



Features

- Conditions Variable Reluctance, Strain Gage, and LVDT Sensors
- 10 Vdc Output for Input Sensitivities of 0.9 mV/V to 100 mV/V
- Selectable Low-Pass Filter
- Long Line Operation
- Optional Relay Activated Shunt Calibration

Description

The CD 173 Plug-in module is a high-gain differential input carrier demodulator for use with variable reluctance, strain gage, potentiometric and LVDT transducers. It uses the MC170 3kHz carrier for sensor excitation, in either half-bridge or full-bridge configuration. The sine wave carrier and adjustable reference phase control allow operation with transducers located over a thousand feet away. Full scale transducer input signals from 0.9 mV/V to 100 mV/V can be adjusted to produce 10 Vdc output using front-panel six-position gain switch and continuously adjustable gain vernier. Other front panel controls include low pass filter selector switch, zero balance adjustments for in-phase ("R") and quadrature components and reference phase adjustment ("C").

Front Panel Controls & Test Points

- Gain Switch – to set gain from 1 mV/V to 50 mV/V of sensitivity to obtain 10 Vdc output
- Gain Vernier – to adjust span at any gain setting
- Filter Switch – select output frequency response
- "R" Balance – to adjust zero balance for the in phase component of the carrier input signal
- "C" Balance – to adjust zero balance for the quadrature component of the carrier input signal
- O adjust – to adjust the carrier demodulator reference phase to that of the carrier input signal; useful to minimize phase shifts caused by long-line or reactive source operation
- AC Test Jack – to allow monitoring of AC input signal during input zero-balance
- DC Test Jack – to allow monitoring of DC output signal during setup and calibration

NOTE: All switches and adjustments are screwdriver actuated unless otherwise stated. Ground connection for all test points is on MC170 rear panel.

Specifications

Input Sensitivity:	+/-0.9mV/V to +/-100 mV/V for 10 Vdc output	
Gain Switch:	1 mV/V, 2.5 mV/V, 5 mV/V, 10 mV/V, 25 mV/V and 50 mV/V steps	
Gain Vernier:	Continuously variable, 10% to 110% of gain step	
Bridge Excitation:	5 Vrms, 3 kHz suitable for use with variable reluctance strain-gage and differential transformer transducers	
Bridge Configuration:	2-arm (half-bridge) or 4-arm (full bridge); switch selected	
Input Impedance:	Half-bridge, 100k ohms; Full-bridge 200k ohms	
Balance Range:	Low:	Hi:
	"R" 2mV/V	20 mV/V
	"C" 2 mV/V	2 mV/V
Reference Phase Adjust:	+/-90°, single turn screw-driver phase adjustment	
Output Voltage:	+/-10 Vdc	
Output Current:	+/-2 mA	
Frequency Response:	Switch selectable low pass filter of 10 Hz, 50 Hz, and 200 Hz	
Temperature:	Operating Range: 0° To 150° F Zero Shift: 0.0005%/°F Span Shift: 0.01%/°F	
Power Requirements:	5 Vrms, 3kHz, and +/-15Vdc supplied from MC170 Module Case Power Supply	
Size:	2.76"H x 0.45"W x 7.5"D (7.01 cm x 1.14 cm x 19.04 cm)	