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## MS390 Datasheet

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### Overview

The Meraki MS390 addresses the most demanding enterprise applications by combining the simplicity of the Meraki dashboard with powerful switching hardware. To satisfy high-bandwidth applications and the deployment of high-speed 802.11ax/wifi-6 access points, the MS390 provides multigigabit ports, 480G stacking, and modular 10/40G uplinks. The MS390 delivers resiliency with fast stack convergence and StackPower. The MS390 provides Adaptive Policy using an over-the-wire tag which segments traffic into security groups to deliver scalable security. The MS390 is integrated under the Meraki dashboard to provide a simply powerful solution to the most demanding wired access applications.

Adaptive Policy provides simple & scalable security policies to segment traffic using Security Groups. Security Groups are created in the dashboard using natural language such as “IOT device” & “Guest.” The security policy intent (e.g., Permit or Deny) is then simply provisioned between Security Groups which results in the segmentation of each group’s traffic. By making security policy management intuitive and scalable relative to legacy IP-address based Access Control Lists, Adaptive Policy empowers operators to confidently secure their network traffic independent of future network changes.

By pooling & distributing power across MS390s using a series of StackPower cables, StackPower provides simple and resilient power distribution across the stack.



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### Models

| Number of Ports | Model | Description |
|-----------------|-------|-------------|
|-----------------|-------|-------------|

|                 |                |                                                   |
|-----------------|----------------|---------------------------------------------------|
| <b>24 Ports</b> | MS390-24-HW    | 24-port GbE switch                                |
|                 | MS390-24P-HW   | 24-port GbE PoE+ switch                           |
|                 | MS390-24U-HW   | 24-port GbE UPoE/802.3bt switch                   |
|                 | MS390-24UX-HW  | 24-port mGbE UPoE/802.3bt switch                  |
| <b>48 Ports</b> | MS390-48-HW    | 48-port GbE switch                                |
|                 | MS390-48P-HW   | 48-port GbE PoE+ switch                           |
|                 | MS390-48U-HW   | 48-port GbE UPoE/802.3bt switch                   |
|                 | MS390-48UX-HW  | 36-port 2.5GbE + 12-port mGbE UPoE/802.3bt switch |
|                 | MS390-48UX2-HW | 48-port 5GbE UPoE/802.3bt switch                  |

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## Features

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### MS390 Licensing

MS390 license structure includes two feature tiers: Enterprise and Advanced. The MS390 also introduces a new and simpler license to hardware mapping, specifically 24-port or 48-port licenses. As with all MS, every MS390 license is available in 1, 3, 5, 7, and 10 year terms.

Meraki Support is unable to upgrade licensing from Enterprise to Advanced for the MS390 model. This upgrade must be purchased as a new license.

| <b>MS390 License Structure</b> | <b>24-Port Model</b> | <b>48-port Model</b> |
|--------------------------------|----------------------|----------------------|
| <b>Advanced Features</b>       | LIC-MS390-24A        | LIC-MS390-48A        |
| <b>Enterprise Features</b>     | LIC-MS390-24E        | LIC-MS390-48E        |

The features available with advanced licensing are:

- [Adaptive policy](#)
- [Netflow v10 \(IPFIX\) and Encrypted Traffic Analytics](#)

In the Co-term licensing model (most existing Organizations), an Organization must either have all MS390 Enterprise or

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all MS390 Advanced licenses - they cannot be mixed. In the Per-device licensing model, a mix of Enterprise and Advanced can be added to a single Organization, but certain features may require all devices in a Network to have Advanced licenses, e.g. Adaptive Policy.

**Note:** Catalyst 9300-M series existing in the same co-term Organization will require the *same* license edition (either Enterprise or Advanced) as the MS390. License types cannot be mixed and will result in an incompatible license error.

MS130, MS150, MS390, C9300 require the **same license tier** (either Enterprise or Advanced) across the entire Organization.

For more information on licensing, refer to [Meraki Licensing Models article](#).

[Subscription licensing](#) is also available for the MS390 switches.

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## Technical Breakdown

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### Interfaces Specifications

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| Model         | Interfaces                        | Uplink 10/<br>40GbE<br>(SFP+,<br>QSFP+) | 120G Hardware<br>Stack Port | Dedicated<br>Management<br>Interface | PoE/ UPoE<br>Capabilities |
|---------------|-----------------------------------|-----------------------------------------|-----------------------------|--------------------------------------|---------------------------|
| MS390-24-HW   | 24 x 1GbE RJ45                    | Modular                                 | 2                           | 1                                    | n/a                       |
| MS390-24P-HW  | 24 x 1GbE RJ45                    | Modular                                 | 2                           | 1                                    | PoE                       |
| MS390-24U-HW  | 24 x 1GbE RJ45                    | Modular                                 | 2                           | 1                                    | UPoE/<br>802.3bt          |
| MS390-24UX-HW | 24 x 100M/1G/2.5G/<br>5G/10G RJ45 | Modular                                 | 2                           | 1                                    | UPoE/<br>802.3bt          |
| MS390-48-HW   | 48 x 1GbE RJ45                    | Modular                                 | 2                           | 1                                    | n/a                       |
| MS390-48P-HW  | 48 x 1GbE RJ45                    | Modular                                 | 2                           | 1                                    | PoE                       |
| MS390-48U-HW  | 48 x 1GbE RJ45                    | Modular                                 | 2                           | 1                                    | UPoE/<br>802.3bt          |

|                       |                                                     |         |   |   |                  |
|-----------------------|-----------------------------------------------------|---------|---|---|------------------|
| <b>MS390-48UX-HW</b>  | 36 x 100M/1G/2.5G +<br>12 x 100M/1G/2.5G/<br>5G/10G | Modular | 2 | 1 | UPoE/<br>802.3bt |
| <b>MS390-48UX2-HW</b> | 48 x 100M/1G/2.5G/<br>5G                            | Modular | 2 | 1 | UPoE/<br>802.3bt |

All models are available with modular uplinks that have been listed under the [Accessories](#) list. For supported SFP modules please refer the [SFP Datasheet](#).

**Cabling Best Practices for Multi-Gigabit operations:** While Category-5e cables can support multigigabit data rates upto 2.5/5 Gbps, external factors such as noise, alien crosstalk coupled with longer cable/cable bundle lengths can impede reliable link operation. Noise can originate from cable bundling, RFI, cable movement, lightning, power surges and other transient event. It is recommended to use Category-6a cabling for reliable multigigabit operations as it mitigates alien crosstalk by design.

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## Physical Specifications

| Model               | Dimensions (h x<br>w x d)<br><br>W/ Default<br>Power Supply | Weight                | Mount<br>Type    | Hot Swap<br>Fans | Operating<br>Temperature | Humidity |
|---------------------|-------------------------------------------------------------|-----------------------|------------------|------------------|--------------------------|----------|
| <b>MS390-24-HW</b>  | 1.73" x 17.5"<br>x17.7"<br><br>(4.4 x 44.5 x<br>44.9cm)     | 16.03 lb<br>(7.27 kg) | 1U Rack<br>Mount | Yes, 3x          | -5°C to 45°C             | 5 to 90% |
| <b>MS390-24P-HW</b> | 1.73" x 17.5"<br>x17.7"<br><br>(4.4 x 44.5 x<br>44.9cm)     | 16.33 lb<br>(7.4 kg)  | 1U Rack<br>Mount | Yes, 3x          | -5°C to 45°C             | 5 to 90% |

|                       |                                                      |                       |                  |         |              |          |
|-----------------------|------------------------------------------------------|-----------------------|------------------|---------|--------------|----------|
| <b>MS390-24U-HW</b>   | 1.73" x 17.5" x<br>19.2"<br>(4.4 x 44.5 x<br>44.8cm) | 16.63 lb<br>(7.54 kg) | 1U Rack<br>Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| <b>MS390-24UX-HW</b>  | 1.73" x 17.5" x<br>20.2"<br>(4.4 x 44.5 x<br>51.3cm) | 18.18 lb<br>(8.25 kg) | 1U Rack<br>Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| <b>MS390-48-HW</b>    | 1.73" x 17.5"<br>x17.7"<br>(4.4 x 44.5 x<br>44.9cm)  | 16.43 lb<br>(7.45 kg) | 1U Rack<br>Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| <b>MS390-48P-HW</b>   | 1.73" x 17.5"<br>x17.7"<br>(4.4 x 44.5 x<br>44.9cm)  | 16.73 lb<br>(7.59 kg) | 1U Rack<br>Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| <b>MS390-48U-HW</b>   | 1.73" x 17.5" x<br>19.2"<br>(4.4 x 44.5 x<br>48.8cm) | 17.03 lb<br>(7.72 kg) | 1U Rack<br>Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| <b>MS390-48UX-HW</b>  | 1.73" x 17.5" x<br>22.2"<br>(4.4 x 44.5 x<br>56.4cm) | 20.50 lb<br>(9.34 kg) | 1U Rack<br>Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |
| <b>MS390-48UX2-HW</b> | 1.73" x 17.5" x<br>22.2"                             | 20.05 lb<br>(9.09 kg) | 1U Rack<br>Mount | Yes, 3x | -5°C to 45°C | 5 to 90% |

|  |                       |  |  |  |  |  |
|--|-----------------------|--|--|--|--|--|
|  | (4.4 x 44.5 x 56.4cm) |  |  |  |  |  |
|--|-----------------------|--|--|--|--|--|

## Performance

| Model                 | Switching Capacity | Stacking Bandwidth | Forwarding rate |
|-----------------------|--------------------|--------------------|-----------------|
| <b>MS390-24-HW</b>    | 208 Gbps           | 480 Gbps           | 154.76 Mpps     |
| <b>MS390-24P-HW</b>   | 208 Gbps           | 480 Gbps           | 154.76 Mpps     |
| <b>MS390-24U-HW</b>   | 208 Gbps           | 480 Gbps           | 154.76 Mpps     |
| <b>MS390-24UX-HW</b>  | 640 Gbps           | 480 Gbps           | 476.19 Mpps     |
| <b>MS390-48-HW</b>    | 256 Gbps           | 480 Gbps           | 190.48 Mpps     |
| <b>MS390-48P-HW</b>   | 256 Gbps           | 480 Gbps           | 190.48 Mpps     |
| <b>MS390-48U-HW</b>   | 256 Gbps           | 480 Gbps           | 190.48 Mpps     |
| <b>MS390-48UX-HW</b>  | 580 Gbps           | 480 Gbps           | 431.54 Mpps     |
| <b>MS390-48UX2-HW</b> | 640 Gbps           | 480 Gbps           | 476.19 Mpps     |

## Power Options and Specifications

| Model              | Default Power Supply | Hot Swap Power Supply | Available PoE W/ Primary PS | Max Available PoE W/ Secondary PS*** | Power Load (idle/ max) |
|--------------------|----------------------|-----------------------|-----------------------------|--------------------------------------|------------------------|
| <b>MS390-24-HW</b> | MA-PWR-350WAC**      | Yes, Dual             | n/a                         | n/a                                  | 79.2 / 99 W            |

|                       |                 |           |      |       |                 |
|-----------------------|-----------------|-----------|------|-------|-----------------|
| <b>MS390-24P-HW</b>   | MA-PWR-715WAC** | Yes, Dual | 445W | 720W  | 84.1 / 554.4 W  |
| <b>MS390-24U-HW</b>   | MA-PWR-1100WAC  | Yes, Dual | 830W | 1440W | 85.4 / 990.3 W  |
| <b>MS390-24UX-HW</b>  | MA-PWR-1100WAC  | Yes, Dual | 560W | 1440W | 162.7 / 809.9 W |
| <b>MS390-48-HW</b>    | MA-PWR-350WAC** | Yes, Dual | n/a  | n/a   | 83.9 / 109.9 W  |
| <b>MS390-48P-HW</b>   | MA-PWR-715WAC** | Yes, Dual | 437W | 1152W | 92.6 / 555 W    |
| <b>MS390-48U-HW</b>   | MA-PWR-1100WAC  | Yes, Dual | 822W | 1800W | 145 / 844.9 W   |
| <b>MS390-48UX-HW</b>  | MA-PWR-1100WAC  | Yes, Dual | 490W | 1590W | 218.5 / 785.5 W |
| <b>MS390-48UX2-HW</b> | MA-PWR-1100WAC  | Yes, Dual | 645W | 1745W | 157.9 / 843.8 W |

\*\* Upgrade options to 715W and 1100W PSU are available.

\*\*\* The PoE values are provided considering the secondary PS to be the default power supply of the respective model.

Note: For Japan, the recommendation is to deploy the switch with 200V+ outlets. The 1100WAC power supply will not operate on 100V. Please reference [Table 13. AC Power Cords](#) for the appropriate 250VAC power cable.

## PSU configuration and PoE budgets

| Model              | Primary PSU                        | PoE               | With 350W<br>Secondary PSU | With 715W<br>Secondary PSU | With 1100W<br>Secondary PSU |
|--------------------|------------------------------------|-------------------|----------------------------|----------------------------|-----------------------------|
| <b>MS390-24P</b>   | MA-PWR-715WAC                      | 445W              | 720W <sup>2</sup>          | 720W <sup>2</sup>          | 720W <sup>2</sup>           |
|                    | <b>MA-PWR-1100WAC</b> <sup>1</sup> | 720W <sup>2</sup> | 720W <sup>2</sup>          | 720W <sup>2</sup>          | 720W <sup>2</sup>           |
| <b>MS390-24U</b>   | MA-PWR-1100WAC                     | 830W              | 1180W <sup>2</sup>         | 1440W <sup>2</sup>         | 1440W <sup>2</sup>          |
| <b>MS390-24UX</b>  | MA-PWR-1100WAC                     | 560W              | 910W                       | 1275W                      | 1440W <sup>2</sup>          |
| <b>MS390-48P</b>   | MA-PWR-715WAC                      | 437W              | 787W                       | 1152W                      | 1440W <sup>2</sup>          |
|                    | <b>MA-PWR-1100WAC</b> <sup>1</sup> | 822W              | 1172W                      | 1440W <sup>2</sup>         | 1440W <sup>2</sup>          |
| <b>MS390-48U</b>   | MA-PWR-1100WAC                     | 822W              | 1172W                      | 1537W                      | 1800W <sup>3</sup>          |
| <b>MS390-48UX</b>  | MA-PWR-1100WAC                     | 490W              | 840W                       | 1205W                      | 1590W                       |
| <b>MS390-48UX2</b> | MA-PWR-1100WAC                     | 645W              | 995W                       | 1360W                      | 1745W                       |

<sup>1</sup> Using upgraded power supply option.

<sup>2</sup> Limited by port density and per-port PoE capacity.

<sup>3</sup> Limited by design.

## What's included

| Model               | Package Contents                                                                                         |
|---------------------|----------------------------------------------------------------------------------------------------------|
| <b>MS390-24-HW</b>  | 1 x Power Supply (MA-PWR-350WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide |
| <b>MS390-24P-HW</b> | 1 x Power Supply (MA-PWR-715WAC), Rack mount brackets and screw kit, 3 x Pre-Installed                   |

|                       |                                                                                                           |
|-----------------------|-----------------------------------------------------------------------------------------------------------|
|                       | Fans, Cable guide                                                                                         |
| <b>MS390-24U-HW</b>   | 1 x Power Supply (MA-PWR-1100WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide |
| <b>MS390-24UX-HW</b>  | 1 x Power Supply (MA-PWR-1100WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide |
| <b>MS390-48-HW</b>    | 1 x Power Supply (MA-PWR-350WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide  |
| <b>MS390-48P-HW</b>   | 1 x Power Supply (MA-PWR-715WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide  |
| <b>MS390-48U-HW</b>   | 1 x Power Supply (MA-PWR-1100WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide |
| <b>MS390-48UX-HW</b>  | 1 x Power Supply (MA-PWR-1100WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide |
| <b>MS390-48UX2-HW</b> | 1 x Power Supply (MA-PWR-1100WAC), Rack mount brackets and screw kit, 3 x Pre-Installed Fans, Cable guide |

## Optional Accessories

| Accessory               | Description                           | Supported Models         |
|-------------------------|---------------------------------------|--------------------------|
| <b>MA-PWR-350WAC</b>    | 350W AC Power Supply                  | MS390-24-HW, MS390-48-HW |
| <b>MA-PWR-715WAC</b>    | 715W AC Power Supply                  | All Models               |
| <b>MA-PWR-1100WAC</b>   | 1100W AC Power Supply                 | All Models               |
| <b>MA-MOD-2X40G</b>     | 2 x 40G Uplink Module                 | All Models               |
| <b>MA-MOD-4X10G *</b>   | 4 x 10G Uplink Module                 | All Models               |
| <b>MA-MOD-8X10G</b>     | 8 x 10G Uplink Module                 | All Models               |
| <b>MA-CBL-120G-50CM</b> | Meraki 120G Stacking Cable, 0.5 Meter | All Models               |
| <b>MA-CBL-120G-1M</b>   | Meraki 120G Stacking Cable, 1 Meter   | All Models               |
| <b>MA-CBL-120G-3M</b>   | Meraki 120G Stacking Cable, 3 Meter   | All Models               |

|                          |                                     |            |
|--------------------------|-------------------------------------|------------|
| <b>MA-CBL-SPWR-30CM</b>  | Meraki MS390 30CM StackPower Cable  | All Models |
| <b>MA-CBL-SPWR-150CM</b> | Meraki MS390 150CM StackPower Cable | All Models |
| <b>MA-FAN-16K2</b>       | System Fan                          | All Models |
| <b>MA-RCKMNT</b>         | Meraki MS390 Rack Mount Kit         | All Models |

\* **MA-MOD-4X10G** reached end-of-sale on November 1, 2021. Please refer to its [end-of-sale announcement](#) for further details.

## Regulations and Compliance

|                                                     |                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Electromagnetic Compatibility Certifications</b> | FCC Part 15 (CFR 47) Class A, ICES-003 Class A, CISPR22 Class A, CNS13438, EN 300 386 V1.6.1, EN 55022 Class A, EN 61000-3-2, EN61000-3-3, KN 32, TCVN 7189 Class A, EN 55032, CISPR 32 Class A, V-2/2015.04, V-3/2015.04, VCCI-CISPR 32 Class A, CISPR24, EN 300 386 V1.6.1, EN 55024, KN35, TCVN 7317 |
| <b>Safety</b>                                       | CAN/CSA-C22.2 No. 60950-1, UL 60950-1, EN 60950-1, IEC 60950-1, AS/NZS 60950.1                                                                                                                                                                                                                          |
| <b>Environmental</b>                                | Reduction of Hazardous Substances (RoHS)                                                                                                                                                                                                                                                                |
| <b>Warranty</b>                                     | Full lifetime hardware warranty with next-day advanced replacement included                                                                                                                                                                                                                             |

## MTBF Rating

| Model               | MTBF at 25°C |
|---------------------|--------------|
| <b>MS390-24-HW</b>  | 314,790      |
| <b>MS390-24P-HW</b> | 299,000      |
| <b>MS390-24U-HW</b> | 238,410      |

|                       |         |
|-----------------------|---------|
| <b>MS390-24UX-HW</b>  | 214,760 |
| <b>MS390-48-HW</b>    | 305,870 |
| <b>MS390-48P-HW</b>   | 277,770 |
| <b>MS390-48U-HW</b>   | 227,410 |
| <b>MS390-48UX-HW</b>  | 202,160 |
| <b>MS390-48UX2-HW</b> | 198,647 |

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## Installation Guide

For instructions on how to install and configure the MS390 series switch please refer the [MS390 Series Installation Guide](#)