



# ADTECH

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## SMART TOUCH™ ISOLATED FREQUENCY TRANSMITTER TWO-WIRE MPF-250

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 IT'S 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 CONSISTENCY.

THE ADTECH SMART TOUCH™ FREQUENCY 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, WHY SETTLE FOR A FIXED FACTORY RANGE?

ALL OUR FREQUENCY 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.

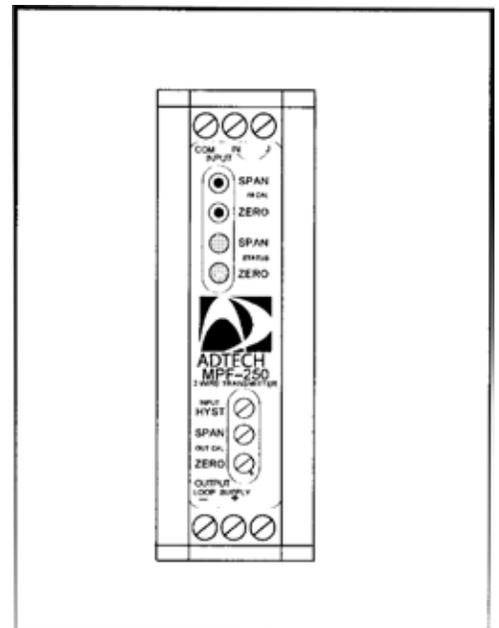
OUR COMPACT PACKAGE MAY BE DIN, SURFACE OR SNAP TRACK MOUNTED. NEMA 4 AND 7 HOUSINGS WITH OR WITHOUT PROCESS INDICATORS ARE OPTIONALLY AVAILABLE.

## 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 100KHZ 3,000,000:1
- RESPONSE TIME: 1 PERIOD UP TO 64 HZ
- BUILT-IN CRYSTAL CALIBRATION REFERENCE
- RESOLUTION: ±0.05% MAX
- REPEATABILITY: ±0.05% MAX.
- HIGH ACCURACY: ±0.1% OF SPAN
- ISOLATION: 600 VAC/ 1,000 VDC INPUT TO OUTPUT TO POWER

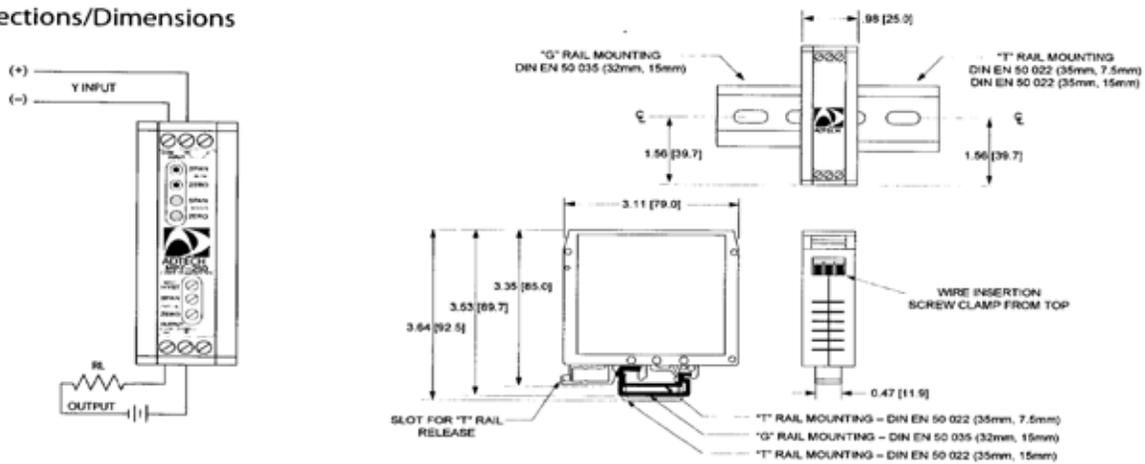
## TYPICAL APPLICATIONS

- 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

## 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- WHERE THE OUTPUT IS PROPORTIONAL TO THE INPUT'S ABSOLUTE FREQUENCY.

### 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: ±0.39% MIN. TO ±50% MAXIMUM OF REFERENCE FREQUENCY

**OUTPUT**  
 FREQUENCY DEVIATION OUTPUT:  
 RANGES: 0.390625 - 2<sup>1</sup> % F.S. REFERENCE 1 = 0 TO 7  
 FIELD SELECTABLE

### OUTPUT

OUTPUT SIGNAL: 4-20 mA DC  
 OUTPUT LOOP DRIVE CAPABILITY

$$R \text{ (OHM)} = \frac{(V \text{ SUPPLY} - 12.0) * 1000}{I \text{ OUT MAX (MA)}}$$

I <sub>out</sub>	4-20 mA				
	V supply	15	24	36	42
R(ohms)	150	600	1200	1500	

### PERFORMANCE

CALIBRATED ACCURACY: ±0.1% OF MV INPUT  
 INDEPENDENT LINEARITY: ±0.05% MAX., ±0.02% TYPICAL  
 REPEATABILITY: ±0.01% MAX., ±0.004% TYP.  
 AMBIENT TEMPCO  
 ZERO 75 PPM/ °C  
 SPAN 75 PPM/ °C  
 LOAD EFFECT: ±0.005% ZERO TO FULL LOAD  
 OUTPUT RIPPLE: 10 mV (P-P) MAXIMUM

TEMPERATURE RANGE:  
 -25° TO 185°F (-31°C TO 85°C) OPERATING;  
 -40° TO 200°F (-40°C TO 93°C) STORAGE  
 POWER SUPPLY EFFECT: ±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

12-42 VDC STANDARD (2-WIRE)

### MECHANICAL

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

NUMBER	DESCRIPTION
H 15D	EXPLOSION PROOF GLASS: CLASS 1, GROUP B.C. & D
H 23	TWO (2) INCH PIPE MOUNTING PLATE & CLAMPS
H 25	SNAP TRACK MOUNTING (SPECIFY)
H 26	SURFACE MOUNTING (SPECIFY)
H 27	NEMA 4 ENCLOSURE (UP TO 3 UNITS)
H 29	T 35 DIN "T" RAIL TWO FEET LONG
H 30	T 32 DIN "G" RAIL TWO FEET LONG

### 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.