

New indoor and outdoor High Voltage instrumentation transducers extend our HV Transducer range of high accuracy sensors

SURETECH™ Outdoor Live Line Sensor

Sensor measures voltage on power systems without making physical contact with the HV source.

Typical Applications:

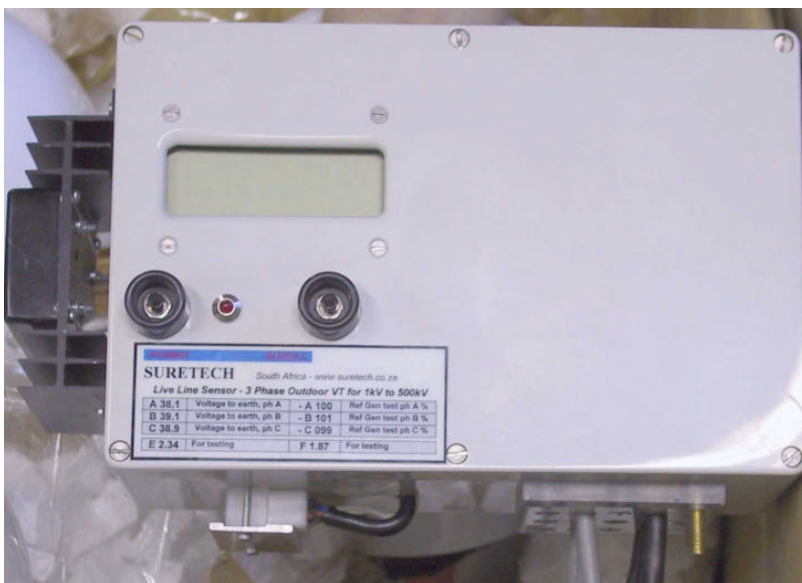
- ✓ Cranes and tip-trucks working near power lines during adverse weather conditions
- ✓ Safety interlocks in outdoor switchyards
- ✓ HV switchyards voltage alarms (upper & lower)
- ✓ HV line recloser voltage control
- ✓ HV lines voltage measurements
- ✓ HV frequency counter
- ✓ HV phase angle measurements
- ✓ HV phase rotation measurements
- ✓ Replaces VTs for HV metering
- ✓ Replaces VTs for HV protection
- ✓ Synchronise other measurements such as cameras and oscilloscopes to the HV power system in the field
- ✓ HV pylon monitoring of voltage on each HV conductor, Each sensor feeds into a radio telemetry system to transfer power line voltage to the system control centre. Line fault location will be much quicker
- ✓ Measure voltage on the rotor of an HV motor or generator as it turns
- ✓ Monitor and measure induced voltages on power circuits.
- ✓ Safety interlocks in HV substations and switchyards
- ✓ HV substation voltage alarms (upper & lower)
- ✓ HV line re-closer voltage control
- ✓ HV substation voltage meter indication
- ✓ HV substation voltage measurements
- ✓ HV pylon monitoring of voltage on each of six phases, Each sensor can feed into a radio telemetry system to transfer power line voltage to system control centre. Line fault location will be much quicker.
- ✓ Measure the voltage on the rotor of an HV motor or generator as it turns
- ✓ Monitor and measure induced voltages on power circuits.



A wide range of output formats are available. Please enquire with the factory for interfacing the ODLLS with our transducers.

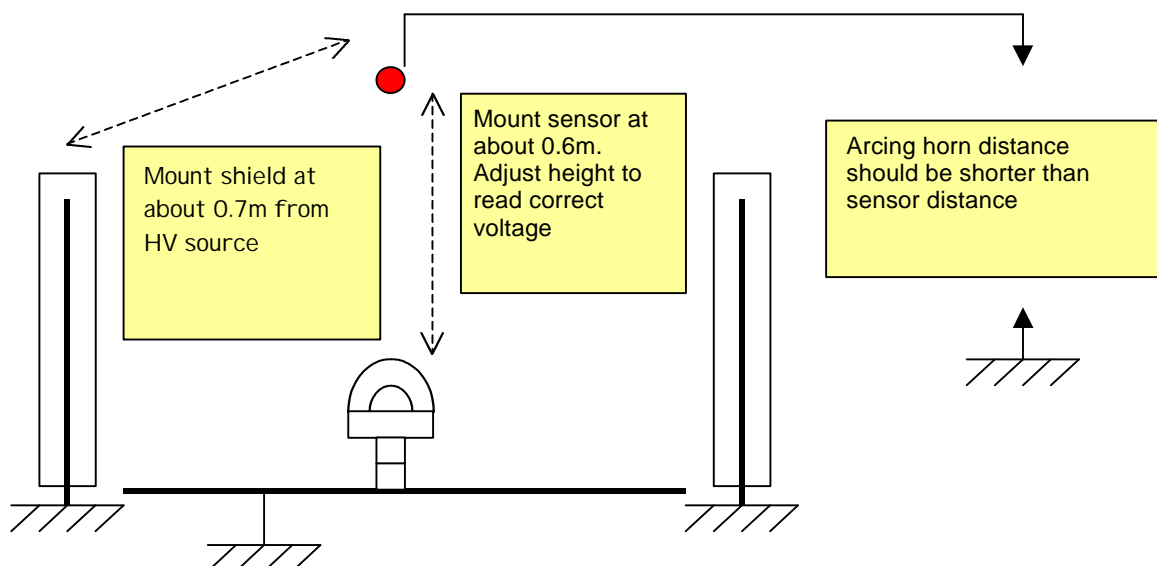
General Features:

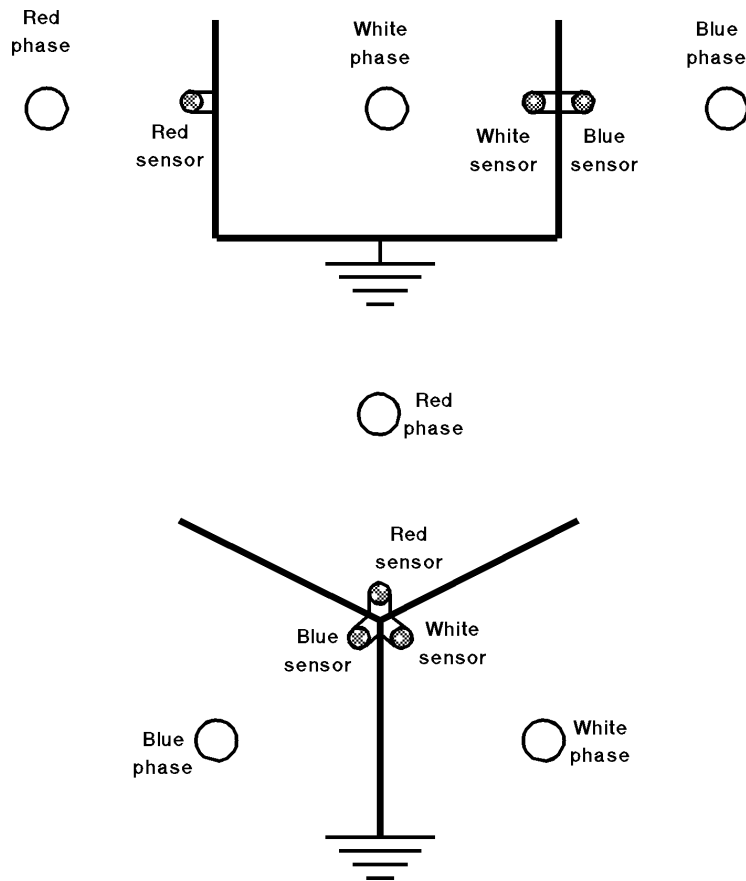
- ✓ One size fits all: any voltage from hundreds of volts up to hundreds of thousands of volts can be measured by one instrument
- ✓ Voltage accuracy can be calibrated to better than 0.2%
- ✓ Phase accuracy: <0.3 degree
- ✓ Frequency measurement accuracy 50ppm
- ✓ Capacitively coupled to HV source through air or insulation
- ✓ Rain and sun shield for outdoor use
- ✓ Ultra linear measurement circuits
- ✓ Bandwidth: 5MHz standard
- ✓ Corona discharge and other filter available, to either reject corona, or measure it
- ✓ Static discharge filter available
- ✓ Powder coated stainless steel outer shield for long life expectancy
- ✓ Dimensions of sensor: 150mm diameter x 220mm sensors; control enclosure: 220mm x 150mm x 90mm
- ✓ Integral cable connection to LV enclosure
- ✓ Transient suppression on inputs and outputs
- ✓ Wide selection of output options including, logic, analogue RS232 / 485 etc
- ✓ Wide selection of auxiliary power supply options
- ✓ Completely isolated from HV source (e.g. 0.7m for 66kV, or 160mm for 11kV)
- ✓ Engineering backup to provide you support for design, applications information, installation & calibration, maintenance
- ✓ For use on 50Hz and 60Hz systems without modification
- ✓ Patent pending



Calibration

Sensors should be initially mounted at an appropriate distance (eg. for 66kV, about 0.6m) from the HV source. Electric field shields should be placed between the sensors so that the electric field from adjacent phases do not interfere with each other.





Operating distance is given as a guideline:

Sensor distance should be fixed at a distance just greater than arcing horn spacing:

Sensing Voltage	Nominal operating distance
3.3 kV	100 mm
11 kV	150 mm
33 kV	300 mm
66 kV	600 mm
132 kV	1200 mm
400 kV	2500 mm

Accuracy

- Accuracy is dependent mainly on the stability on the physical environment around the sensor
- Phase accuracy is improved when closely coupled to the HV source. Harmonic response is good to 10kHz.
- Rain: The Outdoor Live Line Sensor has two bowls to protect the instrument against rain and sun. Rain falling on the outside protection bowl or skirt does not impair the accuracy
- Wind: if the physical configuration changes due to wind moving HV lines, electric field shields, or mounting arrangement, then the electric field will change, thereby degrading accuracy. By physically stabilising the HV environment will correct for this sort of inaccuracy.

15-Apr-04



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