SY-KLONE® INTERNATIONAL

Electronic Pressure Monitor System
INSTALLATION GUIDELINES

IN THIS MANUAL:

IN THE BOX:

- Electronic Pressure Monitor
- Attached Wiring (6 feet, *1.828 meters*)
- Black Nylon Air Line (6 feet, *1.828 meters)*
- Small Plastic Screwdriver

FEATURES:

The unit operates when the power is switched on.

LED Alarm: The lighted indicator illuminates whenever the cab pressure drops below the preset minimum threshold for more that 10 seconds. This feature cannot be disabled. The 10 second delay allows for normal door opening and closing without setting off the alarm.

Numeric Display: This indicates the realtime pressure in the cab.

Low Pressure Signal Alarm: This feature is internal in all units. It can be activated or de-activated during set up. If this feature is activated, the alarm will sound when the cab pressure drops below the set pressure level for 10 seconds. It self-resets when the cab pressure returns to normal or when an off/on power cycle is completed.

Silence Alarm Button: Sometimes it is necessary to open a window or door for more than 10 seconds. This will set off the alarm. The alarm signal can be silenced by pushing the silence button. (Note: the light will remain on until pressure is restored). The alarm mode is self-resetting when the cab pressure normalizes or with an off/on power cycle. The alarm is again armed and will sound after a 10 second pressure drop.

Quick Connect Fitting: The included air line attaches here.

Electrical Wiring: Connects to any convenient DC voltage connection between 9VDC and 36 VDC, so this unit can be installed on a 12V or 24V system.

Low Voltage Pressure Signal Port: The unit includes a 0 to 5 volt output signal that can stream realtime pressure information to an on-board computer. The 1/8" mono plug signal port puts out a low power voltage signal that varies with the pressure reading (see technical specifications for details).

TROUBLESHOOTING / FREQUENTLY ASKED QUESTIONS

Please visit www.sy-klone.com for additional support information on the Sy-Klone Electronic Pressure Monitor System, part number KT-CABPRES-EL1-ENG.

TECHNICAL SUPPORT

For assistance, contact the dealer from whom you purchased the Pressure Monitor System.

ABOUT THE SETTINGS

There are several parameters that can be set by the installer, including:

- Display pressure readings in Pascal or Inches of H_2O.
- Warning signal tone On or Off.
- Warning signal volume.
- Low pressure alert threshold.

The default settings (as shipped) are:

- Sound: On.
- Volume: Full volume.
- Digital display units: Inches of H_2O.
- Alarm threshold: 0.08 inches H_2O *(20 Pascal)*.
 The light and signal will activate when the pressure drops below the alarm threshold.

CHANGING THE SETTINGS

Setting the Alarm On/Off and Volume Control:

1. Read warnings below before adjusting the volume.
2. If sound "ON" is set, the volume can be controlled to best suit the application.
3. Insert the small plastic screwdriver supplied with the unit into the micro-volume control. With the unit powered up, the tone alarm will sound after 10 seconds. Vary the volume by turning the control to the desired level.
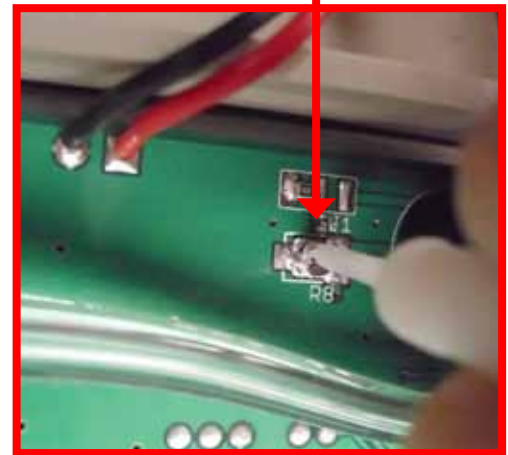   **Note:** *the audible alarm volume will be much lower when the cover is replaced, so set the cover in place and test the volume before screwing the cover back on.*

Identification of internal components:
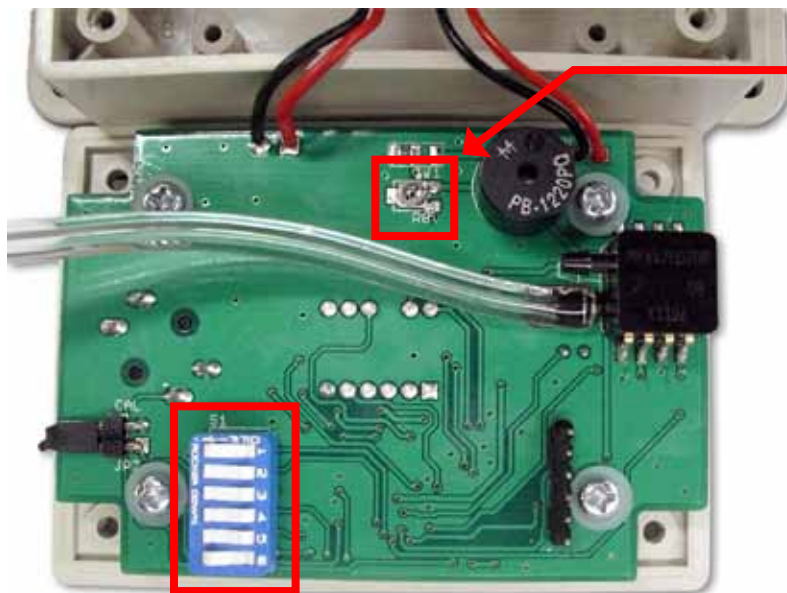
Volume Control

DIP Switches

To make the changes to the default settings, follow the steps below to change the DIP Switch settings (see next page for settings diagram):

1. Touch grounded metal to discharge static electricity.
2. Remove the 4 screws in the cover and carefully lift the cover.
3. Identify the DIP switches and the micro-volume control.
4. Use the DIP switch settings diagram on the next page to determine or to adjust the setitings for the alarm threshold, display units, and sound (on/off).
5. The small plastic screwdriver supplied with the unit can be used to change the DIP switch settings. If the screwdriver is not available, use any non metallic items such as a wooden pick to change the switch positions.

WARNING!

Discharge static electricty by touching grounded metal before you touch the board.

Do not touch any metallic object in or near the circuit board as memory loss or damage may occur. Use plastic screwdriver or wooden pick to adjust dip switches and volume control.

Failure to follow these instructions can lead to non function or permanent damage to the unit!

Table 1: Setting Alarm Signal Pressure Level

Switch Position				Alarm Signal Pressure Level	
DIP 1	DIP 2	DIP 3	DIP 4	Pascal	Inches of H_2O
On	Off	Off	Off	20	0.08
Off	On	Off	Off	30	0.12
On	On	Off	Off	40	0.16
Off	Off	On	Off	50	0.20
On	Off	On	Off	60	0.24
Off	On	On	Off	70	0.28
On	On	On	Off	80	0.32
Off	Off	Off	On	90	0.36
On	Off	Off	On	100	0.40
Off	On	Off	On	110	0.44
On	On	Off	On	120	0.48
Off	Off	On	On	130	0.52
On	Off	On	On	140	0.56
Off	On	On	On	150	0.60
On	On	On	On	160	0.64

Table 2: Setting the Pressure Units

DIP 5	Pressure Scale
Off	Inches of H20
On	Pascal

Table 3: Setting the Sound On/Off

DIP 6	Alarm Sound
Off	Sound OFF
On	Sound ON

Pressure Level:
There are no international guidelines for required minimum pressure. Some regulatory bodies have deterimed minimum pressurization to be 20 pascal or .08 inches of H2O. **Please check your local standards, regulations or best practice recommendations to determine the appropriate minimum pressure threshold.** If there are no guidelines we recommend the minimum threshold setting of 20 Pascal or .08 inches of H_2O.

DIP Switch illustration
Actual switch appearance may vary.

TECHNICAL SPECIFICATIONS

Operating Pressure Range	0 to 0.8 Inches H_2O (0 to 200 Pascal)
Display Resolution	0.01 in Inches H_2O (1 Pascal)
DC Input Voltage (Self-resetting fuse)	Minimum: 9V; Maximum: 36V
Current Consumption	Less than 30 mA
Operating Temperature Range	-40° F to 140° F (-40° C to 60° C)
Low Voltage Pressure Output Signal (see chart at right)	0V @ 0 Inches H_2O (0 Pascal) 5V @ 0.8 Inches H_2O (200 Pascal) 20 mA
Dimensions - Enclosure	3.50 x 2.52 x 1.39 inches (88.9 x 64x 35.2 mm)
Dimensions - Mounting Plate	4.52 x 2.52 x 0.11 inches (114.8 x 64x 2.8 mm)
Weight	0.2 oz. (175 g)
Air Tube	3/16 inches OD; 6 foot length (1.8 m)

Low Voltage Output Signal
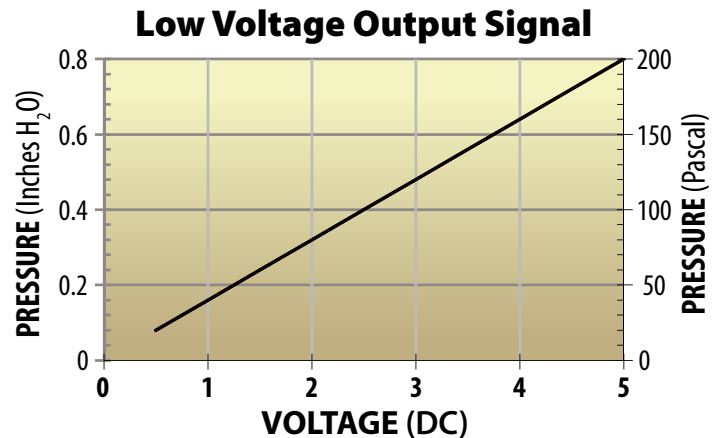
This low voltage output signal chart can be used to calibrate real-time pressure data when sent to a computer or telemetric system. A more detailed version of the chart is available on www.sy-klone.com.

Installing the Unit

Please read all items before installation.

MOUNTING the Unit:

The sensor unit can be mounted at any location INSIDE the operator cab that is visible to the operator.

When deciding on the location, you will need to take into consideration the need to:

1. Route a wire to the machine's electrical system.

2. Run a 3/16 inch air line through a hole in the cab to the outside.

The box comes with mounting tabs; at the discretion of the installer, these can be used with installer-supplied screws (such as for a dash mount). The unit can also be secured to glass with installer-supplied foam mouting tape.

CONNECTIONS: Wiring to Power

The Cab Pressure Monitor power leads can be connected to any convenient DC voltage connection point meeting these criteria:

*   The supply voltage must be between 9 VDC and 36 VDC.**

*   The voltage source is to be switched with the vehicle power (if the vehicle has a key, make sure the connection point is "ON" with the key on and "OFF" with the key off.

*   The power lead is to be fused appropriately. A 5A max fuse is recommended. If an appropriate fused connection point is not available, an in-line fuse can be purchased. **

*   The RED lead is to be connected to (+) positive battery voltage and the BLACK lead is to be connected to (–) negative or vehicle ground).**

*   The wire can be cut if desired.

*   Wire end terminals are the choice of the installer.

*   Secure the wire to the cab in a manner so as to protect the wire.

*   The wire can be routed behind the cab panels as desired.

*** Failure to follow these instructions can result in non-function or permanent damage to the pressure monitor.*

CONNECTIONS: External air line

Note: This unit is a differential pressure-measuring device. It is necessary to connect a tube (supplied) from the unit to the outside air.

The system comes with 6' of 3/16" nylon air line. This line must be connected to the quick-connect fitting on the right side of the monitor unit, with the other end leading to a protected area outside the cab.

The outside the cab connection can be made in one of 2 ways (at the discretion of the installer):

*   Choose an existing opening in the cab wall, such as a hole or grommet through which an existing wire or hose passes.

*   Drill a hole approximately 0.2" (5.25mm) through the cab. It is important to clean the hole of burrs and sharp edges so that the air line will not be damaged.

Extend the air line a minimum of 2" (50mm) through the hole, outside of the cab, and secure it.

Do not put the open (outside) end where it can become clogged by direct exposure to dirt. The best location is the space between the sheet metal exterior and the pressurized cab.

Seal around the air line as necessary.

Secure the air line to areas of the cabs that will protect the air line from being damaged.

The air line can be routed behind cab panels as desired.

BE CAREFUL NOT TO KINK OR PINCH THE AIR LINE WITH ANY MOVING OBJECTS. A DAMAGED, CLOGGED OR KINKED AIR LINE MAY CAUSE INCORRECT READINGS.

Quick-Connect Fitting

This unit is calibrated at the factory however drift can happen due to shipping and/or extreme ambient changes. **The calibration procedure is to be performed at initial installation and can be performed as often as necessary.**

Re-Boot

This is a computer controlled monitoring system. The system automatically re-boots each time the power is cycled OFF and ON.

A manual re-boot can be done at any time by holding the reset button ("Silence Alarm" button) down for 6 seconds.

<< Reset button

While holding the button down:

1. The display will go blank at first.

1. Then the display will indicate RES for reset.

RELEASE the reset button immediately when RES is displayed. The panel indicator will count down and return to normal operation.

Calibration

The calibration procedure is similar to the re-boot process and takes less than 1 minute.

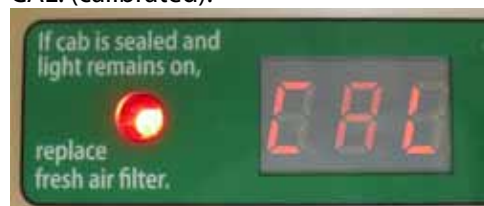1. Disconnect the nylon air tube.

2. Hold the reset button down for 30 seconds.

3. The display will go blank at first.

4. After 6 seconds the display will indicate RES (reset); **CONTINUE holding the button.**

5. After an additional 5 seconds the display will indicate CAL. (calibrated).

6. **RELEASE the reset button immediately when CAL is displayed.** The display will read zero and return to normal operation.

7. Reconnect the nylon air tube.

The calibration is complete