

Kübler Sendix F36 Series

# The Compact Revolution.

Absolute Singleturn and Multiturn Encoders



**PATENTED  
TECHNOLOGY**

- Intelligent Scan Technology
- High resolution up to 41 bits
- Extremely robust



Safety-Lock™



Temperature  
-40° +90°



Protection type  
**IP 67**



High shaft  
loading  
capacity



Shock /  
vibration  
resistant



Magnetic  
field proof



Short-circuit  
proof



Reverse  
polarity  
protection



SIN/COS  
2048 ppr



Resolution  
**41 Bit**



UL-certified



RoHS  
compliant

# The compact revolution: Kübler Sendix F36

Optical encoders, 100% insensitive to magnetic fields, without gear



The patented absolute multiturn and singleturn encoder series Sendix F36 with Intelligent Scan Technology excels due to its high level of ruggedness. A hollow shaft diameter of up to 10 mm is realized with a device size of only 36 mm. Its very precise, optical sensors reach a high resolution of up to 17 bits for singleturn. The multiturn version has a resolution of up to 41 bits – with up to 16 million revolutions. Sendix F36 is the first optical multiturn encoder without gear, which is also completely insensitive to magnetic fields.

## Sendix F36 Series

- Continuous hollow shaft up to 8 mm / blind hollow shaft up to 10 mm
- Singleturn resolution up to 17 bits
- Electronic multiturn on a purely optical basis
- Multiturn resolution of up to 24 bits:  
Possible total resolution of up to 41 bits
- Sturdy Safety Lock™ design bearing structure with extra-large bearing
- Suitable for outdoors use: IP 67, – 40° C to +90° C
- High precision, the position value is updated every  $\square$ 1  $\mu$ s
- Short control cycles, clock rate with SSI up to 2 MHz / with BISS up to 10 MHz
- High-resolution feedback in real time via incremental outputs SinCos or RS422
- CANopen interface

## i Sendix F36: Compact impulses for new solutions

- Medical technology:  
Where installation space is limited
- Wind energy power plants:  
With suitable interfaces
- Compact drives:  
With hollow shafts up to 10 mm
- Small machines:  
Adaptable connection technology
- Mobile automation:  
Robust Safety Lock™ bearing construction
- Packaging industry:  
Up to 41 bits resolution





**Reliable** The considerably reduced number of components in the Sendix F36 encoder contributes to its insensitivity and good failure safety.

The extremely sturdy bearing structure in Safety Lock™ design accounts for two thirds of the total depth of the compact encoder. This allows using larger bearings with longer useful life and better resilience.

**Compact** An 8 mm hollow shaft and a 10 mm blind hollow shaft look like a new record with a flange diameter of 36 mm. The tangential cable output makes it perfect: even if the installation space is limited, the cable connection does not disturb.

**OptoASIC with Intelligent-Scan-Technology™**  
The core of the new Sendix F36 Series is an OptoASIC with a new scanning procedure. All the information is bundled here; this is the intelligence for singleturn and multiturn functions.

**i 2 in 1**

The additional incremental outputs SinCos or RS 422 supply the system with high-resolution feedback in real time. The compact encoder and the incremental encoder are “two devices in one”.

## Technical data

### Mechanical characteristics

**Maximum speed**

- Shaft or blind hollow shaft version without shaft seal (IP 65)  
12 000 rpm or 10 000 rpm in continuous operation
- Shaft version (IP 67) or hollow shaft version (IP 65) with shaft seal:  
10 000 rpm or 8 000 rpm in continuous operation

**Shaft load capacity** radial 40 N, axial 20 N

**Shock resistant** to DIN-IEC 68-2-27 > 2500 m/s<sup>2</sup>, 6 ms

**Vibration resistant** to DIN-IEC 68-2-6 > 100 m/s<sup>2</sup>, 55 ... 2000 Hz

### Electronical characteristics

**Data update** up to 14 bits < 1 μs

**Resolution** for singleturn 10 ... 17 bits

**No. of revolutions** 4096 (12 bits), 65536 (16 bits), 16 million (24 bits optionally)

**Incremental outputs (A/B)**

2048 ppr Sine/Cosine or RS 422 TTL compatible

**SET input** The encoder can be set to zero in any position. Other preset values can be configured in the factory. The SET input has a signal processing time of approx. 1 ms.

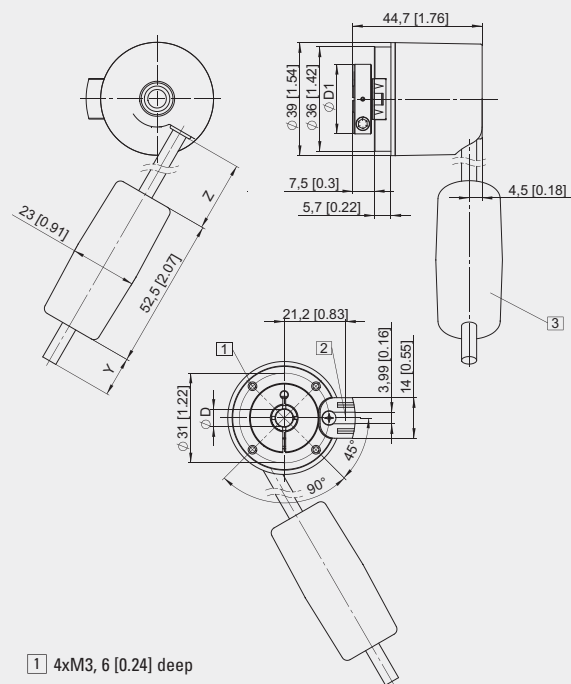
**DIR input** A high signal switches the direction of rotation from standard CW to CCW.

**The status output** displays different alarm and error messages, LED faults (failure or ageing), excess temperature, insufficient voltage

**SSI clock rate** < 14 bits: 50 kHz ... 2 MHz; > 15 bits: 50 kHz ... 125 kHz

**BISS clock rate** up to 10 MHz

**CANopen** interface



- 1 4xM3, 6 [0.24] deep
- 2 Torque stop slot
- 3 Battery

## Kübler Sendix family – absolute and incremental

absolute ■ incremental ■ magnetic ■ optical ■ Fieldbus ■ Ethernet



The Sendix device family guarantees a very safe technology with extremely sturdy housing. It is characterized by a sturdy Safety Lock™ design bearing structure, its housing technology and its wide temperature range. The devices can also be used outdoors. Many different options for connection or extension are offered. Thanks to a modular system, the optimum encoder can be realized. In short: The use determines the product.



**For detailed technical information on Kübler Sendix F36** please refer to our New for 2009 catalogue or our website [www.kuebler.com/F36](http://www.kuebler.com/F36)

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