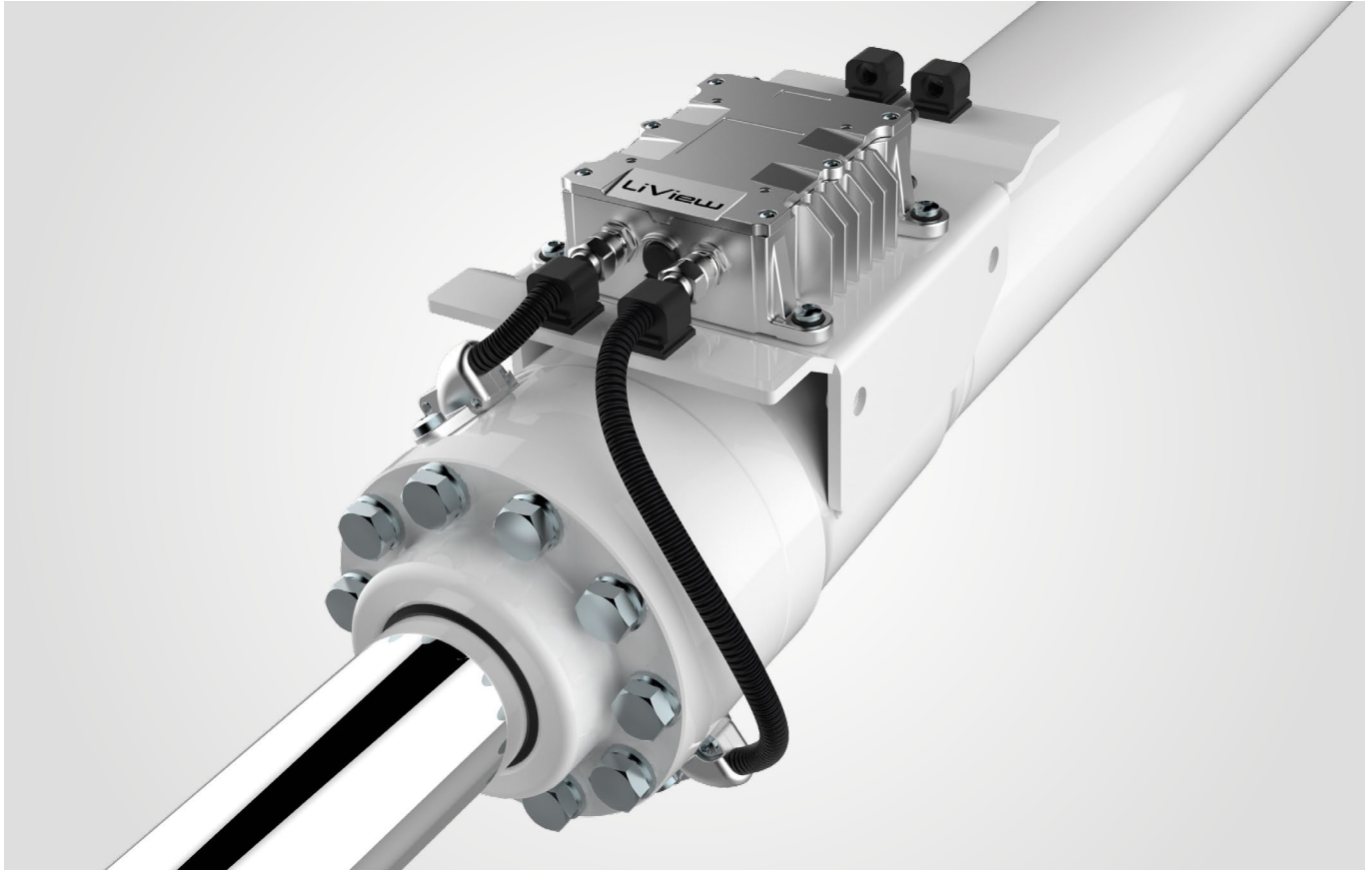


Short Description

LiView® Position Transducer for Hydraulic Cylinders



LiView® measures the electric characteristics of hydraulic cylinders allowing precise and fast determination of piston position and speed. The high-speed measuring cycle allows accurate measurement even at high cylinder dynamics and thereby allows for decentralised controls. The position transducer is suitable for all cylinder lengths and independent of the piston diameter. The compact design ensures a space-saving installation, without impacts on the cylinder stroke and at low cost. In operation, LiView® is free from wear and easily accessible for maintenance work. Due to its robustness, the position transducer qualifies for heavy-duty operation. Thus, LiView® is ideal for the automation of mobile machinery.

Features

- Precise absolute piston position and speed measurement
- Suitable for all cylinder lengths
- Independent of piston diameter
- Easy mechanical integration
- Space-saving installation, no stroke limitations
- Developed for highest stresses and strains
- Free from wear
- No weakening of piston rod
- No moving parts in oil
- Ideal for automation

Technical Data

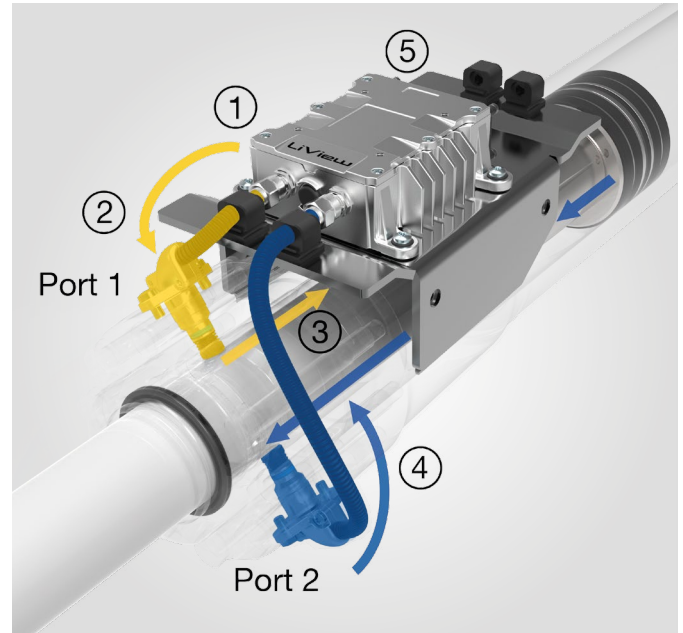
LiView® Position Transducer for Hydraulic Cylinders

Principle of operation

LiView® measures the cylinder scattering parameters through proper signals at different frequencies injected into the cylinder structure. Piston position and speed are calculated by the processing electronics in real time.

Measuring process in detail

- 1) Electronics unit generates signal.
- 2) Signal is coupled into cylinder via probe (Port 1).
- 3) Signal travels towards piston and is reflected.
- 4) Reflected signal returns to electronics unit via second probe (Port 2).
- 5) Electronics unit calculates piston position and speed.



Measurement performance

Measuring frequency	4,000 Hz
Measured quantities	Absolute piston position, piston speed
Resolution	100 µm
Nonlinearity	Max. 0.3% ¹⁾
Repeatability	250 µm (typical)
Safety	PL d according to EN ISO 13849, SIL2 according to EN IEC 61508

¹⁾The actual nonlinearity depends on the specific cylinder characteristics.

Interfaces and operating conditions

Operating voltage	9 to 32 V
Output signal digital	CANopen, CANopen Safety
Electrical connections	M12
Max. measurement range	10 m
Max. pressure	420 bar
Operating temperature	-40 °C to +105 °C (oil) -40 °C to +85 °C (electronics)
IP rating	IP6K9K, IP67, IP68