



TECHNICAL DATA
DOCUMENT

Inlet Solenoid Valve

Low-Pressure 3/8" Brass · Normally Closed · Part #93368 / #93596



KEY SPECIFICATIONS

IHC PART NUMBERS

93368 · 115V coil

93596 · 230V coil

VALVE TYPE

2-way, normally closed (NC)

BODY / SIZE

Brass · 3/8"

SUPPLY PRESSURE

25 – 100 psi (low-pressure side)

SUPPLY FLOW

≥ 1.5 × rated pump capacity

COIL VOLTAGE

115V or 230V, matching the station supply

CONTROL

PLC Output 1 (relay "1")

ELECTRICAL CONNECTION

DIN plug · 4-spade connector

LOCATION

Pump Station inlet, right after the 5-micron pre-filter

Specifications

General Description

In the FanMist system, the inlet solenoid valve is an automated on/off switch for the low-pressure water supply going into the high-pressure pump. It is a **normally closed (NC), 3/8" brass solenoid valve**, factory-installed on the Pump Station inlet line right after the 5-micron pre-filter and on the inlet side of the EP Series pump.

The PLC controls the valve, and it opens only when the pump is commanded to run. This keeps water from flowing through the pump and high-pressure lines when the system is OFF or in standby, while the main water supply valve stays ON at all times.

Part Family



93368

Inlet solenoid valve, 3/8" brass, NC, with **115V coil**. For 115V 1Ph Pump Stations.



93596

Inlet solenoid valve, 3/8" brass, NC, with **230V coil**. For 230V Pump Stations.

The coil and DIN plug are the most common failure points. Keep a spare coil and DIN plug on hand, and replace the valve, coil or DIN plug as a matched set when possible.

Technical Data

Inlet Solenoid Valve	
Function	Automatic on/off control of the low-pressure supply water to the high-pressure pump
Valve type	2-way, normally closed (NC): closed when de-energized, open when energized
Body material / size	Brass · 3/8"
Operating principle	Coil-driven internal piston; a rubber diaphragm controls the flow
Service	Low-pressure inlet side only, not exposed to 1000-psi
Inlet supply pressure	25 – 100 psi
Supply flow required	At least 1.5 × the rated pump capacity, continuous and uninterrupted
Medium	Treated water after 5-micron filtration (softened or RO recommended)
Coil voltage	115V (#93368) or 230V (#93596), matching the Pump Station supply
Control source	Pump Station PLC, Output 1 (relay "1")
Electrical connection	DIN plug connector with 4 spade prongs, center screw and strain-relief nut
Installed location	Pump Station inlet line, after the 5-micron pre-filter (#92608) and before the EP Series pump



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Component Identification & Water Path



Figure 1 — Inlet solenoid valve, shown with the DIN plug removed so the coil's 4-spade connector is visible.

COMPONENTS

- 1 Coil retaining nut:** remove it, then lift the coil straight up off the valve stem
- 2 Solenoid coil:** 115V (#93368) or 230V (#93596). Moves the internal piston with an audible, tactile "click"
- 3 4-spade connector:** receives the DIN plug from the PLC Output 1 circuit
- 4 Diaphragm cover & screws:** the internal rubber diaphragm controls flow
- 5 Brass valve body:** 3/8", low-pressure service only
- 6 Threaded port:** inlet from the pre-filter, outlet to the pump. Observe the flow direction on the body when replacing

Water Flow Path

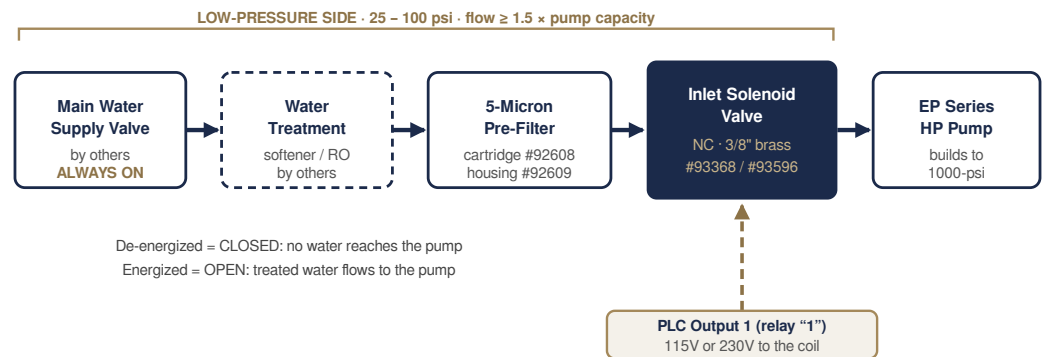


Figure 2 — Supply water path from the main supply valve to the high-pressure pump.

1. The main water supply valve to the system, provided by others, is always left **ON**.
2. Water passes through the 5-micron pre-filter (Part #92608).
3. Water reaches the inlet solenoid valve.
4. When the valve opens, water flows directly into the high-pressure pump.

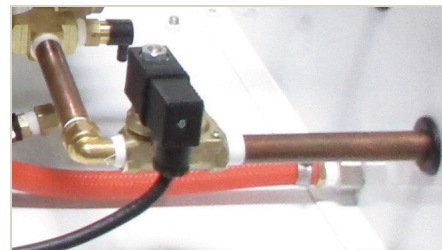


Figure 3 — Inlet solenoid valve installed inside the Pump Station. Incoming low-pressure supply water (copper line, right) enters the valve, and the DIN plug and cable on the coil connect to the PLC circuit.



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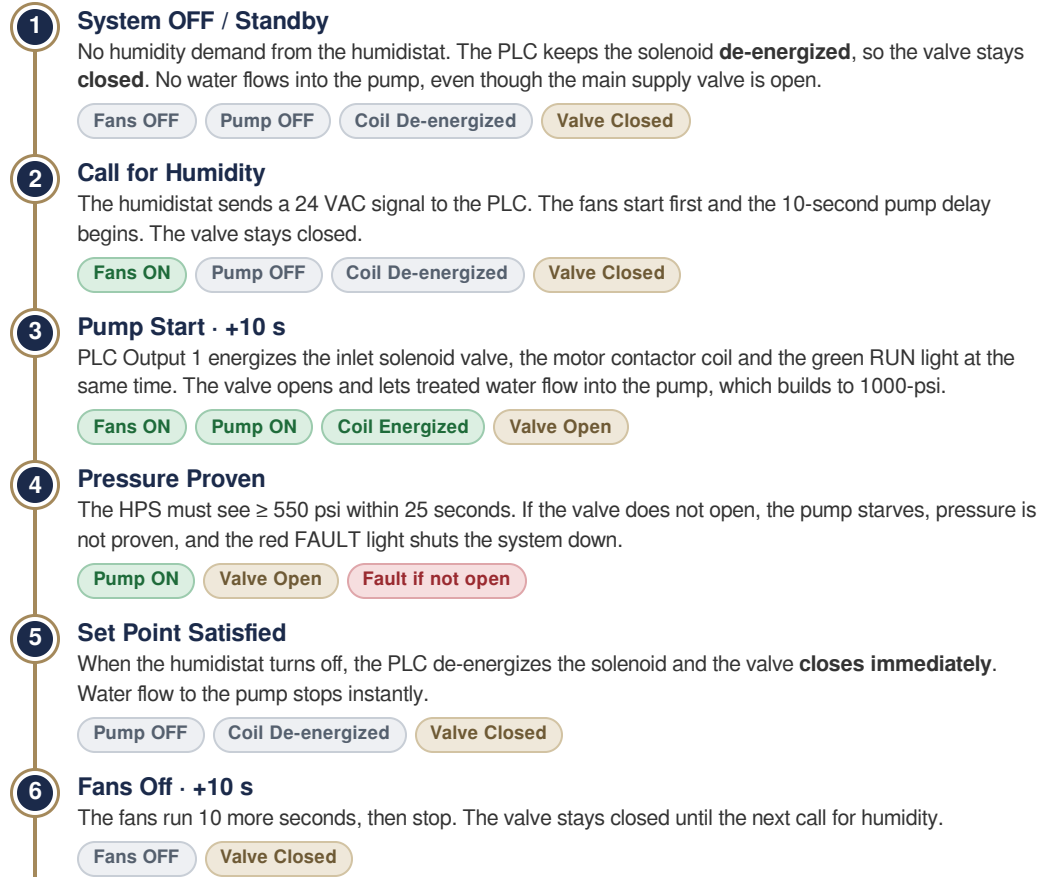
DIN plug · 4-spade connector

LOCATION

Pump Station inlet, right after the 5-micron pre-filter

Operating Sequence & Function

The inlet solenoid valve follows the pump. It opens only when PLC Output 1 starts the pump, and it closes the moment the pump is told to stop. Valve-position tags are shown in a neutral color, because "closed" is the normal standby state, not a fault.



Why This Design Is Important

- **Safety & protection:** the pump only gets water when it is about to run. This avoids dry-running damage and reduces wear on the pump head and seals.
- **Seal protection at rest:** no constant supply pressure on the pump seals while idle, less chance of inlet leaks, and no stagnant water sitting in the pump.
- **Water conservation:** no constant trickle or bypass when the system is idle.
- **Easy daily operation:** the main water supply valve never has to be turned on and off. It stays ON, and the solenoid does all the automatic control.

Bottom line: the inlet solenoid valve is the PLC's "smart faucet" on the incoming water line. It lets the main supply valve stay open 24/7 while water flow starts and stops automatically, exactly when the high-pressure pump needs it.

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Electrical & Supply Integration

Electrical Integration

The inlet solenoid valve is factory-wired inside the Pump Station. It sits on the PLC **Output 1** circuit together with the electric drain valve (EDV), the motor start contactor coil and the green RUN light. Ten seconds after the fans start, PLC relay "1" closes and energizes all four at the same time. Per the station wiring schematics, the coil runs at the station's line voltage, so the coil voltage must match the Pump Station supply.

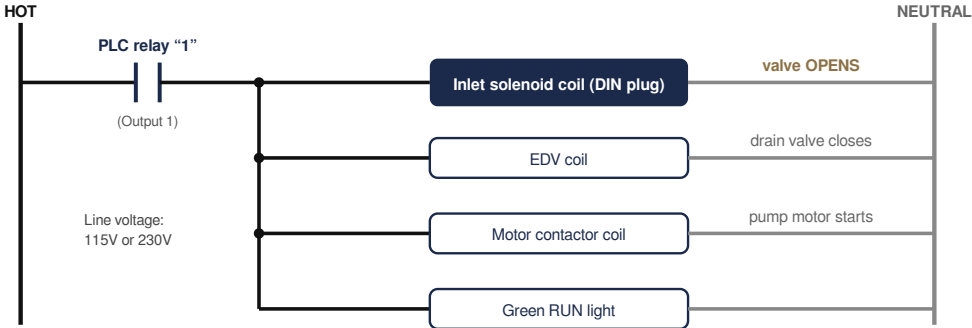


Figure 4 — Simplified diagram of the PLC Output 1 circuit. For full detail, see the Pump Station schematics in TDD IHC–TDD–WIR–1026–RevA (FanMist System Wiring & Schematics).

Electrical Item	Detail
Coil, #93368	115V. Used on 115V 1Ph Pump Stations.
Coil, #93596	230V. Used on 230V Pump Stations.
Connection	DIN plug onto the coil's 4-spade connector, held by a center screw and a strain-relief nut
Voltage check	With the pump called to run, 115V or 230V should be present at the coil prongs. No voltage means a wiring or PLC Output 1 problem.
Functional check	A distinct "click" you can feel and hear as the piston moves when the coil is energized

Supply Water Requirements

Sizing the Incoming Supply	
Water flow	Maintain 1.5 × the rated pump capacity
Water pressure	25 psi or higher, up to a maximum of 100 psi
Continuity	Continuous and uninterrupted, so the high-pressure pump is never starved

Size the incoming supply for continuous, uninterrupted flow to the inlet solenoid valve and pump. Water treatment such as a twin-alternating softener or RO must also support continuous 24-hour demand without interrupting supply to the valve. Untreated water causes debris and scale that can hold the diaphragm open or restrict flow.



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Maintenance

When to Service

- No water flow when the pump is called to run
- Water keeps flowing, or drips, when the pump is OFF
- The coil makes no audible or tactile "click"
- The amber MAINT light or fault indicators come on
- Pump pressure is reduced or operation is inconsistent

Tools Needed

Phillips screwdriver · multimeter (for the voltage check) · shop rags · replacement coil, DIN plug or complete valve, as needed.

Step-by-Step Maintenance & Troubleshooting

- 1 Safety First.** Turn the pump switch OFF. Lock out/tag out electrical power. Shut off the main water supply valve, or close the manual inlet ball valve.
- 2 Visual & Functional Check.** Restore power and turn the pump switch ON, with the humidistat calling for humidity. Place your fingers on the solenoid coil. You should feel a distinct "click" as the internal piston moves, or hear it if the area is quiet. If there is no click, go on to the electrical and coil checks.
- 3 DIN Plug / Connector Inspection.** Remove the center screw and strain-relief nut from the DIN plug. Separate the outer shell from the inner connector. Inspect the wiring for damage, corrosion or loose terminals. Clean any carbon buildup off the 4 spade prongs. Replace the DIN plug if it is damaged or corroded.
- 4 Coil Inspection & Replacement.** Remove the retaining clip/nut, then pull the coil straight up off the valve stem. Look for bulging, holes or deformation (signs of a short circuit or overheating), burn marks or melted plastic, and water intrusion, which is a common cause of failure. If the coil is damaged, replace it with the correct voltage model (93368 or 93596). Reinstall and test for the "click."
- 5 Valve Body & Diaphragm Check.** The internal rubber diaphragm controls flow. If the valve lets water flow when OFF, or restricts flow when ON, the diaphragm is likely torn, out of position or scaled. Replace the entire solenoid valve body. This is recommended over attempting a diaphragm repair.
- 6 Electrical Verification.** Use a multimeter to confirm that 115V or 230V reaches the coil prongs when the pump is called to run. No voltage means a wiring or PLC output problem.
- 7 Functional Test After Reassembly.** Reconnect all lines and restore the water supply. Temporarily remove the pump outlet line and attach a short hose running to a bucket. Turn the pump ON: water should flow freely at full inlet line pressure. Turn the pump OFF: flow must stop immediately. If the test passes, reinstall the outlet line and return to normal operation.

Replacement Notes

- Always replace the complete valve, coil or DIN plug as a matched set when possible.
- The inlet solenoid is a low-pressure component (25–100 psi inlet) and is not exposed to 1000-psi.
- Keep a spare coil and DIN plug on hand. They are the most common failure points.

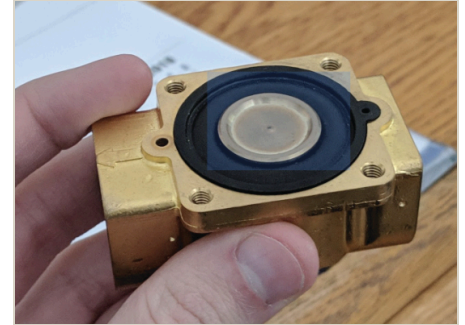


Figure 5 — Valve body with the cover removed, showing the internal rubber diaphragm that controls flow. Viewed from the top, the center brass should be indented.



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LOCATION

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Troubleshooting

SAFETY WARNING: Always lock out/tag out electrical power, depressurize the system (the EDV must open) and verify zero pressure on the gauge before any inspection or repair. Use proper safety equipment.

Symptom	Possible Cause	Corrective Action
Clicking sound present, but still no water flow	Debris, scale or a damaged diaphragm inside the valve	Replace the complete solenoid valve body. Check water treatment (TDS/hardness).
Inlet solenoid not opening	Failed coil or diaphragm	Check the DIN plug and the coil supply voltage. Replace the solenoid (Part #93368 or #93596).
Intermittent water flow or erratic pump pressure	Loose DIN plug, low voltage or a failing coil	Tighten the DIN plug connections. Verify a stable coil supply voltage. Replace the coil.
Low inlet pressure to the pump (or pump cavitation)	Clogged pre-filter, restricted supply line, or a partially clogged/scaled solenoid	Replace the 5-micron cartridge (Part #92608). Clean or replace the solenoid. Verify the RO/softener.
No audible or tactile click when the system is called	Faulty coil, bad DIN plug, or no PLC output	Inspect the DIN plug and wiring. Replace the coil. Test PLC relay "1."
No water flow to the pump when the system starts	Inlet solenoid not opening (no coil voltage, or a failed coil)	Check for the click. Test the voltage at the coil. Inspect or replace the DIN plug or coil.
Pump runs but has no pressure or low pressure	Inlet solenoid not opening, a clogged pre-filter, or a leak	Clean or replace the inlet solenoid. Replace the pre-filter. Inspect the tubing for leaks.
Pump pressure builds slowly, or the red FAULT light comes on	Restricted flow, or no water through the solenoid	Verify the inlet pressure gauge reads 25–100 psi. Clean or replace the solenoid valve.
Water keeps flowing or drips after the pump shuts off	Solenoid stuck open, or a torn diaphragm	Replace the complete solenoid valve body.

If you see the pump not filling or not getting water (red FAULT light), first check that the inlet solenoid clicks open when the system is commanded to run. You can hear it or feel it. For all system symptoms, see the standalone FanMist Troubleshooting Guide.

Related Documents

Document	Relevance
IHC-TDD-WIR-1026-RevA · FanMist System Wiring & Schematics	PLC Output 1 circuit and the 115V / 480V Pump Station schematics
IHC-TDD-PLC-0926-RevA · Omron PLC	Output 1 sequencing, T1/T2 timers and the 25-second HPS timer
Electric Drain Valve (EDV) TDD	Companion valve energized on the same Output 1 circuit
IHC-TDD-EPS-0926-RevA · EP Series Pumps	The pump this valve supplies