

SOLID STATE DECOUPLER

PRODUCT DATA SHEET

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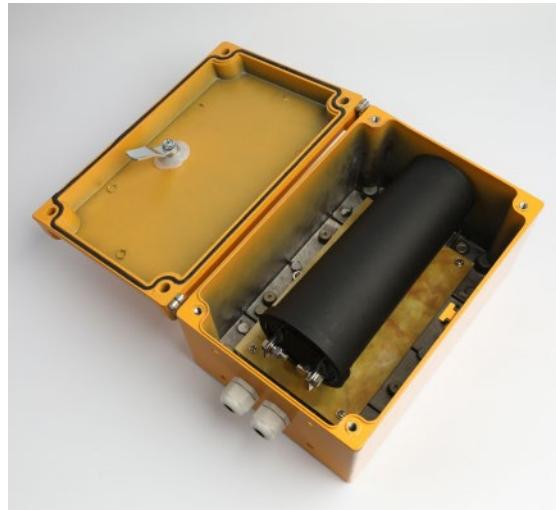
The solid state decoupler (SSD) functions as a DC isolation and AC grounding device designed for use in conjunction with cathodically protected equipment. It allows AC induced current to pass and prevents the flow of DC current while the DC voltage remains below the predetermined voltage threshold. When the DC voltage exceeds the threshold, the device instantly switches on forming a near short circuit across the circuit and limits the DC voltage of the device. Immediately, the voltage falls as the surge event passes and decays to below the threshold level, the solid state decoupler switches off and reverts to its blocking mode.

PRACTICAL APPLICATION

■ Electrical Equipment Grounding System Decoupling

The cathodic protection systems, which are commonly applied on buried pipelines, underground storage tanks or other metallic structures, prevent galvanic corrosion by applying a low voltage negative DC bias to the structure. However, required safety grounding systems connected to the structure short this CP current to ground and may compromise the efficiency of the CP system.

Installed between the protected structure and the grounding system, our solid state decoupler isolate or block the flow of DC current to the grounding system or other equipment, thereby eliminating any negative influence on your CP system caused by the grounding materials or neighboring equipment.



■ Insulated Joint Over-voltage Protection

Isolation joints often need over-voltage protection against lightning and AC fault current, and in some cases, steady-state induced AC voltage. The AC fault current generated by a failure of nearby equipment can be transmitted through a pipeline, endangering personnel or causing damage. When an AC fault occurs, our solid state decoupler instantly conducts fault current to ground, taking the AC current away from the pipeline for immediate protection.

■ Lightning Protection

When a lightning strike occurs, it presents a safety hazard to personnel and pose a risk to nearby pipelines. The solid state decoupler behaves in the same way as it does during an AC fault. It channels the high voltage DC current of the lightning to ground, safely protecting nearby workers and the pipeline. As soon as this event has ended, the solid state decoupler automatically switches back to its DC isolation mode.

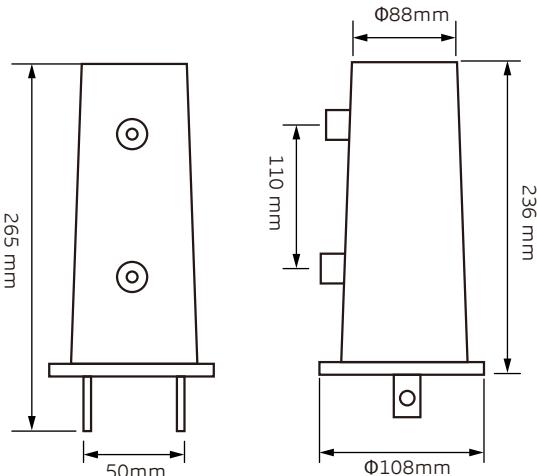
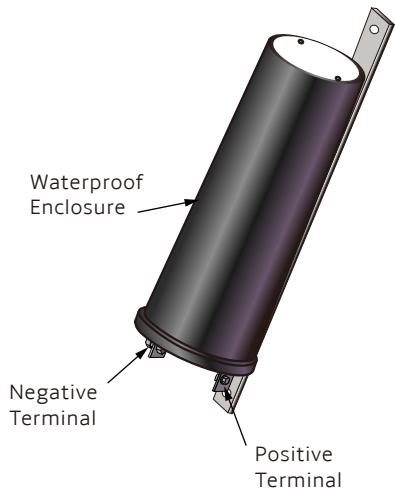
■ AC Voltage Mitigation

Many pipelines are usually buried along a shared right-of-way with overhead high-voltage power lines, inducing AC current in the pipeline. It normally causes corrosion and related issues. Our solid state decoupler can collapse the steady-state voltage between the connection points to a negligible level by continuously conducting induced AC current to ground, while simultaneously leaving your cathodic protection system unaffected.



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SPECIFICATIONS



Technical Measurement	Performance
Threshold Voltage	-2 V / +2 V
AC Fault Current	3.5 kA
AC Steady-State Current (50/60Hz)	45 A
Lightning Surge Current (8/20 μ s)	100 kA
Ingress Protection	IP65
Working Temperature	-45 °C ~ +65 °C
Enclosure Size	300x200x150mm

Hazardous Location Certifications

Rating	Certification Agency
Class I, Division 2, Groups A, B, C, D	UL, C-UL
ATEX Directive, Zone 2, Group IIC	UL, Demko
IECEx, Zone 2	CE





Industrial Corrosion Control Solutions Provider

Established in 2003, YUXI has over a 20-year heritage of innovation in corrosion control science and technology. We're a spirited team of ambitious thinkers and pioneer sheep with a common goal in mind: protect our clients' assets from corrosion with cost-saving measures.

We have the most comprehensive catalog of cathodic protection materials including anodes, transformer rectifiers, backfills, coatings, etc. Our anodes and supplies are manufactured to strict quality standards through an ISO 9001 quality management system and are guaranteed to offer excellent performance in the industry.



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www.yuxi-anode.com

6/F, Tianlu Building, 767 Liangzhu Road,
Ningbo 315000, P.R. China

E-mail: info@yuxi-anode.com

Tel: +86 (574) 8388 2233

Fax: +86 (574) 8388 2238