Cleerline Industrial Switch

1 x SFP to 4 x RJ45 Gigabit Switch

The SSF-1x4-RUGGED is a 4 port Gigabit Ethernet 10/100/1000Base-TX to 1000Base-X non-managed Industrial Ethernet Switch. It is designed with a hardened case for use in extreme operating temperatures (-40 to +75°C). The rugged metal housing is IP40 rated and intended to withstand mechanically or electrically extreme environments.

This industrial switch features strong surge protection (4kV ~ 8kV) per port and is compliant with IEC and EN standards for industrial grade equipment.

FEATURES AND BENEFITS

- DC power input block 10-60V
- Extreme operating temperature: -40 to 75°C
- Rugged IP40 rated metal casing, DIN rail bracket
- Store and Forward switching mechanism
- Reversed power polarity protection
- Auto-Negotiation & Auto MDI/MDI-X on every RJ45 port
- Supports 6kV surge protection per port on all TP ports
- Supports IEEE 802.1Q Tag VLAN pass thru
- Redundant DC power inputs on every model

APPLICATION EXAMPLE

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PART NUMBER DESCRIPTION

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>SSF-1x4-RUGGED</td>
<td>Industrial Gigabit switch 4x 10/100/1000Base-Tx &amp; 1x SFP slot, DC 10-60V required, DIN rail mountable</td>
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OPERATION & DETAILS

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>Operating Temperature</td>
<td>-40 ~ 75°C</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>5% to 95% (Non-condensing)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 ~ 85°C</td>
</tr>
<tr>
<td>Housing</td>
<td>Rugged Metal, IP40 Protection</td>
</tr>
<tr>
<td>Dimensions</td>
<td>88 x 35 x 120mm (D x W x H)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.38kg</td>
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<tr>
<td>Installation Mounting</td>
<td>DIN Rail mounting or wall mounting</td>
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## SPECIFICATIONS

### GENERAL

| IEEE Standard       | IEEE 802.3 10Base-T Ethernet  
|                     | IEEE 802.3u 100Base-TX and 100Base-FX  
|                     | Fast Ethernet  
|                     | IEEE 802.3ab 1000Base-T and 1000Base-X  
|                     | Gigabit Eth.  
|                     | IEEE 802.3x Flow Control and Back Pressure  
| Switch Architecture | Back-plane (Switching Fabric): 10 Gbps  
| Data Processing     | Store and Forward  
| Flow Control        | IEEE 802.3x flow control, back pressure flow control  
| Provides Broadcast  | Present  
| Storm Protection    | Present  
| MAC Address Table   | 4K  
| Packet Buffer Size  | 1MB  
| Ports               | 4 x RJ-45 10/100/1000Base-T x  
|                     | 1 x 1000Base-X SFP slot  
|                     | 10/100/1000Base-TX auto negotiation speed  
|                     | Auto MDI/MDI-X function, Full/Half duplex  
| Network Cable       | 10Base-T: 2-pair UTP/STP Cat. 5 cable  
|                     | 100Base-TX: 2-pair UTP/STP Cat. 5 cable  
|                     | 1000Base-T: 4-pair UTP/STP Cat. 5e cable  
|                     | EIA/TIA-568 100-ohm (100m)  
| Protocols           | CSMA/CD  
| LED                 | Per unit: PWR (Green)  
|                     | LNK/ACT (Green - Fiber port status and activity)  
|                     | Per Port: Link/Active (Green), Speed/100 (Yellow)  

### POWER, ALARM, TERMINAL BLOCK

| Reverse Polarity Protection | Present  
| Overload Current Protection | Present  
| Power Supply | Redundant Dual DC 12/24/48V (9.6~60VDC Input power)  
|                   | (Removable Terminal Block)  
| Power Consumption | <8W  
| Alarm Relay Contact | Relay outputs with current carrying capacity of 1 A@24VDC, NC  
| Removable Terminal Block | Provide 2 Redundant power, Alarm relay contact, 6 Pin  

### RATINGS

| EMI | FCC Part 15 Subpart B Class A, CE EN 55022 Class A  
| EN61000-6-4 – Emission for industrial environment  
| EN61000-6-2 – Immunity for Industrial environment  
| EN61000-4-3 (ESD) Level 3, Criteria B  
| EN61000-4-3 (RS) Level 3, Criteria A  
| EN61000-4-4 (Burst) Level 3, Criteria A  
| EN61000-4-5 (Surge) Level 3, Criteria B  
| EN61000-4-6 (CS) Level 3, Criteria A  
| EN61000-4-8 (Magnetic Field) Level 3, Criteria A  
| EMS | EN61000-6-2  
| EN61000-4-2 (ESD) Level 3, Criteria B  
| EN61000-4-3 (RS) Level 3, Criteria A  
| EN61000-4-4 (Burst) Level 3, Criteria A  
| EN61000-4-5 (Surge) Level 3, Criteria B  
| EN61000-4-6 (CS) Level 3, Criteria A  
| EN61000-4-8 (Magnetic Field) Level 3, Criteria A  
| Traffic Control | NEMA-TS2  
| Rail Traffic | EN50121-4  
| Shock | IEC 60068-2-27  
| Freefall | IEC 60068-2-32  
| Vibration | IEC 60068-2-6  
| MTBF | 120,000Hrs  
| Warranty | 2 years  

### DIMENSIONS

#### SIDE

- 88mm x 120mm x 31mm

#### FRONT

- 15mm x 5.83 x 35mm

#### WALL MOUNT KIT VIEW

- 25.5mm x 48mm x 186mm