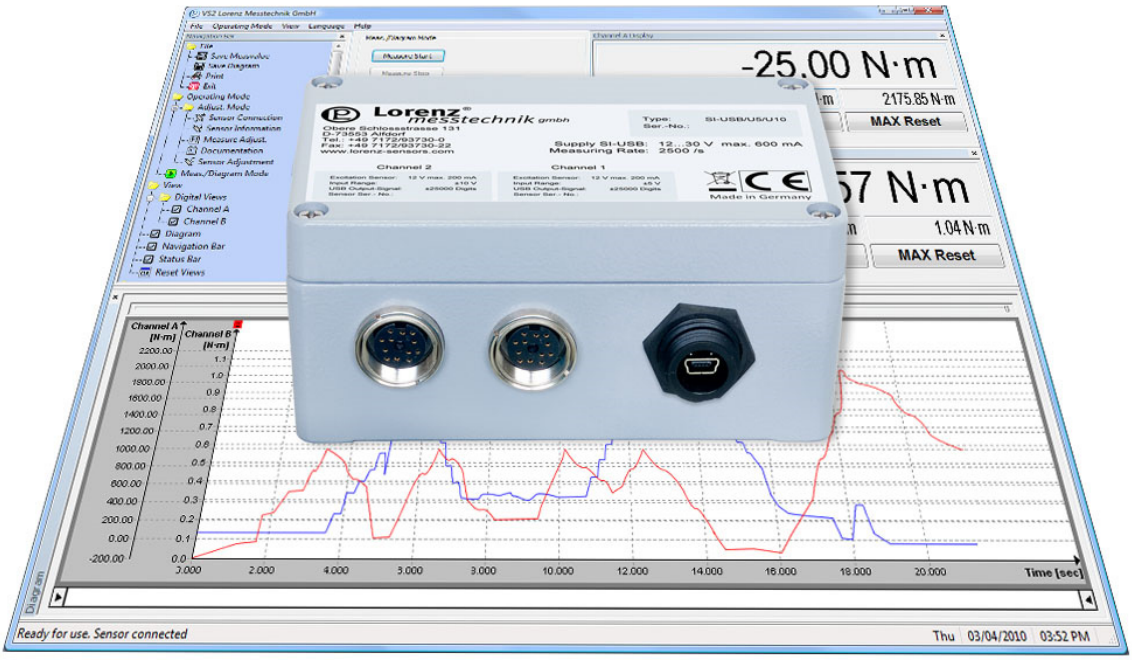
LORENZ MESSTECHNIK GmbH Obere Schloßstr.131 D-73553 Alfdorf ☎ +49 7172/93730-0 Fax +49 7172/93730-22

2 Channel USB-Sensor-Interface with Configuration and Evaluation Software

SI-USB

- Fast Measurement of up to 2500/s
- Up to 16 Bit Resolution
- Full Synchronism of both Measuring Channels
- Input Ranges for mV, V and mA
- Input Ranges combinable with each other
- Adjustment and Control Trigger via Software



Description

The sensor interface SI-USB is connected between the sensor and the PC. By this, analog sensor signals with up to 16 bit resolution are digitized.
Highly-dynamic are realizable with a measuring rate of 2500 measurements/sec per measurement channel. The measured values are transferred to a PC via the USB interface and are visualized through the software.
If a control signal is integrated in the sensor, an automatic adjustment can be carried out, which is checkable at any time (monitoring of the measuring chain).

Following sensor output signals can be digitally converted and conveniently displayed and evaluated by the freely available corresponding software:

USB/DMS	Excitation 5V ≤20 mA Input Range ±3 mV/V
USB/U5/U10	Excitation 12V ≤200 mA Input Range ±5V/±10V
USB/I20	Excitation 12V ≤200 mA Input Range 0/4 .. 20 mA

Many commercially available sensors such as force-, torque-, displacement- or pressure sensors can be used with the SI-USB. The sensor parameters can be stored in the SI-USB. After a one-time parameterization each sensor is automatically recognized by the software.

The voltage supply of the SI-USB occurs via an external power supply unit. Through the measuring amplifier, the connected sensors are being directly supplied with voltage directly, whereby a separate voltage of the sensors has been omitted.

Unwanted frequencies are filtered with the second-order low-pass filter. Here, a differentiation between 4 limit frequencies is possible.
The connection to LabVIEW or the integration into internal programs is possible with the freely available driver package.

Specifications

Type	SI-USB/DMS/DMS	SI-USB/U5/U5	SI-USB/U10/U10	SI-USB/I20/I20	SI-USB/DMS/U5
Article-No.	111963	111964	113022	111966	111973
Input Range	2* ±3 mV/V	2* ±5V	2* ±10V	2* 0/4 .. 20 mA	±3 mV/V; ±5V
Type	**SI-USB/DMS/U10**	**SI-USB/DMS/I20**	**SI-USB/U5/U10**	**SI-USB/U5/I20**	**SI-USB/U10/I20**
Article-No.	113021	111974	113023	111975	113024
Input Range	±3 mV/V; ±10V	±3 mV/V; 0/4 .. 20 mA	±5V; ±10V	±5V; 0/4 .. 20 mA	±10V; 0/4 .. 20 mA

Evaluation Side

Supply power supply[1] Output power supply Supply voltage SI-USB	Voltage	100 .. 240VAC 24VDC, 1.25 A 12 .. 30VDC ≤600 mA
Excitation sensor	Strain gauge U5/U10/I20	5V ≤20 mA 12V ≤200 mA
Measured values	Strain gauge U5/U10 I20	±3 mV/V = ±30000 Digits ±5V/±10V = ±25000 Digits 0/4 .. 20 mA = 0/4000 .. 20000 Digits
Resolution	Strain gauge U5 U10 I20	1 mV/V = 10000 Digits 1V = 5000 Digits 1V = 2500 Digits 1 mA = 1000 Digits
Zero point	Strain gauge/U5/ U10/I20	0 Digits
Output format		16 Bit Signed Int.
Input resistance	Strain gauge/U5/U10 I20 burden	>1 MΩ 62 Ω
Second-order low-pass filter	Hz	30/300/1000/3000
Measuring rate		Max. 2500 Meas./s
Temperature drift		4 Bit/10 K
Linearity error		±32 Digits
Accuracy		±32 Digits

Miscellaneous

Cable length SI-USB - sensor		1 m (max. 3 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)		125 x 80 x 57 mm
Weight		480 g
Level of protection		IP40
Electrical connection	Strain gauge U5/U10/I20 USB[2]	Female socket 6-pin Female socket 12-pin PX0446 IP68 B Mini USB

Options/ Accessories

Article-No.	Type	Designation
115134	mV/V/±10V/0/4...20mA	Adjustment amplifier with simulator
113591	LCV-USB2/SI-USB/-RS485/-ETH/4,5mV/V	Sensitivity ±4.5 mV/V per channel
10452	KS4	Male cable connector 4-pin
10302	KS6	Male cable connector 6-pin
10303	KS12	Male cable connector 12-pin
10296	KDM7/A-KS6/A-3m/PVC	Connection cable for passive sensors, 3 m, with 7-pin female cable connector and 6-pin male cable connector
10271	KD6/A-KS6/A-3m/PVC	Connection cable for passive sensors, 3 m, with 6-pin female cable connector and 6-pin male cable connector
10279	KDM8/A-KS12/B-3m/PVC	Connection cable for active sensors, 3 m, with 8-pin female cable connector and 12-pin male cable connector
10283	KD12/B-KS12/B-3m/PVC	Connection cable for active sensors, 3 m, with 12-pin female cable connector and 12-pin male cable connector

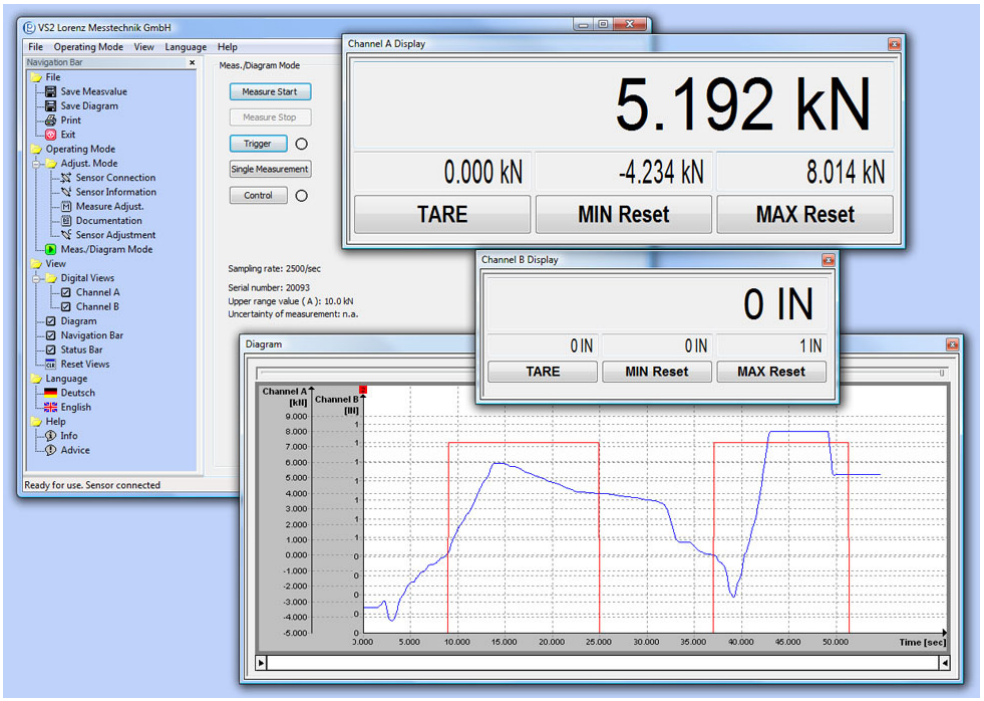
[1] At first delivery power supply in scope of delivery.
[2] At first delivery cable SI-USB evaluation in scope of delivery, cable length 3 m.

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Configuration and Evaluation Software

VS2

- Comfortable Configuration and Evaluation Software
- Graphical Presentation of up to 2 Input Channels max.
- Automatic Scaling of Y-axis
- Simultaneous Storage of up to 2 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.

Specifications

Type	**VS2**[3]
Interface	USB
Protocol	Lorenz standard protocol
System requirements	Windows® '03/ '08/ Vista/ 7/ 8 32/64 Bit[4] Dual-Core ex 1.8 GHz (with diagram)

Conversion in physical variables	✓
Simultaneous measurement	Up to 2 input channels
Graphical presentation of the measured variables	✓
Automatic or manual storage in a CSV- and BMP-file	✓
Print-out of the diagram with date and definable headline	✓
Scaling function of the input variable to any display value with unit	✓
Resettable minimum value memory for any measured variable	✓
Resettable maximum value memory for any measured variable	✓
Variable average determination	✓
Tare for each measured value	✓

[3] Software/driver download: www.lorenz-sensors.com.
[4] Windows® is either a registered brand or brand of the Microsoft Corporation in the USA and/or other countries.
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