

# iES8G

## Intelligent 8 Port Managed Gigabit Ethernet Switch

### Product Overview



The iES8G is an intelligent 8 Port managed Gigabit Ethernet switch with up to 8 x 10/100/1000Base-T(X) RJ45 Auto MDI/MDIX, up to 6 x 10/100Base-T(X) RJ45 Auto MDI/MDIX, up to 4 x 100/1000Base-X SFP, up to 4 Combo 10/100/1000Base-T(X) RJ45 and 100/1000Base-X, and up to 2 X 1000SX /LX.

The iES8G provides redundancy support through functions such as STP/RSTP/MSTP assuring protection of all mission critical network applications. iES8G can be managed via the Web UI, iManage Software Suite, Telnet, and Console (CLI)/SSH v2.

The switch is made of IP-40 galvanized steel and has a wide operating temperature range from -40°C to +85°C, which is suitable for the harshest of environments without the use of fans.



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# Features

**Table 1. Features**

| Feature  |  |
|--|--|
| <b>Supports:</b>   | <ul style="list-style-type: none"><li>• STP / RSTP / MSTP</li><li>• LLDP (Link Layer Discovery Protocol)</li><li>• Modbus TCP</li><li>• VLAN Priority—supports priority-tagged frames to be received by specific IEDs</li><li>• HTTPS / SSH v2</li><li>• SNTP for synchronizing the switch's clock</li></ul> |
| IGMP v2 / v3 (IGMP Snooping)   |  |
| SNMP v1 / v2c / v3   |  |
| RADIUS for 802.1x authentication<br>TACACS+ for user login authentication  |  |
| Supports DDM (Digital Diagnostic Monitoring) function for SFP modules  |  |
| Multiple alarm notification methods  |  |
| Configurable by Web UI, Telnet, Console(CLI), iManage software running on Windows 10, NT /2000/<br>XP/2003/VISTA/7 |  |
| DIN rail and panel mount   |  |



## Product Specifications

**Table 2. Technical Specification**

| Description  | Specification   |
|--|---|
| 10/100/1000Base-T(X) RJ45 Auto MDI/MDIX            | Up to 8   |
| 10/100Base-T(X) RJ45 Auto MDI/MDIX                 | Up to 6   |
| 100/1000Base-X SFP                                 | Up to 4   |
| Combo 10/100/1000Base-T(X) RJ45 and 100/1000Base-X | Up to 4   |
| 1000SX /LX   | Up to 2   |
| RS-232 Serial Console Port                         | RS-232 in RJ45 connector with console cable: 9600 bps, 8, N, 1  |
| Warning / Monitoring System                        | Relay output for fault event alarming<br>2 alarm warning methods for system events supported: <ul style="list-style-type: none"> <li>• SYSLOG with server / client structure; recording and viewing events in the System Event Log</li> <li>• SMTP for notification via email</li> </ul> Event selection per port   |
| Alarm  | Relay output to carry capacity of 1 A at 24 VDC   |
| Technology   |   |
| MAC Table  | 8K  |
| Priority Queues                                    | 4   |
| Processing   | Store-and-Forward   |
| Switch Properties                                  | Switching latency: 7 $\mu$ s<br>Switching bandwidth: 16 Gbps<br>Max. Number of Available VLANs: 4096<br>IGMP multicast groups: 32<br>Port rate limiting: User Defined   |
| Jumbo frame  | 9.6K  |
| Security Features                                  | <ul style="list-style-type: none"> <li>• STP/RSTP/MSTP</li> <li>• RADIUS for 802.1x authentication</li> <li>• TACACS+ for user login authentication</li> <li>• Port based network access control (NAS) 802.1x</li> <li>• VLAN (802.1 Q) for segregation and securing network traffic enabled by GVRP</li> <li>• SNMPv3 authentication and privacy encryption</li> <li>• Management Security</li> <li>• Port security and MAC Blacklist</li> <li>• IP Guard</li> <li>• HTTPS / SSH v2</li> <li>• Web and CLI authentication and authorization</li> </ul> |



| Description                            | Specification  |
|--|--|
| <b>Software Features</b>               | <ul style="list-style-type: none"><li>• Web or CLI based Management (RS-232 Serial Console or Telnet/SSH v2)</li><li>• DHCP Server /Client / Relay</li><li>• VLAN—Port-based (untagged) and 802.1Q (tagged)</li><li>• Supports SNMPv1/v2/v3</li><li>• Traffic Prioritization—QoS, Port-based Priority, COS/802.1p, TOS/ DSCP</li><li>• Multicast traffic—IGMP Snooping (IGMP v2 / v3), MVR, Static Multicast Filtering</li><li>• Warnings (SYSLOG and SMTP), Fault Alarm (power and ports failure), and Event Selection</li><li>• Monitoring and Diagnostics—MAC Table and Port Statistics, Counters, and Monitoring, System Event Log, Traffic Monitoring, and Ping</li><li>• SNTP for synchronizing of clocks over network</li></ul> |
| <b>Network Redundancy</b>              | STP/ RSTP/ MSTP, Fast Recovery, Dual Port Recovery, and Ring   |
| <b>Physical Characteristics</b>        |  |
| <b>Enclosure</b>                       | IP-40 Galvanized Steel   |
| <b>Dimensions (W x D x H) for 8G</b>   | 101.6 (W) x 125.2 (D) x 162.4(H) mm (4.0 x 4.93 x 6.39 inches) DIN rail<br>101.6 (W) x 120.8 (D) x 184.2(H) mm (4.0 x 4.76 x 7.25 inches) Panel mount 1<br>101.6 (W) x 125.2 (D) x 184.2(H) mm (4.36 x 4.93 x 7.25 inches) Panel mount 2   |
| <b>Dimensions (W x D x H) for 8G-S</b> | 65.13 (W) x 160.5 (D) x 191.3 (H) mm (2.56 x 6.32 x 7.53 inches) DIN rail<br>114.3 (W) x 156.5 (D) x 203.2 (H) mm (4.50 x 6.16 x 8.0 inches) Panel mount   |
| <b>Weight (g)</b>                      | ~1 kg (8G-S); ~1.6 kg (8G)   |
| <b>Power</b>                           |  |
| <b>Input Power</b>                     | Dual Input 10-48VDC, or Single Input 36-75VDC with Single 10-48VDC Backup, or Single Input 110-370VDC or 90-264VAC with Single 10-48VDC Backup   |
| <b>Power Consumption (Typ.)</b>        | 22.8 Watts   |
| <b>Overload Current Protection</b>     | Present  |
| <b>Reverse Polarity Protection</b>     | Internal   |

**Table 3. Compliance Specifications**

| Type                             | Standards  |
|----------------------------------|--|
| <b>Electromagnetic Emissions</b> | FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)  |
| <b>Electromagnetic Immunity</b>  | EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11 |
| <b>Safety Standards</b>          | EN60950-1  |
| <b>Operating Environment</b>     | -40°C to +85°C (-40° to 185°F) (no fans)<br>EN 60068-2-21  |
| <b>Storage Environment</b>       | -40°C to +85°C (-40° to 185°F)<br>EN 60068-2-14  |
| <b>Operating Humidity</b>        | 5% to 95% Non-condensing<br>EN 60068-2-30  |
| <b>Shock</b>                     | IEC60068-2-27  |
| <b>Free Fall</b>                 | IEC60068-2-32  |
| <b>Vibration</b>                 | IEC60068-2-6   |
| <b>Warranty</b>                  | 5 years  |

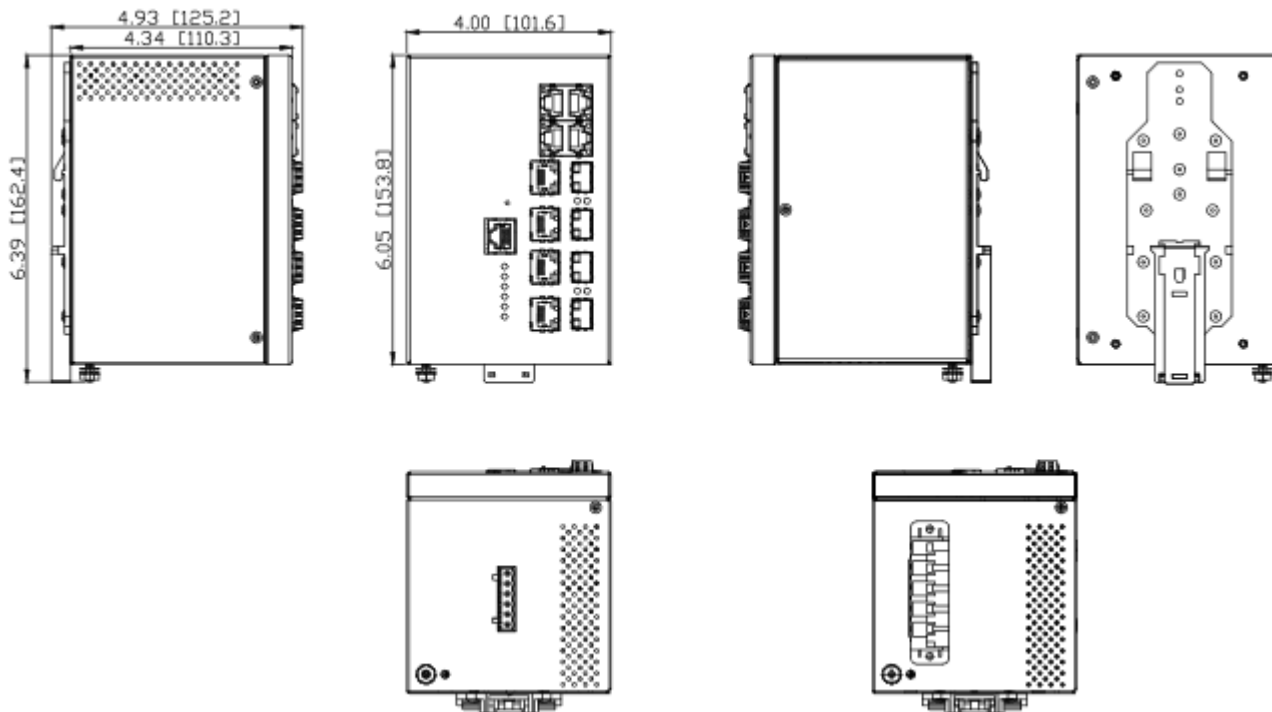
**Table 4. Standards and Management**

| Description   | Specification   |  |  |  |
|---|---|--|--|--|
| <b>IEEE Standards</b>   | <p>IEEE 802.3 for 10Base-T<br/> IEEE 802.3u for 100Base-TX and 100Base-FX<br/> IEEE 802.3ab for 1000Base-T<br/> IEEE 802.z for 1000Base-X<br/> IEEE 802.3x for Flow control<br/> IEEE 802.1D Spanning Tree Protocol<br/> IEEE 802.1w -2001 Rapid Spanning Tree Protocol (RSTP)<br/> IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP:2004)<br/> IEEE 802.1X-2010 Port Based Network Access Control<br/> IEEE 802.1AB – 2016 Station and Media Access Connectivity discovery (LLDP)</p>   |  |  |  |
| <b>RFC Compliance</b>   | <table border="0"> <tr> <td> <ul style="list-style-type: none"> <li>• RFC 768: UDP</li> <li>• RFC 783: TFTP</li> <li>• RFC 791: IPv4</li> <li>• RFC 792: ICMP</li> <li>• RFC 793: TCP</li> <li>• RFC 854: Telnet</li> <li>• RFC 959: FTP</li> <li>• RFC 1157: SNMP</li> <li>• RFC 1901,1902-1907<br/>SNMPv2</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• RFC 2273-2275: SNMPv3</li> <li>• RFC 2571: SNMP Management</li> <li>• RFC 1166: IP Addresses</li> <li>• RFC 1643: Ethernet Interface MIB</li> <li>• RFC 2068: HTTP</li> <li>• RFC 2131, 2132: DHCP</li> <li>• RFC 2236: IGMP v2</li> <li>• RFC 2817 Upgrading to TLS Within HTTP/1.1</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• RFC 2818 HTTP Over TLS</li> <li>• RFC 3376: IGMP v3</li> <li>• RFC 2474: DiffServ Precedence</li> <li>• RFC 3046: DHCP Relay Agent Information Option</li> <li>• RFC 3580: 802.1x RADIUS</li> <li>• RFC draft-ietf-opsawg-tacacs-09 -TACACS+</li> </ul> </td> </tr> </table> | <ul style="list-style-type: none"> <li>• RFC 768: UDP</li> <li>• RFC 783: TFTP</li> <li>• RFC 791: IPv4</li> <li>• RFC 792: ICMP</li> <li>• RFC 793: TCP</li> <li>• RFC 854: Telnet</li> <li>• RFC 959: FTP</li> <li>• RFC 1157: SNMP</li> <li>• RFC 1901,1902-1907<br/>SNMPv2</li> </ul>        | <ul style="list-style-type: none"> <li>• RFC 2273-2275: SNMPv3</li> <li>• RFC 2571: SNMP Management</li> <li>• RFC 1166: IP Addresses</li> <li>• RFC 1643: Ethernet Interface MIB</li> <li>• RFC 2068: HTTP</li> <li>• RFC 2131, 2132: DHCP</li> <li>• RFC 2236: IGMP v2</li> <li>• RFC 2817 Upgrading to TLS Within HTTP/1.1</li> </ul> | <ul style="list-style-type: none"> <li>• RFC 2818 HTTP Over TLS</li> <li>• RFC 3376: IGMP v3</li> <li>• RFC 2474: DiffServ Precedence</li> <li>• RFC 3046: DHCP Relay Agent Information Option</li> <li>• RFC 3580: 802.1x RADIUS</li> <li>• RFC draft-ietf-opsawg-tacacs-09 -TACACS+</li> </ul> |
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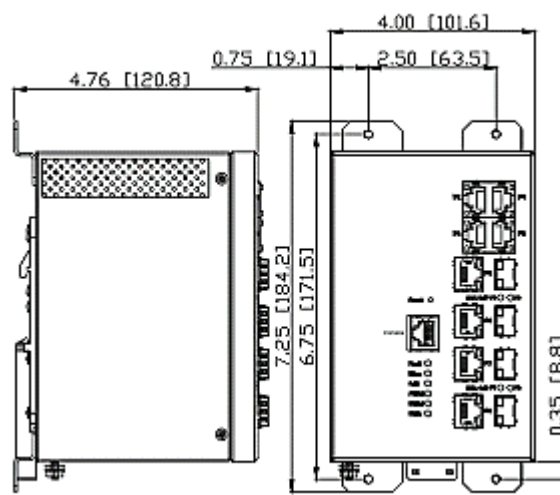


# Dimensions

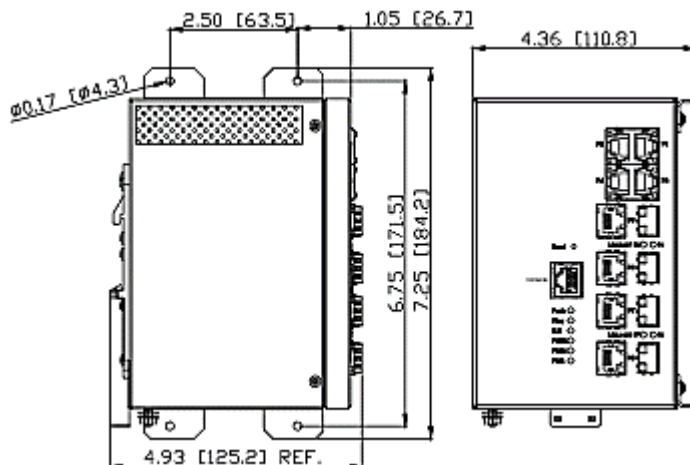
All dimensions are shown in inches.



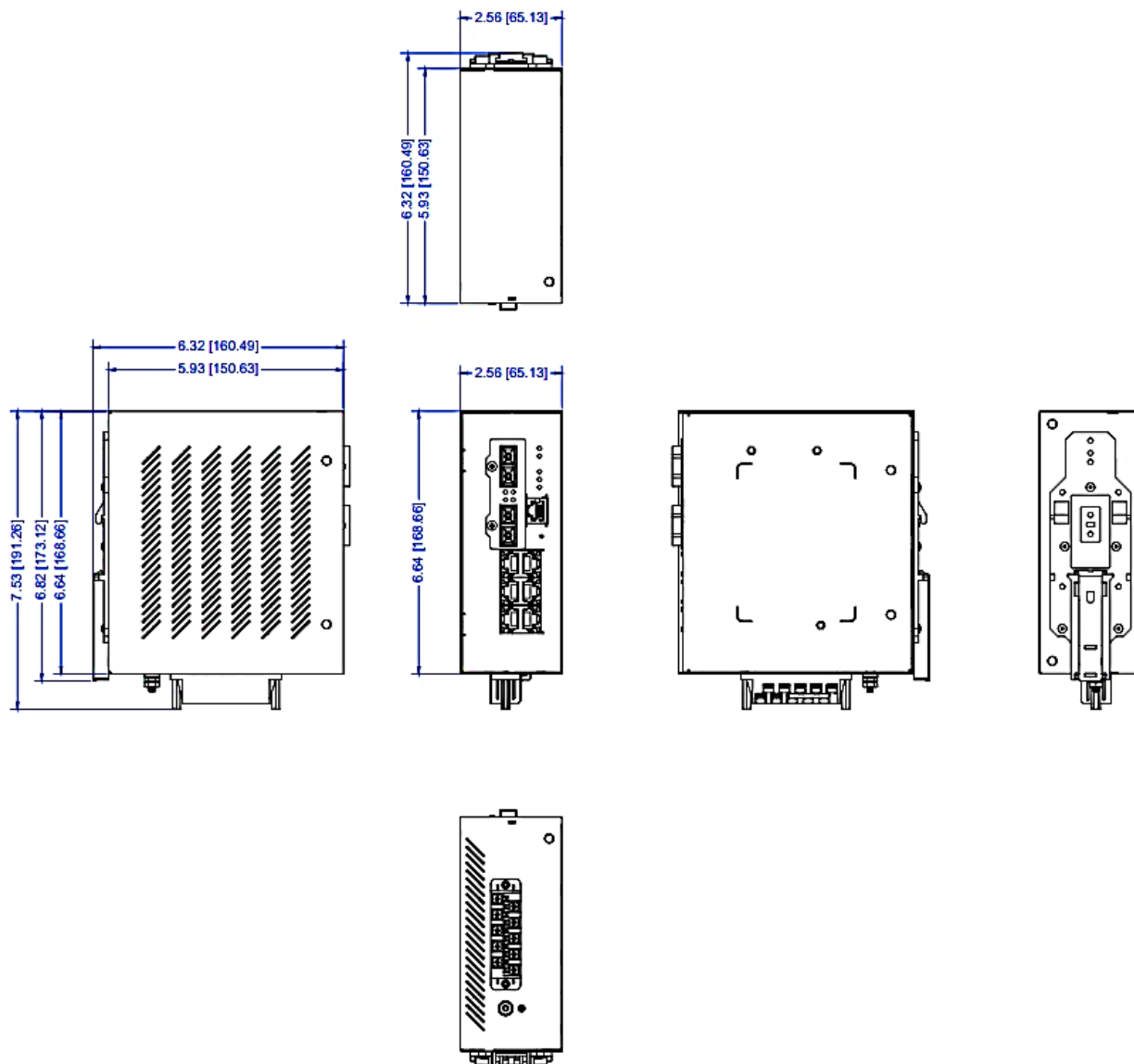
**iES8G with a DIN mount bracket**



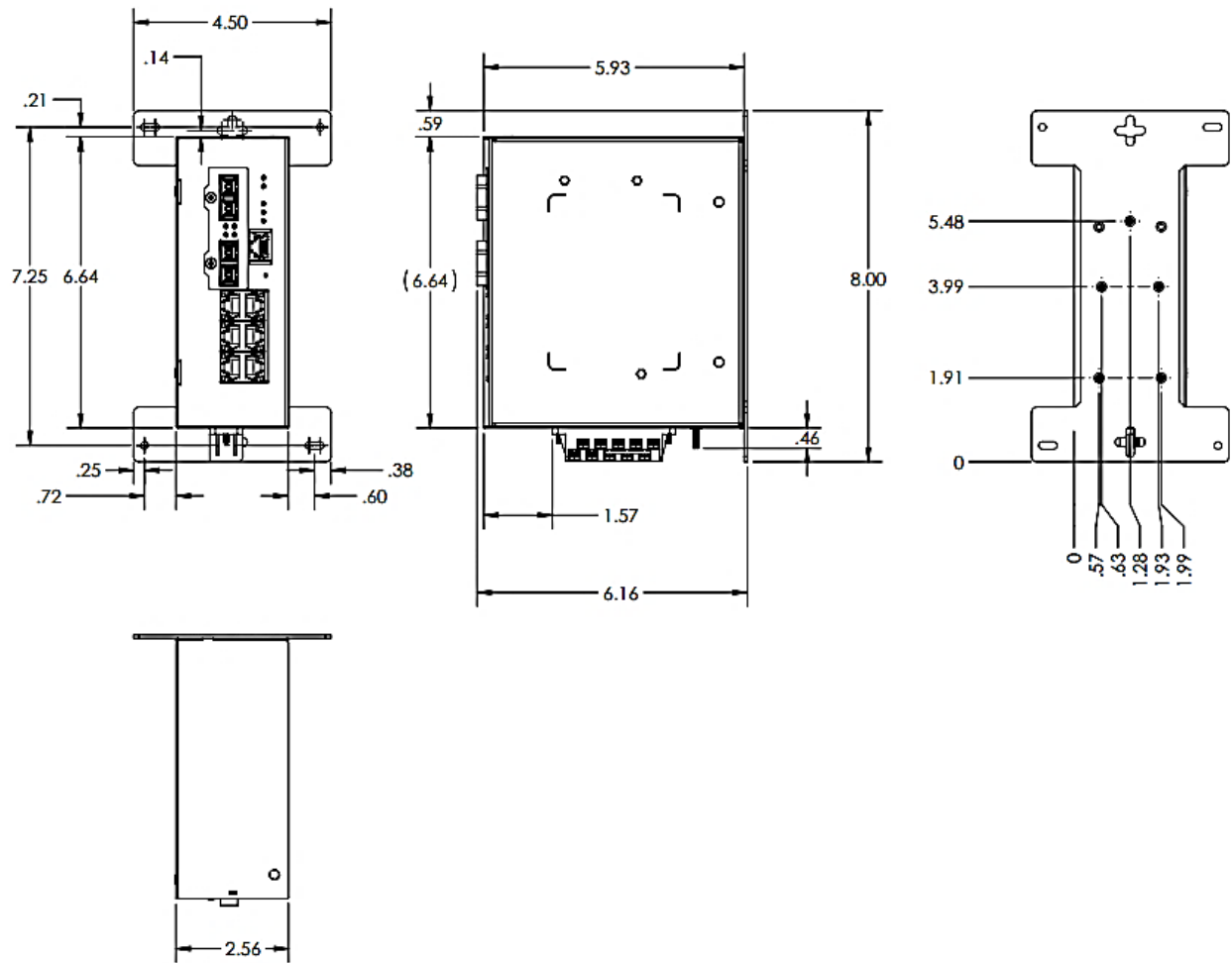
**iES8G with a panel mount bracket installed at rear**



**iES8G with a panel mount bracket installed at side**



**iES8G-S with a DIN mount bracket**



**iES8G-S with a panel mount bracket**





## Ordering Information

| Base    | Power Supply | Mount | Ethernet Port 1-4* | Ethernet Port 5 & 6 | Ethernet Port 7 & 8**** | Conformal Coating | Description  |
|---------|--------------|-------|--------------------|---------------------|-------------------------|-------------------|--|
| iES8G   | HV           | D     | 4GRJ45             | 2GSFP               | 2GSFP                   |                   |  |
| iES8G   |              |       |                    |                     |                         |                   | Core assembly and packaging                                      |
| iES8G-S |              |       |                    |                     |                         |                   | Slim Line Core assembly and packaging                            |
|         | LV           |       |                    |                     |                         |                   | Dual Input 10-48VDC  |
|         | MV           |       |                    |                     |                         |                   | Single Input 36-75VDC with Single 10-48VDC Backup                |
|         | HV           |       |                    |                     |                         |                   | Single Input 110-370VDC or 90-264VAC with Single 10-48VDC Backup |
|         |              | D     |                    |                     |                         |                   | DIN Rail Mounting  |
|         |              | P     |                    |                     |                         |                   | Panel Mounting   |
|         |              | N     |                    |                     |                         |                   | No Mounting Hardware   |
|         |              |       | 4GRJ45             |                     |                         |                   | 4 X 10/100/1000Base-T(X) RJ45                                    |
|         |              |       | 6RJ45              |                     |                         |                   | 6 X 10/100Base-T(X) RJ45   |
|         |              |       |                    |                     | XX                      |                   | None   |
|         |              |       |                    | 2GRJ45              | 2GRJ45                  |                   | 2 X 10/100/1000Base-T(X) RJ45                                    |
|         |              |       |                    | 2GSFP               | 2GSFP                   |                   | 2 X 100/1000Base-X SFP   |
|         |              |       |                    | 2GCX                | 2GCX                    |                   | Combo*** 2 X 10/100/1000Base-T(X) RJ45 and 2 X 100/1000Base-X    |
|         |              |       |                    |                     | 2GMMSC                  |                   | 2 X 1000SX Multimode SC, 850nm, 550m                             |
|         |              |       |                    |                     | 2GMMST                  |                   | 2 X 1000SX Multimode ST, 850nm, 550m                             |
|         |              |       |                    |                     | 2GSMSC10                |                   | 2 X 1000LX Singlemode SC, 1310nm, 10km                           |
|         |              |       |                    |                     | 2GSMST10                |                   | 2 X 1000LX Singlemode ST, 1310nm, 10km                           |
|         |              |       |                    |                     | 2GSMSC40                |                   | 2 X 1000LX Singlemode SC, 1310nm, 40km                           |
|         |              |       |                    |                     | 2GSMST40                |                   | 2 X 1000LX Singlemode ST, 1310nm, 40km                           |
|         |              |       |                    |                     | 2GSMSC70                |                   | 2 X 1000LX Singlemode SC, 1550nm, 70km                           |
|         |              |       |                    |                     | 2GSMST70                |                   | 2 X 1000LX Singlemode ST, 1550nm, 70km                           |
|         |              |       |                    |                     |                         | C1                | Conformal Coating  |

\*iES8G is available only with 4GRJ45, iES8G-S is available only with 6RJ45. Ports 5-6 are not available when selecting option 6RJ45 as used in iES8G-S.

\*\*\* Combo of the 2 ports is available (Combo 2GCX for ports 5-6 and 7-8), only one type can be used for ports 5-6 and 7-8.

\*\*\*\*iES8G offers RJ45 or SFP ports only (Ports 5-8); only iES8G-S offers an option of 1000SX/LX (SC/ST connectors) (for ports 7&8), and then 6RJ45 is used for ports 1-6.

**Example Order Code**    iES8G-HV-D-4GRJ45-2GSFP-2GSFP-iES20G-C1  
**Description:**

**8 Port Gigabit Ethernet Switch—(Power Supply) Dual Input 10-48VDC, (Mount) DIN Rail Mounting, (Ethernet Port 1-4) 4 X 10/100/1000Base-T(X) RJ45, (Ethernet Port 5&6) - 2 X 100/1000Base, (Ethernet Port 7&8) 2 X 100/1000Base-X, C1 - added for conformal coating.**