Tarea: Indique el MTBF, marca, modelo, y referencia de la información de dos componentes de red (routers, switches, servidores...), según sus especificaciones (0.3 ptos)\*.

**Router: Cisco 812 ISR Specifications**

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| Description | C812G+7-K9(3G only) | C812G-CIFI+7-E-K9C812G-CIFI+7-N-K9C812G-CIFI-V-A-K9C812G-CIFI-S-A-K9(3G + WiFi) |
| Physical Characteristics | | |
| Dimensions (H x W x D) | 2.01 x 8.95 x 9.49 inches (51 x 227x 241 mm) | |
| Weight | 3.96 lbs (1.8 kg) | |
| Maximum Power Consumption | 11 W | 18 W |
| Extended Shock-vibe | No | |
| IP41 (with DC adapter) | No | |
| Environmental Operating Ranges | | |
| Operating Temperature and Altitude | –32 to 104 °F (0 to 40 °C) | |
| Derate max operating temperature 1.5 °C per 1000 ft above 5000 ft | |
| 10,000 ft maximum except CCC[1](https://www.cisco.com/c/en/us/td/docs/routers/access/800/hardware/installation/guide/800HIG/appendix.html#pgfId-1034373) only up to 2000 meters. | |
| Humidity | Maximum 85% non-condensing RH | |
| Ingress Protection Rating | IP 20 per IEC 60529 | |
| Standard Safety Certifications | * UL 60950-1, 2nd edition * CAN/CSA C22.2 No. 60950-1, 2nd edition * EN 60950-1, 2nd edition * CB to IEC 60950-1, 2nd edition with all group differences and national deviations * AS/NZS 60950-1, Edition 1 (Australia and New Zealand) | |
| EMC Emissions | * EN55022/CISPR22 * CFR 47 Part 15 * ICES003 * VCCI-V-3 * AS/NZS CISPR22 * CNS13438 * CISPR22 * CNS13438 * EN300-386 * EN61000-3-2 * EN61000-3-3 * EN61000-6-1 | |
| EMC Immunity | * EN55024/CISPR24 (EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11) * EN300-386 | |
| Radio Immunity | EN301 489-1, EN 301 489-7, and EN301 489-24 | |
| Transportation/Storage Conditions | | |
| Temperature | –40 to158 °F (–40 to 70°C) | |
| Humidity | 5–95% | |
| Altitude | 4570 m (15,000 ft) | |
| AC Power Adapter | | |
| Power Source | 100–240 VAC | |
| In-ceiling Plenum | No | |
| IP41 | No | |
| Extended Shock-vibe | No | |
| Maximum Power Consumption | 25 W | |
| Maximum Output Power Rating | 20 W | |
| Operating Temperature | –13 to 140 °F (–25 to 60 °C) | |
| PoE+ Splitter | | |
| Power Source | PoE+ (IEEE802.3at Class 4) | |
| In-ceiling Plenum | Yes | |
| IP41 | No | |
| Extended Shock-vibe | No | |
| Maximum Power Consumption | 25 W | |
| Maximum Output Power Rating | 20 W | |
| Operating Temperature | –13 to 140 °F (–25 to 60 °C) | |
| Embedded WiFi Antenna | | |
| Frequency Range | — | 2.4–2.5 Ghz  4.9–5.875 Ghz |
| Peak Gain | — | 4 dBi (2.4 GHz)  6 dBi (5.875 Ghz) |
| Voltage Standing Wave Ratio | — | 2.5:1 maximum for all bands |
| Nominal Impedance | — | 50 ohms |

Switche : Catalyst 2960-X

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| Environmental Ranges | |
| Operating temperature  [1](https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b_c2960x_hig_appendix_0100.html" \l "fntarg_1) | 23 to 113°F (–5 to 45°C) up to 5,000 ft (1500 m)  23 to 104°F (–5 to 40°C) up to 10,000 ft (3000 m) |
| Storage temperature | –40 to 158°F (–40 to 70°C) up to 15,000 ft (4500 m) |
| Relative humidity | 10 to 95% (noncondensing) |
| Storage altitude | Up to 15,000 ft (4500 m) |

[1](https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b_c2960x_hig_appendix_0100.html" \l "fnsrc_1) Minimum ambient temperature for cold start is 32°F (0°C)

## Specifications for the Catalyst 2960-X Switches

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| Table 2 Catalyst 2960X-48FPD-L, 2960X-48LPD-L, 2960X-24PD-L, 2960X-48FPS-L, 2960X-48LPS-L, and 2960X-24PS-L Switch Specifications | |
| **Power Requirements** | |
| AC input voltage | 100 to 240 VAC (autoranging)   * 9 to 4 A, 50 to 60 Hz (Catalyst 2960X-48FPD-L) * 5 to 2 A, 50 to 60 Hz (Catalyst 2960X-48LPD-L) * 5 to 2 A, 50 to 60 Hz (Catalyst 2960X-24PD-L) * 9 to 4 A, 50 to 60 Hz (Catalyst 2960X-48FPS-L) * 5 to 2 A, 50 to 60 Hz (Catalyst 2960X-48LPS-L) * 5 to 2 A, 50 to 60 Hz (Catalyst 2960X-24PS-L) |
| DC input voltage for RPS 2300 | * +12 V @ 4 A, –53 V @ 15 A (Catalyst 2960X-48FPD-L) * +12 V @ 4 A, –53 V @ 8 A (Catalyst 2960X-48LPD-L) * +12 V @ 3A, –53 V @ 8 A (Catalyst 2960X-24PD-L) * 12 V @ 4 A, –53 V @ 15 A (Catalyst 2960X-48FPS-L) * +12 V @ 4 A, –53 V @ 8 A (Catalyst 2960X-48LPS-L) * +12 V @ 3 A, –53 V @ 8 A (Catalyst 2960X-24PS-L) |
| Power consumption | * 149 W, 508 BTUs per hour (Catalyst 2960X-48FPD-L) * 103 W, 351 BTUs per hour (Catalyst 2960X-48LPD-L) * 92 W, 313 BTUs per hour (Catalyst 2960X-24PD-L) * 149 W, 508 BTUs per hour (Catalyst 2960X-48FPS-L) * 102 W, 348 BTUs per hour (Catalyst 2960X-48LPS-L) * 90 W, 307 BTUs per hour (Catalyst 2960X-24PS-L) |
| Power rating | * 0.89 KVA (Catalyst 2960X-48FPD-L) * 0.48 KVA (Catalyst 2960X-48LPD-L) * 0.47 KVA (Catalyst 2960X-24PD-L) * 0.89 KVA (Catalyst 2960X-48FPS-L) * 0.49 KVA (Catalyst 2960X-48LPS-L) * 0.49 KVA (Catalyst 2960X-24PS-L) |
| **PoE+** | |
| * 30 W-per-port maximum, 740-W switch maximum  (Catalyst 2960X-48FPD-L and 2960X-48FPS-L switches) * 15.4 W-per-port maximum, 370-W switch maximum  (Catalyst 2960X-48LPD-L, 2960X-24PD-L, 2960X-48LPS-L, and 2960X-24PS-L switches) | |
| **Physical Dimensions** | |
| Weight | * 12.9 lb (5.8 kg) (Catalyst 2960X-48FPD-L) * 12.8 lb (5.8 kg) (Catalyst 2960X-48LPD-L) * 12.7 lb (5.8 kg) (Catalyst 2960X-24PD-L) * 13.2 (6.0 kg) (Catalyst 2960X-48FPS-L) * 12.9 lb (5.8 kg) (Catalyst 2960X-48LPS-L) * 12.8 lb (5.8 kg) (Catalyst 2960X-24PS-L) |
| Dimensions (H x D x W) | 1.75 x 14.50 x 17.5 in. (4.45 x 36.83 x 44.5 cm). Applies to all PoE switches. |

2 Power consumption values for the power consumed internally by the switch at 120 VAC 60 Hz.

3 Power rating values for the switch input power.

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| Table 3 Catalyst 2960X-48TD-L, 2960X-24TD-L, 2960X-48TS-L, 2960X-24TS-L, 2960X-48TS-LL, 2960X-F24TS-LL, Switch Specifications | |
| **Power Requirements** | |
| AC input voltage | 100 to 240 VAC (autoranging)   * 1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-48TD-L) * 1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-24TD-L) * 1 to 0.5, 50 to 60 Hz (Catalyst 2960X-48TS-L) * 1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-24TS-L) * 1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-48TS-LL) * 1 to 0.5 A,, 50 to 60 Hz (Catalyst 2960X-24TS-LL) |
| DC input voltage for  RPS 2300 | * +12 V @ 4 A, –53 V @ 8 A (Catalyst 2960X-48TD-L) * +12 V @ 3 A, (Catalyst 2960X-24TD-L) * +12 V @ 5 A, (Catalyst 2960X-48TS-L) * +12 V @ 4 A, (Catalyst 2960X-24TS-L) |
| Power consumption   [4](https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b_c2960x_hig_appendix_0100.html" \l "fntarg_4) | * 47 W, 161 BTUs per hour (Catalyst 2960X-48TD-L) * 32 W, 110 BTUs per hour (Catalyst 2960X-24TD-L) * 49 W, 168 BTUs per hour (Catalyst 2960X-48TS-L) * 37 W, 126 BTUs per hour (Catalyst 2960X-24TS-L) * 55 W, 187 BTUs per hour (Catalyst 2960X-48TS-LL) * 37 W, 126 BTUs per hour (Catalyst 2960X-24TS-LL) |
| Power rating[5](https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b_c2960x_hig_appendix_0100.html" \l "fntarg_5) | * 0.049 KVA (Catalyst 2960X-48TD-L) * 0.034 KVA (Catalyst 2960X-24TD-L) * 0.051 KVA (Catalyst 2960X-48TS-L) * 0.039 KVA (Catalyst 2960X-24TS-L) * 0.46 KVA (Catalyst 2960X-48TS-LL) * 0.035 KVA (Catalyst 2960X-24TS-LL) |
| **Physical Dimensions** | |
| Weight  Dimensions (H x D x W) | 9.6 lb (4.3 kg) Catalyst 2960X-48TD-L  8.9 lb (4.0 kg) Catalyst 2960X-24TD-L  9.4 lb (4.2 kg) Catalyst 2960X-48TS-L  8.9 lb (4.0 kg) Catalyst 2960X-24TS-L  8.9 lb (4.0 kg) Catalyst 2960X-48TS-LL  8.2 lb (3.7 kg) Catalyst 2960X-24TS-LL |
| 1.75 x 11 x 17.50 in. (4.45 x 27.94 x 44.5 cm) All non-PoE switches. |

References:

Routers: <https://www.cisco.com/c/en/us/td/docs/routers/access/800/hardware/installation/guide/800HIG/appendix.html#88259>

Switches: <https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b_c2960x_hig_appendix_0100.html>