

The Smart Current Interrupter for today's CP systems



Smart Interrupter SI220

High performance, solid-state Current Interrupter for pipeline Cathodic Protection monitoring



Radiodetection

High voltage and current capability

For today's CP systems; longer pipes in difficult conditions

Synchronize multiple units

Enables evaluation of complex CP networks

Easy to use

Simple menu operation & powerful control features

Advanced safety features

Transient & overload protected cool running, even at elevated temperature

Worldwide, utilities employ Cathodic Protection (CP) Systems to protect buried metal pipes and other structures against corrosion and thus maintain the safety and value of the infrastructure.

These systems apply a negative potential from a voltage source at potentially high currents to the pipeline. In order to improve protection in difficult conditions and over longer distances, CP systems have been getting more powerful and networks are getting more complex with increasing congestion.

Radiodetection has a wealth of experience in pipeline integrity products and now introduces a new Smart Interrupter addressing the demands of the corrosion technician. The Smart Interrupter enables the interruption of the CP current so allowing the integrity of the pipeline coating to be evaluated without disturbing the pipeline as part of the routine maintenance of cathodically protected pipes.

SI220 Smart Interrupter

SI220 is a solid state interrupter for corrosion technicians. The unit features advanced power management, high current switching capability, user programmability, circuit protection and compact physical size. It is compact and lightweight, fits in tight areas, with no orientation requirement. High current capability is addressed via a base plus booster concept switching up to 100A.

This powerful, solid state, current interrupter features advanced power management and current switching capabilities with two stage thermal protection such that, unlike many other available interrupters, the unit does not run excessively hot. Multiple SI220 units can be synchronized to monitor the effect of multiple CP sources. Ease of use is provided via user programmable functions selected via a menu.

Housed in an impact resistant case, the SI220 is robust and compact. The SI220 enables the corrosion technician to interrupt higher currents with a low temperature rise. The Radiodetection SI220 Smart Interrupter delivers best in class performance:

High Performance

- The Smart Interrupter can be used as a conventional interrupter switching currents up to 100A as well as generating unique signatures for the Radiodetection Stray Current Mapper (SCM) system
- High voltage operation: 155Vrms, (220Vpeak) with reverse polarity indication

Over-voltage, current and heat protection

- Over-voltage protection increases resilience to proximity lightning strikes
- Advanced power electronics and 2-stage thermal protection meets thermal safety standards; SI220 (base and booster) run cool enough to touch
- High quality engineered casing with fire retardant material

Flexible and easy to use

- Compact and modular with a base unit and 100A booster
- Radiodetection patented GPS synchronization as standard; permits synchronization of any number of interrupters remote from each other and permits 24hr timer operation enabling interrupt during survey hours leaving pipeline fully protected at all other times
- Simple set-up; clear display and tactile keypad; operational menus are consistent with previous Radiodetection SI products
- Full microprocessor controlled, automatically stores the last ten used setups and waveforms
- On/Off ranges between 0 to 100 seconds (0-10s: 0.1s, and 10-100s: 1s resolution)

Supports Radiodetection Stray Current Mapper, Precision Pipe Locator and Pipeline Current Mapper/A frame.

300 hour battery life (2xD cells) or can run extended time from CP supply.

Software upgrades supported via USB socket.



POWERFUL, EASY TO USE CONTROL FUNCTIONS



ROBUST CONNECTION TO CPS (CROC CLIPS OPTIONS)



CARRY CASE INCLUDED



GPS TIME SYNCHRONISATION OF MULTIPLE UNITS



SI220 BOOSTER



AUTO BACKLIT LED SCREEN

EASY TO USE KEYPAD

HIGH IMPACT PLASTIC
Fire retardant

SI220-0 BASE UNIT

TECHNICAL SPECIFICATION	
SI220-0 (BASE UNIT)	SI BOOSTER UNIT
220v peak base unit (drives separate booster)	100A output switcher
10/SN2786-BP	10/SN2900

Controller and Booster configuration

Covers range of switching loads

High voltage and current capability

155Vrms / 220Vpk
100A

Base Unit

Simple user interface
Menu selected
switching patterns

Booster Unit

100 Amp switching
cool running

■ Operating Voltage:

155Vrms (220Vpeak) continuous

■ Protection:

Thermal (software and hardware) and over voltage protection. Over current protection via thermal switches. Lightning related surge and spike

■ Current Output:

100A via booster unit

■ Dimensions & weight (base unit):

Size 12" (300mm) x 6" (150mm) x 3" (80mm),
Weight 2.5kg (5.5lb)

■ Booster Unit:

Additional unit linked to SI220-0 base unit

■ Dimensions & weight (booster unit):

10" (255mm) x 10" (255mm) x 9.6" (216mm),
Weight 13.3kg (29lb)

■ Connection Outputs:

2 cables (CP supply, CP switched) Customer lugs
(Croc clips as option)

■ Switching Patterns:

On/Off Time 0-100s (0.1sec increments to 10secs) Unit saves history of last ten patterns. Last pattern used selected at power on. SCM and Precision Pipe Locator signals

■ Synchronization:

via GPS synchronization (as standard): +/- 4ms

■ 24hr Timer:

Programmable On/Off timer repeats every 24hrs

■ Microcontroller:

Controls keyboard inputs, LCD functions, non-volatile storage, USB I/O and FET switching

■ User Interface:

2 line by 16 character LCD, alpha numeric and special character display. Automatic backlight

■ Keypad:

User input via 9 key membrane keypad

■ Software Upgrades:

Via USB interface

■ Batteries:

2 x 1.5V D cells provide 300 hours @ 20°C (68°F). Battery life of the SI220 can be extended by powering from the CP supply, if above 5V open circuit

■ Environmental Protection:

IP65 rain and dust resistant. Note that if the unit is to be used in heavy storm conditions then it should be suitably covered

■ Ambient Operating Temperature:

-14°F (-20°C) to 140°F (60°C)

■ Reverse Polarity:

Indication of reverse polarity via a red LED on Booster pack

■ Construction:

Housing high impact plastic. Fire retardant

■ EMC Compliance:

Meets EC Directive 89/336/EEC and FCC Part CFR Part 15

■ Lead sets:

Switching leads. Copper tube lugs. Croc clips as optional accessory

■ *Advanced features:

The Smart Interrupter provides switching patterns compatible with Radiodetection's Stray Current Mapper (SCM) and Precision Pipe Locator (PPL) products and PCM/A-Frame for ACVG surveys



One ampere of current consumes approximately 10kg of iron per year!

Corrosion

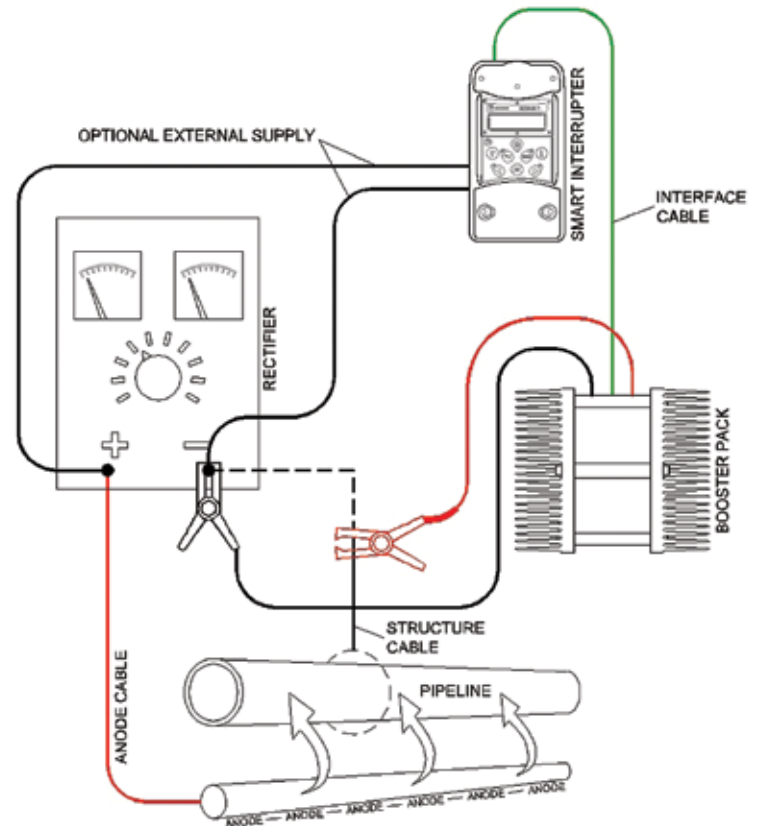
Corrosion is an electrochemical reaction and all metallic structures will corrode, it is just a question of how quickly. Metals, when immersed in an electrolyte, such as soil, water, or concrete, produce a current and it is the rate of flow of this current that determines the life of the metal structure.

The job of the corrosion engineer is to slow down this process. Cathodic protection is one of the techniques available. On a buried pipeline, a current will flow from the anode (positive) to the cathode (negative) creating anodic corrosion. By making the pipeline negative with respect to the surrounding earth we apply Cathodic Protection holding back corrosion on the target structure. This is achieved by an external power supply (usually rectified mains) applying a current onto the pipeline.

Cathodic Protection Systems are most effective with proper monitoring and this becomes all the more important when considering the age of buried services and the environmental and safety threat from a damaged pipe. Regular surveys, which may include close interval surveys (CIS) need to be made to determine the effectiveness of the protection. With the amount of pipeline in the ground, it is important that such surveys are able to be carried out quickly, repeatably and effectively.

The Smart Interrupter has been designed to meet these needs, addressing the range of old and new services across different soil types. It is a robust, compact and easy to use tool enabling the corrosion technician to effectively monitor the effectiveness of the CPS system without having to connect to the pipeline or dig down to the pipeline.

The new Radiodetection Smart Interrupter delivers higher voltage interrupt at high currents with improved over-voltage protection. Multiple units can be synchronized via GPS (RD patented) Radiodetection have paid particular attention to the safe running temperature of the SI220 and the Booster.



World leaders



Radiodetection is a proud member of the SPX group of companies, which provide technical products and service solutions worldwide.

Radiodetection and its associated companies specialize in the design and manufacture of products for the location and maintenance of underground pipes and cables. Our aim is to be viewed as the supplier of choice of 'high performance' quality equipment using advanced product technologies. We are also committed to both design innovation and customer support.

Technical support



Radiodetection equipment users have easy access to technical support. A call to your regional representative, or the Radiodetection head office, will put you in contact with our team of field-experienced technical experts.

Servicing and repair



Radiodetection has a team of factory-trained service technicians and a dedicated service facility accredited to ISO 9000. Turnaround is fast, and costs are very competitive. All repairs carry a six month warranty.

Training



Product training for your operators and training personnel is available on your site, or at Radiodetection's headquarters. Training is with qualified instructors and each trainee receives a certificate to confirm they have received the training.

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