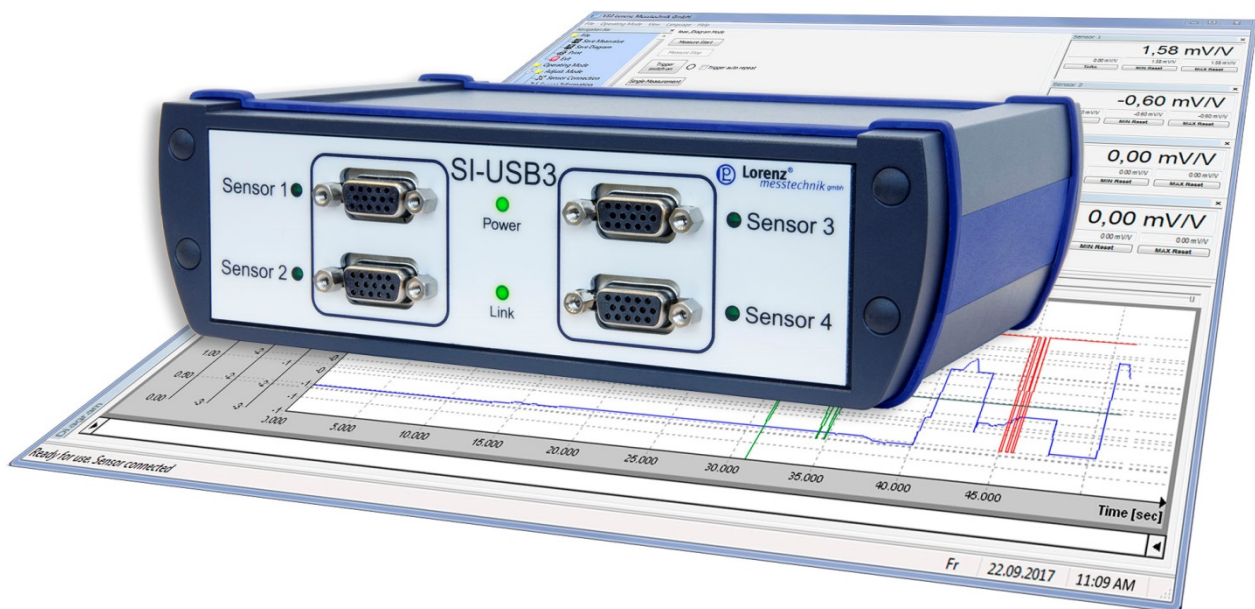




4 Channel USB-Sensor-Interface with Configuration- and Evaluation Software VS3

SI-USB3

- Competitive “Plug & Measure” Concept
- Easy Connection via PC USB-Port
- Fast Measurement of up to 5000 Measurements/s per Channel
- Full Synchronicity of all Measuring Channels
- Up to 16 Bit Resolution
- Input Ranges for mV/V, V and mA
- Digitally switchable analogue Input Filter
- Input Ranges for Linear Potentiometer and Temperature Probe PT100
- Input Ranges combinable with one another
- Adjustment and Control Signal Activation via Software
- Convenient Configuration- and Evaluation Software VS3 included in the Scope of Delivery
- Free LabVIEW- and DLL-Drivers enable Integration in own Software





Description

In practice, it often becomes necessary to quickly and easily acquire the sensor measuring signals in the immediate vicinity and to transmit them directly to a PC without additional amplifiers or converters.

This can be realized very well with the USB-Sensor-Interface SI-USB3 through its "Plug & Measure" concept. The USB connection allows very easy installation.

The sensor interface SI-USB3 is connected between sensor and PC. In this way, analog sensor signals will be digitized with up to 16 bit resolution.

By the measuring rate of 5000 measurements/s per measuring channel, high-dynamic measurements can be achieved. The measured values are transferred to a PC via the USB interface and visualized by means of software. If a control signal is integrated in the sensor, an automatic adjustment can be carried out and checked at any time (measuring chain monitoring).

Typical Applications:

- Mobile Test Measurements by Laptop
- Experimental Setups in Test Laboratories
- Measurement- and Control Facilities
- Diagnosis Measurements in Chemical Industries
- PC-based Recordings of Strain Characteristics in Biotechnology

Following sensor output signals can be digitally converted and conveniently displayed and evaluated via the free evaluation software:

USB/SG	Bridge Resistance (Full Bridge) 350 ... 5000 Ω Connection Technology 4-Wire Sensor Supply 4V ≤20 mA Input Range ±3 mV/V
USB/U5/U10	Sensor Supply 12V ≤80 mA Input Range ±5V/±10V Measurement Deviation 0.05% f. s.
USB/I20	Connection Technology 2- or 3-Wire Sensor Supply 12V ≤80 mA Input Range 0/4 ... 20 mA (Optional 10±10 mA/12±8 mA)
USB/Linear Potentiometer	Connection Technology 3-Wire Sensor Supply +5V ≤170 mA Input Range 30 ... 5000 Ω (+5V)
USB/Temperature Sensor PT100	Input Range -200 ... 860°C Connection Technology 4-Wire Sensor Supply 4V ≤20 mA Sensitivity 32 Digits / K

Many standard sensors, such as force-, torque-, displacement- and pressure sensors, linear potentiometers, temperature sensors PT100 etc., can be used with the SI-USB3. The sensor parameters can be stored in the SI-USB3. After a single parameterization, each sensor is automatically recognized by the software.

The voltage supply of the SI-USB3 is provided by an external mains adapter, or by a polarity-protected mains connector. The connected sensors are directly supplied with voltage through the measuring amplifier which eliminates the need for separate sensor supply voltage.

The low-pass filter 2nd order allows filtration of unwanted frequencies. Here you can distinguish between 4 cutoff frequencies.

The connection to LabVIEW, or integration into own programs is possible with the freely available driver package.

**Technical Data**

SI-USB3	Art.-No.	Sensor 1	Sensor 2	Sensor 3	Sensor 4
	116610				
Input Range Sensors 1 - 4					
±3 mV/V	116611				
±5V	116612				
±10V	116613				
0 ... 20 mA	116614				
4 ... 20 mA	116615				
10±10 mA	116616				
12±8 mA	116617				
30 ... 5000 Ω (+5V)	116618				
-200 ... 860°C	116619				

Order Example:

SI-USB3 with 2 USB-Sensor-Interfaces for SG-Sensors and 2 USB-Sensor-Interfaces for Pt100-Sensors, incl. Configuration and Evaluation Software VS3

Order-Code

116610-2*116611-2*116619

Evaluation Side

Supply Mains Adapter ¹ Output Mains Adapter Supply Voltage SI-USB3	Voltage	100 ... 240VAC 24VDC, 1.25 A 10 ... 30VDC ≤880 mA
Sensor Supply	SG/PT100/ U5/U10/I20 Potentiometer	4V ≤20 mA 12V ≤80 mA +5V
Measured Values	SG U5/U10 I20 PT100 Potentiometer	±3 mV/V = ±30000 Digits ±5V/±10V = ±25000 Digits 0/4 ... 20 mA = 0 ... 20000 Digits -200 ... 860°C = -6400 ... 27520 Digits 0 ... 5V = 0 ... 25000 Digits
Resolution	SG/PT100 I20 PT100 U5/Potentiometer U10	1 mV/V = 10000 Digits 1 mA = 1000 Digits 32 Digits / K 1V = 5000 Digits 1V = 2500 Digits
Zero Point	SG/U5/U10/I20/ Potentiometer/	0 Digits
Output Format		16 Bit signed Int.
Input Resistance	SG/U5/U10/ Potentiometer I20 app. ohmic resist.	>1 MΩ 62 Ω
Low-Pass Filter 2nd Order	Hz	30/300/1000/3000
Measuring Rate		max. 5000 Meas./s
Temperature Drift		4 Bit/10 K
Linearity Error		±32 Digits
Accuracy		±32 Digits

¹ Mains adapter included in scope of delivery at first order

**Miscellaneous**

Cable Length SI-USB3 - PC	3 m
Cable Length SI-USB3 - Sensor	3 m (max. 5 m)
Nominal Temperature Range	10 ... 40°C
Service Temperature Range	0 ... 50°C
Storage Temperature Range	-10 ... 70°C
Dimensions (L x W x H)	130 x 190 x 60 mm
Weight	1200 g
Material	Aluminum
Level of Protection	IP20
Electr. Connection	D-SUB-Socket, 15-pin USB-B-Socket
	SG/U5/U10/I20/Potentiometer/PT100 USB ²

Pin Assignment

15-pin		SG, U5, U10, I20, Potentiometer, PT100	
Pin 1	Ground (Supply 4V and 12V)	0V	<p>Top View</p>
Pin 2	+12V (active Supply)	12VDC	
Pin 3	NC	-	
Pin 4	Please do not connect anything	-	
Pin 5	Please do not connect anything	-	
Pin 6	Ground	0V	
Pin 7	NC	-	
Pin 8	Supply 4V	4VDC	
Pin 9	NC	-	
Pin 10	Control	L <2.0V; H >3.5V	
Pin 11	Signal+ (active or passive)	mV/V; ±5V; ±10V; 0/4 ... 20 mA	
Pin 12	Signal- (when active connect to ground)	0V	
Pin 13	Ground	0V	
Pin 14	NC	-	
Pin 15	+5V Reference Voltage	5VDC	

Options/Accessories

Article-No.	Type	Designation
115134	mV/V/±10V/0/4 ... 20 mA	Adjustment Measuring Amplifier with Simulator
113591	LCV-USB2/-USB3/SI-USB/-USB3/-RS485/-ETH/4.5 mV/V	Sensitivity ±4.5 mV/V per Channel
116620	SI-USB3/WB	Wall Mounting
116621	SI-USB3/TF	Tower Foot
113273	USB-A-Connector/USB-B-Connector, 3 m/PVC	USB Interface Cable
10293	KSSH15	D-SUB-Connector, 15-pin
10477	KDM5/A-KSSH15/A-3m/PVC	Connection cable for passive sensors, 3 m, with 5-pin female cable connector and 15-pin D-SUB- male cable connector
10365	KDM7/A-KSSH15/A-3 m/PVC	Connection cable for passive sensors, 3 m, with 7-pin female cable connector and 15-pin D-SUB- male cable connector
10269	KD6/A-KSSH15/A-3 m/PVC	Connection cable for passive sensors, 3 m, with 6-pin female cable connector and 15-pin D-SUB- male cable connector
10312	KD12/A-KSSH15/A-3 m/PVC	Connection cable for passive sensors, 3 m, with 12-pin female cable connector and 15-pin D-SUB- male cable connector
103075	KDM8/A-KSSH15/A-3 m/PVC	Connection cable for active sensors, 3 m, with 8-pin female cable connector and 15-pin D-SUB- male cable connector
10268	KD12/B-KSSH15/A-3 m/PVC	Connection cable for active sensors, 3 m, with 12-pin female cable connector and 15-pin D-SUB- male cable connector

² Interface cable SI-USB3 for evaluation, cable length 3 m included in scope of delivery at first order.

**Option Calibration mV/V³**

Article-No.	Designation	Steps	Norm
401010	Proprietary Calibration	10	ISO 10012
401011	Proprietary Calibration	20	

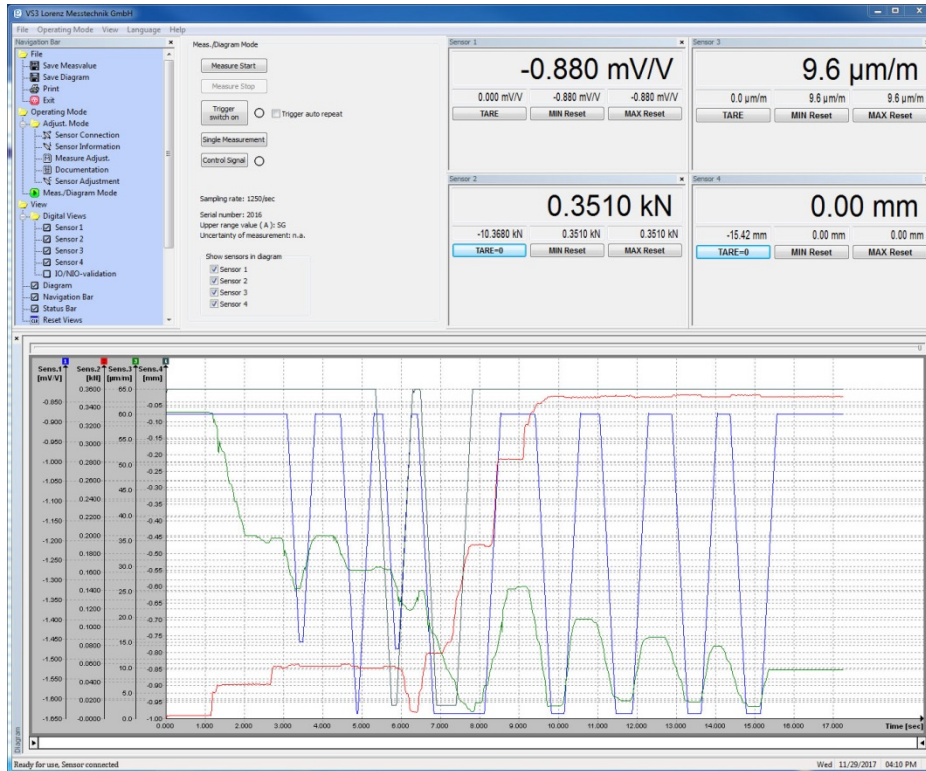
³ Lorenz-Standard:

- 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 VS2 (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

Configuration and Evaluation Software

VS3

- Comfortable Configuration and Evaluation Software
- Graphical Display of up to 4 Input Channels
- Automatic Scaling of Y-Axis
- Simultaneous Storage of up to 4 Input Channels
- Automatic Storage Function of the Measured Values as CSV- and BMP-File



Description

Configuration and evaluation software for analysis and graphical presentation on a PC.

The software allows direct read-in of measured data into a text file in CSV-Format through the USB-Port of a PC. This enables further analyses with a commercially available spreadsheet program at any time.

Technical Data

Type	VS3⁴
Interface	USB
Protocol	Lorenz standard protocol
System requirements	Windows [®] 7 - 10 32/64 Bit ⁵ Dual-Core ex 1.8 GHz (with Diagram)

Conversion in physical Variables	✓
Simultaneous Measurement	Up to 4 Input Channels
Graphical Display of the measured Variables	✓
Automated or manual storage in a CSV- and BMP-file	✓
Print-out of the Diagram with Date and definable Superscription	✓
Scaling Function of the Input variable to any Display Value with Unit	✓
Resetable min. Value Memory for any measured Variable	✓
Resetable max. Value Memory for any measured Variable	✓
Floating Averaging	✓
Tara for each measured Size	✓

⁴ Software/driver download: www.lorenz-sensors.com.

⁵ Windows[®] is either a registered brand or brand of the Microsoft Corporation in the USA and/or other countries.

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