

Wireless Non-Contact Switch (WLS Series)

Limitless™ Switch



DESCRIPTION

Honeywell's Limitless™ product line uses the latest commercial off-the-shelf wireless technology. The Limitless™ WLS Series is especially beneficial for remote monitoring applications where wiring or wire maintenance is not physically possible or economically feasible.

Honeywell is expanding the Limitless™ product line with its industrial Wireless Non-Contact Switch that provides non-contact presence/absence detection of a variety of different magnet styles and magnetic actuators installed on the end-users'

product, machine, equipment, etc. The Limitless™ WLS Non-Contact Switch's design features an industrial grade reed switch. Customers can choose how the reed switch is oriented within the switch's plastic head, i.e., either top- or side-sensing. Combining this greater flexibility with proven harsh-duty packaging can result in increased efficiencies and improved safety for industrial machines, equipment, OEMs, and operators.

FEATURES

Wireless design

- Radio (license-free and global): WPAN 802.15.4, 2.4 GHz, point-to-point
- FCC 15, IC, ACMA, ETSI, COFETEL, WPC & IDA
- Up to 305 m [1000 ft] line-of-sight communication range when used with a Limitless™ wireless monitor or receiver module (sold separately)
- Reliable, flexible, and secure wireless transmission
- Replaceable battery with ultra-low power consumption
- Direct or remote mount antenna options

Mechanical design

- IP67; NEMA 1, 4, 12, 13
- Top and side sensing heads
- Zinc head and body are phosphate treated and epoxy finished

BENEFITS

- Allows "non-contact" actuation
- Enables presence/absence detection in remote parts of application/machinery, where wiring is an issue or not feasible
- Able to reconfigure and network multiple switches, or point-to-point with personalized addresses, which allows for adding, subtracting or relocating of the Limitless™ WLS Non-Contact Switches
- Reduced installation/maintenance costs with no wires, conduit, strain relief, clips, connectors, connection boxes, etc.
- Eliminates issues with wire connection integrity on moving equipment
- Consumes ultra-low power to prolong battery life

APPLICATIONS

- Machine tools
- Packaging machinery
- Lifts
- Ag/construction equipment
- Industrial machines

Limitless™ Series

Table 1. General Limitless™ WLS Series Specifications

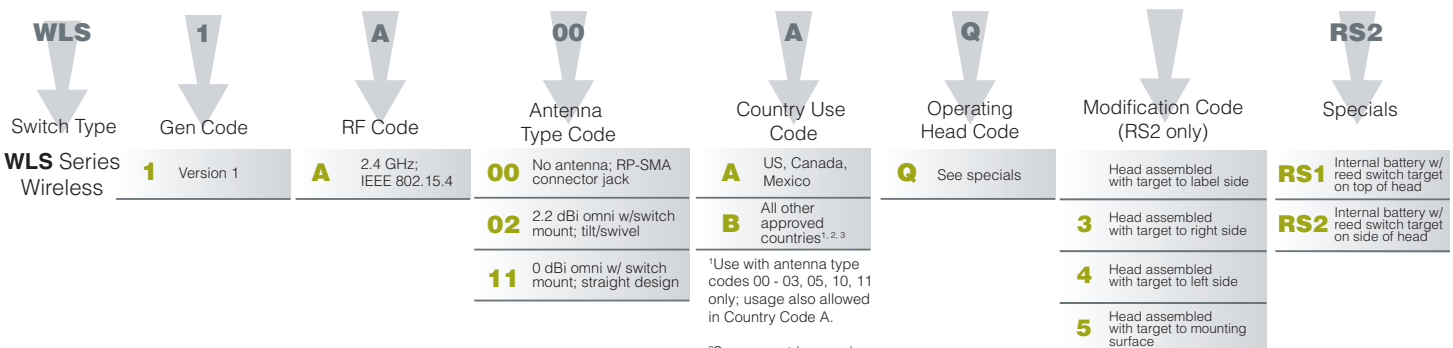
Characteristic	Parameter
Series name	WLS Series
Product type	Limitless™ Non-Contact Switch
Availability	Global, license-free bands
Operating characteristics	Operating point: 3,81 mm [0.15 in] min.; Release point: 15,24 mm [0.60 in] max. with use of WMG1 magnet (included with WLS Series Non-Contact Switch)
Sensing target	Top and side of head
Housing material	Zinc head and body are phosphate treated and epoxy finished; 30% glass-filled PBT plastic head
Housing type	WLS
Radio type	WPAN 802.15.4; 2.4GHz
Communication agency approvals/certificates*	- FCC 15.247: United States of America - IC RSS 210: Canada - COFETEL: Mexico - ETSI, CE mark: European countries - ACMA, C-TICK: Australia - IDA: Singapore - WPC: India
Antenna type	RP-SMA jack for direct or remote mount antenna options; omni directional standard
Signal range	Nominal 305 m** [1000 ft]** Clear line-of-sight between Limitless™ switch and monitor/receiver when using 2.2 dBi integral antenna
Internal power option (battery)	3.6 Vdc Lithium Thionyl Chloride; 2/3 AA size (Est. life >1yr) Manufactured by Green Energy, part number ER14335M
Sealing	IP67; NEMA 1, 4, 12, 13
EMC	Latest applicable standards: EN 300 328, V1.7.1; EN 61326-1 (2006); EN 301 489-1, V1.8.1; EN 301 489-17, V2.1.1
Shock	IEC 60068-2-27; half sine, 10 g, 6 mS, 3 axis
Vibration	IEC 60068-2-6; 10-58 Hz w/ 0,35 mm peak-to-peak - 5g
Operating temperature	-40 to 85 °C [-40 °F to 185 °F]

*Honeywell is continuing to add new Country Communication Agency Approvals as opportunities and requirements are established

**Actual range will vary depending upon antennas, cables, and site topography.

NOMENCLATURE TREES


Limitless™ WLS Series Non-Contact Switch Nomenclature



³If Limitless devices are used on machinery that may shipped globally, use country code "B".

Wireless Non-Contact Switch

Table 2. Standard Listings

	Part Number	Description
	WLS1A00AQRS1	Limitless™ WLS Series Non-Contact Switch with no antenna and a top sensing target, for use in US Canada, and Mexico
	WLS1A00AQRS2	Limitless™ WLS Series Non-Contact Switch with no antenna and a side sensing target, for use in US Canada, and Mexico
	WLS1A11AQRS1	Limitless™ WLS Series Non-Contact Switch with a 0 dBi antenna and a top sensing target, for use in US Canada, and Mexico
	WLS1A11AQRS2	Limitless™ WLS Series Non-Contact Switch with a 0 dBi antenna and a side sensing target, for use in US Canada, and Mexico
	WLS1A00BQRS1	Limitless™ WLS Series Non-Contact Switch with no antenna and a top sensing target, for use in all other approved countries
	WLS1A00BQRS2	Limitless™ WLS Series Non-Contact Switch with no antenna and a side sensing target, for use in all other approved countries
	WLS1A11BQRS1	Limitless™ WLS Series Non-Contact Switch with a 0 dBi antenna and a top sensing target, for use in all other approved countries
	WLS1A11BQRS2	Limitless™ WLS Series Non-Contact Switch with a 0 dBi antenna and a side sensing target, for use in all other approved countries

Limitless™ Series

Limitless™ WPMM Monitor Nomenclature (used in conjunction with the Limitless™ WLS Switch)

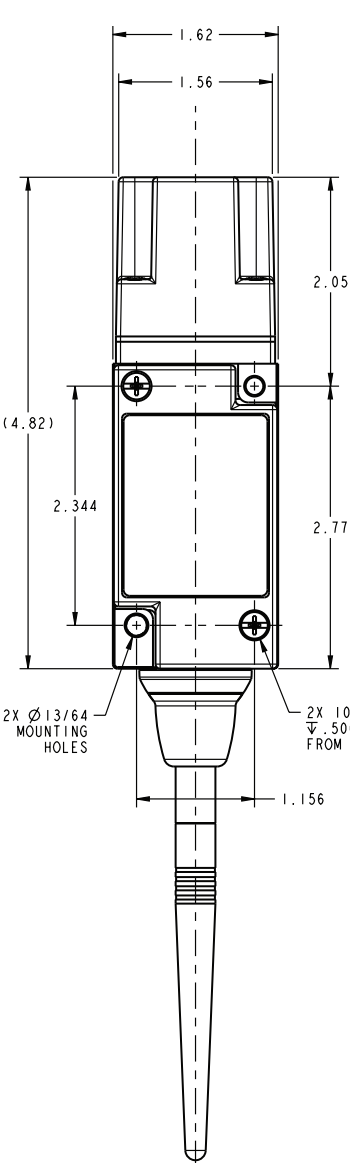
WPMM	1	A	00	A
Switch type	Gen Code	RF Code	Antenna type code	Country use code
WPMM Series Monitor	1 Version 1	A 2.4 GHz; IEEE 802.15.4	00 No antenna; RP-SMA connector jack	A US, Canada, Mexico
			01 2.2 dBi omni w/switch mount; straight design	B All other approved countries ^{1, 2, 3}
			02 2.2 dBi omni w/switch mount; tilt/swivel	¹ Use with antenna type codes 00 - 03, 05, 10, 11 only; usage also allowed in Country Code A.
			03 3.0 dBi omni w/remote adhesive mount 9.8 ft cable	
			04 5.5 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable	² Some countries require specific communication certifications. Contact Honeywell for existing certification information.
			05 5.5 dBi omni w/remote mag. mount, tilt/swivel 10ft cable	
			06 9.0 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable	³ If Limitless devices are used on machinery that may shipped globally, use country code "B".
			07 9.0 dBi omni w/remote mag. mount, tilt/swivel 10ft cable	
			08 8.0 dBi omni w/remote bkt. mount, str. design 3 ft cable	
			09 8.0 dBi omni w/remote bkt. mount, str. design 11 ft cable	
			10 2.2 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable	

Limitless™ WDRR Din-Rail Receiver Nomenclature (used in conjunction with the Limitless™ WLS Switch)

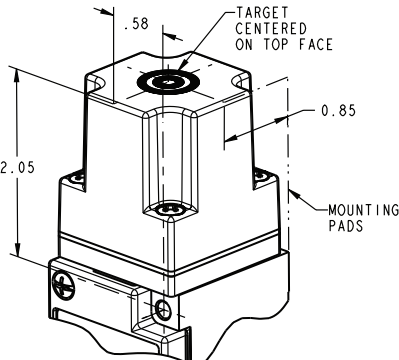
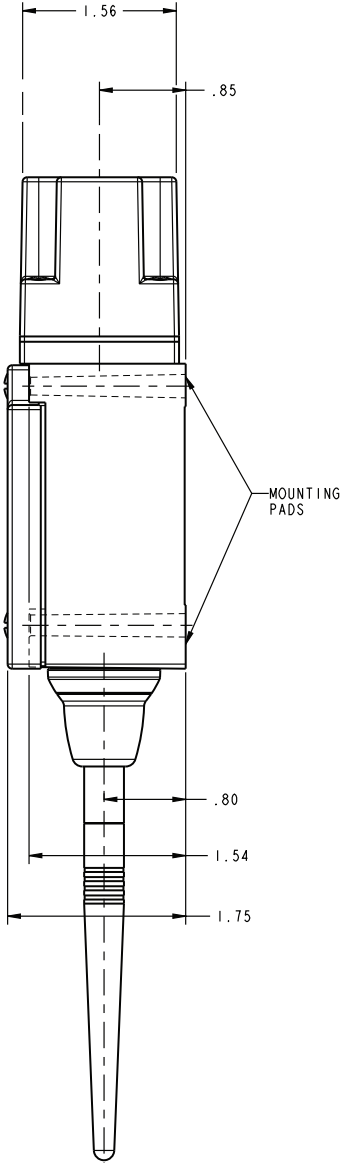
WDRR	1	A	00	A	0	A
Switch type	GEN code	RF Code	Antenna type code	Country use code	Output code	Channel code
WDRR Series Din-Rail Receiver	1 Version 1	A 2.4 GHz; IEEE 802.15.4	00 No antenna; RP-SMA connector jack	A US, Canada Mexico	0 NPN/PNP selectable	A 14 channels
			01 2.2 dBi omni w/switch mount; straight design	B All other approved countries ^{1, 2, 3}		
			02 2.2 dBi omni w/switch mount; tilt/swivel	¹ Use with antenna type codes 00 - 03, 05, 10, 11 only; usage allowed in Country Code A.		
			03 3.0 dBi omni w/remote adhesive mount 9.8 ft cable			
			04 5.5 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable	² Some countries require specific communication certifications. Contact Honeywell for existing certification information.		
			05 5.5 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable			
			06 9.0 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable	³ If Limitless™ devices are used on machinery that may be shipped globally, use Country Code "B".		
			07 9.0 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable			
			08 8.0 dBi omni w/remote bkt. mount, str. design 3 ft cable			
			09 8.0 dBi omni w/remote bkt. mount, str. design 11 ft cable			
			10 2.2 dBi omni w/remote mag. mount, tilt/swivel 10 ft cable			

Wireless Non-Contact Switch

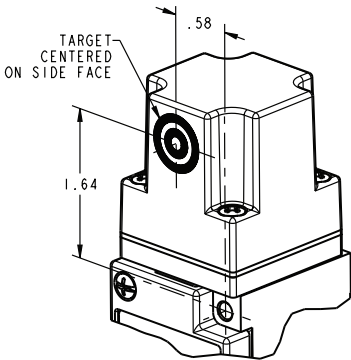
DIMENSIONS



2X 10-32 UNF-2B
▽.500 MIN TAPPED
FROM REAR ONLY



RS1



RS2

Limitless™ Series

ANTENNA OPTIONS



Antenna
Type Code
"01"

WAN01RSP
straight design,
2.2 dBi gain,
direct mount
connector



Antenna
Type Code
"02"

WAN02RSP
tilt & swivel design,
2.2 dBi gain,
direct mount
connector



Antenna Type
Code "03"

WAN03RSP
flat design,
3 dBi gain,
adhesive mount



WAN04RSP
tilt & swivel design,
5.5 dBi gain,
direct mount
connector



Antenna Type
Code "04"

**WAN05RSP &
WAMM100RSP-005**
T/S, 9 dBi gain,
magnetic mount



WAN06RNJ
straight design,
8 dBi gain,
bracket mount



Antenna
Type Code
"11"

WAN07RSP
straight design,
0 dBi gain, direct
mount connector



WAN09RSP
low-profile mobile antenna,
3.0 dBi gain, magnetic mount



WAN10RSP
straight mobile an-
tenna, 5.0 dBi gain,
magnetic mount



WAN11RSP
low-profile dome antenna,
4.0 dBi gain, through-hole screw mount



WPB1
WPMM mounting
bracket



WPR1
WPMM panel mount
retainer

Wireless Non-Contact Switch

ANTENNA CABLE OPTIONS

WCA200RNPRSP-002 Cable Assembly: 2 ft¹
 WCA200RNPRSP-010 Cable Assembly: 10 ft¹



¹ use only with WAN06RNJ antenna and when extra cable is desired

WCA200RNJRSP-002 Cable Assembly: 2 feet length²
 WCA200RNJRSP-005 Cable Assembly: 5 feet length²
 WCA200RNJRSP-010 Cable Assembly: 10 feet length²
 WCA200RNJRSP-015 Cable Assembly: 15 feet length²
 WCA200RNJRSP-020 Cable Assembly: 20 feet length²

² Use when extra cable length is desired and allows connection from RP-SMA jack to RP-SMA plug

MOUNTING OPTIONS

Limitless™ Panel Mount Accessories
 WAMM100RSP-005 Magnetic Antenna Mount: w/ 5 ft of cable³
 WAMM100RSP-010 Magnetic Antenna Mount: w/ 10 ft of cable³



³ Use only with WAN01RSP, WAN02RSP, WAN04RSP, WAN05RSP, or WAN08RSP antennas

MAGNETS

Limitless™ magnets for use with WLS Non-Contact Switch only

<p>WMG1: Operating point 0.150 in min.; Release point 0.600 in max.</p>	<p>WMG2: Operating point 0.45 in min.; Release point 1.0 in max.</p>

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this datasheet is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

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

⚠ 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

IMPROPER INSTALLATION

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.

Warranty. 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 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.**

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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.

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