PISeca Signal Evaluation

For Capacitive Single-Electrode Sensors

E-852

- Inexpensive system solution for PISeca capacitive sensors
- Excellent linearity thanks to integrated linearization function (ILS)
- Selectable bandwidth from 10 Hz up to 10 kHz
- Variable measuring range
- LED-bar measuring-range display for easy integration
- External synchronization for multi-axis applications

Integrated linearization system (ILS) for highest accuracy
In the electronics, an integrated linearization system assures highest accuracy. Compensates the influence of parallelism errors between the sensor and measurement surface and therefore guarantees excellent linearity (linearity error under 0.1 %).

External synchronization for multi-axis applications
When several sensor systems are used together, synchronization is simply done via the I/O lines of the PISeca electronics.

Specifications

	E-852.10	E-852.10A1
Function	Evaluation electronics for PISeca	Evaluation electronics for single-electrode capacitive sensors, remote operation
Channels	1	1

Sensor	E-852.10	E-852.10A1
Sensor type	Single electrode, capacitive	Single electrode, capacitive
Sensor bandwidth	10 / 3 / 0.3 kHz; 1.1 / 0.1 / 0.01 kHz (optional)	10 / 3 / 1 / 0.3 / 0.01 kHz
Extension factor for the measuring range*	1 and 2.5 (calibrated); 2 and 5 (optional)	1 (calibrated); 2 / 2.5 / 5 (on request)
External synchronization	Auto master-slave	Auto master-slave
Temperature stability	0.71 ±0.25 mV/K	0.2 mV/K

Electrical properties	E-852.10	E-852.10A1
Output voltage	-10 to 10 V / -5 to 5 V / 0 to 10 V (selectable)	-10 to 10 V / -5 to 5 V / 0 to 10 V (selectable)
Output signal	1 kΩ / 1 nF	1 kΩ / 1 nF
Supply voltage	±15 V (125 mA), 5 V (20 mA)	±15 V (220 mA), 5 V (20 mA)
Static resolution**	<0.001 % of the measuring range (RMS)	<0.001 % of the measuring range (RMS)
Dynamic resolution**	<0.002 % of the measuring range (RMS)	<0.002 % of the measuring range (RMS)
Noise factor***	0.14 pp/m √Hz	0.14 pp/m √Hz
Linearity in the nominal measuring range	<0.1 % (<0.2% for D-510.020)	<0.1 % (<0.2% for D-510.020)

Interfaces and operation	E-852.10	E-852.10A1
Sensor connection	LEMO ECP.00.650.NLL.543 socket, triaxial	LEMO ECP.00.650.NLL.543 socket, triaxial (on signal amplifier); Sub-D 9-pin, 10 m cable from signal amplifier to evaluation electronics, differential signal transmission
Signal output	BNC	BNC
Signal monitor	–	Test point on signal amplifier
Display and indicators	LED bar	Power On
Linearization	ILS	ILS

Miscellaneous	E-852.10	E-852.10A1
Operating temperature range	5 to 40 °C	5 to 40 °C
Mass	Evaluation electronics: 0.355 kg Power adapter E-852.PS2: 0.55 kg	Evaluation electronics: 0.355 kg Power adapter E-852.PS2: 0.55 kg Signal amplifier: 0.076 kg
Dimensions	Evaluation electronics: 80 mm × 130 mm × 40 mm Power adapter E-852.PS2: 146 mm × 76 mm × 43 mm	Evaluation electronics: 80 mm × 130 mm × 40 mm Power adapter E-852.PS2: 146 mm × 76 mm × 43 mm Signal amplifier: 55 mm × 70 mm × 20 mm
Target ground connector	Socket for 4-mm spring clip connector	Socket for 4-mm spring clip connector

*Extension factors refer to the nominal measuring range of the respective D-510 sensor probe
**Static: Bandwidth 10 Hz, dynamic: Bandwidth 10 kHz, cable length 1 m
***Specifications in ppm (parts per million), refer to the nominal measuring range
Ask about customized versions.

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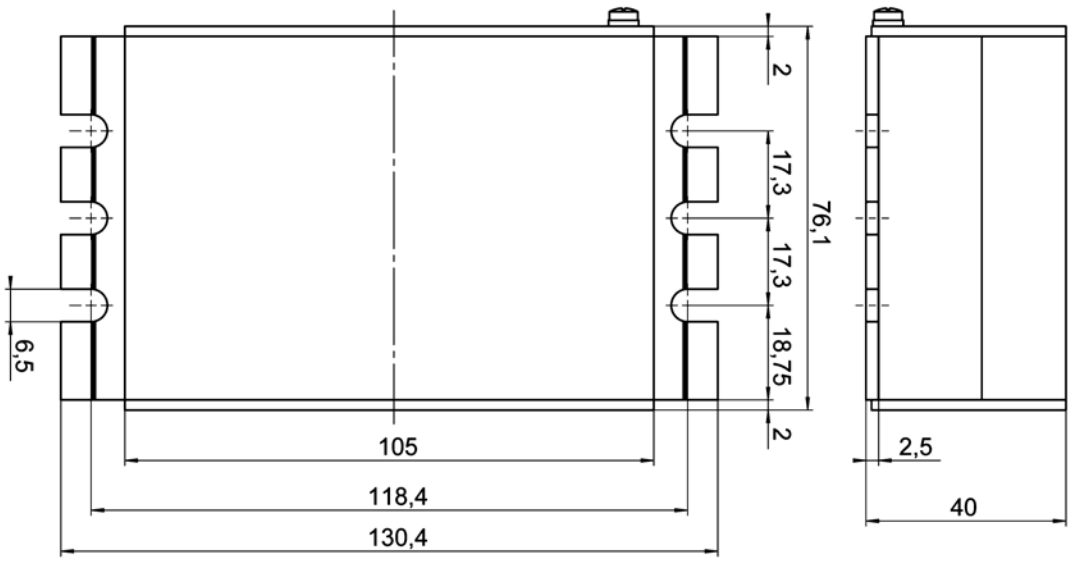
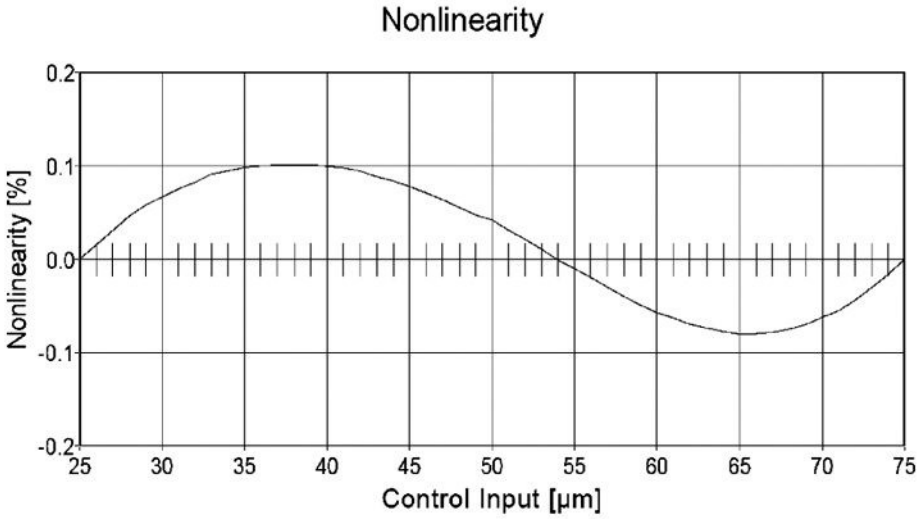
Drawings / Images



E-852.10, dimensions in mm



Excellent linearity thanks to the combination of E-852 evaluation electronics and D-510.050 sensor (in the nominal measuring range)

Ordering Information

E-852.10
PISeca Evaluation electronics for single-electrode capacitive sensors, 1 channel, including a low-noise power adapter

E-852.10A1
PISeca Evaluation electronics for single-electrode capacitive sensors, 1 channel, including external signal amplifier with 10 m cable and low-noise power adapter