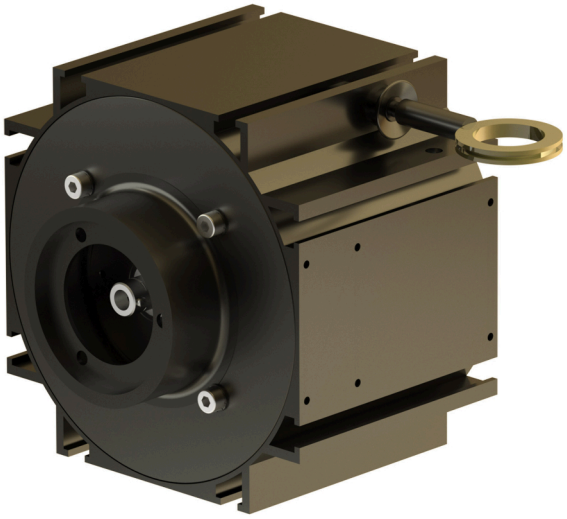
SUPREME SENSORING

Cable-type displacement converter Model SWE

Document no.:
SWE 16896 AE
24.10.2023



- **Low cost version**
- **For converting linear displacements of 5 m to 15 m into a rotary movement**
- **For mounting onto an absolut or incremental encoder**
- **Very tight design**
- **For synchro flange and clamping flange**

KEY INFORMATION OVERVIEW

DESIGN & FUNCTION

The linear movement of a flexible steel cable, which can have a length from 5 to 15 m, is converted into an rotary movement with the aid of a measuring drum. The measuring drum is connected to the shaft of an encoder. In this way a change in displacement of the measuring cable causes the shaft of the encoder to rotate by a directly proportional amount which can be recorded.

The restoring force of the spring drive holds the measuring cable tight at all times and prevents any sagging which would otherwise induce an error. The measuring drum moves axially on a spindle ensuring that the cable is wound up precisely and reproducibly wrap for wrap in the helical groove of the drum.

The entrance of the cable is protected with a bellow to prevent water or dust entering the drum.

FEATURES

- Encoders with different interfaces can be used
- The standard device is designed for synchro flange design 58 (e.g. TRX58-S), adapters for other encoder flanges (e.g. clamping flange for TRX58-K) are available
- Measuring stroke 5 m, 7.5 m, 10 m and 15 m
- Accessories: Deflection roller
- Devices with sealing between drum and spring as option

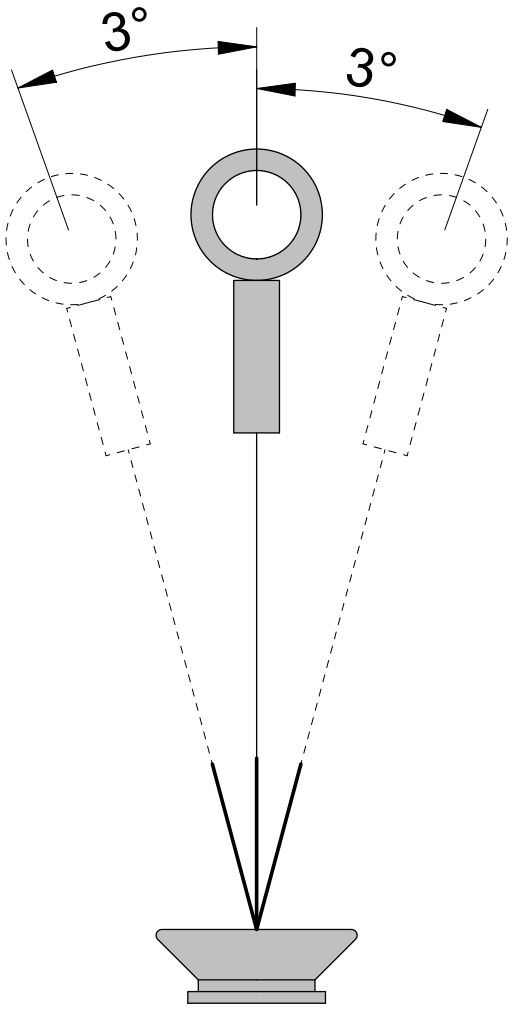
TECHNICAL DATA

MECHANICAL DATA

Measuring ranges . . . . . 5 m, 7.5 m, 10 m, 15 m
Drum circumference . . . . . 315 mm (the actual value is shown on the item when supplied)
Permissible cable acceleration . . . . . refer to table on page 6
Force required to draw out the cable. . . . . refer to table on page 6
Cable material . . . . . stainless steel (covered with polyamide)
Cable diameter . . . . . 1,0 mm
Housing material . . . . . anodized aluminium alloy
Linearity. . . . . refer to table on page 6
Deviation from straight pull-off. . . . . max. +/- 3 ° in any direction (refer to drawing below)

ENVIRONMENTAL DATA

Operating temperature range . . . . . -20 °C to +80 °C
Storage temperature range . . . . . -40 °C to +80 °C
Shock . . . . . 500 m/s² / 10 ms, in 3 axes (2 directions and per 1.000 shocks each)
Vibration . . . . . 200 m/s² / 20 Hz to 2.000 Hz in 3 axis and 10 cycles each
Mass . . . . . refer to table on page 6



Note: The cable exit should be downwards or sideways. The cable must be extracted rectilinearly with reference to the housing (deflection max. 3° in any direction admitted).

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ORDER CODE FORMAT

SWE	5	B -	01	STANDARD

SWE	Cable-type displacement converter SWE		
5	Measuring range	5 7,5 10 15	5 m 7.5 m 10 m 15 m
B	Accessories	B U	with bellow with deflection roller SWE-U-01
01	Electrical and mechanical variants*	01 02	standard version (e.g. for TRX58-S) for encoders with clamping flange (e.g. TRX58-K)

* The basic versions according to the data sheet bear the number 01. Deviations are identified with a variant number and are documented in the factory.

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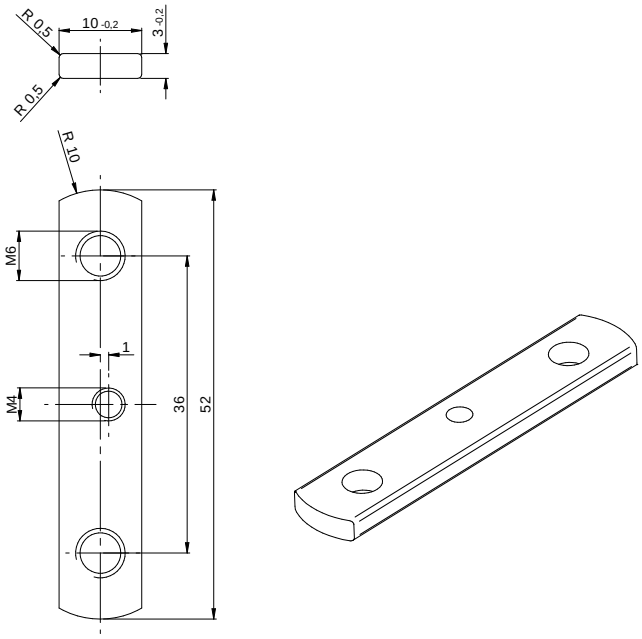
ACCESSORIES (SELECTION)

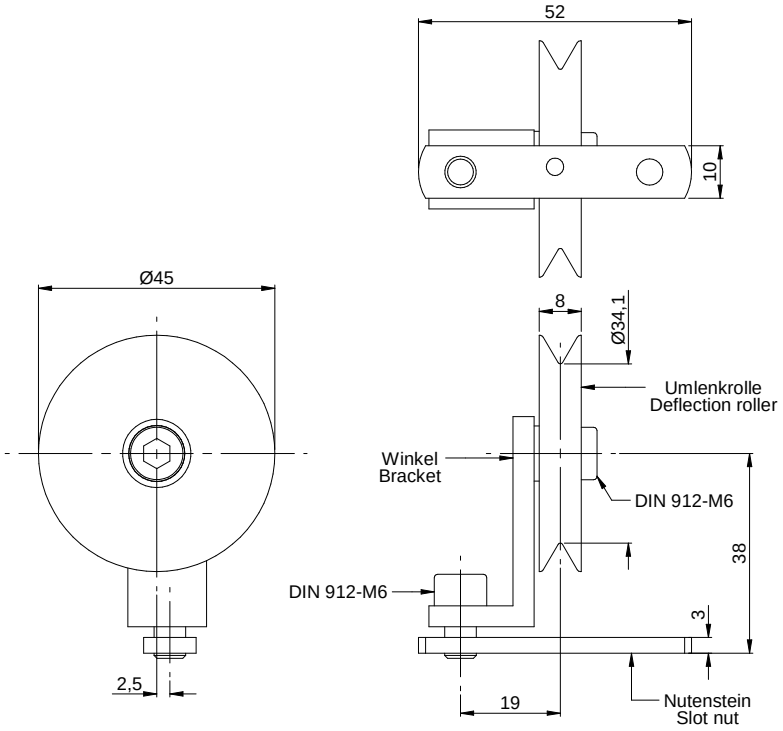
SWE-NUTENST

Slot stone
(Scope of delivery: two slot stones with each cable-type displacement converter)



SWE-U-01

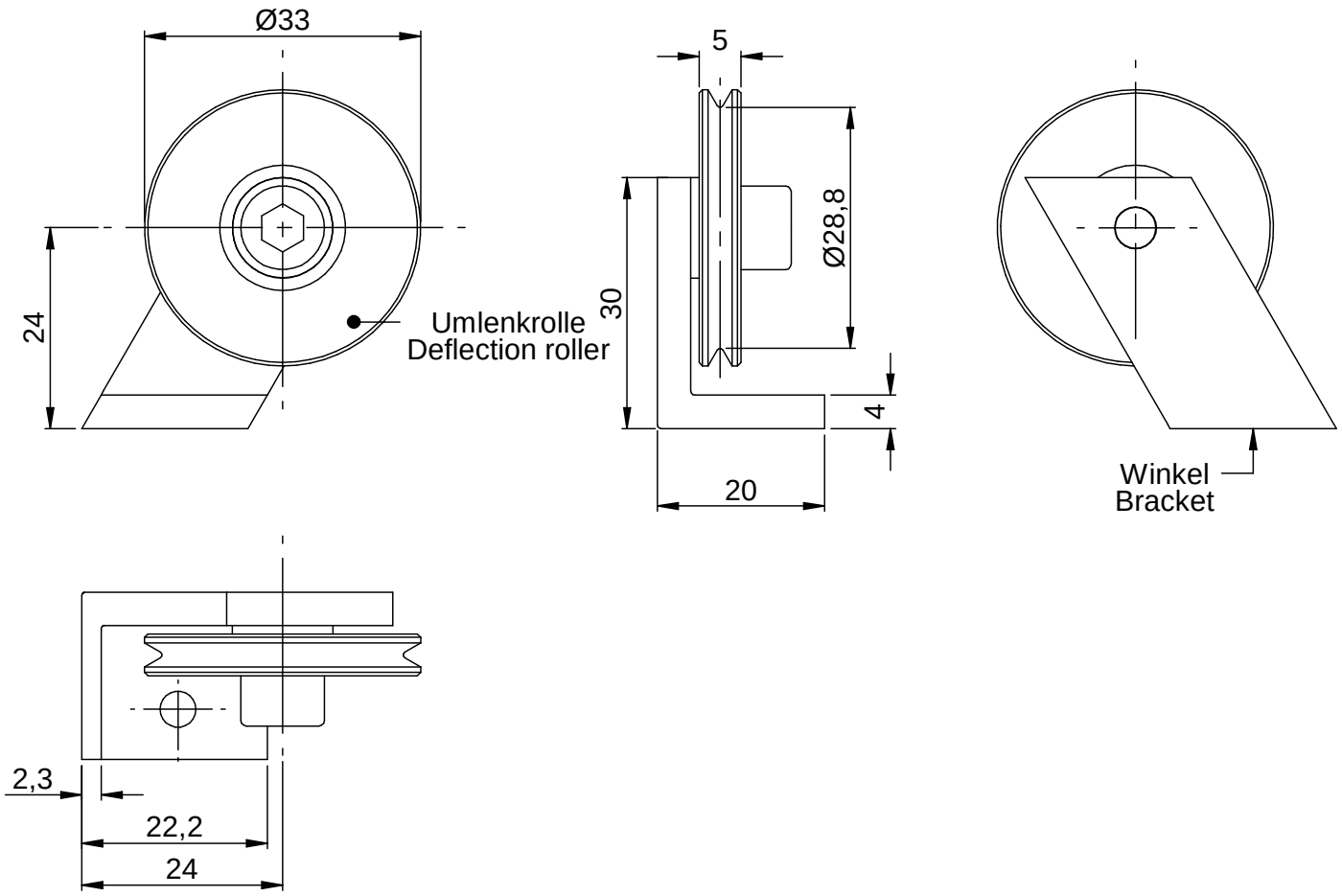
Deflection roller for mounting at the cable-type displacement converter
(Can be ordered with device (see order code format page 3)
or separately and mounted by customer)



ACCESSORIES (SELECTION)

SWE-U-02

Deflection roller for mounting on a rack or a wall
(has to be ordered seperately)



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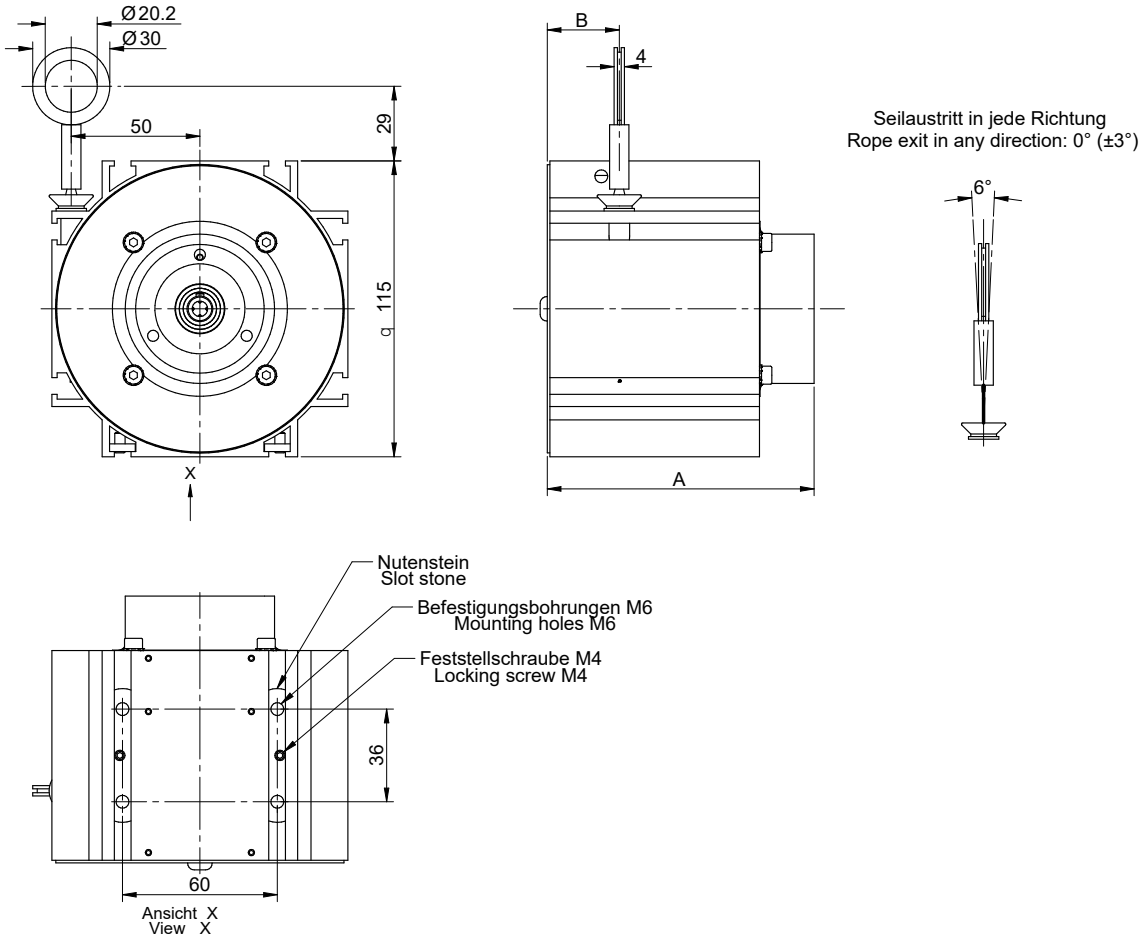
INSTALLATION DRAWINGS

SWEXB-01

(X: measuring stroke in meters)

Dimensions in mm



Measuring stroke	5 m	7.5 m	10 m	15 m
A	104 mm	127 mm	170 mm	202 mm
B	28 mm	37 mm	44.5 mm	61 mm
Mass	1.4 kg	1.9 kg	2.8 kg	3.2 kg
Maximum accelaration	50 m/s²	60 m/s²	30 m/s²	30 m/s²
Force (draw out)	16 N	24 N	21 N	25 N
Linearity	± 1 mm	± 1.5 mm	± 1 mm	± 1.5 mm

MATERIALS USED

Housing . . . . . Aluminium alloy, anodised black
Cable ring CuZn40Pb2