

# DEWE-43A

**MUST HAVE FOR EVERY ENGINEER**



## 8 ANALOG INPUTS

- ▀ Multi-sensor input for Voltage, Bridge, IEPE, Temperature, Charge
- ▀ Simultaneous sampling
- ▀ 200 kHz/channel
- ▀ 24 bit, alias-free
- ▀ 10 V, 1 V, 100 mV, 10 mV ranges (200 V with MSI adapter)
- ▀  $\pm 5$  V, 12 V sensor supply
- ▀ Isolated power supply as standard

## 8 COUNTER INPUTS 24 DIGITAL INPUTS

- ▀ Counting, Waveform timing, Encoder, Tacho and Geartooth sensors
- ▀ Digital inputs
- ▀ Fully synchronized with analog data

## 2 CAN BUS PORTS

- ▀ optical isolation
- ▀ Vehicle CAN, OBDII, J1939
- ▀ CAN sensors support
- ▀ CAN 2.0b up to 1 MBit/sec

## DEWESoft®

- ▀ DEWESoft® X included
- ▀ Synchronous data acquisition of different sources
- ▀ Full support of DEWE-43A, GPS and video camera



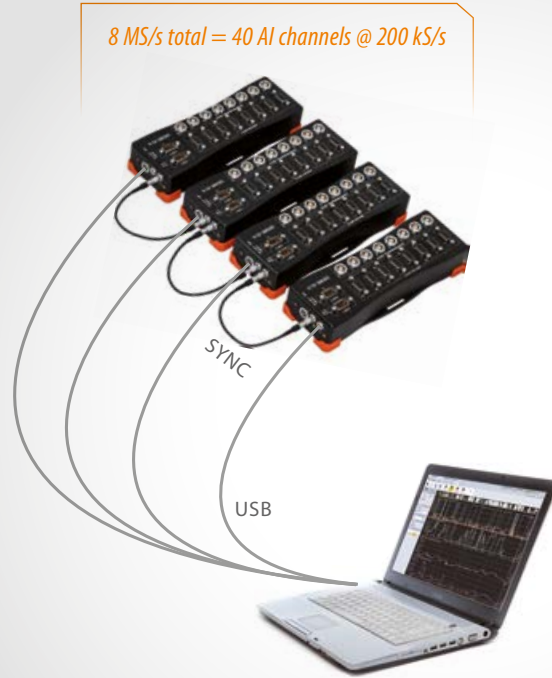
## DEWE-43A SYSTEM CONFIGURATIONS

ANY combination up to 32 analog, 32 counter and 8 CAN bus channels.

### 4 x 8 channel systems



### 1 x 32 channel system



## DEWE-43 + DS-NET= ETHERNET DAQ SYSTEM

Mixed signal data acquisition

### Example configuration:

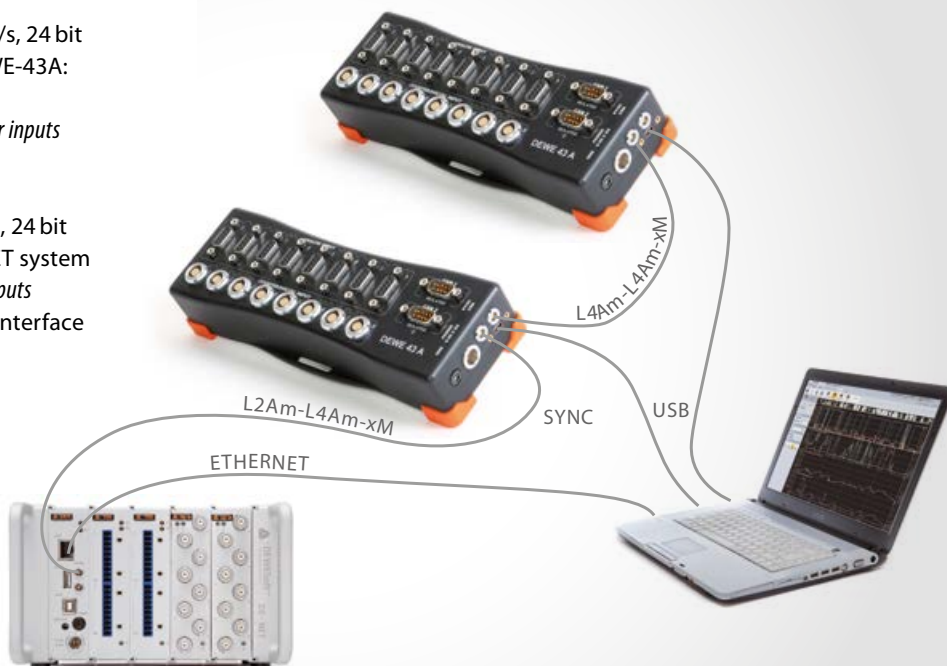
16 channel fast 200 kS/s, 24 bit each channel, 2 x DEWE-43A:

- ▶ For ACC vibration sensors
- ▶ 16 channel super-counter inputs
- ▶ 4 CAN bus

32 channel slow 2 kS/s, 24 bit each channel, 1 DS-NET system

- ▶ Mixed signals isolated inputs

With DEWEsoft® user interface



## DEWE-43A – TECHNICAL SPECIFICATIONS

### ANALOG INPUT

|                           |   |
|---------------------------|---|
| <b>Number of channels</b> | 8 (simultaneously sampled)  |
| <b>Measured values</b>    | Voltage, full bridge (IEPE, charge, thermocouple and RTD with MSI adapters) |
| <b>Resolution</b>         | 24-bit  |
| <b>Type of ADC</b>        | Sigma-Delta with anti-aliasing filter                                       |
| <b>Sampling rate</b>      | 200 kS/s  |
| <b>-3 dB bandwidth</b>    | 76 kHz @ 200 kS/s   |

### AMPLIFIER CHARACTERISTICS

|                                     |  |  |
|-------------------------------------|--|--|
| <b>Input ranges</b>                 | <b>Voltage</b>   | $\pm 10\text{ V}; \pm 1\text{ V}; \pm 100\text{ mV}; \pm 10\text{ mV}$ |
|                                     | <b>Voltage via MSI-V200</b>  | up to $\pm 200\text{ V}$   |
|                                     | <b>Full bridge @ 10 Vexc</b>   | $\pm 10\text{ mV/V}, \pm 100\text{ mV/V}, \pm 1000\text{ mV/V}$        |
|                                     | <b>Half or quarter bridge</b>  | With external bridge completion  |
|                                     | <b>IEPE via MSI-ACC</b>  | $\pm 0.1\text{ V}, \pm 1\text{ V}, \pm 10\text{ V}$                    |
|                                     | <b>Thermocouple via MSI-THx</b>  | Full range of thermocouple type (isolated thermocouple only)           |
|                                     | <b>Pt100, Pt200, Pt500, Pt1000, Pt2000 and resistance via MSI-RTD</b>  | $-200^{\circ}\text{C}$ to $1000^{\circ}\text{C}$ and 0 to 6.5 kOhm     |
| <b>DC accuracy</b>                  | 10 V range: 0.1 % of value, +1 mV<br>1 V range: 0.1 % of value, +0.5 mV<br>100 mV range: 0.1 % of value, +0.1 mV<br>10 mV range: 0.1 % of value, +0.1 mV |  |
| <b>Input impedance</b>              | 10 M $\Omega$   33 pF (common mode), 20 M $\Omega$   47 pF (differential mode)   |  |
| <b>CMRR</b>                         | >80 dB   |  |
| <b>Sensor supply voltage</b>        | $\pm 5\text{ V } 0.1\% @ 100\text{ mA}, 12\text{ V } @ 400\text{ mA}$ per channel  |  |
| <b>Voltage mode coupling</b>        | DC   |  |
| <b>Input overvoltage protection</b> | $\pm 70\text{ V}$  |  |

### DYNAMIC CHARACTERISTICS

|   |           |
|---|-----------|
| <b>Signal to noise @ <math>f_s &lt; 1000\text{ Hz}</math></b> | < -100 dB |
| <b>Crosstalk</b>  | < -100 dB |

### COUNTER/DIGITAL INPUTS

|                                 |   |
|---------------------------------|---|
| <b>Number of channels</b>       | 8 counters or 24 digital inputs<br>(per software each counter can be selected to be 3x digital input) |
| <b>Counter modes</b>            | Event counting, encoder input, period, pulsewidth, duty cycle, frequency measurement                  |
| <b>Resolution</b>               | 32-bit  |
| <b>Time base</b>                | 102.4 MHz   |
| <b>Signal levels</b>            | TTL/CMOS  |
| <b>Input voltage protection</b> | 30 V  |

## CAN PORTS

|                    |                        |
|--------------------|------------------------|
| Number of channels | 2 (optically isolated) |
| Specification      | CAN 2.0b up to 1MBit/s |
| Physical layer     | High speed             |

## ENVIRONMENTAL

|                       |                                 |
|-----------------------|---------------------------------|
| Operating temperature | -20 to 50°C                     |
| Storage temperature   | -20 to 70°C                     |
| Relative humidity     | 10 to 90 %                      |
| Vibration             | MIL-STD 810F 514.5, procedure I |
| Shock                 | MIL-STD 810F 516.5, procedure I |

## PHYSICAL

|                        |  |
|------------------------|--|
| Dimensions (L x W x H) | 223 x 78 x 45 mm (7.78 x 3.08 x 1.77 inch) |
| Weight                 | 0.72 kg (1.58 pounds)                      |

## POWER REQUIREMENTS

|                                   |                         |
|-----------------------------------|-------------------------|
| Supply voltage                    | 6 to 36 V <sub>DC</sub> |
| Supply overvoltage protection     | 80 V                    |
| Negative input voltage protection | -30 V                   |
| Typical power consumption         | 5 W                     |
| Maximum sensor consumption        | 6 W                     |

## SYSTEM REQUIREMENTS

|                  |  |
|------------------|--|
| Operating system | Microsoft WindowsXP®<br>Microsoft Windows Vista®<br>Microsoft Windows 7® |
| System           | PC with DEWESoft® software   |
| Interface        | USB 2.0  |

## IN THE PACKAGE

|   |
|---|
| DEWE-43A  |
| DEWESoft® X - Professional Edition (DSA upgrade available) incl. CAN option |
| MINI USB cable (equipped with special lock-in screws for secure connection) |
| Carrying bag  |
| Device ground cable   |

## DEWE-43A INPUTS

|                       |              |
|-----------------------|--------------|
| No of analog channels | 8            |
| Samplerate / channel  | 200 kHz      |
| Vertical resolution   | 24 bit       |
| Input type            | differential |

## INPUT TYPES

|                                    |   |
|------------------------------------|---|
| Voltage                            | 8 ch  |
| U Max. Range                       | ± 10V<br>± 200 V<br>MSI option  |
| Input coupling                     | DC  |
| = IEPE/ICP Sensors                 | 8 ch<br>MSI option<br>4 mA,<br>max 21V                                  |
| Sensor supply per system           | ± 5V 100 mA<br>12V 400 mA   |
| Bridge connection type             | 8 ch<br>4 wire  |
| Bridge completion with MSI adapter | full bridge,<br>half bridge 1 kOhm<br>quarter bridge<br>120 and 350 Ohm |
| Super-counter                      | 8 ch  |
| TEDS supprt without MSI adapters   | yes   |
| Charge input with MSI adapter      | up to 50000 pC  |
| Potentiometer                      | with MSI adapter  |
| Pt100.. Pt2000                     | with MSI adapter  |
| Thermocouple                       | with MSI adapter  |
| CAN bus ports                      | 2 ch (isolated)   |

## CONNECTORS

|                        |             |
|------------------------|-------------|
| DSUB 9                 | 8 + 2       |
| LEMO 7pin              | 8           |
| BNC, Binder and others | MSI adapter |