

Technical Data Sheet

iGAL Galvanic CP Remote Monitor

Web based remote monitoring for galvanic anode installations



Description

The PowerView **iGAL** remote monitoring device is designed to provide remote monitoring and testing of galvanic anode installations. This battery powered unit is supplied as a standalone unit or mounted in an optional vandal resistant, weather-proof enclosure for easy installation.

Typical features

- monitor up to four anode currents
- monitor up to four reference electrode potentials
- remotely interrupt anode to cathode for testing
- monitor ON and IOFF reference electrode potential
- monitor reference electrode decay potentials
- battery operation for up to 6 years

Applications

The **iGAL** is designed to enable remote monitoring of galvanic anode installation without the need for AC power. The remote monitoring facility enables daily function monitoring and monthly programmable performance monitoring, without the need to attend site. Equipment is supplied with a 1 year Web portal licence and supporting SIM card, along with permanent 8GB on-site SD card providing direct manual access to monitoring data.

The **iGAL** is designed for use with the Data2Desktop Monitoring Web portal, which provides a client interface facility, allowing direct access to the monitoring data and adjustment of testing programs, via normal computer or mobile device browsers, without the need for any additional software or hardware.

Features of application

- Remotely Monitor Galvanic Anode Systems
- no AC power required - Battery powered with up to 6 years life.
- secure and user friendly
- web access via normal web browser, no need for extra software or hardware
- monitor multiple units and sites from a single private web login
- remotely interrupt anode to cathode current, enabling performance verification testing as per the requirements of BS EN ISO 12696 Cathodic Protection of Steel in Concrete
- programmable monitoring intervals for the measurement of reference electrode potential and anode current

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Monitoring capability

The **iGAL** units were specifically developed and designed to enable galvanic anode testing in accordance with the testing requirements listed in **BS EN ISO 12696**, which included:

- Measurement of ON and Instant Off reference electrode potentials
- Measurement of anode to cathode current
- Remotely interrupt the anode to cathode current at a programmable date and time for a programmable period while measuring reference electrode potentials (depolarisation testing)
- Remotely reconnect the anode to cathode following a scheduled depolarisation test period

Reference electrodes

The **iGAL** allows connection and monitoring of up to four reference electrodes. Its anode current switching function enables measurement of On and Instant Off potentials, as well as longer-term depolarisation or decay potentials for performance verification testing.

Coupon current measurement

The **iGAL** units have the ability to measure up to four coupon currents through zero-resistance-ammeter inputs. Where the coupon surfaces areas are known, the coupon currents can be used to calculate the delivered cathode current density at the steel.

Anode current monitoring and switching

Up to four anode zones can be connected to and monitored through the **iGAL**, to measure individual anode to cathode zone current. The anodes can be remotely disconnected from the structure to enable testing including instant off potential and the measurement of potentials over a longer depolarisation period.

Additionally, two extra unmonitored anode zones can be connected through the **iGAL**. These zones can be disconnected simultaneously with the monitored zones to prevent reference electrode potential interference from adjacent anode areas.

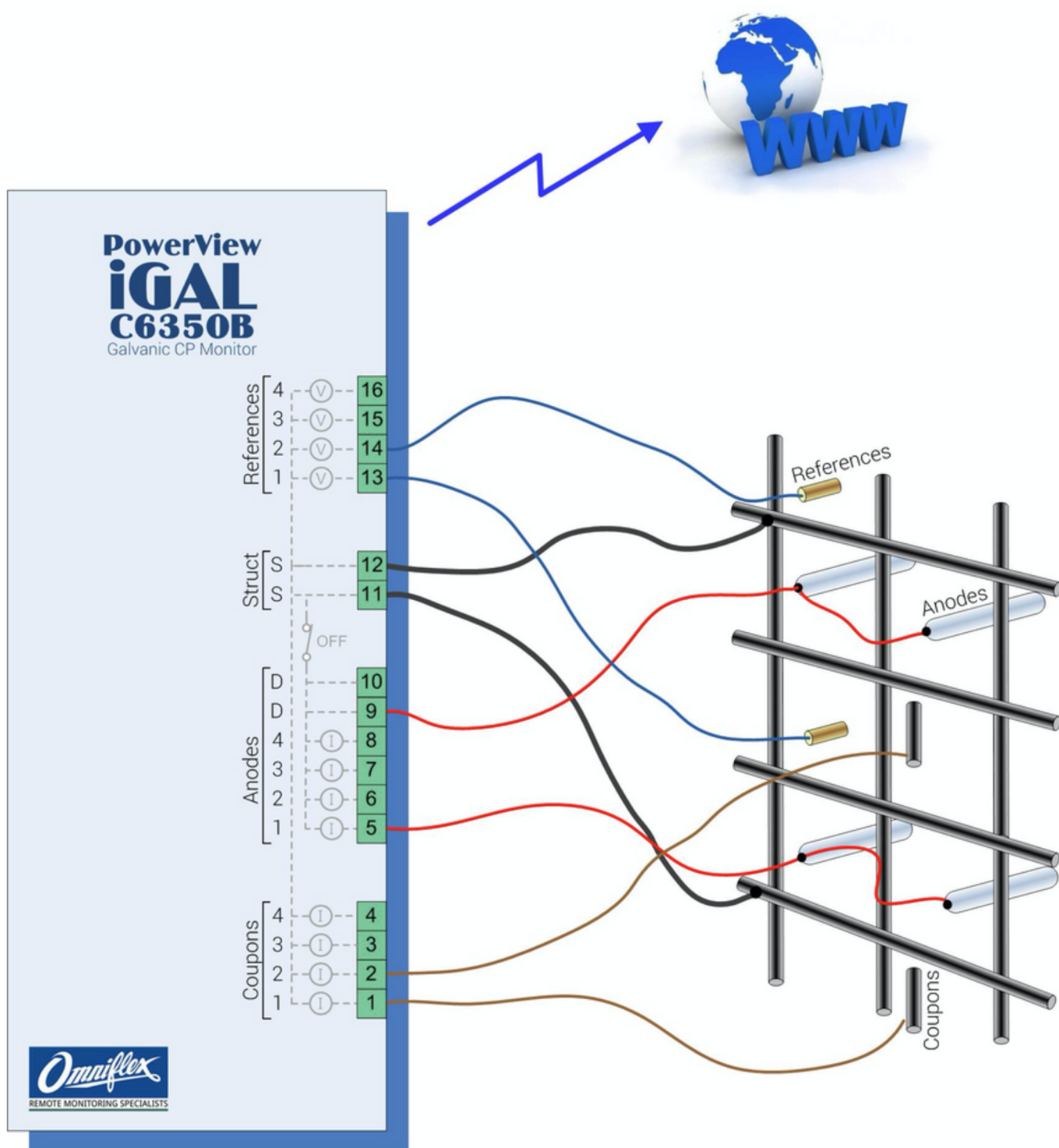
Temperature Sensor

An internal temperature sensor on the **iGAL** allows the local equipment temperature to be monitored which can be used to evaluate galvanic anode performance over varying temperatures.

Data access

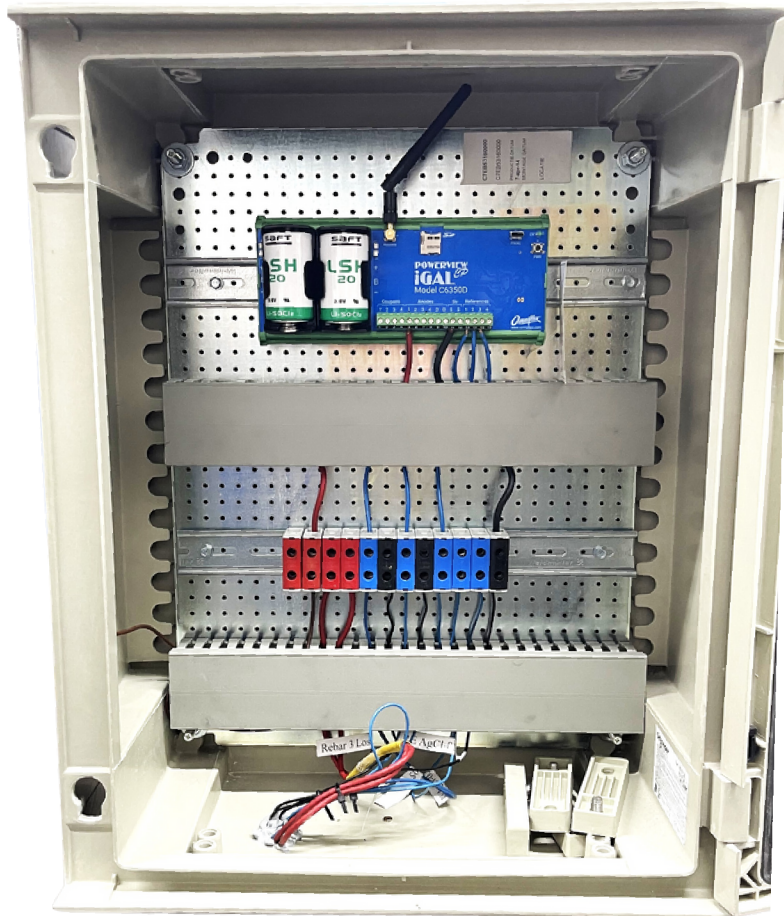
To maintain SIM card connectivity and Web portal access, an annual license is required after the first year. Alternatively, data can be manually retrieved from the on-site storage (SD card), which provides a complete backup of all historical monitoring data in CSV format.

iGAL Connections



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iGAL Arrangement in Vandal Resistant Enclosure with Cable Termination



CABINET INFORMATION

DIMENSIONS	
WIDTH	194 MM
HEIGHT	241 MM
DEPTH	107 MM
IP	IP66
MATERIAL TYPE	ABS

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iGAL Data2Desktop Monitoring Web Portal

Overview Charts **History** Test and Control Ioff Results Diagnostics Diagnostic Charts

From Date: Blank for 15 days of data From Time: ☐ Blank for 00:00 To Date: Blank for latest

History

Update Time	Anode	Ref 1	Ref 2	Ref 3	Ref 4
2019-10-23 00:02:05	213	-0.7036	-0.7893	-0.756	-0.8677
2019-10-23 00:00:05	213.3	-0.7036	-0.7893	-0.756	-0.8676

Overview Charts History **Ioff Results** Diagnostics Diagnostic Charts

From Date: Blank for 15 days of data From Time: ☐ Blank for 00:00 To Date: Blank for latest

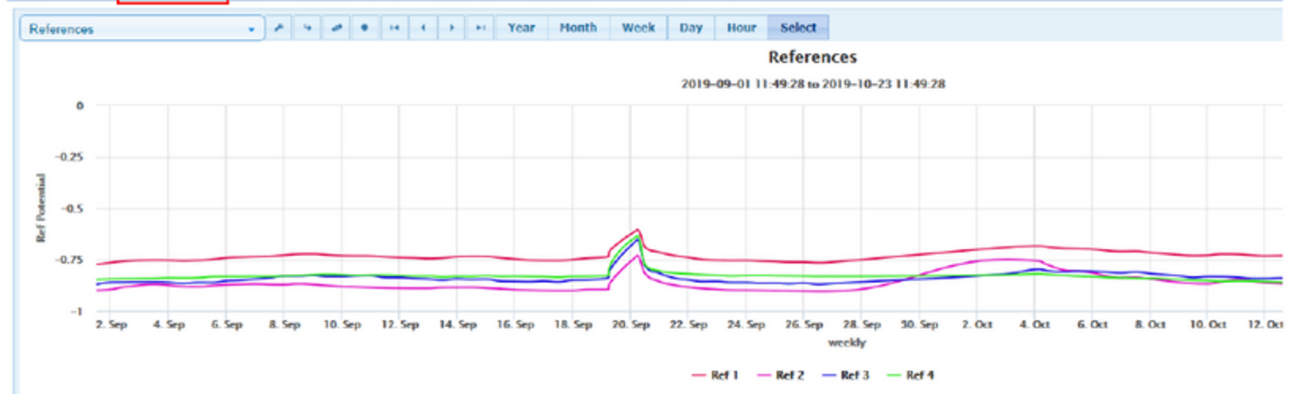
History

Update Time	Ref 1	Ref 2	Ref 3	Ref 4
2019-10-23 00:00:24	-0.6907	-0.7736	-0.741	-0.8477
2019-10-22 12:00:14	-0.6926	-0.7586	-0.7408	-0.8477

Overview **Charts** History Test and Control Ioff Results Diagnostics Diagnostic Charts



Overview **Charts** History Test and Control Ioff Results Diagnostics Diagnostic Charts



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Specifications

Network Communication Specifications

Bands	LTE FDD: B1/B3/B5/B7/B8/B20 WCDMA: B1/B5/B8 GSM: B3/B8
Approvals	Various Carrier Approvals

Antenna

Antenna	Basic 0dB antenna supplied External antenna available on request
Antenna Connection	SMA Female Jack on iGAL

Reference Half-Cell Voltage Measurement Inputs

Quantity	4 channels
Input voltage range	0 to ± 3 V
Input Impedance	>100 M Ω
Resolution	1 mV
Accuracy	<10 mV

Anode Current Measurement Inputs

Quantity	4 channels
Range	0-1 A
Resolution	54 μ A
Accuracy	<1 mA
Max current rating per channel	1 A

Anode Zone Switching Inputs - Non-monitored

Quantity	2 channels
Max current rating per channel	0.5 A

Anode Switching

Total switchable anode current including monitored and un-monitored anode zones	5A
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Coupon Current Measurement Inputs

Quantity	4 channels
Range	0-1 mA
Resolution	10 nA
Accuracy	100 nA
Max current rating per channel	1 mA

LED Indicators

OK LED (Green)	On in running mode Off when Power is off or in standby
Battery OK (Top) LED (Green) (one per battery)	Flashes when Battery is OK
Battery Flat (Bottom) LED (Red) (one per battery)	Flashes when Battery is Flat

Temperature Sensor

Quantity	1 (internal)
Sensor Type	NTC Thermistor

Temperature Range	-20 to 55 °C
Accuracy	± 1 °C

Batteries

Quantity	2
Type	3.6V Primary Li-SOCl ₂ (non-rechargeable)
Size	'D' Cell
Battery Life	3 – 6 years typical with once per day updates
Battery consumption criteria	Battery No 1 then battery No 2. Web portal warning notification to replace battery No 1 for uninterrupted service

Monitoring Capability

As Found	On potential of all connected reference electrodes Anode to cathode current of all connected anode zones
Instant Off Test	IOFF potential of all connected reference electrodes
Depolarisation Test	Potential of all connected reference electrodes following anode to cathode interruption
Programmable period	5 minutes to yearly intervals Decay period 5 min to 1 month

Environment

Operating Temperature	-10 to +50°C (+14°F – 122°F)
Storage Temperature	-10°C – 70 °C (+14°F – 158°F)

iGAL Mechanical

Width	227mm (10.7")
Height	87mm (6.7")
Depth	54mm (3.6")
Weight	0.43 kg approx.

Enclosure Mechanical

Degree of Protection in Weatherproof Housing	IP67 / NEMA 4S
Width	271mm (10.7")
Height	170mm (6.7")
Depth	90mm (3.6")
Weight	0.6 kg approx. (box only).

Compliance to Standards

Safety	IEC950; EN60950
Emissions	EN 55011 Group I, Class A
Immunity	IEC 61326-1 (2005)

Ordering Information

ORDER CODE	DESCRIPTION
	PowerView iGAL
Accessories	iGAL Weatherproof Housing SAFX LSH20 3.6V Primary Lithium Battery (takes 2)

CorrPRE - Special Anodes Manufacturing, Zuidbaan 509, 2841MD, Moordrecht, Netherlands

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Approved by: R. Giorgini