

Accessories

Magnetic Position Sensors

R Series rodless actuators are equipped with position indicating magnets installed internally on both sides of the carriage guide assembly. Four non-contacting position sensors are available to sense the magnet as the carriage passes by.

All four position sensors mount directly to standard R Series actuators. Two sensors, RPS-1 and RP1, are normally open switches. Two, RPS-2 and RP2, are normally closed switches. Type RPS sensors consist of a reed switch, and type RP sensors use a Hall-effect sensing element and a simple solid state electrical circuit.

End-of-Travel Limits

To maximize cylinder life, Industrial Devices recommends the use of end-of-travel “limit switches” (position sensors) with all cylinders.

The purpose of an end-of-travel sensor is to signal the controller that the cylinder has traveled beyond its normal safe operating region, and is nearing its physical end of stroke. The controller immediately brings the cylinder to a stop to prevent physical contact, and to avoid potential damage to the actuator, to the load, or to the machine. Normally closed switches are generally used for end-of-travel sensing. Normally closed switches are considered “fail safe” because when a cable becomes accidentally severed or disconnected, motion is prevented.

Position Sensing

Limit Switch controls use position sensors as inputs for extend and retract position indication, or for reversing direction. They also use position sensors for changing speed during a move, usually to reduce cylinder speed before reaching the final stopping position for greater repeatability.

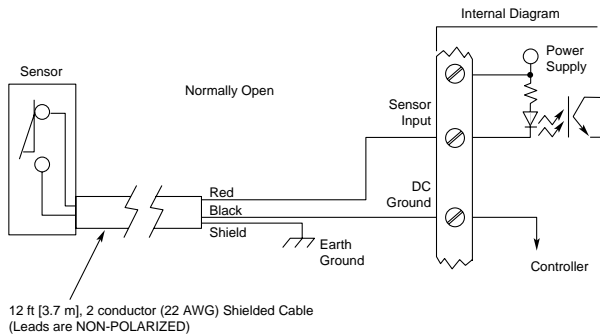
Programmable position controls use a position sensor to establish a home, or zero reference position.



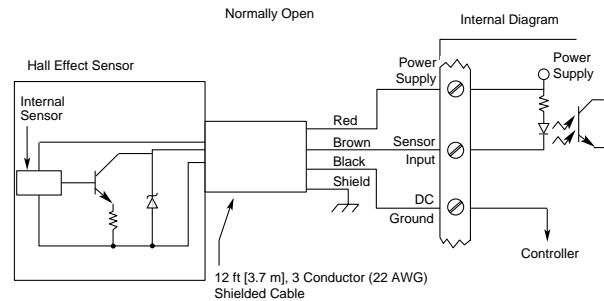
Position Sensor Specifications

	RPS-1	RPS-2	RP1	RP2
Switch Type	Mechanical Reed		Hall-effect	
Output Type	Contact closure		Open collector, sinking output	
Connection	Normally open	Normally closed	Normally open	Normally closed
Number of Leads	2		3	
Supply				
Voltage	n/a		8-28VDC	
Current	n/a		22mA	
Power	n/a		0.6W	
Output				
DC Voltage max	100VDC	100VDC	8-28VDC	
AC Voltage max	100VAC	100VAC	AC not allowed	
Current max	250mA	200mA	40mA	
Power max	7W	2W	1.1W	
Operating Temperature	-22° to 212°F [-30° to 100°C]		-4° to 140°F [-20° to 60°C]	
Storage Temperature	-22° to 212°F [-30° to 100°C]		-22° to 176°F [-30° to 80°C]	
Humidity Rating	0 to 95% non-condensing		0 to 95% non-condensing	

Wiring for RPS-1 and RPS-2



Wiring for RP1 and RP2



Comparison of Hall-Effect and Reed Switches

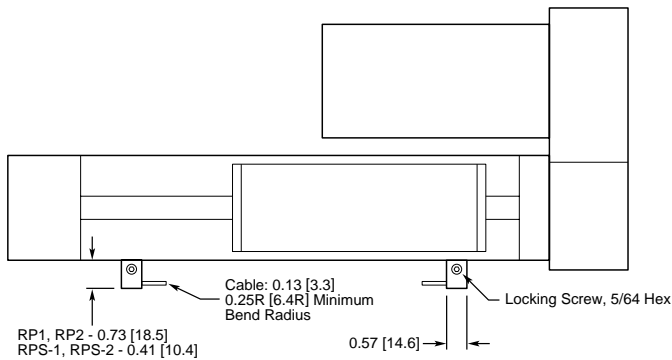
RPS-1 and RPS-2 Reed Switch

- More noise immune (EMI)
- Does not require a power supply
- Operates over a wider temperature range
- Slightly lower cost
- Does not work with inductive loads
- Switches AC voltages

RP1 and RP2 Hall-Effect Switch

- LED visually indicates state of switch
- Higher tolerance to vibration
- Greater durability and reliability (no moving parts)
- Requires external DC power. Available on IDC controls.

Position Sensor Mounting

**Notes:**

- All sensors include a 12-foot [3.7 m] shielded cable.
- Position sensors can be mounted along either side of a rodless actuator.
- Recommended minimum distance between switches is 0.65 inches [17 mm].
- Using position sensors for end-of-travel protection reduces effective travel distance.

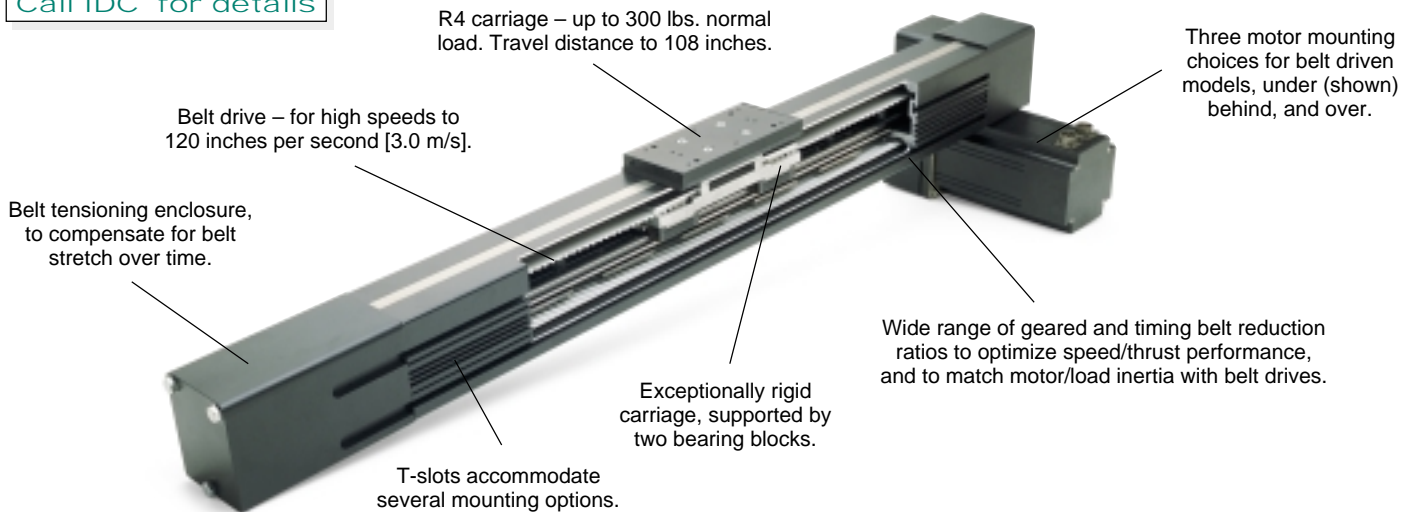
Ordering Information

Model Description

RP1	Normally open Hall-effect switch
RP2	Normally closed Hall-effect switch
RPS-1	Normally open reed contact switch
RPS-2	Normally closed reed contact switch

More Solutions . . .

Call IDC for details



More Options

If one of our more than 150,000 standard catalog configurations isn't just right, one of these options or modifications may be the answer. If not, call IDC for *more solutions . . .* we're flexible and fast to respond.

- **BM Brakes** – electrically released brake mounted to the motor rather than the lead-screw shaft. This multiplies holding force, but it also will not hold the load if a belt or gear reduction fails. Speed (and therefore power) is limited.
- **Ground Ballscrews** – available for applications requiring higher absolute accuracy.

Also Available

- **Custom Mounting** – help to retrofit an existing actuator, quicken your installation time, or reduce your cost to install.
- **Custom lead screws.**
- **Custom drive ratios.**
- **Custom cabling;** quick disconnects, etc.
- **RnX Series** – lets you specify your motor with an R Series actuator.
- **Gear motors** for smooth low speed applications available.
- **Multi-axis systems** – The modular R Series is suited for gantry XY, XZ and XYZ configurations for your pick-and-place and coordinated motion applications. Please refer to the Cartesian Systems section of the catalog on page D-1 for more details.