

Piezotron Coupler

Type 5148

16-channel voltage mode piezoelectric sensor power supply/conditioner

An easy-to-use, 16-channel, rack mountable signal conditioner that provides excitation power and acts as an interface between voltage mode piezoelectric sensors and measuring instruments. The coupler is powered by an external AC/DC power line adaptor.

- Provides constant current excitation for Piezotron and voltage mode piezoelectric sensors
- LEDs indicate circuit integrity
- Convenient front/rear BNC connectors
- Standard rack mountable
- Low cost per channel operation
- Conforming to CE

Description

Type 5148 is an economical 16-channel power supply/coupler that provides constant current excitation for, Piezotron, PiezoBeam, K-Shear, Ceramic Shear and other similar piezoelectric voltage mode sensors. The coupler can also power external impedance converters and fixed gain in-line charge converters in a high impedance measurement system. Each channel features an individual LED for monitoring circuit integrity. The front panel includes conveniently mounted BNC output connectors, while the rear panel includes both input and output BNC connectors. The 16-channel coupler is DC operated from sources between 8 and 20 Volts DC. Power may be supplied by an external AC-DC adaptor, power supply, vehicle source or battery, allowing operation of the coupler in diverse power situations. This coupler is provided with a versatile power adaptor which can provide both 115 V and 230 V.

Application

The primary use for the Type 5148 is to provide economical excitation power and signal coupling low impedance, voltage mode piezoelectric pressure, force and acceleration sensors. Its low profile and relatively lightweight construction provides excellent portability for a measurement system both in the laboratory or in the field.



Technical data

Type	Unit	5148	
Channels		16	
Display: LED (red)		open/short	
Sensor excitation			
Voltage	VDC	24	
Constant current	mA	2 ... 4	
Fixed gain		1	
Accuracy	%	±1	
Non-Linearity	%	±1	
Frequency response, ±5 %	Hz	0.05 ... 50,000	
Time constant, ±11 %	s	10	
Noise	µV _{rms}	<100	
Channel isolation, min.	dB	74	
Output			
Voltage	V	±10	
Current	mA	5	
Power required @ 6.2 W (see accessories)	VDC	8 ... 20	
Environmental			
Operating temperature range	°C [°F]	0 ... 50 [32 ... 120]	
Relative humidity	%	<85	
Physical			
Connectors	type	Input Rear: 16 BNC Fem. Output Rear: 16 BNC Fem. Output Front: 16 BNC Fem.	
Size	W	cm [in]	48 [19]
	H	cm [in]	4.6 [1.8]
	D	cm [in]	22 [8.7]
Weight	kg [lbs]	2.5 [5.5]	

1 g = 9.80665 m/s², 1 in = 25.4 mm, 1 Gram = 0.03527 oz, 1 lbf-in = 0.113 N-m

Mounting

Type 5148 is a 16-channel piezoelectric sensor power supply and coupler housed in a standard rack mountable case. It can be used on a laboratory bench top or permanently mounted in a standard 48 cm [19 in] instrument rack using the supplied mounting brackets.

Accessories included

- Power adaptor 115/230 V, 60/50 Hz
- Rubber feet (4) with adhesive backing
- Rack mounting brackets (set of 2)
- DC power cable with pigtails

Type

- 5752
- 55129428
- 55129384
- 55131496

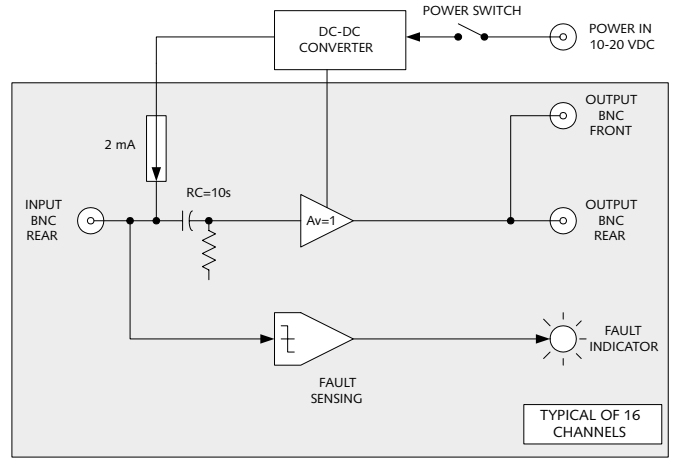


Fig. 1: Block diagram of Type 5148

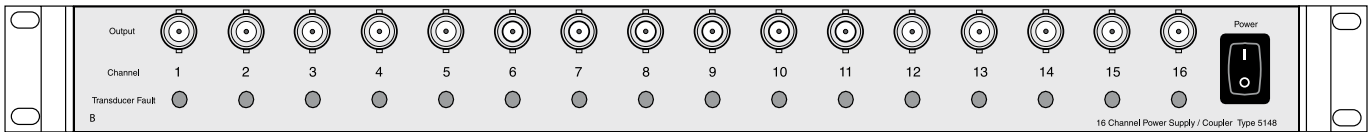


Fig. 2: Front panel

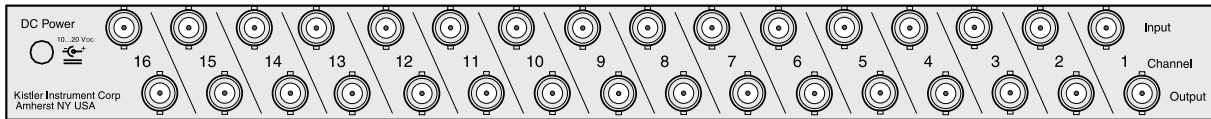
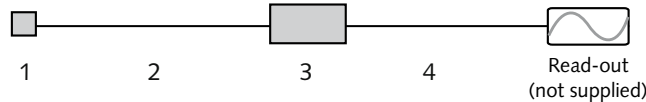


Fig. 3: Rear panel

Measuring chain

- | | | |
|---|--|------------|
| 1 | Low impedance sensor | Type 87... |
| 2 | Sensor cable, 10-32 (pos.) to BNC (pos.) | 1761B... |
| 3 | Power supply/signal conditioner | 5148 |
| 4 | Output cable, BNC (pos.) to BNC (pos.) | 1511 |

Ordering key



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