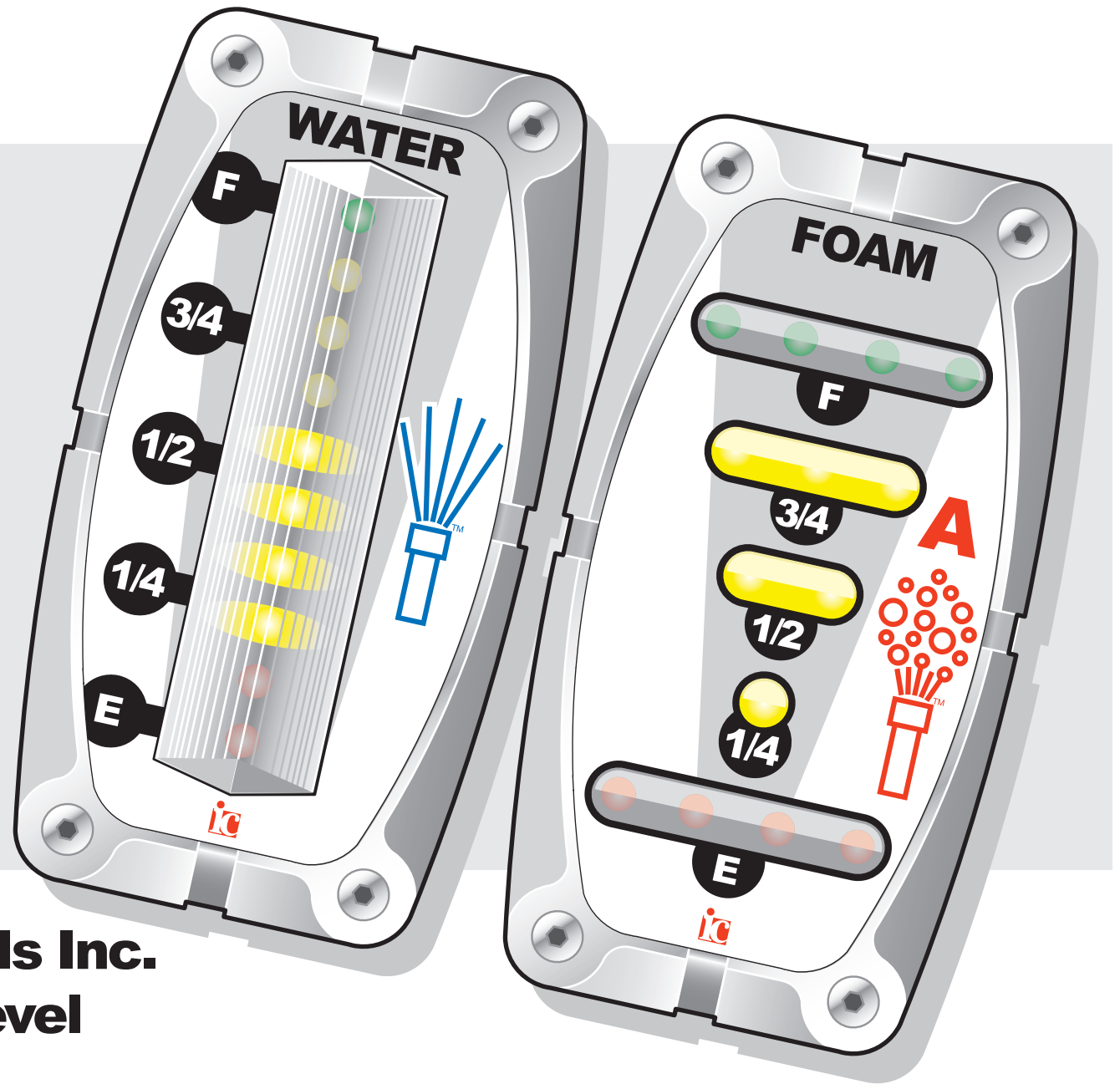




**Innovative Controls Inc.
SL Series Tank Level
Monitor**



The decorative mounting bezel is chrome plated to the most stringent SAE standards.

Both 14 LED and 10 LED master and slave display modules feature 3 dimensional lenses for 180 degree visibility.

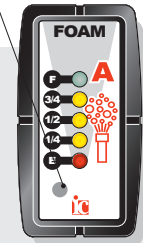
Both 10 LED and 14 LED dual displays are available as a more compact, economical, and easier-to-install alternative to individual tank level displays.

All display modules are self-calibrating for three common tank styles (rectangular, elliptical, and T-shaped). A user-friendly manual calibration mode is accessible, if desired, and can be done without any truck or system disassembly. An external magnet is held in front of the display to calibrate the system. The calibration information is stored in the display unit.

Bright, bold, easy-to-read graphics are sub-surface screened on a polycarbonate overlay, which protects the graphics from wear and UV degradation.

All SL display modules are easy to install requiring a simple rectangular hole and 4 screw holes.

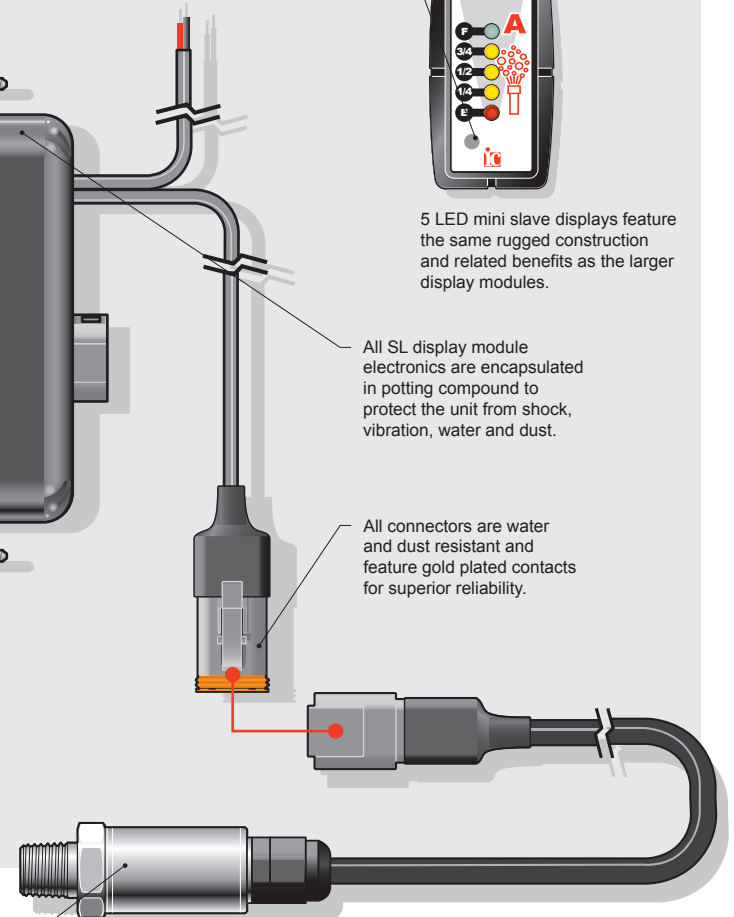
Photo-eye automatically dims or brightens LEDs as ambient light conditions change.



5 LED mini slave displays feature the same rugged construction and related benefits as the larger display modules.

All SL display module electronics are encapsulated in potting compound to protect the unit from shock, vibration, water and dust.

All connectors are water and dust resistant and feature gold plated contacts for superior reliability.



The easy-to-install sender unit is constructed of stainless steel and features a vent to atmosphere, which prevents inaccuracy typically associated with altitude changes.

The sender unit remains accurate in all types of water and foam.

The sender's electronics are encapsulated for protection from shock, vibration, water and dust.

Bid Specifications			
Date Originated: 02/28/05	Revisions: A	Revision Date: 02/28/05	Standards No. 5000047
Subject: SL Series Tank Level Monitor Bid Specifications - 10 LED Master Foam A Unit			

10 LED Master Class A Foam Tank Level Monitor

An Innovative Controls SL Series Tank Level Monitor System shall be installed. The system shall include an electronic display module, a pressure transducer-based sender unit and a 70' connection cable. The display module shall show the volume of Class A foam in the tank using 10 superbright easy-to-see LEDs. Tank level indication is enhanced by the use of green LEDs at the full and near full levels, amber LEDs between 1/2 and 3/4 tank levels, and red LEDs at the near-empty and empty levels. A wide-angle diffusion lens in front of the LEDs creates a 180° viewing angle. The electronic display module shall be waterproof and shock resistant being encapsulated in a urethane-based potting compound. The potting display module shall be mounted to a chrome plated panel-mount bezel with a durable easy-to-read polycarbonate insert featuring red graphics and a foam icon.

All programming functions shall be accessed and performed from the front of the display module. The programming includes self diagnostics, manual or self calibration, and networking capabilities to connect remote slave displays. Low tank level warnings shall include flashing red LEDs starting below the 1/2 level, down-chasing LEDs when the tank is almost empty, and an output for an audible alarm.

The display module shall receive an input signal from a pressure transducer. This stainless steel sender unit shall be installed on the outside of the foam tank near the bottom. All wiring, cables and connectors shall be waterproof without the need for sealing grease.

Location of Class A foam tank level monitor shall be:

Functional Specifications:

Level Sensing Range: Four discrete factory and user adjustable sensing levels.

Accuracy: 2.0% of set level

Supply Voltage Range: +10VDC to +26VDC supply voltage range with protective shutdown above 30VDC

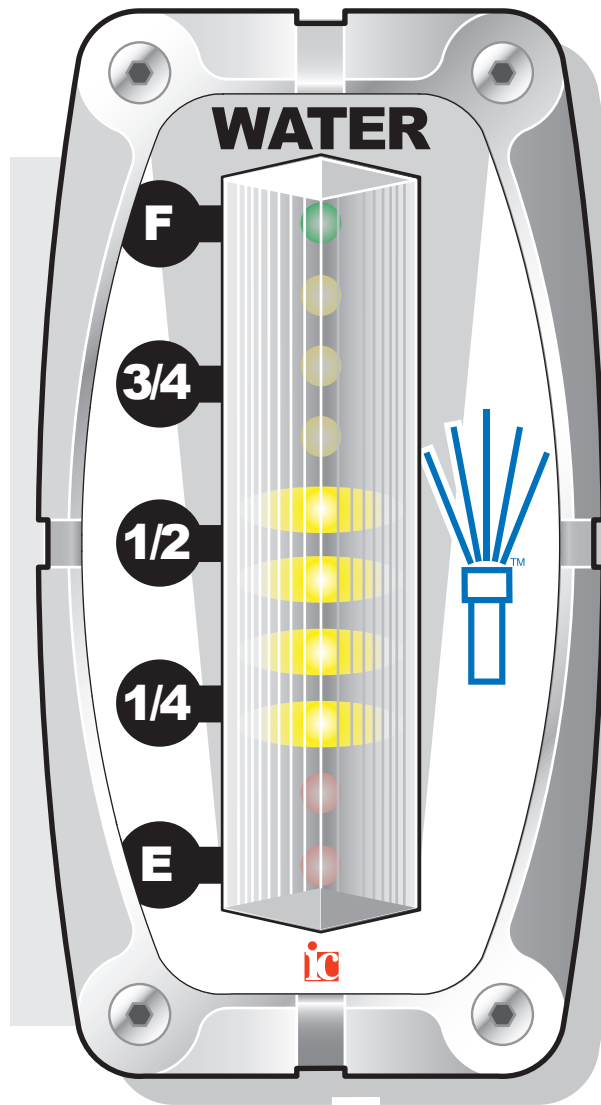
Operating Temperature Range: -40°F to +150°F

Maximum Supply Current: 350mA @ 12VDC

Bid specifications available:

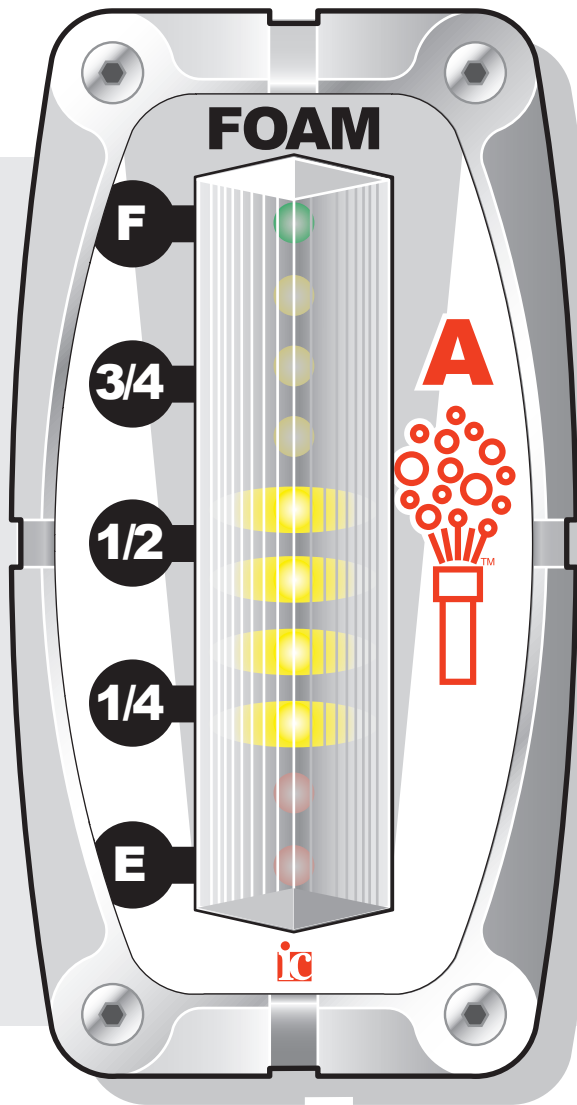
Innovative Controls SL Series Tank Level Monitor System





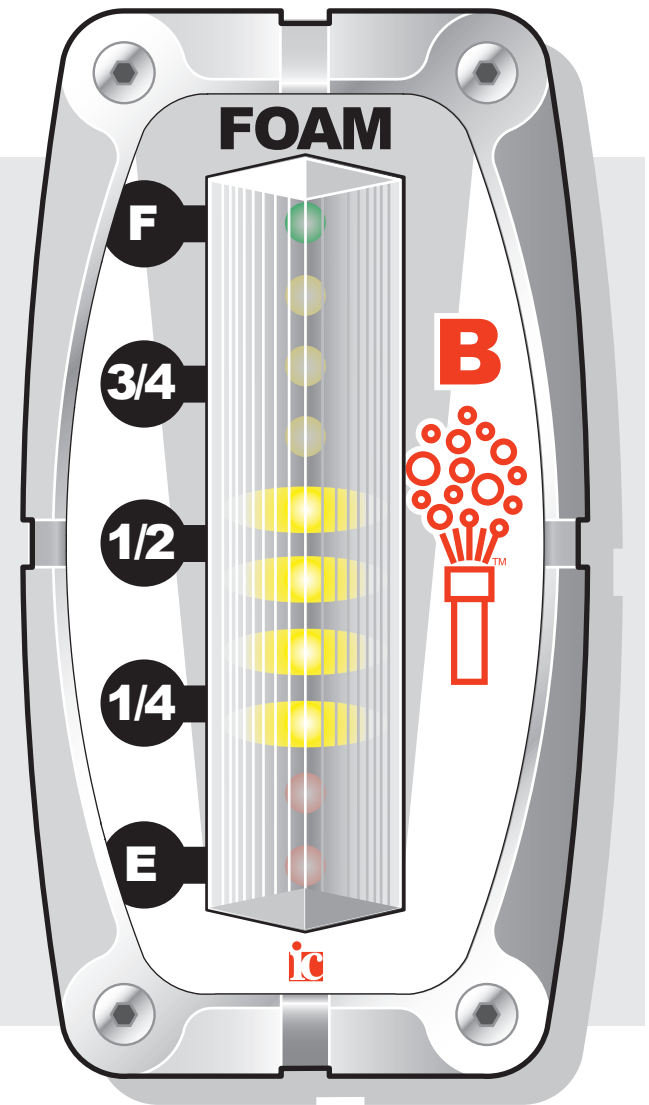
10-LED Master Water Display
P/N 3030358-01

10-LED Large Slave Water Display
P/N 3030395-01



10-LED Master Foam Display - Class A
P/N 3030393-01A

10-LED Large Slave Foam Display Class A
P/N 3030396-01A

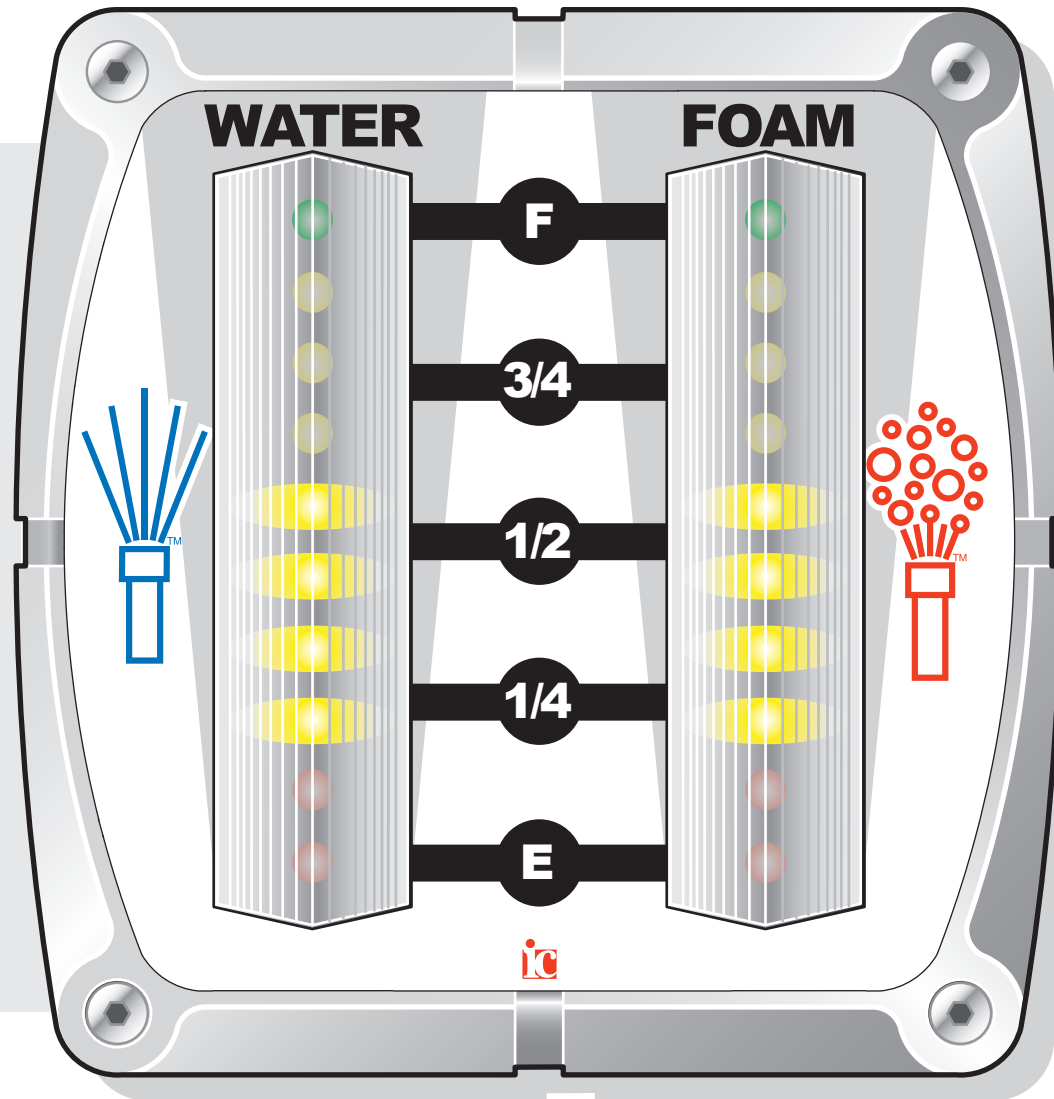


10-LED Master Foam Display - Class B
P/N 3030393-01B

10-LED Large Slave Foam Display - Class B
P/N 3030396-01B

Innovative Controls SL Series
Tank Level Monitor System



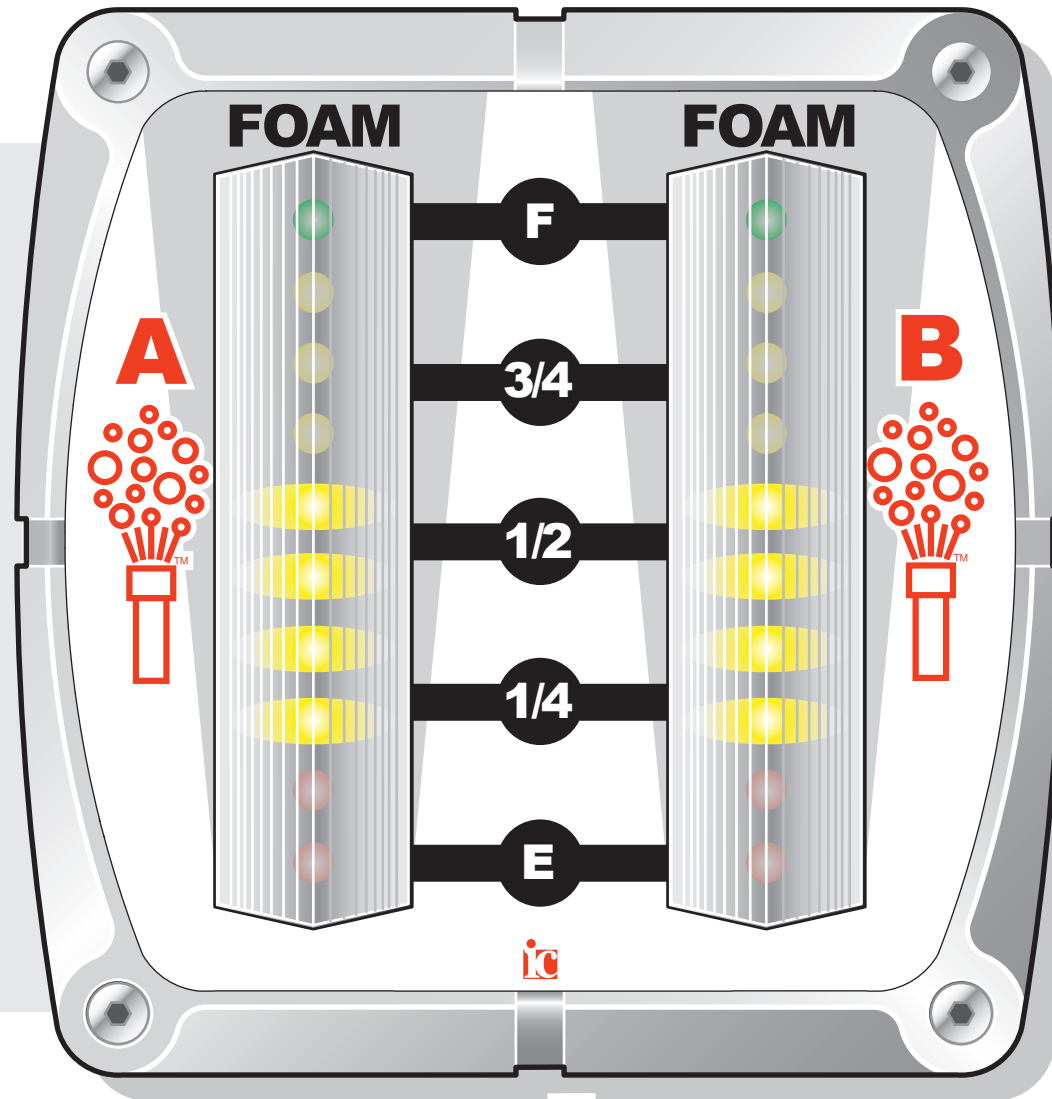


10-LED Master Dual Water/Foam Display
P/N 3030359-01

10-LED Dual Large Slave Water/Foam Display
P/N 3030397-01

Innovative Controls SL Series
Tank Level Monitor System



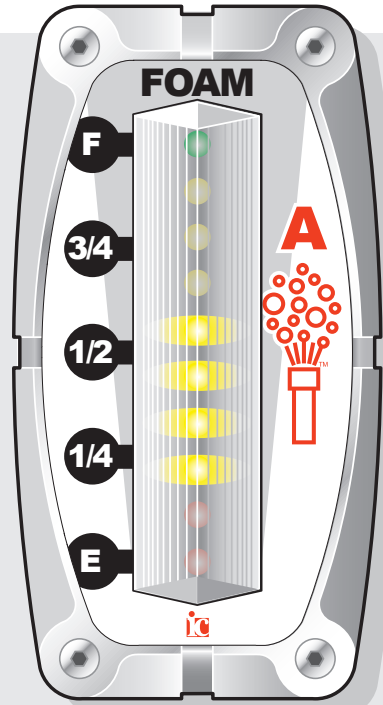


10-LED Dual Master Foam Display - Class A & B
P/N 3030394-01

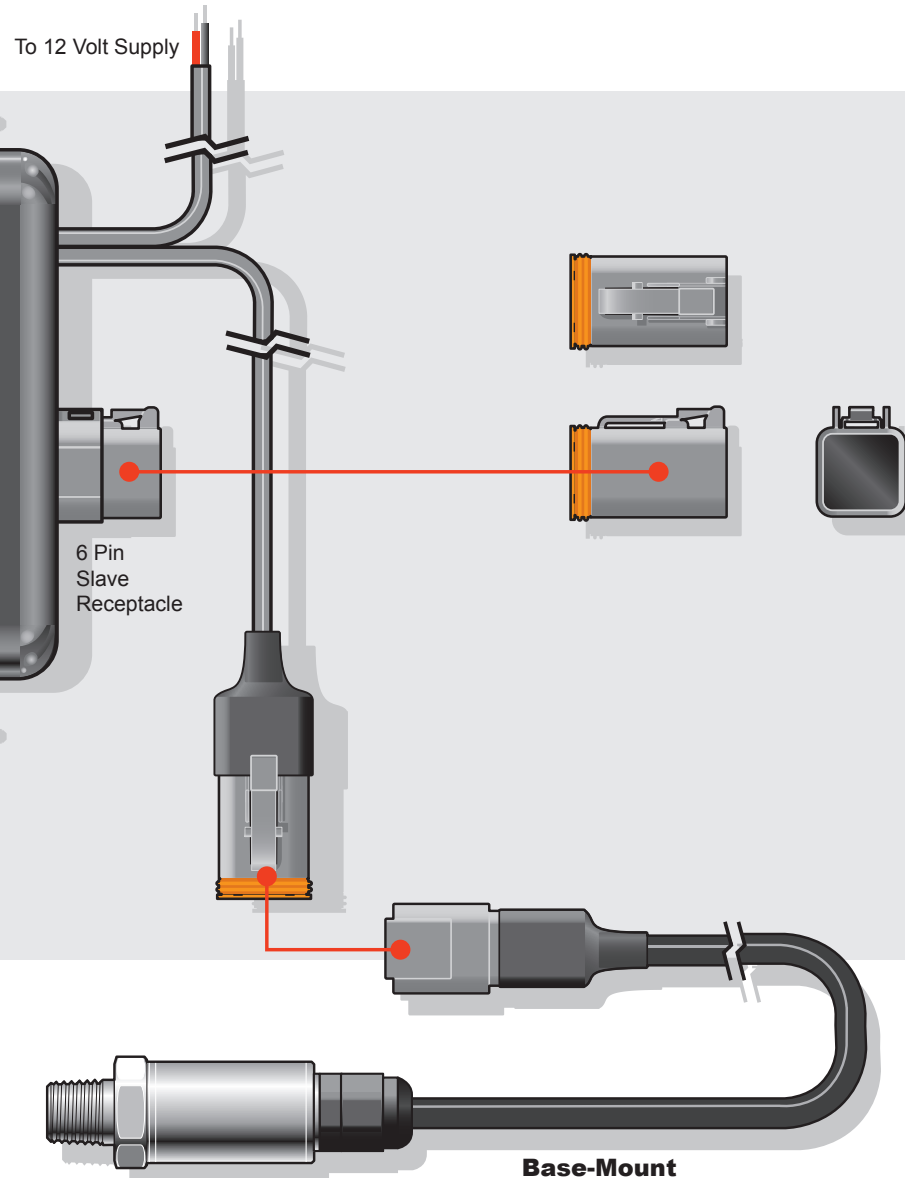
10-LED Dual Large Slave Foam Display - Class A & B
P/N 3030398-01

Innovative Controls SL Series
Tank Level Monitor System





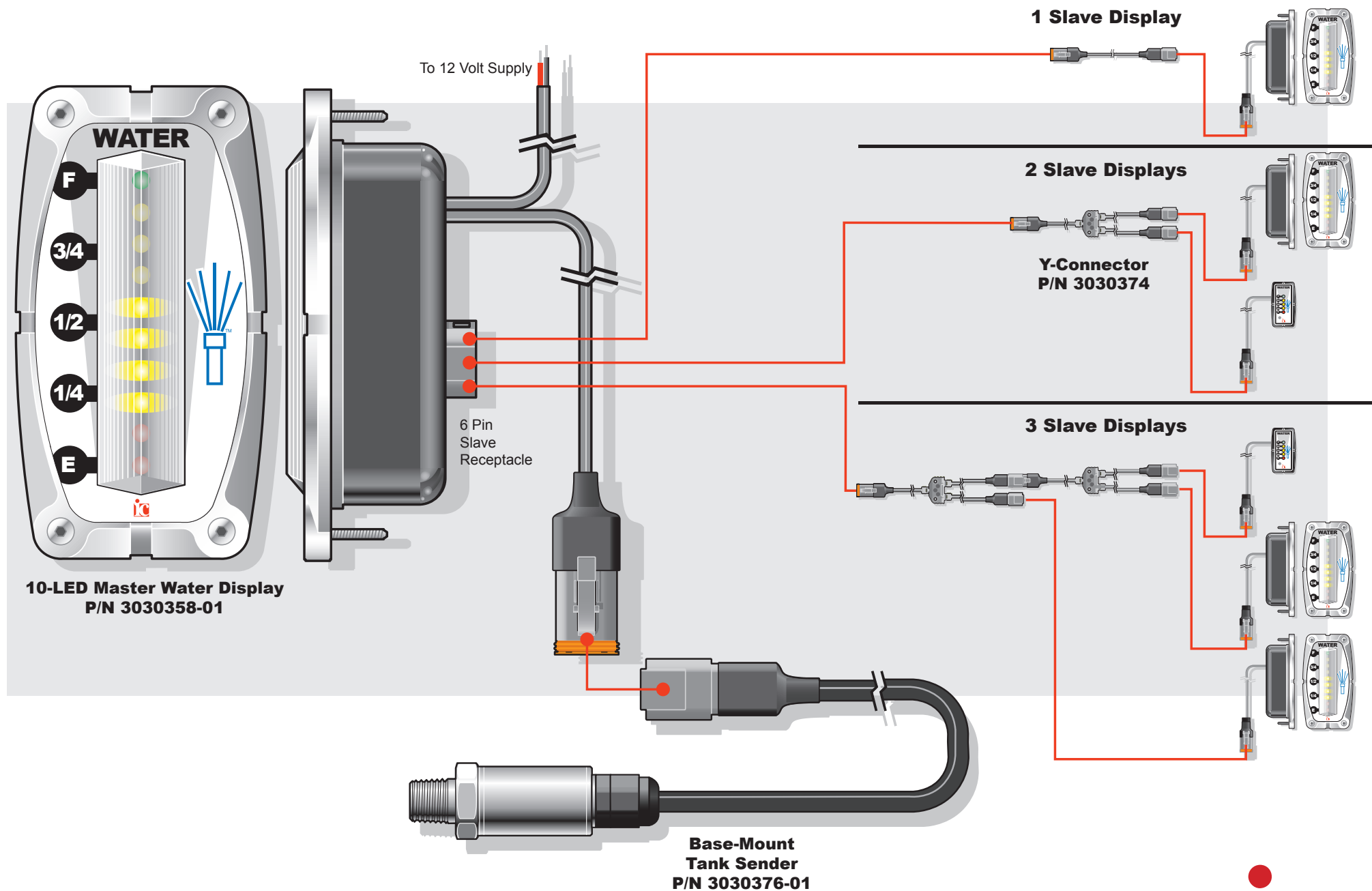
10-LED Master Foam Display
P/N 3030393-01A



**Base-Mount
Tank Sender**
P/N 3030376-01

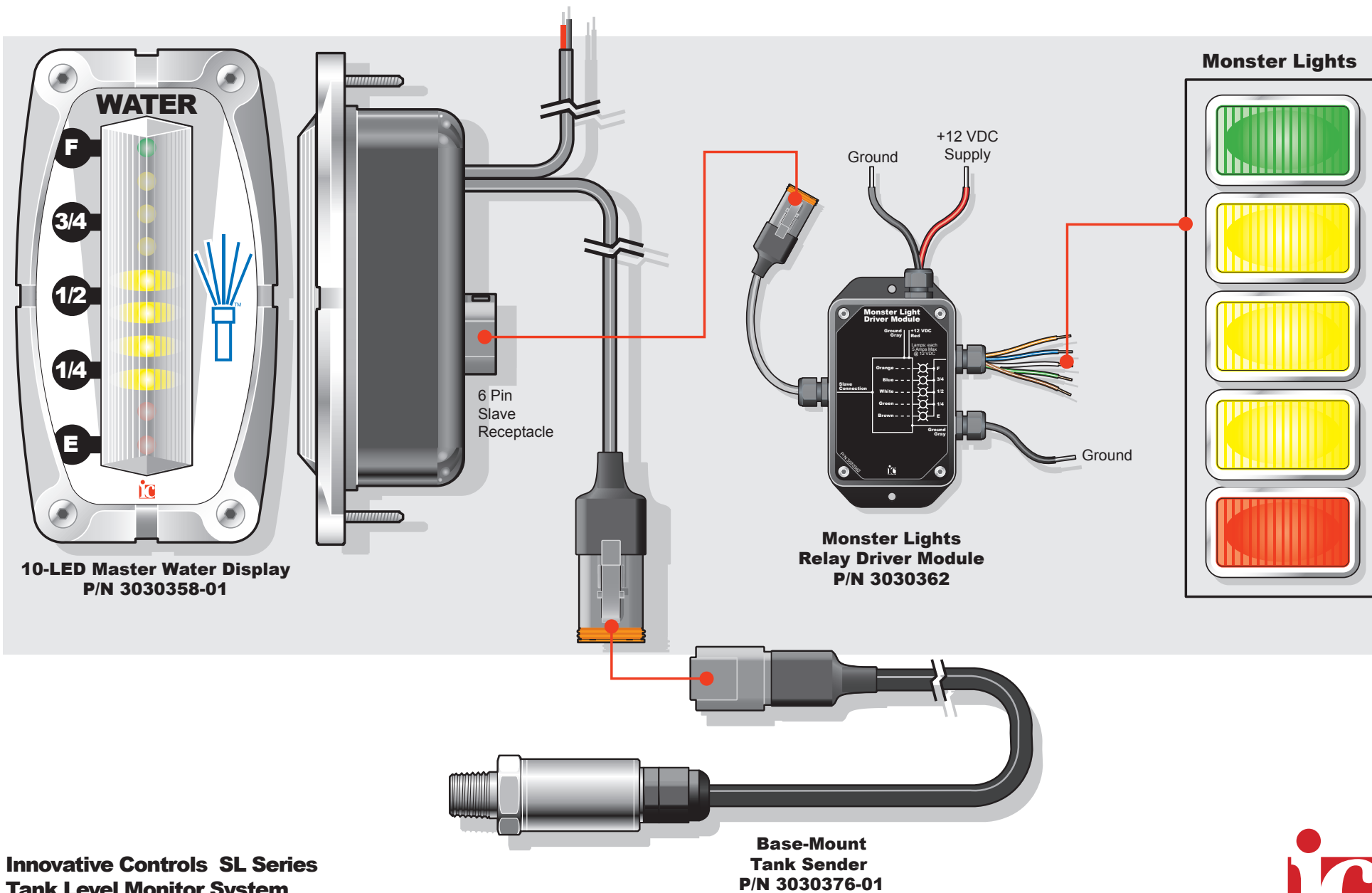
**Innovative Controls SL Series
Tank Level Monitor System**





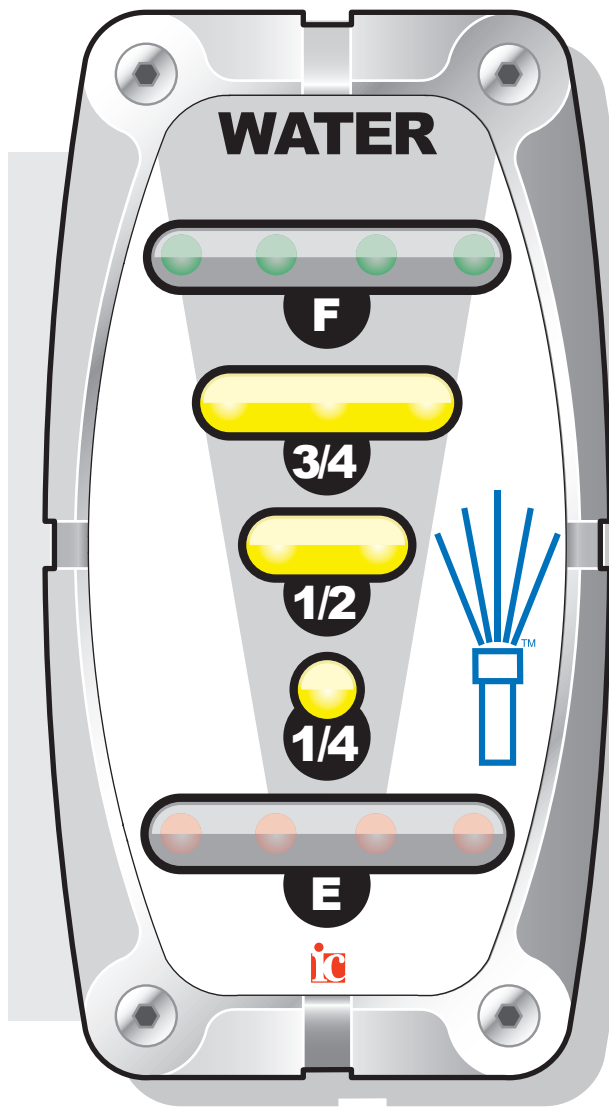
Innovative Controls SL Series
Tank Level Monitor System





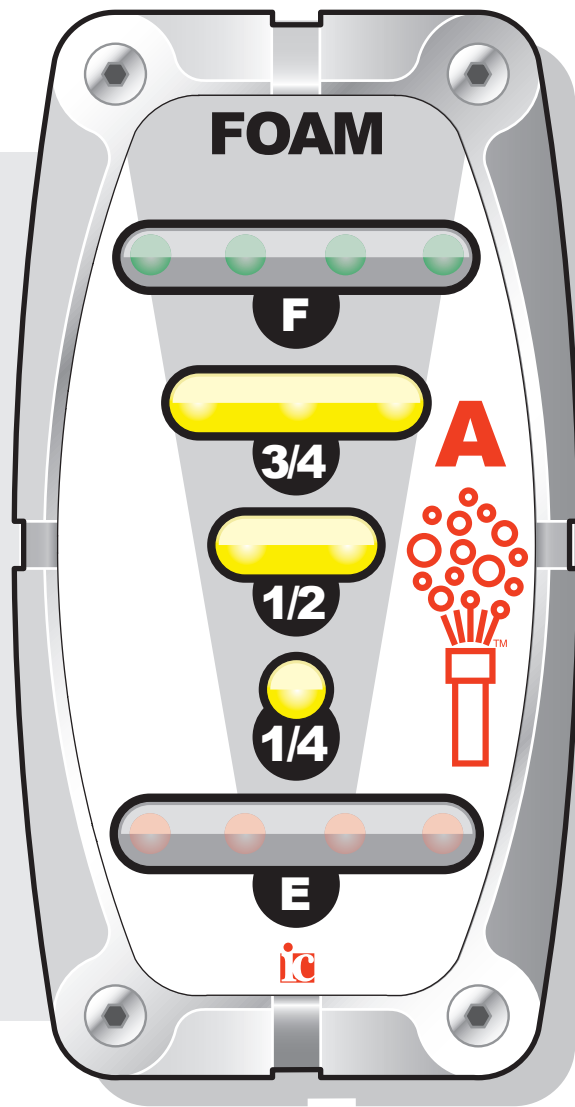
**Innovative Controls SL Series
Tank Level Monitor System**





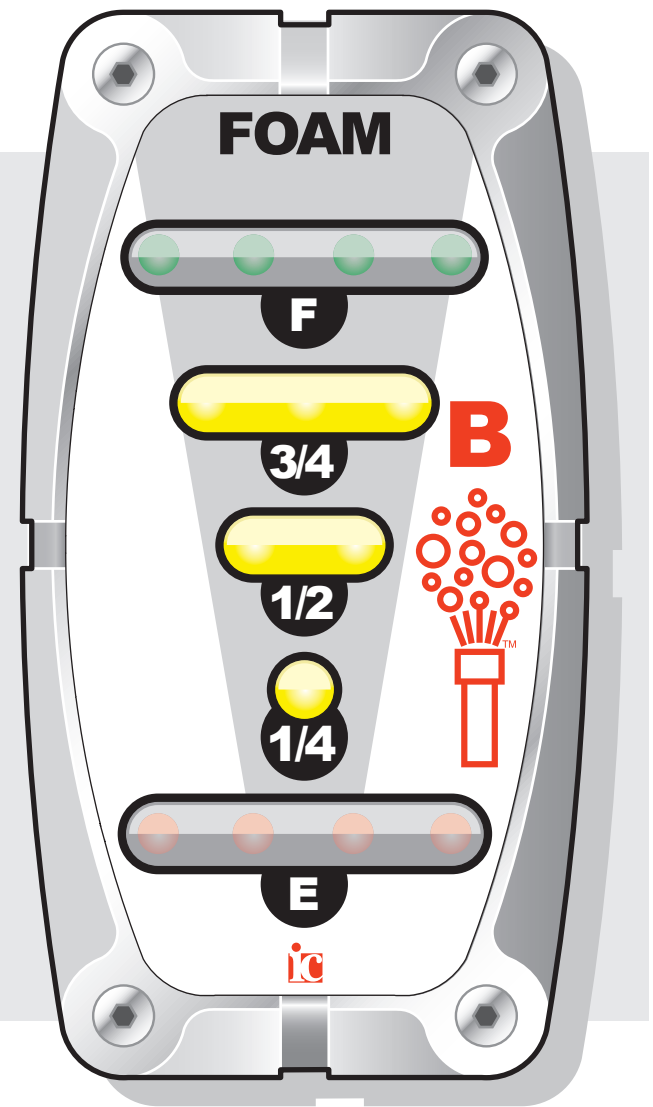
14-LED Master Water Display
P/N 3030385-01

14-LED Large Slave Water Display
P/N 3030389-01



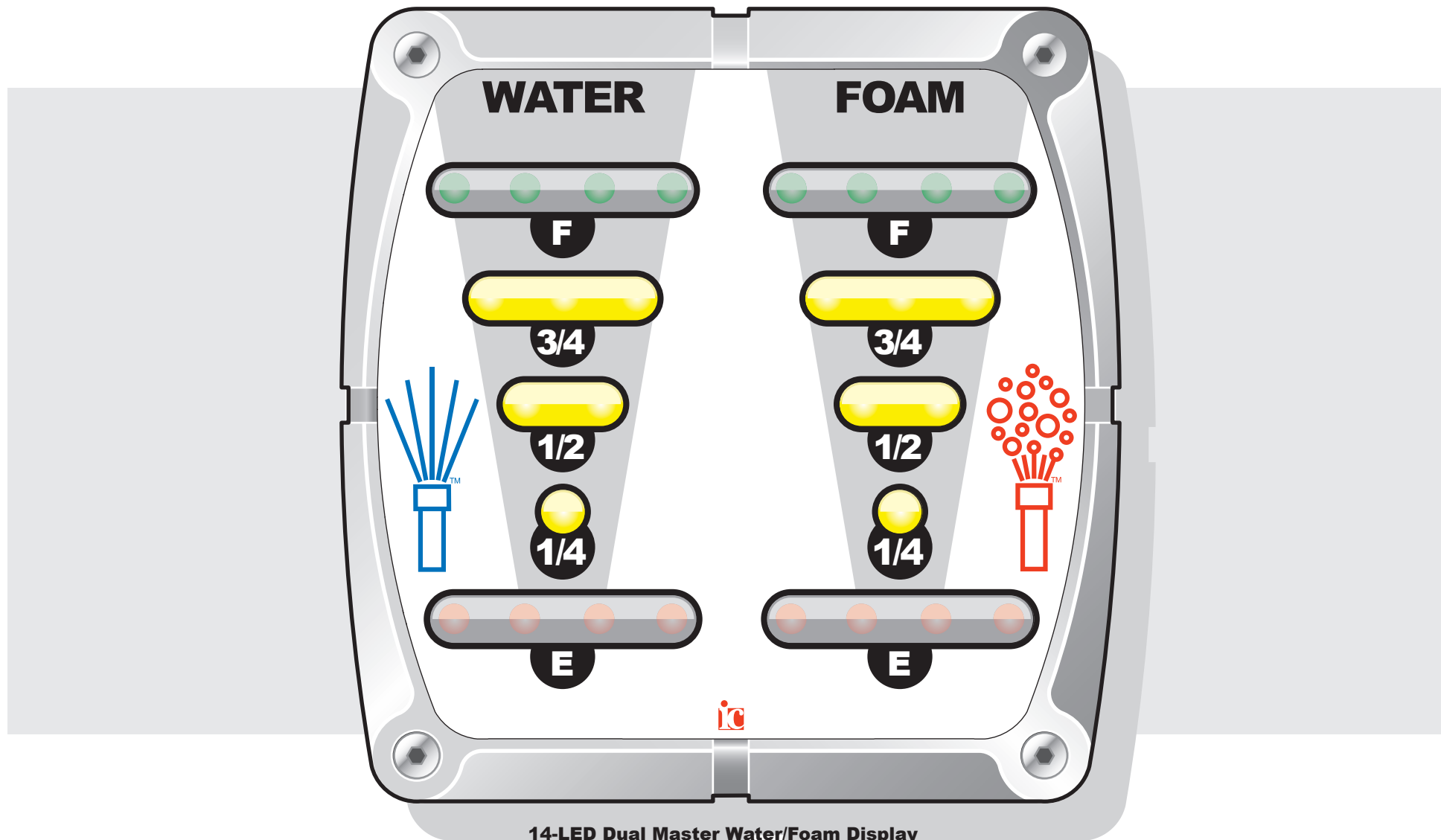
14-LED Master Foam Display - Class A
P/N 3030386-01A

14-LED Large Slave Foam Display - Class A
P/N 3030390-01A



14-LED Master Foam Display - Class B
P/N 3030386-01B

14-LED Large Slave Foam Display - Class B
P/N 3030390-01B

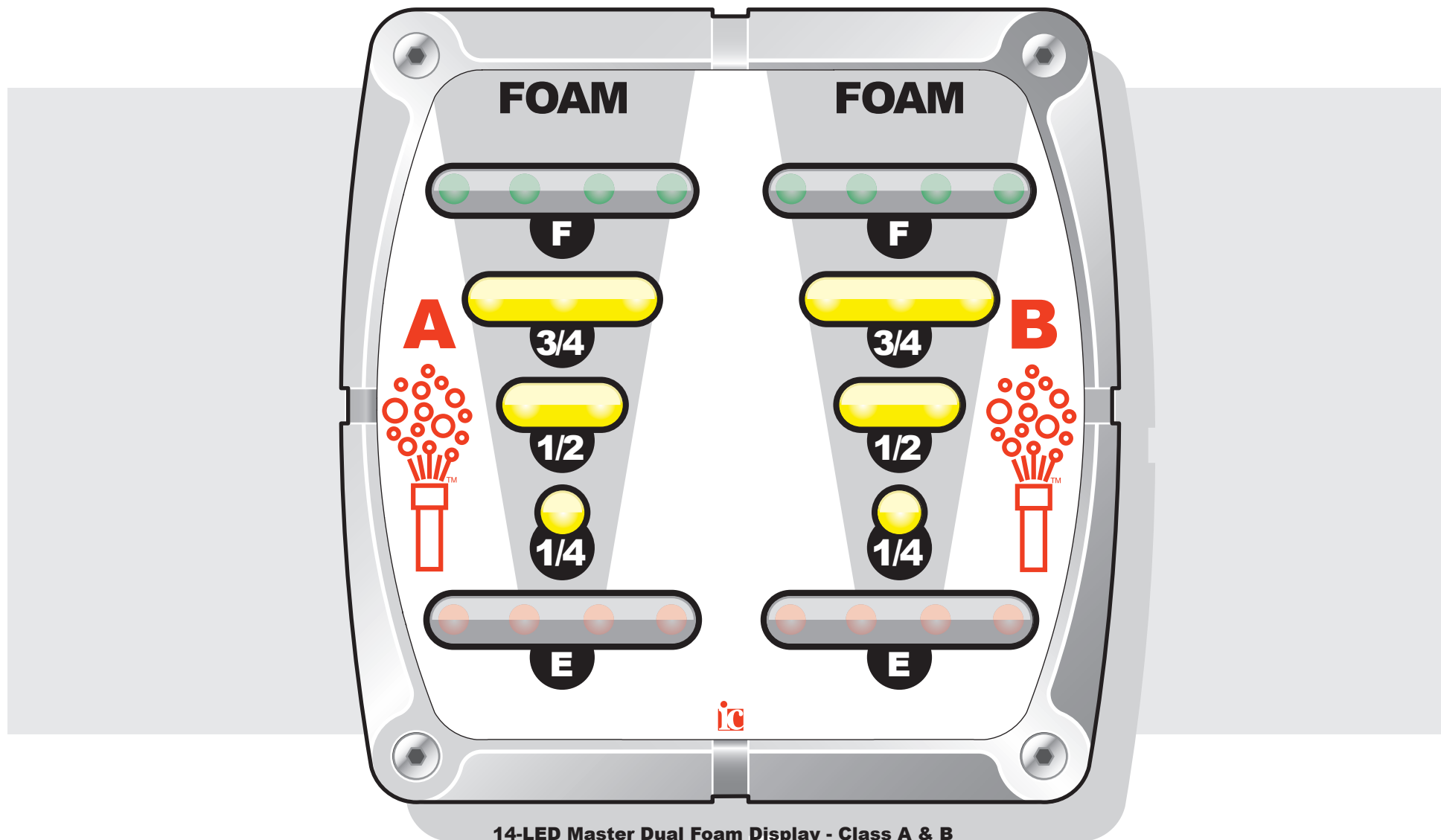


14-LED Dual Master Water/Foam Display
P/N 3030387-01

14-LED Dual Large Slave Water/Foam Display
P/N 3030391-01

Innovative Controls SL Series
Tank Level Monitor System



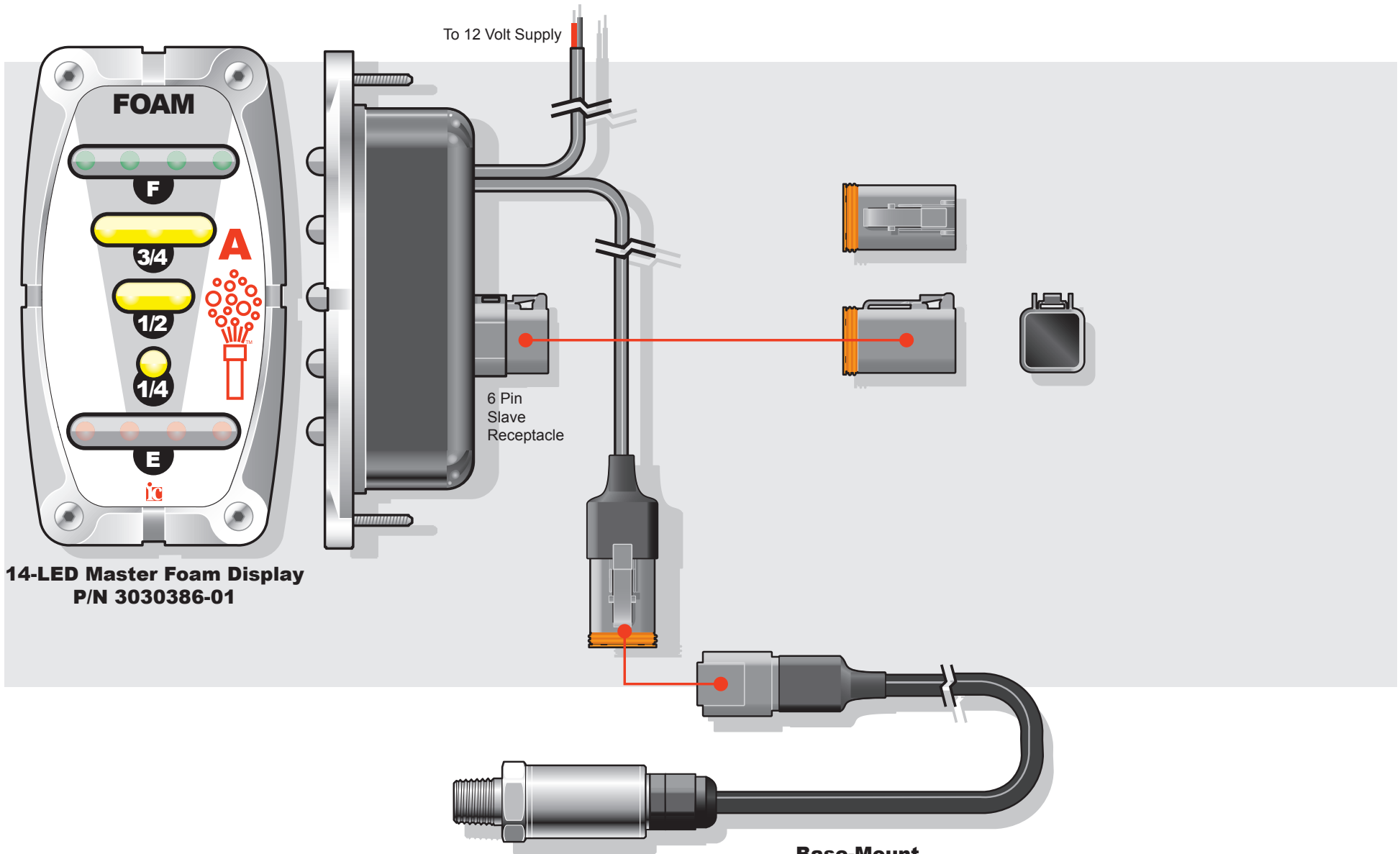


14-LED Master Dual Foam Display - Class A & B
P/N 3030388-01

14-LED Dual Large Slave Foam Display - Class A & B
P/N 3030392-01

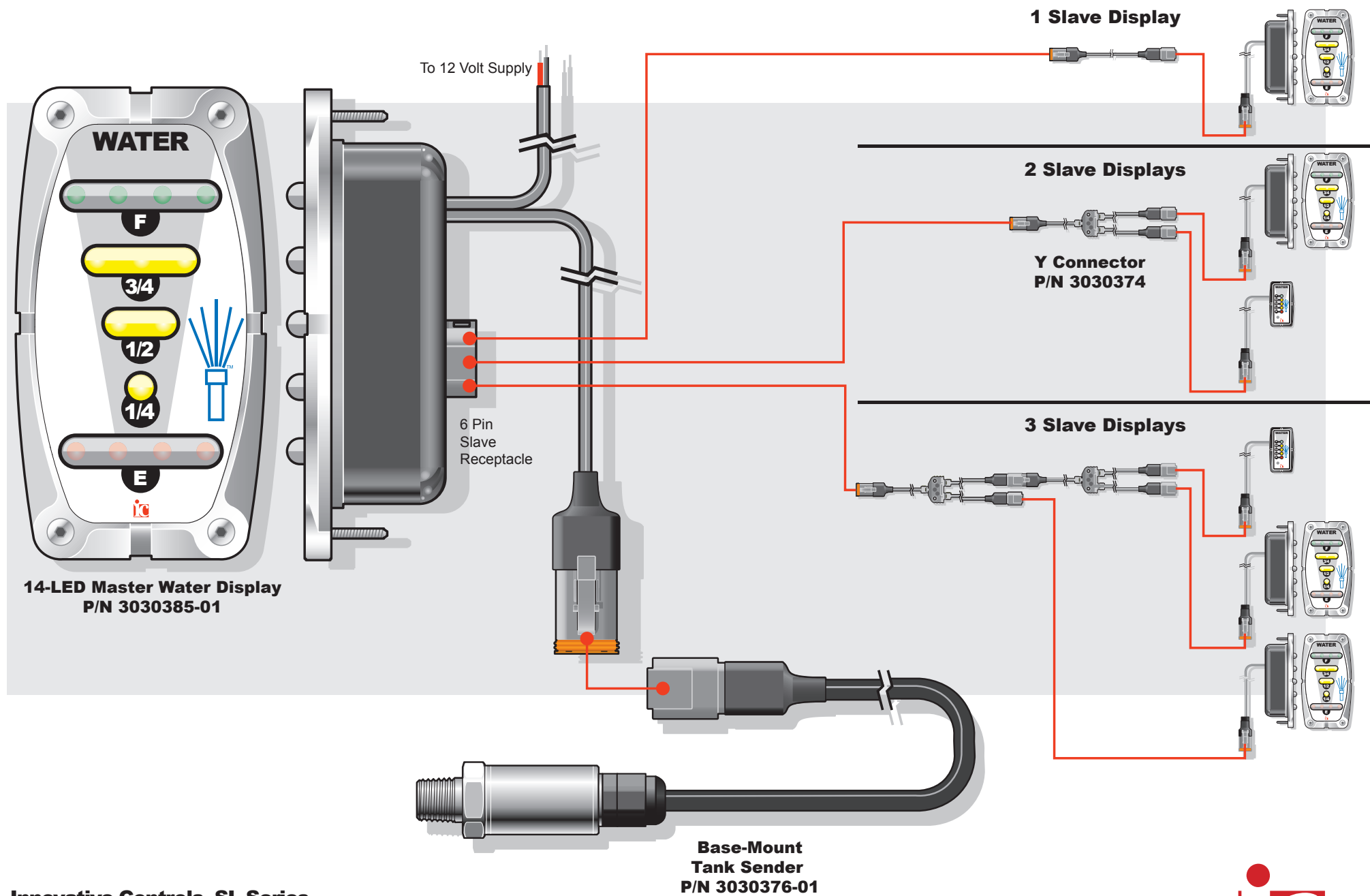
Innovative Controls SL Series
Tank Level Monitor System





**Innovative Controls SL Series
Tank Level Monitor System**

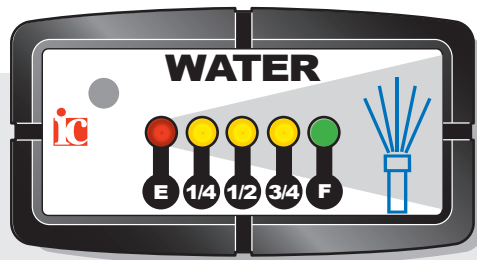




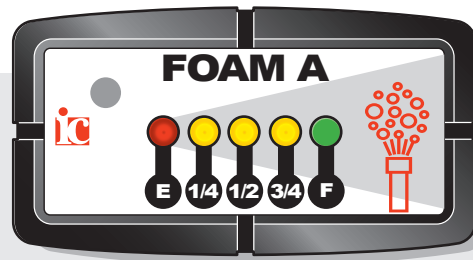
**Innovative Controls SL Series
Tank Level Monitor System**



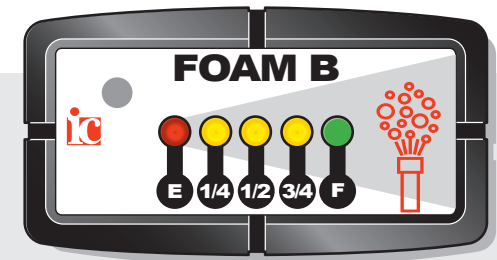




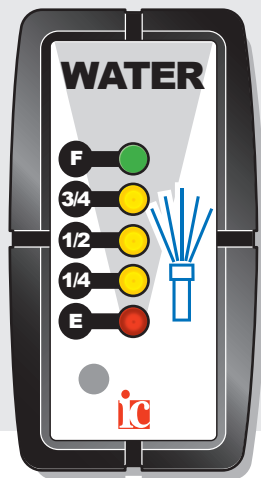
5-LED Mini Slave Water Display
P/N 3030423-01



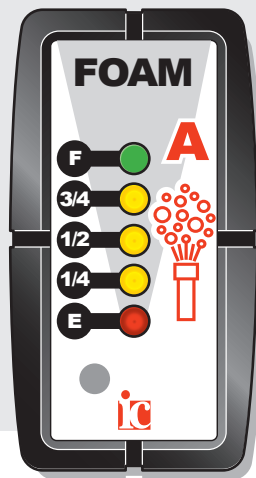
5-LED Mini Slave Foam Display
Class A
P/N 3030423-01A



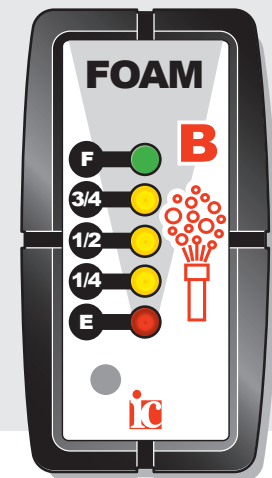
5-LED Mini Slave Foam Display
Class B
P/N 3030423-01B



5-LED Mini Slave Water Display
P/N 3030372-01



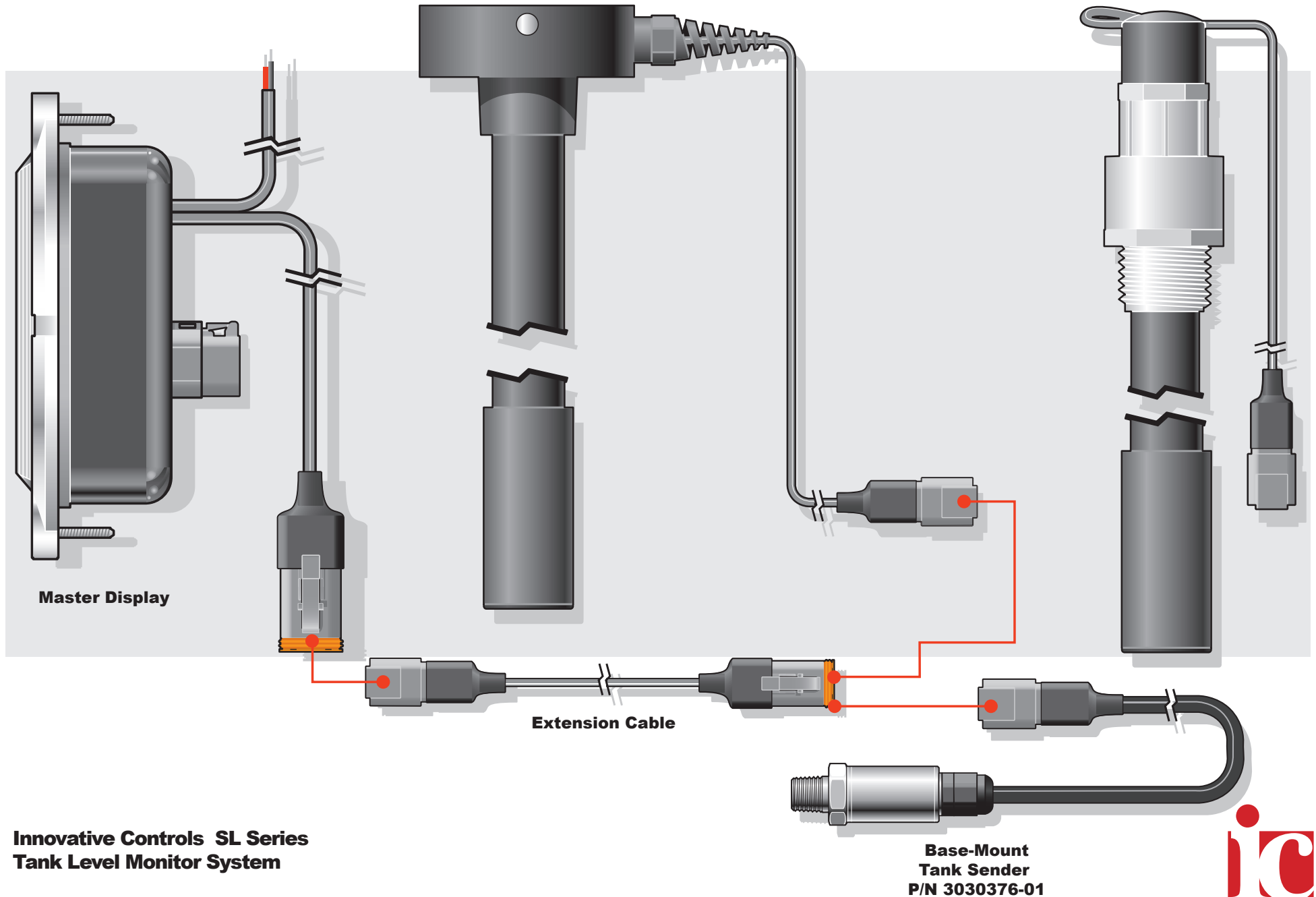
5-LED Mini Slave Foam Display
Class A
P/N 3030373-01A



5-LED Mini Slave Foam Display
Class B
P/N 3030373-01B

**Flanged Top-Mount
Tank Sender
P/N 3030448-01-XX**

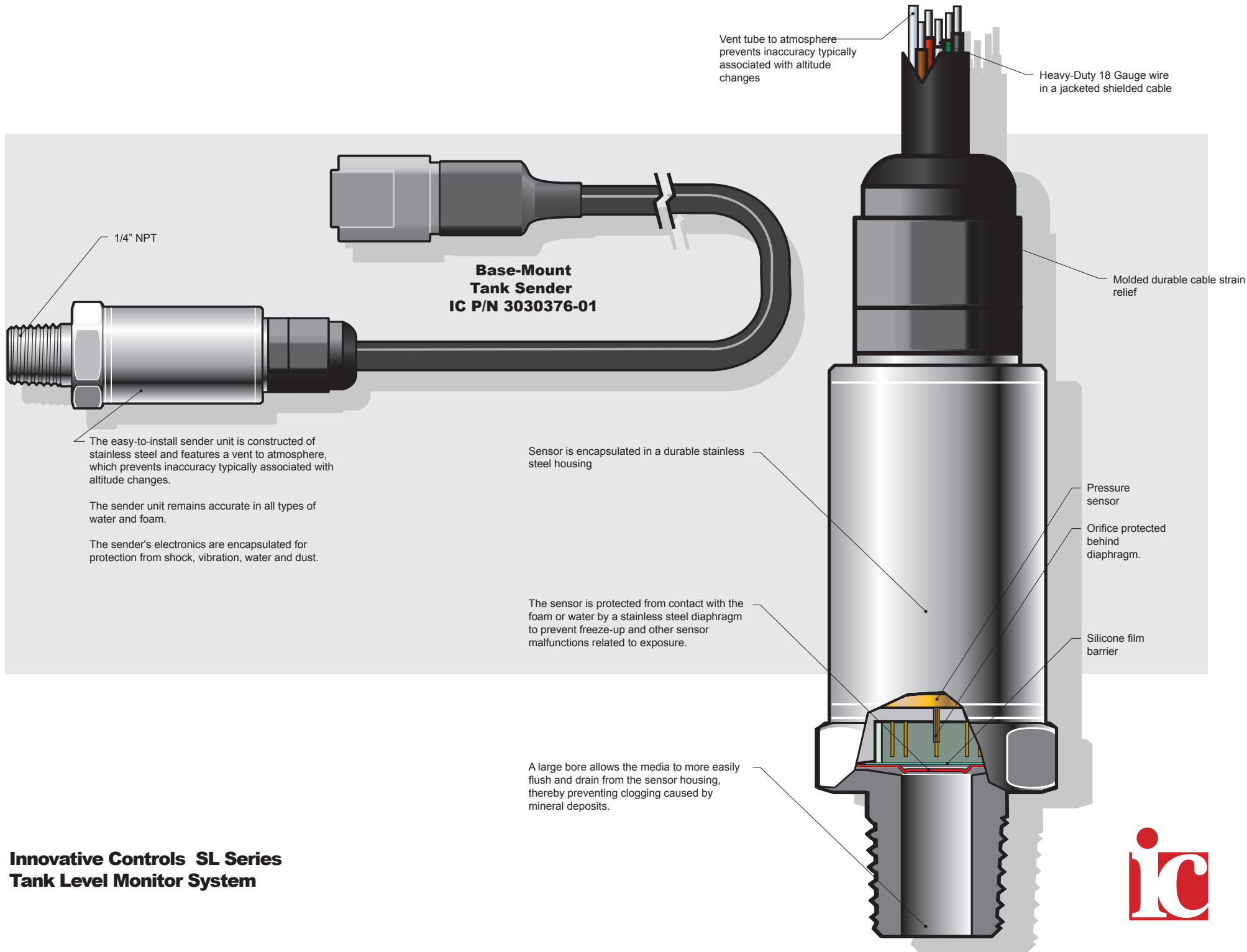
**Thread-Mount
Tank Sender
P/N 3030454-01-XX**



**Innovative Controls SL Series
Tank Level Monitor System**

**Base-Mount
Tank Sender
P/N 3030376-01**





**Innovative Controls SL Series
Tank Level Monitor System**



Master Display



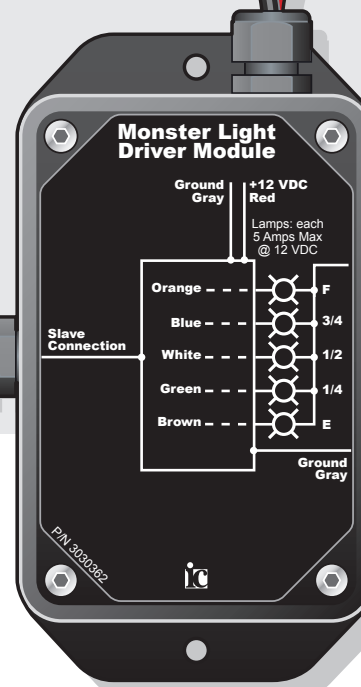
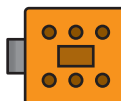
External Relay Warning Wire
P/N EXT

Y Connector

1 ft. P/N 3030374-01
3 ft. P/N 3030374-02

Wiring Harnesses

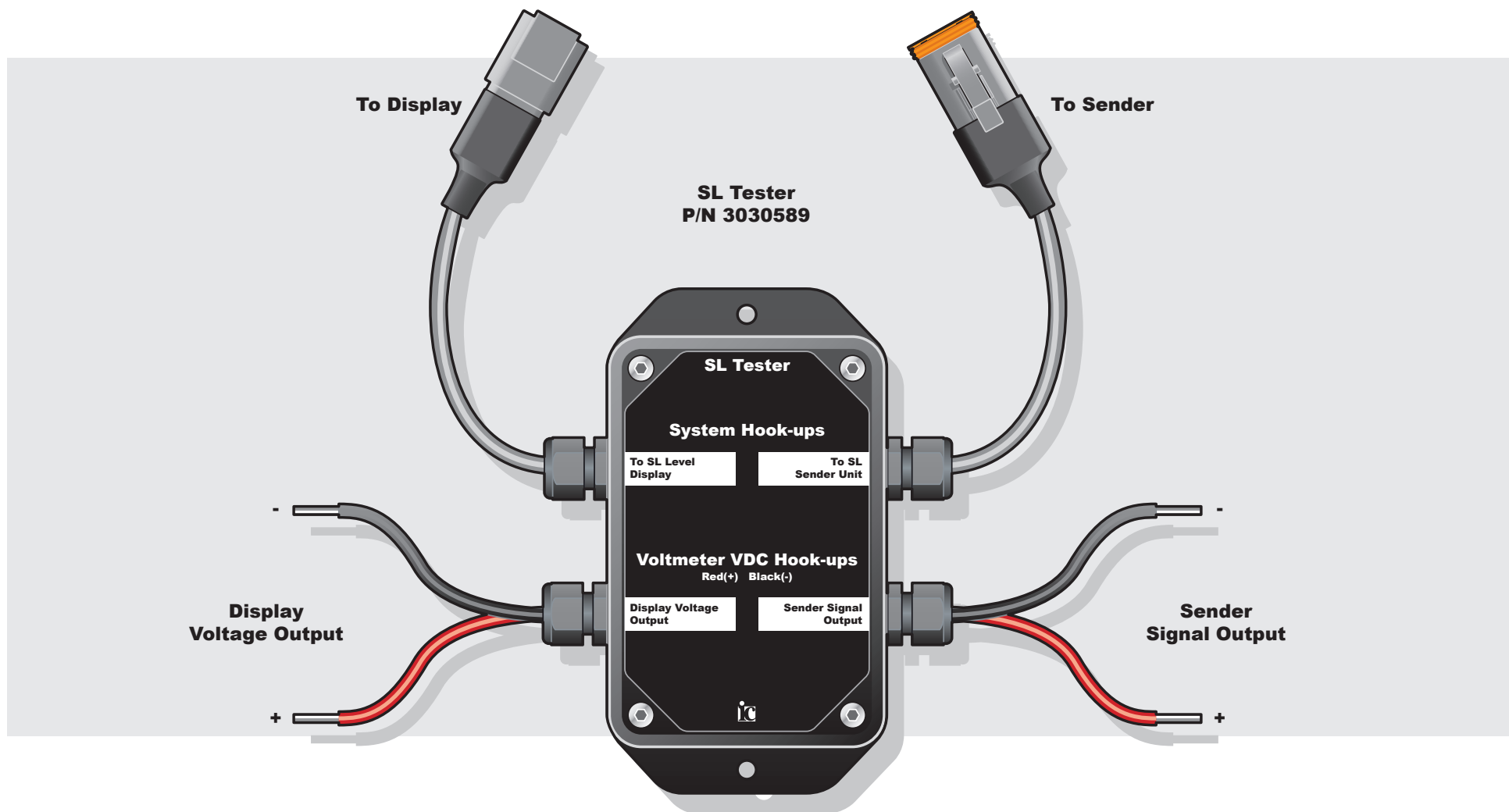
5 ft. P/N 4000418-01
10 ft. P/N 4000418-02
15 ft. P/N 4000418-03
20 ft. P/N 4000418-04
25 ft. P/N 4000418-05
30 ft. P/N 4000418-06
35 ft. P/N 4000418-07
40 ft. P/N 4000418-08
50 ft. P/N 4000418-09



Monster Lights Driver Module
P/N 3030362

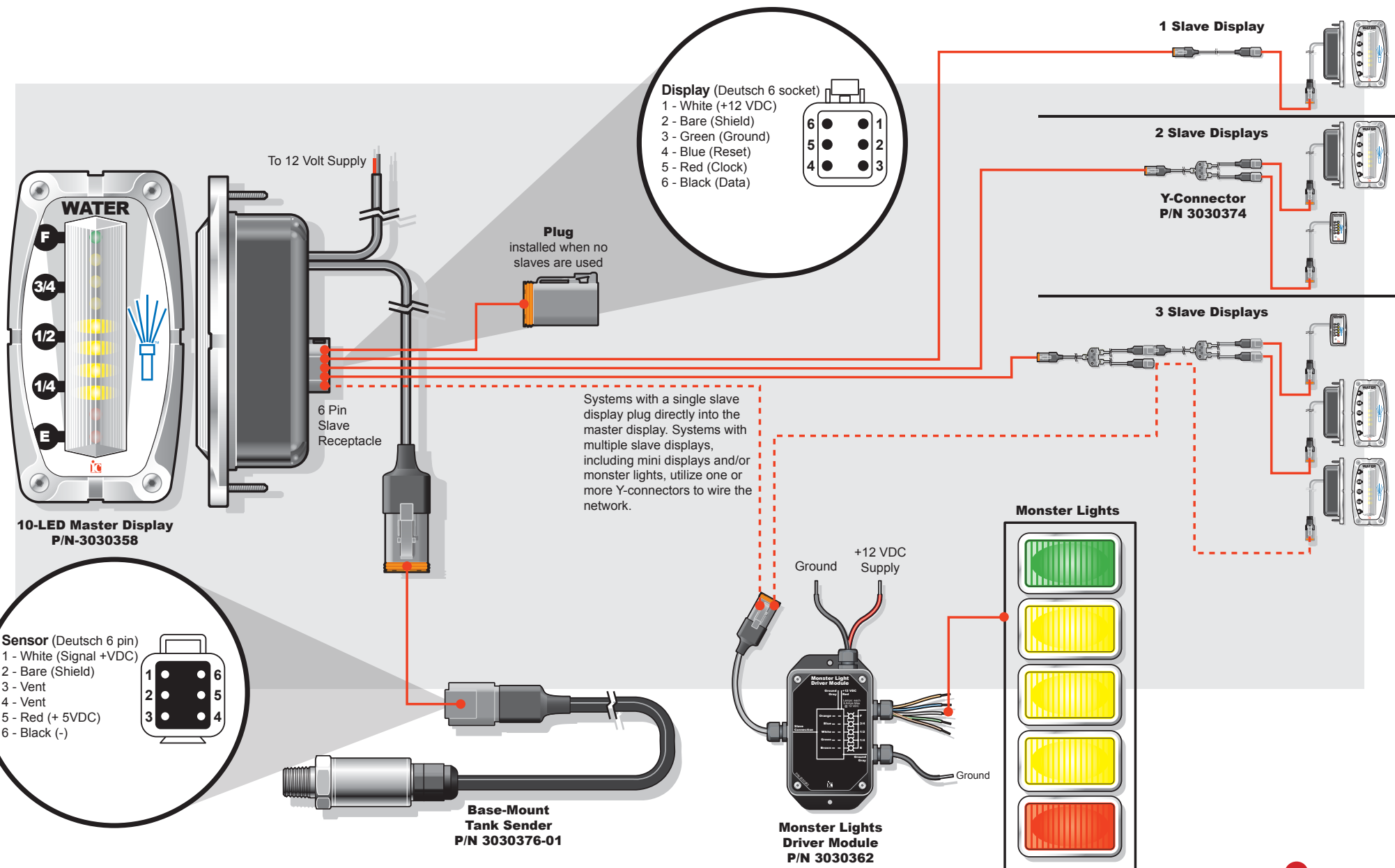
Innovative Controls SL Series
Tank Level Monitor System





**Innovative Controls SL Series
Tank Level Monitor System**





**Innovative Controls SL Series
Tank Level Monitor System**

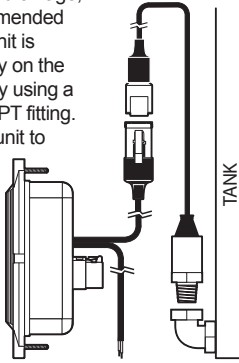


Note:

This calibration procedure must be performed to ensure that the indicated fluid levels on the display accurately match the actual levels in the tank. The tank can be full or empty to begin calibration, but must be filled before beginning Step 4. To ensure proper calibration, do not have water in the fill tower.

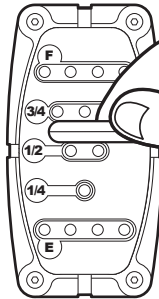
Step 1: Install Tank Sender Unit

To ensure proper drainage, it is highly recommended that the sender unit is mounted vertically on the side of the tank by using a 90 degree 1/4" NPT fitting. Connect sender unit to the display and the display to a 12 or 24 volt power source. Go to Step 2.



Step 2: Initiate Calibration

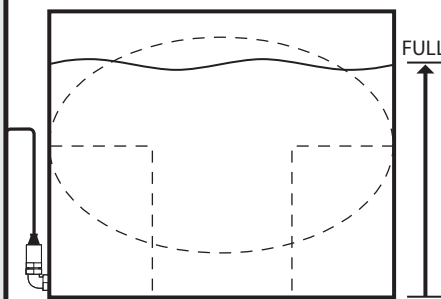
Within 1 min. of powering up the unit, place the magnet over the master display between the 1/2 and 3/4 levels.



The 1/4, 1/2, 3/4 and FULL lights will flash in succession and then they will flash together - at the same time.

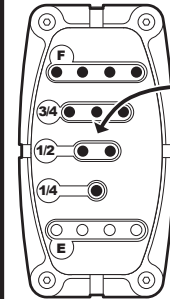
Step 3: Calibrating The Probe

With the 1/4, 1/2, 3/4 and FULL lights all flashing, fill tank - if not yet full. For a level-by-level calibration, do not fill tank and go to alt. instructions on page 2.



Step 4: Tank Selection Mode

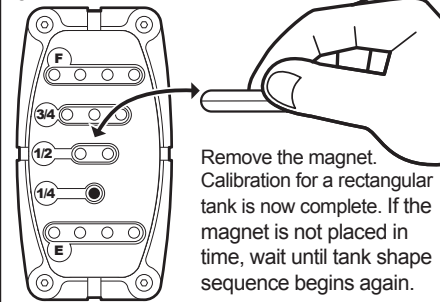
Place the magnet over the display between 1/2 and 3/4 levels. The level lights will flash in sequence upward beginning the tank selection mode.



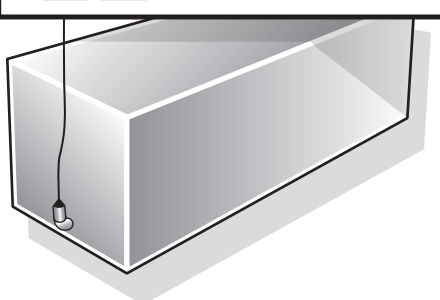
You will now select the tank shape. For a rectangular tank, go to Step 5. For a T tank, go to Step 6. For an elliptical tank go to Step 7.

Step 5: Rectangular Tank

When the 1/4 level light begins to flash, place the magnet back onto the master display before the lights flash for the fifth time.

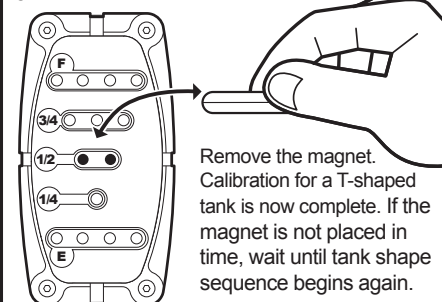


Remove the magnet. Calibration for a rectangular tank is now complete. If the magnet is not placed in time, wait until tank shape sequence begins again.

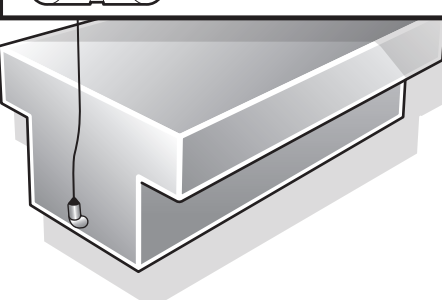


Step 6: T-Shaped Tank

When the 1/2 level lights begin to flash, place the magnet back onto the master display before the lights flash for the fifth time.

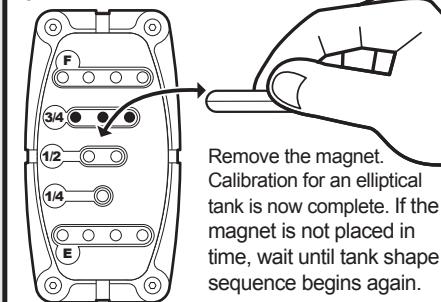


Remove the magnet. Calibration for a T-shaped tank is now complete. If the magnet is not placed in time, wait until tank shape sequence begins again.

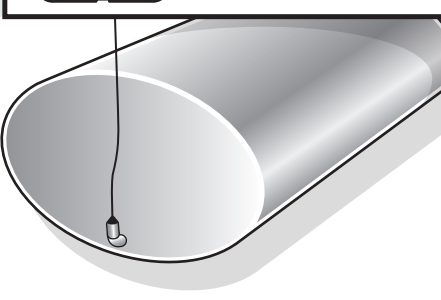


Step 7: Elliptical Tank

When the 3/4 level lights begin to flash, place the magnet back onto the master display before the lights flash for the fifth time.



Remove the magnet. Calibration for an elliptical tank is now complete. If the magnet is not placed in time, wait until tank shape sequence begins again.



Notes:

If the magnet is not placed in front of the display to select a tank shape, the tank selection sequence will continue and the FULL light will flash 5 times. After the FULL light flashes 5 times the tank shape selection sequence will begin again. (Step 5) The tank shape selection sequence will repeat 3 times. If no tank shape selection is made in this time, the display will default to a rectangular tank.

If the display was calibrated incorrectly, remove power from the display and repeat the process. Recalibration can not occur without cycling power.

**Innovative Controls SL Series
Tank Level Monitor System
Calibration Instructions**

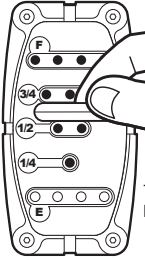


Note:

If none of the 3 calibration modes described on the previous page is acceptable, use this special calibration mode to set each of the water or foam levels independently. Perform Steps 1, 2, and 3 on previous page before starting Alt. Step 4.

Alt. Step 4

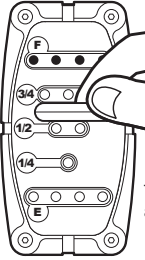
With the tank empty and the 1/4, 1/2, 3/4 and FULL lights flashing, place the magnet over the master display between the 1/2 and 3/4 levels.



The 1/4, 1/2, 3/4, and FULL lights will flash in succession.

Alt. Step 5

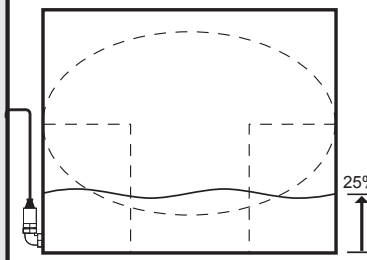
Wait until the FULL level is flashing and place the magnet over the display.



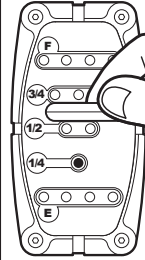
The 1/4 and EMPTY lights will alternate flashing.

Alt. Step 6

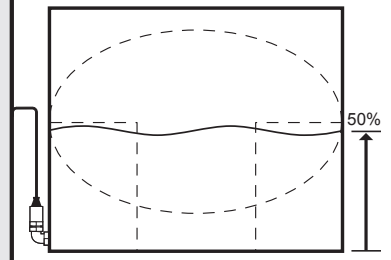
Fill the tank to the desired 25% level. Check level visually or by measuring depth.

**Alt. Step 7**

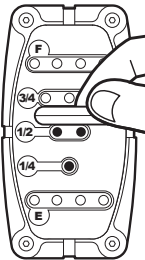
Place the magnet over the display. The 1/4 lights will stay on while the 1/2 lights begin to flash.

**Alt. Step 8**

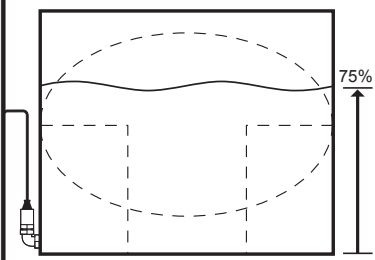
Fill the tank to the desired 50% level. Check level visually or by measuring depth.

**Alt. Step 9**

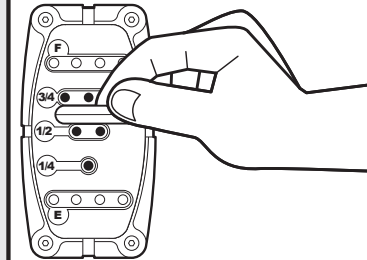
Place the magnet over the display. The 1/4 and 1/2 lights will be on while the 3/4 lights begin to flash.

**Alt. Step 10**

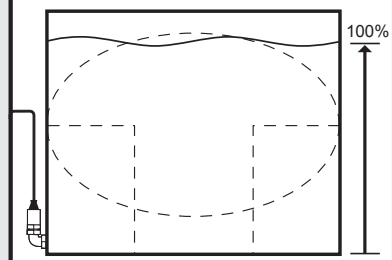
Fill the tank to the desired 50% level. Check level visually or by measuring depth.

**Alt. Step 11**

Place the magnet over the display. The 1/4, 1/2 and 3/4 lights will be on while the FULL lights begin to flash.

**Alt. Step 12**

Fill the tank to the desired FULL level.

**Alt. Step 13**

Place the magnet over the display to complete the alternate calibration process.

