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Smart encoders & actuators

Incremental and absolute linear encoders

Lika Electronic's incremental and absolute linear encoders are suitable for industrial applications and combine high performance with rugged mechanical design and a wide choice of options. Thanks to their mechanical and electrical features, they offer several advantages, even in the most advanced automation systems. Here are a couple of valuable solutions picked from our range.

- *Incremental and absolute range (including Ethernet interfaces)*
- *non contact, virtually wear- and maintenance-free operation*
- *no moving parts*
- *very compact and robust packaging*
- *highest protection rate (up to IP69K) for challenging environments*



What are their main benefits?

They adopt the **magnetic sensing technology**, so they operate without contact and ensure virtually wear- and maintenance-free operation. They do not mount moving parts and almost all the mechanical components of a rotary encoder (flange, shaft, bearings, etc.) are not installed.

The limited use of both mechanical parts and miniaturized circuits allows to minimize the overall footprint of the devices. Furthermore magnetic technology is highly immune to external interferences such as light, oil, grease, water, chemical contaminants, etc. and enables to easily adopt PCB protection methods such as encapsulating, tropicalization, conformal coating, varnishing. In this way they can achieve the highest protection rates (IP67 to IP69K) and reliably operate in the harshest industrial environments. Their design and features also ease installation and enable minimum mounting time. A further remark: using IF55 gateways, linear encoders with SSI serial interface (the whole absolute range) can be easily integrated into the most popular industrial Ethernet networks: Profinet, EtherNet/IP, POWERLINK, EtherCAT and MODBUS-TCP (but also into conventional fieldbuses: CANopen, Profibus and DeviceNet). So they can be ideally combined for installation in case of plant retrofit and in tight spaces.

Lika Electronic's range of linear encoders has grown more and more and includes today a wide variety of both incremental and absolute devices. It has enriched with some solutions that are dedicated to specific applications such as lateral reading sensors, sensors for toothed wheels and racks, sensors for UHV installations. Among the "standard" and most widely used models are **SME53 and SME54 incremental linear encoders and SMA2 absolute linear encoder**.

SME53 is the incremental linear encoder with very high resolution down to 0.08 μm designed for demanding motion control

applications. SME54 offers the engineers a fully programmable solution, its resolution can be set in the range 1.25 mm ... 0.08 μm along with Index mark duration and counting direction. It provides complete adaptability and freedom for any type of application. Thanks to their rugged frame and encapsulated electronics, SME53 and SME54 are optimally protected against dust, oils, liquids, contaminants, shocks and vibrations (IP67 protection). The large permissible tolerances and air gap (up to 2 mm) ease installation and enable minimum mounting time.

SMA2 is ideally suited for position and speed feedback applications where small size, finest resolution and greatest accuracy are mandatory.

SMA2 provides high resolution down to 1 μm and high accuracy of $\pm 2 \mu\text{m}$. The max. measuring length is 8.1 m (26.57 ft) and the max. speed is 10 m/s. It is paired with MTA2 double track magnetic tape, so it is able to deliver both the absolute information for position feedback through the BiSS-C and SSI interfaces and the incremental information for speed feedback through the NPN output circuit.

SMA2 is outstanding also in its mechanical characteristics: although the sensing head is very compact and slim, yet it preserves its toughness. The fully encapsulated electronics (IP67 protection rate) is optimally protected against dust, oil, grease, water, shocks, vibrations. Typical applications are for example linear motors, pick & place robots, electronic assembly systems.

Find out more about Lika's range of linear encoders
http://www.lika.it/eng/prodotti.php?id_cat=266

For more information on IF55 gateways
http://www.lika.it/eng/prodotti.php?id_titolo=IF55