

About Your NetBotz 4-20mA Sensor Pod

Thank you for purchasing this NetBotz 4-20mA Sensor Pod. Each 4-20mA Sensor Pod enables you to connect up to four 4-20mA sensors to your NetBotz 420 or NetBotz 500 appliance.

Hundreds of 4-20mA sensors are available from third-parties, including sensors designed to measure liquid flow rates, liquid levels, gases, pressure, temperature, air velocity, voltage, and more. These sensors are connected to the pod using screw terminals that are attached to the pod. The 4-20mA Sensor Pod also provides a supplemental power port (18 volts nominal, 50mA) for use with 3- and 4-wire 4-20mA sensors.

The NetBotz 4-20mA Sensor Pod package includes the following items:

- The NetBotz 4-20mA Sensor Pod (with detachable screw terminals)
- 5 meter USB Cable
- 4 self-stick black rubber feet (can be adhered to the unit's mounting tabs for desktop-mounted pod deployments)
- Wall-mounting kit (includes 2 screws and 2 anchors for use in wall-mounted deployments)
- USB cable mounting kit
- About Your NetBotz 4-20mA Sensor Pod (this pamphlet)



Note

You must provide any wiring that is necessary to connect the 4-20mA sensors to the screw terminals.

Before You Begin

Before continuing, be sure you have the latest available version of *Using Your Appliance*. You can obtain the latest available version of this publication (as a PDF file) from the NetBotz Technical Support site at:

<http://www.netbotz.com/support>

Once you have opened the NetBotz Technical Support web page, select your appliance model from the Monitoring and Management Appliances drop box, click **Go**, and then click on *Using Your Appliance* in the list of downloadable Product Pubs.

Using Your Appliance contains information and instructions you will need to complete installation and configuration of the NetBotz 4-20mA Sensor Pod.

Installing the 4-20mA Sensor Pod

Important! Before connecting your NetBotz 4-20mA Sensor Pod to your NetBotz appliance, first use the Upgrade task in the Advanced View to ensure that your appliance is running BotzWare 2.2.2 or later. Earlier versions of BotzWare do not support 4-20mA sensors and will not recognize or be able to use the NetBotz 4-20mA Sensor Pod.

To install the NetBotz 4-20mA Sensor Pod, connect the pod to your NetBotz appliance, or to a powered USB hub that is connected to the NetBotz appliance.



Due to power requirements, your NetBotz 4-20mA Sensor Pod must be connected either directly to one of the NetBotz appliances USB ports or to a powered USB hub. If a USB cable extension is required, use either a NetBotz CAT 5 or Fiber 500m Cable Extender. Use of other USB cable extenders may result in inadequate power supply for the sensors and is not recommended by NetBotz.

The 4-20mA Sensor Pod also features 4 mounting tabs. These mounting tabs are designed to allow the 4-20mA Sensor Pod to be mounted along one edge of a standard 19" rack or to be mounted on a wall/backboard. Alternatively, you can adhere the 4 self-stick black rubber feet to the mounting tabs to help prevent the pod from sliding or shifting when deployed on a table or desktop.

Connecting 4-20mA Sensors to your 4-20mA Sensor Pod

The 4-20mA Sensor Pod features 5 removable screw terminal blocks: 4 of the terminal blocks provide 4 matched positive/negative sensor connections and the 5th terminal block provides a DC supply negative (common) terminal and a positive (18V) terminal to supply up to 50mA of supplemental power to 3- and 4-wire 4-20mA sensors.

To connect a sensor to the 4-20mA Sensor Pod, disconnect the required terminal block (or blocks) from the Sensor Pod. Then, using a small slotted screwdriver, refer to the sensor manufacturer's instructions and the wiring examples in this booklet (see "Wiring Examples" on page 5) to connect the sensor wires as necessary.



Note

If you are installing multiple 3- or 4-wire sensors, be sure that the combined supplemental power demand of the sensors does not exceed that 50mA maximum that can be supplied by the DC Supply port on the 4-20mA Sensor Pod.

When you have finished connecting devices to the terminal blocks, reconnect the terminal blocks to the 4-20mA Sensor Pod. Then use the Basic View Configuration pane or the Advanced View Sensor Pods task to specify the type of 4-20mA sensor that is connected to each of the pod ports. If you do not currently have a preconfigured sensor type that matches the specific 4-20mA sensor or sensors you connected to your pod, use the Add Custom Sensor functionality to define a custom 4-20mA sensor type. For complete instructions, see Using Your Appliance.

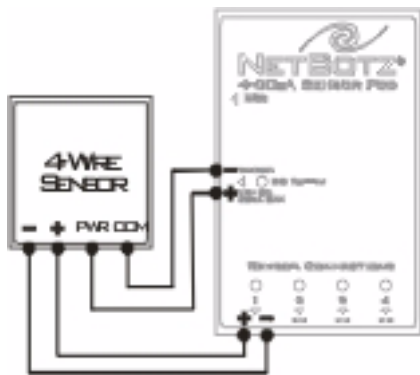
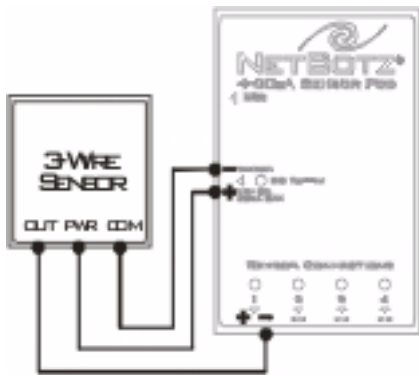
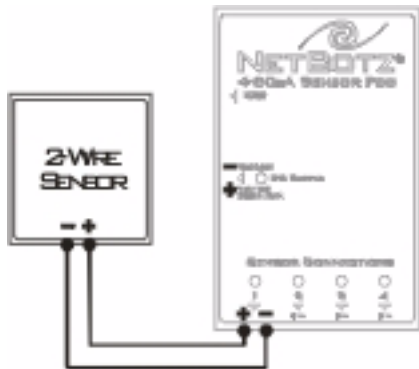
Wire Length Guide

The maximum length of wire that can be used to connect a 4-120mA sensor to the 4-20mA Sensor Pod is dependent on both the voltage required to power the sensor and the gauge of wire that is used. For general guidelines to maximum wire length (in feet) refer to the table below.

Note that these guidelines assume that the 4-20mA Sensor Pod is being used as specified, which ensures that the pod is receiving a full 5V of power from the USB port and that the load on the DC Power supply does not exceed 50mA.

		Wire Gauge				
Volts Required		20	22	24	26	28
	6	13,300	8,300	5,100	3,200	1,900
	8	10,000	6,200	3,800	2,400	1,400
	10	6,600	4,100	2,500	1,600	900
	12	3,300	2,000	1,200	800	400

Wiring Examples



Specifications

- Accuracy: +/- 0.5 % Full Scale
- Sensor I/O Current Range: 0 to 23mA
 - Open is detected at 3mA
 - Overcurrent is detected at 23mA
- DC Supply Port: Non-Isolated, Unregulated 18V DC, 50mA MAX
- Operational Environment: 35 to 120 deg F, 5 % RH to 95% RH non-condensing
- Sense voltage drop: 1V DC @ 20mA
- Designed for indoor use only.
- Wiring Recommendations: Use AWG 16 to AWG 28 wire for best results. Twisted-pair recommended for loop lengths greater than 100'.

Federal Communications Commission (FCC) Declaration of Conformity Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.

Cleaning Your 4-20mA Sensor Pod

Use only a dry cloth to clean the 4-20mA Sensor Pod housing. Gently wipe the surface of the 4-20mA Sensor Pod with a dry cloth.

Warranty

NetBotz Inc. warrants the 4-20mA Sensor Pod to be free from defects in materials and workmanship for a period of one year from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser.

Warranty Limitations

Except as provided herein, NetBotz Inc. makes no warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

Some jurisdictions do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

Except as provided above, in no event will NetBotz Inc. be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of this product, even if advised of the possibility of such damage.

Specifically, NetBotz Inc. is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state.

Trademarks

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