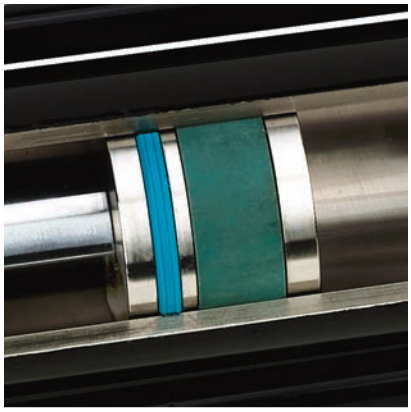
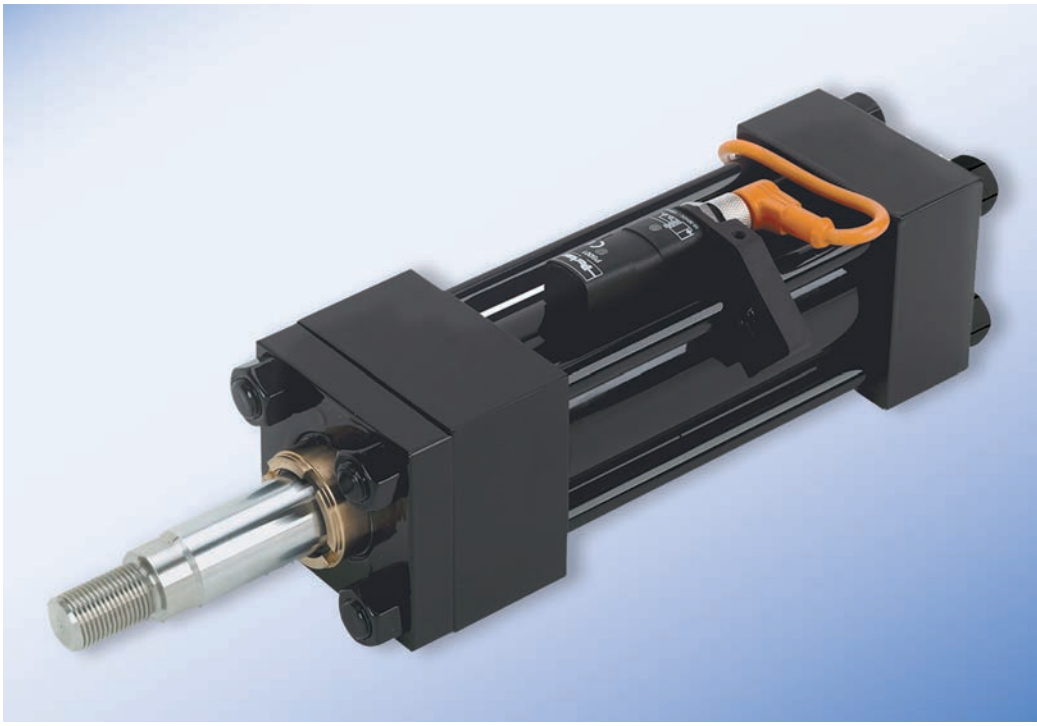
Read.me Position Switches

Fully adjustable magnetic position sensing for HMI and 2H Series hydraulic cylinders with magnetic piston



A Complete Positioning Solution

- Accurate, reliable and versatile
- Does not affect cylinder build length
- Permits switching at any point, including end of stroke
- Non-contacting design has no wearing parts
- Quickly and easily positioned and adjusted
- For use at full working pressure – no de-rating required
- Low-profile design reduces risk of physical damage
- A cost-effective alternative to transducers where simple position control is required



What is a Read.me Switch?

Parker's new Read.me switch is a magnetically-operated position switch which can be mounted anywhere on the tube of a fully rated, steel-bodied HMI or 2H Series hydraulic cylinder fitted with a Read.me magnetic piston.

A Read.me switch enables you to select any point in the travel of a mechanical process driven by a hydraulic cylinder and generate an electronic signal when it is reached.

Where can I use it?

Position switches provide a versatile and cost-effective means of monitoring piston position in a hydraulic cylinder, in a wide range of industrial applications.

The switching signal which they generate can be used to control or sequence actions which correspond to specific points in a production cycle or process, as determined by the position of the cylinder's piston. Multiple switches can be used for sequencing complex tasks.

Parker

ENGINEERING YOUR SUCCESS.

How does it work?

The Read.me switch allows the position of a special piston to be 'read' through a standard steel cylinder tube. The read.me option, which must be specified when the cylinder is ordered, uses magnets attached to the piston in the cylinder, and an external switch which responds to changes in the polarity of a magnetic field.

Before first use, the cylinder tube is 'formatted' by completing a full stroke to establish residual magnetism. Once formatted, moving the piston with magnets through the cylinder creates a second, stronger field, opposite in polarity to the residual magnetism of the cylinder tube. As this field passes under the Read.me switch, the change in polarity of the magnetic field is detected and the switch is operated.

Switching Zone

The sensing area of the Read.me switch body is at the opposite end to the connector – see figure 1. Magnets are mounted on the rod side of the piston, as shown in figures 2 and 3.

Switch actuation occurs as the piston-mounted magnets enter a switching 'zone'. The switching zone may be up to 50mm wide, depending on tube wall thickness and piston speed. The switching point is highly repeatable, in either direction, under conditions of constant piston speed and operating temperature.

Note At the head end of the cylinder, the position of the magnets and shape of the switching zone cause the switch to operate at a maximum of approximately 3mm from the absolute end of stroke. Absolute end of stroke switching is available at the cap end. See figures 2 and 3.

LED Indicators

The switch is fitted with two LEDs, to indicate when the piston is inside or outside the switching zone.

Operating Conditions

Parker Read.me switches are suitable for piston speeds up to 0.5m/s and temperatures up to 85°C.

Read.me switch performance may be affected by an external magnetic field. Care must be taken to avoid external magnetic field exposure.

Attachment and Position Adjustment

The Read.me switch is supplied with a bracket which clamps to the tie rods of an HMI or 2H Series cylinder, as shown in figure 4. Switch position is adjusted by releasing the grub screw in the switch bracket, re-positioning the switch and re-tightening in the desired position.

Other Control Solutions

In addition to Read.me switches, Parker offers end-of-stroke position switches and a wide range of linear position transducers – please contact us for details.

Part Number (additional switches only)	
PNP	ALS-PH-C
NPN	ALS-NH-C

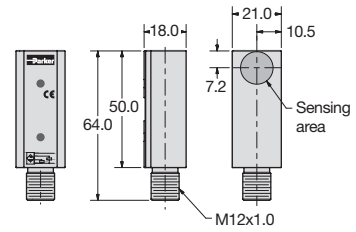


Fig. 1 Read.me switch dimensions

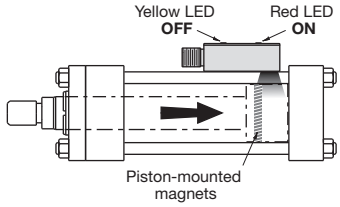


Fig. 2 Switching zone at cap end of cylinder

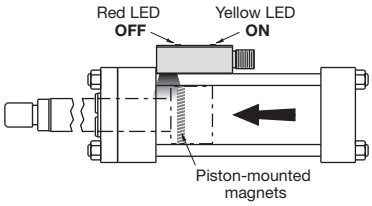


Fig. 3 Switching zone at head end of cylinder

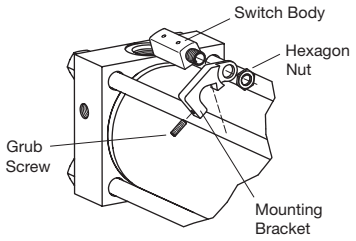


Fig. 4 Attaching a Read.me switch to bracket and tie rod

Specifications

Minimum cylinder bore [1]	HMI series – 40mm; 2H series – 38.1mm
Maximum cylinder bore	HMI series – 100mm; 2H series – 101.6mm
Switching output	PNP or NPN
Hysteresis [2]	5mm
Repeatability [2]	0.5mm
Load current	100mA
Leakage current	< 10µA
Voltage drop	< 1.5V DC
Short circuit and overload protection	Yes
Reverse polarity protection:	Yes
Supply voltage	10 – 30V DC
Current consumption	< 30mA
Operating temperature range:	-25°C to +85°C
Enclosure rating	IP67

[1] For small bore cylinder with short strokes, please consult the factory before ordering.
[2] Hysteresis and repeatability figures shown are based on measurements using a cylinder with outer diameter of 46mm, wall thickness of 3mm and piston speed of 0.5m/s.

Catalogue HY07-0810-B/UK 09/2014 ZZ

European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PT, SE, SK, UK)
US Product Information Centre
Free phone: 1-800-27 27 537
www.parker.com