

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

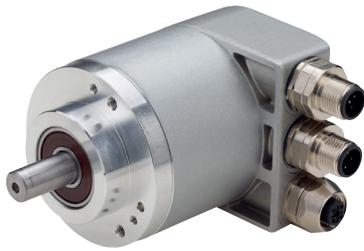


ACURO®
AC58 Fieldbus

ACURO®
AC58

ACURO®
AR60

ACURO®
AC36



E1 10-036823

Absolute Single + Multiturn Fieldbus

- > 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

Variants:

- > Large number of configuration options
- > Stainless steel as **ACURO® AC61** available

Fields of application:

- > 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

Absolute Single + Multiturn SSI / BiSS

- > 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

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

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 (AC58-I)

Absolute Single + Multiturn

- > 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

Variants:

- > Heavy Duty version: **AR62** for maritime applications (DNV GL certified) **AR63** with high grade stainless steel housing

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

Absolute Single + Multiturn

- > 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:

- > AD35 / AD36 (Build-In)

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 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	Incremental	Incremental	Incremental
<ul style="list-style-type: none"> > 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 	<ul style="list-style-type: none"> > 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 	<ul style="list-style-type: none"> > 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 	<ul style="list-style-type: none"> > 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
	<p>Variants:</p> <ul style="list-style-type: none"> > Hubshaft RI36-H 	<p>Variants:</p> <ul style="list-style-type: none"> > Hollow-shaft versions RI58-H, RI58-D/G, RI58-F > As ICURO® RI59 with high grade stainless steel housing 	
<p>Fields of application:</p> <ul style="list-style-type: none"> > CNC axes > Machine tools > Robot > Special machines > High speed winding machines > Medicine technology > Textile machinery 	<p>Fields of application:</p> <ul style="list-style-type: none"> > Position Feedback in any kind of general machinery or factory automation application > CNC Axes > Machine Tools > Robots > Special Machinery > High speed winding machines 	<p>Fields of application:</p> <ul style="list-style-type: none"> > Machine tools > CNC axes > Packing Machines > Motors/drives > Injection Moulding Machines > Sawing Machines > Textile Machines 	<p>Fields of application:</p> <ul style="list-style-type: none"> > Speed and position feedback in asynchronous geared and non-geared motors > Point of motion measuring in any type of machine

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