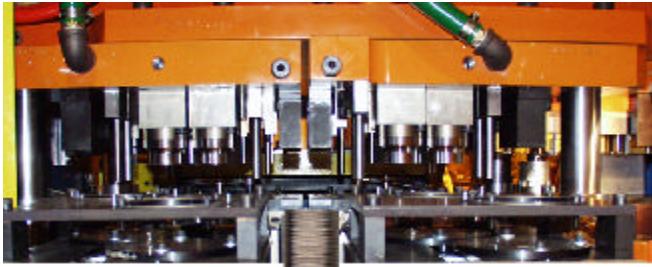


## MODELS PM4, PM10, PM15

### Single Probe Double Metal Detection



Prime's Single Probes are ideal for use in machines where sensing metal blanks or sheets are accessible only on one side. The probe



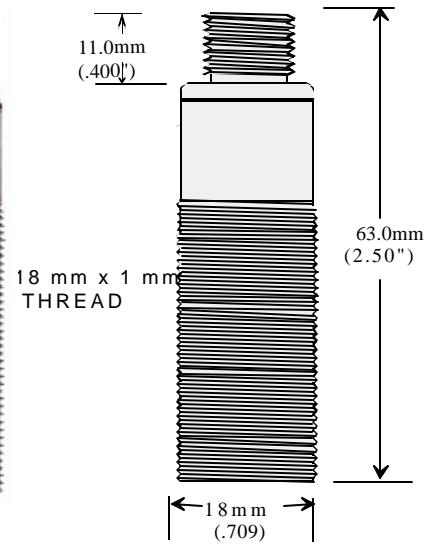
Simulated photo of the ideal location to install double blank sensor, flush with metal slide plate.

face has a permanent magnet that is used as part of the sensing circuit as well control the sheet. It monitors the magnetic attraction of ferrous metal. The attraction strength is proportional to metal thickness. Either of the three probes described in this sheet operate with either Prime Model DS100 or DS101 Double Sheet Detector. Each detector provides power conversion from 120 or 220 Vac 50-60 Hz, calibrate and threshold logic and output switching (max. up to 240 Vac at 10 amps).

#### Specifications:

<b>Thickness Detection:</b>	.04 mm (.0015") to .4 mm (.015")
<b>Probe to Metal Range:</b>	0 to 2 mm (.006")
<b>Metal Sensitivity:</b>	Ferrous, Magnetic Stainless
<b>Compatibility:</b>	with Models DS100, DS101
<b>Operating Temp.:</b>	5°C to 75°C (25° to 150°F)
<b>Housing Material:</b>	#303 Stainless Steel
<b>Mounting:</b>	Secured with two nuts to
<b>Brackets</b>	BR18SR, BR18PS, BR18PA

**PRIME**<sup>®</sup>  
**CONTROLS, INC.**  
METAL SENSING SOLUTIONS

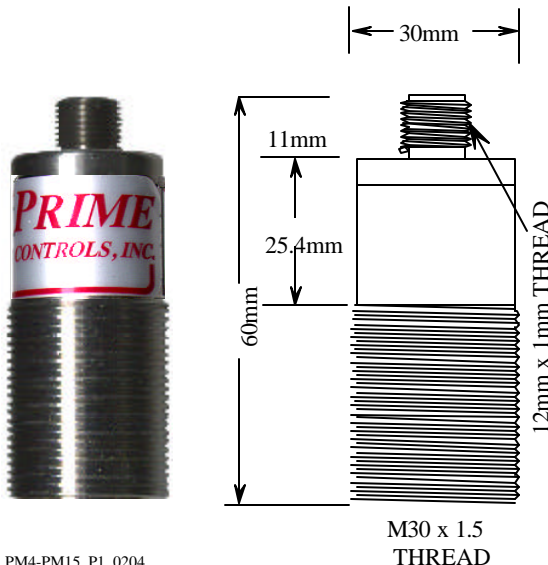


Prime's 18 mm Model PM4, above, detects light gauge ferrous metal ranging from .04 mm (.0015") to .4 mm (.015") thick. It is encapsulated in a threaded 18 mm #303 stainless steel barrel. The Model PM4 is ideal for applications where the sheet or blank touches or slides across the sensor face. A limited air gap is possible between metal and the sensor face. The air gap is approximately 1/3 the maximum detectable gauge or .2 mm (.006"). For connectivity the probe has a quick-disconnect molded connector for connecting a cable. Standard cable lengths are available in three or six meters. Up to 50 meters of cable may be added.

Prime's 30 mm Model PM10, to the left, detects medium to light gauge ferrous metal ranging from .1 mm (.004") to 1.0 mm (.040"). Nonferrous plating will not effect detection. The sensor is encapsulated in threaded 30 mm x 1.5 thread 303 stainless steel. It is normally used in applications where the sheet or blank touches or slides across the sensor face. A limited air gap is possible between metal and the sensor face of approximately 1/3 the maximum detectable gauge or 4 mm (.015").

#### Specifications:

<b>Thickness Detection:</b>	.1 mm (.004") to 1.0 mm (.040")
<b>Probe to Metal Range:</b>	0 to 4 mm (.015")
<b>Metal Sensitivity:</b>	Ferrous, Magnetic Stainless
<b>Compatibility:</b>	with Models DS100, DS101
<b>Operating Temp.:</b>	5°C to 75°C (25° to 150°F)
<b>Housing Material:</b>	#303 Stainless Steel
<b>Mounting:</b>	Secured with two nuts to
<b>Brackets:</b>	BR18SR, BR18PS, BR18PA



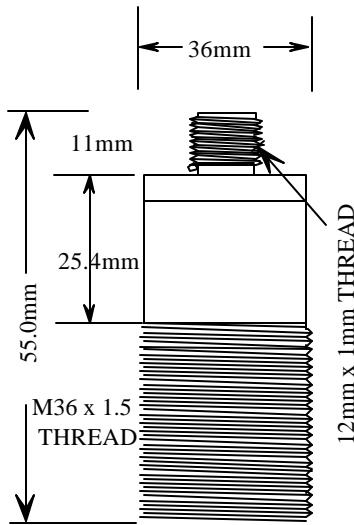
PD\_PM4-PM15\_P1\_0204

©2002 Prime Controls, Inc.

## Model PM15

Prime's Model PM15, below, detects medium to heavy gauge ferrous metal ranging from .15 mm (.006") to 1.5 mm (.060"). Nonferrous plating will not effect detection. The sensor is encapsulated in a threaded 36 mm barrel made of #303

stainless steel. It is normally used in applications where the sheet or blank is picked up with metal in contact with the sensor face. These are typically found in general sheet and blank handling operations for automotive, appliance and the hardware industries. A limited air gap is possible between metal and the sensor face of approximately 1/3 the maximum detectable gauge or .5 mm (.020").



### Specifications:

Thickness Detection:	.15 mm (.006") to 1.5 mm (.060")
(Ferrous Metal Only)	
Probe to Metal Range:	0 to 4 mm (.015")
Metal Sensitivity:	Ferrous, Magnetic Stainless
Compatibility:	with Models DS100, DS101
Operating Temp.:	5°C to 75°C (25°F to 150°F)
Housing Material:	#303 Stainless Steel
Mounting:	Secured with two nuts to Brackets

**Sensor Operation:** A magnetic field is shunted across sensor poles by the thickness of metal. Maximum thickness is limited by the diameter of the probe. The table below provides a range for each probe.

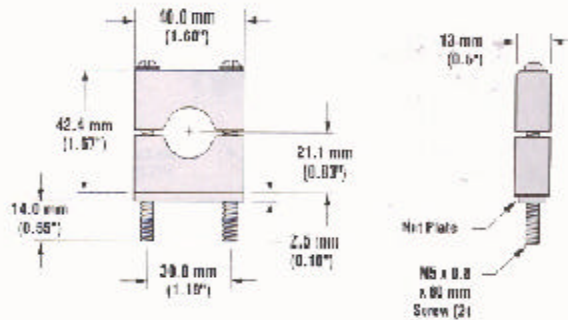
Probe Model	Probe Diameter	Breakaway Force	Min Thickness	Max Thickness
PM4	18 mm (.7")	$\frac{\text{Thickness (mm)}}{.8 \text{ mm}} \times 1.3 \text{ kgs}^*$	.04mm (.0015")	.4mm (.015)
PM10	30 mm (1.18")	$\frac{\text{Thickness (mm)}}{2 \text{ mm}} \times 6 \text{ kgs}$	0.1mm (.004")	1.0mm (.040)
PM15	36 mm (1.85")	$\frac{\text{Thickness (mm)}}{3 \text{ mm}} \times 14 \text{ kgs}$	.15mm (.006")	1.5mm (.060")

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



**BR18PS  
BRACKET**

SPLIT CLAMP TYPE, BLACK REINFORCED THERMOPLASTIC POLYESTER, INCLUDES STAINLESS STEEL HARDWARE



**For Models PM4, P70T18S**  
Refer to "Mounting Bracket" sheet for additional bracket sizes