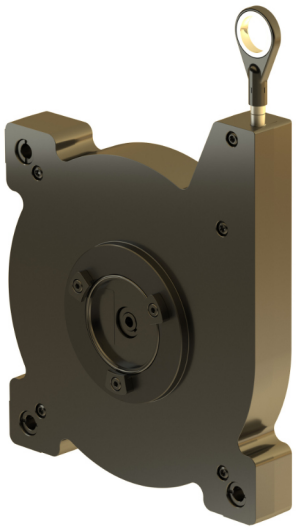
SUPREME SENSORING

Cable-type displacement converter Model SWR

Document no.:
SWR 17089BE
23.03.2026



- **For converting linear displacements of up to 10 m into a rotary movement**
- **For mounting onto an absolute or incremental encoder**
- **Compact design: shaft of the encoder extends into the cable converter**
- **Easy to install and to use**
- **Protection class IP50 (with mounted encoder)**

KEY INFORMATION OVERVIEW

DESIGN & FUNCTION

The linear movement of a flexible steel cable, which can have a length of up to 10 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 cable is wound up precisely and reproducibly wrap for wrap in the helical groove of the drum.

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 SWR draw-wire displacement transducer are T-series encoders with digital, incremental or analogue interfaces.

Preferably, TWK encoders with synchro flange 58 with a shaft (Ø 10 mm) with nut and feather key (TXX58-SP) are used. A shaft adapter for encoders with synchro flange and diameter 6 mm (TXX58-S) is delievered with each device. Encoders with other mounting flanges can be mounted on request.

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TECHNICAL DATA

MECHANICAL DATA

Measuring range . . . . . 3 m, 5 m, 10 m
Circumference of cable drum . . . . . see table below
Mechanical tolerance . . . . . see table below
Maximum permissible speed of cable . . . . . 4 m/s
Maximum permissible acceleration of cable . . . . . see table below
Maximum force required to draw out the cable (start / end) . . . . . see table below
Cable material . . . . . stainless steel 1.4401
Cable diameter . . . . . 0.55 mm
Live span of cable and spring drive . . . . . ≥ 10^6 cable strokes
Housing material . . . . . plastic, black painted
Protection grade . . . . . housing IP50, cable entry IP40
Temperature range . . . . . -30 °C to +70 °C
Mass . . . . . see table below

Measuring stroke	**3 m**	**5 m**	**10 m**
Circumference	230 mm	385 mm	555 mm
Mechanical tolerance	± 0.1 %	± 0.1 %	± 0.06 %
Permissible acceleration of cable $a_{max.}$	3 m/s²	3 m/s²	4 m/s²
Force required to draw out the cable at the start $F_{max.}$	4.5 N	4.5 N	9 N
Force required to draw out the cable at the end $F_{max.}$	7 N	7 N	12 N
Mass	0.9 kg	1.1 kg	1.9 kg

ORDER CODE FORMAT

SWR	**10**	**- 01**	STANDARD VERSION

SWR	Cable type displacement converter SWR		
10	Measuring range	3	3 m
		5	5 m
		10	10 m
01	Electrical and/or mechanical variants*	01	Basic version for synchro flange model 58 with shaft 10 mm with nut and feather key TXX58-SP or with shaft adapter for model 58 with shaft 6 mm TXX58-S (other versions on request)

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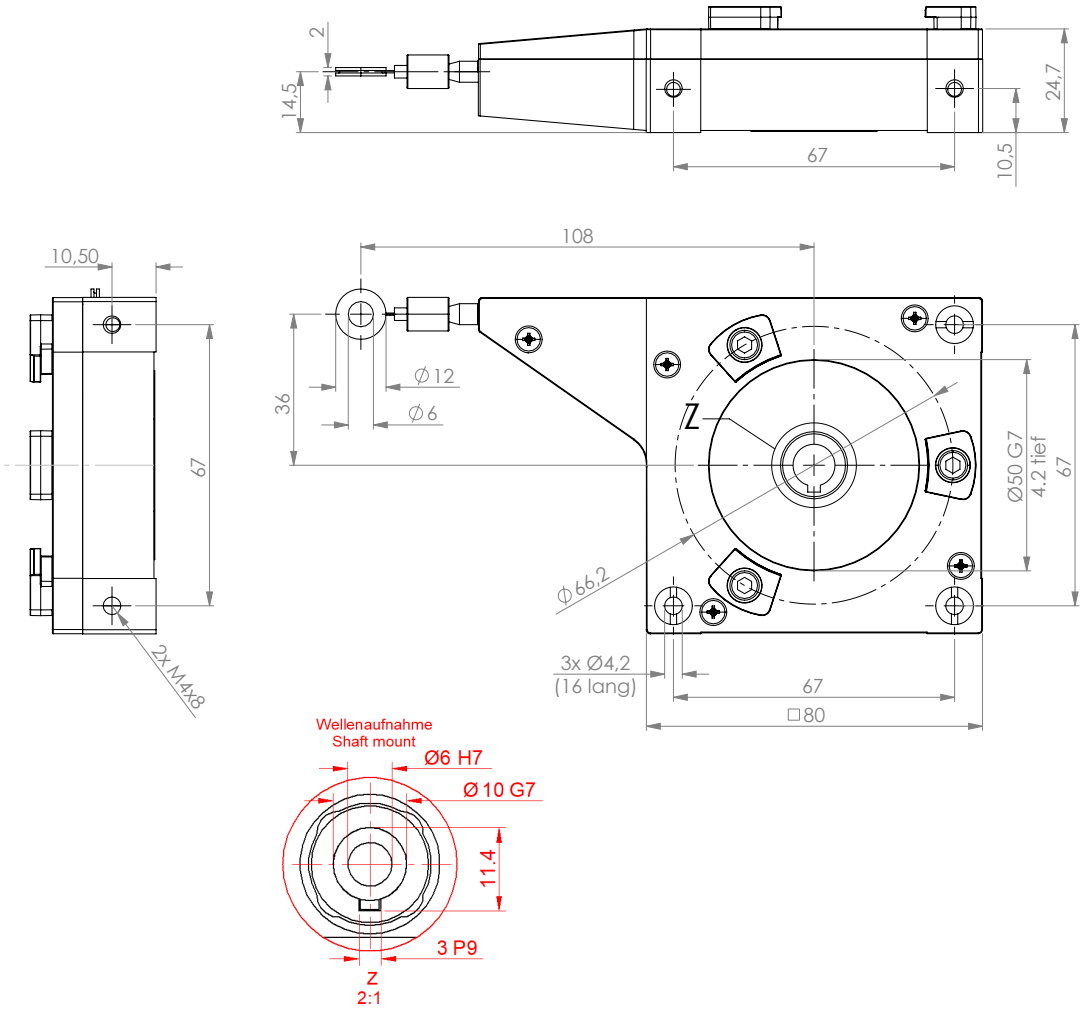
The following documents can be found in the Internet under www.twk.de/en in the documentation area, model SWR.

Data sheet SWR17089
CE Declaration of Conformity ZE12467
UKCA Declaration of Conformity ZE16569
Reach compliant QS15286
RoHS compliant QS13284
POP Declaration of Conformity QS17238

INSTALLATION DRAWINGS

MODEL SWR3-01 (3 METRES)

Dimensions in mm



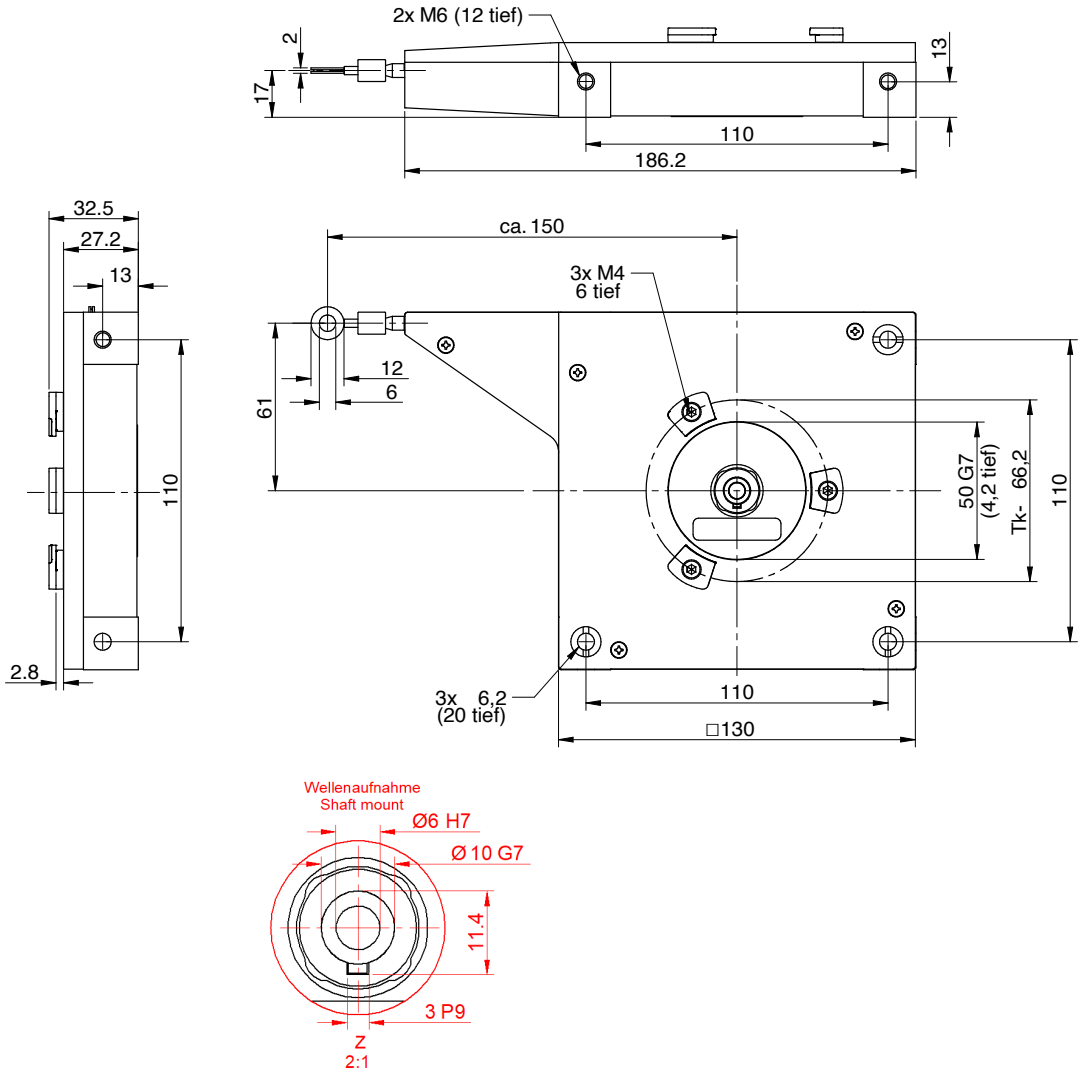
NOTE

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 SWR5-01 (5 METRES)

Dimensions in mm



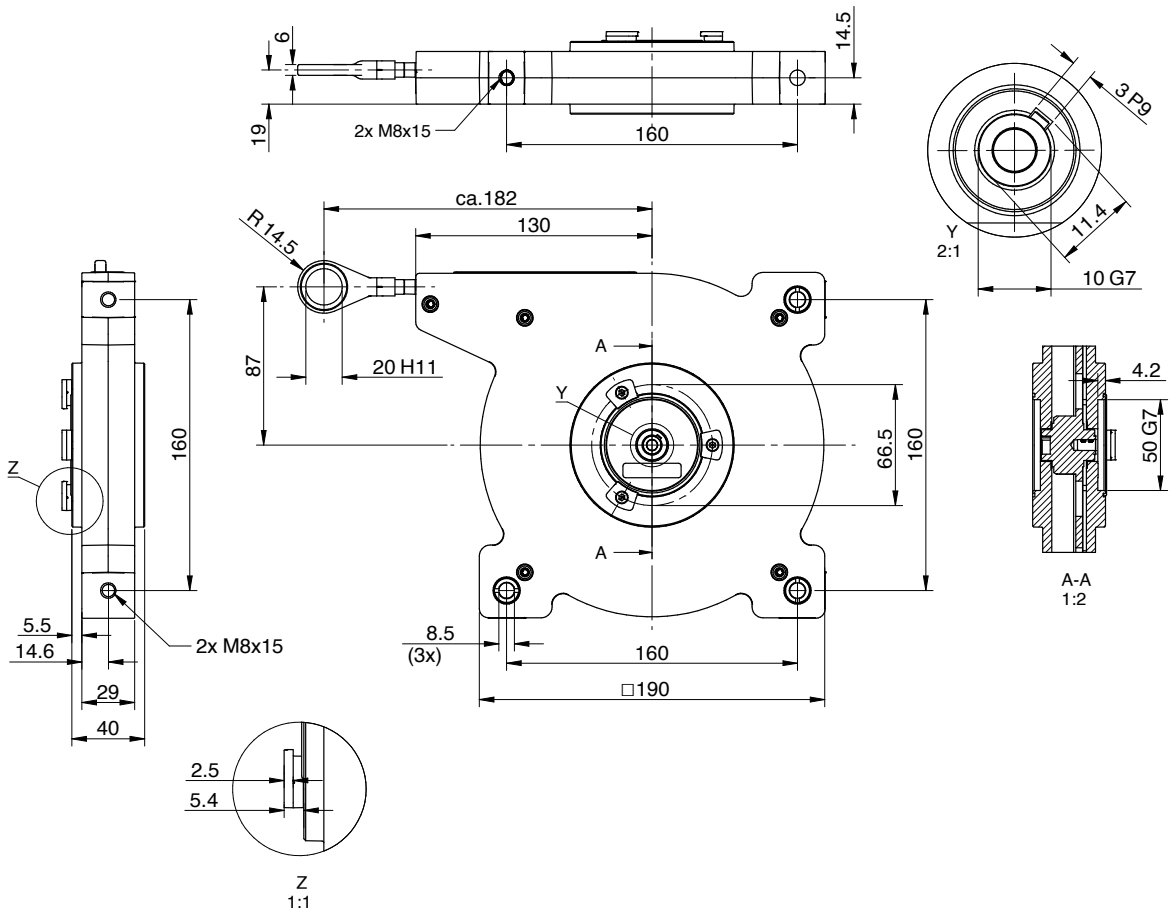
NOTE

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 SWR10-01 (10 METRES)

Dimensions in mm



NOTE

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