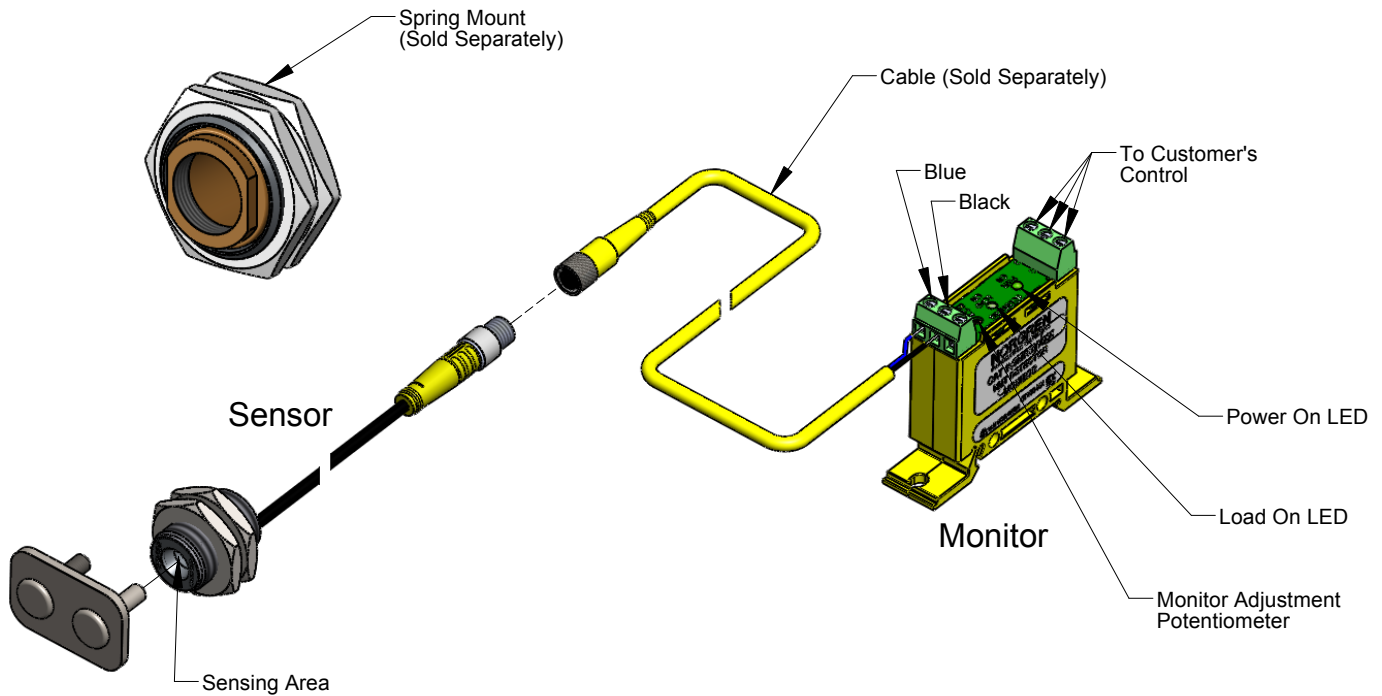


## Installation Instructions

(with thread detection calibration procedures)

### Stud Sensor and Monitor

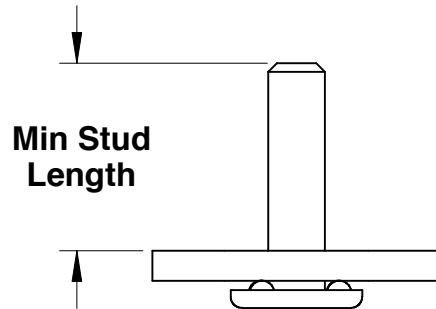
#### 1. System Components:



#### 2. Technical Data

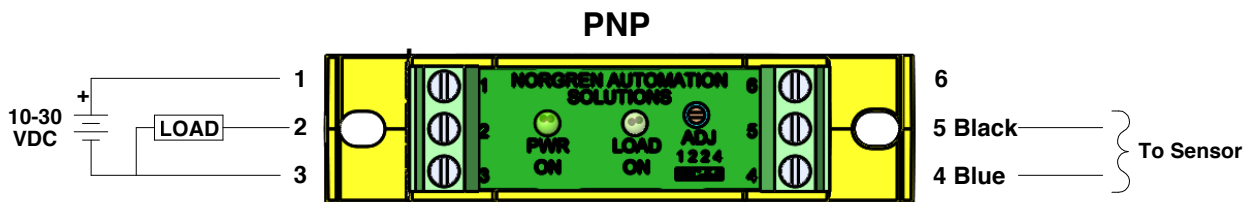
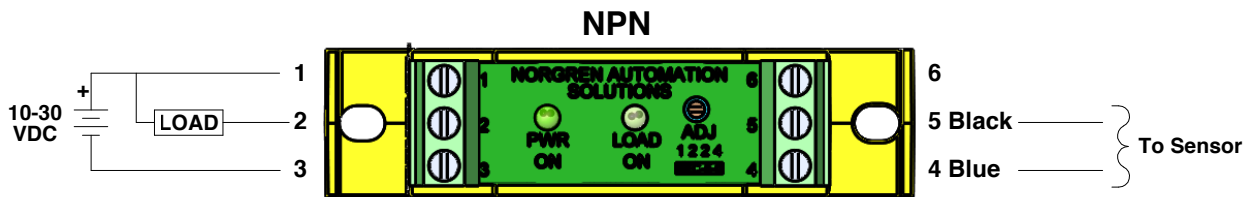
<b>Monitor Power / Sensor Connectors:</b>	3 Position Terminal Blocks
<b>Sensor Connector:</b>	3 - Pin (male) 8mm Pico Type Connector
<b>Supply Voltage Range:</b>	10 - 30 VDC
<b>Maximum Continuous Load Current:</b>	180mA
<b>Operating Temperature Range:</b>	0°C to +60°C
<b>Response Time:</b>	25ms
<b>Green LED:</b>	On When Power Supply is Active
<b>Yellow LED:</b>	On When Target is Detected
<b>Target Material:</b>	Ferrous
<b>Target Size:</b>	See Target Size Tables
<b>Short Circuit Protection:</b>	Yes (self resetting)
<b>Overload Protection:</b>	Current Limits at 0.8A Typ.
<b>Reverse Polarity Protection:</b>	Yes, Up to 50VDC
<b>Interface:</b>	3 - Wire Device: NPN Output (Current Sinking) PNP Output (Current Sourcing)
<b>Monitor Housing</b>	Plastic Housing sealed to IP65
<b>Sensor Housing:</b>	All Steel construction. Housing sealed to IP67
<b>Missing Probe Detection:</b>	Output turns off when probe is disconnected or damaged

Senor Catalog #	Monitor Catalog #	Stud Size	Minimum Stud Length	Output
NSS0506 FOR M5 and M6	SMS36005	5mm	0.31	NPN
	SMS37005			PNP
	SMS36006	6mm	0.31	NPN
	SMS37006			PNP
NSS0810 FOR M8 and M10	SMS36008	8mm	0.62	NPN
	SMS37008			PNP
	SMS36010	10mm	0.62	NPN
	SMS37010			PNP

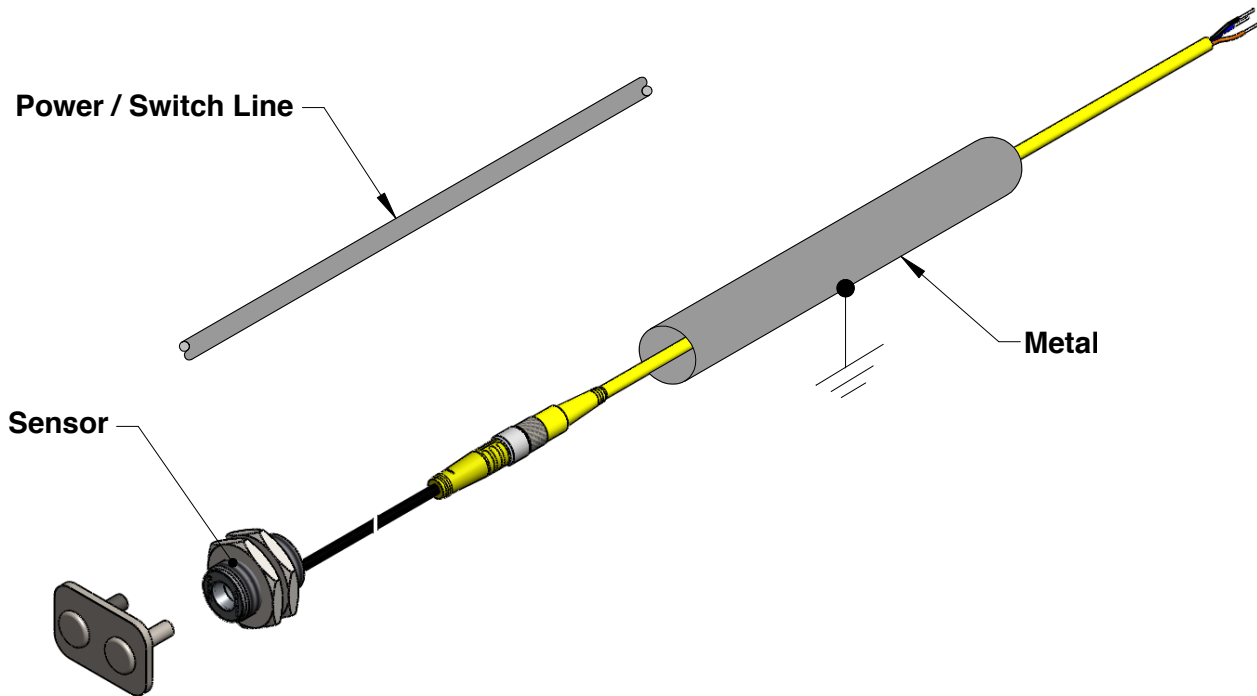


### 3. Wiring

Electrical loads up to 180mA, such as control relays, can be driven directly. Power supply voltages may range between 10 and 30 volts DC, and must match the relay or PLC input requirements.



The sensor cable should not be run near any wires which contain high voltage, high current or a switching load. This can be avoided by running the sensor cable through a metal conduit as shown below, or using a shielded cable for the power / switching line. The sensor cables of multiple stud sensors should not be bundled together (at least 1 cable diameter apart); however, the power/signal cables of multiple monitors may be bundled.



#### 4. Adjusting the Monitor

Each monitor is factory assembled to closely match its intended metric stud sensing size (M5, M6, M8, and M10). In addition a fine tuning adjustment (25 turn adjustment potentiometer) is provided to optimize each monitor for variations in plate thickness, stud length, sensor interchangeability, fixture positioning, and usage with English stud sizes. Turning the adjustment potentiometer clockwise will increase the sensitivity. Turning the adjustment potentiometer counter-clockwise will decrease the sensitivity.

##### Mechanical Alignment of Sensor:

- A. The stud should be centered within the diameter of the sensor to reduce Mechanical wear on the sensor.
- B. The stud should be fully inserted into the entire sensing region of the sensor.

##### Adjustment of Stud Detection

- A. If the monitor's "Load On" LED (yellow) does not illuminate with the stud present, then slowly turn the monitor's adjustment potentiometer clockwise until the LED turns on. Turn an additional 2 full turns clockwise. Check that the monitor's "Load On" LED does not illuminate when the stud is NOT present.
- B. If the monitor's "Load On" LED (yellow) remains illuminated with no stud present, then slowly turn the monitor's adjustment potentiometer counter-clockwise until the LED turns off. Turn an additional 3 full turns counter-clockwise. Then go to step A and complete adjustment.

### Adjustment for Thread Detection

Adjusting the monitor for thread detection requires a stud with threads and a stud without threads.

- A.** If the monitor's "Load On" LED (yellow) does not illuminate with the threaded stud present, then slowly turn the monitor's adjustment potentiometer clockwise until the LED turns on. Turn an additional 2 full turns clockwise. Check that the monitor's "Load On" LED does not illuminate when the stud without threads is present.
- B.** If the monitor's "Load On" LED (yellow) remains illuminated with no threaded stud present, then slowly turn the monitor's adjustment potentiometer counter-clockwise until the LED turns off. Turn an additional 3 full turns counter-clockwise. Then go to step A and complete adjustment.

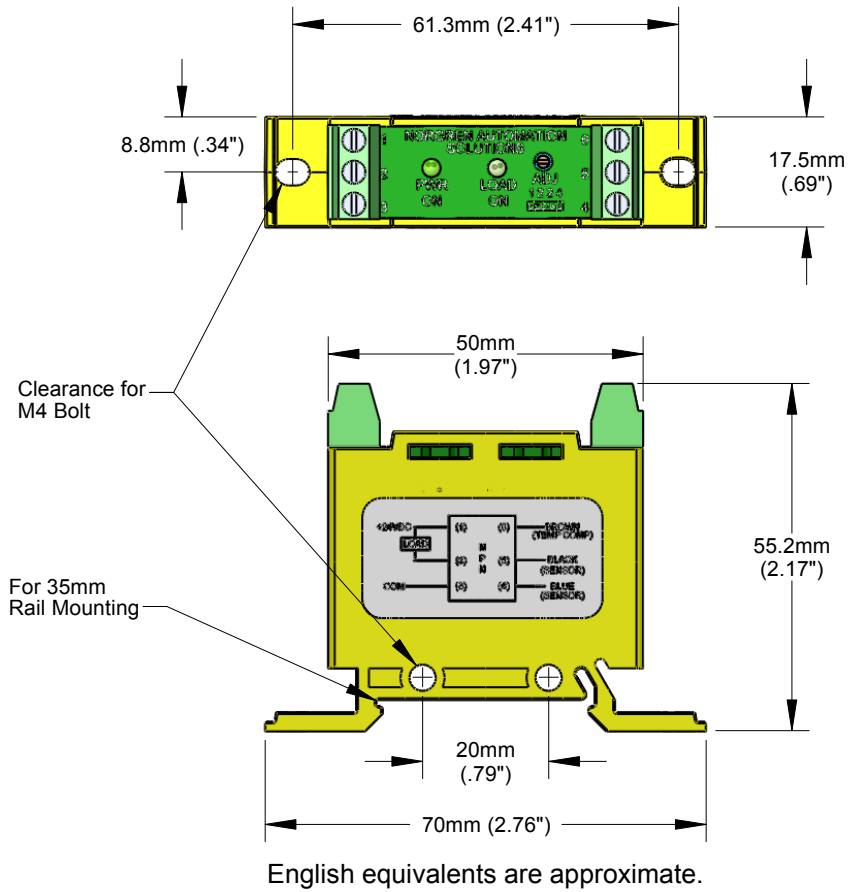
The result will be an output that turns on when threads are present on the stud and no output if the threads are not present.

## 5. Installation Considerations

To avoid mutual interference between two stud sensors, a minimum distance of 16mm (0.63") for the M5 & M6 sensors and 21mm (0.83") for the M8 & M10 sensors must be provided.

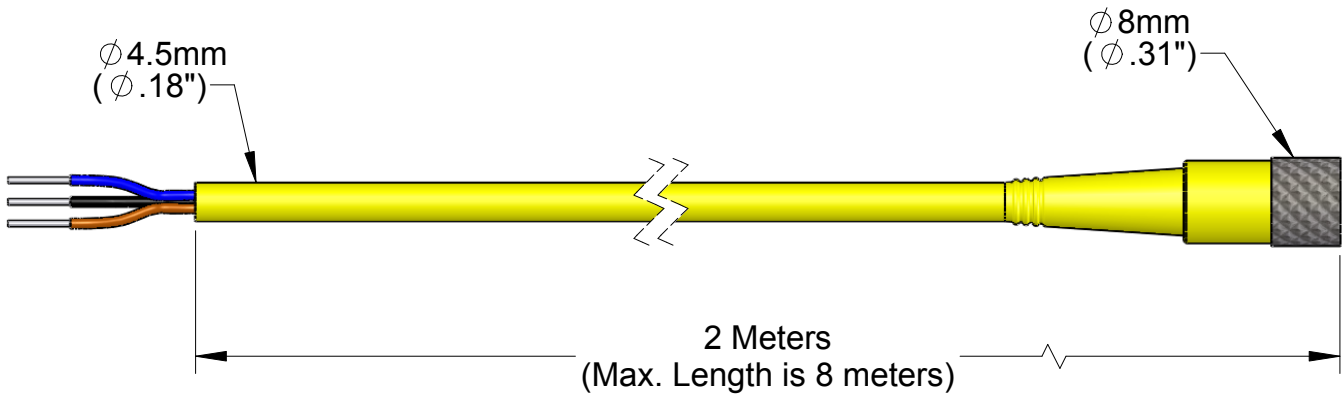
Nearby welding operations will not damage the sensor and monitor, but the monitor may give a false part present indication while the welder is active. All stud detection operations should be performed while the welder is off.

**6. Dimensional Information:**

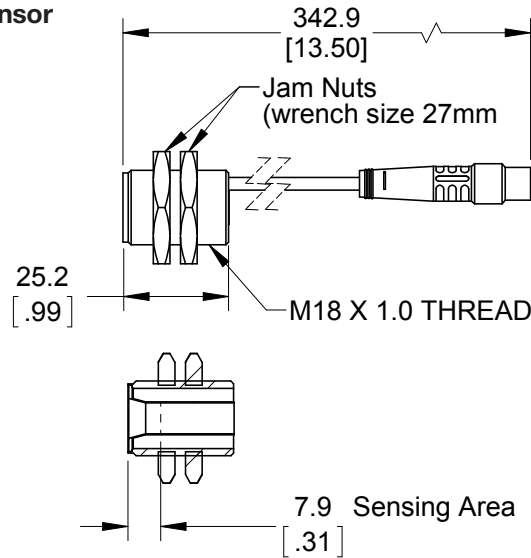


**NAS Part Number**

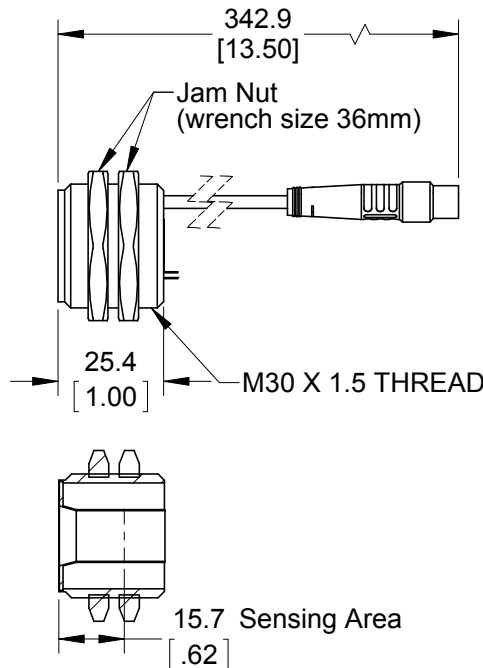
SCE13000 = 2M Cable SCE13005 = 5M Cable



**NSS0506 M5 and M6 Sensor**



**NSS0810 M8 or M10 Sensor**



**Warning**

Improper selection, misuse, age or malfunction of components used in systems can cause failure in various modes. The system designer is warned to consider the failure modes of all component parts and to provide adequate safeguards to prevent personal injury or damage to equipment or property in the event of such failure modes. System designers and end users are cautioned to consult instruction sheets and specifications available from the factory. The system designer/end user is responsible for verifying that all requirements for the application are met.

**Warranty**

The products described herein are warranted subject to seller's Standard Terms and Condition of Sale, available at seller's website.

**Proposition 65:** These products may contain chemicals known to the state of California to cause cancer, or birth defects, or other reproductive harm.