Spectra Machine Receiver Hands-On
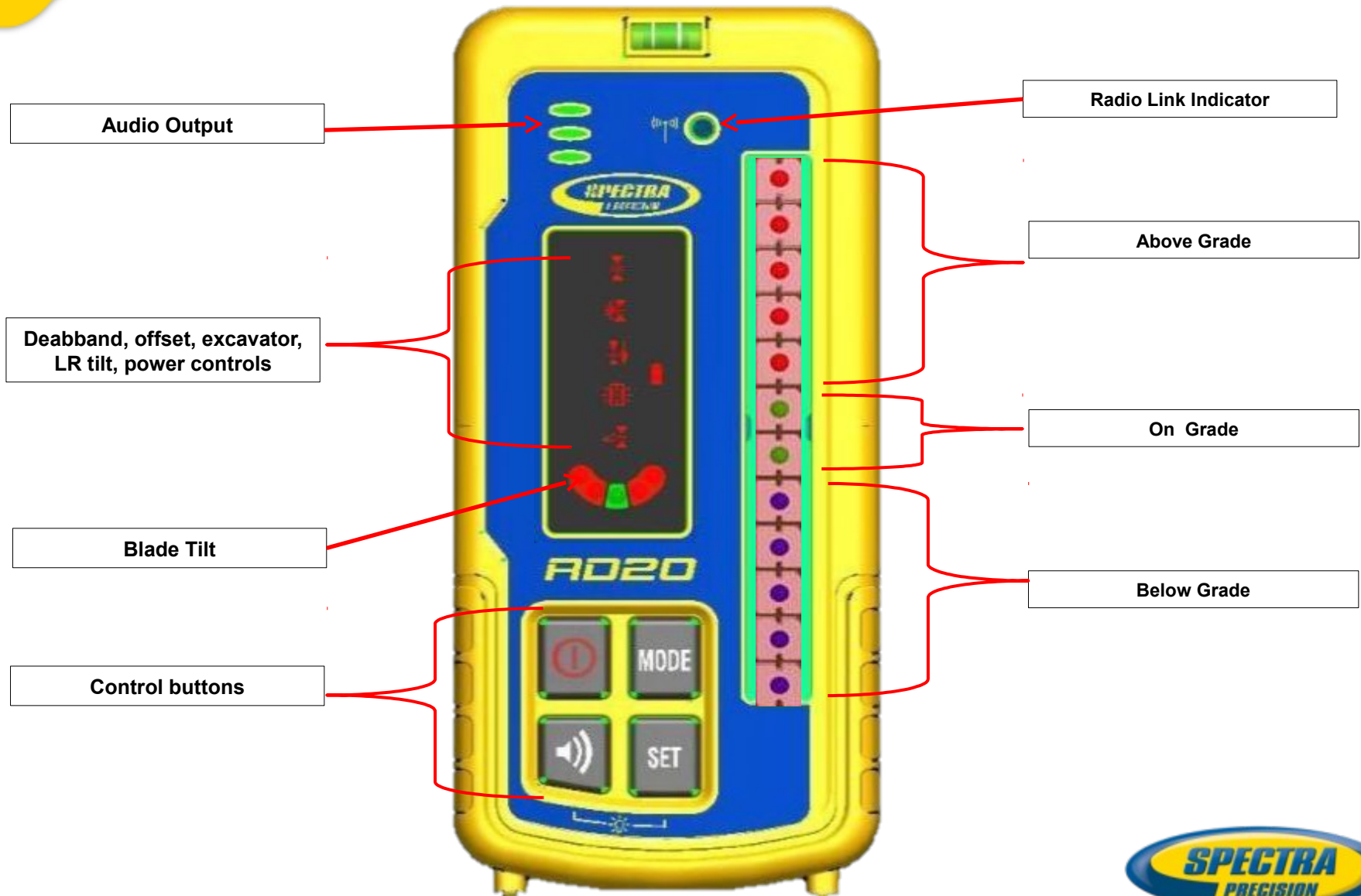
LR30 / LR30W
LR50 / LR50W
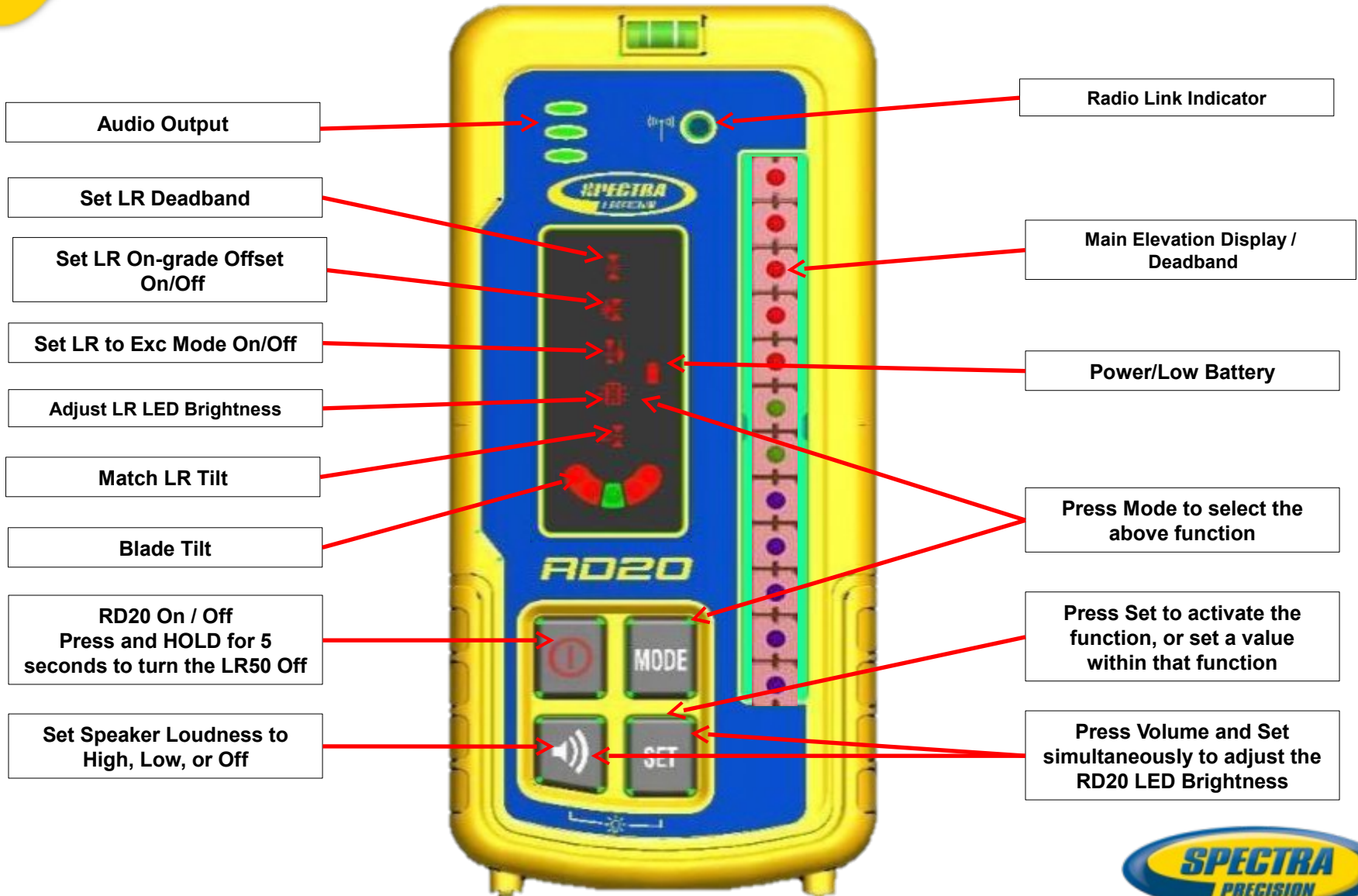## LR60 / LR60W

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RD20 Controls and Indicators

Audio Output

Radio Link Indicator

Deabband, offset, excavator, LR tilt, power controls

Above Grade

On Grade

Blade Tilt

Below Grade

Control buttons

RD20

MODE

SET

SPECTRA PRECISION

RD20 Controls and Indicators - Details

Audio Output

Set LR Deadband

Set LR On-grade Offset On/Off

Set LR to Exc Mode On/Off

Adjust LR LED Brightness

Match LR Tilt

Blade Tilt

RD20 On / Off
Press and HOLD for 5 seconds to turn the LR50 Off

Set Speaker Loudness to High, Low, or Off

Radio Link Indicator

Main Elevation Display / Deadband

Power/Low Battery

Press Mode to select the above function

Press Set to activate the function, or set a value within that function

Press Volume and Set simultaneously to adjust the RD20 LED Brightness

RD20

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Powering the RD20

Internal AA Batteries:

Battery life about 20 hours (alkaline)
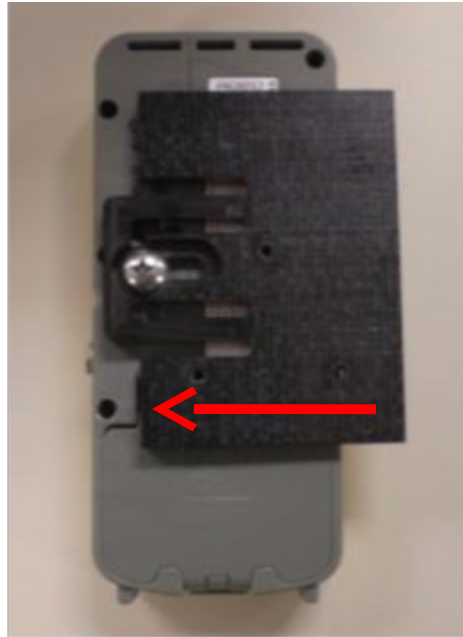

Machine Power:

Included power cable P/N 010983 connects machine's power port (10 to 30VDC) to the RD20.

Note: The internal batteries are automatically disconnected when Machine Power is operating: No charging of the internal batteries will occur.

To install, slide the plate over the mounting screw and slide to the left until it locks into place

RD20 Mounting – Adhesive Tape

Machine Surface

Remove the backing from the supplied adhesive tape, and apply the tapes between the Quick Disconnect Mounting Plate and the machine's mounting surface.

RD20 Mounting – Magnetic

Use the supplied hardware to install the 3 magnets as shown on the Quick Disconnect Mounting Plate. Magnetically clamp the assembly to the machine's mounting surface.

Machine Surface

Optional Mount – Swivel with Suction Cup

Use the supplied mounting screws, swivel mount and suction cup to secure the RD20 to the inside window of the machine

Machine Window

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Power Up
-Radio link established, LINK LED illuminates
-Main display indicates receiver DEADBAND setting

Power Down

Receiver Power Down
Both receiver power and RD20 power down if held > 5 seconds.

Wireless Link Status

Wireless connection is indicated by flashing yellow LED next to antenna symbol

RD20 - if no link with the receiver, the RD20 will alternate flash 1) top red and bottom blue then 2) on grade 2 green LEDs

Receiver - if it loses link with the RD20, it will alternate flash 1) red LED in 4 corners the 2) center green LED.

NOTE: To use the receiver by itself (with no RD20), cycle power to clear the lost link indication.

Elevation Display – Full Display or Battery Saver

Standard

Battery saver

- **Standard – multiple LEDs indicate height**
- **Battery saver – only 1 LED indicates height**

- To toggle between the two modes press and hold the Power and Set buttons simultaneously until the LEDs flash (about 2 seconds).

- The RD20 ships from the factory in Standard display mode. The last selected mode is remembered after a power cycle.

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Speaker Volume and RD20 LED Brightness

Sound

- **Beeper volume options: High (105db), Medium (95db), Low (65db) and Off**
- **Press to cycle through options (low beep indicates volume off)**
- **Hi, On-Grade and Low tones to match elevation LEDs**
- **The RD20 remembers the last volume setting after a power cycle.**
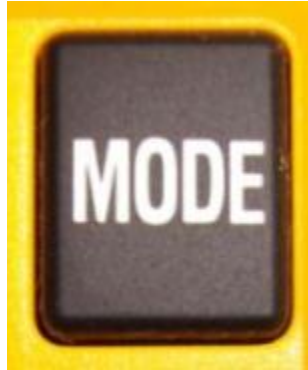
LED Brightness

- **Simultaneous press sets the brightness of the Elevation and Tilt LEDS to Bright, Medium, or Dim.**
- **The RD20 remembers the last brightness setting after a power cycle**

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Function Select - Mode

MODE functions work only when linked to a receiver

Press Mode until desired function/LED symbol lights. Cycle through functions.

Then press Set to cycle through options.

If no button is pressed after 5 seconds the selected LED goes out

Set LR Dead-Band

Press Mode until DEAD-BAND LED lights

Press Set to cycle through options
Fine=Green on-grade LEDs flash,
Medium=on-grade and single high and low LEDs flash,
Coarse=on-grade and 2 high and low LEDs flash, LR60
Very Coarse= on-grade and 3 high and low LEDs flash

Dead band changes are also indicated on the receiver

The RD20 and receiver remember the last dead-band setting after a power cycle

Set LR On-Grade Offset

Press Mode until ON-GRADE OFFSET lights

Press Set to set the current laser elevation to On Grade.

If successful, the green On Grade LEDs will light to show on grade. The green LEDs will double flash to indicate on Offset has been entered.

If no laser is hitting the receiver, offset cannot be set and the green LEDs will not light.

Set LR to Excavating Mode

Press Mode until Excavator Mode lights

Press Set to start excavating mode
- **offsets to current laser height**
- **plumb indication is "turned on"**
- **Excavator LED continues to flash**
- **(does not work with LR60 in ACE mode)**

To return to center grade, press Mode and Set again.

Adjust LR LED Brightness

Press Mode until Excavator Mode lights

Press SET till LR BRIGHTNESS LED lights

Cycle through options (feedback from LR)

NOTE: Tilt display must be enabled at the LR60 for the RD20 to display or match tilt. To toggle Tilt Display On/Off at the LR60:

1. Turn the LR60 on
2. Momentarily and simultaneously press the Power, Plumb and Dead-band buttons at the same time. This toggles Tilt display at the RD20 On or Off.

MATCH LR TILT LED illuminated: Sets the receiver null and RD20 Tilt displays to On-Grade at the current valid receiver tilt angle. Tilt-angle set to NULL is indicated by a double-flash indication, then the LED goes out.

Match LR50 Tilt

NOTE: Tilt display must be enabled at the LR50 for the RD20 to display or match tilt. To toggle Tilt Display On/Off at the LR50:

1. Turn the LR50 on
2. Press and release the tilt button to toggle tilt on or off

MATCH LR TILT LED illuminated: Sets the receiver null and RD20 Tilt displays to On-Grade at the current valid receiver tilt angle. Tilt-angle set to NULL is indicated by a double-flash indication, then the LED goes out.

LR30W Radio Pairing

NOTE: The RD20 and LR30 receiver are PAIRed at the factory. The below procedure is in case a RD20 needs to be PAIRed with a different LR30 receiver.

To start LR30W PAIR mode:
1. Make sure the receiver is turned OFF
2. Press the BRIGHTNESS and DEAD-BAND keys, then while continuing to hold them down press the POWER key at the same time. When the receiver starts its power-up sequence release the keys.
3. After the receiver completes its power up sequence, the On-Grade LEDs will blink rapidly indicating the receiver is in PAIR mode.

To start RD20 PAIR mode:
4. Make sure the RD20 is turned OFF
5. Press the POWER, MODE and SET keys at the same time. When the RD20 starts its power-up sequence release the keys.
6. After the RD20 completes its power up sequence, the yellow ANTENNA LED will blink rapidly indicating the RD 20 is in PAIR mode.
7. Wait about 10 seconds for the 2 units to PAIR to each other. When PAIR is complete the rapid blink of the LEDS on both units will stop and normal operation will start.

LR50W Radio Pairing

NOTE: The RD20 and LR50 receiver are PAIRed at the factory. The below procedure is in case a RD20 needs to be PAIRed with a different LR50 receiver.

To start LR50 PAIR mode:
1. Make sure the receiver is turned OFF
2. Press the ON-GRADE OFFSET and DEAD-BAND keys, then while continuing to hold them down press the POWER key at the same time. When the receiver starts its power-up sequence release the keys.
3. After the receiver completes its power up sequence, the On-Grade LED will blink rapidly indicating the receiver is in PAIR mode.

To start RD20 PAIR mode:
4. Make sure the RD20 is turned OFF
5. Press the POWER, MODE and SET keys at the same time. When the RD20 starts its power-up sequence release the keys.
6. After the RD20 completes its power up sequence, the yellow ANTENNA LED will blink rapidly indicating the RD20 is in PAIR mode.
7. Wait about 10 seconds for the 2 units to PAIR to each other. When PAIR is complete the rapid blink of the LEDS on both units will stop and normal operation will start.
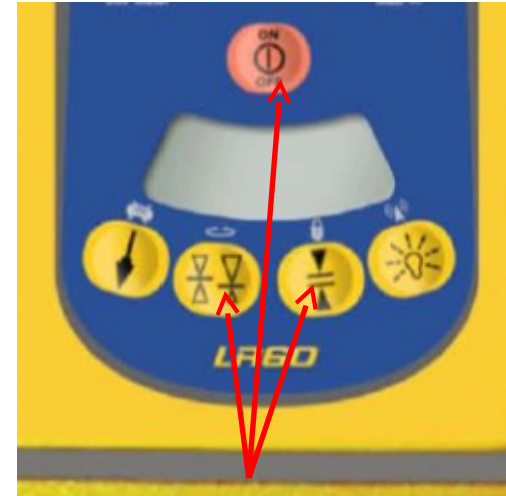
LR60W Radio Pairing

NOTE: The RD20 and LR60 receiver are PAIRed at the factory. The below procedure is in case a RD20 needs to be PAIRed with a different LR60 receiver.

To start LR60 PAIR mode:
1. Make sure the receiver is turned OFF
2. Press the ON-GRADE OFFSET and DEAD-BAND keys, then while continuing to hold them down press the POWER key at the same time. When the receiver starts its power-up sequence release the keys.
3. After the receiver completes its power up sequence, the On-Grade LED will blink rapidly indicating the receiver is in PAIR mode.

To start RD20 PAIR mode:
4. Make sure the RD20 is turned OFF
5. Press the POWER, MODE and SET keys at the same time. When the RD20 starts its power-up sequence release the keys.
6. After the RD20 completes its power up sequence, the yellow ANTENNA LED will blink rapidly indicating the RD20 is in PAIR mode.
7. Wait about 10 seconds for the 2 units to PAIR to each other. When PAIR is complete the rapid blink of the LEDS on both units will stop and normal operation will start.

RD20 Control Summary
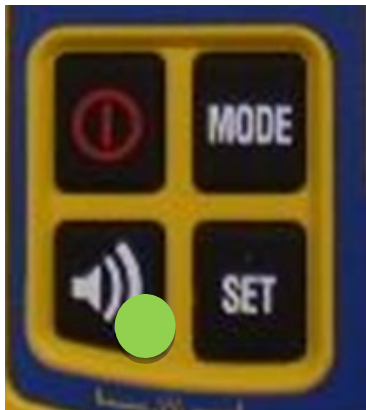

Power on / off

Battery Saver

Pairing with LR

LED brightness

Sound Volume

Functions

1 Cycle through Functions:

- Dead band
- On Grade Offset
- Excavating Mode
- LR LED Brightness
- Match LR60 Tilt

2 Select Setting

LRW can switch between Wireless and RS485

**This button combination will toggle between Wireless Mode and Hard-Wired RS-485 Mode
(Note: after putting in Wireless Mode, the LRW and RD20 must be "Paired"**

LR30W

LR50W

LR60W

Use LR30W "hidden" button

How to recognize "W" model

W and non-W models look the same!

LR30W
LR30

LR50W
LR50

LR60W
LR60

Front – same – no W!

W models have a radio compliance
label on the back side.

Case is clearly marked.

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