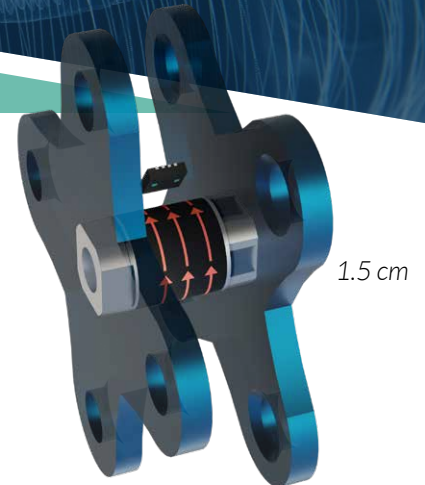


ELAXIS™ MODULE

Ultra compact and contactless integrated torque sensing

For any Cobot or service robot joints, the measurement of the torque is an essential and safety-critical function that can hardly be derived with the currents in the motor. For a smooth motion and safe reaction in case of collision, dedicated torque sensors are used in each joint. This is done today with costly, heavy-weight and complex measurement sensing technologies. Thanks to Elaxis™ module, the torque is now measured with one single IC in a contact-less way reducing the cost to its bare minimum. Unlike strain-gauge or capacitive technologies, Melexis is offering a simple mechanical design without spokes in order to provide a very compact module.



Magnetometer with magneto-elastic shaft

INNOVATE WITH HEART

Easy, light, affordable and compact

- Reduce the electronic footprint on the torque sensor module
- Fully integrates the torque calculation in one single circuit
- Avoid the need for a mechanical design with "Spokes"

APPLICATIONS

Measure the torque on an hollow shaft

- Motorized systems with gearboxes
- Cobots, Service robot
- Light weight applications: only 80g

SECRET INGREDIENTS

- Technology: magnetometer sensor (Melexis core expertise) with high sensitivity Hall sensors
- Process: shaft magnetization
- Mechanical design: Flange to flange (height <15mm)



References

- A Torque Transducer Utilizing A Circularly Polarized Ring, by I. J. Garshelis, IEEE TRANSACTIONS ON MAGNETICS, VOL. 28, NO. 5, SEPTEMBER 1992



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