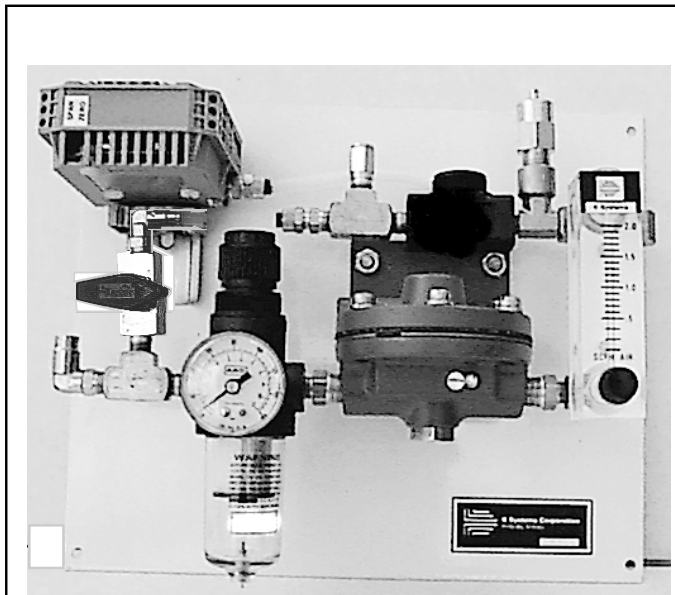
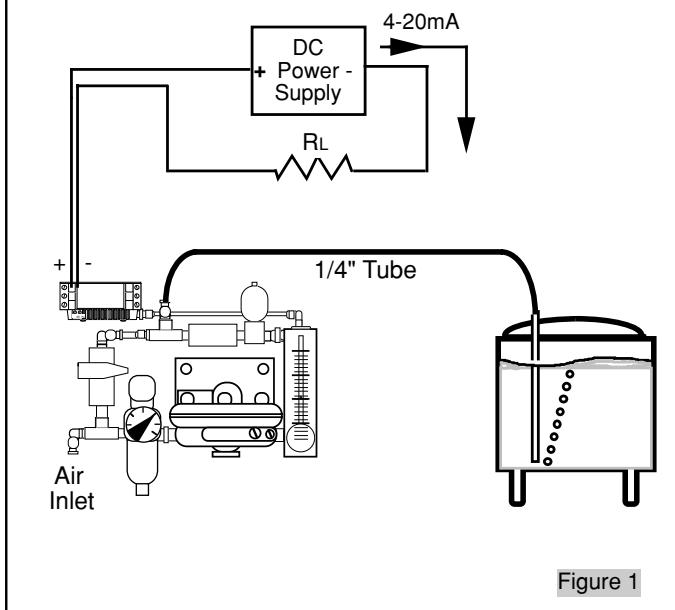


# K100 Downpipe Level Control

## PRECISION TRANSMISSION OF LIQUID LEVEL IN VENTED OR PRESSURIZED TANKS



Single tank System



### FEATURES

- Totally Solid State
- No Moving Parts in Electronics
- High Accuracy and Stability
- Three Times Rated F.S. Overpressure Safety Factor
- Visual Purge Rate Indication
- Blow-Down Capability

### GENERAL DESCRIPTION:

The K Systems K100 Down-Pipe Level System (sometimes referred to as a "bubble tube" system) is a self-contained system, requiring connections to an air or inert gas supply, a downpipe or "bubble tube" and an electrical power source in order to provide a continuous and precise 4-20 mA signal proportional to the liquid level in a tank. This system may be used on virtually any tank or vessel whose contents will tolerate continuous contact with compressed air bubbling through it.

The K100 system provides a continuous flow of air into the downpipe which acts as a force balance creating a pneumatic pressure equal to the hydrostatic pressure due to liquid depth in the tank. The pressure is created by liquid being forced out of the pipe and reaches equilibrium when excess air is vented through the bottom of the downpipe. The pressure is converted to a 4-20 mA signal for use with a variety of instrumentation for continuous level indication and control.

This System contains an over-pressure relief valve and a back-flow check valve for protection of the P/I Transmitter. A rotameter reads normal operational purge flow rate and a manual high pressure air valve is provided for clearance of any obstruction or product build-up in the downpipe.

If the tank is under other than atmospheric pressure, the K100 Level System requires a differential pressure measurement. An additional purged equalized line is provided to sense the pressure above the liquid while keeping corrosive fumes or vapors from condensing in the system.

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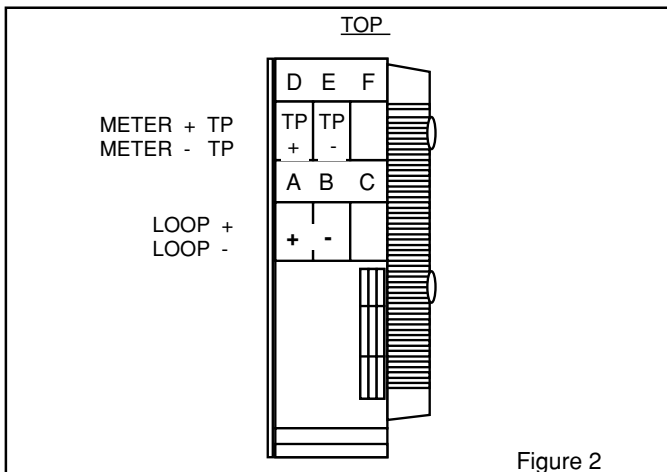
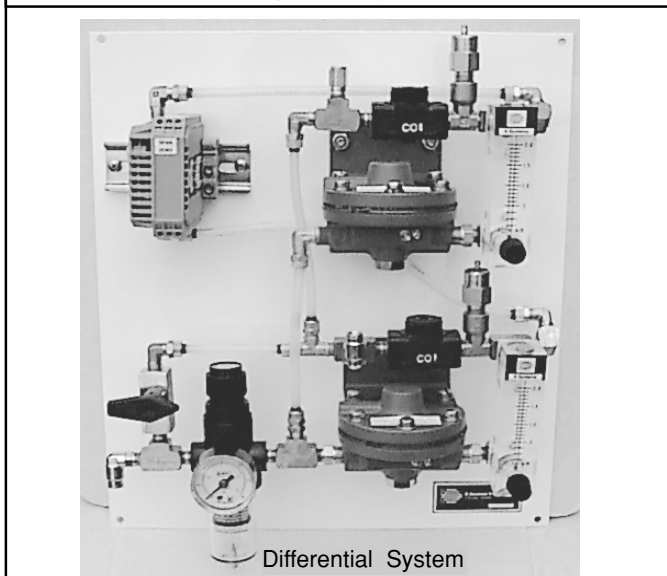
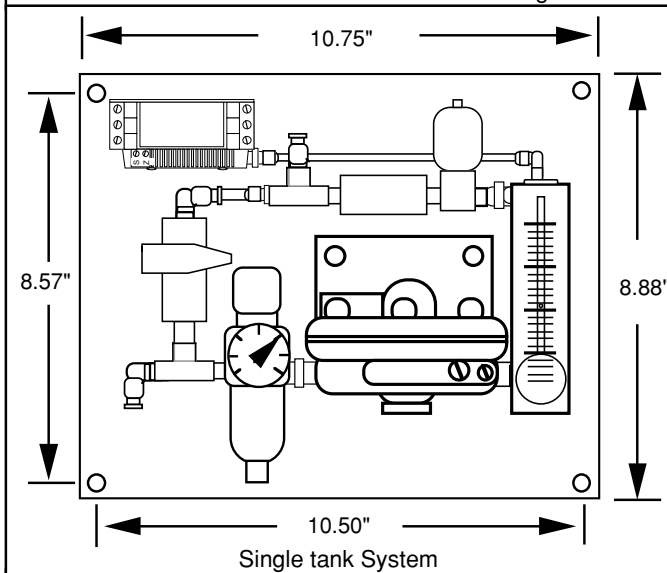


Figure 2



## INSTALLATION

Mount system vertically as shown in the illustration to allow the filter proper drainage. Connect air supply to the air inlet plug-in fitting and adjust the regulator, if required, to the proper pressure. Connect a 1/4" poly tube between the Downpipe fitting and the fitting marked "to downpipe". With the black shutoff valve on the rotameter wide open, adjust the air flow to 1 SCFH using the flow adjustment screw on the regulator. The Air blow bypass valve can be utilized to remove blockages or restrictions in this line as required. **IMPORTANT:** the Bypass valve **MUST** be **COMPLETELY CLOSED** in order to maintain the accuracy of the system.

The Model MC60 P/I Transmitter is a solid state pressure to electrical convertor that translates a pneumatic signal to a 4-20mA two wire output signal. For the MC60 to operate properly it is necessary to hook up the incoming wires from the instrument loop with the correct polarity as shown in figures 1 & 2.

The P/I has been adjusted for ZERO and SPAN at the factory, however, the Zero should be checked after installation and adjusted if required.

## SPECIFICATIONS

Ranges: 0-30 thru 0-850 Inches of Water full scale

Input: Maximum - 100 PSIG

Minimum - 5 PSIG greater than the maximum anticipated head pressure or 20 PSIG

Max. blow down pressure 100 PSI.

Max. regulated pressure is 50 PSI

**P/I Overpressure:** 3X Rated

**Power:** 24 to 40 VDC

**Output:** 2-Wire, 4-20 mA

**Maximum Load:** @ 24 VDC - 550 ohms

@ 40 VDC - 1350 ohms

## Accuracy:

**Linearity** - .2% of span

**Repeatability** - .05% of span

**Hysteresis** - Negligible

**Temperature** - Maximum shift  $\pm$  1% of span over the temperature compensated range

**Operating Temp. Range:** 0 to 250 degrees F  
(-17.8 to 121.0 deg. C)

**Compensated Temp. Range:** 32 to 120 deg. F  
(0 to 48.9 deg. C)

**Electrical Connections:** 2-wire screw-clamp terminal

## -HOW TO ORDER-

<u>TYPE</u>	<u>PART NO.</u>	<u>RANGE</u>
		(XX) INCH of H2O
Single Tank	K100-XX	-30 = 30 Inches H2O
Differential	K101-XX-XX	Max. liquid Height in inches Max. pressure above product
Dual Tank	K102-XX-XX	Tank 1 - Tank 2