

SMB Gateway

GW-1000-WE/GW-1000-NWE

INSTALLATION INSTRUCTIONS

Gateway

GW-1000-WE/GW-1000-NWE

PRODUCT DATA

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APPLICATION

GW-1000-WE and GW-1000-NWE Gateways are the advanced devices that integrate and aggregate data from field devices like Thermostats, Sensors, and IO with the Small and Medium Building Administrator Supervisor Dashboard cloud platform used for monitoring and control. It has provisions to integrate with field devices using various physical interfaces like Wi-Fi, Bluetooth, and Ethernet. It also provides a secured physical connection to the Small and Medium Building Administrator Supervisor Dashboard cloud platform.

Models

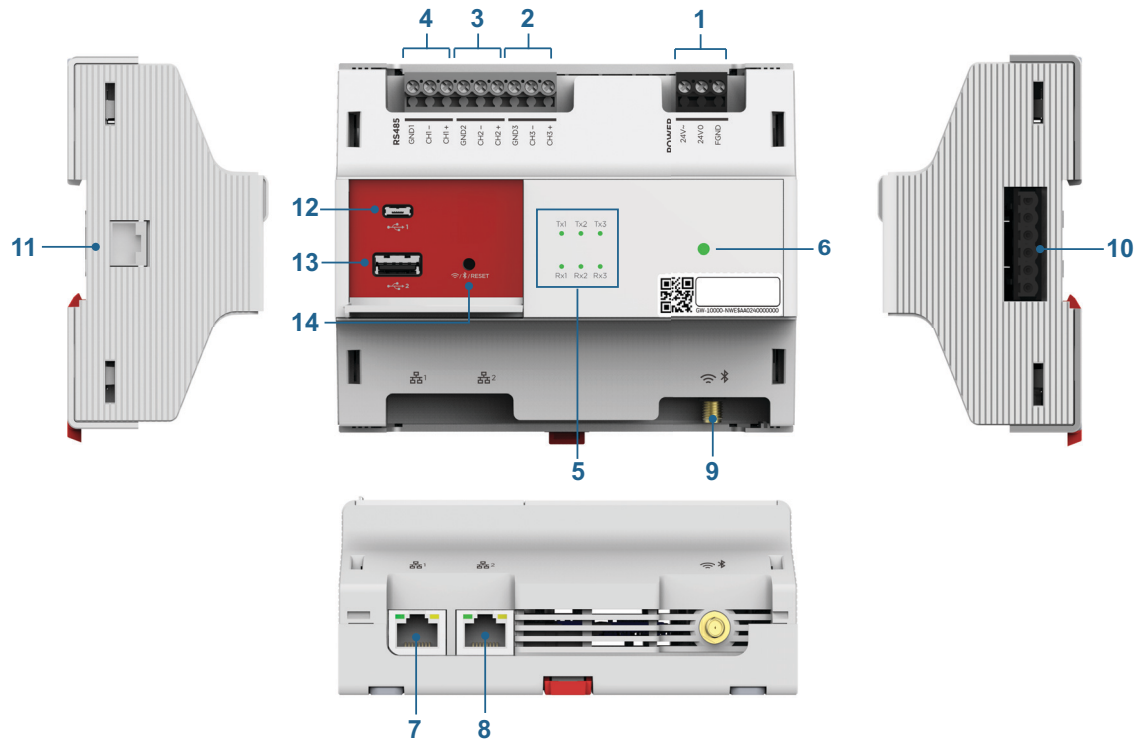
GW-1000-WE: Wireless Gateway with European and Latin American conformance.

GW-1000-NWE: Wireless Gateway with North American conformance.

FEATURES

- **Integrated with Small and Medium Building Administrator Supervisor Dashboard (built on Honeywell Forge cloud platform).**
- **Configurable via the Honeywell Connect Mobile app.**
- **Integrated with Honeywell Thermostat (TC500A-N/TC500A-W) and Honeywell Smart IO (IO-10MIXR-NWE/IO-10MIXR-WE) via BACnet (secured).**
- **Compatible with MultiTech LoRaWAN hub.**
- **Compatible with R718A, R718CT, and R718G sensors.**
- **Supports remote, over-the-air upgrades.**
- **Supports BACnet (secured), HTTPS, MQTTS, and DHCP.**
- **Real-Time Clock with 72 hours retention using a gold capacitor.**
- **Supports Wi-Fi (Access Point Mode).**
- **Two Ethernet ports with status LEDs.**
- **Supports remote diagnostics.**
- **Reset button to restore to factory default settings.**
- **External antenna for Wi-Fi and Bluetooth.**
- **Main LED to show the operational status of the Gateway.**
- **Supports DIN rail mounting and wall/panel mounting (four screws).**
- **The following will be enabled in future**
 - All RS485 Interfaces
 - Both USBs
 - RJ11 Interface
 - Bluetooth/BLE
 - Tx1, Tx2, Tx3, Rx1, Rx2, and Rx3 LEDs
 - Wi-Fi 5 GHz

INTERFACES AND TERMINALS



NOTE: *All RS485 interfaces, USB interfaces, RJ11 interface, Rx and Tx LEDs are for future use.

Table 1. Gateway Terminals

Type	Legend	Signal	Comment
Power Supply Terminals	1	FGND	Connect to earth ground in the field
		24V0	Power supply common
		24V~	Power supply (24 Vac/dc)
*RS485 Interface 3 Terminals	2	CH3+	(+) for RS485 interface 3
		CH3-	(-) for RS485 interface 3
		GND3	GND3 for RS485 interface 3
*RS485 Interface 2 Terminals	3	CH2+	(+) for RS485 interface 2
		CH2-	(-) for RS485 interface 2
		GND2	GND2 for RS485 interface 2
*RS485 Interface 1 Terminals	4	CH1+	(+) for RS485 interface 1
		CH1-	(-) for RS485 interface 1
		GND1	GND1 RS485 interface 1
LED	5	*Tx1 LED (green)	Transmit and receive indication for RS485 interfaces 1 to 3
		*Rx1 LED (green)	
		*Tx2 LED (green)	
		*Rx2 LED (green)	

Table 1. Gateway Terminals (Continued)

Type	Legend	Signal	Comment
LED	5	*Tx3 LED (green)	Transmit and receive indication for RS485 interfaces 1 to 3
		*Rx3 LED (green)	
	6	Main LED	Indicates the operational status of the Gateway
RJ45 Interface	7	Ethernet 1	Dedicated to Internet/Cloud connectivity (10/100/1000BASE-T)
	8	Ethernet 2	Dedicated to MultiTech LoRaWAN hub (10/100/1000BASE-T)
SMA Terminal	9	For Wi-Fi and Bluetooth antenna	Antenna for both Wi-Fi and Bluetooth 802.11a/b/g/n/ac + BT 4.2
*RS485 Interface 4 Terminals	10	~ (24V~)	Communication and power bus for expansion modules
		24V0	
		FGND	
		GND	
		(-) for RS485 interface 4	
		(+) for RS485 interface 4	
*RJ11 Interface	11	(+) for RS485 interface 5	
		(-) for RS485 interface 5	
		output 5Vdc	
		GND	
*USB Interface	12		Micro USB port to connect with laptops, mobile, and tablets
	13		USB Type A port
Reset Button	14		Reset button to reset the device to factory default

Ethernet 1 and 2 Interfaces

Ethernet 1 is used for Cloud connectivity and Ethernet 2 is to connect with MultiTech LoRaWAN hub.

They are RJ45 female interfaces, each with a yellow activity status LED (located to the left) and a green activity LED (located to the right).

Small and Medium Building Administrator Supervisor Dashboard

For more information, refer to the Small and Medium Building Administrator Supervisor Dashboard user guide (31-00379M).

Honeywell Connect Mobile App

For more information, refer to the Honeywell 2.Small and Medium Business Administrator Setup Guide (Deploy App Setup Guide) (31-00451M).

TECHNICAL DATA

System Data

Table 2. System Data

Operating Voltage (AC)	19 to 29 Vac (50/60Hz)
Operating Voltage (DC)	19 to 29 Vdc
Overvoltage Protection	Protected against overvoltages of max. 29 Vac or 40 Vdc. Terminals are protected against short-circuiting.

Power Consumption

Table 3. Power Consumption

Gateway	Power	
	24 Vac	24 Vdc
GW-1000-WE/GW-1000-NWE	Max. 35VA	Max. 15W

Current Consumption

Table 4. Current Consumption

Gateway	Power	
	24 Vac	24 Vdc
GW-1000-WE/GW-1000-NWE	1430mA	620mA

Standards

Table 5. Standards

Protection Class	IP20
Product Standards	CAN/CSA-E60730-1:02, Ethernet Protocol version IEEE 802.3
Testing Electrical Components	IEC68
Certification	<ul style="list-style-type: none"> • UL60730-1 • UL916 • EN 60730-1 • EN 60730-2-9 • FCC Part15, Subpart B • CAN ICES-3 (B)/NMB-3(B) • BQB • RoHS II • REACH

Table 5. Standards

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.
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Operating Environment

Table 6. Operating Environment

Ambient Operating Temperature	0 to 50 °C (32 to 122 °F)
Ambient Operating Humidity	5 to 95% relative humidity (non-condensing)
Storage Temperature	-28.9 to +70 °C (-20 to 158 °F)
Ambient Storage 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
RFI, EMI	Residential, commercial, and light-industrial environments
MTBF (Mean Time Between Failure)	11.5 years

Communication Baud Rates

Table 7. Communication Baud Rates

Ethernet	10/100/1000 Mbit/s, RJ45
BACnet MSTP	9.6, 19.2, 38.4, 76.8, 115.2 Kbps
Wi-Fi	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 150Mbps
Bluetooth	BR: up to 1Mbps EDR: up to 3Mbps BLE: up to 1Mbps
Wi-Fi Range with unobstructed line of sight	100 ft
Supported type of Wi-Fi connections	Wi-Fi Access Point - Providing access point to IO-10MIXR-WE/IO-10MIXR-NWE Smart IO and TC500A-N Commercial Thermostat devices

NOTE: Wi-Fi 5 GHz is for future use.

Gateway Parameters

Table 8. Gateway Parameters

Max number of points	3000
Max trend retention	2 days (1 min samples)
Max number of alarms retained	70000 Records
History push	Per Minute
GW OTA Upgrade check	Once in 4 hours
Devices OTA Upgrade check	Once in 24 hours
Max rumen of devices in Wifi interface	12

Gateway Ordering Part Numbers


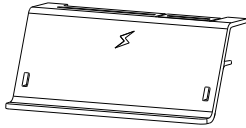
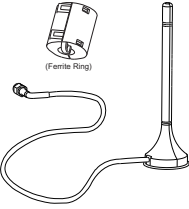

Table 9. Gateway Part Numbers

Part Number	Description
GW-1000-WE	Wireless Gateway with European and Latin American conformance
GW-1000-NWE	Wireless Gateway with North American conformance

Accessories Part Numbers

These accessories are available by separate order.

Table 10. Accessories

	Part Number	Description
	GW-TCVR	Replacement Terminal Covers (Small) (Pack Quantity of 4)
	GW-EXT-TCVR	Extended Terminal Covers (Large) (Pack Quantity of 4)
	ANT-REM	Remote Antennas with adhesive magnetic foot for wireless communication. 1.5 meter (4.9 feet) cable length for remote mounting of the antenna. (Pack Quantity of 4) & Ferrite Ring Part Number: ZCAT3035-1330-BK Manufacture: TDK
	GW-ANT-LOC	Local Antennas (optional, not included in the kit) (MPN: ANT-DB1-LCD-SMA, Manufacturer: LINX Technologies) (Pack Quantity of 4)

Remote Antenna Part Numbers

Table 11. Remote Antenna Part Numbers

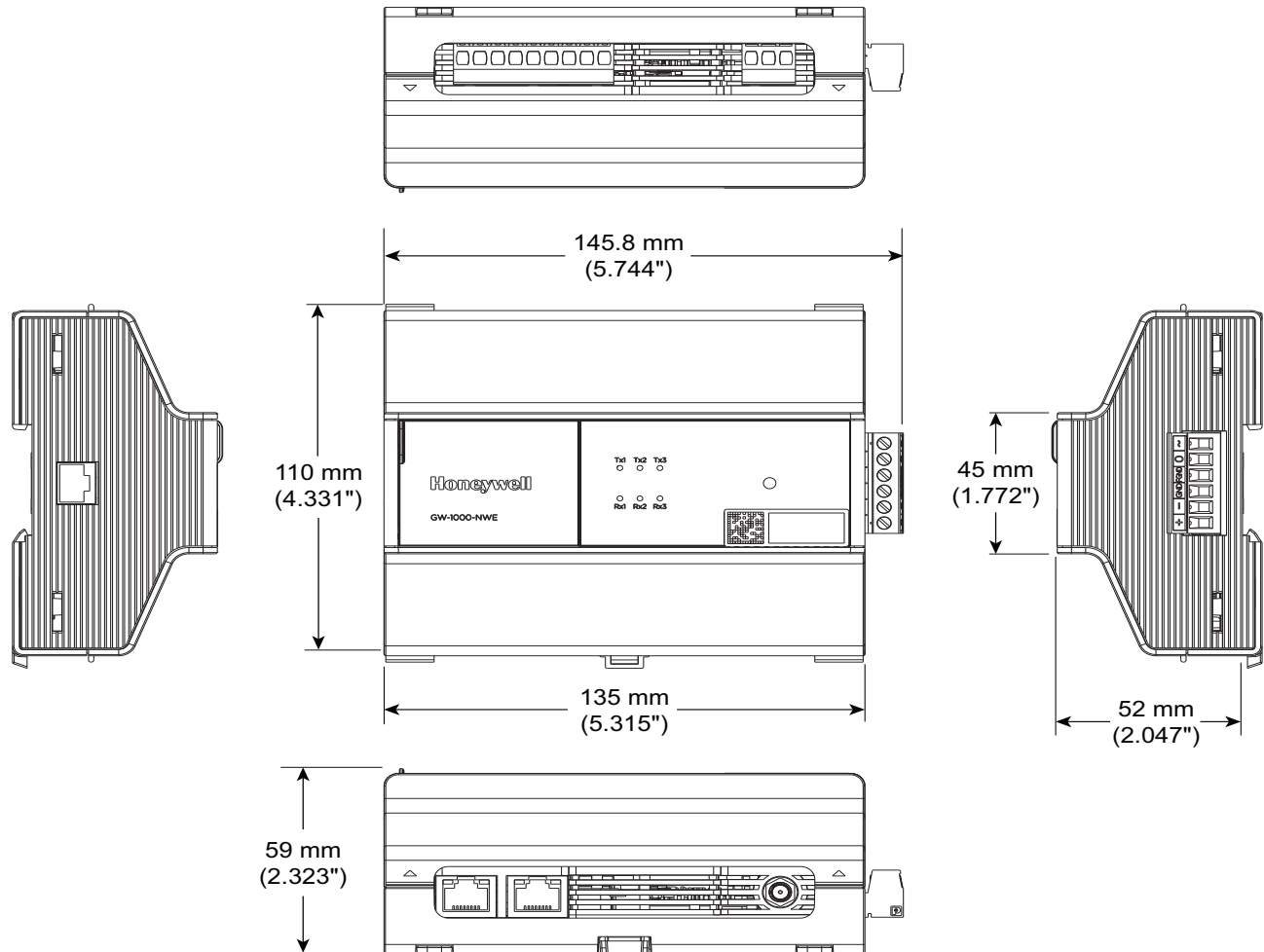
Antenna Part Numbers	Vendor Name	Type	Gain
CA #ANTT935-4	ADAM	External	2.4 GHz: 2.9dbi
ANT-DB1-LCD-SMA	LINX	External	2.4 GHz: 2.8dbi
ARY113-0012-004-00	WIESON	External	2.4 GHz: -0.31dbi

Hub and Sensors

- MultiTech LoRaWAN hub is a product of Multi-Tech Systems, Inc.
- R718A, R718CT, and R718G sensors are products of NETVOX TECHNOLOGY CO., LTD.

DIMENSIONS

GW-1000-WE/GW-1000-NWE



GENERAL SAFETY INFORMATION

- When performing any work (installation, mounting, start-up), all manufacturer instructions and in particular the Installation and Commissioning Instructions (EN1B-0077IE10) are to be observed.
- GW-1000-WE/GW-1000-NWE Gateway must be installed and mounted only by authorized and trained personnel.
- Rules regarding electrostatic discharge should be followed.
- If the GW-1000-WE/GW-1000-NWE Gateway is modified in any way, except by the manufacturer, all warranties concerning operation and safety are invalidated.
- Make sure that the local standards and regulations are observed at all times. Examples of such regulations are VDE 0800 and VDE 0100 or EN 60204-1 for earth grounding.
- Use only accessory equipment that comes from or has been approved by Honeywell.
- It is recommended that devices be kept at room temperature for at least 24 hours before applying power. This is to allow any condensation resulting from low shipping/storage temperatures to evaporate.
- The GW-1000-WE/GW-1000-NWE Gateway must be installed in a manner (e.g., in a lockable cabinet) ensuring that unauthorized persons have no access to the terminals.
- Investigated according to United States Standard UL-60730-1, UL-916, and UL60730-2-9.
- Investigated according to Canadian National Standard(s) C22.2, No. 205-M1983 (CNL-listed).
- Do not open the GW-1000-WE/GW-1000-NWE, as it contains no user-serviceable parts inside!
- CE declarations according to LVD Directive 2014/35/EU and EMC Directive 2014/30/EU.
- Product standards are EN 60730-1 and EN 60730-2-9.

Professional Installation

- This device must be professionally installed, this should be noted on grantee.
- To maintain compliance, only the antenna types that have been tested shall be used, which listed in “Remote Antenna Part Numbers” on page 6. This device requires a significant technology engineering expertise towards understanding of the tools and relevant technology, not readily available to average consumer. Only a person professionally trained in the technology is competent.
- This device is not directly marketed or sold to general public.

Safety Information as per EN60730-1

The GW-1000-WE/GW-1000-NWE Gateway is intended for residential, commercial, and light-industrial environments.

The GW-1000-WE/GW-1000-NWE Gateway is an independently mounted electronic control system with fixed wiring.

The GW-1000-WE/GW-1000-NWE is suitable for mounting in fuse boxes conforming with standard DIN43880, and having a slot height of max. 45 mm.

It is suitable for panel rail mounting on 35 mm standard panel rail (both horizontal and vertical rail mounting possible).

The GW-1000-WE/GW-1000-NWE is used for the purpose of building HVAC control and is suitable for use only in non-safety controls for installation on or in appliances.

Table 12. Safety Information as per EN60730-1

Electric Shock Protection	PELV
Pollution Degree	Pollution Degree 2, suitable for use in industrial environments.
Installation	Class 3

Table 12. Safety Information as per EN60730-1

Overvoltage Category	24 V-powered controls: Category I
Rated Impulse Voltage	330 Vac for Category I (SELV)
Automatic Action	Type1.Y
Software Class	Class A
Enclosure	IP20 according to EN-60529
Ball-pressure Test Temperature	>75 °C for all housing and plastic parts >125 °C in the case of devices applied with voltage-carrying parts, connectors, and terminals.
Electromagnetic Interference	Tested at 230 Vac, with the modules in normal condition.
System Transformer	Europe: safety isolating transformers according to IEC61558-2-6 U.S.A. and Canada: NEC Class-2 transformers

WEEE



WEEE Directive 2012/19/EC Waste Electrical and Electronic Equipment Directive

- At the end of the product life, dispose of the packaging and product in an appropriate recycling center.
- Do not dispose of the device with the usual domestic refuse.
- Do not burn the device.

Honeywell Building Solutions

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GENERAL SAFETY INFORMATION

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- Gateway may be installed and mounted only by authorized and trained personnel.
- Rules regarding electrostatic discharge should be followed.
- If the GW-1000-WE/GW-1000-NWE gateway is modified in any way, except by the manufacturer, all warranties concerning operation and safety are invalidated.
- Make sure that the local standards and regulations are observed at all times. Examples of such regulations are VDE 0800 and VDE 0100 or EN 60204-1 for earth grounding.
- Use only accessory equipment which comes from or has been approved by Honeywell.
- It is recommended that devices be kept at room temperature for at least 24 hours before applying power. This is to allow any condensation resulting from low shipping/storage temperatures to evaporate.
- The GW-1000-WE/GW-1000-NWE gateway must be installed in a manner (e.g., in a lockable cabinet) ensuring that uncertified persons have no access to the terminals.
- Investigated according to United States Standard UL-60730-1, UL-916, and UL60730-2-9.
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- CE declarations according to LVD Directive 2014/35/EU and EMC Directive 2014/30/EU.
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The GW-1000-WE/GW-1000-NWE gateway is an independently mounted electronic control system with fixed wiring.

The GW-1000-WE/GW-1000-NWE gateway is suitable for mounting in fuse boxes conforming with standard DIN43880, and having a slot height of max. 45 mm.

It is suitable for panel rail mounting on 35 mm standard panel rail (both horizontal and vertical rail mounting possible).

The GW-1000-WE/GW-1000-NWE gateway is used for the purpose of building HVAC control and is suitable for use only in non-safety controls for installation on or in appliances.

Table 1. Safety Information as per EN60730-1

Electric Shock Protection	PELV
Pollution Degree	Pollution Degree 2, suitable for use in industrial environments.
Installation	Class 3
Overvoltage Category	24 V-powered controls: Category I
Rated Impulse Voltage	330 Vac for Category I (SELV)
Automatic Action	Type1.Y
Software Class	Class A
Enclosure	IP20 according to EN-60529
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Electromagnetic Interference	Tested at 230 Vac, with the modules in normal condition.
System Transformer	Europe: safety isolating transformers according to IEC61558-2-6 U.S.A. and Canada: NEC Class-2 transformers

WEEE



WEEE Directive 2012/19/EC Waste Electrical and Electronic Equipment Directive

- At the end of the product life, dispose of the packaging and product in an appropriate recycling center.
- Do not dispose of the device with the usual domestic refuse.
- Do not burn the device.

Regulation (EC) No 1907/2006

According to Article 33 of REACH Regulation, be informed that this product may contain components with lead (CAS: 7439-92-1) content above the threshold level of 0.1% by weight.

TECHNICAL DATA

Electrical Data

Table 2. Electrical Data

Operating Voltage (AC)	19 to 29 Vac (50/60Hz)
Operating Voltage (DC)	19 to 29 Vdc
Screw-type Terminals	2.5 mm ²
Overvoltage Protection	Protected against overvoltages of max. 29 Vac or 40 Vdc, terminals are protected against short-circuiting.

Power Consumption

Table 3. Power Consumption

Gateway	Power	
	24Vac	24Vdc
GW-1000-WE/GW-1000-NWE	Max. 35VA	Max. 15W

Current Consumption

Table 4. Current Consumption

Gateway	Power	
	24Vac	24Vdc
GW-1000-WE/GW-1000-NWE	1430mA	620mA

Operational Environment

Table 5. Operational Environment

Ambient Operating Temperature	0 to 50 °C (32 to 122 °F)
Ambient Operating Humidity	5 to 95% relative humidity (non-condensing)
Ambient Storage Temperature	-28.9 to +70°C (-20 to 158 °F)
Ambient Storage 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

Table 5. Operational Environment

RFI, EMI	Residential, commercial, and light-industrial environments
MTBF (Mean Time Between Failure)	11.5 years

Default IP Address

Table 6. Default IP Address

IP Address	192.168.2.1 (applicable only when Gateway is in AP mode)
Net Mask	255.255.255.0

Standards

Table 7. Standards

Protection Class	IP20
Product Standards	CAN/CSA-E60730-1:02, Ethernet Protocol version IEEE 802.3
Testing Electrical Components	IEC68
Certification	<ul style="list-style-type: none"> • UL60730-1 • UL916 • EN 60730-1 • EN 60730-2-9 • FCC Part15, Subpart B • CAN ICES-3 (B)/NMB-3(B) • BQB • RoHS II • REACH
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.

INTERFACES

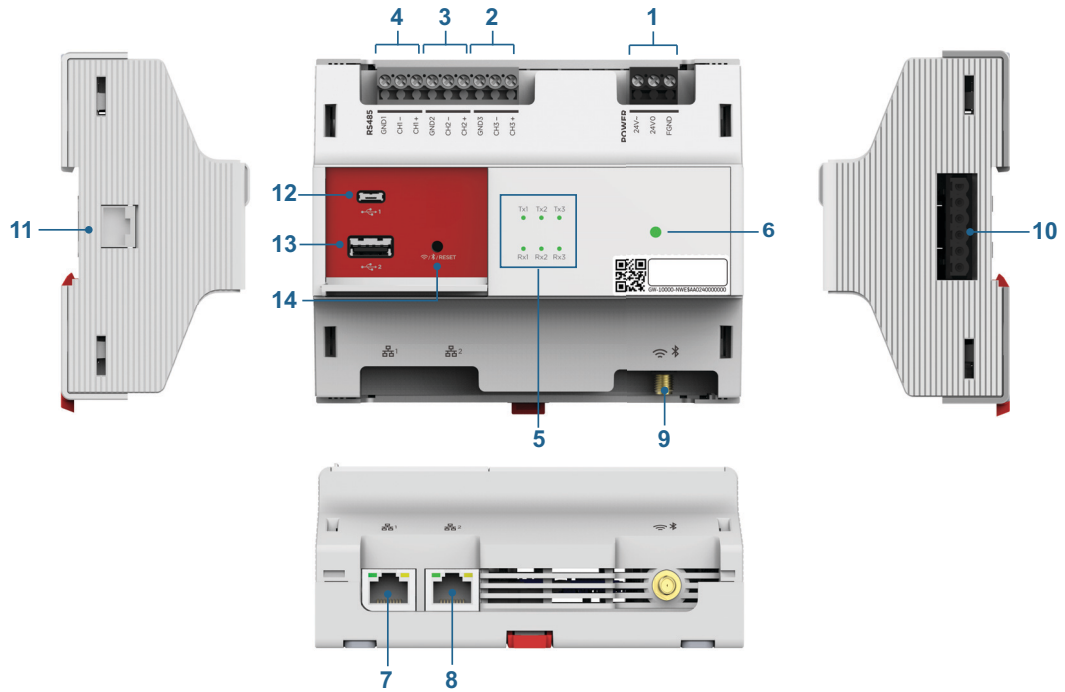


Fig. 1. GW-1000-WE/GW-1000-NWE Gateway

NOTE: *All RS485 interfaces, USB interfaces, RJ11 interface, Rx and Tx LEDs are for future use.

Table 8. Gateway Terminals

Type	Legend	Signal	Comment
Power Supply Terminals	1	FGND	Connect to earth ground in the field
		24V0	Power supply common
		24V~	Power supply (24 Vac/dc)
*RS485 Interface 3 Terminals	2	CH3+	(+) for RS485 interface 3
		CH3-	(-) for RS485 interface 3
		GND3	GND3 for RS485 interface 3
*RS485 Interface 2 Terminals	3	CH2+	(+) for RS485 interface 2
		CH2-	(-) for RS485 interface 2
		GND2	GND2 for RS485 interface 2
*RS485 Interface 1 Terminals	4	CH1+	(+) for RS485 interface 1
		CH1-	(-) for RS485 interface 1
		GND1	GND1 RS485 interface 1
LED	5	*Tx1 LED (green)	Transmit and receive indication for RS485 interfaces 1 to 3
		*Rx1 LED (green)	
		*Tx2 LED (green)	
		*Rx2 LED (green)	

Table 8. Gateway Terminals (Continued)






Type	Legend	Signal	Comment
LED	5	*Tx3 LED (green)	Transmit and receive indication for RS485 interfaces 1 to 3
		*Rx3 LED (green)	
	6	Main LED	Indicates the operational status of the Gateway
RJ45 Interface	7	Ethernet 1	Dedicated to Internet/Cloud connectivity (10/100/1000BASE-T)
	8	Ethernet 2	Dedicated to MultiTech LoRaWAN hub (10/100/1000BASE-T)
SMA Terminal	9	For Wi-Fi and Bluetooth antenna	Antenna for both Wi-Fi and Bluetooth 802.11a/b/g/n/ac + BT 4.2
*RS485 Interface 4 Terminals	10	~ (24V~)	Communication and power bus for expansion modules
		24V0	
		FGND	
		GND	
		(-) for RS485 interface 4	
		(+) for RS485 interface 4	
*RJ11 Interface	11	(+) for RS485 interface 5	
		(-) for RS485 interface 5	
		output 5Vdc	
		GND	
*USB Interface	12		Micro USB port to connect with laptops, mobile, and tablets
	13		USB Type A port
Reset Button	14		Reset button to reset the device to factory default

Main LED

Table 9. Main LED Pattern

LED behavior	Visual	Meaning
Green-Yellow-Red cycling (Alternate Green, Yellow, Red every 1.0 sec)		Factory default <ul style="list-style-type: none"> No Configuration in Gateway and Not Registered
Solid Green		Working properly <ul style="list-style-type: none"> Firmware Running and Connected to Cloud
Yellow - breathing		Internet connection Status <ul style="list-style-type: none"> Internet is connected
Red - breathing		Wi-Fi connection: <ul style="list-style-type: none"> AP Mode - Failed

Table 9. Main LED Pattern

LED behavior	Visual	Meaning
Blink every 0.2S Green		Firmware download or device configuration is in progress
Blink every 0.2S Red		Total communication failure
Three Blinks in 1.5 second interval and then Pause for 2 sec Red		Internet/Cloud connection failure
2 Red Blinks and Pause		OS booting
Yellow Slow Blink every 1 sec		Wi-Fi connection is in progress after device boot-up.

Ethernet LEDs

Ethernet 1 is used for Cloud connectivity and Ethernet 2 is to connect with MultiTech HUB.

These are RJ45 female interfaces, each with a yellow activity status LED (located to the left) and a green activity LED (located to the right). The possible behaviors and corresponding meanings of these LEDs are explained in the following table.

Table 10. LEDs of Ethernet interfaces 1 and 2

Case	LED Behavior	Meaning	Remedy
1	Yellow LED is ON steadily	Ethernet is working with connectivity up to 100Mbps.	If communication problems persist, then check the green LED. See Case 3 and Case 4 given below.
2	Yellow LED is OFF	<ul style="list-style-type: none"> If the green LED is ON or flashing, then Ethernet is working with connectivity up to 10Mbps. If the green LED is OFF, then Ethernet is disconnected 	Connect the cable between the Gateway and the switch.
3	Green LED is flashing	Normal operation. The Gateway is transmitting/receiving data to/from the switch via cable.	If communication problems persist, the Ethernet parameter configuration may be defective: Check IP address, MAC address, and firmware.
4	Green LED is ON	Ethernet connectivity exists but no data flow.	Check the software configuration.
5	Green LED is OFF	Ethernet port link is down.	<ul style="list-style-type: none"> Check the cable connection between the Gateway and the switch. Check the switch. Use good a laptop or good cable to directly connect the Gateway and the switch

Reset Button

The GW-1000-WE/GW-1000-NWE gateway has a reset button to reset the device to factory default. The user should push the button for 20 seconds to reset the Gateway. After reset, the Gateway will restart two times. The reset performs the following operations and completes in three minutes.

- Erases the Gateway configuration
- Resets the SSID to default
- Retains the user registration
- Retains the current firmware version
- Retains the current OS version
- LED Yellow breathing

Communication Baud Rates

Table 11. Communication Baud Rates

Ethernet	10/100/1000 Mbit/s, RJ45
BACnet MSTP	9.6, 19.2, 38.4, 76.8, 115.2 Kbps
Wi-Fi	802.11b: up to 11Mbps 802.11g: up to 54Mbps 802.11n: up to 150Mbps
Bluetooth	BR: up to 1Mbps EDR: up to 3Mbps BLE: up to 1Mbps
Wi-Fi Range with unobstructed line of sight	100 ft
Supported type of Wi-Fi connections	Wi-Fi Access Point - Providing access point to IO-10MIXR-WE/IO-10MIXR-NWE Smart IO and TC500A-N Commercial Thermostat devices

NOTE: Wi-Fi 5 GHz is for future use.

Connection to Honeywell Forge

GW-1000-WE/GW-1000-NWE Gateway uses HTTPS for connecting to the Honeywell Forge platform. It connects to Internet via Ethernet 1 port.

Connection to MultiTech LoRaWAN Hub

GW-1000-WE/GW-1000-NWE Gateway uses UDP Port for its communication on Wifi and Ethernet 2. For more information, refer to “Gateway to MultiTech LoRaWAN hub connection” section on page 10.

Small and Medium Building Administrator Supervisor Dashboard

For more information, refer to the Small and Medium Building Administrator Supervisor Dashboard user guide (31-00379M).

Honeywell Connect Mobile App

For more information, refer to the Small and Medium Building Administrator Deploy App Setup guide (31-00451M).

POWER SUPPLY

WARNING

Risk of electric shock or equipment damage!

- Do not connect more than one GW-1000-WE/GW-1000-NWE gateways to the same transformer.

Transformers

Honeywell Transformers

A transformer can power the GW-1000-WE/GW-1000-NWE gateway. When determining total current consumption and selecting the appropriate transformer, take into account the number of connected modules, accessories, and field devices.

NOTE: In Europe, system transformer(s) must be safety isolating transformers according to IEC61558-2-6. In the U.S.A. and Canada, NEC Class-2 transformers must be used.

Table 12. Honeywell CRT Series Transformers (Europe)

Part No.	Primary Side	Secondary Side
CRT 2	220/230 Vac	24 Vac, 50 VA, 2 A
CRT 6	220/230 Vac	24 Vac, 150 VA, 6 A
CRT 12	220/230 Vac	24 Vac, 300 VA, 12 A

Table 13. Honeywell 1450 Series Transformers (N. America)

Part No. 14507287	Primary Side	Secondary Side
-001	120 Vac	24 Vac, 50 VA
-002	120 Vac	2 x 24 Vac, 40 VA; 100 VA from separate transformer
-003	120 Vac	24 Vac, 100 VA; 24 Vdc; 600 mA
-004	240/220 Vac	24 Vac, 50 VA
-005	240/220 Vac	2 x 24 Vac, 40 VA; 100 VA from separate transformer
-006	240/220 Vac	24 Vac, 100 VA; 24 Vdc, 600 mA

NOTE: Standard commercially available transformers can also power the GW-1000-WE/GW-1000-NWE gateway.

Switch Mode Power Supply

To reduce overall current consumption, the GW-1000-WE/GW-1000-NWE gateway can be powered by a switch mode dc power supply (rather than by a transformer).

Fusing

The choice of appropriate fusing is dependent upon the given connection scenario (i.e., cable lengths and the use of a primary and/or secondary transformer) and upon the type of connected bus.

Table 14. Fusing

Designation	Description
F1	4 A, time-lag fuse (slo-blow), e.g., Littlefuse type 218.004.
F2	Depends upon field devices.

WIRING AND SET-UP

General Safety Considerations

- When connecting the GW-1000-WE/GW-1000-NWE gateway, VDE, National Electric Code (NEC) or equivalent, and any local regulations concerning grounding must be observed.
- Only qualified electricians may carry out electrical work.
- The electrical connections must be made at the terminals of the GW-1000-WE/GW-1000-NWE gateway.
- For Europe, only: To comply with CE requirements, devices with a voltage in the range of 50 to 1000 Vac or 75 to 1500 Vdc and which are not provided with a supply cord and plug or with other means for disconnection from the supply having a contact separation of at least 3 mm in all poles must have the means for disconnection incorporated in the fixed wiring.
- Only copper conductors should be used for electrical connection.
- Only electrical cables/wires with operating temperature at least 75° C should be used for electrical connection.

! WARNING

Risk of electric shock or equipment damage!

- Do not touch any live parts in the cabinet.
- Disconnect the power supply before making connections to or removing connections from Gateway terminals.
- Do not use spare terminals as wiring support points.
- Do not reconnect the power supply until you have completed the power supply.



CAUTION

Observe the precautions for handling electrostatic devices.

Wiring Terminals

The GW-1000-WE/GW-1000-NWE gateway features screw-type terminals.

Table 15. Power Supply Wiring Terminals Specifications

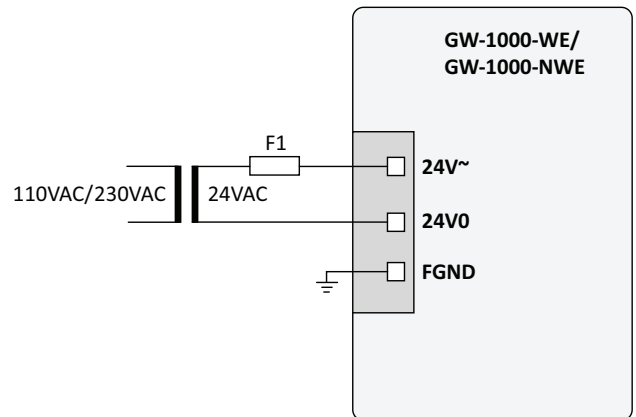
Terminal Type	Stripping Length	Torque Value	Max. Plug Gauge
Screw (Type P2)	6mm	3.1 to 3.5 lb-in (0.350 to 0.395 N-m)	28 to 14 AWG (0.0804-2.075 mm ²)

Terminals support both flexible and solid cables. Wires can be equipped additionally with ferrules.

Connecting Power Supply

Connect the power supply to the power supply terminals of the GW-1000-WE/GW-1000-NWE gateway.

The factory default Gateway must be powered ON for a minimum of 10 hours for the first time to make the RTC function as intended.

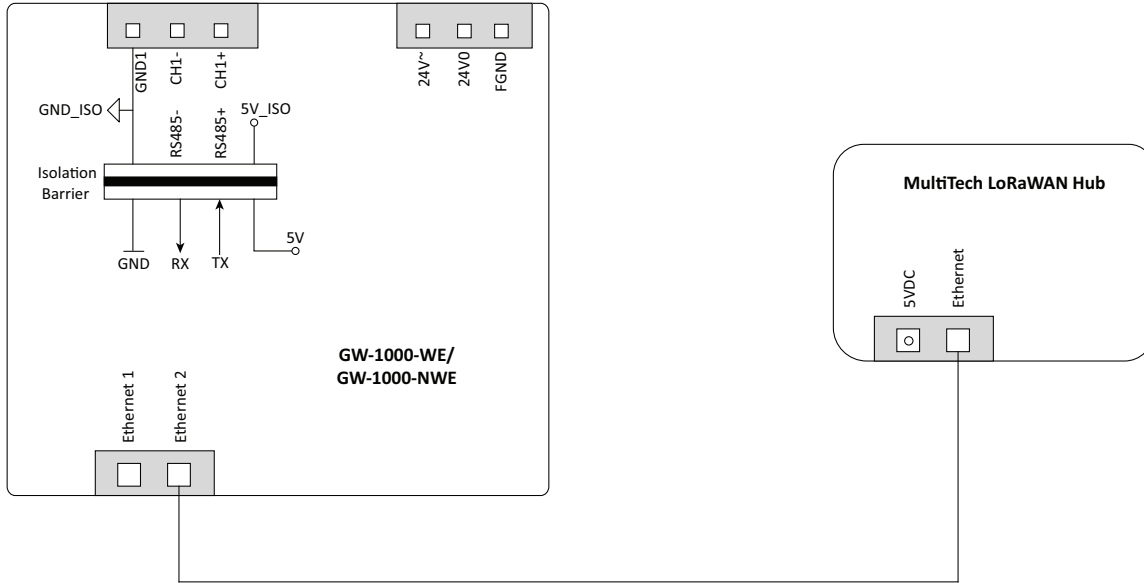


Earth Grounding

The GW-1000-WE/GW-1000-NWE gateway comply with SELV (Safety Extra-Low Voltage), so protective earth grounding is not required. However, a functional earth grounding for EMC is mandatory. For information, see "Appendix: Earth Grounding" section on page 13.

WIRING CONNECTIONS

Gateway to MultiTech LoRaWAN hub connection



! WARNING

Do not connect the MultiTech LoRaWAN Hub to Ethernet 1

If connected to Ethernet 1 mistakenly, then restart the MultiTech LoRaWAN Hub before connecting to Ethernet 2

WIRELESS CONNECTIVITY

Connectivity Frequency Range

Table 16. Connectivity Frequency Range

Connectivity Medium	Frequency Range	E.I.R.P for CE	E.I.R.P for FCC/IC
Bluetooth	2400 MHz-2483.5 MHz	20 mW	20 mW
Wi-Fi 2.4 GHz	2400 MHz-2483.5 MHz	100 mW	320 mW

NOTE: Wi-Fi 5 GHz is for future use.

General Information

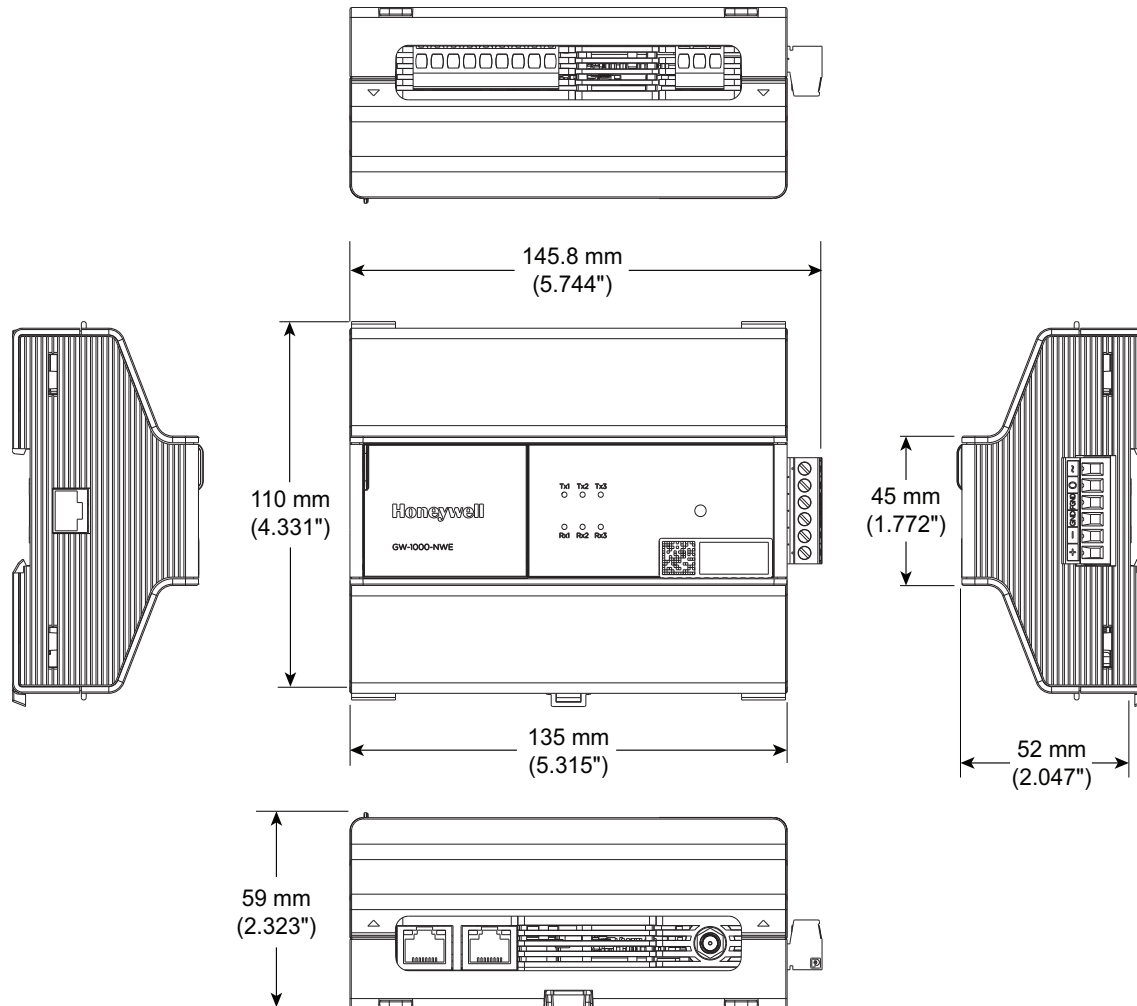
- EMF Statement: To maintain compliance with the RF exposure requirement, a separation distance of 20 cm between the device and the human should be maintained.
- Alarm information in France
 - Déclaration d'exposition Attention: Cet émetteur doit être installé pour fournir une distance de séparation d'au moins 20 cm de toute personne.
 - Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- FCC Warning Statement: "This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 1. This device may not cause harmful interference, and
 2. This device must accept any interference received, including interference that may cause undesired operation.
 - Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
 - This device complies with FCC radiation exposure limits set forth for an uncontrolled environment.
 - This device must not be co-located or operating in conjunction with any other antenna or transmitter.
 - End users must follow the specific operating instructions for satisfying RF exposure compliance.
- FCC Class B Statement: NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause

harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
 - IC Statement: This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

DIMENSIONS

GW-1000-WE/GW-1000-NWE Gateway



APPENDIX: EARTH GROUNDING

Gateway and SELV

In order to avoid distribution of noise or earth ground potential differences over networks or other connections, the GW-1000-WE/GW-1000-NWE gateway is designed to comply with SELV (Safety Extra Low Voltage).

Furthermore, SELV offers the greatest possible safety against electrical impact.

To support SELV, all Honeywell external (CRT series) or internal transformers comply with standard EN60742. Earth grounding is therefore not recommended.

Gateway and EN60204-1

However, if compliance with the standard EN60204-1 is required, note the following:

General Information about EN60204-1

EN60204-1 defines electrical safety for a complete application/machine including Gateways, sensors, actuators and any connected/controlled electrical device.

EN60204-1 requires Gateways to be powered by PELV (Protective Extra-Low Voltage) and earth grounding of the secondary side of the used transformers or earth grounding of the system ground.

Earth grounding is prescribed to prevent the unexpected start-up of connected rotating/moving machines due to an insulation fault and double earth grounding somewhere in the plant.

The use of an earth leakage monitor is also possible to fulfill PELV if earth grounding is prohibited.

When is EN60204-1 Applicable to Gateway?

SAFETY AGAINST ELECTRICAL IMPACT

EN60204-1 is not mandatory; this is because electrical safety is provided by the use of SELV and transformers according to standard EN60742.

SAFETY AGAINST UNEXPECTED START-UP OF ROTATING/MOVING MACHINES

If the application/plant does not contain machines that can be harmful to the operator due to an unexpected start-up, the standard EN60204-1 is not applicable. If such machines are encountered, then EN60204-1 must be followed. Grounding is required.

Functional EMC Grounding

- Use a cable as short as possible for grounding: min 1.5 mm² (16 AWG).
- For connection details, refer to the following example.

EXAMPLE

Connecting a single transformer with multiple GW-1000-WE/GW-1000-NWE gateway earth-grounded as per EN60204-1.

- Connect earth ground to FGND of the GW-1000-WE/GW-1000-NWE gateway.

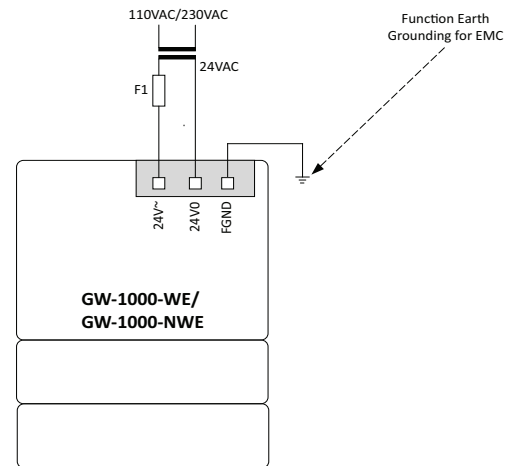


Fig. 2. Connecting and earth grounding multiple GW-1000-WE/GW-1000-NWE gateway Plant Gateways (single transformer)

NOTES:

- Use a noise-free earth ground inside the cabinet.
- Use one star-point to split power for Gateways and field devices.
- If the transformer is used for several Gateways, each Gateway ground has to be wired separately to the star point.
- If a field device that prohibits earth grounding is connected to the system ground, an isolation monitoring device must be used instead of earth grounding.
- If the field device transformer is physically far away from the Gateway, earth grounding must still be performed for the Gateway.

GATEWAY PART NUMBERS

Table 17. Gateway Part Numbers

Part Number	Description
GW-1000-WE	Wireless Gateway with European and Latin American conformance
GW-1000-NWE	Wireless Gateway with North American conformance

Accessories Part Numbers

These accessories are available by separate order.

Table 18. Accessories

	Part Number	Description
	GW-TCVR	Replacement Terminal Covers (Small) (Pack Quantity of 4)
	GW-EXT-TCVR	Extended Terminal Covers (Large) (Pack Quantity of 4)
	ANT-REM	Remote Antennas with adhesive magnetic foot for wireless communication. 1.5 meter (4.9 feet) cable length for remote mounting of the antenna. (Pack Quantity of 4) & Ferrite Ring Part Number: ZCAT3035-1330-BK Manufacture: TDK
	GW-ANT-LOC	Local Antennas (optional, not included in the kit) (MPN: ANT-DB1-LCD-SMA, Manufacturer: LINX Technologies) (Pack Quantity of 4)

Remote Antenna Part Numbers

Table 19. Remote Antenna Part Numbers

Antenna Part Number	Vendor Name	Type	Gain
CA #ANTT935-4	ADAM	External	2.4 GHz: 2.9dbi
ANT-DB1-LCD-SMA	LINX	External	2.4 GHz: 2.8dbi
ARY113-0012-004-00	WIESON	External	2.4 GHz: -0.31dbi

Declaration

Transmitter Antenna (From Section 6.8 RSS-GEN, Issue 5, April 2018):

– This radio transmitter [IC: 24552-00001] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

– Le présent émetteur radio [IC: 24552-00001] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés cidessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont trictement interdits pour l'exploitation de l'émetteur.

Hub and Sensors

- MultiTech LoRaWAN hub is a product of Multi-Tech Systems, Inc.
- R718A, R718CT, and R718G sensors are products of NETVOX TECHNOLOGY CO., LTD.

TECHNICAL LITERATURE

Table 20. Technical Literature

Title	Product Literature Number	Contents
GW-1000-WE/GW-1000-NWE Gateway Datasheet	31-00424	Product data of the device.
GW-1000-WE/GW-1000-NWE Gateway Mounting Instructions	31-00425	Describes the mechanical mounting of the device.
IO-10MIXR-WE/IO-10MIXR-NWE Smart IO Datasheet	31-00427	Product data of the device.
IO-10MIXR-WE/IO-10MIXR-NWE Smart IO Installation Instructions	31-00429	Describes electrical connection, configuration, troubleshooting information.
IO-10MIXR-WE/IO-10MIXR-NWE Smart IO Mounting Instructions	31-00428	Describes the mechanical mounting of the device.
TC500A-N Commercial Thermostat Datasheet	31-00398M-1	Product data of the device.
TC500A-N Commercial Thermostat Mounting Instructions	31-00399M-1	Describes the mechanical mounting and basic wiring of the device.
TC500A-N Commercial Thermostat User Guide	31-00400M-1	Contains procedures for UI-based functionalists of the device.
TC500A-N Commercial Thermostat Quick Start Guide	31-00401M-1	Contains simple procedures to quickly set up the device.
Small and Medium Building Administrator Supervisor User Guide	31-00379M	Contains procedures to control and monitor the Small and Medium Building Administrator devices.
Small and Medium Building Administrator Setup Guide	31-00451M	Contains procedures to commission, monitor, and control the Small and Medium Building Administrator devices.
Small and Medium Building Administrator Security Manual	31-00452M	Contains Honeywell's solution architecture and Cybersecurity related features.
Small and Medium Building Administrator Onboarding User Guide	31-00450M	Admin document. Contains procedures to create new organization and User accounts.

Honeywell Building Solutions

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