Signal conditioner

SD20

"*Plug and Play*" USB signal conditioner for industrial, laboratory and academic applications
Quick and simple real time readout visualization and signal sample acquisition

- Compatible with linear displacement transducers, pressure sensors, load cells, inclinometers, among other sensors.
- Direct power supply from the USB bus for both conditioner and sensor, without the need of external power supply.
- SD20 DataLogger software included for easy readout visualization and data sample acquisition.
- State-of-the-art signal conditioner featuring a 24-bit high precision A/D converter and internal linearization lookup table with more than 500,000 reference points.
- Open communication protocol, allowing user application development and connectivity with many commercial software.

www.metrolog.net
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Using the SD20 - Steps 1-2-3

1. The SD20 signal conditioner is supplied to the user paired with a specific transducer. All transducer's characteristics and calibration data is saved into the device flash memory prior shipment.

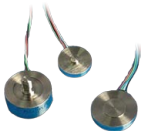
2. The user receives the device ready to use. The only required steps are simple cable connection and software installation (available on supplied CD-ROM or at Metrolog's web site).

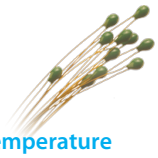
3. All done. The user may start up the SD20 DataLogger software to display the sensor readouts and to acquire data samples. Optionally it is possible to use other compatible commercial software or even develop new applications.

Technical Data

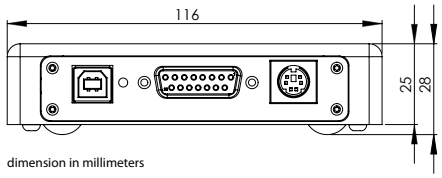
Communication Interface	USB (Universal Serial Bus 2.0) with UART serial port virtualization.
Sensor compatibility	Linear displacement sensor, pressure sensors, load cells, among others.
Linearization	Sensor signal linearization based on lookup table (*LUT*) with total of 524,288 reference points. Linear interpolation between look-up table (*LUT*) reference points. Modeling and linearization point generation provided by SD20ConfDiag software.
LVDT signal conditioner (SD20-LVDT model only)	Sine wave oscillator circuit (5kHz) with low harmonic distortion for sensor excitation. Adjustable excitation signal by factory based on specific transducer requirement (1,7 to 5VRMS). Ratiometric LVDT signal processing with low thermal drift (500Hz bandwidth).
Analog to Digital converter	24-bit high precision A/D converter with precision voltage reference. Primary data sample rate selectable by software from 6.8 to 3500 samples per second.
Effective digital data throughput	Software selectable transfer rate from 6.88 to 2150 reads/s, based on selected primary and secondary filter parameters.
Process control tolerance limits	2 adjustable tolerance limits (upper and lower) with digital output port signaling.
Digital Input/Output interface	Digital input interface: 3 optocoupled input ports. Function defined by user. Digital output interface: 2 open-coletor outputs with pull-up. Function defined by user.
Power Supply	4.5 to 5.5V_{DC}, 400mA, supplied direct from the USB bus (or external USB compatible power supply)
Storage temperature/operation	10°C/50F to 70°C/158F (storage), 10°C/50F to 50°C/122F (operation)
Protection Class	IP50, IEC 60529
Dimensions/Weight	116 x 80 x 28 mm / 4.6" x 3.2" x 1.1". 140g / 5oz

Sensor compatibility

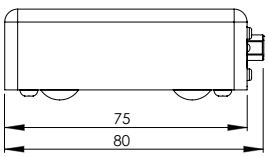




	LVDT	Pressure	Inclinometers	Load Cells	Temperature
Measurement of	Linear displacement	Absolute and gauge pressure	Inclination and angular deviation	Tensile and compression forces	Environment and surface temperature
Range	0.26 mm up to 940 mm (model specific)	1 psi up to 25,000 psi (model specific)	±2° up to ±60° (model specific)	750gf up to 2,2MN (model specific)	Application dependant
Typical applications	Floor shop or laboratory dimensional quality control, deformation tests, instrument accuracy check.	Industrial process monitoring, leakage tests, laboratory tests.	Lasers leveling, Wheel alignment, trailers levelling, platform monitoring.	Weight measurements, industrial force control, tensile tests.	Industrial process monitoring, environmental temperature monitoring, chemical mixture monitoring.



dimension in millimeters



Technical specifications are subject to change without notice. Pictures, photos and diagrams merely illustrative.
Detailed technical data, application examples and other informations available at
http://www.metrolog.net/sd20

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