

Wireless Heavy-Duty Limit Switch with Eyelet-Pull (WLS Series)

Limitless™ Switch



DESCRIPTION

Honeywell is extending its Limitless™ WLS Series of Heavy Duty Wireless Limit Switches with an eyelet-pull operating head that can be used to attach a rope, cable or chain. It also can be used on cranes as an anti-two-block (A2B) switch.

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, ANATEL, SRRC, and KCC
- Up to 1000 ft [305 m] line of sight communication range when used with a Limitless™ WPMM Series wireless monitor or WDRR Series receiver module (sold separately)
- Reliable, flexible, and secure wireless transmission
- Long-life standard replaceable battery
- Direct or remote mount antenna options

Mechanical design

- IP67/IP68; NEMA 1, 4, 6, 6P, 12, 13
- Unique all-metal drive train
- Zinc head and body are phosphate treated and epoxy finished
- Tested to 750 lb of pull force
- Captive head and body screws

The Limitless™ Series benefits 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 machines, equipment, OEMs, and operators.

BENEFITS

- Enables presence/absence detection in remote parts of application/machinery, where wiring is an issue or not feasible
- Ability to reconfigure multiple switches that easily allows for adding, subtracting or relocating Limitless™ WLS switches
- Reduces installation/maintenance costs with no wires, conduit, strain relief, clips, connectors, or connection boxes
- Eliminates issues with wire connection integrity on moving equipment
- Consumes ultra-low power to prolong battery life

APPLICATIONS

- Cranes: A2B (anti-two block) switch
- Rope-pull: door activation switch
- Cable pull for production stop applications (e.g., quality, broken tool, maintenance, out of parts); not applicable to human safety-stop applications

Limitless™ Series

Table 1. General Limitless™ WLS-EP Series Specifications

| Characteristic | Parameter |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Series name | WLS Series |
| Product type | Limitless™ Wireless Heavy-Duty Limit Switches |
| Operating characteristics | Operating force: 7 lb approx. or 18 lb approx. |
| Actuator | Eyelet-pull operating head (pull eyelet in-line with shaft to prevent damage) |
| Housing material | Zinc head and body are phosphate treated and epoxy finished |
| Housing type | WLS |
| Radio type | WPAN 802.15.4; 2.4GHz |
| Communication agency approvals/certificates* | <ul style="list-style-type: none"> - FCC 15.247: United States of America - IC RSS 210: Canada - ETSI, CE mark: European countries - ACMA, C-TICK: Australia, New Zealand - IDA: Singapore - COFETEL: Mexico - WPC: India - ANATEL: Brazil - SRRC: China - KCC: South Korea |
| Antenna type | RP-SMA jack for direct or remote mount antenna options; omni-directional |
| Signal range | In excess of 305 m [1000 ft] line-of-sight communication between Limitless™ switches and monitor/receiver when using 2.2 dBi integral antenna |
| Battery | 3.6 Vdc Lithium Thionyl Chloride; 2/3 AA size (Est. life >1yr) Manufactured by Uniwell, part number DEV-10-0009; or Green Energy, part number ER14335M |
| Sealing | IP67/IP68; NEMA 1, 4, 6, 6P, 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; 10-500Hz w/ 0,35 mm peak-to-peak, 58-500 Hz- 5g |
| Operating temperature | -40 °C to 85 °C [-40 °F to 185 °F] |

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

Table 2. Standard Listings

| Part Number | Description |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WLS1A11AQ-4P01 | Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to left side, 0 dBi omni antenna, for use in US Canada, and Mexico |
| WLS1A11BQ-4P01 | Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to left side, 0 dBi omni antenna, for use in all other approved countries |
| WLS1A11AQ-P01 | Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in US Canada, and Mexico |
| WLS1A11BQ-P01 | Limitless™ WLS Series heavy-duty limit switch with 7 lb low-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in all other approved countries |
| WLS1A11AQ-P02 | Limitless™ WLS Series heavy-duty limit switch with 18 lb high-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in US Canada, and Mexico |
| WLS1A11BQ-P02 | Limitless™ WLS Series heavy-duty limit switch with 18 lb high-force eyelet pull operating head, head assembled with actuator to label side, 0 dBi omni antenna, for use in all other approved countries |

Wireless Heavy-Duty Limit Switch with Eyelet-Pull

NOMENCLATURE TREES

Limitless™ WLS Side Eyelet Head Switch Nomenclature (used in conjunction with the Limitless™ WLS Switch)

| WLS | 1 | A | 00 | A | A | — | 3 | PO1 |
|----------------------------|--------------------|---------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---|-----------------------------------------------------------|----------------------------------------------------------------|
| Switch type | Gen Code | RF Code | Antenna type code | Country use code | Operating head code | | Modification code | Specials |
| WLS Series Wireless | 1 Version 1 | A 2.4 GHz; IEEE 802.15.4 | 00 No antenna; RP-SMA connector jack | A US, Canada, Mexico | Q See specials | | Head assembled with actuator towards nameplate surface | PO1 Eyelet-pull operating head (low force, 7 lb ref.) |
| | | | 01 2.2 dBi omni w/switch mount; straight design | B All other approved countries ^{1,2,3} | | | 3 Head assembled with actuator to right side | PO2 Eyelet-pull operating head (high force, 18 lb ref.) |
| | | | 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. | | | 4 Head assembled with actuator to left side | |
| | | | 03 3.0 dBi omni w/remote adhesive mount 9.8 ft cable | ² Some countries require specific communication certifications. Contact Honeywell for existing certification information. | | | 5 Head assembled with actuator to mounting surface | |
| | | | 04 5.5 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". | | | | |
| | | | 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 | | | | | |
| | | | 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 | | | | | |
| | | | 11 0 dBi omni w/switch mount; straight design | | | | | |

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 | ² Some countries require specific communication certifications. Contact Honeywell for existing certification information. |
| | | | 04 5.5 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". |
| | | | 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 | |
| | | | 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 | |

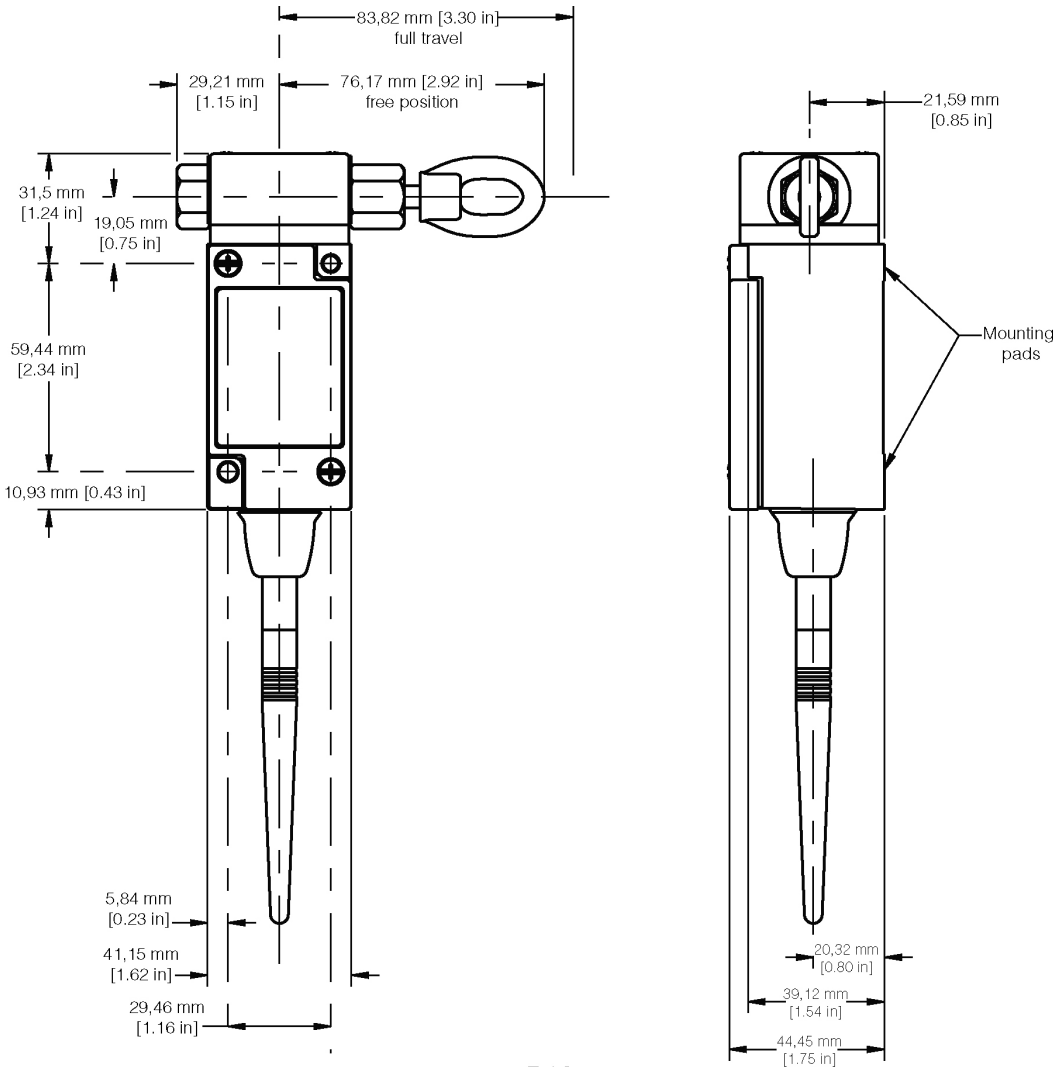
Limitless™ Series

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

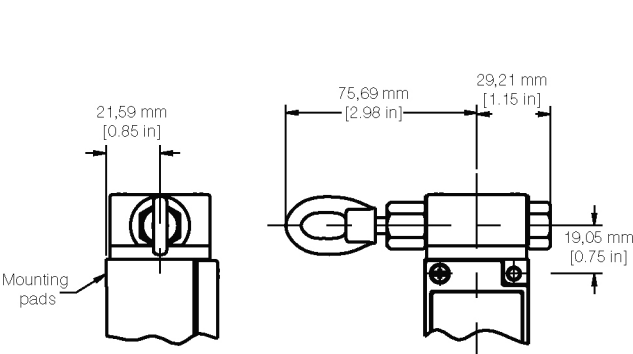
| WDRR | 1 | A | 00 | A | 0 | A |
|-------------------------------------|--------------------|------------------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------|
| 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 | ² Some countries require specific communication certifications. Contact Honeywell for existing certification information. | | |
| | | | 04 5.5 dBi omni w/remote mag. mount, tilt/swivel 5 ft cable | | | |
| | | | 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 | | | |
| | | | 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 | | | |

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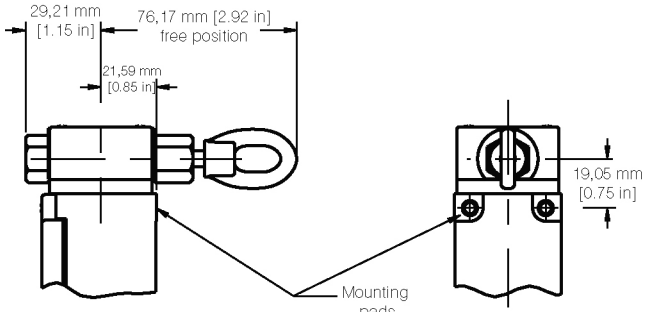
DIMENSIONS



**P01
WITH EYELET-PULL OPERATING HEAD
ASSEMBLED PER MODIFICATION CODE 3**



**P01
WITH EYELET-PULL OPERATING HEAD
ASSEMBLED PER MODIFICATION CODE 4**



**P01
WITH EYELET-PULL OPERATING HEAD
ASSEMBLED PER MODIFICATION CODE 5**

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



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
WPM mounting
bracket



WPR1
WPM panel mount
retainer

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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

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

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.

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