Supplement

CV-10 Extension Module for PR Sensors
1. Intended use

This extension module is designed for use with SPEKTRA’s CV-10 Mobile Calibrator only. It extends the CV-10’s functional range by enabling users to also calibrate piezoresistive (PR) sensors that are based on a Wheatstone bridge type of electrical circuit inside the sensor. The extension module provides the electrical excitation voltage for the sensor and amplifies the sensor’s output signal. The extension module is powered by the CV-10 via a connection to the extension port and neither needs nor allows any other external voltage supply.

The product must only be used for the intended purpose in its defined application area, as it is adapted to the respective circumstances. The risks of injury, material damage, and harm to the health of humans and animals are already reduced to the technically possible minimum through design measures and safety systems.

The product is intended solely for commercial use.

2. Technical Data

**Bridge Power Supply**

Voltage range

- symmetric: \( \pm 0 \, \text{V} \ldots \pm 10 \, \text{V} \)
- asymmetric: \( 0 \, \text{V} \ldots 10 \, \text{V} \)

Current: max. 20 mA

Excitation voltage: 4-wire measurement at the excitation voltage output or via sense wires inside the sensor

**Signal Amplifier**

Gain: 0 dB / 20 dB / 40 dB

- automatic gain control via firmware

Signal Output: max. \( \pm 10 \, \text{V} \)

Signal input (sensor): max. \( \pm 10 \, \text{V} \)

Offset: Offset measurement and compensation via firmware

Overload indication: >90% full scale signal (via digital signal for firmware)

Low pass filter: 30 kHz edge frequency with 3rd order Butterworth characteristics

Calibration Data: Correction data is stored inside the CV-10 PR module and read during initialization.
### Input / Output

- **Extension port**: Digital communication with CV-10 and power supply of the extension module
- **Signal output**: BNC connector
- **Signal input (sensor)**: Sub-D connector pin 1 and pin 2
- **Excitation voltage**: Sub-D connector pin 13 and pin 14
- **Excitation voltage sense wires**: Sub-D connector pin 7 and pin 8 (if available)

### Case

- **Dimensions**: 102 mm x 35 mm x 200 mm (W x H x D)
- **Weight**: 605 g
- **IP class**: IP52

All specifications are at laboratory temperature unless otherwise specified.

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**Note:** To operate the PR module, the CV-10 Mobile Calibrator must be running firmware version 1.2.6 or higher.

For further details regarding the set-up and operation of the PR module, please refer to the CV-10 Instruction Manual and the CV-10 Software Operation Manual.

### 3. Environmental conditions

To use the product safely and efficiently, the following environmental conditions have to be met:

#### Operation

- **Temperature**: 0 °C…50 °C
- **Relative humidity**: 20 %…100 %, no condensation
- **Max. altitude**: 2 000 m at 25 °C, 800 mbar

#### Storage and transportation

- **Temperature**: -25 °C…55 °C
- **Relative humidity**: 5 %…80 %, no condensation

Protect the product against long periods of heat, cold, direct sunlight, moisture and wet conditions during transport. Do not operate the product close to water, open fire sources or in potentially explosive environments, such as in the presence of flammable liquids, gases or dust. Only use the product in compliance with the specified environmental conditions.