## DESCRIPTION

The MVT223 is a loop powered, isolating transmitter that offers an economical solution combining compactness with accuracy and flexibility. The MVT223 is ideal in field enclosures or in larger control cabinets. Standard output is 4 - 20mA loop powered with a minimum supply voltage of 8V. Factory set output configurations include 10-50mA loop powered and a range of 3-wire connection versions. Double surge protection is standard with all Series 200 loop powered transmitters to prevent failure due to spikes induced by DC switched inductive loads. The MVT223 accepts low level DC millivolt input signals. It features coding plugs to easily change ranges in the field without special tools or soldering. The MVT223 can be factory configured for applications requiring "reverse acting" operation. Final calibration is trimmed using the front accessible zero and span 15-turn trim adjustments. A front mounted L.E.D. and a test socket verify module function and assist in calibration checks without disconnection of output wires.

Features

- Suitable for 12V battery supply systems or in automotive applications.
- Link selectable ranges of 20 to 1000mV cover external DC shunt applications.
- Reference for 3-wire connection is the negative supply.

Block Diagram
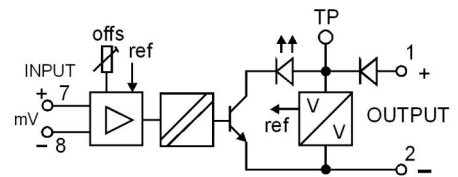
General Specifications

Size:	23.5W x 71.5H x 109D (mm).
Mounting:	Clip for 35mm DIN-Rail.
Housing material:	ABS.
Connection:	Screw terminals.
Weight:	0.110 kg.
Protection class:	IP40 (IP65 refer to MVT523)
Calibration. accuracy:	<0.2% of range.
Linearity:	<0.2% of range.
Ambient operating temperature range:	-10...+65°C.
Temperature drift error:	<0.5% within operating range.
Supply voltage:	8 - 40V continuous (50V 30 seconds).

Load for 4 - 20mA output:
$$RLmax = \frac{SupplyVoltage - 8V}{0.02A} \, \Omega \, .$$

Load change effect:	0.1% up to RLmax.
Response time:	0.2 sec for T_{90}
Front Zero adjust:	+20% / -10% typical.
Front Span adjust:	±25% typical.
Internal Offset Adjust:	±50%.
Input range:	20mV up to 1000mV.
Input impedance:	30k Ω (20-200mV ranges).
	140k Ω (250-1000mV ranges)
Input/output isolation:	> 2kV rms.
Electromagnetic compatibility:	Complies with AS/NZS 4251.1 (EN 50081.1)

For inputs of 1 volt dc and above, refer to SI231.

For input / output combinations refer to TYPE NO. DESIGNATION overleaf.

A.P.C.S.

MVT223 - X X X X

TYPE NO. DESIGNATION

Output:

1 = 4 - 20mA. ⎫
2 = 10 - 50mA. ⎬ 2-wire
*) 3 = 0 - 1mA. ⎫
*) 4 = 0 - 10mA. ⎬ 3-wire
*) 5 = 0 - 20mA. ⎭ 0V Ref.

*) 6 = 0 - 1V.
*) 7 = 0 - 5V, min supply 10.5Vdc. ⎫ 3-wire
*) 8 = 0 - 10V, min supply 15.5Vdc. ⎬ 0V Ref.
*) 9 = Other (Specify). ⎭

Input:

3 = 20 - 1000mV (see table 1, Specify required input).

Action:

1 = Direct.   2 = Reverse.

Options:

0 = None.   *) 1 = Output ramp (external capacitor set).

*) = Price Extra.

Front Controls

1. Test socket - output signal access with reference to terminal (1) loop integrity is maintained when digital multimeter Rin <30 Ω is used.
2. Loop indicator - dim at 4mA, bright at 20mA.
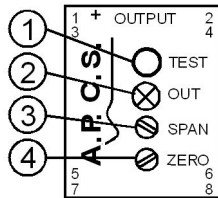3. SPAN (full scale) adjust 15 turn.
4. ZERO (start scale) adjust 15 turn.

Wiring Example

POWER SUPPLY PS109

+24V

Input

MVT223

4-20mA

*RL

Optional Earth

Indicator DPM528

* Note: RL is input load of PLC, VSD, or other process instrument.
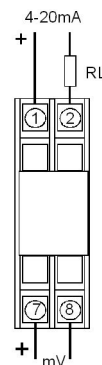
Link Selection Models

A 10 way 2 row header is used to set the input level (table 1) and input output response time (table 2). After the links have been set for the required input the span and zero adjustments must be set. Standard factory settings are :-
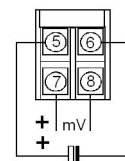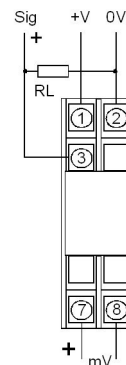   Input: 0-75mV, Response Time: 500mS.

Table 1

SW1	A	B	C	D	E	F	G	H
0-20mV			X	X	X	X	X	
0-40mV			X	X	X			
0-50mV			X	X	X		X	
0-60mV			X	X		X		
0-75mV			X	X		X	X	
0-100mV			X	X			X	
0-150mV			X		X		X	
0-200mV			X				X	
0-250mV				X	X		X	
0-500mV				X			X	
0-750mV					X		X	
0-1000mV							X	
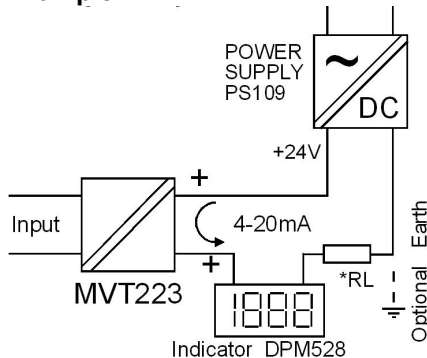
Table 2 Response Time

SW1	I	J
5mS		
50mS	X	
500mS		X

A   SW1   J

Bottom right corner of PCB ^

Connection Diagrams

2-wire (Loop Powered)

4-20mA

RL

3-wire

Sig +V 0V

RL

Option 1

CF