

Model PD100

*Pushbutton Calibrate
Fast Response*

Position & Missing Part Detector

More Than A Proximity Detector

Prime's **Model PD100 Single Probe** Position Detector is a unique detector that solves many application problems that proximity sensors are unable to accomplish.

1. It is used to monitor the return position of a ferrous metal part to within .025mm (.001") The metal must effect a magnetic field.
2. It also detects ferrous metal through any metal in the foreground. It's output responds only when metal is at or over the calibrated thickness, up to 1.5 mm (.060") maximum.

To calibrate, simply insert the acceptable metal part in front of the probe, then push the calibrate button. The detector automatically sets the accept threshold at the calibrate value or greater. It's form "C" contact relay remains de-energized if the metal is less than calibrated, power is lost, or a probe failure is detected. An additional PnP transistor output is on when any metal is in proximity. This output is used to verify a ferrous metal part is present. The Model PD100 detector has fault detection that immediately analyzes any problem and operates a flashing Green and Amber lamp sequence that directs the operator to the problem through reference codes.

PRIME'S MODEL PD100 Features...

Detection range 6mm maximum

Responds to part detection in 3 mS to 21 mS

Maximum metal thickness 1.5mm with Model PM15 probe

Senses through foreground metal to 50% of max thickness

Automatic setup identifies probe type

Push-button calibration instantaneously sets reject threshold and adjusts signal for metal

Diagnostic warning alternately blinking indicators for error and probe failure, fail safe output

Power Input jumper configured to 120 or 240 VAC @ 50-60 Hz for international applications

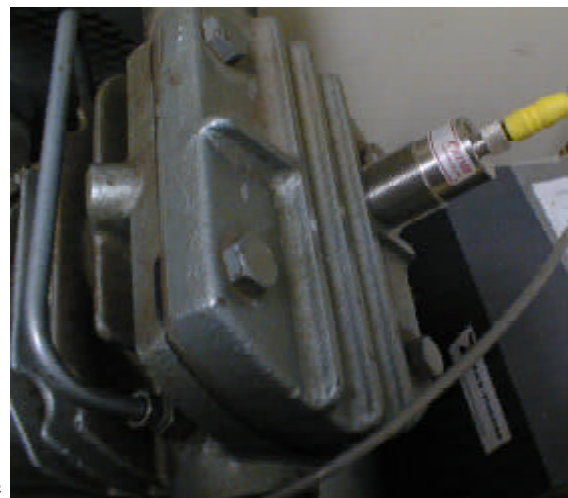
Quick connect terminals for fast replacement and to reduce downtime

Contact relay output rated at 10 AMPS (½ HP) @240VAC, 8 AMPS @24VDC.

Extra outputs signal metal is present with PnP transistor



Detects ferrous metal through metal in the foreground



Detects accurate position within .025mm up to 70C

Power input: Jumper configuration to 120 Volts Max or 240 Volts AC Max, 50 to 60 Hz, 300 mA operating load

Reject Output: SPDT contact relay
 Calibrate part detected, NC closed
 Max. load 10 Amps @ 240 V ac,
 8 Amps @ 24 V dc
 ½ HP @ 240 V ac
 response time < 10 mSec.

Present Output: PNP transistor
 Metal detected (less than calibrated)
 single = 24 V dc
 nothing = 0 V dc
 load source 24 Volts, 100mA max.
 response time < 2 mSec.

Output fail Safe: Contact goes to reject condition
 PNP changes to nothing condition
 Indicators flash sequence

Metal Sensitivity: Ferrous metal, steel, tinplate, no non-ferrous

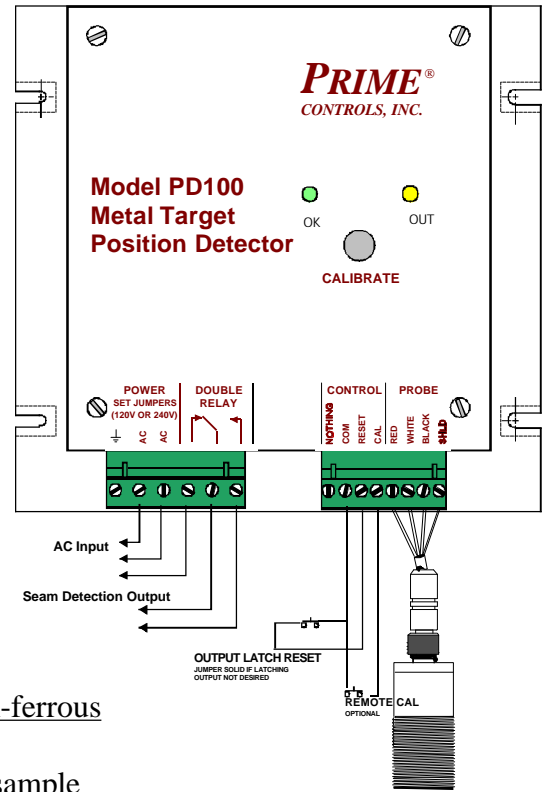
Thickness range: 04mm to 1.5mm (.0015" to .060")

Calibration: Push-button switch with single part sample

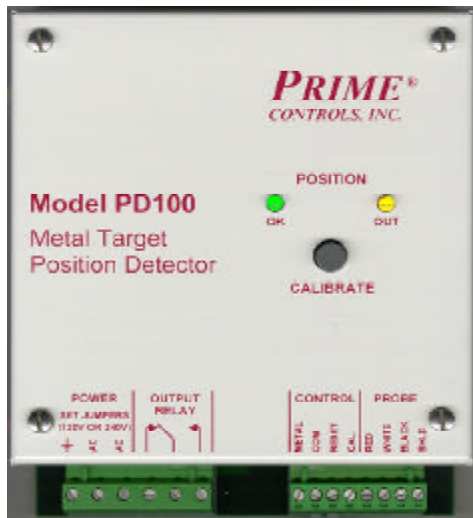
Indicators: Green for OK, amber for OUT of position, flashing lamp indicates bad probe or disconnected

External inputs: External calibration and output reset on terminal strip

Sensor Operation: Permanent magnetic flux field shunts across sensor poles proportionally to the thickness of metal. Maximum thickness is limited by the diameter of the probe



Probe Model	Probe Diameter	Breakaway Force	Min Thickness	Max Thickness	Max. Cal. Distance	Min. Cal. Distance
PM4	18 mm (.7")	13 lbs	.04mm (.0015")	.4mm (.015)	0.6mm (0.024)	0mm
PM10	30 mm (1.18")	20 lbs	.1mm (.004")	1.0mm (.040)	1.5mm (0.06")	0mm
PM15	47 mm (1.85")	30 lbs	.15mm (.006")	1.5mm (.060")	2.0mm (0.08")	0mm



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