

# Digital Loop Monitor SWICHGAGE®

MDM-9113B  
Revised 01-98  
Catalog Section 05  
(00-02-0027)

## Model MDM45



Approved\*

Factory  
Mutual  
System  
Approved\*

- 3 Instruments in 1
- Monitor Any 4–20 mA Linear Output
- Designed to Operate from 12–24 VDC
- Adjust a Separate Trip Point for High and Low Values
- Easy Access for Trip Point, Span and Zero Adjustments
- Specify Unit of Measurement

\* Approved for 10–30 VDC power input and 4–20 mA signal input.



### Description

Model MDM45 is an electronic LOOP MONITOR which accepts one 4–20 mA transmitter input and digitally displays the results via a highly visible Liquid Crystal Display. Separately adjustable high and low limit trip points are also provided for control functions. A toggle switch and push button on the face allow the operator to select the trip point to be read and set. Both trip points are always active regardless of the position of the toggle switch.

Designed to be installed within a weatherproof enclosure the MDM45 can be panel mounted in the same manner as our popular OPL and SPL series SWICHGAGE® instruments. Zero and span adjustments are easily accessible from the face of the MDM45 for setting to the 4–20 mA input signal.

### Features

The model MDM45 is designed to operate from 12 or 24 VDC (10-30 VDC) systems. This model has FET trip point outputs. The "Push to Read" button allows the operator to check each trip point value and to watch the display as adjustments are made to a selected trip point. Releasing the push button returns the readout to that equal to the input signal: i.e. pressure, level, percent open, etc. The user determines the unit of measurement according to the source of the input signal. An LED below the trip point adjustment potentiometer lights to indicate that the trip point has been reached.

**Added value from basic features.** (1) Onboard DC to DC conversion for superior interference isolation. (2) Front accessible span and zero adjustment. (3) Easy to read one-half inch numerals on a liquid crystal display. (4) Three instruments in one: digital gauge, low limit switch, high limit switch. (5) Extremely user friendly and highly field adaptable.

### Applications

- Engine/compressor lube-oil pressures
- Pump/compressor discharge pressures
- Valve position indication (% open/closed)
- Vibration
- Any 4–20 mA input

### Specifications

**Accuracy:** ± 1% of full scale.

**Operating Temperature Range:** 32 to 155°F (0 to 70°C).

**Storage Temperature:** -40 to 300°F (-40 to 150°C).

**Display Range:** -10,000 to 19,999.

**Signal Input:** 4–20 mA.

**Input Resistance:** 250 Ohms.

**Display Update Time:** 0.5 seconds.

**Power:** 1.8 watts @ 12 VDC  
3.6 watts @ 24 VDC.

min.-max. operating voltage 10–30 VDC.

**Trip Point Output:** A power FET switch turns on when signal reaches the trip point. Trip points can be selected to open or closed (0.5 amp @ 250 VDC).

**Shipping Weight:** 2 lb. 7 oz. (1.2 kg).

**Shipping Dimensions:** 10 x 9 x 6 in. (254 x 229 x 152 mm).

**Laboratory Approvals:** CSA and FM approved† for Class I, Division 2, Group D, hazardous locations).

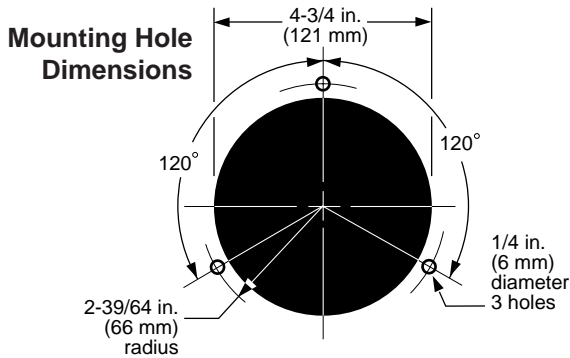
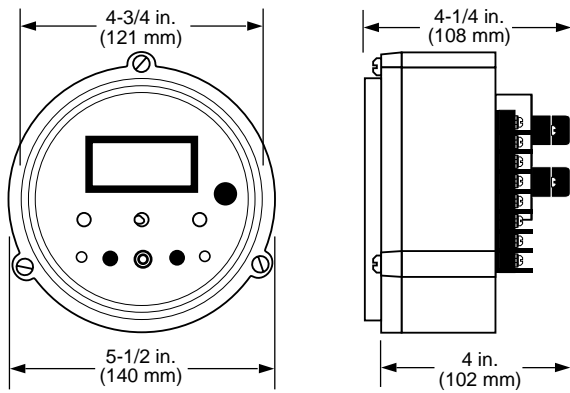
† Approved for 10–30 VDC power input and 4–20 mA signal input.

### About Trip Points

During normal operation, both trip points are always active and are independent of the trip point selector switch.

When the transmitter signal meets the high or low trip point, that trip point is triggered: the trip point output "turns on"; and an LED lights to indicate the output is ON.

## Dimensions



## How to Order

To order specify trip point output and unit of measurement. Example **MDM45-B**.

## MDM45 -

	Low contact (decreasing value)	High contact (increasing value)
A*	closes	closes
B	opens	closes
C	closes	opens
D	opens	opens

\*Standard configuration

Note: The MDM45 is for use with **Electromechanical TATTLETALE®** annunciators or **SELECTRONIC®** or similar solid state annunciators.

## Warranty

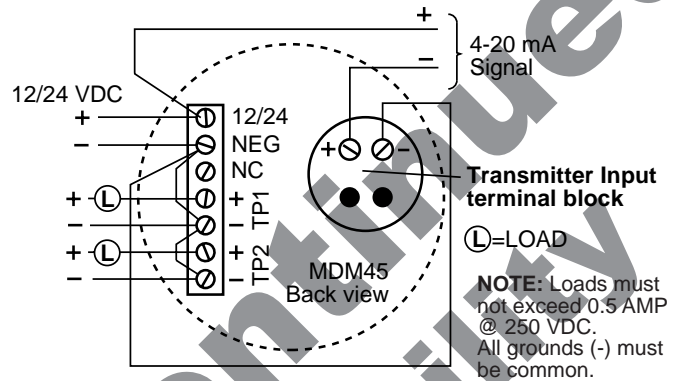
A two year limited warranty on materials and workmanship is given with this Murphy product. Details are available on request and are packed with each unit.

## Open Transmitter Input

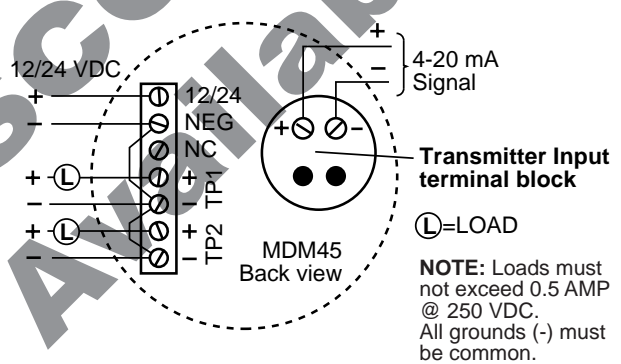
An open transmitter input causes the SWICHGAGE® to go negative, triggering the low trip point if the trip point is being used.

## Typical Wiring Diagrams

### Common Transmitter Power Source



### Separate Transmitter Power Source



## MDM45 Interface Capabilities

Model	Power Source	Rating
LCDT	CD Ign., 120 VAC, 12/24 VDC	Cl.I, Div.1, Gr.D, Haz. areas*
S1400	120 VAC or 12/24 VDC	Cl.I, Div.1, Gr.D, Haz. areas*
MARK II	CD Ignition, pos. or neg. grnd	Cl.I, Div.2, Gr.D, Haz. areas**
TATTLETALE®	CD Ign., 120 VAC, 12/24 VDC	Non-Hazardous areas
PLC's, various non-Murphy annunciators	contact factory.	

\*An isolation barrier is needed between the MDM45 and an Annunciator rated for Class I, Division 1, Group D, Hazardous Areas.

\*\*When used with approved ignition. Contact Murphy for details.

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.



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