

DAYTRONIC

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MODEL 5M30

LVDT CONDITIONER

[5M SERIES]



PROVEN FILTER AND MODULATION CIRCUITRY OPTIMIZES PERFORMANCE IN HARSH ENVIRONMENTS.



The DIN Mount **Model 5M30** is a high-reliability conditioner for measurement of displacement, force, pressure, and other parameters obtained with a **linear variable differential transformer (LVDT)** or other variable transformer transducer.

The **5M30** delivers filtered analog output of **± 5 Vdc**, **± 10 Vdc** or **4-20 ma**; switch selectable. Based on the synchronous carrier-demodulator principle, the 5M30 can handle a remarkably wide range of signals from 16 to 1600 mV/V full scale — Configuration and all adjustments are performed through front panel controls - simplifying transducer setup and calibration. There is no need for the user to open the DIN case for jumper or switch settings changes.

- **regulated, remotely sensed AC excitation**
- **auto-phase and manual phase selection**
- **high-stability amplification**
- **selectable low-pass active filtering**
- **$\pm 100\%$ zero offset adjustment**

The **5M30** provides regulated AC excitation with remote sensing for applications which require long cable lengths¹ along with a zero offset adjustment of $\pm 100\%$.

Selectable high-level, noise-free analog output : The 5M30 analog output can be switched selected via the front panel controls for ± 5 Vdc or ± 10 Vdc or 4-20 mA.

Powerful low-pass active filtering is selectable for the analog output, for removal of unwanted high-frequency measurement-signal components and the elimination of aliasing errors, if the module's output is subsequently sampled.



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FRONT PANEL CONTROLS ALLOW S EASY; QUICK SET-UP AND CALIBRATION OF THE LVDT SENSOR AND ANALOG OUTPUT.

COARSE and FINE BALANCE CONTROLS 100% zero authority in compression or extension of the LVDT.

COARSE and FINE SPAN CONTROLS stable gain adjustment for long and short stroke LVDTs with excitation sensing.

PHASE ADJUSTMENT Used to synchronize primary and secondary phase shifts due to sensor winding inductance and cabling.

MASTER / SLAVE CONTROL Eliminates "cross talk" when multiple units or transducers are mounted in close proximity of each other.

SPECIFICATIONS

Housing: DIN mount housing; non-removable screw terminals.

Dimensions: 114.5 mm D x 22.5 mm W x 99.0 mm H

Power Requirements: 11- 28 Vdc; 2 watts max.

Operating Temperature Range : -10° C to 70° C (14° F to 158° F)

Operating Relative Humidity : 5% to 95%, noncondensing

Transducer Types: Virtually any variable transformer transducer, including 4-, 5-, and 6-wire LVDT's and 3- and 5-wire Variable Reluctance Transducers (see diagram, below, for typical cabling)

Input Ranges (Nominal, Full-Scale):

Low Range : 16 to 160 mV/V

High Range: 160 to 1600 mV/V

Excitation Frequency: 5.00 kHz

Excitation Voltage: Nominal 2.77 Vac rms

FRONT PANEL SWITCH SETTINGS

	Left	Right
Output Mode	Current	Voltage
Voltage Level	10 Vdc	5 Vdc
Current Level	4-12-20ma	4-20ma
Filter Setting	1khz	100 Hz
Filter Setting	10 Hz	100 Hz
Sync Mode	Slave	Master
Zero Adj	Extended	Normal
Sensor mv/V Range	High (160-1600)	Low (16-160)
Phase Mode	Manual Phase	Auto-Phase

Amplifier:

Normal-Mode Range: 5 V rms operating; ± 28 V without damage

Input Impedance (Differential): 200 k Ω

Offset: vs. temperature: ± 30 ppm/ $^{\circ}$ C; vs. time: ± 10 ppm/month

Gain Accuracy: Limited only by calibration accuracy

Gain Stability: vs. temperature: ± 30 - ppm/ $^{\circ}$ C; vs. time: ± 10 ppm/month

Analog Filters : Low pass; Three-pole modified butterworth selectable at 10, 100 or 1000 Hz

Analog Outputs : Filtered ± 0 to 5 Vdc or ± 0 to 10 Vdc or 4-20 mA. Selectable via front panel - 20 % over-range in voltage mode

Status Indicator Lights: Power and analog over-range

CE Directive 2014/30/EU Electromagnetic Compatibility
2014/35/EU Low Voltage Safety

