

Type code (abstract)

SK sensor capacitive, w/o amplifier
 SKF sensor cap., w/o amplifier, flexible
 SK1 sensor capacitive, self-contained
 SV(D) sensor amplifier (dynamic)
 SNG sensor power pack

HT### high temperature use
 TM pulse modulation technique (High noise immune)

/ FS(A) max sensing distance / Fill-level switch (adaptive)

M30 model and/or dimension

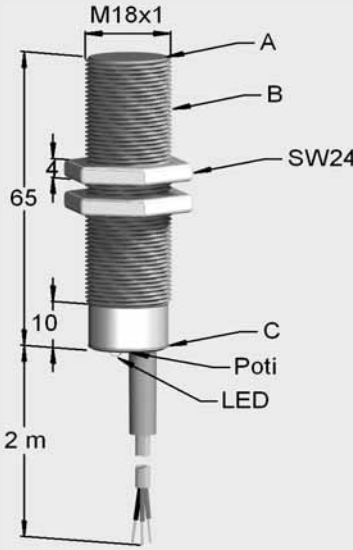
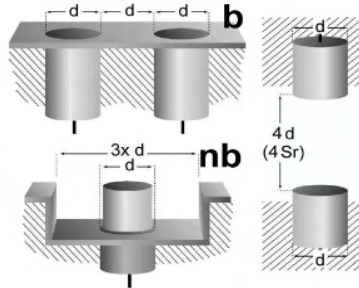
P output stage PNP, NPN, 2-wire AC/DC, X (switchable)

b mounting b=flush nb=non-flush

S S=N.O. Ö=N.C. X=function switchable

(c)PTFE Housing material, e.g. PTFE cPTFE=complete PTFE

1m2-Y2 cable & connector: Y# = connector 1m2 = 1.2m cable length



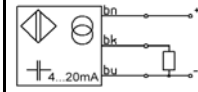
Functional principle

The functional principle behind the capacitive analog position pick-up is similar to that of a capacitive proximity switch. It detects objects which are within its response range without touching them. The function is based on the effect on the electric field in the vicinity of its "active sensor surface". The basic structure of the sensor consists of an oscillator, a demodulator, the linearization network and the controlled current source.



The criteria for an analog evaluation are the material properties, the size of the object involved, and its distance from the "active sensor surface". For objects deviating from the standard target, the maximum working distance is reduced.

Distance Sensor-Object	Display	Meaning of Display
0 mm	red flashing	calibration too low/R _L too high
0 mm	green flashing	calibration okay/R _L too high
0 mm	orange flashing	calibration too high/R _L too high
0 mm	red steady	calibration too low/R _L ?
0 mm	green steady	calibration okay/R _L ?
0 mm	orange steady	calibration too high/R _L ?
>11 mm	orange flashing	calibration?/R _L too high
<11 mm	orange steady	calibration?/R _L okay



Typ / Type	Nr./No.
SK1-A-8-M18-4I20-b	08002

mounting [flush / nonflush]	[b / nb]	b
operating distance	Sd [mm]	0... 8
Hysteresis	H [%Sr]	
frequency of operating cycles	f [Hz]	100
repeat accuracy	R [%Sr]	0,05mm
Operating temperature range	[°C]	10... 55
temperature drift [range]	[%Sr] [°C]	10[10... 55]
protection class (EN 60529)		IP 67
rated insulation voltage	Ui [V]	75 d. c.
material of housing		A: PBT; B: VA; C: PVC
utilisation category		
connection		2m / 3x 0,25mm ² PVC

supply voltage range UB	UB [V]	12... 35
no-load supply current	Io [mA]	17
minimum operational current	Im [mA]	
operational current	Ie [mA]	4... 20
off-state current	Ir [mA]	
voltage drop [50mA/ Ie]	Ud [V]	
time delay before availability	tv [ms]	
Indicator [UB / Output]		• / • Duo-LED
Short circuit- overload-protection		• / •
Reverse polarity Protection		•

Conformity	EMC EEC-direct.	IEC 60947-5-2 : 2000	
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EMC			
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associated equipment			
additional functionality			

Application			
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In actual operation, the optimum calibration to be performed from the rear of the housing over a trimming potentiometer is signalled to the user by the adjacent LED. As a further special feature, this LED also signals if the load impedance at the output is too high or non-existent.

Advantages of the capacitive analog pick-up

The capacitive analog sensor scans objects without contact. This means that the object scanned is not subjected to any mechanical wear and tear. Nor do colours and surface roughness have any negative effect on the measured result. In the case of differing object materials, the output signal deviates from the standard output signal of 4...20 mA, and can be returned by a simple-to-perform user calibration procedure to the standard output signal.

The capacitive analog sensor makes linear evaluation of a position for the first time; as soon as an object is located within the sensor's measuring range, a precise output current is produced.

Typische Anwendungen

- Material selection Non-conductive material-thickness
- Sheet-thickness measurement Height measurement
- Diameter measurement Static and dynamic displacement
- Orbit-tracing Concentricity and eccentricity
- Axial and radial shaft run-out Alignment