

# SD - 081 / 083 / 084

## Non-Contacting Displacement Sensors

Measuring displacement 3,5 mm

### 1 Application

The non-contacting displacement sensor *is part of the Brüel & Kjær Vibro displacement measuring chain*, comprising:

- Non-contacting displacement sensor
- Extension cable
- Oscillator

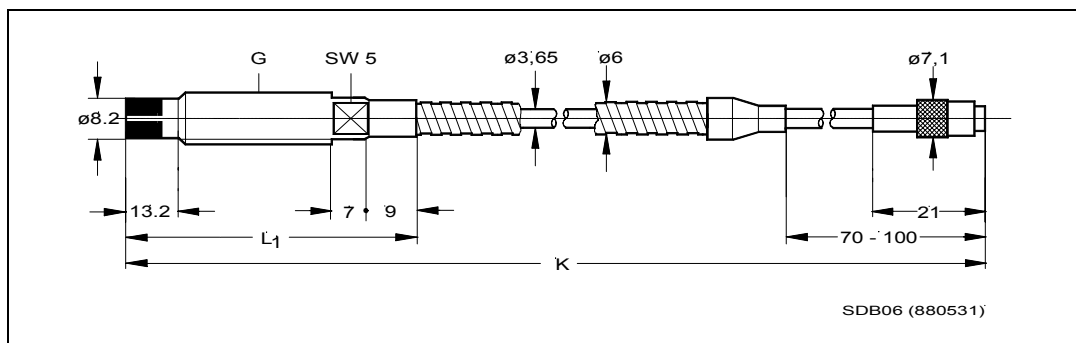
The displacement measuring chain serves for non-contacting displacement measurement according to the eddy-current measuring principle.

### 2 Employment range

The vibration sensor may be used in hazardous areas applications when used in conjunction with a compatible oscillator type OD-081 and a corresponding protective circuit (Zener Barrier).

(See data sheet of oscillator type OD-081).

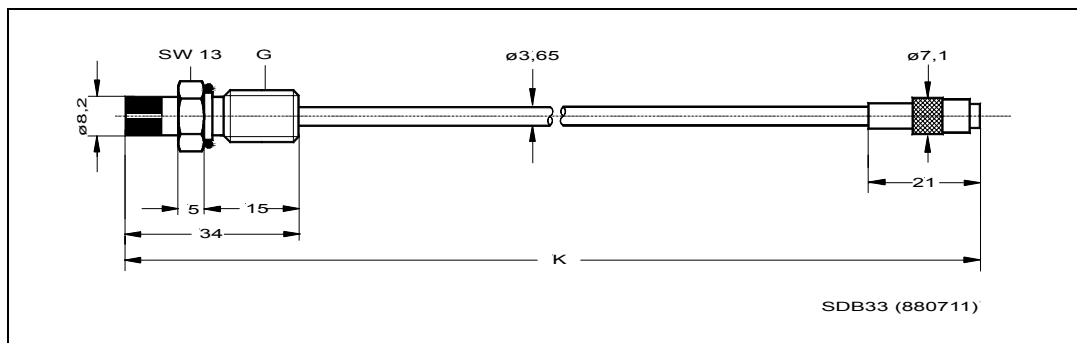
#### 2.1 Dimensioned drawing SD-081



##### 2.1.1 Variable dimensions

Thread G	M10 x 1 - 6 g 3/8" - 24 UNF -2 A
Sensor length L <sub>1</sub>	45 mm ... max. 255 mm
Cable length K	0.5 m ± 0.1 m ... + 0.3 m 1.0 m ± 0.2 m

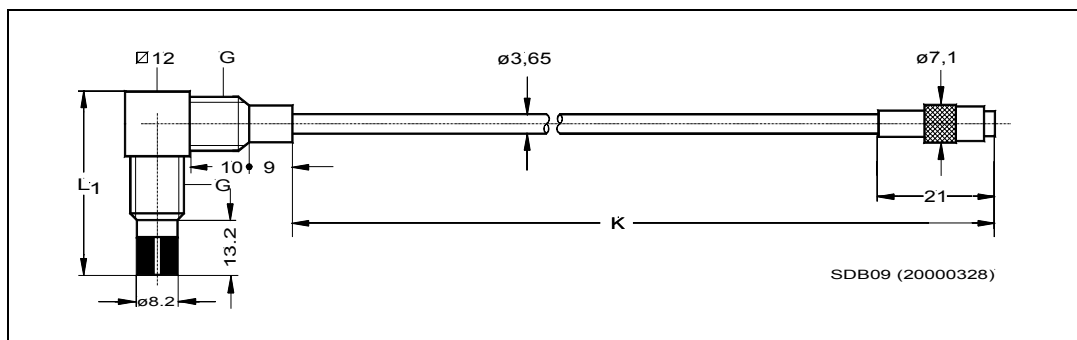
## 2.2 Dimensioned drawing SD-083



### 2.2.1 Variable dimensions

Thread G	M10 x 1 - 6 g 3/8" - 24 UNF -2 A
Sensor length $L_1$	34 mm
Cable length K	0.5 m $\pm$ 0.1 m ... + 0.3 m 1.0 m $\pm$ 0.2 m

## 2.3 Dimensioned drawing SD-084



### 2.3.1 Variable dimensions

Thread G	M10 x 1 - 6 g 3/8" - 24 UNF -2 A
Sensor length $L_1$	34 mm ... max. 150 mm
Cable length K	0.5 m $\pm$ 0.1 m ... + 0.3 m 1.0 m $\pm$ 0.2 m

### 3 Technical Data

Standards and directives	API 670 and DIN 45670
Measured variable	shaft relative vibration shaft relative displacement
Measuring principle	eddy-current principle
Working frequency range	0 ... 10 000 Hz
Displacement measuring range	1.2 ... 4.7 mm
Recommended working range	2.9 ... 3.4 mm correspond to a Gap voltage of -8 ... -10 V
Material of sensor tip	epoxy resin
Material of sensor sleeve	SD-081 Mat.-No. 1.4541 SD-083 Mat.-No. 1.4305 SD-084 Mat.-No. 1.4541 Thread bushing 1.4301 Housing
Working temperature range	-30 °C ... + 180 °C
Storage temperature range	-55 °C ... + 180 °C
Sensor suitable for oscillator	type OD - 081

#### EMC

EMC-relevant data for the entire measuring chain consisting of displacement sensor fitting oscillator OD-... and extension cable EC-... are given in the data sheets of the oscillator.

#### Note:

*The housing of sensor is potential free.*

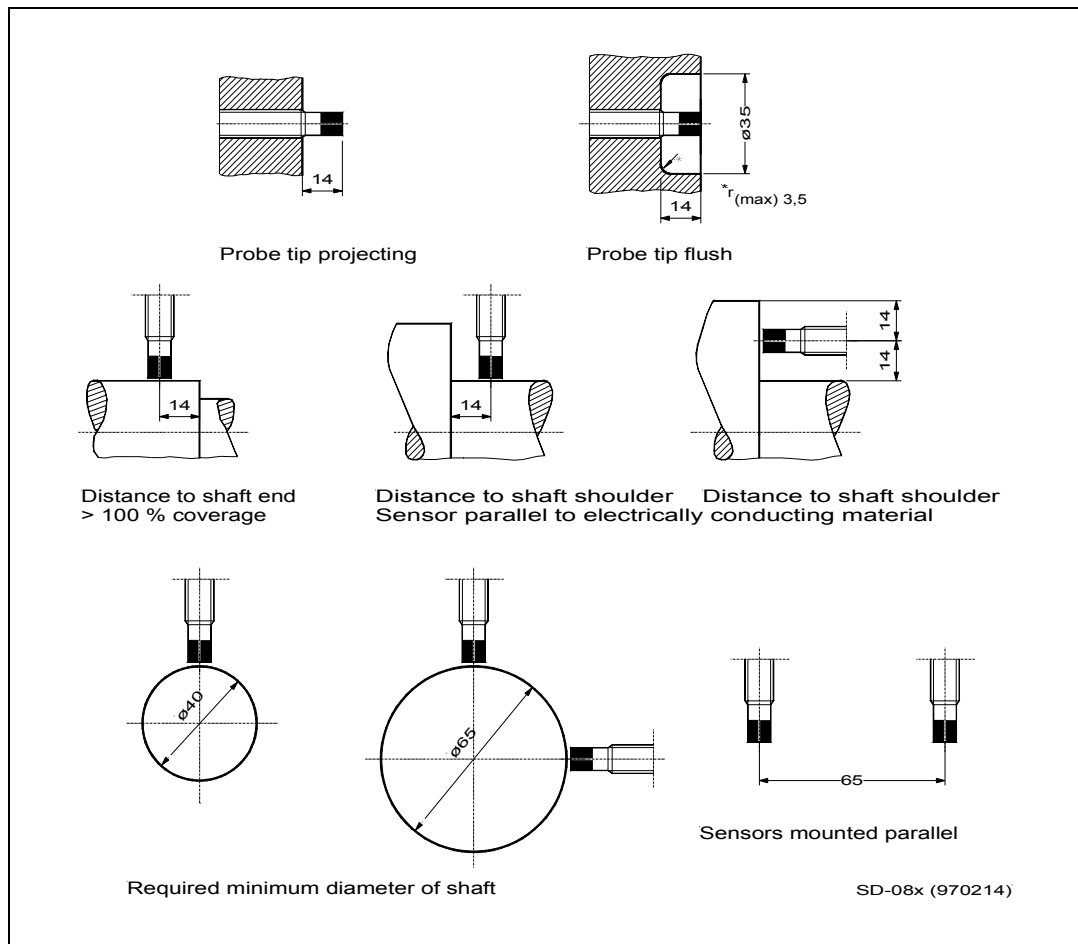
### 4 Mounting Instructions

The sensor must be installed according to the "Installation instructions for displacement measuring chains".

Sensors for non-contacting displacement measurement are preferably to be fastened to such machine parts which do not falsify the measuring result by natural frequencies.

## 4.1 Free space and minimum distances for non-contacting displacement sensors

Non-contacting displacement sensors produce a high-frequency electromagnetic field. If any electrically conductive material apart from the measuring object is within this field, the measuring result will be falsified. Therefore, the following free space and minimum distances must be adhered to during installation of the non-contacting displacement sensors:



***If minimum free spaces and distances cannot be realized by machine design, please contact the manufacturer.***