



DAIRYLAND
ELECTRICAL INDUSTRIES
ALWAYS RUGGED. ALWAYS RELIABLE.



TECNOLOGÍA TOTAL
INGENIERÍA EN INTEGRIDAD Y CORROSIÓN
www.tecnologiatotal.net

WHAT CUSTOMERS ARE SAYING...

“We’ve installed over 800 Dairyland devices on our system for AC Mitigation and have not had one fail due to normal use. We are impressed with Dairyland products and the technical support staff.”

“Dairyland technical service does an excellent job of fielding installation and application questions, which are often unique.”

“Dairyland has always provided quality service and products that have not only supplied adequate corrosion protection to our structures, but have also eliminated or reduced potential hazardous situations that could cause injury or death to our workforce.”

“We are very satisfied with Dairyland products and the excellent & timely service provided by their staff. The technical support and material delivery service is very hard to beat.”

“Dairyland’s technical expertise and unsurpassed product quality continue to be a tremendous asset for our company.”

“Without question, Dairyland has become the most respected name in electrical grounding, over-voltage protection, polarization cells and decoupling devices.”

“In terms of product reliability and reputation, no other product line exceeds Dairyland.”



LETTER FROM THE PRESIDENT



Since 1983, Dairyland has enjoyed designing and manufacturing unique products for applications that involve safety grounding, electrical isolation, and over-voltage protection on pipeline, electric utility, and transportation systems, among others. Perhaps you already know Dairyland from our frequent training sessions at industry conferences, been on the receiving end of our excellent technical support, watched our online training videos, or have used our products to safely solve troublesome problems.

Why are we unique? Our universal company attitude is one of service. If you contact us, we will provide thorough and accurate technical and commercial assistance, and even route you to other knowledgeable sources of materials or services if we cannot solve your particular application. We are a resource.

Further, our product offering is complete, compliant, and safe. We test our product designs thoroughly in high power test labs with AC fault and lightning surge current. Hazardous location use (a common requirement by customers) has been certified by independent laboratories. All products have been designed as “fail-safe,” meaning that they are designed to

fail shorted and continue to provide safety bonding/grounding if exposed to current levels beyond our generous ratings. We don’t just claim these features – various independent laboratories have certified all of the above.

Dairyland is proud to be certified to ISO 9001:2015 after an extensive auditing process. Our operations feature a robust quality management system to guide and govern all that we do from top to bottom. This achievement points to our commitment that customers will receive the very best in quality and service from Dairyland.

Enjoy this brief review of our products and applications, visit www.dairyland.com for extensive technical reference information, and contact us anytime for assistance on applications where it is desirable to **Isolate** DC, **Ground** AC and lightning, and **Protect** your equipment and personnel.



A handwritten signature in black ink that reads "Mike Tachick".

Mike Tachick



CP System Isolation

Pipelines and other cathodically protected structures require efficient CP systems to protect against corrosion. It can be difficult or impossible to provide adequate protection if that system is bonded to unprotected structures or grounding systems, resulting in excessive current demand and inadequate protection voltage. Electrical isolation is accomplished by utilizing Dairyland decouplers which block the flow of DC current to foreign structures, thereby optimizing your CP system's performance.

Grounding Electrical Hazards

Protected structures are now isolated, but also require grounding of induced AC voltage, AC faults, and lightning effects. Dairyland decoupling devices provide simultaneous DC isolation and safety grounding functions to limit voltage on structures. This unique ability to operate in both DC isolation and AC grounding modes provides you with a safely grounded structure while still achieving efficient cathodic protection.

Protect Plant and Personnel

When CP efficiency and electrical safety have both been addressed, you can know that both personnel and equipment have been truly protected. Dairyland's solid-state products and accessories are focused on complete protection inherently provided in the highly rated, fail-safe designs. With extensive design experience, third-party product certifications, audited ISO 9001 systems, and technical application expertise freely available, Dairyland is the solutions provider to help users isolate, ground, and protect.

Dairyland Electrical Industries is the world's leading manufacturer of solid-state decoupling products most commonly used to isolate cathodically protected structures from grounding systems or other equipment while simultaneously providing safety grounding for AC fault current and lightning.

Our solid-state and maintenance-free products feature extensive third party certification, and our company has achieved ISO 9001:2015 certification, implementing robust quality management processes. Our latest certifications position Dairyland to continue delivering the exceptional product quality and service our customers around the world have come to expect.

- Fail-Safe & Maintenance-Free Products
- Simultaneous CP Isolation & Safety Grounding
- Lightning Protection Rated
- Impeccable Product Performance for More Than 30 Years

- UL, C-UL Certifications for grounding electrical equipment
- UL, C-UL Certifications for hazardous locations
- IECEx, ATEX, EAC Certified



PRODUCT QUALITY

We're passionate about quality. Our extensive product line features proven engineering methods & design techniques with extensive product certification ensuring a safe, reliable product you can trust.



CUSTOMER SERVICE

Our staff is trained to serve. We know that your time is valuable and our team is prepared to provide thorough, accurate assistance to all of your needs.



TECHNICAL SUPPORT

We are your resource. Our online technical support knowledge base includes video training, technical articles and frequently asked questions and our team of engineers are ready to assist with your questions and applications.

AC MITIGATION

- Mitigate induced voltage on pipelines in close proximity to power lines
- Maintain integrity of CP system voltage
- Provide over-voltage protection from AC faults and lightning

APPLICABLE PRODUCTS



SSD

DC isolation & AC grounding in a sealed, low-cost package



PCR

DC decoupling device with a wide range of ratings



PCRH

DC decoupling featuring Div 1/Zone 1 certification

SOLID-STATE DECOUPLER (SSD)

Use of the SSD product line dominates decoupler applications around the world, providing DC isolation, AC continuity and over-voltage protection. Using proven, solid-state construction, and independently certified to the applicable standards, the SSD is an affordable, compact, and highly rated decoupling device for cathodically protected structures. With a wide variety of ratings and mounting arrangements available, the SSD can be applied to most applications addressed by Dairyland.



Rated for high levels of AC fault current, lightning, and steady-state AC current, the SSD outperforms other technologies such as metal oxide varistors, gapped arrestors, and polarization cells, and can be used for a wide variety of applications including AC voltage mitigation, insulated joint protection, decoupling electric equipment and tank grounding systems, and other situations where it is desirable to isolate DC (CP current) while grounding AC fault current and lightning.

FEATURES

- Fail-Safe Product Design
- Compact, Lightweight Package
- Hermetically Sealed, Submersible Design
- Standardized Mounting Arrangements
- Higher Blocking Voltage and Lower Leakage than Polarization Cells
- UL, C-UL Listed for Grounding Electrical Equipment
- UL, C-UL Listed for Class I, Division 2 Locations
- IECEx Certified for Zone 2 – UL
- ATEX Certified for Zone 2 – UL/DEMKO
- EAC Certified for Zone Class 2 – NANIO



WHY ARE FAULT CURRENT RATINGS IMPORTANT?



Fault current exposure for the Dairyland decoupler relates to the ampacity, proximity, and mode of current transfer from a faulting source (power transmission line, motor circuit, induction from overhead lines, etc.). Selecting a product rating with reasonable margin above the site conditions will provide an unlimited lifetime of service. Contact Dairyland for any assistance with selection of appropriate ratings.

DECOUPLING POWER UTILITY GROUNDING SYSTEMS

- Block facility CP current from reaching power company grounds
- Simple decoupler installation at power company transformer
- Preserves AC bonding for safety



APPLICABLE PRODUCTS



PCR

DC decoupling device with a wide range of ratings

POLARIZATION CELL REPLACEMENT (PCR)

Since 1994, the PCR has been the gold standard for decoupling products, providing a wide range of protective ratings to handle abnormal conditions that can occur on pipeline and power utility systems. Providing DC isolation and simultaneous AC continuity/grounding, the PCR will enhance cathodic protection system operation while providing the safety grounding and bonding needed for personnel and equipment.

With a blocking voltage higher than polarization cells, yet much lower and safer than gapped arresters and metal oxide varistors, the PCR is the ideal isolation and grounding product for cathodically protected structures. Boasting an impeccable safety and operation record, with tens of thousands installed worldwide, the PCR remains positioned as the most versatile decoupling product available.



FEATURES

- Fail-Safe Design
- Range of AC Fault Ratings Available
- Higher Blocking Voltage and Lower Leakage than Polarization Cells
- Available in Submersible Version
- UL, C-UL Listed for Grounding Electrical Equipment
- UL, C-UL Listed for Class I, Division 2 Locations
- IECEx Certified for Zone 2 – UL
- ATEX Certified for Zone 2 – UL/DEMKO
- EAC Certified for Zone Class 2 – NANIO



UNDERSTANDING ELECTRICAL GROUNDING SYSTEMS



Electrical grounding systems are necessary for personnel safety and equipment protection, and are required by code, but problems can arise when cathodic protection systems are bonded to grounding systems. Decouplers that are certified for such use can be installed in electrical grounding systems to isolate DC and meet all AC safety codes, but these must be applied correctly. Contact Dairyland or see the website application pages for more guidance.

DECOUPLING ELECTRIC EQUIPMENT GROUNDING SYSTEMS

- Prevent unwanted drain of cathodic protection current
- Comply with required AC grounding codes
- Minimal installation effort provides large improvement in CP



APPLICABLE PRODUCTS



PCR

DC decoupling device with a wide range of ratings



SSD

DC isolation & AC grounding in a sealed, low-cost package



PCRH

DC decoupling featuring Div 1/
Zone 1 certification

POLARIZATION CELL REPLACEMENT FOR HAZARDOUS LOCATIONS (PCRH)

Dairyland's popular PCR device is also available in a version suitable for addressing Division 1 and Zone 1 (classified) locations: the model PCRH. The PCRH features the same electrical ratings as the PCR, in a flameproof package, extending the product line for use in Division 1 or Zone 1 hazardous locations.

The PCRH has been fully tested and certified by Underwriter's Laboratory (UL) to various international standards, making it the only known decoupler in the world carrying these markings in a Class I Division 1 and Zone 1 package.



FEATURES

- Fail-Safe Design
- Range of AC Fault Ratings Available
- UL, C-UL Listed for Class I, Division 1&2 Locations
- UL, C-UL Listed for Grounding Electrical Equipment
- IECEx Certified for Zone 1 – UL
- ATEX Certified for Zone 1 – UL/DEMKO
- Offered with Optional Customized Conductor Kits
- EAC Certified for Zone Class 1 – NANIO



HOW TO DEFINE A HAZARDOUS LOCATION



Hazardous (Classified) Locations are defined in the US National Electrical Code (NEC), and in other international standards, describing the requirements of electrical products used in these locations. Decisions on the classification of a particular site depend on several factors, including:

- Whether ignitable concentrations of flammable gases, vapors, or liquids are considered commonly present (Division 1 or Zone 1) or not typically present (Division 2 or Zone 2)
- The ease of ignition of the material, considering the gas or vapor type (Gas Groups) and the temperature of ignition (Temperature Codes)

See the Dairyland website for further education on hazardous locations.

AIRPORT FUELING SYSTEM PROTECTION

- Protect insulated joints from lightning and AC fault damage
- Fail-safe, solid-state design outperforms all other technologies
- Meet military and civilian specifications for protection in hazardous locations



APPLICABLE PRODUCTS



OVP

Lightning and AC fault protection
in a Div 1/Zone 1 package



OVP2

Lightning and AC fault protection
in Div 2/Zone 2 locations

OVER-VOLTAGE PROTECTOR (OVP)

The OVP product line specializes in over-voltage protection of insulated joints and is the premier option when lightning or AC fault current is a concern. OVP devices feature a fail-safe design, with substantial ratings for fault current and lightning surge current.

Outclassing typical gapped arrester designs, which are only rated for lightning, the OVP uses solid-state construction to conduct at very low voltages, providing the best over-voltage protection available, and capable of handling substantial lightning and AC fault.

The OVP is a totally unique product, certified for use in Division 1 and Zone 1 hazardous locations, with flameproof construction. Designed for rigorous military requirements, the OVP is used at hazardous above- and below-grade locations. OVP use is intended for sites where induced AC voltage is not present.



FEATURES

- Fail-Safe Construction
- Solid-State Design Eliminates Arcing
- Meets US Army Corp of Engineers Specification for Fueling Systems
- Rated for Both AC Fault and Lightning Current
- Suitable for Submersed or Above-Grade Locations
- UL, C-UL Listed for Class I, Division 1&2 Locations
- IECEx Certified for Zone 1 – UL
- ATEX Certified for Zone 1 – UL/DEMKO
- EAC Certified for Zone Class 1 – NANIO



UNDERSTANDING AC FAULTS AND LIGHTNING



Alternating current and lightning waveforms are often confused by users. An AC fault is a high magnitude alternating current (50 or 60 cycles per second) produced during an electrical system malfunction, while a lightning discharge occurs in microseconds during a storm. Lightning can cause spectacular flashovers (arcing) due to its fast rise time, while AC faults are relatively longer duration events that involve significantly more energy. Each causes different effects, so visit the Dairyland website to learn more about these phenomena.

INSULATED JOINT PROTECTION

- Protect insulated joints from lightning and AC fault damage
- Fail-safe, solid-state design outperforms all other technologies
- Certified products for hazardous locations



APPLICABLE PRODUCTS



OVP2

Lightning and AC fault protection in Div 2/Zone 2 locations



PCR

DC decoupling device with a wide range of ratings



SSD

DC isolation & AC grounding in a sealed, low-cost package



OVP

Lightning and AC fault protection in a Div 1/Zone 1 package



PCRH

DC decoupling featuring Div 1/Zone 1 certification

OVER-VOLTAGE PROTECTOR 2 (OVP2)

Like its predecessor, the OVP, the OVP2 features fail-safe construction, as well as high fault and lightning current ratings to provide the best over-voltage protection available. The OVP2 features a hermetically sealed enclosure for sites classified as Division 2, Zone 2, or ordinary locations and has the same conservative design and features of the OVP, but in a lighter weight and lower cost package.

Unlike “arrester” type products, the OVP2 is a solid-state switching device with full ratings for AC fault current and high levels of lightning surge current. Protection occurs at a much lower and safer voltage, providing years of reliable service. OVP2 use is intended for sites where induced AC voltage is not present.



FEATURES

- Fail-Safe Construction
- Solid-State Design Eliminates Arcing
- Meets US Army Corp of Engineers Specification for Fueling Systems
- Rated for Both AC Fault and Lightning Current
- Suitable for Submersed or Above-Grade Locations
- UL, C-UL Listed for Class I, Division 2 Locations
- IECEx Certified for Zone 2 – UL
- ATEX Certified for Zone 2 – UL/DEMKO
- Corrosion-free, Lightweight Molded Housing
- EAC Certified for Zone Class 2 – NANIO



WHY IS CONDUCTOR LENGTH IMPORTANT?



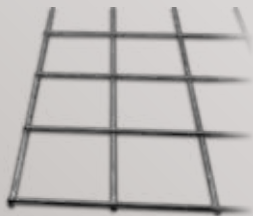
For fast rising currents, such as from lightning, over-voltage protection is greatly affected by the proximity of the device relative to an insulated joint or other structure being protected. This effect is independent of the protective device being used, as it is mainly due to the inductance properties of the conductor that increase with length. If this voltage is in excess of the insulation or coating strength, arcing will occur. Use bus bar mounting kits by Dairyland to best limit voltage.

GRADIENT CONTROL MATS AND DECOUPLING

- Limit step and touch voltage near pipelines
- Grid-type mat outperforms other mat designs
- Interaction of the mat and CP system is eliminated when decoupled



APPLICABLE PRODUCTS



GCM

Engineered Gradient Control Mats to limit touch and step potentials



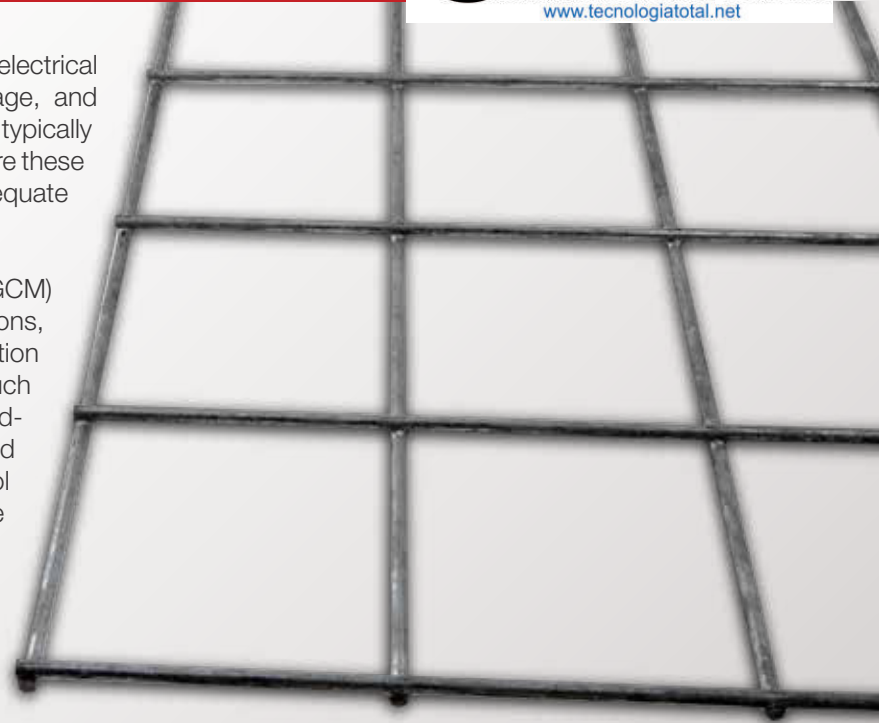
SSD

DC isolation & AC grounding in a sealed, low-cost package

GRADIENT CONTROL MATS (GCM)

Personnel working near pipelines can be subject to electrical hazards such as lightning, AC fault current/voltage, and steady-state AC induction. “Ground mats” have typically been used at above ground pipeline structures where these hazards exist, but past designs do not provide adequate protection against lightning conditions.

Dairyland offers engineered Gradient Control Mats (GCM) to address lightning and AC fault current conditions, backed by analysis from experts in lightning protection and cathodic protection guidelines. Step and touch potentials are now limited with the Dairyland grid-type mat, in a much lower cost design. Dairyland also recommends decoupling gradient control mats to improve CP on the pipeline, and offers the affordable Solid-State Decoupler (SSD) line for use in conjunction with the Gradient Control Mat.



FEATURES

- Low Cost Design
- Fast Construction Using 4ft x 8ft Sheets and Exothermic Welding
- Low Inductance Design Limits Step and Touch Potentials Due to Lightning
- Decoupling the Mat Offers Long Life and Improved CP on the Pipeline
- Data Available on Design Life and Supplemental Anodes

ADVANTAGES OF MAT DECOUPLING



Dairyland recommends decoupling gradient control mats to improve CP on the pipeline. Decoupling mats using the SSD allows for several distinct advantages including:

- The galvanic potential of the mat material has no effect upon pipeline CP
- Pipeline CP readings can be taken in the vicinity of the mat
- The life of the anodes used to protect the mat is significantly increased

POWER CABLE SHEATH DECOUPLING

- Isolate CP from copper substation grounding systems
- Provide over-voltage protection for sheath or pipe
- Ground high transmission fault current values effectively



APPLICABLE PRODUCTS



ISP

DC decoupling with ratings appropriate for power transmission systems



ISOLATOR/SURGE PROTECTOR (ISP)

The ISP is the original solid-state AC conducting/DC blocking device designed for the corrosion prevention industry. The ISP product line features the most flexible and wide range of product ratings and applications available to the market. Additionally, the ISP provides the highest levels of AC fault-handling capability - up to the highest typical transmission system faults. With its design features and ratings, the ISP is the preferred device for power utility underground cable decoupling/bonding requirements.

Comprehensive in-service testing of the ISP is possible using the ISP Tester accessory, a sophisticated yet automated field test device that verifies all major ISP functions.



FEATURES

- Solid-state Design Replaces Polarization Cell Technology
- No Maintenance Needed
- Fail-safe Design
- Self-protection Features Built-in
- Simple Field Testing Procedures
- Comprehensive Testing Available with Optional ISP Tester
- Flashing LED Indicates Device Operation
- No Energy/Power Requirements
- Submersible or Non-submersible Enclosure

FAIL-SAFE CONSTRUCTION IMPORTANCE



A key design feature of all Dairyland products is the fail-safe nature of the devices. Simply stated, if the device is exposed to current and time beyond the rating of the device, it is designed to fail as a short circuit, continuing to provide over-voltage protection to the structure. In this mode, it is still fully capable of handling the rated lightning or fault current, but will not block CP current. Assured safety grounding is key, and you can't have "safety" without "fail-safe."

DECOUPLING TANK GROUNDING SYSTEMS

- Isolate cathodically protected tanks from local tank grounds and other structures
- Comply with required safety codes for an effective grounding path
- Dramatically improve CP system performance
- Maintain lightning and AC fault protection on tanks

APPLICABLE PRODUCTS



OVP

Lightning and AC fault protection in a Div 1/Zone 1 package



OVP2

Lightning and AC fault protection in Div 2/Zone 2 locations



PCR

DC decoupling device with a wide range of ratings



SSD

DC isolation & AC grounding in a sealed, low-cost package



PCRH

DC decoupling featuring Div 1/Zone 1 certification

RECTIFIER DISCONNECT SWITCH

Rectifiers that serve cathodically protected structures, such as pipelines, can be subject to various field effects that pose a hazard to maintenance staff. Pipelines near high voltage power transmission structures may have magnetically induced alternating current and voltage affect the pipeline, which can translate back to the rectifier, causing risks for personnel. Pipeline measurements during surveys can also be influenced due to AC induction applied to the rectifier. The Dairyland Rectifier Disconnect Switch is a compact and safe pull-style switch to separate rectifier DC output from field connections to address these problems.



FEATURES

- Rated for Rectifier Output Through 100A
- UL, C-UL Listed Switch Design
- Contacts Enclosed During Switching
- No Arc Exposure
- Clearly Labeled Switch Positions Indicate Rectifier Status

PRODUCT CERTIFICATIONS



Dairyland has obtained numerous product certifications from various independent testing laboratories around the world. Independent verification of our product performance is a valuable indicator of the Dairyland philosophy of providing the highest product quality to the energy industry. Personnel and public are well served by Dairyland products that provide electrical safety to extensive infrastructure around the world.

SWX-100 ISOLATION SWITCHES

Now In A Pull-Style Design!

When decouplers are installed on a pipeline for AC voltage mitigation and over-voltage protection, there may be occasions where disconnection of the decoupler is required, such as during testing, locating, or surveys. Safe disconnection cannot always be easily accomplished by hand if notable AC induction is present, therefore Dairyland designed the Isolation Switch to serve this need. Where such isolation in a non-hazardous area is necessary, the Isolation Switch allows safe disconnection and reconnection without causing exposed arcs, in an AC fault-rated design.



FEATURES

- Safe Decoupler Disconnection in Seconds
- No Exposed Arcing or Contacts
- Enhances Field Testing and Surveying Options
- AC Fault-rated to Match Decouplers
- Available in Pedestal Mounted and Enclosure Mounted Options
- SWX-100-PED, SWX-100-INT, Mounted to the Exterior or Interior of any Dairyland Mounting Pedestal
- SWX-100-ENCL, Mounted Inside a Dairyland Enclosure With Any Model SSD or PCR

WHY DISCONNECT DECOUPLERS?



Decouplers perform safety functions, such as collapsing induced AC voltage on pipelines that is caused by overhead power line influence, and decoupler disconnection could expose workers to arcs and increased AC voltage. Dairyland Isolation Switches allow for safe disconnection. Decouplers will appear as a low impedance to pipe locating signals requiring disconnection local to the test. Other reasons for disconnection can include system testing, or to overcome capacitive effects during close interval surveys.



SWX-100-PED

The updated SWX-100-PED decoupler isolation switch features an improved dead-front design and added jacks for easy connection for testing and locating.



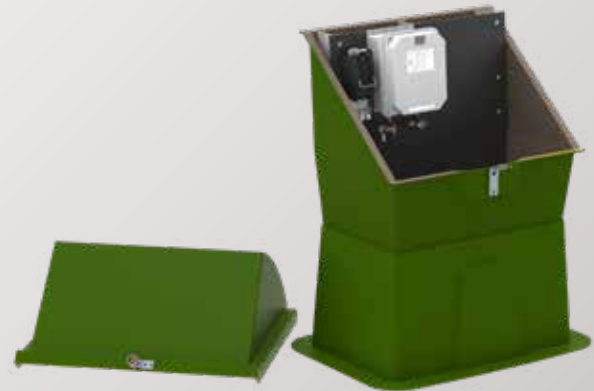
SWX-100-ENCL

SWX-100-ENCL models accommodate a pull style isolation switch and any Dairyland decoupler bundled in a NEMA 4x enclosure.



SWX-100-INT

Utilizing the same switch technology that has become popular amongst Dairyland customers, the SWX-100-INT kit allows users to locate the isolation switch inside a padlock-able MTP-36 pedestal.



SWX-100-INT48

The SWX-100-INT48 switch kit includes a pullstyle isolation switch and components needed to connect with any Dairyland decoupler for field installation inside Dairyland's MTP-48 pedestal.



ACL-18 OR RACL-18

PCRH Conductor Kit

Suitable for use with: PCRH



AP KIT

Adapter Plate Kit for Flange Attachment of Cables



DENSO LT TAPE

Low Temperature Petrolatum Tape

Suitable for use with: GCM



HCN

Hex Coupling Nut for Pin Brazed Mounting of SSD



HORIZONTAL FLANGE MOUNT

Flange Mounting for PCR on Horizontal Flanges



MTM MOUNTING KIT

Used for mounting SSD decouplers and OVP2 over-voltage protectors across monolithic isolation joints.



MTF KIT

Flange Mount Bracket for SSD and OVP2



MTG-OVP2

General Purpose OVP2 Mounting Bracket



MTL KIT

Conductor Kit

Suitable for use with: PCR, SSD, OVP2



MTT KIT

Flange Mounting Bracket for SSD or OVP2 Using Drilled/Tapped Holes



PMK KIT

Mounting Stand for Decouplers



TERMINAL EXTENSION KIT

Accomodate multiple conductors to decoupler terminals

Suitable for use with: SSD, OVP2, PCR



FMFB KIT
Flange Mounting Kit for OVP
Using Flange Bolts



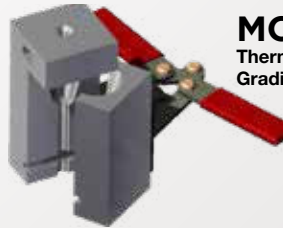
FMTH KIT
Flange Mounting Kit for OVP
Using Tapped Holes



FMWHB KIT
Flange Mounting Kit for
OVP Using Welded Hex
Bolts



**ISP
TESTER**
Automated ISP Testing
in the Field



MOLD-6X
Thermit Welding Mold for
Gradient Control Mats



MTC-38
Tubing Clamp Kit

Suitable for use with: OVP,
OVP2, PCR, SSD



MTP-36
36" Pedestal
for PCR, SSD



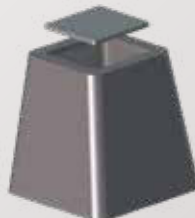
MTP-48
48" Pedestal
for PCR, SSD.



UFB
Universal Flange Mounting
Bracket for PCR



MTS KIT
Flange Mounting Bracket
for SSD and OVP2 Using
Pin Brazed Studs



VAULT
Decoupler Mounting
Below Grade



WTM-S
Weld Tab Mounting Kit

PCR - RATINGS

Threshold Voltage

-3/+1V (standard)
-2/+2V (optional)
-4/+1V (optional)
-6/+1V (optional)

AC Steady-State Current (amperes - rms) 50/60Hz

45A (standard)
80A (optional)

Lightning Surge Current

100kA crest (8 x 20 μ s waveform)

AC Fault Current (amperes-rms) 60Hz

Model	1 cycle	3 cycles	10 cycles	30 cycles
3.7KA	6,500	5,000	4,200	3,700
5KA	8,800	6,800	5,700	5,000
10KA	20,000	15,000	12,000	10,000
15KA	35,000	27,000	21,000	15,000

Example Model Number: PCR-3.7KA

AC Fault Current (amperes-rms) 50Hz

1 cycle	3 cycles	10 cycles	30 cycles
6,500	5,000	4,200	3,700
8,800	6,800	5,700	5,000
19,000	14,000	11,000	9,000
33,000	25,000	19,000	14,000

Environmental Rating:

NEMA 4X, IP66 (standard)
NEMA 6P (optional)

Hazardous (classified) areas

Per NEC, CSA: Class I, Division 2, Groups A, B, C, D
Per ATEX, IECEx, EAC: Zone 2, Group IIC

Third-party listings and approvals:

UL, C-UL, UL/DEMKO, NANIO

PCRH - RATINGS

Threshold Voltage

-3/+1V (standard)
-2/+2V (optional)

AC Steady-State Current (amperes - rms) 50/60Hz

45A (standard)

Lightning Surge Current

100kA crest (8 x 20 μ s waveform)

AC Fault Current (amperes-rms) 60Hz

Model	1 cycle	3 cycles	10 cycles	30 cycles
3.7KA	6,500	5,000	4,200	3,700
5KA	8,800	6,800	5,700	5,000
10KA	20,000	15,000	12,000	10,000
15KA	35,000	27,000	21,000	15,000

Example Model Number: PCRH-3.7KA-BCD

AC Fault Current (amperes-rms) 50Hz

1 cycle	3 cycles	10 cycles	30 cycles
6,500	5,000	4,200	3,700
8,800	6,800	5,700	5,000
19,000	14,000	11,000	9,000
33,000	25,000	19,000	14,000

Environmental Rating:

NEMA 4, IP66

Hazardous (classified) areas

Per NEC, CSA: Class I, Division 1 & 2, Groups B, C, D
Per ATEX, IECEx, EAC: Zone 1, Group IIB

Third-party listings and approvals:

UL, C-UL, UL/DEMKO, NANIO

SSD - RATINGS

Threshold Voltage

-2/+2V (standard)
-3/+1V (optional)

AC Steady-State Current (amperes - rms) 50/60Hz

45A (standard)

Lightning Surge Current

100kA crest (4 x 10 μ s waveform) for 5.0KA, 3.7KA and 2.0KA models
75kA crest (4 x 10 μ s waveform) for 1.2KA models

AC Fault Current (amperes-rms) 50/60Hz

Model	1 cycle	3 cycles	10 cycles	30 cycles
1.2KA	2,100	1,600	1,400	1,200
2.0KA	5,300	4,500	3,700	2,000
3.7KA	6,500	5,000	4,200	3,700
5.0KA	8,800	6,800	5,700	5,000

Example Model Number: SSD-2/2-3.7-100-R

Hazardous (classified) areas

Per NEC, CSA: Class I, Division 2, Groups A, B, C, D
Per ATEX, IECEx, EAC: Zone 2, Group IIC

Third-party listings and approvals: Environmental Rating:

UL, C-UL, UL/DEMKO, NANIO

IP68 - Submersible
(to 2m depth)

OVP - RATINGS

Threshold Voltage

-3/+1V (standard)
-2/+2V (standard)
Up to -4/+4V (optional)

Lightning Surge Current

100kA crest (8 x 20 μ s waveform)

AC Fault Current (amperes-rms) 50/60 Hz

1 cycle	3 cycles	10 cycles	30 cycles
6,500	5,000	4,200	3,700

Example Model Number: OVP-3/1-3.7-100

Environmental Rating:

NEMA 6P, IP68

Hazardous (classified) areas

Per NEC, CSA: Class I, Division 1 & 2, Groups B, C, D
Per ATEX, IECEX, EAC: Zone 1, Group IIB + H2

Third-party listings and approvals:

UL, C-UL, UL/DEMKO, NANIO

OVP2 - RATINGS

Threshold Voltage

-2/+2V (standard)
-3/+1V (optional)

Lightning Surge Current

100kA crest (4 x 10 μ s waveform) for 5.0KA, 3.7KA and 2.0KA models
75kA crest (4 x 10 μ s waveform) for 1.2KA models

AC Fault Current (amperes-rms) 50Hz/60Hz

Model	1 cycle	3 cycles	10 cycles	30 cycles
1.2KA	2,100	1,600	1,400	1,200
2.0KA	5,300	4,500	3,700	2,000
3.7KA	6,500	5,000	4,200	3,700
5.0KA	8,800	6,800	5,700	5,000

Example Model Number: OVP2-2/2-3.7-100

Environmental Rating:

IP68 - Submersible (to 2m depth)

Hazardous (classified) areas

Per NEC, CSA: Class I, Division 2, Groups A, B, C, D
Per ATEX, IECEX, EAC: Zone 2, Group IIC

Third-party listings and approvals:

UL, C-UL, UL/DEMKO, NANIO

ISP - RATINGS

The ISP has numerous ratings combinations possible—reference the technical literature for more information. Ranges shown here for brevity.

Threshold Voltage

to 20V

AC Steady-State Current (amperes - rms)

to 90A

Lightning Surge Current

to 100kA peak, 8 x 20 μ s waveform

AC Fault Current (amperes-rms)

to approx. 100kA

Questions?

Find out more about our products and services at www.dairyland.com or contact us directly: Phone: 608-877-9900 Email: marketing@dairyland.com



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