



D-307386

PGx312

PowerG 2-Way Wireless Magnetic Contact Device with Hard-Wired Input Installation Instructions.

ENG Introduction

The PGx312 is a two-way wireless PowerG magnetic contact device. The device has the following features:

- Weatherproof, water-resistant outdoor transceiver
- Flat and curved surface installation
- Battery pull tab for auto enrollment
- Functions at extreme temperatures (-40 °C to 66 °C / -40°F to 151 °F) and is IP66 certified
- Note:** UL testing temperatures: -35 °C to 66 °C (-31 °F to 151 °F)
- Battery life up to 5 years (with typical commercial use)
- Integrated magnetic sensor
- Maximum magnetic gap of 44.5 mm (1.75 in.) on wood and 31.8 mm (1.25 in.) on metal
- Magnetic sensor toggle if the auxiliary input only is required
- Separate transmissions from sensor and auxiliary input that trigger the same RF transmitter.
- Front and back tamper protection (back tamper not available in US market)
- Automatic periodic supervision at regular intervals
- PowerG two-way FHSS TDMA technology
- Anti-masking protection, based on panel software version
- Auxiliary hard-wired input, programmable as either normally open (NO), normally closed (NC), end of line (EOL), or double end of line (DEOL) for use with additional device. DEOL functionality is based on panel version software.
- Supports temperature level reports according to PowerG panel software version
- Paintable using non-metallic paint. Recommended paints include Krylon 'Fusion for Plastic', Rust-Oleum 'Plastic', and Dupli-Color 'Vinyl & Fabric Coating'.

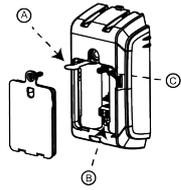
Enrolling the PGx312

1. Enter into the installer menu and select 02: ZONES / DEVICES.
2. Select ADD NEW DEVICES.
3. Begin the auto-enrollment process by pulling the tab, inserting the batteries, or entering the device ID.
4. Select the desired zone number.
5. Configure the location, zone type, and chime parameters.
6. Configure the detector.

Note:

- If the magnetic contact device is already enrolled, configure the magnetic contact device parameters using the Modify Devices option – see step 2.
- To configure the device parameters, select the Device Settings option and refer to *Configuring the Device Parameters*.
- To enroll the device, power on the device by pulling the battery tab or insert the batteries. Both methods will activate the auto-enrollment process. Alternatively, enter the ID:107-XXXX (the number of the device printed on the label).

- If the device was not automatically enrolled, press the enrollment button as seen in Figure 1 B.



A: Enrollment tab B: Enrollment button

C: Tamper switch

Figure 1: Enrollment options

Installation

This equipment is designed to be installed by qualified service persons only. Place the device above the door or window on the fixed frame and the magnet on the movable part of the door or window. Do not place the magnet more than 44.5 mm (1.75 in) from the marked side of the device.

To monitor outdoor areas, you can mount the PGx312 on a curved surface, such as a fence pole or similar.

Note:

- Once the battery cover is removed, a tamper message is transmitted to the panel. Subsequent removal of the battery prevents transmission of the TAMPER RESTORE alert, leaving the receiver in permanent alert. To avoid this, press the tamper switch when you remove the battery.
- It is recommended to wait about 1 minute after battery removal before inserting the new batteries.

Caution! Risk of explosion if the battery is replaced by an incorrect type. Dispose of the used battery according to the manufacturer's instructions.

Attention! Some models have a back tamper switch behind the device. As long as the device is seated firmly within the bracket, the switch lever will be pressed against a special break-away bracket segment that is loosely connected to the bracket. Be sure to fasten the break-away segment to the wall. If the detector unit is forcibly removed from the wall, this segment will break away from the bracket, causing the tamper switch to open.

Local diagnostics test

A local diagnostic test establishes the signal strength of a device in its current position during the installation process. To perform this mandatory test, complete the following:

1. Separate the decorative cover from the device and unscrew the battery cover. See steps 1 to 3 of *Mounting the PGx312*.
 2. Press the tamper switch once and release it.
 3. Open the door or window and verify that detection is indicated by a red LED flash.
- After two seconds, the LED flashes three times in one of three colors to indicate the signal strength.

LED response	Reception
Green LED flashes	Strong
Yellow LED flashes	Good
Red LED flashes	Poor
No flashes	No communication

Table 1: LED reception response

Important! Reliable reception must be assured. Therefore, "poor" signal strength is not acceptable. If you receive a "poor" signal from the detector, relocate it and re-test until a "good" or "strong" signal strength is

received (in regions requiring UL-compliant installation, only "strong" signal strength is permitted).

Note:

- For UL, only strong signal strength is acceptable.
- For detailed diagnostics test instructions, refer to the control panel Installer Guide.
- After this step, reattach the battery cover.
- The LED light is off in normal conditions.

Mounting the PGx312

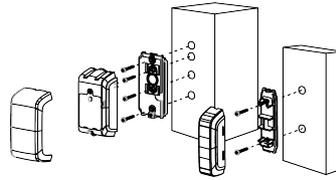


Figure 2: Mounting on a flat surface

1. Insert a flat-head screwdriver into the slot provided and push upward to remove the decorative cover.
2. Unscrew the lower screw from the device cover.
3. Separate the device from the bracket.
4. Mark and drill the required number of holes in the mounting surface.
5. Screw in the bracket with four screws provided.
6. Reattach the device to the bracket.
7. Mount the magnet base with two supplied screws to an adjacent surface and attach the magnet to the magnet bracket.

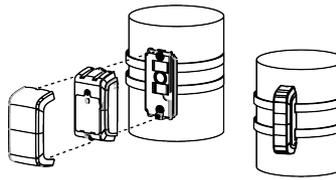
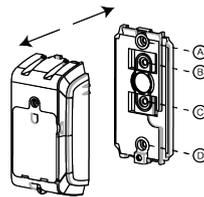


Figure 3: Mounting on a curved surface with straps

To mount the device on a curved surface, use straps (not included) as seen in Figure 3.

Note:

- Use holes A and D in Figure 4 for standard mounting. Add holes B and C in Figure 4 for tamper protection.
- Align the device and magnet according to the specifications in *Range Coverage Directions*.



A: Standard mounting B: Tamper protection

C: Tamper protection D: Standard mounting

Figure 4: Device and bracket separation

Range coverage directions

Non-metallic surface		Supports	Metallic surface	
Open	Close	Direction	Open	Close
71 mm (2.8 in.)	52 mm (2.0 in.)	X	48 mm (1.9 in.)	35 mm (1.4 in.)
40 mm (1.6 in.)	33 mm (1.3 in.)	Y (up)	32 mm (1.3 in.)	25 mm (1.0 in.)
22 mm (0.9 in.)	17 mm (0.7 in.)	Y (down)	17 mm (0.7 in.)	8 mm (0.3 in.)
85 mm (3.3 in.)	55 mm (2.2 in.)	Z	80 mm (3.1 in.)	60 mm (2.4 in.)

Table 2 - Range coverage directions

Note:

- The values stated above may vary by up to 10%. For steel installations, the gaps cannot be less than 3.2 mm (0.1 in.).
- For roller shutter assembly, the magnet needs to be mounted 25 mm to 35 mm (1.0 in. to 1.4 in.) from the devices (on the X plane). For all other installations, a minimum gap of 5 mm (0.2 in.) is needed.
- When mounting on a slide door, refer to X. When mounting on a roller shutter, refer to Y. When mounting on a normal door, refer to Z.

Parallel magnet Perpendicular magnet

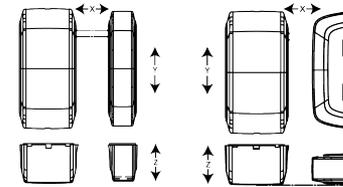


Figure 5: Range coverage directions

Note:

- For UL commercial installations, the maximum opening to activate is 50.8 mm (2 in.).
- Y (up) refers to the upper half of the Y plane. Y (down) refers to the bottom half of the device on the Y plane.
- When mounting the magnet perpendicular to the device, align the magnet with the face of the device as seen in the perpendicular magnet image.

Configuring the device parameters

Enter the control panel **DEVICE SETTINGS** menu and follow the configuration instructions for the PGx312 magnetic contact device as described in Table 3.

Option	Configuration instructions
Magnetic sensor	Determine whether to enable or disable the magnetic sensor. Optional settings: Enable (default) or Disabled .
Input #1	Define the external input according to the installer's requirements. Optional settings: Disabled (default), NO , NC , EOL , or DEOL . Note: DEOL support is dependent on panel software version.
Anti-mask	Determine whether to enable or disable the anti-masking. Optional settings: Disabled (default) or Enabled (default). Note: This feature is dependent on panel software version.

Table 3 - Magnetic device parameters

Wiring the auxiliary input

Note:

- For UL installations, the device connected to the initiating circuit must be located in the same room as the transmitter.
- For UL installations, connect to UL listed residential burglar alarm accessories only.
- For ULC installations, connect ULC listed products only to the auxiliary wiring input.
- An alarm message transmits once the loop is opened or short circuited.

To connect this device with another nearby device by auxiliary input, complete the following steps:

1. Remove the jacket at the end of the cable to expose the wires within.
2. Perforate the silicon gasket with a 0.8 mm (1/32 in.) pin.
3. Pass each wire through an entry hole and out the opposite side.
4. Remove the insulation from the end of each wire.
5. Connect each wire to the relevant terminal, referencing Auxiliary Wiring Options.
6. Screw the terminal closed using a flat head screwdriver.

Note:

- Use a 22 AWG AUX cable (3.0 mm, 0.12 in. jacket diameter) for this installation.
- Use a cable shorter than 3 m (10 ft) for the AUX connection.
- Seal the auxiliary wiring gasket with RTV Silicone adhesive sealant.

Auxiliary wiring options

You can add more devices to the circuit of the PGx312 for NC, NO, EOL, or DEOL applications. Each application type is as follows:

NC	Exclusively use series connected NC sensor contacts if the auxiliary input of the PGx312 is defined as a normally closed (NC) type. An EOL resistor is not required.
NO	Exclusively use parallel connected NO sensor contacts if the auxiliary input of the PGx312 is defined as NO type. An EOL resistor is not required.
EOL	For EOL supervision, NC or NO sensor contacts can be used. A 5.6kΩ EOL resistor must be wired at the far end of the zone loop.
DEOL	For DEOL supervision, only N.C. contacts should be used. A 5.6kΩ EOL resistor must be wired at the far end of the zone loop.

Table 4: Auxiliary wiring options

Note: Figure 6 E illustrates a DEOL resistor setup that is available dependent on panel software version.

A: N.O. switch

B: N.C. switch

C: EOL ; N.O. switch ; use 5.6 kΩ resistor

D: EOL ; N.C. switch ; use 5.6 kΩ resistor

E: DEOL ; N.C. switch only ; use 5.6 kΩ resistor

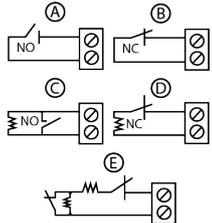


Figure 6: Auxiliary wiring options

Calibrating the anti-mask

The anti-mask feature enables the detection of attempted sabotage, for example, sensor obstruction.

Note:



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- This feature is dependent on panel software version.
- Begin the anti-mask calibration process when the device and magnet are in the final installation position. This must be the shortest distance between the magnet and the device.
- For the proper operation of the AM function, align the magnet with the sensor decorative cover during calibration. See Figure 5 for parallel and perpendicular magnet installation.

Pre-requisites:

- To receive an alert for magnet interference, enable the anti-masking configuration on the device settings menu.
- Complete the anti-masking learning process after enrollment (see *Enrolling the PGx312*) and with the device and magnet in the final installation position.

To enable the anti-mask feature, complete the following steps:

1. Position the device and magnet pointers to face each other with reference to Range Coverage Directions.
2. Ensure the device and magnet are placed no more than 5 mm apart on the Z plane. See Range Coverage Directions.
Note: During the anti-mask learning process, the sensor and the magnet must be stable for 10 seconds.
3. Press and hold the enroll button for 6-8 seconds to start the anti-mask learning process.
Note: Do not release the enrollment button while the yellow LED is lit. Release the button after the green LED lights at 6 seconds and before 8 seconds.
If successful, the green LED flashes three times. If unsuccessful, the red LED flashes three times.
Note: If the door is open while the enroll button is pressed, the anti-mask learning process is ignored.

Miscellaneous comments

DSC wireless systems are very reliable and are tested to high standards. However, due to low transmitting power and limited range (required by FCC and other regulatory authorities), there are some limitations to be considered as follows:

- A.** Receivers may be blocked by radio signals occurring on or near their operating frequencies, regardless of the digital code used.
- B.** A receiver responds only to one transmitted signal at a time.
- C.** Wireless devices should be tested regularly to determine whether there are sources of interference and to protect against faults.

Specifications

Frequency Band (MHz): Europe and rest of world: 433-434, 868-869, USA: 912-919

Maximum Tx Power:
10dBm (10mW) @433MHz
14dBm (25mW) @868MHz
15dBm (30mW) @915MHz

Alarm input: One internal and one auxiliary

Supervision: Signalling at 4-minute intervals

Tamper alert: Report when a tamper event occurs

Communication protocol: PowerG

Power supply: Tyce C

Battery type: 2 x 1.5 VAA Ultimate Lithium Energizer battery only

Battery life expectancy: 5 years with typical commercial transmissions per day (not tested by UL)

Low battery threshold: 3.0 V

Battery supervision: Automatic transmission of battery condition data as part of the periodic status report and immediately upon low battery detection.

Operating Temperature: -40 °C to 66 °C (-40°F to 151 °F)

Note: UL testing temperatures: -35 °C to 66 °C (-31 °F to 151 °F)

Relative Humidity (RH): Average relative humidity of approximately 75% non-condensing. For 30 days per year relative humidity may vary between 85% and 95% noncondensing.

Note: For UL installations, relative humidity is 93%.

Dimensions (LxWxD): 105 mm x 52 mm x 35 mm (4.1 in. x 2.0 in. x 1.4 in.)

Device weight (including battery): 154 g (5.4 oz)

Color: Dark grey

UL/ULC notes

The PG312 has been listed by UL for commercial and residential burglary applications and by ULC for residential burglary applications in accordance with the requirements in the Standards UL 634 and ULCORD634 for Door and Window Contact. For UL/ULC installations use this device only in conjunction with compatible DSC wireless receivers: HS1MZH0S79, HS2LCCDRF(P)9, HS2CNRF(P)9, P G9920, WS900-19, and WS900-29.

Europe: CE/EN (EN50131-2-6 GRADE 2, CLASS IV, EN50131-6 Type C) listed PG8312:868 MHz PG4312:433 MHz According to EN 50131-1, this equipment can be applied in installed systems up to and including Security Grade 2, Environmental Class IV. UK: The PG8312 is suitable for use in systems installed to conform to PD6662 at Grade 2 and environmental class IV BS8243.

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Tyco Safety Products Canada Ltd declares that the radio equipment type is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.dsc.com
PG4312: <http://dsc.com/pdf/1808001>
PG8312: <http://dsc.com/pdf/1808002>

Frequency Bands	Maximum Power
868.0MHz - 868.6 MHz	14dBm (25mW)
868.7MHz - 869.2MHz	14dBm (25mW)
433.22MHz - 434.64MHz	10dBm (10mW)

European single point of contact: Tyco Safety Products, Vollaweg 20, 6101 XK Echt, Netherlands.

FCC COMPLIANCE STATEMENT

WARNING! Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device 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 residential installations. 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 and television reception.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or re-locate the receiving antenna.
- Increase the distance between the device and the receiver.
- Connect the device to an outlet on a circuit different from the one that supplies power to the receiver.

- Consult the dealer or an experienced radio/TV technician.

FCC ID: F5318PG312

Innovation Science and Economic Development Canada (ISED) Statement

This equipment complies with FCC and ISED Canada RF radiation exposure limits set forth for an uncontrolled environment.

This device complies with FCC Rules Part 15 and with ISED Canada licence exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and (2) this device must accept any interference that may be received or that may cause undesired operation.

Le présent appareil est conforme aux CNR d'ISED 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.

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(a) NO WARRANTY - DSC PROVIDES THE SOFTWARE "AS IS" WITHOUT WARRANTY. DSC DOES NOT WARRANT THAT THE SOFTWARE WILL MEET YOUR REQUIREMENTS OR THAT OPERATION OF THE SOFTWARE WILL BE UNINTERRUPTED OR ERROR-FREE.

(b) CHANGES IN OPERATING ENVIRONMENT - DSC shall not be responsible for problems caused by changes in the operating characteristics of the

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However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this SOFTWARE PRODUCT to fail to perform as expected. The term C before the radio certification number signifies that the Industry Canada technical specifications were met. This Class B digital apparatus complies with Canadian ICES-003. This device complies with RSS-247 of Industry Canada. 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.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Ce dispositif satisfait aux exigences d'Industrie Canada, prescrites dans le document CNR-247, son utilisation est autorisée seulement aux conditions suivantes: (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.



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