved if the o-ring is uniformely presse and the sensor does not touch the surface of the test chamber.

8. SPECIFICATIONS

8.1. ABSOLUTE MAXIMUM RATINGS

Temperature	+60°C
UV stability	no

To avoid yellowing, we recommend not to expose the test chamber to direct sunlight. The function of the test chamber is not affected by this effect.

8.2. RECOMMENDED FLOW RATES

Designed and tested for low flow rates in the range of 0 to 100 ml/sccm.

8.3. MECHANICAL

Height (body)	20 mm
Length (body)	50 mm
Width (body)	42

9. ORDERING INFORMATION

TC 2x1/4”

10.PACKAGING/SHIPPING INFORMATION

The test chamber is shipped individually in in a box, together with three spacers and two O rings.

11.NOTES

12.WORLDWIDE SALES AND CUSTOMER SUPPORT

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