DOUBLE SHEET DETECTION

DS63/64

Single Probe Double Sheet Detector

A COMPLETE SYSTEM REQUIRES:

Control: DS63 or DS64 (Qty 1)
Probe: PM4, PM10, PM15 (Qty 1)
Cable: CBL110, CBL113 series (Qty 1 each)
Bracket: Dependent on selected probe

FEATURES:

- Small package, big detector
- Single probe
- Detects ferrous metals (Steel & Tinplate)
- Thickness ranging: .05mm-1.5mm (.002”-.060”)
- 18mm threaded aluminum housing to withstand harsh industrial environments
- No additional enclosure required
- Ideal for application where space is limited or hard to access locations
- Provides flexibility for a broad range of thickness applications
- Push button or remote calibration
- Output capabilities to distinguish between a single, double or nothing present
- Push button and indicators easily visible

ABOUT DS63/64

Prime Controls’ remarkable DS63 and DS64 Single Probe Double Sheet Detectors have much to offer in a small package. Operating in locations where space is limited, these detectors are 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 DS63/64 control, with its indicators and push-button, can then be mounted in an operator accessible part of a machine.

Ferrous metals, such as steel and tinplate, are monitored over a thickness range of .05mm to 1.5mm (.002” to .060”). Each unit has an additional output for single sheet present as well as the standard double sheet output. The DS63 unit sources current from both outputs. The DS64 sinks current through both outputs.

The DS63/64 detectors learn fast. Simply place a single metal sheet on the front of the probe and push the calibrate button once or momentarily close the external calibration line and the unit is calibrated. That’s it. By teaching the single thickness value, the units automatically measures the thickness, calculates the double value and sets the reject threshold. There is nothing more to adjust.

In addition, by rapidly inputting the calibration twice within .7 seconds, the detect switches to its two sample calibration procedure. This allows users to teach the detector a custom range for single and double values. The threshold is set between the two thickness values.

The double output is connected for fail-safe operation. The detector’s double output de-energizes when the reject threshold limit is exceeded; power is lost; or when a fault condition is detected.

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PRIME CONTROLS
Metal Sensing Solutions

PRODUCT SPECIFICATIONS

POWER INPUT: Vin= 12-24 Volts DC

OUTPUTS: DS63: 1 double output, 1 single output, both PNP current sourcing Vin. DS64: 1 double output, 1 single output, both NPN current sinking. Max load source 24 volts, 100mA max.

MAX LOAD: 24 volts, 100mA. NPN transistor sinking: single sheet = 5-30 V DC @ 100mA max, no sheet = 0 V dc

OUTPUT FAIL SAFE: Contact goes to double condition, PNP changes to nothing condition, flashing indicators sequence code identify problems

PROBE TYPES: PM4, PM10, PM15

CABLE TYPES: CBL110, CBL113 series
Various cables lengths available

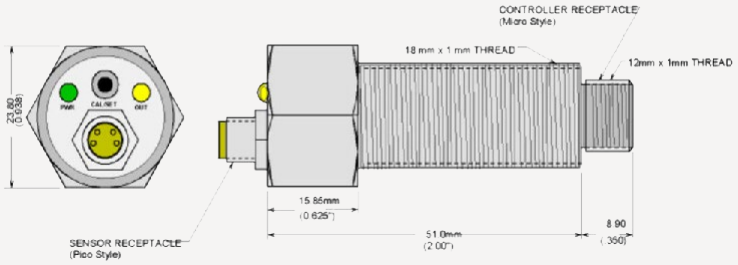
METAL SENSITIVITY: Ferrous metal (Steel & Tinplate)

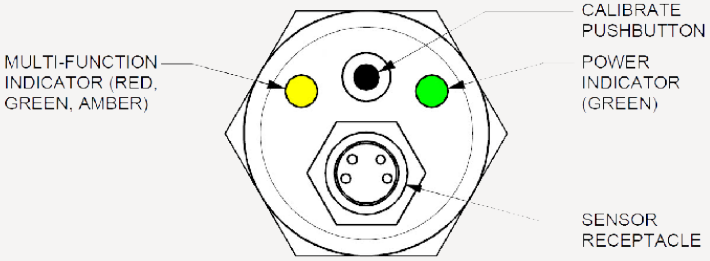
THICKNESS RANGE: .05mm-1.5mm (.002”-.060”)

CALIBRATION: Push-button switch with single sheet or double sheet sample or external line. DS63: source supply current to calibration line. DS64: sink current to common from calibration line

INDICATORS: Green power, multi-color = red for double, amber slow flash waiting for second, fast flash calibration not acceptable

THEORY OF OPERATION: Permanent magnetic flux field is shunted across sensor poles by the thickness of metal. Max thickness is limited by the diameter of the probe. The chart below provides a range for each probe.





Probe Model	Probe Diameter	Breakaway Force	Min. Thickness	Max. Thickness
PM4	18mm (.7”)	.9 Kg*	.04mm (.0015”)	.4mm (.015”)
PM10	30mm (1.18”)	4.5 Kg*	.1mm (.004”)	1.0mm (.040”)
PM15	36mm (1.41”)	9.0 Kg*	.15mm (.006”)	1.5mm (.060”)

* For example: $\frac{.09mm}{.8mm}$ x 1.3 kg = 0.146 kg or .32 lbs 1 kg = 2.2 lbs, 1mm = .039 inch

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