



# ADTECH

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## 300 SERIES THREE- WIRE FIELD SELECTABLE WIDE RANGING TRANSMITTERS GUIDE



### FEATURES

- **TYPES OF INPUTS:** AC I/V (TRMS OR AVERAGE); FREQUENCY, MILLIVOLTS, POTENTIOMETER, RTD, DC I/V, T/C.
- **NO INTERACTION:** ZERO AND SPAN CONTROLS
- **ELEVATION/SUPPRESSION:** UP TO 100% OF RANGE
- **POWER RANGE:** 15 TO 42 VDC, 28 MA TYPICAL
- **RFI-RESISTANT**
- **TEMPERATURE COEFFICIENTS:**  
ZERO =  $\pm 0.007\%$  / °C OF SPAN- TYPICAL  
SPAN =  $\pm 0.008\%$  / C OF SPAN- TYPICAL
- **REPEATABILITY:**  $\pm 0.002\%$  TYPICAL
- **BANDWIDTH:** (-3 DB) : 3.2 HZ TYPICAL
- **ISOLATION:** 1000 VDC OR 600 VAC
- **POWER SUPPLY EFFECT:**  $\pm 0.005\%$  OF SPAN
- **RESPONSE TIME:** 110 MILLISECONDS TYPICAL
- **REVERSE POLARITY PROTECTION**

### TYPICAL APPLICATIONS

#### MEASUREMENT OF :

- TEMPERATURE
- FLOW
- SPEED
- POSITION
- DISPLACEMENT
- ROTATION
- AC CURRENT
- AC VOLTAGE
- DC SIGNALS

AC INPUT ACX 340 (ISOLATED)	FREQUENCY INPUT FDT 350 (ISOLATED)	MV INPUT MVT 306 (NON-ISOLATED)																																													
INPUT/OUTPUT	INPUT/OUTPUT	INPUT/OUTPUT																																													
<p><b>INPUT SIGNALS</b> AC CURRENT: ANY 0-1 TO 0-5 AMPS AC, BURDEN LESS THAN 0.5 VA (SELECTABLE AVERAGE OR TRUE RMS RESPONDING) AC VOLTAGE: ANY 0-0.25 TO 0-250 VAC, BURDEN LESS THAN 0.5 VA (SELECTABLE AVERAGE OR TRUE RMS RESPONDING) (4 MAJOR RANGES 0.25, 2.5, 25, 250) ZERO ADJUSTMENT: ±5% NOMINAL OF SPAN COURSE SPAN ADJUSTMENT: 100% OF A MAJOR RANGE (VOLTAGE ONLY) FINE SPAN ADJUSTMENT: ±5% NOMINAL OF MAJOR RANGE (±1 AMP FOR CURRENT INPUT) INPUT FREQUENCY RANGE: 25-1,000 HZ INPUT OVERLOAD CAPABILITY: 200% CONTINUOUS</p> <p>OUTPUT SIGNALS: 4-20 mA DC; 0-20 mA DC; 0-10 mA DC; 0-1 mA DC; 1-5 VDC; 0-5 VDC; 0-10 VDC OUTPUT LOOP DRIVE CAPABILITY R (OHM) = <math>\frac{(V \text{ SUPPLY} - 5) \cdot 1,000}{I \text{ OUT MAX. MA}}</math></p> <p>V SUPPLY: 15 TO 42 VDC</p> <table border="1" data-bbox="120 743 561 829"> <thead> <tr> <th>I out</th> <th colspan="4">4-20 mA or 0-20 mA</th> </tr> </thead> <tbody> <tr> <td>V supply</td> <td>15</td> <td>24</td> <td>36</td> <td>42</td> </tr> <tr> <td>R(ohms)</td> <td>500</td> <td>950</td> <td>1550</td> <td>1850</td> </tr> </tbody> </table>	I out	4-20 mA or 0-20 mA				V supply	15	24	36	42	R(ohms)	500	950	1550	1850	<p><b>INPUT SIGNALS</b> VOLTAGE (AMPLITUDE): 10 mV-100 VRMS (0-5 KHZ); 50 mV TO 50 VRMS (5 KHZ TO 30 KHZ) CONTACT: DRY, 2 mA @ 24 VAC RATING FREQUENCY RANGE: 0-30 HZ TO 0-30 KHZ FULL SCALE MAJOR RANGE SWITCH: PROVIDES 11 DISCRETE RANGES WITH THE ZERO CONTROL ADJUSTABLE 10% OF OUTPUT AND SPAN CONTROL ADJUSTABLE FROM 50% TO 100% OF THE MAJOR RANGE SELECTED</p> <p>OUTPUT SIGNAL: 4-20 mA DC; 0-20 mA DC; 0-10 mA DC; 0-1 mA DC; 1-5 VDC; 0-5 VDC; 0-10 VDC OUTPUT LOOP DRIVE CAPABILITY: R (OHM) = <math>\frac{(V \text{ SUPPLY} - 5) \cdot 1,000}{I \text{ OUT MAX. MA}}</math> V SUPPLY: 15 TO 42 VDC</p> <table border="1" data-bbox="597 743 1039 829"> <thead> <tr> <th>I out</th> <th colspan="4">4-20 mA or 0-20 mA</th> </tr> </thead> <tbody> <tr> <td>V supply</td> <td>15</td> <td>24</td> <td>36</td> <td>42</td> </tr> <tr> <td>R(ohms)</td> <td>500</td> <td>950</td> <td>1550</td> <td>1850</td> </tr> </tbody> </table>	I out	4-20 mA or 0-20 mA				V supply	15	24	36	42	R(ohms)	500	950	1550	1850	<p><b>INPUT SIGNALS</b> 0.5 mV TO 100 mV SPAN (Z IN GREATER THAN 10 MEGOHMS) ZERO SUPPRESSION: UP TO 100% OF THE MAJOR RANGE SELECTED IN 16 DIVISIONS OF THE COARSE ZERO ADJUSTMENT SWITCH SPAN: FROM 0.5 mV TO 100 mV FULL SCALE SWITCH SELECTABLE. THE COARSE SPAN SWITCH ADDS 16 DIVISIONS TO EACH MAJOR RANGE.</p> <p>OUTPUT SIGNAL: 4-20 mA DC; 0-20 mA DC; 0-10 mA DC; 0-1 mA DC; 1-5 VDC; 0-5 VDC; 0-10 VDC OUTPUT LOOP DRIVE CAPABILITY R (OHM) = <math>\frac{(V \text{ SUPPLY} - 5) \cdot 1,000}{I \text{ OUT MAX. MA}}</math> V SUPPLY: 15 TO 42 VDC</p> <table border="1" data-bbox="1065 743 1507 829"> <thead> <tr> <th>I out</th> <th colspan="4">4-20 mA or 0-20 mA</th> </tr> </thead> <tbody> <tr> <td>V supply</td> <td>15</td> <td>24</td> <td>36</td> <td>42</td> </tr> <tr> <td>R(ohms)</td> <td>500</td> <td>950</td> <td>1550</td> <td>1850</td> </tr> </tbody> </table>	I out	4-20 mA or 0-20 mA				V supply	15	24	36	42	R(ohms)	500	950	1550	1850
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<p style="text-align: center;"><b>MV INPUT</b> <b>MVT 326 (ISOLATED)</b></p>	<p style="text-align: center;"><b>POTENTIOMETER INPUT</b> <b>PTT 373 (NON-ISOLATED)</b> <b>PTT 374 (ISOLATED)</b></p>	<p style="text-align: center;"><b>RTD INPUT</b> <b>RBT 374 (NON-ISOLATED)</b></p>																																													
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RTD INPUT RBT 372 (ISOLATED)	I/V/MV INPUT SCT 302 (ISOLATED)	T/C INPUT TCT 326 (ISOLATED)																																													
INPUT/OUTPUT	INPUT/OUTPUT	INPUT/OUTPUT																																													
<p><b>INPUT SIGNALS</b> RESISTANCE BULB SENSOR: 2, 3, OR 4 WIRE TYPES 1 TO 400 OHM RESISTANCE SPANS: STANDARD ZERO SUPPRESSION: UP TO 100% OF THE MAJOR RANGE SELECTED IN 16 DIVISIONS OF THE COARSE ZERO ADJUSTMENT SWITCH. SPAN: FROM 0-100% FULL SCALE SWITCH SELECTABLE. THE COARSE SPAN SWITCH ADDS 16 DIVISIONS TO EACH MAJOR RANGE. LEAD COMPENSATION: 1% MAXIMUM ERROR OF DIFFERENTIAL LEAD RESISTANCE</p> <p>OUTPUT SIGNALS: 4-20 mA DC, 0-20 mA DC, 0-10 mA DC, 0-1 mA DC, 1-5 VDC, 0-5 VDC, 0-10 VDC OUTPUT LOOP DRIVE CAPABILITY</p> <p><math>R \text{ (OHM)} = \frac{V \text{ SUPPLY} - 5}{I \text{ OUT MAX. MA}} \cdot 1,000</math></p> <p>V SUPPLY = 15 TO 42 VDC</p> <table border="1" data-bbox="126 762 565 842"> <thead> <tr> <th>I out</th> <th colspan="4">4-20 mA or 0-20 mA</th> </tr> </thead> <tbody> <tr> <td>V supply</td> <td>15</td> <td>24</td> <td>36</td> <td>42</td> </tr> <tr> <td>R(ohms)</td> <td>500</td> <td>950</td> <td>1550</td> <td>1850</td> </tr> </tbody> </table>	I out	4-20 mA or 0-20 mA				V supply	15	24	36	42	R(ohms)	500	950	1550	1850	<p><b>INPUT SIGNALS</b> 4-20 mA DC (Z IN 10 OHMS) 0-20 OR ± 20 mA DC (Z IN 10 OHMS) 0-10 OR ±10 mA DC (Z IN 20 OHMS) 0-1 OR ±1 mA DC (Z IN 200 OHMS) 1-5 VDC (Z IN 1 MEGOHM) 0-5 OR ±VDC (Z IN 1 MEGOHM) 0-10 OR ±10 VDC (Z IN 1 MEGOHM) ANY UNIPOLAR OR BIPOLAR VOLTAGE FROM 100 MV TO 200 VDC. (OPTION 1 14) ZERO SUPPRESSION: ±10% SPAN ADJUSTMENT: ±10%</p> <p>OUTPUT SIGNALS: 4-20 mA DC, 0-20 mA DC, 0-10 mA DC, 0-1 mA DC, 1-5 VDC, 0-5 VDC, 0-10 VDC OUTPUT LOOP DRIVE CAPABILITY</p> <p><math>R \text{ (OHM)} = \frac{V \text{ SUPPLY} - 5}{I \text{ OUT MAX. MA}} \cdot 1,000</math></p> <p>V SUPPLY = 15 TO 42 VDC</p> <table border="1" data-bbox="591 762 1029 842"> <thead> <tr> <th>I out</th> <th colspan="4">4-20 mA or 0-20 mA</th> </tr> </thead> <tbody> <tr> <td>V supply</td> <td>15</td> <td>24</td> <td>36</td> <td>42</td> </tr> <tr> <td>R(ohms)</td> <td>500</td> <td>950</td> <td>1550</td> <td>1850</td> </tr> </tbody> </table>	I out	4-20 mA or 0-20 mA				V supply	15	24	36	42	R(ohms)	500	950	1550	1850	<p><b>INPUT SIGNALS</b> *THERMOCOUPLE: ALL STANDARD ISA CALIBRATION (B, E, J, K, R, S, T), -20 MV TO 100 MV SPANS (Z IN GREATER THAN 1 MEGOHM) ZERO SUPPRESSION: UP TO 100% OF THE MAJOR RANGE SELECTED IN 16 DIVISIONS OF THE COARSE ZERO ADJUSTMENT SWITCH. SPAN: FROM 0.5 MV TO 100 MV FULL SCALE SWITCH SELECTABLE. THE COARSE SPAN SWITCH ADDS 16 DIVISIONS TO EACH MAJOR RANGE. UPSCALE/DOWNSCALE BURNOUT PROTECTION: STANDARD, FIELD SELECTABLE BURNOUT CURRENT: 0.1 MICRO AMPERES-NOMINAL *CONSULT FACTORY FOR OTHER T/C TYPES.</p> <p>OUTPUT SIGNALS: 4-20 mA DC, 0-20 mA DC, 0-10 mA DC, 0-1 mA DC, 1-5 VDC, 0-5 VDC, 0-10 OR ±10 VDC OUTPUT LOOP DRIVE CAPABILITY</p> <p><math>R \text{ (OHM)} = \frac{V \text{ SUPPLY} - 5}{I \text{ OUT MAX. MA}} \cdot 1,000</math></p> <p>V SUPPLY = 15 TO 42 VDC</p> <table border="1" data-bbox="1057 762 1495 842"> <thead> <tr> <th>I out</th> <th colspan="4">4-20 mA or 0-20 mA</th> </tr> </thead> <tbody> <tr> <td>V supply</td> <td>15</td> <td>24</td> <td>36</td> <td>42</td> </tr> <tr> <td>R(ohms)</td> <td>500</td> <td>950</td> <td>1550</td> <td>1850</td> </tr> </tbody> </table>	I out	4-20 mA or 0-20 mA				V supply	15	24	36	42	R(ohms)	500	950	1550	1850
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<p><b>PERFORMANCE</b></p> <p>* CALIBRATED ACCURACY: ±0.1% *INDEPENDENT LINEARITY: ±0.025% MAXIMUM, ±0.01% TYPICAL CONFORMANCE TO RTD CURVES: 0.15% MAX. REPEATABILITY: ±0.005% MAX., ±0.002% TYP. ZERO TC: <math>\pm \frac{0.05}{\text{INPUT SPAN (OHMS)}} + 0.005</math> % OF SPAN/ °C MAX. SPAN TC: ±0.008% OF SPAN MAX. / °C LOAD EFFECT: ±0.005% ZERO TO FULL LOAD OUTPUT RIPPLE: 10 MV P/P MAXIMUM RESPONSE TIME: 110 MILLISECONDS ( 10 TO 90% STEP RESPONSE) BANDWIDTH: (-3 DB): 3.2 HZ TEMPERATURE RANGE: -25° TO 185°F (-31° TO 85°C) OPERATING; -40° TO 200°F (-40° TO 93°C) STORAGE POWER SUPPLY EFFECT: ±0.005% OF SPAN MAX. ISOLATION: INPUT/OUTPUT/CASE: 1000VDC, 600 VAC NOTE: ALL ACCURACIES ARE GIVEN AS A % OF SPAN.</p>	<p><b>PERFORMANCE</b></p> <p>* CALIBRATED ACCURACY: ±0.1% *INDEPENDENT LINEARITY: ±0.025% MAXIMUM, ±0.01% TYPICAL REPEATABILITY: ±0.005% MAX., ±0.002% TYP. ZERO TC: ±0.007% OF SPAN MAX. / °C SPAN TC: ±0.008% OF SPAN MAX. / °C LOAD EFFECT: ±0.005% ZERO TO FULL LOAD OUTPUT RIPPLE: 10 MV P/P MAXIMUM RESPONSE TIME: 110 MILLISECONDS ( 10 TO 90% STEP RESPONSE) BANDWIDTH: (-3 DB): 3.2 HZ TEMPERATURE RANGE: -25° TO 185°F (-31° TO 85°C) OPERATING; -40° TO 200°F (-40° TO 93°C) STORAGE POWER SUPPLY EFFECT: ±0.005% OF SPAN MAX. ISOLATION: INPUT/OUTPUT/CASE: 1000 VDC, 600 VAC NOTE: ALL ACCURACIES ARE GIVEN AS A % OF SPAN.</p>	<p><b>PERFORMANCE</b></p> <p>* CALIBRATED ACCURACY: ±0.1% ( OF MV INPUT) *INDEPENDENT LINEARITY: ±0.01% MAXIMUM, ±0.006% TYPICAL (14-BIT DIGITAL LINEARITY) (OF MILLIVOLT INPUT) REPEATABILITY: ±0.005% MAX., ±0.002% TYP. ZERO TC: <math>\pm \frac{0.025}{\text{INPUT SPAN (MV)}} + 0.007</math> % OF SPAN/ °C MAX. SPAN TC: ±0.008% OF SPAN MAX. / °C LOAD EFFECT: ±0.005% ZERO TO FULL LOAD OUTPUT RIPPLE: 10 MV P/P MAXIMUM RESPONSE TIME: 110 MILLISECONDS ( 10 TO 90% STEP RESPONSE) BANDWIDTH: (-3 DB): 3.2 HZ TEMPERATURE RANGE: -25° TO 185°F (-31° TO 85°C) OPERATING; -40° TO 200°F (-40° TO 93°C) STORAGE POWER SUPPLY EFFECT: ±0.005% OF SPAN, MAX. ISOLATION: INPUT/OUTPUT/CASE: 1000 VDC, 600 VAC COLD JUNCTION COMPENSATION ERROR: 1.5 °C MAX (0 TO 50 °C)  NOTE: ALL ACCURACIES ARE GIVEN AS A % OF SPAN.</p>																																													
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<p>ELECTRICAL CLASSIFICATION: GENERAL PURPOSE CONNECTION: SCREW, COMPRESSION TYPE, ACCEPTS UP TO 14 AWG CONTROLS: TWO 16 POSITION ROTARY SWITCHES FOR COARSE ZERO AND SPAN CONTROL; TWO MULTITURN POTENTIOMETERS FOR FINE ZERO AND SPAN CONTROL AND JUMPERS FOR RTD TYPE; MAJOR RANGE, INPUT ZERO ELEVATION AND OUTPUT SELECTION MOUNTING: DIN RAILS, SURFACE, SNAP TRACK, OR NEMA 4 OR 7 WEIGHT: NET UNIT: 4 OZ. (115 GRAMS); SHIPPING: NOMINAL 7 OZ. ( 200 GRAMS)</p>	<p>ELECTRICAL CLASSIFICATION: GENERAL PURPOSE CONNECTION: SCREW, COMPRESSION TYPE, ACCEPTS UP TO 14 AWG CONTROLS: 8 JUMPERS FOR RANGES, TWO MULTITURN POTENTIOMETERS FOR ZERO AND SPAN MOUNTING; DIN RAILS, SURFACE, SNAP TRACK, OR NEMA 4 OR 7 WEIGHT: NET UNIT: 4 OZ. (115 GRAMS); SHIPPING: NOMINAL 7 OZ. ( 200 GRAMS)</p>	<p>ELECTRICAL CLASSIFICATION: GENERAL PURPOSE CONNECTION: SCREW, COMPRESSION TYPE, ACCEPTS UP TO 14 AWG CONTROLS: TWO 16 POSITION ROTARY SWITCHES FOR COARSE ZERO AND SPAN CONTROL; TWO MULTITURN POTENTIOMETERS FOR FINE ZERO AND SPAN CONTROL AND JUMPERS FOR T/C TYPE MAJOR RANGE , INPUT ZERO ELEVATION AND OUTPUT SELECTION MOUNTING: DIN RAILS, SURFACE, SNAP TRACK, OR NEMA 4 OR 7 WEIGHT: NET UNIT: 4 OZ. (115 GRAMS); SHIPPING: NOMINAL 7 OZ. ( 200 GRAMS)</p>																																													
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<p>H 15 D, H 25 - H 30 LPI 40 D</p> <p>MOUNTING LOOP POWERED INDICATOR</p>	<p>H 15 D, H 25 - H 30 LPI 40 D</p> <p>I 14</p> <p>MOUNTING LOOP POWERED INDICATOR VOLTAGE / CURRENT INPUTS</p>	<p>H 15 D, H 25 - H 30 LPI 40 D</p> <p>MOUNTING LOOP POWERED INDICATOR</p>																																													

THE ADTECH 300 SERIES THREE-WIRE TRANSMITTERS PROVIDE MOUNTING EFFICIENCY AND EASE OF WIRING IN A COMPACT DIN PACKAGE. THEIR SMALL SIZE MAKES THEM IDEAL REPLACEMENTS FOR THE TYPICAL POWERED TRANSMITTER.

THE UNITS CONVERT MOST SENSOR INPUTS TO INDUSTRY STANDARD 4-20 mA, 1-5 VDC, 0-5 VDC OR 0-10 VDC OUTPUT FOR INTERFACE DIRECTLY WITH PLC'S, DCS'S AND PROCESS COMPUTERS.

MOST UNITS PROVIDE INDEPENDENT LINEARITY EQUIVALENT TO 14-BIT DIGITAL ACCURACY AND INCLUDE USER FRIENDLY FEATURES SUCH AS WIDE RANGING AND NON-INTERACTIVE ZERO AND SPAN CONTROLS.

THE COMPACT DIN MOUNTING STYLE ALLOWS HIGH DENSITY MOUNTING IN NEW OR EXISTING CONTROL PANEL ENCLOSURES OR FIELD MOUNTED.

STANDARD MOUNTING IS DIN RAIL. SURFACE OR SNAP TRACK MOUNTING IS PROVIDED AT NO CHARGE. NEMA 4 OR 7 ARE OPTIONALLY AVAILABLE.

THESE UNITS ARE DESIGNED FOR INDUSTRIAL ENVIRONMENTS. THE HOUSING IS MADE OF RUGGED KRILEN FOR PROTECTION AGAINST CORROSION, MOISTURE AND DUST. SCREW COMPRESSION TERMINALS ARE PROVIDED FOR POSITIVE FIELD CONNECTIONS.

REVERSE POLARITY PROTECTION IS SUPPLIED AS STANDARD.

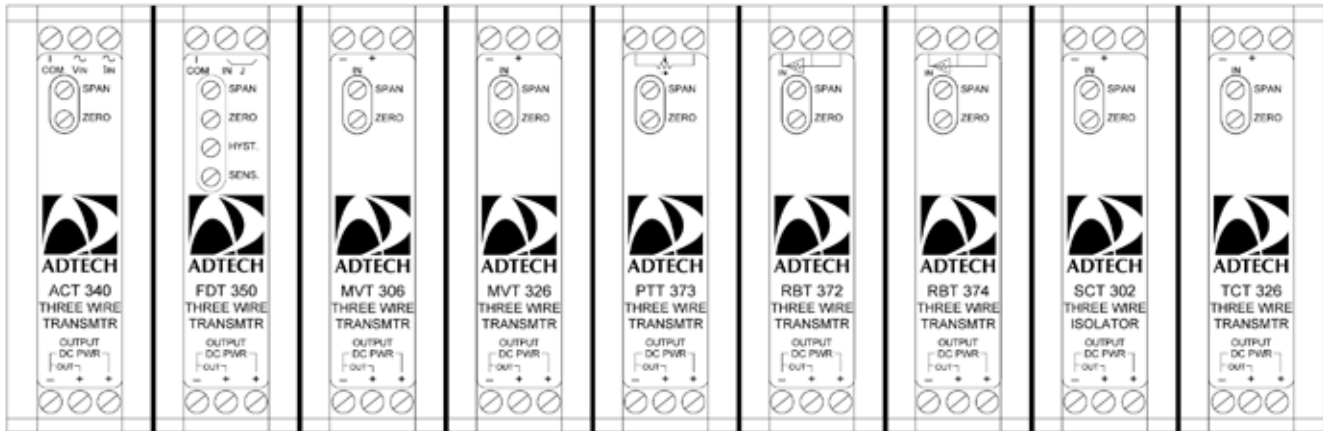
THE POWER RANGE OF 15 TO 42 VDC; 28 MA TYPICAL PROVIDES VALUABLE ADDED DRIVE CAPABILITY.

THE INPUT/OUTPUT CAN BE FACTORY SET TO ORDER AS SPECIFIED (NO CHARGE) OR RECONFIGURED IN THE FIELD BY SIMPLY ADJUSTING SWITCHES, MULTI-TURN POTENTIOMETERS, AND PLUG-IN JUMPERS.

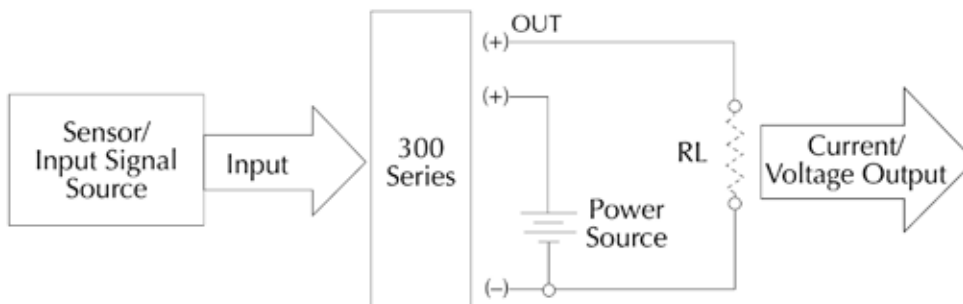
INTEGRAL LCD FIELD INDICATOR (LPI 40D) IS OPTIONALLY AVAILABLE.

AC TO DC OR DC TO DC INSTRUMENT POWER SUPPLIES ARE AVAILABLE. THE IPS 2402 AC/DC POWERS UP TO 2 UNITS. THE IPS 2416 AC/DC OR DC/DC POWERS UP TO 12 UNITS. DIN, SURFACE, SNAP TRACK OR NEMA MOUNTINGS ARE AVAILABLE.

## Connections

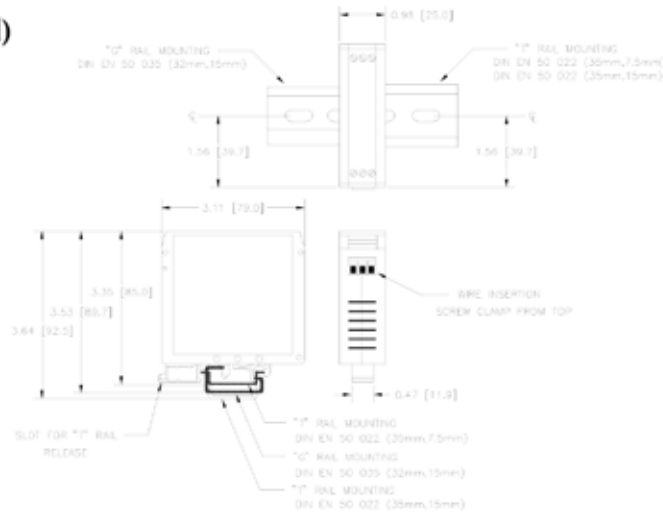


## Typical Connection

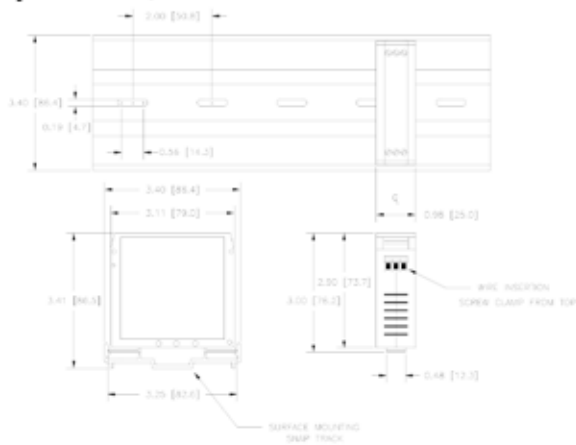


# Outline & Mounting

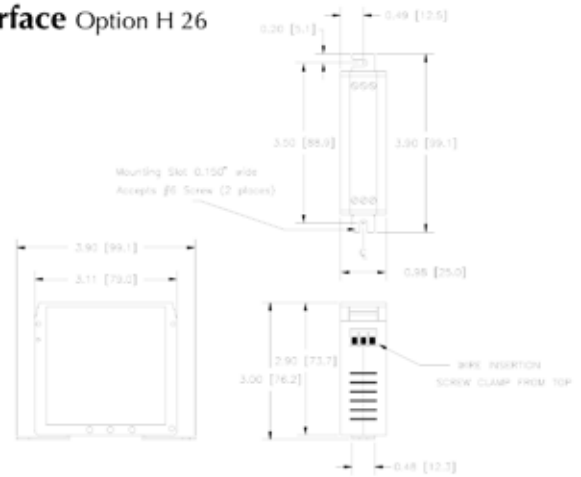
## DIN Mount (Standard)



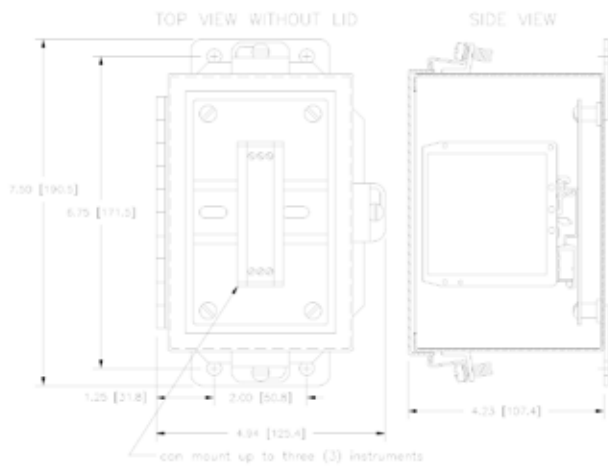
## Snap Track Option H 25



## Surface Option H 26



## NEMA 4 Option H 27



## NEMA 7 Option H15D

