

Direct Interface to Thermocouples, RTDs, Strain Gages, Voltage, and Process Current Signals

Rugged, Compact, Low-Cost

High Accuracy, Low Drift

Input-to-Output Isolation

Mix-and-Match Modules as Needed



The DI-5B Series is a family of low-cost, high performance plug-in signal conditioners. Designed for industrial applications, these modules incorporate an innovative circuit design using transformer based isolation. Combining 1500V rms continuous common mode voltage isolation, $\pm 0.05\%$ accuracy, small size, and low cost, the DI-5B Series is an attractive alternative to expensive signal conditioners and in-house designs. Our DI-75B Analog Module Expander accepts up to eight mix-and-match modules while the DI-500 Series and DI-750/760 Series instruments accept up to 32 mix-and-match modules, providing an easy, safe, and flexible way to make industrial measurements.

Uniform Package

Each module is potted and identical in pinout and size (2.25" x 2.25" x 0.60").

High Performance

All modules feature $\pm 0.05\%$ calibrated accuracy, and $\pm 0.02\%$ non-linearity. Chopper based amplification assures a low drift of $\pm 1\mu\text{V}/^\circ\text{C}$ and excellent long term stability.

Flexibility

The DI-5B Series can be easily tailored to the needs of many applications. These plug-in signal conditioners can be mixed and matched in any combination to adapt to even the most demanding applications. Each module features a simple pinout, plugs easily into instrument-mounted sockets, and is secured with a self-contained mounting screw.

Features

Easy To Use

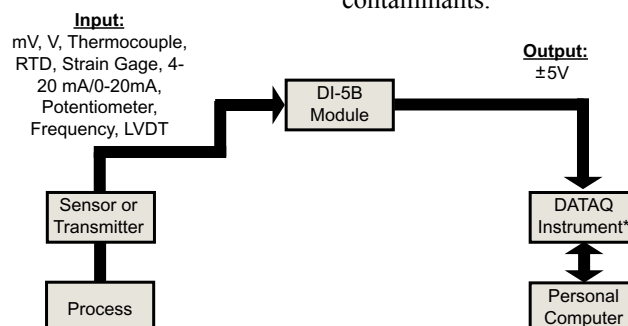
The DI-5B Series has no pots to adjust. Simply choose the module function and measurement range, install it in the instrument (the DI-195B, the DI-75B, the DI-500 Series, and the DI-750/760 Series are ideally suited for this purpose), and then connect your input signals to the instrument. The instrument then becomes a direct sensor interface, providing a way to connect your input signals so the modules can output a perfectly conditioned, $\pm 5\text{V}$ signal (ideal for WINDAQ software).

On-board CJ Compensation

Each input connector of the DI-5B Series backplane is complemented by a cold junction compensation circuit, allowing the thermocouple modules to be located in any position.

Rugged Construction

All modules are hard-potted to protect the internal circuitry from moisture and other contaminants.



*DI-195B, DI-400 Series, DI-75B, DI-500/510 Series, and DI-750/760 Series all accept DI-5B Modules.

Specifications (common to all DI-5B Modules)

Isolation:	1500 Volts	Operating Temperature Range:	-40°C to +85°C
Input Protection:	240VAC	Dimensions:	2.28" × 2.26" × 0.6" (58mm × 57mm × 15mm)
Common Mode Rejection:	160db		

Ordering Guide

Analog Voltage Input Modules (4Hz or 10kHz BW)

Narrow Bandwidth (4Hz)		Wide Bandwidth (10kHz)	
MODEL NO.	Input Range	MODEL NO.	Input Range
DI-5B30-01	±10mV	DI-5B40-01	±10mV
DI-5B30-02	±50mV	DI-5B40-02	±50mV
DI-5B30-03	±100mV	DI-5B40-03	±100mV
DI-5B31-01	±1V	DI-5B41-01	±1V
DI-5B31-02	±5V	DI-5B41-02	±5V
DI-5B31-03	±10V	DI-5B41-03	±10V
DI-5B31-07	±20V	DI-5B41-07	±20V
DI-5B31-09	±40V	DI-5B41-09	±40V

DC Transducer Input Modules with +10VDC Excitation

MODEL NO.	Input Range	MODEL NO.	Input Range
DI-5B43-01	±1V	DI-5B43-06	±6V
DI-5B43-02	±2V	DI-5B43-07	±7V
DI-5B43-03	±3V	DI-5B43-08	±8V
DI-5B43-04	±4V	DI-5B43-09	±9V
DI-5B43-05	±5V	DI-5B43-10	±10V

2-wire Transmitter Interface Module (100Hz BW)

MODEL NO.	Input Range	Excitation
DI-5B42-01	4 to 20mA	Nom. 20V at 4 to 20mA

Strain Gage Input Modules (4Hz or 10kHz BW)

MODEL NO.	Full Scale Input/Bridge	Excitation
10kHz		
DI-5B38-01	±10mV/Full, (3mV/V) 100 to 10KΩ	3.333V
DI-5B38-02	±30mV/Full, (3mV/V) 300 to 10KΩ	10.000V
DI-5B38-03	±10mV/Half, (3mV/V) 100 to 10KΩ	3.333V
DI-5B38-04	±30mV/Half, (3mV/V) 300 to 10KΩ	10.000V
DI-5B38-05	±20mV/Full, (2mV/V) 300 to 10KΩ	10.000V
DI-5B38-06	±33.3mV/Full, (10mV/V) 100 to 10KΩ	3.333V
DI-5B38-07	±100mV/Full, (10mV/V) 300 to 10KΩ	10.000V
4Hz		
DI-5B38-31	±10mV/Full, (3mV/V) 100 to 10KΩ	3.333V
DI-5B38-32	±30mV/Full, (3mV/V) 300 to 10KΩ	10.000V
DI-5B38-33	±10mV/Half, (3mV/V) 100 to 10KΩ	3.333V
DI-5B38-34	±30mV/Half, (3mV/V) 300 to 10KΩ	10.000V
DI-5B38-35	±20mV/Full, (2mV/V) 300 to 10KΩ	10.000V
DI-5B38-36	±33.3mV/Full, (10mV/V) 100 to 10KΩ	3.333V
DI-5B38-37	±100mV/Full, (10mV/V) 300 to 10KΩ	10.000V

Potentiometer Input Modules (4Hz BW)

MODEL NO.	Input Range	Excitation
DI-5B36-01	0 to 100Ω	0.25mA
DI-5B36-02	0 to 500Ω	0.25mA
DI-5B36-03	0 to 1KΩ	0.25mA
DI-5B36-04	0 to 10KΩ	0.10mA

Frequency Input Modules

MODEL NO.	Input Range	Excitation
DI-5B45-01	0 to 500Hz	+5.1V @ 8mA max
DI-5B45-02	0 to 1kHz	+5.1V @ 8mA max
DI-5B45-03	0 to 3kHz	+5.1V @ 8mA max
DI-5B45-04	0 to 5kHz	+5.1V @ 8mA max
DI-5B45-05	0 to 10kHz	+5.1V @ 8mA max
DI-5B45-06	0 to 25kHz	+5.1V @ 8mA max
DI-5B45-07	0 to 50kHz	+5.1V @ 8mA max
DI-5B45-08	0 to 100kHz	+5.1V @ 8mA max

Isolated True RMS Input Modules (20kHz BW)

MODEL NO.	Input Range	MODEL NO.	Input Range
DI-5B33-01	100mVFS	DI-5B33-04	150VFS
DI-5B33-02	1VFS	DI-5B33-05	300VFS
DI-5B33-03	10VFS		

Analog Current Input Modules (4Hz BW)

MODEL NO.	Input Range	MODEL NO.	Input Range
DI-5B32-01	4 to 20mA	DI-5B32-02	0 to 20mA

Linearized RTD Input Modules (4Hz BW)

MODEL NO.	Type	Input Range
For 2- or 3-Wire RTDs		
DI-5B34-01	100Ω Pt	-100°C to +100°C (-148°F to +212°F)
DI-5B34-02	100Ω Pt	0°C to +100°C (+32°F to +212°F)
DI-5B34-03	100Ω Pt	0°C to +200°C (+32°F to +392°F)
DI-5B34-04	100Ω Pt	0°C to +600°C (+32°F to +1112°F)
DI-5B34C-01	10Ω Cu @ 0°C	0°C to +120°C (+32°F to +248°F)
DI-5B34C-02	10Ω Cu @ 25°C	0°C to +120°C (+32°F to +248°F)
DI-5B34C-03	10Ω Cu @ 0°C	0°C to +160°C (+32°F to +320°F)
DI-5B34N-01	120Ω Ni	0°C to +300°C (+32°F to +572°F)

For 4-Wire RTDs

DI-5B35-01	100Ω Pt	-100°C to +100°C (-148°F to +212°F)
DI-5B35-02	100Ω Pt	0°C to +100°C (+32°F to +212°F)
DI-5B35-03	100Ω Pt	0°C to +200°C (+32°F to +392°F)
DI-5B35-04	100Ω Pt	0°C to +600°C (+32°F to +1112°F)
DI-5B35C-01	10Ω Cu @ 0°C	0°C to +120°C (+32°F to +248°F)
DI-5B35C-02	10Ω Cu @ 25°C	0°C to +120°C (+32°F to +248°F)
DI-5B35C-03	10Ω Cu @ 0°C	0°C to +160°C (+32°F to +320°F)
DI-5B35N-01	120Ω Ni	0°C to +300°C (+32°F to +572°F)

Linearized Thermocouple Input Modules (4Hz BW)

MODEL NO.	Type	Input Range
DI-5B47J-01	J	0°C to +760°C (+32°F to +1400°F)
DI-5B47J-02	J	-100°C to +300°C (+148°F to +572°F)
DI-5B47J-03	J	0°C to +500°C (+32°F to +932°F)
DI-5B47J-12	J	-100°C to +760°C (-148°F to +1400°F)
DI-5B47K-04	K	0°C to +1000°C (+32°F to +1832°F)
DI-5B47K-05	K	0°C to +500°C (+32°F to +932°F)
DI-5B47K-13	K	-100°C to +1350°C (-148°F to +2462°F)
DI-5B47K-14	K	0°C to +1200°C (+32°F to +2192°F)
DI-5B47T-06	T	-100°C to +400°C (-148°F to +752°F)
DI-5B47T-07	T	0°C to +200°C (+32°F to +392°F)
DI-5B47E-08	E	0°C to +1000°C (+32°F to +1832°F)
DI-5B47R-09	R	+500°C to +1750°C (+932°F to +3182°F)
DI-5B47S-10	S	+500°C to +1750°C (+932°F to +3182°F)
DI-5B47B-11	B	+500°C to +1800°C (+932°F to +3272°F)
DI-5B47N-15	N	-100°C to +1300°C (-148°F to +2372°F)

ICP-style Piezoelectric Transducers

MODEL NO.	Input Range	Output Range
DI-5BICP-Peak	±5V	±5V
DI-5BICP-RMS	±5V	0 to 3.535V



241 Springside Drive
Akron, Ohio 44333
Phone: 330-668-1444
Fax: 330-666-5434
www.dataq.com

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