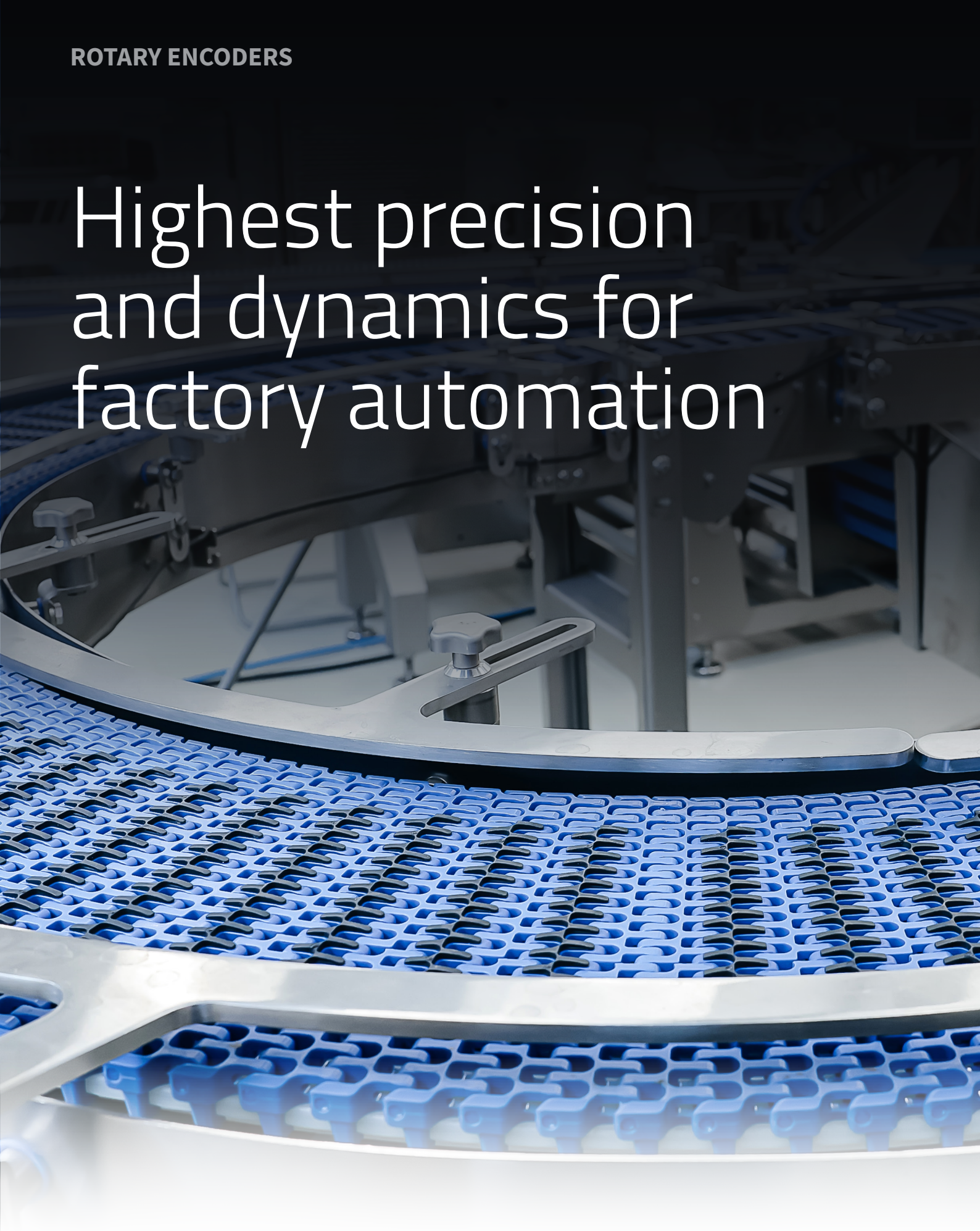
ROTARY ENCODERS

Highest precision and dynamics for factory automation



HENGSTLER

BEYOND THE STANDARD

For those of you who **refuse unplanned downtime.**

Absolute Encoders

Absolute shaft encoders, also known as shaft-angle encoders, are by no means used only to detect angular positions. They are also suitable for linear movements that can be converted into rotary movements by a toothed belt, drive pinion, or wire winch.

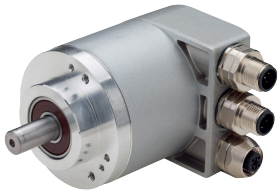
The special feature of absolute shaft encoders is that they assign a unique, digitally encoded signal to each individual measured increment. The method of transducing prevents erroneous readings, whether by a power failure, or by a transient malfunction. After the encoder is switched on again, or power is restored, the position can be read out.

It is not necessary to move to a reference position, as it is for shaft encoders of the incremental type.

Examples of typical application for absolute encoders:

- Overhead support robots
- Ventilation flaps
- Spinning machines
- Conveyor belts
- Cam controllers
- Injection moulding machines
- Packaging machinery
- Extruders
- Folding machines
- Printing machines
- High lift storage systems
- Stamping machines
- Pitch-control for Wind Mills
- Shaft Copy for Elevators
- Harvester
- Water-Gun for Fire-Fighting Trucks
- Patient Beds
- C-Arc position for CT
- Ship-Winches
- Harbor-Cranes

For those of you with the **expectation** of using the **latest technology**

ACURO® AC58 Fieldbus	ACURO® AC58	ACURO® AR60	ACURO® AC36
			
		E1 10 - 036823	
Absolute Single + Multiturn Fieldbus	**Absolute Single + Multiturn SSI / BiSS**	**Absolute Single + Multiturn**	**Absolute Single + Multiturn**
- Interfaces: EtherCAT, Profinet, Ethernet-IP, Profibus, CANopen, DeviceNet, CAN Layer 2, Interbus, SUCOnet - Housing diameter 58 mm - Solid or hollow shaft versions - Optical encoder with a true geared Multiturn - Temperature range: -40°C ... + 85°C - Resolution 22 Bit ST + 12 Bit MT - High accuracy - High EMC – Resistance - Wide range of programmable functions - 10,000 rpm continuous operation - High shock and vibration resistance - Low Power consumption	- Interfaces: SSI, BiSS-B and BiSS-C - Compact design: 50 mm length for Single- or Multiturn - Housing diameter 58 mm - Solid or hub shaft versions - Optical encoder with a true geared Multiturn - Temp. range: -40° C ... +100° C - Resolution 22 Bit ST + 12 Bit MT - High accuracy - High EMC – Resistance - Easy commissioning and operation: Diagnostic LEDs, preset button with visual feedback, status message - Sine / cosine signals for fast control tasks - Control input: Preset, Direction - Position and Speed output in a single rotary encoder (AC58-I) - MT absolute SSI + incremental output TTL or HTL (AC58-I) - 10,000 rpm continuous operation	- Resolution 12 Bit ST + 16 Bit MT - Wearless electronic Multiturn: contact- and batteryless, self-energetic - 40N axial and 110N radial load - 200 g shock resistance / 20 g vibrations resistance - Protection class IP64 - Temperature range: -40°C ... +100°C - Solid or hollow shaft versions - Compact design: 32 mm mounting depth - Interfaces: SSI, CANopen, Analog - CANopen interface with E1 approval for vehicle applications	- Resolution 22 Bit ST + 12 Bit MT - High accuracy +/- 35" - Solid or hollow shaft versions - Overall length: 36 mm - Temperature range: -40 ° C ... + 100 ° C. - Protection class IP64 - 10.000 rpm continuous operation - Optical encoder with a true geared Multiturn - Interfaces: SSI, BiSS-B or BiSS-C - Optional Sine wave 1 Vpp - Bandwidth 500 kHz - 360° full screen
Variants: - Large number of configuration options - Stainless steel as ACURO® AC61 available	**Variants:** - Large number of config. options - Option with incremental signal as ACURO® AC58-I available - Stainless steel as ACURO® AC59 available - AC58 also with Parallel interface available	**Variants:** - Heavy Duty version: AR62 for maritime applications (DNV GL certified) AR63 with high grade stainless steel housing	**Variants:** - AD35 / AD36 (Build-In)
Fields of application: - Position Feedback in any kind of general machinery or factory automation application - Packaging Machines - Injection Moulding Machines - Wood Processing Machines - Assembly and Handling Technology - Conveyor Technology - Printing and Paper Machines	**Fields of application:** - Position Feedback in any kind of general machinery or factory automation application - Asynchronous motors with and without gear with inverter for speed and position - Pitch Control systems (Normal AC58- SSI)	**Fields of application:** - Position Feedback in any kind of general machinery or factory automation application - Wind Power Plants - Cranes - Marine Equipment - Offshore Plants - Commercial Solar Plants - Bottling Machines - Presses - Food & Beverage Industry - Harvester - Fire-fighting Trucks	**Fields of application:** - For equipment engineering and industry - Robots - Surveying equipment - Patient beds - Surgical robots - C-Arc CT - AGV

For those of you looking for **maximum freedom** of **design**

Incremental Encoders

Incremental encoders are sensors capable of generating signals in response to rotary movement. In conjunction with mechanical conversion devices, such as rack-and-pinions, measuring wheels or spindles, incremental shaft encoders can also be used to measure linear movement. The shaft encoder generates a signal for each incremental change in position.

With the optical transformation, a line-coded disc made of glass or nickel and positioned on a rotary bearing interrupts the infrared light ray emitted by gallium arsenid sender diode. The number of lines determines the resolution, i.e. the measuring points within a revolution. The interruptions of the light ray are sensed by the receptor element and electronically processed. The information is then made available as a rectangular signal at the encoder output.

Examples for typical application of incremental encoders:

- Door closing devices
- For trains
- Desktop robots
- Lens grinding machines
- Plotters
- Testing machines for optical
- Waveguides
- Scattering machines
- Tampon printing machines
- Ultrasonic welding
- Screwing machines
- Labelling machines
- Analysis devices
- Drilling machines
- Mixing machines
- Speed control
- Length-Measuring

For those of you who want to **install and forget**

ACURO® RI30	ACURO® RI36	ACURO® RI58	ACURO® RI76
			
Incremental	**Incremental**	**Incremental**	**Incremental**
- Small rotary encoder for industrial applications - Incremental TTL or HTL - Up to 6,000 steps with 1,500 pulses - Bandwidth: 300 kHz - Very compact design: 30 mm housing diameter / mounting depth 27 mm - Protection class up to IP64 - Solid shaft Ø 5 mm - Temperature range: -10°C … +70°C - Low current consumption - High interference protection - Suitable for high pulse frequencies - 360° full screen	- Small rotary encoder for industrial applications - Compact design: 36 mm housing diameter / mounting depth 27 mm - Up to 14.400 steps with - pulses - Incremental TTL or HTL - Protection class up to IP64 - Solid or hub shaft versions - Temperature range: -10 ° C… + 70 ° C - Low current consumption - High interference protection - Suitable for high pulse frequencies - 360° full screen - Wide-range power supply - 3-38 VDC	- Up to 40.000 steps with 10.000 pulses - High signal accuracy - Protection class up to IP 67 - Temperature range: -40 ° C ... + 100 ° C - Solid or hollow shaft versions - Incremental TTL or HTL - Flexible due to many flange and configuration variants - Suitable for high shock ratings - 360° full screen - Wide-range power supply - 3-38 VDC	- Up to 40.000 steps with - pulses - Through hollow shaft Ø 15 to 42 mm - Compact design: housing diameter 76 mm / mounting depth 43 mm - Easy installation thanks to the clamping ring at the front or rear - Temperature range: -25 ° C ... + 100 ° C - 360° full screen
	Variants: - Hubshaft RI36-H	**Variants:** - Hollow-shaft versions RI58-H, RI58-D/G, RI58-F - As **ICURO® RI59** with high grade stainless steel housing	
Fields of application: - CNC axes - Machine tools - Robot - Special machines - High speed winding machines - Medicine technology - Textile machinery	**Fields of application:** - Position Feedback in any kind of general machinery or factory automation application - CNC Axes - Machine Tools - Robots - Special Machinery - High speed winding machines	**Fields of application:** - Machine tools - CNC axes - Packing Machines - Motors/drives - Injection Moulding Machines - Sawing Machines - Textile Machines	**Fields of application:** - Speed and position feedback in asynchronous geared and non-geared motors - Point of motion measuring in any type of machine

Explore our factory automation solutions.
Access technical details, configurations, and application support.

Scan to get started:

HENGSTLER

Uhlandstr. 49
D-78554 Aldingen

Telefon: +49 (0) 7424-89-0
info@hengstler.com

Hengstler.com