KOLLMORGEN

Position Sensor Specifications
for Sensors used on EC, N2, and NV Series Electric Cylinders

Sensor Series		PSR-1	PSR-2	PSN-1	PSN-2	*PSP-1	*PSP-2
Sensor Type		Mechanical Reed		Hall-Effect			
Output Type		Contact Closure		Sinking, Open Collector (NPN)		Sourcing (PNP)	
Connection		Norm. Open	Norm. Closed	Norm. Open	Norm. Closed	Norm. Open	Norm. Closed
LED Color		Green	Red	Green	Red	Yellow	Red
Number of Leads		2 + shield, 26 AWG, 3-meter cable		3 + shield, 26 AWG, 3-meter cable			
Supply	Voltage	4 - 120 V (AC or DC)		10 - 24 VDC			
	Current			5 mA @ 12 VDC; 10 mA @ 24 VDC			
	Power			0.24 W			
Leakage Current (max.)				0.01 mA			
Output	DC Maximum	120 VDC		24 VDC			
	AC Maximum	120 VAC					
	Current Max.	50 mA		100 mA			
	Power Max.	6 W		3 W			
Operating Temp.		-4° to 158°F [-20° to 70°C]					
Storage Temp.		-4° to 176°F [-20° to 80°C]					
Environmental Rating		IEC Standard IP67					

***Not compatible with IDC motion controllers**

PSR (Reed Switch)

- More noise immunity (EMI)
- Does not require a power supply
- Slightly lower cost
- Does not work with inductive loads
- Switches AC voltages
- Can be used with Sinking or Sourcing Inputs

If You Ordered:	You Should Have Received:
PSR-1	sensor with 3m flying-lead cable
PSR-1Q	sensor with 4m quick-disconnect cable
PSR-1Q-C9M	sensor with 9m quick-disconnect cable
PSR-1Q-NC*	sensor with quick-disconnect (no cable)
PSR-2	sensor with 3m flying-lead cable
PSR-2Q	sensor with 4m quick-disconnect cable
PSR-2Q-C9M	sensor with 9m quick-disconnect cable
PSR-2Q-NC*	sensor with quick-disconnect (no cable)
*This part number is intended to be ordered as a replacement part for those already using the quick disconnect option.	

PSN and PSP (Hall-Effect Switches)

- Higher tolerance to vibration
- Greater durability and reliability
- Requires external DC power (readily available from IDC Controls)
- Best used for long cable lengths (greater than 9 meters)

If You Ordered:	You Should Have Received:
PSN-1	sensor with 3m flying-lead cable
PSN-1Q	sensor with 4m quick-disconnect cable
PSN-1Q-C9M	sensor with 9m quick-disconnect cable
PSN-1Q-NC*	sensor with quick-disconnect (no cable)
PSN-2	sensor with 3m flying-lead cable
PSN-2Q	sensor with 4m quick-disconnect cable
PSN-2Q-C9M	sensor with 9m quick-disconnect cable
PSN-2Q-NC*	sensor with quick-disconnect (no cable)
PSP-1	sensor with 3m flying-lead cable
PSP-1Q	sensor with 4m quick-disconnect cable
PSP-1Q-C9M	sensor with 9m quick-disconnect cable
PSP-1Q-NC*	sensor with quick-disconnect (no cable)
PSP-2	sensor with 3m flying-lead cable
PSP-2Q	sensor with 4m quick-disconnect cable
PSP-2Q-C9M	sensor with 9m quick-disconnect cable
PSP-2Q-NC*	sensor with quick-disconnect (no cable)
*This part number is intended to be ordered as a replacement part for those already using the quick disconnect option.	

Quick-Disconnect Option - IDC position sensors may be ordered with a convenient quick-disconnect cable as shown here.

Kollmorgen
201 West Rock Road
Radford, VA 24141, USA

Web site: www.kollmorgen.com
E-mail: support@kollmorgen.com
TEL 1-540-633-3545
FAX • 1-540-639-4162

Position Sensor Installation

CAUTION

When installing the sensor, tighten the clamp screw to a maximum 7.0 oz-in of torque. Failure to heed this caution could cause irreparable damage to the sensor.

Tighten the clamp screw gently and only to the point where the sensor assembly feels secure and does not slide along the cylinder wall.

Important Installation Notes

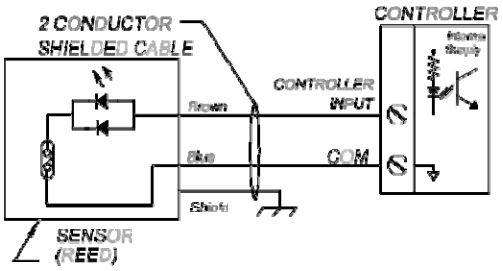
1. Position sensors may be mounted along either side of a cylinder.

   Note: Each end-of-travel (EoT) sensor consumes 50mm of stroke length. Remember to add 50mm if you have an end-of-travel sensor or you have a home limit that is sitting at the end of travel (i.e., full retraction). If you have 2 sensors, one at each end of travel, then you must add 100mm to the stroke length. Any sensors in the middle of travel do not require additional length.
2. Distance between sensors should be 1.50 inches or more. If sensors are located closer than 1.50 inches apart, they may trigger at the same time.
3. Using position sensors for end-of-travel protection reduces effective travel distance. Consult the factory.
4. D2200, D2300 and D2400 series controls use only Normally Open, Reed or NPN position sensors (PSR-1, PSN-1).

The connection diagrams below show wiring color codes and controller inputs for connecting each series of position sensor.

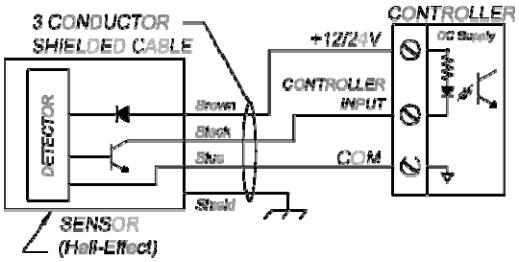
Sensor Connection Diagrams

PSR Reed Sensor

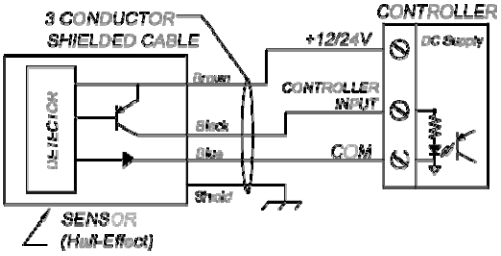


Note: The black wire in *Quick Disconnect* cables is not used with any version of the PSR (Reed) sensor. In the above drawing, only the blue wire, brown wire, and shield are connected.

PSN Hall-Effect Sensor



***PSP Hall-Effect Sensor**



***PSP** sensor is not compatible with IDC controls.

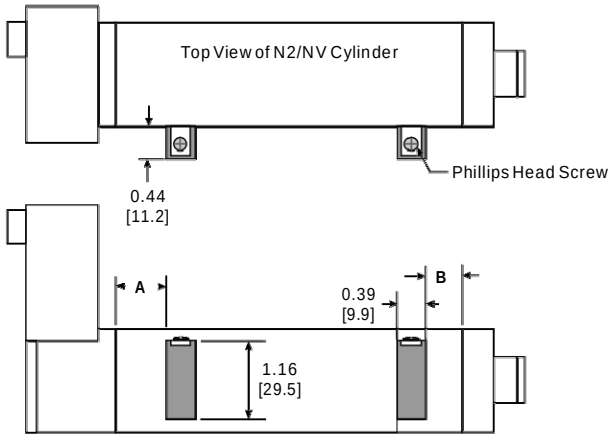
The dimension/mounting diagrams below show sensor mounting locations when cylinder magnet and sensor are physically aligned.

Dimensions/Mounting Locations - N2/NV Cylinders

These locations are recommended as a starting point when setting up a cylinder for the first time. Depending on the speed and payload of the application, sensors may be moved inward to prevent hard-stop crash when the load travels at full speed past a limit switch.

Dimensions “A” and “B” are approximate end-of-stroke locations for the position sensors.

Model	Dim “A”	Dim “B”
N2/NV Acme	1.00 [25.4]	0.70 [17.8]
N2/NV Ball	1.40 [35.6]	0.30 [7.6]

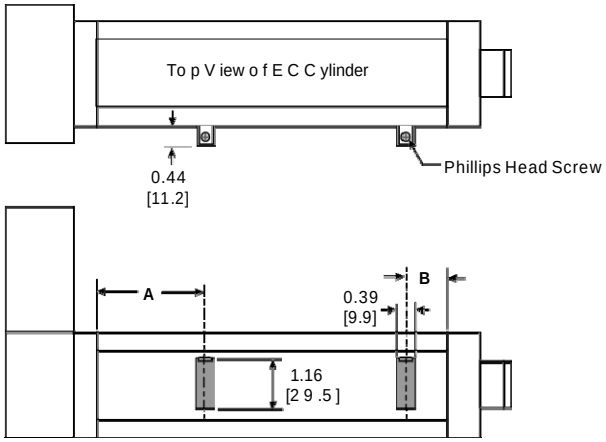


Side View of N2/NV Cylinder

Dimensions/Mounting Locations - EC Cylinders

Dimensions “A” and “B” are approximate end-of-stroke locations for the position sensors.

Model	Dim “A”	Dim “B”
EC2 Series	2.90 [73.3]	1.90 [48.3]
EC3 Series	3.03 [77.0]	2.23 [56.6]
EC4 Series	5.39 [137.0]	2.48 [63.0]
EC5 Series	5.39 [137.0]	2.48 [63.0]



Side View of EC Cylinder