



P.O. BOX 740755 ARVADA, CO. 80006 USA  
 TEL. (303) 465-1011 • FAX (303) 466-9761

**Model SM9850 Specifications**  
**Digital Panel Meter For Load Cells/Tension Sensors**  
**Accurate - Reliable - High Speed Update Rate**

**Meter Display:** 5 LED 7 Segment, 0.56" (14.2mm) high digits & 3 LED indicators  
**Display Color:** Red is standard, Green is Optional  
**Display Range:** -99999 to +99999 and -99990 to +99990

**A to D Conversion:** Read Rate, 60/sec for 60 Hz NMR or 50/sec 50 Hz NMR  
**Display Update Rate:** 3.5/sec at 60Hz or 3/sec at 50 Hz  
**Output Update Rate:** 56/sec at 60 Hz or 47/sec at 50 Hz

**Power Requirements:**

**Standard Voltage Inputs:**..... 85-264 VAC or 90-300 VDC (DC range no UL approved)  
**Low Voltage Input Option:**..... 12-32 VAC or 10-48 VDC  
**Power Line Frequency:**..... DC and 47 – 63 Hz  
**Power Consumption:**..... 5 Watts Maximum

**Excitation Outputs:** Voltage & Current Level (jumper selectable) 5 VDC  $\pm 5\%$ , 100 mA max  
 10 VDC  $\pm 5\%$ , 120 mA max  
 24 VDC  $\pm 5\%$ , 40 mA max

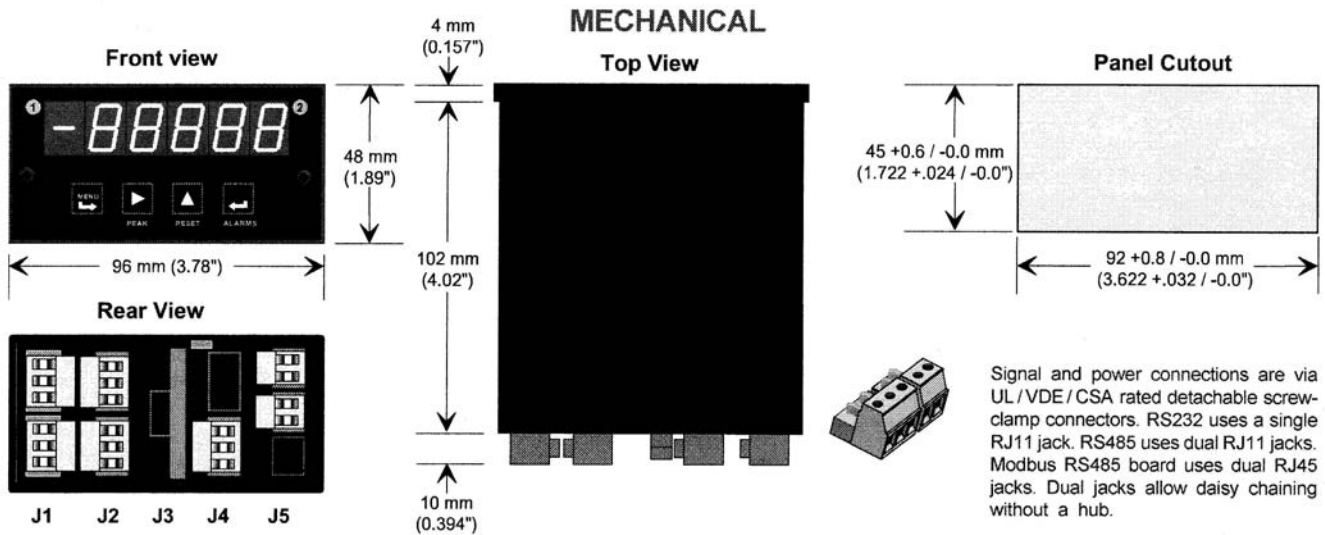
**Isolation from power and outputs:**..... 250 VAC  
**Isolation to signal common:**..... 50 VDC  
**Excitation Output Ripple:**..... 100 mVp max  
**Insulation dielectric strength to power and outputs:** 3.5 kV AC for 5 sec, 2.3 kV AC for 1 min

**LOAD CELL INPUT TYPES: Strain Gaged Full Bridge Load Cells or Sensor Transducers  
 With 4 or 6 Wire Connection.**

Range	Resolution	Resistance	Zero Range	Span Range	Error
$\pm 20.000$ mV	1 $\mu$ V	1 G $\Omega$	-99999 to 99999	0 to $\pm 99,999$	0.01% of FS $\pm 2$ counts
$\pm 50.000$ mV	2.5 $\mu$ V				
$\pm 100.00$ mV	5 $\mu$ V				
$\pm 250.00$ mV	12.5 $\mu$ V				
$\pm 500.00$ mV	25 $\mu$ V				

**Environmental:**

**Operating Temperature:** 0°C to 55°C  
**Storage Temperature:** -40°C to 85°C  
**Relative Humidity:** 95% from 0°C to 40°C, non-condensing  
**Case:** NEMA-4X (IP65) from front when panel mounted  
**Certified to UL 61010C-1 (UL Mark), EN 61010-1 (CE Mark), and ROHS**



**Control Inputs:** (CMOS/TTL Levels, Logic 0 = tied to digital ground, logic 1= open)

- /Hold Input..... Logic 0 holds display and outputs
- /Peak or Valley Input..... Logic 0 displays peak/valley value
- /Tare Input..... Logic 0 offsets input value to zero
- /Tare Reset..... Logic 0 resets Tare value to zero
- /Reset Input..... Logic 0 resets all meter functions
- /Function Reset Input..... Logic 0 resets peak values and alarms
- /Decimal Point Input..... Overrides internal DP selections and controls DP position
- /Display Blank Input..... Logic 0 shuts off the display

- Noise Rejection:**
- CMV from DC to 60 Hz..... Withstand 250 VAC
  - CMR from DC to 60 Hz..... 130 dB
  - NMR at 50/60 Hz..... 90 dB with minimum digital filtering
  - Dielectric Strength..... 3.5 kV AC for 5 sec, 2.3 kV AC for 1 min.

**Analog Output Option:** Power to analog output option is supplied by meter

- Output Levels: 0-10VDC, -10 to + 10VDC, 0-20mA, 4-20 mA
- Accuracy: Meter input accuracy of ±0.02% of FS output
- Resolution: 16 Bit (1 part in 65,536)
- Current Compliance: 2 mA at 10V (≥5 kOhm Load)
- Voltage Compliance: 12V at 20 mA (≤600 Ohm Load)
- Response Time: 50/60 Hz update rate
- Scaling of Reading for Zero Output....-99,999 to +99,999
- Scaling of Reading for Full Scale Output..... -99,999 to +99,999
- Isolation rating between signal common and analog output.....250 VAC
- Insulation dielectric strength between signal common and analog output:  
 3.5 kV AC for 5 sec, 2.3 kV AC for 1 min

**Relay Options:** Dual and Quad Offered. Power to relays provided by meter

- Setpoint Setup..... Via front panel pushbuttons or RS232/485
- Update Rate..... 56/sec at 60 Hz, 47/sec at 50 Hz
- Response to input signal (min)... Display update rate
- Input Signal (selectable)..... Filtered or un-filtered input signal
- Actuation Modes (selectable)..... Above or below setpoint, latching or non-latching, disabled
- Output Time Delay (selectable)... 1 – 128 readings
- Front Panel Enable / Lockout Modes (selectable).....
  - 1) Display and change setpoints
  - 2) Display but do not change setpoints
  - 3) Neither display nor change setpoints
- Alarm Status Indication..... 2 or 4 red LED lamps
- Status Indication Setup (selectable)...Lit when output is ON or OFF, or disabled

**Form C, SPDT Relay Output:**

- AC Rating.... 8A@ 240 VAC
- DC Rating....8A @ 24 VDC
- Isolation rating between signal common and contacts: 250 VAC
- Insulation dielectric strength between signal common and contacts:  
3.5 kV AC for 5 sec, 2.3 kV AC for 1 min

**Form A, SPST Solid State Relay Output:**

- AC Rating.....130 mA @ 140 VAC
- DC Rating..... 130 mA @ 180 VDC
- Isolation rating between signal common and contacts.....250 VAC
- Insulation dielectric strength between signal common and contacts:  
3.5 kV AC for 5 sec, 2.3 kV AC for 1 min

**Serial Interface Options: USB, RS232, RS485**

- Power to Interface Option..... Powered by meter
- RS485 Wiring..... Half or full duplex
- Baud Rates..... 300, 600, 1200, 2400, 4800, 9600, 19200
- Serial Protocols..... Custom ASCII
- Signal Levels..... Meet RS232, RS485 or USB
- Connectors.....USB, Single RJ11 (RS232), two RJ11 (RS485),
- Isolation rating between signal common and serial I/O.....250 VAC
- Insulation dielectric strength between signal common and serial I/O:  
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