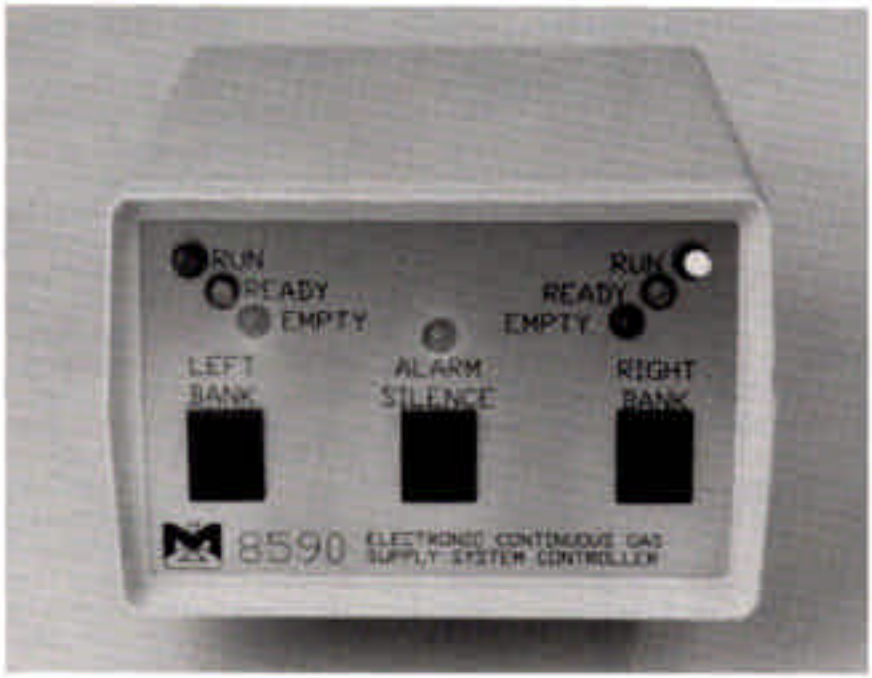
Matheson TECH/Brief

TB 259

Continuous Gas Supply Systems

Model 8590 Series Electronic Controller

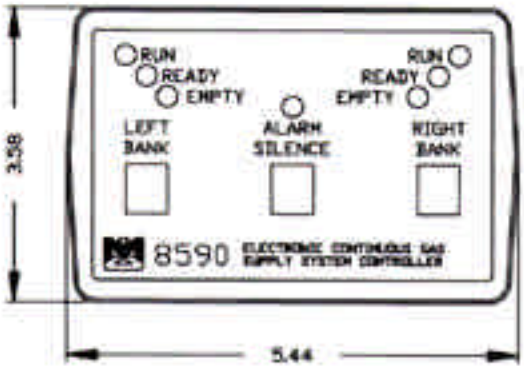


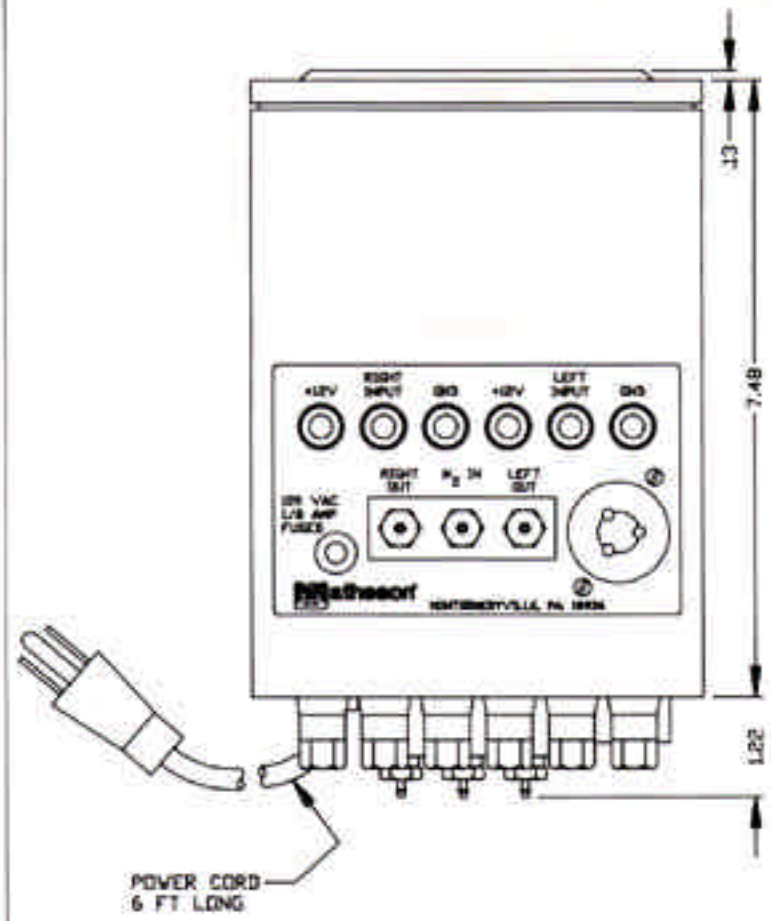
APPLICATIONS

The Model 8590 Series Electronic Controller Continuous Gas Supply System is used in conjunction with the continuous supply manifolds and electronic cylinder scales, process controllers, or pressure switches to create a continuous supply system that is electro/pneumatically controlled, which enables you to automatically change the supply from a depleted cylinder/bank to a standby cylinder/bank.

FEATURES

- Remote operation
- Choice of one input operation - Model 8591
- Or two input operation (two pressure switches/transducers)-Model 8590
- Or standby mode (two pressure switches/transducers)-Model 8592
- Fail safe control logic, shuts off when both supplies depleted
- Audible alarm for depleted supply condition
- Green status indicators for active system
- Yellow status indicators for standby mode
- Red status indicator for depleted mode (alarm condition)
- Set of status indicators for each cylinder/bank





All dimensions in inches

SPECIFICATIONS

Power supply:	120 VAC 50/60 Hz @ 15W
Pneumatic supply:	80-100 psig air or inert gas (for remote valve actuation)
Input	
Model 8590:	Two inputs required
Model 8591:	One input required
Model 8592:	Two inputs required
Switched Input:	Normally open/normally closed
DC Input:	12 VDC 3 mA
Transistor Input:	Sink 3 mA in external transistor
Logic: Proprietary	
	One or two input programmed EPROM fail safe logic to prevent continuous toggle if both systems empty.

FOR LIQUEFIED GASES

FUNCTION MODE TWO ELECTRONIC CYLINDER SCALES/BOXES

Model 8590 – Manifold Model 5371

- In this mode, the two readout boxes of both Electronic Cylinder Scales are measuring the weight of the liquefied gases and providing an electronic signal at a preset weight to the electronic supply controller and causing the events as described at the two process controller mode.

FOR COMPRESSED GASES

FUNCTION MODE TWO PROCESS CONTROLLERS - PRESSURE SENSORS

Model 8590 – Manifold Model 5372

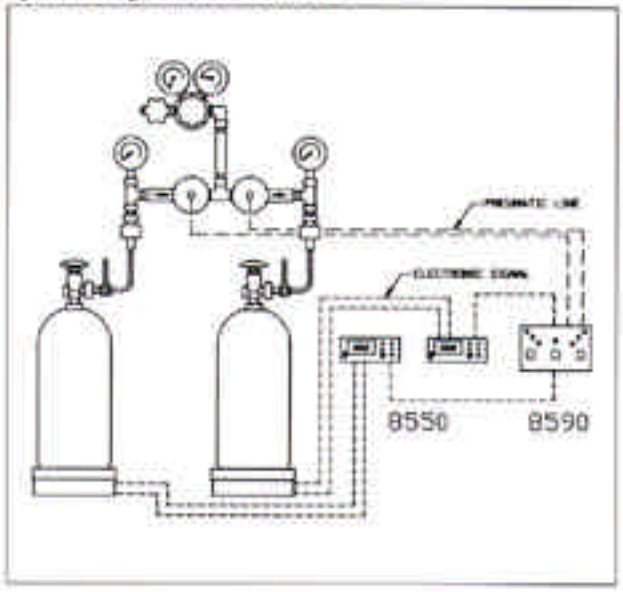
- The pressure sensors provide a signal that is proportional to the cylinder pressure of the two process controllers. The alarm output of the process monitor/controller is connected to the electronic continuous supply controller and provides an electronic signal when a cylinder (cylinder bank) pressure sinks to a preset level.
- The controller converts this electronic signal and pneumatically closes the active supply and opens the inactive supply side.
- Should the newly opened supply be also empty, the controller reacts to the alarm condition from the process monitor/controller and then closes both valves. Otherwise, the new supply side is indicated by a green light at the controller, the depleted side is indicated by a red light (alarm condition) and the cylinders should be replaced with full cylinders. When the pressure sensor reads a full cylinder at the inactive supply side, the alarm is released and the indicator at the controller changes to yellow.

FUNCTION MODE ONE PROCESS MONITOR/CONTROLLER - ONE PRESSURE SENSOR

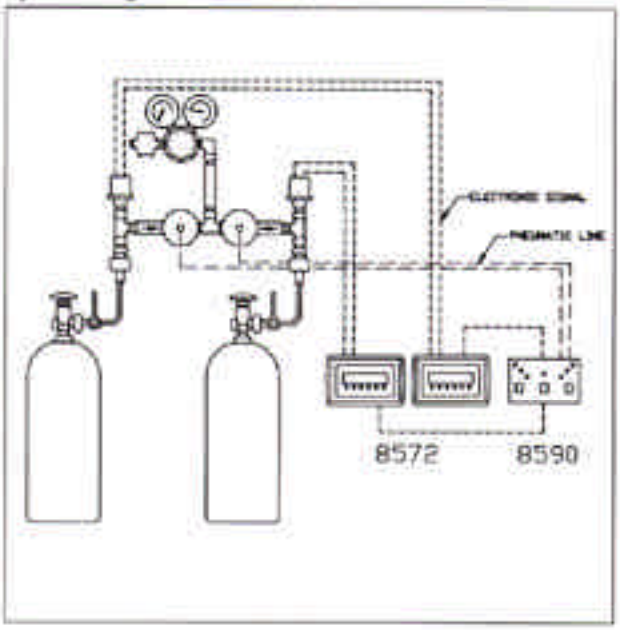
Model 8591 – Manifold Model 5375

- In this mode, the pressure sensor is detecting the pressure after the switch valves and only supplies a reading of the active cylinder/bank. When this bank is depleted, the preset alarm at the monitor/controller provides a signal to the electronic supply controller which closes the active bank and opens the standby supply. At this point, the pressure sensor is reading the pressure of the newly active bank, clears the alarm at the process monitor/controller and sets the green active signal at the electronic supply controller.
- Should the newly switched bank be also empty, programmed logic in the electronic supply controller will shut both valves to prevent the unit from toggling the valves on/off. Alarm condition (red) is then set at both supply sides and the unit has to be initialized (push-button) after the cylinders have been changed.

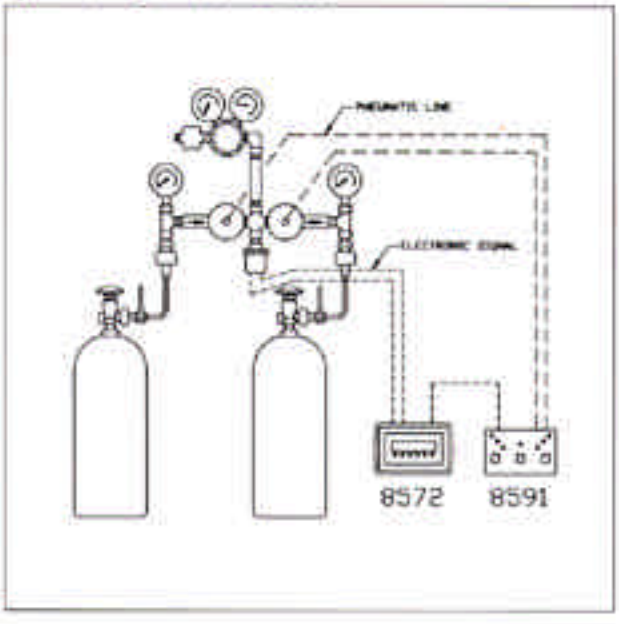
System Using Manifold Model 5371



System Using Manifold Model 5372



System Using Manifold Model 5375



FUNCTION MODE TWO INDICATING PRESSURE SWITCHES

Model 8590 – Manifold Model 5373

- In this mode, two indicating pressure switches are measuring the pressure content of the active and the standby supply cylinder/bank. At a set level, the pressure switch provides the electronic signal to the electronic continuous supply controller.

FUNCTION MODE ONE PRESSURE SWITCH/TWO GAUGES

Model 8591 – Manifold Model 5376

- In this mode, one pressure switch is reacting to the active supply pressure. At a set level, the pressure switch provides the electronic signal to the electronic continuous supply controller and causes the closing of the active and opening of the standby supply.

For additional information to build a complete system, please request:

TB-260 Model 5370/5470 Series Manifolds for Liquefied Gases

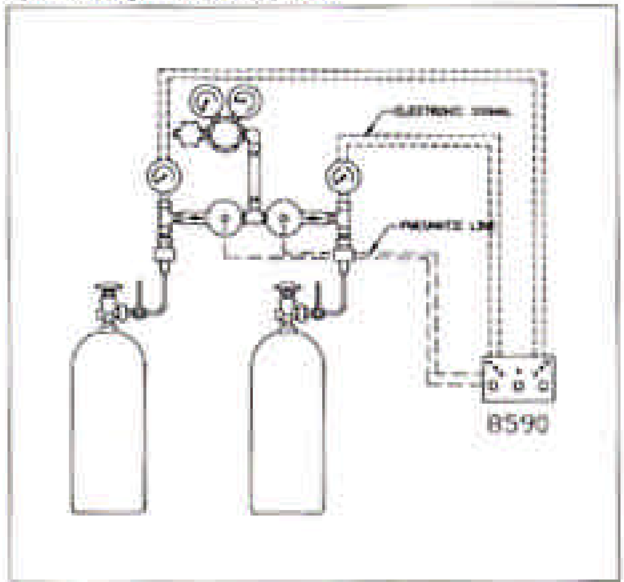
TB-261 Model 5370/5470 Series Manifolds for Compressed Gases-with pressure sensors

TB-262 Model 5373/5473 Series Manifolds for Compressed Gases-with pressure switches

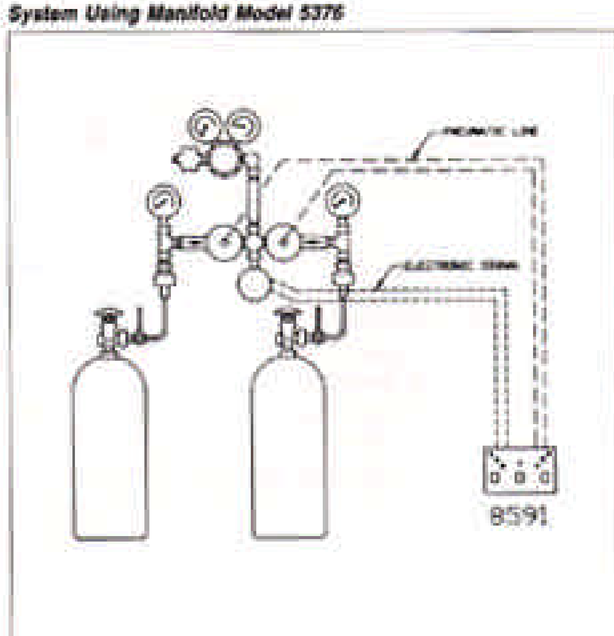
TB-263 Model 8800 Pressure Sensors

TB-264 Model 8570 Series Process Controller/Monitor

System Using Manifold Model 5373



System Using Manifold Model 5376



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