

## D5 Series Dual Gauges with Output/Battery Shutdown

Top Gauge: 10 Segment LED Battery Fuel Gauge or LED Volt Meter

Bottom Gauge: LCD Hour Meter with Flash Alerts Service Alarms



D5N Series Gauges provide an easy to read user interface combined with electronic protection for equipment. Battery shutdown feature extends equipment life and reduces battery replacement costs. All gauges are 100% epoxy encapsulated and pass SAE environmental tests.

Applications include equipment with a Lead acid battery, Lithium battery, or equipment with power supply.

Examples include: Utility Vehicles, Dispensers, Forklifts, Golf carts, Floor care equipment, Pumps, Lifts, Lawn and Garden Equipment, Generators and other Industrial Equipment.

### Top Gauge

- Battery Fuel Gauge: Displays the percent of charge in lead acid or lithium batteries
- LED Volt Meter: Displays the voltage of the electrical system

### Bottom Gauge

- Hour Meter with Flash Alert options



### Operation of a Battery Fuel Gauge:

Battery Charge capacity is indicated using a 10 segment LED bar graph display from full (right LED segment lit) to empty (left LED segment lit).

- *LED Flash Alert™* flashes the 2<sup>nd</sup> LED from the left as a warning that the battery has discharged 70%.
- At 80% discharge, *LED Flash Alert™* alternately flashes the left 2 LEDs to indicate very low capacity is remaining. At this level the output is turned off, disabling the equipment and protecting the battery.
- The *LED Flash Alert™* discharge warning levels, lighting sequence, and output settings can be OEM customized.

### Operation of the LED Volt Meter:

The appropriate system voltage is displayed using a 10 segment LED bar graph display.

- The *LED Flash Alert™* warns the user that the equipment voltage is approaching a high or low critical voltage range.
- High voltage and Low voltage *LED Flash Alert™* levels, lighting sequence, and output settings can be OEM specified.

### Operation of the Hour Meter:

- The hour meter displays 0.1 hour displayed resolution up to 99,99.9 hours, then 1 hour resolution up to 99,999 hours.
- Hour glass symbol flashes on/off to indicate time counting.
- OEM specified Service Alerts show maintenance requirements on the LCD (standard and custom messages available).
- The LCD is always lit so users can examine the total hours and service alarms at all times.

### Operation of Shut Down

When the battery charge level, or equipment voltage gets to a critical level, a shutdown occurs.

- Solid State N channel FET, 100 vdc, 3 amp (low side switching)
- Inductive load protection
- Other switching and shut down options available

### Battery Fuel Gauge

- Available in 12, 24, 36, and 48 volt, or custom DC ranges
- 10 segment LED Bar Graph display
- Resolution: 10% per LED segment (or OEM specified)
- Current Draw: 3.2mA LED Display off, 15 mA with LED Display ON
- Reverse Polarity Protected
- LED enable input option to save battery current
- 70% discharge indicated by the 2nd left LED segment flashing
- 80% discharge indicated by alternate both left LED segments flashing
- Overcharge protected (50% over nominal voltage)
- Full charge indicated when the right LED bar is lit, or all LEDs for All on LED version.
- (specified full charge voltage per cell is reached for a minimum of 6 minutes continuously). \*\*custom full charge algorithms available

### Environmental Specifications

- Operating temperature: -40F to 160F (-40C to 71C)
- Shock: SAE J1378 55g's
- Vibration: SAE J1378 20g's
- Humidity: SAE J1378 95% RH
- 100% Epoxy encapsulated
- Case Material: ABS, black
- Weight 1 oz.
- Warranty: Two years for OEMs

### Volt Meter

- Available in 12, 24, 36, and 48, volt or custom DC ranges
- 10 segment LED Bar Graph display
- Resolution: 1 Volt per Bar (or OEM specified).
- Accuracy: +/- 0.12 volts DC
- Current Draw: 3.2mA LED Display off, 15 mA with LED Display ON
- Reverse Polarity Protected

### Hour Meter

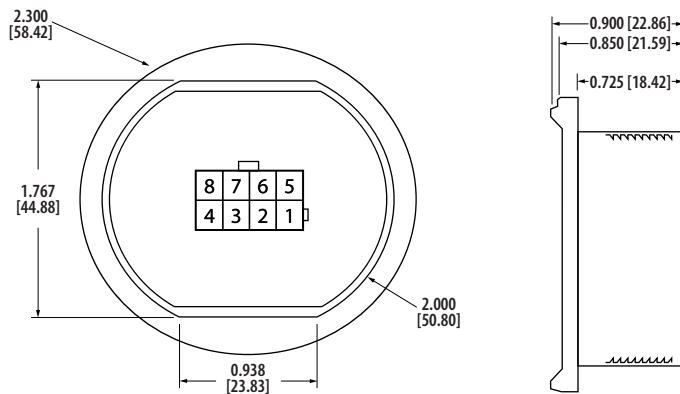
- Hour meter, non resettable.
- Hour meter displays 0.1 hour displayed resolution up to 99,99.9 hours, then 1 hour resolution up to 99,999 hours.
- LCD display always lit
- Service Alerts available based on run hours

### Certifications

- ETL, CE

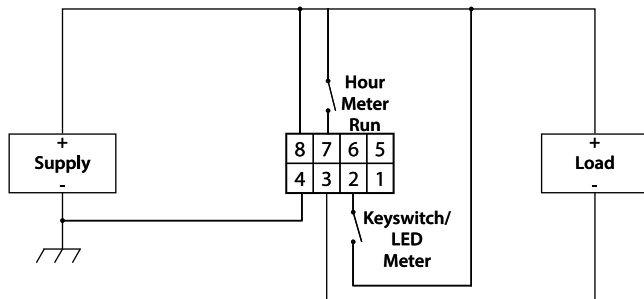
Model	Bezel Style	Top Gauge	Bottom Gauge	Top Gauge Tabs	OEM Code
D5	N = Dual Round	A = 12-48VDC Battery fuel/Volt meter	2 = Hour Meter, in line tabs 5-277DC, 60-277AC input	Factory #	Factory #

Pin	Description
1	N/C
2	SOC LED Enable
3	FET Output (open drain)
4	V-
5	N/C
6	HM2
7	HM1
8	V+

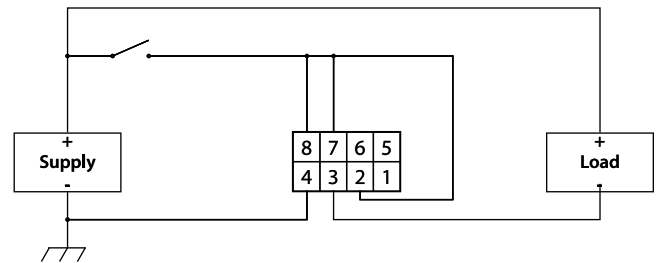


Note 1: By default HM2 is pulled to V- internally to allow HM1 to be used as a single ended input (DC, referenced to V-).

Note 2: Hour meter counting is initiated when the input voltage HMI-HM2 are 2 volts or greater.



Example 1: Hour Meter switched count enable & separate switch for LED bar light enable. Includes load shutdown.



Example 2: Single switched Hour Meter count enable & LED bar light enable. Includes load shutdown.