**HEWITT INDUSTRIES**

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FORM NO. 180-0055 REV. 01/15

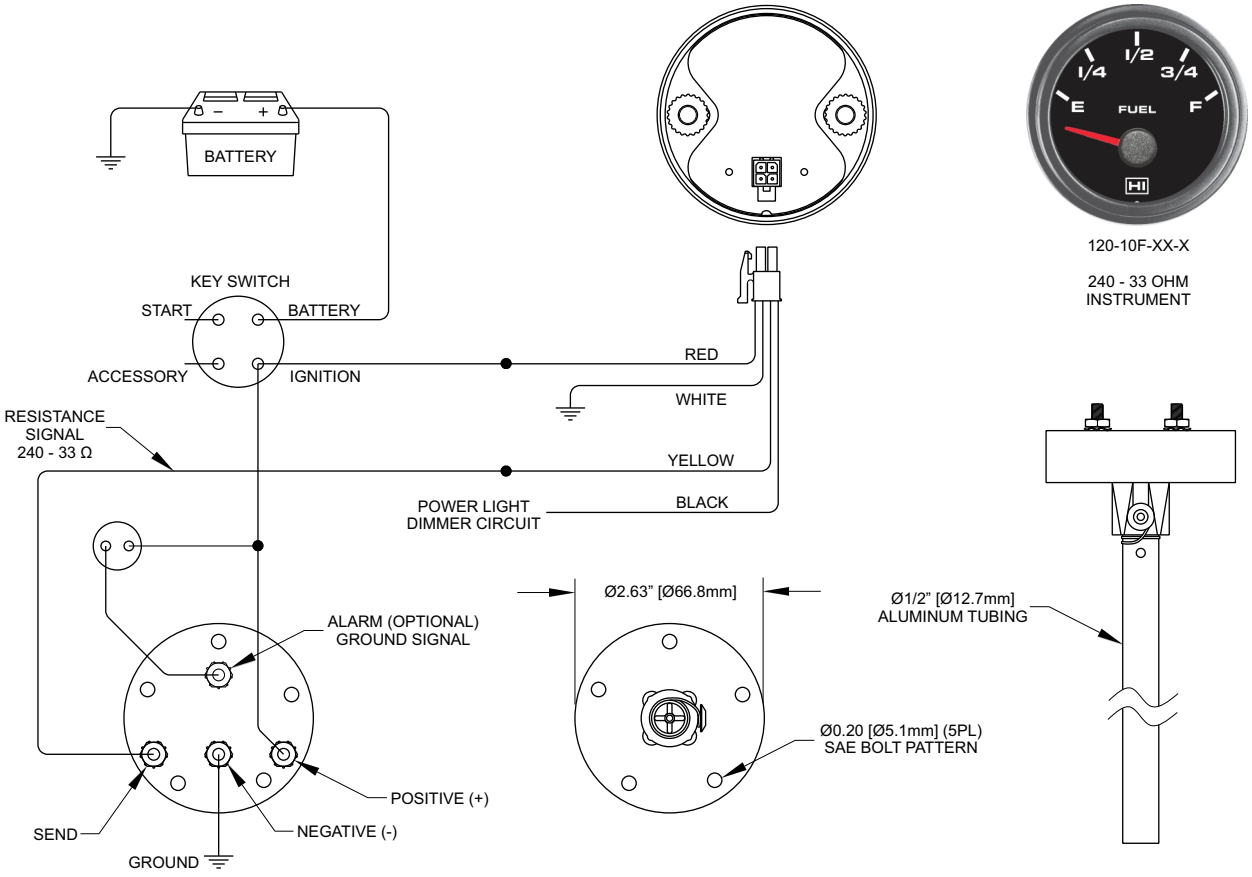
# *ELECTRONIC LIQUID LEVEL GAUGE*
## *Resistance Signal, 240 - 33 Ohms*
### *Installation Instructions*

Place the gasket on the sending unit. Align the holes and apply a sealer such as Permatex on the gasket. Put a small amount of sealant in the mounting holes and insert the mounting screws with flat washers and lock washers. Place the sending unit in the tank. Note the holes are not symmetrical, rotate until holes line up. Then tighten down the mounting screws properly.

**Warning!:** It is recommended that 16 AWG wire and crimp eyelet type terminals with insulated shanks be used to wire the sending units to avoid the possibility of short circuiting the terminals.

**CAUTION!... DISCONNECT THE BATTERY BEFORE MAKING ANY ELECTRICAL CONNECTIONS....**

1. Connect a wire from the signal terminal on the unit to the *yellow* wire on the gauge.
2. Connect a wire from the positive (+) terminal on the unit and *red* wire from the gauge to the ignition (+) 12 volt / 24 volt.
3. Connect a wire from the negative (-) terminal on the unit and *white* wire from the gauge to a reliable ground (-) location.
4. Connect a *black* wire from the gauge to the Power Light Dimmer Circuit (+).
5. This completes the installation. Put a generous coating of sealant over the wire terminals on the unit.
6. Connect the battery and turn on the ignition switch. The gauge will go to the *Full* mark then drop back to the correct fuel level.



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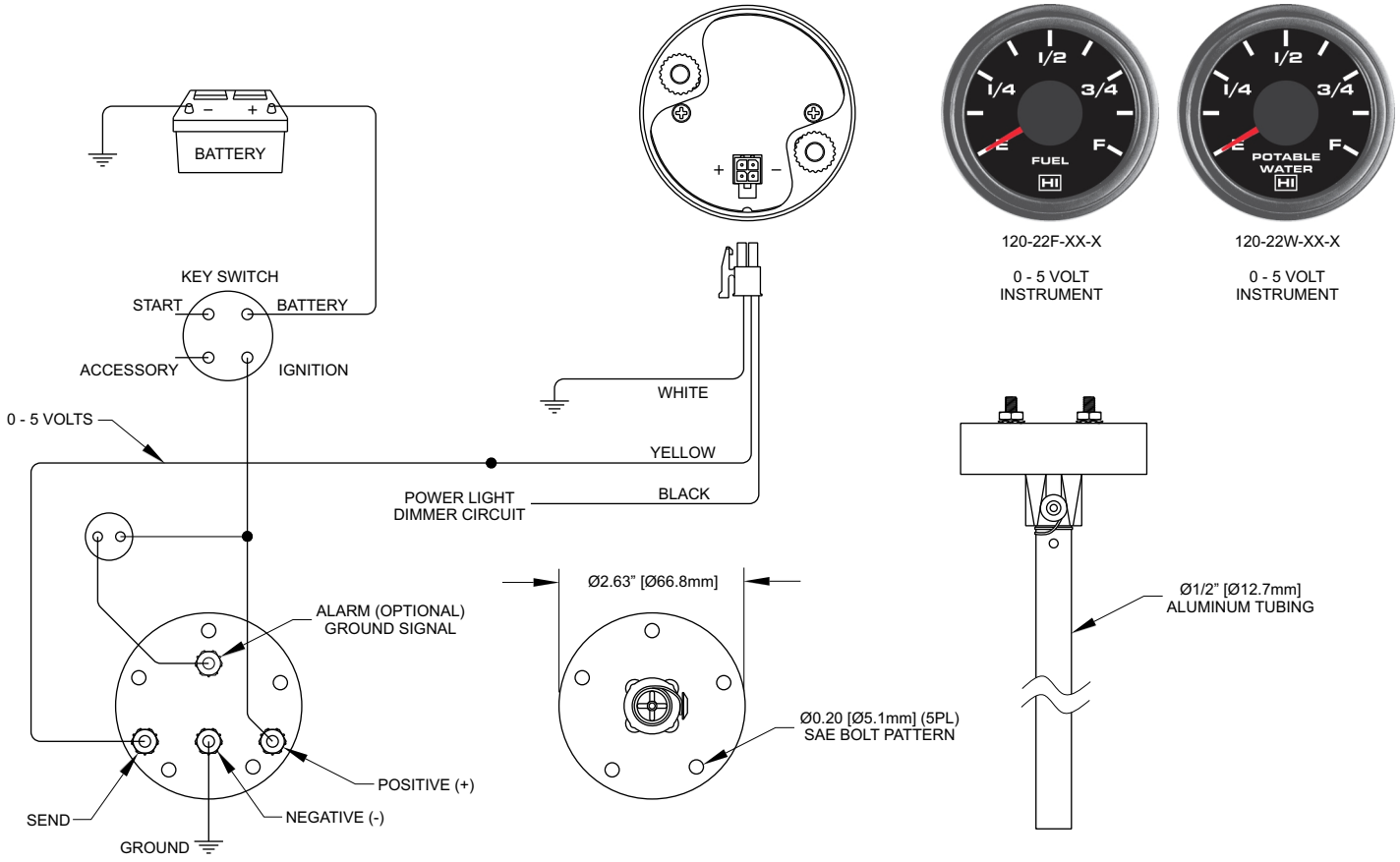
# *ELECTRONIC LIQUID LEVEL GAUGES*
## *0 - 5 Volt*
### *Installation Instructions*

Place the gasket on the sending unit. Align the holes and apply a sealer such as Permatex on the gasket. Put a small amount of sealant in the mounting holes and insert the mounting screws with flat washers and lock washers. Place the sending unit in the tank. Note the holes are not symmetrical, rotate until holes line up. Then tighten down the mounting screws properly.

**Warning!:** It is recommended that 16 AWG wire and crimp eyelet type terminals with insulated shanks be used to wire the sending units to avoid the possibility of short circuiting the terminals.

**CAUTION!... DISCONNECT THE BATTERY BEFORE MAKING ANY ELECTRICAL CONNECTIONS....**

1. Connect a wire from the signal terminal on the unit to the *yellow* wire on the gauge.
2. Connect a wire from the positive (+) terminal on the ignition (+) 12 volt / 24 volt.
3. Connect a wire from the negative (-) terminal on the unit and *white* wire from the gauge to a reliable ground (-) location.
4. Connect a *black* wire from the gauge to the Power Light Dimmer Circuit (+).
5. This completes the installation. Put a generous coating of sealant over the wire terminals on the unit.
6. Connect the battery and turn on the ignition switch. The gauge will go to the *Full* mark then drop back to the correct fuel level.



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# ELECTRONIC LIQUID LEVEL
## Calibration Instructions

Output Range and alarm level are not changeable by the customer.
The output range (e.g. 240/33 ohms) and alarm levels, if ordered, are set at Hewitt's facility per the customer's instruction at the time of the customer's order. They cannot be changed by the end user. However, they can be changed back at the Hewitt facility if needed.

If you do not need to shorten the sender, Hewitt's factory *Empty* and *Full* settings should be correct. Please contact Hewitt's customer service via email or telephone if they seem to be incorrect rather than attempting to re-calibrate. **If do you shorten the sender**, please follow the re-calibration steps below.

Automatic Calibration (for senders with an **AutoCal** stamp on the head)

Automatic *Empty* Calibration:
After shortening the sender, connect the *Empty* sender to the system wiring, and turn the power *On*. The instrument gauge pointer will bounce between *Empty* and *Full* a couple of times before the pointer returns to the *Empty* mark as the sender automatically discovers it's shorter length.

Automatic *Full* Calibration:
Turn the power *Off* and install the sender into a full tank of the appropriate liquid. Turn the power *On*. The instrument gauge pointer will go above the *Full* mark and then lower and settle on the *Full* mark. The AutoCal will use this Full detection each time you fill-up your tank.

Preliminary note concerning manual calibration for senders not stamped **AutoCal**.
The programmable senders are calibrated by a jumpering scheme or bridging the *Send* to *Negative* during power-up, rather than by potentiometers . For the 240/33 ohm sender with no positive connections (2 terminals), this is done with a 33 ohm resistor (e.g. Radio Shack p/n 271-1104).
**Timing**: For label dates 04/13 and later: *Empty* = 10 seconds, *Full* = 20 seconds.
For label dates 03/13 and earlier: *Empty* = 2 seconds, *Full* = 6 seconds.

Manual *Empty* Calibration:
Remove the sender from the tank but still wired normally to the gauge with the ignition switch *Off*. Have the jumper applied. Turn the ignition *On* and count the *Empty* seconds listed above, at this point remove the jumper. Depending on how quickly your instrument gauge response, the pointer may do some bouncing, the pointer will eventually settle on the *Empty* reading marker.

Manual *Full* Calibration:
For fuel senders with 1/2" tubing: *Full* is by default set automatically by the *Full* detection sensor at power-up each time the tank is filled. This is useful because it corrects for "dielectric constant" differences between tank fills of full fuel.

For Water senders or Fuel senders with 1/4" tubing, or if for some reason you would prefer to set the *Full* manually: Have the sender in a full tank of the appropriate liquid and wired normally to the instrument gauge with the ignition switch *Off*. Apply the jumper. Turn the ignition switch to the *On* position and count the *Full* seconds listed above, at this point remove the jumper. Depending on how quickly your instrument gauge response, the pointer may do some bouncing, the pointer will eventually settle on the *Full* reading marker.

PART NO. 119–XXXX–XX

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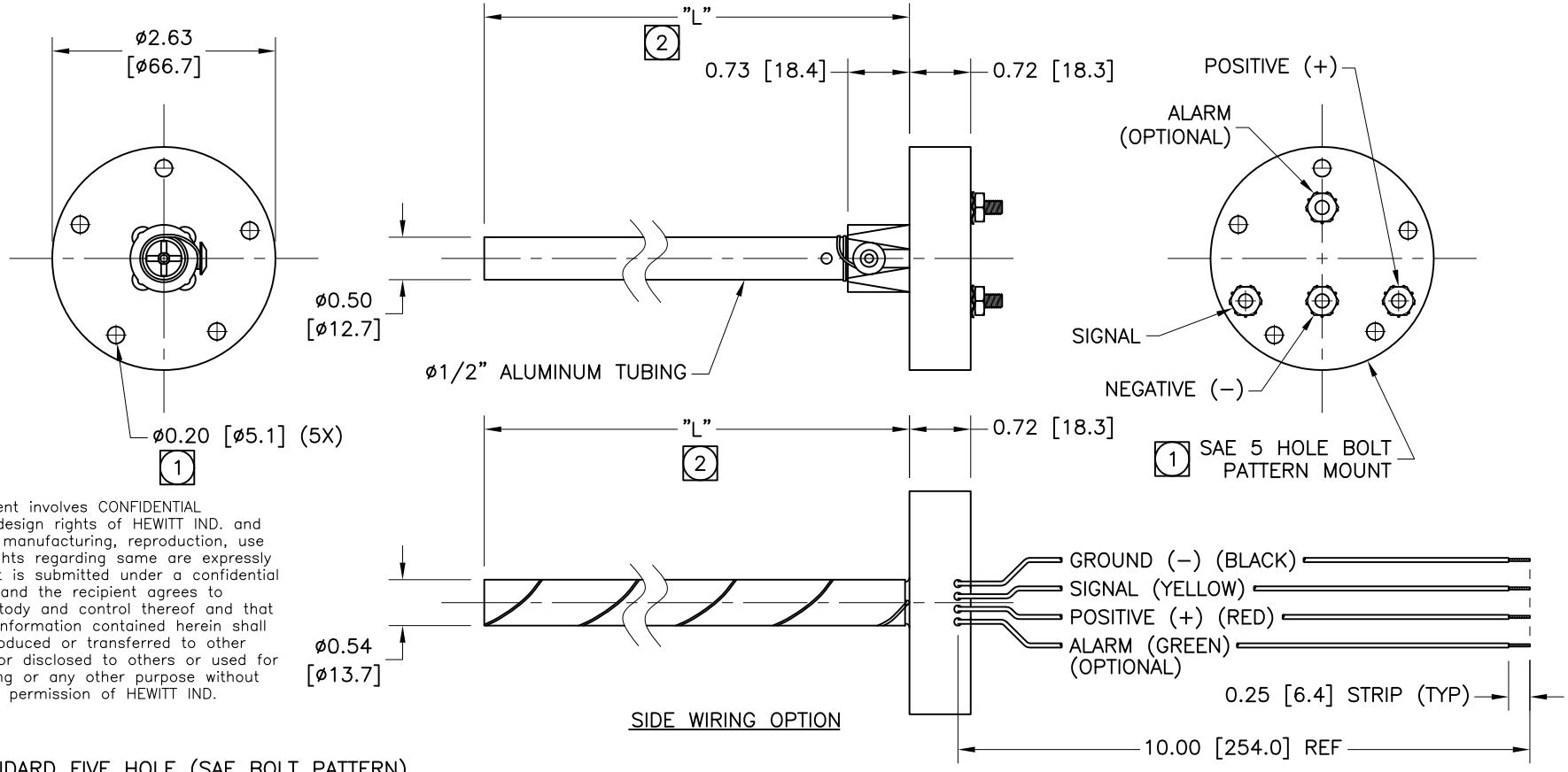
OUTPUT FOR INSTRUMENT GAGE: 0 = 240/33 OHMS (USA STANDARD), 1 = 10/180 OHMS, 2 = 0–5V, 3 = 0–4V.
LOW ALARM SET POINT: 0 = NO ALARM OR 1 = LOW ALARM.
FITTING: 0 = 5 HOLE SAE BOLT PATTERN, 1 = 1/2" NPT FLATTED, 2 = 1–1/2" NPT FLATTED, 3 = 1/2" NPT HEX, 4 = SIDE WIRING
TYPE OF LIQUID: D = DIESEL, G = GASOLINE, W = WATER, H = HYDRAULIC FLUID.
LENGTH IN INCHES OF ALUMINUM TUBING: "L" DIMENSION (LENGTH FROM TOP TO BASE).

EXAMPLE: P/N 119–214D–10.5 = 0 TO 5 VOLT OUTPUT FOR GAUGE, LOW ALARM, SIDE WIRING, DIESEL LIQUID, 10.5" SENDER LENGTH ("L" DIMENSION).




SIDE WIRING OPTION



NOTES:

1. STANDARD FIVE HOLE (SAE BOLT PATTERN) HOLDER SENDER MOUNT.
2. "L" DIMENSION FROM 3 INCHES [76.2mm] TO 144 INCHES [365.8cm].
3. DIMENSIONS ARE FOR REFERENCE ONLY.
4. THE "ALARM" SIGNAL IS OPTIONAL ON BOTH VERSIONS OF ELECTRIC SENDERS.
5. ELECTRIC LIQUID LEVEL SENDER WILL FUNCTION WITH BOTH 12 VOLT AND 24 VOLT SYSTEMS.

D

| REVISIONS | | | | |
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| REV. | DESCRIPTION | EO# | DATE | BY |
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TOLERANCES

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES, METRIC EQUIVALENTS ARE IN [BRACKETS]:
.X = .050 [1.27]
.XX = .030 [0.76]
.XXX = .010 [0.25]
FRACTIONS = 1/32
ANGLES = ±1°
SCALE: 1/2

HEWITT INDUSTRIES OF LOS ANGELES

TITLE: ELECTRIC LIQUID LEVEL SENDER

DRAWN BY: JAG
APPR. BY: LM
DATE: 03/15/10

PART NO. 119–XXXX–XX

SHEET 1 OF 1