

Rotary Encoders

Highest precision

and dynamics for

factory automation



for those of you with the
expectation
of using the
latest technology

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
who **care** about a
green footprint

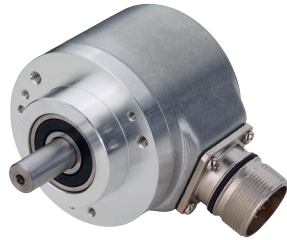
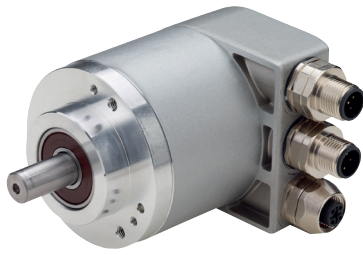


ACURO®
AC58 Fieldbus

ACURO®
AC58


ACURO®
AR60

ACURO®
AC36



E1 10-036823

| <p>Absolute Single + Multiturn Fieldbus</p> | <p>Absolute Single + Multiturn SSI / BiSS</p> | <p>Absolute Single + Multiturn</p> | <p>Absolute Single + Multiturn</p> |
|--|--|---|---|
| <ul style="list-style-type: none"> > Interfaces: EtherCAT, Profinet, Ethernet-IP, Profibus, CANopen, DeviceNet, CAN Layer 2, Interbus, SUCONet, OPC UA ready for IIoT > 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 | <ul style="list-style-type: none"> > Interfaces: SSI, BiSS-B and BiSS-C > Compact design: 50 mm length for Single- or Multiturn > Housing diameter 58 mm > Solid or hollow 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 | <ul style="list-style-type: none"> > 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, BiSS, CANopen, Analog > CANopen interface with E1 approval for vehicle applications | <ul style="list-style-type: none"> > 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 |
| <p>Variants:</p> <ul style="list-style-type: none"> > Large number of configuration options > Stainless steel as ACURO® AC61 available | <p>Variants:</p> <ul style="list-style-type: none"> > 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 | <p>Variants:</p> <ul style="list-style-type: none"> > Heavy Duty version: AR62 for maritime applications (DNV GL certified) > AR63 with high grade stainless steel housing | <p>Variants:</p> <ul style="list-style-type: none"> > AD35 / AD36 (Build-In) |
| <p>Fields of application:</p> <ul style="list-style-type: none"> > Position Feedback in any kind of general machinery or factory automation application > Packaging Machines > Injection Molding Machines > Wood Processing Machines > Assembly and Handling Technology > Conveyor Technology > Printing and Paper Machines | <p>Fields of application:</p> <ul style="list-style-type: none"> > 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 (AC58-I) | <p>Fields of application:</p> <ul style="list-style-type: none"> > 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 | <p>Fields of application:</p> <ul style="list-style-type: none"> > 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 metal, plastic or glass 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

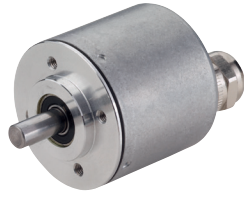


for those of you who want to
install and
forget

ICURO®
RI30



ICURO®
RI36



ICURO®
RI58



ICURO®
RI76



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

Incremental

- > Small rotary encoder for industrial applications
- > Compact design: 36 mm housing diameter / mounting depth 27 mm
- > Up to 14.400 steps with 3.600 pulses
- > Incremental TTL or HTL
- > Protection class up to IP64
- > Solid or hollow 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

Incremental

- > 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

Incremental

- > Up to 40.000 steps with 10.000 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

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