

**Type HDD-12aq50b0.4-55NK1 Ref. No. 13.26-58**

Sensing distance 0.4 mm, flush mountable, DC 3-pole, push-pull output (pos. and neg. switching), short circuit protected.

**Application**

- registering direction
- double geometric resolution
- high switching frequency (up to 12 kHz)
- high geometric resolution
- registering approaching or passing soft iron edges.

**Notes**

- Observe mounting instructions concerning material, and distance
- Housing must be mounted precisely perpendicular to the edges of the teeth; the actuation point is not on the central axis of the hall element switch
- Keep active surface free from metal filings
- Avoid operation in the vicinity of strong magnetic fields
- Distance between connecting leads and control lines to inductive loads must be  $\geq 30$  cm
- Leads of lengths  $> 10$  m must be shielded cables. Shield must be connected to L - (0V) at device end only
- Hall element switches are not suitable for detecting grooves, objects approaching along the axis, nor objects of materials which cannot be magnetized.

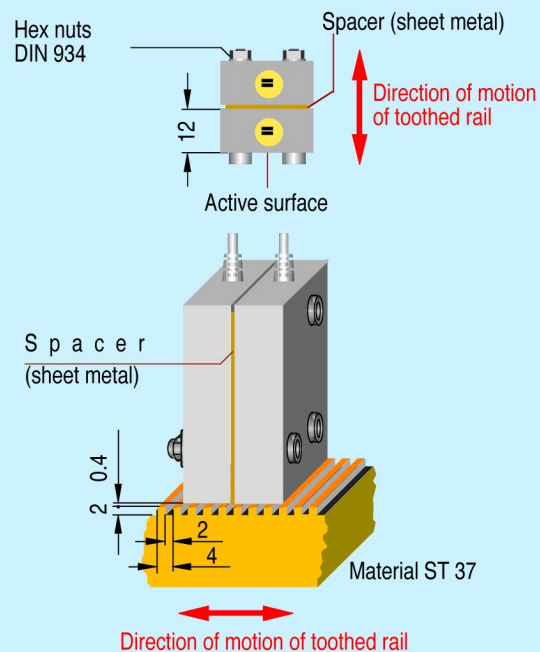
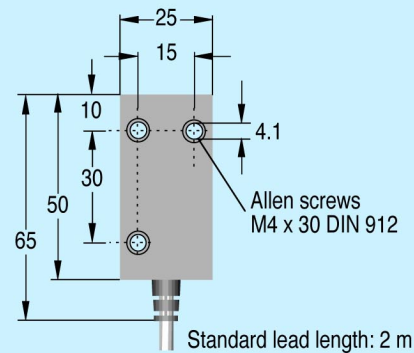
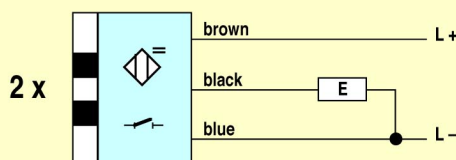
**Technical data**

(with  $U = 24$  V,  $T \approx 23$  °C,  $I = 0$ , unless otherwise indicated)

<b>Supply voltage U</b>	<b>10 ... 24 ... 30 VDC</b>
Max. permissible residual ripple	10 %
Load current	$\leq 25$ mA
Idle current	$\leq 25$ mA
Voltage drop (with $I = 0$ )	$\leq 1.5$ V
Voltage drop (with $I = 25$ mA)	$\leq 10$ V
Switching frequency	0 ... 12 kHz
Protection against reverse polarity	built in
Protection against interference voltages	built in
Switch-on transient suppression	built in
Short circuit protection	$\leq 20$ s
Ambient temperature range	- 25 ... + 75 °C
Switching distance s using toothed rails as specified in mounting instructions	0.4 mm
Duty cycle v	0.5 (1 $\pm$ 10 %)
Phase shift $\phi$	90° (1 $\pm$ 10 %)
Max. cable length	$\leq 150$ m
Shape, dimensions	cube, 50 x 25 x 12 mm
Housing material	aluminium
Connection type	PVC cable
Protection type	IP 67
Weight	160 g

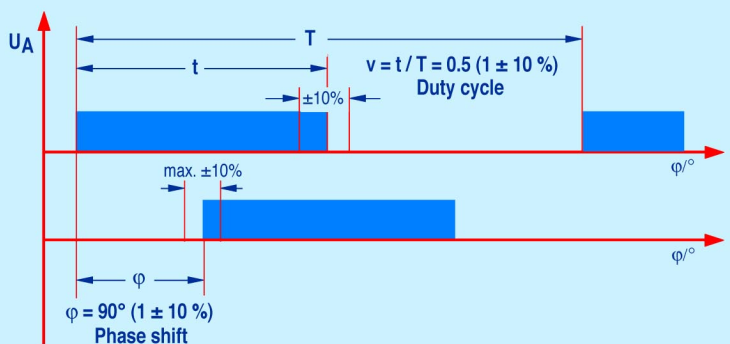
**Connection diagram**

DC 3-pole, guide for connecting leads



**Pulse diagram**

Sensing distance 0.4 mm using toothed rail and direction of motion specified in mounting instructions



Duty cycle v and phase shift  $\phi$  of output signal depend directly on

- direction of motion of toothed rail
- distance between toothed rail and sensor
- tooth length to space length ratio

Deviation from the indicated positions may result in alteration of the specified characteristics.