



THIS BULLETIN CONTAINS CRITICAL INFORMATION FOR THE SET-UP OF THIS DEVICE. PLEASE READ IT CAREFULLY!

NOTES FOR USING ALICAT PC-EXTSEN DEVICES

PC-EXTSEN units connect a Pressure Controller (with no internal pressure sensor) to an end-user supplied external pressure sensor. Designed mainly for the vacuum coating industry, the PC-EXTSEN marries the sensing ability of an existing capacitance manometer or ion gauge with a 16 Series electronics package and internal PID algorithm. This enables fast and precise control of extreme vacuum conditions in the coating chamber.

The PC-EXTSEN receives a linear analog signal from the external sensor. This analog signal corresponds to a full scale range that is specified by the user at the time of order (and corresponds to the scale of the external sensor). The PC-EXTSEN interprets this analog signal as its sensed pressure.

The PC-EXTSEN then utilizes its proportional control valve to control the flow of gas into the chamber, allowing for closed loop vacuum control based on the interpreted signal. Set-point control and PID tuning all happen through the instrument's interface, via the buttons on the display, or a user selected analog interface (0-5V, 0-10V, or 4-20mA), or through a multidrop RS-232 interface.

There are two base models of PC-EXTSEN controllers, the **PC-EXTSEN-D**, and the **PC-EXTSEN-D-ISC**.

The **PC-EXTSEN-D** has an 8 pin Mini-Din female electrical connector as its electrical connection to power, ground, signal input from the external sensor, RS-232 transmit and receive, as well as analog transmit and receive. The PC-EXTSEN-D also has a barrel plug electrical connection if you choose to power the device through a wall mounted AC adaptor, rather than wiring power to the 8 pin minidin connection.

The **PC-EXTSEN-D-ISC** is identical to the PC-EXTSEN-D except it has an additional locking 6 pin industrial electrical connector which is intended for use as a dedicated connection to your external sensor, leaving the 8 pin Mini-Din connection available to be used as a dedicated RS-232 or analog interface connection.



When using the PC-EXTSEN-D-ISC device, it is recommended that power and communications to the PC-EXTSEN-D-ISC device be wired through the 8 pin Mini-DIn connector and that the industrial connector is maintained as a dedicated connection to the external sensor.

WHEN USING THE INDUSTRIAL CONNECTOR AS A DEDICATED CONNECTION TO THE SENSOR, DO NOT WIRE ANY SIGNAL INPUT INTO PIN 2 ON THE MINI-DIN CONNECTOR.

Please refer to the operating manual that came with this device for complete information regarding use and tuning of your PC-EXTSEN controller.

POWER AND SIGNAL CONNECTIONS

Power can be supplied to your controller through either the power jack or the 8 pin Mini-DIN connector.

An AC to DC adapter which converts line AC power to DC voltage and current as specified below is required to use the power jack.

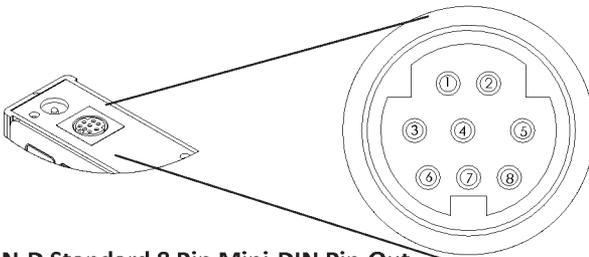
A 2.1mm, positive center, 12-30 Vdc AC/DC adapter rated for at least 250 mA is required to use the adapter jack in a **PC Series controller**.

A 2.1mm, positive center, 24-30 Vdc AC/DC adapter rated for at least 500 mA is required to use the adapter jack in a **PCR Series controller**.

NOTE: 4-20mA analog output requires at least 15 Vdc.

PC-EXTSEN-D Pin-Outs

The following pin-out diagram is applicable to all standard PC-EXTSEN-D devices. If your device was ordered with custom pin-out requirements, please contact Alicat for assistance.



PC-EXTSEN-D Standard 8 Pin Mini-DIN Pin-Out

Pin	Function	Mini-DIN cable color
1	Inactive or <u>4-20mA Primary Output Signal</u>	Black
2	External Sensor Signal Input*	Brown
3	RS-232 Input Signal	Red
4	Analog Input Signal	Orange
5	RS-232 Output Signal	Yellow
6	<u>0-5 Vdc (or 0-10 Vdc) Output Signal</u>	Green
7	Power In	Blue
8	Ground (common for power, communications and signals)	Purple

*If you are using the PC-EXTSEN-D-ISC's 6 pin locking connection to receive the external sensor input signal do not wire any signal into pin 2 of the Mini-DIN.



Pin 7 which is normally utilized to provide power into the Alicat device can be used to provide power to your external sensor. Please make sure that the power you are providing to the device is compatible with the power your sensor can accept before choosing to wire power in this manner.



CAUTION! Do NOT CONNECT POWER TO PINS 1 THROUGH 6 AS PERMANENT DAMAGE CAN OCCUR!

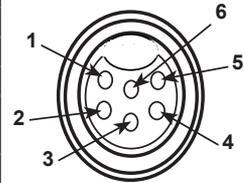
PC-EXTSEN-D-ISC Pin-Outs

The PC-EXTSEN-D-ISC is equipped with an additional Six Pin Locking connection, for use as a dedicated connection to your external sensor.

This leaves the 8 pin Mini-DIN connection available to be used as a dedicated RS-232 or analog interface connection.

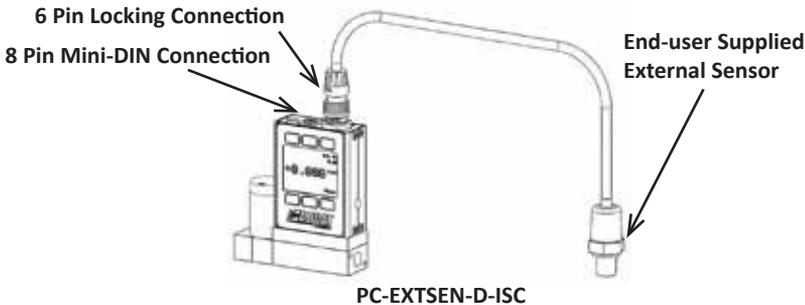
Please be sure to reference the following pin-out diagram. The following pin-out diagram is applicable to all standard PC-EXTSEN-D-ISC devices. If your device was ordered with custom pin-out requirements, please contact Alicat for assistance.

Pin	Function	Cable Color
1	Power In (+)	Red
2	In-Active	Blue
3	In-Active	White
4	External Sensor Signal Input	Green
5	Ground (common for power, communications and signals)	Black
6	In-Active	Brown



PC-EXTSEN-D-ISC Standard 6 Pin Locking Connection Pin-Out

- ➔ **The 6 pin locking connection on the –ISC unit has only three active pins, power, ground and signal input from the external sensor.**
- ➔ **Pin 1** which is normally utilized to provide power into the Alicat device can be used to provide power to your external sensor. Please make sure that the power you are providing to the device is compatible with the power your sensor can accept before choosing to wire power in this manner.



- ➔ **When using a PC-EXTSEN-D-ISC device, it is recommended that power and communications to the PC-EXTSEN-D-ISC device be wired through the 8 pin connector and that the industrial connector is maintained as a dedicated connection to the external sensor.**

WHEN USING THE INDUSTRIAL CONNECTOR AS A DEDICATED CONNECTION TO THE SENSOR, DO NOT WIRE ANY SIGNAL INPUT INTO PIN 2 ON THE Mini-DIN CONNECTOR.