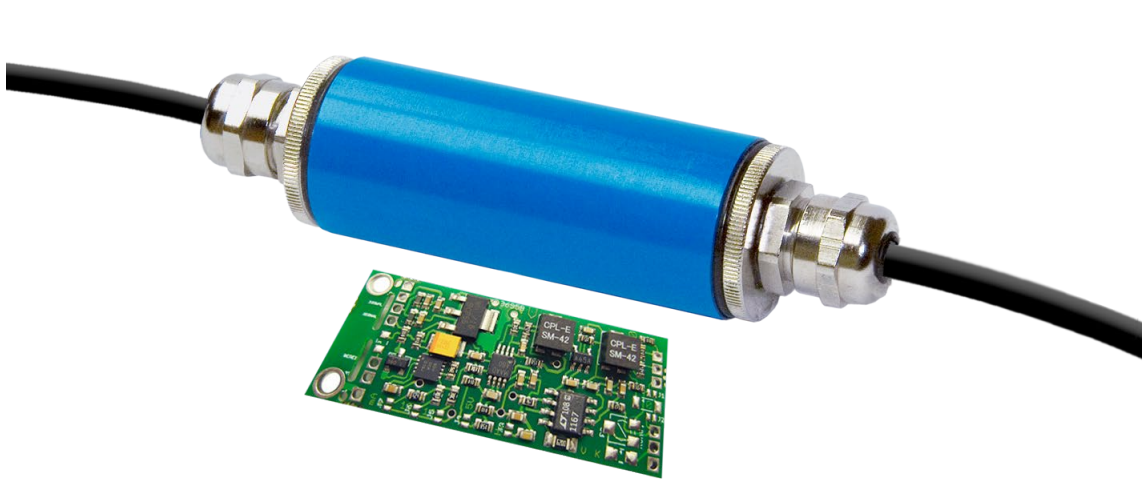


Strain Gauge Sensor-Interface LCV

Data sheet



Performance Features	Application
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- High accuracy
- Voltage or current output
- Direct connection to PLC
- Long input lead possibility from LCV to evaluation
- Integrable in large sensors as board
- Level of protection IP67

- Research and development
- Process measuring and control technology
- Automotive engineering
- Energy and environmental technology
- Mechanical engineering

Description

This sensor-interface was designed for the adaption of output signals between SG-Sensor and evaluation. The interference-prone SG-signals are raised to standardized output levels at the sensor, directly. By this, the noise immunity and the accuracy of measurement is decisively increased.

The LCV is connected between the supply line of the sensor and signal acquisition (e.g. PLC). The robust tube-housing with a high level of protection also allows operation in rough environments. A screw clamp is sufficient for the fixation. A circuit board module can be integrated for large sensors.

The supply of 12 ... 28VDC is suitable for automotive and industrial applications. High flexibility is ensured by many analog output versions.

For very slow measurements, a 50 Hz -3 dB filter can be pre-configured as an option.

An optional external control signal excitation allows to activate the control signal in the sensor (if available) with a regulating signal, externally. By this, the adjustment and the subsequent calibration can be checked at any time.

Scope of Delivery

If the LCV is ordered with a Lorenz-Sensor, it will be mounted and calibrated together exfactory. If the LCV is ordered without a sensor, an uncalibrated assembly set (amplifier module, tube-housing, screw connection) will be delivered. All output versions can be configured by solder jumpers. As an option, the amplifier module can be pre-calibrated to a value, determined by the customer. At initiation only the zero point must be adjusted.

Technical Data

Strain Gauge Sensor-Interface LCV

Type	LCV-U10	LCV-U5	LCV-I0	LCV-I4	LCV-I10	LCV-I12
Article-No. board ¹	100882	101051	101052	100892	101053	101054
Article-No. LCV in the measuring line	100430	100626	101177	100432	100956	101018

Evaluation Side

Output signal	$\pm 10V \leq 2 \text{ mA}$	$\pm 5V \leq 2 \text{ mA}$	0 ... 20 mA	4 ... 20 mA	10 \pm 10 mA	12 \pm 8 mA
Ripple U-out/I-out at 400 Ω	<10 mV					
Gain drift	<0.015 %/10 K		<0.02 %/10 K			
Zero point drift	<0.015 %/10 K		<0.02 %/10 K			
Linearity	<0.02 %					
Output resistance	<1 Ω		-			
Rated burden	-		max. 400 Ω			
Supply voltage	12 ... 28VDC					
Ripple of supply voltage	$\leq 100 \text{ mV RMS}$					
Current consumption	$\leq 70 \text{ mA}$					
Cable length LCV - evaluation	3 m (max. 10 m)		3 m (max. 100 m)			

Sensor Side

Sensor supply	5V \leq 20 mA short-circuit resistance					
Temperature coefficient of the excitation voltage	<25 ppm/K					
Input range	0.35 ... 3.5 mV/V					
Input resistance	$10^9 \Omega$					
Cable length LCV - sensor	1 m (max. 3 m)					

Miscellaneous

Cut-off frequency	1 kHz -3 dB					
Rated temperature range	10 ... 50 $^{\circ}\text{C}$					
Operating temperature range	0 ... 60 $^{\circ}\text{C}$					
Storage temperature range	-10 ... 70 $^{\circ}\text{C}$					
Dimensions (\varnothing x L)	25 x 115 mm (incl. screw joint)					
Level of protection	IP67					
Weight LCV in the measuring line	0.2					

Options

Article-No.	Description	Type
110564	mV/V adjusted rated characteristic value	mV/V
113512	Output signal 2.5 \pm 2.5V	2.5 \pm 2.5V
110651	Output signal 5 \pm 5V	5 \pm 5V
103760	Control signal excitation external 5 ... 28VDC	LCV/KS
100563	Filter 50 Hz -3 dB	LCV/50Hz
112712	Measuring range resistance	LCV/R
108200	Increased dynamics 5 kHz -3 dB	5 kHz -3 dB
108533	Increased dynamics 10 kHz -3 dB	10 kHz -3 dB

¹ Integrable in large Sensors

Calibrations mV/V²

Article-No.	Description	
401010	Proprietary calibration acc. to ISO 10012	10 steps
401011	Proprietary calibration acc. to ISO 10012	20 steps

² Lorenz-Standard:

- Supply voltage 5V, calibration range ± 1 mV/V in 10 steps, calibration range ± 2 mV/V in 10 or 20 steps
- Language of the Certificate: German and English
- Calibration at DC: Normal K3608, if so display above Keithley 2000 or Lorenz VS3 (Lorenz amplifier with USB interface)
- Calibration at 225 Hz: Normal K3608, if so display above HBM MGCplus + ML38
- Calibration at 225 Hz: Normal BN100A, if so display above HBM DMP40