

Rotary encoders



Rotary Encoder

General: Rotary encoders work with opto-electric scanning a bar glass. An infrared beam is Light impermeable strokes on the disc interrupted. The rotation of the shaft creates an ongoing exchange of light and dark. The passing a stroke (there are max. 1250 strokes per revolution) is an electrical pulse definable converted. Since it is difficult to scan fine strokes individually, a panel with the same line division intervenes. The result is (although several lines are scanned at the same time) a light- and dark change while occurring the stroke.

The direction detection (or right / left running or Incrementing / Decrementing) is effected by two scanning orders. The geometric arrangement of scanning points and the associated aperture two strokes output signals generated in the form of their impulses and frequency are the same, other phases, but 90 degrees (equivalent to $\frac{1}{4}$ impulse division) moved. From the situation of displacement, the evaluation electronics (eg ELGO - position indicator) the direction of rotation.

The impulse disc is an essential element of the donor. In its accuracy and stability (delay freedom and temperature resistance) are very high demands. Because of the necessary precision of the stroke division of the originals on a neon sign enlarged computer (about 40 cm in diameter) drawn. This unique situation is photographically Alvor on the actual disc sized image. In the same way, the aperture. It is like the disc, hight-tensile photographically to a carrier material. A punching device with a built-in projection optics allows exactly centric cut the slices.

The mechanical construction is on the highest robustness and high protection class vote. The housing consist of solid aluminum turned parts or die casting. The dual ball bearing ensures a precise rotational freedom and vibration at high speeds. The bearings are protected by lock-rings, or as a rubber sealed stock.

The accuracy is 1 increment (1 pulse).

The metrological assignment (which unit is assigned an impulse), results from the application.

The electronic design is different to traditional donors in the following ways:

a) The calibration of the optical scanning elements:

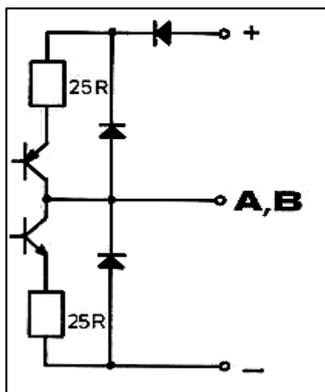
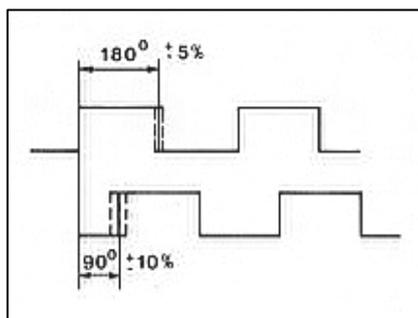
This is not about pot, but by mechanical, adjustable apertures. The waiver critical point contacts brings an excellent long-term stability and increased vibration resistance

b) Output Channels: The outputs are short push-pull amplifiers (push / pull). In addition, a thermal overload protection.

This largely prevented the destruction of the donor by external influences and makes the transmission of signals even in extremely long lines noise. For special applications, there is a push-pull output kurzschlussfester available, the per channel to deliver 1A.

Product features:

- Incremental rectangle signals with the channels A and B (direction detection)
- Short Duration Fixed push / pull-push-pull outputs



The proven standard

Type 15.22

10-30 VDC
Max. 500 pulses/revolution
Max. 10 KHz (more on request)
Steel shaft 6mm
Double ball bearing
IP54 (IP64 as Option)
Weigth 0,5 Kg
Dimensions 75 x70 mm
Massive zinc die cast



Compact and inexpensive

Type 15.32

10-24 VDC
1...360 pulses/revolution (standard)
120...360 pulses/revolution (with zero-pulse)
Max. 10 KHz (more on request)
Double ball bearing
IP54 standard (IP63 Option)
Weigth 144 g
Diameter of housing 45mm
Diameter of flange 45mm
Shaft diameter 6mm



...also with external flange

Type 15.37

Weigth 226g
Diameter of housing 45mm
Diameter of flange 58mm
Shaft diameter 10mm
Other datas identical with 15.32



The rugged one with high protection class

Type 15.42

10-30 VDC
Max. 1250 pulses/revolution
10 KHz (more on request)
Steel shaft 12mm
IP66
Double ball bearing
Massive anodised aluminium
Gewicht 1,1 Kg
Option Channels A/B inverted possible
Diameter = 90 mm,
Flange = 80 mm



The compact with hollow shaft

Type 15.62

10-30 VDC
Max. 250 pulses/revolution
Max. 10 KHz (more on request)
Hollow shaft 6 mm
IP54
Double ball bearing
Housing 52 x 41 mm, massive zinc die cast



Accessories:

Measuring wheels

Measuring wheels are friction wheels with a defined scope. Movements can be measured directly by surfaces. Measuring wheels must be pressed resilient e.g. with a tongue-faced flange.

Order specifications:

500 mm flush plastic **19.5001**, corrugated **19.5002**
200 mm flush plastic **19.2001**, corrugated **19.2002**

Wide small = 12 mm resp. 17,5 with shaft

Wide big = 25 mm resp. 33 with shaft

Precision clutch

The torque will transfer by a rustproof metal-bellow. This can balance angular or parallel offsets, however, admits no errors of rotation angle. Are to be preferred with higher impulse numbers. (Length=34 mm, Diameter= 20 mm)

Order specifications:

Precision clutch

C1/C2 **19.6300**

Please indicate shaft hole diameter C1/C2!

Gear rods, measuring pinions

The combination gear rod and pinion are ideal construction elements for the linear measurement. The measuring pinions are balanced in the length so that they can be added to bigger lengths. There are light (5mm wide) and heavy (15 mm wide) pinion-types available.

Pinion light = version with 20 cogs, Pinion heavy = version with 40 cogs, Gear rods = 500 or 1000 mm long

For simplification of the assembly coordinated angle flanges, spring flanges and clamp flanges are available.

Please contact us, if required!

Elastic clutch

For offset-compensation, between drive shaft and encoder shaft, an elastic clutch is necessary. With this coupling a strong spring transfers the torque. On both sides, the shaft holes can be implemented differently.

Order specifications:

Length (A) Diameter (B) C1/C2

35 mm 16 mm 4-8 mm **19.6100**

50 mm 26 mm 6-14 mm **19.6200**

Please indicate shaft hole diameter C1/C2!

Mini clutch

The miniature clutch distinguishes itself by particularly low construction length. Particularly been suitable for encoder-type 15.32.

Order specifications:

Mini clutch C1/C2 **19.6350**

Please indicate shaft hole diameter C1/C2 angeben!

