

Inductive proximity sensors

XS range, Application

Sensors with analogue output signal 0...10 V ⁽¹⁾

For position, displacement and deformation control/monitoring

Functions

These analogue output proximity sensors are solid-state sensors designed for monitoring displacement. They are not measuring sensors.

They are suitable for use in many sectors, particularly for applications involving:

- deformation and displacement monitoring,
- vibration amplitude and frequency monitoring,
- control of dimensional tolerances,
- position control,
- concentricity or eccentricity monitoring.

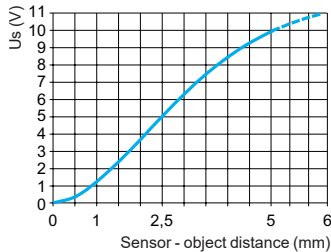
Operating principle

The operating principle of the sensor is that of a damped oscillator. The degree of damping will depend on the distance of an object from the sensing face. The sensor will sense the distance and produce an output current with a value directly proportional to this distance.

Output curves 0...10 V, 3-wire connection

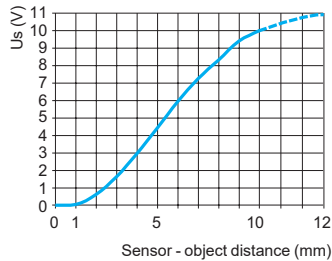
XS9F

$S_n = 1 \dots 5 \text{ mm}$



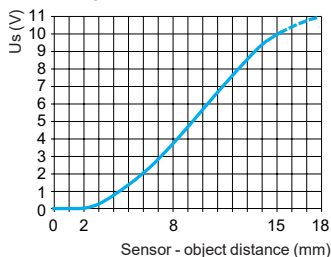
XS9E

$S_n = 1 \dots 10 \text{ mm}$



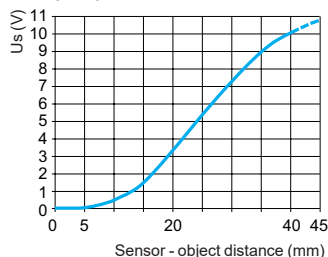
XS9C

$S_n = 2 \dots 15 \text{ mm}$



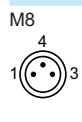
XS9D

$S_n = 5 \dots 40 \text{ mm}$



Wiring schemes

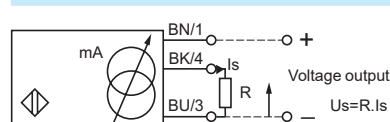
Connector



Pre-cabled

BN: Brown
BU: Blue
BK: Black

3-wire connection



Output current	Load impedance value	Output voltage	Load impedance value	
24 V	0...10 mA	$R \leq 1400 \Omega$	0...10 V	$R = 1000 \Omega$

Note: Ensure a minimum of 5 V between the + (terminal 1) and the sensor output (terminal 4).

⁽¹⁾ Voltage range only obtained with a load impedance of 1000 Ω .