

D1B1A11C

➤ Belt Displacement Sensor

Direction

DS₀

Application

Measurement of belt movement

Measurement specification

Optical

Incremental

Options

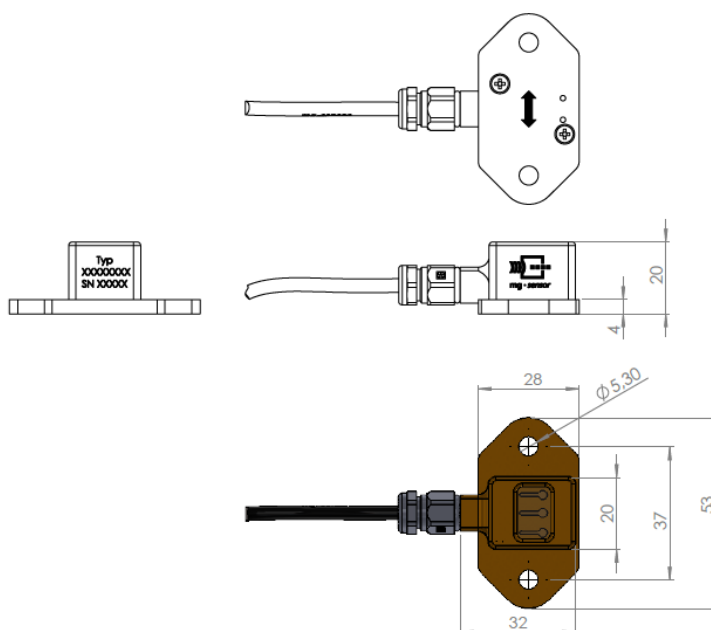
ID-Module integrated in sensor



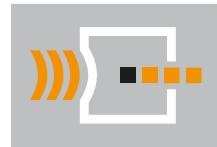
Technical description

A reference tape is detected using optical scanning. The reference tape consists of a high-precision black and white pattern of lines each with width of 1 mm. This is bonded to the belt. If the line pattern moves over the sensor, the increments are recorded and output as voltage directly proportional to the displacement. The distance between reference tape and the sensor may be up to 10 mm.

➤ Dimensions



Technical Data Sheet



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Technical specification

	Unit	Value
		DS ₀
Measuring range	mm	-1024 to +1024
Calibration range	mm	-250 to +250
Resolution	mm	0.5
Sensitivity ¹⁾	mV/mm	2.42
Output signal ^{1), 2)}	V	±2.46
Offset ^{1), 4)}	mV/V	≤ 0.1
Amplitude non-linearity ³⁾	%	≤ 1.0
Distance to reference tape	mm	≤ 10
Detection rate	m/s	60
Supply voltage	VDC	10–18
Insulation resistance	GΩ	> 5.0
Temperature range	°C	-30...+70
Weight (approximate)	g	22

All values measured at 10 V supply voltage at 23 °C.

¹⁾ Typical value

²⁾ At nominal load

³⁾ Relative nominal range

⁴⁾ Related to the offset at 5 V



Warning – Laser Radiation!

This sensor works with laser radiation in the wavelength range of 850 nm! Only operate the sensor with suitable protective equipment against the emitted laser radiation. Never look directly into the laser exit opening while the sensor is connected!