

Cable-type displacement converter SWF series

for use with absolute and incremental encoders

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- **Very robust construction for mechanical engineering and industrial plant application**
- **For converting linear displacements of up to 30 m into a rotary movement**
- **For mounting onto an absolute or incremental encoder**
- **Easy to install and to use**
- **Protection grade IP 65 (IP 54)**



Functional description

The linear movement of a flexible steel cable, which can have a length of up to 30 m, is converted into a 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 nozzle, through which the cable enters the drum, is protected with a brush and a bellow to prevent water or dust entering the drum. An additional grease chamber can be fitted upon request.

Shipment

The cable converter is supplied with or without encoder. For assembly to the cable converters the TWK encoders will fit. The assembly of other encoders can be realised on request.

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Technical data

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- Measuring ranges: 5, 10, 15, 20, 25, 30 m
- Drum circumference: 334 mm nom¹⁾
- Permissible cable speed ($V_{max.}$): ref. to table page 3
- Permissible cable acceleration ($a_{max.}$): ref. to table page 3
- Force required to draw out the cable (start / end): 15 N max. / 30 N max.
- Cable material and diameters (Stainless steel 1.4401): highly flexible, stranded wire (7 x 19 = 133 conductor strands)
- Rope diameter: 1.3 mm (0.8 mm optional)
- Life expectancy for cable and spring: up to 1 mio. change of load
- Housing material: anodized aluminium
- Spring housing: plastic
- Protection grades: Housing IP 65
Cable entry IP 54
- Working and storage temperature range: -20 °C bis +70 °C
- Mass: ref. to table page 3

¹⁾ The actual value is shown on the item when supplied.

Order code format

SWF	5	-	B	-	FK	-	27	
								Electrical and / or mechanical variants*
								01 Design 58
								04 Design 105
								06 Design 65
								07 Design 66
								27 Design 50 (T-series)
								FK Grease chamber (optional)
								Accessories (options) :
								B with bellows (standard)
								U with deflection roller
								VX Extention SWF-VX for cable.
								BÜ External brush case SWF-BÜVO to avoid entry of dust.
								Measuring ranges :
								5 5 m
								10 10 m
								15 15 m
								20 20 m
								25 25 m
								30 30 m
								Model
								SWF SWF

* 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

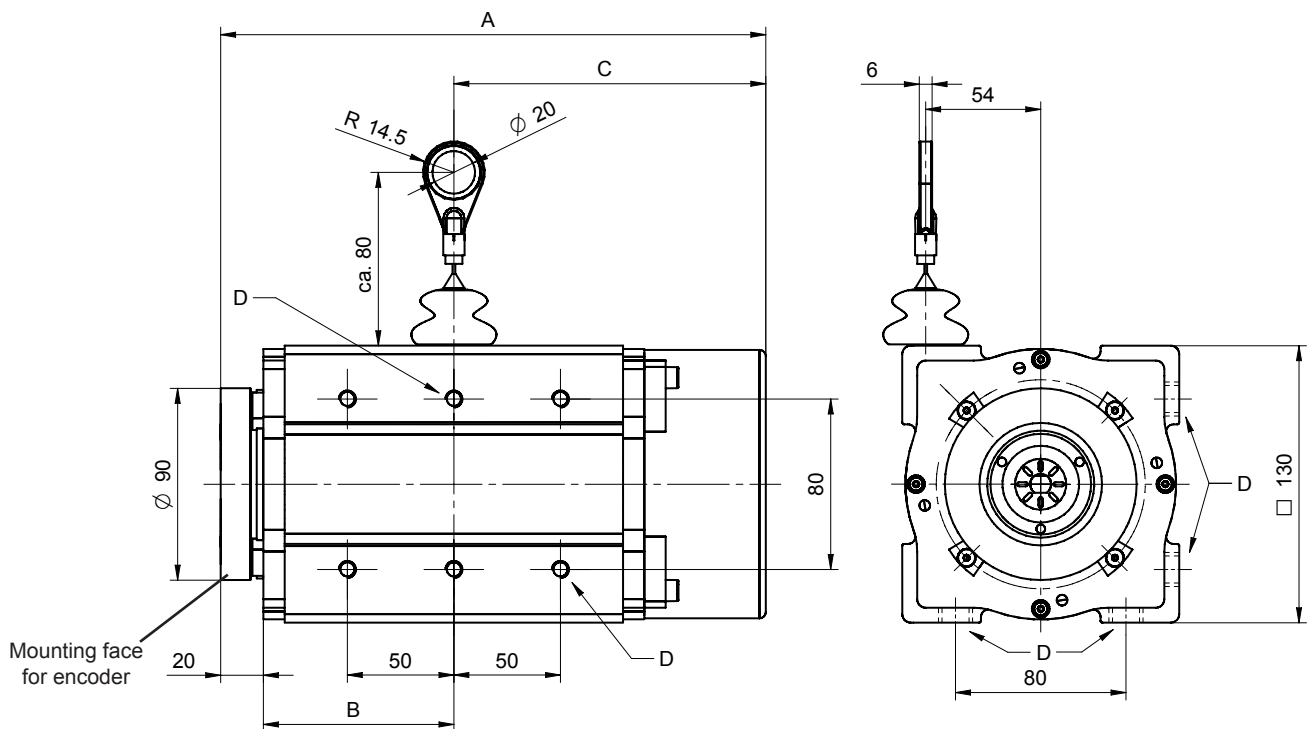
Als Zubehörteile sind lieferbar:

- ADAKIT50 Adapter rings for flange 50
- ADAKIT58 Adapter rings for flange 58
- ADAKIT65 Adapter rings for flange 65
- ADAKIT66 Adapter rings for flange 66
- Roller SWF-U (360° rotating); refer to SWF 10749
- Cable extension SWF-Vx (x = length in meter), refer to SWF 11027
- External set of brushes SWF-BÜVo for applications in dusty environment, refer to 11195
- SWF-DRUVO Attachment for compressed air. Recommended in applications with saw mills - for example, refer to SWF 11173

For use under aggressive ambient conditions, e.g. in maritime climate, the converters can be supplied with a protective anodised hard coating.

Drawing

Dimensions in mm



Models	5 m	10 m	15 m	20 m	25 m	30 m
A	141.7	187	256	301	370	415
B	44.3	67.1	89.6	112.1	134.6	157.1
C	77.4	99.9	146.4	168.9	215.4	237.9
D	2 x M 8; 8 deep		6 x M 8; 8 deep			
Mass (kg)	3	4	5.5	6.5	7.5	8.5
V _{max.} *	12 m/s	12 m/s	10 m/s	10 m/s	6 m/s	6 m/s
a _{max.} *	70 m/s ²	60 m/s ²	40 m/s ²	30 m/s ²	25 m/s ²	15 m/s ²

* At 20 °C working temperature.

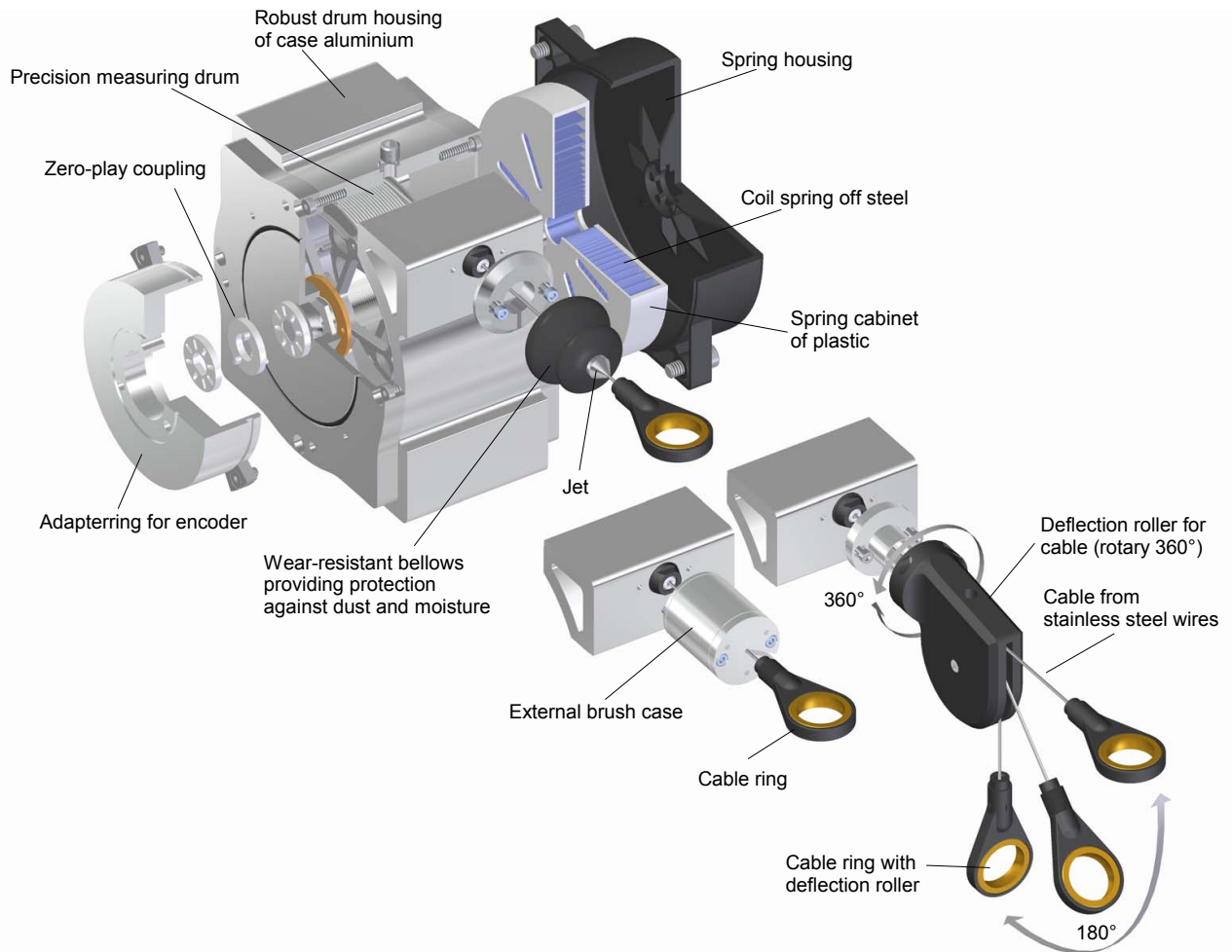
Mounting position

The D threaded holes at two faces permit to adjust the position of the cable exit to suit the requirements.

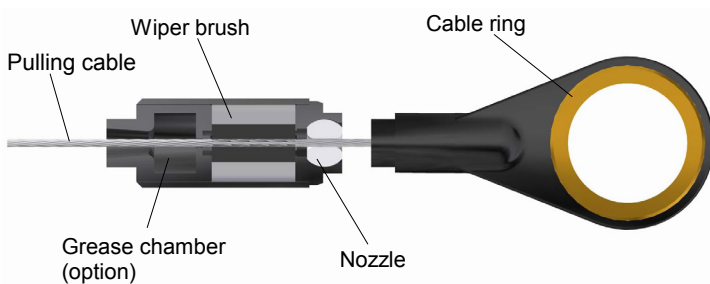
Note: The cable exit should be downwards or sideways. The cable must be extracted rectilinearly with reference to the housing (no lateral deflection admitted).

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Construction



Cable entry



Cable extension SWF-VX (the cable extension SWF-VX is to be ordered separately. The "X" is the cable length in meter. E.g. "SWF-V7" is 7 m long.)

