Automotive
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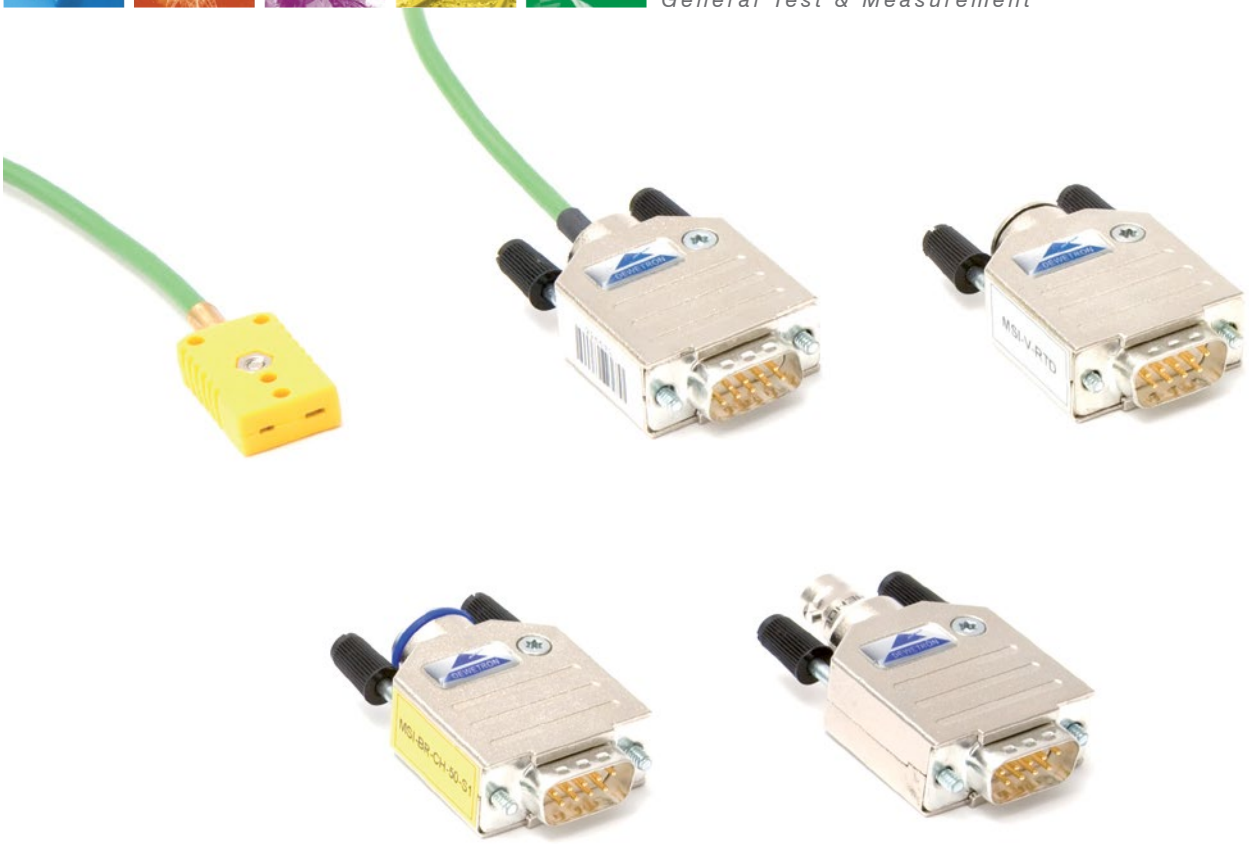
General Test & Measurement



Modular Smart Interfaces

MSI Series

Modular Smart Interfaces (MSI) bring an expanded level of flexibility to your DEWETRON measurement system. MSIs expand the functionality of many amplifier modules and enable you to use a bridge amplifier (e.g. DAQP-STG) for measuring also IEPE®, Thermocouple, Pt100 to Pt2000, charge or voltage up to 200 V.

All MSI's are the size of a SUB-D-9 housing, which contains the electronics as well as the sensor connector.

The miniature electronics of each MSI sensor also contain an EEPROM, in which the identification and calibration data of the MSI are stored. Both are read automatically by the DEWESoft software and entered accordingly into the setup.

Key Features

- *Expand functionality of bridge and voltage inputs*
- *Automatically detected*
- *Easy channel setup in the right engineering units*
- *Versions for voltage, thermocouple, RTD, IEPE® and charge sensors*

As soon as the MSI is connected to a voltage or bridge amplifier module of DAQP or MDAQ series, DEWESoft software recognizes it and automatically modifies the amplifier setup - for example a voltage input is changed to IEPE® input - so that user errors are avoided and the correct scaling can be directly applied.

Selection Guide

MSI Series

Modular Smart Interfaces for HSI, DAQP and MDAQ modules						
	MDAQ-SUB-STG-D	**MDAQ-SUB-BRIDGE-D**	**MDAQ-SUB-V-200-D**	**DAQP-STG-D**	**DAQP-LV-D**	**HSI-LV**
MSI-BR-ACC 	✓	✓	-	✓	-	-
	Isotron (constant current powered) adapter for MDAQ-SUB-BRIDGE / -STG modules with DB9 connector Excitation current 4 mA at 21 V, High pass filter 1.5 Hz, BNC connector Bandwidth and ranges are defined by connected amplifier Automatic adapter identification					
MSI-BR-V-200 	✓	✓	-	✓	-	-
	200 V input adapter for MDAQ-SUB-BRIDGE / -STG modules with DB9 connector Differential input configuration, BNC connector Bandwidth and ranges are defined by connected amplifier Automatic adapter identification					
MSI-BR-RTD 	✓	✓	-	not needed	-	-
	Pt100, Pt200, Pt500, Pt1000 and Pt2000 adapter for MDAQ-SUB-BRIDGE / -STG modules with DB9 connector 2, 3 and 4 wire connection methods, 5-pin Binder 712 series connector Automatic adapter identification					
MSI-BR-CH-x 	✓	✓	-	✓	-	-
	Charge input interface for DAQP-STG and MDAQ-SUB-BRIDGE / -STG with DB9 connector Range up to 50000 pC, AC coupled with 0.07 Hz, BNC signal connection Max. 100 kHz bandwidth (dependent on the max. bandwidth of the amplifier) Automatic adapter identification					
MSI-BR-TH-x 	✓	✓	-	✓	-	-
	isolated TC sensor			any TC sensor		
	Thermocouple type K / J / T adapter for DAQP-BRIDGE-x and MDAQ-SUB-BRIDGE / -STG modules with DB9 connector For use with **isolated** thermocouple sensors only ! (except in combination with DAQP-BRIDGE-A*) High accuracy cold junction reference measurement, 1 m thermo cable with Mini TC connector Automatic adapter identification					
MSI-V-ACC 	-	-	✓	-	✓	✓
	Isotron (constant current powered) adapter for DAQP-LV and MDAQ-SUB-V-200 modules with DB9 connector Excitation current 4 mA at 21 V, High pass filter 1.5 Hz, BNC connector Bandwidth and ranges are defined by connected amplifier Automatic adapter identification					
MSI-V-RTD 	-	-	✓	-	✓	✓
	Pt100, Pt200, Pt500 and Pt1000 adapter for DAQP-LV and MDAQ-SUB-V-200 modules with DB9 connector 2, 3 and 4 wire connection methods, 5-pin Binder 712 series connector Automatic adapter identification					

MSI-BR-ACC

Accelerometer amplifier for MDAQ-BRIDGE /-STGx and DAQP-STG

- *Support of IEPE® sensors*
- *AC coupled measurement*
- *Automatically identification by TEDS (Transducer Electronic Datasheet)*
- *Sensor connection: BNC*

Specifications

	MSI-BR-ACC		
Sensor connection	BNC		
Supported sensors	IEPE®		
Sensor excitation	4 mA ±10 % (MSI-BR-ACC-S2 and MSI-BR-ACC-S3: 6 mA)		
Compliance voltage	>23 V		
Input coupling	AC		
Accuracy 30 Hz to 30 kHz	0.2 %**		
Gain drift	50 ppm/ °C		
Max. input offset	12 mV		
Input impedance	1 MΩ		
Supply voltage	±5 V (±1 %)		
Power consumption	max. 380 mW		
Host amplifier	**DAQP-STG**	**MDAQ-STG**	**MDAQ-BRIDGE**
Isolation	350 V_{DC}	not isolated	not isolated
Bandwidth	300 kHz	30 kHz	30 kHz
Lowpass filter	10 Hz to 300 kHz	with MDAQ-FILT	with MDAQ-FILT
Ranges	10000 mV; 5000 mV; 2000 mV; 1000 mV 500 mV; 200 mV; 100 mV	10000 mV; 5000 mV; 2500 mV; 1250 mV 1000 mV; 500 mV 250 mV; 200 mV; 100 mV	10000 mV; 5000 mV; 2500 mV; 1250 mV 1000 mV; 500 mV 250 mV; 200 mV; 100 mV
Typical SNR @ 30 kHz bandwidth			
200 mV	80 dB	80 dB	80 dB
1000 mV	90 dB	95 dB	95 dB
High pass filter			
MSI-BR-ACC	1.4 Hz; 3 Hz*; 10 Hz*	1.4 Hz; 3 Hz*; 10 Hz*	3.2 Hz; 10 Hz*
MSI-BR-ACC-S1	0.16 Hz; 3 Hz*; 10 Hz*	0.16 Hz; 3 Hz*; 10 Hz*	0.32 Hz; 3 Hz*; 10 Hz*
MSI-BR-ACC-S2	1.4 Hz; 3 Hz*; 10 Hz*	1.4 Hz; 3 Hz*; 10 Hz*	3.2 Hz; 3 Hz*; 10 Hz*
MSI-BR-ACC-S3	0.16 Hz; 3 Hz*; 10 Hz*	0.16 Hz; 3 Hz*; 10 Hz*	0.32 Hz; 3 Hz*; 10 Hz*
TEDS	For adapter identification and calibration data; IEPE® sensor TEDS is not supported.		
Amplifier settings	Excitation: 10 V; Measurement: Voltage; Range: ±0.1 to ±10 V; automatically selected by software		

*) Software filter available in DEWESoft 7 only.
**) might be reduced through A/D card accuracy or system bandwidth.

MSI-BR-V-200

Adapter for voltage measurement (up to 200 V) with MDAQ-BRIDGE /-STGx and DAQP-STG

- *Programmable ranges from ±0.4 V to ±200 V*
- *Differential input*
- *Bandwidth: up to 200 kHz*
- *High signal noise ratio*
- *Automatically identification by TEDS (Transducer Electronic Datasheet)*
- *Sensor connection: BNC*

Specifications

	MSI-BR-V-200		
Sensor connection:	BNC		
Input attenation:	50 ±0.5 %		
Input type:	differential		
Common mode voltage range:	± 200 V		
Input overvoltage protection:	± 250 V		
Input impedance In+:	1 MΩ		
Input impedance In-:	1 MΩ		
Gain drift:	typ. 25 ppm/K (max. 40 ppm/K)		
Input Offset drift:	200 µV/K		
Host amplifier:	**DAQP-STG**	**MDAQ-BRIDGE /-STG**	**DEWE-43 / DEWE-101**
Isolation:	350 V_{DC}	not isolated	not isolated
Bandwidth (-3dB):	200 kHz	30 kHz	44 kHz
Lowpass filter:	10 Hz to 300 kHz	with MDAQ-FILT	n.a.
Ranges:	±200 V; ±100 V; ±50 V; ±40 V; ±20 V*; ±10 V*; ±8 V*; ±4 V*; ±2 V*; ±1 V*; ±0.8 V*; ±0.4 V*	±200 V; ±100 V; ±50 V; ±40 V; ±20 V*; ±10 V*; ±8 V*; ±4 V*; ±2 V*; ±1 V*; ±0.8 V*; ±0.4 V*	±200 V; ±40 V; ±4 V
DC accuracy: ±5 V to ±40 V ±50 V to ±150 V ±150 V to ±200 V	 ±0.5 % of reading ±20 mV ±0.04 % of reading ±0.04 % of range ±1 % of reading ±0.04 % of range	 ±0.5 % of reading ±20 mV ±0.04 % of reading ±0.04 % of range ±1 % of reading ±0.04 % of range	 ±0.07 % of reading ± 10mV ±0.07 % of reading ±0.04 % of range ±1 % of reading ±0.04 % of range
Typical SNR @ 30 kHz BW (1 kHz BW):	82 dB (100 dB) @ 200 V range	101 dB (106 dB) @ 200 V range 97 dB (106dB) @ 50 V range 90 dB (103dB) @10 V range	98 dB @ 200 V range 98 dB @ 40 V range 79 dB @ 4 V range
Typical CMR:	160 dB DC 110 dB @ 1 kHz	100 dB @ 100 Hz 60 dB @ 10 kHz	100 dB @ 100 Hz 70 dB @ 10 kHz
TEDS:	For adapter identification and calibration data.		
Amplifier settings:	Excitation: 10 V; Measurement: Voltage; Range: ±0.1 to ±10 V; automatically selected by software		

*) **For ranges below 10 V use DAQP-STG or MDAQ-STG directly!**

MSI-BR-RTD

RTD amplifier for temperature measurement with MDAQ-BRIDGE /-STGx and DAQP-STG

- *Support of Pt100, Pt200, Pt500, Pt1000, Pt2000*
- *Resistor measurement from 8 to 6000 Ω*
- *Temperature range from -200 to 850 °C*
- *2-, 3- or 4-wire sensor connection*
- *Automatically identification by TEDS (Transducer Electronic Datasheet)*
- *Sensor connection: 5-pin BINDER connector series 712*

Specifications

	MSI-BR-RTD		
Sensor connection:	5-pin BINDER connector series 712		
Supported sensors:	Resistance; Pt100; Pt200; Pt500; Pt1000; Pt2000;		
Temperature range:	-200 °C to 850 °C		
Input offset:	50 µV		
Constant current:	1.25 mA		
Constant current accuracy:	±0.02 % from calibrated value		
Constant current drift:	22 ppm/ °C		
Linearisation:	Through software according to sensor type		
Connection types:	2-, 3- or 4-wire		
Host amplifier:	**DAQP-STG*** **	**MDAQ-STG / -BRIDGE**	**DEWE-43 / DEWE-101**
Isolation:	350 V_{DC}	not isolated	not isolated
Bandwidth:	10 kHz	10 kHz	10 kHz
Lowpass filter:	10 Filter: 10 Hz to 300 kHz	10 Hz,100 Hz, MDAQ-FILT	10 Hz,100 Hz
Accuracy:			
Resistance			
Ranges:	Accuracy:		
2, 4, 6, 8, 16 Ω	±0.07 % of reading ±50 mΩ	±0.05 % of reading ±50 mΩ	
20, 40, 60, 80, 160 Ω	±0.07 % of reading ±80 mΩ	±0.05 % of reading ±90 mΩ	±0.07 % of reading ±120 mΩ
200, 400, 800* Ω	±0.07 % of reading ±200 mΩ	±0.05 % of reading ±400 mΩ	±0.07 % of reading ±200 mΩ
1k6**, 2 k, 4 k, 6 kΩ*	±0.07 % of reading ±0.03% of range	±0.05 % of reading ±0.04 % of range	±0.07 % of reading ±840 mΩ
Pt100 (DIN EN 60751)			
Ranges:	Accuracy:		
-200 to 850 °C	±0.1 % of reading ±0.51 °C	±0.1 % of reading ±1.05 °C	±0.11 % of reading ±0.69 °C
-200 to 260 °C	±0.1 % of reading ±0.40 °C	±0.1 % of reading ±1.05 °C	n.a.
-200 to 150 °C	n.a.	±0.07 % of reading ±0.35 °C	n.a.
Pt200 (DIN EN 60751)			
Ranges:	Accuracy:		
-200 to 850 °C	±0.1 % of reading ±0.45 °C	±0.08 % of reading ±0.59 °C	±0.10 % of reading ±0.44 °C
-200 to 260 °C	±0.1 % of reading ±0.34 °C	±0.08 % of reading ±0.59 °C	n.a.
Pt500 (DIN EN 60751)			
Ranges:	Accuracy:		
-200 to 850 °C	±0.1 % of reading ±0.41 °C	±0.08 % of reading ±0.56 °C	±0.11 % of reading ±0.61 °C
-200 to 260 °C	±0.1 % of reading ±0.29 °C	±0.07 % of reading ±0.31 °C	n.a.
-200 to 150 °C	±0.1 % of reading ±0.24 °C	±0.07 % of reading ±0.31 °C	±0.09 % of reading ±0.28 °C
Pt1000 (DIN EN 60751)			
Ranges:	Accuracy:		
-200 to 850 °C	±0.1 % of reading ±0.40 °C	±0.08 % of reading ±0.45 °C	±0.10 % of reading ±0.39 °C
-200 to 260 °C	±0.1 % of reading ±0.29 °C	±0.07 % of reading ±0.34 °C	n.a.
Pt2000 (DIN EN 60751)			
Ranges:	Accuracy:		
-200 to 260 °C	±0.1 % of reading ±0.29 °C	±0.07 % of reading ±0.29 °C	±0.09 % of reading ±0.29 °C
Typical noise:			
100 Hz bandwidth	0.1 °C	0.03 °C	0.03 °C
Supply voltage:	±5 V (±1 %)		
Power consumption	max 30 mW		
TEDS:	For adapter identification and calibration data		
Amplifier settings:	Excitation: 10 V; Measurement: Voltage; Range: ±0.2 to ±10 V; automatically selected by software		

*) These ranges are supported by DEWE-43.
**) These ranges are not supported by DAQP-STG.
***) DAQP-STG natevly supports RTD and resistance measurement; still MSI-BR-RTD could be used.

MSI-BR-CH-x — Charge amplifier for MDAQ-BRIDGE /-STGx and DAQP-STG

- *Range from 200 pC to 50000 pC*
- *Support of charge sensors*
- *Automatically identification by TEDS (Transducer Electronic Datasheet)*
- *Sensor connection: BNC*

Specifications

	MSI-BR-CH-x	
Sensor connection:	BNC	
Accuracy:	0.5 %	
Gain drift:	100 ppm/ °C	
Supply voltage:	±5 V (±1 %)	
Power consumption:	max. 100 mW	
Host amplifier:	**DAQP-STG**	**MDAQ-STG / -BRIDGE**
Isolation:	350 V_{DC}	not isolated
Bandwidth:	0.08 Hz to 45 kHz	0.08 Hz to 30 kHz
Lowpass filter:	10 Hz to 300 kHz	with MDAQ-FILT
MSI-BR-CH-50		
Ranges:	50000 pC; 20000 pC; 10000 pC 5000 pC; 2500 pC; 1000 pC 500 pC; 250 pC	50000 pC; 25000 pC; 12500 pC 10000 pC; 5000 pC; 2500 pC 1000 pC; 500 pC; 250 pC; 200 pC
Typical SNR @ 30 kHz bandwidth: 1000 pC 50000 pC	 80 dB 90 dB	 89 dB 100 dB
Highpass filter:	0.08 Hz; 1 Hz*; 10 Hz*	0.08 Hz; 1 Hz*; 10 Hz*
Max. input DC offset	20 pC	
MSI-BR-CH-100		
Ranges:	100000 pC; 40000 pC; 20000 pC 10000 pC; 5000 pC; 2000 pC 1000 pC; 500 pC	100000 pC; 50000 pC; 25000 pC; 20000 pC; 10000 pC; 5000 pC 2000 pC; 1000 pC; 500 pC; 400 pC
Typical SNR @ 100000 pC	90 dB	100 dB
Highpass filter:	0.08 Hz; 1 Hz*; 10 Hz*	0.08 Hz; 1 Hz*; 10 Hz*
Max. input DC offset	40 pC	
TEDS:	For adapter identification and calibration data	
Amplifier settings:	Excitation: 10 V; Measurement: Voltage; Range: ±0.2 to ±10 V; automatically selected by software	
*) Software filter available in DEWESoft 7 only.		

MSI-BR-TH-x

Thermocouple amplifier for temperature measurement with MDAQ-BRIDGE /-STGx and DAQP-STG

- *Internal cold junction compensation*
- *Support of thermocouple type K, J, T, C (others on request)*
- *Automatically identification by TEDS (Transducer Electronic Datasheet)*
- *Sensor connection: 1 m cable with standard miniature thermocouple connector according to TC type*

Specifications

	MSI-BR-TH-x	
Sensor connection:	1 m cable with standard miniature thermocouple connector according to TC type	
Thermocouple types:	MSI-BR-TH-K: Type K; MSI-BR-TH-J: Type J; MSI-BR-TH-T: Type T; MSI-BR-TH-C: Type C;	
Cold junction compensation:	Integrated	
CJC accuracy:	1.0 °C	
Input impedance:	> 10 MΩ	
BIAS current:	50 nA	
Open TC detection:	Yes	
Linearization:	Through software according to sensor type	
Host amplifier:	**DAQP-STG**	**MDAQ-STG / -BRIDGE**
Isolation:	350 V_{DC}	not isolated
Bandwidth:	300 kHz**	30 kHz
Lowpass filter:	10 Hz to 300 kHz	10 Hz,100 Hz or MDAQ-FILT
Accuracy including CJC error:		
MSI-BR-TH-K for thermocouple type K (DIN EN 60584-1)		
Input range:	Accuracy @ actual reading	
-120 to 120 °C*	±1.8 °C @ -120 to 0 °C ±1.3 °C @ 0 to 120 °C	±2.0 °C @ -120 to 0 °C ±1.4 °C @ 0 to 120 °C
-200 to 1370 °C -200 to 1290 °C* -200 to 640 °C* -200 to 250 °C*	Specs apply to 4 ranges ±4.6 °C @ -200 to -100 °C ±2.4 °C @ -100 to 0 °C ±1.9 °C @ 0 to 500 °C ±2.5 °C @ 500 to 1000 °C ±3.0 °C @ >1000 °C	Specs apply to 4 ranges ±4.6 °C @ -200 to -100 °C ±2.4 °C @ -100 to 0 °C ±1.8 °C @ 0 to 500 °C ±2.1 °C @ 500 to 1000 °C ±2.5 °C @ >1000 °C
MSI-BR-TH-J for thermocouple type J (DIN EN 60584-1)		
Input range:	Accuracy @ actual reading	
-180 to 180 °C	±2.4 °C @ -180 to 0 °C ±1.3 °C @ 0 to 180 °C	±2.5 °C @ -180 to 0 °C ±1.3 °C @ 0 to 180 °C
-210 to 1200 °C -210 to 900 °C* -210 to 450 °C* -210 to 360 °C*	Specs apply to 4 ranges ±4.0 °C @ -210 to -100 °C ±2.0 °C @ -100 to 0 °C ±1.6 °C @ 0 to 300 °C ±2.0 °C @ 300 to 1200 °C	Specs apply to 4 ranges ±4.0 °C @ -210 to -100 °C ±1.7 °C @ -100 to 0 °C ±1.6 °C @ 0 to 300 °C ±1.8 °C @ 300 to 1200 °C
MSI-BR-TH-T for thermocouple type T (DIN EN 60584-1)		
Input range:	Accuracy @ actual reading	
-240 to 240 °C* -270 to 400 °C	Specs apply to 2 ranges ±7.0 °C @ -250 to -100 °C ±1.8 °C @ -100 to 0 °C ±1.3 °C @ 0 to 100 °C ±1.0 °C @ 100 to 400 °C	Specs apply to 2 ranges ±7.0 °C @ -250 to -100 °C ±1.8 °C @ -100 to 0 °C ±1.3 °C @ 0 to 100 °C ±1.0 °C @ 100 to 400 °C
MSI-BR-TH-C for thermocouple type C (ASTM E988-96)		
Input range:	Accuracy @ actual reading	
0 to 150 °C* 0 to 310 °C* 0 to 620 °C*	Specs apply to 3 ranges ±2.0 °C @ 0 to 620 °C	Specs apply to 3 ranges ±2.0 °C @ 0 to 620 °C
0 to 1240 °C* 0 to 1560 °C* 0 to 2300 °C	Specs apply to 3 ranges ±3.0 °C @ 0 to 1000 °C ±4 °C @ 1000 to 1600 °C ±6.7 °C @ 1600 to 2300 °C	Specs apply to 3 ranges ±3.0 °C @ 0 to 1000 °C ±4 °C @ 1000 to 1600 °C ±6.7 °C @ 1600 to 2300 °C
Typical peak to peak noise with sensor type K:		
30 kHz bandwidth	0.50 °C	0.50 °C
100 Hz bandwidth	0.25 °C	0.25 °C
1 Hz bandwidth	0.02 °C	0.02 °C
TEDS:	For adapter identification and calibration data	
Amplifier settings:	Excitation: 10 V; Measurement: Voltage; Range: ±2 to ±100 mV; automatically selected by software	
**) might be limited through A/D card		

MSI-V-ACC

Accelerometer amplifier for DAQP-LV and MDAQ-V-200

- *Support of IEPE® sensors*
- *AC coupled measurement*
- *Automatically identification by TEDS (Transducer Electronic Datasheet)*
- *Sensor connection: BNC*

Specifications

	MSI-V-ACC	
Sensor connection:	BNC	
Supported sensors:	IEPE®	
Sensor excitation:	4 mA ±10 %	
Compliance voltage:	>23 V	
Input coupling:	AC	
Accuracy 30 Hz to 30 kHz:	0.2 %**	
Gain drift:	50 ppm/ °C	
Max. input offset:	12 mV	
Input impedance:	1 MΩ	
Supply voltage:	9 V to 15 V	
Power consumption:	max. 350 mW	
Host amplifier:	**DAQP-LV**	**MDAQ-V-200**
Isolation:	not isolated	not isolated
Bandwidth:	300 kHz	30 kHz
Lowpass filter:	10 Hz to 300 kHz	with MDAQ-FILT
Ranges:	10000 mV; 5000 mV; 2000 mV; 1000 mV; 500 mV; 200 mV; 100 mV	10000 mV; 5000 mV; 2500 mV; 1250 mV; 1000 mV 500 mV; 250 mV; 125 mV
Typical SNR @ 30 kHz bandwidth:		
200 mV	80 dB	83 dB
1000 mV	90 dB	93 dB
High pass filter:		
MSI-V-ACC	1.4 Hz; 3 Hz*; 10 Hz*	1.4 Hz; 3 Hz*; 10 Hz*
MSI-BV-ACC-S1	0.16 Hz; 3 Hz*; 10 Hz*	0.16 Hz; 3 Hz*; 10 Hz*
TEDS:	For adapter identification and calibration data; IEPE® sensor TEDS is not supported.	
Amplifier settings:	Excitation: 10 V; Measurement: Voltage; Range: ±0.1 to ±10 V; automatically selected by software	

*) Software filter available in DEWESoft 7 only.
**) might be reduced through A/D card accuracy or system bandwidth.

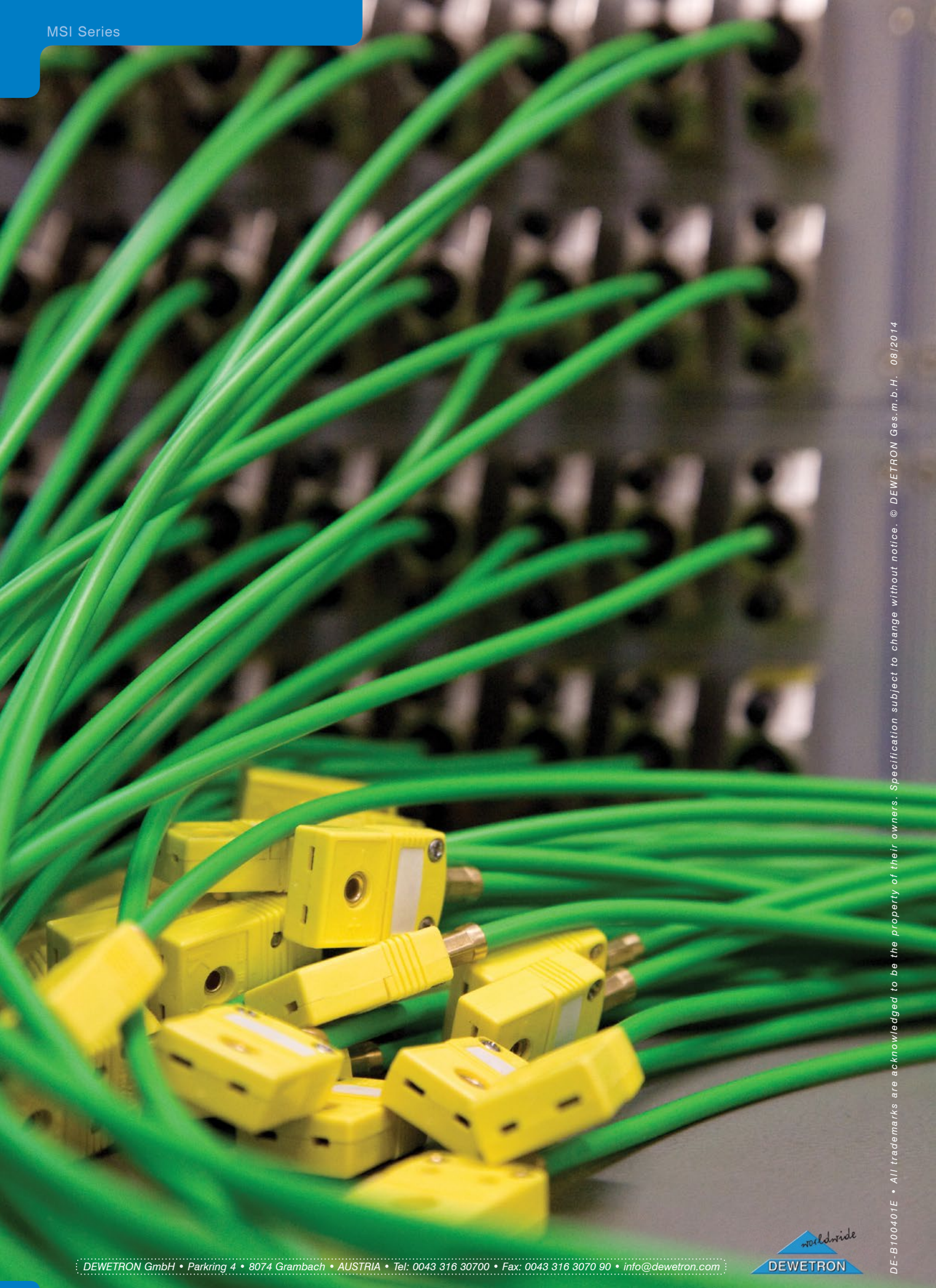
MSI-V-RTD

RTD amplifier for temperature measurement with DAQP-LV and MDAQ-V-200

- *Support of Pt100, Pt200, Pt500, Pt1000, Pt2000*
- *Resistor measurement from 8 Ω to 4 kΩ*
- *Temperature range from -200 to 850 °C*
- *2-, 3- or 4-wire sensor connection*
- *Automatically identification by TEDS (Transducer Electronic Datasheet)*
- *Sensor connection: 5-pin BINDER connector series 712*

Specifications

	MSI-V-RTD	
Sensor connection:	5-pin BINDER connector series 712	
Supported sensors:	Resistance; Pt100; Pt200; Pt500; Pt1000; Pt2000;	
Temperature range:	-200 °C to 850 °C	
Input offset:	50 µV	
Constant current:	1.25 mA	
Constant current accuracy:	±0.02 % from calibrated value	
Constant current drift:	22 ppm/ °C	
Linearisation:	Through software according to sensor type	
Connection types:	2-, 3- or 4-wire	
Host amplifier:	**DAQP-LV**	**MDAQ-V-200**
Isolation:	not isolated	not isolated
Bandwidth:	10 kHz	10 kHz
Lowpass filter:	10 Filter: 10 Hz to 300 kHz	10 Hz,100 Hz
Accuracy:		
Resistance	[±x.xx % of reading ±Ω]	
Ranges:	Accuracy:	
8 to 80 Ω	±0.04 % of reading ±90 mΩ	n.a.
100 to 200 Ω	±0.04 % of reading ±130 mΩ	±0.05 % of reading ±360 mΩ
400 to 800 Ω	±0.04 % of reading ±500 mΩ	±0.05 % of reading ±360 mΩ
1000 to 4000 Ω	±0.04 % of reading ±0.07 % of range	±0.05 % of reading ±0.05 % of range
Pt100	DIN EN 60751	
Ranges:	Accuracy:	
-200 to 850 °C	±0.08 % of reading ±0.74 °C	±0.1 % of reading ±1.05 °C
-200 to 260 °C	n.a.	±0.1 % of reading ±1.05 °C
-200 to 150 °C	±0.06 % of reading ±0.43 °C	n.a.
Pt200	DIN EN 60751	
Ranges:	Accuracy:	
-200 to 850 °C	±0.07 % of reading ±0.68 °C	±0.08 % of reading ±0.59 °C
-200 to 260 °C	±0.06 % of reading ±0.42 °C	±0.08 % of reading ±0.59 °C
Pt500	DIN EN 60751	
Ranges:	Accuracy:	
-200 to 850 °C	±0.07 % of reading ±0.64 °C	±0.08 % of reading ±0.56 °C
-200 to 260 °C	n.a.	±0.07 % of reading ±0.31 °C
-200 to 150 °C	±0.06 % of reading ±0.23 °C	n.a.
Pt1000	DIN EN 60751	
Ranges:	Accuracy:	
-200 to 850 °C	±0.07 % of reading ±0.63 °C	±0.08 % of reading ±0.45 °C
-200 to 260 °C	±0.06 % of reading ±0.24 °C	±0.07 % of reading ±0.34 °C
Pt2000	DIN EN 60751	
Ranges:	Accuracy:	
-200 to 260°C	±0.06 % of reading ±0.36 °C	±0.07 % of reading ±0.29 °C
Typical noise: 100 Hz bandwidth	0.1 °C	0.03 °C
Supply voltage:	±9 V (±5 %)	±15 V (±5 %)
Power consumption	max. 30 mW	max. 500 mW
TEDS:	For adapter identification and calibration data	
Amplifier settings:	Excitation: 10 V; Measurement: Voltage; Range: ±0.2 to ±10 V; automatically selected by software	



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