

### Description

The highly versatile MVX 2-Wire Millivolt Transmitter accepts a low-level millivolt or current input from a grounded or ungrounded source. It provides a proportional current output. The MVX can also be used as a signal isolator, or as a repeater for regenerating a process signal.

**Converter**—A wide range of input and output options makes the MVX the perfect interface between a 2- or 4-wire transmitter and almost any control system or receiving device.

**Isolator**—The MVX provides total isolation between the signal from a non-isolated signal transmitter and a receiving device. It eliminates faulty readings caused by ground loops and other electrical interference.

**Repeater**—The MVX's low 2 ohm (for 4-20mA input) input impedance combined with high drive capability makes it perfect for regenerating signals to increase transmission distances or allow additional instruments to be added to the loop.

### Ordering Specifications

To order, use the bold face data from the Ordering Specifications section of the Specifications table (see back page). For assistance, refer to the model number example located at the bottom of the table.

#### Certifications (see Options listing where applicable)



**CSA: General Location** – DIN and HP, File Number LR28549-26 and -14;  
**Explosion-proof** – HP in explosion-proof enclosure, File Numbers LR28549-19, -30, and -34



**FM: Explosion-Proof** – HP in explosion-proof enclosure, File Number 1Q78A8.AE



**CENELEC: Explosion-proof** – HP in explosion-proof enclosure, File Number INIEX 86.103.522

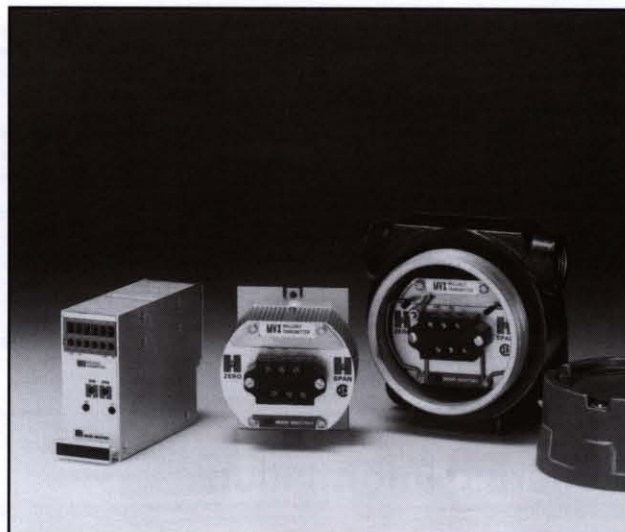
**SAA: Explosion-Proof** – HP in explosion-proof enclosure, File Number 1031;

**Intrinsically Safe** – HP in explosion-proof enclosure, File Number EX760;

**Type N** – DIN, File Number 1044X



**CE Conformant** – DIN and HP, File Number EMC 89/336/EEC EN 50081-2, 1993, and EN 50082-2, 1995 (-RF Option required)



The compact, DIN-style housing of the MVX installs in tight spaces. The hock-puck housing fits in a variety of explosion-proof enclosures for mounting in the field.

### Features

- **Wide range of inputs and outputs.** Interfaces almost any current/voltage devices to a control system, readout device, or process instrument.
- **Low output ripple/high common mode rejection.** Low output ripple and high common mode rejection mean output signals are exceptionally accurate, stable, and noise-free.
- **Complete isolation.** Isolation between input, output, and power terminals eliminates signal inaccuracies caused by ground loops.
- **RFI/EMI protection.** When ordered with the -RF option, the MVX is resistant to the harmful effects of radio frequency and electromagnetic interference.

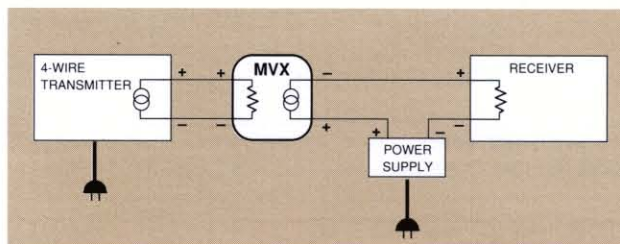


Figure 1. The MVX's complete isolation stops ground loops from affecting the accuracy of a transmitted process signal.

# MVX

## 2-Wire Millivolt Transmitter

### Specifications

<p><b>Performance</b> <b>Calibration Capability:</b> ±0.1% of span; ±0.25% of span with -LSA option (linearity and repeatability)</p> <p><b>Frequency Response:</b> 10Hz (3dB point)</p> <p><b>Isolation:</b> Input and output are transformer-isolated (500Vrms); no dc connections between them</p>	<p><b>Performance (continued)</b> <b>Common Mode Rejection:</b> Exceeds 120dB at 60Hz with limit of 500Vrms</p> <p><b>Ripple:</b> &lt;20mV P/P at maximum span and load</p> <p><b>Load effect:</b> ±0.01% of span from 0 to maximum load resistance (current output)</p> <p><b>Line Voltage Effect:</b> ±0.002%/Vdc change</p>	<p><b>Ambient Conditions Ratings</b> <b>Range:</b> -29°C to +82°C (-20°F to +180°F)</p> <p><b>Effect:</b> ±0.018/°C (±0.01%/°F) over above range</p> <p><b>Adjustments</b> <b>Type:</b> External multiturn potentiometers</p> <p><b>Span:</b> Adjusts output to full scale over entire input range</p> <p><b>Zero:</b> Adjusts output to 0% for offsets of up to ±10% of full scale input</p> <p><b>Weight</b> 141.5 grams (5 oz.)</p>
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### Ordering Information

Unit	Input	Output	Power	Options	Housing
<b>MVX</b>	<p><b>4-20MA</b> into 2 ohms</p> <p><b>1-5V</b> (-AT option required. Other ranges available, consult factory)</p> <p><b>5-10MVFS</b> 0-5 through 0-10MVFS (-LSA option required)</p> <p><b>10-20MVFS</b> 0-10 through 0-20MVFS</p> <p><b>20-40MVFS</b> 0-20 through 0-40MVFS</p> <p><b>40-80MVFS</b> 0-40 through 0-80MVFS</p> <p><b>80-160MVFS</b> 0-80 through 0-160MVFS</p> <p><b>160-320MVFS</b> 0-160 through 0-320MVFS</p> <p><b>320-640MVFS</b> 0-320 through 0-640MVFS</p> <p>(Bias Current limited to 20 nanoamperes)</p>	<p><b>4-20MA</b> into 600 ohms with 24Vdc power supply</p> <p><b>10-50MA</b> into 600 ohms with 42Vdc power supply</p>	<p><b>12-42DC</b> (loop-powered on output side)</p> <p><b>12-28DC</b> (loop-powered on output side) Required for -SAA Option</p>	<p><b>-AT</b> Attenuated input, 200K impedance; required for inputs of 1V or higher (not available with -UD option)</p> <p><b>-DD</b> Downscale open input drive</p> <p><b>-EZ</b> Elevated zero (specify millivolt input for 0% output after -EZ in model number)</p> <p><b>-FA</b> Front accessible terminal block (-FA is factory default; specify -FA or -RA for DIN housing)</p> <p><b>-LSA</b> Low input span (required for 0-5 through 0-10MVFS input)</p> <p><b>-RA</b> Rear accessible terminal block (-FA is factory default; specify -FA or -RA for DIN housing)</p> <p><b>-RF</b> RFI/EMI protection rates 50V/m - abc = 0.1% F.S. when tested according to SAMA Standard PMC 33.1 (Required for CE conformity.)</p> <p><b>-RTB</b> Removable terminal block (DIN housing only)</p> <p><b>-SAA</b> Certified Intrinsically Safe, Ex ia IIC T6 AUS 760X (Requires 12-28DC Power specification)</p> <p><b>-UD</b> Upscale open input drive (downscale is standard; -UD not available with 4-20MA input or with -AT option)</p>	<p><b>DIN</b> Aluminum DIN-style housing mounts on 32mm G-type (EN50053) rail; -FA or -RA option required (see DIN housing sheet for details)</p> <p><b>HP</b> Hockey-puck housing with spring clips for mounting in an explosion-proof enclosure (see FL/HP housing sheet for details)</p> <p><b>FL</b> Hockey-puck housing with flanges for surface or relay track mounting (see FL/HP housing sheet for details)</p> <p><b>2LS*</b> Hockey-puck housing mounted in a 2-hub, solid cover, low dome explosion-proof enclosure (see EXPL housing sheet for details)</p> <p><b>*FM</b> (prefix) on 2LS explosion-proof enclosure indicates FM approved Class I, Division I, Groups B, C, D (e.g., <b>FM2LS</b>)</p> <p><b>P</b> (suffix) indicates unit comes equipped with base plate and U-bolts for mounting on a 2-inch pipe (e.g., <b>2LS P</b>)</p>

**When ordering, specify:** Unit / Input / Output / Power / Option(s) [Housing]

**Model Number Examples:** MVX / 4-20MA / 4-20MA / 12-42DC / -FA [DIN] , MVX / 1-5V / 4-20MA / 12-42DC / -AT [2LS]



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