

Models DS61, DS62

PRIME[®]
CONTROLS, INC.
METAL SENSING SOLUTIONS

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
Single Output	Model DS61 Current Source
Double Output	Models DS62 Current Sink
Diagnostics	alternately flashing lamps warn of calibration error and probe failure
Metering	Variable indicator flashrate with thickness change
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 DS6x , Single Probe Double Sheet Detector** is a control that has so much to offer in a small package. It operates in locations where space is limited. It is sealed to stand up against harsh industrial environments and without an additional enclosure. The split self-contained design permits the installation of the probe in a *hard to get at location* while the detector is mounted at a safer, more accessible position. It detects steel or tinplate (ferrous metals) over a thickness range of .05-mm to 1.5-mm (.002" to .060"). Each model has an additional output for **Single** sheet present as well as the standard **Double** sheet output. The Model DS61 sources current from both outputs. The Model DS62 sinks current through both outputs.

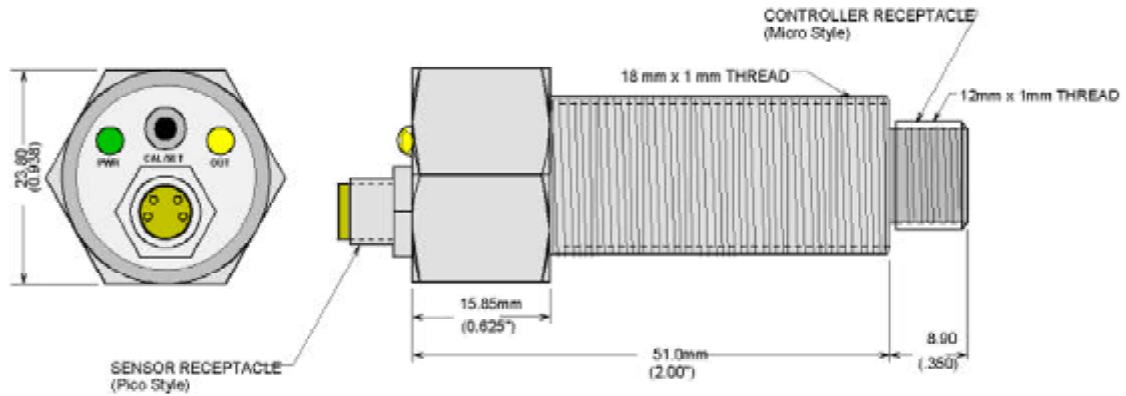
Probe Models PM4, PM10 and PM15 operate with both detectors. Each probe represents a different housing size, magnetic attraction and thickness range. A table on the back page illustrates the difference.

The DS6x detector learns fast. Place a single metal sheet on the front of the probe and push the calibrate button once. That's it. With one push of the button, the Model DS6x *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.

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

Outputs Model DS60, 2 Double Outputs, 1 Pnp, 1 Npn

Model DS61, 1 Double Output, 1 Single Output, both PNP current sourcing V_{in}

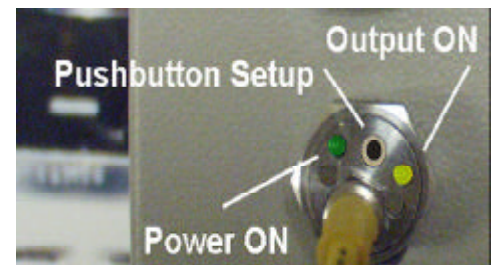
Model DS62, 1 Double Output, 1 Single Output, both NpN current sinking

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: 04-mm to 1.5-mm (.002" to .060")

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

Indicators: Green power, Multi Color = red for double, amber slow flash waiting for second, fast flash calibration not acceptable

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 x 2.2

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