VALIDYNE ENGINEERING

CD12

DC OUTPUT
UNIVERSAL
TRANSDUCER INDICATOR

VERSATILE TRANSDUCER INDICATOR

For use with most pressure transducers including variable reluctance, strain gage, potentiometric, LVDT and RVDT

Features

- □ **2-arm, 4-arms bridges-switch selectable**
- □ **Meter readout plus dual analog outputs**
- □ **Scale expansion of X3 and X10**
- □ **Selectable frequency response**
- □ **Zero suppression to ± 100% FS**

DESCRIPTION

The CD12 is a portable, high-gain Carrier Demodulator, used to provide transducer excitation, and to amplify and demodulate the output of variable-reluctance transducers, strain gages, linear and rotary variable differential transformers, and potentiometric transducers. It operates with full or half-bridge transducers, delivering a 10 Vdc output for inputs ranging from 0.9 to 75 mV/V.. Ideal for use in R & D labs, medical laboratories, and field use. The compact instrument accurately displays the transducer signal on its integral 5-inch analog meter, as well as providing two analog outputs, one of which is controlled by the suppression circuitry.

A suppression circuit is incorporated into the CD12 to critically observe signal deviations around a reference level. Input signals can be suppressed from 0 to 10 Vdc in either a positive or negative direction using a single multi-turn dial. This circuit enables the meter to be used as a null indicator for reading accuracies of 0.1%.

A three-position sensitivity switch permits the sensitivity of the CD12 instrument to be set at 1, 3, or 15 mV/V steps in either a balance or operate mode. A 10-turn vernier gain control allows the gain to be adjusted from 20 to 120 percent of the selected gain step.

A meter range switch selects plus or minus 100, 30 or 10 percent of the range to equal full scale deflection. This allows expansion of the meter scale for more accurate observations of small pressure changes.

Other controls and indicators on the front panel include:

- o Low pass filter selector switch to select a low pass frequency response of 0.1, 1, 10, 100 or 1000 hertz.
- o R and C zero balance controls for adjustment of quadrature and resistive unbalance of the input.
- o Low, medium, high range settings for the R balance control.
- o Push-button on/off switch to energize the instrument.
- o LED indicator light to indicate when power is on.

Two analog outputs are provided at the rear of the instrument. A normal output and a suppressed output. Connections and controls on the back of the instrument provide for selection of either 2 or 4 arm transducers, binding posts for connection of a calibration resistor, and a calibrate +, OFF, - switch for applying the calibration resistor into the circuit in the desired polarity.

The CD12 has been designed for ease of operation with all normal operating controls located on the front panel.

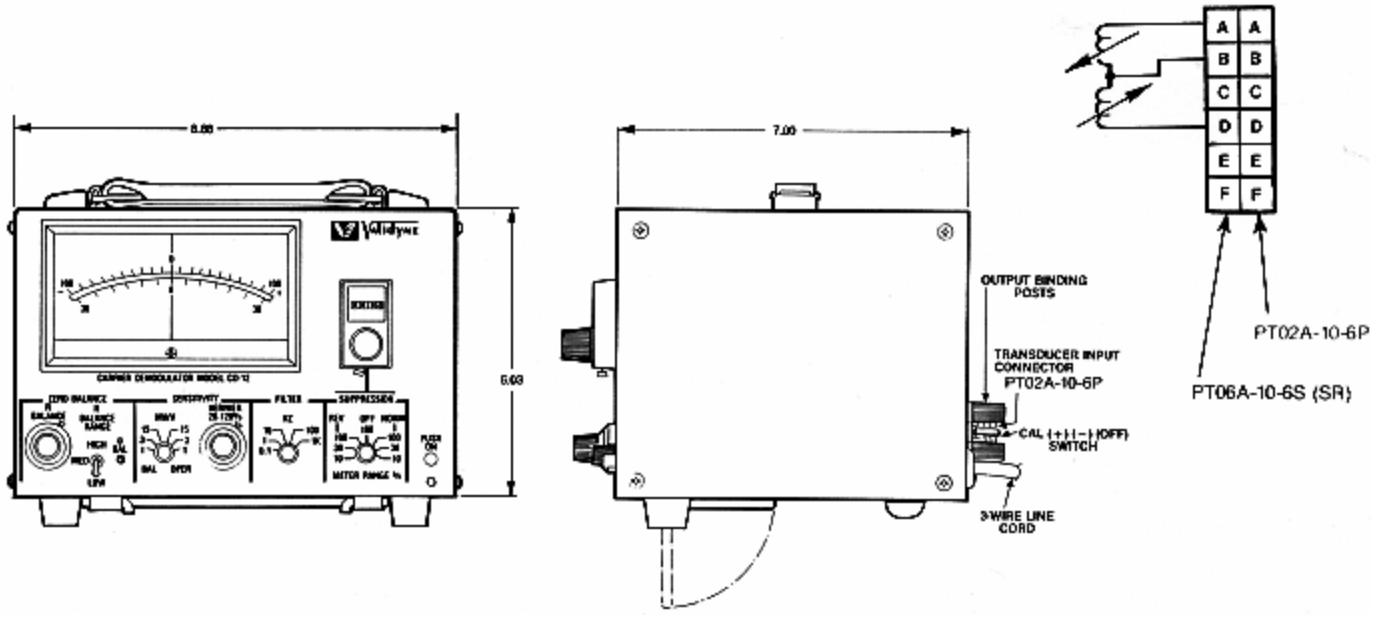
Specifications

Input Sensitivity:	0.9 – 75mV/V for 10 Vdc FS output 1,3, and 15mV/V
Input Range Switch:	1, 3, and 15mV/V
Gain Vernier (10-turn Dial)	0.2 to 1.2X of selected input range step.
Differential Amplifier Input Impedance:	120K Ohms to common, each input
Balance Ranges:	
C-Balance	± 10mV/V
R-Balance High	± 15mV/V
Med	± 1.5mV/V
Low	± 0.5mV/V
Transducer Excitation:	5 Vac, 5 kHz, sinewave, 0.5 VA suitable for strain gage, variable reluctance, LVDT & RVDT, and potentiometric transducers.
Bridge Selection:	Switch selectable for 2-arm or 4-arm input
Calibration:	Binding posts provided for installing external shunt calibration resistor. Toggie switcd selects plus or minus CAL, or normal operation.
Analog Outputs:	Two outputs, 0 to ± 10Vdc @ 10 mA, Short-circuit proof, on binding post, Output linearity, symmetry ±0.02% FS Output impedance < 10 Ohms. Output Ripple 0.1% FS RMS.
Output "A"	Direct function of input
Output "B"	Displayed on meter; suppressed and expanded by front panel controls
Suppression:	Adjustable to ±100% FS
Meter Range Switch:	Selects 10%, 30% or 100% of calibrated FS range for full scale meter deflection and 10 Vdc FS "B" output.

CD12 Specification (continued)

Meter: *	Zero center taut band, indicates "B"- Output. Resolves =0.1% as expanded null indicator. Provides convenient R & C balance indication in Balance Mode.	**Power Input: ***	95 – 125 Vac, 50 – 400 Hz (Can be converted to 190 – 250 Vac operation by reconnecting internal jumpers)
Temperature Range: Operating and Storage	0°F to 185°F (-18°C to 85°C)	**Electrical Connections: ***	PT02A-10-6P, Bendix or equal. Mating connector PT06A-10-6S (SR) not furnished
Stability:		**Common Mode Rejection:**	100 db DC-120Hz
Gain	0.005%/°F		
Zero	0.001%/°F		
Frequency Response:	Flat ±10% from DC to selected frequency of 0.1, 1, 10, 100 or 1000 Hz	**Weight:**	4.5 pounds (2.04 Kg)
Normal Mode Rejection	50 db DC-120Hz	* See Ordering Information section for available options.	

Installation Drawing



Ordering Information *To order, specify part number as follows:*

CD12 - A - 1 - A

- A: Input Power
- 1: Transducer Input Connector
- A: Display

INPUT POWER OPTIONS

Option Letter Description
- A = 95 - 125Vac, 50 - 400 Hz (STD)
- B = 10.5 - 14.5 Vdc (dc only)
- C = 190 - 250 Vac, 50 - 400 Hz

TRANSDUCER INPUT CONNECTOR

Option No. Description
- 1 = PT02A-10-6P, Bendix or equal (STD)
- 2 = WK-4-32S, Cannon
- 3 = WK-5-32S, Cannon

DISPLAY OPTIONS

Option Letter Description
- A = Zero center taut band (STD)
- B = 3½ Digit, digital display (See note 1)
- C = 4½ Digit, digital display (See note 2)
- D = 3½ Digit, with parallel BCD output (See note 1)
- E = 4½ Digit, with parallel BCD output (See note 2)

Notes:
1. The optional 3½ digital, panel meter provides a 100.0% display for 10 Vdc full scale analog output (output "B").
2. The optional 4½ digit panel meter provides a 100.00% display for 10 Vdc full scale analog output (output "B").

VALIDYNE ENGINEERING

8626 Wilbur Avenue - Northridge, CA 91324-4498
(818) 886-2057 - FAX (818) 886-6512
http://www.validyne.com - e-mail to sales@validyne.com