Installation and Operation Manual

HouseLink HL-10P

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Description

The House Link HL-10P provides a 2mV/V or 3mV/V output proportional to the weight of the selected bin. The device will connect to the BinTrac Indicator BINS port in parallel with the Smart Summing Box. The BinTrac Indicator transmits digital weight data which is converted to a proportionate millivolt output.

Installation

The HouseLink HL-10P is designed to be used with the BinTrac Bin Weighing system. One HouseLink HL-10P can be connected per displayed bin.

1. The HouseLink HL-10P should be mounted no more than 10 feet from the house control.
2. Using a two-conductor cable (ordered separately), connect the green wire from the Smart Summing Box (or the BINS port of the BinTrac Indicator) to the +COM (OUT) terminal in the HouseLink HL-10P and the white wire from the Smart Summing Box (or the BINS port of the BinTrac Indicator) to the -COM (OUT) terminal in the HouseLink HL-10P. See **Figure 1**.
3. Connect the HouseLink HL-10P to the house control by connecting the +EXC (IN) to the + EXC terminal and the –EXC (IN) to the –EXC terminal of the house control.
4. Finally, connect the +mV/V (OUT) from the HouseLink HL-10P to the + SIG of the house control and the –mV/V from the HouseLink HL-10P to the –SIG of the house control.

HL-10P	Smart Summing Box/ BinTrac Indicator BINS Port
+COM (OUT)	+SIG (Green Wire)
-COM (OUT)	-SIG (White Wire)
HL-10P	**House Control/PLC**
+EXC (IN)	+EXC
-EXC (IN)	-EXC
+mV/V (OUT)	+SIG
-mV/V (OUT)	-SIG

Figure 1

Setup & Configuration

Dip Switch Setup

The unit has four dip switches that need to be set up for configuration. Printed inside the unit are the dip switch setting designations (see **Figure 2**).

Bin Selection (S1 and S2)

This setting allows you to control which bin the HL-10P will send data from. By default, S1 and S2 are both in the OFF position (Bin A).

ZERO Tracking (S3)

This setting allows the ZERO to be tracked with the BinTrac Indicator. Setting S3 to the ON position will allow the ZERO to be tracked by the house controls. By default, dip switch S3 is in the OFF position.

Output Scale Selection (S4)

This setting provides a 3mV/V output at full scale. Setting S4 to the ON position will instead provide a 2mV/V at full scale. By default, dip switch S4 is in the OFF position.

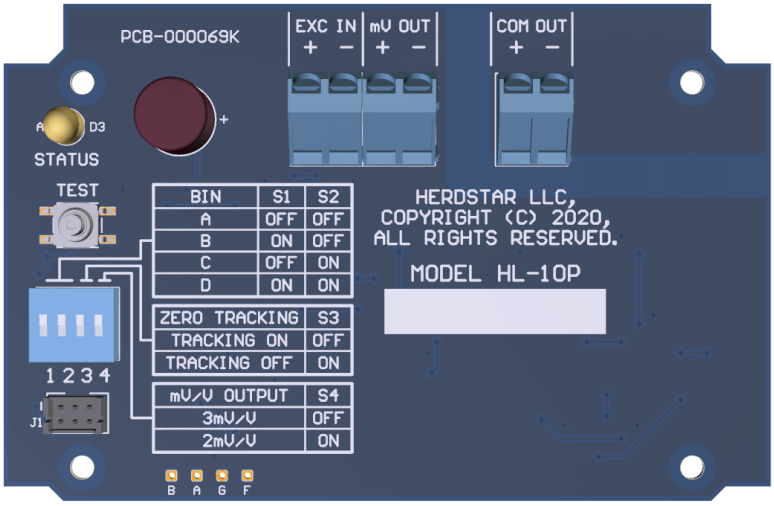


Figure 2

BinTrac Indicator Setup

The BinTrac Indicator must be set up for peripheral devices. Access the SETUP menu on the BinTrac Indicator by pressing and holding the BIN key until SEtUP appears, then release. If the display changes to b in, press the UPPER ▲ once to return to SEtUP.

The Bin LEDs indicate configuration options as being enabled (solid on) or disabled (flashing).

Bin A – Configures BinTrac Monitor as a Remote Display.

Bin B – Enable ASCII Serial Communications Command Set

Bin C – Enable Weight Broadcast.

Bin D – Enable communications to peripheral devices.
This must be enabled when BinTrac Indicator is connected to the HouseLink HL-10P.

1. Press the BIN key to select the desired configuration option.
2. Use the UPPER ▲ or LOWER ▼ keys to enable or disable options.

Operation

Status LEDs

The LED will flash three different ways dependent upon how the unit is operating.

SLOW FLASH – This indicates the unit is communicating and operating normally.
FAST FLASH – This means the unit is in Test mode.
STEADY ON – This indicates the unit is not communicating but has power.
NO LIGHT – The unit doesn't have an adequate power source.

Testing & Calibration

Once the unit is wired and the dip switches are set up correctly, the unit can be put into one of five test modes. These modes are useful when setting up and testing with the house controls.

Please note: Due to increased filtering effects on house controllers, for best calibration results wait thirty seconds after each button press on the HL-10P so weights can stabilize before proceeding further in the calibration process.

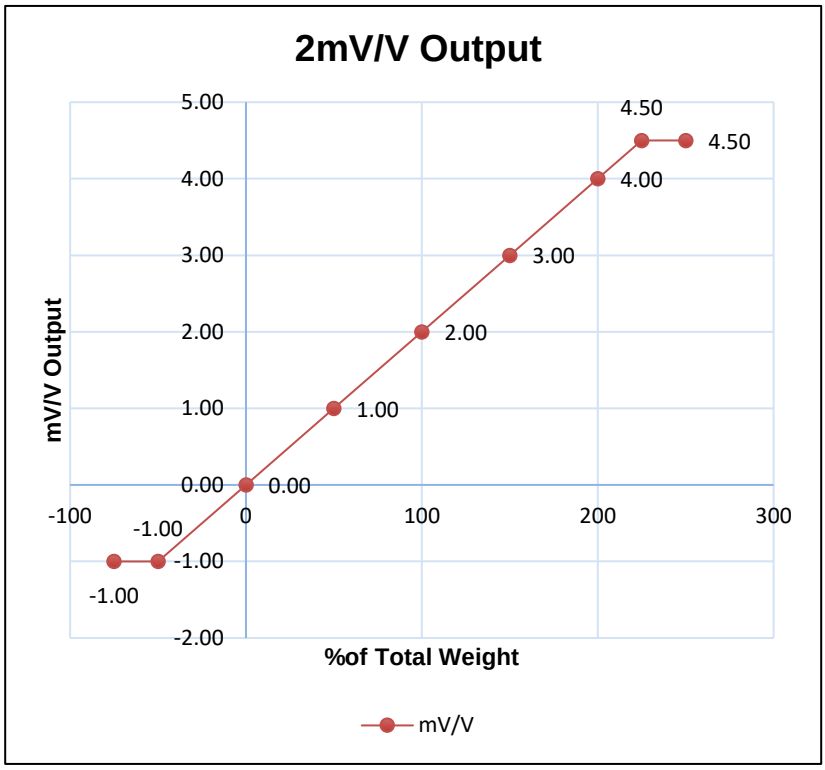
Test 1 – Press the Test button on the board once and the unit will output -0.5 mV/V.
Test 2 – Press the Test button on the board twice and the unit will output 0 mV/V.
Test 3 – Press the Test button on the board three times and the unit will output 2 mV/V.
Test 4 – Press the Test button on the board four times and the unit will output 3 mV/V.
Test 5 – Press the Test button on the board five times and the unit will output 4.5 mV/V.

Pressing the test button a sixth time will return the unit to normal operations. If the unit is left in test mode, it will automatically return to normal operation mode after five minutes.

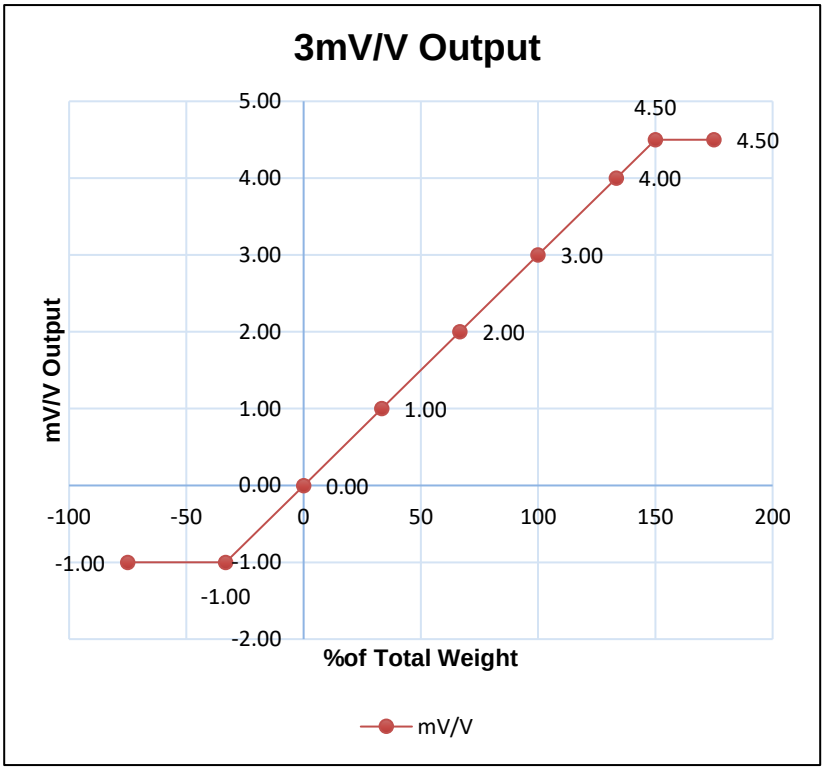
*For calibrating the HouseLink HL-10P with a ***ROTEM Platinum*** control, please refer to instructions in Addendum A.

Output Specification

The displayed weight is relative to the output voltage from the HouseLink HL-10P. The charts below outline the percentage of the total weight based on the output voltage.



mV/V	% of Total Weight
-1.00	-75
-1.00	-50
0.00	0
1.00	50
2.00	100
3.00	150
4.00	200
4.50	225
4.50	250



mV/V	% of Total Weight
-1.00	-75
-1.00	-33.3
0.00	0
1.00	33.3
2.00	66.6
3.00	100
4.00	133.33
4.50	150
4.50	175

Operational Specifications

Operating Temperature Range:	-40°C to +60°C (-40°F to +140°F)
Humidity:	5% to 95% (non-condensing)
Environmental Air:	No corrosive gasses permitted
Shock and Vibration:	N/A
Enclosure Type:	Unsealed
Agency Approvals:	N/A
Wiring Type:	Screw terminal block
Power Requirements:	5.0 VDC - 12.0 VDC, 70 mA (max)
Output Signal Type:	Simulates 3mV/V 360 ohm load cell.
Maximum Output Signal Range:	-1.0 mV/V to +4.5 mV/V
Default Output Value:	-1.0 mV/V
Maximum Load Capacitance:	No limit
Zero Accuracy:	+/- 35 mV/V
Span Accuracy:	+/- 0.2% of reading
Linearity Error:	+/- 0.02% of full-scale
Span Temperature Stability:	+/- 35 ppm/°C
Output Signal Resolution:	.092 mV/V
Output Signal Ripple:	.046 mV/V
Serial Communication Interface Type:	HerdStar optically isolated (proprietary)

Addendum A

Initial Setup of the Rotem Control using the HouseLink Proportional Interface HL-10P

The HouseLink Proportional Interface HL-10P emulates a Rotem bin scale allowing the user to connect a BinTrac bin scale system to a Rotem control. An individual HouseLink HL-10P control is required for each bin that is being connected to the Rotem. The HouseLink HL-10P is a highly accurate unit that simplifies the calibration with the Rotem without the need of filling the bin with known weight amount or the bin being empty.

1. Locate the HouseLink HL-10P in a dry location near the Rotem control.

2. The Rotem control needs to have a scale card, a silo plug, and a scale card power supply installed.

3. Wire the BinTrac indicator, Smart Summing Box, HouseLink HL-10P, and Rotem Scale card per the wiring diagram.

4. Calibrate the BinTrac Indicator so it is accurately weighing the bin. See BinTrac manuals.

5. Set HouseLink HL-10P dipswitch S1 & S2 for the desired bin that it will emulate to the Rotem.

6. Set HouseLink HL-10P dipswitch S3 to OFF for weight readings on the Rotem to match the BinTrac.

7. Platinum Scale card is made to work with 2mv/v. Set the S4 dip switch in the HouseLink HL-10P to the “UP/ON” position. This sets the output at 2mV/V which matches the Rotem scale card.

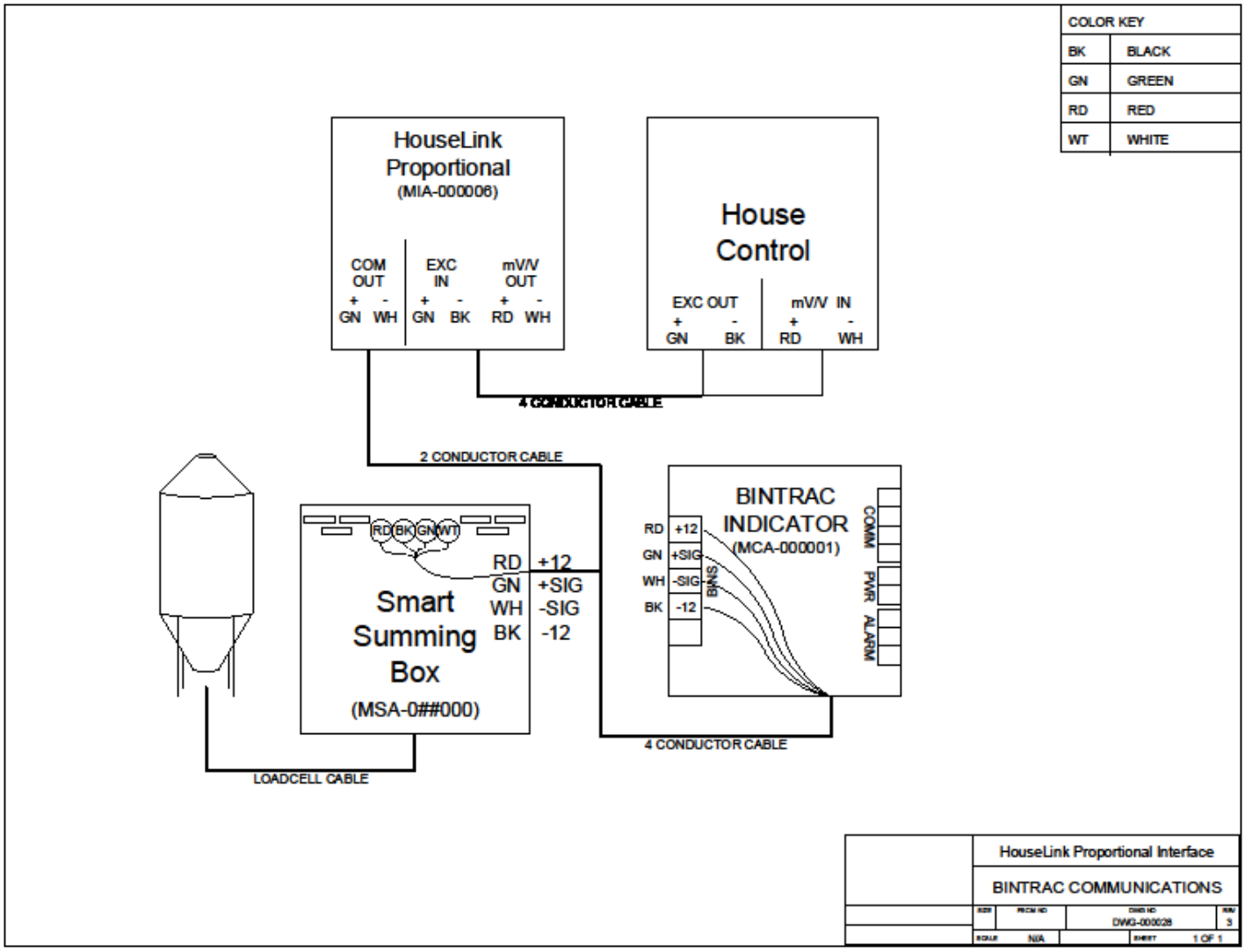
8. The BinTrac indicator needs to be set up for peripheral devices. Follow the procedure shown in the HouseLink HL-10P “Installation and User Guide”.

9. Calibrate the Rotem control using the silo calibration method for empty and full weight and using the HouseLink HL-10P test mode. (The scale factor cannot be keyed in as each individual Rotem scale card has a different scale factor). ***Please note: Due to increased filtering effects on house controllers, for best calibration results wait thirty seconds after each button press on the HL-10P so weights can stabilize before proceeding further in the calibration process.**

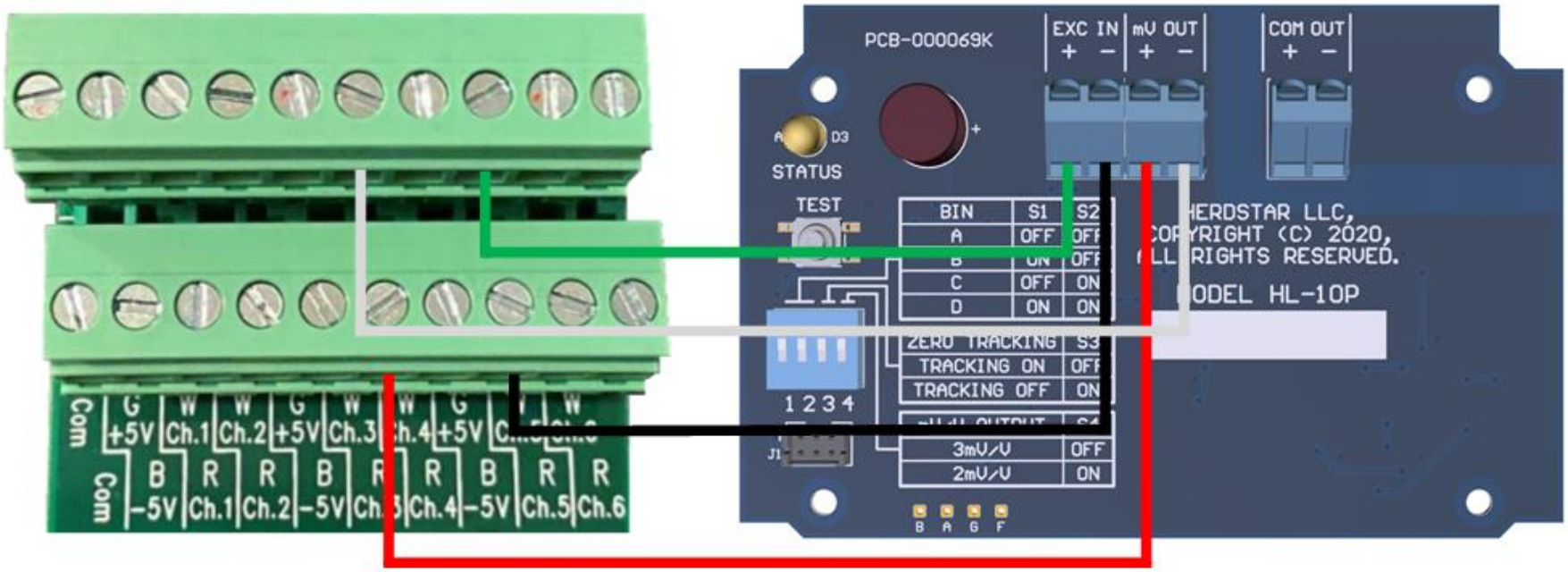
    a. Enter the silo calibration mode on the Rotem control.
    b. Press the TEST button on the HouseLink HL-10P two times for the 0mV/V output setting which represents an empty bin weight reading.
    c. Calibrate Rotem to the empty bin weight reading and advance to known weight reading.
    d. Press the HouseLink HL-10P TEST button 1 more time for the 2mV/V output setting which represents a full capacity bin weight reading.
    e. Enter the BinTrac Load Cell Capacity setting as the known weight value in the Rotem control. Ex: For a BinTrac scale system with six 10k load cells this would be 60,000lbs capacity.
    f. After a successful known weight value has been calibrated. Set the current weight the same way as step “e” again for final calibration.
    g. Calibration of Rotem control to the BinTrac should be completed.
    h. Press HouseLink HL-10P TEST button three more times to exit test mode. HouseLink HL-10P will now output the correct mV/V to the Rotem that will match the BinTrac displayed weight.

10. Verify the displayed weight of the BinTrac Indicator closely matches the displayed weight on the Rotem control. Note: It may take a minute or more for the Rotem control to begin displaying the correct amount due to the excessive filtering in the Rotem. If weight values are not within 50lbs, repeat step 9.

Addendum A – Wiring Diagram



Addendum A – Rotem 6 Input Scale Card Wiring Diagram



Rotem 6 Input Scale Card	Wire Color	BinTrac HL-10P
G +5V	GREEN	EXC IN +
B +5V	BLACK	EXC IN -
R Ch. X*	RED	mV OUT +
W Ch. X*	WHITE	mV OUT -

*X indicates the chosen channel of the scale card that you wish to use. In the wiring diagram above, Channel 3 is being used.