

SOIC/SOAC Encoders for Hydraulic and Pneumatic Cylinders

SOIC/SOAC encoders are designed for high precision and high resolution (down to less than 50 μm) position sensing in hydraulic and pneumatic cylinders.

Available in both incremental and absolute versions, their installation is very simple and non-invasive.



Lika Electronic's SOIC/SOAC is the new **series of incremental (SOIC) and absolute (SOAC) encoders designed for installation on hydraulic and pneumatic cylinders.**

They offer several advantages over the measuring solutions that are commonly adopted on cylinders. They are **easy to install on any type of cylinder** and do not need customization such as dedicated mechanics or additional space for mounting internal parts. What's more, they do not require any invasive (and expensive) mechanical machining and the rod must not be drilled, so it preserves its whole robustness. Also, they let you save time and money as the sensor is easily mounted on the outside of the cylinder housing (a great benefit, for example, should a replacement be required).

The working principle of the new SOIC/SOAC encoders relies on a small size sensing head that reads the incremental or absolute track marked on the rod of the cylinder. The sensing head paired with a microprocessor uses an optical reflective technology to sense and decode the light emitted by the unit and refracted by the track.

The incremental track has no length limits and the stroke can be virtually infinite. With the absolute track, a stroke of 1.0 m / 39.37" can be achieved currently.

The reading is non-contact and extremely robust, insensitive to electromagnetic noise, shocks, vibrations, temperature fluctuations, and humidity. It also ensures high levels of accuracy, repeatability and reliability of the measurements.

Commissioning does not require any calibration operation. The resolution of the measuring system ranges from 1 mm / 0.03937" for the simplest applications down to values below **50 μm for the most advanced applications.**

The SOIC incremental version is already commercially available and provides PNP signal output that can be also redundant. The SOAC absolute version has reached an advanced stage of development and will be ready very soon and within a matter of weeks. It includes an analog interface as well as the complete range of industrial **Ethernet interfaces, i.e. Profinet, EtherNet/IP, EtherCAT, etc.**

SOIC/SOAC encoders are primarily designed for installation on hydraulic and pneumatic cylinders and are well suited also to harsh environments. Typical application areas include agricultural and forestry machines, rough terrain machines, construction machinery, excavators, off-road vehicles, telescopic handlers, utility vehicles (such as for installation on steering cylinders, suspension cylinders, stabilizer leg cylinders, etc), as well as palletizing systems, logistic machines, and aerial platforms.

The measuring principle, i.e. the optical reading of a coded track marked on the structure, can be easily implemented in many other applications which do not necessarily require the use of cylinders.