KMC CONTROLS CMDR-ADVT-WIFI-BASE KMC IoT Commander Gateways Owner's Manual

Contents

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Specifications

- Product: KMC Commander Gateways
- Type: IoT and Automation Platform
- Gateway Options: Hardware-based and Software-based
- Hardware Gateway Model: Advantech UNO-420
- Software Gateway Models: CMDR-ADVT-WIFI-BASE, CMDR-NIAGARA, CMDR-NIAGARA-3P, CMDR-VM

Product Usage Instructions

KMC Commander Overview
KMC Commander is an IoT solution that connects building devices to the cloud for real-time data access on PC or mobile devices.

Advantech UNO-420 Gateway
The Advantech UNO-420 hardware gateway includes Intel processor, PoE power supply, 2 Ethernet ports, DIN-rail mounting, and Wi-Fi connectivity. The package comes with an antenna for setup.

Wi-Fi Usage
Wi-Fi can be used during setup and optionally during normal operation in Client or AP mode.

KMC Commander Gateway Service for Niagara 4
This service allows remote viewing and management of Niagara stations. It securely sends data to the KMC Commander Cloud for easy access via the user interface.

Gateway for VM Hypervisors
The virtual machine deployment eliminates the need for a physical gateway. It can be set up from various file formats into a hypervisor.

Point Licensing
Select the number of points needed for your project. Each point of interest pulled from a device requires a license point. Point licenses include cloud storage and updates for one year.

DESCRIPTION

Analytics at the Edge
KMC Commander® is a next-generation IoT (Internet of Things) solution that connects your building and other devices to the cloud and provides meaningful data in real-time to your PC or mobile device. The KMC Commander platform consists of Advantech UNO-420 Gateway hardware plus KMC IoT software and cloud services. It is an out-of-the-box solution to visualize, connect, and manage energy, building, and other systems. It not only works with KMC controllers, but also most third-party meters and many other energy and automation devices. It is designed to aggregate, analyze, secure, and relay data from diverse sensors and equipment, and communicate the analytics and visualizations to your mobile device. From a mobile device in the palm of your hand, you can analyze and act on data at the edge of the network with this IoT platform, purpose-built for building and industrial automation.

Built Tough for Demanding Environments
Unlike PCs and servers, the KMC Commander IoT gateway hardware is designed to attach to a wall, panel, or DIN rail in commercial and industrial environments. Engineered with an industrial-grade form factor and fanless, solid-state design, the KMC Commander gateway can reliably run 24/7 with long life at extended temperatures, in addition to withstanding the higher levels of humidity and dust typical of commercial environments.

Connect Multiple Communication Protocols
Make the most of the equipment you already have and expand capabilities with new technologies. Use KMC Commander to connect with the physical world, bridging both legacy systems and modern sensors to the Internet. Connect to BACnet Ethernet, BACnet IP, BACnet MS/TP, KMDigital, SNMP, and Modbus TCP. For details, see Specifications—Supported Communication Protocols on page 3.

Security Built In
You can depend on KMC Commander's security. A Trusted Platform Module (TPM) chip performs hardware root of trust, secure boot, and BIOS-level lock-down of unused I/O ports. Embedded Ubuntu Core software ensures secure operation. Allow/disallow lists prevent unauthorized IP connections. Custom user permissions, data encryption, and other measures enhance security.

APPLICATIONS
KMC Commander provides data collection, analysis, visualization, and management for the modern smart building ecosystem, including HVAC, lighting, security, and other building applications. For just one example, see Sample Installation on page 6.

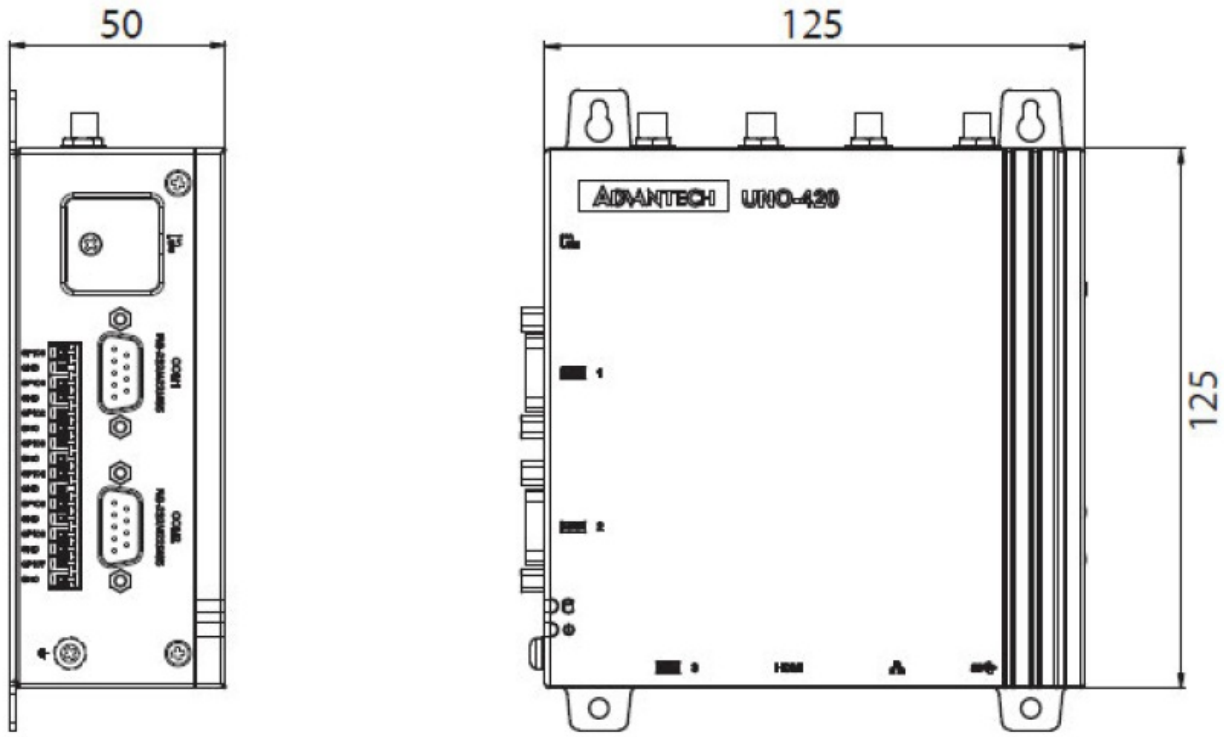
MODELS

KMC COMMANDER BASE PACKAGE
CMDR-ADVT-WIFI-BASE package includes **(Wi-Fi) KMC Commander**
The base package also includes: • **Antenna** for Wi-Fi Internet connection • A CMDR-D3-PWR-POE **Power Over Ethernet injector** • A CMDR-ADVT-DINMT mounting adapter for optional **DIN-rail mounting (or mount on a panel with screws)** See also **Frequently Asked Questions on page 5** and **Accessories on page 4**.

POINT LICENSES		
Add licenses for expected points:		
Points	**Part Number**	**Description**
100	**CMDR-1YR-LIC-000100**	Up to 100 points annual license
250	**CMDR-1YR-LIC-000250**	Up to 250 points annual license
500	**CMDR-1YR-LIC-000500**	Up to 500 points annual license
750	**CMDR-1YR-LIC-000750**	Up to 750 points annual license
1000	**CMDR-1YR-LIC-001000**	Up to 1000 points annual license
1500	**CMDR-1YR-LIC-001500**	Up to 1500 points annual license
2000	**CMDR-1YR-LIC-002000**	Up to 2000 points annual license
3000	**CMDR-1YR-LIC-003000**	Up to 3000 points annual license
4000	**CMDR-1YR-LIC-004000**	Up to 4000 points annual license
5000	**CMDR-1YR-LIC-005000**	Up to 5000 points annual license
6000	**CMDR-1YR-LIC-006000**	Up to 6000 points annual license
7000	**CMDR-1YR-LIC-007000**	Up to 7000 points annual license
8000	**CMDR-1YR-LIC-008000**	Up to 8000 points annual license
9000	**CMDR-1YR-LIC-009000**	Up to 9000 points annual license
10,000	**CMDR-1YR-LIC-010000**	Up to 10,000 points annual license

SPECIFICATIONS—COMMANDER IOT APPLIANCE HARDWARE

Processor	Intel® Atom™ E3815, 1.46 GHz, 64-bit, 1 core, 512 KB L2 cache
Memory	2 GB DDR3L 1066 MHz, 32 GB eMMC
Storage	Built-in 32 GB eMMC
Environmental	Operating temperature –4 to 140° F (–20 to 60° C) at relative humidity 5 to 85% with 0.7 m/s airflow, non-condensing, shock and vibration resistant
Dimensions	4.9 x 4.9 x 2.0 inches (125 x 125 x 50 mm)
Form Factor	Fan-less design, optimized for wall/panel mounting or (with the included CMDR-ADVT-DINMT adapter) DIN-rail mounting—see **Accessories on page 4**
Weight	3.3 pounds (1.5 kg)
Power Requirements	Power Over Ethernet Injector (CMDR-D3-PWR-POE) or 10–30 V**DC** (2 A @ 140° F or 60° C) power supply—see **Accessories on page 4**
I/O	Gigabit Ethernet (RJ-45), Wi-Fi
Status Indicators	Power and Storage
Operating System	Ubuntu Core Series 20
Security	Trusted Platform Module (TPM) 2.0 chip, Secure Boot, BIOS lockdown of unused I/O ports
KMC Limited Warranty	1 year (from Advantech Co., Ltd.'s manufacturing date code)

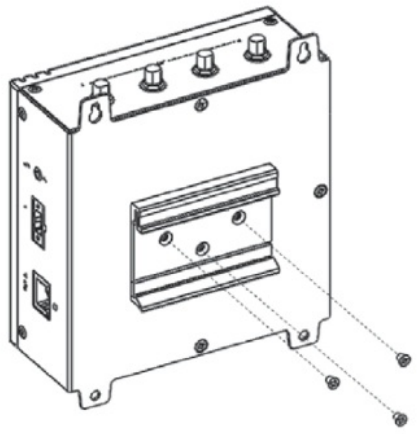


SPECIFICATIONS—SUPPORTED COMMUNICATION PROTOCOLS

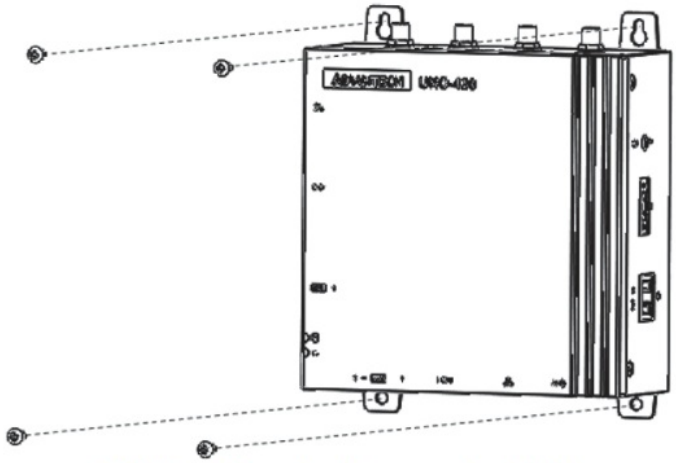
SNMP	Direct network connection to the Ethernet port
Modbus TCP	Direct network connection to the Ethernet port
BACnet MS/TP	With a KMC **BAC-5051AE** BACnet router connected to the Ethernet network
BACnet IP and Ethernet	Direct network connection to the Ethernet port*
KMDigital	With a KMC **KMD-5551E** translator connected to the Ethernet network*
	***NOTE:** Three Tier **1** KMDigital controller models have optional BACnet Ethernet interfaces. Their points **are** discoverable in KMC Commander using BACnet **Ethernet** protocol without a KMD-5551E translator. (Points in any Tier **2** controllers connected to them via EIA-485, however, are **not** discoverable without a KMD-5551E.)

ACCESSORIES

Power supply	• Replacement Power Over Ethernet Injector (**CMDR-D3-PWR-POE**)
Mounting on a DIN rail or on a wall or panel	• A replacement (**CMDR-ADVT-DINMT**) adapter for DIN-rail mounting (included in base packages)
Mounting inside an enclosure	• Steel control enclosure, 16 x 18 x 6 inches (**HCO-1034**) or equivalent—and use a **CMDR-ADVT-DINMT** adapter to mount the gateway inside
Remote mounting of antennas (out- side of an enclosure or at a distance for better range/reception)	• Extension cables (pack of two), Wi-Fi, 3-foot (**CMDR-ANT-EXT-3**) • Extension cables (pack of two), Wi-Fi, 15-foot (**CMDR-ANT-EXT-15**)
Network communication accessories	• Dual-port BACnet router (**BAC-5051AE**)—use for connecting to an MS/TP network • KMDigital to BACnet translator (**KMD-5551E**)—use for connecting to a KMDigital network • Ethernet patch cable, 50 feet (**HSO-9001**) • Ethernet patch cable, 50 feet, plenum rated (**HSO-9011**) • Ethernet patch cable, 75 feet, plenum rated (**HSO-9012**)

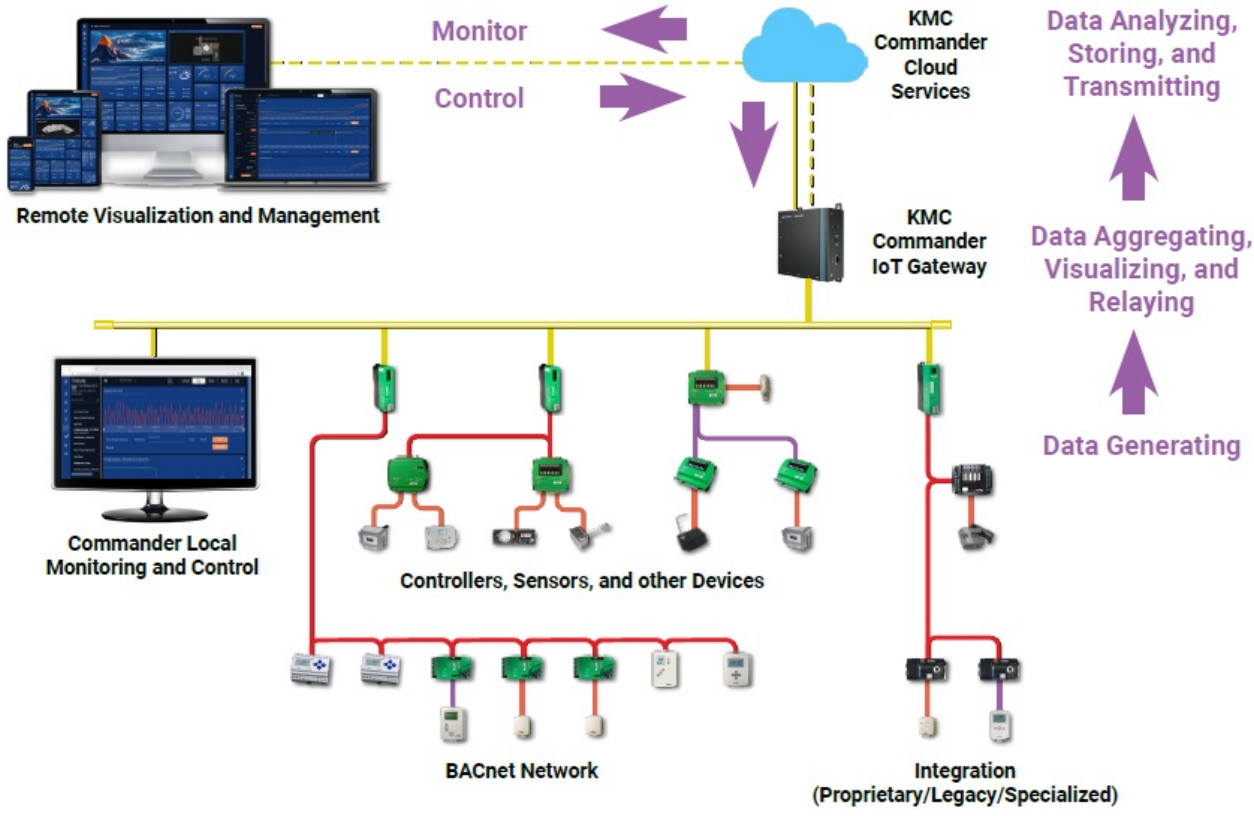


With DIN Rail Adapter (Included in Base Packages)

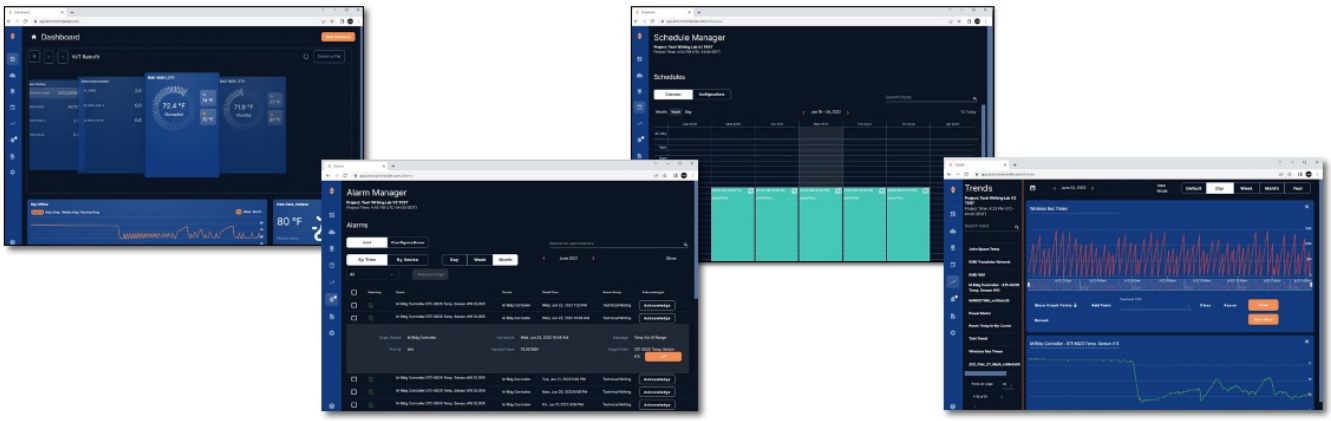


Wall/Panel Mounting (Screws not Included)

SAMPLE INSTALLATION



SAMPLE SCREENS



SUPPORT
Additional KMC product information and resources are available at **www.kmccontrols.com**. Log in to see all available files.
Information on KMC Commander installation and operation is available at **help.kmccommander.com**.

KMC Controls, 19476 Industrial Drive, New Paris, IN 46553 / **877-444-5622**

- Fax: **574-831-5252**
- **www.kmccontrols.com**

FREQUENTLY ASKED QUESTIONS

What is a point in the KMC Commander system?

A point is a device data point used for alarming, scheduling, trending, or control logic. Points of interest are manually selected and tracked, requiring a license point each.

How are license points calculated?

The number of license points needed depends on the number of points of interest being pulled from devices. Each point of interest requires one license point.

Why Does the Base Package Need Wi-Fi?

During KMC Commander installation, Wi-Fi is used to discover and set up the hardware. NOTE: Wi-Fi is used during installation and then disabled for security reasons. During operation, Ethernet is normally used for the Internet connection. See KMC Commander Base Package

What Is a Point (of Interest) License?

A point is a device data point that is alarmed, scheduled, trended, or used in control logic. Examples of data points include, but are not limited to, temperature, air volume, CO2 level, door status (open/closed), pressure, tank level, and binary status (on/off). When one of these points is manually selected to be continuously tracked, it counts as a point of interest and is licensed as such. A point of interest is any user-selected point that is configured to be tracked and/or commanded by KMC Commander. Not all points in a controller will be points of interest. Points of interest are continuously subscribed to in the KMC Commander software. Each point of interest being pulled from a device uses 1 license point. For example, 60 controllers gathering 8 points of interest each would need a total of 480 license points. A 500 point license would cover this amount and provide room for small future additions to the project. Point licenses can be purchased in increasing increments and are available for purchase as projects expand. See Point Licenses

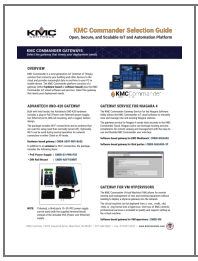
How Does Licensing Work?

Licensing is an annual term and based on total number of system points identified as points of interest. Licensing also includes cloud storage as well as software and security updates and enhancements for the length of the term. License renewal notifications will be forwarded in advance and prior to expiration of the existing license term. For 14 days after a licenses expiration date, KMC Commander will continue to function to allow time to remedy payment. After 14 days, KMC Commander will not be accessible, and will not receive updates and enhancements, store data in the cloud, or interact with the building automation system. If the license is renewed prior to 60 days after the initial license expiration date, KMC Commander will return to normal operation. If not renewed for more than 60 days, the license will be decommissioned, at which point a new license would need to be purchased and the project set up again from the beginning. Also, any connection to a KMD-5551E KMDigital to BACnet translator will not work without an active license and a live Internet connection.

What is the Commander Cloud Service?

The Commander cloud service provides important data and security benefits to customers. Cloud services include: Securely storing data ,Processing data ,Relaying data to mobile and other devices ,Managing control devices ,Providing automatic software enhancements and security updates

Documents / Resources

	KMC CONTROLS CMDR-ADVT-WIFI-BASE KMC IoT Commander Gateways [pdf] Owner's Manual CMDR-ADVT-WIFI-BASE KMC IoT Commander Gateways, CMDR-ADVT-WIFI-BASE, KMC IoT Commander Gateways, Commander Gateways

References

- KMC Controls | Building Automation and Control Solutions
- User Manual