Cathodic Protection. Power Electronics.



1980s
Designing ICCP converters since the late 1980s

98%
Peak converter efficiency, no fans

1 supplier
Converter, solar, storage and monitoring

Global
Supplied to projects on three continents

Converters, solar power, storage, surge protection and monitoring for remote pipelines, tanks and structures.

Cathodic Protection at AERL

ICCP since the late 1980s

AERL designs and supports solar-powered impressed current cathodic protection (ICCP) for buried and submerged steel at remote sites: oil, gas and water pipelines, tanks and structures.

In the late 1980s AERL built a dedicated cathodic protection controller for off-grid pipeline systems. Its ICCP Cathodic Converters™ earned a worldwide reputation for efficiency and reliability. Today AERL engineers the power electronics at the heart of a CP site, the CoolPro converter and its surge protection, and supplies every component around them: solar charge controllers, battery storage and remote monitoring, from one Australian team.

Core Capabilities

CP power electronics 01

High-current DC-DC conversion with integrated ICCP control, designed in-house.

Solar power for CP sites 02

CoolMax SRX MPPT charge controllers and LiFe² battery storage to run CP with no grid.

Remote monitoring 03

Converter readings on RS485 / Modbus RTU, through the Nexus Gateway to AERL Cloud or SCADA.

Lightning protection 04

Surge Buster module, 50 kA (8/20 µs), for long or tall structures. Made in Australia.

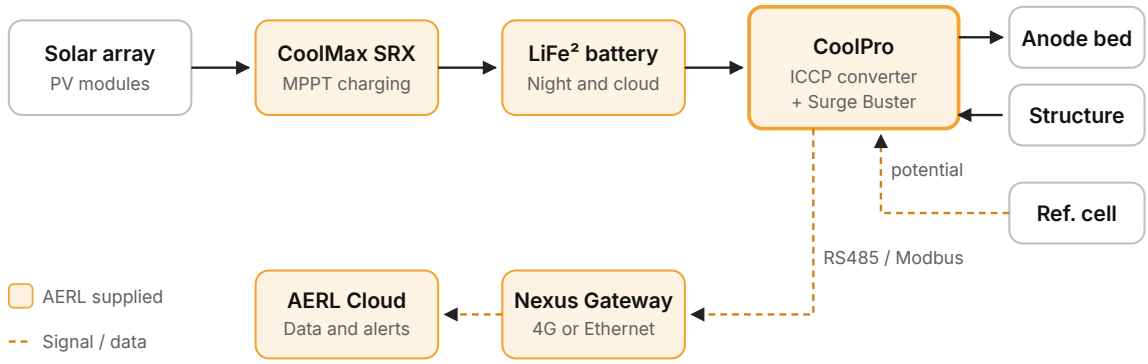
Survey-ready control 05

1–2 ms current interruption for instant-off surveys; reference-cell potential control.

Design and support 06

System sizing, set-up advice and Australian technical support for the life of the site.

A Solar ICCP Site, Supplied by AERL



Why AERL for Cathodic Protection

- ICCP converters designed by AERL since the late 1980s
- Fan-less, IP65 design for heat, dust and unattended sites
- One supplier for the converter, solar, battery and monitoring
- Surge protection sized for long pipelines and tall structures

The CP Range

From the solar array to the structure

Function	AERL product	Role in a CP system
ICCP conversion	**CoolPro Cathodic Converter™**	Turns battery power into a controlled protection current: constant current, voltage or structure potential. Up to 98% efficient, fan-less, IP65; 30 A per unit, in parallel for more.
Surge protection	**Surge Buster**	50 kA (8/20 µs) lightning protection on the converter's input, output, interrupt and reference-cell lines. Made in Australia.
Solar charging	**CoolMax SRX · SRX-R**	MPPT charge controllers with up to 600 V PV input and up to 200% PV oversizing, wall-mount or 2U rack.
Energy storage	**LiFe²**	48 V LiFePO4 modules of 5.12 kWh, in parallel, to keep protection current flowing through the night and cloudy days.
Monitoring	**CoolPro Meter Board · Nexus Gateway · AERL Cloud**	Output current, voltage and structure potential over RS485 / Modbus RTU, sent over 4G or Ethernet with alerts.
DC insulation monitoring	**EarthGuard EG-600**	Detects insulation faults on two PV or battery circuits, 40–600 Vdc, with audible and visual alarms.

Engineered for CP Work

- Structure-potential control (±2400 mV) for coated structures
- Output current held within ±0.5% over load and temperature
- 1–2 ms current interruption for instant-off surveys
- Converters in parallel to protect the largest structures

Applications

Oil and gas pipelines
Remote transmission and gathering lines, where AERL's CP story began.

Water pipelines
Buried steel water mains far from grid power.

Tanks and vessels
Structures where over-protection harms coatings, using potential control.

Where It Works

CoolPro converters supplied to pipeline and corrosion projects in:

Australia · United States · Nigeria · Egypt

Trusted By

Among the pipeline and energy operators that rely on AERL equipment:

Santos APA epic energy

aerl

Let’s talk about your CP project.

COMPANY

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CP RANGE

CoolPro ICCP converters
Surge Buster
lightning protection
CoolPro Meter Board

POWER AND MONITORING

CoolMax SRX charge controllers
LiFe² battery storage
Nexus Gateway · AERL Cloud

DOCUMENTS

CoolPro datasheet and manual
Modbus RTU protocol
Surge Buster datasheet

aerl.com.au

CP Capability Statement
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