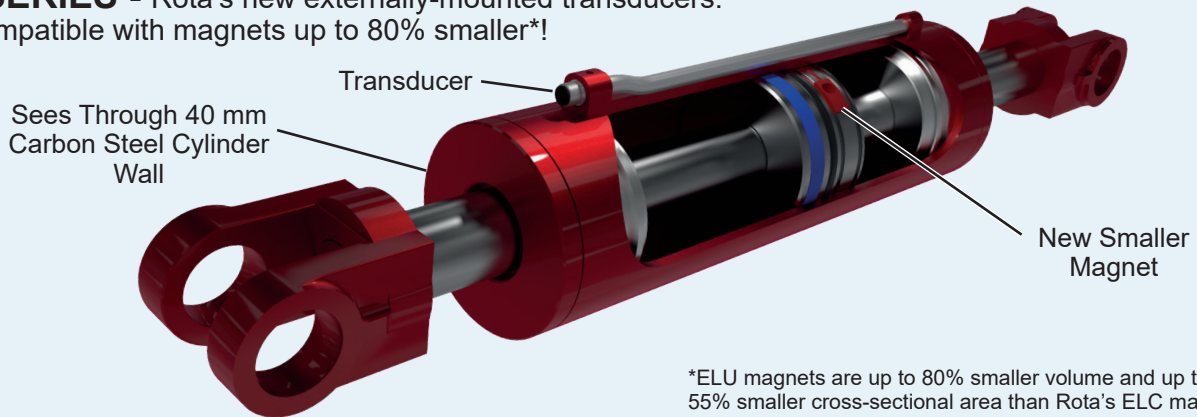




TRANSDUCER PRODUCT GUIDE

NEW SENSORS SPOTLIGHT

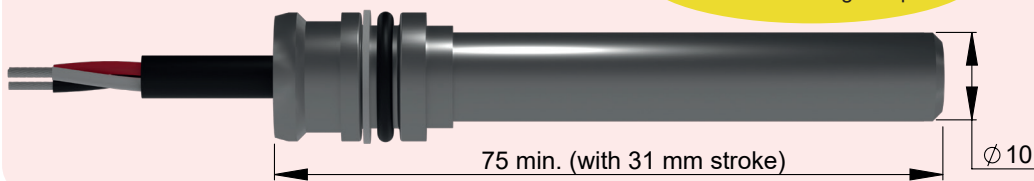
ELU SERIES - Rota's new externally-mounted transducers. Now compatible with magnets up to 80% smaller*!



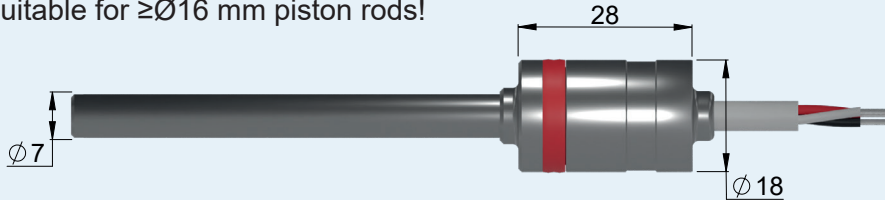
*ELU magnets are up to 80% smaller volume and up to 55% smaller cross-sectional area than Rota's ELC magnets

CM SERIES - Rota's most compact design!

Available Now!
with certain voltage outputs



NM SERIES - For small-roded cylinders. Suitable for $\geq \text{Ø}16$ mm piston rods!



LA SERIES - For mobile cylinders.



TLT SERIES - Tank Level sensors. Now with integrated temperature indication!



Rota is dedicated to providing its customers with highly reliable linear transducers that maximise hydraulic cylinder performance, without changing existing mounting lengths, maximising uptime with the best vibration capability, whilst containing costs and improving your bottom line.



RELIABLE OPERATION TOUGH APPLICATION

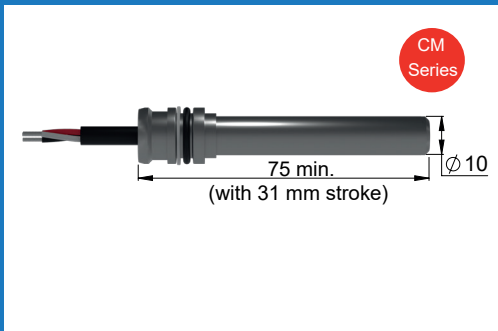
Rota Limited, Manchester UK

www.rota-ltd.com
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Available Now!
with certain voltage outputs

rota

For Short Cylinders



Improved stroke to length ratio

UN ECE R10 automotive EMC approval

Very robust, high vibration capability

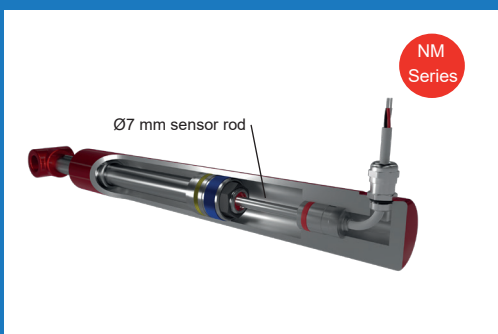
IP69K unmated connectors!

CM SERIES

- Rota's shortest sensor designs for the most compact cylinders.
- 375 bar working pressure.
- Suitable for some $\geq\text{Ø}20$ mm piston rods.
- Absolute signal - Analogue voltage outputs available, with other analogue and CANbus outputs in development.
- Tested up to 25g RMS, with resonant frequencies held at 1g for 1 hour.
- Tested to the following EMC ratings:
 - UN ECE Reg. 10.05: October 2014 (Automotive)
 - EN ISO 14982:2009 (Agricultural and Forestry Machinery)
 - ISO 13766:2018 (Earth-Moving and Building Construction Machinery)

rota

For Small-Diameter Cylinders



Ø7 mm sensor rod reduces gundrill hole diameter

Suitable for some $\geq\text{Ø}20$ mm bore cylinders

Multiple mounting and electrical termination options

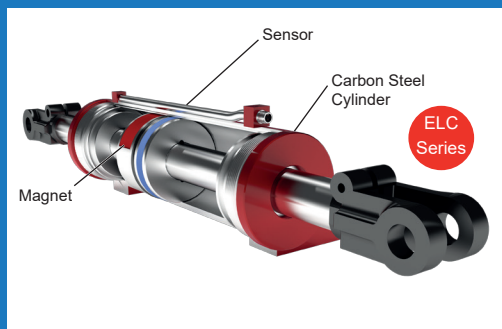
Welded stainless steel construction

NM SERIES

- Rota's narrowest sensor designs for some $\geq\text{Ø}16$ mm piston rods.
- Small-diameter mounting head options.
- M12 and M18 threaded mounting head options.
- 470 bar operating pressure.
- Approx. 735 mm max. stroke.
- IP69K unmated connector options!
- High vibration ratings and EMC ratings expected.



Externally Mounted Transducers



Easily field-replaceable for maximum machine uptime

No gun drilling cost

Very simple low-cost piston machining

No new hydraulic port needed

ELC SERIES

- Ideal for steering and long cylinders.
- Sees through carbon steel cylinder wall.
- Up to 0.5 mm resolution.
- Can mount two sensors with one magnet to achieve redundancy.
- Velocity monitoring option with CANbus outputs.
- -40°C to +105°C operating temperature range.
- Tested up to 25g RMS, with resonant frequencies held at 1g for 1 hour.
- Tested to the following EMC ratings:
 - UN ECE Reg. 10.05: October 2014 (Automotive)
 - EN ISO 14982:2009 (Agricultural and Forestry Machinery)
 - ISO 13766:2018 (Earth-Moving and Building Construction Machinery)

Now Available
with temperature indication!



For Monitoring Tank Level



Capable of monitoring position, velocity, and temperature

Up to 6 metres in length

UN ECE R10 Automotive EMC specification

High accuracy

TL SERIES

- Suitable for Diesel, Oils, Adblue, and Agri Chemicals etc.
- High resolution 0.3 mm design.
- IP69K unmated connectors!

TLT SERIES

- TLT CANbus version can also monitor temperature - great for hydraulic tanks.
- Very cost-effective, eliminating a separate temperature sensor and mounting/assembly costs.
- -40 to 105°C operating temperature.

TLH SERIES

- Larger tube design for harsher applications.



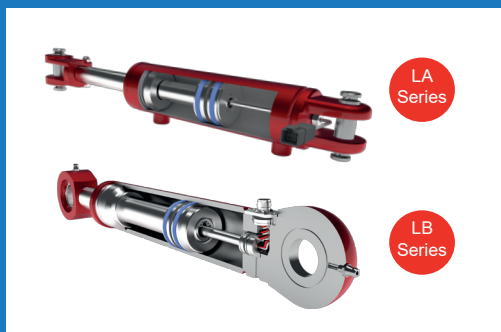


TRANSDUCER PRODUCT GUIDE

Now Available
with temperature indication!



Mobile Cylinder Transducers



Maintains pin-to-pin dimension

OEM or field installable/re-calibratable

Very robust, high vibration capability
Up to 25g RMS, resonant frequency found and held for 1 hour!

IP69K unmated connectors!

LA SERIES

- 350 bar working pressure.
- Miniature M12 screw-in head for mounting between clevis eyes.
- UN ECE R10 Automotive EMC specification.
- IP69K unmated connectors!
- Aluminium build.

LB SERIES

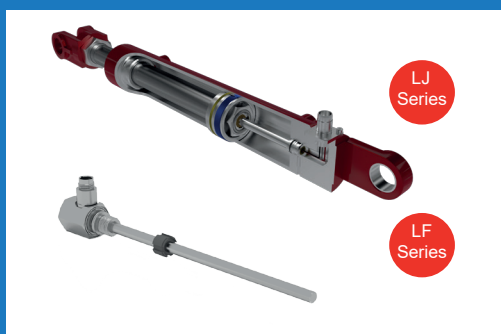
- 375 bar working pressure.
- Stainless steel build.

LM SERIES

- 375 bar working pressure.
- Welded stainless steel build.



Industrial Cylinder Transducers



CANbus and SSI Asynchronous output options

Very rugged design
Three different tube sizes available for different applications

Up to 0.05 mm resolution

High vibration capability
including resonant frequencies

LJ SERIES

- Up to 500 bar working pressure.
- SSI Asynchronous option.
- Up to 20 metre stroke.
- High speed - up to 8m/s.
- Very compact.

LJW SERIES

- Subsea transducers.
- Compatible with a large variety of subsea connectors.
- 316 stainless steel build.
- 5000 metre depth rating.

LF SERIES

- 720 bar working pressure, 1035 bar max. pressure test.



RELIABLE OPERATION TOUGH APPLICATION

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Safety Related Transducers



UN ECE R10 Automotive EMC Specification

Has additional checking circuit

Maintains pin-to-pin dimension

Very robust, high vibration capability

LV SERIES

- Verification transducer has an additional array of Hall-effect sensors for checking and verifying the primary circuit.
- 0.3 mm resolution.
- Exceedingly reliable - over 70,000 supplied!
- Very compact.

ELV SERIES

- Externally-mounted sensor with verification signal (see ELC series).
- Sees through standard carbon steel cylinder.



Redundant Transducers



Dual or triple outputs

Separate sensor circuits

Separate power supplies

Separate connectors and cables

LR SERIES

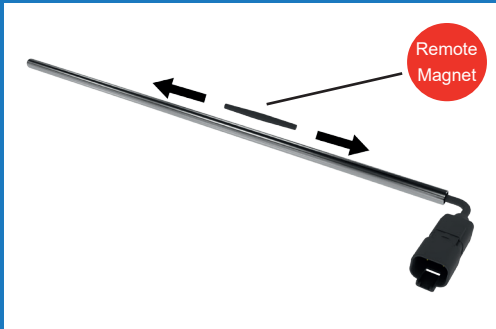
- Redundant transducer houses two entirely separate sensing circuits.
- Two separate connectors and cables.
- Up to 20 metre stroke.
- Independently pin-mounted LUR option available - see independently pin-mounted transducer section overleaf.

LQ SERIES

- Triple redundant transducer houses three entirely separate sensing circuits.
- Three separate connectors and cables.
- Up to 20 metre stroke.



For Monitoring Linear-Moving Structures



Very compact - no head

Non-contacting design

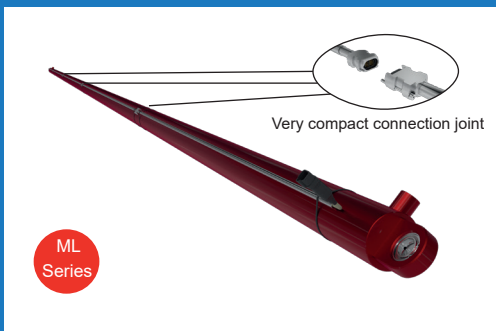
UN ECE R10 Automotive EMC specification

Multiple magnet arrangement options

R - REMOTE MAGNETS

- Compatible with most transducer types.
- Ideal for use with modular ML series transducers.
- Ideal for long boom monitoring.
- Ideal for replacing string/wire pull sensors.
- Very cost-effective.
- Resolution up to 0.2 mm.
- High speed.

Modular Transducers



Easy transportation in small sections

Solid state, only the magnet moves

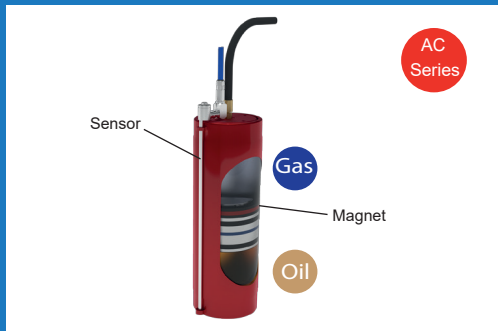
Easy maintenance

Ideal for long cylinders up to 30 m

ML SERIES

- Very compact connection joint, ideal for telescopic booms.
- Modular version simply bolts together.
- Short sections, easier to transport, stock and assemble.
- Available with an EL type magnet or an 'R' remote magnet.
- Absolute signal.

For Piston Accumulators



Externally mounted sensor

Up to 20 metre stroke

No additional seals required

No end cap modification required

AC SERIES

- Suitable for thick-wall carbon steel piston accumulators.
- Sees through 25 mm carbon steel wall.
- Solid-state design.
- Installed 360° magnet can rotate with modified piston.
- Versions for Subsea or Ex atmospheres.
- Resolution up to 4 mm.
- Suitable for thick-wall carbon steel hydraulic cylinders with limited crush load, pumps, or intensifiers with large diameter spigot. (Coded as AL series).

Independently Pin-Mounted Transducers



Short pin-to-pin length

Very robust, high vibration capacity

Highly customisable

UN ECE R10 Automotive EMC specification

LL/LN/LU SERIES

- LL - Light duty - aluminium build.
- LL - Ideal for high-volume, low-cost OEM applications.
- IP69K unmated connectors!
- LN - Normal duty - stainless steel build.
- LU - Ultra-heavy duty - stainless steel build.
- LU & LN - Subsea & Ex. I.S. versions.
- LUR - Two entirely separate sensing circuits for redundancy.

For Explosive Atmospheres



AEx, IECEx and ATEX approved

AEx, IECEx and ATEX approved

High shock capability

High vibration capability

LK SERIES

- 2 wire 4-20 mA absolute signal option.
- Suitable for Zones 0/1/2, ATEX Categories 1/2/3.
- Intrinsically safe design.
- Very compact mounting head options.
- Max. stroke of 10 metres.

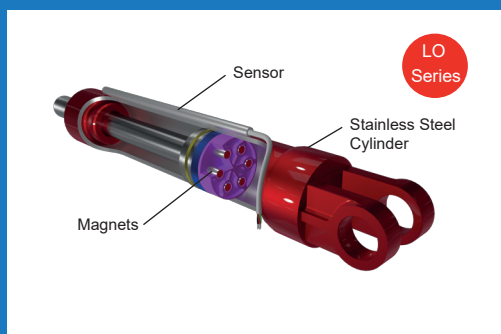
LD SERIES

- 2 wire 4-20 mA absolute signal option.
- Explosive atmosphere transducer for Zones 1/2, ATEX Categories 2/3.
- No I.S. barrier or galvanic isolator needed.
- Very compact.

LZ SERIES

- Linear transducer with enclosed limit switches.
- Resistive output.
- Rotatable junction box for easy cable lay.
- No I.S. barrier or galvanic isolator needed.

For Ocean Yachts With Stainless Steel Cylinders



Extensively used by America's Cup teams

316 Stainless Steel or Titanium enclosure

IP68 Rated to a depth of 3 metres for 28 days

Redundant options available

LO SERIES

- Multiple magnet installation options.
- -30° to +70°C operating temperature range.
- Non-contact, zero-wear design with absolute signal.
- Industry leading random and sinusoidal vibration ratings - including resonant frequencies.
- Common applications include:
 - Traveller car position monitoring
 - Jib inhaul/outhall position monitoring
 - Rudder rake angle monitoring
 - Daggerboard position monitoring