



ADTECH
Analog-Digital Technology, Inc.

The real costs of frequency measurements go far beyond the initial price tag for the transmitter. Cost of ownership, installed cost and ease of maintenance are the true measures of value. ADTECH provides this value with all its transmitters. Our SMART TOUCH™ frequency transmitter will change the way you specify transmitters.

The MPF 250 provides superior **dynamic response**; which is the measure of how accurately a transmitter can track a dynamically changing process.

In order to track a dynamic process, the transmitter update rate and response time must be fast enough to follow the input.

A 20 Hz update rate and 67 millisecond response time provides superior **dynamic response** achieving tighter process control reducing process variability, waste, energy costs and improved product consistency.

The ADTECH SMART TOUCH™ Temperature Transmitter provides the benefits and value of a microprocessor based transmitter, yet the simplicity and intuitive feel of a conventional transmitter. The key to ADTECH's solution is; limit the complexity of the user interface. Make it simple to use and don't force the user to navigate a complicated setup routine to verify or perform a simple calibration.

Whether your system is a DCS, PC or PLC, enhance it with your specific measurement range and move the linearization burden to the transmitter. Why settle for a fixed factory range.

All our temperature transmitters provide the benefit of enhanced resolution by converting your specific process temperature range to a full scale output. PLC, DCS and PC systems are fixed range over the entire range of the sensor leading to measurement degradation.

Our compact package may be DIN, surface or SNAP Track mounted. NEMA 4 and 7 housings with or without process indicators are optionally available.

Features

- **Types of Inputs:** Sine, square wave, or contact closure
- **Inputs: Voltage, or Contact with Adjustable Sensitivity:** Turbine/flowmeter, tach/speed
- **Absolute Frequency Measurement**
- **Frequency Deviation Measurement**
- **Frequency Rate of Change:** Of absolute or deviation
- **Input Voltage Range:** 10 mV to 150 V rms
- **Input Frequency Range:** 0 to 0.031 Hz to 0 to 100 k Hz:
3,000,000:1
- **Response Time:** 1 period up to 64 Hz
- **Built-in Crystal Calibration Reference**
- **Resolution:** $\pm 0.05\%$ max.
- **Repeatability:** $\pm 0.05\%$ max.
- **High Accuracy:** $\pm 0.1\%$ of span
- **Isolation:** 600 VAC/ 1,000 VDC input to output to power

"Smart Touch™" Isolated Frequency Transmitter Two-Wire

Model No. MPF 250

Benefits:

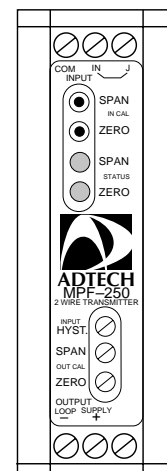
- **Eliminates proprietary hand held or portable P/C's for calibration**
- **Eliminates the expense of the LCD Display**

Absolute Frequency

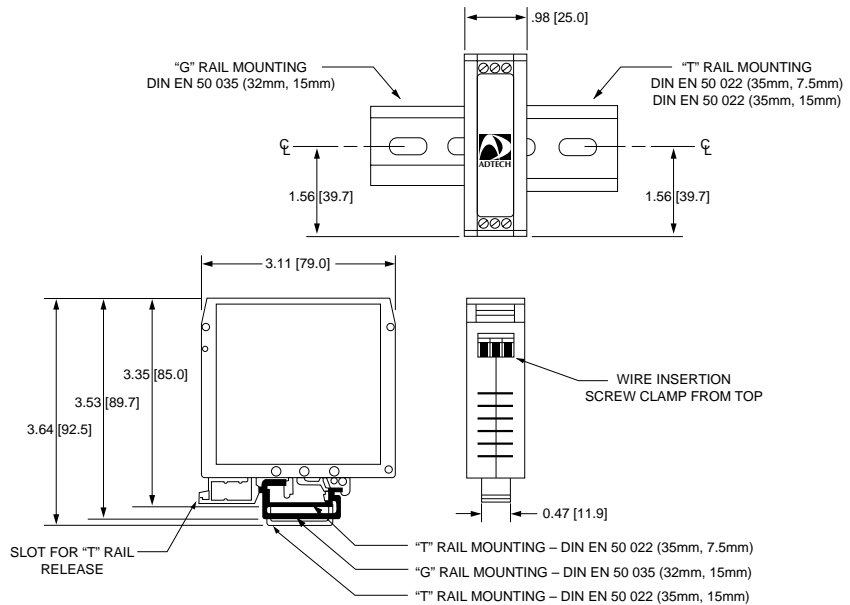
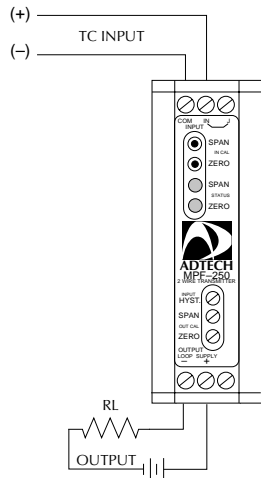
- Flow Measurement
- Machine Speed
- Power Frequency
- Energy management
- Watt-hour pulse rate

Frequency Deviation

- Utility line monitoring
- Generation control
- Load shed relay
- High resolution and accuracy of operation speed



Connections/Dimensions



Absolute Frequency Input/Output

Input Signals
Voltage: 10 mV to 150 V rms; specify; Input impedance 100 k Ω
Contact: Dry, 2 mA @ 24 VDC rating; specify
Frequency Range: 0.031 Hz full scale to 38 k Hz full scale; field selectable

Output
Absolute Frequency: Standard

Frequency Deviation

Input Signals
Voltage: 10 mV to 150 V rms; specify; Input impedance 100 k Ω
Contact: Dry, 2 mA @ 24 VDC rating; specify
Reference Frequencies: 25 Hz, 50 Hz, 60 Hz, 400 Hz; specify field selectable
Frequency Deviation: $\pm 0.39\%$ min. to $\pm 50\%$ maximum of reference frequency

Output
Frequency Deviation Output:
 Ranges: $0.390625 \cdot 2^1\%$ F.S. reference I = 0 to 7 field selectable

Output

Output Signal: 4-20 mA DC
Output Loop Drive Capability

$$R \text{ (ohm)} = \frac{(V \text{ supply} - 12.0) \cdot 1000}{I \text{ out max (ma)}}$$

Iout	4-20 mA		
	15	24	36
V supply	150	600	1200
R(ohms)	150	600	1200

Performance

Calibrated Accuracy: $\pm 0.1\%$ of mv input
Independent Linearity: $\pm 0.05\%$ max., $\pm 0.02\%$ typical
Repeatability: $\pm 0.01\%$ max., $\pm 0.004\%$ typ.
Zero TC: $\pm 0.15 \mu\text{V}/^\circ\text{C}$
Span TC: ± 30 ppm of span max./ $^\circ\text{C}$
Load Effect: $\pm 0.005\%$ zero to full load
Output Ripple: 10 mV (p-p) maximum

Temperature Range:
 -25 $^\circ$ to 185 $^\circ\text{F}$ (-31 $^\circ\text{C}$ to 85 $^\circ\text{C}$) operating;
 -40 $^\circ$ to 200 $^\circ\text{F}$ (-40 $^\circ\text{C}$ to 93 $^\circ\text{C}$) storage
Power Supply Effect: $\pm 0.005\%$ of span over operating range
Isolation: Input/Output/Case: 1000 VDC or 600 VAC
Response Time: 67 milliseconds (10 to 90% step response)
Bandwidth: 5.24 Hz

Power Mechanical

12-42 VDC standard (2-wire)

Electrical Classification: General purpose
Connection: Screw compression type accepts up to 14 AWG
Mounting: DIN - standard (See other options below)

Controls: 8 position switch, input zero and span push button switch and status led; output span and zero trim potentiometers.

Options

Ordering Information

- Input pulse rate and voltage amplitude
- Pulse or contact input
- Prime power
- Housing and miscellaneous options

Please refer to the Housing and/or Option Section for more specific and detailed information.

Number	Description	Number	Description
H 15D	Explosion Proof: Class 1, Group B, C & D	H 27	NEMA 4 enclosure (up to 3 units)
H 23	Two (2) inch pipe mounting plate & clamps	H 29	T 35 DIN "T" rail two feet long
H 25	Snap track mounting (specify)	H 30	T 32 DIN "G" rail two feet long
H 26	Surface mounting (specify)		

Represented by:



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