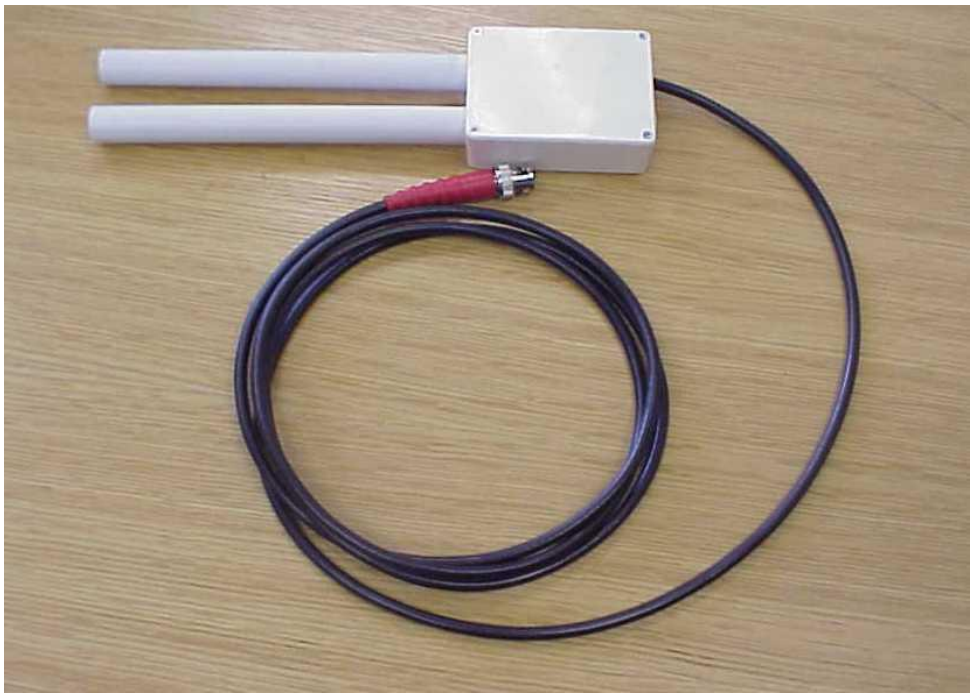
Radio Frequency Current Transducer
Open Wand Type
Type OW/99/200/15/1

The Open Wand current transducer has been developed to overcome difficulties encountered when measuring rf. currents in the star point earth straps on HV transformers. These rf currents are produced by partial discharges occurring within the winding and bushings, and those due to arcing. It may however find many other applications.

When measuring rf currents, it is sometimes necessary to detect the rf currents when they flow in flat copper straps that are clamped close to the casing of the plant. The practice has been to use large diameter circular transducers to give the required curvature to get behind the flat strip. These transducer have a large profile and tend to be heavy if using ferrite cores. Both Ferrite and Rogowski Coil have been used for this application. The Open Wand current transducer is linear, has a small profile to enable it to fit in the space available and of a low weight.

The Open Wand current transducer, when connected to a 50Ω input instrument, gives an output voltage representing the current waveform being monitored at a sensitivity of 1V/A. It measures in the frequency range 0.7 to 180MHz. The transducer shown below is designed to measure currents in conductors up to 1cm by 7.5cm. As it is light weight it can easily handled by one hand leaving the other free for operating the instrument. A clamp can be slid over the open end to lock the transducer to the conductor in which the current is being measured.



Open Wand Current Transducer

Typical Specification

Primary Parameters	
Sensitivity	1 V/A
Low Frequency limit	0.7 MHz
High Frequency limit	180 MHz
Terminated Impedance	50Ω

Other Parameters	
Rise time	<3 nS
Droop time	0.23 μS
Transfer impedance	1Ω
Insertion impedance	0.6Ω
External pickup Touching casing 25mm away	 10% max 5% max
Maximum continuous rf current	3 A
Maximum charge pulse	20 x 10^6 pC

Performance in the presence of mains currents	
Rejection to mains current	80 db
Maximum current for linear operation	10,000 A

Operating Dimensions	
Gap (Conductor thickness)	12 mm
Stand off clearance	20 mm
Conductor width	75 mm

Physical Dimensions	
Length	230 mm
Width	55 mm
Thickness	25 mm
Weight	0.25 Kg

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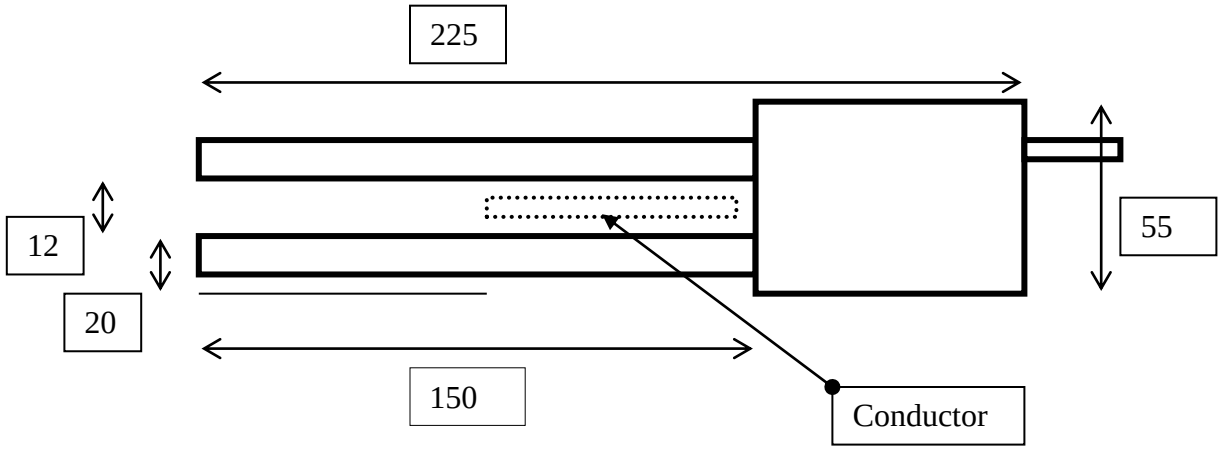
Dimensions of a typical transducer



Dimensions in mm