Universal 2 Plus
Two Wire Converter

Convert Any Controller to Two Wire Output

HIT PRODUCTS

P.O. Box 929, 556 S. Mirage Avenue
Lindsay, CA 93247
For Technical Assistance: 800-468-0071 ext. 331

MADE IN THE USA
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Specifications and Installation Instructions Read Entire Booklet Before Installing

Receivers Must be Programmed Before Installation

Use LP-RP Receivers Only
### SPECIFICATIONS

**FEATURES**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Universal 2</th>
<th>Plus</th>
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<tbody>
<tr>
<td>Stations Available</td>
<td>1-40</td>
<td></td>
</tr>
<tr>
<td>Maximum Number of Valves Running Simultaneously</td>
<td>4</td>
<td></td>
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<tr>
<td>Valves Per Receiver</td>
<td>1</td>
<td></td>
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<tr>
<td>Minimum Wire Size</td>
<td>14 gauge</td>
<td></td>
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<tr>
<td>Maximum Wire Run</td>
<td>12,000 Feet</td>
<td></td>
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<tr>
<td>Maximum Number of Receivers</td>
<td>80</td>
<td></td>
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<tr>
<td>Receivers</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Programmable and Re-Programmable</td>
<td></td>
<td>Yes</td>
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<tr>
<td>Remote Receiver Programming use LP-HHRP</td>
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**Enclosure:**
Box - Stainless steel, locking, wall or pedestal mount.
Pedestal – Stainless steel
See diagram section of this manual for box and pedestal dimensions.

**Input Power:**
110VAC 60Hz or
230VAC 50Hz

**Grounding:**
Enclosure grounded to utility ground. SPD/Output board grounds with 8 foot ground rod. See diagram section of this manual.
Multiple Controller Installation
Install a separate ground rod for each controller. Do not connect the field wires or power wires of one controller with those of another. Use slave or isolation relays if activating a common master valve. That is controlled from more than one Universal 2 Plus. See diagram section of this manual.

Power ON
A 5 second countdown / delay to "Power ON" the system on initial start up of any manual or automatic watering activity. This eliminates the need to have the system "Hot" with voltage at all times.

Accessory:
Hand held programmer. For Programming Receivers to be used with the Universal 2 Plus Converter See diagram section of this manual.
Universal 2 Plus Installation “Do’s & Don’ts”

For Warranty To Be Valid, Installation Must Comply To All Instructions Below

1. Use only LP-RP Receivers (Gray Molded Box) with the Logic Plus Controllers (LP-42, LP-128 and Uni-2 Plus). Do not use the L-RP (Black Molded Box) Receivers with the Logic Plus Controllers. Do not use the LP-RP (Gray Box) Receiver with the Logic 1, Logic 2, Logic 3 or Uni-2 Controller.

2. Branching and Teeing is permitted with Universal 2 Plus. But should be well planned and minimized with care given using only waterproof DBC-BR splice kits. All wire connection/splices are to be made in a valve box. DO NOT bury connection/splices.

3. Logic Plus receivers must be directly attached to the 2 wire path; red wires to field wires, black wires to solenoid (See #4).

4. Wire Connections
   A. All field wiring Connections of Logic Plus Receiver Red Wires (1 each to each of field wires) to field wires must use the enclosed DBC-BR splice kits. See instructions on back. DO NOT USE PRE-FILLED GEL TYPE WIRE NUTS.
   B. All receiver to Valve Solenoid Connections must be waterproof, using "dry type" wire connectors (Hit Products DBC-Y or DBC-R series or 3M™ DBY/DBR series™) and/or soldered and then installed in waterproof housings. DO NOT USE PRE-FILLED GEL TYPE WIRE NUTS.

5. DO NOT install the Logic Plus Controller, its Receivers or any Logic Plus Field Wire within 15 feet of any high voltage electrical panels, meters, pumps, equipment or controls.

6. Use with standard 24 VAC solenoids only. DO NOT use any with low power/diode bridge type solenoids.

7. Use different colored field wires for every wire in each two wire path.

8. Logic Plus provides 4 separate field outputs. Line 1, Line 2, Line 3 and Line 4. DO NOT mix the wiring.

9. On multiple controller Installations DO NOT connect any field wires of one controller with those of another. Each controller must have a separate ground rod.

10. DO NOT "loop" field wiring. At last valve on wire run, terminate line there.

This is a computer, install it accordingly and it will serve you well. If you have any questions, please don’t hesitate to call the factory in California (800) 468-0071, ext. 331 for help. 8am-5pm, Mon-Fri.
Two Wire Operation

Receiver Operations
The Receiver operates as an electronically controlled switch. When the receiver recognizes the encoded signal that matches its programmed data, it then allows or “switches” power to the solenoid at the valve. Each receiver has a Red LED that will light when the receiver is “switched” or activated. When testing or troubleshooting, this LED is a convenient indicator of the Receiver Status. Lit condition indicates that the signal and power are present and the Power is being sent to the solenoid. An unlit condition indicates the receiver is not activated. This is an indication that the power and/or signal is not present.

Line Short Code
The controller, through its current monitoring ability, can show a fault condition: “Line Short.” This fault is triggered when current draw has exceeded a pre-set level.

Note: No Output is sent to the field during this condition.

- If this current draw is sensed at a program's initial start the "Line Short" LED will light.

Note: This code is designed to protect the controller and transformer. In extremely long wire runs the current level may not be reached to activate “Short” due to line loss.
WIRE CONNECTIONS:
One of the most critical installation requirements of a Two Wire system is the quality of your wire connections. If you follow these directions you will have a reliable, dependable control system for many years. It is suggested to soldier all receiver (red wire) connections to your main two-wire run. Next install the soldered two-wire connection in a waterproof underground connector housing. When soldering is impractical, a waterproof "dry-type" connection such as the Hit Products DBC-BR wire connector is required. The above mentioned products will provide an uncontaminated, dry connection. See diagram section of this manual.

Do not use pre-filled wire nut connectors as they will impede the transfer of the signal through the wire splice.
1. Remove Stainless Steel Panel.

2. Wire the Controller Common and Universal Station Outputs to the panel.

3. Secure each 2-wire into the appropriate terminals.

4. Make Ground Connection.

For each wire used, use different colored wires colored wires. It is strongly suggested to keep each 2-wire set independent. Do NOT mix outputs.

5. Connect Black and White wires to 120VAC. This connection should be made by a qualified technician.

6. Reinstall Stainless Steel.

Knowledge of local wiring code.

Screw 120VAC to 120VAC.

Input Power.

Ground Red.
NOTE: Use different colored wire for ground wire.

Along the field run:
Every 50 to 100 feet.

NOTE: Install the L-SPD-R.

Field Lightning and Surge Protection (L-SPD-R) Wiring Diagram

HIT LOGIC TWO WIRE CONTROLLER
Field Surge Protection Device

LP-SPD-F

Install every 200-300 ft along the wire path.