

---

# BearScan 16 INSTALLATION INSTRUCTIONS

---

## *General Information*

The BearScan 16 may be located in a non-hazardous area, office, electrical room, or sample room, etc. It is suggested that if an external alarm is not to be connected, the unit should be located where the internal alarm can be heard and the alarm light can be seen. Also, a fused 110V AC line is required to complete the installation.

## *Power Connection*

A terminal block is provided for 110V AC connection. It is located at the lower left side of the printed circuit board. An AC line with accessible circuit breaker is necessary and a good ground is imperative for proper operation of the equipment. An internal 1 amp fuse is located next to the input terminal block (**Figure 2**).

## *External Alarm*

A terminal block located just above the fuse is provided for the connection of an external alarm. These connections consist of relay contacts rated for 3 amps. Operating power for the external alarm must be provided by the customer (**Figure 2**).

## *Control Connections*

All control connections are made in the instrument by connecting the wires from the sensors to the terminal block (**Figure 2**). The

terminal block is numbered 1 through 8 and then a common for the first 8 sensors, then 9 through 16 and a common for the second 8 sensors.

Attach the wire for Sensor 1 to number 1 on the terminal block and the common for Sensor 1 to the first common on the terminal block. This process is repeated for all the sensors that are being monitored.

**NOTE:** Any points in the terminal block that are not connected to a sensor must be connected to their respective common to form a closed circuit.

**NOTE:** It is very important to keep accurate labeling on the pairs of control wire from the sensor to the respective attachment in the instrument.

## *Sensors*

The thermostats with pre-selected temperatures are mounted in a ring terminal in a normally closed position. These thermostats are environmentally protected by an epoxy adhesive, a strengthened external housing, and a heat shrinkable tube. This ensures a thermostat protected from moisture including salt spray, from grounding to the local area, and from harsh handling. It is advised that all control runs and splices be made in protective housings such as conduit. This protects the wire from environmental conditions such as moisture and ultraviolet rays and also from rodent activity.

## *Mount the Instrument*

FIGURE 1.

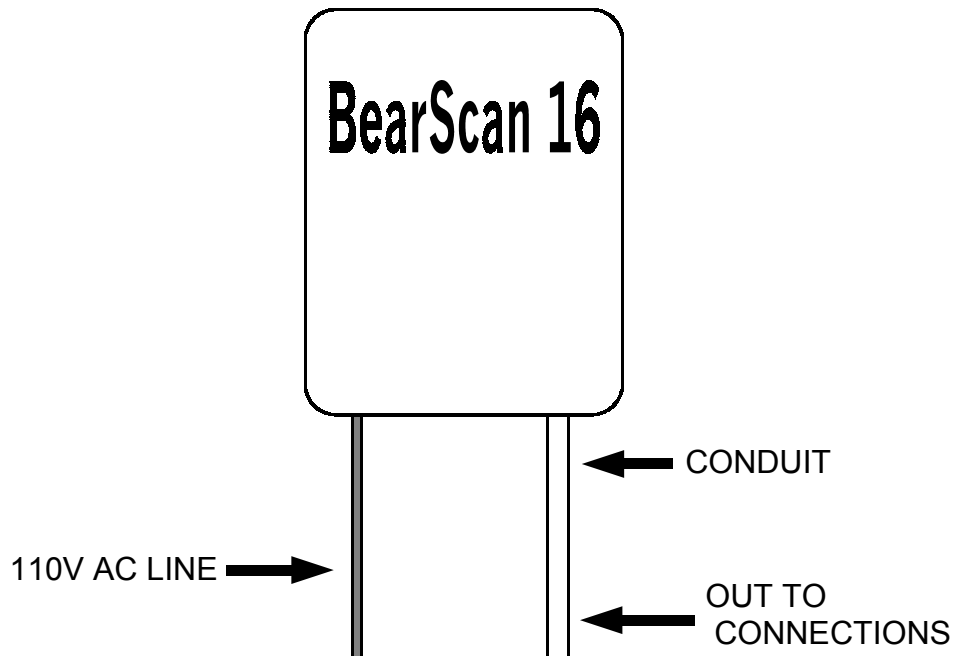
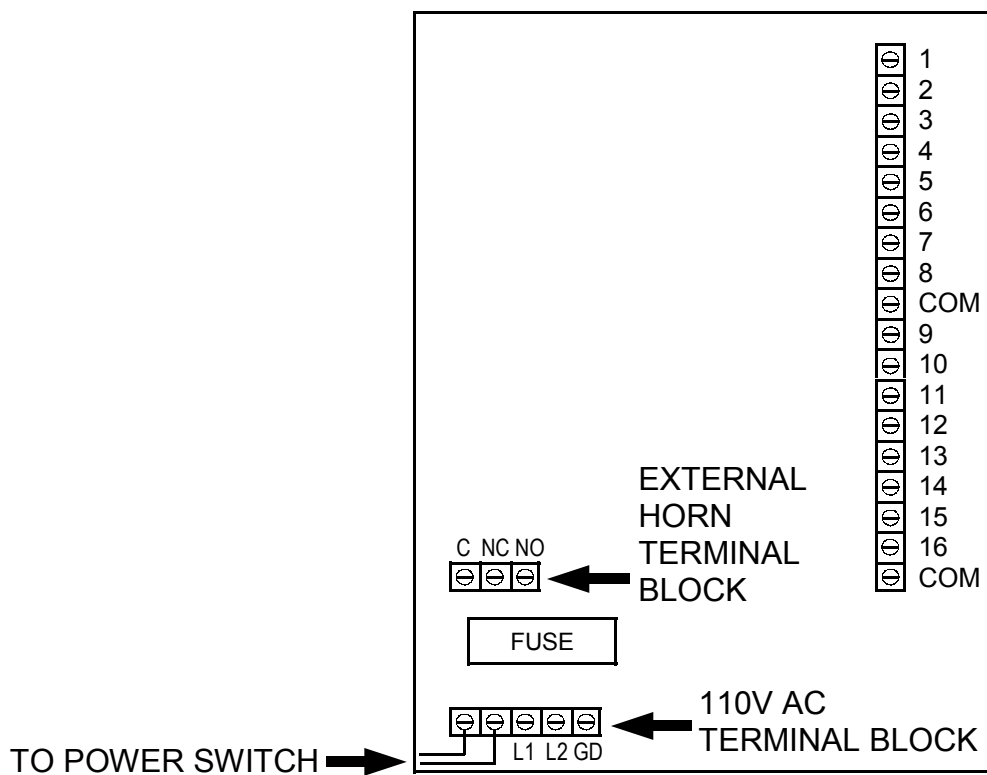


FIGURE 2.



---

# SPECIFIC INSTALLATION INSTRUCTIONS

---

Two holes must be drilled in the enclosure—one for the 110 power cord and one for the control wires that will be attached to the terminal block. Use bolts or concrete anchors to secure the enclosure in a dry, vibration-free location.

## *Mount the Sensor*

There are two types of monitors used with this system, a bearing sensor and a belt alignment sensor. For bearing monitoring, the sensor can be attached to the bearing by removing the grease zerk, inserting it through the ring terminal on the sensor, and reattaching it to the bearing. If the ring is not the right size for the zerk it may have to be drilled out with a unibit or a washer may need to be placed between the zerk and the ring. Before removing the zerk it is **imperative** that the area around the zerk is as clean as possible so that no foreign material gets inside the bearing case. Another method of attachment is drilling and tapping a hole in the bearing casing, and securing the sensor with a screw. Special care must be taken however, to make sure the bearing is not damaged. The belt alignment monitoring has a two-part attachment. First the location on the up-side of the belt at the bottom of the leg must be determined—hopefully close to the inspection door so the belt location can be determined for placement of the sensor. A two inch hole needs to be drilled in each side of the leg in a location so that the middle of this hole is located where the belt will run. A two inch hole saw bit works well for this job. Insert the rub pad into the hole and secure the pad to the side of the leg with two #10 + 1/4 sheet metal screws or POP rivets. Next attach the ring terminal of the sensor to the outside of the rub pad.

## *Attaching the Sensor to the Control Wire*

There is a strand of two conductor wire

attached to the sensor which is approximately two or three foot long. Inside this wire are two individual wires, a red and black wire that needs to be connected to the control wire that will be run to the instrument. Either colored wire can be connected to any pair of wires, or a single wire and a common wire in the control run. If more than 1 instrument is being used the common wire for each instrument must be kept separate. It is **imperative** that good labeling procedures are used so that when the control wire is hooked up to the instrument, the proper sensor is attached to the proper indicator light in the instrument. Allow for a small amount of slack in the control connection to the bearing zerk as the bearing is repositioned slightly to change belt alignment and tension.

## *Running Control Wire*

All control wire should be installed per standard wiring practices. If the control run is in an outside environment or a location where it can easily be damaged the wire should be in a protective housing such as conduit. Loose wires, or wires pulled tightly around sharp objects, invite system failure. Make sure that uncovered control wire is properly attached to solid objects along the length of the run.

## *Attaching the Control to the Instrument*

The control wire coming from the sensor can either be run as a pair (2 wires) all the way to the instrument, or one of the wires from the sensor could be connected to a common wire for all the sensors in the system. See the BearScan 16 General Information for the wiring sequence.

## *Dual Instruments*

---

When there are two BearScan 16 instruments hooked in parallel there must be power provided and both instruments turned ON for the system to operate.

If there is only power to the instrument where the TEST switch has been disconnected, the TEST mode will be activated at all times.

If the instrument that is double-wired has either wire disconnected (to the test switch), the other instrument can activate both TEST modes on both instruments. The only other way to use the TEST mode is to activate both TEST switches at the same time.



**Tri-States Grain Conditioning, Inc.**

P.O. BOX 468 ♦ SPIRIT LAKE, IA 51360  
712-336-0199 ♦ FAX: 712-336-0299

---