

## 32-Channel Expansion Device for DI-720 and DI-730 Instruments

Features a Programmable Gain Amplifier with Gain Factors of 1, 2, 4, and 8

Two Versions Support Measurement Range of  $\pm 10$  or  $\pm 20$ VFS



Back (top) and Front (bottom) of a DI-725 analog channel expander.

The DI-725 is a 32-channel analog expansion device that allows you to increase the analog input channel capacity of DI-720 and DI-730 Series instruments. Each DI-725 features 32 differential analog inputs and programmable gain amplifiers with gain selections of 1, 2, 4, and 8. Model DI-725 features a  $\pm 10$  VFS range. Model DI-725E features a  $\pm 20$  VFS range with expanded input protection. A dual power connector arrangement allows the DI-725 to share the same power supply used to power the host instrument.

In return for the 32 expansion channels it provides, each DI-725 consumes two channels from its host instrument. A maximum of 240 analog channels may be configured by connecting multiple DI-725's together.

## Features

### Fast Input Signal Connection

Connect your analog input signals to the DI-725 through dual 37-pin, male "D" connectors. The DI-725 accepts 32 high-level or preconditioned analog inputs in a differential configuration (one positive and one negative signal lead per channel). High-level inputs are typically low impedance, no-conditioning-required signals

### Select Measurement Range Per Channel

The DI-725's programmable gain amplifier allows you to select measurement ranges of  $\pm 10$ ,  $\pm 5$ ,  $\pm 2.5$ , or  $\pm 1.25$  volts full scale per channel for the standard version. The DI-725E provides a measurement range of  $\pm 20$ ,  $\pm 10$ ,  $\pm 5$ , or  $\pm 2.5$  volts full scale per channel.

### Flexible Power Requirements

The DI-725 may be powered from any DC source within the range of +9 to +36 VDC. A POWER LOW indicator on the rear panel glows red when power is inadequate.

### Identical Footprint

The DI-725 is packaged in the same 9"L  $\times$  7.29"W  $\times$  1.52"H box as DI-720 and DI-730 instruments. This allows the DI-725 to be stacked and mounted to the host instrument with an optional hardware mounting kit.

### Easy to Connect

The DI-725 connects to the host instrument in seconds with the supplied interconnecting cable. Simply connect one end of the cable to the EXPANSION port on the host instrument and connect the other end to EXPANSION IN on the rear panel of the DI-725. A power jumper cable is provided that allows the DI-725 to be powered by the same power supply that serves the host instrument.

### Instrument Specific Input Channel Totals

In return for the 32 expansion channels it provides, each DI-725 consumes two channels from its host instrument. When a single DI-725 is connected to a DI-720, the combination delivers 62 total channels (30 are still available on the host DI-720). When connected to a DI-730, the DI-725 adds 32 high level differential inputs to the host's 8 wide measurement range inputs for a diverse blend of 40 total channels.

## Specifications

### Analog Inputs

<b>Number of Channels:</b>	32 differential	
<b>Input Signal Ranges:</b>		
Gain (Software Selectable)	Measurement Range	
1	DI-725	DI-725E
2	±10V	±20V
4	±5V	±10V
8	±2.5V	±5V
	±1.25V	±2.5V
<b>Input Coupling:</b>	DC	
<b>Maximum working voltage (signal + common mode):</b>	Each input should remain within ±10V of chassis ground.	
<b>Overvoltage Protection:</b>		
DI-725:	±30V powered on and off	
DI-725E:	±120V RMS powered on and off.	
<b>Inputs Protected:</b>	Channels 1-32.	




### Transfer Characteristics

<b>Nonlinearity:</b>	±0.01% FSR
<b>Offset Error:</b>	±1mV ±5mV/gain
<b>Gain Error:</b>	0.05% FSR

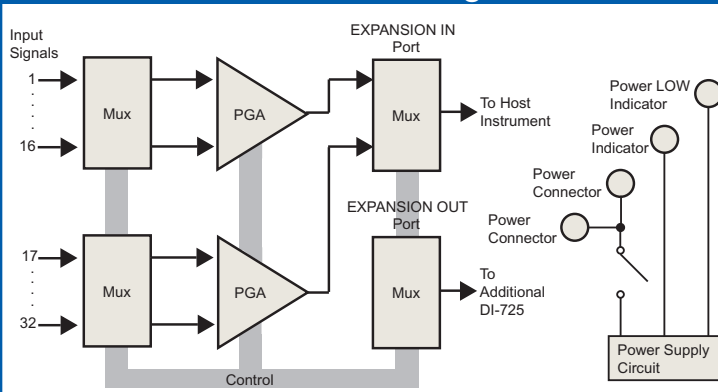
### Amplifier Characteristics

<b>Input Impedance</b>	Normal Powered On: >1MΩ
	Normal Powered Off: 1kΩ
<b>CMRR:</b>	80dB
<b>CMRR input range:</b>	±10V
<b>Dynamic Characteristics</b>	
<b>Setting Time:</b>	8μs (0.01%)
<b>Crosstalk:</b>	-72dB @ 100kHz & 100Ω imbalance
<b>Stability</b>	
<b>Recommended warm-up time:</b>	15 minutes
<b>Gain temperature coefficient:</b>	±25 ppm/°C
<b>Physical</b>	
<b>Dimensions:</b>	9 by 7.29 by 1.52 inches
<b>I/O Connectors:</b>	Front: 37-pin male D Back: 40-pin ribbon cable
<b>Environment</b>	
<b>Operating Temperature:</b>	0 to 50°C
<b>Storage Temperature:</b>	-20 to 70°C
<b>Relative Humidity:</b>	5% to 90% non condensing

## DI-725 Accessories and Options

Order No.		Description
<b>100671 and 100690</b>		<b>Stacking Brackets and Handles.</b> A pair of stacking brackets allow the DI-725 and its host DI-720, DI-722, or DI-730 instrument to be stacked and fastened together on each side to form one rigid, monolithic unit. Both sides of all DI-720, DI-722, and DI-730 instruments are fitted with PEM® brand fasteners, which act as mounting holes for the stacking brackets. Screws provided with the brackets are easily installed with a screwdriver. An optional handle (sold separately) may be mounted directly to either or both stacking brackets (screws are included) to facilitate carrying or mounting the unit.
<b>DI-705</b>		<b>Screw Terminal I/O Signal Interface.</b> A small, lightweight screw terminal signal interface board that plugs into the DI-725's 37-pin "D" connector and allows stripped wire inputs to be connected to the DI-725. The screw terminal blocks accept AWG 16-22 gauge wire.
<b>DI-706-1</b>		<b>32-channel Banana Jack Signal Interface.</b> 32 channel signal interface device that allows banana plug inputs to be directly connected to any 37-pin D-type input connectors. The DI-706-1 is designed specifically for host instruments with differential-only measurement capability like the DI-725.

### DI-725 Block Diagram



### Ordering Guide

Description	Order No.
<b>DI-725</b> 32-channel analog signal expander for DI-720 and DI-730 instruments. Includes interconnecting cable.	DI-725
<b>DI-725E</b> Same as DI-725 with expanded measurement range.	DI-725E
<b>100671 and 100690</b> Stacking brackets and handles to stack DI-725(s) with host instrument. 100671 (brackets) or 100690 (handle).	100671 or 110690
<b>DI-705</b> Screw terminal I/O signal interface.	DI-705
<b>DI-706-1</b> 32-channel banana jack signal interface for differential instruments.	DI-706-1

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