



HOCKWAY™

Hockway's smart Cathodic Protection for well casing



HOCKWAY
WELL CASING

www.hockway.com



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The issues

Corrosion of well casings is a serious concern. Well casings are usually cemented for the purpose of anchoring the casing in the borehole. Poor cementation can lead to bare steel casing being exposed to surrounding soil. Electrochemical cells can form which lead to active corrosion sites and eventually to penetration of the external casing, allowing water to enter through to the annulus, leading to expensive repairs and production downtime.

The answer

Hockway's cost effective well casing cathodic protection is a fraction of the cost of work-over of a well.



Identifying the correct Cathodic Protection

We use a number of survey techniques to determine the Cathodic Protection requirements.

Surveys

Downhole Survey with Corrosion Protection Evaluation Tool (CPET)

CPET is an advanced downhole tool survey technique to measure whether corrosion current is discharging from the casing and, where CP is applied, to confirm its effectiveness.

E-LogI Testing and polarisation curves

Running E-LogI surveys indicate the possible Cathodic Protection current requirements. This survey can be applied at grade level with no interference in production.

Mathematical Modelling

The effect of applied cathodic protection can be calculated from electrical measurements.



Average Current Density

Depending on the environment and cement quality a range of current densities are used to determine the total current requirement and can range from 1-30mA/m². As a rule of thumb:

Depth (m)	Current (A)
900	2
1500	5
3000	30

A more accurate assessment can be made using the E-LogI survey.

Hockway systems to suit your circumstances

We base our CP systems on your needs and your environment

- Number of wells, geometry and location of well casings to protect
- Ground conditions, water Salinity
- Cementing practices
- Formation resistivities
- Electrical grounding
- Hazardous conditions – AC availability
- Pipelines and flowlines and whether or not to isolate
- Soil resistivity
- Future development

The quantity and CP layout can only be established by site survey.

Typical Cathodic Protection system

Power supply unit with Deepwell borehole groundbed located 100-200 metres from the well casings.

Other available systems:

One of our Cathodic Protection systems can protect well clusters and multi CP systems can protect complex sites. Each require detailed design and forethought.

Power Supplies

Hockway can manufacture and supply a range of power supplies.

CP Controllers powered by solar PV systems

Our solar powered systems are ideal for remote situations. Our solar array can supply power to:

- Storage batteries and enclosure
- Battery charge controller
- Cathodic Protection Controller
- Instrumentation
- Remote monitoring and control
- Datalogging

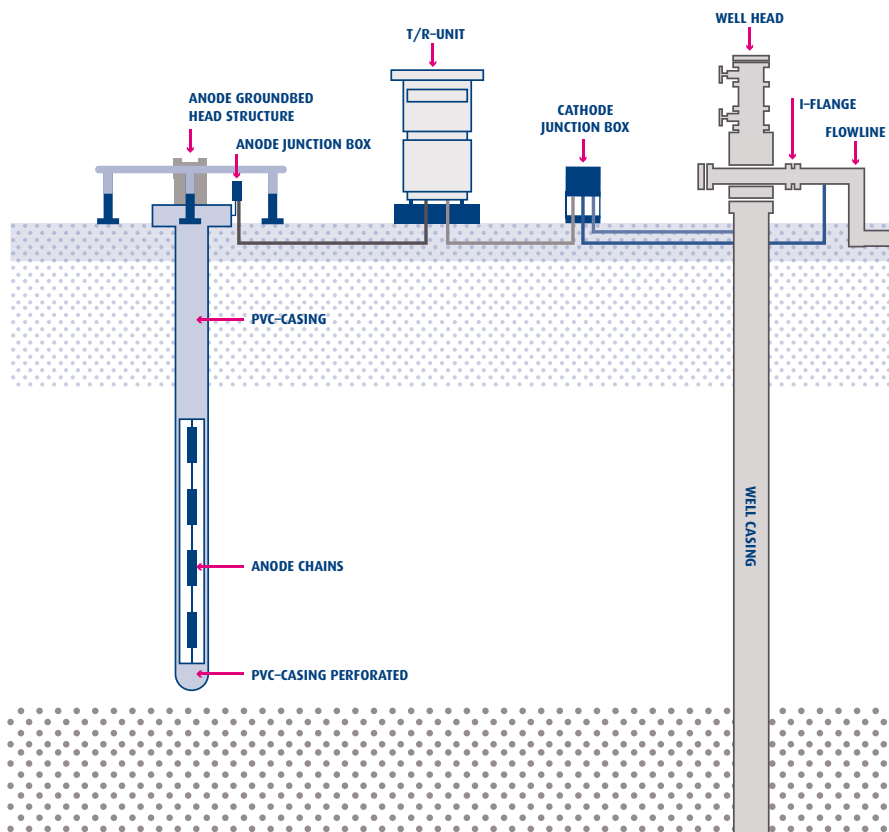
Transformer rectifiers

Suitable for any environment from any AC power availability. 240/415V, single or 3 phase.

Remote Monitoring:

Ideal for remote wells an easy and relatively cost effective method of monitoring the CP performance.

Diagram of typical CP system for well-casing



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