

Models DS60

Small Size-Big Detector

Metal Sensitivity ferrous, steel, tinplate, magnetic stainless

Thickness Range .05 mm to 1.5 mm (.002" to .060"), provides flexibility for a broad range of thickness applications with one detector

Calibration **push-button**, one push instantly measures single metal blank thickness, calculates double thickness, sets reject value

Double Output **two outputs**, current source & current sink

Diagnostics alternately flashing lamps warn of calibration error and probe failure

Connectivity **quick cable connectors** for fast replacement and to reduce downtime

Fast response outputs switch in 3-mS

Power input 12 to 24 DC Volts

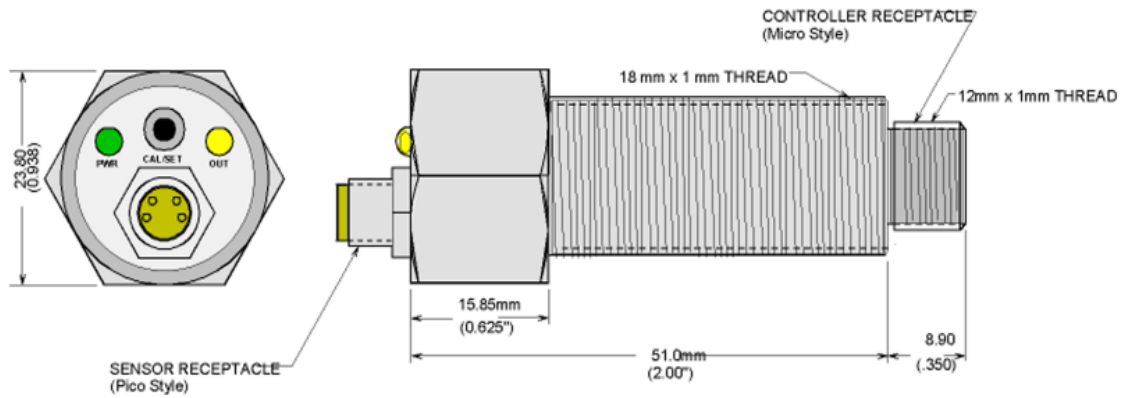


Prime's remarkable **Model DS60, Single Probe Double Sheet Detector** has so much to offer in a small package. It operates in locations where space is limited. It detects steel or tinplate (ferrous metals) over a thickness range of .05-mm to 1.5-mm (.002" to .060"). It measures the change in a magnetic field as metal contacts it's face. Probe Models PM4, PM10 and PM15 operate with the Model DS60. Each model represents a different housing size, magnetic attraction and thickness range. A table on the back page illustrates the difference.

The DS60 is a fast learner. Place a single metal sheet on the front of the probe and push the calibration button once. That's it. With one push of the button, the Model DS60 *automatically measures the thickness, calculates the double value and sets the reject threshold*. There is nothing more to adjust.

In addition, by rapidly pushing the calibration button twice, the detector switches to it's two sample calibration procedure. This allows the user to teach the detector a custom range for single and double values.

Both sinking and sourcing transistor outputs are provided in the Model DS60. Outputs are connected for fail-safe operation. It de-energizes when the reject threshold limit is exceeded; power is lost; or when a fault condition is detected.



Power input: $V_{in} = 12$ to 24 Volts DC

Output **PNP transistor sourcing**
 Single Sheet = V_{in} minus 1 volt
 No Sheet = 0 V dc
 Maximum load source 24 Volts, 100mA max.

NPN transistor sinking
 Single Sheet = 5 to 30 V dc @ 100 mA 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.

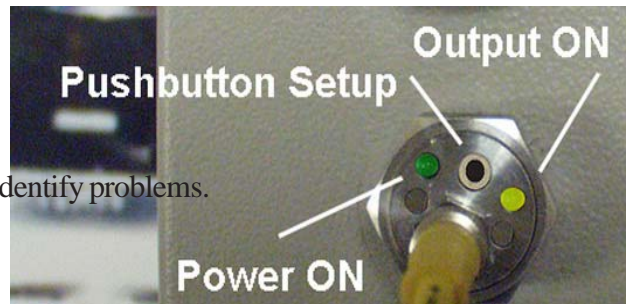
Metal Sensitivity: Ferrous metal, steel, tinplate

Thickness range: 04mm to 1.5mm (.002" to .060")

Calibration: Push-button switch with single sheet or double sheet sample

Indicators: Green power, amber for double, amber blinking probe is bad calibrate **E**

Sensor Operation: Permanent magnetic flux field is shunted across sensor poles by the thickness of metal. Maximum 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	18 mm (.7")	.9 Kg*	.04mm (.0015")	.4mm (.015)
PM10	30 mm (1.18")	4.5 Kgs*	.1mm (.004")	1.0mm (.040)
PM15	36 mm (1.85")	9.0 Kg*	.15mm (.006")	1.5mm (.060")

* Worst case. This is straight away force, perpendicular to face. Shear force is approximately 1/4 BF

$lbs = kg \times 2.2$

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