



VOLTAGE GRADIENT PROBE

The Voltage Gradient Probe (VGP) is a robust, hand held, subsea unit used to give an easy to interpret, robust, and reliable indication of AC voltage gradients in sea water.

The primary use is to provide a robust indication of the presence of any local AC voltage gradients as part of a risk assessment and management scheme while working on or around subsea electrical equipment. The VGP should never be touched against known or suspected “live” parts and comes pre-fitted with an insulating cap to prevent such accidental contact

The VGP gives an indication of the presence and magnitude of the AC voltage gradient using a series of 6x LEDs, which illuminate progressively at clearly defined trigger voltages, in an easy to interpret ‘traffic light’ configuration.

A dedicated BATTERY STATUS LED provides a clear indication of the battery status and also provides confirmation that the unit is functioning.

The VGP comes with a dedicated TESTBOX which allows functionality to be tested prior to deployment by following a quick, simple, and intuitive procedure.

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General Specification:

Probe minimum battery life at 5°C	2 days (10 days typical)
Probe Battery Type	3x Standard 1.5V 'AA' Alkaline cells (Duracell MN1500)
Testbox Battery Type	1x Standard 9V 'PP3' Alkaline cell (Duracell MN1604)
Probe operating temperature range	-5°C to +50°C (+23°F to +122°F)
Probe external pressure rating	300m (984ft) / 30 bar (435Psi)

Probe Sensor:

Measurement gap (Between handle and Endring)	140mm (5.5")
Measurement frequency range	50Hz to 500Hz
LED 1 illumination level	20mVpp ±4mVpp (50mVrms/m*)
LED 2 illumination level	50mVpp ±4mVpp (130mVrms/m*)
LED 3 illumination level	120mVpp ±4mVpp (300mVrms/m*)
LED 4 illumination level	300mVpp ±9mVpp (760mVrms/m*)
LED 5 illumination level	800mVpp ±24mVpp (2020mVrms/m*)
LED 6 illumination level	2000mVpp ±60mVpp (5050mVrms/m*)

*Assumes a sinusoidal waveform satisfying $V_{pp} = 2.828 \times V_{rms}$ across the measurement gap.

Probe Materials:

Handle Material	DUPLEX STAINLESS STEEL 2205
Endring Material	DUPLEX STAINLESS STEEL 2205
Cap Material	BLACK ACETAL HOMOPOLYMER
Housing Material	ACRYLIC
Bleedscrew Material	ALLOY BRONZE CA104 EN 12163
Handle o-rings	2x BS 50-220 NBR70
Endring o-rings	1x BS 50-213 NBR70
Bleedscrew o-rings	1x BS 50-008 NBR70

Probe Dimensions:

Length	392.0mm (15.4") ±0.25mm
Diameter	49.0mm (1.9") ±0.25mm
Weight in air	2.2kg (4.9lbs)
Weight in seawater	1.8kg (4lbs)