

## Installation and Technical Manual for the **Limitless™ Series WGLA Limit Switch** *used in conjunction with the Limitless™ WPMM Series*

**ISSUE 1**  
**50051863**

### **WARNING** **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING**

Honeywell does not recommend using devices for critical control applications where there is, or may be, a single point of failure or where single points of failure may result in an unsafe condition. It is up to the end-user to weigh the risks and benefits to determine if the products are appropriate for the application based on security, safety and performance. Additionally, it is up to the end-user to ensure that the control strategy results in a safe operating condition if any crucial segment of the control solution fails. Honeywell customers assume full responsibility for learning and meeting the required Declaration of Conformity, Regulations, Guidelines, etc. for each country in their distribution market.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING** **RF EXPOSURE**

- To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna used for this transmission must not be co-located in conjunction with any other antenna or transmitter.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING**

- The WGLA must be installed in accordance with the requirements specified in this document. See Section 3 and Section 4 for EIRP requirements. Only the specified EIRP power settings, antenna types and gains and cable lengths (attenuation) as outlined in this document are valid for WGLA Series installations.

### **CAUTION**

- Power to the WGLA should not be applied (ensure battery is removed) during installation of antenna as damage could occur to the WGLA electronics.

## TABLE OF CONTENTS

<b>TABLE OF CONTENTS.....</b>	<b>II</b>
<b>LIST OF FIGURES.....</b>	<b>VI</b>
<b>LIST OF TABLES .....</b>	<b>6</b>
<b>1 DESCRIPTION.....</b>	<b>1</b>
1.1 GENERAL.....	1
1.2 PRINCIPLE OF OPERATION.....	1
1.3 MODEL REFERENCE.....	1
1.4 ABBREVIATIONS AND DEFINITIONS .....	2
1.5 SYMBOL DEFINITIONS .....	3
<b>2 SPECIFICATIONS .....</b>	<b>4</b>
2.1 INTENDED COUNTRY USAGE .....	4
2.2 CERTIFICATION AND APPROVALS .....	5
2.3 RADIO MODULE SPECIFICATIONS.....	5
2.4 ELECTRICAL SPECIFICATIONS .....	5
2.5 EMC SPECIFICATIONS.....	5
2.6 ENVIRONMENTAL SPECIFICATIONS.....	6
2.7 AGENCY COMPLIANCE INFORMATION.....	6
2.7.1 FCC Compliance Statements.....	6
2.7.2 IC compliance statements.....	6
2.7.3 Radio Frequency (RF) Safety statement (FCC & IC).....	7
2.7.4 European restrictions.....	7
2.8 EUROPEAN (CE) DECLARATION OF CONFORMITY (DOC) .....	8
2.8.1 European Declaration of Conformity statements.....	8
2.8.2 For more information about the R&TTE Directive .....	9
<b>3 EQUIVALENT ISOTROPICALLY RADIATED POWER (EIRP) .....</b>	<b>9</b>
<b>4 COUNTRY COMMUNICATION AGENCY EIRP LIMITS PER ANTENNA .....</b>	<b>10</b>
<b>5 QUICK START UP .....</b>	<b>11</b>
5.1 ANTENNA CONNECTION .....	11
5.2 BATTERY CONNECTION PROCEDURE.....	12
5.3 PAIRING MODE.....	13
5.4 WGLA PURGE MODE .....	15
5.5 WPMM OPERATION AND LED FUNCTIONS.....	15
<b>6 INSTALLATION.....</b>	<b>18</b>
6.1 ENVIRONMENTAL EFFECTS: ANTENNA PATTERN AND RF SIGNAL STRENGTH .....	18
6.1.1 Outdoor Installation Warnings.....	18
6.1.2 Choosing a Mounting Location.....	19
6.1.3 Site Selection .....	19
6.2 ENVIRONMENTAL EFFECTS: LIGHTNING .....	20
6.3 ANTENNA MOUNTING AND ADJUSTMENT.....	20
6.3.1 Mounting .....	20
6.3.2 Antenna adjustment.....	24
6.4 WGLA MOUNTING/MECHANICAL ACTUATORS.....	25
<b>7 INSPECTION AND MAINTENANCE .....</b>	<b>28</b>

7.1 WGLA INSPECTION AND REPLACEMENT ..... 28

7.2 ANTENNA INSPECTION AND REPLACEMENT ..... 28

7.3 BATTERY REPLACEMENT ..... 28

**8 ACCESSORIES..... 30**

8.1 ACTUATORS..... 30

8.2 ANTENNA OPTIONS ..... 31

8.3 ANTENNA CABLE OPTIONS ..... 32

8.4 MOUNTING OPTIONS ..... 33

**9 INSTALLATION DRAWINGS ..... 34**

9.1 DRAWING AVAILABILITY ..... 34

**10 TROUBLESHOOTING GUIDES ..... 35**

## LIST OF FIGURES

Figure 1. European Declaration of Conformity (DoC) .....	8
Figure 2. Limitless™ Switch Housing .....	12
Figure 3. Limitless™ Battery and Insulator.....	12
Figure 4. Limitless™ Switch Housing .....	14
Figure 5. Limitless™ Switch Housing .....	14
Figure 6. Limitless™ Switch with Function Button Depressed .....	14
Figure 7. Limitless™ Switch Label Placement .....	14
<b>Figure 8. WPMM Operation and LED functions chart – part 1 .....</b>	<b>16</b>
<b>Figure 9. WPMM Operation and LED functions chart – part 2 .....</b>	<b>17</b>
<b>Figure 10. Integral Mount Antennas (WAN01RSP and WAN02RSP) .....</b>	<b>21</b>
<b>Figure 11. Adhesive Mount Antenna – Step 1. Pre-clean the surface .....</b>	<b>22</b>
<b>Figure 12. Adhesive Mount Antenna – Step 2. Peel Protection from Adhesive Strip .....</b>	<b>22</b>
<b>Figure 13. Adhesive Mount Antenna – Step 3. Mount the Antenna .....</b>	<b>22</b>
<b>Figure 14. Mast Mount Antenna – Tighten nut on mounting bracket .....</b>	<b>23</b>
<b>Figure 15. Mast Mount Antenna – Side View with Attachment to Pipe .....</b>	<b>23</b>
<b>Figure 16. Magnetic Mount Bracket with Antenna – Mounted on Steel Surface .....</b>	<b>23</b>
<b>Figure 17. Limitless™ WGLA and WPMM in parallel .....</b>	<b>24</b>
<b>Figure 18. Limitless™ WPMM LED display .....</b>	<b>24</b>
<b>Figure 19. Limitless™ WGLA mounting hole diagram .....</b>	<b>25</b>
<b>Figure 20. Limitless™ Switch Actuator characteristics.....</b>	<b>26</b>
<b>Figure 21. Limitless™ WGLA Battery Replacement.....</b>	<b>29</b>

## LIST OF TABLES

Table 1 –Table of Abbreviations and Definitions .....	2
Table 2 –Table Symbol Definitions .....	3
Table 3 – North America .....	4
Table 4 – Asia Pacific .....	4
Table 5 – European Union .....	4
Table 6 – Other European Countries .....	4
Table 7 – Approvals and Ratings .....	5
Table 8 – Radio Module Specifications .....	5
Table 9 – Electrical Specifications .....	5
Table 10 – Environmental Specifications .....	6
Table 11 – EIRP Limits Per Antenna .....	10

## 1 DESCRIPTION

### 1.1 General

The new Limitless™ product line combines the best of MICRO SWITCH™ global limit switches with the latest commercial off-the-shelf wireless technology. Wireless-enabled limit switches can now be used for position sensing and presence/absence detection for a wide variety of applications. The Limitless™ Series is especially beneficial for remote monitoring applications where wiring or wire maintenance is not physically possible or economically feasible. Combining this greater flexibility with proven harsh duty packaging can result in increased efficiencies and improved safety for machine and equipment OEMs and operators. This document will provide installation instructions to properly install a Limitless™ global limit switch, WGLA switch, or simply the WGLA.

### 1.2 Principle of Operation

The WGLA will transmit the position of its actuator to a Limitless™ Wireless Panel Mount Monitor (WPMM Series). The WPMM will then indicate the actuator position of the WGLA via a visual indicator, audible indicator and/or electronic output. The WGLA supports no electrical signal inputs and is powered by a replaceable battery.

### 1.3 Model Reference

WGLA	1	A	00	A	A	1	A-	3	— — —
Switch type	Software version	RF Code	Antenna type code	Country use code	Head code	Lever code	Roller code mm [in]	Modification code	Specials
WGLA Series Wireless	1 Version 1	A 2.4 GHz; IEEE 802.15.4	00 No antenna; RP-SMA connector jack	A U.S. Canada	A Side rotary, momentary	Not applicable	Not applicable	Not applicable	Use only if switch has a special feature.
			01 2.1 dBi omni with switch mount, straight design	B European countries*	B Top pin plunger	1 Std. fixed length	A 19 x 6.35 (0.75 x 0.25) nylon	3 Head assembled with actuator to right side	
			02 2.1 dBi omni with switch mount, 180 and swivel design	C Australia	C Top roller plunger	2 Adjustable roller	B 19 x 6.35 (0.75 x 0.25) steel	4 Head assembled with actuator to left side	
			03 3.0 dBi omni with remote adhesive mount/0.8 ft cable		D Top roller lever	3 Yoke roller	D 38.1 x 6.35 (1.5 x 0.25) nylon	5 Head assembled with actuator to mounting surface	
			04 5.5 dBi omni w/ remote mag. mount, 118xswivel5 ft cable	*Antenna type codes 00 to 05 only		4 Adjustable rod	J 500 mm aluminum adjustable rod	6 Roller perpendicular to mounting surface	
			05 5.5 dBi omni w/ remote mag. mount, 118xswivel10ft cable			5 Offset	K 140 mm aluminum adjustable rod		
			06 9.0 dBi omni w/ remote mag. mount, 118xswivel5 ft cable				N 318 mm stainless steel adjustable rod		
			07 9.0 dBi omni w/ remote mag. mount, 118xswivel10ft cable				W 40.0 x 12.7 (1.5 x 0.5) rubber		
			08 9.0 dBi omni w/ remote bat. mount, 30" designed ft cable				Y 50.9 x 12.7 (2.0 x 0.5) rubber		
			09 9.0 dBi omni w/ remote bat. mount, 30" designed 11 ft cable				T 19 x 6.76 (0.75 x 0.345) stainless steel		

## 1.4 Abbreviations and Definitions













**Table 1 –Table of Abbreviations and Definitions**

<b>ACMA</b>	Australian Communications and Media Authority
<b>dB</b>	DeciBel
<b>dBi</b>	DeciBel Isotropic
<b>dBm</b>	DeciBel above or below 1 milliwatt
<b>DSSS</b>	Direct Sequence Spread Spectrum
<b>EIRP</b>	Equivalent isotropic radiated power
<b>EMC</b>	Electromagnetic Compatibility
<b>ETSI</b>	European Telecommunications Standards Institute
<b>EU</b>	European Union
<b>FCC</b>	Federal Communications Committee
<b>ft-lbs</b>	Foot-pounds
<b>GHz</b>	GigaHertz
<b>IC</b>	Industry Canada
<b>ICES</b>	Industry Canada Electrical Specification
<b>IEEE</b>	Institute of Electrical and Electronics Engineers
<b>kbps</b>	KiloBits Per Second
<b>LED</b>	Light Emitting Diode
<b>Mhz</b>	MegaHertz
<b>MPE</b>	Maximum Permissible Exposure
<b>NA</b>	North America – United States of America and Canada
<b>NEMA</b>	National Electrical Manufacturers Association
<b>R&amp;TTE</b>	Radio and Telecommunications Terminal Equipment
<b>RP-SMA</b>	Reverse Polarity SMA connector
<b>RF</b>	Radio Frequency
<b>TX</b>	Transmit
<b>WGLA</b>	Wireless Global Limit Switch Series
<b>WPMM</b>	Wireless Panel Mount Monitor Series

## 1.5 Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

**Table 2 –Table Symbol Definitions**

Symbol	Definition
	<b>ATTENTION:</b> Identifies information that requires special consideration.
	<b>TIP:</b> Identifies advice or hints for the user, often in terms of performing a task.
<b>CAUTION</b>	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.
	<b>CAUTION:</b> Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. <b>CAUTION</b> symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	<b>WARNING:</b> Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. <b>WARNING</b> symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	<b>WARNING, Risk of electrical shock:</b> Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 Vdc may be accessible.
	<b>ESD HAZARD:</b> Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	<b>Protective Earth (PE) terminal:</b> Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	<b>Functional earth terminal:</b> Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
	<b>Earth Ground: Functional earth connection.</b> NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	<b>Chassis Ground:</b> Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	<b>C-Tick Mark.</b> The C-Tick Mark is a certification trade mark registered to ACMA (Australian Communications and Media Authority) in Australia under the Trade Marks Act 1995 and to RSM in New Zealand under section 47 of the NZ Trade Marks Act. The mark is only to be used in accordance with conditions laid down by ACMA and RSM. This mark is equal to the CE Mark used in the European Union.
	<b>Notified Body.</b> For radio equipment used in the European Union in accordance with the R&TTE Directive, the CE Mark and the notified body (NB) identification number is used when the NB is involved in the conformity assessment procedure. The alert sign must be used when a restriction on use (output power limit by a country at certain frequencies) applies to the equipment and must follow the CE marking.

## 2 SPECIFICATIONS

### 2.1 Intended Country Usage

**Table 3 – North America**

Country	ISO 3166 2 letter code
UNITED STATES	US
CANADA	CA

**Table 4 – Asia Pacific**

Country	ISO 3166 2 letter code
AUSTRALIA	AU

**Table 5 – European Union**

Country	ISO 3166 2 letter code	Country	ISO 3166 2 letter code
Austria	AT	Latvia	LV
Belgium	BE	Lithuania	LT
Bulgaria	BG	Luxembourg	LU
Cyprus	CY	Malta	MT
Czech Republic	CZ	Netherlands	NL
Denmark	DK	Poland	PL
Estonia	EE	Portugal	PT
Finland	FI	Romania	RO
France	FR	Slovak Republic	SK
Germany	DE	Slovenia	SI
Greece	GR	Spain	ES
Hungary	HU	Sweden	SE
Ireland	IE	United Kingdom	GB
Italy	IT		

**Table 6 – Other European Countries**

Country	ISO 3166 2 letter code	Country	ISO 3166 2 letter code
Bosnia and Herzegovina	BA	Norway	NO
Croatia	HR	Russian Federation	RU
Iceland	IS	Serbia	RS
Liechtenstein	LI	Switzerland	CH
Macedonia	MK	Turkey	TR



## 2.2 Certification and Approvals

See the product label for applicable approvals and ratings.

**Table 7 – Approvals and Ratings**

Approval/Item	Ratings/Description
Enclosure Type	IP67; NEMA 1, 4, 12, 13
Federal Communications Commission (FCC)	FCC Part 15.247
Industry Canada (IC)	Canadian ICES-003
European Telecommunications Standards Institute (ETSI)	CE mark
Australian Communications and Media Authority (ACMA)	C-Tick mark

## 2.3 Radio Module Specifications

**Table 8 – Radio Module Specifications**

Item	Specification
Wireless standard	WPAN IEEE 802.15.4 Direct Sequence Spread Spectrum (DSSS), 2.4 GHz
Data rate	250 kbps
Operating Frequency	ISM 2.4 GHz
Module transmit power	18 dBm or 10 dBm (Maximum transmit power will vary by country usage requirements)
Receive sensitivity (typ.)	-100 dBm



### **WARNING**

The WGLA must be installed in accordance with the requirements specified in this document. See Section 3 and Section 4 for EIRP requirements. Only the specified EIRP power settings, antenna types and gains and cable lengths (attenuation) as outlined in this document are valid for WGLA Series installations.

## 2.4 Electrical Specifications

**Table 9 – Electrical Specifications**

Item	Specification
Battery	3.6 Vdc Lithium Thionyl Chloride; 2/3AA size; Manufacturer: Uniwell, P/N DEV-10-0009

## 2.5 EMC Specifications

The latest applicable EMC Standards are as follows:

- EN 300 328, V1.7.1
- EN 61326-1 (2006)
- EN 301 489-1, V1.8.1
- EN 301 489-17, V2.1.1

## 2.6 Environmental Specifications

**Table 10 – Environmental Specifications**

Item	Specification
Operating temperature	-25 °C to 85 °C [-13 °F to 185 °F] ; Side rotary to -40 °C [40 °F]
Storage temperature	-25 °C to 85 °C [-13 °F to 185 °F] ; Side rotary to -40 °C [40 °F]
Operating humidity	0 %RH to 100 %RH

## 2.7 Agency Compliance Information

### 2.7.1 FCC Compliance Statements

- This device complies with Part 15 of FCC Rules and Regulations. 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.
- 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 these instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.
- Intentional or unintentional changes or modifications must not be made to the WGLA unless under the express consent of the party responsible for compliance. Any such modifications could void the user's authority to operate the equipment and will void the manufacturer's warranty.

### 2.7.2 IC compliance statements

- To reduce potential radio interference to other users, the antenna type and its gain should be chosen so that the equivalent isotropic radiated power (EIRP) is not more than that permitted for successful communication.
- 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.
- This Class B digital apparatus has been tested and found to comply with Canadian ICES-003.
- French: Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## 2.7.3 Radio Frequency (RF) Safety statement (FCC & IC)

To comply with FCC's and Industry Canada's RF exposure requirements, the following antenna installation and device operating configurations must be satisfied.

- Remote antenna for this unit must be fixed and mounted on outdoor permanent structures with a separation distance between any other antenna(s) of greater than 20cm and a separation distance of at least 20 cm [7.87 in] from all persons.
- Furthermore, when using an integral antenna with the WGLA, it must not be co-located with any other antenna or transmitter device and have a separation distance of at least 20 cm [7.87 in] from all persons.

## 2.7.4 European restrictions

- **France** restricts outdoor use to 10mW (10 dBm) EIRP in the frequency range of 2,454-2,483.5 MHz. Installations in France must limit EIRP to 10 dBm, for operating modes utilizing frequencies in the range of 2,454 MHz to 2,483.5 MHz.
- **Norway** prohibits operation near Ny-Alesund in Svalbard. More information can be found at the Norway Posts and Telecommunications site ([www.npt.no](http://www.npt.no))

## 2.8 European (CE) Declaration of Conformity (DoC)

### 2.8.1 European Declaration of Conformity statements

This section contains the European Declaration of Conformity (DoC) statement for the Radio used in the WGLA.

**Figure 1. European Declaration of Conformity (DoC)**

**Honeywell**

Honeywell Control Systems Ltd.,  
Newhouse Industrial Estate,  
Motherwell, Lanarkshire, ML1 5SB,  
Scotland, United Kingdom.

Tel.: +44 (0)1698 481000  
Fax: +44 (0)1698 481011

A subsidiary of Honeywell Control Systems Ltd.,

Registered Office: Honeywell House,  
Arlington Business Park,  
Bracknell, Berkshire,  
R12 1EB.

Registered No 217808 (England)

### EC Declaration of Conformity

Honeywell Control Systems Ltd. hereby declare that the products identified below conform to the essential requirements of the EC Directive(s) listed below and that the products supplied are in conformity with the type described in any EC Type Examination Certificate (EC TEC) identified below.

**Manufacturer:** Honeywell International, MICRO SWITCH Division  
11309 West Chetlain Lane, Galena, Illinois,  
IL 61036-0327, USA

**Product:** Limit Switch  
WGLA and WPMM Wireless Limit Switch and Monitor

<u>Directive (Amendments)</u>	<u>Conformity Details</u>	
LVD 2006/95EC	Standards applied:	EN 61010-1: 2001 + A2:2005
1999/5/EC and 2004/108/EC	Standards applied:	EN 61326-1:2006 ETSI EN 300 328 V1.7.1 ETSI EN 301 489-1 V1.8.1 and -17 V2.1.1

Signed on behalf of Honeywell Control Systems Ltd. :

  
Frank Turnbull, S&C Chief Engineer

DoC No: A434

DoC Issue: 1

DoC Date: 08/04/2010

Page 1 of 1

### 2.8.2 For more information about the R&TTE Directive

The following website contains additional information about the Radio and Telecommunications Terminal Equipment (R&TTE) directive:

<http://ec.europa.eu/enterprise/sectors/rtte/faq/>

## **3 EQUIVALENT ISOTROPICALLY RADIATED POWER (EIRP)**

In radio communication systems, Equivalent Isotropically Radiated Power (EIRP) or, alternatively, Effective Isotropic Radiated Power, is the amount of power that would have to be emitted by an isotropic antenna (that evenly distributes power in all directions and is a theoretical construct) to produce the peak power density observed in the direction of maximum antenna gain. EIRP can take into account the losses in transmission line and connectors and includes the gain of the antenna. The EIRP is often stated in terms of decibels over a reference power level that would be the power emitted by an isotropic radiator with equivalent signal strength. The EIRP allows making comparisons between different emitters regardless of type, size or form. From the EIRP, and with knowledge of a real antenna's gain, it is possible to calculate real power and field strength values.

$$\text{EIRP (dBm)} = \text{Radio TX Power (dBm)} - \text{Cable Loss (dB)} + \text{Antenna Gain (dBi)}$$

Antenna gain is expressed relative to a (theoretical) isotropic reference antenna (dBi).

#### 4 COUNTRY COMMUNICATION AGENCY EIRP LIMITS PER ANTENNA

Table 11 – EIRP Limits Per Antenna

Antenna Type	Radio usage	Application	Freq. (GHz)	Max. Ant. Gain (dBi)	Min. cable/connect. loss (dB)	Agency/country	Max. radio output power (dBm)	Total EIRP (dBm)	Max. EIRP (dBm)
None*	Point to point	N/A	2.4	0	–	FCC, IC/USA, Canada	18	18	36.00
None*	Point to point	N/A	2.4	0	–	ACMA/Australia	10	10	19.24
None*	Point to point	N/A	2.4	0	–	ETSI/European Countries	10	10	12.86
None*	Point to point	N/A	2.4	0	–	ETSI/France 2400-2454 MHz	10	10	12.86
None*	Point to point	N/A	2.4	–	–	ETSI/France 2454-2482.5 MHz	Do not use	–	–
2.1 dBi Omni	Point to point	Integral**	2.4	2.1	–	FCC, IC/USA, Canada	18	20.1	36.00
2.1 dBi Omni	Point to point	Integral**	2.4	2.1	–	ACMA/Australia	10	12.1	19.24
2.1 dBi Omni	Point to point	Integral**	2.4	2.1	–	ETSI/European Countries	10	12.1	12.86
2.1 dBi Omni	Point to point	Integral**	2.4	2.1	–	ETSI/France 2400-2454 MHz	10	12.1	12.86
2.1 dBi Omni	Point to point	N/A	2.4	–	–	ETSI/France 2454-2482.5 MHz	Do not use	–	–
3.0 dBi Omni	Point to point	Remote	2.4	3	0	FCC, IC/USA, Canada	18	21	36.00
3.0 dBi Omni	Point to point	Remote	2.4	3	0	ACMA/Australia	10	13	19.24
3.0 dBi Omni	Point to point	Remote	2.4	3	0.14	ETSI/European Countries	10	12.86	12.86
3.0 dBi Omni	Point to point	Remote	2.4	3	0.14	ETSI/France 2400-2454 MHz	10	12.86	12.86
3.0 dBi Omni	Point to point	N/A	2.4	3	–	ETSI/France 2454-2482.5 MHz	Do not use	–	–
5.5 dBi Omni	Point to point	Integral or Remote***	2.4	5.5	0	FCC, IC/USA, Canada	18	23.5	36.00
5.5 dBi Omni	Point to point	Integral or Remote***	2.4	5.5	0	ACMA/Australia	10	15.5	19.24
5.5 dBi Omni	Point to point	Remote***	2.4	5.5	2.64	ETSI/European Countries	10	12.86	12.86
5.5 dBi Omni	Point to point	Remote***	2.4	5.5	2.64	ETSI/France 2400-2454 MHz	10	12.86	12.86
5.5 dBi Omni	Point to point	N/A	2.4	–	–	ETSI/France 2454-2482.5 MHz	Do not use	–	–
8.0 dBi Omni	Point to point	Remote**	2.4	8	0	FCC, IC/USA, Canada	18	26	36.00
8.0 dBi Omni	Point to point	Remote**	2.4	8	0	ACMA/Australia	10	18	19.24
8.0 dBi Omni	Point to point	Remote**	2.4	8	5.14	ETSI/European Countries	10	12.86	12.86
8.0 dBi Omni	Point to point	Remote**	2.4	8	5.14	ETSI/France 2400-2454 MHz	10	12.86	12.86
8.0 dBi Omni	Point to point	N/A	2.4	–	–	ETSI/France 2454-2482.5 MHz	Do not use	–	–
9.0 dBi Omni	Point to point	Integral or Remote***	2.4	9	0	FCC, IC/USA, Canada	18	27	36.00
9.0 dBi Omni	Point to point	Integral or Remote***	2.4	9	0	ACMA/Australia	10	19	19.24
9.0 dBi Omni	Point to point	Remote***	2.4	9	6.14	ETSI/European Countries	10	12.86	12.86
9.0 dBi Omni	Point to point	Remote***	2.4	9	6.14	ETSI/France 2400-2454 MHz	10	12.86	12.86
9.0 dBi Omni	Point to point	N/A	2.4	–	–	ETSI/France 2454-2482.5 MHz	Do not use	–	–

\* WGLA requires an antenna to function properly

\*\* Indoor or outdoor use

\*\*\* Indoor or limited outdoor exposure. Protect against direct rain, salt, snow, ice, etc.

**ATTENTION**

If using the WGLA in a portable application (for example, the WGLA is used in a handheld device and the antenna is less than 20 cm from the human body when the device is in operation): The integrator is responsible for passing additional SAR (Specific Absorption Rate) testing based on FCC rules 2.1091 and FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields, OET Bulletin and Supplement C. The testing results will be submitted to the FCC for approval prior to selling the integrated unit. The required SAR testing measures emissions from the module and how they affect the person.

**Notes for Table 11:**

1. Antennas listed in this chart are approved for use with the Digi International XBee –PRO® RF Module which the WPMM utilizes.
2. The following shall apply for antenna type, frequency range, application/usage and agency/country compliance:
  - Antenna gains above the maximum values shown shall not be used.
  - Cable length/loss below the minimum values shown shall not be used.
  - Maximum overall radio output power shown shall not be exceeded.
  - Maximum EIRP values shown above shall not be exceeded.
3. Industry Canada Compliance Statement: This device has been designed to operate with the antenna types listed in this document, and having a maximum gain of 9 dBi. Antenna types not included in this list or having a gain greater than 9 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 Ohm.

**5 QUICK START UP****5.1 Antenna Connection****WARNING****RF EXPOSURE**

- To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm [7.87 in] or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna used for this transmission must not be co-located in conjunction with any other antenna or transmitter.

**Failure to comply with these instructions could result in death or serious injury.**

**CAUTION**

- Power to the WGLA should not be applied (ensure battery is removed) during installation of antenna as damage could occur to the WGLA electronics.


The antenna and antenna guard are packaged separately and thus will need to be assembled to the WGLA.

A **direct mount antenna** (either straight or tilt & swivel) can be easily mounted by threading the mating RP-SMA plug of the antenna to the RP-SMA jack on the WGLA. Tighten the connection until finger tight. Then, attach the antenna guard by simply threading the guard finger tight onto the threaded base with the RP-SMA connector.

A **remote mount antenna** requires the use of an extension cable to allow the antenna to be mounted in a different location than the WGLA location. The extension cable will need to have one end with a RP-SMA plug connector which will mate with the WGLA connector jack under the same mounting procedure as the direct mount antenna. The other end of the extension cable will need to mate with antenna connector directly.


Refer to Section 6.3 for further information regarding installation.

5.2 Battery Connection Procedure

**WARNING**  
**RISK OF DEATH OR SERIOUS INJURY FROM EXPLOSION OR FIRE**


- Connection and disconnection of the batteries should only be performed in a non-hazardous area. The batteries used in this device may present a risk of fire or chemical burn if mistreated. Do not recharge, disassemble, heat above 100 °C [212 °F], or incinerate.

**Failure to comply with these instructions could result in death or serious injury.**

**WARNING**  
**RISK OF DEATH OR SERIOUS INJURY FROM EXPLOSION OR FIRE**

- If WGLA is to be returned to Honeywell for any reason, the battery MUST be removed prior to shipping. Dispose of used batteries promptly per local regulations or the battery manufacturer's recommendations. Keep away from children. Do not disassemble and do not dispose of in fire.

**Failure to comply with these instructions could result in death or serious injury.**

**ATTENTION**

Use only the following 3.6V lithium thionyl chloride (Li-SOCl<sub>2</sub>) battery (non-rechargeable), size 2/3AA. No other batteries are approved for use in the WGLA Series limit switch.

- Uniwell, DEV-10-0009
- Honeywell, WBT1

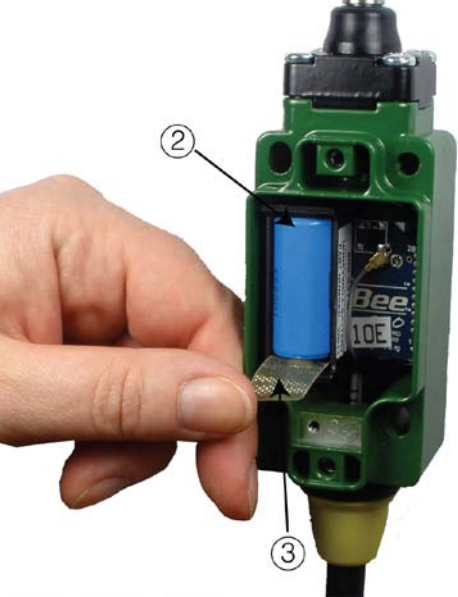
**WGLA battery activation:**  
Tools required: Slotted or Phillips screwdriver

Step	Action
1	If applicable, remove the two screws ① on the housing cover.
2	Using a finger, press down slightly on the battery top ② and remove the battery insulator ③. Insure that the battery is properly seated and making good contact.
3	Replace cover and retighten screws or immediately proceed to Section 5.3 Pairing Mode.

Figure 2. Limitless™ Switch Housing



Figure 3. Limitless™ Battery and Insulator





### 5.3 Pairing Mode

Pairing is required to initiate and establish an RF communication link between each single WGLA and a single WPMM. The WGLA will be shipped from the factory with two identification labels (1) that are recommended to be completed and applied to the WGLA housing during the pairing mode. As there are up to 16 WGLAs that can be paired to a single WPMM, these labels will be used to identify the WGLA switch in the sequence of #1 to #16. The initial WGLA switch paired to the WPMM will be Sequence #1; the second WGLA paired will be Sequence #2 and so on. If replacing a WGLA switch that has been purged (see section 6.5 of the WPMM Installation and Technical Manual), identify the correct replacement Sequence # on the identification labels.



#### ATTENTION

The operation and LED functions for the WPMM are visually depicted and described in Section 5.4. This file is also located as a separate file on this CD or at [www.honeywell.com/sensing](http://www.honeywell.com/sensing).



#### ATTENTION

The operation and LED functions for the WPMM are visually depicted and described in Section 5.4. This file is also located as a separate file on this CD or at [www.honeywell.com/sensing](http://www.honeywell.com/sensing).

The battery will need to be activated in the WGLA and proper power applied to the WPMM (green ② LED illuminated) before proceeding with this pairing procedure. Once the pairing is completed, the WGLA selected will only communicate with the WPMM it was paired to and no other device.

Step	Action
1	Completely read this procedure before starting in order to understand the timing of events that need to be performed.
2	WGLA: Remove (if required) the two screws ⑥ on the housing cover (See Figure 4) of the WGLA and locate the function button ⑦ to be used in Step 4.
3	WPMM: Press the Function button ④ on WPMM (See Figure 5) for more than four seconds and less than eight seconds at which time the green ② and amber ③ LEDs will be flashing which indicates to release the function button immediately as it has entered the pairing mode.
4	WGLA: Within a 30 second interval of Step 3, depress the WGLA switch function button ⑦ (See Figure 6) and hold depressed for more than one second and less than 12 seconds at which time the orange ⑧ LED turns on. While in pairing mode, the orange led will flash on for 100 ms every second. The orange ⑧ LED flashes three times 100 ms on, 100 ms off when pairing succeeds. If pairing does not succeed, the orange ⑧ LED will turn off and user will need to repeat steps starting with Step 3.
5	WPMM: Successful pairing will be indicated by the green ② and amber ③ LEDs (See Figure 5) ceasing to flash and remaining on for a few seconds before turning off. A short buzzer beep will also occur.
6	To confirm proper pairing between the WGLA and WPMM, actuate the WGLA, and the red LED ⑤ should illuminate along with a buzzer sound.
7	Record the WGLA Sequence # on identification labels ① and apply to the WGLA housing in desired locations (See Figure 7).
8	Repeat Steps 2-7 to add additional WGLA switches. Up to 16 WGLAs can be paired to a single WPMM.



#### ATTENTION

The purging of a WGLA per Section 5.4 is required when a previously paired WGLA is desired to be paired again.

Figure 4. Limitless™ Switch Housing

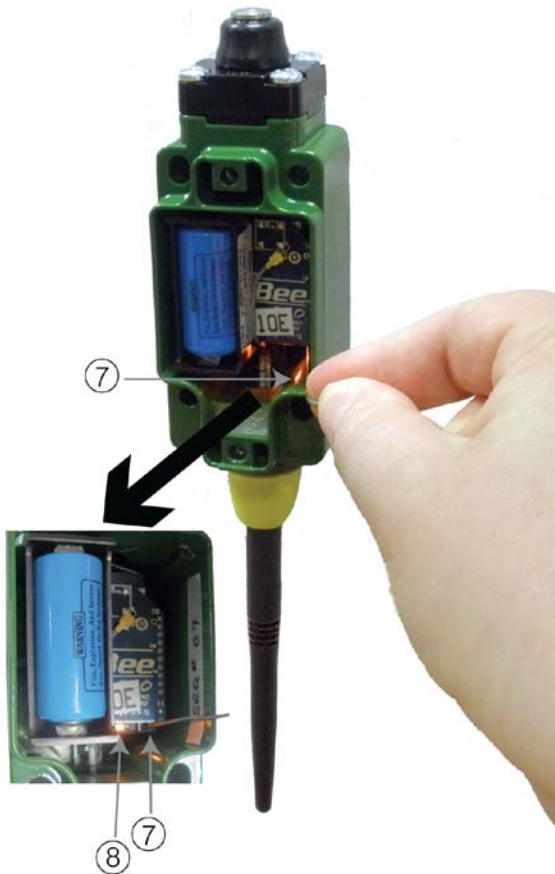


Figure 5. Limitless™ Switch Housing



**NOTE:** Use a blunt object, such as a paper clip or tooth pick to actuate the function switch ④.

Figure 6. Limitless™ Switch with Function Button Depressed



**NOTE:** Use a blunt object, such as a paper clip or tooth pick to actuate the function switch ⑦.

Figure 7. Limitless™ Switch Label Placement



## 5.4 WGLA Purge Mode

The purging of a WGLA is required when a previously paired WGLA is desired to be paired again per Section 5.3. Follow the procedure below which will then allow a new pairing to be conducted after successful purging:

Step	Action
1	Remove (if required) the two screws ⑥ on the housing cover of the WGLA (See Figure 4) and locate the switch function button ⑦ & orange LED ⑧ (See Figure 6).
2	Press and hold the switch function button for greater than 12 seconds. Initially the orange LED ⑧ turns on and after the 12 seconds will turn off indicating the WGLA has been purged.
3	Repeat above steps if necessary to purge more Limitless™ switch(s).

## 5.5 WPMM Operation and LED functions

### 5.5.1 Principle of Operation of the WPMM and Limitless™ switch :

A Limitless™ switch will send an RF signal to the WPMM when the actuator of the switch changes position. There are up to 16 Limitless™ switches that will communicate and indicate their actuation position with a single WPMM. The actuation (Free Position to Full Overtravel) of any one of the Limitless™ switches will cause a single red output LED to illuminate, a buzzer to sound, and a change in the NPN output. However, there will be no differentiation of outputs (visual, audible or NPN state change) between the Limitless™ switches (up to 16) being actuated. Further, if a Limitless™ switch is actuated and thus causes the single red output LED to illuminate, a buzzer to sound, and a change in the NPN output, actuation of another Limitless™ switch(s) will not cause another output change (visual, audible or NPN state change).

The operation and LED functions for the WPMM are visually depicted and described in the attached file. This file is also located as a separate file on this CD or @ [www.honeywell.com/sensing](http://www.honeywell.com/sensing).

Figure 8. WPMM Operation and LED functions chart – part 1

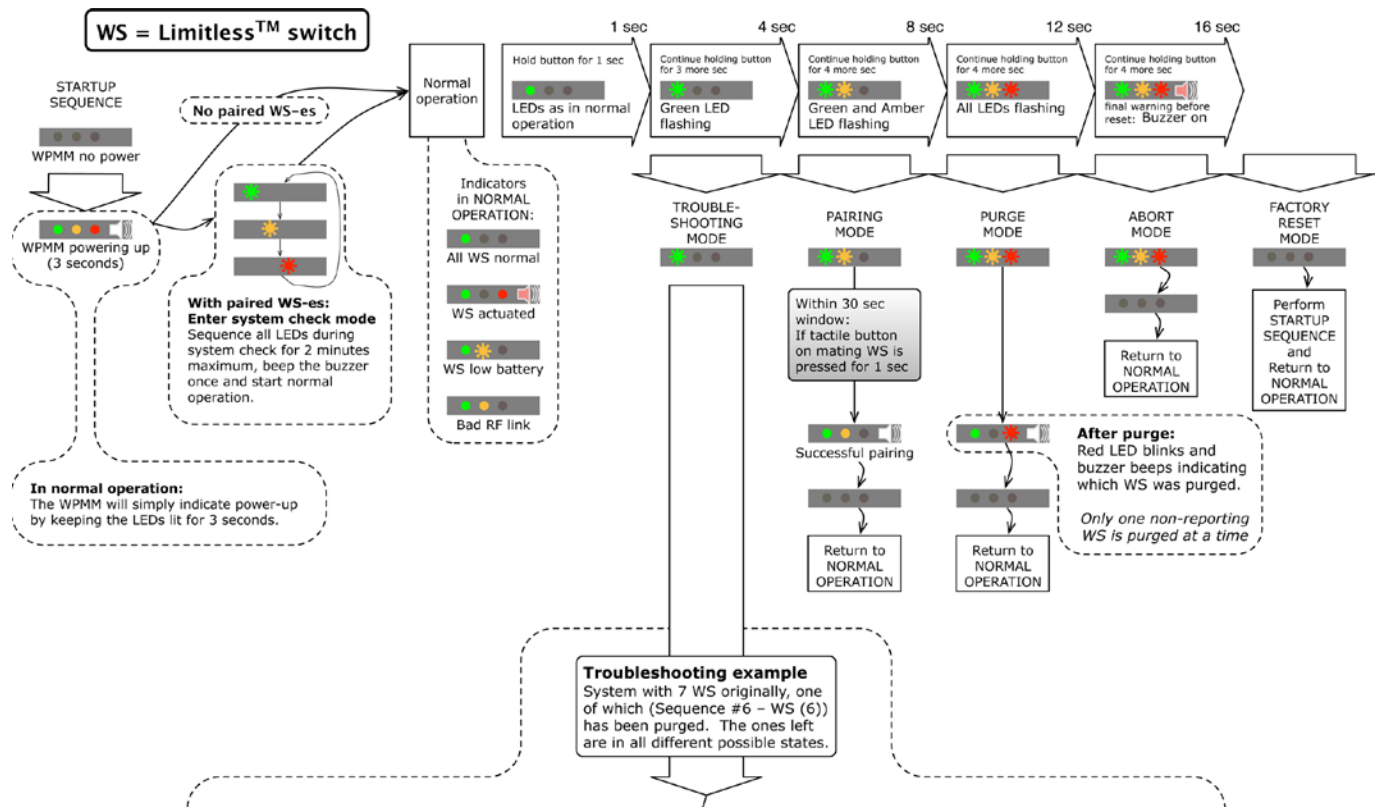
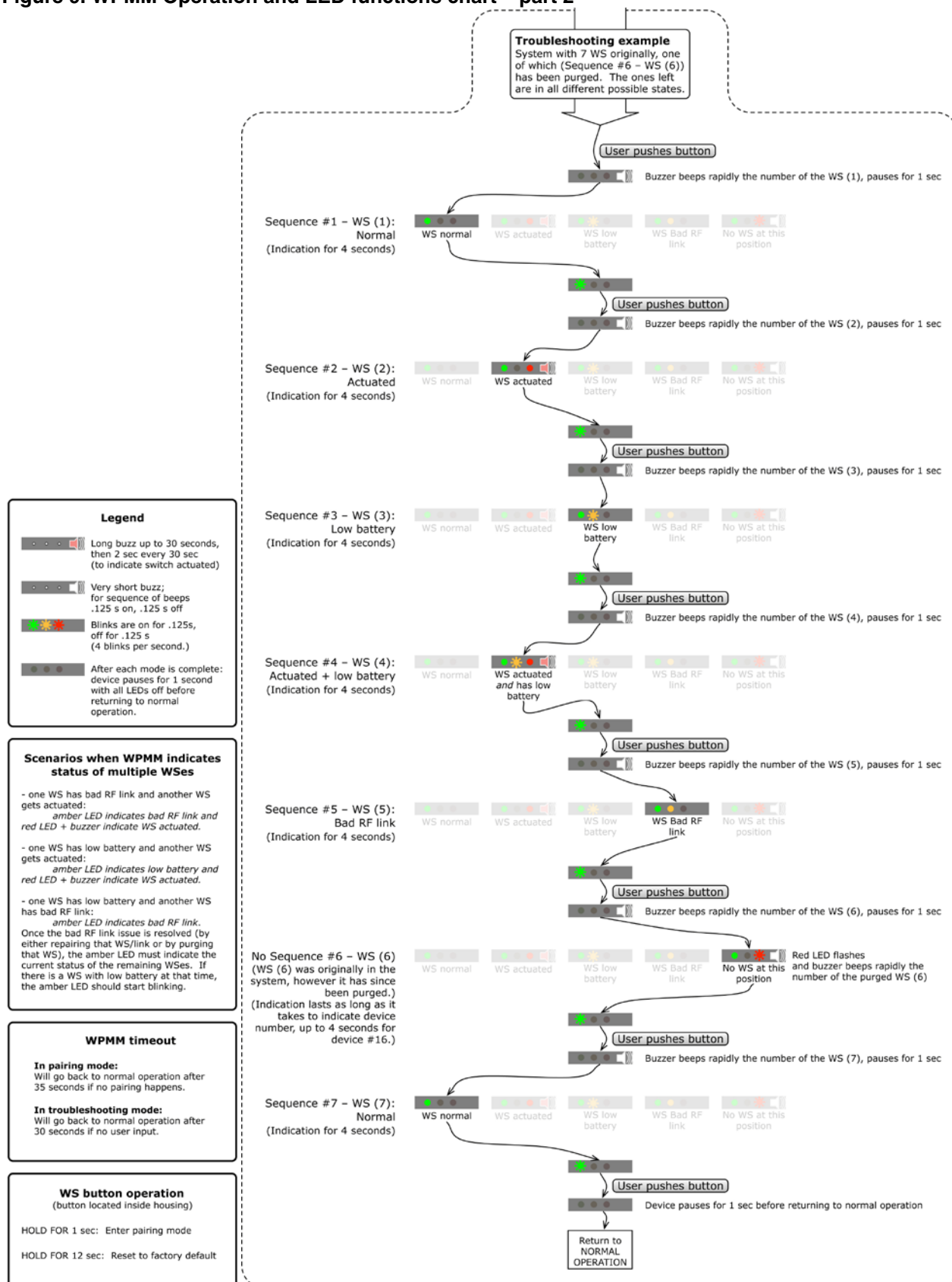


Figure 9. WPMO Operation and LED functions chart – part 2



## 6 INSTALLATION

### 6.1 Environmental effects: antenna pattern and RF signal strength

There are several environment factors that should be considered with respect to antenna placement during installation as they can affect the radio frequency (RF) signal strength that is being transmitted and received by the WGLA and corresponding WPMM.

#### CAUTION

- \* Power to the WGLA should not be applied (ensure battery is removed) during installation of antenna as damage could occur to the WGLA electronics.

#### WARNING

The WGLA must be installed in accordance with the requirements specified in this document. See Section 3 and Section 4 for EIRP requirements. Only the specified EIRP power settings, antenna types and gains and cable lengths (attenuation) as outlined in this document are valid for WGLA Series installations.



#### ATTENTION

The Honeywell antenna range calculator can be used to estimate the expected range of chosen antennas, cable extensions, etc. The calculator may be found at [www.honeywell.com/sensing](http://www.honeywell.com/sensing).

#### 6.1.1 Outdoor Installation Warnings

#### WARNING

##### LIVES MAY BE AT RISK!

Carefully observe these instructions and any special instructions that are included with the equipment being installed.

#### WARNING

##### CONTACTING POWER LINES CAN BE LETHAL

Look over the site before beginning any installation, and anticipate possible hazards, especially these:

- Make sure no power lines are anywhere where possible contact can be made. Antennas, masts, towers, guy wires, or cables may lean or fall and contact these lines. People may be injured or killed if they are touching or holding any part of equipment when it contacts electric lines. Make sure there is NO possibility that equipment or personnel can come in contact directly or indirectly with power lines.
- Assume all overhead lines are power lines.
- The horizontal distance from a tower, mast, or antenna to the nearest power line should be at least twice the total length of the mast/antenna combination. This will ensure that the mast will not contact power if it falls during either installation or later.

#### WARNING

##### TO AVOID FALLING, USE SAFE PROCEDURES WHEN WORKING AT HEIGHTS ABOVE GROUND

- Select equipment locations that will allow safe, simple equipment installation
- Don't work alone. A friend or co-worker can save a life if an accident happens.
- Use approved, non-conducting ladders and other safety equipment. Make sure all equipment is in good repair.
- If a tower or mast begins falling, don't attempt to catch it. Stand back and let it fall.
- If anything such as a wire or mast does come in contact with a power line, DON'T TOUCH IT OR ATTEMPT TO MOVE IT. Instead, save a life by calling the power company.
- Don't attempt to erect antennas or towers on windy days.

## **WARNING**

**MAKE SURE ALL TOWERS AND MASTS ARE SECURELY GROUNDED, AND ELECTRICAL CABLES CONNECTED TO ANTENNAS HAVE LIGHTNING ARRESTORS.**

This will help prevent fire damage or human injury in case of lightning, static build up, or short circuit within equipment connected to antenna.

- The base of the antenna mast or tower must be connected directly to the building protective ground or to one-or-more approved grounding rods, using 1 OAWG ground wire and corrosion-resistant connectors.
- Refer to the National Electrical Code for grounding details.
- Lightning arrestors for antenna feed coaxial cables are available from HyperLink Technologies, Inc.

## **WARNING**

If a person comes in contact with electrical power, and cannot move

**DO NOT TOUCH THAT PERSON OR RISK ELECTROCUTION**

- Use a non-conductive dry board, stick, or rope to push, pull, or drag them so they no longer are in contact with electrical power.
- Once they are no longer contacting electrical power, administer CPR if certified, and make sure emergency medical aid has been requested.

### 6.1.2 Choosing a Mounting Location

The location of the antenna is important. It is desirable that the antenna be mounted to limit the exposure of adjacent materials/objects between the WGLA and WPMM as they will have an effect on the RF signal strength. Examples of what can affect the antenna patterns and thus RF signal strength:

- Indoor: Concrete, wood, drywall and metal walls, chain link fence major power cables, etc.
- Outdoor: Vehicles, buildings, trees, structures, topology, weather conditions, chain link fence, major power cables, etc.

Best performance is achieved when antennas for both the WPMM and Limitless™ switch are mounted at the same height and in a direct line of sight with no obstructions. If this is not possible and RF signal reception is poor, try different mounting positions to optimize reception.

Antennas should be mounted clear of any obstructions to the sides of the antenna radiating element. If the mounting location for an omni-directional antenna is on the side of a building or tower, the antenna pattern will be degraded on the building or tower side.

### 6.1.3 Site Selection

Before attempting to install the antenna, think where the antenna can best be placed for safety and performance.

Follow these steps to determine a safe distance from wires, power lines, and trees.

Step	Action
1	Measure the antenna's height.
2	Add this length to the tower or mast. Double this total for the minimum recommended safe distance.

## **CAUTION**

If unable to maintain this safe distance, stop and get professional help.

Generally speaking, the higher the antenna is above the ground, the better it performs. Good practice is to install the antenna about 5 ft to 10 ft [1.5 m to 3 m] above the roof line and away from all power lines and obstructions. If possible, find a mounting place directly above the wireless device so that the lead-in cable can be as direct as possible.

## 6.2 Environmental effects: Lightning

Outdoor antenna installations can lead to the possible damage caused by nearby lightning strikes that induce charges or surges on the antenna and/or antenna extension cables.

A lightning arrestor such as the AL-NFNFB-9 from Hyperlink Technologies can be reviewed against application requirements.



### ATTENTION

National, local and/or regulatory agencies may require the use of a lightning arrestor and possibly other requirements for an antenna system installation. It is recommended that the customer review and adhere to these requirements.

---

## 6.3 Antenna Mounting and Adjustment

### 6.3.1 Mounting

The WGLA Series switch contains an integral RP-SMA connector jack that allows mounting directly to an antenna or use of an extension cable for a remote antenna.



### ATTENTION

Only a Honeywell approved antenna is allowed to be used in accordance with country communication agency regulations. Refer to Section 4 for agency approved antennas and Section 8.2 for a list of approved antennas.

---

### CAUTION

- \* Power to the WGLA should not be applied (ensure battery is removed) during installation of antenna as damage could occur to the WGLA electronics.



### WARNING

#### RF EXPOSURE

- To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm [7.87 in] or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna used for this transmission must not be co-located in conjunction with any other antenna or transmitter.

**Failure to comply with these instructions could result in death or serious injury.**



An **integral mount antenna** (either straight or tilt & swivel) can be easily mounted by threading the mating RP-SMA plug of the antenna to the RP-SMA jack on the WGLA. Tighten the connection until finger tight.

**Figure 10. Integral Mount Antennas (WAN01RSP and WAN02RSP)**



A **remote mount antenna** has or requires the use of an extension cable to allow the antenna to be mounted in a different location than the WGLA location. The extension cable will need to have one end with a RP-SMA plug connector that will mate with the WGLA connector jack under the same mounting procedure as the direct mount antenna. The other end of the extension cable will need to mate with the antenna connector directly.

The remote antennas are offered with three different mounting styles and mounting is recommended as follows:

- **Adhesive mount:** Pre-clean surface where antenna is to be mounted with the alcohol wipe supplied and then peel paper protection from adhesive strip and mount to cleaned surface.
- **Mast mount bracket** (Included with the 8 dBi antenna): Attach antenna to mounting bracket and tighten nut. Assemble two U-clamps around mast and tighten nuts to ensure lock washers provided are compressed to a flat condition.
- **Magnetic mount bracket:** Attach mating RP-SMA plug of the antenna to the RP-SMA jack of the magnetic mount. Attach magnetic mount to a metal surface at the application site.

**Figure 11. Adhesive Mount Antenna –  
Step 1. Pre-clean the surface**



**Figure 12. Adhesive Mount Antenna –  
Step 2. Peel Protection from Adhesive Strip**



**Figure 13. Adhesive Mount Antenna –  
Step 3. Mount the Antenna**



## ATTENTION

National, local and/or regulatory agencies may require antenna grounding, use of a lightning arrestor and possibly other requirements for an Antenna System Installation. It is recommended that the customer review and adhere to these requirements.

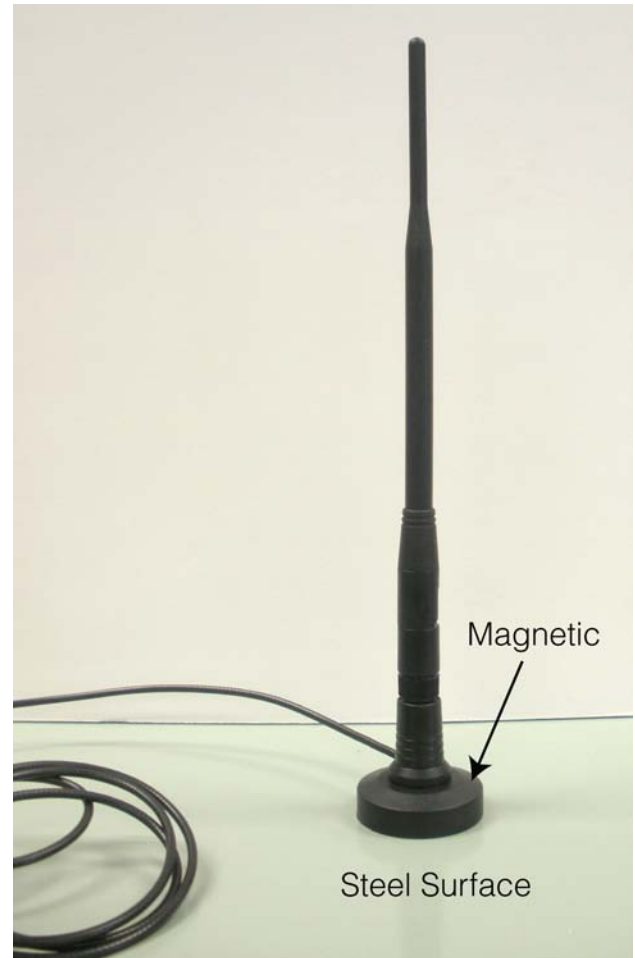
**Figure 14. Mast Mount Antenna –  
Tighten nut on mounting bracket**



**Figure 15. Mast Mount Antenna –  
Side View with Attachment to Pipe**



**Figure 16. Magnetic Mount Bracket with Antenna  
– Mounted on Steel Surface**



## ATTENTION

National, local and/or regulatory agencies may require antenna grounding, use of a lightning arrestor and possibly other requirements for an Antenna System Installation. It is recommended that the customer review and adhere to these requirements.

## 6.3.2 Antenna adjustment

The antenna of the WGLA and WPMM should be oriented with respect to each other such that they are parallel. This will in most cases allow the longest range and highest RF communication link/signal. The least RF signal is normally in a direction in-line with the top of the antenna, so it is best to avoid having the antennas pointed directly toward each other, or directly away from each other. An acceptable RF signal is also indicated by the WPMM. This can be checked by making sure the red ⑤ LED turns on when the WGLA is actuated but the amber ③ LED is off.

Figure 17. Limitless™ WGLA and WPMM in parallel



Figure 18. Limitless™ WPMM LED display



**NOTE:** Use a blunt object, such as a paper clip or tooth pick to actuate the function switch ④.

### WARNING

#### RF EXPOSURE

- To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm [7.87 in] or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter.

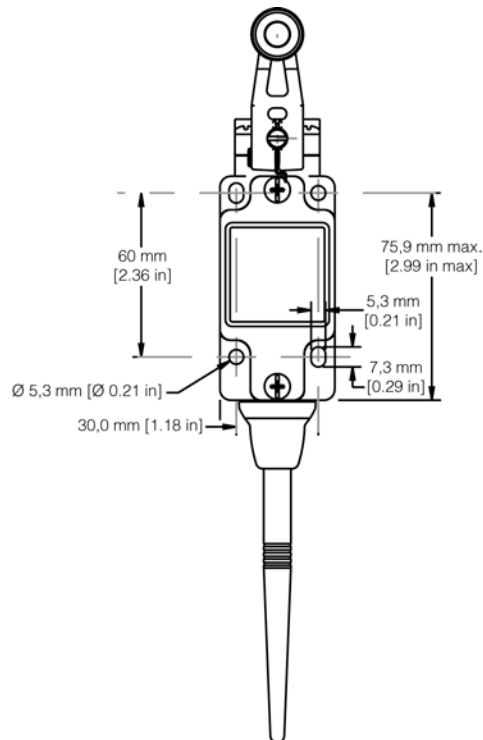
**Failure to comply with these instructions could result in death or serious injury.**

## 6.4 WGLA Mounting/Mechanical Actuators

The WGLA housing has four mounting holes that will accept a M5 or #10 size screw. Two of the mounting holes are slotted to allow adjustment of the switch actuator to the customer actuator during installation. It is suggested that the two slotted holes have screws installed and adjustment be made before installing screws in the non-slotted holes.

Note: The adjustment process should not allow preload of the switch actuator and the full travel of the switch actuator should not exceed the switch over travel maximum specification. (See installation drawing at [www.honeywell.com/sensing](http://www.honeywell.com/sensing))

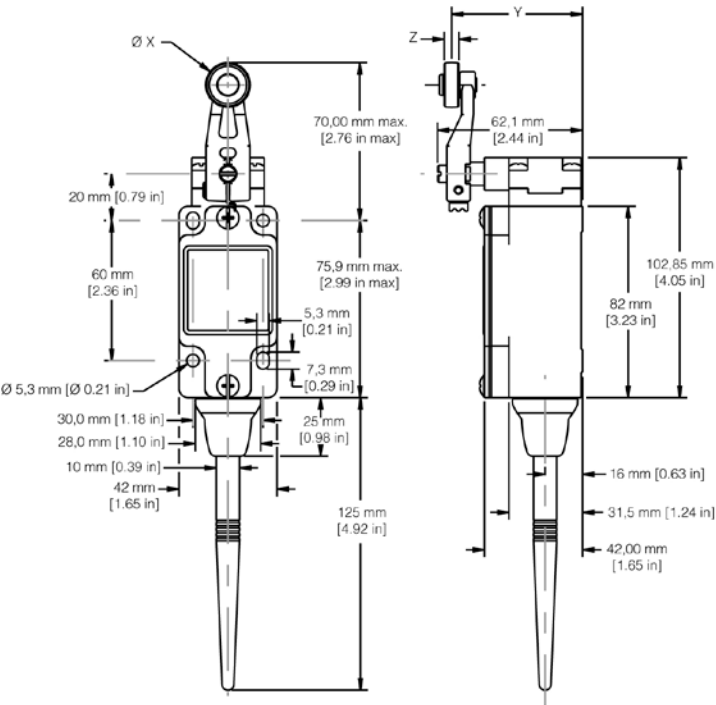
**Figure 19. Limitless™ WGLA mounting hole diagram**



The WGLA Series switch has many actuator types and associated specifications (see below). Additional information regarding the instructions for reading of the bar charts can be found at: [www.honeywell.com/sensing](http://www.honeywell.com/sensing)

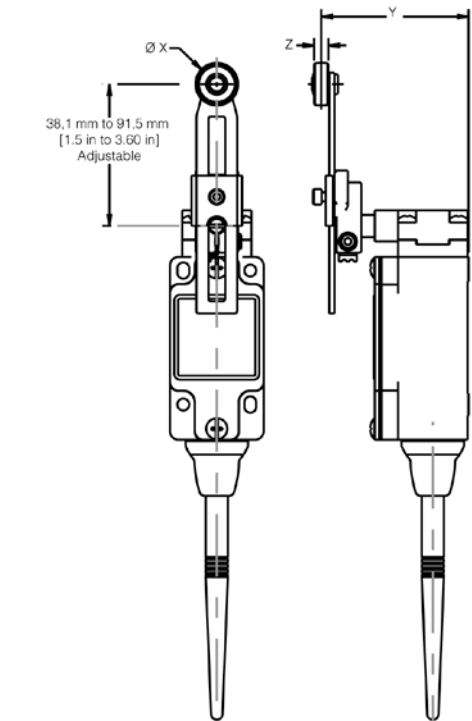
Figure 20. Limitless™ Switch Actuator characteristics

Side Rotary Head with GLZ51 Series Lever



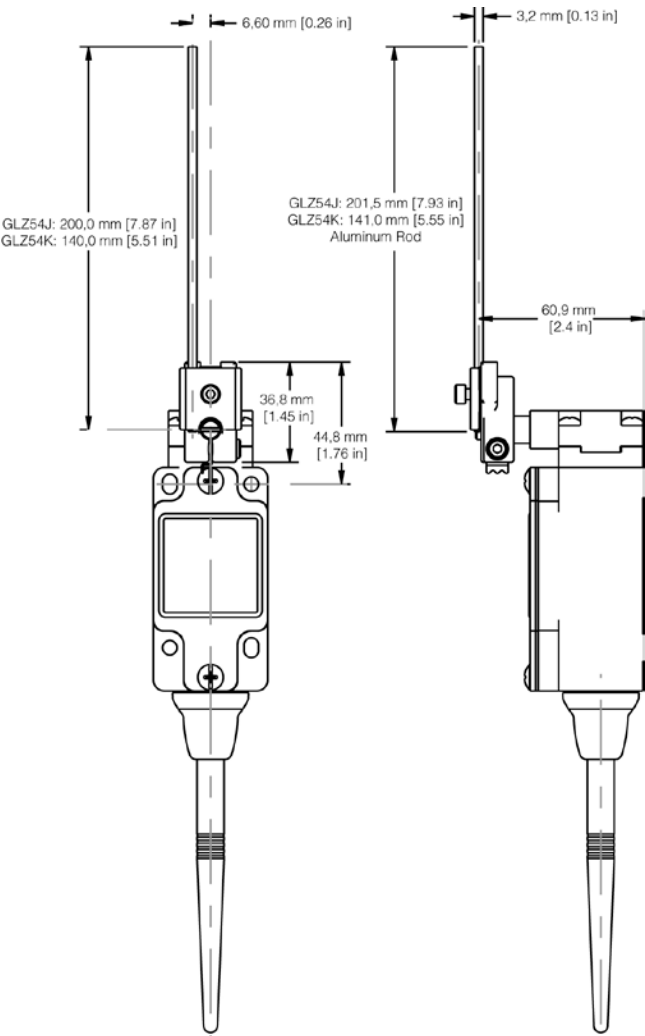
Lever	Roller Material	X Dim	Y Dim	Z Dim
GLZ51A	Nylon	19,1 mm [0.75 in]	55,9 mm [2.2 in]	6,4 mm [0.25 in]
GLZ51B	Steel	19,1 mm [0.75 in]	55,9 mm [2.2 in]	6,4 mm [0.25 in]
GLZ51T	Stainless Steel	19,1 mm [0.75 in]	56,8 mm [2.24 in]	8,8 mm [0.35 in]
GLZ51Y	Rubber	50,0 mm [1.97 in]	66,1 mm [2.60 in]	10,0 mm [0.39 in]

Side Rotary Head with GLZ52 Series Lever

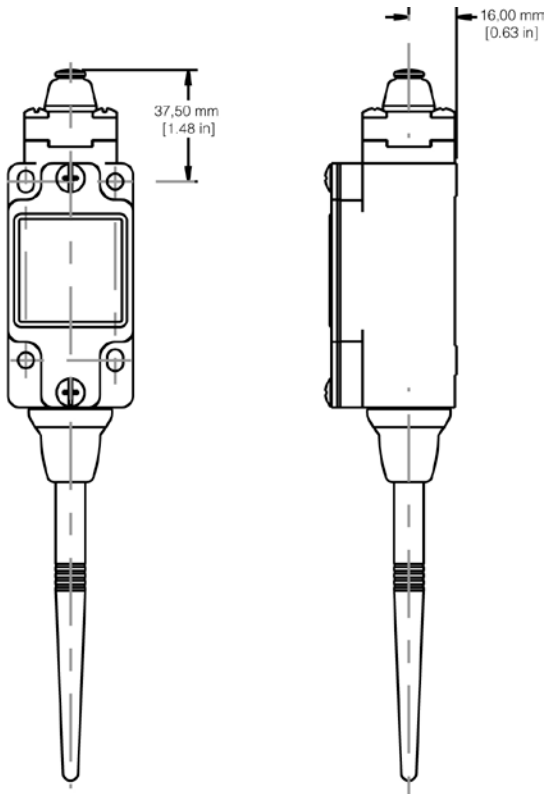


Lever	Roller Material	X Dim	Y Dim	Z Dim
GLZ52A	Nylon	19,1 mm [0.75 in]	65,9 mm [2.59 in]	6,4 mm [0.25 in]
GLZ52B	Steel	19,1 mm [0.75 in]	65,9 mm [2.59 in]	6,4 mm [0.25 in]
GLZ52D	Nylon	38,1 mm [1.5 in]	65,9 mm [2.59 in]	6,4 mm [0.25 in]
GLZ52E	Nylon	19,1 mm [0.75 in]	79,4 mm [3.13 in]	33,1 mm [1.30 in]
GLZ52W	Rubber	40,0 mm [1.57 in]	71,5 mm [2.81 in]	12,7 mm [0.5 in]
GLZ52Y	Rubber	50,0 mm [1.97 in]	68,8 mm [2.71 in]	10,0 mm [0.39 in]

Side Rotary Head with GLZ54 Series Lever



Top Pin Plunger Head



## 7 INSPECTION AND MAINTENANCE

### 7.1 WGLA Inspection and Replacement

Periodic inspection

- Check the WGLA housing and the actuator for signs of damage. Replace if necessary

### 7.2 Antenna Inspection and Replacement

Periodic inspection

- Check antenna or cable connection to WGLA connector to ensure it is tight and no signs of damage or corrosion. Replace if necessary per Section 6.3.

### 7.3 Battery Replacement

When to replace

- Battery is dead or low. The WPMM will indicate a dead or low battery condition when the amber LED is flashing. Upon this indication, proceed with replacing the battery in the WGLA as per below.

Tools required

- Slotted or Phillips screwdriver



#### **WARNING**

##### **RISK OF DEATH OR SERIOUS INJURY FROM EXPLOSION OR FIRE**

- Connection and disconnection of the batteries should only be performed in a non-hazardous area. The batteries used in this device may present a risk of fire or chemical burn if mistreated. Do not recharge, disassemble, heat above 100°C [212°F], or incinerate.

**Failure to comply with these instructions could result in death or serious injury.**



#### **WARNING**

##### **RISK OF DEATH OR SERIOUS INJURY FROM EXPLOSION OR FIRE**

- If WGLA Series switch is to be returned to Honeywell for any reason, the battery MUST be removed prior to shipping. Dispose of used batteries promptly per local regulations or the battery manufacturer's recommendations. Keep away from children. Do not disassemble and do not dispose of in fire.

**Failure to comply with these instructions could result in death or serious injury.**



#### **WARNING**

- When installing the battery, do not snag the battery terminal on the clip or the battery may be damaged. Do not apply excessive force. Do not drop. Dropping the battery may cause damage. If a battery is dropped, do not install the dropped battery into the WGLA. Dispose of dropped battery promptly per local regulations or per the battery manufacturer's recommendations.

**Failure to comply with these instructions could result in death or serious injury.**



#### **ATTENTION**

Use only the following 3.6V lithium thionyl chloride (Li-SOCl<sub>2</sub>) battery (non-rechargeable), size 2/3AA. No other batteries are approved for use in the WGLA Series limit switch.

- Uniwell, DEV-10-0009
- Honeywell, WBT1



Step	Action
1	Remove the two screws ① on the housing cover.
2	Remove old battery from the battery holder ②. If needed, pry out battery by using a slotted screwdriver as a lever on the holder's side slots.
3	Install battery as follows to avoid damage to the battery and holder: <ul style="list-style-type: none"> <li>• See label in battery holder defining the “+” and “-” terminals ③ to ensure battery is placed in holder with correct polarity.</li> <li>• Do not attempt to bend the battery's hold-down tabs forward.</li> <li>• Insert the battery negative end under the hold-down tab, at an angle, and against the end of the spring tab ④. Simultaneously move the negative end of the battery into position, compressing the spring tab, and angle the positive end into the holder ⑤.</li> </ul>
4	Replace cover and retighten screws ①.
5	Dispose of used battery promptly per local regulations or the battery manufacturer's recommendations. Keep away from children. Do not disassemble and do not expose of in fire.

Note: Re-pairing via pairing mode is not required after installing a new battery

**Figure 21. Limitless™ WGLA Battery Replacement**



## 8 ACCESSORIES

### 8.1 Actuators

Lever	Roller Material	X Dim	Y Dim	Z Dim
GLZ51A	Nylon	19,1 mm [0.75 in]	55,9 mm [2.2 in]	6,4 mm [0.25 in]
GLZ51B	Steel	19,1 mm [0.75 in]	55,9 mm [2.2 in]	6,4 mm [0.25 in]
GLZ51T	Stainless Steel	19,1 mm [0.75 in]	56,8 mm [2.24 in]	8,8 mm [0.35 in]
GLZ51Y	Rubber	50,0 mm [1.97 in]	66,1 mm [2.60 in]	10,0 mm [0.39 in]

Lever	Roller Material	X Dim	Y Dim	Z Dim
GLZ52A	Nylon	19,1 mm [0.75 in]	65,9 mm [2.59 in]	6,4 mm [0.25 in]
GLZ52B	Steel	19,1 mm [0.75 in]	65,9 mm [2.59 in]	6,4 mm [0.25 in]
GLZ52D	Nylon	38,1 mm [1.5 in]	65,9 mm [2.59 in]	6,4 mm [0.25 in]
GLZ52E	Nylon	19,1 mm [0.75 in]	79,4 mm [3.13 in]	33,1 mm [1.30 in]
GLZ52W	Rubber	40,0 mm [1.57 in]	71,5 mm [2.81 in]	12,7 mm [0.5 in]
GLZ52Y	Rubber	50,0 mm [1.97 in]	68,8 mm [2.71 in]	10,0 mm [0.39 in]

8.2 Antenna Options

WAN	01	RSP	— — —
Antenna type	Antenna type code	Connector Code	Specials
WAN Series Antenna	01 2.1 dBi omni; straight design	RNJ Reverse polarity N jack**	Use only if antenna has a special feature.
	02 2.1 dBi omni; tilt & swivel des.	RSP Reverse polarity SMA plug	
	03 3.0 dBi omni with adhesive mount & 9.8 ft cable		
	04 5.5 dBi omni;*** tilt & swivel des.		
	05 9.0 dBi omni;*** tilt & swivel des.		
	06 8.0 dBi omni w/ bracket, straight des. 1 ft cable		

\*\* Only used with 06 antenna type code  
\*\*\* Limited outdoor exposure. Protect against direct rain, salt, snow, ice, etc.

Limitless™ Antennas

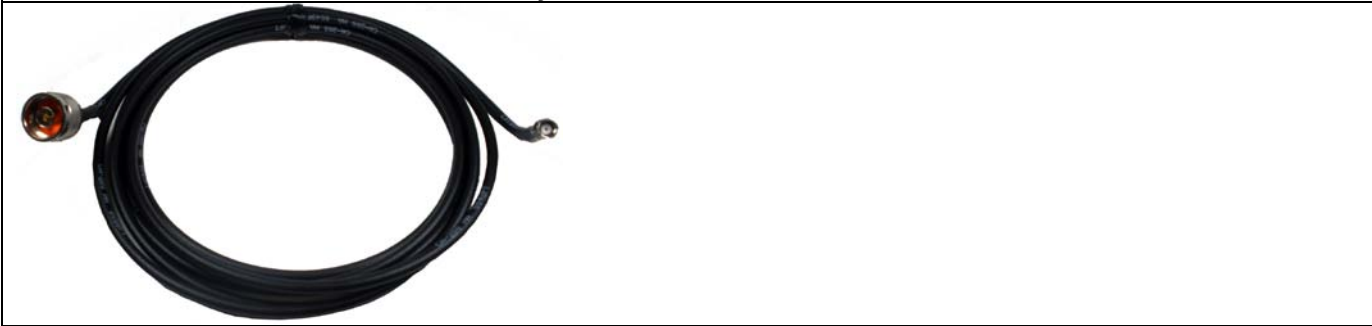
WAN01RSP Straight Design Direct Mount Connector	WAN02RSP Tilt and Swivel Design, Direct Mount Antenna	WAN05RSP with WAMM100RSP-005 Tilt and Swivel Design, Magnetic Mount Antenna	WAN03RSP Flat Design, Adhesive Mount Antenna	WAN06RNJ Straight Design, Bracket Mount Antenna
				

8.3 Antenna Cable Options

WCA	200	RNP	RSP-	010	— — —
Cable type	Cable Type	Connector Code	Connector Code	Length Code	Specials
WCA Series Cable	200200 Series Coax	RNPReverse polarity N plug	RSPReverse polarity SMA plug	Not applicable0022 ft cable length01010 ft cable length	Use only if cable has a special feature.

Limitless™ Cable Accessories

WCA200RNPRSP-002/010 Cable Assembly



8.4 Mounting Options

WAM	M	100	RSP-	005	— — —
Mounting	Type Code	Cable Type	Connector Code	Length Code	Specials
WAM Series Antenna Mount	M Magnetic	100 100 Series Coax	RSP Reverse polarity SMA plug	Not applicable 005 5 ft cable length 010 10 ft cable length	Use only if mount has a special feature.

Limitless™ Panel Mount Accessories

WAMM100RSP-005/010 Magnetic Antenna Mount



## 9 INSTALLATION DRAWINGS

### 9.1 Drawing Availability

Complete installation drawings for each listing of the Limitless™ WGLA Series switch and accessories are available at [www.honeywell.com/sensing](http://www.honeywell.com/sensing)

## 10 TROUBLESHOOTING GUIDES

The troubleshooting guide includes WPMM indications and symptoms as it is being used in conjunction with the WGLA.

SYMPTOM	CAUSE	RESOLUTION
Green LED is not ON	10 Vdc to 30 Vdc is not applied to "+" & "-" terminals	Check for proper connection and 10 Vdc to 30 Vdc to "+" and "-" terminals
	Power leads connected in reverse	Check for proper connection of power: "+" and "-" terminals
Green, amber and/or red LEDs do not blink ON at start-up	WPMM internal electronics damaged	Replace WPMM
	LED(s) burnt out	Replace WPMM
Green, amber, and red LEDs are momentarily OFF then ON with possible NPN output change during normal operation. Resulting in only green LED on and possibly incorrect amber and red LED indication/output for up to 30 seconds.	ESD/EMI exposure beyond published specifications or device performing self check	Determine source for ESD/EMI emissions in application and take action to remove
Amber LED is flashing	Low battery in Limitless™ switch	<ul style="list-style-type: none"> <li>Determine which Limitless™ switch has a low battery using the procedure in Section 7.3.</li> <li>Replace Limitless™ switch battery per Limitless™ switch Installation guide</li> </ul>
	Incorrect battery installed in Limitless™ switch	<ul style="list-style-type: none"> <li>Determine which Limitless™ switch has a low battery using the procedure in Section 7.3.</li> <li>Replace Limitless™ switch battery per Limitless™ switch Installation guide</li> </ul>
Amber LED is constantly ON	Dead or Low battery in Limitless™ switch	<ul style="list-style-type: none"> <li>Determine which Limitless™ switch has a low battery using the procedure in Section 7.3.</li> <li><b>Limitless™ switch status will in this case be reported as insufficient RF</b></li> <li>Replace Limitless™ switch battery per Limitless™ switch installation guide</li> </ul>
	Incorrect battery installed in Limitless™ switch	<ul style="list-style-type: none"> <li>Determine which Limitless™ switch has a low battery using the procedure in Section 7.3.</li> <li><b>Limitless™ switch status will in this case be reported as insufficient RF</b></li> <li>Replace Limitless™ switch battery per Limitless™ switch installation guide</li> </ul>
	RF range/distance between WPMM and Limitless™ switch is beyond capability	Reposition Limitless™ switch closer to the WPMM until amber LED is no longer ON
	Exposure to adjacent materials/objects and/or materials/objects	Reposition Limitless™ switch away from objects until amber LED is no longer ON
	Damage or missing antenna from WPMM and/or Limitless™ switch	Replace antenna per Section 6.3
	Antenna alignment is not acceptable	Reposition antenna per Section 6.3
	Damage to antenna cable	Replace antenna cable per Section 6.3
	Loose antenna or cable connections	Check connections and tighten as necessary per Section 6.3

SYMPTOM	CAUSE	RESOLUTION
Red LED is not ON and buzzer does not sound when Limitless™ switch is actuated (green LED ON, amber LED OFF)	Limitless™ switch is not paired to WPMM	Pair Limitless™ switch to WPMM per Section 5.4
	External actuator of Limitless™ switch damaged	Replace Limitless™ actuator
	Actuating head of Limitless™ switch damaged	Replace Limitless™ actuating head
	Limitless™ switch internal electronics damaged	Replace Limitless™ switch
	Amber LED burnt out or damaged electronics of WPMM	Replace WPMM
	Red LED burnt out	Replace WPMM
Buzzer not sounding when Limitless™ switch is actuated (green LED ON, amber LED OFF)	Limitless™ switch is not paired to WPMM	Pair Limitless™ switch to WPMM per Section 5.3
	External actuator of Limitless™ switch damaged	Replace Limitless™ actuator
	Actuating head of Limitless™ switch damaged	Replace Limitless™ actuating head
	Limitless™ switch internal electronics damaged	Replace Limitless™ switch
	Amber LED burnt out or damaged electronics of WPMM	Replace WPMM
	Buzzer burnt out	Replace WPMM
NPN output is not changing state when Limitless™ switch is actuated (green LED ON, amber LED OFF)	Limitless™ switch is not paired to WPMM	Pair Limitless™ switch to WPMM per Section 5.3
	Incorrect connections	Check for correct connections to output terminal "O" with respect to minus "-" terminal
	External actuator of Limitless™ switch damaged	Replace Limitless™ actuator
	Actuating head of Limitless™ switch damaged	Replace Limitless™ actuating head
	Limitless™ switch internal electronics damaged	Replace Limitless™ switch
	Damaged output	Replace WPMM



## WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

## SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

**E-mail:** [info.sc@honeywell.com](mailto:info.sc@honeywell.com)

**Internet:** [www.honeywell.com/sensing](http://www.honeywell.com/sensing)

### Phone and Fax:

Asia Pacific	+65 6355-2828 +65 6445-3033 Fax
Europe	+44 (0) 1698 481481 +44 (0) 1698 481676 Fax
Latin America	+1-305-805-8188 +1-305-883-8257 Fax
USA/Canada	+1-800-537-6945 +1-815-235-6847 +1-815-235-6545 Fax

Sensing and Control  
Honeywell  
1985 Douglas Drive North  
Golden Valley, MN 55422  
[www.honeywell.com](http://www.honeywell.com)

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