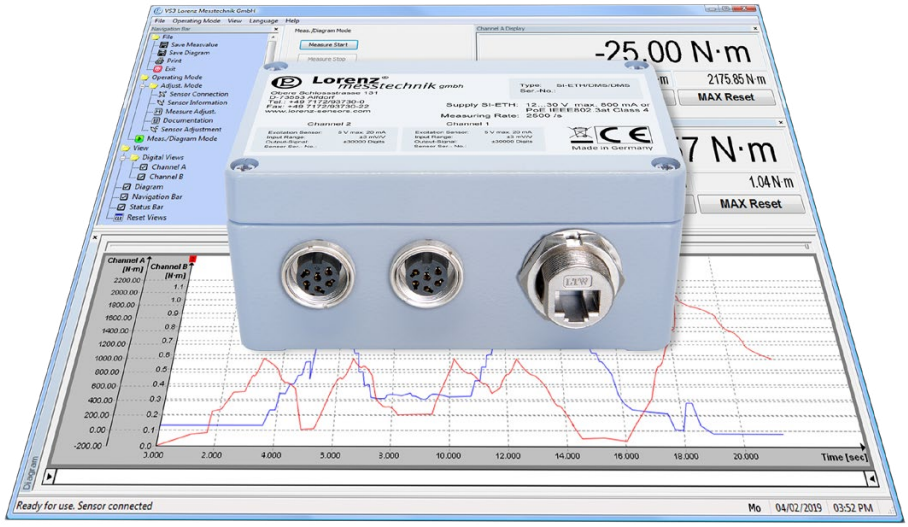
Lorenz® messtechnik gmbh

Data sheet

2 Channel Ethernet-Sensor-Interface SI-ETH with Configuration and Evaluation Software



Performance Features

- Fast measurement of up to 2500 meas./s per measuring channel
- Up to 16 bit resolution
- Input ranges for mV, V and mA
- Full synchronism of both measuring channels
- Input ranges combinable with each other
- Adjustment and control trigger via software
- Voltage supply via PoE or separate mains adapter

Application

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

Description

The sensor interface SI-ETH connects sensor and PC through an IP-based Ethernet. In this way, analog sensor signals will be digitized with up to 16 bit resolution.
By the measuring rate of 2500 measurements/s per measuring channel, high-dynamic measurements can be achieved. The measured values are transferred to a PC via the Ethernet 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).
Following sensor output signals can be digitally converted and conveniently displayed and evaluated via the free evaluation software:

.../DMS (Strain gauges)	Input Range ±3 mV/V (Excitation 5V ≤20 mA)
.../U5/U10	Input Range ±5V/±10V (Sensor supply 12V ≤200 mA)
.../I20	Input Range 0/4 ... 20 mA (Sensor supply 12V ≤200 mA)

Many standard sensors, such as force-, torque-, displacement or pressure sensors can be used with the SI-ETH. The sensor parameters can be stored in the SI-ETH. After a single parameterization, each sensor is automatically recognized by the software.
The voltage supply of the SI-ETH is provided by an external mains adapter or with PoE via the network cable. Through the measuring amplifier, the connected sensors are directly supplied with voltage, so a separate supply of the sensors is omitted.
Unwanted frequencies are filtered with the second-order low-pass filter. Here you can distinguish between 4 cutoff frequencies.
The connection to LabVIEW or the integration into internal programs is possible with the freely available driver package.

Technical Data

Ethernet-Sensor-Interface SI-ETH					
Type	**SI-ETH/DMS/DMS**	**SI-ETH/U5/U5**	**SI-ETH/U10/U10**	**SI-ETH/I20/I20**	**SI-ETH/DMS/U5**
Article-No.	114907	114908	114909	114910	114911
Input range	2 x ±3 mV/V	2 x ±5V	2 x ±10V	2 x 0/4 ... 20 mA	±3 mV/V; ±5V
Measured values	±30000 digits	±25000 digits	±25000 digits	0 ... 20000 digits	±30000 digits; ±25000 digits
Resolution	1 mV/V ≙ 10000 digits	1V ≙ 5000 digits	1V ≙ 2500 digits	1 mA ≙ 1000 digits	1 mV/V ≙ 10000 digits; 1V ≙ 5000 digits
Type	**SI-ETH/DMS/U10**	**SI-ETH/DMS/I20**	**SI-ETH/U5/U10**	**SI-ETH/U5/I20**	**SI-ETH/U10/I20**
Article-No.	114912	114913	114914	114915	114916
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
Measured values	±30000 digits; ±25000 digits	±30000 digits; 0 ... 20000 digits	±25000 digits	±25000 digits; 0 ... 20000 digits	±25000 digits; 0 ... 20000 digits
Resolution	1 mV/V ≙ 10000 digits; 1V ≙ 2500 digits	1 mV/V ≙ 10000 digits; 1 mA ≙ 1000 digits	1V ≙ 5000 digits; 1V ≙ 2500 digits	1V ≙ 5000 digits; 1 mA ≙ 1000 digits	1V ≙ 2500 digits; 1 mA ≙ 1000 digits
Evaluation Side					
Zero point	0 digits				
Output format	16 bit signed int.				
Input resistance	>1 MΩ (only for DMS/U5/U10)				
Rated burden	62 Ω (only for I20)				
Second-order low-pass filter	30/300/1000/3000 Hz				
Measuring rate	max. 2500 meas./s				
Temperature drift	4 bit/10 K				
Linearity error	±32 digits				
Accuracy	±32 digits				
Supply voltage of mains adapter[1]	100 ... 240VAC				
Output mains adapter	24VDC, 1.25 A				
External supply voltage	12 ... 30VDC <800 mA				
PoE supply voltage	or IEEE802.3at Class 4				
Sensor Side					
Sensor supply	Strain gauges (DMS): 5V ≤20 mA U5/U10/I20: 12V ≤200 mA				
Cable length SI-ETH - Sensor	1 m (max. 3 m)				
Miscellaneous					
Electrical connection	Strain gauges (DMS): Female socket 6-pin U5/U10/I20: Female socket 12-pin Ethernet[2]: RJS-5EBMMM-SL7E02 (RJ45)				
Rated temperature range	10 ... 40 °C				
Operating temperature range	0 ... 50 °C				
Storage temperature range	-10 ... 70 °C				
Dimension (L x W x H)	125 x 80 x 57 mm				
Level of protection	IP40				
Weight	0.5 kg				

Options

Article-No.	Description	Type
115134	Adjustment amplifier with simulator	mV/V / ±10V / 0/4 ... 20 mA
113591	Input range ±4.5 mV/V per channel	LCV-USB3/SI-USB/-RS485/-ETH/SI-USB3/4.5 mV/V

[1] Mains adapter included in scope of delivery at first order
[2] At first delivery cable SI-ETH evaluation in scope of delivery, cable length 5 m

Accessories

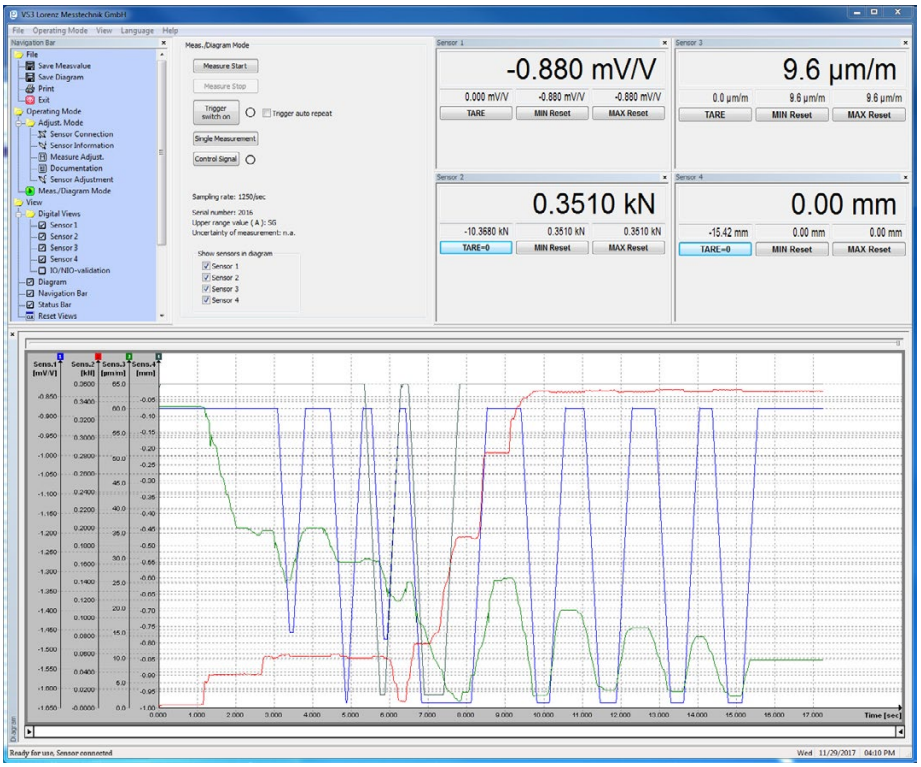
Article-No.	Description	Type
10302	Male cable connector 6-pin	KS6
10303	Male cable connector 12-pin	KS12
10296	Connection cable for passive sensors, 3 m, with 7-pin female cable connector and 6-pin male cable connector	KDM7/A-KS6/A-3m/PVC
10271	Connection cable for passive sensors, 3 m, with 6-pin female cable connector and 6-pin male cable connector	KD6/A-KS6/A-3m/PVC
10279	Connection cable for active sensors, 3 m, with 8-pin female cable connector and 12-pin male cable connector	KDM8/A-KS12/B-3m/PVC
10283	Connection cable for active sensors, 3 m, with 12-pin female cable connector and 12-pin male cable connector	KD12/B-KS12/B-3m/PVC
115523	PoE power-supply-injector for voltage supply	PoE12-HP

Calibrations mV/V[3]

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

[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 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

Configuration and Evaluation Software VS3



The configuration and evaluation software serves for easy evaluation and graphical visualisation of the evaluated data on a PC.
The software allows direct read-in of measured data into a text file in CSV-format through the Ethernet interface. This enables further analyses with a commercially available spreadsheet program at any time.

Technical data	
Type	VS3[4]
Interface	ETH
Protocol	Lorenz Standard Protocol
System requirements	Windows® 7 - 10 32/64 Bit[5] Dual-Core from 1.8 GHz (with diagram)

Highlights at a glance	
Conversion in physical values	✓
Simultaneous measuring	Up to 2 input channels with SI-ETH
Automatic scaling of y-Axis	✓
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	✓
Resettable minimum value memory for each measured value	✓
Resettable maximum value memory for each measured value	✓
Floating averaging	✓
Simple evaluations (OK/NOK)	✓
Tara for each measured Size	✓

[4] Software/driver download: https://www.lorenz-messtechnik.de/phplogin/login_en/html/software.php
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