



KEEP THE PRODUCTION LINE MOVING

DOUBLE SHEET DETECTION

PRIME
CONTROLS
Metal Sensing Solutions

WWW.PRIMECONTROLS.COM



We always focus on providing better solutions through communication and value. At Prime Controls, we work with our customers to find the right solution for their products.

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. Our systems are created by combining a control and single or dual probes, depending on the application and need.

STEEL SERIES

The **DS210 double sheet detection system**, when paired with a single, contacting electromagnetic smart sensor, will measure a wide range of thicknesses for steel and other ferrous metals. The DS210 utilizes pulse and release technology for easy sheet transfer, making this system well suited for pick-and-place and end-of-arm robotic transfer applications.



DS210 SYSTEM

Single-probe, contacting double sheet detector for ferrous metals (steel and tinplate) with pulse and release technology. Additional features include multiple calibration memory, remote calibration and setup, compact design, convenient mounting and wash-down safe.

Complete System Includes:

- 1 DS210 Control
- 1 PE Series Sensor
 - PE36M: Metal thickness of .25mm–3.05mm (.01"–.12")
 - PE42M: Metal thickness of .25mm–4.31mm (.01"–.17")
 - PE54M: Metal thickness of .25mm–5.82mm (.01"–.23")
 - PE75M: Metal thickness of .25mm–6.35mm (.01"–.25")
- 1 CBL108 Series Cable for Power
Connector cable, 8 conductor available in the following lengths:
 - 2 meters, 5 meters, 15 meters
- 1 CBL109 Series Cable for Interconnect
Connector cable, M-F, 8 conductor to be used as interconnect between probe and control, available in the following lengths:
 - 2 meters, 5 meters
- ET210 Optional
Industrial communications gateway via Ethernet/IP.

STEEL SERIES

Our steel solutions include the **DS100** and **DS60 series** double sheet detector controls, along with the **DS210 double sheet detection system** that, when paired with a single, contacting double sheet sensor, will measure a wide range of thicknesses for steel and other ferrous metals. These detection systems are perfect for sheet feeders/slitter tables, robots and destackers forming parts for the automotive, canmaking and other metal forming industries.

DS100 SERIES

Single-probe, contacting double sheet detection systems for thin steel and ferrous metals.

Series Control Options:

DS100: Double sheet control in a sheet metal housing for mounting in an electrical enclosure.

DS101: Double sheet control in an IP 65 rated polycarbonate enclosure, for easy and flexible mounting out in an open plant floor environment, on a machine or in an electrical enclosure.

Complete System Includes:

- 1 DS100 Series Control
- 1 PM Series Sensor
 - Metal thickness of .050mm–1.524mm (.002"–.06")
- 1 CBL100 Series Cable
 - Connector cable, shielded, 3 conductor available in the following lengths:
 - 3 meters, 3 meters with right angle, 6 meters, 10 meters, 15 meters, 30 meters



PM SERIES SENSORS

Threaded barrel sensors in 303 stainless steel housings

PM4

Sensor diameter of 18mm
Metal thickness of .050mm–.381mm (.002"–.015")

PM15

Sensor diameter of 36mm
Metal thickness of .15mm–1.524mm (.006"–.06")

PM10

Sensor diameter of 30mm
Metal thickness of .1mm–1.016mm (.004"–.04")

PM11C

Sensor diameter of 30mm with 10' pigtail cable
Metal thickness of .254mm–1.016mm (.01"–.04")

DS60 SERIES

Low cost single-probe, contacting double sheet detection system for thin steel and ferrous metals.

Series Control Options:

DS60: Output type PNP & NPN. No part present output, which makes it good for automotive weld environments.

DS63: Output type PNP, input type PNP for remote calibration.

DS64: Output type NPN, input type NPN for remote calibration.

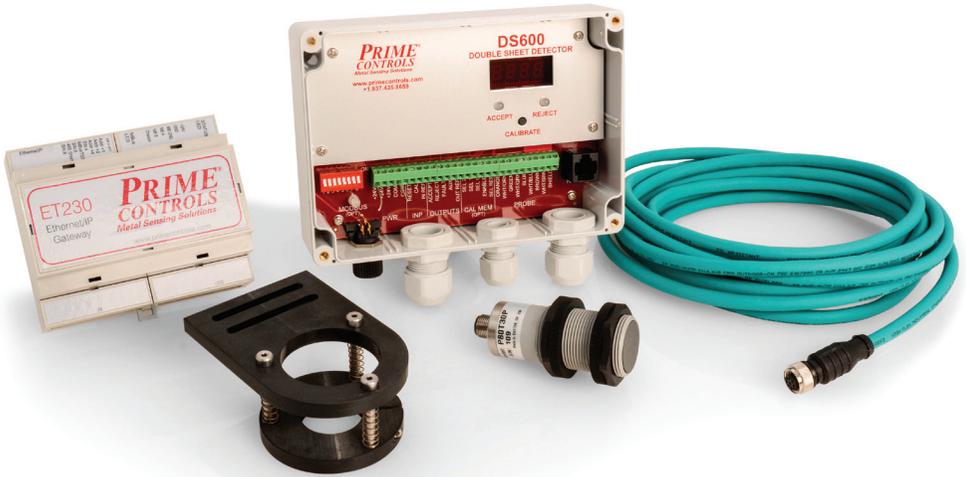
Complete System Includes:

- 1 DS60 Series Control
- 1 PM Series Sensor
 - Metal thickness of .050mm–1.524mm (.002"–.06")
- 1 CBL113 Series Cable for Power
 - CBL113: Connector cable, 5 conductor, female available in the following length:
 - 2 meters, 5 meters, 10 meters
- 1 CBL110 Series Cable for Interconnect
 - Interconnect cable between control and sensor available in the following lengths:
 - 2 meters, 5 meters



ALUMINUM SERIES

Our aluminum solutions include the **DS600 series** double sheet detector controls. When paired with a single, non-contacting sensor, the DS600 series detects a wide range of thicknesses of aluminum and other non-ferrous metals, from very thin to very thick gauges. As the automotive industry has moved more towards the use of more and more aluminum in its automotive body parts, the DS600 series was designed to provide the first of its kind double sheet detector that is both single sided and non-contact. It's perfect for automation applications, robotics, automated destackers, sheet feeders and in-fixture (poke-a-yoke), where sensing from one side is possible.



DS600 SERIES

Single-probe, non-contacting double sheet detector for thin to thick aluminum metals.

Series Control Options:

DS600: Basic double sheet detection control for aluminum metals.

DS600-P: Premium control plus 8 slot calibration memory selected through discrete input/output.

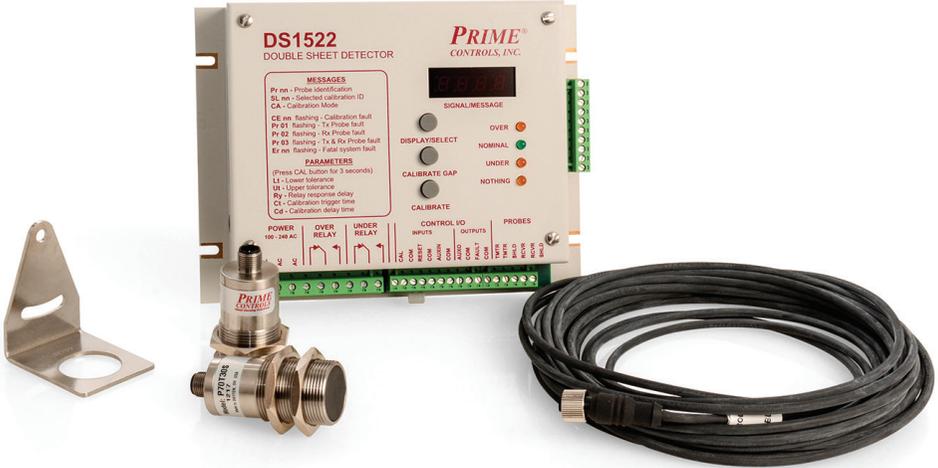
DS600-PC: Premium^{PLUS} control with 64 slot memory, memory backup and industrial communications.

Complete System Includes:

- 1 DS600 Series Control
- 1 P80T30P Series Sensor
– P80T30P: Metal thickness of .025mm–3.81mm (.001"–.15")
- 1 CBL600 Series Cable
High-flex PUR cable available in the following length:
– 5 meters, 15 meters
- ET600 Optional
Industrial communications gateway via EthernetIP.

ALL METAL SERIES

Our all metal solutions include the **DS150 series** double sheet detector controls. When paired with two non-contacting double sheet sensors, these detectors will measure a wide range of thicknesses for all metal types. These control systems detect double sheet instances, where the metal is able to pass between the sensors for a non-contact, non-marring solution. Our all metal solutions are perfect for sheet feeders for the automotive, canmaking and other metal forming industries.



DS150 SERIES

Dual-probe, non-contacting double sheet detection systems for all metal types.

Series Control Options:

DS150: Basic double sheet detector

DS152: 24V DC power basic double sheet detector

DS1510: Basic plus double sheet detector with over/under thickness indication and automatic calibration. Having the control in a safe location, separate from the probes ensures longer life and lower total cost of ownership.

DS1522: The ultimate double sheet detector with over/under thickness detection, automatic calibration, incremental threshold adjustment and 64 slot calibration memory.

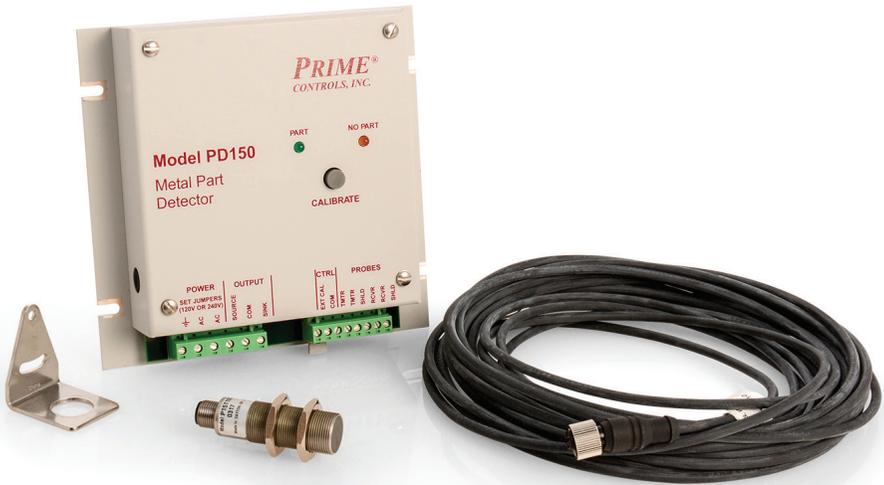
Complete System Includes:

- DS150 Series Control
- 2 of the same P15, P70 or P1000 Series Sensor
 - P15 Series: Non-ferrous sensitive with metal thickness of .050mm–1.27mm (.002"–.05").
 - P15T18S: 18mm diameter threaded barrel
 - P15T30S: 30mm diameter threaded barrel
 - P70 Series: Ferrous sensitive with metal thickness of .050mm–1.27mm (.002"–.05").
 - P70T18S: 18mm diameter threaded barrel
 - P70T30S: 30mm diameter threaded barrel
 - P1000BC: Ferrous sensitive with metal thickness of .1mm–7.5mm (.004"–.300").
 - Heavy aluminum cast housing with M12 Connector.
- 2 CBL101 Series Cables
 - Connector cable with a right angle, shielded, 2 conductor twisted pair available in the following lengths:
 - 3 meters, 3 meters with right angle, 6 meters, 17 meters, 30 meters

*Mounting bracket available if needed.

PART DETECTION SERIES

Our part detection series includes the **PD100** and **SC200 series** part detectors. When paired with a single sensor for ferrous metal objects or dual, non-contacting sensors for ferrous and non-ferrous metal parts, these systems verify the presence of visible or hidden parts within an assembly, an important step in the quality control process.



PD100 SERIES

Metal position and missing part detection systems for ferrous and non-ferrous metals.

Series Control Options:

PD100: When paired with a single, contacting sensor, this control detects the presence of hidden ferrous metal parts for part presence verification.

PD150: When paired with two like non-contacting sensors, this control detects the presence of both ferrous and non-ferrous metals parts for part presence verification.

Complete System Includes:

- 1 PD100 Series Control
- 1 PM Series Sensor (for PD100 Control)
 - PM4: Metal thickness of .050mm–.381mm (.002"–.015")
 - PM10: Metal thickness of .1mm–1.016mm (.004"–.04")
 - PM15: Metal thickness of .15mm–1.524mm (.006"–.06")
- 2 P15 Series Sensor (for PD150 Control)
 - P15T18S: Metal thickness of .050mm–1.27mm (.002"–.05")
- 1 CBL100 Series Cable (for PD100 Control)
Connector cable, shielded, 3 conductor available in the following lengths:
 - 3 meters, 3 meters with right angle, 6 meters, 10 meters, 15 meters, 30 meters
- 2 CBL101 Series Cable (for PD150 Control)
Connector cable, shielded, 2 conductor twisted pair available in the following lengths:
 - 3 meters, 3 meters with right angle, 6 meters, 17 meters, 30 meters

PART DETECTION SERIES

The **SC200 series** is a unique, compact part-detection system that, when paired with a single sensor, detects the presence of ferrous metal parts.



SC200 SERIES

Single-probe metal part detection systems for ferrous metals (steel and tinplate).

Series Control Options:

SC200: Part detection control that's better for slower operations and where 8 mS de-bounce is necessary to overcome the erratic motion of a part.

SC201: Part detection control that's better for applications where the 2 mS de-bounce will not allow the detection of the lead edge of a part multiple times and where the output must remain on for at least 25 mS to energize a relay coil or overcome a slow PLC scan time.

Complete System Includes:

- 1 SC200 Series Control
- 1 FS Series Sensor
 - FS12T18S: Standard flat sensor head
 - F12T18S-SP1: 45-degree angled sensor head
 - FS12T18SC: Standard flat sensor head with 2 meter cable
- 1 CBL113 Series Cable for Power
 - Connector cable, 5 conductor, female available in the following lengths:
 - 2 meters, 5 meters, 10 meters
- 1 CBL111 Series Cable for Interconnect
 - Interconnect cable between control and sensor available in the following length:
 - 2 meters

THIN METAL SERIES

Our thin metal solutions include the **DS160 series** and **DS3410** double sheet detector controls. These systems detect double sheets of very thin stainless steel, aluminum, thin foil and copper. Depending on the contact preference, either contact or non-contact, the DS160 series and DS3410 system has you covered. Perfect for thin metal product production where double sheet detection is critical, such as metal food packaging, pharmaceutical packaging, metal caps and seals, peel-off lids and blister packs.

DS160 SERIES

Single-probe, non-contacting double sheet detection systems for thin stainless steel and aluminum metals.

Series Control Options:

DS160: Thin metal double sheet detector, with over/under thickness indication.

DS161: Thin metal double sheet detector, with single indication only.

DS162: Thin metal double sheet detector, 24V DC Power.

Complete System Includes:

- 1 DS160 Series Control
- 1 P10T30P Series Sensor
 - P10T30P: Metal thickness of .025mm-.254mm (.001"-.01")
 - P10T30P-H: Metal thickness of .025mm-.254mm (.001"-.01") high-gains
- 1 CBL113 Series Cable
 - Connector cable, 5 conductor, female available in the following lengths:
 - 2 meters, 5 meters, 10 meters



DS3410 SYSTEM

Dual-probe, non-contacting double sheet detection system for thin stainless steel and aluminum metals.

Complete System Includes:

- 1 DS3410 Series Control
- 1 P1 Series Sensor: Metal thickness of .025mm-.254mm (.001"-.01")
 - P1C: Focused and precise sensor
 - P1CS: Extended range where more space is required
 - P1SH: Short 1" high housing with 15" pigtail cable for space limiting applications
 - P1T18P: 18mm diameter PVC plastic threaded barrel
- 2 CBL101 Series Cables
 - Connector cable with a right angle, shielded, 2 conductor twisted pair available in the following lengths:
 - 3 meters, 3 meters with right angle, 6 meters, 17 meters



*Mounting bracket available if needed.

OUR DOUBLE SHEET DETECTORS ARE TRUSTED BY THE TOP AUTOMAKERS FROM AROUND THE WORLD.

Backed by 25+ years of experience, Prime Controls' extensive line of world-class double sheet detection solutions improves your bottom line, boosts product quality, and ramps up your manufacturing efficiency.

We offer a wide range of double sheet detection systems for metals such as steel, copper and aluminum, covering a wide range of metal thicknesses, from very thin foils to very thick blanks of steel. Whether our sensors can contact your metal, or if you would prefer the metal to pass between or not contact the metal, we've got you covered.



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