

# F92 Series Air Volume Controls for Shallow Wells

## Product/Technical Bulletin

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The F92 Series Air Volume Controls for Shallow Wells control the amount of air in the residential water storage tanks of shallow well water systems. Shallow wells are less than 7.6 m (25 ft) deep.

F92 Series Controls automatically maintain air volume in the storage tanks of shallow well water systems by allowing room air to enter into the air charging section of the pump when the water level in the tank rises (loss of air volume).

F92 Controls open the air valve on a rise in tank water level to permit charging air into the storage tank with pressures up to 552 kPa (80 psig).



Figure 1: F92B Air Volume Control for Shallow Wells

Table 1: Features and benefits

Features	Benefits
Sturdy noryl (high performance thermoplastic) body	Resists mechanical damage and corrosion.
Brass internal operating parts	Minimize corrosion.
Pressure tested plastic float	Provides long operating life.
Optional pressure gauge tapping	Allows mounting of a pressure gauge.

## Application

**IMPORTANT:** Use this F92 Series Air Volume Controls for Shallow Wells only as an operating control. Where failure or malfunction of the F92 Series Air Volume Controls could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices, such as supervisory or alarm systems or safety or limit controls, intended to warn of or protect against failure or malfunction of the F92 Series Air Volume Controls.

Water storage tanks in residential water systems rely on a volume of air in the tank to provide system pressure, making it important to control the amount of air in the tank:

- Too little air in the tank results in rapid pump cycling - a problem common in shallow well systems (less than 7.6 m [25 ft] deep).
- Too much air in the tank results in air entering the distribution system - a problem common in deep well systems (more than 7.6 m [25 ft] deep).

For information on air volume controls for deep wells, refer to the *F93 Series Air Volume Controls for Deep Wells Product/Technical Bulletin (Part No. 24-7664-3000)*.



## Installation

**IMPORTANT:** Use only Teflon® thread sealing tape or pipe sealant that is compatible with plastic. Pipe sealant meant for use with metal may corrode the plastic body, causing it to crack.

The F92 Series Air Volume Control for Shallow Wells connects to the air charging section of the pump. Install the control in the tank as follows:

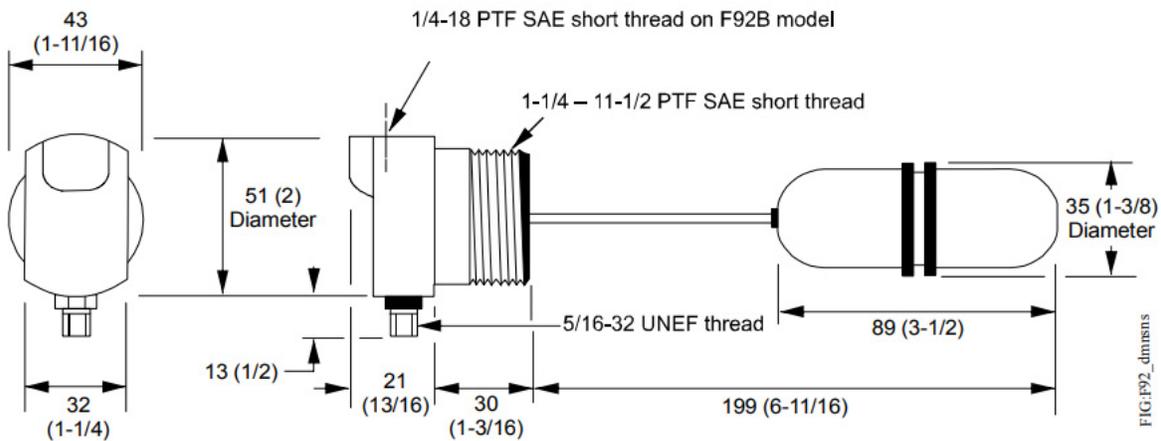
1. If you are using Teflon® thread sealing tape, wrap the 1-1/4 in. NPT threads on the control. Overlap the tape half its width to make two layers, and continue to where the thread ends at the large end. If you are using pipe sealant instead of Teflon tape, apply a generous amount of sealant to the male threads.
2. Use a wrench on the flat sides of the control body to screw the control into a tank opening located about 2/3 of the way up.

**Note:** The tank must have a diameter of at least 229 mm (9 in.) to allow room for the float to operate.

**IMPORTANT:** Tighten (not overly tight) with the air valve and assembly pointed down. Ensure that the wrench does not slip and damage the air valve casing assembly.

3. The F92B Control has a 1/4 in. tapped opening for a pressure port at the top of the control. (The F92A Control does not have a tapped opening.)

When you install a gage into this pressure port, wrap two turns of Teflon thread sealing tape around the male threads of the gage. Overlap the tape half its width to make two layers. If you are using pipe sealant instead of Teflon tape, apply a generous amount of sealant to the male threads.



**Figure 2: F92 Series Air Volume Control for Shallow Wells Dimensions, mm (in.)**

If you do not install a gage, install a standard 1/4 in. pipe plug in the opening. Wrap two turns of Teflon thread sealing tape around the male threads of the plug or gage. Overlap the tape half its width to make two layers. If you are using pipe sealant instead of Teflon tape, apply a generous amount of sealant to the male threads.

**Note:** Do not overtighten. 6.8 N•m (5 lb•ft) of torque is adequate to seal the threads.

4. When the F92 Control is installed, run 5 mm (3/16 in.) tubing from the sniffer valve on the pump to the air valve on the control.

**IMPORTANT:** Do not use the gage opening to connect the pressure switch controlling the operating pump. It must only be used for a pressure gage because the opening can become plugged.

## Setup and adjustments

On initial startup, the level of water in the tank increases. This raises the float until the air valve opens, allowing room air to enter the charging section of the pump and build up pressure in the tank.

The volume of air stabilizes after several cycles.

If the pump short-cycles after several days of operation, the supply of air in the tank is insufficient. Open the air inlet valve on the pump so that more air can enter the system.

Air volume controls require no oiling or adjustments.

## Checkout procedure

Before leaving the installation, observe at least three complete operating cycles to be sure all components are functioning correctly.

## Troubleshooting

If water leaks from the valve body of the F92 Control, remove the tubing from the control valve and determine whether the water is coming up the tube from the pump or from the control.

- If the water is coming from the pump, the snifter valve on the pump is probably defective. Replace the snifter valve.
- If water is leaking through the air volume control, replace the control.

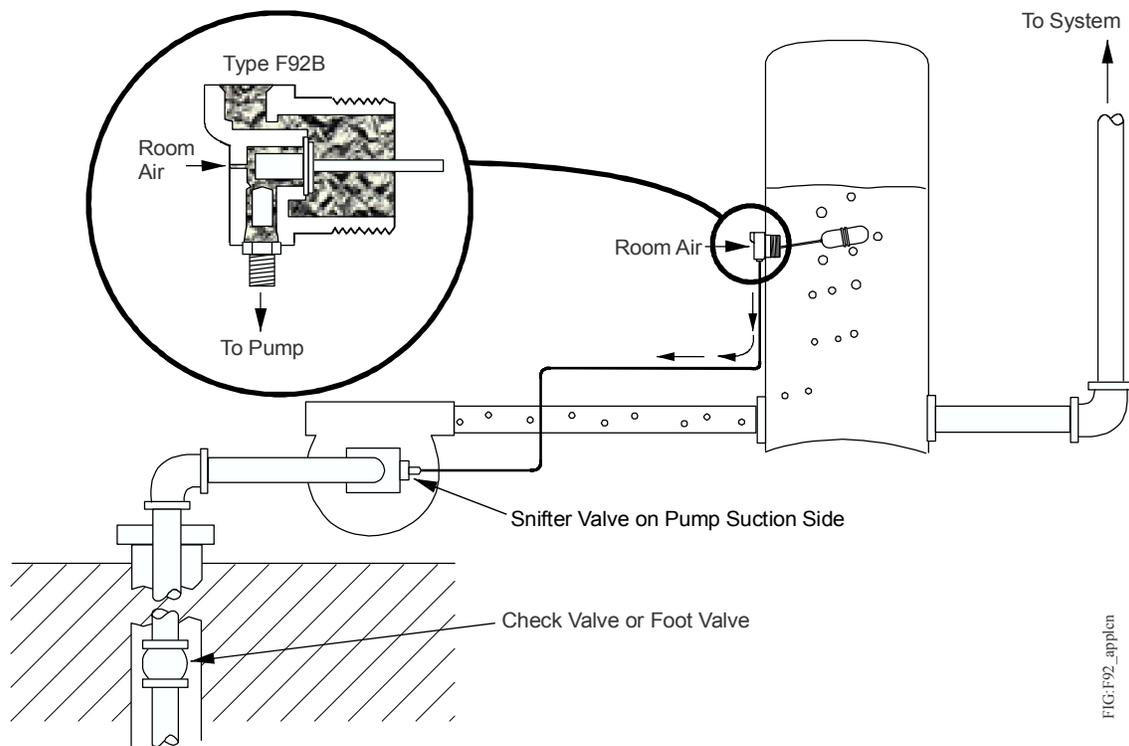


Figure 3: F92 Series Air Volume Control for Shallow Wells Application

## Ordering information

To order, specify the complete product code number.

**Table 2: Selection chart for F92 Series Air Volume Controls for Shallow Wells**

Product code number	Description
F92A-4C	Air Volume Control for Shallow Wells, opens on pressure rise, barbed fitting on charger valve
F92B-1C	Air Volume Control for Shallow Wells, opens on pressure rise, 1/4-18 PTF SAE short gage tap, 0.4 mm (0.016 in.) valve orifice. Use this model in applications where excessive airflow may reduce water pumping capacity.
F92B-2C	Air Volume Control for Shallow Wells, opens on pressure rise, 1/4-18 PTF SAE short gage tap

## Repairs and replacement

Do not make field repairs. Repair parts are not available. If an F92 Series Air Volume Control for Shallow Wells malfunctions, replace the control. Contact your nearest Johnson Controls®/PENN® distributor or sales representative to purchase a replacement.

## Technical specifications

### ***F92 Series Air Volume Control for Shallow Wells***

Body material	30% glass-filled Noryl thermoplastic
Float material	Plastic with brass rod
Maximum tank pressure	552 kPa (80 psig)
Shipping weight	Individual: 0.19 kg (0.42 lb)
Tank connector size	1-1/4 in. Male NPT
Air flow restrictor orifice	F92B-1C Model: 0.4 mm (0.016 in.)
Snifter line connection	Flare fitting for 5 mm (3/16 in.) tubing

*The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult Johnson Controls/PENN application engineering at 1-414-524-5535 or 1-800-275-5676. Johnson Controls shall not be liable for damages resulting from misapplication or misuse of its products. © 2018 Johnson Controls.*



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