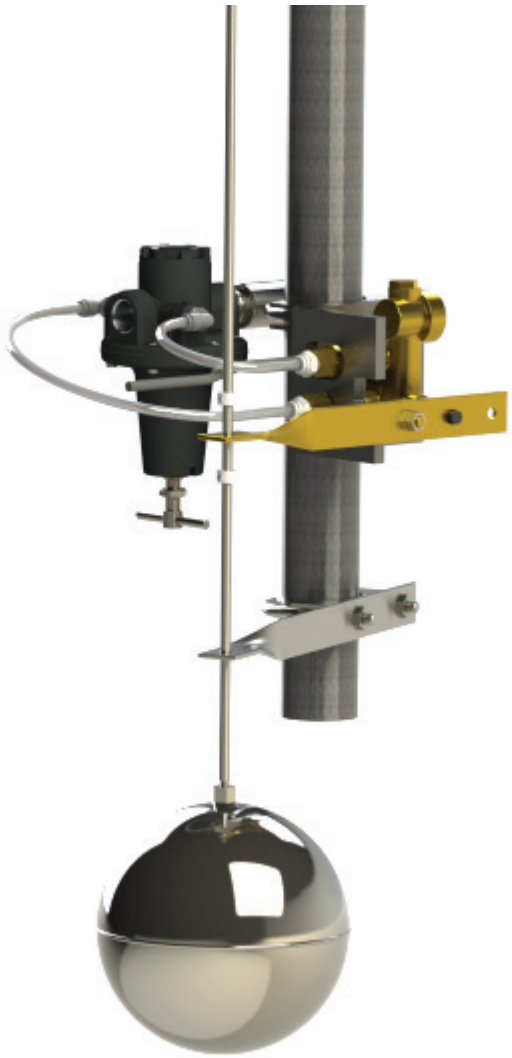
FTI Air Liquid Level Control

Assembly, Installation, & Operation Manual

P/N 109834



EU Declaration of Conformity

CE

FTI Air hereby declares that the following machine(s) fully comply with the applicable health and safety requirements as specified by the EU Directives listed. The complete product complies with the provisions of the EU Directive on machinery safety.

This declaration is valid provided that the devices are fully assembled and no modifications are made to these devices.

Type of Device:
FTI Air Pneumatic Liquid Level Control

Model:
109832 and 109832-1

EU Directives:
Machinery Safety (2006/42/EC)

Applied Harmonized Standards:
EN ISO 12100

Manufacturer:
FTI Air, A Division of Finish Thompson, Inc.
921 Greengarden Road
Erie, Pennsylvania 16501-1591 U.S.A

Signed,

Corey D Bowers

President

27 June 2018

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EU Declaration of Conformity

1026

II 2GD
Ex h IIC TX Gb
Ex h IIIC TX Db
FTZU 18 ATEX A581-18

This declaration applies to the **FTI Air AODD Liquid Level Control**. Model number 109832-1.

Finish Thompson declares under our sole responsibility that the product listed below conforms to the relevant provisions of EU directive 2014/34/EU of 26 February 2014 for equipment and protective systems intended for use in potentially explosive atmospheres, and is certified for safe use in Group II category 2 areas.

This product has used the following harmonized standards to verify conformance:

Non-electrical equipment for potentially explosive atmospheres: ISO 80079-36:2016
Basic Methods and Requirements.

Non-electrical equipment intended for use in potentially explosive atmospheres: ISO 80079-37:2016
Protection by construction safety “c.”

This product must not be used in areas other than specified above. If in doubt consult an authorized distributor, or refer to the manufacturer Finish Thompson.

Approved by:

Date: 8/16/18

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Safety Precautions for ATEX/Metallic Level Control

⚠ **WARNING**: READ THIS SUPPLEMENTAL INSERT COMPLETELY BEFORE INSTALLING AND OPERATING THIS LIQUID LEVEL CONTROL. FAILURE TO FOLLOW THESE PRECAUTIONS CAN RESULT IN SERIOUS INJURY OR DEATH.

⚠ **WARNING**: Static sparking can cause explosion. When operating in a hazardous area or pumping a hazardous fluid, the level control and entire system must be grounded to earth to prevent static discharge. This includes but is not limited to pipes, hoses, tanks, containers, valves, etc. Before operating the pump, ensure the electrical continuity throughout the pumping system and earth ground is 1 Ohm or less. If it is greater than 1 Ohm, re- check all grounding connections. Grounding kit 109704 is available to aid in grounding of the liquid level control.

⚠ **WARNING**: Vibrations from operation may cause mounting surfaces and connections to loosen and generate a spark. Ensure the level and connections are securely mounted and fastened prior to each operation.

⚠ **WARNING**: Do not exceed maximum pressure stated on the pump serial number sticker.

⚠ **WARNING**: Pump must be cleaned on a regular basis to avoid dust buildup greater than 5mm.

Safety Precautions

⚠ **WARNING**: **Chemical Hazard**. This device is used for transferring many types of potentially dangerous chemicals. Always wear protective clothing, eye protection and follow standard safety procedures when handling corrosive or personally harmful materials. Proper procedures should be followed for decontaminating the device before disassembly and inspection of the level control. There may be small quantities of chemicals present during inspection.

⚠ **CAUTION**: Before attaching air supply to air inlet to make sure all airline debris is clear. It is recommended to use a minimum 5µ (micron) air filter.

⚠ **CAUTION**: Before maintenance or repair, close the compressed air line supply valve, bleed the pressure and disconnect airline from the device. Any pressure must be relieved prior to servicing. Manually cycle the level control by moving the top guide arm up and down to ensure no air pressure between the level control and pump.

Liquid Level Control Specifications

- Completely pneumatic/mechanical operation.
- Automatic operation after initial set up.
- Float level controls on/off of air supply to pump.
- Easy set up for either high level on/low level off or low level on/high level off.
- Out of the box capable to control liquid level operating range from a couple inches to 6 feet. Additional guide rods available to extend maximum range to 10 feet (3 meters).
- Air flow through valve up to 125 CFM.
- Max inlet air pressure 120 PSI (8.3 BAR). Observe pump limits if unregulated air goes from level control to pump.
- Recommended minimum 20 PSI (1.4 BAR) inlet air to unit.
- Device air outlet must connect to pump or device that creates at least 5 PSI (0.4 BAR) back pressure for unit to operate properly.
- All 304 stainless steel or polypropylene wetted parts.
- Mounts to standard 1-1/2” (38.1 mm) pipe.

Installation

1. Mount the liquid level control assembly onto a customer supplied 1-1/2” (38.1 mm) diameter pipe above the fluid using the U bolt clamp. Position the unit so that labels are right side up. The unit is set up for high level on/low level off. To change to low level on/high level off remove nut on level arm with a 7/16” wrench and rotate 180° about the black pin. Reinstall and tighten nut.

2. Mount lower guide arm (item 7) below the liquid level control assembly on the same 1-1/2” (38.1 mm) diameter pipe using the U bolt clamp. Purpose of the lower arm is to keep the guide rod straight while the float ball moves up & down. Actual position of the lower arm may vary with guide rod length and installation.

3. Assemble the guide rod (items 3 & 8). The guide rod comes in 2 foot (61 cm) increments with (1) lower guide rod (item 8) & (2) upper/extension guide rods (item 3). Thread the (2) upper/extension guide rods together using the small 8-32 UNC-2A threaded male & female ends. Thread the upper/extension guide rods onto the lower guide rod. The lower guide rod has a larger ¼-20 UNC – 2A thread for the float ball (item 9). Thread the Float ball onto the lower guide rod. Note: the overall length of the standard guide rods will be 6 feet (183 cm). Up to (2) additional upper/extension guide rods can be attached to the guide rod for a maximum total length of 10 ft. (305 cm).

4. Pass the guide rods with float ball through the holes in each end of the level arms. Prior to passing the guide rod through the upper level arm install (1) of the Shaft Collars (item 5) position it so it mounts below the upper level arm. Pass the guide rod through the upper level arm & place the remaining shaft collar onto the guide rod above the upper level arm to hold it in place. Tighten the shaft collars in the desired location. Note: it may be necessary to unthread the guide rods to make it easier to install depending on the guide rod length and installation.

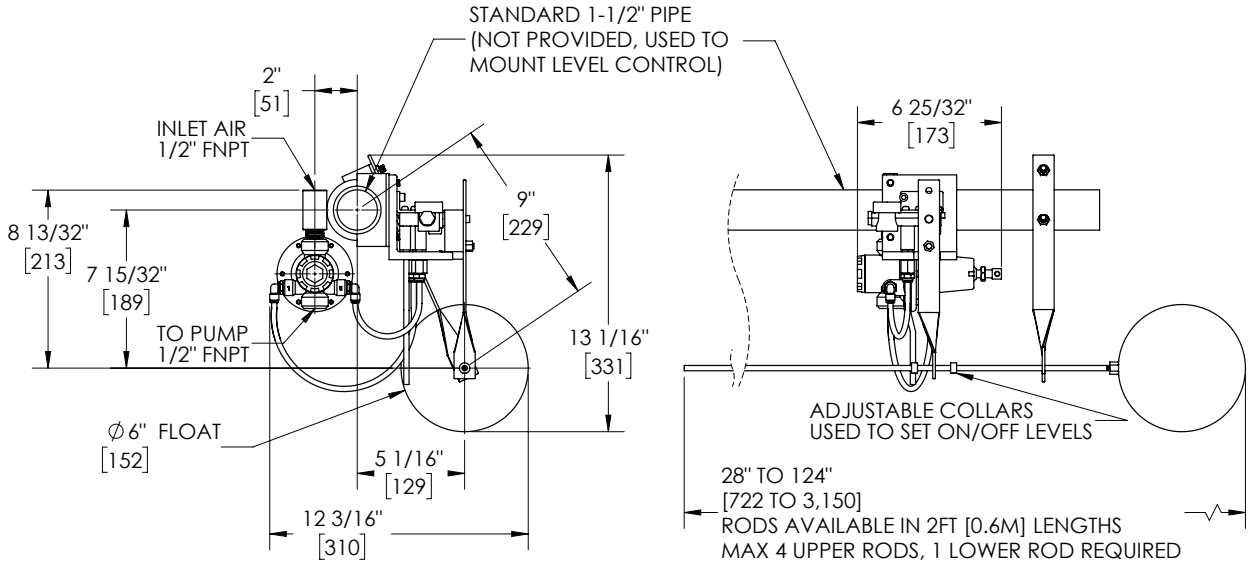
Operation

1. A float ball is connected to guide rods. The guide rods pass through a hole in the control valve’s level arm. The guide rod has two shaft collars to be set at desired locations for on/off levels. One is set above the level arm and the other below. When the float ball rises or falls the shaft collar switches the position of the control valve which turns the air supply to the pump on or off.

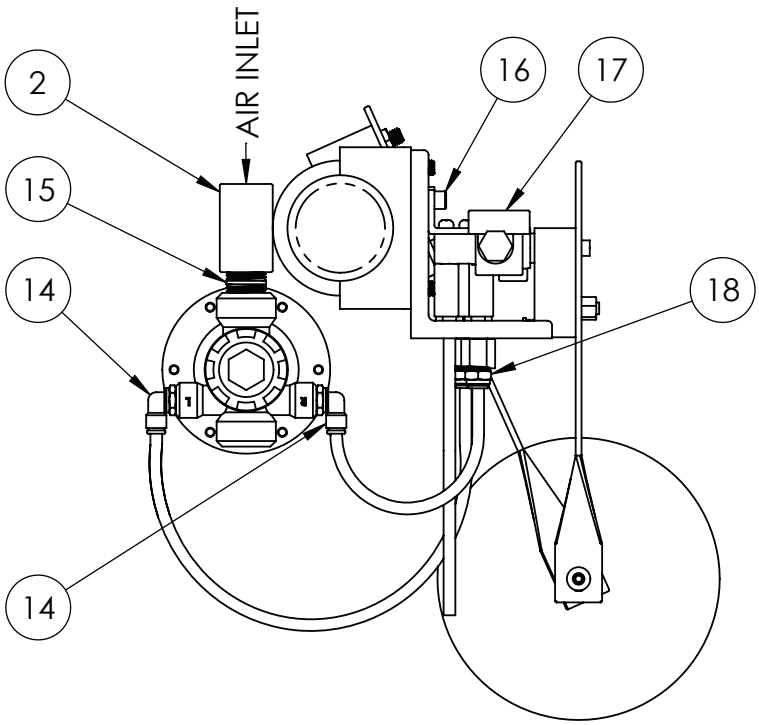
2. For high level on/low level off- When the lower collar actuates the level arm the air supply to the pump will open. When the upper collar actuates the level arm the air supply to the pump will close.

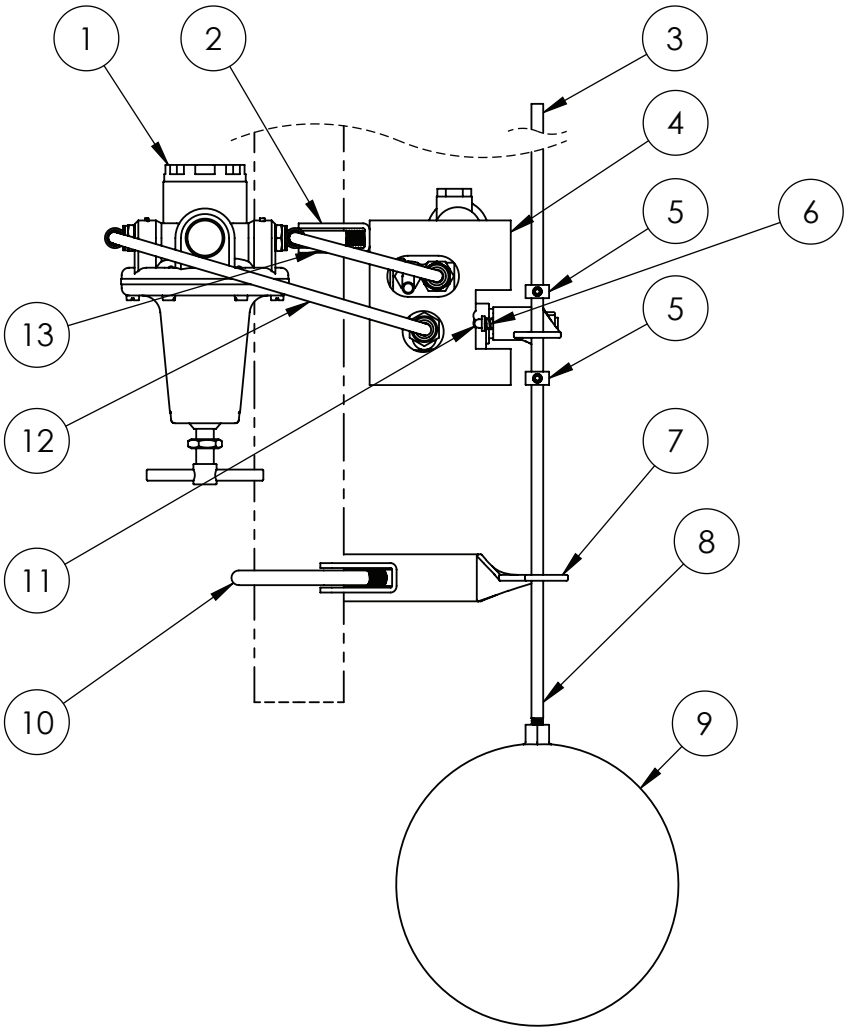
3. For low level on/high level off- When the upper collar actuates the level arm the air supply to the pump will open. When the lower collar actuates the level arm the air supply to the pump will close.

Dimensions



Parts Diagram





Spare Parts List

ITEM	PART NUMBER	DESCRIPTION	QUANTITY
1	110710	CONTROL VALVE (PP FLOAT ONLY)	1
	110710-1	CONTROL VALVE WITH CONDUCTIVE CAP, GROUNDABLE (SS FLOAT ONLY)	
2	109819	SUPPORT/PIPE COUPLING WELDMENT	1
3	109829	GUIDE ROD, UPPER/EXTENSION	2
4	109823	MOUNTING BRACKET	1
5	109826	SETTING COLLAR	2
6	109831	COMPRESSION SPRING	1
7	109824	LOWER GUIDE ARM	1
8	109829-1	GUIDE ROD, LOWER	1
9	109825	FLOAT BALL, POLYPROPYLENE, BLACK	1
	109825-1	FLOAT BALL, 304 STAINLESS STEEL	
10	109820	CLAMPING U-BOLT	1
11	109830	DETENT PIN	1
12	109849	COMPRESSION TUBING, 12” LENGTH	1
13	109848	COMPRESSION TUBING, 6” LENGTH	1
14	109828-1	ELBOW, COMPRESSION FITTING	2
15	J100242	PIPE NIPPLE	1
16	J103396	CAP SCREW	2
17	109822	FLOAT VALVE	1
18	109828	ADAPTER, COMPRESSION FITTING	2
19	109833	GROUNDING CABLE (SS FLOAT ONLY) - NOT SHOWN	1