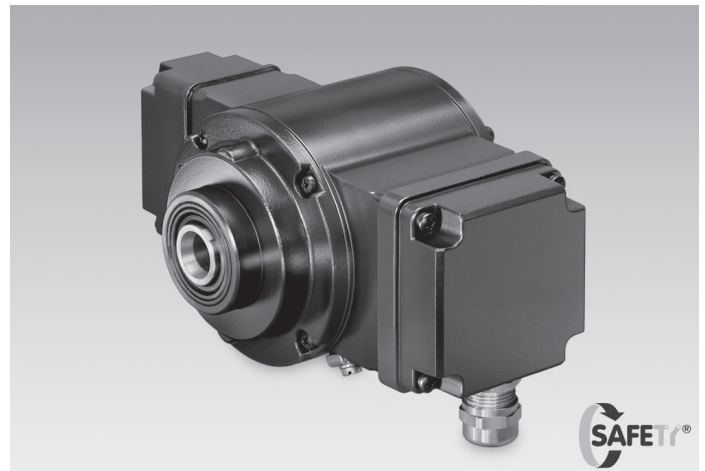


## HOG 10 + DSL

Encoder with integrated programmable, digital speed switch  
Blind hollow shaft  $\varnothing 16$  mm 512...2500 pulses per revolution

### Overview

- Freely programmable on and off switching speed
- Programming via included software (RS485 interface)
- Logic level HTL or TTL
- 512...2500 pulses per revolution
- Blind hollow shaft  $\varnothing 16$  mm
- DSL.R: 3 outputs speed controlled (independent transistor outputs)
- DSL.E: 2 outputs speed controlled and 1 control output



### Technical data

#### Technical data - electrical ratings

Voltage supply	With DSL.R: 15...30 VDC With DSL.E: 9...30 VDC
Consumption w/o load	$\leq 200$ mA
Shaft insulation	Suitable up to 2.8 kV

#### Technical data - electrical ratings (encoder)

Pulses per revolution	512 ... 2500
Phase shift	$90^\circ \pm 20^\circ$
Duty cycle	40...60 %
Reference signal	Zero pulse, width $90^\circ$
Output frequency	$\leq 120$ kHz
Output signals	K1, K2, K0 + inverted
Output stages	HTL TTL/RS422
Sensing method	Optical

#### Technical data - electrical ratings (speed switches)

Interface	RS485
Switching accuracy	$\pm 2$ % (or Digit)
Switching outputs	With DSL.R: 3 outputs, speed control With DSL.E: 2 outputs, speed control and 1 control output
Output switching capacity	With DSL.R: 12 VDC; $\leq 40$ mA With DSL.E: 5...230 VAC/VDC; 5...250 mA
Switching delay time	$\leq 40$ ms

#### Technical data - mechanical design

Size (flange)	$\varnothing 105$ mm
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#### Technical data - mechanical design

Shaft type	$\varnothing 16$ mm (blind hollow shaft)
Admitted shaft load	$\leq 450$ N axial $\leq 600$ N radial
Protection DIN EN 60529	IP 66
Speed (n)	$\leq 6000$ rpm
Range of switching speed (ns)	Pulses = 512: $\pm 16$ ...6000 rpm Pulses = 1024: $\pm 8$ ...6000 rpm Pulses = 2048: $\pm 4$ ...3500 rpm Pulses = 2500: $\pm 3$ ...2900 rpm
Operating torque	$\leq 2$ Ncm
Rotor moment of inertia	340 gcm <sup>2</sup>
Material	Housing: aluminium Shaft: stainless steel
Operating temperature	$-30$ ... $+85$ °C
Resistance	IEC 60068-2-6 Vibration 10 g, 10...2000 Hz IEC 60068-2-27 Shock 200 g, 6 ms
Corrosion protection	IEC 60068-2-52 Salt mist for ambient conditions C4 according to ISO 12944-2
Explosion protection	II 3 G Ex nA IIC T4 Gc (gas) II 3 D Ex tc IIIC T135°C Dc (dust)
Connection	Terminal box
Weight approx.	3,1 kg
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

### Optional

- Relay module DS 93 R (DSL.R version only)

# HOG 10 + DSL

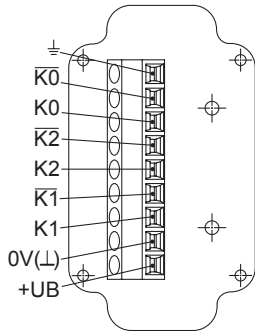
Encoder with integrated programmable, digital speed switch

Blind hollow shaft  $\varnothing 16$  mm 512...2500 pulses per revolution

## Terminal assignment

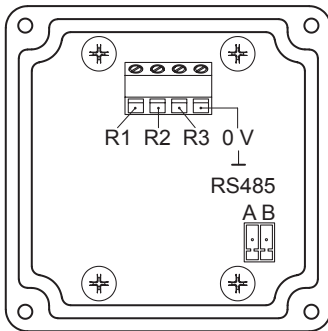
### View A (see dimension)

Connecting terminal terminal box encoder



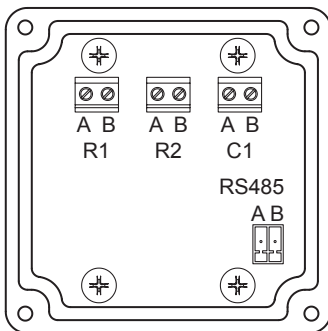
### View B (see dimension)

Connecting terminal speed switch DSL.R



### View B (see dimension)

Connecting terminal speed switch DSL.E



## Terminal significance

### Encoder incremental

+UB	Voltage supply
0V (L)	Ground
⊥	Earth ground (housing)
K1	Output signal channel 1
$\overline{K1}$	Output signal channel 1 inverted
K2	Output signal channel 2 (offset by 90° to channel 1)
$\overline{K2}$	Output signal channel 2 inverted
K0	Zero pulse (reference signal)
$\overline{K0}$	Zero pulse inverted

### Speed switch DSL.R

R1*	Transistor switching output 1, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
R2*	Transistor switching output 2, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
R3*	Transistor switching output 3, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
GND*	Ground connection
RS485	Interface for PC or Laptop (adapter required). Programming of the DSL via the included software.

\* Connection to relay module, for example DS 93 R (accessory)

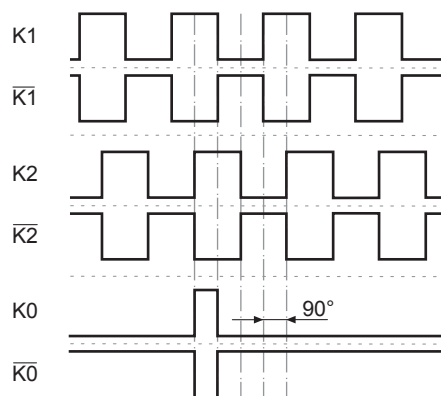
### Speed switch DSL.E

R1 (A+B)	Electronic relay output 1, individually adjustable switching speed, 5...230 V AC/DC
R2 (A+B)	Electronic relay output 2, individually adjustable switching speed, 5...230 V AC/DC
C1 (A+B)	Electronic relay output as a control output, 5...250 mA
RS485	Interface for PC or Laptop (adapter required). Programming of the DSL via the included software.

## Output signals

### HTL/TTL

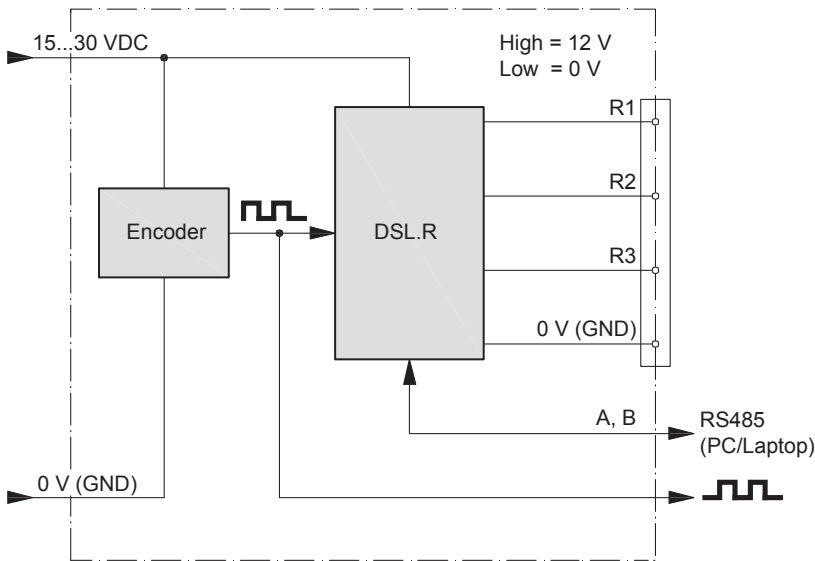
At positive rotating direction (see dimension)



# HOG 10 + DSL

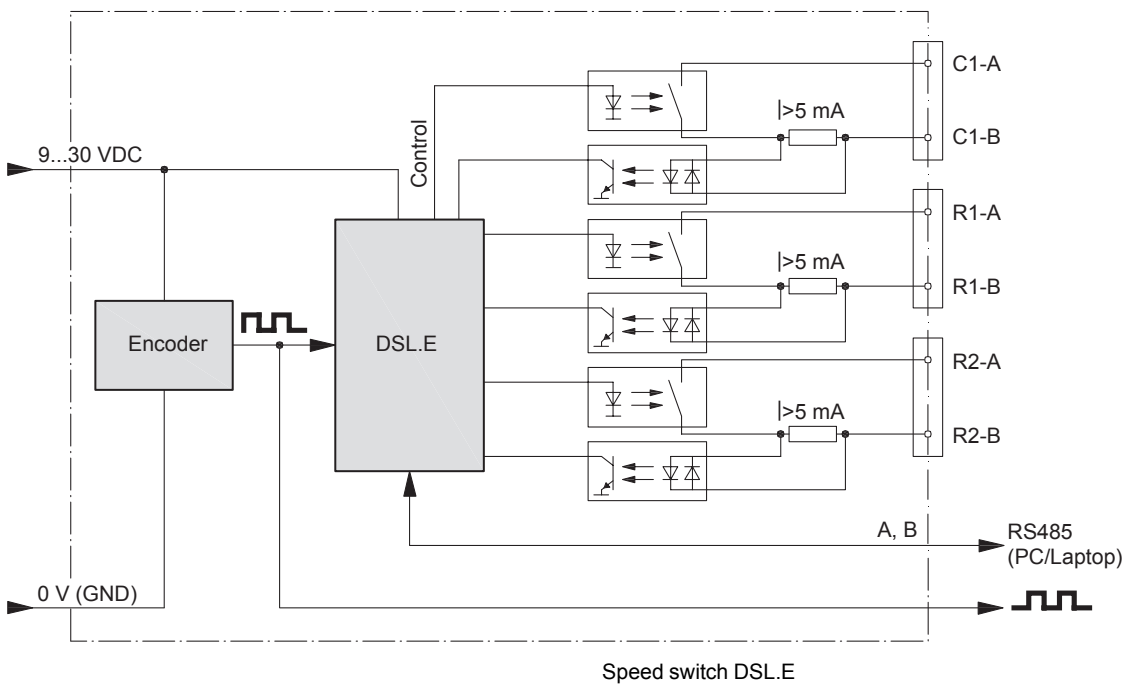
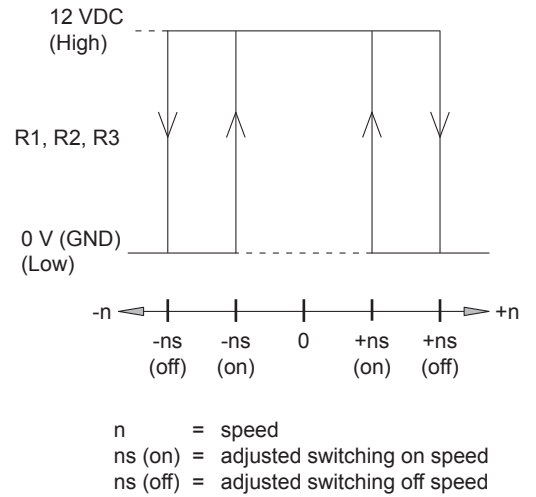
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## Block circuit diagram



Speed switch DSL.R

## Switching characteristics

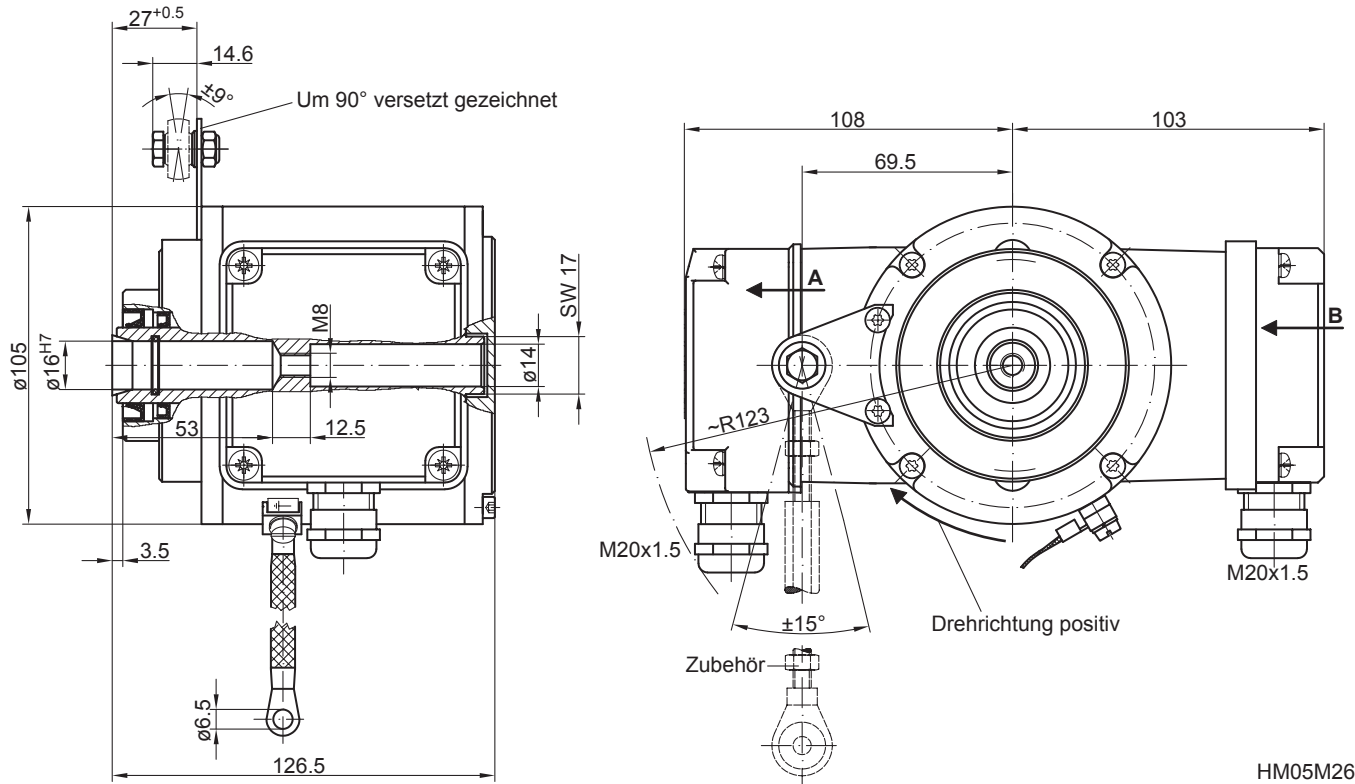


Speed switch DSL.E

# HOG 10 + DSL

Encoder with integrated programmable, digital speed switch  
Blind hollow shaft  $\varnothing 16$  mm 512...2500 pulses per revolution

## Dimensions



HM05M26992

# HOG 10 + DSL

 Encoder with integrated programmable, digital speed switch  
 Blind hollow shaft  $\varnothing 16$  mm 512...2500 pulses per revolution

## Ordering reference

	HOG10	DN	####	#	##	16H7	#####
<b>Product</b>	HOG10						
Incremental encoder + Speed switch							
<b>Output signals</b>							
K1, K2, K0		DN					
<b>Pulse number</b>							
512			512				
1024			1024				
2048			2048				
2500			2500				
<b>Incremental output</b>							
Output circuit HTL with inverted signals					I		
Output circuit TTL with inverted signals					R		
<b>Sealing system</b>							
Dust protection						LR	
Damp protection						SR	
<b>Shaft diameter</b>							
Blind hollow shaft $\varnothing 16$ mm						16H7	
<b>Version speed switch</b>							
2 outputs, speed control and 1 control output							+ DSL.E
3 outputs, speed control							+ DSL.R

## Accessories

### Mounting accessories

11077197	Mounting kit for torque arm size M6 and earthing strap
11077087	Mounting and dismantling set
11043628	Torque arm M6, length 67...70 mm
11004078	Torque arm M6, length 120...130 mm ( $\geq 71$ mm)
11002915	Torque arm M6, length 425...460 mm ( $\geq 131$ mm)
11054917	Torque arm M6 insulated, length 67...70 mm
11072795	Torque arm M6 insulated, length 120...130 mm ( $\geq 71$ mm)
11082677	Torque arm M6 insulated, length 425...460 mm ( $\geq 131$ mm)

### Connectors and cables

	Sensor cable for encoders HEK 8
11064248	USB $\rightarrow$ RS485 converter
11117345	USB $\rightarrow$ RS485 converter with connecting cable for DSL

### Diagnostic accessories

11075858	Analyzer for encoders HENQ 1100
11075880	Analyzer for encoders HENQ 1100 with a power pack