

Encoders, Slip rings, Counters: Solutions for the Packaging Industry



Ideal for your applications

- Encoders and linear measuring technology for positioning and speed monitoring
- Slip rings for transmitting current, signals, pneumatics and hydraulics
- Counting and Process Technology: display and simple control

Encoder Solutions

Specially for the Packaging Industry

Sendix[®]



Safety-Lock™



High shaft load



High speed



Temperature



High IP value



Mechanical gear



Shock / vibration resistant



Magnetic field resistant



Short-circuit proof



Reverse polarity protection

Fit for every purpose: the new Sendix encoder technology – incremental and absolute, singleturn, multiturn and fieldbus

■ **Safe**

The sturdy Safety-Lock™ Design bearing construction and the magnetic-field resistant technology eliminate machine down-time and repairs.

■ **Fast**

Very high clock frequency (up to 10 MHz), short control cycles, quick start-up.

■ **Versatile and compact**

The unique modular concept allows for an undreamt of array of versions. Through hollow shafts up to 15 mm in 58 mm or 50 mm sizes. Highly compact construction.



Encoder Solutions

Specially for the Packaging Industry

Sendix incremental 5000/5020

Universal industrial encoder on a new technology platform, with solid or hollow shaft

- Extremely compact housing with 50 mm outside diameter
- Flange compatible with all 58 mm standard flanges
- Resolution up to 5000 ppr.
- Short-circuit proof outputs
- High scanning rate (300 kHz)
- Shaft diameter 6 ... 12 mm
- Hollow shaft diameter 6 ... 15.87 mm (through shaft)
- Speed max. 12000 rpm
- Load capacity radial 80 N

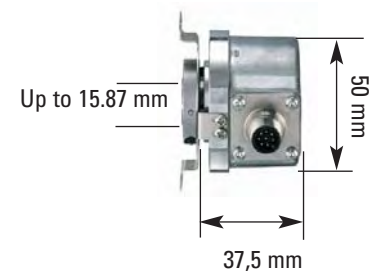


Flexible and universal in application

Many connection options



Comprehensive fixing technology



Sendix absolute, Singleturn Type 5853/5873, SSI

NEW! The fast, efficient encoder with High Speed SSI

Sendix SSI technology permits super fast positioning. Your benefit: less cabling required than with parallel encoders. You save money and installation time.

- 360 step resolution or up to 17 bits
- Update rate > 100 kHz, Jitter 1 μ s/5 μ s
- SSI Clock speed 50 kHz ... 2 MHz
- With additional 2048 incremental or Sin/Cos-track
- 1 status output
- Also digital BiSS interface option (up to 10 MHz)



Sendix absolute, Multiturn Type 5868/5888

First multiturn encoder in 58 standard format with gear module and through hollow shaft.

- Gear module made from special materials, first stage with double bearing layer and specially developed gear teeth
- High rotational speed up to 9000 rpm
- Minimal wear
- High temperatures
- Hollow shafts up to 14 mm, as well as 15 mm as blind hollow shaft.

As a fieldbus encoder

- The right type of connector to suit every application
- The latest fieldbus profiles
- Genuine time-synchronous position detection of several axes is possible
- Position, speed, acceleration and working area available in real-time
- Fast error-free start-up
- User-friendly version with bus cover for easy integration into complex fieldbus networks



EtherCAT Technology Group CANopen PROFIBUS

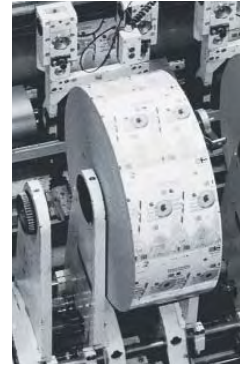
Encoder Solutions

Specially for the Packaging Industry

Incremental Miniature Encoder 24xx

Small dimensions – great performance

- Just 24 mm outside diameter
- High performance at a competitive price
- Wide temperature range (–20 ... +85 °C)
- Sturdy cable outlet with multiple clamping
- Temperature compensation
- Broad input voltage range (5 ... 24 V or 8 ... 30 V)
- Solid or blind hollow shaft up to 6 mm
- Highly flexible cable
(can be used with drag chains from 0 °C ... 70 °C)
- Low power consumption despite high scanning rate
- Short-circuit proof



Absolute Singleturn Encoder 5852/5872

The classic bestseller, with parallel interface

- Divisions: up to 2000 Gray Excess or up to 16384 (14 Bit) Gray, Singleturn
- Housing ø 58 mm
- IP 67/Temperature range –20 ... +80 °C
- Change of count direction
- Electronic temperature and ageing compensation
- Short-circuit proof outputs
- High shock resistance:
(>2500 m/s², 6 ms to DIN IEC 68-2-27).



NIRO Encoder

Stainless-steel, ideal for the Food and Beverage market

We offer a comprehensive range of stainless-steel encoders to meet the requirements of the food and beverage, dairy, pharmaceutical and chemical industries.

All the external components of the encoder housing are made from stainless, austenitic nickel-chromium steel, which meets food regulation requirements. Electrical connections for the encoder are made via a high quality durable cable or connector. The high IP 66 protection together with the NIRO steel ensure high levels of hygiene and safety against aggressive media.



Encoder Solutions

Specially for the Packaging Industry

Length Measuring System: measuring wheel and encoder

For direct detection on the running material or conveyor belt

Measuring wheel system

- New fixing solution for measuring wheels permits freely adjustable contact pressure
- Can be mounted in all positions
- Allows for greater distance between wheel and running material
- Measuring point can also be in the centre
- Can be combined with all standard encoders (Incremental, SSI, Fieldbus,...)



Mini-Measuring Wheel System

- With incremental interface
- Very compact (74 mm x 50 mm x 52 mm)
- Simple to install: one unit. Screw on, connect, ready.
- Economical



Linear Measuring System: *LIMES*

- Simple to operate and mount
- Resolutions from 0.005 mm up to 1 mm
- Very high repeatability
- Magnetic non-contact measuring principle:
 - completely free of wear
 - no pitch or gear backlash errors
 - not affected by oil, dust, grease or fluids



Slip rings

For the rotary transmission of load current, signals, pneumatics and hydraulics

Slip rings IST-SR085

Description:

In general slip rings are used to transmit power, signal or data from a stationary to a rotating platform. The transmission between the stator and rotor takes place via sliding contacts and is extremely reliable. The construction is modular and offers the greatest flexibility in a variety of applications.

Advantages and benefits:

- Rugged design for industrial use
- Modular system construction, load and signal channels can be combined selectively
- GFPC housing (glass-reinforced polycarbonate) 30% glass fibre content
- Long service life and long maintenance cycles
- Individually replaceable brush rings
- Customised versions easily available
- Separate signal channels
- Fieldbus signals such as Profibus, CANopen etc. up to 12 MB



Application areas for Slip Rings:

- Packaging machines
- Textile machines
- Robots and handling equipment
- Cranes
- Pipeline inspection systems
- Video surveillance (CCTV) equipment
- Fairground rides
- Bottling plants
- Rotary tables

Safety-Trans™-Design:

- Two-cavity system for load and signal transmission
- Labyrinth seal
- High vibration resistance

- 1 Copper graphite for high abrasion resistance
- 2 Platinum/Gold alloy (50% Gold content)
- 3 Separate signal channels with contact guide

Modular construction system:



Stator ring with pick-off spring for load currents.

Insulator with slip ring for load currents.

Stator ring with pick-off spring for signal currents.

Insulator with slip ring for signal currents.

Practical maintenance window:



Secure connections:



Easily accessible connections:



Technical Data (standard version):

Dimensions:	see drawing
Overall length:	dependent on the number of transmission paths
Bore diameter:	up to \varnothing 30 mm
Current loading:	max. 16 A (at 240 V AC)
Voltage/current loading:	240 V AC (dependent on the current loading)
Contact resistance load channel:	≤ 1 Ohm
Contact resistance signal channel:	≤ 0.1 Ohm
Insulation resistance at 500 V DC:	10^3 MOhm
Dielectric strength:	1000 V eff. (60 sec.)
Speed:	max. 800 1/min
Operating temperature:	0 ... 80 °C
Protection rating:	IP 50 up to IP 64 on request
Service life:	> 500 Mio. revolutions
Maintenance cycles:	approx. 50 Mio. revolutions
Number of rings:	approx. 20

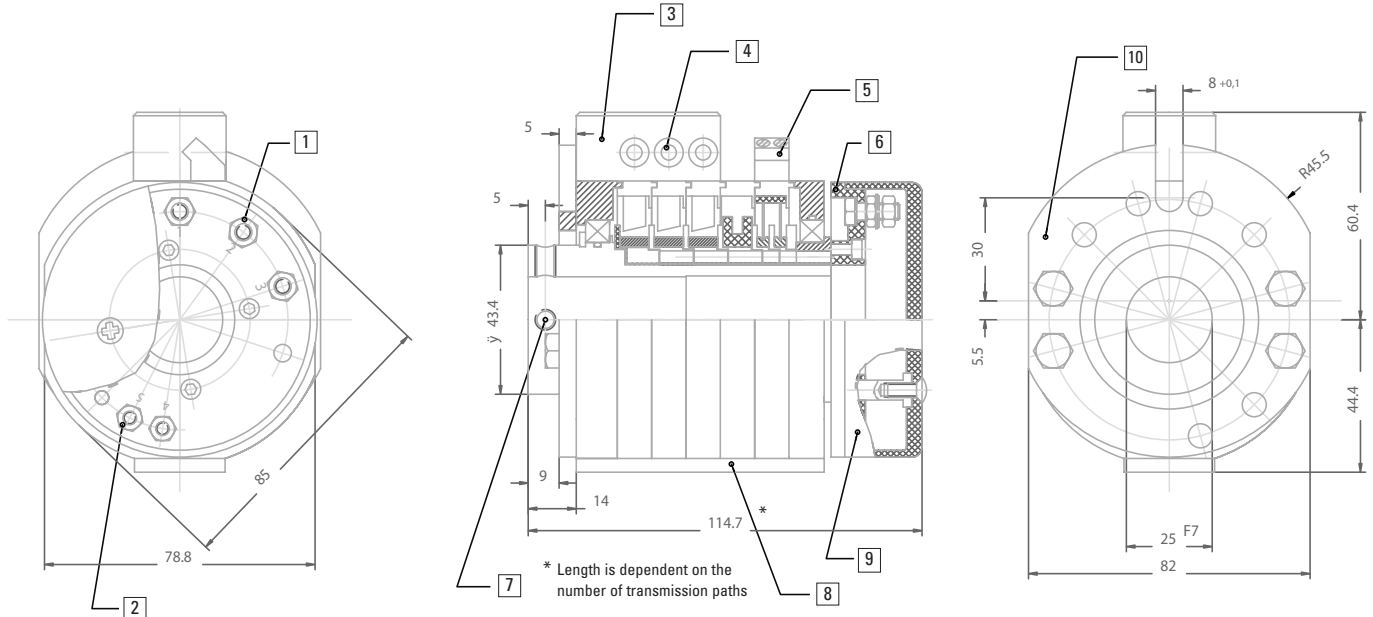
Slip rings

For the rotary transmission of load current, signals, pneumatics and hydraulics

Slip rings IST-SR085

Dimensions:

Example type IST-SR085-2-3-V14



- 1 Screw terminal M5 for load transmission
- 2 Screw terminal M4 for signal transmission
- 3 Terminal clamp for load without wire protection, with shock-hazard touch protection

- 4 Wire lead-in for load possible on both sides
- 5 Terminal clamp for signal transmission
- 6 Rotating connection ring
- 7 4 x socket set screw DIN 914 M6x10

- 8 Window for maintenance
- 9 Protective cover for connections
- 10 Torque stop

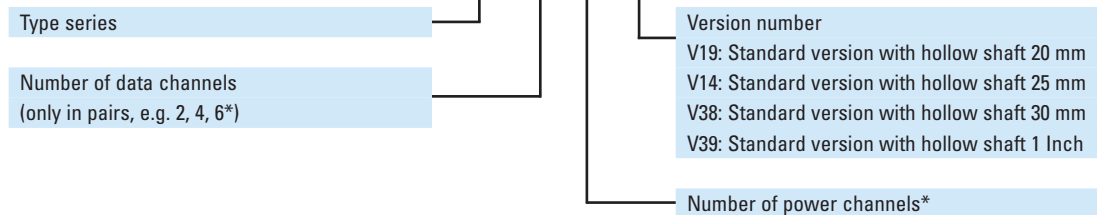
Standard version:

Protection rating IP 50, Signal rings (if present) on the connection side for horizontal mounting and mounting from underneath, terminal connections, for tolerances see dimensional drawing

Order code:

for standard versions

IST-SR085-XX-XX-VXX



Accessories: Maintenance set (comprises brush and contact oil for signal contacts) IST-MS-01

* 20 combination max. , for example 4 data channels and 16 power channels

Options on request:

- Pneumatics, hydraulics transmission
- Current 40 A
- Voltage 400 V AC
- Other mounting positions
- Higher protection rating
- Mounting from above
- Load rings 400 V/16 A
- Load rings 240 V AC/25 A

Slip rings

For the rotary transmission of current and signals

Slip rings IST-SR060

Description:

The SR060 is a compact, economical slip ring for up to 3 load and 2 signal transmissions from a stationary to a rotating platform. The transmission between the stator and rotor units occurs extremely reliably via sliding contacts.

Advantages and benefits:

- Various component configurations for the transmission paths, max. 3 x load and 2 x signal transmission
- Fully encapsulated in high-grade glass reinforced plastic housing shells
- Ideally suited for the heating of sealing drums (rollers) in packaging machines
- Can be used as a pair starting from just 60 mm shaft distance of the sealing rollers
- Economical – thanks to minimization of individual components, advantages in mounting and component part design to suit



Application areas for Slip Rings:

- Packaging machines
- Textile machines
- Robots and handling equipment
- Cranes
- Pipeline inspection systems
- Video surveillance (CCTV) equipment
- Fairground rides
- Bottling plants
- Rotary tables

Technical Data (standard version):

Dimensions:	see drawing
Overall length:	dependent on the number of transmission paths
Hollow shaft diameter:	up to max. \varnothing 25 mm
Current loading:	max. 16 A (at 240 V AC)
Voltage/current loading:	240 V AC (dependent on the current loading)
Contact resistance load channel:	\leq 1 Ohm
Contact resistance signal channel:	\leq 0.1 Ohm
Insulation resistance at 500 V DC:	10^3 MOhm
Dielectric strength:	1000 V eff. (60 sec.)
Speed:	max. 500
Operating temperature:	0 ° ... 75 °C
Protection rating:	IP 50
Service life:	> 500 Mio. revolutions
Maintenance cycles:	approx. 50 Mio. revolutions

Fully encapsulated housing:

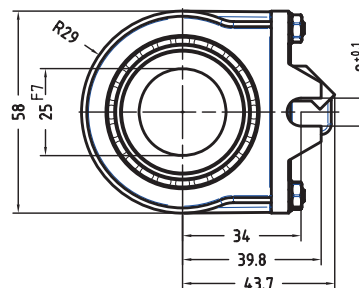
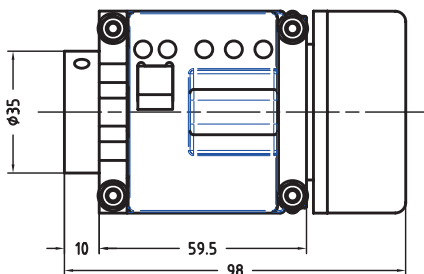


Easily accessible connections:



Dimensions:

Example Type IST-SR060



Order code:

IST-SR060-XX-X-X-V01

Product group: slip ring

Size: \varnothing 60 mm

Hollow shaft diameter*

18 = \varnothing 18 mm

20 = \varnothing 20 mm

24 = \varnothing 24 mm

25 = \varnothing 25 mm

* other diameters on request

Version number V01 (Standard)

Number of load transmission paths (max. 3)

Number of signal transmission paths (max. 2)

Counting and Process Technology



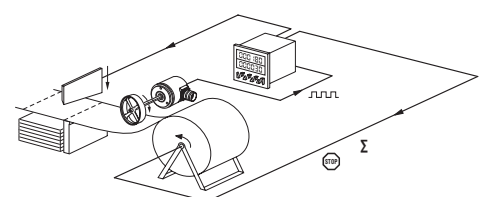
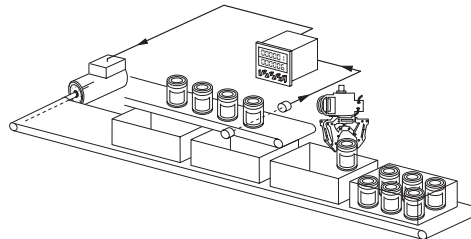
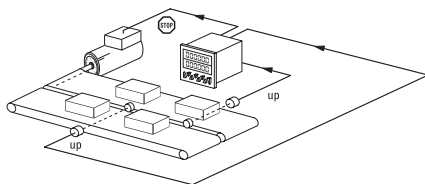
for local control and display in the packaging industry

Benefits:

- Economical solution for simple control tasks without a PLC
- Local display and control – fast fault recognition during machine stoppage
- User-friendly: large, bright display, menu-driven programming via keys, versions with interface
- Can be used where hygiene is paramount: can be operated using gloves, high protection rating
- High accuracy: galvanic isolation, resistant to shock and magnetic fields, linearization up to 32 points, scaling, up to 8 digit display

Applications:

- Piece counting
- Length measuring
- Time measuring
- Preset counter
- Batch counting
- Level
- Flow
- Maintenance times
- Mechanical stop adjustment
- Adhesive application
- Controlling weld seams



The following product examples are just a few from our wide range

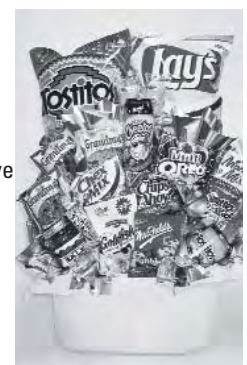
LCD Display counter **CODIX 130**

Economically priced, with high performance

- Large 8-digit LCD display height of the figures 8 mm
- Optional backlighting
- Simple counter for fast and slow count pulses, count direction can be switched via a control input
- High voltage versions for 10 ... 260 V AC/DC voltage pulses
- Unified Codix design, matches the comprehensive Codix family
- Protection rating IP65



- Screw terminals RM 5 mm
- Battery life 8 years
- Reset button can be inhibited via Reset Enable input
- Temperature range -10 ... +60 °C
- All versions work with positive or negative counting edges
- Filter function for bounce-free counting with mechanical contacts



Counting and Process Technology

for local control and display in the packaging industry



The universal Preset Counter **CODIX 923/924**



Multi-functional



Batch counter



Total counter



Max. frequency



Presets



Frequency meter HRA



Position display



High IP value



Temperature range



Plug-in screw terminal



MultiColour

The ready-to-go control and display solution for pulses, time and frequency

Multifunction:

- To display, measure and control pulses, time, frequency and position
- Local control functions – ready for immediate use, with many count modes and functions – just set the parameters
- Extremely easy to operate – with direct display
- Can be used as a preset counter, batch counter, total counter and monitoring device
- Direct preset entry or as tracking preset

Numerous logic functions and preconfigured, selectable operating modes for a variety of applications, including for example positioning and batch counting, make the counter a real alternative to a PLC - with the benefit of a display included. The devices are so designed that they are expandable for OEM applications. Both hardware and software can be modified and expanded. PCB-board receptacles are provided in the counter for hardware upgrade purposes:

- To increase from the standard 6 up to 10 inputs
- Up to 6 optocoupler outputs
- To increase from the standard 2 up to 4 relay outputs
- Further individual functions

The software can be specifically customised to OEM applications. This includes the logic behaviour of the inputs and outputs (I/O functionality) or the whole display unit

User-friendly:

- Large 2-line, 2 x 6-digit LCD display with sign, leading zero suppression and annunciators, as well as backlighting for easy readability and clearer understanding in all situations.
- Decade key-pad for fast, direct entry of the presets
- Quick, straightforward setting of the parameters thanks to the clear-cut programming structure and the menu-driven alpha-numeric display.
- Direct input of the presets via the front keys or the Teach-In input
- Fast installation thanks to plug-in screw terminals



New with 4 and 6 presets



Expanded hardware

Customised software



Simple programming and operation

Display colours:

Standard:

LED Look:

Multicolour:

positive green with optional backlighting
negative, red backlighting
upper line negative, red backlighting
lower line negative, red or green backlighting (programmable)

Counting and Process Technology

for local control and display in the packaging industry



Temperature display **CODIX 531**

For Pt100 and Ni100 resistance thermometers

Your benefit

- Temperature display in °C or °F
- MIN/MAX value acquisition and data backup in case of Power Off
- Galvanic isolation with protection against incorrect polarity
- Screw terminal connections: 5 mm raster
- Display Hold input



Input range

resistance thermometer

Further advantages

- Economical compact temperature display
- Very easy programming and operation
- Modern industrial design
- 5 measurements per second



Process Controller **CODIX 555**

With totaliser and 2 limit values

Your benefit

- Programmable input characteristic curve with up to 24 control points
- Totaliser for integrating (adding) the measured values (e.g. flow measurement => liquid level) with own scaling and programmable input threshold
- MIN/MAX value acquisition
- Display-Hold for display storage, or reset input for the totaliser or limits
- Large keys enable easy operation, even wearing gloves



- Key-lock input (keypad inhibit)
- Very bright display
- Input range 0 ... 20 mA, 4 ... 20 mA; 0 ... 10 V 2 ... 10 V; +10 V
- Outputs: 2 limit values with programmable hysteresis and programmable signal behaviour, relays with change-over contact or optocoupler

Additional advantages

- Auxiliary power supply output for measuring transducer/sensor



Electromechanical time meters H 37 / H 57

Standard hours run meters in 48 x 24 / 48 x 48 mm format

- 7- or 8 digit hours run meters
- High shock and impact resistance
- Without reset, small dimensions
- Optically large figures
- Protection rating IP 65 from front
- Protection rating IP 52, any mounting position
- AC- or DC-powered



DIN front bezel 48 x 24 mm



DIN front bezel 48 x 48 mm



Encoder Solutions

All our encoders and length measuring systems, including order codes, product details and dimensional drawings can be viewed online or in our large encoder catalogue.



Display and Control Solutions

A wide variety of solutions: electromechanical, electronic (LCD, LED), miniature, compact, DIN sizes, bezel adapters for all common panel cutouts as well as products suitable for DIN rail mounting – all these can be viewed online, as well as in our Counting Technology and Process Technology catalogues.



Further System Solutions

In our OEM Products and Systems Division we develop and manufacture display, measurement and control components, as well as sub-assemblies, tailor-made to customers requirements.

