# DCS30 Series

## *100 to 600 Amp DC Current Sensors*


***Electronic Battery Current Sensor interfacing with Electronic Instrument Systems.***

## Technical Description

The DCS30 Series is a family of highly accurate electronic sensors for measuring DC current, and are available in maximum capacities of 100, 200, 300, 400, 500 and 600 amps. The current sensor consists of a Hall-effect based sensor unit with an electronic interface circuit that operates conventional 50 or 100 millivolt ammeter meter movements. The non-intrusive design allows the sensors to be installed without the need to cut and re-terminate the high current DC cables as required with the installation of mechanical meter shunts. Unlike mechanical meter shunts, the DCS 30 sensors are smaller, do not generate heat and do not have exposed electircal potentials.

The sensor's opening diameter is 1.23 inches, accommodating typical battery cables. Connections are made using a four-pin Packard Metri-Pak 150 sealed connector.

The DCS30 sensors are designed to operate with standard 50 or 100 millivolt ammeters with internal resistance of 20 ohms or greater. They requires a power source of +12 volts @ 8.1 milliamps. The DCS30 models measure bi-directional current (e.g., -400 to +400 amps).

## Key Features

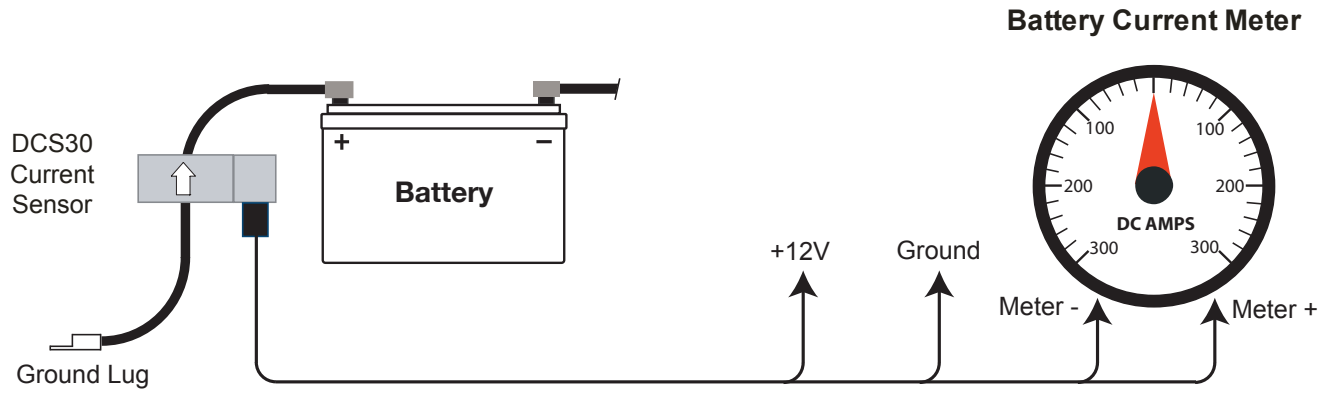
- *Electronic Hall-Effect Sensor Design* - Eliminates the need for heat-producing mechanical shunts.
- *Sealed Construction* - No exposed electrical potentials as in mechanical meter shunts.
- *Non-Intrusive* - No need to cut and re-crimp battery cables.
- *Analog Voltage Output* - 0.5 to 4.5 V or 0 to 5.0 V output interfaces to electronic instrument systems.
- *Fits Most Vehicle and Marine Applications* - Available in 100 through 600 Amp Capacities.
- *Weather Resistant Connector* - Allows use in severe environments.
- Other calibrations available upon request.

**DC Current Sensor Models**

| Model | Current Range | Sensor Output |
|---|---|---|
| DCS30-XXX-1 | ±XXX Amps | ±50 Millivolts |
| DCS30-XXX-2 | ±XXX Amps | ±100 Millivolts |

XXX stands for the amperage of the unit.

## System Diagram



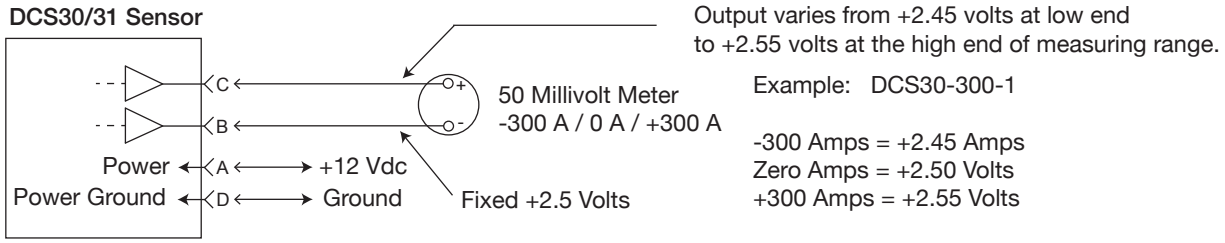
# DCS30 Series

*100 to 600 Amp DC Current Sensors*

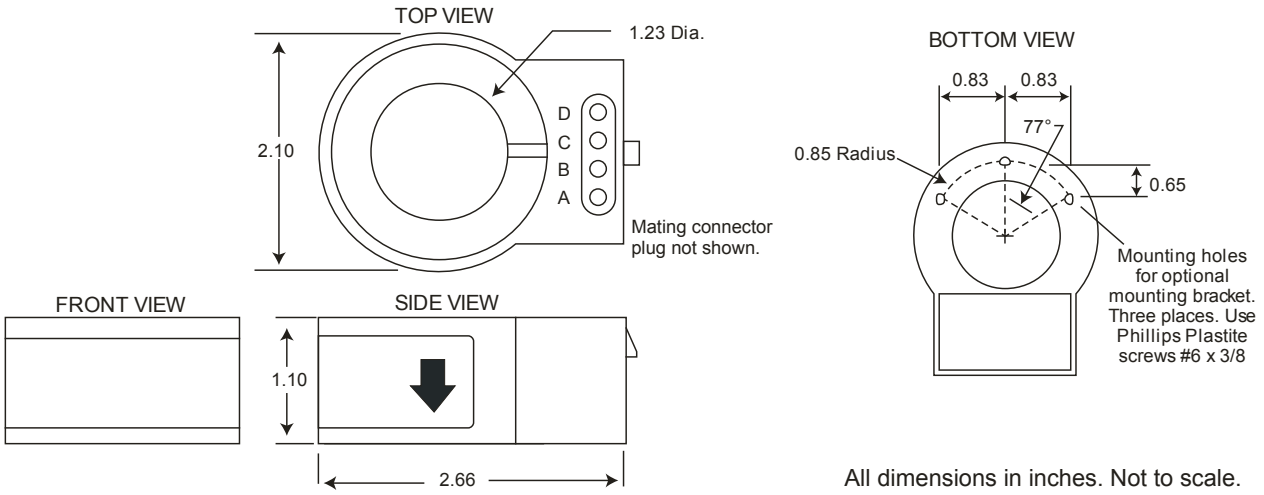
## Specifications

| | |
|---|---|
| Sensor Type: | Open loop Hall-effect |
| Linearity: | 1.5% |
| Supply Voltage Range: | +7 to + 20 Vdc |
| Current Consumption: | 8.1 milliamps maximum |
| Output: | Models DCS30-XXX-1 ±50 millivolts<br>Models DCS30-XXX-2 ±100 millivolts<br>Note - Meter internal resistance must be 20 ohms or greater. |
| Operating Temperature: | -40° C to +125° C |
| Storage Temperature: | -40° C to +125° C |
| Aperture Size: | 1.23 inches |
| Weight: | 0.30 lbs |
| Connector System: | Packard Sealed Metri-Pak 150. Note - Mating plug not supplied with sensor. (See InPower Technical Bulletin TB-31 for details and purchasing source). |
| Connector Interface: | Pin A + Vdc Supply  Pin C Ground (Signal Return)<br>Pin B Output  Pin D Ground (Power Return) |
| Sensor Wiring: | |

Floating Differential Output




## Mechanical Drawing




All dimensions in inches. Not to scale.

# DCS35/36 Series

## *100 to 600 Amp DC Current Sensors*


### *Electronic Battery Current Sensor interfacing with Electronic Instrument Systems.*

## Technical Description

The DCS35/36 Series is a family of highly accurate electronic sensors for measuring DC current, and are available 100, 200, 300, 400 or 600 amps maximum capacity. The current sensor consists of a Hall-effect based sensor unit with an output interface compatible with electronic instrument systems. The non-intrusive design allows the sensors to be installed without the need to cut and re-terminate the high current DC cables as required with the installation of mechanical meter shunts. Unlike mechanical meter shunts, the DCS 35 and 36 sensors are smaller, do not generate heat and do not have exposed electircal potentials.

The sensor's opening diameter is 1.23 inches, accommodating typical battery cables. Connections are made via a four-pin Packard Metri-Pak 150 sealed connector.

The DCS35/36 sensors are designed to interface to electronic vehicle systems such as instrument clusters and multiplex systems. Sensor outputs are available in 0.5 to 4.5 Volt and 0 to 5.0 Volt, with ground reference. They requires a power source of +12 volts @ 8.1 milliamps. The DCS35 models measure bi-directional current (e.g. -100 to +100 Amps). The DCS36 models measure unidirectional current (e.g. 0 to 100 Amps).

## Key Features

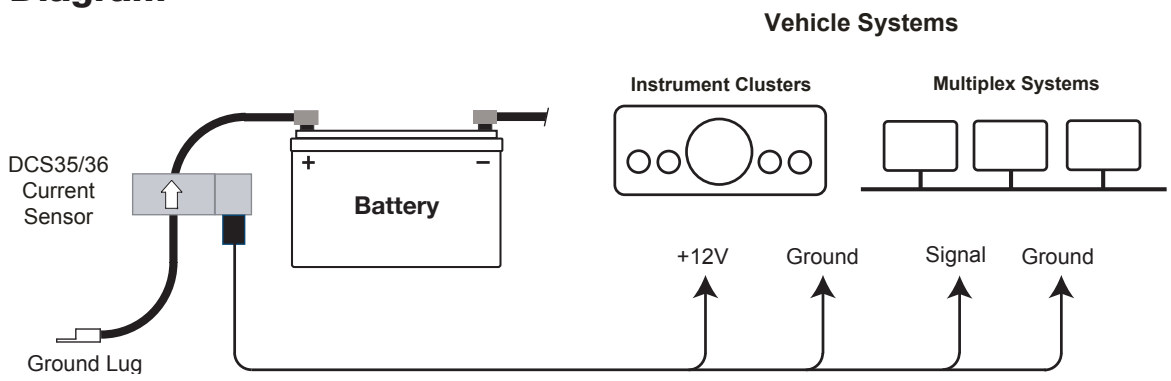
- *Electronic Hall-Effect Sensor Design* - Eliminates the need for heat-producing mechanical shunts.
- *Sealed Construction* - No exposed electrical potentials as in mechanical meter shunts.
- *Non-Intrusive* - No need to cut and re-crimp battery cables.
- *Analog Voltage Output* - 0.5 to 4.5 V or 0 to 5.0 V output interfaces to electronic instrument systems.
- *Fits Most Vehicle and Marine Applications* - Available in 100 through 600 Amp Capacities.
- *Weather Resistant Connector* - Allows use in severe environments.
- Other calibrations available upon request.

**DC Current Sensor Models**

| Model | Current Range | Sensor Output |
|---|---|---|
| DCS35-XXX-1 | ±XXX Amps | 2.5 V ±2.0 V |
| DCS35-XXX-2 | ±XXX Amps | 2.5 V ±2.5 V |
| DCS36-XXX-1 | 0 to XXX Amps | 0.5 V to 4.5 V |
| DCS36-XXX-2 | 0 to XXX Amps | 0 V to 5.0 V |

XXX stands for the amperage of the unit.

## System Diagram



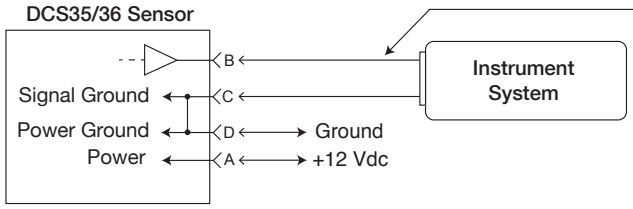
# DCS35/36 Series

*100 to 600 Amp DC Current Sensors*

## Specifications

| | |
|---|---|
| Sensor Type: | Open loop Hall-effect |
| Linearity: | 1.5% |
| Supply Voltage Range: | +7 to + 20 Vdc |
| Current Consumption: | 8.1 milliamps maximum |
| Output: | See Model Chart on other side |
| Operating Temperature: | -40° C to +125° C |
| Storage Temperature: | -40° C to +125° C |
| Aperture Size: | 1.23 inches |
| Weight: | 0.30 lbs |
| Connector System: | Packard Sealed Metri-Pak 150. Note - Mating plug not supplied with sensor. (See InPower Technical Bulletin TB-31 for details and purchasing source). |
| Connector Interface: | Pin A + Vdc Supply; Pin B Output; Pin C Ground (Signal Return); Pin D Ground (Power Return) |

Sensor Wiring:




**Sensor Output Types:**

DCS35-XXX-1
Output: +2.5 V ±2.0 V

DCS35-XXX-2
Output: +2.5 V ±2.5 V

Example: DCS35-300-1

-300 Amps = +0.5 Volts
Zero Amps = +2.5 Volts
+300 Amps = +4.5 Volts

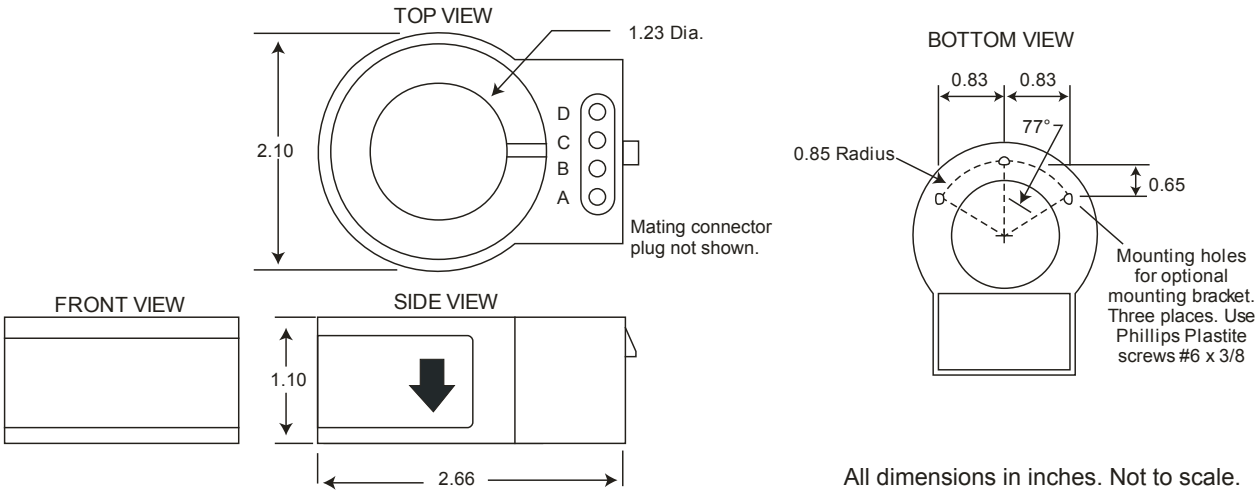
DCS36-XXX-1
Output: 0.5 V to 4.5 V

DCS36-XXX-2
Output: 0.5 V to 5.0 V

Example: DCS36-300-2

Zero Amps = 0.0 Volts
+300 Amps = +5.0 Volts

## Mechanical Drawing




All dimensions in inches. Not to scale.





Specifications subject to change without notice.