



Technical Specifications

This section provides the technical specification for the Cisco IE 2000U switches.

Operating Temperature Specifications

Table 15 on page 79 lists the operating temperatures for the Cisco IE 2000U switches.

Table 15 Operating Temperature for the Cisco IE 2000U Switches

	Substation
Enclosure types	Vented enclosures For example: NEMA1, IP20, and IP21.
Operating temperature ^{1 2}	-40 to 158°F (-40 to 70°C)

1. Operating temperature ranges provided are based on the stated NEMA standards. The switch is test verified for operation to -40°F/-40°C. There is no safety coverage outside of these parameters.

2. The IE-2000U-16TC-X model maximum ambient temperature is +65°C due to its conformal coating feature. The IE-2000U-16TC-GP model maximum ambient temperature is +65°C if powering four PoE+ ports of 30 Watt each.

Note: The safety certifications apply only to ambient temperatures under 140°F (60°C). However, the Cisco IE 2000U switch can function in the substation installations under the environmental conditions shown in Table 16 on page 79.

Technical Specifications

Table 16 on page 79 lists the technical specifications for the Cisco IE 2000U switches.

Table 16 Cisco IE 2000U Switch Technical Specifications

Environmental Ranges	
Operating temperature ¹	-40°C to +74°C <ul style="list-style-type: none"> ■ -40°C to +70°C (Vented Enclosure Operating) ■ -40°C to +60°C (Sealed Enclosure Operating) ■ -34°C to +74°C (100LFM or more Fan or Blower equipped Enclosure Operating) ■ -40°C to +85°C (Type Tested to +85°C for 16 hours) ²
Storage temperature	-58 to 185°F (-50 to 85°C)
Operating humidity	5 to 95% (noncondensing)
Operating shock	30 g at 11 ms
Operating altitude ³	Up to 6562 ft (2000 m)

Table 16 Cisco IE 2000U Switch Technical Specifications (continued)

Storage altitude	Up to 40,000 ft (12,192 m)
Power Requirements	
DC input voltage	<ul style="list-style-type: none"> ■ Maximum operating range: 9.6 to 60 VDC ■ Nominal: 12, 24, or 48 VDC <p>Notes:</p> <ul style="list-style-type: none"> ■ The DC-input power supply is an SELV circuit, and it can only be connected to another SELV circuit. ■ IE 2000U-16TC-GP may require an additional power input connection to power the PoE ports. This connection requires 48/54 VDC @ 2.5.A. <ul style="list-style-type: none"> – PoE mode: 48 VDC (nominal)/44-57 VDC (absolute range) – PoE+ mode: 54VDC (nominal)/50-57 VDC (absolute range)
Maximum DC input current	<ul style="list-style-type: none"> ■ 1 A @ 48 VDC ■ 2 A @ 24 VDC ■ 4 A @ 12 VDC <p>Note: Switch models with PoE capability require an additional power input connection to power the PoE ports. This connection requires 48/54 VDC @ 2.5 A.</p>
Power consumption	<ul style="list-style-type: none"> ■ 6-port models—10 W (typical), 13 W (maximum) <ul style="list-style-type: none"> – IE 2000U-4S-G – IE 2000U-4T-G – IE 2000U-4TS-G ■ 10-port models—14 W (typical), 18 W (maximum) <ul style="list-style-type: none"> – IE 2000U-8TC-G ■ 20-port models—18 W (typical), 23 W (maximum) <ul style="list-style-type: none"> – IE 2000U-16TC-G – IE 2000U-16TC-G-X – IE 2000U-16TC-GP <p>Note: Typical power consumption is with a 24 VDC input voltage at a 40° C (104° F) ambient temperature.</p> <p>Note: Maximum power consumption is the extreme level at any operational DC input voltage over the entire operating temperature range.</p>

Table 16 Cisco IE 2000U Switch Technical Specifications (continued)

Physical Dimensions	
Weight	<ul style="list-style-type: none"> ■ IE 2000U-4S-G: 2.45 lbs (1.11 kg) ■ IE 2000U-4T-G: 2.45 lbs (1.11 kg) ■ IE 2000U-4TS-G: 2.45 lbs (1.11 kg) ■ IE 2000U-8TC-G: 3.45 lbs (1.57 kg) ■ IE 2000U-16TC-G: 4.35 lbs (1.98 kg) ■ IE 2000U-16TC-G-X: 4.35 lbs (1.98 kg) ■ IE 2000U-16TC-GP: 4.35 lbs (1.98 kg)
Dimensions (H x W x D)	<p>For these 6-port models:</p> <ul style="list-style-type: none"> ■ IE 2000U-4S-G ■ IE 2000U-4T-G ■ IE 2000U-4TS-G <p>The dimensions are: 5.10 x 2.95 x 4.29 in. (13.0 cm x 7.5 cm x 10.9 cm)</p> <p>Note: Depth is the distance from the rail; the depth including the rail is 4.51 in. (11.5 cm).</p>
Dimensions (H x W x D)	<p>For this 10-port model:</p> <ul style="list-style-type: none"> ■ IE 2000U-8TC-G <p>The dimensions are: 5.1 x 3.6 x 5.04 in. (13.0 cm x 9.1 cm x 12.8 cm)</p> <p>Note: Depth is the distance from the rail; the depth including the rail is 5.26 in. (13.4 cm).</p>
Dimensions (H x W x D)	<p>For these 20-port models:</p> <ul style="list-style-type: none"> ■ IE 2000U-16TC-G ■ IE 2000U-16TC-G-X ■ IE 2000U-16TC-GP <p>The dimensions are: 5.1 x 5.0 x 5.04 in. (13.0 cm x 12.7 cm x 12.8 cm)</p> <p>Note: Depth is the distance from the rail; the depth including the rail is 5.26 in. (13.4 cm).</p>
Insulation Class	Class III

1. Operating temperatures exceeding 60°C are not covered by the product safety certifications and approvals. However, the switch can function in the installations under the environmental conditions listed.
2. The maximum operating temperature of the switch varies depending on the type of SFP module that you use.

3. Operating altitude: -200 ft (-60 m) to 10,000 ft (3,000m), de-rate maximum operating temperature per IEEE-1613-2009

Alarm Ratings

Table 17 on page 82 lists the alarm ratings for the Cisco IE 2000 switches.

Table 17 Alarm Input and Output Ratings

Alarm Ratings	Specification
Alarm input electrical specification	No power required—open or closed state detected
Alarm output electrical specification	1.0 A @ 24 VDC or 0.5 A @ 48 VDC

Hazardous Locations Standards

Table 18 on page 82 lists the hazardous location standards for the Cisco IE 2000U switches.

Table 18 Hazardous Locations Standards

Hazardous Locations	Standards
IECEx Test Report	IEC 60079-0 4th Edition IEC 60079-15 5th Edition
ATEX	EN 60079-0:2009 EN 60079-15:2010
North American divisions	ANSI/ISA 12.12.01-2011 CSA C22.2 No. 213-M1987
North American zones	UL 60079-0, 5th Ed, 2009-10-21 UL 60079-15, 3rd Ed, 2009-7-17 CAN/CSA E60079-15: 02