

AquiTron

AT-V-NC

Solenoid Valve Normally
Closed 230V



**INSTALLATION
& OPERATION
INSTRUCTIONS**



aquilar
leak detection solutions

AT-V-NC

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Brass bodied WRAS approved (certificate N. 1411048) pilot operated diaphragm valve for use with TraceTek and AquiTron leak detection systems.

Normally Closed (fail safe), with manual release override. Suitable to shut off water (verify suitability of fluid with materials in contact). 230VAC 100% duty cycle solenoid coil.

Option to mount in any position apart from coil facing down (coil facing up is recommended).

A. GENERAL INFORMATION

The AT-V-NC solenoid valve is a fail-safe normally closed valve. Meaning it is closed in an unpowered state. In an emergency situation it is possible to manually override this and open the valve without power. A small flat bladed screwdriver is required. This is inserted as shown on page 4 and the screw head rotated quarter of a turn in a clockwise direction.

Important: For normal operation the grub screw head must be returned to its original position.

B. INSTALLATION

MECHANICAL CONNECTION

- Make sure that there is no power arriving at the coil during the installation phase
- Make sure that the arrow or numbers reported on the solenoid valve correspond to the direction of fluid flow
- Make sure that no foreign bodies enter the solenoid valve during assembly
- Make sure that the piping is perfectly clean. Due to their internal configuration, solenoid valves tend to trap solid particles, dirt and sediments entrained by or suspended in the fluid
- Use high quality products to seal the piping (tapes, adhesives, mastics, bi-conical fittings, etc.). Do not use hemp or similar products
- The solenoid valves must be screwed onto the piping using the appropriate wrench on the hexagonal part or on the parallel flats of the body. The coil must never be used as a lever as this may distort the core tube and prevent the correct operation of the solenoid valve
- Solenoid valves will work in any position with the coil facing upwards, it cannot be installed with the coil facing down.

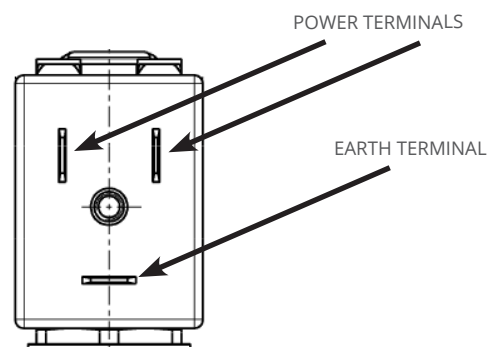
Warning: Pilot operated solenoid valves are only designed to control water in one direction, and therefore not suitable for applications that may encounter water flowing in two directions, such as the return circuit in a 'flow and return' system. Please contact Aquilar for suitable alternatives.

ELECTRICAL CONNECTION

- Check that the voltage and frequency values stamped on the coil correspond to the power supply
- Solenoid valves must be connected to an appropriate earthing system in accordance with the voltage and local standards
- The electrical connection does not have a fixed polarity, except in the case of latching valves, in which case the polarity is indicated by the symbols "+" and "-" stamped on the coil near the spade terminals

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- Do not connect the coil to the power supply if it is not mounted on the valve
- The coils can be rotated to suit specific positioning requirements: after having established the correct position, tighten the locknut
- Unless otherwise specified on the component itself, all coils are rated for continuous duty
- The maximum temperature of the coil is linked to the temperature of the fluid, ambient temperature and the operating conditions of the valve on which it is mounted
- Particularly narrow spaces or high ambient temperatures can contribute to increasing the temperature of the coil. Under normal conditions, however, the coil will heat up to temperatures that are too high for skin



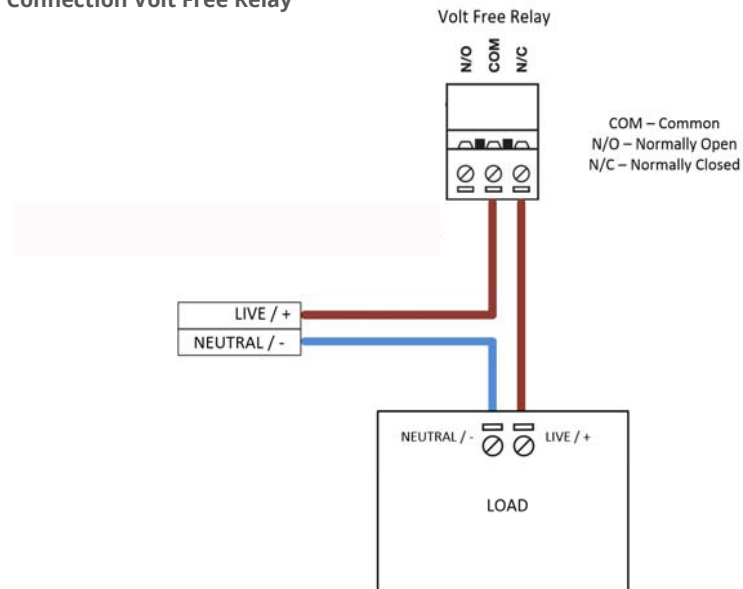
Typical AT-V-NC connection to volt free relay within AquiTron alarm panel.

MAINTENANCE INSTRUCTIONS

- The electrical connection of the solenoid must be inspected at intervals not exceeding 12 months
- The pipework connections must be checked for soundness at intervals not exceeding 12 months
- The valves should be cleaned regularly at a frequency in line with the type of application, which we recommend does not exceed 12 month intervals, see process below:
- The valves are held in the open position during operation, to avoid possible sticking of the plunger in the shaft these should be cycled on a regular/frequent basis at intervals no greater than weekly
- If the water does not isolate firstly check the operation of the solenoid if this is working

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Typical Connection Volt Free Relay



TO INSPECT AND CLEAN THE SOLENOID VALVE WE RECOMMEND THESE STEPS:

- Remove the top circlip and solenoid coil then remove the stainless steel guide tube (inside the tube there is a loose plunger and spring)
- Check both tube and plunger for solid particles then clean with solvent, (see below) and water
- Remove the valve upper body screws and check the diaphragm for debris or damage
- Clean all parts inside the valve
- Once satisfied that the parts are not damaged and the inside is clean then reassemble the valve and check operation of the valve

RECOMMENDED SOLVENTS

Stubborn spots, stains and light discolouration. Water marking. Light rust staining

- Mild, non-scratching creams and polishes. Apply with soft cloth or soft sponge and rinse off residues with clean water and dry avoid cleaning pastes with abrasive additions. Suitable cream cleansers are available with soft calcium carbonate additions, e.g. 'Jif', or with the addition of citric acid.

For calcium deposits

- Soak in a 25% vinegar solution and use a nylon brush to remove deposits Badly neglected surfaces with accumulated grime deposits
- A fine, abrasive paste as used for car body refinishing, e.g. 'T-cut' rinsed clean to remove all paste material and dried, it should be ensured that the stainless steel is neutralised and suitable for re-installation in to a potable water system cleansers are available with soft calcium carbonate additions, e.g. 'Jif', or with the addition of citric acid.

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TECHNICAL INFORMATION

Port size ISO 228	G½	G¾	G1	G1¼	G1½
Orifice size (mm)	13.5	18	24	30	45
Differential pressure (bar) Δp min	0.35	0.35	0.35	0.50	0.50
Differential pressure (bar) Δp Max Gasses	16	12	12	10	10
Differential pressure (bar) Δp Max Liquids	16	12	12	10	10
Maximum allowable pressure (bar)	20	20	20	15	15
Kv (m3/h)	3.8	5	12	15	27
Power absorption Inrush VA	12	12	12	23	23
Power absorption Holding VA	6	6	6	14	14
Power absorption Holding W	4	4	4	9	9
Opening time	from ~300ms to ~1500ms				
Closing time	from ~1000ms to ~2000ms				
Fluid temperature (°C) NBR	-10 to +90				
Fluid temperature (°C) EPDM	-10 to +140				
Max viscosity	5°E (~37 cStokes or mm ² /s)				
Weight (Kg)	0.38	0.52	1.08	1.59	2.51

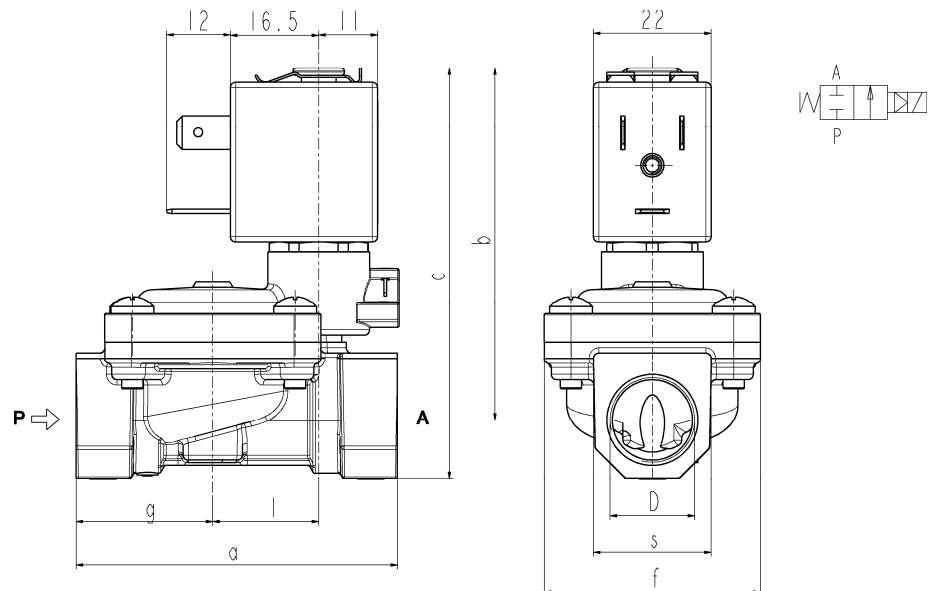


Emergency override manual release grub screw head.

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DIMENSIONS

D	A	B	C	F	G	I	S
15mm - 1/2"	66	68	82	40	29	20	27
22mm - 3/4"	79	72.5	89	50	35.5	24.5	33
28mm - 1"	105	85	106	71	46	28	42
35mm - 1 1/4"	113	106	132	81	50	40	52
42mm - 1 1/2"	140	110	140	110	64	53	60



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