

# TRANSDUCER KITS INSTALLATION INSTRUCTIONS



## ⚠ WARNING



### ELECTRICAL SHOCK HAZARD

Disconnect power before installing or servicing this product. A qualified service person must install and service this product according to applicable electrical and plumbing codes.

## ⚠ WARNING



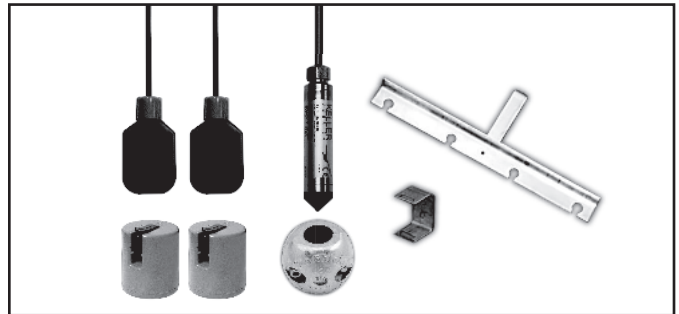
### EXPLOSION OR FIRE HAZARD

Do not use this product with flammable liquids. Do not install in hazardous locations as defined by National Electrical Code, ANSI/NFPA 70, unless used in an intrinsically safe circuit of a UL 698A listed control panel.

Failure to follow these precautions could result in serious injury or death. Replace product immediately if switch cable becomes damaged or severed. Keep these instructions with warranty after installation. This product must be installed in accordance with National Electric Code, ANSI/NFPA 70 so as to prevent moisture from entering or accumulating within boxes, conduit bodies, fittings, float housing, or cable.

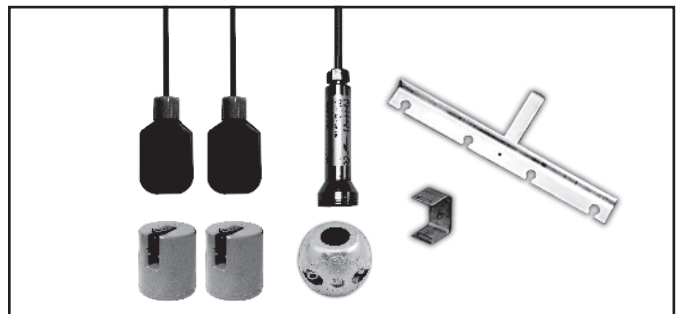
## TRANSDUCER KIT 1

- (1) Transducer 0-15 ft. measuring range (4-20mA)
  - Levelgag with 50 ft. vented cable
- (1) Transducer Weight
- (2) Blue Cap Control Switches
  - Normally open contacts, rated at 1A 125V max.
  - 50 ft. flexible SJOW water resistant cable
- (2) PVC coated cable weights with lock
- (1) 4-position stainless steel hanging bracket



## TRANSDUCER KIT 2

- (1) Transducer 0-15 ft. measuring range (4-20mA)
  - Levelrat with 50 ft. vented cable
- (1) Transducer Weight
- (2) Blue Cap Control Switches
  - Normally open contacts, rated at 1A 125V max.
  - 50 ft. flexible SJOW water resistant cable
- (2) PVC coated cable weights with lock
- (1) 4-position stainless steel hanging bracket



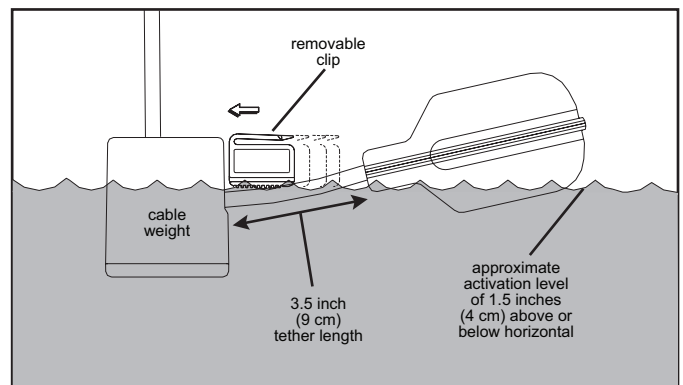
## CABLE WEIGHTS

1. Determine desired activation level.
2. Suspend float switch and cable weight at desired activation level as shown in Figure C (typical).
3. Connect float switch wires according to control panel schematics.
4. Check installation. Allow system to cycle to insure proper operation.

To adjust cable weight tether length:

1. Release clip.
2. Adjust tether length to 3.5 inches as shown in Figure A.
3. Snap clip snugly up to cable, moving clip to tightest possible position.

FIGURE A



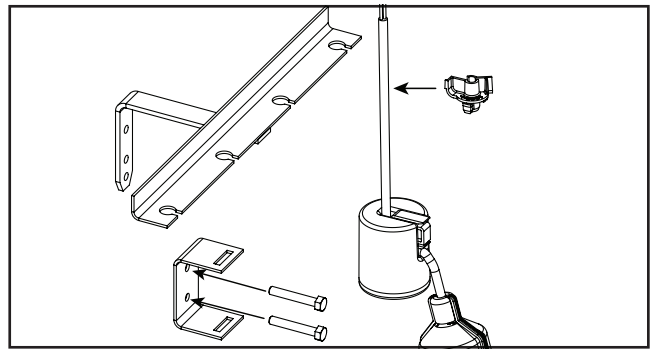
## **FLOAT BRACKET**

1. Drill holes in mounting surface 1-5/16 inches apart vertically.
2. Install the mounting bracket to the mounting surface using two fasteners shown in Figure B.

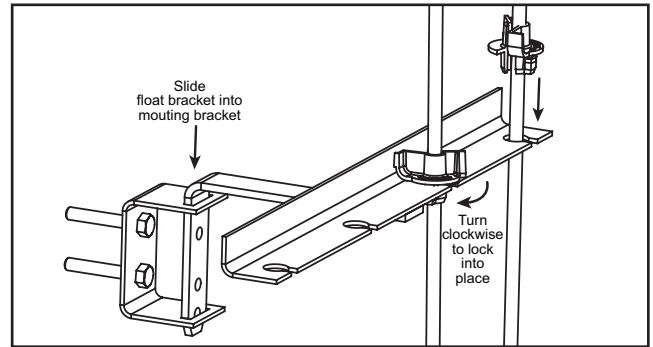
**NOTE: Use stainless steel fasteners appropriate for the mounting surface.**

3. Snap the cord lock onto the cable shown in Figure B.
4. Drop the cord lock and cord into the top side of a desired hole in the float bracket as shown in Figure C.
5. Adjust the cord to the proper length, so that activation occurs at the desired level.
6. To lock the cord in place, turn the cord lock clockwise as shown in Figure C.
7. Slide the float bracket into the mounting bracket slots as shown in Figure C.
8. Confirm the float cords are set at a proper height to insure correct activation/deactivation levels.

**FIGURE B**



**FIGURE C**



## **LEVELGAGE**

The Levelgage is a general purpose submersible level transmitter available in 1% and 0.5% FS TEB accuracy. Constructed from 316L stainless steel, it is ideally suited for most fresh water monitoring applications.

## **LEVELRAT**

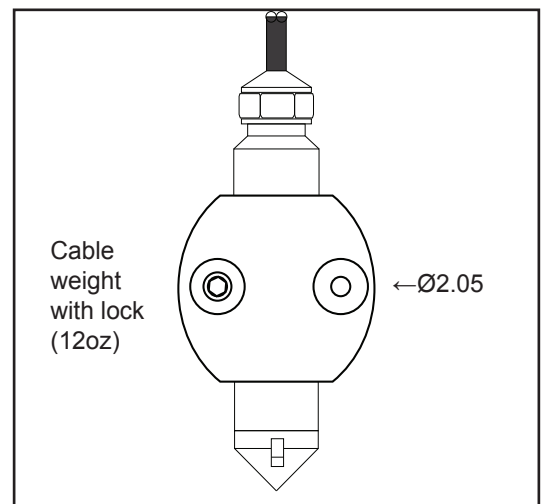
The LevelRat is specifically designed to provide accurate level indication in grease-laden environments commonly found in lift stations serving commercial concerns. The LevelRat design takes a step away from the large and bulky protection cage designs by utilizing a flush Kynar™ diaphragm. Kynar offers the non-stick properties of Teflon and provides added resistance to damage from debris.

## **LIGHTNING/SURGE PROTECTION**

LevelRat and Levelgage transducers carry a lifetime warranty against damage caused by lightning and/or electrical surge. This warranty applies even in the case of a direct lightning strike. The user's liability is limited to shipping costs to PRIMEX®.

## **STABILIZING WEIGHT**

Zinc prop shaft anode adapted to fit ø21mm O.D. of Levelgage and LevelRat submersible level transmitters. Aids in corrosion resistance as well as helps ensure that the cable remains taut in turbulent conditions.



## INSTALLATION

The following is important installation and general maintenance information for submersible transmitters. Please contact PRIMEX® for additional instruction.

1. **Transmitter Anchoring:** It is recommended that PRIMEX® submersible transmitters be installed in a stilling well or attached to rigid conduit via a conduit fitting integral to the transmitter, in order to prevent damage to the transmitter from impact with immovable objects. It is not advisable to tie the transmitter to a pump or to piping, as any problem with the transmitter could require that the pump be pulled from the installation. Some applications require the transmitter to be suspended without a protective stilling well or conduit attachment. In all installations, care should be taken to prevent damage to the submersible cable.
2. **Transmitter Submersion:** Damage to submersible cable can lead to failure of the transmitter. PRIMEX® employs a rugged cable jacket material to minimize the risk of cuts and abrasion. Still, take care when lowering your transmitter into the well, making sure the cable does not drag over sharp edges. Avoid dropping the transmitter from the surface.
3. **Condensation protection:** PRIMEX® has optimized the size of the cable vent to minimize the occurrence of water vapor incursion. In areas of high humidity, it may be desirable to use a Drying Tube Assembly (desiccant) or Bellows Assembly to prevent water vapor from entering the vent tube. Contact PRIMEX® for ordering information.
4. **Bending of Cable:** Our jacketed cable is quite flexible. However, care must be taken to ensure the vent tube integral to the cable is not crimped when bending the cable to suit your installation. It is recommended that the cable not be bent to a radius smaller than 1 inch.
5. **Cable Compression:** Many users employ a compression fitting to secure our cable as it enters a junction box. Care must be taken that the fitting is not over tightened, causing damage to the cable and/or crimping the vent tube.
6. **Position Sensitivity:** The transmitter should be installed in a vertical position, otherwise it may exhibit an offset. If the transmitter must be installed in any position other than vertical, measure the output with no pressure applied prior to connection to your display, PLC, or controller. Use the measured value for your zero point.

## GENERAL MAINTENANCE TIPS

**Cleaning a Clogged Nose Cap:** A clogged nose cap could result in erroneous readings from your transmitter. Never attempt to clean your transmitter's nose cap or diaphragm with a sharp object. This could dent the sensor diaphragm and cause permanent damage to the transmitter. To clean the transmitter, it is recommended that a soap, scum, and hard-water stain remover be used. Fill a suitable container with the cleaner. Fill another bowl with a mixture of the cleaner and fresh water. Fill a third bowl with fresh water. Beginning with the first bowl, hold the cable about six inches from transmitter and stir gently in the solution for 20-30 seconds. Second, repeat in the mixture bowl. Finish by stirring in the fresh water bowl. Wipe dry with a soft rag or towel.

## SAFE HANDLING

Safe handling of PRIMEX® pressure measurement devices is accomplished if a nominal amount of care is taken.

Things to avoid are:

- Sharp impact against hard surface
- Contact with chemicals known to be corrosive to the materials of construction
- Probing of pressure sensing membrane with ANYTHING

## LIMITS OF PRESSURE

PRIMEX® transducers are designed to withstand a certain amount of overpressure without damage or calibration shift. It can range from 15X for the lower pressure ranges to 1.1X for the highest ranges. This value is different for each product and is referred to in the product literature as “Over pressure”. It is the user’s responsibility to ensure that the proper PRIMEX® product is chosen for the particular pressure conditions expected.

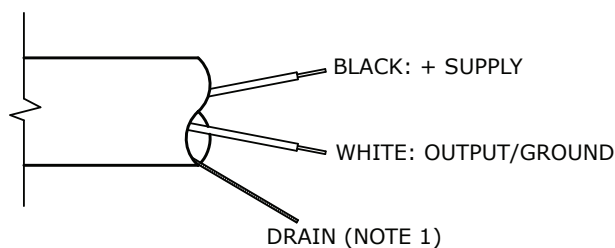
## ENVIRONMENTAL CONDITIONS

Each PRIMEX® product is designed to be compatible with a particular environment. It is the user’s responsibility to ensure that the PRIMEX® product is not exposed to an environmental condition for which it is not designed. These conditions can include operating temperature range and exposure to high-pressure water jets, media not compatible with the materials of construction, submergence of transmitters not designed for that purpose, or potentially explosive atmospheres.

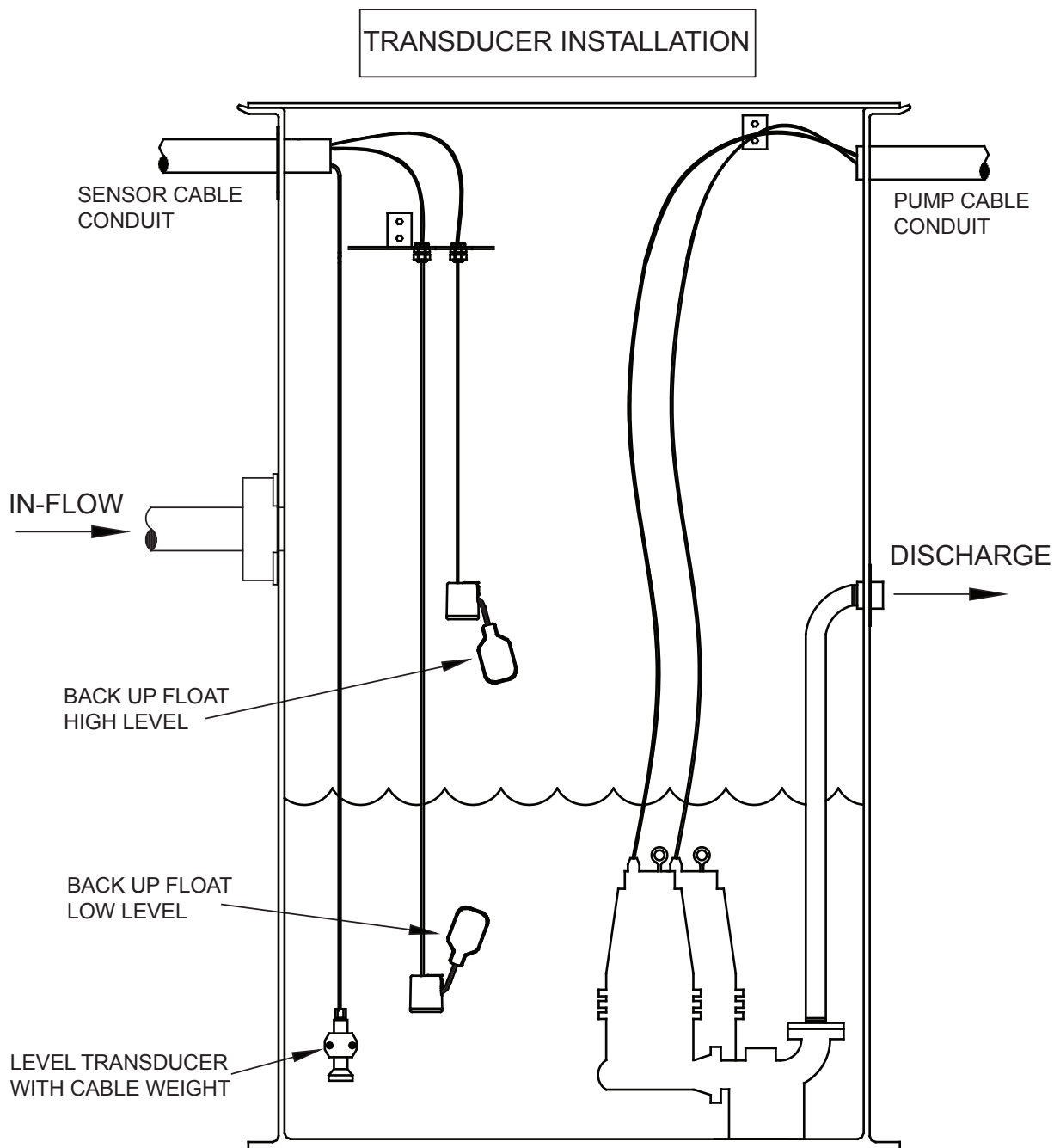
## ELECTRICAL CONDITIONS

Each PRIMEX® product is designed to operate properly within a specific range of electrical conditions. The specific product label defines the rating(s), if any, that applies to the product to which it is affixed. All transmitters are designed to withstand reverse polarity as well as over voltage to a certain extent. It is the user’s responsibility to ensure that all electrical connections are made to the PRIMEX® products in accordance with PRIMEX® recommendations as well as local electrical code. Wire colors or connector pin-outs are either printed on the label affixed to the product or provided separately.

# LEVELRAT and LEVELGAGE w/ ATTACHED CABLE...4-20mA



NOTE 1: FOR LIGHTNING/SURGE PROTECTION TO BE EFFECTIVE,  
CONNECT DRAIN WIRE TO A LOW-IMPEDANCE EARTH GROUND

**WARNING:**

Keep floats clear of pumps, pipes, and motor cables.  
 Ensure that floats cannot reach pump suction.  
 Do not run pump and float cables in the same conduit.

**PREVENTATIVE MAINTENANCE**

- Periodically inspect the product. Check that the cable has not become worn or that the housing has not been damaged so as to impair the protection of the product. Replace the product immediately if any damage is found or suspected.
- Periodically check to see that the float is free to move and operate the switch.
- Use only PRIMEX® replacement parts.

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