AC | DC Surge Protection
AC | DC Surge Protection

AC | DC power protection are vital to the continuous operability and longevity of most critical electrical and communication systems. In particular, when the application is key to revenue and growth, it must be protected from malfunctioning and downtime. Leading the industry with SASD, MOV, and hybrid technologies, Transtector and LEA offer a wide range of AC | DC surge protection solutions for a wide range of markets.

Transtector Systems specializes in the protection of highly sensitive, low voltage equipment through its patented, non-degrading silicon diode technology and custom filters. Its power quality expertise translates into a diverse product offering including AC, DC, and signal applications as well as integrated cabinets, power distribution panels and EMP hardened devices.

LEA International is dedicated to the protection of high voltage AC power systems using advanced MOV technology. As a specialist in the design and manufacturing of series filters and parallel surge protection devices, LEA leads the industry with robust solutions for facilities, sensitive equipment and custom OEM applications from service entrance panels to load equipment.

Smiths Power is a leading supplier of power distribution, conditioning, protection and monitoring solutions for data centers, wireless communications and other critical or high-value electrical systems. As a family of brands, PDI, Onyx, PolyPhaser, Transtector, DOWIN, LEA and R&O Associates unite under one umbrella to Transform, Distribute, Monitor and Protect™ power in global networks and systems. Our companies provide expertise in consulting, design and manufacturing of power transformers and distribution systems, static switching, power monitoring, RF, AC, DC, data signal and EMP protectors as well as power quality engineering services.

Alongside Smiths Connectors and Smiths Microwave, Smiths Power is part of the Smiths Interconnect division of Smiths Group (www.smiths.com), a global leader in applying advanced technologies for markets in threat and contraband detection, energy, medical devices, communications and engineered components. Smiths Group employs around 23,000 people in more than 50 countries.
AC Surge Protection

Panel Protector

**IMAX Series**

Modular, 160 kA per phase, hybrid panel surge protection with visual and remote status monitoring in outdoor enclosure.

**Features**
- Hybrid silicon diode/MOV design or MOV only
- Visual and remote status monitoring
- Line and load bidirectional protection
- Replacement suppression modules
- Outdoor enclosure
- Motorola R-56 approved

**Standards and Certificates**
- UL 1449 3rd Edition
- ANSI/IEEE C62.45 2002
- IEEE C62.41 2002 C High
- IEC 61643-1
- Class II
- Fault Current Rating per NEC 285.6

**Electrical**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>1101-808</th>
<th>1101-809</th>
<th>1101-808-MM</th>
<th>1101-809-MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>1101-808-M</td>
<td>1101-809-M</td>
<td>1101-808-M-MM</td>
<td>1101-809-M-MM</td>
</tr>
</tbody>
</table>

**Nominal Operating Voltage**
- 120/208 Vac 2 phase split
- 120/208 3-phase wye

**Max Continuous Operating Voltage**
- 138 Vac L-N

**Imax**
- 160 kA @ 4 kV 8/20 µs per IEC 61643-1 Class II

**Fault Current Rating**
- 65 kAIC per NEC 285.6

**Mechanical**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>1101-808</th>
<th>1101-809</th>
<th>1101-808-MM</th>
<th>1101-809-MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>1101-808-M</td>
<td>1101-809-M</td>
<td>1101-808-M-MM</td>
<td>1101-809-M-MM</td>
</tr>
</tbody>
</table>

**Dimensions - Standard**
- (H x W x D)
- 12.0 x 10.0 x 8.0 in
- 30.5 x 24.6 x 20.3 cm

**Dimensions - Metal**
- (H x W x D)
- 12.0 x 10.0 x 8.0 in
- 30.5 x 24.6 x 20.3 cm

**Weight (max) lb, kg**
- 14.0, 6.5

**Environmental**

<table>
<thead>
<tr>
<th>Humidity</th>
<th>&lt;100% non-condensing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +70°C</td>
</tr>
<tr>
<td>Enclosure Rating</td>
<td>NEMA 4, NEMA 4, NEMA 4, NEMA 4</td>
</tr>
</tbody>
</table>

**Technology**
- Silicon / MOV
- MOV

**Nominal Operating Voltage**
- 120/240 Vac 2 phase split
- 120/240 3-phase wye

**Max Continuous Operating Voltage**
- 138 Vac L-N

**Imax**
- 160 kA @ 4 kV 8/20 µs per IEC 61643-1 Class II

**Fault Current Rating**
- 65 kAIC per NEC 285.6

**Mechanical**

<table>
<thead>
<tr>
<th>Dimensions - Standard</th>
<th>(H x W x D)</th>
<th>Dimensions - Metal</th>
<th>(H x W x D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0 x 10.0 x 8.0 in</td>
<td>30.5 x 24.6 x 20.3 cm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weight (max) lb, kg**
- 14.0, 6.5
AC Surge Protection

Panel Protector

APEX IV Series
Robust, high surge current capacity AC panel surge protection with visual and remote status indication per phase in outdoor enclosure.

- Non-degradable, low clamping silicon diode suppression with robust, high surge current capacity MOV
- Visual and remote status monitoring
- Line and load bidirectional protection
- Thermally protected MOV
- Plug-in modules
- Outdoor enclosure

Features

<table>
<thead>
<tr>
<th>Standards and Certificates</th>
</tr>
</thead>
<tbody>
<tr>
<td>• UL 1449 3rd Edition (1101-460, 1101-464)</td>
</tr>
<tr>
<td>• ANSI/IEEE C62.45</td>
</tr>
<tr>
<td>• IEEE C62.41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical</th>
</tr>
</thead>
</table>

- Technology: Silicon/MOV
- Nominal Operating Voltage: 120/240 Vac 2 phase split
- Max Continuous Operating Voltage: 138 Vrms
- Max Surge Current: 10 kA silicon/ 30 kA MOV per phase
- Fault Current Rating: 69 kAIC

- Technology: Silicone/MOV
- Nominal Operating Voltage: 120/240 Vac 3-phase wye
- Max Continuous Operating Voltage: 276 Vrms
- Max Surge Current: 10 kA silicon/ 30 kA MOV per phase
- Fault Current Rating: 69 kAIC

- Technology: Silicone/MOV
- Nominal Operating Voltage: 240/415 Vac 3-phase wye
- Max Continuous Operating Voltage: 276 Vrms
- Max Surge Current: 10 kA silicon/ 30 kA MOV per phase
- Fault Current Rating: 69 kAIC

Part Name: APEX IV X5 120TMR
Part Number: 1101-460

Part Name: APEX IV X5 120WNR
Part Number: 1101-464

Part Name: APEX IV X5 120BMI
Part Number: 1151-446-43

Part Name: APEX IV X5 120MBMI
Part Number: 1151-446-44

MCP-OD Series
Low clamping, high surge current capacity AC panel surge protection with visual and remote status indication per phase in outdoor enclosure.

Features

- Non-degradable, low clamping silicon diode suppression with robust, high surge current capacity MOV
- Visual and remote status indication per phase
- Line and load bidirectional protection

Standards and Certificates

- IEEE C62.41
- ANSI/IEEE C62.45
- IEC 61643-1
- NEMA 4X enclosure

Part Name: MCP 120TA-10M-OD
Part Number: 1101-424

Part Name: MCP 120W SDM/MOV-OD
Part Number: 1101-738

Electrical

- Technology: Silicon / MOV
- Nominal Operating Voltage: 120/240 Vac 2 phase split
- Max Continuous Operating Voltage: 138 Vrms
- Turn on Voltage: 230 Vpk @ 5 mA
- Voltage Protection Level: 330 Vpk L-N @ 500 A
- Max Surge Current: 10 kA
- IEEE Rating: C High

Mechanical

- Dimensions (H x W x D) in: 11.0 x 9.0 x 6.2
- Dimensions (H x W x D) cm: 27.9 x 22.9 x 15.9
- Weight (max) lb, kg: 5.8, 2.6

Environmental

- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +65°C
- Enclosure Rating: UL 94-B1

<table>
<thead>
<tr>
<th>Panel Protector</th>
</tr>
</thead>
</table>

- APEX IV X5 120TMR
- APEX IV X5 120WNR
- APEX IV X5 120BMI
- APEX IV X5 120MBMI

- Part Name: MCP 120TA-10M-OD
- Part Number: 1101-424
- Part Name: MCP 120W SDM/MOV-OD
- Part Number: 1101-738

- Panel Protector

- MCP-OD Series

- Low clamping, high surge current capacity AC panel surge protection with visual and remote status indication per phase in outdoor enclosure.

- Panel Protector

- MCP-OD Series

- Low clamping, high surge current capacity AC panel surge protection with visual and remote status indication per phase in outdoor enclosure.

- Panel Protector

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- MCP-OD Series

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- Panel Protector

- MCP-OD Series

- Low clamping, high surge current capacity AC panel surge protection with visual and remote status indication per phase in outdoor enclosure.

- Panel Protector
AC Surge Protection

Panel Protector

Dyna System Series

Series connected, modular, hybrid silicon avalanche diode with coordinated, robust MOV technology for high lightning exposure environments. AC panel surge protection with visual and optional remote monitoring.

Features

- Non-degradable, low clamping silicon diode suppression with robust, high surge current capacity MOV patented linear-sharing Wagon Wheel technology
- Incorporated LC filter for superior protection
- Replaceable suppression modules
- Visual and remote status indication
- Optional Surge Counter and Audible Alarm

Dimensions

- DS21 Model
  - (H x W x D) in: 18.9 x 14.4 x 7.9
  - (H x W x D) cm: 48.0 x 36.6 x 20.1
  - Weight (max): 40.0 lb, 18.1 kg

- DS30 Model
  - (H x W x D) in: 30.0 x 24.0 x 8.8
  - (H x W x D) cm: 76.0 x 61.0 x 23.0
  - Weight (max): 80.0 lb, 36.3 kg

Voltage Configurations

- 120 2 phase split
- 120 3 phase wye
- 120 3 phase High-Leg Delta
- 240 single phase
- 220/380 wye
- 230/400 wye
- 240/415 wye
- 240 Delta
- 277/480 wye
- 480 Delta

Model Number

- DS21-80A
- DS21-225A
- D530-600A

Electrical

- Max Amperage
  - Up To 80 A
  - Up To 225 A
  - Up To 600 A

- Max Surge Current Per Phase 8/20µs
  - 225 kA @ 6 kV
  - 337.5 kA @ 6 kV

- Filter Component
  - 1 µH coil
  - 100 µH coil Triax

Mechanical

- Dimensions (H x W x D) in
  - 18.9 x 14.4 x 7.9
  - 30.0 x 24.0 x 8.8
  - 72.0 x 36.0 x 13.2

- Dimensions (H x W x D) cm
  - 48.0 x 36.6 x 20.1
  - 76.0 x 61.0 x 23.0
  - 182.9 x 91.4 x 33.5

- Weight (max) lb, kg
  - 40.0, 18.1
  - 80.0, 36.3
  - 950.0, 431.0

Environmental

- Humidity
  - <95% non-condensing

- Operating Temperature
  - -40°C to +60°C

- Enclosure Rating
  - NEMA 4 X
  - NEMA 12 Metal
  - NEMA 12 Mmetal

DS30 (600Amp)
DS21 (80Amp)
PV Plus Series

Robust, modular, UL 1449 3rd Edition surge protection device with up to 600 kA of surge current capacity per phase.

Features

- Robust, thermally protected MOV technology
- Modular per mode
- All mode protection - L-N, L-G, N-G & L-L
- Visual status indication per phase
- Remote status indication
- Audible alarm with disable switch
- Transient surge counter
- EMI/RFI noise filtering
- Disconnect switch available

Standards and Certificates

- UL 1449 3rd Edition
- UL96A
- IEEE C-High
- CBEMA/ITIC
- NEMA 3R
- NEC Article 100/285

Electrical

| Voltage Configurations Available | 120/240 Vac 2 phase split, 120/208 3-phase wye, 277/480 3-phase wye, 480 B phase |
| Max Surge Current per Phase 8/20 µs | 200 kA | 400 kA | 600 kA |
| Max Surge Current per Mode 8/20 µs | 100 kA | 200 kA | 300 kA |
| Nominal Discharge Current Rating (In) | 20 kA per phase |
| Fault Rating (SCCR) | 100 kAIC |
| Operating Frequency | 47-63 Hz |
| IEEE Location | C-High |

Mechanical

| Dimensions (H x W x D) in | 24.0 x 16.0 x 8.0 |
| Dimensions (H x W x D) cm | 61.0 x 41.0 x 22.4 |
| Weight (max) lbs, kg | 60, 27 |

Environmental

| Humidity | <95% non-condensing |
| Operating Temperature | -40°C to +65°C |
| Enclosure Rating | NEMA 3R |
| Operating Altitude | 12,000 feet above sea level |
AC Surge Protection

Panel Protector

**LS Plus**

Compact, modular, thermally protected surge protection device.

**Features**

- Robust, thermally protected MOV technology
- Replaceable modules
- All mode protection - L-N, L-G, N-G & L-L
- Visual status indication per phase
- Remote status indication
- Audible alarm with disable switch
- Transient surge counter
- Disconnect switch available

**Standards and Certificates**

- UL 1449 3rd Edition
- UL 96A Compliant
- IEEE C62
- NEMA LS
- NEC Article 285

<table>
<thead>
<tr>
<th>Part Name</th>
<th>LS Plus</th>
<th>LS Plus</th>
<th>LS Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>LS 100</td>
<td>LS 200</td>
<td>LS 300</td>
</tr>
</tbody>
</table>

**Electrical**

- Nominal Operating Voltage
  - 120/240 Vac 2-phase split, 120/220 V 3-phase wye, 277/480 V 3-phase wye
- Max Surge Current Per Phase 8/20µs
  - 100 kA
  - 200 kA
  - 300 kA
- Max Surge Current Per Mode 8/20µs
  - 50 kA L-G, L-N, N-G, L-L
  - 100 kA L-N, N-G, L-G, L-L
  - 150 kA L-N, L-L, L-G, N-G
- Nominal Discharge Current Rating (Iₚ)
  - 20 kA per phase
- Fault Rating (SCCR)
  - 100 kAIC

**Mechanical**

- Wire Size (max)
  - #14 to #4 AWG (25 mm² max)
- Dimensions (H x W x D) in
  - 14.0 x 12.0 x 6.0 (20.0 x 16.0 x 7.0 - with disconnect)
- Dimensions (H x W x D) cm
  - 50.8 x 30.5 x 15.2 (50.8 x 40.6 x 17.8 - with disconnect)
- Status Indicator Terminal
  - #22 to #14 AWG
- Weight (max): lb, kg
  - 30.0, 13.6
  - 32.0, 14.6
  - 35.0, 15.9

**Environmental**

- Humidity
  - <95% non-condensing
- Operating Temperature
  - -40° C to +60° C
- Enclosure Rating
  - NEMA 3R
SP Plus Series

Robust, modular, UL 1449 3rd Edition surge protection device with up to 200 kA of surge current capacity per phase.

Features

- Robust, thermally protected MOV technology
- All mode protection - L-N, L-G, N-G & L-L
- Visual status indication per phase
- Remote status indication
- Audible alarm with optional disable switch
- EMI/RFI noise filtering

Standards and Certificates

- UL 1449 3rd Edition
- UL 96A Compliant
- IEEE C62
- NEMA LS
- NEMA 4
- NEMA 1 with disable switch
- NEC Article 285

<table>
<thead>
<tr>
<th>Part Name</th>
<th>SP Plus</th>
<th>SP Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>SP 100</td>
<td>SP 200</td>
</tr>
</tbody>
</table>

Electrical

<table>
<thead>
<tr>
<th>Nominal Operating Voltage</th>
<th>120/240 Vac 2 phase split, 120/208 V 3-phase wye, 277/480 V 3-phase wye, 480 V delta (SP 200 only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Surge Current Per Phase 8/20µs</td>
<td>100 kA</td>
</tr>
<tr>
<td>Max Surge Current Per Mode 8/20µs</td>
<td>50 kA</td>
</tr>
<tr>
<td>Nominal Discharge Current Rating (Iₕ) 8/20µs</td>
<td>Up to 20 kA</td>
</tr>
<tr>
<td>Fault Rating (SCCR)</td>
<td>100 kAIC</td>
</tr>
</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Wire Size (max)</th>
<th>#10 AWG leads (6 mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D) in</td>
<td>6.3 x 6.3 x 3.5</td>
</tr>
<tr>
<td>Dimensions (H x W x D) cm</td>
<td>16.0 x 16.0 x 8.9</td>
</tr>
<tr>
<td>Weight (max) lb, kg</td>
<td>3.1, 1.4</td>
</tr>
</tbody>
</table>

Environmental

| Humidity | <93% non-condensing |
| Operating Temperature | -40° C to +90° C |
| Enclosure Rating | NEMA 4 (NEMA 1 if ordered with optional alarm disable switch) |
**AC Surge Protection**

### Panel Protector

**CFS Series**
- Robust, compact, 120 kA surge current capacity per phase surge protection.

| Part Name | CFS
|-----------|---
| Part Number | A70-00-5006, A70-00-5007, A70-00-5008, A70-00-5009, A70-00-5010, A70-00-5011, A70-00-5020

**Electrical**
- Voltage Configuration
  - Available: 120/240 Vac 2 phase split, 120/208 3-phase wye, 277/480 3-phase wye, 120/240 CPGD, 480-O, 240 single phase
- Max Surge Current per Phase (8/20 µs) 120 kA
- Max Surge Current per Mode (8/20 µs) 60 kA L-N, L-L, & L-G

**Mechanical**
- Terminal Type: #10 AWG leads (6 mm²)
- Dimensions (H x W x D) in: 2.5 x 2.5 x 2.5
- Dimensions (H x W x D) cm: 6.4 x 6.4 x 6.4
- Weight (max) lb, kg: 5.2, 2.3

**Environmental**
- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +65°C
- Enclosure Rating: NEMA 4X

### SuperHy 240W CM

**SuperHy 240W CM**
- 240/415, hybrid silicon diode with combined MOV, hardwired, Class I and Class II IEC surge suppressor with remote monitoring.

| Part Name | SuperHy 240W CM Enclosure
|-----------|---
| Part Number | 1101-901

**Electrical**
- Voltage Configuration: 240/415 Vac 3 phase
- Nominal Operating Voltage (U_n): 230 V 50/60 Hz
- Max Continuous Operating Voltage (U_c): 320 V 50/60 Hz
- Impulse Current (I_{imp}): 20 kA @ 10/350 μs
- Nominal Discharge Current (I_{n}): 20 kA @ 820 μs
- Max Discharge Current (I_{max}): 120 kA @ 820 μs
- Voltage Protection Level (U_{p}): 1.2 kV @ 820 μs

**Mechanical**
- Wire Size (max): 16 mm² (stranded), 25 mm² (solid) #6 to #4 AWG
- Dimensions (H x W x D) in: 8.7 x 10.9 x 5.4
- Dimensions (H x W x D) cm: 22.0 x 27.6 x 13.6
- Weight (max) lb, kg: 6.2, 2.8

**Environmental**
- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +80°C
- Enclosure Rating: IP65

### Standards and Certificates

- **Panel Protector**
  - Robust, high surge current capacity
  - MOV linear sharing technology
  - Visual status indication

- **SuperHy 240W CM**
  - IEEE C62.41
  - ANSI/IEEE C62.45

- **Electrical**
  - IEC 61643-1 Class I and Class II
  - IP 65 (IEC EN 60529)
  - FRNC-UL94 V-0
  - RoHS

- **Environment**
  - <95% non-condensing
  - -40°C to +65°C
  - NEMA 4X
**AC Surge Protection**

**Panel Protector**

**F R CDS Series**

Modular, low clamping, high surge current capacity AC panel surge protection using DIN rail components with visual and remote status indication

<table>
<thead>
<tr>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replaceable DIN rail modules</td>
</tr>
<tr>
<td>High surge current capacity</td>
</tr>
<tr>
<td>Visual and remote status indication</td>
</tr>
<tr>
<td>IP65 enclosure (1101-980)</td>
</tr>
</tbody>
</table>

### Features

- Replaceable DIN rail modules
- High surge current capacity
- Visual and remote status indication
- IP65 enclosure (1101-980)

### 1101-980

**Modular, low clamping, high surge current capacity AC panel surge protection using DIN rail components with visual and remote status indication**

#### Part Name
- MCP 30 120TH-MA-1
- FR 120/240 RR
- FR 120/240 MMRR
- MCP 120W BM

#### Part Number
- 1101-517-2303
- 1101-980
- 1101-981
- 1101-872

### Electrical

<table>
<thead>
<tr>
<th>Technology</th>
<th>SASD/MOV</th>
<th>MOV</th>
<th>SASD/MOV</th>
<th>SASD/MOV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Operating Voltage</td>
<td>120/240 Vac 2 Phase</td>
<td>120/240 Vac 2 Phase Split</td>
<td>120/240 Vac 2 Phase Split</td>
<td>120/208 Vac 3-phase w/ N-PE</td>
</tr>
<tr>
<td>Max Continuous Operating Voltage</td>
<td>150 Vrms L-N</td>
<td>145 Vrms L-N</td>
<td>145 Vrms L-N</td>
<td>150 Vrms L-N, 350 Vrms L-L</td>
</tr>
<tr>
<td>Voltage Protection Level</td>
<td>325 Vpk</td>
<td>400 Vpk @ 3 kA 6 kV 8/20 µs L-N</td>
<td>590 Vpk @ 3 kA 6 kV 8/20 µs L-N</td>
<td>330 Vpk @ 500 A 6 kV 8/20 µs L-N</td>
</tr>
<tr>
<td>Max Surge Current (8x20)</td>
<td>30 kA</td>
<td>45 kA per phase</td>
<td>40 kA per phase</td>
<td>40 kA per phase</td>
</tr>
</tbody>
</table>

### Mechanical

<table>
<thead>
<tr>
<th>Terminal Type</th>
<th>#10 AWG leads</th>
<th>#10 AWG leads</th>
<th>#10 AWG leads</th>
<th>#10 AWG leads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D) in</td>
<td>8.5 x 8.3 x 4.75</td>
<td>8.7 x 8.1 x 5.6</td>
<td>8.5 x 8.5 x 4.5</td>
<td>8.5 x 8.5 x 4.0</td>
</tr>
<tr>
<td>Dimensions (H x W x D) cm</td>
<td>21.1 x 21.5 x 121</td>
<td>22.1 x 20.6 x 14.0</td>
<td>22.2 x 16.5 x 11.5</td>
<td>16.6 x 14.0 x 10.2</td>
</tr>
<tr>
<td>Status Indication</td>
<td>Form C dry relay contacts, 0.5 A 75 Vdc, 0.1 A 250 Vdc, 0.5 A 250 Vdc, 822 to 814 AWG (2 mm maximum)</td>
<td></td>
<td></td>
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### Environmental

<table>
<thead>
<tr>
<th>Humidity</th>
<th>&lt;95% non-condensing</th>
<th>&lt;100% non-condensing</th>
<th>&lt;100% non-condensing</th>
<th>&lt;95% non-condensing</th>
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</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +65°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure Rating</td>
<td>NEMA 1</td>
<td>IP65</td>
<td>NEMA 3R</td>
<td>NEMA 4</td>
</tr>
</tbody>
</table>
AC Surge Protection

**Component Protector**

**SuperHy 240**

240 and 240/415, hybrid silicon diode with combined MOV, hardwired, Class I and Class II IEC surge suppressor with remote monitoring.

**Part Name**: SuperHy 240

**Part Number**: 1101-826

**Electrical**

- **Voltage Configuration**: 240 Vac single phase
- **Nominal Operating Voltage (U_n)**: 230 V 50/60 Hz
- **Max Continuous Operating Voltage (U_c)**: 320 V 50/60 Hz
- **Impulse Current (I_{imp})**: 20 kA @ 10/350 µs
- **Nominal Discharge Current (I_{n})**: 20 kA @ 8/20 µs
- **Max Discharge Current (I_{max})**: 120 kA @ 8/20 µs
- **Voltage Protection Level (U_{p})**: 1.2 kV @ 8/20 µs

**Mechanical**

- **Wire Size (max)**: 16 mm² (stranded), 25 mm² (solid) #6 to #4 AWG
- **Dimensions (H x W x D)**: 3.6 x 2.2 x 2.7 in
- **Dimensions (H x W x D)**: 9.1 x 5.5 x 6.8 cm
- **Weight (max)**: 0.7 lbs, 0.3 kg

**Environmental**

- **Humidity**: <90% non-condensing
- **Operating Temperature**: -40°C to +80°C
- **Enclosure Rating**: IP 20 (IEC EN 60529)

**Standards and Certificates**

- FRNC-UL94 V-0
- RoHS
- CE
- IEC 61643-1 Class I and II, Type 1 and 2
- IP 20 (IEC EN 60529)

---

**Component Protector**

**I2R LSA Series**

DIN rail mounted surge suppressor that offers high performance hybrid technology protection. Tested to meet Class I and Class II applications.

**Part Name**: I2R LSA 220W50-120

**Part Number**: 1104-15-106

**Electrical**

- **Nominal Operating Voltage (U_n)**: 230 Vac, 50/60 Hz, three phase
- **Max Continuous Operating Voltage (U_c)**: 320 Vac (L-0N); 260 Vac (N-PE)
- **Nominal Discharge Current (I_{n}) (8/20µs)**: 40 kA
- **Max Discharge Current (I_{max}) (8/20µs)**: 150 kA
- **Voltage Protection Level**: 1.5 kV (L-N)

**Mechanical**

- **Wire Size (max)**: 16 mm² (stranded), 25 mm² (solid) #6 to #4 AWG
- **Dimensions in (H x W x D)**: 3.5 x 4.9 x 2.6 in
- **Dimensions cm (H x W x D)**: 8.9 x 12.8 x 6.6 cm
- **Weight (max)**: 2.2 lbs, 1.0 kg

**Environmental**

- **Humidity**: <95% non-condensing
- **Operating Temperature**: -40°C to +70°C
- **Enclosure Rating**: IP 20 (IEC EN 60529)
AC Surge Protection

Component Protector

**I2R IEP 120-10**

- DIN rail mountable 120 Vac surge protection device (SPD) that offers high performance silicon avalanche suppression diode (SASD) technology protection.

<table>
<thead>
<tr>
<th>Part Name</th>
<th>I2R IEP 120-10</th>
<th>I2R IEP 240-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1104-15-000</td>
<td>1104-15-020</td>
</tr>
</tbody>
</table>

**Electrical**

<table>
<thead>
<tr>
<th>Nominal Operating Voltage (U_n)</th>
<th>120 Vac</th>
<th>240 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Continuous Operating Voltage (U_c)</td>
<td>150 Vac</td>
<td>300 Vac</td>
</tr>
<tr>
<td>Nominal Discharge Current (I_n) (8/20µs)</td>
<td>5 kA</td>
<td>10 kA</td>
</tr>
<tr>
<td>Maximum Discharge Current (I_max) (8/20µs)</td>
<td>&lt;600 V</td>
<td>&lt;900 V</td>
</tr>
</tbody>
</table>

**Features**

- Silicon diode surge protection
- Replaceable suppression module
- Visual and remote status indication
- DIN rail mount

**Standards and Certificates**

- IEC 61643-1 Class I and II, Type 1 and 2
- UL 1449 3rd Edition
- FRNC-UL94 V-0
- RoHS
- IP 20 (IEC EN 60529)

**Mechanical**

<table>
<thead>
<tr>
<th>Wire Size (max)</th>
<th>16 mm² (standard) - 25 mm² (solid) 60 to 44 AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D)</td>
<td>3.5 x 1 x 2.4</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>8.9 x 3.6 x 6.1</td>
</tr>
<tr>
<td>Weight (max)</td>
<td>0.26, 0.12</td>
</tr>
</tbody>
</table>

**Environmental**

- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +80°C
- Enclosure Rating: IP 20 (IEC EN 60529)

---

Component Protector

**I2R Storm Series**

The I2R Storm is a DIN rail mountable, 120 Vac, surge protection device that offers high performance silicon avalanche suppression diode (SASD) technology protection.

<table>
<thead>
<tr>
<th>Part Name</th>
<th>I2R Storm 120-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1104-15-001</td>
</tr>
</tbody>
</table>

**Electrical**

<table>
<thead>
<tr>
<th>Nominal Operating Voltage (U_n)</th>
<th>120 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Continuous Operating Voltage (U_c)</td>
<td>150 Vac</td>
</tr>
<tr>
<td>Maximum Discharge Current (I_max) (8/20µs)</td>
<td>10 kA (Type 4)</td>
</tr>
<tr>
<td>Nominal Discharge Current (I_n) (8/20µs)</td>
<td>5 kA</td>
</tr>
</tbody>
</table>

**Features**

- Silicon diode surge protection
- Visual and remote (dry relay contact) status indication
- DIN rail mounted

**Standards and Certificates**

- IEC 61643-1 Class I and II, Type 1 and 2
- UL 1449 3rd Edition
- FRNC-UL94 V-0
- RoHS
- IP 20 (IEC EN 60529)

**Mechanical**

<table>
<thead>
<tr>
<th>Wire Size (max)</th>
<th>16 mm² (standard) - 25 mm² (solid) 60 to 44 AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D)</td>
<td>3.5 x 0.7 x 2.4</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>9.0 x 1.8 x 6.1</td>
</tr>
<tr>
<td>Weight (max)</td>
<td>0.26, 0.12</td>
</tr>
</tbody>
</table>

**Environmental**

- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +80°C
- Enclosure Rating: IP 20
AC Surge Protection

Component Protector

**I²R ICP Series**

Modular, 120 Vac and 240 Vac single phase, silicon diode, DIN rail surge protection with visual status indication.

<table>
<thead>
<tr>
<th>Part Name</th>
<th>120 V SASD</th>
<th>240 V SASD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1101-627</td>
<td>1101-629</td>
</tr>
</tbody>
</table>

**Electrical**

- Nominal Operating Voltage: 120 Vac single phase, 240 Vac single phase
- Max Continuous Operating Voltage: 158 Vrms, 280 Vrms
- Voltage Protection Rating: 550 Vpk @ 3 kA 8/20 µs, N/A
- Voltage Protection Level: 600 Vpk @ 500A 8/20µs
- Max Surge Current: 7 kA @ 8/20 µs

**Mechanical**

- Wire Size (max): #14 to #8 AWG (2.5 mm² to 25 mm²)
- Dimensions (H x W x D) in: 2.7 x 1.0 x 2.7
- Dimensions (H x W x D) cm: 6.9 x 2.5 x 6.9
- Weight (max) lb, kg: 0.4, 0.2

**Environmental**

- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +80°C
- Enclosure Rating: IP 20

---

**Component Protector**

**I²R SA 120-50M**

DIN rail, Class II MOV surge protection device for 120 Vac with pluggable modules.

<table>
<thead>
<tr>
<th>Part Name</th>
<th>I²R SA 120-50M (Modular)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1104-15-002</td>
</tr>
</tbody>
</table>

**Electrical**

- Nominal Operating Voltage: 120 Vac single phase
- Max Continuous Operating Voltage (Uc): 150 Vac
- Nominal Discharge Current (In): 20 kA @ 8/20 µs
- Maximum Discharge Current (Imax): 50 kA @ 8/20 µs
- Voltage Protection Level (Up): 700 V

**Mechanical**

- Wire Size (max): 16 mm² stranded, 25 mm² solid #6 to #4 AWG
- Enclosure Dimensions (H x W x D) in: 3.5 x 0.7 x 2.6
- Enclosure Dimensions (H x W x D) cm: 9.0 x 1.8 x 6.5
- Weight (max) lb, kg: 0.2, 0.1

**Environmental**

- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +80°C
- Enclosure Rating: IP 20

---

**Features**

- Non-degrading, low clamping, leadless silicon diode protection
- LED status indication
- DIN rail or panel mount

**Standards and Certificates**

- UL 1449 3rd Edition (1101-627)
- UL 497B (DC only)
- CE (DC only)

---

**Features**

- High surge current thermally protected MOV
- Replaceable suppression module
- Visual and remote status indication
- DIN rail mount

**Standards and Certificates**

- UL 1449 3rd Edition
- FRNC-UL94 V-0
- RoHS
- IP 20 (IEC EN 60529)
# AC Surge Protection

## Component Protector

**1R SA Series**

High surge current capacity, DIN rail mount, AC surge protection.

![Image of 1R SA Series component](image.png)

### Features
- High surge current thermally protected MOV
- Visual and remote status indication
- DIN rail mount

### Standards and Certificates
- IEC 61643-1 (1102-014-44)
- UL 1449 3rd Edition (1102-014-42, 1102-014-44)
- CE (1102-014-42, 1102-014-44)
- RoHS (1102-014-44)

## Technical Specifications

### Electrical

<table>
<thead>
<tr>
<th>Part Name</th>
<th>FR SA 240-50</th>
<th>FR SA 277-50</th>
<th>FR SA480D-40</th>
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</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1102-014-44</td>
<td>1102-014-42</td>
<td>1102-014-26</td>
</tr>
</tbody>
</table>

#### Nominal Operating Voltage
- 240 Vac single phase
- 277 Vac single phase
- 480 Vac 3-phase delta

#### Max Continuous Operating Voltage ($U_c$)
- 275 Vrms
- 320 Vrms

#### VPR
- 500 Vpk @ 3 kA 6 kV
- 550 Vpk @ 3 kA 6 kV
- 850 Vpk @ 3 kA 6 kV

#### Nominal Discharge Current ($I_n$)
- 20 kA @ 8/20 µs
- 20 kA @ 8/20 µs
- 20 kA @ 8/20 µs

#### Max Discharge Current ($I_{max}$)
- 50 kA 8/20 µs (10/350 µs)
- 40 kA 8/20 µs (10/350 µs)

#### SCRR
- 200 kA
- 200 kA
- 60 kA

#### Nominal Discharge Voltage
- 900 Vpk @ 3 kA/6 kV
- 900 Vpk @ 3 kA/6 kV
- 850 Vpk @ 3 kA/6 kV

#### Max Discharge Current
- 50 kA 8/20 µs (10/350 µs)
- 40 kA 8/20 µs (10/350 µs)

### Mechanical

#### Wire Size (max)
- #6 AWG (3.3 mm² max)
- #6 AWG (3.3 mm² max)
- #4 AWG (25 mm² max)

#### Dimensions (H x W x D) in
- 2.1 x 0.8 x 2.7
- 4.1 x 0.8 x 2.7
- 3.5 x 0.7 x 2.7

#### Dimensions (H x W x D) cm
- 5.3 x 2.0 x 6.9
- 10.4 x 2.0 x 6.9
- 9.0 x 1.8 x 6.7

#### Dry Contacts
- Screw terminal accepts up to #16 AWG (1.5 mm²)
- Screw terminal accepts up to #16 AWG (1.5 mm²)
- Screw terminal accepts up to #10 AWG (6 mm²)

#### Weight (max) lb, kg
- 0.2, 0.1
- 0.2, 0.1
- 0.3, 0.4

### Environmental

#### Humidity
- <95% non-condensing

#### Operating Temperature
- -40°C to +65°C

#### Enclosure Rating
- IP 30/UL 94H-5
AC Surge Protection

I2R CM 230-20

The I2R CM 230-20 is a RoHS compliant, DIN rail mounted surge arrester designed for the protection of sensitive electronic power systems for 230 Vac service applications that require neutral-to-ground suppression.

Part Name: I2R CM 230-20
Part Number: 1102-014-8

Electrical

- Nominal Operating Voltage (U_n) 230 V single phase
- Max Continuous Operating Voltage (U_c) 260 Vrms
- Nominal Discharge Current (I_n) 20 kA @ 8/20 µs
- Maximum Discharge Current (I_max) 50 kA @ 8/20 µs

Features

- FRNC-UL94 V-0
- RoHS
- IEC 61643-1 Class II
- IP 20 (IEC EN 60529)

Mechanical

- Wire Size (max) 16 mm^2 (stranded) - 25 mm^2 (solid) #6 to #4 AWG
- Dimensions (H x W x D) in 3.5 x 0.7 x 2.6
- Dimensions (H x W x D) cm 9.0 x 1.8 x 6.7
- Weight (max) lbs, kg 0.2, 0.1

Environmental

- Humidity <95% non-condensing
- Operating Temperature -40°C to +80°C
- Enclosure Rating IP 20

Component Protector

MCP Series

Low clamping, high surge current capacity AC component surge protection with visual and remote status indication per phase.

Part Name
Part Number
MCP 120TA-10M
1101-299
MCP 120W SASD/MOV
1101-732

Electrical

- Nominal Operating Voltage
  - 120/240 Vac split phase 120/208 Vac 3-phase wye
- Max Continuous Operating Voltage
  - 138/267 Vrms

Mechanical

- Wire Size (max)
  - Three #10 AWG (6 mm^2) wire leads
  - Four #10 AWG (6 mm^2) wire leads
- Dimensions
  - (L x W x D) in 6.8 x 4.2 x 3.3
  - (L x W x D) cm 17.8 x 10.6 x 8.3
- Weight (max) lbs, kg 2.5, 1.1

Environmental

- Humidity <95% non-condensing
- Operating Temperature -40°C to +60°C
- Enclosure Rating UL 94V-0

Component Protector

Component Protector

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**AC Surge Protection**

**Component Protector**

**ACP 100 Series**

Hardwired, compact, silicon, 120 Vac single phase surge protection.

**Features**

- Non-degradable, low clamping silicon diode suppression
- Illuminated status indication
- Line and load bidirectional protection
- Fused outputs (1100-954)

**Standards and Certificates**

- IEEE C62.41

---

**Electrical**

<table>
<thead>
<tr>
<th>Port Name</th>
<th>ACP 100 BWN3</th>
<th>ACP 100 WN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Number</td>
<td>1100-954</td>
<td>1100-647</td>
</tr>
</tbody>
</table>

| Nominal Operating Voltage | 120 Vac single phase |
| Max Continuous Operating Voltage | 220 Vrms |
| Voltage Protection Level  | 330 Vpk L-NC 500 A 8/20 µs |
| Nominal Amperage         | 10 A | 15 A (fused) |

**Mechanical**

| Wire Size (max) | Four position terminal strip | 6 inch #14 AWG leads |
| Dimensions (H x W x D) in | 6.3 x 3.4 x 2.4 | 2.2 x 3.2 x 1.7 |
| Dimensions (H x W x D) cm | 16.9 x 8.6 x 6.0 | 5.6 x 8.2 x 4.3 |
| Weight (max) lb, kg | 0.7, 0.3 | 0.2, 0.1 |

**Environmental**

| Humidity | <95 % non-condensing |
| Operating Temperature | -40°C to +65°C |
| Enclosure Rating | IP 20 |
AC Surge Protection

Plug-In-Protector

RMP Series

120 Vac single phase, multiple outlet, 19" rack mount, silicon diode surge protection.

Features

- Non-degradable, low clamping silicon diode suppression
- Illuminated status indication
- Compact 1RU
- NEMA 5-15 and 5-20 rated plugs and receptacles
- Locking plug available

Plugs

- Type: Six NEMA 5-15, Eight NEMA 5-20 (4 per unit)

Dimensions

- (H x W x D) in: 1.8 x 19.0 x 3.5
- (H x W x D) cm: 4.6 x 48.3 x 8.9

Weight

- Max Surge Current: 3 kA 8/20 µs

Environmental

- Humidity: <95% non-condensing
- Operating Temperature: -40°C to +65°C

Enclosure Rating

- NEMA 5-15

Electrical

- Nominal Operating Voltage: 120 Vac single phase
- Nominal Amperage: 15 A (fused) 20 A
- Max Surge Current: 3 kA 8/20 µs

Mechanical

- Plug Type: Six NEMA 5-15, Eight NEMA 5-20 (4 per unit)
- Dimensions: 1.8 x 19.0 x 3.5
- Dimensions: 4.6 x 48.3 x 11.5
- Weight (max): 4.5, 2.1 kg

Part Name

- RMP 615A
- RMP 420A

Part Number

- 1101-534
- 1101-1057 (Locking Plug)
- 1101-560 (Locking Plug)
**AC Surge Protection**

**Plug-In-Protector**

---

**SL Series**

The SL Series AC surge protectors are a solid-state SASD (Silicon Avalanche Suppressor Diode) device designed to protect electronic equipment and systems from transient overvoltages on 120 Vac single phase services. The SL Series offers continuous bi-polar, bi-directional, non-interrupting protection.

---

**Features**

- Non-degradable, low clamping, leadless silicon diode protection
- Illuminated status indication
- Bi-polar, bi-directional protection
- NEMA 5-15 plug and outlet

---

**Standards and Certificates**

- UL 1449 3d Edition
- FRNC-UL34 V-0
- RoHS
- NEMA 5-15

---

**Table:**

<table>
<thead>
<tr>
<th>Part Name</th>
<th>SL 120</th>
<th>SLN 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1104-29-000</td>
<td>1104-29-001</td>
</tr>
</tbody>
</table>

**Electrical**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SL 120</th>
<th>SLN 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Operating Voltage</td>
<td>120 V, 50/60 Hz (L-N)</td>
<td>120 V, 50/60 Hz (L-N)</td>
</tr>
<tr>
<td>Maximum Continuous Operating Voltage</td>
<td>150 V, 50/60 Hz (L-N)</td>
<td>150 V, 50/60 Hz (L-N)</td>
</tr>
<tr>
<td>Maximum Discharge Current</td>
<td>5 kA (L-N)</td>
<td>5 kA (L-N)</td>
</tr>
<tr>
<td>Voltage Protection Level</td>
<td>500 V @ 6 kV, 3 kA</td>
<td>500 V @ 6 kV, 3 kA</td>
</tr>
<tr>
<td>Status Indication</td>
<td>GREEN - SPD functioning</td>
<td>GREEN - SPD functioning</td>
</tr>
<tr>
<td></td>
<td>RED - Power continues to be supplied to load</td>
<td>RED - Power removed from load</td>
</tr>
</tbody>
</table>

**Mechanical**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SL 120</th>
<th>SLN 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enclosure</td>
<td>PA66, UL94 V-0</td>
<td>PA66, UL94 V-0</td>
</tr>
<tr>
<td>Enclosure Dimensions (H x W x D)</td>
<td>2.9 x 2.8 x 2.4</td>
<td>2.9 x 2.8 x 2.4</td>
</tr>
<tr>
<td>Enclosure Dimensions (H x W x D)</td>
<td>7.6 x 7.2 x 6.1</td>
<td>7.6 x 7.2 x 6.1</td>
</tr>
<tr>
<td>Weight (max) lb, kg</td>
<td>0.3, 0.1</td>
<td>0.3, 0.1</td>
</tr>
</tbody>
</table>

**Environmental**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>SL 120</th>
<th>SLN 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
<td>&lt;95% non-condensing</td>
<td>&lt;95% non-condensing</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +70°C</td>
<td>-40°C to +70°C</td>
</tr>
<tr>
<td>Enclosure Rating</td>
<td>IP20</td>
<td>IP20</td>
</tr>
</tbody>
</table>
AC Surge Protection

**Features**
- Non-degradable, low clamping, leadless silicon surge protection
- NEMA 5-15, 5-20 outlets
- Visual status monitor
- Connects via terminal block
- DIN rail or panel mount
- Line and load bidirectional protection
- UL 94V-0 enclosure

**Standards and Certificates**
- UL94 V-0
- NEMA 5-20
- IEEE C62.41
- IEEE C62.45

**DC Surge Protection**

**Component Protector**

**Features**
- Silicon diode surge protection
- Replaceable modules
- DIN rail mount
- Visual and remote status indication
- FRNC-UL94 V-0
- IEC 61643-1 Class II
- RoHS Compliant
- CE
- IP 20 (IEC EN 60529)

**Standards and Certificates**
- IEC 61643-1 Class II
- RoHS Compliant
- CE
- IP 20 (IEC EN 60529)
DC Surge Protection

**Component Protector**

**I²R SA Series**

The I²R SA 48-40 is a RoHS compliant, DIN rail mounted, modular surge suppression device designed for the protection of sensitive DC power systems.

<table>
<thead>
<tr>
<th>Part Name</th>
<th>I²R SA 48-40</th>
<th>I²R SA 48-3-40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1102-014-38-2</td>
<td>1104-11-005</td>
</tr>
</tbody>
</table>

**Electrical**

<table>
<thead>
<tr>
<th>Nominal Operating Voltage (U&lt;sub&gt;n&lt;/sub&gt;)</th>
<th>48 Vdc single phase</th>
<th>48 Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Continuous Operating Voltage (U&lt;sub&gt;c&lt;/sub&gt;)</td>
<td>75 Vdc</td>
<td>75 Vdc</td>
</tr>
<tr>
<td>Max Discharge Current (I&lt;sub&gt;max&lt;/sub&gt;)</td>
<td>40 kA 8/20 μs</td>
<td>40 kA 8/20 μs</td>
</tr>
<tr>
<td>Max Voltage Protection Level (U&lt;sub&gt;p&lt;/sub&gt;)</td>
<td>700 Vpk</td>
<td>&lt; 25 ns</td>
</tr>
</tbody>
</table>

**Mechanical**

<table>
<thead>
<tr>
<th>Wire Size (max)</th>
<th>25 mm&lt;sup&gt;2&lt;/sup&gt; (solid), 16 mm&lt;sup&gt;2&lt;/sup&gt; (stranded)</th>
<th>2 to 4 AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Indication Terminal</td>
<td>Eurostyle terminal plug</td>
<td></td>
</tr>
<tr>
<td>Dimensions (H x W x D) in</td>
<td>3.5 x 0.7 x 2.8</td>
<td>3.5 x 2.1 x 2.6</td>
</tr>
<tr>
<td>Dimensions (H x W x D) cm</td>
<td>9.0 x 1.8 x 6.7</td>
<td>9.0 x 4.5 x 6.7</td>
</tr>
<tr>
<td>Weight (max), lb, kg</td>
<td>0.2, 0.1</td>
<td>0.7, 0.3</td>
</tr>
</tbody>
</table>

**Environmental**

| Humidity | <95% non-condensing |
| Operating Temperature | -40°C to +60°C |
| Enclosure Rating | IP 20 |

**Standards and Certificates**

- IEC 61643-1 Class I
- RoHS
- CE
- FRNC:UL94 V-0
- IP 20 (IEC EN 60529)

---

**Component Protector**

**DRI 24**

24 Vdc low power signal, silicon diode, DIN rail equipment surge suppressor with visual status indication. DRI 24 is approved for hazardous locations that require a rating of Class I Division II Groups A, B, C and D.

<table>
<thead>
<tr>
<th>Part Name</th>
<th>DRI 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1101-869</td>
</tr>
</tbody>
</table>

**Electrical**

<table>
<thead>
<tr>
<th>Service Voltage</th>
<th>24 Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Rate</td>
<td>DC power to 30 KHz</td>
</tr>
<tr>
<td>Protection Modes</td>
<td>L-H, L-G</td>
</tr>
<tr>
<td>Protection Level</td>
<td>48 Vpk</td>
</tr>
<tr>
<td>Max Continuous Operating Voltage</td>
<td>34 Vpk</td>
</tr>
<tr>
<td>Max Pass Through Current</td>
<td>3 A</td>
</tr>
<tr>
<td>Response Time</td>
<td>5 ns</td>
</tr>
</tbody>
</table>

**Mechanical**

| Dimensions (H x W x D) in | 2.9 x 1.7 x 3.4 |
| Dimensions (H x W x D) cm | 7.3 x 4.3 x 8.6 |
| Weight (max), lb, kg | 0.3, 0.14 |

**Environmental**

| Humidity | <95% non-condensing |
| Operating Temperature | -40°C to +65°C |

---

![Component Protector](image1)

**Component Protector**

**DRI 24**

24 Vdc low power signal, silicon diode, DIN rail equipment surge suppressor with visual status indication. DRI 24 is approved for hazardous locations that require a rating of Class I Division II Groups A, B, C and D.

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<td>Max Continuous Operating Voltage</td>
<td>34 Vpk</td>
</tr>
<tr>
<td>Max Pass Through Current</td>
<td>3 A</td>
</tr>
<tr>
<td>Response Time</td>
<td>5 ns</td>
</tr>
</tbody>
</table>

**Mechanical**

| Dimensions (H x W x D) in | 2.9 x 1.7 x 3.4 |
| Dimensions (H x W x D) cm | 7.3 x 4.3 x 8.6 |
| Weight (max), lb, kg | 0.3, 0.14 |

**Environmental**

| Humidity | <95% non-condensing |
| Operating Temperature | -40°C to +65°C |
DC Surge Protection

**CB Series**

Circuit breaker style silicon surge protection for DC power distribution systems with reverse polarity protection from power cross and inductive swells.

<table>
<thead>
<tr>
<th>Feature Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-degradable, low clamping, silicon avalanche diode surge suppression</td>
<td></td>
</tr>
<tr>
<td>Visual and remote status monitoring</td>
<td></td>
</tr>
<tr>
<td>Bi-directional, line and load protection</td>
<td></td>
</tr>
<tr>
<td>Bullet style breakers</td>
<td></td>
</tr>
</tbody>
</table>

**Features**

- MOV technology
- Low let-through voltage
- High surge current capacity
- All mode protection series device

**Electrical**

- Nominal Operating Voltage: ±48 Vdc
- Max Continuous Operating Voltage: 60 Vpk
- Max Surge Current 10/1000 μs: 1100 A
- Max Surge Current 8/20 μs: 15 kA
- Voltage Protection Level 10/1000 μs: 75 Vdc
- Voltage Protection Level 8/20 μs: 75 Vdc
- Response Time: < 5 ns

**Mechanical**

- Suppression Terminal: #10-32 bullet style
- Dimensions (H x W x D) in: 2.5 x 2.5 x 0.7
- Dimensions (H x W x D) cm: 6.3 x 6.3 x 1.9
- Weight (max) lb, kg: 0.3, 0.1

**Environmental**

- Humidity: <65% non-condensing
- Operating Temperature: -30°C to +65°C

**Standards and Certificates**

- UL 497B

**Part Name**

- CB-48-RD-DW
- CB-48-RD

**Part Number**

- 1101-686
- 1101-511

---

**3DC48-20 Series**

48 Vdc protector that utilizes MOV technology to provide high surge current capacity and low let-through voltage.

**Features**

- MOV technology
- Low let-through voltage
- High surge current capacity
- All mode protection series device

**Electrical**

- Nominal Operating Voltage: ±48 Vdc
- Max Continuous Operating Voltage: ±60 Vdc
- Max Continuous Operating Current: 324 A
- Surge Capabilities: 30 kA 8/20 μs per mode maximum
- Protection Modes: Pse-Negl, Pse-GND, Neg-GND

**Mechanical**

- Connection Terminals: #6 - #20 AWG (16 mm² max)
- Dimensions (H x W x D) in: 3.0 x 6.0 x 2.5
- Dimensions (H x W x D) cm: 7.6 x 15.2 x 6.4
- Weight (max) lb, kg: 0.8, 0.3

**Environmental**

- Operating Temperature: -40°C to +65°C

**Part Name**

- 3DC48-20
- 3PC48-32

**Part Number**

- 1101-1014
- 1101-1180

---

**Component Protector**

- UL 497B (1101-686)
DC Surge Protection

**Outdoor Protector**

**DCOD Series**

The DCOD series of products offer SASD-based technology that provides non-degrading, silicon protection for DC power supplies up to 25 A in an outdoor enclosure.

<table>
<thead>
<tr>
<th>DCOD Series</th>
<th>24-2.5</th>
<th>24-5</th>
<th>40-2.5</th>
<th>40-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1101-1024</td>
<td>1101-1026</td>
<td>1101-1025</td>
<td>1101-1027</td>
</tr>
</tbody>
</table>

**Electrical**

- Nominal Operating Voltage: 24 Vdc, 24 Vdc, 48 Vdc, 48 Vdc
- Max Continuous Operating Voltage: 44 Vdc, 44 Vdc, 88 Vdc, 88 Vdc
- Nominal Discharge Current (8/20 µs): 2.5 kA, 5 kA, 2.5 kA, 5 kA
- Voltage Protection Level: 50 V, 50 V, 100 V, 100 V

**Mechanical**

- Wire Range: #8 to #6 AWG (16 mm² max)
- Terminal Torque: 10 lb-in
- Mounting: 3/8 screws 4" centers
- Remote Indication: 3 pin No/NC/C contacts
- Remote Contact Current Rating: 2 A
- Dimensions (H x W x D) in: 7.2 x 5.9 x 2.6
- Dimensions (H x W x D) cm: 18.3 x 14.9 x 6.4
- Weight (max): 1.0 lb, 0.4 kg

**Environmental**

- Operating Temperature: -40°C to +85°C

**Features**

- Non-degradable, low clamping, silicon avalanche diode suppression
- Options available to protect 24 Vdc and 48 Vdc applications
- Outdoor NEMA 3R enclosure
- Three mode protection: supply to return, return to ground and supply to ground
- Shunt protectors that also provide a wired "in-line" input and output lug connectors
- Dry contacts for alarming

**Standards and Certificates**

- UL 48-5V
- CE
- NEMA 3R
- IP 55

**Outdoor Component Protector**

**DC Defender Series**

Robust, 5 kA lightning protection device designed for sensitive 48 Vdc powered equipment.

<table>
<thead>
<tr>
<th>Part Name</th>
<th>DC Defender 48-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1101-1110</td>
</tr>
</tbody>
</table>

**Electrical**

- Nominal Operating Voltage: 48 Vdc
- Max Continuous Operating Voltage: 65 Vdc
- Nominal Discharge Surge Current: 15 A
- Nominal Discharge Surge Current (8/20 µs per protection mode)

**Mechanical**

- Wire Range: #14 to #10 AWG
- Dimensions (H x W x D) in: 7.2 x 5.7 x 1.7
- Dimensions (H x W x D) cm: 18.3 x 14.9 x 4.2
- Weight (max): 5 lb, 2.3 kg

**Environmental**

- Operating Temperature: -40°C to +85°C
DC Power Distribution Panel

DC Edge™ II

Compact high-power, high-current, universal voltage (+24 Vdc to -48 Vdc) power panel featuring dual-feed 350 A buses for either primary or secondary power distribution.

Features
- Compact 1RU PDU
- High current capability - two 350 A inputs
- Universal voltage
- Front lead TFD housing or circuit breaker
- 19” or 23” rack mount
- Front panel alarm status LED and discrete dry relay contacts

Standards and Certificates
- UL 60950, Listed
- NEBS Level III

Electrical
- Part Name/Number: DC EDGE 350 DF 4/4 / 1101-900
- Input Positions (quantity/type): Dual 3/8” - 16 on 1” stud centers
- Operating Voltage Range: 20 to 60 Vdc
- Max Input Current per Feed: 350 A
- Output Positions per Input: Four 1/4” - 20 on 5/8” stud centers
- Input Rating: 350 A per feed, max
- Input Interrupt Device: 450 A per feed, max
- Max Current per Breaker: 100 A, Airpax
- Max Current per Fuse: 125 A, TLS; 70 A, TPS
- Fuse Type: TPS and TLS
- Monitoring Connection: Terminal strip for Dry Form-C contacts

Mechanical
- Dimensions (H x W x D) in: 1.7 x 19.0 x 12.0
- Dimensions (H x W x D) cm: 4.3 x 48.3 x 30.4
- Weight (max) lb, kg: 16.5, 7.5
- Chassis Ground: Single, dual 1/4” - 20 on 5/8” stud centers

Environmental
- Humidity: <90% non-condensing
- Operating Temperature: -40°C to +55°C
- Enclosure Rating: Indoor UL60600

DC Edge™ III

Compact mid-current, universal voltage (+24 Vdc to -48 Vdc) power panel featuring quad-feed 100 A buses for secondary power distribution.

Features
- Compact 1RU PDU
- High current capability - four 100 A inputs
- Universal voltage
- Front lead circuit breaker
- 19” or 23” rack mount
- Front panel alarm status LED and discrete dry relay contacts

Standards and Certificates
- UL 60950, Listed
- NEBS Level III

Electrical
- Part Name/Number: DC EDGE III 200QF 8/8 / 1101-1006
- Input Positions (quantity / type): Four two-pin, keyed Molex male connectors
- Operating Voltage Range: 20 to 74 Vdc
- Max Input current per Feed: 100 A
- Output Positions per Input: One 3/8” - 16 on 1” stud centers
- Input Rating: 100 A per feed, max
- Input Interrupt Device: 125 A per feed, max
- Max Current per Breaker: 30 A
- Monitoring Connection: HD-15 pin connectors (two), standard and bay alarms

Mechanical
- Dimensions (H x W x D) cm: 4.4 x 48.3 x 31.5
- Weight (max) lb, kg: 11.5, 5.2
- Chassis Ground: Single, dual 1/4” - 20 on 5/8” stud centers

Environmental
- Humidity: <90% non-condensing
- Operating Temperature: -10°C to +65°C
- Enclosure Rating: Indoor UL60600

Primary or Secondary Distribution

DC Edge™ II Primary or Secondary Distribution

Primary or Secondary Distribution DC Edge™ III

Primary or Secondary Distribution
Integrated Power Protection Cabinets

### Compact, Power Protection Cabinet

AC power protection cabinet suitable for service entrance applications.

<table>
<thead>
<tr>
<th>Model</th>
<th>100 A</th>
<th>200 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Number</td>
<td>1101-1032-21111</td>
<td>1101-1032-32113</td>
</tr>
<tr>
<td>Voltage</td>
<td>120/240 Vac</td>
<td>130/240 Vac</td>
</tr>
<tr>
<td>Ampere Rating</td>
<td>100 A</td>
<td>200 A</td>
</tr>
<tr>
<td>Material</td>
<td>Heavy gauge aluminum</td>
<td></td>
</tr>
<tr>
<td>Finish</td>
<td>Powder coat</td>
<td></td>
</tr>
<tr>
<td>Dimensions (H x W x D) in</td>
<td>30.0 x 24.0 x 10.0</td>
<td></td>
</tr>
<tr>
<td>Dimensions (H x W x D) cm</td>
<td>76.2 x 61.0 x 25.4</td>
<td></td>
</tr>
<tr>
<td>Weight (max) lb, kg</td>
<td>65.0, 29.5</td>
<td></td>
</tr>
<tr>
<td>Mount</td>
<td>Wall or H frame, 4x Ø 0.44” mounting holes</td>
<td></td>
</tr>
</tbody>
</table>

#### Specifications
- NEMA 3R cabinet enclosure
- Three-point latching system and pad lockable handle
- Integrated surge protection (meets UL 1449 3rd Edition)
- Illuminated power and surge suppression status indication
- Remote status monitoring
- GFCI convenience outlet
- UL 891 listed

#### Features
- Choice of load center sizes:
  - 16 or 24 position for 100 A
  - 24 position for 200 A
- Mechanically interlocked main breakers
- Numerous configurations available
- Choice of auxiliary power connections:
  - Appleton AR20044-RS
  - Side Mounted Cam-Lok® connectors

#### Options

---

### Outdoor Cabinet

#### Compact Cabinet

#### Features
- NEMA 3R cabinet enclosure
- Three-point latching system and pad lockable handle
- Integrated surge protection (meets UL 1449 3rd Edition)
- Illuminated power and surge suppression status indication
- Remote status monitoring
- GFCI convenience outlet
- UL 891 listed

#### Options
- Choice of load center sizes:
  - 16 or 24 position for 100 A
  - 24 position for 200 A
- Mechanically interlocked main breakers
- Numerous configurations available
- Choice of auxiliary power connections:
  - Appleton AR20044-RS
  - Side Mounted Cam-Lok® connectors

---

### TransComm Rail Cabinet

Rugged cabinet for sensitive railway communications equipment.

#### Specifications
- Material: 16 gauge steel
- Finish: Powder coat
- Dimensions (H x W x D) in: 24.0 x 24.0 x 10.0
- Dimensions (H x W x D) cm: 61.0 x 61.0 x 25.4
- Mount: Wall or pole mount
- Enclosure Type: NEMA 4
- Humidity: <100% non-condensing
- Operating Temperature: -40°C to +75°C

#### Features
- Automated, programmable, environmental control system
- AC distribution with silicon diode surge protection
- Multi-point ground bar (six position)
- Grounded metal backplane

---

![Compact Cabinet](image1)

![Outdoor Cabinet](image2)

![TransComm Rail Cabinet](image3)
**Integrated Power Protection Cabinets**

**Outdoor Cabinet**

**MiniCab Electrical Box**

The MiniCab is ideal for electrical service drop requirements at remote or co-located equipment locations.

**Specifications**

<table>
<thead>
<tr>
<th>Part Name / Number</th>
<th>MINICAB QOB2 / 1101-1128</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Voltage</td>
<td>120/240 Vac two phase split</td>
</tr>
<tr>
<td>Maximum Continuous Operating Voltage Uc</td>
<td>150 Vac</td>
</tr>
<tr>
<td>Voltage Protection Level E20 µs @ 8/20 kV</td>
<td>330 Vac L-N</td>
</tr>
<tr>
<td>Surge Current Rating 8/20 µs</td>
<td>10kA</td>
</tr>
<tr>
<td>Dimensions (HxW)</td>
<td>10.23”x5.30” (259.8cmx134.6cm)</td>
</tr>
<tr>
<td>Panel Rating</td>
<td>QO-20A 120 Vac 50/60 Hz</td>
</tr>
<tr>
<td>Enclosure Type</td>
<td>Outdoor/Metal NEMA 3R</td>
</tr>
<tr>
<td>Short Circuit Current Rating</td>
<td>10 kA</td>
</tr>
<tr>
<td>Main Breaker</td>
<td>Fixed Mains - Lugs</td>
</tr>
<tr>
<td>Max Wire Size</td>
<td>#12 to 3 AWG(AI) or #14 to 4 AWG(Cu)</td>
</tr>
<tr>
<td>Humidity</td>
<td>&lt;90% non-condensing</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C to +65°C</td>
</tr>
</tbody>
</table>

**Features**

- Surge protected electrical service drop
- Electrical breaker style QO-20A
- Compact NEMA 3R metal enclosure
- UL 67 Listed Class CTL

**Standards**

- IEEE Location Category: C High
- IEC 61643-1: Class II
- UL 1449 3rd Edition Approved SPD
- UL 67 Listed Class CTL
- NEMA 3R