

OPERATING and INSTALLATION
INSTRUCTIONS
FOR
HIGH PURITY AUTOMATIC
CHANGEOVER MANIFOLD
Series 918E - AUTO-LOGIC

DESCRIPTION

The AUTO-LOGIC changeover manifold is the solution to providing an uninterrupted supply of gas to your instrumentation or process. The feed and line regulators and the interconnecting valves are of high purity, metal diaphragm, diffusion resistant construction capable of passing a helium leak rate test of 1×10^{-9} .

The manifold is assembled using a central control section and a manifolded bank of cylinders on each side to provide the gas supply. A commonly used simple two station automatic manifold employs a central control section with a single pigtail installed on each inlet to connect one cylinder on each side as the supply sources.



This unit is for use with non-flammable, non-corrosive gases only

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INSTALLATION

The AUTO-LOGIC is installed in a NEMA 4X enclosure to help ensure that components are not twisted and develop leaks during handling and operation. The enclosure is supplied with four tabs for mounting the unit to a wall or other structure. There is no need to open the NEMA 4X enclosure for installation. Mount the manifold at a suitable height to allow the pigtailed to be easily connected to the cylinder valves. After mounting the manifold follow these steps:

- a. Install the pigtailed by connecting to the 1/4" npt inlet connections at the bottom of the enclosure. If an optional pigtail set has been ordered a CGA 346 male has been provided at the inlet for easy installation. Your requested CGA connection will be on the opposite end.
- b. Your system should have a valve downstream of the AUTO-LOGIC outlet to provide for adjustment of the delivery pressure.
- c. Do not plug the AUTO-LOGIC in at this time.

OPERATION

Follow the simple steps below for the initial set-up of your system.

- a. At this time the on-off valve that is installed down stream of the manifold should be closed
- b. Connect full cylinders to both sides of the manifold
- c. **Slowly** open all the cylinder valves.
- d. Plug the power cord into a standard 110vac outlet. In a moment the display will appear showing the cylinder pressures of the right and left banks. This is the home screen. Should an audio alarm sound press the "ESC" key on the controller to silence and see option "a" after completing this section.
- e. Open the NEMA 4X enclosure and turn the increase/decrease knob clockwise until your desired delivery pressure is shown on the display.
- f. When you are ready to operate open the down stream on-off valve.
- g. At this point no further adjustments will be required unless you wish to change the delivery pressure of the system.

The operation from this point is simple. When the operating cylinder bank is depleted the system will automatically switch to feed gas from the other cylinder bank. When this happens the green light will switch to red & an audio alarm will sound. To silence the audio alarm press the "ESC" key once. The alarm will remain silenced for 30 minutes. If the cylinders have not been replaced within this time frame it will re-activate. Simply press the "ESC" key again to silence it. The red light will remain illuminated until the cylinders have been replaced. To disable the audio alarm please refer to section e in the option section. Once the empty cylinders have been replaced with full cylinders, the system recognizes the change and sets itself to perform the switch in the reverse direction when the now operating bank is exhausted. No adjustments to the system are necessary.

CAUTION: ALWAYS OPEN CYLINDER VALVES SLOWLY TO PREVENT DAMAGE TO THE CHANGEOVER.

OPTIONS

- a. Alarm activation at start up is caused by the system recognizing that there is less than full cylinder pressure (2400 psig) at start up. This is a normal occurrence when connecting low pressure cylinders or dewars for the first time. Once you have pressed the "ESC" key there will be no need to reset the alarm in future changeovers.

- b. Primary side - the default setting is the right side, if the left side is desired press the "A" key twice this will bring you to the in service screen. At this point press the "B" key once. The screen will show the right side going from in use to stand by and the left side going from stand by to in use. Once this program change has been made press the "ESC" key to return to the home screen.

To reverse the settings follow the above instructions.

- c. Changeover set point - the AUTO-LOGIC has been factory preset to change banks at 300 psig. this is the maximum changeover pressure and should never be exceeded. If a lower changeover point is desired it can be programmed by the following steps.

Press the "A" key once, the changeover set point screen will appear. The cursor is now blinking on the left cylinder set point. To change this setting;

Press the "OK" key once.

Press the "--" key until the desired set point is reached.

Press the "OK" key once to store the new value. To change the right cylinder set point;

Press the "--" once. This will move the cursor down to the right cylinder value.

Press the "OK" key

Press the "--" key until the desired set point is reached.

Press the "OK" key to store the new value.

Press the "ESC" key to return to the home screen.

If an increase in set point is needed simply replace the "--" key with "+" key in the above instructions.

CAUTION

When adjusting the changeover set point, the lowest pressure setting should be at least 50 psig higher than the delivery pressure. To maintain purity and functionality on high pressure cylinders it is recommended not to set the changeover pressure at less than 200 psig regardless of the delivery pressure.

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Remember not to exceed the 300 psig setting when increasing the changeover point.

- d. The AUTO-LOGIC has an integrated leak detection system that is automatically activated when cylinders with greater than 2000 psig are installed. The system will monitor the stand-by bank, and in the event a leak is detected the AUTO-LOGIC will sound an alarm & the yellow “leak detected” light will illuminate. The display will change from the home screen to the alarm screen indicating the reserve bank is leaking. To silence the alarm & clear the light press the "ESC" key this will bring you to the home screen.
- e. Disable Audio Alarm – This feature allows the user to disable the audio alarms of the AUTO-LOGIC. At any time the alarm can be re-enabled by repeating the steps below.
 - 1) press the “A” key 3 times, this will bring you to the audible alarm screen.
 - 2) press the “B” key once to disable the alarm.
 - 3) press the “ESC” key. At this point the screen will display “audible alarm currently disabled”.

This screen will remain for 10 seconds and repeat every 5 minutes for 10 seconds as a reminder the audio alarm is disabled.

Disabling the audio alarm will have no effect on the indicating lights on the front of the panel.

- f. A dry contact has been installed at the top of the enclosure to accommodate a remote alarm such as the model 912-AVA.