

- **Robust construction**
- **For measuring linear displacements of 1 or 2 metres**
- **Integrated output signal generation (no additional rotary encoder necessary):**
 - ☐ **A: 0 to 20 mA**
 - ☐ **B: 4 to 20 mA**
 - ☐ **P: Potentiometric output (5 kΩ)**
- **Compact design**
- **Easy to install and to use**
- **Protection class IP54**

ANALOGUE

**POTENTIAL-
METRIC**

KEY INFORMATION OVERVIEW

DESIGN & FUNCTION

The linear movement of a flexible steel cable, with a length of up to 2 m is converted into an angular movement with the aid of a measuring drum. The measuring drum is coupled via a gear to a conductive plastic potentiometer.

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 contains a brush to remove dust.

FEATURES INTERFACES

The cable converter is supplied with an internal signal generator based on a conductive plastic potentiometer. An electronic circuit can be integrated or the potentiometer can be used directly.

The output signal can be chosen via the order code number:

A: 0 to 20 mA, B: 4 to 20 mA or P: using the conductive plastic potentiometer directly.

TECHNICAL DATA

ELECTRICAL DATA

VERSION A AND B WITH ELECTRONIC CIRCUIT

Current	80 mA max.
Supply voltage V_S	20 - 30 V (polarity safe)
Signal output	A: 0 to 20 mA B: 4 to 20 mA
Linearity	$\pm 0.2 \%$

VERSION P WITHOUT ELECTRONIC CIRCUIT

Resistance	5 k Ω $\pm 10 \%$
Power dissipation	1.5 W max.
Linearity	$\pm 0.2 \%$

MECHANICAL DATA

Measuring range	1 m or 2 m
Force of spring	~ 4 N at start
Spring constant	~ 2.5 N/m
Diameter of cable	0.55 mm
Thermal coefficient	0.01 mm/mK
Speed	10 m/s max.
Acceleration	70 m/s ² max.
Mass	~ 0.6 kg

ENVIRONMENTAL DATA

Temperature range	-20 °C to +50 °C
Protection class	IP 54
Shock resistancy	~ 250 m/s ²
Life expectancy	2 Mio. cycles typ.

MATERIALS

Housing material	anodized aluminium
Cable entry	stainless steel 1.4105
Cap	durethan black
Spring housing	durethan black
Cable	stainless steel 1.4401

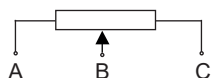
ELECTRICAL CONNECTION - PINOUT

CONNECTIONS FOR VERSION A OR B

Contact A +24 VDC V_S - power supply
Contact B 0V - power supply
Contact C 0(4) to 20 mA - output (0 V = reference)
Contact D not connected
Contact E Screening not connected
Contact F not connected

See [page 4](#) for the pin assignment.

CONNECTIONS FOR VERSION P



ORDER CODE FORMAT

SWP **2 -** **2000 -** **A** **01** **STANDARD VERSION**

SWP	Cable-type displacement converter SWP		
2	Maximum measuring range	1 2	Cable length 1 m Cable length 2 m
	Calibrated measuring range	15 ... 2000	Range in mm to which the output signal shall be calibrated to (Calibrated measuring range ≤ Maximum measuring range)
A	Version	A	0 to 20 mA
		B	4 to 20 mA
		P	Potentiometric output (5 kΩ)
01	Electrical and/or mechanical variants*	01	Standard

ACCESSORIES (TO BE ORDERED SEPARATELY)

MATING CONNECTORS

Order number,	Type	Design & wire fixing	Housing-material	Cable ø & wire size	IP grade
STR6GS20 —	Cannon 6-pole, female	Straight, soldering	Zinc die-cast nickel-plated	6 – 8 mm ≤ 1.5 mm ²	IP67

DOCUMENTATION

DOCUMENTATION

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

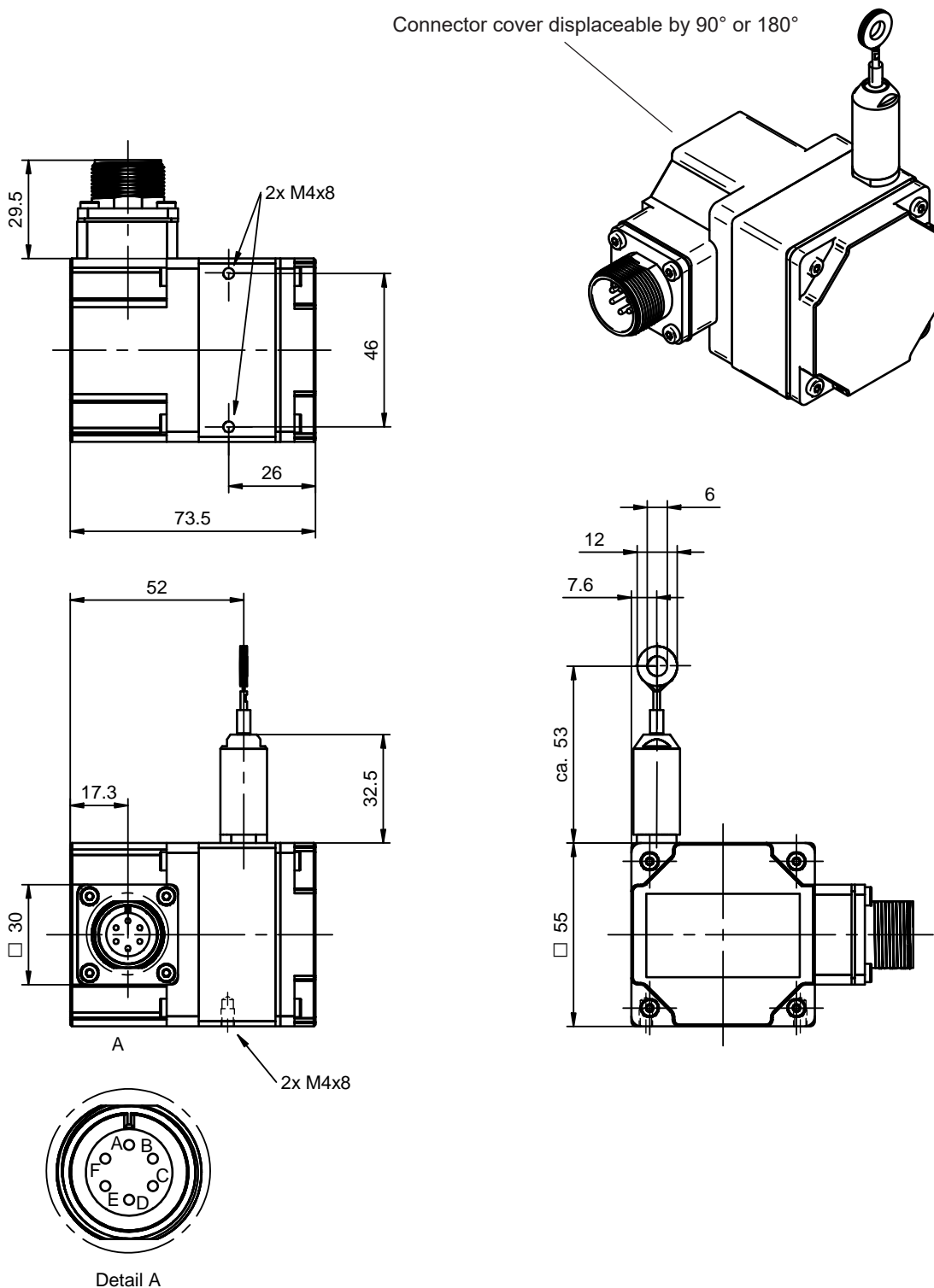
Data sheet [SWP11201](#)
Declaration of Conformity CE [ZE12467](#)
Declaration of Conformity UKCA [ZE16569](#)
Reach compliant [QS15286](#)
RoHS compliant [QS13284](#)

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

INSTALLATION DRAWINGS

MODEL SWP1 (1 M MAXIMUM MEASURING RANGE)

Dimensions in mm



INSTALLATION DRAWINGS

MODEL SWP2 (2 M MAXIMUM MEASURING RANGE)

Dimensions in mm

