

# Cathodic Protection Rectifiers

Product Brochure

Typically used to protect buried pipelines, above and below ground storage tanks, submerged structures and any instance where metal structures are at risk through environmentally induced corrosion.

Cathtect has been manufacturing Cathodic Protection Rectifiers since 1992 and Switchmode Rectifier technology is renowned for its reliability and small footprint. The technology stems from the requirement of reliable power conversion for essential services during surgical procedures. Switchmode Rectification is reliable, efficient and extremely dirty mains input tolerant. Low losses equates to lower heat dissipation and electrical stress.

## Benefits

- ⇒ Superb efficiencies of 95% are achievable!
- ⇒ Cost effective and low copper foot print! (**Less attractive to thieves**)
- ⇒ Smaller real estate requirement!
- ⇒ Single Phase and 3 Phase configuration!
- ⇒ Very low ripple content <300mV!
- ⇒ Vastly lower operating temperatures!

## Features of Cathtect Switchmode Cathodic Protection Rectifiers

- ⇒ Automatic Output control in one of 3 user programable control modes
- ⇒ Constant Output Voltage.
- ⇒ Constant Output Current.
- ⇒ Constant structure to electrolyte potential (Reference Electrode feedback).
- ⇒ Manual control also available via a 10 turn hermetically sealed adjustment potentiometer.
- ⇒ Exceptionally low single phase ripple (<300mV) at high output currents of 130A plus.
- ⇒ Extremely wide supply input 96-264V range on single phase units.
- ⇒ Wide frequency input range 47-63Hz.
- ⇒ Digital metering with backlight of Output Voltage, Current and Reference



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a * www.Cathtect.com
U:006.3V Ref2:-1.15V
I2:+015.3A s11111111
*** Connecting ***
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**Cathtect**  
U.S.A. INC.  
Cathodic Protection Products



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Potential.

- ⇒ Wide selection of output power ratings are available;  
**40W; 80W; 150W; 300W; 800W; 1500W; 3000W and 10000W**
- ⇒ Digital control technology permits parallel Current sharing stacking as well as series stacking.
- ⇒ Output Voltage range from 12V through to 60V standard.
- ⇒ High Output as high as 180V and up to 400A are optionally available.
- ⇒ Optional Telemetry/Remote monitoring (Sigfox/LTE/Nbiot.)
- ⇒ Class 1 8/20uS surge protection on Input and 10/350uS on Output.

## Enclosure

Three enclosure options are available;

- ⇒ Epoxy Powder Coated 3CR12 - 2mm thick (*alternately designated as UNS40977, S41003 or 1,4003*)
- ⇒ Epoxy Powder Coated 304L - 2mm thick
- ⇒ Polyester

All units are equipped with “dead front” double insulated operator panels (internal swing door) for user safety and Occupational Health and Safety compliance. Sun shields and drip canopies are available in the metal enclosures, specifically tailored to the enclosure utilized. Pole Mount, Plinth Floor Mount as well as Wall Mount



hardware is available to ensure simple mounting of the equipment. The metal units are available in three user selectable colour variations;

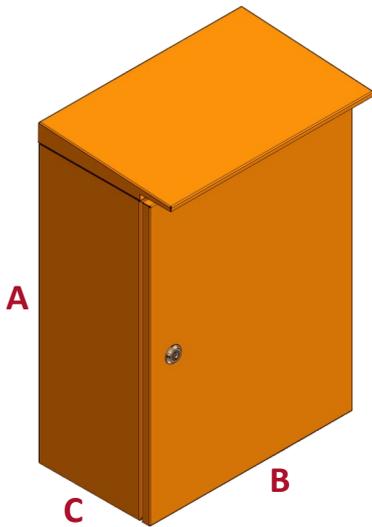
- ⇒ Electric Orange—Ral 2004
- ⇒ Red—Ral 3020
- ⇒ Grey—Ral 7032

The Polyester enclosures are only available in one standard colour;

- ⇒ Grey—Ral 7032

## Enclosure Sizing

### Metal Enclosures (IP 65) (2mm/0.063" thick)



Power Rating	Metric (mm)	Imperial (inch)
40 thru 150W	400x300x220	15.75x11.8x8.66
300	500x400x220	19.68x17.75x8.66
800	700x600x270	25.56x23.62x10.63
1500	800x 600x270	31.5x23.62x10.63
3000	900x700x320	35.4x27.56x12.59
10000	1000x800x320	39.37x31.49x12.59

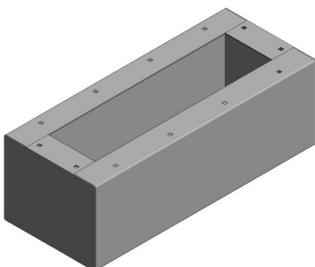
### Polyester Enclosures (IP65)



Power Rating	Metric (mm) A x B x C	Imperial (inch) A x B x C
40 thru 150W	500x405x200	19.68x15.94x7.87
300	500x405x200	19.68x15.94x7.87
800	650x515x250	25.59x20.27x9.84
1500	800x 585x300	31.49x23x11.8
3000	800x585x300	31.49x23x11.8
10000	1060x800x350	41.7x31.5x13.8

### Mounting Hardware

Plinth



Wall Mount Hardware



Pole Mount Hardware



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## Thermodynamics

At optimal efficiency, Switchmode Rectifiers perform well in small enclosures at ambient temperatures up to 158°F (70°C). A typical curve was obtained below with no forced ventilation at full load over a period of 11 hours. The curve below reveals ambient outside the enclosure and the other traces the inside temperature of the enclosure.

The heat run graph was obtained at an initial outside ambient of 50°F (10°C). The internal thermodynamics of the enclosure is internally stable and reveals it is influenced by external variables and less so by the internal operation.

