



## Gateway 375 Installation Manual

Models: GW375, GW375-EU, GW375-ANZ

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<p><b>Gateway 375 Installation Manual</b></p>			
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## 1. SYSTEM OVERVIEW

The Gateway 375 is an embedded computer that provides interfacing capability among a variety of wired and wireless networks. It implements Z-wave, cellular, WIFI, 433-MHz, GPS, and Iridium satcom radios. Wired interfaces include CAN and Ethernet.

## 2. PURPOSE

This Installation Manual is intended to inform installers and users of the proper placement, configuration and distances between system components.

## 3. INSTALLATION

### IMPORTANT NOTICE

This device must be professionally installed using only the antennas specified herein to comply with 47 CFR 15.203.

### 3.1. SPECIAL TOOLS REQUIRED

In addition to SAE standard and/or metric wrenches, sockets, and screw drivers, the following tools are required:

- 1) Torque Wrench (in-lbs)
- 2) Wrench set

## 3.2. PARTS LIST

Parts included in the kit are listed below. The item numbers are referenced throughout this document.

**Table 1 Kit Parts List**

Item	Description	Part Number	QTY
1	Gateway 375	153510-000231	1
2	SMA Cap (installed at 433 MHz connector)	Amphenol 132364	1
3	M12 Plug (installed at ethernet connector)	Phoenix Contact 1680539	1
4	Deutsch A Sealing Plug	353050-000120	1
5	Deutsch B Sealing Plug	353050-000121	1
6	GW375 Charging Harness	353050-000122	1
7	Power Charger	Mean Well GST90A19-P1M	1
8	Charger AC Cable - US	Mean Well YP12_YC12	1
9	Telematics Antenna	Taoglas MA410.A.LBIJ.001	1
10	WiFi Antenna	Taoglas GW.26.0111	1
11	Z-Wave Antenna	LPRS ANT-SS900	1
12	433 MHz Antenna	Taoglas TI.10.0111	0*
13	RF Cable SMA RG-316 3.0m	Cinch 415-0029-M3.0	4
14	SMA Adapter Jack-Jack	TE ADP-SMAF-SMAF	4
15	General Deutsch A Harness	TBD	0*
16	M12 A CODE TO RJ45 CAT5E SFTP 25 FT	253030-000039	0*
17	Z-Wave Sensor	Various	8
18	Bolt 1/4-20 5 inch	TBD	4
19	Lock Nut 1/4 inch	TBD	4
20	Magnet	TBD	4

\*Purchased separately.

## 3.3. POWER OPTIONS

The device contains an internal battery. This allows for two options of supplying power in the installation. Choose the option that best fits your needs.

- With external power. When the voltage on pins Keyswitch and Power is within acceptable range, the unit will draw current on the Power pin to run the device and to charge the battery as needed. The unit will fall back to battery power as needed when Keyswitch or Power is not asserted. To wire for this scenario, connect Power and Ground to the power source, and connect Keyswitch to switched power (e.g., indicating

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when vehicle alternator is active). Alternatively, Keyswitch and Power can both connect to switched power.

- Without external power. This scenario requires periodically charging the battery with the supplied charging harness (item 6) and AC-powered charger (item 7). When finished charging, remove the charging harness and install the sealed connector (Item 4). Leave Power, Ground, and Keyswitch pins unconnected. Press the button to wake the unit.

### **3.4. MOUNTING**

Mount the device in the desired location using four fasteners. The mounting holes accept 1/4"-20 or M6 bolts. Refer further to the dimensions drawing in Appendix A.

Optionally mount the device to a metal surface using the supplied magnets.

### **3.5. WHIP ANTENNAS**

The supplied WiFi, Z-wave, and 433 antennas are whip format. Attach the SMA connectors to the unit as labelled. Torque to 7-10 in-lbs +/- 0.5 in-lbs.

Keep the 433 connector capped when not in use to maintain the seal.

### **3.6. TELEMATICS ANTENNA**

Mount the telematics antenna (cellular, cellular diversity, satcom, and GPS) in the desired location with a clear view of the sky. Per antenna manufacturer's recommendations, drill hole diameter 22mm, and torque M20 mounting nut to 260 in-lbs (29.4 Nm).

Attach the four SMA connectors to the unit as labelled. Torque to 7-10 in-lbs +/- 0.5 in-lbs. If further cable length is needed, use the included SMA cables and adapters. Other cable extensions may be used instead, provided the signal loss is less than 3 dB at 1 GHz for the total cable.

### **3.7. WIRED OPTIONS**

Ethernet, CAN, analog inputs, and digital inputs/outputs may be wired as desired. The general Deutsch A harness (item 15) provides wires loaded in all positions. Keep the M12 ethernet connector capped when not in use to maintain the seal.

### **3.8. Z-WAVE SENSORS**

Place supplied Z-Wave sensors in the environment as desired according to manufacturer instructions.

## 4. HARDWARE COMPONENTS BACKGROUND

### 4.1. ELECTRICAL CHARACTERISTICS

Input Power Requirements: 9-20 VDC  
Current, Charging, 19VDC: 2.5A (nominal)

### 4.2. WEIGHT INFORMATION

The total weight of the Gateway and antenna is listed below.

**Table 2 Weight Information**

Component	Weight (lbs)
Gateway	7.5
Telematics Antenna	1.0

## 4.3. EQUIPMENT DIMENSIONS

Equipment dimensions are outlined in the table below for all required components in Gateway. All figures given are representative of maximum equipment dimensions (where applicable). Refer to Appendix A for further dimension information.

**Table 3 Equipment Dimensions**

Component	Length (in)	Width (in)	Height (in)
Gateway	8.31	6.75	3.81
Telematics Antenna	8.52	3.68	1.22

## 4.4. CONDITIONS FOR OPERATION

### IMPORTANT NOTICE

This device can be configured to transmit on the 433 MHz frequency following the requirements of 15.231(a-d). This requirement is that the transmission must be used as a control signal. It can include data transmission as well, or not, but in all cases it must be a control signal. Failure to adhere to this requirement voids the authority to operate the equipment.

## 5. SEPARATION DISTANCES

With equipment installed, final configuration must meet 20 cm minimum separation distance between users and system antennas to comply with FCC part 1.310 and ISED RSS-102.

## 6. REGULATORY INFORMATION

### 6.1. FEDERAL COMMUNICATIONS COMMISSION NOTIFICATION TO USER

#### Models: GW375

These devices comply with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

These devices must be operated as supplied by Appareo Systems LLC. Any changes or modifications made to these devices without the express written approval of Appareo Systems LLC may void the user's authority to operate these devices.

This equipment has been tested and found to comply with the limits for Class B digital devices, 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, no guarantee shall be made 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.

### 6.2. INDUSTRY CANADA NOTIFICATIONS TO USER

#### Models: GW375

English

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

## French

Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux normes CNR exemptes de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne doit pas causer d'interférences.
2. Cet appareil doit accepter toute interférence, y compris celles qui peuvent entraîner un fonctionnement indésirable de l'appareil.

## 7. APPENDIX A – INSTALLATION DRAWING

