

Product Selection Guide

This guide provides a quick overview of Prime's product line.

Three Double Detection Groups

PRIME offers three specialized Double Metal Detector groups. Probes used within a group will not work with the detectors from another group. Our Groups are:

1. *Single Probe Double Metal Detectors for Ferrous metals,*

Their Models are DS100-DS101, PD100 and have probe models that begin with **Model PM** and are color coded **black**.

2. *Dual Probe Double Metal Detectors for Nonferrous thin Film and Stainless Steel*

Their Models are DS3400-DS3410 and have probe models that begin with a **Model P or Type**, and are color coded **green**.

3. *Dual Probe Double Metal Detectors for ferrous and Nonferrous standard thickness*

Their Models are DS150-DS1520, SD200-203 and have probe models that begin with a **Model P or Type** and are color coded **black or blue**.

An explanation of this Guide's content is worth reviewing

Inside the guide you will find that many of our probes begin with a "Model P", while others are described as "Type". The "Type" probes are of an early design that typically had a three conductor cable or separate wires. They limit operation to a maximum of 20 to 30 feet from the detector.

Probes that begin with a "Model P" have Prime's newest technology incorporated. They are available in two forms. One form has a twisted pair cable that is permanently attached to the probe with epoxy encapsulation. The second form is available with a quick disconnect "Micro" style connector. Unlike the earlier "Type" probes, additional cable lengths in excess of 100 feet and high noise immunity became possible with the new "Model P" probes. "Model P" probes work extremely well when used with new Prime detectors that initiate an automatic setup process, when power is applied.

"Model P" probes with connectors function with earlier Prime and Hyde Park Double Sheet detectors if a Model CBL100 cable is used in place of the twisted pair Model CBL101.










Dual vs Single Probe System






Dual probe detectors have a *transmitter and receiver* that face each other. Prime probes function as either a transmitter or receiver. Metal passing between the two probes impedes the received signal, proportionally to the thickness. The separation or gap on some probes extends to three inches. This is achieved with Prime's unique detectors that optimize the signal by roughly estimating metal type, metal thickness and gap. The maximum gap will decrease as metal thickness increases and overcomes the detector's ability to adjust the signal to penetrate the metal.









Single probe systems provide solutions where dual probe systems can not be used. In order to detect doubles it is necessary to penetrate the depths of the metal sheet or blank. Many other sensing techniques are surface sensitive and are unable to penetrate to any distance. Prime single probe double detectors use permanent magnet flux to penetrate through metal. As with the received signal of a dual probe system, the magnetic flux is impeded proportionally to the metal thickness. This applies only to ferrous metal like steel, tinplate or some magnetic stainless steels. Nonferrous metals are only detectable with our dual sensing systems.










Color Codes











Prime encapsulates its probes with colored epoxy. The colors indicated preferred metal uses. **Black** is used in probes that work well with ferrous metal. **Green** is used on probes that detect thin nonferrous foils or very difficult metals like stainless steel. **Blue** is used with probes that work well with thicker nonferrous metals.

Detector Selection Sheet							
	DS50	DS100	DS101	DS150	DS1510	DS1520	DS1522
Feature	Aluminum & Steel	Ferrous only, steel, tinplate, magnetic SS			All Metal .002" to .250"		
"Over" (output)	√	√	√	√	√	√	√
" Normal" metal present (output)		√	√		√	√	√
"Under" (output)		√	√	√	√	√	√
"No metal" (output)		√	√		√	√	√
Probe type auto configure		√	√	√	√	√	√
Probe error detection & indication		√	√	√	√	√	√
Fault output (Transistor, PnP,NpN)		√	√		√	√	√
Push button calibration		√	√	√	√	√	√
Remote calibration connection		√	√		√	√	√
Calibrate on single sample (steel)		√	√		√	√	√
Automatic calibration (time triggered)					√	√	√
Single non-volatile cal memory		√	√	√	√	√	√
Memory Presets via rotary switch						Max. 10	
Memory Presets via PLC binary							Max. 24
Remote reset of latched output		√	√	√	√	√	√
Programmable relay response time						√	√
Automatic nominal adjustment for						√	√
Adjustable tolerance						√	√
Double & Missing Part in one							
Two Double Detectors in one package							
Two missing Part detectors in one							
System cost less than \$1000.00*	√						
System cost from \$1000. to \$1500*		√	√				
System cost from \$1500 to \$2000*							
System cost from \$2000 to \$2500*				√			
System cost from \$2500 to \$3000*					√		
System cost from \$3000 to \$3500*						√	√

Detector Selection Sheet					
	DS3400	DS3410	SD200	SD202	SD203
	Copper, Stainless Steel, Thin Foils		Aluminum & Steel		
"Over" thickness detection (output)	√	√	√	√	√
" Normal" metal present (output)	√	√	√	√	√
"Under" thickness detection	√	√	√	√	√
"No material" detection (output)	√	√	√	√	√
Probe type auto-sense	√	√	√	√	√
Probe error detection	√	√	√	√	√
Remote error reporting output	√	√	√	√	√
Push button calibration on	√	√	√	√	√
Remote calibration connection	√	√	√	√	√
Calibrate on single only (steel)	√	√	√	√	√
Automatic calibration (time)					
Single non-volatile cal memory	√	√	√	√	√
Memory Presets via rotary switch	Max. 8	Max. 8			
Memory Presets via PLC binary	Max. 8	Max. 8			
Relay latch with remote reset	√	√	√	√	√
Programmable relay response time		√			
Automatic nominal adjustment for secondary roll stock steel		√			
Adjustable tolerance		√			
Double & Missing Part in one package			√		
TwoDouble Detectors in one package				√	
Two missing Part detectors in one					√
System cost less than \$1000.00*					
System cost from \$1000. to \$1500*					
System cost from \$1500 to \$2000*					
System cost from \$2000 to \$2500*	√	√			
System cost from \$2500 to \$3000*					
System cost from \$3000 to \$3500*			√	√	√
* includes probes & cables					

Probe Model or Type	Pictorials approximately 1/3 actual size	Metal Sensitivity	Gauge Range	Single or Dual Probe(s)	Sensing Range	Typical application	Description	Used with Detector Model(s):	Special Features
Models For Single Probe, Ferrous, Double Metal Detection Systems									
PM4		Steel & other magnetically attracted metals	.0015" to .015"	Single	<.007"	Used were dual probe systems are unable to operate. Used primarily on sheet or blank pickups or embedded in the metal handling surface, to facilitate a quick reject sequence without stopping the operation.	18 mm dia. x 63 mm long, 8 x 1 mm threaded, #301 stainless steel barrel	PRIME Models DS100, DS101 & PD100	Only with Prime single probe systems is metal to probe separation possible. Excellent temperature stability when compared to similar systems
PM10			.004" to .040"		<.020"		30 mm dia. x 60 mm high, 30 x 1.5 mm threaded, #301 stainless steel barrel		
PM15			.006" to .060"		<.030"		36 mm dia. x55 mm high, 36 x 1.5 mm threaded, #301 stainless steel barrel		
Models For Dual Probe, Thin Non-Ferrous, Double Metal Detection Systems									
Type"AX"		stainless	.002" - .035"	Dual	.625"	appliance & auto gaskets printed circuits foil-backed blister	1.25" dia x 2.5" long, all thread barrel, nickel plated steel, IP67 sealing, encapsulate 10' twisted pair cable, 2 mounting nuts	PRIME Models DS340, DS3410	Close range, narrow field of view compared to Model P1CS
P1C		copper	.0005" - .010"						
		all non-ferrous	.0005" - .035"						
P1CS		stainless	0.002" - .035"	.625"	3"	1" dia x 2" long, smooth barrel, nickel plated steel, with microconnector, IP67 sealing			Long range, widest field of view compared to Type AX or P1C
		copper	.0005" - .010"						
		all non-ferrous	.0005" - .035"						
Models For Dual Probe, Standard Non-Ferrous, Double Metal Detection Systems									
Type"AY"		aluminum and other non-ferrous	0.002" - .050"	Dual	1"	General purpose non-ferrous sheets and blanks	1.25" dia x 2.0" long, all thread barrel, nickel plated steel, IP67 sealing, encapsulate 10' twisted pair cable, 2 mounting nuts	PRIME Models SD200 - SD203 for food & bev can end application of pull off tabs & for blanks, use Models DS150, DS1500 - DS1520	Tuned for aluminum detection on early detectors & works well on all metals in new Models SD200 to SD203
P15A								Use with Models DS150, DS1500 - DS1520	Twisted pair cable, rugged, general purpose use with aluminum blanks

Probe Model or Type	Probe Photo	Metal Sensitivity	Gauge Range	Dual or Single Probe(s)	Sensing Range	Typical application	Description	Used with Detector Model(s):	Special Features	
Models For Dual Probe Standard Non-Ferrous Metal Detection Systems continued										
Type "AV"		aluminum and other	.002 to .030"	Dual	.625"	Primarily used on a food & beverage pull tab converting press for detecting double ends or missing tabs	1" dia x 2.375" long, smooth barrel, nickel plated steel, IP67 sealing	PRIME & Hyde Park Models DS33 to DS38, Prime Models SD200 to SD202	Tuned for aluminum detection with early detectors Model DS33 & DS35. Detects both steel & aluminum with new Models SD200 to SD203	
Type "AZA"										
Type "CB"							1" dia. x 2" height smooth barrel, nickel plated steel, with 10 feet of cable, Attached in epoxy encapsulated housing			Same as Type "CB" plus armor covered cable to reduce cable cuts and breaks
Type "CFB"										
Model P15CB							1" dia. x 2" height smooth barrel, nickel plated steel, with "Micro" style 12mm DC connector, IP67 sealing			General purpose sensor for conversion application
Model P15CR							1" dia. x 2" height smooth barrel, nickel plated steel, with 10 feet of cable encapsulated in housing			Has retaining shoulder 1.5" above sensing face
Model P15LR							1" dia x 2.375" long, smooth barrel, nickel plated steel, with "Micro" style 12mm DC connector, IP67 sealing			Has retaining shoulder and anti-turn notch .75" above sensing face, used on DRT converting presses Larger dia. compared to P15AV increases range,
Model P15AV										Has retaining shoulder and anti-turn notch .75" above sensing face, used on Can end converting press for double end & missing tab
Model P15AVS							1.75" dia. x 2.375" high, smooth barrel, nickel plated steel, with "Micro" style 12mm DC connector, IP67 sealing			

Probe Model or Type	Pictorials approximately 1/3 actual size	Metal Sensitivity	Gauge Range	Dual or Single Probe(s)	Sensing Range	Typical application	Description	Used with Detector Model(s):	Special Features
Models For Dual Probe Standard Ferrous Metal Detection Systems									
Type "A"		steel, tinplate magnetic stainless and other ferrous metals	.002" to .030"	Dual	1"	General purpose steel sheet and blank detector	1.25" dia x 2.5" high, all thread barrel, nickel plated steel, IP67 sealing, encapsulate 10' twisted pair cable, 2 mounting nuts	<i>PRIME</i> Models DS150 to DS1520, but recommend Model P70A replacement for noise immunity	Designed primarily for Hyde Park Models DS10 to DS13, Three 16 gauge wires Connect
Type "AK"								<i>PRIME</i> SD200-202, 203	#20 gauge 3 conductor cable
Type "AVB"					.625"	Primarily used on a food & beverage pull tab converting press for detecting double ends or missing tabs	1" dia x 2.375" long, smooth barrel, nickel plated steel, with "MS" style, 3 pin male plug connector on cable end, IP67 sealing	<i>PRIME (Hyde Park)</i> Models DS37, DS38	Has retaining shoulder and anti-turn notch .75" above sensing face, used on DRT converting presses
Type "CA"							1" dia x 2" high, smooth barrel, Nickel plated steel with encapsulated 10' cable, IP67 sealing	<i>PRIME & Hyde Park</i> Models DS33 to DS38	Tuned for steel end detection on early detector models
Type "CF"									Same as Type "CA" plus armor covered wire to reduce cable cuts and breaks
P70A					1"	Steel sheets and blank feeding	1.25" dia x 2.5" high, all thread barrel, nickel plated steel, IP67 sealing, encapsulate 10' twisted pair cable, 2 mounting nuts	<i>PRIME</i> Models DS150, DS1500 - DS1520	Twisted pair cable
P70CS			.002" to .050"		3"		1" dia x 2" high, smooth barrel, #303 stainless with "Micro" style 12mm DC connector, IP67 sealing		Long range capability
P70T30S									
P160B			.020" to .100"		1"	Weld & Short overlap detection	2" x 2" x 4" cast aluminum, 10' encapsulate cable, IP67 sealing	<i>PRIME</i> Model DS1510 & DS1520 only	Has narrow field of view, approximately 1/8" wide
P1000B			.020" to .250"		3"	Steel sheets and blank feeding		<i>PRIME</i> Models DS150, DS1500 - DS1520	<i>PRIME's</i> strongest, detects steel to .250" (single) thick