Cathodic Protection Unit (CP)  

CP Unit is a specialised power converter which provides DC current to metal pipelines, storage tanks, bridges, or other exposed equipment to cancel the effects of natural chemical corrosion. The CP operates directly from storage batteries common to photovoltaic systems and is equipped with a low voltage shut-down feature to prevent battery damage. It is suitable for use in systems of either positive or negative ground.

The Solar Cathodic Protection Controller is designed for trouble-free service in all environments and includes many special features which make it easy to operate and maintain in the field.

Power consumption and heat generation are minimised in the CP since efficient solid state circuitry is used instead of ballast resistors typical of earlier cathodic protection units.

The power circuit contains no moving parts to wear out or break down. Quality digital voltage and current meters provide output monitoring which facilitates field adjustment. Recalibration can be performed in minutes without special tools or meter equipment.

Since corrosion protection systems normally operate in remote, unattended sites, they need to be protected from common events that make them fail such as: lightning exposure, battery damage, and short circuit.

Our dual transient protection network will suppress electrical spikes and surges that normally damage field equipment. If the storage batteries become discharged due to cloudy days or photovoltaic system failure, the CP Unit will automatically shut down, preventing excessive discharge whilst protecting the battery from permanent damage and costly replacement.

Our built-in circuit breaker prevents damage to the CP and other components, should the output leads become shorted to one another. To help reduce overall system cost, the CP includes adjustable current and voltage outputs.

Standard photovoltaic modules can be used and the CP output adjusted to the desired level.

Features:
- Complete weather protection
- Easily mounted
- Protection from damage
- Solid state
- Easy calibration

Applications:
- Metal pipelines
- Storage tanks
- Bridges
- Exposed metal structures
Careful matching of the array to the DC converter is not required. The CP Unit can provide:

1) Adjustable current output with fixed upper limit on voltage output
or
2) Adjustable voltage output with fixed upper limit on current output.

**Standard Features**
- Ideal for solar powered battery backed cathodic protection systems
- User adjustable output voltage, current limit and half cell voltage regulation
- Automatic switching capabilities between different operating modes
- Remote control and metering options available for sequenced operation

**Option**
- LED Metering for output current and voltage

**Control Features**
- Constant Voltage
- Constant Current
- Half Cell Voltage Regulation

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### SPECIFICATIONS

#### Electrical Specifications

- **Input Voltage:** 10V to 40V input voltage range
  12V to 24V nominal battery
- **Output Voltage:** 2.0 to 24.0 Volts
- **Output Current:** 0.1 to 40.0 Amps
- **Half Cell Voltage:** 0.2 to 3.0 Volts
- **Ripple at Load (mV rms):** 20
- **Efficiency:** >96%
- **Transient Protection:** All inputs and outputs protected and tested. Additional protection available.
- **Transient Response:** (10% 90%) 20 ms to return to regulation
- **User Controls:** Adjustment potentiometer to adjust output voltage, current limit and half cell regulation.

#### Mechanical Specifications

- **Dimensions:** 125 x 120 x 40mm
- **Weight:** Approximately 1 kg
- **Temperature Range:** - 40°C to 75°C
- **Terminations:** Power Terminal Block, Wire Size: 6.0mm²
  Signal Terminal Block, Wire Size: 0.75mm²
- **Humidity:** 90% non condensing, designed and tested for operation in a NEMA 12, 4, 4x Enclosure.
- **Warranty:** 2 years