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INNOVACIÓN Y COMPROMISO

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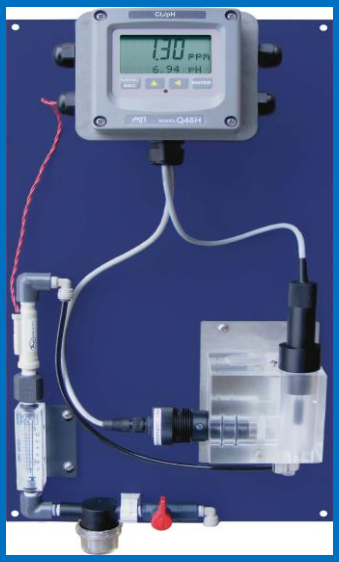
O & M Manual



Model Q46
Optional Panel Addendum

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1.1 General

The Q46 panel assembly option provides a complete sample flow control system mounted on a PVC plate. The purpose of this assembly is to simplify installation of water quality monitors and provide reliable flow control to the sensor flowcell without the need for external hardware.

Each panel provides the following items:

1. An inlet ball valve to turn sample flow on and off

2. An in-line strainer to eliminate particulates larger than 180 microns. The strainer has a clear bowl to permit quick visual inspection.

3. An acrylic flow indicator (rotameter) to provide quick visual indication of sample flow rate.

4. A fixed flow regulator that automatically controls flow at about 6 GPH (0.4 LPM). The flow regulator has either a Buna-N or Viton deformable orifice depending on the application. Viton is used for dissolved ozone systems while Buna-N is used for most others. Inlet pressure may vary between 2 and 150 PSI.

5. Optional: When ordered, some panels are equipped with an in-line flow switch that provides for an alarm in the event that sample flow stops. This flow switch is a normally-closed contact that opens if sample flow stops. There is no indication build into the panel. This contact is provided so that the user can signal a local PLC or telemetry system, or to activate some other device supplied by the user.

Q46 Flow Panels are supplied with a “speed fit” type of inlet fitting. It is suitable for connection of ¼” O.D. sample tubing. A 10 ft. length of tubing and a ¼” NPT tubing adapter are supplied with the panel for installation.

The drain connection is a ½” I.D. hose barb. Flexible ½” I.D. tubing is available from most hardware stores and must be supplied by the user.

Figure 1 shows the layout of the panel along with dimensional data.

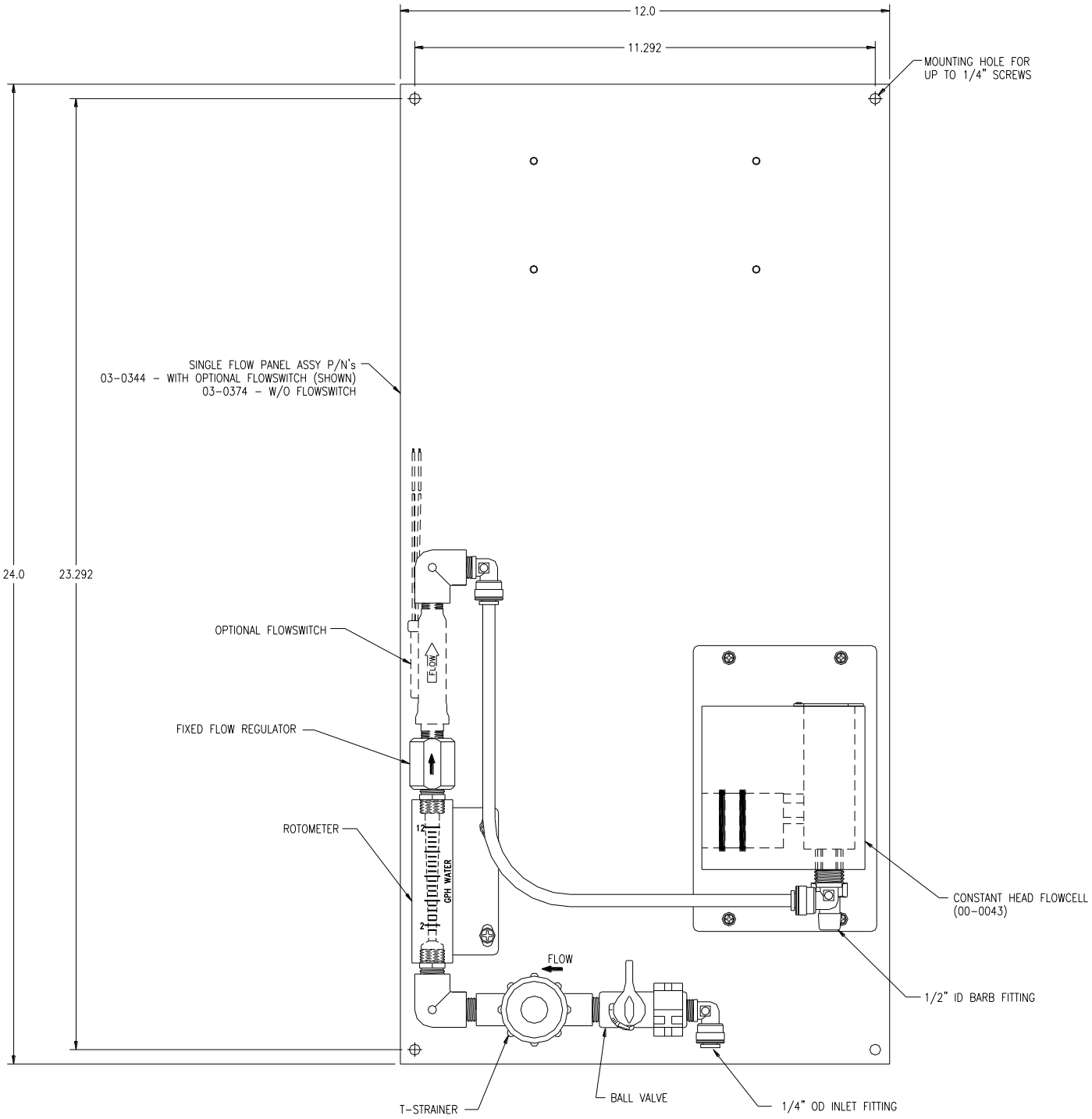

Figure 1 - Typical Panel Assembly

1.2 Installation

Installation of the panel system is simple. Note that the instructions for wiring of the monitor and preparation of the sensor are contained in the main Q46 manual.

1. Mount the panel to the wall or other support using the 4 corner holes.

2. Connect the water sample to the inlet fitting attached to the ball valve and turn on your water supply line.

3. Connect your drain tubing to the drain fitting on the flowcell and to a suitable drain pipe in your installation site.

4. Put the sensor (prepared per manual) into the flowcell.

1.3 Startup

Once steps 1-4 above are complete, simply open the ball valve. Water will begin to flow immediately and the flow indicator should show a flow rate of about 6 GPH. There are no adjustments to be made in this system.

1.4 Optional Flow Switch

As mentioned in the introduction, the optional flow switch provides the ability to remotely indicate that sample flow to the monitor has stopped for some reason. The flow indicator on the panel is normally sufficient for locations where sample flow can easily be checked manually. However, if the monitor is located at a remote site, it is often useful to provide an alarm through the telemetry system in the event of flow interruption.

The flow switch has two wires for connection. With no flow, there is an open circuit and with flow there is a closed contact. There is no power on this contact, and the contact is suitable only for very low currents. Connection to a PLC or other low power input is allowed, but you cannot connect a high current load through this contact.

The contact rating is .17 A @ 120 VAC, .08 A @ 240 VAC, .13 A @ 120 VDC, .06 A @ 240 VDC.

Figure 2 shows a simple local alarm arrangement that could be used if desired for a local indication of loss of flow. It requires the user to supply a power supply and small lamp indicator.

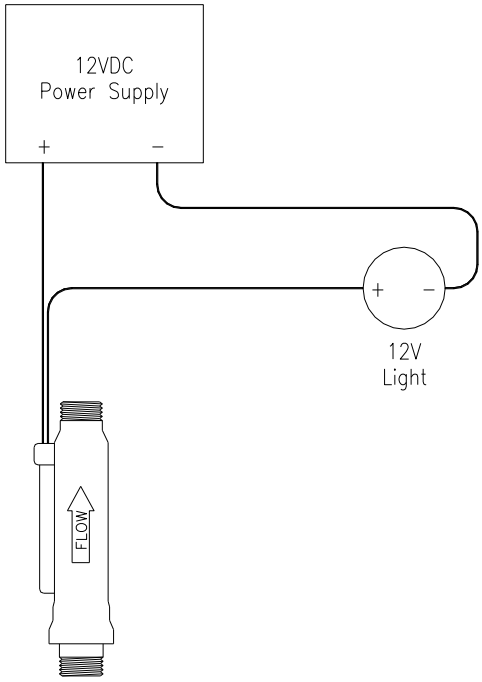

Figure 2 - Low Flow w/Visual indicator wiring

1.5 Strainer Maintenance

The only maintenance required for the sampling system is cleaning of the sample strainer. The clear plastic bowl on the bottom of the strainer unscrews so that the internal screen can be removed and cleaned when necessary. Turn off sample flow by closing the ball valve and then unscrew the bowl. The screen may come off with the bowl, or may stick to the body, in which case it will pull off easily. Rinse out the screen and place it back in the bowl.

Handle the screen carefully to avoid deforming it too much. The screen needs to stay circular so that it slips over the molded circular support in the body of the strainer. Before screwing the bowl back on, examine the rubber gasket seal to be sure it is free of any material that might interfere with the seal. Screw the bowl back on to the body carefully to insure that the screen seats properly.

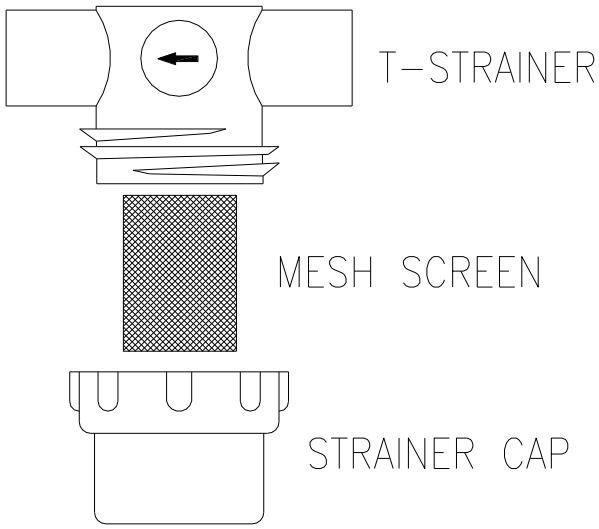

Figure 3 - T-Strainer Exploded View

1.6 Flow Regulator Cleaning

While it is not common, it is possible that a particle might make it past the strainer and cause clogging of the flow control orifice. If sample flow drops below 4 GPH and the strainer is clean, this is most likely the problem. Should this happen, the flow regulator will need to be removed. It is best to remove the entire flow control assembly from the panel before removing the regulator.

1. Shut off the water supply to the panel first. Then disconnect the ¼" OD tubing from the fitting in the ball valve and from the right angle fitting at the outlet of the flow control assembly.

2. Using the flat blade of a screwdriver, open the plastic snap clamp holding the ball valve.

3. Remove the 2 screws holding the flow indicator plate. The entire flow control assembly will then be free of the panel.

4. Unscrew the flow regulator element from the top of the flow indicator. You will need a wrench to hold the outlet fitting from the flow indicator while you rotate the regulator counterclockwise.

5. Connect the ¼" O.D. inlet tube from your water supply to the right angle fitting still attached to the outlet side of the regulator. Opening your supply valve will force water backward through the regulator, washing out any stuck particles. Be sure to point the inlet side of the regulator toward a container or sink as water will be shooting out of it.

6. Disconnect the water line, screw the regulator back onto the flow indicator. Before putting the flow assembly back onto the panel, connect your sample to the inlet fitting and turn on the flow to verify that the flow is back to the normal 5-6 GPH on the flow indicator.

1.7 Flow Switch Maintenance

There is no maintenance required for the flow switch. It is possible that the internal piston mechanism might stick after many months or years of operation, at which point it will have to be changed.

Spare Parts

44-0296	¼" NPT x ¼" O.D. right angle fitting
44-0269	1/8" NPT x ¼" O.D. right angle fitting
44-0267	Ball Valve
44-0264	¼" NPT elbow
44-0266	¼" NPT nipple
44-0276	¼" O.D tubing, Polyurethane
44-0319	Ball valve support hanger
45-0248	Flow indicator mounting plate
55-0063	Tee Strainer
55-0055	Flow Indicator
55-0048	Fixed flow regulator, Buna-N
55-0057	Fixed flow regulator, Viton (for ozone systems)
55-0050	Flow switch

WATER QUALITY MONITORS

Dissolved Oxygen
Free Chlorine
Combined Chlorine
Total Chlorine
Residual Chlorine Dioxide
Potassium Permanganate
Dissolved Ozone
pH/ORP
Conductivity
Hydrogen Peroxide
Peracetic Acid
Dissolved Sulfide
Residual Sulfite
Fluoride
Dissolved Ammonia
Turbidity
Suspended Solids
Sludge Blanket Level
MetriNet Distribution Monitor

GAS DETECTION PRODUCTS

NH_3	Ammonia
CO	Carbon Monoxide
H_2	Hydrogen
NO	Nitric Oxide
O_2	Oxygen
CO	Cl2 Phosgene
Br_2	Bromine
Cl_2	Chlorine
ClO_2	Chlorine Dioxide
F_2	Fluorine
I_2	Iodine
H_X	Acid Gases
C_2H_4O	Ethylene Oxide
C_2H_6O	Alcohol
O_3	Ozone
CH_4	Methane (Combustible Gas)
H_2O_2	Hydrogen Peroxide
HCl	Hydrogen Chloride
HCN	Hydrogen Cyanide
HF	Hydrogen Fluoride
H_2S	Hydrogen Sulfide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
SO_2	Sulfur Dioxide
H_2Se	Hydrogen Selenide
B_2H_6	Diborane
GeH_4	Germane
AsH_3	Arsine
PH_3	Phosphine
SiH_4	Silane
HCHO	Formaldehyde
$C_2H_4O_3$	Peracetic Acid
DMA	Dimethylamine