Mobile Access Portal Gateway Product Bulletin

TL-MAP1810-0Px, TL-MAP1810-0Sx

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Software Release 4.0
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Refer to the QuickLIT website for the most up-to-date version of this document.

The Mobile Access Portal (MAP) Gateway is a pocket-sized web server that provides a wireless mobile user interface to Smart Equipment and Johnson Controls branded system controllers and thermostats. Small, lightweight, and easy to use, the MAP Gateway joins the rapidly expanding list of Johnson Controls® products that leverage the power of mobility and smart devices to improve daily operations.

The MAP Gateway can be used to see field bus devices on *Metasys*® systems, Facility Explorer systems, and Smart Equipment rooftop units (RTUs) with unit control boards (UCBs). The MAP Gateway supports Johnson Controls branded Field Controllers, including FEC, FAC, VMA, PCA, PCG, and PCV Series devices. It also supports the TEC3000 Series Thermostats.

Offering many-to-one, multi-client connectivity, the MAP Gateway gives you access to any Smart Equipment device that is on a connected BACnet® Master-Slave/Token-Passing (MS/TP) field bus. The MAP Gateway solution is conveniently sized and has a built-in wireless access point. The MAP Gateway provides an intuitive, browser-based user interface to access advanced features like alarms and point configuration.

The MAP Gateway **cannot** be used on Smoke Control systems or at Metasys for Validated Environment (MVE) sites.

The wireless connection on the MAP Gateway allows users to be up to 31 m (100 ft, line of sight) away indoors and up to 91 m (300 ft, line of sight) away outdoors while using a supported mobile device. The MAP Gateway may be used as a portable device that can be moved from site to site, or as a stationary device attached to a controller and mounted where needed, depending on the needs and workflow of field personnel. During use, the MAP Gateway is plugged into an SA bus or FC bus.

Figure 1: Mobile Access Portal Gateway

Features and Benefits

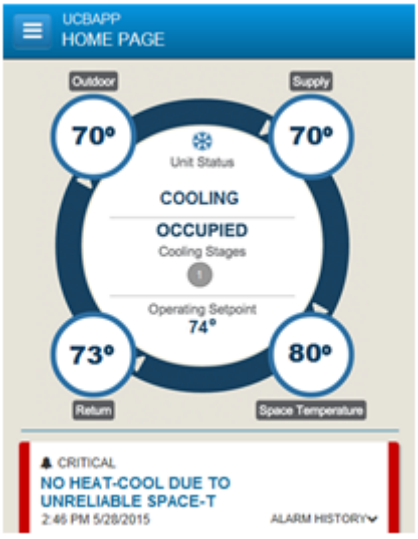
Features	Benefits
Multi-client Connectivity	Provides access to all identifiable devices connected to the BACnet® MS/TP trunk.
Browser-based Interface	Offers a local display replacement solution that allows you to access device information through any supported web browser.
Wi-Fi Connectivity	Lets you commission, configure, and access building automation equipment using Wi-Fi-enabled smart devices or laptops.
Advanced Features	Allow you to view alarms, events, and trends; modify schedules; and commission devices.
Browser-based Remote Building Management	Allows remote management of building systems.
Permanent Audit Log	Allows you to export and view a log file to review all user logins and transactions, along with logging any events generated from the controllers.
Portable Size and Mobility	Allows for options to permanently mount or carry the unit from site to site.

Features	Benefits
Configurable Home Pages for Devices	Allows you to customize your work processes using the Display Object in the Controller Tool.
Easy-to-use Intuitive User Interface	Uses color coded bars on point listings to enable you to quickly get the most important statuses from a long list of points.

MAP Gateway User Interface

The MAP Gateway provides a wireless, intuitive user interface optimized for mobile use. The Circle of Comfort provides at-a-glance status of a supported device on that device's home screen. *Figure 2* shows the Circle of Comfort on a Smart Equipment Unit Control Board (UCB) Controller. In addition to the Circle of Comfort, critical alarms are displayed so they can be selected and acted upon.

Figure 2: Circle of Comfort



The MAP Gateway user interface scales to the device you are using. On a computer screen or tablet, the main menus and screens are side by side. On a phone display, you see either the menu (*Figure 3*) or the screens you selected from that menu, for example, the TEC3000 Home Screen (*Figure 4*). When you view the UI on a phone or smaller tablet, you can drag the screen from the left or right to display the menu or screens as desired.

Figure 3: TEC3000 Menu

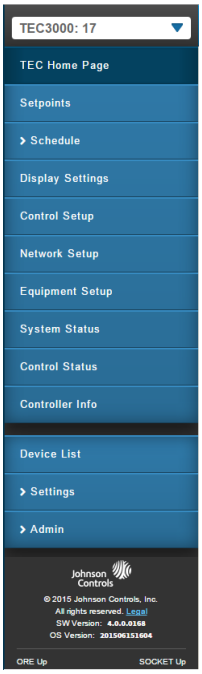
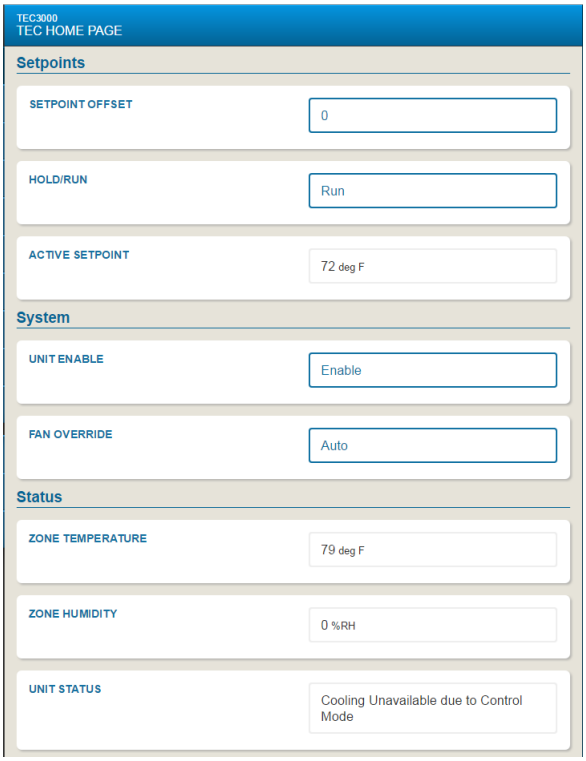


Figure 4: TEC3000 Home Screen



Installation

You can install and use the MAP Gateway as a portable device or as a stationary device. As a portable device, the MAP Gateway requires minimal installation and wiring. You can house the unit in the supplied silicone shell or hang the unit on nearby equipment using the lanyard.

To use the MAP Gateway, you connect the unit to a Sensor Actuator (SA) port or Field Controller (FC) port using a field bus adapter. Power is supplied through the Sensor/Actuator (SA) bus, Field Controller (FC) bus, or through the included AC power supply.

To install the MAP Gateway as a stationary device, you mount the unit on a DIN rail or on a flat wall surface. The MAP Gateway mounting bracket is designed so that the unit may be mounted flush or on the side. The stationary version is permanently mounted in a mounting bracket that may be clipped on to a DIN rail or attached with screws to a stable, flat surface.

Note: When you use the MAP Gateway as a stationary device on Ethernet, you must plug it into external power **before** you attach the field bus adapter.

Repair Information

If the MAP Gateway fails to operate within its specifications, replace it. For a replacement unit or accessories, contact the nearest Johnson Controls representative.

Frequently Asked Questions

About MAP Gateway

Q - Does the MAP Gateway have its own touch screen display?

A - No, the MAP Gateway delivers the local display content to a mobile device over its built-in Wi-Fi access point or Ethernet connection.

Q - How many users can the MAP Gateway support?

A - Up to three simultaneous users.

Q - Do I need to be concerned about security?

A - Yes, always, but the MAP Gateway helps you manage security risks using the following security standards:

- WPA 2 security on the integral MAP Gateway Wi-Fi AP
- An SSL certificate is installed in the MAP Gateway to ensure secure communications by default. However, this certificate does not display as a trusted website. You can install a custom certificate in the MAP Gateway and the device you use to view the MAP Gateway user interface to identify the MAP Gateway as a trusted website.
- An Audit log text file is permanently maintained in the MAP Gateway. You can export and view this log file to review all user logins and transactions, along with logging any events generated from the controllers.

Refer to the *Mobile Access Portal Gateway Network and IT Guidance Technical Bulletin (LIT-12012015)* for more information.

Operation

Q - Do I need to install an application on my mobile device to use the MAP Gateway?

A - No, the MAP Gateway has a built-in web server that provides web pages that can be viewed from your Internet browser.

Q - Does the MAP Gateway work with my iPhone or Android device?

A - Yes, the MAP Gateway supports any device with a supported web browser. The browsers must support HTML 5 and include Apple® Safari® on iPhones and Google® Chrome™ on Android™ devices.

Q - How do I get started?

A - The single page *Mobile Access Gateway Portal Quick Start Guide (Part No. 24-10737-16)* ships with the MAP Gateway. In just a few easy steps, you can be connected to a single device or to an entire network of connected equipment.

Q - Where do I plug in the MAP Gateway?

A - The MAP Gateway ships with a 6 pin phone cord that plugs into any one of three locations:

- Sensor Actuator Bus (SAB) on the Smart Equipment control board
- Bottom SAB jack or any NS series sensor
- Field Controller Bus (FCB) of the Smart Equipment control board

Q - Can I leave the MAP Gateway plugged in overnight?

A - Yes.

Q - Can I access all equipment with the MAP Gateway from a single location?

A - Yes, the MAP Gateway can access ALL equipment on a Field Bus trunk/network from any of the three MAP Gateway connection points - SAB, Sensor, or FCB. The MAP Gateway supports all Johnson Controls devices on wired or wireless (ZFR) field busses. Third-party BACnet devices are discovered and appear on the device list, but they are not supported at this time.

Q - Can I access the Internet when I am using the MAP Gateway?

A - Since the MAP Gateway is used as a local Wi-Fi hot spot, your mobile device cannot access Internet data when connected to the MAP Gateway through a wireless network. If connected through an Ethernet connection, this restriction does not apply.

Q - Can I make or receive phone calls on my mobile device when I am using the MAP Gateway?

A - Yes, the cellular voice capabilities on your mobile device are independent of your data.

Q - Do I have to do anything to change the language presented on my personal device?

A - The MAP Gateway presents its user interface based on the browser settings of your personal device, including language. For example, if your device's browser uses German as the primary language, The MAP Gateway presents all the menus and navigation options in the German language.

Troubleshooting

Q - What if I forget my password?

A - Each MAP Gateway ships with a unique default password and Wi-Fi passphrase. For directions on how to restore factory-default settings and log into your MAP Gateway, refer to the *Mobile Access Gateway Portal Quick Start Guide (Part No. 24-10737-16)* and the *Mobile Access Gateway Portal Installation Instructions (Part No. 24-10737-8)*.

Q - Why isn't the Ethernet port enabled even though I am connected to an SA or FC bus?

A - The Ethernet port on the MAP Gateway requires an external power supply. You must connect the power supply **before** the MAP Gateway begins the boot sequence. If the MAP Gateway is powered through the SA or FC Bus before you connect the external power supply, the Ethernet port is not enabled. In this case, you must start over and connect the external power supply to the MAP Gateway before beginning the boot sequence.

Q - I seem to be stuck in an infinite loop. Every time I install the SSL certificate on my device, it asks me to re-install it. What should I do?

A1 - Verify that the time on your client device is correct. If the device time is not current (for example, after a hard reset), close the browser, set the time, and then try to install the certificate.

A2 - Check your web browser settings and verify that cookies are enabled.

Q - After I install the security certificate, I receive a **too many clients** connection message. What should I do?

A - Wait 30 - 60 seconds after you install a certificate and then refresh the page. When the certificate is installed, it opens an additional connection which counts against the maximum number of users that are allowed to connect to the MAP Gateway. This connection is closed after the certificate is installed and disappears within 30 - 60 seconds.

Ordering Information

Contact your Johnson Controls® representative to order the MAP Gateway or any related products. See *Table 1* for product code numbers and product descriptions.

Table 1: Ordering Information

Product Code Number	Description
TL-MAP1810-0Px [1]	Portable MAP Gateway - includes MAP Gateway, RJ-12 cable, protective shell, and lanyard
TL-MAP1810-0Sx[1]	Stationary MAP Gateway - includes MAP Gateway, field bus adapter, mounting bracket, and AC power supply (Adapters for the power supply may vary by country.)

1 Last digit (**x**) represents non-US country requirements.

Accessories (Order Separately)

Table 2: Accessories

Product Code Number	Description
MP-PRTKIT-0P	Portable Kit - includes RJ-12 cable, shell, and lanyard.
MP-STAKIT-0	Stationary Mounting Cradle only - includes mounting bracket and field bus adapter.
MP-STAKIT-0H	Stationary Cradle Kit - includes mounting bracket, field bus adapter, and AC power supply.
MP-STAFBA-0	Field Bus Adapter - RJ-12 to 4-position Terminal Block Adapter. Used for connecting directly to MS/TP Field Bus.

Related Documentation

Table 3: Related Documentation

For Information On	See Document
Getting started with MAP Gateway	*Mobile Access Gateway Portal Quick Start Guide (Part No. 24-10737-16)*
Installing and wiring MAP Gateway	*Mobile Access Gateway Portal Installation Instructions (Part No. 24-10737-8)*
Understanding features and benefits of MAP Gateway, including FAQs	*Mobile Access Portal Gateway Product Bulletin (LIT-12011884)*
Ordering MAP Gateway	*Mobile Access Portal Gateway Catalog Page (LIT-1900869)*
Using MAP Gateway	*Mobile Access Portal Gateway User's Guide (LIT-12011999)*
Installing and using private keys and security certificates	*Mobile Access Portal Gateway Network and IT Guidance Technical Bulletin (LIT-12012015)*

Technical Specifications

Table 4: MAP Gateway

Product Code[1]	**TL-MAP1810-0Px:** Portable MAP Gateway - includes MAP Gateway, RJ-12 cable, bumper guard, and lanyard. **TL-MAP1810-0Sx:** Stationary MAP Gateway - includes MAP Gateway, field bus adapter, mounting bracket, and AC power supply. (Adapters for the power supply may vary by country.)
Power Consumption	From SA/FC bus: 15 VDC at 2.7 VA maximum
Ambient Temperature Conditions	**Operating:** 0 to 50°C (32 to 122°F) **Operating Survival:** -30 to 60°C (-22 to 140°F) **Non-Operating:** -40 to 70°C (-40 to 158°F)

Table 4: MAP Gateway

Ambient Humidity Conditions	**Storage:** -40 to 70°C (-40 to 158°F); 5 to 95% RH 30°C (86°F) maximum dew point conditions **Operating:** 0-50°C (32 to 122°F); 5 to 95% RH, 30°C (86°F) maximum dew point conditions
Transmission Power (Typical)	**Wireless Local Area Network (WLAN) Transmission Power:** +14.5 dBm, 54 Mbps +12.5 dBm, 65 Mbps
WLAN Receiver Sensitivity (Typical)	-76 dBm, 10% packet error rate (PER), 54 Mbps -73 dBm, 10% PER, 65 Mbps
Transmission Speeds	**Wireless Communication:** 2.4 GHz ISM bands, 802.11 b/g/n, 11/22/54 Mbps **Serial Communication (SA/FC Bus):** 9600, 19.2k, 38.4k, or 115.2k bps **Ethernet Communication:** 10, 100 Mbps
Transmission Range (Typical)	**Wireless Communication:** 30 m (100 ft) line-of-sight indoors 91 m (300 ft) line-of-sight outdoors **WLAN Range Performance:** 0 - 50 ft = Excellent 50 - 100 ft = Good 100 - 300 ft = Weakest, approaching out of range
Wireless Security	WPA2-PSK TKIP (Wi-Fi Protected Access Pre-Shared Key mode Temporal Key Integrity Protocol)
Network and Serial Interfaces	One SA/FC port (6-pin port; connects with 1.5 m [4.9 ft] RJ-12 field bus cable) One USB port (Micro-B port; 2.0; supports Open Host Controller Interface [Open HCI] specification)
Dimensions **(H x W x D)**	Unit alone: 120 x 70 x 24.5 mm (4-23/32 x 2-3/4 x 31/32 in. when used vertically) Unit in shell: 128 x 75 x 29.5 mm (5-1/32 x 2-61/64 x 1-5/32 in. when used vertically)
Housing	White Acrylonitrile butadiene styrene (ABS) bracket Black silicone shell
Weight	Unit alone: 0.10 kg (0.22 lb) Unit in shell: 0.15 kg (0.33 lb) **Note:** Weights do not include any peripheral components such as cables, lanyard, or an external power supply.
Web Browser Requirements for Computers and Handheld Devices	**Computer:** Windows® Internet Explorer® 10 and Windows Internet Explorer 11, Apple® Safari® 6.1 and later, or Google® Chrome™ **Handheld Device**: The handheld device must be running either Internet Explorer Mobile for Windows Mobile version 5 or version 6 operating system (OS); Apple® iPhone® and iPod touch® iOS version 7.0 or greater; or Android™ 4.0.3, 4.0.4, and 4.1+, or Google Chrome. Other web browsers may display the UI, but the functionality is not guaranteed.

Table 4: MAP Gateway

Compliance	**United States** UL Listed File E365459, ANSI/UL 60950-1, Information Technology Equipment; UL 2043 (Stationary version only), Suitable for Use in Other Environmental Air Space in Accordance with Section 300.22, (C) of the National Electric Code. Transmission Complies with FCC Part 15.247 Regulations for Low Power Unlicensed Transmitters Transmitter FCC Identification: OEJ-MAPWIFI FCC Compliant to CFR 47, Part 15, Subpart B, Class A
	Canada: Industry Canada IC: 279A-MAPWIFI ULC Listed File E365459, CAN/CSA-C22.2 No. 60950-1, Safety of Information Technology Equipment

1 Last digit (**x**) represents non-US country requirements.

The performance specifications are nominal and conform to acceptable industry standard. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.

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