

Cathodic Protection Transformer Rectifier



Hind Rectifiers Ltd.

Perfectly Engineered Power Conservation Systems

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HIRECT MAKE CATHODIC PROTECTION TRANSFORMER RECTIFIER



HIRECT make Cathodic Protection Transformer Rectifier unit (TRUs) are of Automatic and manual controlled for cathodic protection of buried pipelines across the country, storage tanks at terminals /refineries and other buried structures.

Application: TRUs are used to prevent submerged (Soil or water) metallic structures from corrosion. All submerged Pipelines (Oil, water etc.), concrete structure of bridges/ buildings / sea ports etc can be protected from corrosion by doing CP.

TRUs superimposes DC Currents in to the steel structure to be protected in opposite direction to the galvanic corrosion currents & protects the structure from corrosion.

To obtain the optimum level of protection under varying conditions, it is necessary to vary the impressed current continuously so as to maintain a constant level of protective potential at the structure. This continuous monitoring and control can be achieved by providing an automatic control for the cathodic protection system.

HIRECT offers several types of TRU which are designed, manufactured and tested under strict quality assurance system to achieve highest quality standards.

Features and Benefits:

Type of Units

Natural Air Cooled, Oil Cooled, Indoor or Outdoor type, Self standing

Operational Climatic condition

TRUs are designed to work under severe environmental conditions with maximum ambient temperature of 50°C and humidity of 95% (non condensing). Enclosure conforming to class IP 55 degree of protection

Transformer

All the Transformers used in TRUs are designed to give high efficiency giving low loss. The coils are wound with high conductivity, annealed, insulated electrolytic copper and core material is high permeability, low loss CRGO / CRNGO. The insulation material used is of high standard Class F .

Rectifier

Rectifiers are based on internal quality standards and our own make Diodes / Silicon Controlled Rectifiers. Rectifier circuits have different topology depending upon the load requirements.

Control Element

The DC Output will be controlled through latest solid state Silicon Controlled Rectifiers (SCRs) with plug in type control card of electronic circuits.

Protection

Normally we provide following protections:

- MCBs with HRC Fuses in AC Input & DC Output
- Over current limit & short circuit protection through electronic controller
- Glass cartridge fuses in the all auxiliary power lines to control circuit

Modes of Operation

A) Auto Reference Mode

The operation of the TRUs in this mode will be fully Automatic and will be controlled by reference electrode feedback. The unit will automatically maintain reference voltage or P.S.P. within ± 15 mv of the set value under all conditions.

B) CVCC MODE

The unit will be operated in Constant Voltage or Constant Current mode.

In constant voltage mode the DC output voltage will be settable from 0 to rated value in stepless manner by means of voltage adjustable pot.

In constant current mode the DC output current will be settable from 0 to rated value in stepless manner by means of current adjustable pot.

C) MANUAL MODE

The DC output voltage of TRU will be controlled in 24 symmetrical steps by means of a separate Auto transformer with Coarse & Fine tapping.

ENCLOSURES

Enclosures are fabricated from 2.5 mm / 2.0mm / 1.5 mm CRCA sheet and confirming to IP55 degree of protection. Lockable doors shall be provided in the Front and Back. Polycarbonate window is provided viewing meters and indications.

FINISH

Powder coating / Paint of required shade and thickness with proper treatment to suit corrosive/site conditions.

AC INPUTS

Single phase or three phase, 50 Hz/ 60 Hz

METERS

48 x 96 mm, 3 ½ Digit Digital meters as under:

Input Voltage	: 0 to 750 V AC
Input current	: Ammeter with suitable Cts
Output Voltage	: As per output rating
Output Current	: Ammeter with suitable shunt
PS.P	: 0 to ± 19.99 V DC

INDICATIONS

Mains ON , Auto Mode, Manual Mode , Auto Ref. mode, CVCC mode, under protection, Over protection, All Ref. Fail, Current Limit.

ADDITIONAL FEATURES

Following additional features can be provided as per Specifications alongwith Rectifiers

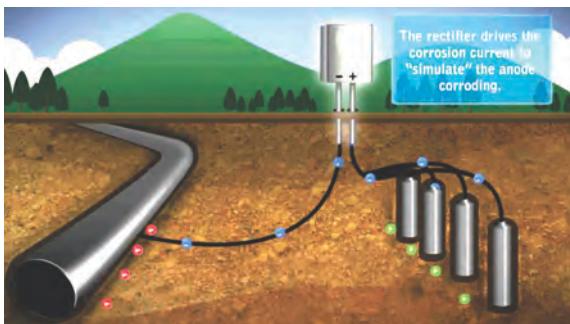
- a) Interrupter Timer
The Interrupter timer is used for carrying out ON /OFF CP survey using the current interruption technique.
- b) SCADA Monitoring Facility
Isolated 4- 20 m A are provided for DC output voltage,DC output current and pipe to soil potential (PSP)
- c) Remote Monitoring through GSM
The parameters values can be remotely monitored using the GSM based remote monitoring systems



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APPLICATIONS



MANUFACTURING UNITS

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