OEM Pressure Sensor
Ceramic Thick Film Technology
Type MCT-1

Applications
- Automotive industry
- Pneumatics
- Mechanical engineering
- Heating, ventilation and air-conditioning
- Facility management

Special Features
- Fast and easy installation through patented sealing system
- Small size
- Amplified ratiometric output signal of 0.5 ... 4.5 V
- Pressure ranges from 0 ... 2 bar to 0 ... 100 bar
- High EMC interference immunity up to 100 V/m

Description

Module with case
- Fast and easy installation
A fast and easy installation of the pressure sensor module is possible using the patented sealing system and a sophisticated sensor housing assembly. The design allows clamping the MCTH-1 into the final product without causing any influences on the output signal from the installation process.

- Low profile, small size
During the design phase of the MCT-1 special consideration was given to provide a compact, low profile case to allow easy installation. A 25mm height means the MCT-1 is ideal for direct integration into the end product.

Module without case
- Focus on the essentials
The MCTO-1 is a sensor hybrid module without a case. Due to the design focus on the essential elements, including the pressure sensor and the integrated amplifier, this cost effective solution is suited for customers who already have an integrated EMC.

- Integrated electronic amplifier
Due to its integrated electronic amplifier the MCT S-1 is fully amplified and adjusted. It provides a ratiometric output signal of 0.5 ... 4.5 V.

- Excellent price/performance ratio
The sensor module has been designed for price-sensitive applications that have high quantity requirements.

- Highest quality standards
The production lines of the MCT S-1 excel in their high quality standards, which are demonstrated by the DIN ISO 9001 and ISO/TS 16949 certification. This indicates the MCT provides the highest reliability and consistently high quality.
### Specifications

<table>
<thead>
<tr>
<th>Model MCT-1</th>
<th>MCTH-1</th>
<th>MCTO-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module with case</strong></td>
<td><strong>Module without case</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pressure ranges bar</strong></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td><strong>Over pressure safety</strong></td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td><strong>Burst pressure</strong></td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

(Vacuum, gauge pressure, compound range are available)

1) Specifications of WIKA's ceramic thick film sensors will not be permanently affected by pressure loads up to the burst pressure.

#### Materials

- **Wetted parts**
  - Sealing element: NBR, EPDM (others on request)
  - Diaphragm: Ceramic Al₂O₃ 96 %
- **Case**
  - VA 1.4301, zinc-diecast, PA6

#### Power supply $U_b$

| DC V | 4.5 $\leq U_b \leq 5.5$ |
| DC V | 0.5 ... 4.5, ratiometric |

#### Signal output $R_A$

<table>
<thead>
<tr>
<th>kΩ</th>
<th>$R_A &gt; 4.5$</th>
</tr>
</thead>
</table>

#### Maximum load $R_A$

<table>
<thead>
<tr>
<th>kΩ</th>
<th>$R_A &gt; 4.5$</th>
</tr>
</thead>
</table>

#### Transducer life time

<table>
<thead>
<tr>
<th>ms</th>
<th>$&gt; 1 \times 10^7$</th>
</tr>
</thead>
</table>

#### Response time (10 ... 90 %)

<table>
<thead>
<tr>
<th>ms</th>
<th>&lt; 2</th>
</tr>
</thead>
</table>

#### Non-linearity

<table>
<thead>
<tr>
<th>% of span</th>
<th>$\leq 0.25$ (BSFL) according to IEC 61298-2</th>
</tr>
</thead>
</table>

#### Total Error Band 2) [3]

<table>
<thead>
<tr>
<th>% of span</th>
<th>Typ. 1 % at -10 ... +100 °C / 14 ... 212 °F</th>
</tr>
</thead>
</table>

3) Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2) as well as temperature error.

#### 1-year stability

<table>
<thead>
<tr>
<th>% of span</th>
<th>&lt; 0.3 (at reference conditions)</th>
</tr>
</thead>
</table>

#### Permissible temperature of with sealing element

- **Medium**
  - °C: -40 ... +125 décor
  - °C: -40 ... +125 décor

- **Ambience**
  - °C: -40 ... +125 décor
  - °C: -40 ... +125 décor

- **Storage**
  - °C: -40 ... +125 décor
  - °C: -40 ... +125 décor

4) -40 ... +125 °C = -40 ... +257 °F / -30 ... +80 °C = -22 ... +176 °F

#### Temperature coefficients in temp. range

- **Mean TC of zero**
  - % of span: Typ. < 0.2 / 10 K max. < 0.3 / 10 K
  - % of span: Typ. < 0.2 / 10 K max. < 0.3 / 10 K

- **Mean TC of range**
  - % of span: Typ. < 0.15 / 10 K max. < 0.3 / 10 K
  - % of span: Typ. < 0.15 / 10 K max. < 0.3 / 10 K

#### α- conformity

89/336/EWG interference emission and immunity see EN 61 326

#### Wiring protection

Resistant to short-circuiting (power supply)

#### Mass

| g | Approx. 20 | Approx. 10 |

{ } Items in curved brackets are optional extras for additional price.

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**Graphic presentation of max. Total Error Band**

![Graph of max. Total Error Band](image)

- **Temperature (°C)**
  - upper limit
  - lower limit

- **max. Total Error Band (%)**
  - lower limit

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**Dimensions in mm**

**MCTH-1**
Module with case  
Ingress Protection  
IP 40  
per IEC 60 529

**MCTO-1**
Module without case
### Accessories

| JST connector, cable length 0.5 m, braids stripped and tin-plated | 11045876 |