INTERNATIONAL CORROSION CONTROL INC.

INTERPROVINCIAL CORROSION CONTROL COMPANY LTD.

Leaders in the Cathodic Protection Industry ... since 1957

DCD DC DECOUPLER

PRODUCT INFORMATION: DC-Decoupler™

Product:

Rustrol® **DC-Decoupler™** Model: **DCD**

End User:

- Oil and Gas Transmission Pipelines
- Refinery and Petrochemical Industries
- Electrical Utilities
- Tank Farm/Oil Depot Facilities

Background:

The Rustrol® **DC-Decoupler™** Model: **DCD** is an enhanced development to the Rustrol® Product Line. The DC-Decoupler™'s unique features are based on the proven Rustrol® technology utilizing solid-state design and superior test proven, quality components throughout the construction. The DC-Decoupler™ Model: **DCD** is typically utilized within applications of light/moderate exposure of AC mitigation. The standard **DCD** Product Line provides an economical engineered solution in a compact, lightweight, ready to mount assembly.

Applications:

The Rustrol® **DC-Decoupler™** Model: **DCD** device is designed to protect personnel and equipment from electrical disturbances. The DC-Decoupler™ device blocks DC current associated with cathodically protected structures, *(ie. Pipelines, On-Grade or Buried Storage Tanks, etc.)* and provides an effective and continuous conductive path to the Utilities Grounding/Earthing Network for all other forms of Electrical Exposures, such as:

- Lightning/Surge Currents
- AC Fault Currents
- AC Induced Voltages
- Over-Voltage Protection

The Rustrol® **DC-Decoupler™** Model: **DCD** is capable of reducing the potential difference across Isolating Flange Assemblies and/or Monolithic Isolating Joints to well below the industry accepted criteria (*ie. <10 volts AC rms*).

The Rustrol® **DC-Decoupler™** Model: **DCD** is versatile and can be used in numerous applications, including coupling the primary structure *(ie. pipes, valves, pumps, etc.)* in series through the DC-Decoupler™ to Gradient Control Systems.

Typical Applications include:

- Pipeline AC Mitigation/AC Discharger
- Isolating Joint Protection
- Decoupling from the Gradient Control Systems

Advantages:

- Product Certification—ATEX/IECEx/UKEX, QPS, KCS
- Rustrol®, an Industry Leader for Safe DC Isolation
- Fail-Safe Design; Grounding Criteria Assured
- Compact; Ready to Mount Design
- Maintenance-Free Performance
- Eliminate "Step & Touch" Potential Risk
- Maintains coating Stress Voltages within Acceptable Limits
- No additional Mounting Accessories required for Installation
- No Structure Compromise Required for Installation *(ie. Flange Drilling)*

Rustrol® **DC-Decoupler™** Model: **DCD**, Operating Characteristics

	Rustrol® DC-Decoupler™ Model: DCD-02.5	**Rustrol® DC-Decoupler™ Model: DCD-06.3**	**Rustrol® DC-Decoupler™ Model: DCD-07.0**	**Rustrol® DC-Decoupler™ Model: DCD-10.0**
AC Fault Current Ratings	*rms* / 50 Hz / 60 Hz 1 cycle / 2.3 kA / 2.5 kA 3 cycles / 1.7 / 1.8 10 cycles / 1.5 / 1.6 30 cycles / 1.3 / 1.4	*rms* / 50 Hz / 60 Hz 1 cycle / 5.8 kA / 6.3 kA 3 cycles / 5.0 / 5.4 10 cycles / 4.1 / 4.4 30 cycles / 2.2 / 2.4	*rms* / 50 Hz / 60 Hz 1 cycle / 6.5 kA / 7.0 kA 3 cycles / 5.0 / 5.4 10 cycles / 4.2 / 4.5 30 cycles / 3.7 / 4.0	*rms* / 50 Hz / 60 Hz 1 cycle / 9.2 kA / 10 kA 3 cycles / 8.0 / 8.7 10 cycles / 5.7 / 6.2 30 cycles / 5.0 / 5.4
DC Leakage Current	≤ 7.5 mA	≤ 7.5 mA	≤ 7.5 mA	≤ 7.5 mA
Fail-Safe Design	Yes	Yes	Yes	Yes
Connection Terminals	Standard – Dual Terminal Post *(DT)* Botton Side of Enclosure, Compact, Lightweight Ready to Install Optional – Optional Terminal *(OT)*, Flange Mount Assembly *(FMA)*: Internal Terminal *(IT)*			
Certifications	ATEX & IECEx UKEX KCS CE Mark QPS	II 3G Ex ec IIC T6 Gc *(-40°C ≤ Ta ≤ +75°C)* II 3D Ex tc IIIC T80°C Dc *(-40°C ≤ Ta ≤ +75°C)* IP6X Class I, Div. 2, Groups A, B, C and D, T6 Class I, Zone 2, AEx ec, IIC T6 Gc Ex ec IIC T6 Gc	Environmental Rating: IP68 Class II, Div. 2, Group F & G, T80°C Zone 21 AEx tb IIIC T80°C Db Ex tb IIIC T80°C Db	

Model: **DCD** Selection Guide

Rustrol® DC-Decoupler™ - Model: DCD

Standard assembly is installed in a performance test rated moulded Non-Metallic enclosure, suitable for indoor/outdoor applications *(IP68 Certified; Equivalent to NEMA 4, 4X, 6P)*, complete with access cover and cable termination fittings.

AC Fault Current Exposure - 1 cycle @ 60 Hz rms: *(1 cycle @ 50 Hz rms, Refer to Drawing DCD-00)*

- ☑ 02.5 kA
- ❑ 06.3 kA
- ❑ 07.0 kA
- ❑ 10.0 kA

(Refer to Drawing No. DCD-00 for Detailed Specifications @ 1, 3, 10 & 30 cycle @ 50 or 60 Hz rms: visit website)

Surge/Lightning Protection:

Standard assembly, peak surge current rating

☑ Primary @ • 100kA @ 4/10 μs • 75kA @ 8/20 μs • 50kA @ 10/350 μs

(Optional Lightning (OL) • 150kA @ 4/10μs • 100kA @ 8/20μs • 100kA @ 10/350μs)

DC Voltage Threshold: *(Up to ± 20.0 volts DC)*

Standard assembly @ -3.0/+1.0 volts DC

Optional Voltage Threshold Settings Available (i.e. –6/+6, –4/+4, –4/+2, –6/+1 volts DC or other)

Mitigation of Induced AC-Steady State: *(@ 50 or 60 Hz rms)*

Selection range 0-100 Amperes, as specified by the customer.

❑ 0 amp (*no AC Mitigation*)

❑ 12 amps ❑ 24 amps ❑ 36 amps ☑ 48 amps ❑ 75 amps ❑ 100 amps

Optional: *(As Specified by the Customer)*

- ❑ ATEX/IECEx/UKEX Certified
- ❑ cQPSus Certified
- ❑ KCS Certified
- ❑ Cable Termination - Standard - DT
  - Optional - FMA, OT, or IT
- ❑ Optional Lightning - OL
- ❑ Submersible Enclosure *(NEMA 6P/IP68 certified)*
- ❑ Free-Standing Fibreglass Pedestal Mount
- ❑ Special finishes *(specify)*

DCD – 02.5 – SL – 03 – A48 – *specify*

(Typical Ordering Code)

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RUSTROL® SYSTEMS

www.Rustrol.com

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