

TECHNICAL REFERENCE MANUAL

DSI ADAPTERS V25-3



2.3.1. Features of DSI adapters:

- **EXTEND ANALOG INPUTS:** DSI adapters are compatible with any Dewesoft amplifier with a DSUB-9 analog input, independent of the product family. They will fit SIRIUS DAQ system, KRYPTON DAQ modules, IOLITE DAQ and Control System, MINITAURS or DEWE-43 DAQ instrument.
- **PLUG-AND-PLAY WITH TEDS:** All DSI adapters have a TEDS chip built-in for automatic sensor detection and plug-and-play setup. Just connect the sensor to the DSI adapter and DSI adapter to one of our DSUB-9 analog inputs and everything from scaling, units, calibration data, etc. will be configured automatically.
- **COMPACT AND RUGGED:** All electronics are built into small and rugged DSUB-9 aluminum housing with screw connectors to firmly screw adapters to the analog input channel.



Hint

When isolation is required, you must use the DSI-adapters on isolated DewesoftX® devices: e.g. Sirius modules.

All DSI-adapters are the size of a DSUB-9 housing, which contains the electronics as well as the sensor connector. The miniature electronics of each DSI sensor also contain a TEDS chip in which the identification, calibration and configuration data of the DSI are stored. TEDS data are read automatically by the DewesoftX® software and are immediately applied to the channel setup.



Hint

When using DSI® adapters, DewesoftX® can read the TEDS information of the adapter and also the TEDS information of any sensors that are connected to the adapter (the old MSI adapters could not read the TEDS of the connected sensor).

*The Bridge Completion Adapters are available in a separate [technical reference manual](#).

2.4. DSI: General Specifications

Connectors	
DAQ interface connector	DB9 Male
Sensor connector	See individual adapter specification
Environmental	
Operating Temperature	-10 to 60 °C
Storage Temperature	-40 to 85 °C
Humidity	5 to 95 % RH non-condensing at 50 °C
IP rating	IP50
RFI susceptibility	±0.5 % span error at 400 MHz, 5 W, 3 m
Shock & Vibration	Vibration sweep sinus (EN 60068-2-6:2008) Vibration random (EN 60721-3-2: 1997 - Class 2M2) Shock (EN 60068-2-27:2009) MIL-STD-810D

2.4.1. Calibration

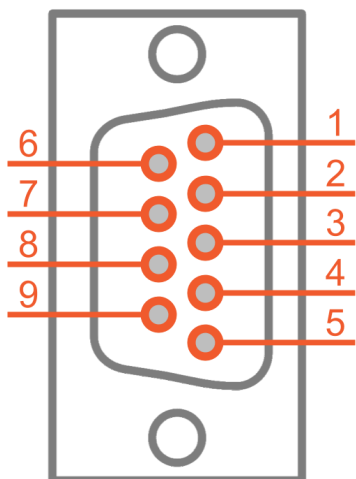
The DSI-adapters are calibrated at 23 °C ± 3 °C and meet their specifications when leaving the factory. The time interval for calibration depends on environmental conditions. A two year calibration interval is recommended.



Important

Total measurement accuracy depends on the adapter accuracy and host amplifier accuracy!

2.4.2. DSI: Pin-out



DSI connector: pin-out (DSUB-9 male)

Pin	Name	Description
1	Exc +	Excitation +
2	In+	Input +
3	Sns-	Sense -
4	GND	Ground
5	N.C.	Not connected
6	Sns+	Sense +
7	In-	Input -
8	Exc-	Excitation -
9	TEDS	TEDS

2.4.3. Environmental



Warning

All DSI® specifications within this manual are valid at 25 °C.
All DSI-adapters are produced according to ISO 9001 and ISO 14001.

2.4.4. DSI adapters / TEDS sensor support

Since there is an inbuilt TEDS device in the adapter itself and if ☒ DSI adapters/TEDS sensors under hardware setup are selected, adapter will be recognised and proper EXC. Voltage will be set automatically.

Please check if you are using the latest software where LVDT Adapter is supported.

2.12. DSI-20mA/DSIw-20mA

The DSI-20mA and DSIw-20mA adapters allow current measurement of up to 20mA. It uses a 50 Ω shunt resistor with 0.01 % accuracy and 0.2 ppm/K temperature drift (0.05 ppm/K in temperature range 0 °C to 60 °C). This is a product made for sensing current from industrial sensors with 4-20 mA output. DSIw-20mA is a waterproof adapter suited for mounting on a SIRIUSw or KRYPTON STG.



DSI-20mA

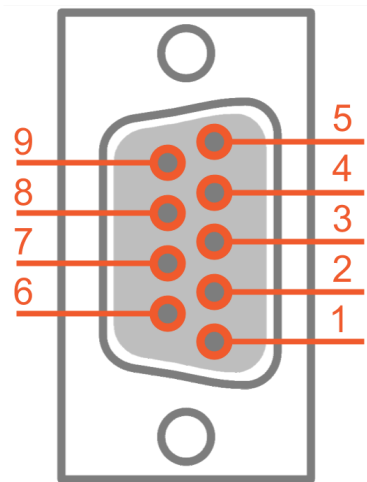


DSIw-20mA

2.12.1. DSI-20mA/DSIw-20mA Specifications

Inputs specifications	DSI-20mA	DSIw-20mA
Input connector type	SMD terminal block with push-buttons (Direct wire: 0.2 ... 0.75 mm ² / 24 ... 18 AWG)	Waterproof DSUB9 female connector
Input range	20 mA	
Shunt Resistor	50 Ω , Metal Foil	
Input accuracy	Calibrated to ± 0.01 %, calibration in TEDS (uncalibrated ± 0.05 %)	
Temperature Coefficient	± 0.05 ppm/ $^{\circ}$ C typical (0 $^{\circ}$ C to +60 $^{\circ}$ C) ± 0.2 ppm/ $^{\circ}$ C typical (-55 $^{\circ}$ C to +125 $^{\circ}$ C)	
Power Rating	250 mW (do NOT exceed maximum rating!)	
TEDS	1024-bit, 1-Wire EEPROM	
Environmental rating	IP20	IP67

2.12.4. DSIw-20mA Output connector pinout

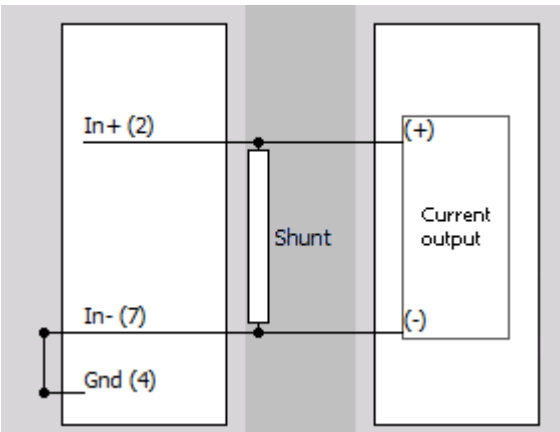


STG connector: pin-out (DSUB-9 female)

Pin	Name	Description
1	Exc +	Excitation +
2	In+	Input +
3	Sns-	Sense -
4	GND	Ground
5	N.C.	Not connected
6	Sns+	Sense +
7	In-	Input -
8	Exc-	Excitation -
9	TEDS	TEDS

2.12.5. DSI-20mA Connection diagrams

External direct shunt



External loop powered shunt

