

# SMART ELECTRODES

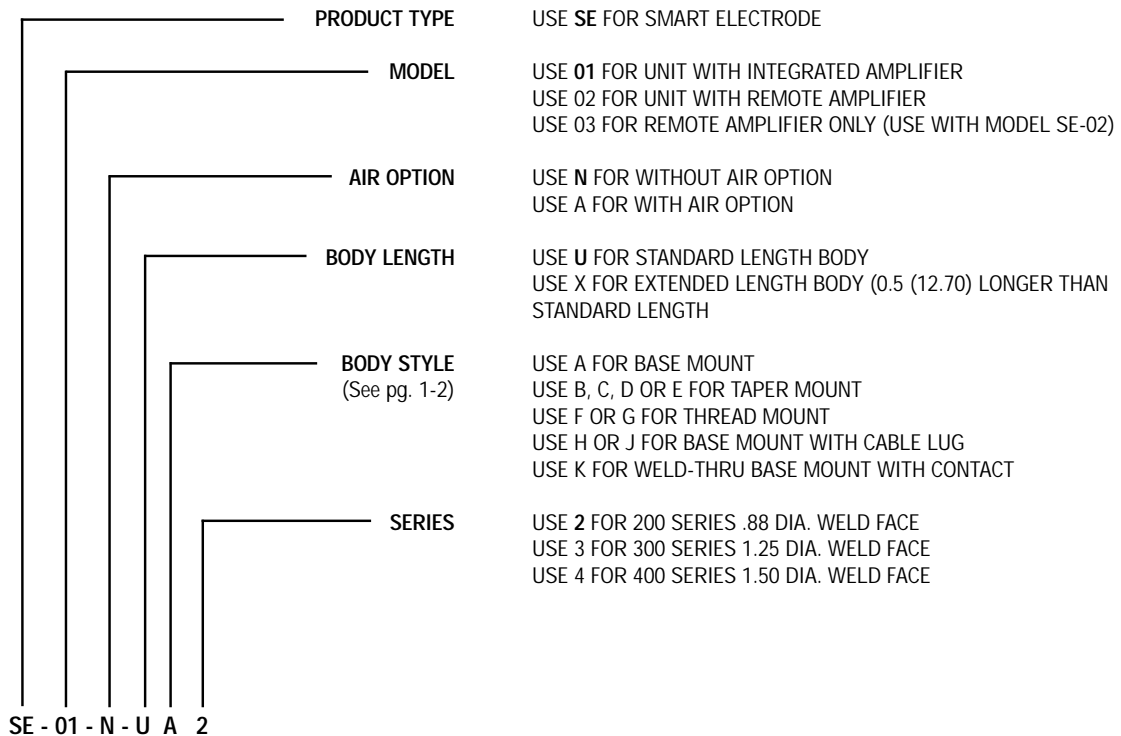
CenterLine has combined its proven nut electrode technology with proven sensing technology to create the patented Smart Electrode nut detection system. The Smart Electrode System can help you determine if a weld nut is present and in the correct orientation. This diagnostic device provides a reliable method for enhancing the quality of the projection welding process.

## System Features

- Available for CenterLine's 2, 3 and 4 series nut weld units.
- Fiber optics communicate data directly from electrode to the monitoring system.
- No PLC or PC is required and there is no software to purchase.
- Able to sense the presence of a single nut at the point-of-weld.
- Capable of sensing piloted and non-piloted nuts.
- Bypass switches to deactivate "gun open" and "single nut" sensors.
- Able to detect when the weldgun has returned to the open position.
- Available for "special electrodes" at a modest additional cost.
- Standard components for quick turnaround time.

The CenterLine Smart Electrode System can be integrated into simple, stand-alone applications or fully integrated monitoring systems. It is compact and easy to install with the aid of the detailed installation manual included with every unit and the tooling change required to incorporate the Smart Electrode is minimal. Set-up and calibration are maintained electronically – no mechanical adjustments are necessary.

### EXAMPLE EXPLANATION CODING



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COMPONENTS	SE-01	SE-02
Fiber optic sensor up to 5' (1.5m)	•	•
Fiber optic integrated control interface (24 volt DC versions available)	•	
Fiber optic non-integrated control interface (24 volt DC versions available)		•
Smart Electrode Remote Amplifier (additional Remote Amplifiers available – Model SE-03)		•
Optional filter regulator (order separately)	•	•
M-12 five pin shielded cord 16.4' (5m)		•
CenterLine nut weld unit (2, 3 and 4 series available)	•	•
Custom CenterLine nut weld bodies and/or copper details are available to suit if required	•	•

## SE-01 Smart Electrode Unit with Integrated Amplifier

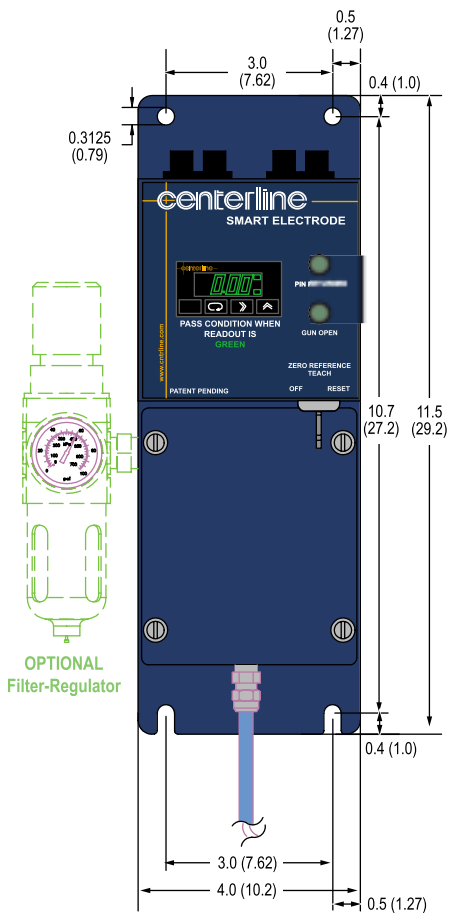


FIGURE 2-1

## SE-02 Smart Electrode Unit with Remote Amplifier

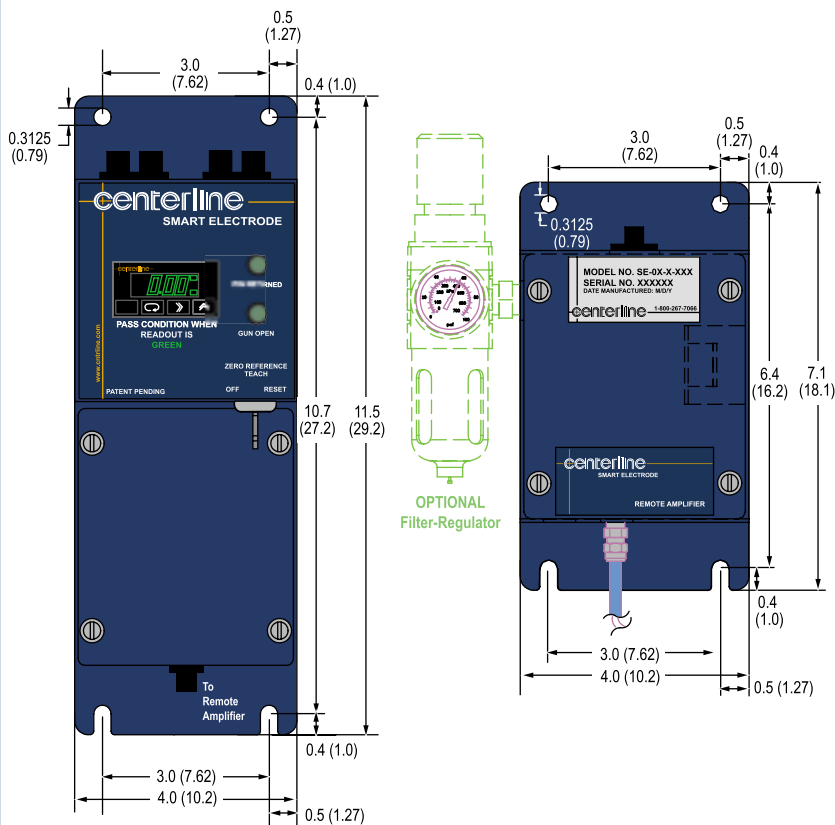


FIGURE 2-2