Baumer
Passion for Sensors

Another Baumer INNOVATION

The new absolute Ethernet encoders. More communicative. More compact.

OptoTurn® EAL580

Maximum space for your constructions.

With the new *OptoTurn*® EAL580 family, Baumer is taking the next logical step in the development of high-performing Ethernet encoders. Here the focus was not only on an extremely compact and cost-effective design, but also on the use of the latest communication technologies. For all-optical single- and multiturn position feedback, Baumer relies on field-proven *OptoTurn*® technology which besides ultimate precision also excels with maximum immunity against magnetic fields. This way, *OptoTurn*® EAL580 offers the high quality standard that our customers have been experiencing for many years.

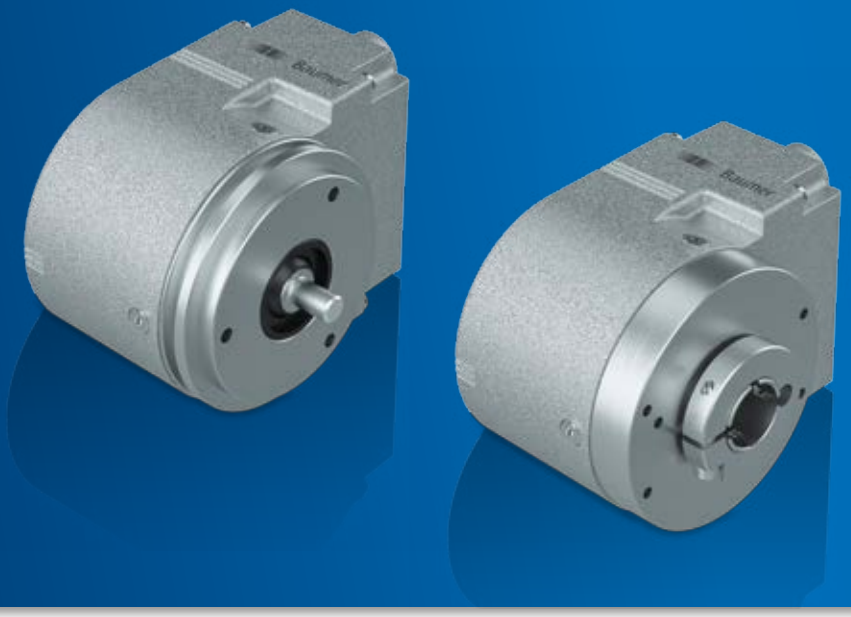
Uncompromisingly compact

Saves installation space
As the Ethernet encoder with the smallest installation depth in the 58 mm class, the compact design of the *OptoTurn*® EAL580 not only makes it particularly cost-effective, it also offers maximum space for your construction – especially where space is limited.

Lean cabling
Thanks to the uniquely compact radial connector outlet, the connecting wiring of the *OptoTurn*® EAL580 is also space-saving. Tight and trouble-prone bending radii are thus a thing of the past.

Cost-effective connection technology
OptoTurn® EAL580 does not require angled connectors which allows you space-saving equipment design and in series production will save you the additional costs of angled compared to straight connectors.

All the flexibility you need for installation
Benefit from all the freedom you need for the installation. The *OptoTurn*® EAL580 is the only compact Ethernet encoder with a continuous hollow shaft and with a clamping ring on the A or B side. This allows optimum integration in your drive train and saves you time-consuming additional constructions.

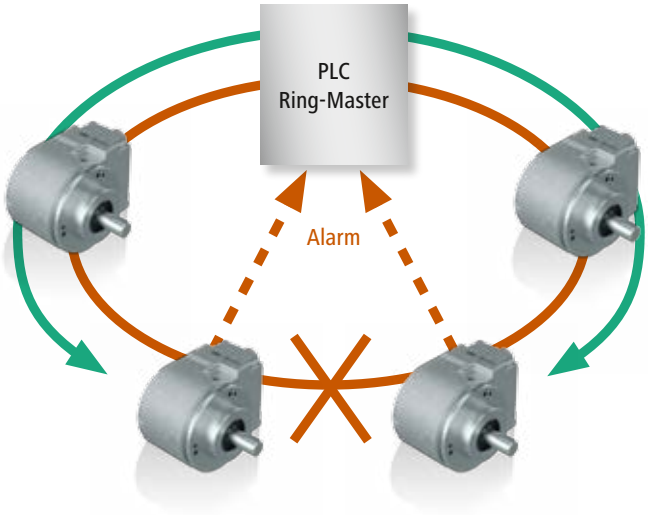


Made BETTER by Baumer

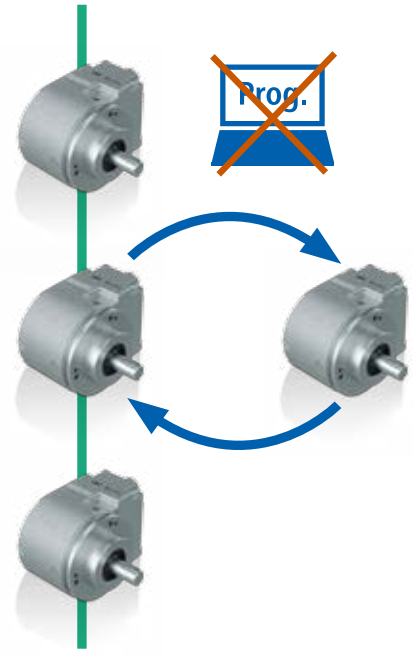
For high system availability.

Easy device integration with Profinet
OptoTurn® EAL580 in its first product variant is available with Profinet interface and excels with a wide range of communication messages. This will simplify your system planning, and for communication you can use exactly the messages you really need. No matter whether it is a new system or machine redesign. The *OptoTurn*® EAL580 combines longproven Profinet standards with cutting-edge technologies in communication and encoder profile. All other Ethernet interfaces in the compact *OptoTurn*® EAL580 design are already being prepared for implementation.

Increased system availability through Media Redundancy Protocol (MRP)
Here, a Profinet network is set up using ring topology. If a connecting wire or a switch fails, the direction of communication in the cut-off part of the network can automatically be reversed and thus still used. The *OptoTurn*® EAL580 with Profinet supports MRP and is thus in a position to adapt correctly to the new communication situation within a very short period of time, and your system can still be operated without interruption.



Minimum downtimes through Simple Device Replacement
Under the toughest conditions, even the best devices can break down. To make replacement as time-saving as possible, the *OptoTurn*® EAL580 supports Simple Device Replacement. Here, the Link Layer Discovery Protocol (LLDP) is used for neighborhood detection. This means that a defective device can be replaced by an identical device without any previous parameterization, for the location of the encoder is known thanks to the exchange of information between the neighbors in the network. Taking this as a basis, the control can upload the settings of the previous device without any additional tools or device-specific technical know-ledge.

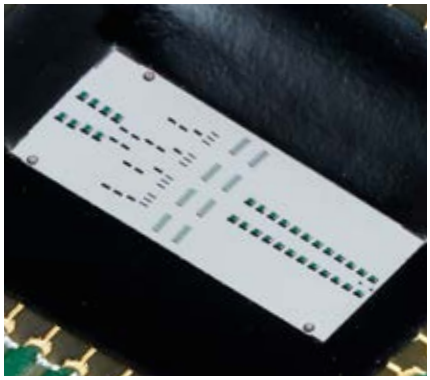


Cost-effective and flexible.

The *OptoTurn*® EAL580 series is based on a sophisticated modular system integrating the latest components. Together with the maximum possible number of identical parts, in terms of cost efficiency it allows an unrivalled large number of product variants for most versatile applications. Further it ensures maximum flexibility in connection and installation technology as well as in parameterization. You as the user will benefit from maximum investment safety to be optimally prepared for future developments in automation technology.

Precise and reliable.

The innovative optical sensing technology of *OptoTurn*® EAL580 ensures very high precision and consistently high signal quality throughout the entire temperature range. The devices operate on an optimized monolithic OptoASIC with high integration density which is specifically designed for use in precision encoders. The accurate code disk ensures reliable measurement results without interpolation errors. This not only ensures maximum process safety for your application, but in addition you will benefit from optimized NTTF values thanks to the limited number of components. Thanks to all-optical multiturn sensing, the *OptoTurn*® EAL580 encoders are also absolutely immune against strong magnetic fields.



Consistent quality

Consistent quality management, from requirement through development to production and the entire supply chain, are the main focus of the Baumer quality management system.

- Advanced quality management, with product, process, FMEA and supplier qualification
- Quality plan with first pass yield evaluation, internal and external audits
- Certification of our factories in accordance with ISO9001, ISO14001 and BS OHSAS 18001
- Production with Lean Six Sigma methods
- ppm measurements for continuously measuring quality in the field

Ready for Industry 4.0 and IIoT.

Open, scalable and non-interacting

The *OptoTurn*® EAL580 is the first encoder on the market to support Profinet and the OPC UA communication standard. This platform-independent and scalable approach has an open architecture which can easily be adapted to future requirements. This guarantees secure, reliable and manufacturer-neutral data exchange between many different systems.

And you as a user are from now on ready for Industry 4.0 and for the industrial Internet of Things (IIoT). The exchange of data between the *OptoTurn*® EAL580 and continuous applications through OPC UA has no influence on the control program. It is completely non-reactive and can work independently from the PLC, for example through a OPC UA-compatible Profinet-Gateway.

High investment protection

With *OptoTurn*® EAL580, your equipment is ready today for the ideas of tomorrow. You are open to all options of today and the future by vendor-neutral OPC UA standard. This way, your investments in the automation environment are optimally protected.

Unlimited application possibilities

Evaluation of device and diagnostic data linked with additional information opens up virtually unlimited application fields:

- Process optimization
- Improved equipment productivity
- Effective planning of on-site service
- Preventive maintenance

It is up to you as a user to determine the degree of data security and confidentiality, perfectly supported by Baumer and the opportunities provided by OPC UA.

OptoTurn® EAL580 – more communicative and compact

Our service commitment – your advantages at a glance

- Compact design allows use in applications with very cramped installation space
- Cutting-edge bus technologies minimize downtime in the event of servicing
- Ready for the future thanks to a vendor-neutral, reliable and secure information flow between different systems
- Our statistical process controls, high process capability as well as automated final inspections ensure you will be provided with extremely long-life encoders
- This means to our customers: precise, reliable and top quality products at cost-efficient prices

OptoTurn® EAL580 product overview.

Product family	EAL580-SC		EAL580-SY		EAL580-B		EAL580-T	
Interface								
- Profinet	■							
- EtherCAT [1]	■ [1]							
- EtherNet/IP [1]	■ [1]							
- Powerlink [1]	■ [1]							
Sensing method	Optical							
Size (flange)	ø 58 mm							
Voltage supply	10 ... 30 VDC							
Shaft type								
- Solid shaft	ø 10 mm		ø 6 mm		–	–	–	–
- Blind hollow shaft	–	–	–	–	ø 12-14 mm		–	–
- Through hollow shaft	–	–	–	–	–	–	ø 12-14 mm, clamping ring on flange or housing	
Steps per turn	≤ 8192/ 13 bit	≤ 262 144/ 18 bit	≤ 8192/ 13 bit	≤ 262 144/ 18 bit	≤ 8192/ 13 bit	≤ 262 144/ 18 bit	≤ 8192/ 13 bit	≤ 262 144/ 18 bit
Number of turns	≤ 65 536/ 16 bit	≤ 8192/ 13 bit	≤ 65 536/ 16 bit	≤ 8192/ 13 bit	≤ 65 536/ 16 bit	≤ 8192/ 13 bit	≤ 65 536/ 16 bit	≤ 8192/ 13 bit
Absolute accuracy	± 0.025°	± 0.01°	± 0.025°	± 0.01°	± 0.025°	± 0.01°	± 0.025°	± 0.01°

[1] In preparation

For more information about our *OptoTurn*® EAL580 series go to:
www.baumer.com/EAL580

Find your local partner: www.baumer.com/worldwide

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