OPTIMIZER ADVANCED CONTROLLER

The Advanced controllers are a family of next generation integration & plant controllers incorporating the Niagara Framework® & powered by an IMX8 64bit quad-core processor. The Advanced controllers are freely programmable IP devices, with a dedicated suite of IO modules providing extremely flexible control options. Using the power of Niagara Framework® they provide both Ethernet & Serial integration options and are native profile BACnet™ Building Controllers ("B-BC"). The Advanced controller is an ISA/IEC 62443-4-2 SL2 Certified Component device ensuring the device supports cyber security best practice.



Honeywell Optimizer Advanced Controller

The N-ADV-133-H-BWA, N-ADV-133-H-B, N-ADV-133-H-BWE, N-ADV-133-H-BWW, N-ADV-133-H, N-ADV-134-H, and N-ADV-112-H Advanced controllers are designed for a wide variety of complex applications. These devices feature RS-485 ports for BACnet™ MS/TP, Panel Bus, Modbus RTU, M-Bus, and IO module devices, Ethernet ports for BACnet™ IP devices, and a RJ11 port interface for HMI devices. These controllers also have touch flakes to connect with multiple IOs in series and a USB Type-C interface port to connect with a computer for serial communication. These controllers can be mounted on either a DIN rail or on the wall in either horizontally or vertically orientations.

FEATURES AND HIGHLIGHTS

SIMPLE AND FLEXIBLE ENGINEERING

- N-ADV-112-H, N-ADV-133-H, N-ADV-134-H controllers have multiple RS-485 ports and Ethernet ports - one isolated IP port and multiple switched IP ports. Refer to the "Ordering Information" on page 2.
- N-ADV-133-H-BW series controller has three RS-485 ports and four Ethernet ports - one isolated IP port, three switched IP ports with Bluetooth®, and Wi-Fi communication that can be configured as client mode or as an access point.
- N-ADV-133-H-B series controller has three RS-485 ports and four Ethernet ports - one isolated IP port, and three switched IP ports with Bluetooth® support.
- RJ11 port to connect with an HMI device for field operations.
- Touch flakes to support RS-485 IO module devices.
- The multiple switched IP ports on the 133 & 134 models support both Daisy chain operation and RSTP (Rapid Span Tree Protocol) which allows a fault tolerant network to be created.
- Built-in RSTP switch (Rapid Span Tree Protocol) allowing loop-free forwarding network topology.
- i.MX 8M Plus, quad Arm® Cortex®-A53 processor, long life industrial grade, Frequency: 1.2 GHz.
- Supports BACnet™/SC configuration within the Niagara Framework®.
- Conforms to BACnet™ Standard ANSI/ASHRAE 135 protocol version 1.15 (ISO 16484-5).
- Wi-Fi models support IEEE 802.11a/b/g/n networks, WPA-PSK and WPA2-PSK security protocols, 2.4 or 5.8 GHz frequencies and include a single dual band 2.4/5.8 GHz antenna.

EFFICIENCY AND SAFETY ON SITE

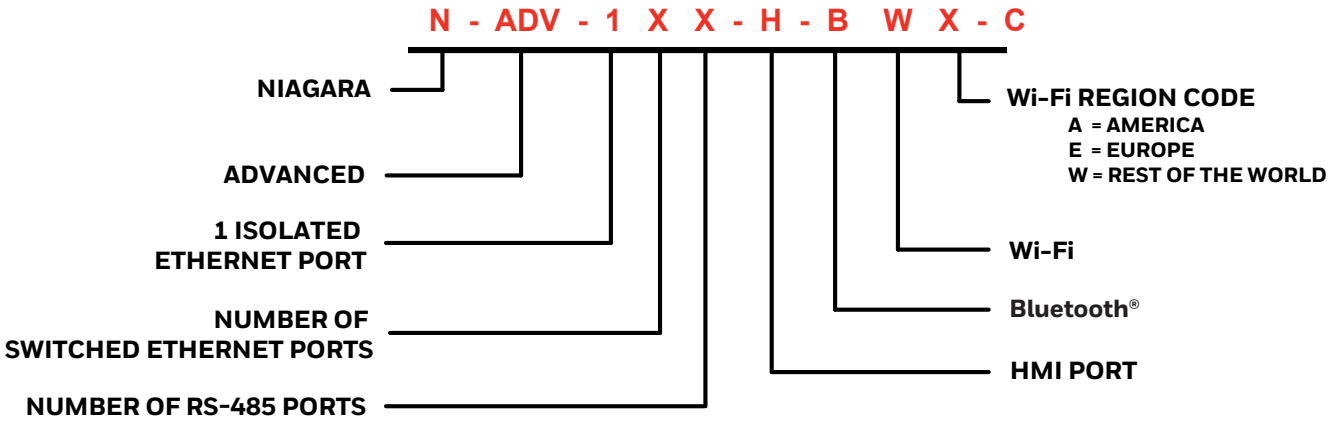
- ISA/IEC 62443-4-2 Security Level 2 Certified Component supporting cyber security best practice
- Multi-color LEDs to show the operational status of the isolated RS-485 communications, HMI device, Ethernet connection, and Service state of the controller.
- Built-in advanced diagnostics software facilitating troubleshooting for IP and MS/TP devices.
- Ferroelectric RAM (FRAM) to store the live data for the controller, including storing the last known values when power is removed.
- Protective end covers to protect the touch flakes.
- UTF-8 and UCS-2 character encoding formats are supported.
- Ubuntu Core OS with snap container based modular software design (Cyber Secure).
- Supports 802.1x network authentication protocol as a Client (supplicant). Requires Niagara N4.12 or later. Providing an IT standard security authentication method for network access.
- Processor featuring Neural Net Accelerator for future development of low latency AI/ML algorithms at the Edge.

EASY UPGRADE

- All RS-485 ports support Panel Bus, BACnet™ MS/TP, Modbus RTU, and M-Bus.
- Removable terminal blocks with screw (factory installed) or Push-in terminals.
- Built-in Web server with HTML5 to support graphics.

Honeywell

CONTROLLER PART NUMBERS DESCRIPTION



WI-FI REGION CODE AND COUNTRIES

WI-FI REGION CODE FOR WIRELESS SKU		
A	**E**	**W**
Anguilla, Antigua, Aruba, Bahamas, Bermuda, British Virgin Islands, Cayman Islands, Dominican Republic, Canada, Grenada, Haiti, Jamaica, Nicaragua, Puerto Rico, Saint Lucia, Saint Martin,Trinidad, Tobago, and United States of America	Albania, Andorra, Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Germany, Greece, Greenland, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Netherlands, Poland, Portugal, Romania, San Marino, Switzerland, Norway, Slovakia, Slovenia, Spain, Sweden, and United Kingdom	Algeria, Angola, Australia, Botswana, Bahrain, Cape Verde, Congo, Cote D'Ivoire, Cameroon, Dem. Republic, Egypt, Ethiopia, Guam, Gabon, Ghana, Hong Kong, India, Israel, Iran, Jordan, Libya, Kenya, Kuwait, Lebanon, Magadaskar, Macedonia, Marshall Islands, Morocco, Namibia, Nigeria, Oman, Qatar, Sudan, Saudi Arabia, Singapore, Senegal, South Africa, Tanzania, Tunisia, Turkey, Uganda, United Arab Emirates, American Samoa, and Yemen

Note:

A - All countries adhere to FCC regulations, except for Canada, which follows ISED regulations that are equivalent to FCC regulations. There is no country code configuration for this model; we set this configuration as the "North America" region configuration.

E - All European countries, including the UK, adhere to ETSI/RED regulations. There is no country code configuration for this model; we set this configuration as "Europe" region configuration.

W - Most countries outside of the U.S. will follow either FCC or ETSI regulations, or a subset of them.

ORDERING INFORMATION

ADVANCED CONTROLLER PART NUMBER							
PART NUMBER	**ISOLATED ETHERNET PORTS**	**SWITCHED IP PORTS**	**HMI PORTS**	**RS-485 PORTS**	**TOUCH FLAKE (RS-485-R)**	**BLUETOOTH**	**WI-FI**
N-ADV-134-H-C	1	3	Yes	4	Yes	No	No
N-ADV-133-H-BWA-C*	1	3	Yes	3	Yes	Yes	Yes
N-ADV-133-H-BWE-C*							
N-ADV-133-H-BWW-C*							
N-ADV-133-H-B-C	1	3	Yes	3	Yes	Yes	No
N-ADV-133-H-C	1	3	Yes	3	Yes	No	No
N-ADV-112-H-C	1	1	Yes	2	Yes	No	No

Note: For example, a customer wishing to buy an Advanced controller with 1 isolated Ethernet port, 3 Switched ports, and 3 serial RS-485 ports, would order using part number N-ADV-133-H-C

* Wi-Fi models have a region code. Building automation products that support RF interfaces such as Wi-Fi and Bluetooth® must undergo RF certification for each country or region before being launched there. The major RF certification regions include the USA (FCC), the European Union (ETSI), Canada (ISED), China (SRRC), Japan (MIC), South Korea (KCC), and Taiwan (NCC). Most other countries worldwide adhere to one or another of these regulations.

ORDERING INFORMATION

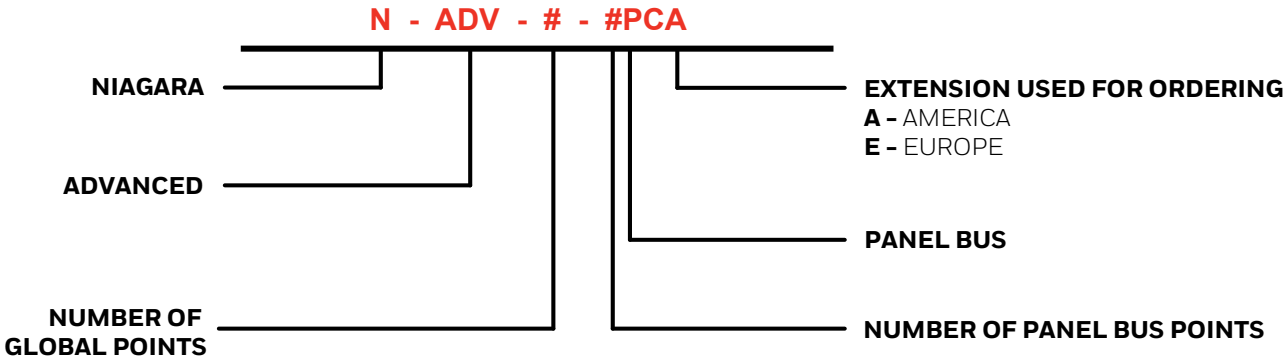
ACCESSORIES OR REPLACEMENT PARTS		
PART NUMBER	**DESCRIPTION**	**AVAILABILITY**
HMI-DN	Touch screen HMI (DIN rail mount)	Sold Separately
HMI-WL	Touch screen HMI with Panel Door/Wall Base	Sold Separately
HMI-ACC-DN	DIN Rail base accessory	Spare Part
HMI-ACC-WL	Door/Wall base accessory	Spare Part
HMI-CABLE-S	0.82 ft. (0.25 m) length HMI cable, short	Spare Part
HMI-CABLE-L	9.84 ft. (3 m) length HMI cable, long	Spare Part
ENDCOVER-10	Protective end covers, pack of 10	Spare Part
TCVR-140-10	Terminal covers 5.5 inches (140 mm), pack of 10	Spare Part
SCRW-TB-3-BLK-50	Black 3 way screw terminals, pack of 50	Spare Part
SCRW-TB-3-GRY-50	Grey 3 way screw terminals, pack of 50	Spare Part
PUSH-TB-3-BLK-50	Black 3 way push terminals, pack of 50	Sold Separately
PUSH-TB-3-GRY-50	Grey 3 way push terminals, pack of 50	Sold Separately
DIN-CLIP-10	Din rail clip, pack of 10	Spare Part
REMOTE-ANT-KIT*	Wi-Fi Antenna kit	Spare Part
IO-ADPT-S-2	Wiring adapters, Power & Comms, Serial, pack of 2	Sold Separately

Note: Parts indicated as “Spare Parts” are included with the Controller or HMI.

*ANTENNA PART NUMBER				
PART NUMBER	**GAIN**			
	2.4G		**5G**	
REMOTE-ANT-KIT	2400 - 2483.5 MHz	2.94 dBi	5170 - 5250 MHz	2.65 dBi
	-	-	5250 - 5330 MHz	2.65 dBi
	-	-	5490 - 5730 MHz	1.7 dBi
	-	-	5735 - 5835 MHz	1.62 dBi

Note: Only the Wireless controller is supplied with the Antenna kit.

SOFTWARE LICENSES AND UPGRADES



ADVANCED CONTROLLER NIAGARA CORE LICENSES

A Niagara license is required to connect with the Niagara Framework®. Select one of the licenses from the table below.

ADVANCED CONTROLLER NIAGARA CORE LICENSES	
PART NUMBER	**DESCRIPTION**
N-ADV-00050-100PC *	Advanced core license for 3 Devices[1], 50 global points, 100 Panel Bus points and 18 month initial SMA
N-ADV-00100-255PC *	Advanced core license for 5 Devices[1], 100 global points, 255 Panel Bus points and 18 month initial SMA
N-ADV-00500-100PC *	Advanced core license for 10 Devices[1], 500 global points, 100 Panel Bus points and 18 month initial SMA
N-ADV-01250-255PC *	Advanced core license for 25 Devices[1], 1250 global points, 255 Panel Bus points and 18 month initial SMA
N-ADV-05000-255PC *	Advanced core license for 100 Devices[1], 5000 global points, 255 Panel Bus points and 18 month initial SMA
N-ADV-10000-255PC *	Advanced core license for 200 Devices[1], 10000 global points, 255 Panel Bus points and 18 month initial SMA

[1] Device limit applies only outside of Europe. Panel Bus IOs do not count towards the device limit.

Note: * To reference your region for ordering. A is for America and rest of the world. E is for Europe. Please contact your Honeywell Sales Representative if you have any questions.

For example, a customer wishing to buy a 500 global point controller with 100 Panel Bus points in the USA where device and point count limits apply, would order using part number N-ADV-00500-100PC**A**.

For example, a customer wishing to buy a 500 global point controller with 100 Panel Bus points in Europe where only the point count limits apply, would order using part number N-ADV-00500-100PC**E**.

ADVANCED CONTROLLER PANEL BUS POINT UPGRADE LICENSES

Advanced Controller core licenses can be upgraded with any of the following upgrade licenses.

PANEL BUS POINT UPGRADE LICENSES	
PART NUMBER	**DESCRIPTION**
N-ADV-0100P-UP	Upgrade License for 100 Panel Bus points
N-ADV-0255P-UP	Upgrade License for 255 Panel Bus points

ADVANCED CONTROLLER GLOBAL CAPACITY POINT UPGRADE LICENSES

Advanced Controller core global points capacity licenses can be upgraded with any of the following upgrade licenses.

GLOBAL CAPACITY POINT UPGRADE LICENSES	
PART NUMBER	**DESCRIPTION**
PIN-DEV-1	Additional 1 Device**, 50 global points capacity.
PIN-DEV-2	Additional 2 Device**, 100 global points capacity.
PIN-DEV-10	Additional 10 Device**, 500 global points capacity.
PIN-DEV-25	Additional 25 Device**, 1250 global points capacity.
PIN-DEV-50	Additional 50 Device**, 2500 global points capacity.

** Device limit applies outside of Europe only. Panel Bus IO module point does not count towards the device limit.

SOFTWARE LICENSES AND UPGRADES

ADVANCED CONTROLLER SMA LICENSES

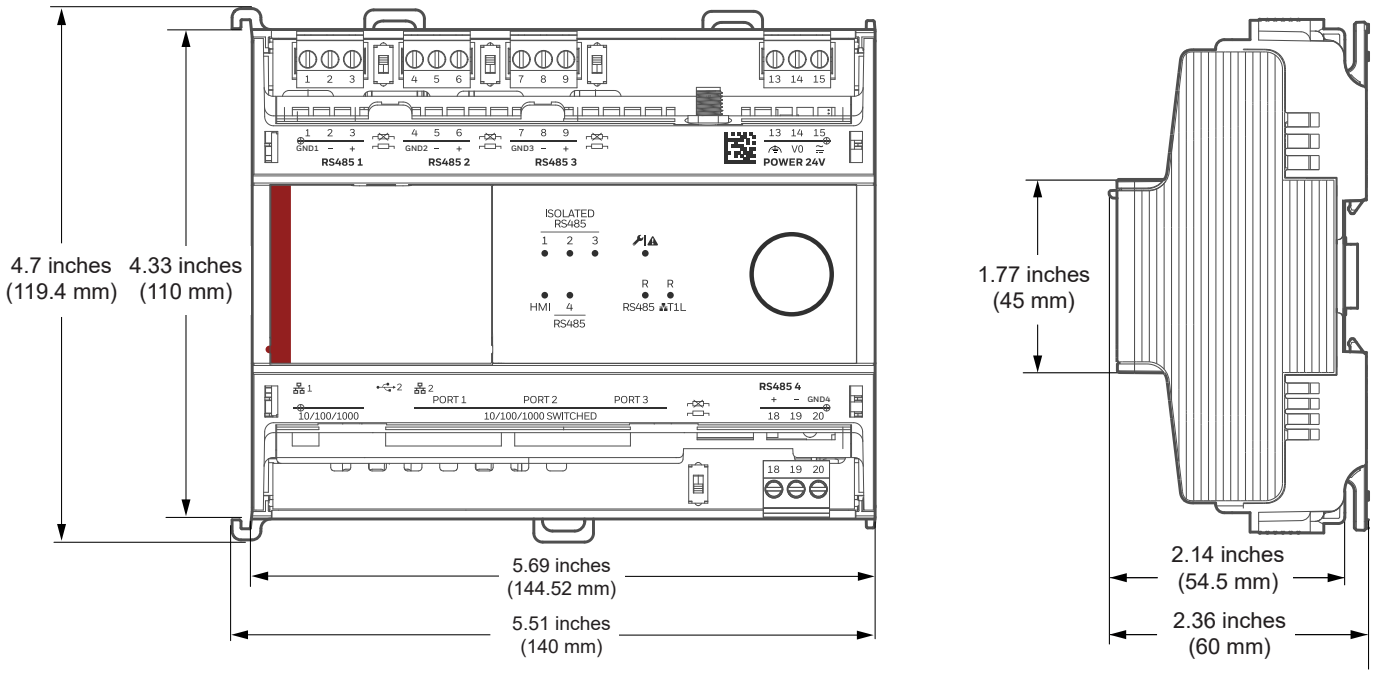
The Advanced Controller core licenses can be upgraded with the following SMA licenses.

SMA LICENSES	
PART NUMBER	**DESCRIPTION**
SMA-0001-1YR	1 year maintenance for up to 99 global points.
SMA-0001-3YR	3 year maintenance for up to 99 global points.
SMA-0001-5YR	5 year maintenance for up to 99 global points.
SMA-0002-1YR	1 year maintenance for up to 499 global points.
SMA-0002-3YR	3 year maintenance for up to 499 global points.
SMA-0002-5YR	5 year maintenance for up to 499 global points.
SMA-0010-1YR	1 year maintenance for up to 1249 global points.
SMA-0010-3YR	3 year maintenance for up to 1249 global points.
SMA-0010-5YR	5 year maintenance for up to 1249 global points.
SMA-0025-1YR	1 year maintenance for up to 4999 global points.
SMA-0025-3YR	3 year maintenance for up to 4999 global points.
SMA-0025-5YR	5 year maintenance for up to 4999 global points.
SMA-0100-1YR	1 year maintenance for up to 9999 global points.
SMA-0100-3YR	3 year maintenance for up to 9999 global points.
SMA-0100-5YR	5 year maintenance for up to 9999 global points.
SMA-0200-1YR	1 year maintenance for up to 10000 or more global points.
SMA-0200-3YR	3 year maintenance for up to 10000 or more global points.
SMA-0200-5YR	5 year maintenance for up to 10000 or more global points.

Note: The number of global points is taken into consideration at the moment of licensing. If you have a valid SMA and you upgrade with a number of global points exceeding the SMA, the licenses will run until your SMA expires. If you extend your SMA after expiration, you will have to buy the SMA associated with the new number of global points.

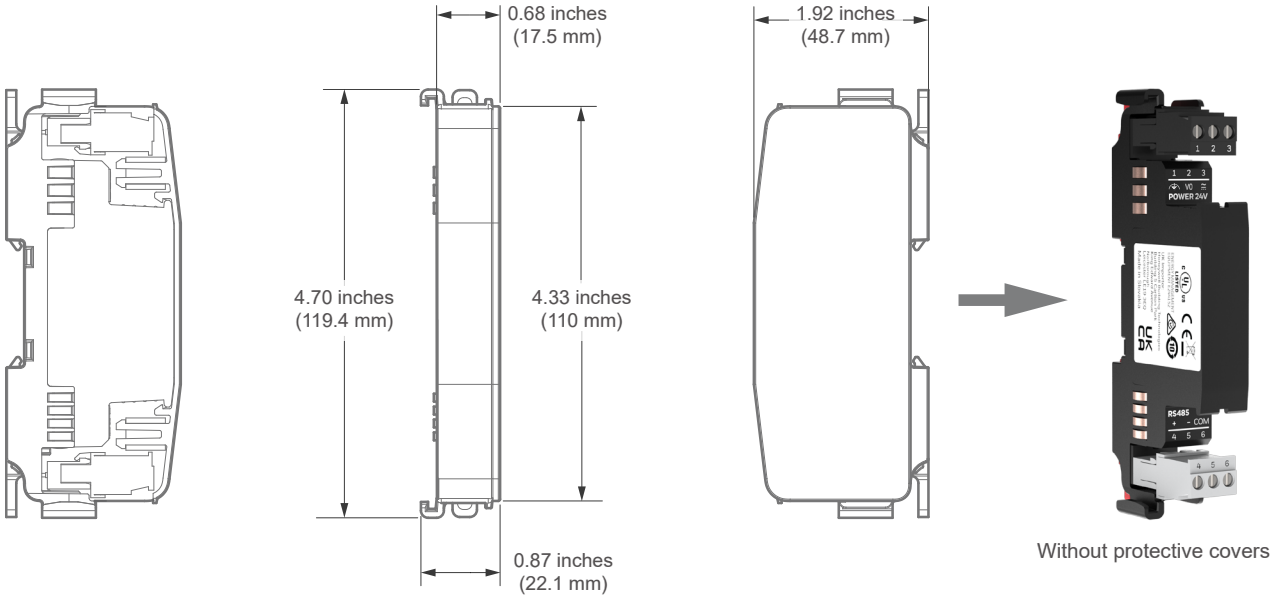
DIMENSIONS

ADVANCED CONTROLLER



All dimensions are in inches (mm). For illustration, the N-ADV-134-H controller is shown.

WIRING ADAPTER

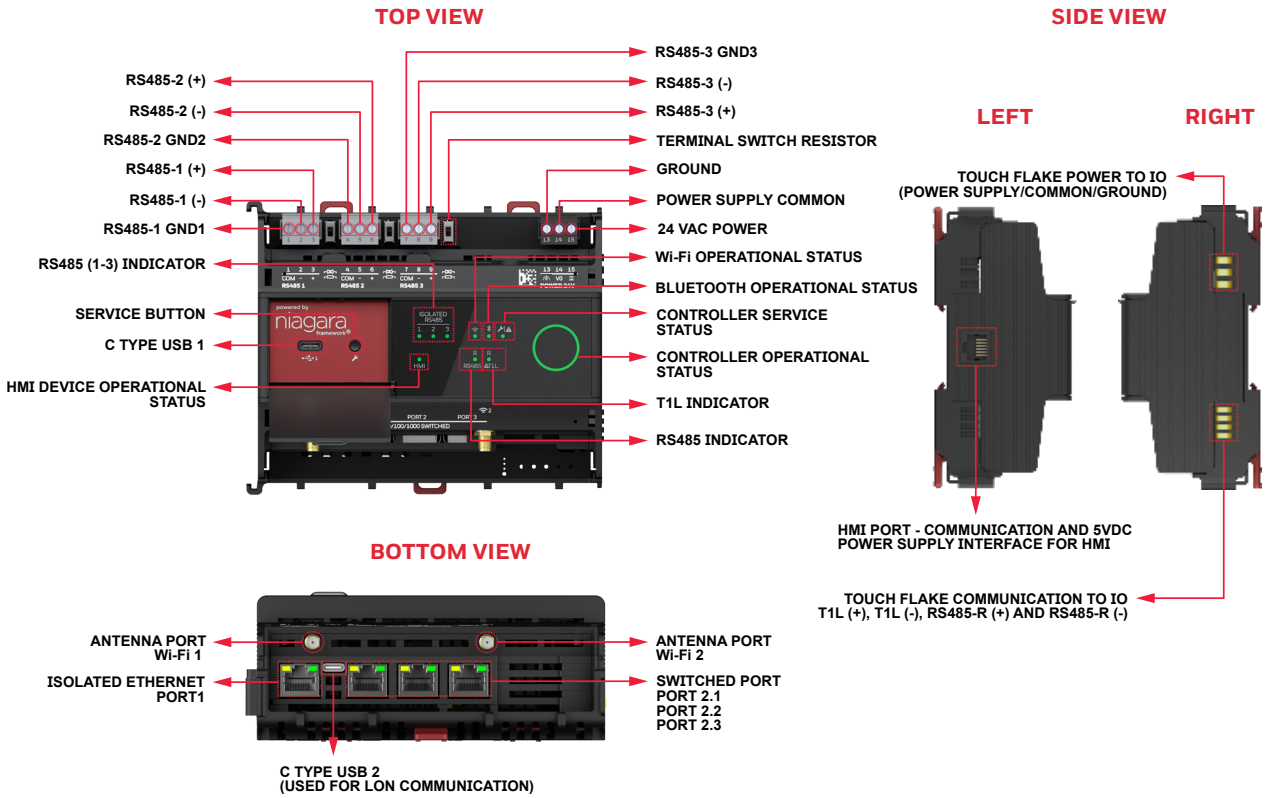


All dimensions are in inches (mm).

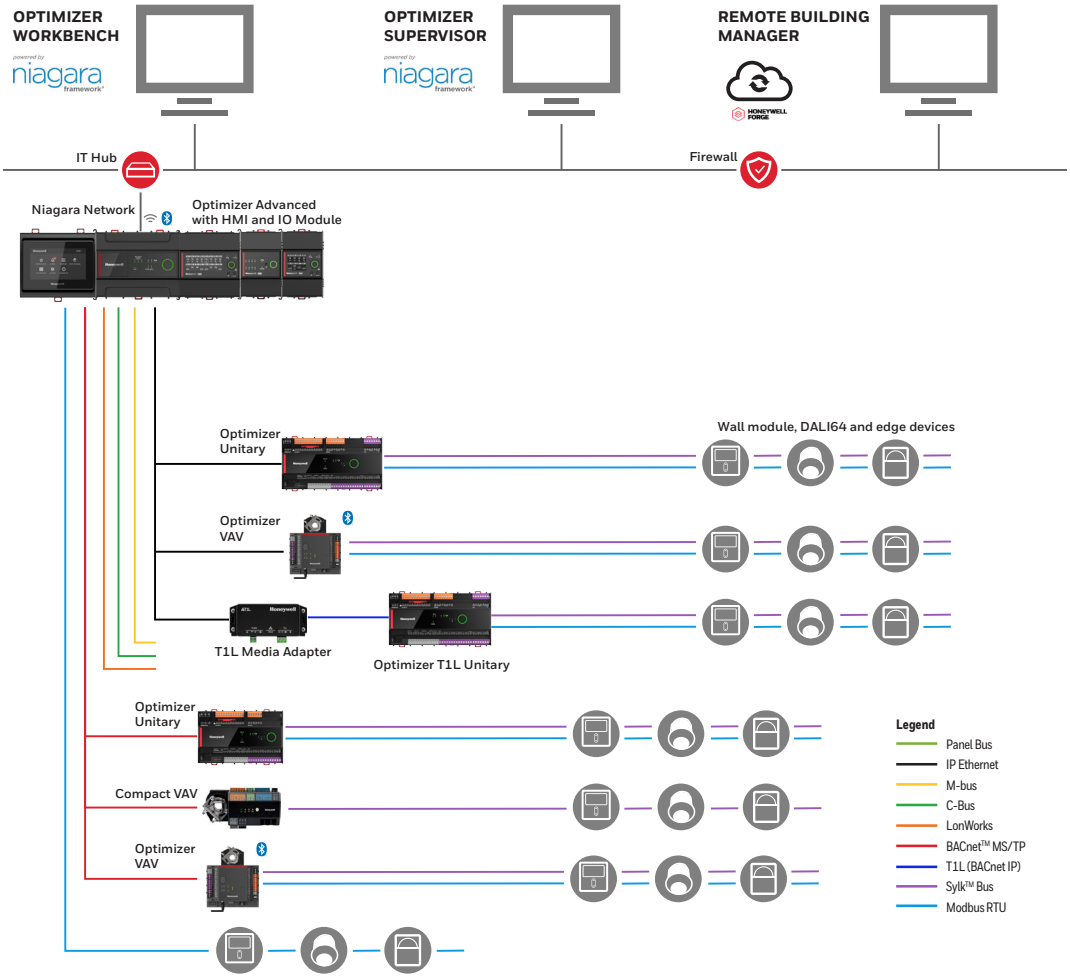
DIMENSIONS	
PARAMETER	**SPECIFICATION**
Controller Dimensions	5.69 x 2.36 x 4.7 inches (150.2 x 60 x 119.4 mm)
Mounting	DIN rail or wall mounted
Wiring Adapter Dimensions	0.87 x 1.92 x 4.7 inches (22.1 x 48.7 x 119.4 mm)

HARDWARE OVERVIEW

N-ADV-133-H-BWA, N-ADV-133-H-BWE, N-ADV-133-H-BWW



SYSTEM OVERVIEW



***** Devices subject to local availability. Contact your local sales representative for information on available devices in your region.

PORTS AND BUS CONNECTIONS

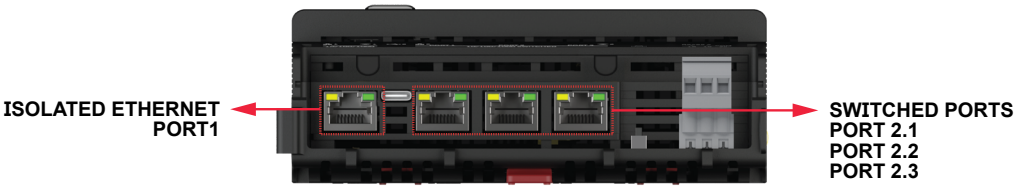
The Advanced controller can be connected to a variety of devices and systems by using its multiple RS-485, IP, and USB ports.

ETHERNET PORTS

Both Ethernet ports can connect the controller to a computer using an Ethernet crossover cable.

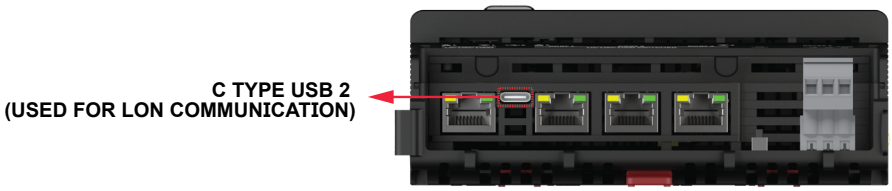
The user can upload, download, and debug the controller application using Niagara workbench from the computer. These connections also establish Internet connectivity.

The controller can be operated via a standard browser. By default, an integrated webserver provides all operation pages for a full browser-based operation. While browsing, the controller can remain connected to the Ethernet network without interruption.



USB PORTS (USB 2.0 HOST PORTS)

The controller is built with two USB Type-C ports to connect with the computer and mobile/tablet devices using a USB cable to monitor and troubleshoot the controller. The USB2 port 2 can connect the IFLON2 gateway interface, allowing the Advanced controller to connect to a LON network.



USB PORTS (USB 2.0 DEVICE PORTS)

The USB 1 device port at the front, which is an Ethernet over USB connection. The permanent IP address of this USB port is 192.168.255.241.
This interface allows connection of the Niagara workbench for programming and operation.



INTERFACES AND BUS CONNECTIONS

WIRING ADAPTER

Use the wiring adapter when power and the communication bus need to be extended to the next DIN rail of IO modules or when an IO module is remotely mounted from the controller. The wiring adapter has a reversible cover that allows wiring left to right or right to left in the panel.

The wiring adapter has Touch flake connections on both left and right sides and provides a set of terminals for power and a set of terminals for the RS-485 communication bus. The power and the communication bus are transferred to the IO modules by the Touch flake connections.

For terminal information, refer to the Wiring Adapter Interface section below. The wiring adapter has removable factory -installed screw terminal blocks.

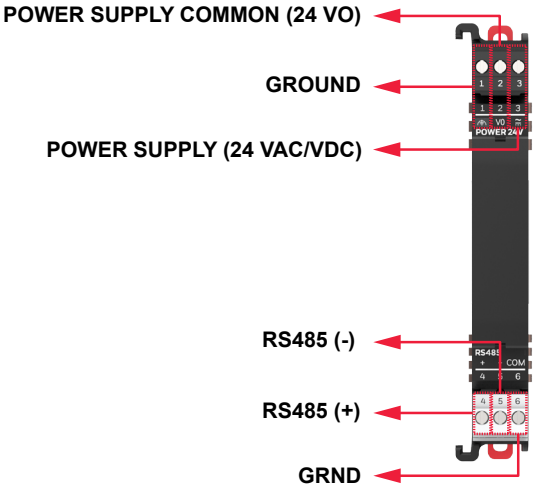
The electrical ratings, environmental ratings, DIN standards, IP protection of the touch flakes, life expectancy, and other compliance standards of the adapter are the same as IO modules.

RS-485-R TERMINAL AND T1L TOUCH FLAKES

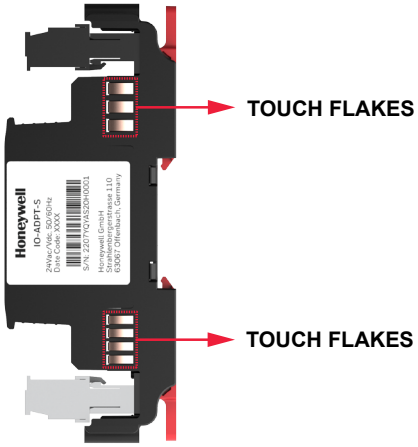
- RS-485 Terminals - Touch flake connections extend RS-485 communications from the Advanced Controller to the IO modules.
- T1L Touch flakes - Touch flake connections extend T1L communications from the Advanced Controller to future T1L IO modules and future T1L communication modules. This is a pass through connection only to allow RS-485 and T1L modules to co-exist on the same DIN rail.

WIRING ADAPTER - INTERFACE

TOP VIEW



SIDE VIEW



PRODUCT SPECIFICATION

HARDWARE	
PARAMETER	**SPECIFICATION**
Ferroelectric RAM (FRAM)	768 KB
LPDDR4	2 GB
EMMC	8 GB
CPU	i.MX 8M Plus, quad Arm® Cortex®-A53 processor, long life industrial grade, Frequency: 1.2 GHz
Operating System	LINUX 64-bit
Real-Time Clock Timekeeping Accuracy	+/- 3 ppm: +/- 1.57 minutes per year (+/- 0.26 seconds per day)
Real-Time Clock Retention	Buffered for 72 hours by gold capacitor (3 day retention)

ELECTRICAL	
PARAMETER	**SPECIFICATION**
Operating Voltage (AC)	24 VAC (+/-20 %) = 19 to 29 VAC 50/60 Hz
Operating Voltage (DC)	24 VDC (+/-20 %) = 20 to 30 VDC
Overvoltage Protection	Protected against overvoltage of max. 29 VAC or 40 VDC. Terminals protected against short-circuiting.

POWER CONSUMPTION				
CONTROLLER	**POWER CONSUMPTION**		**CURRENT CONSUMPTION**	
	24 VAC	**24 VDC**	**24 VAC**	**24 VDC**
N-ADV-134-H	Max. 36 VA	Max. 13 W	1500 mA	540 mA
N-ADV-133-H-BWA N-ADV-133-H-BWE N-ADV-133-H-BWW	Max. 38 VA	Max. 14 W	1600 mA	580 mA
N-ADV-133-H	Max. 34 VA	Max. 12.5 W	1420 mA	520 mA
N-ADV-133-H-B	Max. 34 VA	Max. 12.5 W	1420 mA	520 mA
N-ADV-112-H	Max. 34 VA	Max. 12.5 W	1420 mA	520 mA

OPERATIONAL ENVIRONMENT	
PARAMETER	**SPECIFICATION**
Storage Temperature	-20 to 158 °F (-28.9 to +70 °C)
Operating temperature	-13 to 140 °F (-25 to 60 °C)
Humidity	5 to 95 % relative humidity (non-condensing)
Vibration Under Operation	0.024" double amplitude (2 to 30 Hz), 0.6 g (30 to 300 Hz)
Dust, Vibration	According to EN60730-1
Protection	IP20 with optional terminal covers
Pollution Level	2
Altitude	13123 ft (4000 m)

STANDARDS AND CERTIFICATIONS	
PARAMETER	**SPECIFICATION**
Protection Class	IP20
Product Standards	UL60730-1, UL60730-2-9, UL916, IEC/EN60730-1, Energy Management Equipment, IEC/EN60730-2-9, CAN/CSA-E60730-1:02, IEC/EN61326-1, and IEC/EN61010.
Testing Electrical Components	IEC68
Certification	UL60730-1, UL916, CE, BTL B-BC, BACnet™ Standard 135 version 1.14, ISO 16484-5, AMEV AS-B, FCC Part15, WEEE, C-tick RCM, Subpart B, CAN ICES-3 (B)/NMB- 3(B), RCM, EAC, RoHS II, Ethernet Protocol version IEEEC 802.3, EN-1434-3, EN-13757-3, and ISA/IEC 62443-4-2 SL2 Certified.
Energy Performance	EN12098-1:2022 and EN ISO 52120-1:2022
System Transformer	The system transformer(s) must be safety isolating transformers according to IEC 61558-2-6. In the U.S.A. and Canada, NEC Class 2 transformers must be used.

PRODUCT SPECIFICATION

CONNECTION TO BUSES						
PROTOCOLS	**MAX. NO. OF DEVICES PER CHANNEL**	**RS-485-1**	**RS-485-2**	**RS-485-3**	**RS-485-4**	**RS-485-R (WIRING ADAPTER)**
Panel Bus#	64	Yes	Yes	Yes	Yes	Yes
BACnet™ MS/TP#	64	Yes	Yes	Yes	Yes	Yes
Modbus RTU	32	Yes	Yes	Yes	Yes	Yes
M-Bus*	60	Yes	Yes	Yes	Yes	Yes

Note:

- The communication rate across each interface depends on the given communication protocol.
- **#** Panel BUS addressing supports up to 64 I/O modules per channel (BUS), with a max of 16 devices of each I/O module type allowed up to the maximum of 64 devices on a bus.

  While the Advanced controller has several bus connections this means the total addresses supported is significant, therefore it is important to review the station CPU and memory capacity. The recommended maximum total number of Panel BUS points in the Advanced control across all busses is 510 max total. Performance is also dependent on the poll rate and other station configuration (for example number of wiresheets, PX pages, History & alarm extensions, & 3rd party driver integration). It is important for the design engineer to review the station design and performance required for the application."
- ***** The controller can function as an M-Bus Master. It uses a standard-level converter (e.g., PW60) to connect to the M-Bus devices.
- A wiring adapter is required to establish communication and power supply over RS-485-R (default channel). The default channel must be closed with the protective cover if it is not used.

PRODUCT SPECIFICATION

STANDARD PROTOCOL

The Advanced controller runs the N4 Niagara Framework® and supports all the standard protocols and drivers available in the core framework. These drivers include, but are not limited to:

STANDARD PROTOCOL			
PROTOCOLS	**DRIVER NAME**	**CONNECTION TYPE**	**DETAILS**
BACnet™	BACnet™ MSTP	Serial	RS-485 serial communication
	BACnet™ Ethernet	Ethernet	Ethernet communication
	BACnet™ IP	IP	IP based communication using unencrypted UDP packets
	BACnet™ SC	IP	Encrypted communication via HTTPS over Transport Security Layer 1.3 (TLSv1.3). Requires Niagara Framework® N4.11 or higher.
EIB/KNX	EIB/KNX Driver	IP	Connectivity to EIBNET/IP devices
LON	ILON Driver	IP	Yes
	LON FTT10 Driver	USB-C (2) to IFLON2 (FTT10)	Requires the IF-LON2 interface connected to the Advanced controller USB-C port (2) and provides connectivity to FTT10 LON bus.
M-Bus	M-Bus Driver	RS-485 to PW60	Requires the PW60 M-BUS convertor connected to the Advanced controller RS-485 and provides M-BUS Master communications to M-Bus devices
Modbus	Modbus RTU Driver	Serial	Connectivity to Modbus RTU Devices
	Modbus RTU Slave Driver	Serial	Enables Advanced Controller Station to function as a Modbus RTU Slave Device
	Modbus TCP Driver	IP	Connectivity to Modbus TCP Devices
	Modbus TCP Slave Driver	IP	Enables Advanced Controller Station to function as a Modbus TCP Client Device
MQTT (Message Queuing Telemetry Transport)	MQTT Client	IP	Allows the Advanced controller to connect to MQTT Broker to send and receive data. Note: The use of the JSON tool kit simplifies MQTT engineering and deployment.
		IP to LORAWAN Sensor	The Advanced controller can connect to a series of LORAWAN wireless sensors via an IP to LORAWAN gateway using the honMqttDriver-rt.jar driver.
oBIX (Open Building Information Exchange)	oBIX Driver	IP	Enables communication to oBIX servers – Open Building Information Xchange is an XML standard and WEB services focused on buildings
OPC UA (Unified Architecture)	OPC UA Client	IP	OPC UA support for Advanced Controller
	OPC UA Server	IP	OPC UA support for Advanced Controller
SNMP	SNMP Network	IP	Supports communications to SNMP Devices (SNMPv1, SNMPv2 and SNMPv3)
Panel Bus	Panelbus Network	Serial	Supports the connection for Panel bus I/O modules from Honeywell
IPv4 & v6	-	IP	Supports IP v4 & IPv6 addressing
S-BUS	SBCIP Network	IP	Supports RS-485 communication. For more information, refer to the document Saia PCD® Supervisor Datasheet 34-001 – ENG07.
C-BUS	C-BUS	IP	A converter is required to connect the controller with C-Bus.

Note:

Drivers developed by Tridium & Honeywell are tested within the Niagara Framework® and fully compliant with Niagara Driver development compliance. Therefore, they will operate on the Optimizer Advanced Controllers.

- Drivers that run on IP protocol should be specified to select the “IP interface” and choose “vlan2” on Optimizer Advanced.
- Drivers running on standard serial platform services must select RS485_x interfaces on Optimizer Advanced.

For drivers not developed by Tridium or Honeywell, i.e., a third-party developer, we would recommend conducting driver-specific testing for the application.

Additional drivers and license extensions are also available, such as the Niagara Analytics, E-Signature, JSON toolkit, and serial driver. Please contact your commercial representative if you do not see the driver required listed.

PRODUCT SPECIFICATION

COMMUNICATION	
PARAMETER	**SPECIFICATION**
Ethernet Connection Speed	10/100/1000 Mbps, RJ45
IP Addressing Modes	• DHCP - Dynamic • Static

COMMUNICATION BAUD RATES	
PARAMETER	**SPECIFICATION**
M-Bus	0.3 to 19.2 Kbps
HMI Port	5 VDC power output and RS-485-R
Modbus RTU	0.3 to 115.2 Kbps
BACnet™ MS/TP	9.6, 19.2, 38.4, 76.8, and 115.2 Kbps
Panel Bus	115.2 Kbps

WIRELESS POWER AND FREQUENCY RANGE			
CONNECTIVITY MEDIUM	**FREQUENCY RANGE**	**MAXIMUM POWER OUTPUT FOR CE**	**MAXIMUM POWER OUTPUT FOR FCC/IC**
Bluetooth®	2400 MHz-2483.5 MHz	10 mW	10 mW
Wi-Fi 2.4G	2400 MHz-2483.5 MHz	100 mW	100 mW
Wi-Fi 5G	5150 MHz-5250 MHz	100 mW	100 mW
	5250 MHz-5350 MHz	100 mW	100 mW
	5470 MHz-5725 MHz	100 mW	100 mW
	5725 MHz-5850 MHz	25 mW	100 mW

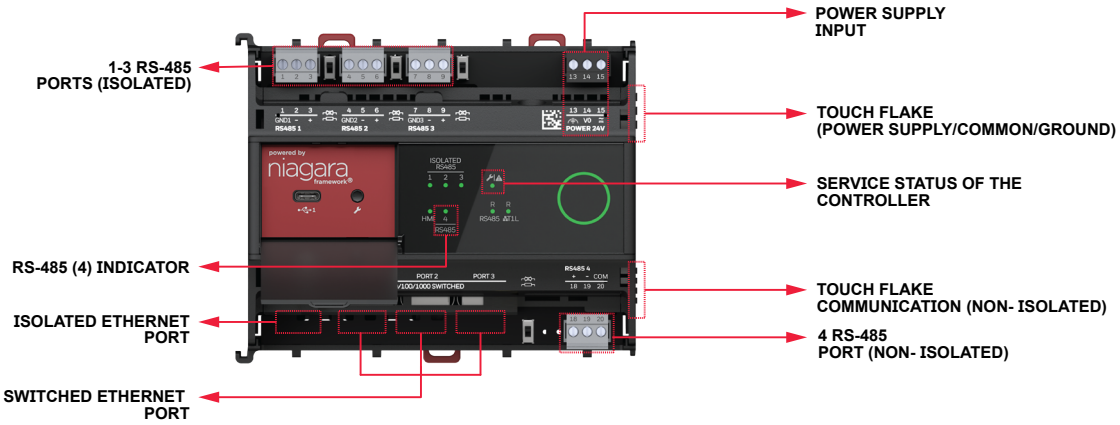
ADVANCED CONTROLLER - INTERFACE

N-ADV-133-H-BWA, N-ADV-133-H-BWE, N-ADV-133-H-BWW

For Interface and overview, refer to the Hardware Overview “N-ADV-133-H-BWA, N-ADV-133-H-BWE, N-ADV-133-H-BWW” on page 7.

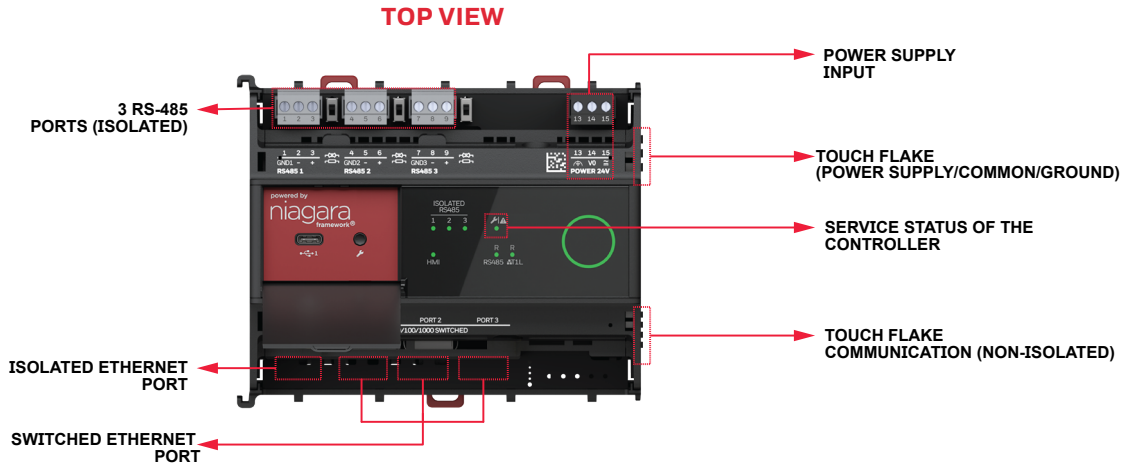
N-ADV-134-H

TOP VIEW



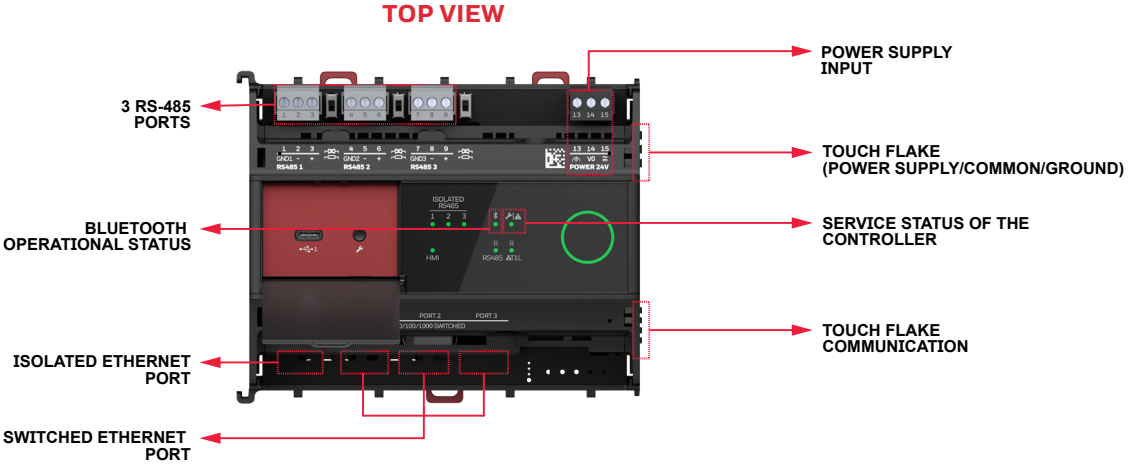
N-ADV-133-H

TOP VIEW



N-ADV-133-H-B

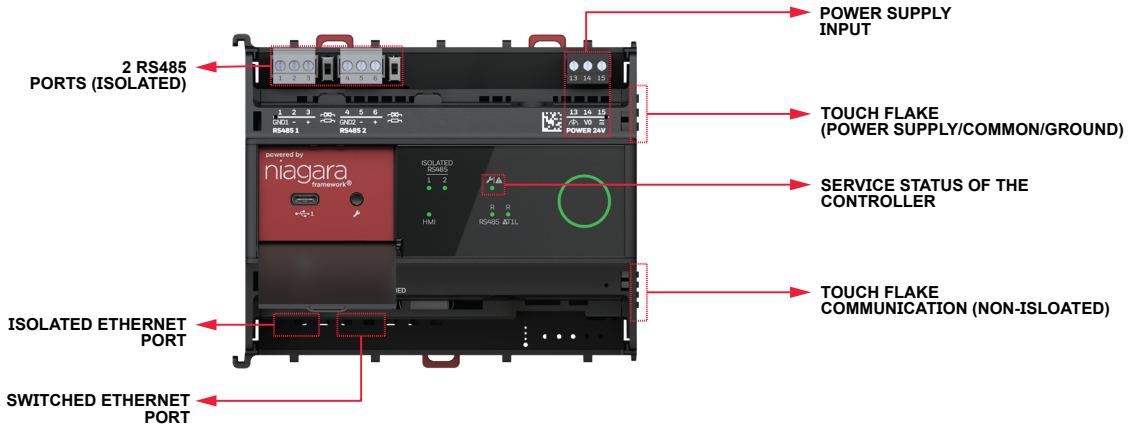
TOP VIEW



ADVANCED CONTROLLER - INTERFACE

N-ADV-112-H

TOP VIEW



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