

# Conditioner Cards for EDX Series

## Standard conditioner cards



CDV-40B(-F)    CVM-41A    DPM-42B(-F)    CT-2A    CTA-40A    CCA-40A(-F)    CFV-40A

## Custom-designed conditioner cards



CAN-41A    CDA-44AS/45AS    CDV-44AS    CDV-46AS    AD-40AS(-F)

Conditioner cards for EDX-100A, EDX-200A, EDX-5000A.

### Standard conditioner cards specifications

#### Strain/Voltage Measurement Card CDV-40B\*, CDV-40B-F

For measuring both strain (Strain gages and strain-gage transducers) and voltage (Model with antialiasing LPF is the CDV-40B-F.)

\*Models with output are available, inquiries are welcome.

Items	Strain	Voltage
Channels	8 (Integrated connector)	
Input Modes	Balanced differential	Unbalanced
Input Resistance	Approx. (10 + 10 MΩ)	Approx. 1 MΩ
Coupling	DC/AC (DC cut)	
Applicable Gage Factor	2.00	
Bridge Excitation	2 VDC ±2% (120 to 1k Ω)	
Balance Adjustment	Resistance ±2.4% (±12000 × 10 <sup>-6</sup> strain)	
Measuring Range	500, 1 k, 2 k, 5 k, 10 k, 20 k, 50 k [×10 <sup>-6</sup> strain], OFF	0.1, 0.2, 0.5, 1, 2, 5, 10 V, OFF
Range Accuracy	±0.2% FS, each range	
Calibration	±100%, ±50%, each range	
Nonlinearity	±0.1% FS	
Frequency Response	DC coupling: DC to 50 kHz, deviation: 1 to -3 dB AC coupling (DC cut): 0.2, 1 Hz to 50 kHz (See the HPF)	
LPF	Transfer characteristics: 2nd order Butterworth Cutoff frequencies: 8 steps of 10, 30, 100, 300, 1 k, 3 k, 10 k [Hz] and FLAT Amplitude ratio at cutoff point: -3±1 dB Attenuation: (-12±1) dB/oct.	
Antialiasing LPF (CDV-40B-F only)	Transfer characteristics: 8th order Butterworth Cutoff frequencies: Automatically set at sampling frequencies x 0.25 Attenuation: -48 dB±5 dB (At sampling frequency x 0.5) Note: Available when the LPF is set to AUTO on the DCS-100A.	
HPF (DC cut)	Cutoff frequencies: 0.2, 1 Hz Attenuation: -6 dB/oct.	
A/D Converter	16 bits	
TEDS	Reads information from TEDS-installed sensors.	
Compliance	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)	
Optional Accessories	<ul style="list-style-type: none"> <li>● 8-channel input cable U-38 to U-48 Note: If the transducer with a remote-sensing function, a 4-conductor extension cable (N-81 to N-85) enables measurement. But the remote-sensing function will be ineffective.</li> <li>● Conversion adapter FV-1A</li> </ul>	

#### Strain/Voltage/Acceleration Measurement Card CVM-41A

A high resolution conditioner card for measuring strain, voltage, and acceleration (Piezoelectric sensor with an amplifier built in)

Items	Strain measurement	Voltage measurement	Acceleration measurement (piezoelectric)
Applicable Recorders	EDX-100A, EDX-200A, and EDX-5000A		
Channels	8		
Measuring Targets	Strain gages *1 Strain-gage transducers	Voltage	Piezoelectric accelerometers (Built-in amplifier)
Input Modes	Balanced differential input	Balanced differential input*2*3	Unbalanced input*4
Input Impedance	—	(1 + 1 MΩ) Within ±10%*5	—
Bridge Excitation or Power Supply to Sensors (Each channel settable *6)	Const. voltage output BV2V: 2 VDC BV5V: 5 VDC BV10V: 10 VDC	Const. voltage output BV2V: 2 VDC (±1 V) BV5V: 5 VDC (±2.5 V) BV10V: 10 VDC (±5 V) or OFF	Const. current output: Approx. 4 mA Excitation voltage: Approx. 23 VDC Load: 1 kΩ or less
Applicable Gage Factor	2.00 fixed		
Applicable Bridge Resistance	BV2V: 120 to 1000 Ω BV5V: 350 to 1000 Ω BV10V: 500 to 1000 Ω	—	—
Balance Operation Settings (Zero suppression)	[Autobalance enabled] Cancel the unbalanced bridge portion in the analog circuit, and zero the measurement value. [Autobalance disabled] Do not cancel the unbalanced bridge portion (The initial unbalanced value in the bridge circuit can be confirmed)	[Zero suppression enabled] Cancel the input voltage in the analog circuit, and zero the measurement value [Zero suppression disabled] Do not cancel the input voltage in the analog circuit (Display the input voltage as is)	—
Balance Adjustment Range	BV2V: Resistance ±10% (±50 k × 10 <sup>-6</sup> strain) BV5V: Resistance ±4% (±20 k × 10 <sup>-6</sup> strain) BV10V: Resistance ±2% (±10 k × 10 <sup>-6</sup> strain)	±5 V	—

Items	Strain measurement	Voltage measurement	Acceleration measurement (piezoelectric)
<b>Measuring Range</b>	BV2V: 5 k, 10 k, 20 k, 50 k, 100 k, 200 k, 500 k × 10 <sup>-6</sup> strain BV5V: 5 k, 10 k, 20 k, 50 k, 100 k, 200 k × 10 <sup>-6</sup> strain BV10V: 2 k, 5 k, 10 k, 20 k, 50 k, 100 k × 10 <sup>-6</sup> strain	1, 2, 5, 10, 20, and 50 V	100, 200, 500, 1000, 2000, and 5000 mV
<b>Range Accuracy</b>	Within ±0.2%FS		Within ±1.0%FS
<b>Nonlinearity</b>	Within ±0.1%FS		Within ±0.2%FS
<b>Calibration (CAL) SHUNT CAL</b>	±100% and ±50% of each range and SHUNT *7	±100% and ±50% of each range	
<b>Frequency Response</b>	DC coupling: DC to 5 kHz, deviation +1dB, -3dB AC coupling: 0.2, 1 Hz to 5 kHz (See the HPF.)	0.5 Hz to 5 kHz Deviation +1dB, -3dB	
<b>LPF</b>	Transmission characteristics: 5 Butterworth type Cutoff frequencies: 30, 100, 300, 1 k, 3 kHz, FLAT, and AUTO *8 Cutoff accuracy: Within -3±1 dB Attenuation: (-30±3) dB / oct.		
<b>HPF</b>	Cutoff frequencies: 0.2 Hz, 1 Hz Attenuation: -6dB / oct.	—	
<b>Resolution</b>	24 bits *9		
<b>Distortion Rate</b>	—		1% or less
<b>Monitor Output</b>	Accuracy: Within ±5 V ±0.5% (With ±FS), Nonlinearity: Within ±0.5%FS		
<b>Dimensions</b>	22 W × 119 H × 213 D mm (Excluding protrusions)		
<b>Weight</b>	Approx. 400 g		
<b>TEDS</b>	Reads information from TEDS-installed sensors.		
<b>Compliance</b>	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)		

- \*1 For strain measurement, use bridge boxes
- \*2 When using the Conversion Adapter FV-1A, this becomes unbalanced input
- \*3 Common mode input voltage range ±20 VDC, absolute input voltage range ±50 V
- \*4 Conversion Adapter FV-1A usage possible
- \*5 When using Conversion Adapter FV-1A (At unbalanced input), within 1 MΩ±10%
- \*6 The max. channels of CVM-41A in EDX-100A is 3 times of units of CVM
- \*7 When SHUNT CAL has 350 Ω load connected, approx. 257 × 10<sup>-6</sup> strain output
- \*8 With AUTO settings, the cutoff frequency is set to 1/4 of the sampling frequency
- \*9 When installed in EDX-100A, its resolution becomes 16 bits.

**Standard Accessories**

2 cross recessed binding head screws M3x6

**Optional Accessories**

- CCA input cable U-111
- CVM input cable U-121 to U-123
- CVM input integrated cable N-121
- Integrated output cable U-62
- Conversion adapter FV-1A
- Voltage input box VI-8A (-T)
- Bridge box for quarter bridge system  
DB5-120B-8 (C) (T), DB5-350B-8 (C) (T)
- One-touch type bridge box DBV-120A-8 (C), DBV-350A-8 (C)

**Dynamic Strain Amplifier Card DPM-42B, DPM-42B-F (\*1) DPM-42B-I (\*2), DPM-42B-I-F (\*1,\*2)**

A carrier wave type card for measuring low level strain. It is isolated between input and output, and between channels.

\*1: With antialiasing LPF \*2: Low inverter noise type

<b>Measuring Targets</b>	Strain gages, strain-gage transducers
<b>Channels</b>	4
<b>Frequency Response</b>	DC to 5 kHz (Deviation: ±10% )
<b>Carrier Wave Frequency</b>	12 kHz
<b>Applicable Bridge Resistance</b>	120 to 1000 Ω
<b>Gage Factor</b>	2.00 fixed
<b>Bridge Excitation</b>	2 V <sub>rms</sub> , 0.5 V <sub>rms</sub> selectable 12 kHz sine wave
<b>Balance Adjustment Range</b>	Resistance: ±2.4% (±12000 × 10 <sup>-6</sup> strain) Capacity: 2000 pF
<b>Balance Adjustment Methods</b>	
	Resistance: Auto balance (Saved in nonvolatile memory) Capacity: CST method (Capacitance self-tracking)
<b>Measuring Range</b>	With bridge excitation 2 V <sub>rms</sub> : 200, 500, 1 k, 2 k, 5 k, 10 k, 20 k × 10 <sup>-6</sup> strain and OFF - 8 steps With bridge excitation 0.5 V <sub>rms</sub> : 1 k, 2 k, 5 k, 10 k, 20 k, 50 k × 10 <sup>-6</sup> strain and OFF-7 steps
<b>Calibration Values (CAL)</b>	Output at ±100% and ±50% of each range
<b>Nonlinearity</b>	Within ±0.2%FS
<b>LPF</b>	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 10, 30, 100, 300, 1 k Hz and FLAT (6 steps) Amplitude ratio at cutoff point: -3 ±1 dB Attenuation: (-12±1) dB/oct.
<b>Antialiasing LPF (DPM-42B-F, DPM-42B-I-F)</b>	
	8th order Butterworth type Cutoff frequencies: Automatic setting at ×0.25 sampling frequency Attenuation: -48 ±5 dB (When ×0.5 sampling frequency) Note: Enabled when "AUTO" set in DCS-100A LPF settings
<b>Resolution</b>	16 bits
<b>Check Functions</b>	Insert resistance into one side of the bridge, and check input
<b>TEDS</b>	Reads information from TEDS-installed sensors.
<b>Monitor Output</b>	Accuracy: Within ±5 V ±0.5% (At ±FS) Nonlinearity: Within 0.5% FS
<b>Withstand Voltage</b>	Between input and output: 250 VAC, 1 min.
<b>Compliance</b>	Directive 2014/30/EU (EMC)
<b>Optional Accessories</b>	<b>Monitor output cable U-64</b>
	Note: If the transducer with a remote-sensing function, a 4-conductor extension cable (N-81 to N-85) enables measurement. But the remote-sensing function will be ineffective.

**Thermocouple Card CTA-40A**

This card measures temperatures using 2 types of thermocouples K (CA) and T (CC). It is isolated between input and output, and between channels.

<b>Measuring Targets</b>	Thermocouples												
<b>Channels</b>	8												
<b>Thermocouple Resistance</b>	200 Ω or less (Burnout ON) 1000 Ω or less (Burnout OFF)												
<b>Measuring Range</b>	K1230, K480, K240, T400, T210 and OFF-6 steps												
	<table border="1"> <thead> <tr> <th>Range Names</th> <th>Measuring Range</th> </tr> </thead> <tbody> <tr> <td>K1230</td> <td>-200 to 1230 °C</td> </tr> <tr> <td>K480</td> <td>-200 to 480 °C</td> </tr> <tr> <td>K240</td> <td>-200 to 240 °C</td> </tr> <tr> <td>T400</td> <td>-200 to 400 °C</td> </tr> <tr> <td>T210</td> <td>-200 to 210 °C</td> </tr> </tbody> </table>	Range Names	Measuring Range	K1230	-200 to 1230 °C	K480	-200 to 480 °C	K240	-200 to 240 °C	T400	-200 to 400 °C	T210	-200 to 210 °C
Range Names	Measuring Range												
K1230	-200 to 1230 °C												
K480	-200 to 480 °C												
K240	-200 to 240 °C												
T400	-200 to 400 °C												
T210	-200 to 210 °C												
<b>General Accuracy</b>	Within ±(0.5% of reading+1)°C (At ambient temp. 20±3°C) Within ±(0.5% of reading+2)°C (At ambient temp. 0 to 40°C)												
<b>Calibration (CAL)</b>	Output at 100% and 50% and 0°C as absolute value of each range												
<b>Frequency Response</b>	DC to 10 Hz												
<b>Resolution</b>	16 bits												
<b>Burnout</b>	Built-in: At burnout [Burnout display], with ON/OFF Note: If high thermocouple resistance, turn the burnout function OFF to improve accuracy.												
<b>Monitor Output</b>	Accuracy: Within 5 V ±0.5% (At +FS) Nonlinearity: Within ±0.5%FS												
<b>Isolation</b>	Between input and output, and between channels: 50 MΩ or more (500 VDC)												
<b>Compliance</b>	Directive 2914/30/EU (EMC)												
<b>Standard Accessories</b>	<b>8-channel input cable U-104</b> Temperature measuring adapter CT-2A ×8												
<b>Optional Accessories</b>	Integrated output cable U-62												



Data Recorders/  
Analyzers

### ■ Charge Amplifier Card CCA-40A, CCA-40A-F

This card measures acceleration using piezoelectric accelerometers. (Type with antialiasing LPF is CCA-40A-F.)

<b>Measuring Targets</b>	Piezoelectric accelerometers
<b>Applied Accelerometers</b>	Built-in amplifier (Voltage output) type
<b>Channels</b>	8
<b>Power Supply to Sensors</b>	Constant current power (Current: 4 mA, excitation voltage: Approx. 24 VDC, load 1 kΩ or less)
<b>Frequency Response</b>	1 to 20 kHz (Deviation: +1 dB, -3 dB)
<b>Measuring Range</b>	20, 50, 100, 200, 500, 1000, 2000, 5000 mV and OFF-9 steps Accuracy: Within ±1%FS
<b>Calibration</b>	DC CAL ±100% and ±50% of each range Accuracy: Within ±0.2%FS AC CAL 100% and 50% of each range Accuracy: Within ±1%FS Frequency accuracy: Within 100 Hz±5%
<b>LPF</b>	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 300, 1 k, 3 k, 10 k Hz and FLAT (5 steps) Amplitude ratio at cutoff point: -3 ±1 dB Attenuation: (-12±1) dB/oct.
<b>Antialiasing LPF (Only applicable to CCA-40A-F)</b>	8th order Butterworth type Cutoff frequencies: Automatic setting at x0.25 sampling frequency Attenuation: -48±5dB (When x0.5 sampling frequency) Note: Available when the LPF is set to AUTO.
<b>Distortion Factor</b>	1% or less
<b>Resolution</b>	16 bits
<b>Monitor Output</b>	Accuracy: Within ±5 V ±1% (At +FS)
<b>TEDS</b>	Reads information from TEDS-installed sensors.
<b>Compliance</b>	Directive 2014/30/EU (EMC)
<b>Standard Accessories</b>	Input cable U-111
<b>Optional Accessories</b>	Integrated output cable U-62 Input cable U-109 Conversion adapter (BNC-miniature) BNCP-C25J-A Conversion adapter (Miniature-Tajimi) CCA-1B Conversion adapter (BNC-Tajimi) CCA-2B

### ■ F/V Converter Card CFV-40A

This card measures the frequency of pulse, and supplies power to the sensors. It is isolated between input and output.

<b>Measuring Targets</b>	Alternating signal output sensors
<b>Channels</b>	4
<b>Input Signals</b>	AC (Zero cross), TTL level (Including open collector signals)
<b>Input Voltage</b>	±(0.5 V to 50 V): High hysteresis ±(0.1 V to 50 V): Low hysteresis
<b>Measuring Range</b>	50, 100, 500, 1 k, 2 k, 5 k, 10 k, 20 kHz and OFF-9 steps Accuracy: Within ±0.1%FS
<b>Calibration (CAL)</b>	Output at 100%, 50% (added), and 0% (Absolute value) of each range
<b>Response Time</b>	10 μs (Continuous pulse input) or less (2 cycles of input pulse + 50 μs) or less (Input pulse are broken)
<b>Resolution</b>	16 bits
<b>Sensor Power Supply</b>	12 VDC: Within ±10% (Each channel 50 mA or less)
<b>Monitor Output</b>	Accuracy: Within 5 V ±0.5% (At +FS) Nonlinearity: Within ±0.1%FS
<b>Isolation</b>	Between input and output, and between channels: 50 MΩ or more (500 VDC)
<b>Compliance</b>	Directive 2014/30/EU (EMC)
<b>Standard Accessories</b>	Conversion adapter FV-1A x4
<b>Optional Accessories</b>	Input cable U-12, U-13 Monitor output cable U-64

### ■ CAN Card CAN-41A

This card measures data frames on the Controller Area Network. The dual input CAN-41A collects data frames for 2 systems of different communications systems as analog data at the same time.

<b>CAN Board Numbers</b>	2 (2 nodes)
<b>Connector Configuration</b>	D-sub 9 pin (male)
<b>Supported CAN Version</b>	Bosch2.0B active support (ISO-11898 specifications-compliant) High-speed CAN/low-speed CAN selectable
<b>Measurement ID Numbers</b>	Max. 32
<b>CAN Controller Operation Clock</b>	40 MHz, 32 MHz
<b>Baud Rate</b>	With high-speed CAN 1000, 800, 500, 250, 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, and 10 kbps With low-speed CAN 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, and 10 kbps
<b>Communications Conditions</b>	Sample points, sampling frequency, resynchronization jump width selection.
<b>Measuring Channel Conditions</b>	Start bit, bit length, data type, calibration coefficient (Conditions for conversion of extracting CAN data to physical quantity)
<b>Graph Display</b>	Simultaneous display of graph, numerical value, frame, and analog data
<b>Others</b>	Only one card can be mounted in the last slot of the EDX. When measuring CAN data, the sampling frequency is restricted. EDX-200A: 2048 Hz EDX-100A: 1 kHz
<b>Compliance</b>	Directive 2014/30/EU (EMC) Directive 2011/65/EU (RoHS)

### ■ Constant Current Amplifier Card CDA-44AS, CDA-45AS

Measurement card suitable for cable extension

<b>Measuring Targets</b>	Strain gages (Full bridge system) Strain-gage transducers, voltage
<b>Channels</b>	4
<b>Input Resistance</b>	Approx. 10 + 10 MΩ (Strain mode) Approx. 1 MΩ (Voltage mode)
<b>Input Format</b>	Balanced differential input (Strain mode) Unbalanced input (Voltage mode)
<b>IMRR</b>	120 dB (When 500 × 10 <sup>-6</sup> strain range)
<b>Frequency Response</b>	DC coupling: DC to 200 Hz, deviation: +1 dB, -3 dB DC cut (AC coupling): 0.2 Hz (See the HPF)
<b>Gage Factor</b>	2.00 fixed (Strain mode)
<b>Applicable Bridge Resistance</b>	CDA-44AS: 120 Ω CDA-45AS: 350 Ω
<b>Bridge Excitation</b>	CDA-44AS: Approx. DC 16.7 mA (Constant current) when gage resistance 120 Ω connected *If sensitivity or temperature resistance is in the transducer bridge excitation lines, then sensitivity and temperature characteristics are not corrected. CDA-45AS: Approx. DC 5.7 mA (Constant current) when gage resistance 350 Ω connected *If sensitivity or temperature resistance is in the transducer bridge excitation lines, then sensitivity and temperature characteristics are not corrected.
<b>Cable Length</b>	CDA-44AS: 500 m, CDA-45AS: Within 1 km (At cross section: 0.5 mm <sup>2</sup> )
<b>Range Accuracy</b>	Within ±0.3%FS
<b>Measuring Range</b>	500, 1 k, 2 k, 5 k, 10 k, 20 k × 10 <sup>-6</sup> strain, OFF (Strain mode) 1, 2, 5, 10, 20, 50 V, OFF (Voltage mode)
<b>Balance Adjustment</b>	Within ±2.4% (±12000 × 10 <sup>-6</sup> strain) (At strain measurement) Within ±5 V (At voltage measurement)
<b>ZERO Accuracy</b>	Within ±0.3% FS (Voltage OFF mode)
<b>Nonlinearity</b>	Within ±0.1%FS
<b>Calibration (CAL)</b>	Output at ±100% and ±50% of each range Accuracy: Within ±0.3%FS
<b>Monitor Output</b>	Accuracy: Within ±5 V ±0.5%
<b>LPF</b>	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 1, 3, 10, 30, 100 Hz and FLAT (6 steps) Amplitude ratio at cutoff point: -3 ±1 dB Attenuation: (-12±1) dB/oct.
<b>HPF</b>	Cutoff frequencies: 0.2 Hz Attenuation: Within (-6±1) dB/oct.
<b>A/D Converter</b>	16 bits
<b>TEDS</b>	Reads information from TEDS-installed sensors.
<b>Isolation</b>	Between input and case (output), and between Between channels: Withstand voltage 500 VDC, 1 min.
<b>Standard Accessories</b>	Conversion adapter FV-2A × 4
<b>Optional Accessories</b>	Input cable U-03 Monitor output cable U-64 Note: If the transducer with a remote-sensing function, a 4-conductor extension cable (N-81 to N-85) enables measurement. But the remote-sensing function will be ineffective.

■ **Strain/Voltage Measurement Isolation Card CDV-44AS**

Measurement card robust against common mode noise even in workplaces with power machinery.

<b>Measuring Targets</b>	Strain gages (Full-bridge system) Strain-gage transducers, voltage
<b>Channels</b>	4
<b>Input Resistance</b>	Approx. 10 + 10 MΩ (Strain mode) Approx. 1 MΩ (Voltage mode)
<b>Input Format</b>	Balanced differential input (Strain mode) Unbalanced input (Voltage mode)
<b>IMRR</b>	120 dB (When 500 × 10 <sup>-6</sup> strain range)
<b>Gage Factor</b>	2.00 fixed (Strain mode)
<b>Frequency Response</b>	With DC coupling DC to 5 kHz, deviation within +1 dB, -3 dB DC cut (With AC coupling) 0.2 Hz (See the HPF)
<b>Bridge Excitation</b>	Within 2 VDC±2% (Strain mode)
<b>Range Accuracy</b>	Within ±0.3%FS
<b>Applicable Bridge Resistance</b>	120 to 1000 Ω (Strain mode)
<b>Measuring Range</b>	500, 1 k, 2 k, 5 k, 10 k, 20 k × 10 <sup>-6</sup> strain, and OFF (Strain mode) 1, 2, 5, 10, 20, 50 V, and OFF (Voltage mode)
<b>Balance Adjustment Range</b>	Within ±2.4% (±12000 × 10 <sup>-6</sup> strain) (At strain measurement) Within ±5 V (At voltage measurement)
<b>ZERO Accuracy</b>	Within ±0.3% FS (Voltage OFF mode)
<b>Nonlinearity</b>	Within ±0.1%FS
<b>Calibration Values (CAL)</b>	Output at ±100% and ±50% of each range Accuracy: Within ±0.3%FS
<b>Monitor Output</b>	Accuracy: Within ±5 V±0.5% (±5 V to full scale of each range)
<b>LPF</b>	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 10, 30, 100, 300, 1 k, Hz and FLAT (6 steps) Amplitude ratio at cutoff point: -3 ±1 dB Attenuation: (-12±1) dB/oct.
<b>HPF</b>	Cutoff frequencies: 0.2 Hz Attenuation: Within (-6±1) dB/oct.
<b>A/D Converter</b>	16 bits
<b>TEDS</b>	Reads information from TEDS-installed sensors.
<b>Isolation</b>	Between input and case (Output): Withstand voltage 500 VDC, 1 min. Between channels: Withstand voltage 500 VDC, 1 min.
<b>Standard Accessories</b>	
Conversion adapter FV-2A × 4	
<b>Optional Accessories</b>	
Input cable U-03 Monitor output cable U-64 (2 m) Note: If the transducer with a remote-sensing function, a 4-conductor extension cable (N-81 to N-85) enables measurement. But the remote-sensing function will be ineffective.	

● **Custom-designed conditioner card specifications**

■ **Strain/Voltage Measurement Isolation Card CDV-46AS**

Measurement card robust against hum noise even in workplaces where using long sensor cables.

<b>Measuring Targets</b>	Strain gages (Full-bridge system) Strain-gage transducers, voltage
<b>Channels</b>	4
<b>Input Format</b>	Balanced differential input (Strain mode) Unbalanced input (Voltage mode)
<b>Input Resistance</b>	Approx. 10 + 10 MΩ (Strain mode) Approx. 1 MΩ (Voltage mode)
<b>IMRR</b>	120 dB (When 2k × 10 <sup>-6</sup> strain range)
<b>Frequency Response</b>	With DC coupling DC to 5 kHz, deviation within +1 dB, -3 dB DC cut (With AC coupling) 0.2 Hz (See the HPF)
<b>Gage Factor</b>	2.00 fixed (Strain mode)
<b>Bridge Excitation</b>	Within 2 VDC±2% (Strain mode)
<b>Applicable Bridge Resistance</b>	120 to 1000 Ω (Strain mode)
<b>Measuring Range</b>	2k, 5k, 10k, 20k, 50k, 100k × 10 <sup>-6</sup> strain, OFF (At strain measurement) 1, 2, 5, 10, 20, 50, OFF (At voltage measurement)

<b>Range Accuracy</b>	Within ±0.3%FS
<b>Balance Adjustment Range</b>	Within ±2.4% (±12000 × 10 <sup>-6</sup> strain) (At strain measurement) Within ±5 V (At voltage measurement)
<b>ZERO Accuracy</b>	Within ±0.3% FS (Voltage OFF mode)
<b>Nonlinearity</b>	Within ±0.1%FS
<b>Calibration Values (CAL)</b>	Output at ±100% and ±50% of each range Accuracy: Within ±0.3%FS
<b>LPF</b>	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 10, 30, 100, 300, 1 kHz and FLAT (6 steps) Amplitude ratio at cutoff point: -3 ±1 dB Attenuation: (-12±1) dB/oct.
<b>HPF</b>	Cutoff frequencies: 0.2 Hz Attenuation: Within (-6±1) dB/oct.
<b>A/D Converter</b>	24 bits
<b>Monitor Output</b>	Accuracy: Within ±5 V±0.5% (±5 V to full scale of each range)
<b>Isolation</b>	Between input and case (output): Withstand voltage 500 VDC, 1 min. Between channels: Withstand voltage 500 VDC, 1 min.
<b>TEDS</b>	Reads information from TEDS-installed sensors.
<b>Max. Sampling Frequency</b>	100 kHz
<b>Standard Accessories</b>	
Conversion adapter FV-2A × 4	

■ **A/D Converter Card AD-40AS, AD-40AS-F**

AD-40AS is an 8-channel voltage input card. (AD-40AS-F equipped with antialiasing LPF is also available.)

<b>Channels</b>	8
<b>Input Range</b>	±5 V, ±10 V and OFF
<b>Input Modes</b>	Unbalanced (Not balanced differential)
<b>Input Resistance</b>	Approx. 1 MΩ
<b>A/D Converter Methods</b>	Successive approximation
<b>A/D Converter</b>	Resolution: 16 bits (± 32000 counts/FS)
<b>Accuracy</b>	Within ±0.2%FS
<b>Nonlinearity</b>	Within ±0.1%FS
<b>Input Frequencies</b>	Range: DC to 50 kHz Deviation: 1dB to -3dB
<b>LPF</b>	Transfer characteristic: 2nd order Butterworth Cutoff frequencies: 10, 30, 100, 300, 1 k, 3 k, 10 k Hz and FLAT (8 steps) Amplitude ratio at cutoff point: -3 ±1 dB Attenuation: (-12 ±1) dB/oct.
<b>Antialiasing LPF (AD-40AS-F only)</b>	
Transfer Characteristic: 8th order Butterworth Cutoff frequencies: A quarter of sampling frequency (auto setting) * Attenuation: -48 ± 5 dB *(Set LPF to [AUTO])	
<b>Power Supply to Sensors</b>	±2.5 V ± 1%, each channel
<b>TEDS</b>	Reads information from TEDS-installed sensors.
<b>Optional Accessories</b>	
8-channel input cable: U-127 (1.5 m) Voltage input box: VI-8A with a cable N-121 (1.5 m)	