Front view length sensor MLS-8
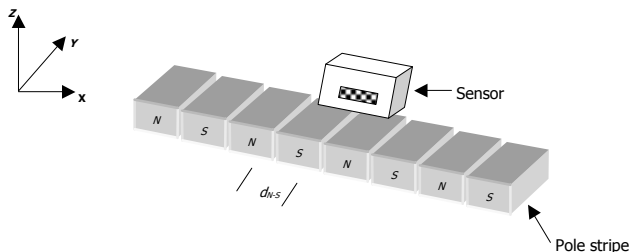
Advantages

- high resolution
- low noise
- low current consumption
- low interference field sensitivity

Applications

- Length measurement for direction identification
- Angle measurement with pole wheels

Application principle

Description

The magnetoresistive strong field sensor MLS-8 consists of two against each other shifted Wheatstone bridges. They are assembled on a ceramic hybrid.
The resistance position at the bridge is fixed by a magnetic scale with a period length (pole distance N-S) of 2.5 mm.
The pole stripe with his changing magnetization is guided along the sensor in a distance of z<1.5 mm. Thereby occur output signals with a sine and cosine characteristic. By sine/cosine analysis precise distances in between the pole stripe can be detected. The reachable measurement precision depends on the distance between sensor and pole stripe.

Pin out
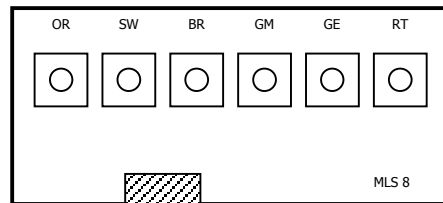
Pin	Mean	Typ
OR	Output signal	V_{cos2+}
SW	Supply voltage	V_B
BR	Ground	GND
GN	Output signal	V_{sin2-}
GE	Output signal	V_{sin1+}
RT	Output signal	V_{cos1+}

Specification

Parameter	*Condition*	*Symbol*	*Min*	*Typ*	*Max*	*Unit*
Supply voltage		U_{cc}		5	10	V
Sensor resistance		R_s	30	40	50	$k\Omega$
Pole distance		d_{N-S}		2.5		mm
Signal amplitude	by H_{appl}=32kA/m, T=RT	$\Delta U/U_{cc}$	8			mV/V
Offset voltage		$|U_{off}/U_{cc}|$			1	mV/V
Applied magnetic field	Magnet field distance z<1.5mm	H_{appl}	10			kA/m
Temperature coefficient of amplitude		TCSV	-0.37	-0.33	-0.29	%/K
Temperature coefficient of resistance		TCBR	0.29	0.33	0.37	%/K
Operating temperature		T_{op}	-40		+85	°C
Storage temperature		$T_{storage}$	-55		+125	°C
Dimension		W x D x L		17.8 x 8.1 x 2.2		mm