



MP-2000

Dual Channel LVDT/RVDT Readout/Controller

SPECIFICATIONS

- Large backlit dual channel display
- Menu driven setup and calibration
- 100 to 240 VAC line powered
- MIN, MAX, TIR, A+B and A-B functions
- 2.5, 3.3, 5 and 10kHz selectable excitation
- Analog and RS-232 outputs
- Four user programmable set-points
- Splash-proof front panel with status LEDs
- ¼ DIN standard panel mounting

FEATURES

- Versatile dual channel display
- Software selectable gain and excitation
- 4 user-programmable set-points with LED indicators
- Master/Slave sync input/output for multiple MP-2000s
- Remote zero and min/max reset
- Rugged extruded aluminum housing

APPLICATIONS

- Pass/fail part sorting
- Concentricity/roundness gaging
- Press cycle control
- Part classification
- Material thickness measurement
- Industrial process control

The **MP-2000** is a dual channel, microprocessor based readout and set-point controller designed for industrial and process control applications utilizing any LVDT/RVDT-based measurement device. In addition to displaying real-time readings of LVDTs, RVDTs and gage heads, the MP2000 is also capable of displaying values such as MIN, MAX, TIR (Total Indicated Run-out), A+B (sum of two channels) and A-B (difference between two channels). A 17-bit analog-to-digital converter provides excellent performance and resolution, while a standard 9-pin RS-232 communications interface provides serial data output to a PLC or PC COM port.

The MP-2000 features four user-programmable, opto-isolated, open-collector set-point outputs, which can be used to monitor any display parameter. Any combination of high or low set-points may be selected, while programmable high and low hysteresis values may be used to create 'set-point dead band' for prevention of control relay chatter. An optional 'Relay Board' with a current handling capability of 5A per relay is available and highly recommended.

A front panel pushbutton permits auto-zeroing (tare) over the full range. Auto-calibration eliminates calculation of slope or gain factors. All calibration and setup parameters are stored in nonvolatile memory for retention on power down or interruption. The zero and min/max reset functions can be hard wired for remote control. The large, easy to read, bit-mapped display provides user-friendly, menu driven prompts for simple push-button system setup, calibration, and monitoring of in-process measurement parameters. A real-time scaled analog output, proportional to the digital readout is provided for each LVDT/RVDT channel. An RS-232 output is provided for data transfer to a computer at 1200 to 19.2K baud.

PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS	
Power requirements	100 to 240 VAC $\pm 10\%$, 47 to 63Hz
Display	
Digits (5)	0.4 [10] high, bitmapped LCD, electroluminescent backlight
Range	± 99999
Decimal point position	User selectable
Annunciator lights (LED)	Each of the four set-points, zero, and preset
Transducer excitation	
Voltage	1 or 3 VRMS (<i>user selectable</i>)
Oscillator frequency	2.5, 3.3, 5 or 10kHz (<i>user selectable</i>)
Current drive capability	25mA maximum per LVDT
Transducer requirements	
Transducer type	LVDT or RVDT with 5 or 6 electrical connections
Full scale output	1.2VRMS maximum with 1 or 3 VRMS excitation
Input (primary) impedance	40 Ω min with 1 VRMS excitation; 120 Ω min with 3V RMS excitation
Amplifier characteristics (transducer input)	
Input sensitivity range	High gain: 0.6 VRMS; Low gain: 1.2 VRMS
Input impedance	100k Ω minimum
Non-linearity	$\pm 0.02\%$ of FSO, maximum
Analog output	
Unipolar voltage output	0 to +10VDC
Bipolar voltage output	± 5 VDC (may be over-ranged to ± 10 VDC)
Response	20mS
Set-points	
Description	4 user programmable, high or low, with LED indicators
Hysteresis (dead band)	User programmable
Outputs	Opto-isolated, open collector logic outputs, 5VDC, 4mA per set-point
Relay board <i>(optional and highly recommended)</i>	Four relays, Normally Open and Normally Closed contacts Maximum switching capability (each relay): 50VAC/30VDC, 5A
Serial communications	
Type	RS-232
Speed	1200, 2400, 4800, 9600, or 19200 Baud (<i>user selectable</i>)

ENVIRONMENTAL AND MECHANICAL SPECIFICATIONS	
Operating temperature range	+32°F to +131°F [0°C to +55°C]
IP rating	IP61 (front panel only)
Mounting	¼ DIN panel mount
Depth behind panel (installed)	7.7 [196] with optional relay board installed (plugged into J4 connector)

Note:

All values are nominal unless otherwise noted

Dimensions are in inch [mm]

FSO (Full Scale Output) is the largest absolute value of the outputs measured at the range ends

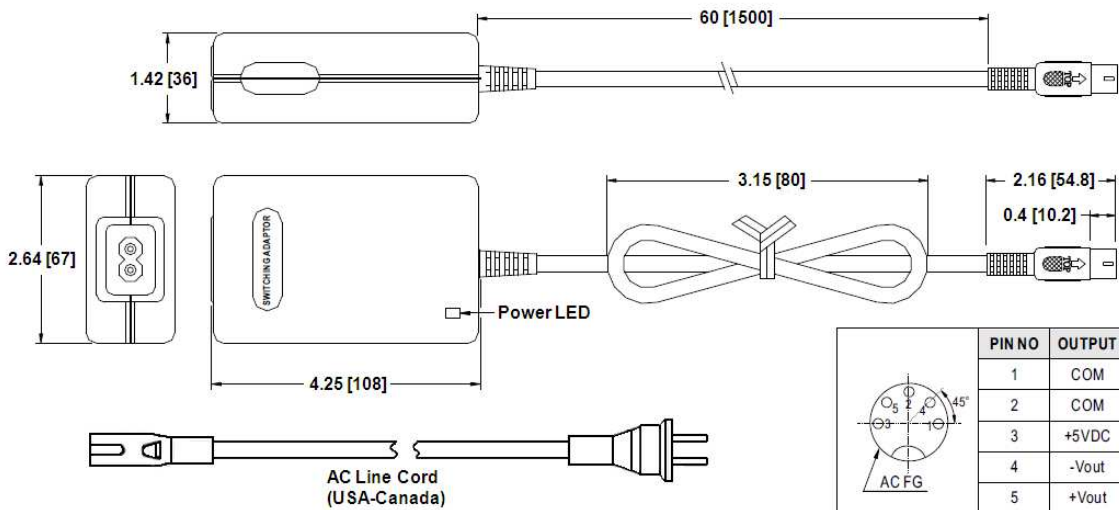
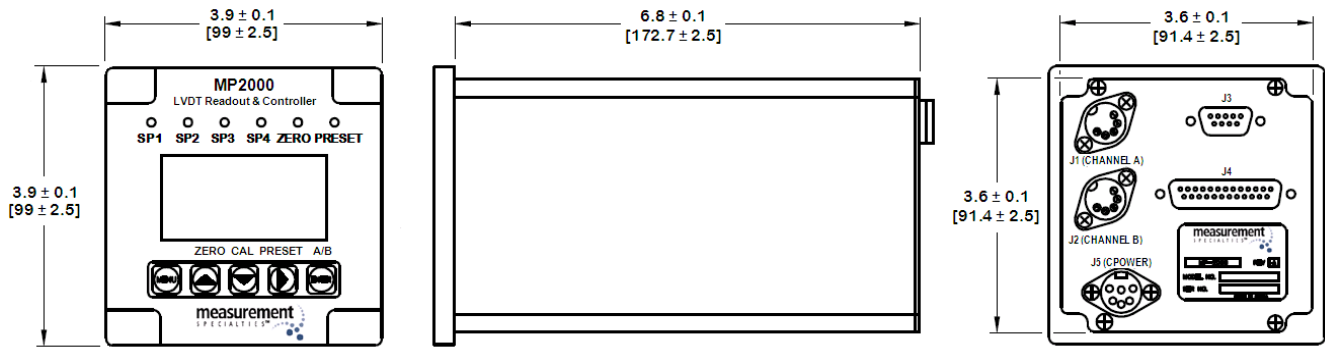
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CONNECTIONS (REAR PANEL)



DIMENSIONS



Dimensions are in inch [mm]

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ORDERING INFORMATION

Description	Part Number
MP-2000 Dual Channel LVDT/RVDT Readout/Controller	02291335-000
Rack Adaptor for up to 4 readout/controllers <i>(optional - MP-2000 readout/controllers not included)</i>	05290032-000
Relay Board <i>(optional and highly recommended)</i>	74170000-000
Cable to connect HCA/HCI/GCA/R36AS to MP2000, PTO6A-10-6S to 05BL5M (1)	04290560-000
Extension cable to connect LBB (option -001) to MP2000, PTO6A-10-6S to 05BL5M (1)	04290562-000

(1) All cables are shielded, 10 foot long, and rated 80°C [176°F] operating. Consult factory for other lengths.

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