

Westinghouse



## Instrument Shunts Switchboard Types

SS-850 (50 Mv Drop)  
SS-851 (100 Mv Drop)

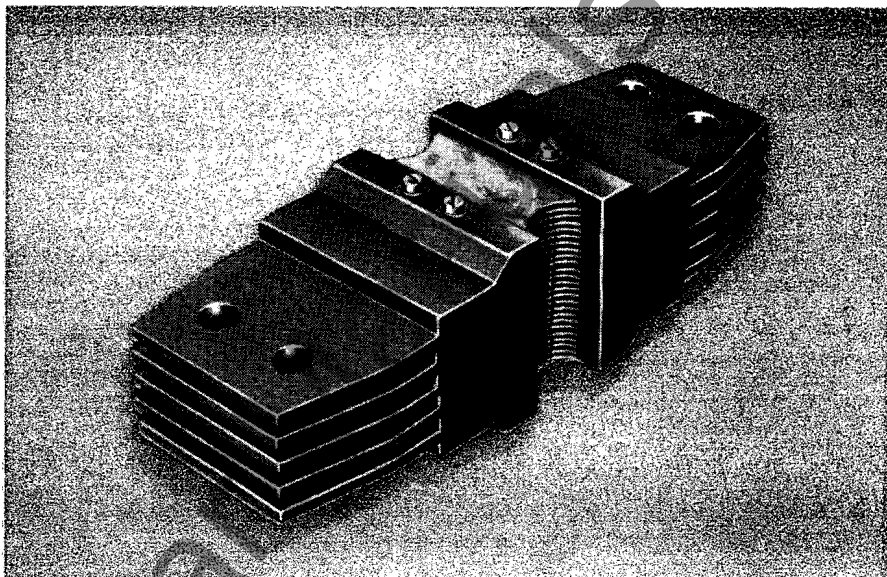
Shunts are separately mounted units for extending the application of dc ammeters to the measurement of currents normally beyond the available limits of self-contained ammeter readings.

The large capacity type switchboard shunt is designed for permanent installation in bus bar circuits.

The lower capacity type are readily mounted on insulated or non-insulated panels.

Where possible, all shunts should be mounted in the grounded side of the circuit. Panel mounted shunts, with insulated bases, on circuits above 750 volts **must be** mounted in the grounded side of the circuit.

These Shunts are designed for use with standard 50 or 100 millivolt movement switchboard indicating or recording instruments, calibrated in terms of the ampere rating of the shunt.



### Features

#### Negligible Temperature Error

All shunts have a temperature error that will not exceed 0.2% between the limits of 24°C and 80°C.

#### Negligible Thermoelectric Effect

Materials used assure these shunts will have no error due to the thermoelectric (thermocouple) effect.

#### Double Shunt Lead Connections

Type SS-850 (50 millivolt) with ratings between 50 and 3,000 amperes, and Type SS-851 (100 millivolt) rated between 150 and 2,000 amperes are equipped with two sets of shunt lead terminals, permitting the use of two instruments operating from the same shunt.

#### Uniform Current Distribution

Design of the shunt terminal block insures uniform distribution of current to all shunt strips, eliminating any possibility of localized overheating.

#### Insulating Base

An insulating base is standard on all SS-850 (50 millivolt) shunts rated 200 amperes and lower, and on all SS-851 (100 millivolt) shunts rated 300 amperes and lower.

#### Voltage Barrier

Standard on all molded bases for Type SS-850 shunts. This barrier increases the length of the leakage path between the shunt terminal block and the mounting screws when mounted on a metal panel. This is a highly desirable feature for high voltage applications.

### Construction

Terminal blocks on the 50 and 100 millivolt shunts rated 300 amperes and lower are made of brass. Shunts rated higher than 300 amperes have terminal blocks constructed of large cross-sectional copper to allow adequate heat dissipation and provide sufficient rigidity to properly support the unit.

The resistance blades are made of manganin, having a negligible temperature coefficient and thermoelectric effect, thus avoiding errors due to heating.

Type SS-850, through 200 amperes, and SS-851, through 300 amperes, are designed for panel, wall, or bus bar mounting. They are mounted on a base which insulates the shunt from the panel, and will take all of the strain due to bus distortion.

Higher ratings are for bus bar mounting only. The terminal castings are slotted to receive one-quarter (1/4) inch bar per slot.

Switchboard shunts are adjusted to give a 50 or 100 millivolt drop across their terminals when carrying full rated current. This value is adjusted at the factory to within 1/4% accuracy.

Shunts may be connected (without error) in parallel, to measure heavy currents when each shunt has a separate pair of millivolt leads connected to the instrument terminals.

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**Temperature Rise**

In conformance with AIEE Standards, these shunts operate at a temperature rise not in excess of 80°C when carrying their rated current.

To prevent this temperature rise from being exceeded, it is necessary to take certain precautions in shunt application. Since most of the heat is dissipated by conduction through the bus bars and connected apparatus, the bus bar size and position naturally influence the temperature rise of the shunt.

The entire installation should be planned so that adequate size bus bars are used and ventilation conditions are favorable.

**Leads**

In some applications it is not feasible to mount the shunt close enough to the instrument to permit the use of the standard lengths supplied.

If longer lead lengths are necessary, the additional IR (millivolt) drop in the leads must be taken into consideration when ordering instruments.

Inasmuch as the prices of the instruments and leads vary, careful consideration should be given to the choice of the instrument and the size of the shunt leads used. This will insure accurate indications and provide the most economical method of metering for each application.

**Specifications**

	SS-850	SS-851
Millivolt Rating.....	50	100
Ampere Ratings Available.....	1 to 20,000	1 to 15,000
Accuracy.....	±¼%	±¼%

**Further Information**

Prices and Ordering Information: PL 43-820

Dimensions and Weights: DS 43-820

Instructions: IL 43-850