

## MT SENSORS FAQ

# MT40 Smart Power Controller



## The basics

### What is MT40?

MT40 is a Bluetooth® Low Energy-connected, in-line AC wall-powered smart power controller. It is connected upstream of the device it is monitoring, in line with its power supply.

### How does MT40 connect to the dashboard?

Like the rest of the MT family, MT40 uses a compatible MR or MV device as a gateway to wirelessly connect to the dashboard using Bluetooth Low Energy.

### What does MT40 do?

It allows users to monitor power metrics and remotely manage power to the device being monitored.

### What does MT40 measure?

MT40 monitors several power metrics and provides measurements for:

- Voltage, measured in volts (V)
- Current, measured in amps (A)
- Apparent power, measured in volt-ampere (VA)
- Real power, measured in watts (W)
- AC frequency, measured in Hertz (Hz)
- Power factor, a measure of energy efficiency as a percentage (%)
- Energy, measured as kilowatt hours (kWh)

# More basics and opportunities

## What can MT40 alert on?

MT40 can alert when a power metric exceeds or drops below a threshold, when a power metric has deviated from the average value, or when a power outage is detected.

## What can customers use MT40 for?

MT40 can be used for a variety of applications. Common use cases are:

- **Alerting on anomalous power readings** to prevent downtime, as irregular power usage can be a sign of improper device configuration or impending failure
- **Remotely rebooting devices** to help with troubleshooting, eliminating the need to travel to the site or having to rely on non-technical employees to locate and reboot the device in question
- **Identifying power outages** and enabling a more efficient response to reduce downtime/impact
- **Monitoring, evaluating, and optimizing energy costs across devices** by benchmarking energy consumption and measuring the effect of different initiatives to reduce energy consumption; MT40 can also be used to turn off devices when they are not needed to save on energy usage

## What does an opportunity look like?

Look for customers who need to manage electrical equipment that is spread across a distributed deployment. It is especially appealing to customers who want to manage power in smaller deployments, where deploying full power distribution units (PDUs) isn't economically feasible. Look for non-rack IT deployments, typically found in small business and retail, including quick-service restaurants and education.

## Who else is a target customer?

Mid-sized businesses, like manufacturing or healthcare, with small rack or cabinet installations may also be a good fit. Larger enterprise organizations with medium to large racks or cabinets may be interested in MT40 to connect upstream of an existing "dumb" PDU.

# Opportunities, continued

## Should I position MT40 with other MT sensors?

Yes! MT40 can be positioned with MT10, MT12, and MT20 as part of a network closet monitoring and sustainability package. MT10, MT12, and MT20 monitor physical environments to alert on potential issues that could cause downtime. MT40 can also alert on anomalous power usage, power outages, and benchmark energy consumption to quantify energy savings for sustainability initiatives.

## Can I position MT40 with other products?

Yes! MT40 can be used together with other Meraki and Cisco equipment such as MS, MX, and Catalyst switches, Catalyst servers, and other networking devices managed by IT teams. MT40 can be used to monitor the power consumption of those devices and power cycle them, should troubleshooting be required.

## What about non-network closet use cases?

MT40 can be used to monitor and control power to a wide variety of devices, including point of sale systems, audio/video equipment, printers, lighting, low power HVAC equipment and fans, refrigerators, and more. MT40 allows organizations to monitor energy usage, remotely turn off power to reduce energy when not in use, and remotely reboot devices for troubleshooting.

# Technical questions

## How often does MT40 sample data?

MT40 samples data every 15 seconds for each power metric that it monitors.

## How often is data sent to the dashboard?

MT40 sends data to the dashboard every 20 minutes, or immediately upon alert threshold violation.

## How does MT40 detect and alert on power outages?

MT40 sends a check-in signal every 30 seconds as an indicator that it is online. If it loses power, the dashboard will wait for three missed check-in signals before sending an alert that MT40 is offline, possibly due to a power outage.

## What happens if MT40 goes offline? Does the device it's connected to lose power?

If MT40 goes offline, it retains the power state that was sent to it in its most recent command. For example, if MT40 is set to turn power on and it later goes offline, MT40 will keep the power status on.

## How long can MT40 store data if it is offline?

MT40 will continue to collect and store power data for up to 3.5 hours (900 samples for each metric, at a 15-second sample period). If MT40 is offline for longer than 3.5 hours, it will overwrite the oldest data. When it comes back online, it will upload all stored data to the dashboard.

## What is a power cycle command?

Power cycling is the act of turning an electrical device off, waiting for a period of time, and then turning it back on. It is often used when troubleshooting a device that has gone into a bad state by forcing a reboot.

## How does power cycling work with MT40?

When a power command is sent, it will turn power off, wait ten seconds, and then turn power back on. The ten-second wait period is not configurable.

## Can power data be exported from MT40?

Yes, admins can export power data from the dashboard as a .csv or .xls file. Data can also be accessed via MQTT.

# Technical questions, continued

## What are the power ratings for MT40?

MT40 is rated for up to 250V and up to 12 A. MT40 is downrated to 12 A from 15 A due to National Fire Protection Agency (NFPA) National Electrical Code (NEC) rules that require electrical devices be rated at 80% of their maximum capacity. This means that we have tested the MT40 and it is safe for up to 15 A, but NFPA requires us to rate it at 12 A. All devices in the market are subject to the same rules.

## Which type of ports does MT40 have?

On the input side, MT40 has an IEC C14 receptacle. It will accept both IEC C13 and IEC C15 plugs. On the output side, MT40 has an IEC C13 receptacle. It will accept IEC C14 plugs.



## What security features does MT40 have?

Like the rest of the MT portfolio, MT40 has a Cisco Trust Anchor module (Tam), which provides a secure unique device identity (SUID). This allows MT40 to securely authenticate as a trusted device and prevents untrusted devices from communicating with the dashboard.

MT40 uses firmware image signing, which allows only firmware that has a signed Cisco certificate to run on its system.

MT40 assigns a unique identifier to each power command, preventing spoofing of power commands by malicious actors.

Lastly, MT40 has a physical remote lockout switch on the device. When the switch is in the locked position, MT40 will ignore any power commands from the dashboard and downstream power will remain on.

## What is the remote lockout switch for?

The remote lockout switch allows customers to prevent power commands from the dashboard from affecting MT40. It can protect against accidental commands when MT40 is monitoring power on a critical piece of infrastructure that needs to remain online at all times.

By default, the switch is set to “unlocked” out of the box.

# Technical questions, continued

## Does MT40 have any certifications?

Yes, MT40 has the following certifications:

- UL 60950-1 Information Technology Equipment – Part 1: Safety
- UL 62368-1 Audio/Video, Information and Communication Technology Equipment – Part 1: Safety

## Can MT40 be used with a PDU or power strip?

Yes, MT40 can be connected in-line with PDUs or power strips. Keep in mind that if a customer turns off the power on a power strip or PDU, it will override the power on/off state for MT40.

## Can MT40 be used with a UPS?

MT40 can be connected in-line with an uninterruptible power supply (UPS). In this type of deployment, it is recommended that MT40 is connected downstream of the UPS so that the UPS can protect MT40 against power surges.

## Can MT40 be used with a device that has multiple power supplies?

Yes, MT40 can be used with devices that have up to two redundant power supplies. In this deployment scenario, one MT40 is used with each power supply, and the customer can “link” them together in the dashboard such that power commands are sent to both MT40s simultaneously. This allows any “turn on,” “turn off,” or power cycle commands to be executed appropriately.

## Does MT40 have surge protection?

No, MT40 does not offer surge protection. If a customer wants surge protection while using MT40, they should have a UPS or surge protector in-line with MT40.

## How accurate are MT40 readings?

MT40 readings are accurate to +/- 1% for all metrics.

## How long is MT40 data stored in the dashboard?

The dashboard stores MT40 data for two years, however only one year of data can be viewed at a time.

# Availability and ordering information

## When will MT40 be available?

MT40 will be available in May 2023, with a list price of \$399 USD.

### Hardware:

- MT40-HW: smart power monitor and controller

### License:

- LIC-MT-xY: Enterprise license for MT (x=1,3,5, or 7 years)

### Accessories:

- MA-PWR-CORD-xx: power cord for input power (xx= US, EU, UK, or AU)
- MA-PWR-C14-C15-1: power cord for output side\*

\*Works with Cisco, Meraki, and other devices that accept IEC C13 or C15 as a power input.

## What's in the box?

MT40 includes:

- Quick install guide with serial number stickers
- Mounting bracket, screws, and drywall anchors
- Zip ties for rack mounting
- Cable management Velcro straps
- IEC C13 and C14 retention sleeves



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