

# Type 252, 4½" Scale Length 1½% Accuracy

## Application

Type 252 edgewise instruments were designed specifically for the nuclear power industry for use on control panels. However, they are well suited to any use where high reliability and efficient use of space are important Considerations.

These instruments incorporate into edge-wise instruments the same taut-band suspension system which is used in the highest quality Weschler portable and switch-board instruments.

They are available in types for direct measurement of standard electrical quantities, or in combination with transducers for measuring any other electrical or mechanical quantity capable of being converted into a proportional electrical quantity.

## Standards

There is no published requirement in ANSI C39.1-1981 for instruments of 1½% accuracy class, however; they exceed the requirements for the 2% class specified therein, and may be calibrated to 1% initial accuracy. The type 252 instruments meet the flammability requirements of IEEE Standard 420-1973 and they have passed the seismic qualification tests under IEEE Standard 344-(1987).

## Specifications

Accuracy 1½% of full scale deflection, horizontal or vertical; ±1% on special order

Waveform Compensation To 15% of third harmonic content

Instantaneous Overload Capacity Ac-35 Times Rating Dc-100 Times Rating

Working Voltage to Ground 1200 volts dc or peak ac, 800 volts ac rms

Shielding Magnetically shielded

Scale Length 4.5 inches (11.43 Cm)

Net Weight 1½ pounds

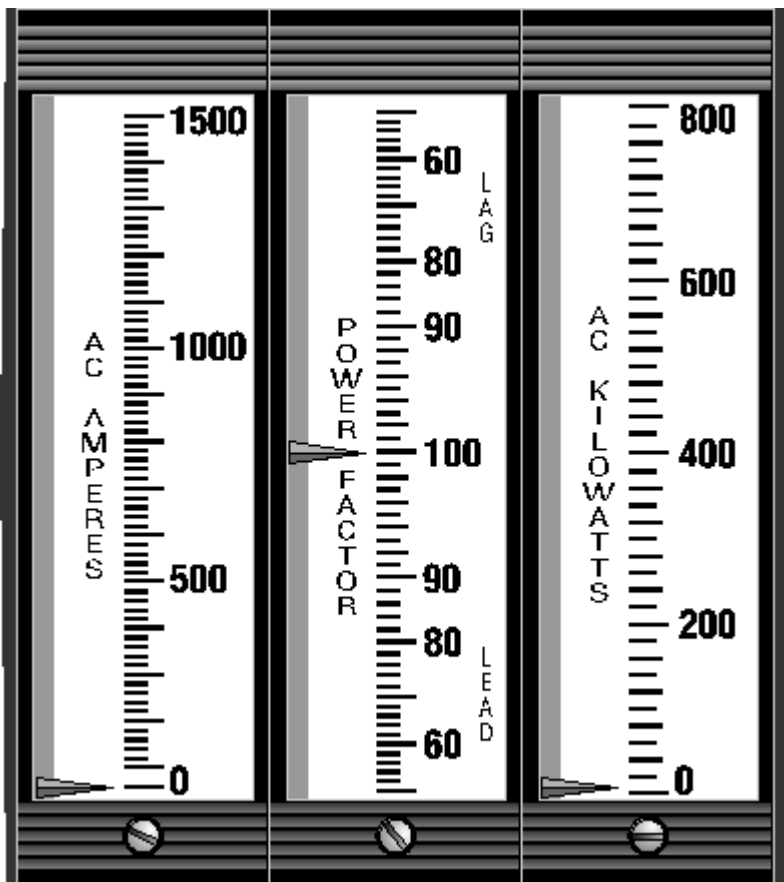
Shipping Weight 2½ pounds

## Ratings (Self-Contained)

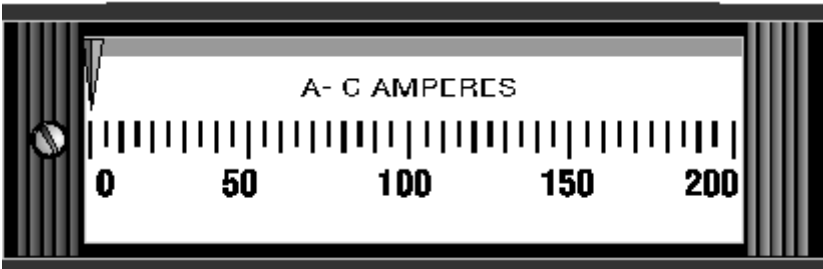
DC: 50 microamperes to 50 amperes  
50 millivolts to 750 volts

Ac: 10 milliamperes to 20 amperes  
5 volts to 600 volts

Transducer-type frequency meters, varmeters, wattmeters and power factor meters are available.



Vertical Type (Grouped)



Horizontal Type

# Type 252, 4 1/2" Scale Length 1 1/2% Accuracy

**Construction:** All components are mounted on a plastic drawer which slides into a plastic case with a clear, curved window. The entire assembly is treated to be static free. The plastic is polycarbonate (ASTM D635) for impact strength and flame retardance.

**Mechanism:** The dc instrument is of the permanent magnet moving-coil type in a core magnet construction.

For ac measurement the same mechanism is used, but rectifiers and an rms network are added. This design permits the ac instrument to have a linear scale, to compensate for wave form distortion, and to be practically immune to the effects of magnetic fields from adjacent conductors regardless of their orientation.

**Suspension:** All type 252 instruments use taut-band suspensions. Instruments incorporating this feature are identified by the trademark *tbs*. The absence of friction in taut-band instruments creates the advantages of perfect repeatability, reduced maintenance, and lower electrical burdens. The inherent ruggedness of the design makes it a top performer under adverse conditions of shock or vibration.

**Dials** Pointer edge and dial markings are on the same arc so that there is no parallax error.

**Mounting** Instruments may be stacked horizontally or vertically. Eight edgewise vertical instruments will occupy the same panel width as three conventional instruments. Trim strips, furnished with each instrument, finish off the edge of each instrument or array. Dial cards may be interchanged to adapt from horizontal to vertical mounting or to change scales.

**Modifications Available:**

Internal illumination with low-voltage lamp and translucent dial.

Non-glare window

Dual scale or rating

Straight fine tubular pointer

Offset, center, or suppressed zero

Gasketed construction

**Further Information**

Instructions: Instruction Leaflet 43-252

Transducers: DB 43-840 & 860 Series

**Burden Characteristics at 60 Hertz**

**Burdens on Current Transformers at 5 Amps**

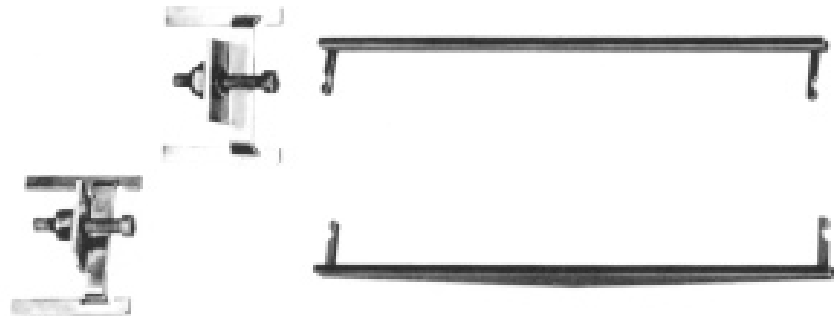
Instrument Rating	Impedance: Ohms	Resistance: Ohms	Reactance: Ohms	Volt-Amperes	Percent Power Factor
5amp	.024	.013	.020	0.6	54

**Burden on Potential Transformers at 120 Volts**

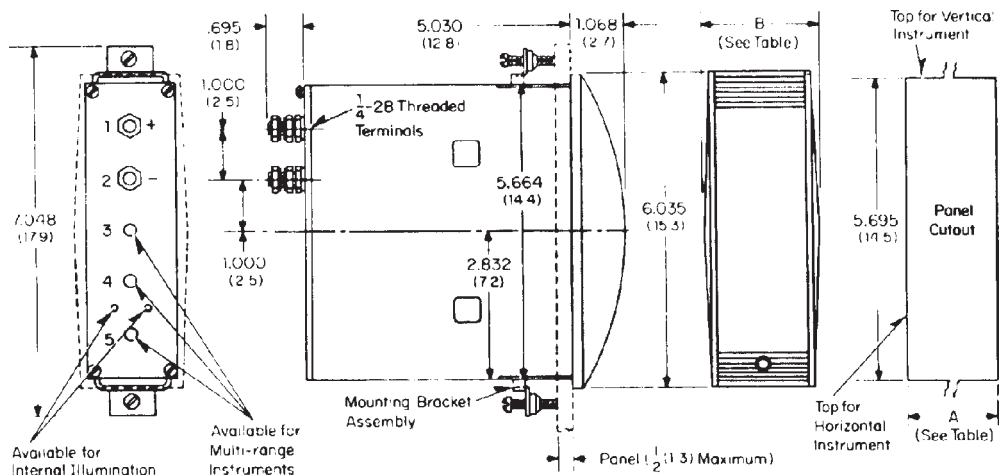
Instrument Rating	Volt-Amperes	Watts	Vars	Percent Power Factor
150 volts	.096	.096	0	100

**Lamps**

Lamp Type	Volts	Amps
46	6.3	0.25



**Figure 1: Mounting Material Supplied with Instrument**



**Figure 2: Outline and Drilling Dimensions, In Inches (Millimeters)**

**Mounting**

Figure 1 shows the two bracket assemblies and two trim strips which are supplied with each 252 instrument. Figure 2 illustrates how these parts are used.

Two trim strips are needed to trim either a single instrument or a stacked array.

No. of Instruments	Dimensions	
	A	B
1	1.770(43)	2.166(55)
2	3.510(89)	3.896(99)
3	5.250(133)	5.620(143)
4	6.990(178)	7.356(187)
5	8.730(222)	9.086(231)
6	10.470(266)	10.816(275)
7	12.210(310)	12.546(319)
8	13.950(354)	14.276(363)