Electronic Sensors

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Reed Sensors Solid State /

Weld Immune Sensors

Connect Block

Electronic Sensors

8mm quick

PNP Solid State Sensor Selection Guide

Serie	s	Bore size or type	3m flying leads	10m flying leads	8mm quick connect*	connect w/ 1 m lead*	12mm quick connect*	Bracket	Sensor page #	Bracket page #
S	P1Q	12mm - 100mm	P8S-EPFXS ¹	N/A	P8S-EPSUS	N/A	N/A	N/A	N/A	N/A
linde		9/16"	L076990000 ²	N/A	L07699000C	N/A	N/A	N/A	Page #	N/A
ct cy	LPM	3/4" - 1-1/8"	L077000000 ²	N/A	L07700000C	N/A	N/A	N/A		N/A
Compact cylinders	LPIVI	1-1/2" - 2"	L077010000 ²	N/A	L07701000C	N/A	N/A	Bracket page	L15	N/A
క		2-1/2" - 4"	L077020000 ²	N/A	L07702000C	N/A	N/A		L15	N/A
	SR/ SRG,	9/16" - 3/4"	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC01	N/A N/A	L9
Round body cylinders	SRM/SRDM	1-1/16" - 2-1/2"	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC02	L5	L9
ound		1-1/8" - 2-1/2"	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC02	L5	L9
<u>ac</u>	' P	3" - 4"	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC03	L5	L9
Tie rod cylinders	4MA standard sensor	1-1/2" - 5"	_					N/A	L5	N/A
rod cy	2MNR	1-1/2" - 4"	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX			
Ξie	4MA	6" - 8"						P8S-TMA0X	L5	N/A
	P1A standard sensor	10-25mm	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC01	L5	L9
		10mm	P1A-2XMK ¹	N/A	N/A	N/A	N/A	P1A-2CCC	L13	L13
"	P1A	12mm	P1A-2XMK ¹	N/A	N/A	N/A	N/A	P1A-2DCC	L13	L13
lso cylinders	right angle	16mm	P1A-2XMK ¹	N/A	N/A	N/A	N/A	P1A-2FCC	L13	L13
cylii	sensors	20mm	P1A-2XMK ¹	N/A	N/A	N/A	N/A	P1A-2HCC	L13	L13
<u> </u>		25mm	P1A-2XMK ¹	N/A	N/A	N/A	N/A	P1A-2JCC	L13	L13
	P1D standard & clean profiles	All	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	N/A	L5	N/A
	P1D tie rod version	All	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMA0X	L5	N/A
0	P1X	All	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMA0Y	L5	N/A
Rodless	P1Z	All	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	N/A	L5	N/A
	OSP-P	All	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	N/A	N/A		L11	N/A
	P5T	Flush mount	P8S-GPFAX	P8S-GPFDX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	N/A	L5	N/A
ည		Right angle	N/A	P8S-SPETXD	P8S-SPTHXD	N/A	N/A	N/A	L10	N/A
Guided cylinders	P5E	All	P8S-GPFAX	P8S-GPFTX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	N/A	L5	N/A
d cyl	НВ	All	P8S-GPFAX	P8S-GPFTX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	N/A	L5	N/A
uide		20 - 25mm	P8S-GPFAX	P8S-GPFTX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC01	L5	L9
	P5L	32 - 63mm	P8S-GPFAX	P8S-GPFTX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC02	L5	L9
		80 - 100mm	P8S-GPFAX	P8S-GPFTX	P8S-GPCHX	P8S-GPSCX	P8S-GPMHX	P8S-TMC03	L5	L9
	PV	Normally open	SMH-1P ²	N/A	SMH-1PC	N/A	N/A	N/A	L19	N/A
tors	XR	Normally closed	SMC-1P ²	N/A	SMC-1PC	N/A	N/A	N/A	L19	N/A
rctua	PRN(A)	All	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rotary actuators	PTR	10, 15	SWH-1P ³	N/A	SWH-1PC	N/A	N/A		L21	N/A
		20, 25, 32	SWH-2P ³	N/A	SWH-2PC	N/A	N/A		L21	N/A

^{1.} Flying leads are 2 meters in length





^{2.} Flying leads are 1.5 meters in length

^{3.} Flying leads are 1 meter in length

Note: See page L23 for Weld Immune Sensors.

^{*} See page L25 for cord sets.

Electronic Sensors NPN Solid State Sensor

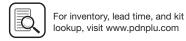
NPN Solid State Sensor Selection Guide

Series		Bore size or type	3m flying leads	10m flying leads	8mm quick connect*	8mm quick connect w/ 1m lead*	12mm quick connect*	Bracket	Sensor page #	Bracket page #
S	P1Q	12mm - 100mm	P8S-ENFXS 1	N/A	P8S-ENSUS	N/A	N/A	N/A	N/A	N/A
linde		9/16"	L076950000 ²	N/A	L07695000C	N/A	N/A	N/A	L15	N/A
Compact cylinders	LPM	3/4" - 1-1/8"	L076960000 ²	N/A	L07696000C	N/A	N/A	N/A	L15	N/A
mpa	LPIVI	1-1/2" - 2"	L076970000 ²	N/A	L07697000C	N/A	N/A	Bracket page	L15	N/A
පි		2-1/2" - 4"	L076980000 ²	N/A	L07698000C	N/A	N/A	N/A	N/A L15 N/A P8S-TMC01 L5 L9 P8S-TMC02 L5 L9 P8S-TMC03 L5 L9 N/A L5 N/A P8S-TMC01 L5 L5 P1A-2CCC L13 L13 P1A-2DCC L13 L13 P1A-2DCC L13 L13 P1A-2JCC L13 L13 P1A-2JCC L13 L13 N/A L5 N/A P8S-TMAOX L5 N/A P8S-TMAOX L5 N/A N/A L5 N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A L5 N/A N/A	
	SR/ SRG,	9/16" - 3/4"	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC01	MC01 L5 L9 MC02 L5 L9 MC03 L5 L9 MC03 L5 L9 MC03 L5 N/A MA0X L5 N/A MC01 L5 L5 CCC L13 L13 CCC L13 L	L9
Round body cylinders	SRM/SRDM	1-1/16" - 2-1/2"	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC02		L9
ound	P	1-1/8" - 2-1/2"	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC02	L5	L9
œ °	r	3" - 4"	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC03	L5	L9
Tie rod cylinders	4MA standard sensor	1-1/2" - 5"						N/A	L5	N/A
d cy	2MNR	1-1/2" - 4"	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GPNSCX	P8S-GNMHX			
Tie ro	4MA	6" - 8"						P8S-TMAOX	L5	N/A
	P1A standard sensor	10-25mm	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC01	L5	L5
		10mm bore	P1A-2XLK ¹	N/A	N/A	N/A	N/A	P1A-2CCC	L13	L13
"	P1A	12mm bore	P1A-2XLK ¹	N/A	N/A	N/A	N/A	P1A-2DCC	L13	L13
ISO cylinders	right angle	16mm bore	P1A-2XLK ¹	N/A	N/A	N/A	N/A	P1A-2FCC	L13	L13
C.	sensors	20mm bore	P1A-2XLK ¹	N/A	N/A	N/A	N/A	P1A-2HCC	L13	L13
<u>80</u>		25mm bore	P1A-2XLK ¹	N/A	N/A	N/A	N/A	P1A-2JCC	L5 L9 L5 N/A L5 N/A L5 L5 L13 L13 L13 L13 L13 L13 L14 L15 L5 N/A	L13
	P1D standard & clean profiles	AII	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	N/A	L5	N/A
	P1D tie rod version	All	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMA0X	L5	N/A
SS	P1X	All	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMA0Y	L5	N/A
Rodless Cylinders	P1Z	All	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	N/A	L5	N/A
	OSP-P	All	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	N/A	N/A	N/A	N/A	N/A
	P5T	Flush mount	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMA0Y L5 N/A L5 N/A N/A N/A L5	N/A	
S		Right angle	N/A	P8S-SNETX	P8S-SNTHX	N/A	N/A	N/A	L10	N/A
d cylinders	P5E	All	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	N/A	L5	N/A
d Cy	НВ	All	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	N/A	L5	N/A
Guide		20 - 25mm	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC01	L5	L9
9	P5L	32 - 63mm	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC02	L5	L9
		80 - 100mm	P8S-GNFAX	P8S-GNFDX	P8S-GNCHX	P8S-GNSCX	P8S-GNMHX	P8S-TMC03	L5	L9
	PV	Normally open	SMH-1N ²	N/A	SMC-1NC	N/A	N/A	N/A	L5 N/A L5 N/A N/A N/A L5 N/A L10 N/A L5 N/A L5 N/A L5 N/A L5 L5 L9 L5 L9	N/A
ors	XR	Normally closed	SMC-1N ²	N/A	SMC-1NC	N/A	N/A	N/A	L16	N/A
Rotary actuators	PRN(A)	All	See page L17							
Rotary	PTR	10, 15	SWH-1N ³	N/A	SWH-1NC	N/A	N/A		L21	N/A
		20, 25, 32	SWH-2N ³	N/A	SWH-2NC	N/A	N/A	Included w/ sensor	Page #	N/A

¹ Flying leads are 2 meters in length

Note: See page L23 for Weld Immune Sensors.





² Flying leads are 1.5 meters in length

³ Flying leads are 1 meter in length

^{*} See page L25 for cord sets.

Solid State / Reed Sensors

Weld Immune Sensors

Cordset /
Connect Block

Reed Sensor Selection Guide

Series	3	Bore size or type	3m flying leads	10m flying leads	8mm quick connect*	8 mm quick connect w/ 1 m lead*	12mm quick connect*	Bracket	Sensor page #	Bracket page #
δ	P1Q	12mm - 100mm	P8S-ERFXS ¹	N/A	P8S-ERSUS	N/A	N/A	N/A	N/A	N/A
linde		9/16"	L077030000 ¹	N/A	L07703000C	N/A	N/A	N/A	L11	N/A
Compact cylinders	LPM	3/4" - 1-1/8"	L077040000 ¹	N/A	L07704000C	N/A	N/A	N/A	L11	N/A
mpa	LPIVI	1-1/2" - 2"	L077050000 ¹	N/A	L07705000C	N/A	N/A	N/A	L11	N/A
පි		2-1/2" - 4"	L077060000 ¹	N/A	L07706000C	N/A	N/A		L11	N/A
>	SR/ SRG,	9/16" - 3/4"	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC01	L8	L9
bod ders	SRM/SRDM	1-1/16" - 2-1/2"	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC02	L8	L9
Round body cylinders	` P	1-1/8" - 2-1/2"	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC02	L8	L9
	r	3" - 4"	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC03	L8	L9
Tie rod cylinders	4MA standard sensor	1-1/2" - 5"	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	N/A	L8	N/A
Sylin	2MNR	1-1/2 - 4"	POS-UNFAX	roo-unrux	POS-UNUITA	ros-unsux	POS-UNIVIRA			
	4MA	6" - 8"						P8S-TMA0X	L4	N/A
	P1A standard sensor	10-25mm	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC01	L4	L9
		10mm bore	P1A-2XRL	N/A	P1A-2XSH	N/A	N/A	P1A-2CCB	L13	L13
ģ	P1A	12mm bore	P1A-2XRL	N/A	P1A-2XSH	N/A	N/A	P1A-2DCB	L13	L13
ISO cylinders	alternate sensors	16mm bore	P1A-2XRL	N/A	P1A-2XSH	N/A	N/A	P1A-2FCB	L13	L13
0 cyl	30113013	20mm bore	P1A-2XRL	N/A	P1A-2XSH	N/A	N/A	P1A-2HCB	L13	L13
<u>S</u>		25mm bore	P1A-2XRL	N/A	P1A-2XSH	N/A	N/A	P1A-2JCB	L13	L13
	P1D standard & clean profiles	All	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	N/A	L8	N/A
	P1D tie rod version	All	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMA0X	L8	N/A
္က ည	P1X	All	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMA0Y	L8	N/A
Rodless cylinders	P1Z	All	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	N/A	L8	N/A
~ 5	OSP-P	All	P8S-GRCHX	P8S-GRFDX	P8S-GRCHX	N/A	N/A		L8	N/A
	P5T	Flush mount	P8S-GRFLX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	N/A	L8	N/A
S		Right angle	N/A	P8S-SRETX	P8S-SRTHX	N/A	N/A	N/A	L8	N/A
cylinders	P5E	All	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	N/A	L8	N/A
	НВ	All	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	N/A	L8	N/A
Guided		20 - 25mm	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC01	L8	L8
Ū	P5L	32 - 63mm	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC02	L8	L8
		80 - 100mm	P8S-GRFAX	P8S-GRFDX	P8S-GRCHX	P8S-GRSCX	P8S-GRMHX	P8S-TMC03	L8	L8
	DV	N.O. high amp	SMR-1 ¹	N/A	SMR-1C	N/A	N/A	N/A	L19	N/A
LS.	PV XR	N.O. low amp	SMR-1L ¹	N/A	SMR-1LC	N/A	N/A	N/A	L19	N/A
uato		N.C.	SMD-1L ¹	N/A	SMD-1LC	N/A	N/A	N/A	L19	N/A
y act	PRN	50 - 800	See model code						L18	N/A
Rotary actuators	PTR	10, 15	SWR-1 ²	N/A	SWR-1C	N/A	N/A		L21	N/A
		20, 25, 32	SWR-2 ²	N/A	SWR-2C	N/A	N/A	Included w/ sensor	L21	N/A

^{1.} Flying leads are 1.5 meters in length





^{2.} Flying leads are 1 meters in length

Note: See page L23 for Weld Immune Sensors.

^{*} See page L25 for cord sets.

P8S Global Solid State Sensor

P8S Global Drop-In Solid State Sensors

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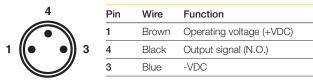
Wiring	PNP sensor	NPN sensor	ATEX certified
3m flying leads	P8S-GPFAX	P8S-GNFAX	P8S-GPFLX/EX
10m flying leads	P8S-GPFDX	P8S-GNFDX	
0.3m lead with 8mm connector	P8S-GPCHX	P8S-GNCHX	N/A
0.3m lead with 12mm connector	P8S-GPMHX	P8S-GNMHX	N/A
1m lead with 8mm connector	P8S-GPSCX	P8S-GNSCX	

Specifications

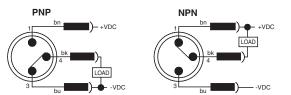
Switch classification	Standard ATEX cert PNP or NPN PNP		
Туре	Electronic		
Output function	Norma	lly open	
Sensor output	PNP/NPN	PNP	
Operating voltage	10 - 30 VDC	10 - 30 VDC	
Continuous current	100 mA max.	70 mA max.	
Response sensitivity	28 Gau	uss min.	
Switching frequency	1 k	KHz	
Power consumption	10 m/	A max.	
Voltage drop	2.5 VD	C max.	
Ripple	10% of operating voltage		
Hysteresis	1.5 mm max.		
Repeatability	0.1 mm max.		
EMC	EN 60 947-5-2		
Short-circuit protection	Yes		
Power-up pulse suppression	Yes		
Reverse polarity protection	Yes		
Enclosure rating	IP68		
Shock and vibration stress	30g, 11 ms, 10	to 55 Hz, 1mm	
Operating temperature range	-25°C to 75°C (-13°F to 167°F)	-20°C to 45°C (-4°F to 113°F)	
Housing material	PA 12, black		
Connector cable	PVC		
Connector	PUR	_	
Approval for ATEX	_	3D/3G	

Wiring connection

Flying lead or 8 mm connector (shown)



PNP sensor

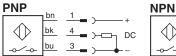


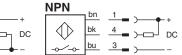
12 mm connector

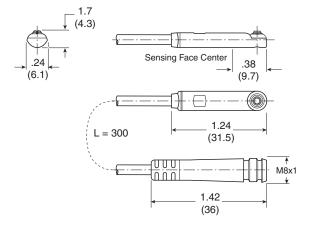


Pin	Wire	Function
1	Brown	Operating voltage (+VDC)
4	Black	Output signal (N.O.)
2*	White	Not used
3	Blue	-VDC

* Pin 2 not present.











P8S Global Drop-In Reed Sensors

CE

Drop-In

Reed Sensors Solid State /

Weld Immune Sensors

Connect Block Cordset/

Proximity

Wiring	Reed sensor		
3m flying leads	P8S-GRFAX		
10m flying leads	P8S-GRFDX		
10m flying leads	P8S-GRFDX2*		
0.3m lead with 8mm connector	P8S-GRCHX		
0.3m lead with 12mm connector	P8S-GRMHX		
1m lead with 8mm connector	P8S-GRSCX		

Specifications

Specifications	
Туре	2-wire reed
Output function	Normally open
Operating voltage	10 - 30 VAC*, 10 - 30 VDC
Switching power	6 W/VA
Continuous current	100 mA max.
Response sensitivity	30 Gauss min.
Switching frequency	400 Hz
Voltage drop	2.5 V max.
Ripple	10% of operating voltage
Hysteresis	1.5 mm max.
Repeatability	0.2 mm max.
EMC	EN 60 947-5-2
Reverse polarity protection	Yes
Enclosure rating	IP68
Shock and vibration stress	30g, 11 ms, 10 to 55 Hz, 1 mm
Operating temperature range	-25°C to 75°C (-13°F to 167°F)
Housing material	PA 12, black
Connector cable	PVC
Connector	PUR cable with 8 or 12 mm connector

Wiring connection

Flying Lead or 8 mm Connector

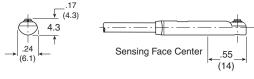


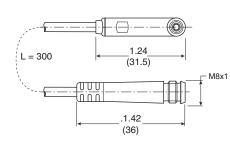
	Pin	Wire	Function
	1	Brown	Operating voltage (+V)
	4	Black	Not used
	3	Blue	Output signal (-V or ground)

12 mm Connector



Pin	Wire	Function
1	Brown	Operating voltage (+V)
2*	White	Not used
3	Blue	Output signal (-V or ground)
4	Black	Not used

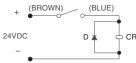




Circuit for switching contact protection (for inductive loads, e.g. solenoids, relays)

(Required for proper operation 24VDC)

Put diode parallel to load (CR) following polarity as shown.

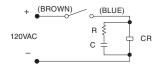


D: Diode: select a diode with the breakdown voltage and current rating according to the load.

Typical Example - 100 volt, 1 amp diode CR: Relay coil (under 0.5W coil rating)

(Recommended for longer life 120 VAC)

Put a resistor and capacitor in parallel with the load (CR). Select the resistor and capacitor according to the load.



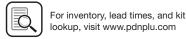
Typical Example:

CR: Relay coil (under 2W coil rating) Resistor 1 KΩ - 5 KΩ, 1/4 W Capacitor 0.1 ΩF, 600 V

∴ Caution

- Use an ampmeter to test reed sensor current. Testing devices such as incandescent light bulbs may subject the reed sensor to high in-rush loads.
- **NOTE:** When checking an unpowered reed sensor for continuity with a digital ohmmeter the resistance reading will change from infinity to a very large resistance (2 M ohm) when the sensor is activated. This is due to the presence of a diode in the reed sensor.
- Anti-magnetic shielding is recommended for reed sensors exposed to high external RF or magnetic fields.
- The magnetic field strength of the piston magnet is designed to operate with our sensors. Other manufacturers' sensors may not operate correctly in conjunction with these magnets.
- Use relay coils for reed sensor contact protection.
- The operation of some 120 VAC PLC's (especially some older Allen-Bradley PLC's) can overload the reed sensor. The sensor may fail to release after the piston magnet has passed. This problem may be corrected by the placement of a 700 to 1K OHM resistor between the sensor and the PLC input terminal. Consult the manufacturer of the PLC for appropriate circuit.
- Sensors with long wire leads (greater than 15 feet) can cause capacitance build-up and sticking will result. Attach a resistor in series with the reed sensor (the resistor should be installed as close as possible to the sensor). The resistor should be selected such that R (ohms) >E/0.3.





^{* 10-230} VAC/DC for P8S-GRFDX2.

P8S Mini-Global Drop-In Solid State Sensors



Wiring	PNP Sensor	NPN Sensor
3m Flying Leads	P8S-MPFLY	P8S-MNFLY
10m Flying Leads	P8S-MPFTX	P8S-MNFTX
0.3m Lead with 8mm Connector	P8S-MPSHX	P8S-MNSHX

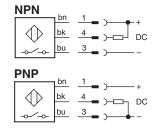
Specifications

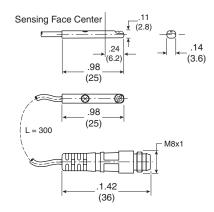
Фросински	
Туре	Electronic
Output Function	Normally open
Sensor Output	PNP or NPN
Operating Voltage	10 - 30 VDC
Continuous Current	≤ 70 mA
Response Sensitivity	≤ 48 Gauss
Switching Frequency	1000 Hz
Power Consumption	≤ 8 mA without load
Voltage Drop	≤ 2.5 VDC
Ripple	10% of operating voltage
Hysteresis	≤ 15 Gauss
Repeatability	≤ ±0.1 mm
EMC	EN 60 947-5-2
Short-circuit Protection	Yes
Power-up Pulse Suppression	No
Reverse Polarity Protection	Yes
Enclosure Rating	IP67
Shock and Vibration Stress	30g, 11 ms, 10 to 55 Hz, 1 mm
Operating Temperature Range	-25°C to 75°C (-13°F to 167°F)
Housing Material	PA 12
Connector Cable	PUR 3 x 0.09mm ²
Connector	PUR cable w/8mm connector

Wiring connection



Pin	Wire	Function	
1	Brown	+VDC	
4	Black	NO	
3	Blue	-VDC	





Selection Guide

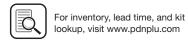
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Solid State / Reed Sensors

Weld Immune Sensors

Connect Block





P8S Mini-Global Drop-In Reed Sensors

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Selection

Drop-in

Solid State / Reed Sensors

Weld Immune

Sensors

Cordset/ Connect Block

Proximity

Wiring	Reed Sensor
3m Flying Leads	P8S-MRFLY
10m Flying Leads	P8S-MRFTX
0.3m Lead with 8mm Connector	P8S-MRSHX

Specifications

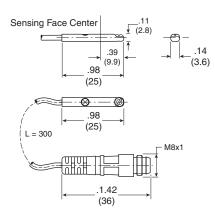
=	
Type	3-Wire Reed
Output Function	Normally Open
Operating Voltage	10 - 30 VAC, 10 - 30 VDC
Switching Power	10 W/VA
Continuous Current	≤ 500 mA max.
Response Sensitivity	≤ 48 Gauss
Switching Frequency	500 Hz
Hysteresis	≤ 7 Gauss
Repeatability	≤ 0.1 mm
EMC	EN 60 947-5-2 / EN 40 050
Enclosure Rating	IP67
Shock and Vibration Stress	30g, 11 ms, 10 to 55 Hz, 1 mm
Operating Temperature Range	-25°C to 75°C (-13°F to 167°F)
Housing Material	PA 12
Connector Cable	PUR 3 x 0.09 mm ²
Connector	PUR cable w/8mm connector

Wiring connection



Pin	Wire	Function
1	Brown	Operating voltage (+V)
4	Black	Output signal
3	Blue	Ground (-V)





⚠ Caution

- Use an ampmeter to test reed sensor current. Testing devices such as incandescent light bulbs may subject the reed sensor to high in-rush loads.
- NOTE: When checking an unpowered reed sensor for continuity with a digital ohmmeter the resistance reading will change from infinity to a very large resistance (2 M ohm) when the sensor is activated. This is due to the presence of a diode in the reed sensor.
- Anti-magnetic shielding is recommended for reed sensors exposed to high external RF or magnetic fields.
- The magnetic field strength of the piston magnet is designed to operate with our sensors. Other manufacturers' sensors may not operate correctly in conjunction with these magnets.

- Use relay coils for reed sensor contact protection.
- The operation of some 120 VAC PLC's (especially some older Allen-Bradley PLC's) can overload the reed sensor. The sensor may fail to release after the piston magnet has passed. This problem may be corrected by the placement of a 700 to 1K OHM resistor between the sensor and the PLC input terminal. Consult the manufacturer of the PLC for appropriate circuit.
- Sensors with long wire leads (greater than 15 feet) can cause capacitance build-up and sticking will result. Attach a resistor in series with the reed sensor (the resistor should be installed as close as possible to the sensor). The resistor should be selected such that R (ohms) >E/0.3.





P8S Sensor Mounting Brackets

Tie Rod Bracket Assembly

Tie Rod Bracket Assembly is necessary for Global and Mini-Global Sensor installation on all tie rod construction cylinders. This includes all Intermediate Trunnion mounts (Style DD or MT4); and all 6"-8" bore Sensors and bracket assemblies must be ordered separately.

Part number P8S-TMAOX fits 1-1/2" to 8" bores and 32-200mm bores for Global Sensors

P8S-TMAOX

Selection Guide

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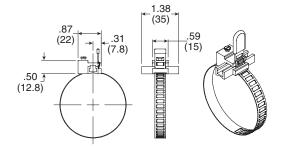
Solid State/ Reed Sensors

Weld Immune Sensors

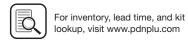
Round Body Bracket Assembly

Sensors and brackets must be ordered separately

Bore size	Round body bracket
9/16" - 1-1/16"	P8S-TMC01
20 - 25mm	P8S-TMC01
1-1/8" - 2-1/2"	P8S-TMC02
32 - 63mm	P8S-TMC02
3" - 4"	P8S-TMC03
80 - 100mm	P8S-TMC03







Right Angle Sensors

Solid State - P8S Right Angle Sensors

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Solid State / Reed Sensors

Weld Immune Sensors

Cordset/ Connect Block

Proximity Sensors

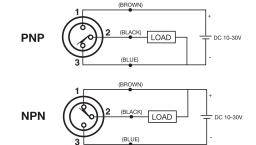
Specifications

=	
Туре	Electronic
Output function	Normally open
Switching output	PNP/NPN
Operating voltage	10 - 30 VDC
Continuous current	≤ 150 mA
Response sensitivity	30 Gauss min.
Switching frequency	5kHz
Power consumption	15 mA
Voltage drop	≤ 2 VDC
Ripple	≤ 10% of operating voltage
Delay time (24V)	Approx. 20 ms
Time delay before availability	≤ 2 ms
Hysteresis	≤ 1.5mm
Repeatability	≤ 0.2mm
EMC	EN 60 947-5-2
Short-circuit protection	Yes
Power-up pulse suppression	Yes
Reverse polarity protection	Yes
Enclosure rating	IP67 DIN 40050
Shock and vibration stress	30g, 11ms, 10 to 55 Hz, 1mm
Ambient temperature range	-25°C to 75°C (-13°F to 167°F)
Housing material	PA 12, black
Connector cable	PVC
Connector	PUR cable w/8 mm connector

Wiring	PNP sensors	NPN sensors
0.2m lead with 8mm connector	P8S-SPTHXD	P8S-SNTHX
10m flying leads	P8S-SPETXD	P8S-SNETX

Wiring connection

2	Pin	Wire	Function
	1	Brown	Operating voltage (+VDC)
1 ((• •)) 3	2	Black	Output signal (N.O.)
	3	Blue	-VDC



Reed – P8S Right Angle Sensors



Specifications

Туре	2-wire reed
Output function	Normally open
Output voltage	10 - 110* VAC, 10 - 30 VDC
Continuous current	≤ 100 mA
Response sensitivity	30 Gauss min.
Switching frequency	400 Hz
Voltage drop	≤ 3 V
Ripple	≤ 10% of operating voltage
Time delay (24V)	Approx. 20 ms
Hysteresis	≤ 1.0mm
Repeatability	≤ 0.2mm
EMC	EN 60 947-5-2
Reverse polarity protection	Yes
Enclosure rating	IP67
Shock and vibration stress	30g, 11ms, 10 to 55 Hz, 1mm
Ambient temperature range	-25°C to 75°C (-13°F to 167°F)
Housing material	PA 12, black
Connector cable	PVC
Connector	PUR cable w/8 mm connector

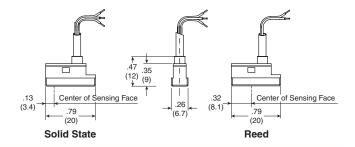
^{* 8}mm connector rated for 50 VAC max.

Wiring Reed sensors 0.2m lead with 8mm connector P8S-SRTHX 10m flying leads P8S-SRETX

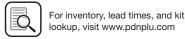
Wiring connection



Pin	Wire	Function
1	Brown	Operating voltage (+V)
3	Black	Not used
2	Blue	Output signal (-V or Ground)







OSP-P Magnetic Switches

OSP-P Magnetic Switches for T-Slot - Series RST & EST

Magnetic switches are used for electrical sensing of the position of the piston, e.g. at its end positions. They can also be used for sensing of intermediate positions.

Sensing is contactless, based on magnets which are built-in as standard. A yellow LED indicates operating status.

The universal magnetic switches are suitable for all OSP-P Actuators.

 For the magnetic switch temperature range, please take into account the surface temperature and the self-heating properties of the linear drive.



Characteristics

Unit	Type RST	Type EST
	Reed	PNP
V	10-30 AC/DC	10-30 DC
	_	≤ 10%
V	≤ 3	≤ 2
	Two wire	Three wire
	normally open normally closed	normally open
mA	≤ 100	≤ 100
W	≤ 6 peak	_
mA	_	≤ 10
	LED, yellow (not for normally close	ed)
ms	≤ 2	≤ 0.5
mT	2 – 4	2 – 4
ms	_	≤ 2
	Yes	Yes
	No	Yes (pulsed)
μF	0.1 at 100 W, 24 VDC	
Hz	≤ 400	≤ 5k
mm	≤ 0.2	≤ 0.2
mm	≤ 1.5	≤ 1.5
EN	60947-5-2	
	≥ 35 Mio. cycles with PLC load	Unlimited
	_	Yes
	_	Yes
	V V MA W MA MS MT	Reed V 10-30 AC/DC

Unit	Type RST	Type EST
	Plastic / PA66 + PA6I red	
mm ²	2 x 0.14	3 x 0.14
	PUR, black	PUR, black
mm	≥ 36	≥ 30
kg	ca. 0.030 RST-K ca. 0.010 RST-S	ca. 0.030 EST-K ca. 0.010 EST-S
IP	67 to DIN EN 60529	
°C	-25°C to 80°C	-25°C to 75°C at UB=10 – 30 V
		-25°C to 80°C at UB=10 – 28 V
°C	-25°C to 60°C	
Nm	0.15 (tightening torque of screwing adapter onto magnetic switch)	
	mm² mm kg IP °C	Plastic / PA66 + PA6I red mm² 2 x 0.14 PUR, black mm ≥ 36 kg ca. 0.030 RST-K ca. 0.010 RST-S IP 67 to DIN EN 60529 °C -25°C to 80°C °C -25°C to 60°C Nm 0.15 (tightening torque of screw

Shock	< res	istar	nce

Vibration to EN 60068-2-6	G	15, 11 ms, 10 to 55 Hz, 1mm
Shock to EN 60068-2-27	G	50, 11 ms
Bump to EN 60068-2-29	G	30, 11 ms, 1000 bumps each axis





Magnetic Switches

Electronic Sensors **OSP-P Magnetic Switches**

Ordering Information

Version	Voltage	Туре	Part number
Magnetic switch, reed contact, normally open, LED indicator, cable 3m	10-30 VAC / VDC	RST-K	P8S-GRFAX
Magnetic switch, reed contact, normally open, LED indicator, cable 10m	10-30 VAC / VDC	RST-K	P8S-GRFDX
Magnetic switch, reed contact, normally open, LED indicator, cable 10m	10-230 VAC / VDC	RST-K	P8S-GRFDX2
Magnetic switch, reed contact, normally open, snap connector M8, LED indicator, cable 0.24m	10-30 VAC / VDC	RST-S	P8S-GRCHX
Magnetic switch, reed contact, normally open, screw connector M8, LED indicator, cable 0.24m	10-30 VAC / VDC	RST-S	P8S-GRCHX
Magnetic switch, reed contact, normally closed, cable 10m	10-30 VAC / VDC	RST-K	P8S-GEFRX
Magnetic switch, electronic, PNP LED indicator, cable 3m	10-30 VDC	EST-K	P8S-GPFAX
Magnetic switch, electronic, PNP LED indicator, cable 10m	10-30 VDC	EST-K	P8S-GPFDX
Magnetic switch, electronic, PNP M8, LED indicator, cable 0.24m	10-30 VDC	EST-S	P8S-GPCHX
Magnetic switch, electronic, NPN M8, LED indicator, cable 0.24m	10-30 VDC	EST-S	P8S-GNCHX

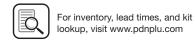
Included in delivery: 1 magnetic switch

1 adapter for dovetail groove mounting

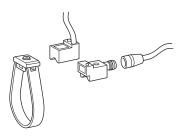
Accessories

Description	Туре	Part number
Cable M8, 2.5m without lock nut	KS 25	KY3240
Cable M8, 5.0m without lock nut	KS 50	KY3241
Cable M8, 5.0m without lock nut	ES-S / RS-S	4041
Cable M8, 5.0m with lock nut	KSG 50	KC3104
Adapter for dovetail groove (pack of 10)		KL3333





These sensors are of solid-state type, with no moving parts. Short-circuit and transient protection is incorporated as standard. The integral electronics make these sensors suitable for applications with very high switching frequencies.



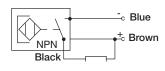
Specifications

opcomoduono	
Design	Hall element
Output	PNP resp. NPN, N.O.
Voltage range	10-30 VDC
Max permissible ripple	10%
Max voltage drop	0.5 V at 100 mA
Max load current, P1A-2XMK, LK	150 mA
P1A-2XHK, EK, JH, FH	100 mA
Max breaking power (resistive)	6 W
Internal consumption	<30 mA at 30 V
Min actuating distance	5 mm
Hysteresis	1.1 - 1.3mm
Repeatability accuracy	±0.1mm
Max on/off switching frequency	1 kHz
Max on/off switching time	0.8/3.0 ms
Encapsulation, P1A-2XHK, EK, MK, LK	IP67
Temperature range	–10 °C to 60 °C (14°F to 140°F)
Indication	LED
Shock resistance	40 g
Material, housing	Polyamid 11
Material, mould	Ероху
Cable	PVC 3x0.15 mm ²
Cable incl. female part connector	PVC 3x0.15 mm ²
Connector	8mm snap on
Mounting	Mounting yoke
Material, mounting	Acetal/Stainless steel
Material, screw	Stainless steel

Wiring connection



P1A-2XEK



Electronic Sensors

Output	Cable length	Weight (lb)	Part number
PNP, N.O.	2m	0.09	P1A-2XMK, Rt. angle
NPN, N.O.	2m	0.09	P1A-2XLK, Rt. angle
NPN, N.O.	2m	0.022	P1A-2XEK

Mounting Brackets

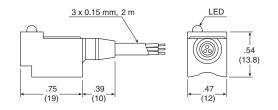
Fits cylinder		
bore size	Weight (lb)	Part number
10mm	0.01	P1A-2CCC
12mm	0.01	P1A-2DCC
16mm	0.0176	P1A-2FCC
20mm	0.0176	P1A-2HCC
25mm	0.022	P1A-2JCC

Cable for Sensors

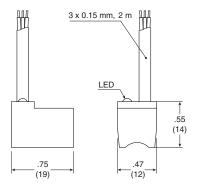
Cable length	Weight (lb)	Part number
3m	0.12	9126344341**
10m	0.4	9126344342**

^{*} Cable ordered separately

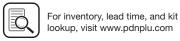
P1A-2XHK and P1A-2XEK



P1A-2XMK and P1A-2XLK









^{**} Cable includes female part connector for sensor

LP/LPM Series Sensors

Bore size	Reed (Low AMP)	NPN sinking	PNP sourcing
9/16"	L077030000	L076950000	L076990000
3/4", 1-1/8"	L077040000	L076960000	L077000000
1-1/2", 2"	L077050000	L076970000	L077010000
2-1/2", 3", 4"	L077060000	L076980000	L077020000

Note: For sensors with an 8mm connector, replace the last digit with a 'C'. For example: L07696000C.

Solid State Sensors (NPN/PNP)

	,
Switching Logic	N.O. NPN (Sinking) N.O. PNP (Sourcing)
Supply Voltage Range	5 - 30 VDC
On-State Voltage Drop	1.5 V max. at 100 mA
Current Output Range	100 mA
Burden Current	7 mA at 12 V 14 mA at 24 V
Leakage Current	0.01 mA
LED Function	NPN: Red (Target Present) PNP: Green (Target Present)
Minimum Current to Light LED	1 mA
Operating Temperature	14° to 158°F (-10° to 70°C)
Storage Temperature	-4° to 176°F (-20° to 80°C)
Enclosure Protection	IEC standard IP 67 NEMA 6P
Lead Wire	3 conductor, 24 gauge
Lead Wire Length	59 inches, 1.5 meter
Color of Cable	Black
Switching Response	Max. 1k Hz
Shock Resistance	50 G (490 m/s ²)
Vibration Resistance	Double Amplitude 1.5 mm (Frequency 10 to 55 Hz 1 scanning, 1 minute)

Reed Sensor (Low AMP)

ricca ocrisor (Low Aim	1
Switching Logic	N.O. SPST (Form A)
Supply Voltage Range	3 - 125 V AC/DC
On-State Voltage Drop	1.8V max. at 20 mA DC
Power Rating*	5 W (2.5 W) 5 VA (2.5 VA)
Switching Current Range*	5-40 mA (5-20 mA)
Leakage Current	0
LED Function	Red (Target Present)
Minimum Current to Light LED	3 mA
Operating Temperature	14° to 158°F (-10° to 70°C)
Storage Temperature	-4° to 176°F (-20° to 80°C)
Enclosure Protection	IEC standard IP67 NEMA 6P
Lead Wire	2 conductor, 24 gauge
Lead Wire Length	59 inches, 1.5 meter
Color of Cable	Gray
Switching Response	Max. 300 Hz
Shock Resistance	30 G (300 m/s ²)
Vibration Resistance	Double Amplitude 1.5 mm (Frequency 10 to 55 Hz 1 scanning, 1 minute)

^{*} Number in parentheses pertains to inductive loads.

Circuits

NPN Sensor – Sinking Output

Color of Cable – Black

"On" State Voltage Drop – 1.5V Maximum



PNP Sensor - Sourcing Output

Color of Cable - Black

"On" State Voltage Drop – 1.5V Maximum



^{*} Wire colors in parentheses pertain to sensors manufactured before 10/15/93.

Reed Sensor

NOTE: Polarity must be observed for DC operation only.

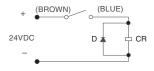






Electronic Sensors

(Required for proper operation 24VDC)

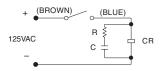


D: Diode: select a Diode with the breakdown voltage and current rating according to the load.

Typical Example – 100 Volt, 1 Amp Diode CR: Relay coil (under 0.5W coil rating)

(Recommended for longer life 125 VAC)

Put a resistor and capacitor in parallel with the load (CR). Select the resistor and capacitor according to the load.



Typical Example:

CR: Relay coil (under 2W coil rating) R: Resistor 1 K Ω – 5 K Ω , 1/4 W C: Capacitor 0.1 μ F, 600 V

♠ Caution

- Use an ampmeter to test reed sensor current. Testing devices such as incandescent light bulbs may subject the reed sensor to high in-rush loads.
- NOTE: When checking an unpowered reed sensor for continuity with a digital ohmmeter the resistance reading will change from infinity to a very large resistance (2 M ohm) when the sensor is activated. This is due to the presence of a diode in the reed sensor.
- Anti-magnetic shielding is recommended for reed sensors exposed to high external RF or magnetic fields.
- The magnetic field strength of the piston magnet is designed to operate with our sensors. Other manufacturers' sensors may not operate correctly in conjunction with these magnets.
- Current capabilities are relative to operational temperatures.
- Use relay coils for reed sensor contact protection.
- The operation of some 120 VAC PLC's (especially some older Allen-Bradley PLC's) can overload the reed sensor. The sensor may fail to release after the piston magnet has passed. This problem may be corrected by the placement of a 700 to 1K OHM resistor between the sensor and the PLC input terminal. Consult the manufacturer of the PLC for appropriate circuit.
- Sensors with long wire leads (greater than 15 feet) can cause capacitance build-up and sticking will result. Attach a resistor in series with the reed sensor (the resistor should be installed as close as possible to the sensor). The resistor should be selected such that R (ohms) >E/0.3.

Selection Guide

Drop-in Sensors

Solid State / Reed Sensors

Weld Immune Sensors

Cordset / Connect Block





PRNA Sizes 3 to 30 Sensors

Fixed Position Sensor

Reed Sensors Solid State /

Weld Immune Sensors

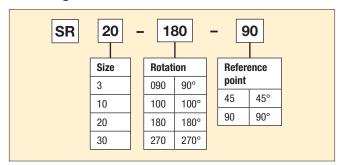
Cordset /
Connect Block

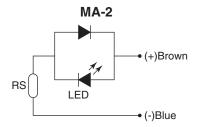
Electronic Sensors

Specifications

Part Number	See Ordering Information
Type of Sensor	Solid State
Application	Relay, PLC, IC Circuit
Output Method	NPN
Load Voltage	5 to 30VDC
Load Current	5 to 200 mA
Max. Power Consumption of Switch Control	Max. 200 mA at 24V
Max. Leak Current	Max. 10 μA
Internal Voltage Drop	1.5VDC or Less
Mean Response Time	1 ms
Shock Resistance	490 m/s ²
Ambient Temperature	5 to 60°C
Enclosure Rating	IP67
Hysteresis	Approximately 2°
Response Range	15° +/- 7°
Lead Wire Length	1 meter

Ordering information





Variable Position Sensor

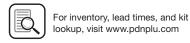
Specifications

-	
Type of Sensor	Solid State
Application	Relay, PLC, IC Circuit
Output Method	NPN
Load Voltage	5 to 30 VDC
Load Current	5 to 200 mA
Max. Power Consumption of Switch Control	Max. 200 mA at 24V
Max. Leak Current	Max. 10 μA
Internal Voltage Drop	1.5 VDC
Mean Response Time	1 ms
Shock Resistance	490 m/s ²
Ambient Temperature	5 to 60°C
Enclosure Rating	IP67
Hysteresis	Approximately 2°
Response Range	23° +/- 7°
Lead Wire Length	1 meter

Variable position sensor

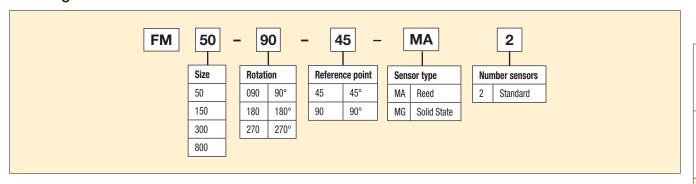
Size	Part number
1	FR-1PRN
3	FR-3PRN
10	FR-10PRN
20	FR-20PRN
30	FR-30PRN



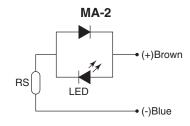


PRN Sizes 50 to 800 Sensors

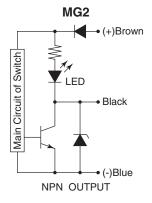
Ordering information



Reed sensors



Solid state sensors



Specifications

Output Method	NPN
Load Current	5 to 45 mA
Internal Voltage Drop	2V or Less
Mean Response Time	1.0 ms
Shock Resistance	294 m/s ²
Ambient Temperature	5 to 60°C
Indicator Light	Red LED
Lead Wire Length	1 meter

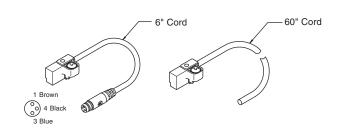
Specifications

Application	Relay, PLC, IC Circuit
Output Method	NPN
Load Voltage	5 to 30VDC
Load Current	5 to 200 mA
Max. Power Consumption of Switch Control	Max. 20 mA at 24V
Max. Leak Current	Max. 10 μA
Internal Voltage Drop	1.5V or Less
Mean Response Time	1 ms
Shock Resistance	490 m/s ²
Ambient Temperature	5 to 60°C
Enclosure Rating	IP67
Indicator Light	Red LED
Lead Wire Length	1 meter

Solid State Sensors

PV & XR Series Solid State (Hall Effect) Sensors

Type	LED color	Logic	Cable/Connector	Part number
N.O.	Green	PNP	1.5m black with leads 0.15m black with connector	SMH-1P
N.O.	Red	NPN		SMH-1N
N.C.	Yellow	PNP		SMC-1P
N.C.	White/Red	NPN		SMC-1N
N.O.	Green	PNP		SMH-1PC
N.O.	Red	NPN		SMH-1NC
N.C.	Yellow	PNP		SMC-1PC
N.C.	White/Red	NPN		SMC-1NC



Specifications

Selection Guide

Reed Sensors

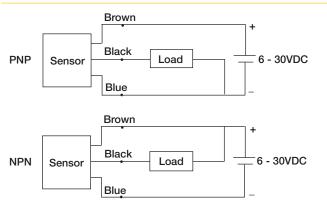
Sensors

Connect Block

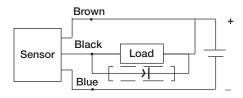
Solid State / Weld Immune

Туре	Solid State Type (PNP or NPN)
Switching Logic	Normally Open or Normally Closed
Supply Voltage Range	6 - 30 VDC
Max. Switch Current	150 mA
Current Consumption	7 mA at 12 VDC, 14 mA at 24 VDC
Switching Response	500 Hz Maximum
Residual Voltage	0.8 V Maximum (150 mA)
Leakage Current	10 uA Maximum
Insulation Resistance	100 M ohm min.
Min. Current for LED	1mA
Operating Temperature	-10° to 85°C (14° to 185°F)
Lead Termination	1500mm (60 in) or 150mm (6 in) with connector
Enclosure Rating	IP67
Shock Resistance	50 G's, 490 m/sec ²

Wiring connection

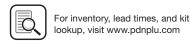


Protection circuit*



* When connecting an inductive load (relay, solenoid valve, etc.), a protection circuit is recommended. Use a 100V, 1A diode. (NPN connection shown.)





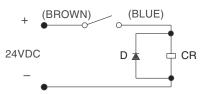
PV & XR Series Reed Sensors

Reed sensors are available in a normally open or normally closed configuration. The low amp sensor is suitable for connection to PLCs or other low current devices. The high amp sensor can be used to drive sequencers, relays, coils, or other devices directly.

Type	LED color	Rating	Cable/Connector	Part number
N.O.	Green	High Amp	1.5 0	SMR-1
N.O.	Red	Low Amp	- 1.5m Gray - with Leads	SMR-1L
N.C.	Yellow	Low Amp	- Will Leads	SMD-1L
N.O.	Green	High Amp	0.1500 0000	SMR-1C
N.O.	Red	Low Amp	0.15m Gray with Connector	SMR-1LC
N.C.	Yellow	Low Amp	WILLI COLLINECTOL	SMD-1LD

Integral circuit for switching contact protection

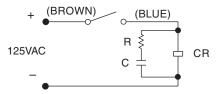
(Required for proper operation 24V DC)
Put Diode parallel to load (CR) with polarity as shown below.



 Diode: select a Diode with the breakdown voltage and current rating according to the load.

CR: Relay coil (under 0.5 W coil rating)

(Recommended for longer sensor life 125V AC) Put resistor and capacitor parallel to load (CR).



CR: Relay coil (under 2 W coil ratings)

R: Resistor under 1 K ohm
C: Capacitor 0.1 µF

SMR-1L or SMD-1L Low Amp Reed Sensor Specifications

Switching Logic	Normally Open (SMR-1L)
	Normally Closed (SMD-1L)
Voltage Rating	85-125 VAC or
	6-30 VDC* (N.O.)
	6-30 VAC, 6-30 VDC* (N.C.)
Power Rating:	
AC or DC Resistive Load	10 watts (N.O.)
AC or DC Inductive Load	5 watts (N.O.)
AC or DC	3 watts (N.C.)
Switching Current Range:	
Resistive Load (PC, Sequencer)	5-40 mA (N.O.),
	5-25 mA (N.C.)
Inductive Load (Relay)	5-25 mA
Minimum Current for LED	5 mA
Switching Response	300 Hz (N.O.), 200 Hz (N.C.)
Breakdown Voltage	200 VDC
Contact Resistance	100 M ohm min.
Operating Temperature	-10° to 85°C (14° to 185°F)
Lead Termination	1.5m (60 in) or
	0.15m (6 in) with connector
Enclosure Rating	IP67
Shock Resistance	30 G's, 300 m/sec ²

SMR-1 High Amp Reed Sensor Specifications

opoomoationo	
Switching Logic	Normally Open
Voltage Rating	85-125 VAC or 5-30 VDC*
Power Rating: AC or DC Resistive Load AC or DC Inductive Load	10 watts 5 watts
Switching Current Range: Resistive Load (PC, Sequencer) Inductive Load (Relay)	30-300 mA 30-100 mA
Minimum Current for LED	18 mA
Switching Response	300 Hz Maximum
Breakdown Voltage	200 VDC
Contact Resistance	100 M ohm min.
Operating Temperature	-10° to 85°C (14° to 185°F)
Lead Termination	1.5m (60 in) or 0.15m (6 in) with connector
Enclosure Rating	IP67
Shock Resistance	30 G's, 300 m/sec ²

Polarity is restricted for DC operation

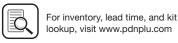
(+) to Brown

(-) to Blue

If these connections are reversed the contacts will close, but the LED will not light.

Note: Care must be taken not to exceed the Power Rating of the sensor while still observing the voltage and current limitations.





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Drop-in Sensors

Solid State/ Reed Sensors

Weld Immune Sensors

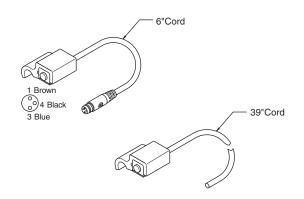
Cordset / Connect Block



PTR Series Solid State (Hall Effect) Sensors

	PNP		NPN	
PTR model	With 6" male quick connect	With 39" potted-in leads	With 6" male quick connect	With 39" potted-in leads
10	SWH-1PC	SWH-1P	SWH-1NC	SWH-1N
15	SWH-1PC	SWH-1P	SWH-1NC	SWH-1N
20	SWH-2PC	SWH-2P	SWH-2NC	SWH-2N
25	SWH-2PC	SWH-2P	SWH-2NC	SWH-2N
32	SWH-2PC	SWH-2P	SWH-2NC	SWH-2N

Note: Sensors with male quick connect option require female cordsets to be ordered separately. Please reference page K25.



Specifications

Reed Sensors

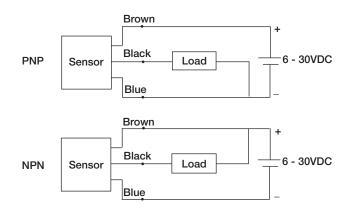
Sensors

Connect Block

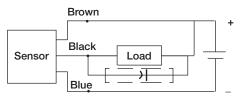
Solid State / Weld Immune

Туре	Solid State (PNP or NPN)
Switching Logic	Normally Open
Supply Voltage Range	6 - 30VDC
Current Output Range	Up to 100 mA at 5 VDC, Up to 200 mA at 12 VDC and 24 VDC
Current Consumption	7 mA at 5 VDC, 15 mA at 12 VDC, and 30 mA at 24 VDC
Switching Response	1000 Hz Maximum
Residual Voltage	1.5V Maximum
Leakage Current	10uA Maximum
Breakdown Voltage	1.8kVACrms for 1 sec., lead to case
Min. Current for LED	1mA
Operating Temperature	14 to 140°F (-10 to 60°C)
Enclosure Rating	Meets IEC IP67, fully encapsulated
Lead Wire	3 conductor, 24 gauge
Lead Wire Length	39 in (1 m)
Vibration Resistance	10-55 Hz, 1.5mm double amplitude

Wiring connection



Protection circuit*



When connecting an inductive load (relay, solenoid valve, etc.), a protection circuit is recommended. Use a 100V, 1A diode. (NPN connection shown.)

Electronic Sensors





PTR Series Reed Sensors

PTR model	With 6" male quick connect	With 39" potted-in leads
10	SWR-1C	SWR-1
15	SWR-1C	SWR-1
20	SWR-2C	SWR-2
25	SWR-2C	SWR-2
32	SWR-2C	SWR-2

Sensors with male quick connect option require female cordsets to be ordered separately.

Specifications

Switching Logic	Normally Open
Voltage Rating	85-125 VAC or 6-30 DC*
Power Rating	10 Watts AC or DC/Resistive Load 5 Watts AC or DC/Inductive Load
Switching Current Range	10-200 mA/Resistive Load (PC, Sequencer) 10-100 mA/Inductive Load (Relay)
Switching Response	300 Hz Maximum
Breakdown Voltage	1.8kVACrms for 1 sec., lead to case
Min. Current for LED	18mA
Operating Temperature	14 to 140°F (-10 to 60°C)
Enclosure Rating	Meets IEC IP67, fully encapsulated
Lead Wire	2 conductor, 22 Gauge
Lead Wire Length	39 in (1m)
Vibration Resistance	10-55 Hz, 1.5mm double amplitude

* Polarity is restricted for DC operation

(+) to White

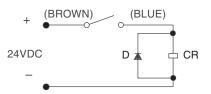
(-) to Black

If these connections are reversed the contacts will close, but the LED will not light.

Protection circuit (Inductive loads)

(Required for proper operation 24VDC)

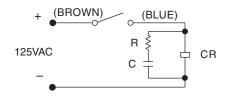
Select a diode with a breakdown voltage and current rating according to the load (CR). Place a diode in parallel to the load with the polarity as indicated:



CR: Relay coil (under 0.5W coil rating)

(Recommended for longer sensor life 125VAC)

Select a resistor and capacitor according to the load (CR). Place a resistor and capacitor in parallel to the load:



CR: Relay coil (under 2W coil rating)

R: Resistor under 1 K ohm

C: Capacitor 0.1 µF

Selection Guide

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Solid State / Reed Sensors

Weld Immune Sensors

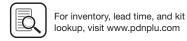
Cordset / Connect Block

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ensors







Weld Immune Sensor

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Selection Guide

Drop-in Sensors

Solid State / Reed Sensors

Weld Immune

Sensors

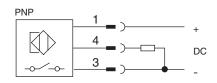
Cordset/ Connect Block

- Weld immune in all welding applications (AC, DC and medium frequency welding).
- Sensor locks the output during the welding process; when welding process stops, the sensor updates the output accordingly.

NOTE: Tie rod construction of the P1D Series can be ordered directly in the model code.



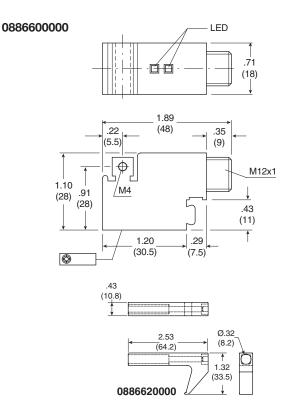
Pin	Function
1	Operating voltage (+VDC)
4	Output signal (N.O.)
3	-VDC
2	Not used



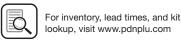
Specifications

Electronic
Normally Open
PNP (3-Wire)
10-30 VDC
≤ 30 Gauss
40 Hz
≤ 10% of Supply Voltage
≤ 2 VDC
≤ 32mA
≤ 18mA
≤ 300mA
≤ 1.5mm
≤ 0.1mm
EN 60 947-5-2
Yes
Yes
Yes
Yes
IP67
30 g, 11ms, 10-55 Hz, 1mm
-25°C to 75°C (-13°F to 167°F)
Die-cast zinc with PTFE coating
Status Indicator (yellow) Function Indicator (green)
M12 connector

Description	Part number
Weld immune sensor	0886600000
Tie rod bracket kit	0886620000







Air Piloted Switch

Features

- Converts a magnetic field to an air pilot signal
- Band clamp allows for mounting to tie rod cylinders
- Fits 32 to 100mm bore (1.5 to 4 inch bore)
- Type 3/2 valve NC, 2-position / spring return 3-way

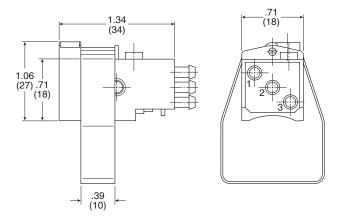
Construction materials

Body	Macrolon, glass fiber
Mounting bracket	Aluminum, anodized
Connection	3 - 3mm OD barbs

Characteristics

Operating temperature	14°F to 140°F (-10°C to 60°C)
Operating pressure	30 PSI to 90 PSI (2 bar to 6 bar)
Normal operating pressure	90 PSI (6 bar)
Flow	0.04 Cv (40 l/min)
Cycle rate	40 hz
Switching accuracy	± 0.008" (0.2mm) w/o air
Filtration	40 micron
Media	Filtered and regulated compressed air
Installation	In any position
Weight	Sensor 0.49 oz (0.014 kg) Sensor & bracket 0.99 oz (0.028 kg)

Description	Part number
Sensor – Air type	KZ2364
Mounting bracket	KZ8255



Selection Guide

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Solid State / Reed Sensors

Weld Immune Sensors

Connect Block

Proximity Sensors





Cordset Specifications

Female Quick Connect Cordset

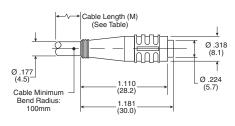
8mm Cordset with Female Quick Connect

A female connector is available for all sensors with the male 8mm quick connect option. The male plug will accept a snap-on or threaded connector. Cordset part numbers are listed below:

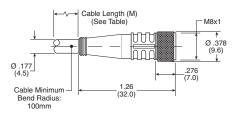
Cable length	Threaded connector	Snap on connector
5 meters	086620T005	086620S005
2 meters	086620T002	086620S002

Specifications	
Connector	Oil resistant polyurethane body material, PA 6 (Nylon) contact carrier, spacings to VDE 0110 Group C, (150 AC/DC)
Contacts	Gold plated beryllium copper, machined from solid stock
Coupling Method	Snap-Lock or chrome plated brass nut
Cord Construction	Oil resistant black PUR jacket, non-wicking, non-hygroscopic, 300V. Cable end is stripped and tinned.
Conductors	Extra high flex stranding, PVC insulation
Temperature	-40°F to 194°F (-40°C to 90°C)
Protection	NEMA 1, 3, 4, 6P and IEC IP67
Cable Length	6.56 ft (2m) or 16.4 ft (5m)

Snap-On Straight Connector



Threaded Straight Connector



12mm Cordset with Female Quick Connect

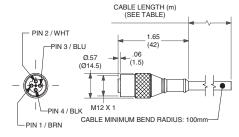
Cable length	M12 Right angle Connector	M12 Straight connector
5 meters	9126487305	9126487205
2 meters	9126487302	9126487202

A female connector is available for all sensors with the male 12mm guick connect option. The cordsets are available with a right angle or straight connector. Cordset part numbers are listed above.

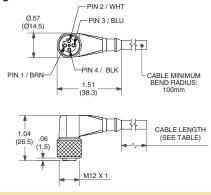
Specifications

-	
Connector	Polyvinylchloride (PVC) body material, PVC contact carrier, spacing to VDE 0110 Group C, (250VAC / 300VDC)
Contacts	Gold Plated Copper Tin (CuSn), stamped from stock.
Coupling Method	Threaded nut: Chrome plated brass.
Cord Construction	PVC non-wicking, non-hygroscopic, 250VAC / 300VDC. Cable end is stripped.
Conductors	Extra high flex stranding with PVC insulation
Temperature	-13°F to 158°F (-25°C to 70°C)
Protection	NEMA 1, 3, 4, 6P and IEC IP67
Cable Length	6.56 ft (2m) or 16.4 ft (5m)

Straight Connector



Right Angle Connector







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Selection Guide

Drop-in

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Sensors

Connect Block

Proximity Sensors

Cordset/

Reed Sensors Solid State /

Connection Block Valvetronic 110

The Valvetronic 110 is a connection block that can be used for collecting signals from sensors at various points on a machine and connecting them to the control system via a multicore cable. Valvetronic 110 can also be used for central connection of the multi-core cable to the outputs of a control system, and can be laid to a machine where the output signals can be connected. The connection block has ten 8mm snap-in connectors and a multi-core cable which is available in lengths of 3 or 10m. The connections on the block are numbered from 1 to 10. Blanking plugs are available for unused connections, as labels for marking the connections of each block.

Connections

Ten 3-pole numbered 8 mm round snap-in female contacts



Input block
Pin 1 Common, +24 VDC
Pin 2 Input signal
Pin 3 Common, 0V



Output block
Pin 1 Common, GND Output signal
Pin 2 Common, 0V
Pin 3

Electrical Data

Voltage	24 VDC (max. 60 V AC/75 V DC)
Insulation group	according to DIN 0110 class C
Load	max. 1 A per connection total max. 3 A

Cable

Length	3m or 10m
Type of cable	LifYY11Y
Conductor	12
Area	0.34 mm ²
Color marking	According to DIN 47 100



Mechanical Data

Enclosure	IP 67, DIN 40050 with fitted contacts and/or blanking plugs.
Temperature	–20 °C to 70 °C
Material	
Body	PA 6,6 VD according to UL 94
Contact holder	PBTP
Snap-in ring	LDPE
Moulding mass	Ероху
Seal	NBR
Screws	Plated steel

Industrial Durability

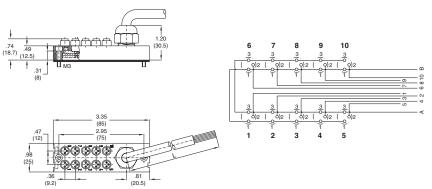
Good chemical and oil resistance. Tests should be performed in aggressive environments.

Ordering Information

Designation	Weight (kg)	Part number
Connection block Valvetronic 110 with 3m cable	0.32	9121719001
Connection block Valvetronic 110 with 10m cable	0.95	9121719002
Blanking plugs (pack of 10), use blanking plugs to close unused connections.	0.02	9121719003
Labels (pack of 10), White labels to insert in grooves on the side of the connection	0.02	9121719004

L25

Dimensions and Wiring Diagrams



Conductor	Color	Input	Output
1	Pink	Signal 1	Signal 1
2	Grey	Signal 2	Signal 2
3	Yellow	Signal 3	Signal 3
4	Green	Signal 4	Signal 4
5	White	Signal 5	Signal 5
6	Red	Signal 6	Signal 6
7	Black	Signal 7	Signal 7
8	Violet	Signal 8	Signal 8
9	Grey-Pink	Signal 9	Signal 9
10	Red-Blue	Signal 10	Signal 10
A	Blue	0 V	0 V
В	Brown	+24 V	PE





EPS-6 & 7 / CLS-1 & 4 End-of-Stroke Proximity Sensors

Ordering information

Sensor type	Inductive proximity	Inductive proximity		Non-contacting magnetically actuated	
Style	EPS-7	EPS-6	CLS-1	CLS-4	
Sensor part number	148897****	148896****	148275****	149109****	
6' Cable	0853550006	0859170006	0853550006	_	
12' Cable	0853550012	0859170012	0853550012	_	
6' Cable, right angle	0875470006	-	0875470006	_	

^{****} Part number suffix: **** 4-digit suffix indicates probe length: 0125=1.25", 0206=2.06", 0288=2.875", 0456=4.562"

Specifications

Drop-in Sensors

Reed Sensors Solid State /

Weld Immune Sensors

Connect Block

Style	EPS-7	EPS-6	CLS-1	CLS-4
Code designator	Н	D	F	В
Sensor type	Inductive proximity	Inductive Proximity	Non-contacting magnetically actuated	Non-contacting magnetically actuated
Description	Economical, General Purpose, 2 wire device, primarily for AC applications, not suitable for 24 VDC applications.	Economical, General Purpose, 3 wire, DC sensor, dual output: sinking and sourcing	Functional replacement for AB (Mechanical) Limit Switches in many applications, or where customer needs NC contacts, zero leakage, zero voltage drop, higher or lower load current than EPS-style.	Functional replacement for AB (Mechanical) Limit Switches in many High Temperature applications, or where customer needs NC contacts, zero leakage, zero voltage drop, higher or lower load current than EPS-style.
Supply voltage	20 to 250 VAC/DC	10 to 30 VDC	24 to 240 VAC/DC	24 to 240 VAC/DC
Load current, min	8 mA	NA	NA	NA
Load current, max	300 mA	200 mA	4 AMPS @ 120 VAC 3 AMPS @ 24 VDC	4 AMPS @ 120 VAC 3 AMPS @ 24 VDC
Leakage current:	1.7 mA, max.	10 micro amps max.	_	_
Voltage drop	7 V, max.	2 VDC max.	NA	NA
Operating temperature	-14° to 158° F	-14° to 158° F	-40°F to 221° F	-40° F to 400° F
Connection	3-pin mini	5-pin mini	3-pin mini	144" PTFE coated flying leads with 1/2" conduit hub
Enclosure rating	IEC IP67	IEC IP67	NEMA 1, 2, 3, 4, 4x, 5, 6, 6P, 11, 12, 12K, 13	NEMA 1, 2, 3, 4, 4x, 5
Led indication	Yes	Yes	No	No
Short circuit protection	Yes	Yes	No	No
Weld field immunity	Yes	Yes	Yes	Yes
Output	2 wire, Normally Open with leakage current	Dual output: DC Sinking and DC Sourcing, user selectable via wiring	SPDT (Single pole double throw), Normally Open/Normally Closed, Form C	SPDT (Single pole double throw), Normally Open/Normally Closed, Form C
Approvals / marks	CE, UL, CSA	CE, UL, CSA	UL or CSA	UL or CSA
Make / break location	0.125" from end of stroke, ty	pical. Tolerance is 0/-0.125"		
Wiring instructions	Pin 1: AC ground (Green)	Pin 1: +10 to 30 VDC (White)	Pin 1: Common (Green)	Common: (Black)
	Pin 2: Output (Black)	Pin 2: Sourcing output (Red)	Pin 2: Normally closed (Black)	Normally open: (Blue)
	Pin 3: AC line (White)	Pin 3: Grounded (not connected or required)	Pin 3: Normally open (White)	Normally closed: (Red)
		Pin 4: Sinking output (Orange)		
		Pin 5: DC common (Black)		

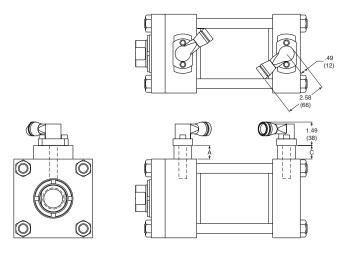


When Parker EPS-6 or 7 proximity sensors are used as inputs to programmable controllers, the preferred practice is to connect each sensor to a separate input channel of the PC. Series or parallel operations may then be accomplished by the internal PC programming.

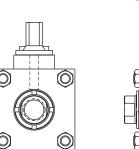
Parker EPS-6 or 7 sensors may be hard wired for series operation, but the voltage drop through the sensors (see specifications) must not reduce the available voltage below what is needed to actuate the load.

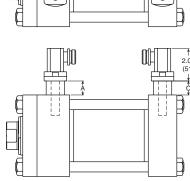
Parker EPS-6 or 7 sensors may also be hard wired for parallel operation. However, the leakage current of each sensor will pass through the load. The total of all leakage currents must not exceed the current required to actuate the load. In most cases, the use of two or more EPS-6 or 7 sensors in parallel will require the use of a bypass (shunt) resistor.

EPS-7 & EPS-6 sensors



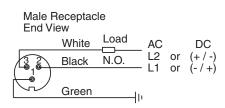
CLS-1 & 4 sensors



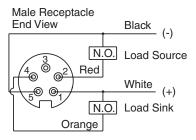


Connector pin numbering

3-pin mini



5-pin mini





EPS-6

Connectors

The male quick disconnect on the Parker EPS-6 is a Brad Harrison 41310 connector.

Plug pin and cable identification

- 1) +10 to 30 VDC (White)
- 2) Source (Red)
- 3) Grounded not connected nor required
- 4) Sink (Orange)

Sensors Drop-in

Reed Sensors Solid State /

Weld Immune

Sensors

Connect Block

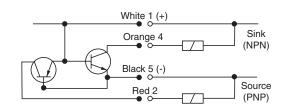
Cordset/

Proximity Sensors

5) Common (Black)



Cable length	Part number
3	0859170003
6	0859170006
12	0859170012



LED Function	"Ready"	"Target"
Power Applied (No Target)	ON	OFF
Target Present	OFF	ON
Short Circuit Condition	FLASH	FLASH

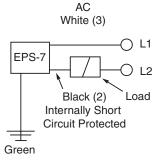
EPS-7

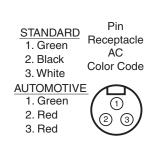
Connectors

The male quick disconnect on the Parker EPS-7 is a Brad Harrison 40909 connector.

Female connects must be purchased with one of the following cable lengths.

Cable length	Part number		
	Automotive	Standard	
3'	085356003	0853550003	
6'	085356006	0853550006	
9'	085356009	_	
12'	0853560012	0853550012	





CLS

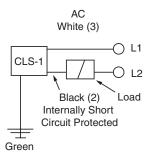
Connectors

The male quick disconnect on the Parker CLS-1 is a Brad Harrison 40909 connector.

Female connects must be purchased with one of the following cable lengths.

Cable length Part number		
3'	0853550003	
6'	0853550006	
9'	_	
12'	0853550012	

The connection for the CLS-4 are 144" PTFE insulated flying leads with 1/2" conduit hub. 3-wire: Common (black), Normally open (blue), and Normally closed (red).



L28

Pin **STANDARD** Receptacle 1. Green AC 2. Black Color Code 3. White





Electronic Sensors

How to specify EPS sensors

Parker EPS proximity sensors may be ordered on 4MA and 4MAJ Series cylinders as follows:

- 1) Complete the basic cylinder model number.
- 2) Place an "S" in the model number to denote sensors and/or special features.
- 3) Mounting styles D, DB, JB, or HB should be used with caution because of possible mounting interferences.
- 4) Special modifications to cylinders other than sensors must have a written description.

5) Specify letter prefix "H" for EPS-7, "D" for EPS-6, "F" for CLS-1, or "B" for CLS-4, then fill in the four fields specifying port location, sensor orientation and actuation point for both head and cap. If only one sensor is used, place "XXXX" in the unused fields.

Example = H13CGG-XXXX denotes a sensor on the head end only, EPS-7

Example = BXXXX-42BGG denotes a sensor on the cap end only, CLS-4

Head end

Н	1	3	Α	GG
Specify: H = EPS-7 D = EPS-6 F = CLS-1 B = CLS-4 N = Prep for sensors only	Port Location See Figure 1.	Sensor Location See Figure 1.	Sensor Orientation See Figure 2 for EPS-7 and EPS-6 only.	Actuation Point GG = End of Stroke

Cap end

4	2	В	GG
Port Location See Figure 1.	Sensor Location See Figure 1.	Sensor Orientation See Figure 2 for EPS-7 and EPS-6 only.	Actuation Point GG = End of Stroke

Note: All specified sensor and port locations are as seen from rod end of cylinder.

Figure 1

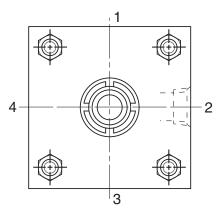
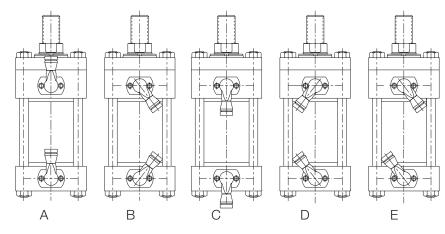


Figure 2



Example:

4.00 CJ4MAUS14AC 12.000 S = H13CGG-13CGG

^{*} Contact pdnapps@parker.com for this option with 4MA and 4MAJ Series cylinders.

The inductive type proximity sensor provides end of rotation indication. The non-contact probe senses the presence of the ferrous cushion spear and has no springs, plungers, cams or dynamic seals that can wear out or go out of adjustment. The sensor is solid state and meets NEMA 3, 4, & 13 specifications. For ease of wiring, the connector housing is rotatable through 360°. To rotate, lift the cover latch, position, and release.

A standard proximity sensor controls 20-230 VAC/DC loads from 5 to 500 mA. The low 1.7 mA off-state leakage current can allow use for direct PLC input. The standard short circuit protection (SCP) protects the sensor from a short in the load or line upon sensing such a condition (5 amp or greater current) by assuming a non-conductive mode. The fault condition must be corrected and the power removed to reset the sensor preventing automatic restarts.

The low voltage DC sensor is also available for use with 10-30 VDC. This sensor is in a non-rotatable housing, but does incorporate the short circuit protection.

Both sensors are equipped with two LEDs, "Ready" and "Target". The "Ready" LED is lit when power is applied and the cushion spear is not present. The "Target" LED will light and the "Ready" LED will go out when the sensor is closed, indicating the presence of the cushion spear. Both LEDs flashing indicates a short circuit condition.

Notes:

- Available with or without cushions.
- 2. Not available with stroke adjusters.
- 3. Pressure rating: 3000 PSIG
- 4. Operating temperature: -4°F to 150°F
- 5. Specify sensor type, orientation and voltage when ordering.
- 6. The low voltage DC sensor is available in non-rotatable style only, consult representative for further information.

Inductive Proximity Sensors – 8mm Barrel Type

Proximity sensors are normally ordered with the unit as part of the model number. Use these part numbers for replacement parts only.

Ordering information

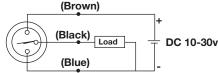
	PNP		NPN	
Series	Quick* connect	Flying leads	Quick ** connect	Flying leads
НВ	B8830-P	913090000	B8830-N	913090100
P5L	B8830-P	913090000	B8830-N	913090100

- * Order cordset B8757-P separately.
- ** Order cordset B8757-N separately.

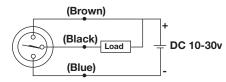
Electrical Specifications

= = = = = = = = = = = = = = = = = = = =		
Voltage	10-30 VDC (3 wire) PNP or NPN	
No Load Current	5.5-9.5 mA	
Continuous Current	150 mA	
Switching Speed	8 ms	
Switch Frequency	5000 Hz	
Switching Distance	Aluminum = 0.016 in (0.4mm) Brass = 0.028 in (0.7mm) Steel = 0.039 in (1.0mm)	
Overload Protection	Triggered at 170 mA	
Reverse Polarity Protection	Incorporated	
Temp. Range	-13 to 158°F (-25 to 70°C)	
Enclosure Rating	Meets NEMA 1,3,4,6,13 and IEC IP67, fully encapsulated	

PNP wiring connection

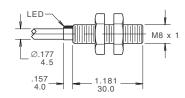


NPN wiring connection



POTTED-IN SENSOR

Lead type sensor with 20 ft. (6m) cord length



PLUG-IN SENSOR

A threaded right angle cordset must be ordered separately. The cordset contains two LEDs:

1 - power, 2 - target indication. Cordset length is 20 ft. (6m).

