

SPECIALIZING IN METAL SENSING

**solutions**

WORLDWIDE

# DOUBLE SHEET SOLUTIONS

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SING PART DOUBLE BLANK  
DETECTION sensors controls  
metal thickness MISSING PART  
DOUBLE BLANK metal thickness  
sensors metal thickness DOUBLE  
detection

Double Sheet Detection is an important part of quality control to prevent two or more sheets of metal from entering into a process at one time. Failure to detect double sheets of metal or improper thickness can damage tools and dies, resulting in costly repairs and downtime. Prime Controls' systems are created by combining a control and single or dual probes, depending on the application and need.

## SINGLE PROBE DOUBLE SHEET DETECTION

Single Probe Double Sheet Detection uses one probe to measure the thickness of the metal or the presence of two or more sheets of metal and is generally used when access is available to only one side of a part. This is frequently used with robotics, automated de-stackers, sheet feeders and in-fixture (Poke-A-Yoke) applications.

## DUAL PROBE DOUBLE SHEET DETECTION

Dual Probe Double Sheet Detection uses two probes to measure the thickness of the metal or the presence of two or more sheets of metal. Because there are two probes, with the metal passing between, the probes do not come in contact with the metal, a valuable piece of information for customers looking for a non-contact method. This type of system is often used in applications where the part passes thru the probes as it is moving on a conveyor or other automated means from one process to another.

Whether you need a simple in-fixture detector for a single part or a highly configurable and flexible detection system, Prime Controls has you covered with a wide range of solutions to fit every budget and need.



**PRIME CONTROLS HAS YOU COVERED WITH A SOLUTION FOR EVERY BUDGET AND NEED.**



**SIMPLE, SMALL, LOW COST DETECTION FOR THIN FERROUS METALS**

Prime Controls' remarkable DS60 family of Single Probe Double Sheet Detectors has much to offer in a small package. Operating in locations where space is limited, this detector is built like a probe with the control being sealed to withstand harsh industrial environments without an additional enclosure. The design permits the installation of the sensing probe in a tough location. The DS60 control, with its indicators and push-button, can then be mounted in an operator accessible part of a machine. Ferrous metals are monitored over a thickness range of .05mm to 1.5mm (.002" to .060").

**Typical applications include:**

Verification of a single piece and valid thickness of sheet metal prior to forming or coating; in-fixture single part verification during an assembly process.



**SINGLE PROBE DETECTION FOR THICKER FERROUS METALS**

The DS210 is a single probe, electromagnetic Double Sheet Detector. The electromagnetic technology allows the detection of thicker ferrous materials with single sheet thickness ranging from .25mm to 6mm (.01" to .24"). Not only can it provide detection of a double sheet (or over thickness) condition, the DS210 also has the ability to detect no metal, a single sheet (correct thickness) and less than a single sheet (under thickness).

The DS210 features smart probe technology. Once the probe is calibrated, it can be disconnected and reconnected at a later time, all while maintaining its calibration values. This becomes valuable in multiple fixture or tool change applications by allowing a probe to remain mounted in a tool that handles a particular product. When that tool is switched out and later is reconnected for subsequent use, there's no need to recalibrate again, the probe remembers the previous settings.

In fact, each probe can store up to eight individual calibration values corresponding to that particular sheet thickness.

The DS210 is ideally suited where access is restricted to only one side of the part. **Typical applications include:** Robotic and automated de-stacking, machine loading, sheet transfer, in-fixture single/correct part verification.

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**SINGLE PROBE DETECTION FOR STAINLESS, COPPER, ALUMINUM & NONFERROUS METALS**

The DS160 is the ideal choice when working with thinner sheets and foils of aluminum, stainless steel, copper, brass and other non-ferrous metals. Unlike many single-probe double sheet detectors this system does not need to make contact with the metal. The DS160 measures over a thickness range of .02mm to .5mm (.001" to .020") or more for some metal types.

**Capabilities and example applications include:** Detecting foil seals under plastic caps used in food or medical packaging, in-fixture material and thickness validation.



**SINGLE PROBE DETECTION FOR SMALL FERROUS PARTS**

The SC200 control is used to detect the position of very small ferrous metal objects. The system will respond to either a small position or density change of a ferrous object. The corresponding FS12T18S probe uses a weak but concentrated magnetic field for detection. It is possible to detect small items with little to no magnetic pull. The probe has a very narrow field of view, eliminating false detection from ferrous objects off to the side of the sensing face.

**Capabilities and example applications include:** Ideal for verifying embedded ferrous objects in non-ferrous metal such as detecting a 3 mm diameter steel ball bearing in an aluminum housing from 12mm away, or for determining the presence of a metal clip on the back side of a plastic part.



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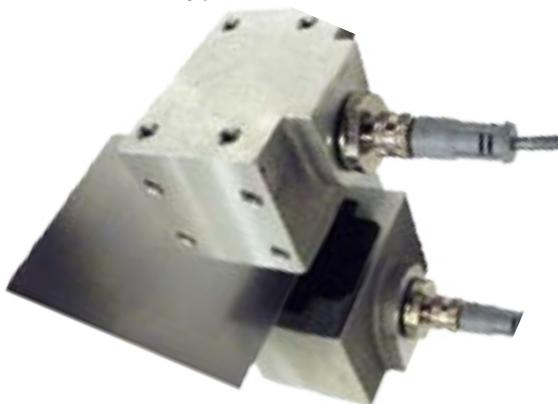
BASIC DETECTION WITH DUAL PROBE SENSING FOR FERROUS OR NON-FERROUS PARTS



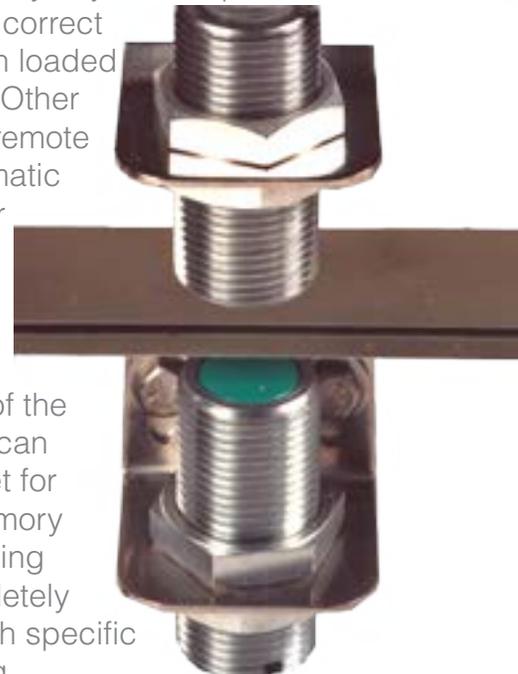
THE ULTIMATE DETECTION WITH DUAL PROBE SENSING FOR FERROUS OR NON-FERROUS PARTS

The DS150 is our basic detector for steel, aluminum, tinsplate, stainless steel, copper, brass and other metals. The DS150 provides a secure level of machine protection from double sheets in a basic and affordable package. Setup is as easy as placing a single sheet between the probes and pressing the calibrate button so that the DS150 learns what a single sheet is. Then following the same procedure with a double (or thicker) sheet to define the value for establishing a reject threshold.

The DS150 is able to easily detect a variety of metals because of its ability to automatically recognize and intelligently change its sensing signal based on the material type that it is sensing. It measures over a wide thickness range of .05mm to 6mm (.002" to .240") or more for some metal types.



The DS1522 is the ultimate dual probe detection unit for all types of metal. This detector programs with the same ease as the DS150, yet provides many more features and functions. It offers multi-gauge detection with capability to store and recall 64 different stored calibrations. The DS1522 can alert the user to the detection of a double sheet (over thickness) condition and also the detection of less than a single sheet (under thickness). Upper and lower tolerance limits are completely adjustable; perfect for ensuring that the correct material has been loaded into the process. Other features include remote calibration, automatic calibration trigger and calibration delay, nominal tracking and adjustable relay delays. All of the specific settings can be individually set for any of the 64 memory calibrations allowing the user to completely custom tailor each specific calibration setting.





## WORLD HEADQUARTERS

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