

**Power Supply, Sensor and Signal Output**

The minimum bending radius of the PC7400-6/4 and PCS/5-WT power supply and output cables (available as accessories) is ten times the cable diameter. All of the connections for the power supply/sensors/signal output are on the controller.

**Connections**

- **Power supply/output side:**
  - Cable gland: WS19; clamping range 4.5 mm ... 10 mm
  - Screw terminals: AWG 16 up to AWG 24, up to AWG 28 with ferrule
  - Alternatively: Connector M12x1, 5-pole, A-coded
- **Sensor side:**
  - Cable gland: WS19; clamping range 1 mm ... 5 mm
  - Screw terminals: AWG 16 up to AWG 24, up to AWG 28 with ferrule
  - Alternatively: female connector M9; 5-pole, series 712, Co. Binder

**Wiring**

The housing must be open to connect the sensors and wire the output and power supply cable.

- **Loosen the screws.**
- **Pass the sensor and signal cables through the cable gland.**
- Connect the cables to the terminals according to the pin assignments.

**Installation**

Fasten the controller of series MSC7401 by means of two M4 screws.

The position of the mounting holes is shown in the drawing below. The tightening torque for the cover screws is 1.5 Nm and for the M12 (M16) cable gland it is 3 Nm.

Please note that less torque should be applied for cable glands with various cable sheath material.

- **Damage to the cable sheath**

**Notes on CE Marking**

The following apply to the indusSENSOR MSC7401:

- The controller satisfies the requirements if the guidelines in the operating instructions are maintained in installation and operation.

**Proper Environment**

- **Temperature range:**
  - -40 ... +85 °C (-40 ... +185 °F)
  - **Humidity:** 5 - 95% (non-condensing)
  - **Ambient pressure:** Atmospheric pressure
  - **Protection class:** IP 67
  - **Vibration/shock:** EN 60068-2

**Control and Displays Elements**

<table>
<thead>
<tr>
<th>Button/LED</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MENU button</td>
<td>Enter the menu level</td>
<td>-</td>
</tr>
<tr>
<td>ENTER button</td>
<td>Confirmation</td>
<td>-</td>
</tr>
<tr>
<td>1 and 2 buttons</td>
<td>Parameter selection</td>
<td>-</td>
</tr>
<tr>
<td>D1 LED</td>
<td>Channel Display</td>
<td>The channel LED indicates the current menu: Channel 1: green, channel 2: red</td>
</tr>
<tr>
<td>D2 LED</td>
<td>menu level display</td>
<td>The D1 and D2 LEDs show the current position in the menu or the corresponding settings</td>
</tr>
<tr>
<td>D3 LED</td>
<td>menu level display</td>
<td>-</td>
</tr>
<tr>
<td>D4 LED</td>
<td>Value display</td>
<td>The value LED indicates the current value of the selected parameter</td>
</tr>
</tbody>
</table>

**Setting**

The controller can be easily set using buttons, LEDs or a software (see operating instructions, Chap. A3).

**Digital interface**

- **Pin assignment for power supply and signal**
  - **Pin**
  - **Description**
    - 1 | Supply voltage |
    - 2 | - |
    - 3 | GND supply/signal ground |
    - 4 | Analog output |
    - 5 | - |
  - **Sensor pin assignment**
    - **Pin**
    - **Description**
      - 1 | Secondary + |
      - 2 | Secondary - |
      - 3 | Primary + |
      - 4 | Primary - |
      - 5 | Secondary center tap |
  - **Pin**
  - **Description**
    - 1 | Housing/shield |
    - 2 | Secondary center tap |
    - 3 | Secondary + |
    - 4 | Secondary - |
    - 5 | Primary + |
    - 6 | Primary - |

**Fig. 2 Sensor models and sensor parameters**

You can download a PDF of detailed operating instructions from our website: http://www.micro-epsilon.de/download/manuals/man--MSC7xxx--en.pdf

MICRO-EPSILON MESSTECHNIK GmbH & Co. KG
Koenigbacher Str. 15
94496 Ortenburg / Germany
Tel. +49 8542 / 168-0 / Fax +49 8542 / 168-90
e-mail info@micro-epsilon.com
www.micro-epsilon.com

**Pin assignment for power supply and signal, 5-pin housing connector**

**Pin**

- **Description**
  - 1 | Supply voltage |
  - 2 | - |
  - 3 | GND supply/signal ground |
  - 4 | Analog output |
  - 5 | - |

**Fig. 6 Pin assignment for power supply and signal, 5-pin housing connector**

**Pin assignment for terminal blocks**

**Pin**

- **Description**
  - 1 | Housing/shield |
  - 2 | Secondary center tap |
  - 3 | Secondary + |
  - 4 | Secondary - |
  - 5 | Primary + |
  - 6 | Primary - |

**Fig. 3 Table of the pin assignment for the sensor at terminal block X2, full bridge**

**Fig. 4 Table of the pin assignment for the sensor at terminal block X2, half bridge**

1) The colors and pins listed refer to MICRO-EPSILON MESSTECHNIK GmbH & Co. KG sensors.

**Pin assignment for the sensor at terminal block X2, digital interface**

**Pin**

- **Description**
  - 1 | Housing/shield |
  - 2 | Secondary center tap |
  - 3 | Secondary + |
  - 4 | Secondary - |
  - 5 | Primary + |
  - 6 | Primary - |

**Fig. 5 Pin assignment for terminal blocks**

**Terminal block X2**

**Pin**

- **Description**
  - 1 | Housing/shield |
  - 2 | Secondary center tap |
  - 3 | Secondary + |
  - 4 | Secondary - |
  - 5 | Primary + |
  - 6 | Primary - |

1) The colors and pins listed refer to MICRO-EPSILON MESSTECHNIK GmbH & Co. KG sensors.

**Pin assignment for terminal block X2, sensor connection**

**Pin**

- **Description**
  - 1 | Housing/shield |
  - 2 | Secondary center tap |
  - 3 | Secondary + |
  - 4 | Secondary - |
  - 5 | Primary + |
  - 6 | Primary - |

**Fig. 3 Table of the pin assignment for the sensor at terminal block X2, full bridge**

**Fig. 4 Table of the pin assignment for the sensor at terminal block X2, half bridge**

**Fig. 5 Pin assignment for terminal blocks**

**Fig. 6 Pin assignment for power supply and signal, 5-pin housing connector**

**Initial Operation**

Connect the sensor before starting the controller.

Ensure that the wiring of the sensor connections, signal cable and power supply connections are correct before connecting the controller to the power supply and turning it on.

Then switch on the power supply.

Set the controller to its basic setting.
### Menu Structure for the MSC7401 Controller

**Adjustment Mode: 2-point Adjustment**

<table>
<thead>
<tr>
<th>D1: Channel</th>
<th>D2: Channel</th>
<th>D3: Value</th>
<th>D4: Value</th>
<th>Next menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustment</td>
<td>E1</td>
<td>E2</td>
<td>Value</td>
<td>E1 level</td>
</tr>
</tbody>
</table>

- **D1: Channel**
  - Adjustment
  - Factory settings
  - Zero-point search

- **D2: E1**
  - Voltage
  - Current

- **D3: E2**
  - Voltage
  - Current

- **D4: Value**
  - 0 ... 10 V
  - 2 ... 10 V
  - 0 ... 5 V
  - 0.5 ... 4.5 V
  - 4 ... 20 mA
  - 0 ... 20 mA
  - 0 ... 10 mA

1. Move the measuring object to position X1, and change the output signal U1 with the appropriate voltage or current range.
2. Move the measuring object to position X2, and change the output signal U2 with the appropriate voltage or current range.

**Legend of the Menu Structure**

- LED orange
- LED red
- LED orange flashing
- LED red flashing
- LED green
- LED off
- SMR Start of measuring range
- MR Midrange
- EMR End of measuring range

### Menu Structure for the MSC7401 Controller, Adjustment Mode: Zero-point Search

1. Position X₀ must be > 10 % of the measuring range away from X₁.

**Legend of the Menu Structure**

- LED orange
- LED red
- LED orange flashing
- LED red flashing
- LED green
- LED off
- SMR Start of measuring range
- MR Midrange
- EMR End of measuring range

**Fig. 8 Menu structure for the MSC7401 controller, adjustment mode: 2-point adjustment**

**Fig. 9 Menu structure for the MSC7401 controller, adjustment mode: Zero-point search**

1. Position X₁ must be > 10 % of the measuring range away from X₀.