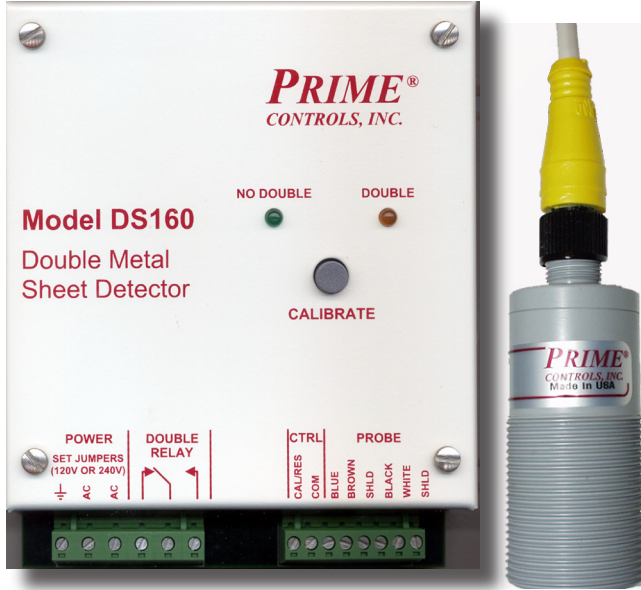


Non-Contact Single Probe Double Sheet Detector

For Stainless Steel & Aluminum Foil

Model DS160 & P10T30P

PRIME[®]
CONTROLS, INC.
METAL SENSING SOLUTIONS



| | |
|----------------|--|
| Thin Thickness | For aluminum foil, copper plate or stainless steel thickness range of .02 mm to .5 mm (.002" to .020"), provides flexibility for many applications with one single probe |
| Non-Contact | Probe to metal separation approximately 12 mm (.5 inches) range |
| Adaptable | Calibrate via teach pushbutton. Instantly measures single metal blank thickness, calculates double thickness, sets reject value |
| Flexible | Automatically identifies probe type and adjusts signal for probe |
| Output | Relay, form "C" rated maximum 10 AMPS (½ HP) @ 240 VAC, 8 AMPS @24 VDC. |
| Diagnostics | Visible warning by alternate flashing lamps for calibrate error and probe failure, fail safe output |
| Termination | Quick disconnect for fast replacement and to reduce downtime |
| Response | Fast, detects a double in 3 mS to 21 mS |

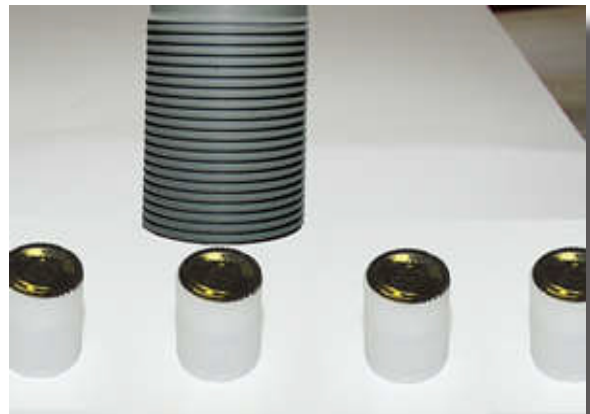
Prime's amazing **Model DS160, Single Probe**, monitors the thickness of aluminum and other nonferrous metals over a range of .02 mm to .5 mm (.002" to .020"). It works by measuring the effects of eddy currents on the nonferrous metal near its' face. Unlike other single probe double sheet detectors this system does not need to make contact with the metal it measures. In fact, the detector prefers a stand off of 10 to 14 mm. The detector maintains its accurate measurement as long as the metal maintains its pass line distance within +/- 1 mm.

It has two simple calibrate methods. For fast double calibration, position a metal target in front of the probe. Push the calibration button once on the front of the DS160. It *automatically measures the thickness, calculates the double value and sets the reject threshold midway between the single and calculated double values*. If you need a precise metal thickness detector, a two sample calibration procedure allows you to teach it the acceptable range. For example position the metal target with a normal thickness in front of the probe. Quickly push the calibration button twice within one second. The DS160 DOUBLE lamp flashes. With the lamp flashing, add the additional thickness (5%, 10%, 50%, 110% or 150% of nominal) and push the button for a third time. The detector sets the reject value midway between the first and second samples.

A form "C" contact relay is used as the control output. It de-energizes when the thickness is greater than the rejected threshold limit, power is lost, or when a probe fault is detected.

Complete System

We recommend: 1 Model DS160 Detector, 1 Model P10T30P Probe, 1 Model CBL104-3 Cable Connector, 1 Model BR30PA Probe Bracket (not shown), substitutes may diminish reliability.



Power input: Configured 120 Volts or 240 Volts AC Max, 50 to 60 Hz, 300 mA operating load

Outputs: SPDT contact relay
Normal run operation with normally open contact closed
Max. load 10 Amps @ 240 V ac, 8 Amps @ 24 V dc
½ HP @ 240 V ac

Output response: < 10 mSec.

Output fail Safe: N.C. contact opens, flashing lamps identifies problem code

Metal Sensitivity: Nonferrous metal, aluminum, copper, stainless Steel

Thickness range: 02-mm to .5-mm (.002" to .020") Aluminum
.02-mm to 3-mm (.002" to .120") 300 series S.S.
.5 ounce copper solid circuit board panel

Target Range: 0 to 12-mm (.5 inch) for aluminum and copper. Stainless Steel 0 to 8-mm

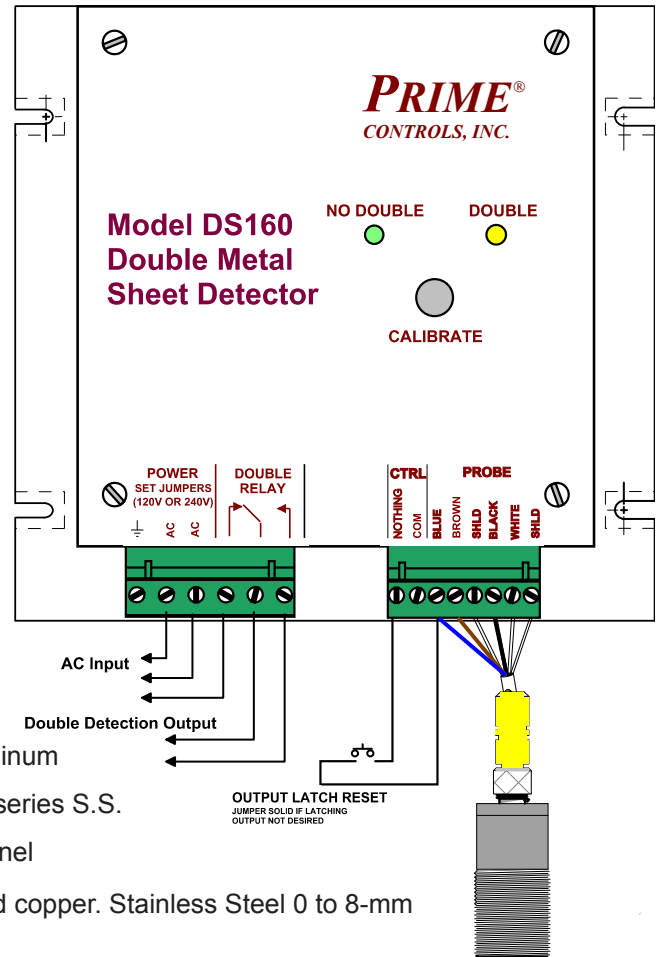
(Dependent on target metal type.)

Calibration: Two option, Push-button switch with single or two target sample

Indicators: Green ON for single, amber ON for double

External input: Reset N.O. contact to closed

Theory : Metal thickness proportionally changes the probes electromagnetic field induction
Consider other factors that effect *thickness sensitivity*. They are metal type, diameter of the probe and distance from probe to target metal.



| Probe Model | Probe Diameter | Target Range(al) | Min Thickness | Max Thickness |
|-------------|----------------|------------------|----------------|-----------------------|
| P10T30P | 30-mm (1.25") | 12-mm (.5") | .02-mm (.001") | .5-mm (.010") Al. |
| " | " | " | " | 3-mm (.120") 300 S.S. |

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