



- **Very robust construction for mechanical engineering and industrial plant application**
- **For converting linear displacements of up to 3 m into a rotary movement**
- **For mounting onto an absolute or incremental encoder**
- **Compact design**
- **Easy to install and to use**
- **Protection class IP65 (IP54)**

KEY INFORMATION OVERVIEW

DESIGN & FUNCTION

The linear movement of a flexible steel cable, which can have a length of up to 3 metres, 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 cable entry is equipped with a nozzle with brush (brush chamber) to protect against dust ingress. In addition, a bellows for protection against water ingress or a deflection roller can be provided as an option.

FEATURES AND INTERFACES OF ENCODERS

The cable converter is supplied with or without encoder. Generally encoders and converters are supplied as one unit.

Upon request both items are also available as separate units.

Suitable for mounting on the SWH draw-wire displacement transducer are T-series encoders with digital, incremental or analogue interfaces, C-series and K-series as well as the DAF model series with analog interface.

Preferably, encoders with TWK flange designs 58 are used. Encoders with other mounting flanges can be mounted on request.

TECHNICAL DATA

MECHANICAL DATA

Measuring ranges	1, 2 or 3 m
Circumference of cable drum	200 mm ¹⁾
Mechanical tolerance	± 0.05 % (related to actual measuring value)
Permissible speed of cable	max. 8.0 m/s (at 20 °C temperature)
Permissible acceleration of cable	max. 40 m/s ² (at 20 °C temperature)
Force required to draw out the cable (start / end)	15 N max. / 30 N max.
Cable material	stainless steel 1.4401, highly flexible steel wires (7x19 = 133 wires)
Cable diameter	1.3 mm
Live span of cable and spring drive	≥ 10 x 10 ⁶ cable strokes
Housing material	anodized aluminium
Protection grades	housing IP65, cable entry IP54
Temperature range	-20 °C to +70 °C (-30 °C optional)
Mass	1.1 kg (1m), 1.25 kg (2 m), 1.45 kg (3 m)

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

ORDER CODE FORMAT

SWH	2	B -	01	STANDARD VERSION
SWH	Cable type displacement converter SWH			
2	Measuring range	1 2 3		1 m 2 m 3 m
B	Accessories (options)	B U		Bellows at cable entry Deflection roller
01	Electrical and/or mechanical variants*	01		Basic version for flange model 58 (other versions on request)

ACCESSORIES (TO BE ORDERED SEPARATELY)

BELLOWS

Bellows for cable entry (both items necessary)

- SWF-BALG**
- SWH-BAFLA**

DEFLECTION ROLLER

360° deflection roller for cable (both items necessary)

- SWF-U** refer to [SWF10749](#)
- SWH-UFLA**

BRUSH CHAMBER

External brush chamber for very dusty environment (both items necessary)

- SWF-BÜVO** refer to [SWF11195](#)
- SWH-BÜVO-RING**

CABLE

Cable extension (X = length of extension in metres, decimal number possible)

- SWF-V-X-01** refer to [SWF11027](#)

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

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

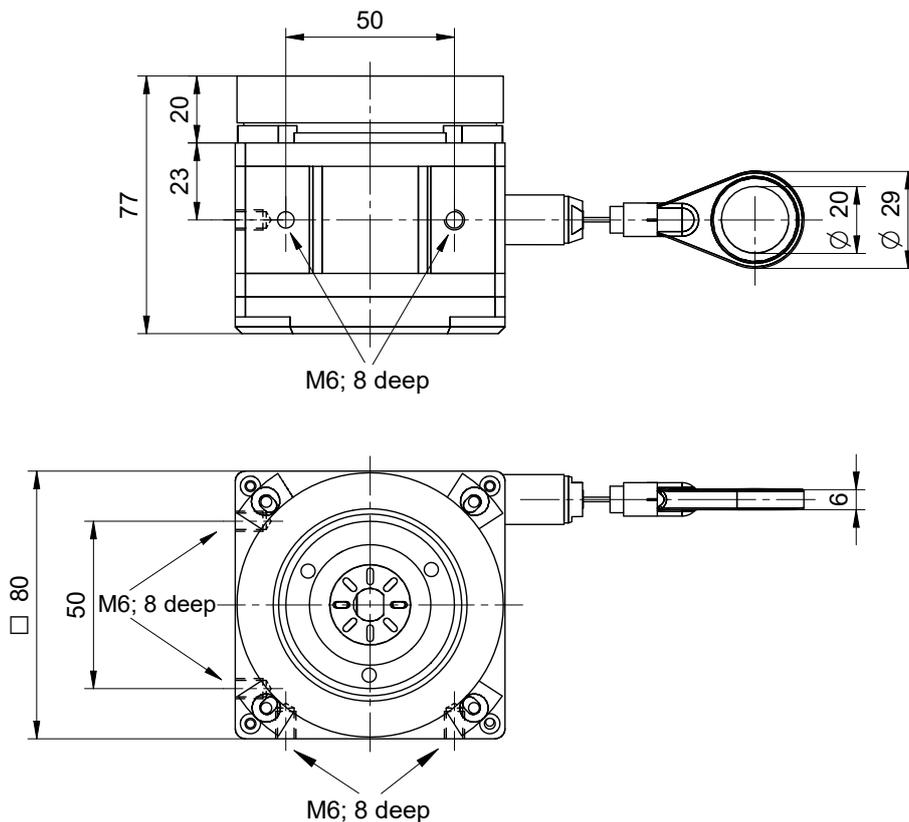
DOCUMENTATION
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The following documents can be found in the Internet under www.twk.de/en in the documentation area, model SWH.

Data sheet	SWF10783
CE Declaration of Conformity	ZE12467
UKCA Declaration of Conformity	ZE16569
Reach compliant	QS15286
RoHS compliant	QS13284

INSTALLATION DRAWINGS
MODEL SWH 1 METER WITH BRUSH CHAMBER (STANDARD)

Dimensions in mm


MOUNTING POSITION

The threaded holes (M6) at two faces permit to adjust the position of the cable exit to suit the requirements.

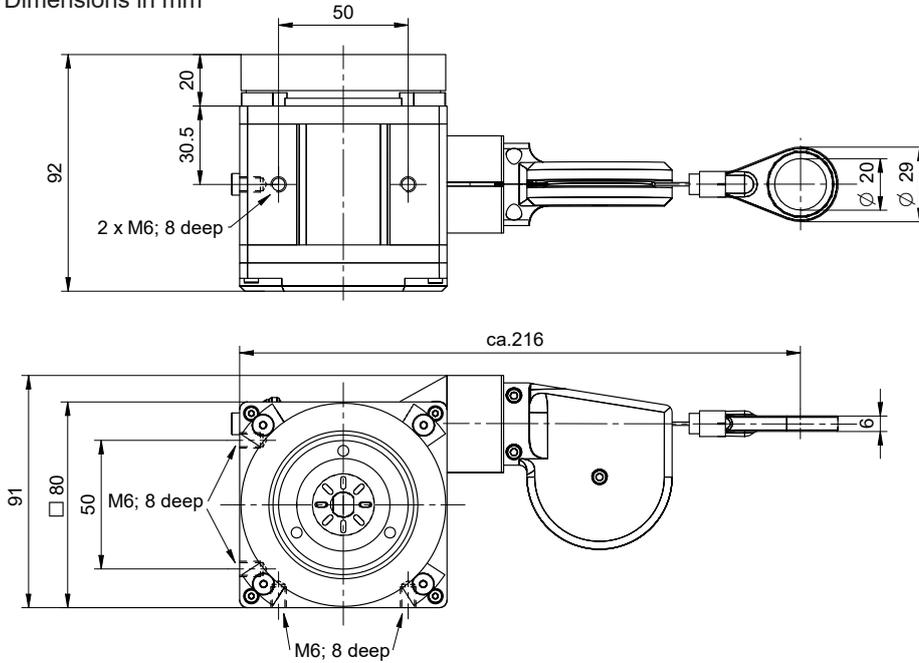
NOTE

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

INSTALLATION DRAWINGS

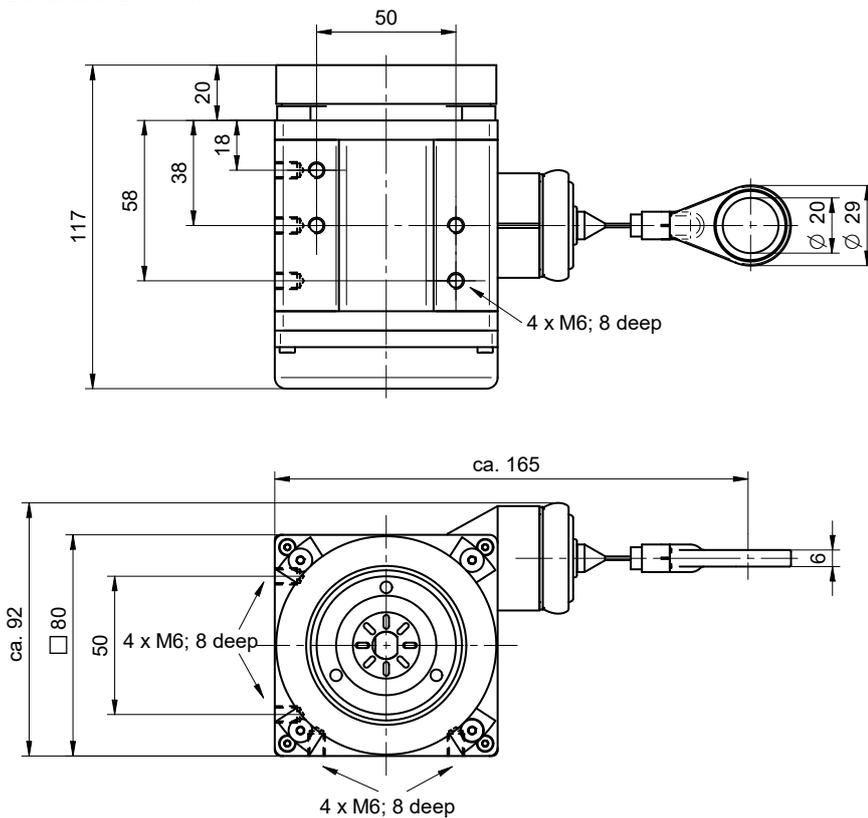
MODEL SWH2U-01 (2 METRES WITH DEFLECTION ROLLER)

Dimensions in mm



MODEL SWH3B-01 (3 METRES WITH BELLOWS)

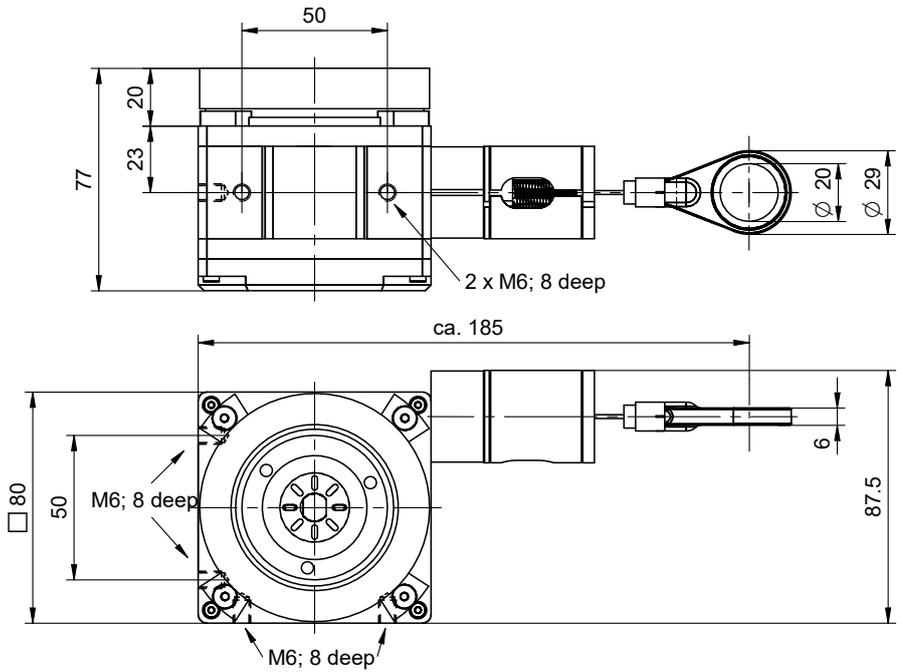
Dimensions in mm



INSTALLATION DRAWINGS

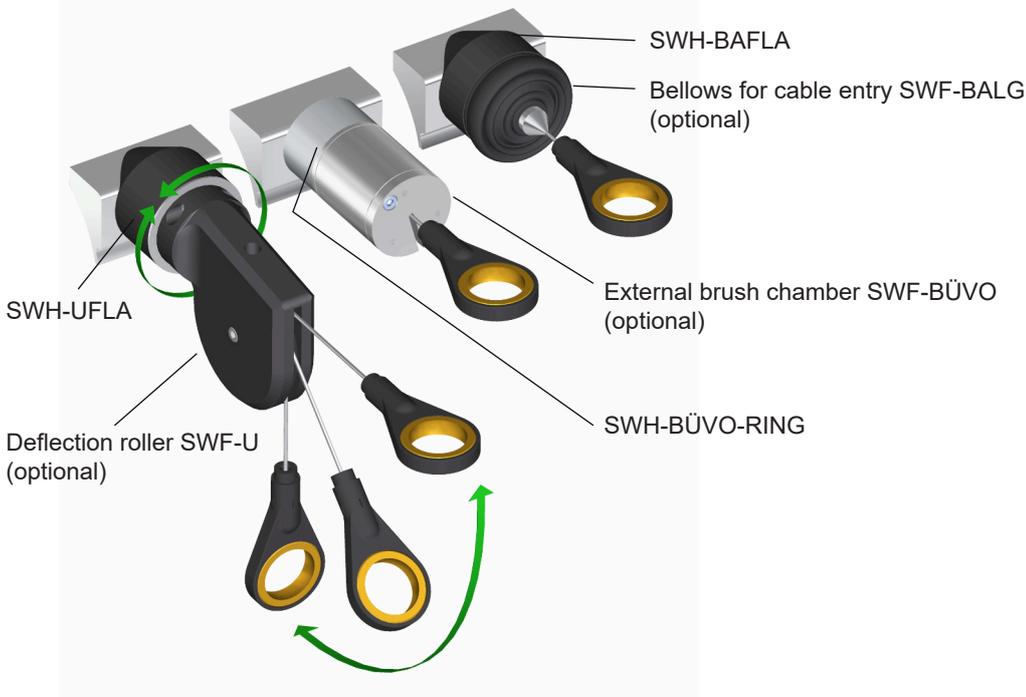
MODEL SWH1BÜ-01 (1 METER WITH EXTERNAL BRUSH CHAMBER)

Dimensions in mm

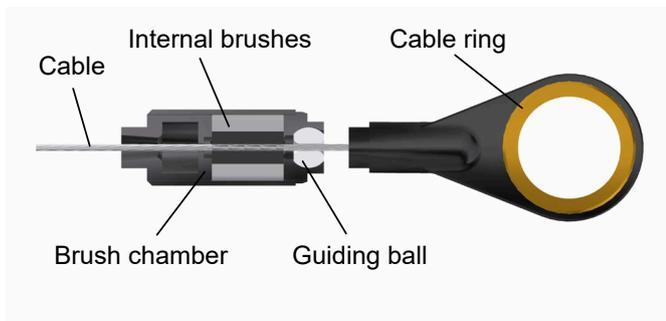


INSTALLATION DRAWINGS OF ACCESSORIES

DEFLECTION ROLLER / EXTERNAL BRUSH CHAMBER / BELLOWS FOR CABLE ENTRY



CABLE ENTRY - STANDARD VERSION



CABLE EXTENTION SWF-V-X-01

The cable extension SWF-V-X-01 is to be ordered separately. The "X" is the cable extension in metres. E.g. "SWF-V-7-01" extends the cable by 7 metres (measured at the outside lying inner edges of the snap hook and the round eyelet).



Dimensions in mm

