Slimline ICL-C Test Station

Coating Integrity – Line Current Measurement – Cathodic Protection Effectiveness – Corrosion Rate

FEATURES

Complete instrumented test station (Big Fink or customized)

Line current measurement

ER probe for measurement of corrosion rate

Verification of CP efficiency

Long battery life - solar option

Remote monitoring - cellular or satellite via Masterlink module

GPS time synchronization

Data presentation, analysis, reporting in CP*Manage Web

MEASUREMENTS

- ✓ Line current
- ✓ Corrosion rate
- ✓ DC potential
  - ✓ On (pipeline)
  - ✓ Instant-off (coupon)
  - ✓ IR-free (coupon)
- ✓ DC current density
- ✓ AC voltage
- ✓ AC current density
- ✓ Spread resistance

DATA AT YOUR FINGERTIPS - WHEREVER YOU ARE!

The MetriCorr ICL-C (Interference Corrosion Logger - Current) test station is designed for comprehensive CP and AC or DC interference analysis using a high sensitivity ER probe, with the added functionality of measuring line currents as a voltage drop across a known pipeline section. The line current facility can be used to assess the distribution of cathodic protection current in a pipeline system, and thus to locate sections with poor coating integrity. Continuous monitoring of this parameter can be used as an early warning system for third party damages.

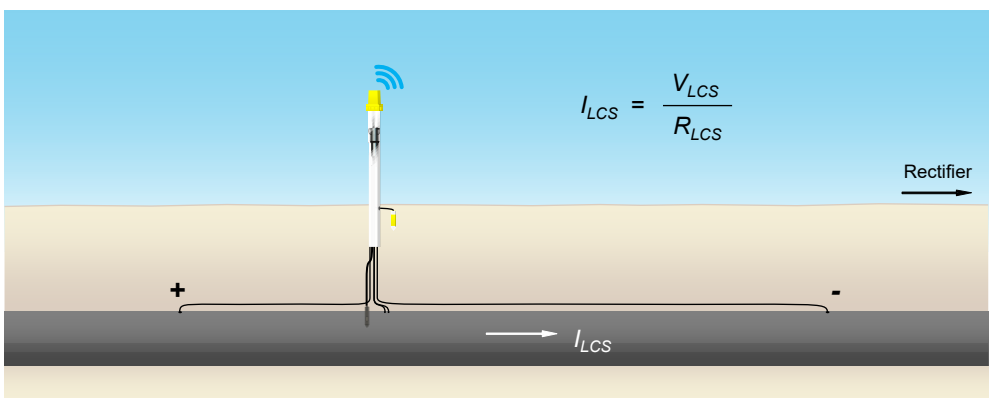
The MetriCorr ICL-C test station is part of a complete remote monitoring system for pipelines and associated components like T/R's, potential test stations, corrosion rate, critical bonds, etc.
Alike the rest of the MetriCorr Slimline product series, the ICL-C is intended as a remote monitoring unit (RMU), a data logging device, or simply as a spot reading device. It may be operated through the MetriCorr CP*Manage Web or through the MetriCorr iOS/Android App.

The Slimline product family fits into Big Fink test stations (see example on the right), MetriCorr tests stations, junction boxes, or customized to fit into the operator's preferred embodiment.

Robust surge protection based on spark gaps for high surge current handling:
- Eliminates the risk of leakage current and measurement errors
- Eliminates high voltage isolation requirements



Installation example



The line current (I_{LCS}) is calculated via Ohm's Law, where the resistance of a pipeline section (R_{LCS}) is a known value, and the potential difference (V_{LCS}) of the line current span is measured by the ICL-C, along with pipe-to-soil potentials, AC/DC current densities and corrosion rate on an ER probe

Technical specifications – ICL-C

Storage capacity	+200 000 readings
Logging interval	10 min – ∞, Typically 1 hour 1s (intensive mode)
Power supply	6 to 15 VDC (Max. 200mA @ 12VDC)
Battery Lifetime	Depends on battery selection – see IS-PL-70-03 “Test Stations & Power Supply”
Casing / Humidity **Temperature**	IP65 / 0 to 100% RH condensing conditions -40°C to +85°C (logger)
Test Station Options	- Big Fink (Solar/Battery powered, see page 1) - Junction box (Solar/battery powered) - Junction box (AC supply 100–240VAC with surge protection) - MetriCorr Type Test Station - Customer’s own specifications
Size L x W x H, weight	250 x 68 x 81 mm, 390 g
Communication	- Cellular: LTE Cat M1 (4G LTE, 5G-compatible IoT technology) - Satellite (optional) - Android or iOS App - Bluetooth Low Energy - Ethernet (optional) - GPS/GNSS Position and Time Synchronization
ER/coupon channel characteristics	Resistance range 156 mΩ Precision (4σ) 0.4 µΩ Repeatability (2σ) 0.2 µΩ Current 300 mA/probe



Measurements		**Potential, Current / Probe**	**Line Current / Shunt**
	Input resistance	+ 10.0 MΩ	33 kΩ
	Range	± 100 V_{DC} / 100 V_{RMS}	± 1250 mV_{DC} / 800 mV_{RMS}
	Resolution	0.1 mV_{DC} / 1 mV_{AC}	0.2 μV_{DC}
	DC accuracy	± 0.8 mV ± 0.3% reading ± 1µA ± 0.6% reading	± 1 µV ± 0.1% reading
	AC accuracy	± 1 mV ± 1% reading ± 2µA ± 0.6% reading	± 10 µV ± 0.1% reading
	AC to DC rejection	- 80 dB	- 80 dB

Surge Protection		**Potential / Probe**	**Line current / Shunt**
	Nom. discharge current	10 kA @ 8/20 µs	10 kA @ 8/20 µs
	Lightning pulse current	2.5 kA @ 10/350 µs	2.5 kA @ 10/350 µs
	Optional (Pipe-Reference)	50 kA @ 8/20 µs 50 kA @ 10/350 µs	

