

# Combination

Encoder with integrated programmable, digital speed switch

Blind hollow shaft  $\varnothing 16$  mm

512...2500 pulses per revolution

HOG 10 + DSL



HOG 10 + DSL

## Features

- 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

## Optional

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

## Technical data - electrical ratings

Consumption w/o load  $\leq 200$  mA

### HOG 10 + DSL.E

Voltage supply 9...30 VDC

### HOG 10 + DSL.R

Voltage supply 15...30 VDC

## Technical data - electrical ratings (encoder)

Pulses per revolution 512...2500

Phase shift  $90^\circ \pm 20^\circ$

Scan ratio 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  $\pm 2$  % (Digit)

Switching delay time  $\leq 40$  ms

### HOG 10 + DSL.E

Switching outputs 2 outputs, speed control  
1 control output

Output switching capacity 5...230 VAC/VDC; 5...250 mA

### HOG 10 + DSL.R

Switching outputs 3 outputs, speed control

Output switching capacity 12 VDC;  $\leq 40$  mA

## Technical data - mechanical design

Size (flange)  $\varnothing 105$  mm

Shaft type  $\varnothing 16$  mm (blind hollow shaft)

Shaft loading  $\leq 450$  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>

Materials 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

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

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**Encoder with integrated programmable, digital speed switch**  
**Blind hollow shaft ø16 mm**  
**512...2500 pulses per revolution**

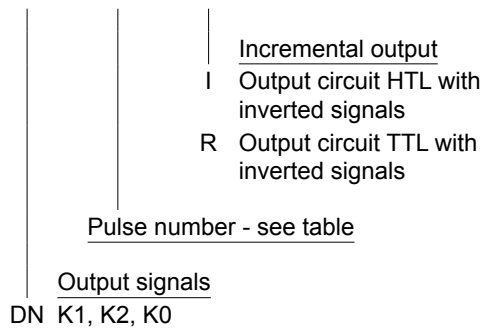
**HOG 10 + DSL**

**Part number**

**Encoder with digital speed switch DSL.E**

HOG 10 

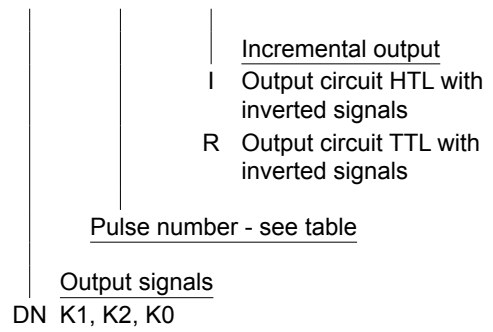
DN					+ DSL.E
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**Encoder with digital speed switch DSL.R**

HOG 10 

DN					+ DSL.R
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**Pulse number**

512		1024		2048		2500
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**Accessories**

Adapter USB → RS485

**Connectors and cables**

HEK 8      Sensor cable for encoders

**Mounting accessories**

DMS 6      Torque arm size M6

11077197    Mounting kit for torque arm size M6 and earthing strap

11077087    Mounting and dismounting set

**Diagnostic accessories**

HENQ 1100   Analyzer for encoders

**Relay module for HOG 10 + DSL.R**

DS 93 R      Relay modul

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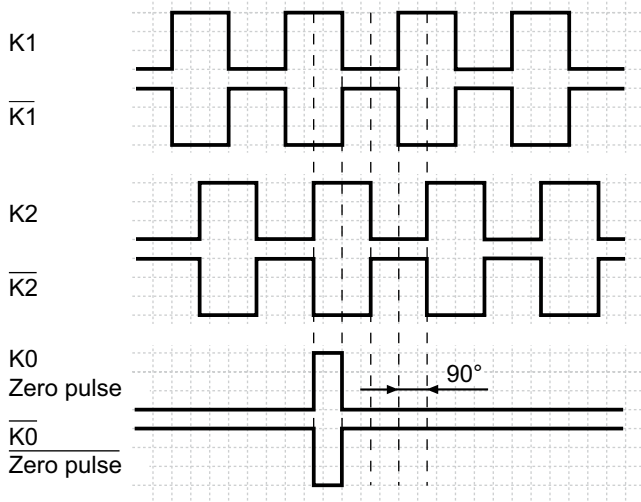
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## HOG 10 + DSL

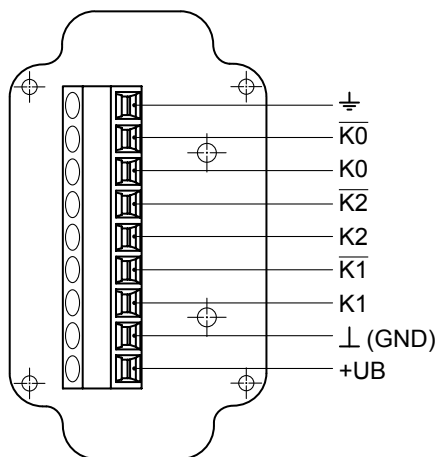
### Output signals

At positive rotating direction

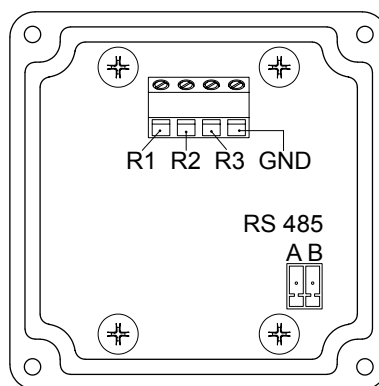


### Terminal assignment

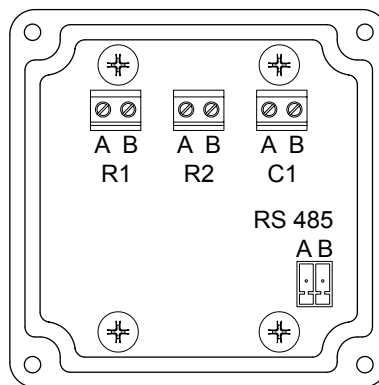
View A - Connecting terminal in terminal box



View B - Connecting terminal speed switch Version DSL.R



View B - Connecting terminal speed switch Version DSL.E



### Terminal significance

#### Speed switch version 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
RS 485	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 version 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
RS 485	Interface for PC or Laptop (adapter required). Programming of the DSL via the included software.

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Encoder with integrated programmable, digital speed switch

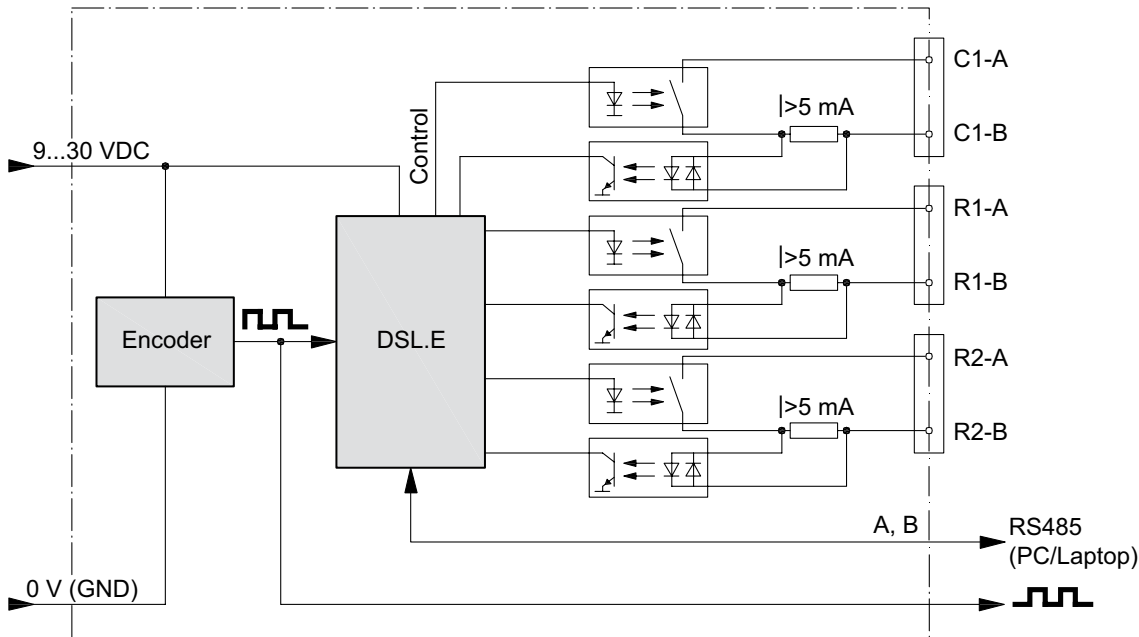
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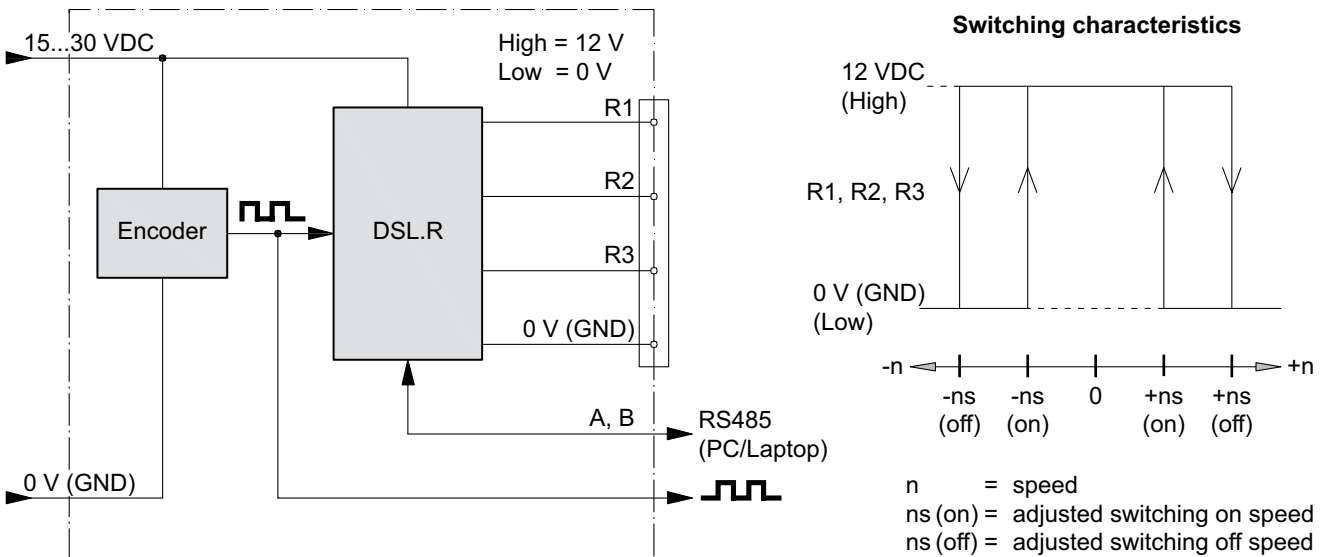
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## Block circuit diagram

### Version with DSL.E



### Version with DSL.R



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## Dimensions

