

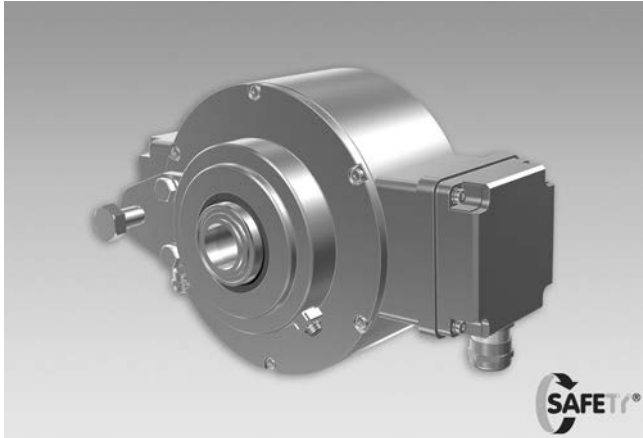
# Combination

Encoder with integrated programmable, digital speed switch

Through hollow shaft  $\varnothing 25$  mm

512...4096 pulses per revolution

HOG 165 + DSL



HOG 165 + DSL

### Technical data - electrical ratings

Consumption w/o load	≤200 mA
Sensing method	Optical

### HOG 165 + DSL.E

Voltage supply	9...30 VDC
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### HOG 165 + DSL.R

Voltage supply	15...30 VDC
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### Technical data - electrical ratings (encoder)

Pulses per revolution	512...4096
Phase shift	90° ±20°
Scan ratio	40...60 %
Reference signal	Zero pulse, width 90°
Output frequency	≤120 kHz
Output signals	K1, K2, K0 + inverted
Output stages	HTL TTL/RS422

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

Interface	RS485
Switching accuracy	±2 % (or Digit)
Switching delay time	≤40 ms

### HOG 165 + DSL.E

Switching outputs	2 outputs, speed control 1 control output
Output switching capacity	5...230 VAC/VDC; 5...250 mA

### HOG 165 + DSL.R

Switching outputs	3 outputs, speed control
Output switching capacity	12 VDC; ≤40 mA

### Features

- Freely programmable on and off switching speed
- Programming via included software (RS485 interface)
- Logic level TTL or HTL
- 512...4096 pulses per revolution
- Through hollow shaft  $\varnothing 25$  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 - mechanical design

Size (flange)	$\varnothing 165$ mm
Shaft type	$\varnothing 25$ mm (through hollow shaft)
Admitted shaft load	≤500 N axial ≤650 N radial
Protection DIN EN 60529	IP 67
Speed (n)	≤6000 rpm
Range of switching speed (ns)	Pulses = 512: ±16...6000 rpm Pulses = 1024: ±8...6000 rpm Pulses = 2048: ±4...3500 rpm Pulses = 2500: ±3...2900 rpm Pulses = 4096: ±3...1750 rpm
Operating torque	≤15 Ncm
Rotor moment of inertia	4.9 kgcm <sup>2</sup>
Materials	Housing: aluminium Shaft: stainless steel
Operating temperature	-30...+85 °C
Resistance	IEC 60068-2-6 Vibration 20 g, 10-2000 Hz IEC 60068-2-27 Shock 300 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.	4.2 kg
Interference immunity	EN 61000-6-2
Emitted interference	EN 61000-6-3
Approval	CE

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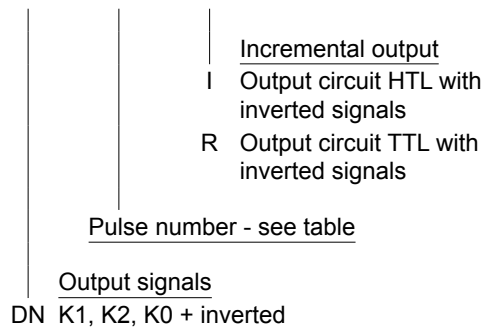
## Part number

### Encoder with digital speed switch

HOG165 

DN				
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 + DSL.E

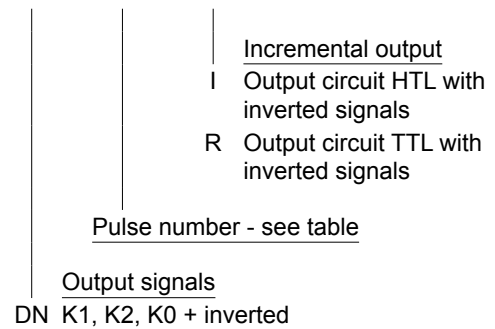


### Encoder with digital speed switch

HOG165 

DN				
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 + DSL.R



## Pulse number

512	1024	2048	2500	4096
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## Accessories

Adapter USB → RS485

### Connectors and cables

HEK 8 Sensor cable for encoders

### Mounting accessories

DMS 12 Torque arm size M12

11069336 Mounting kit for torque arm size M12 and an earthing strap

### Diagnostic accessories

HENQ 1100 Analyzer for encoders

### Relay module for HOG 165 + DSL.R

DS 93 R Relay modul

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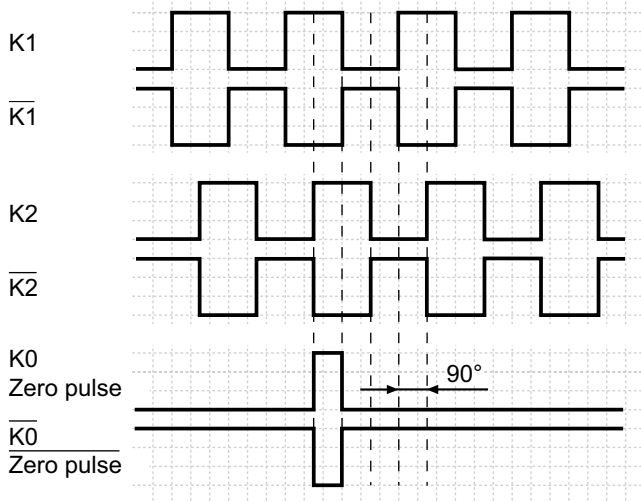
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## HOG 165 + DSL

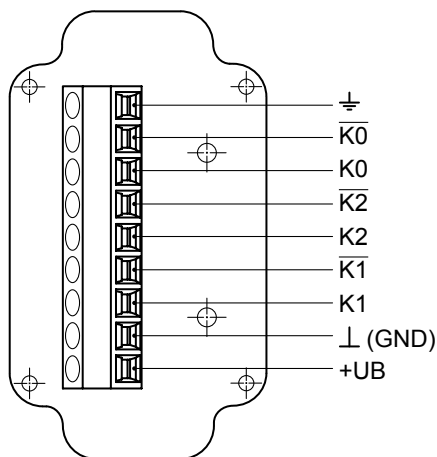
### Output signals

At positive rotating direction

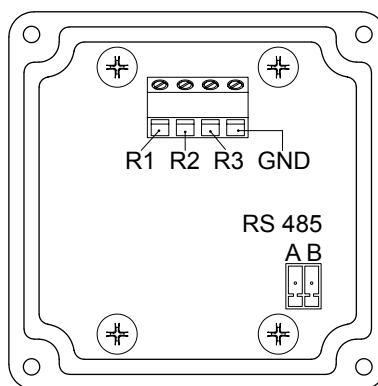


### Terminal assignment

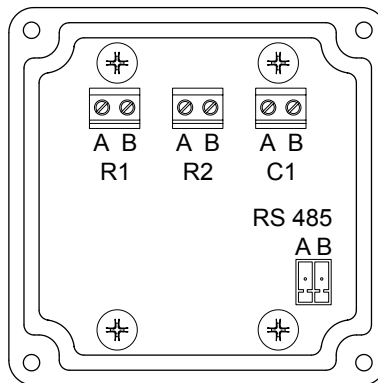
View A - Connecting terminal in terminal box



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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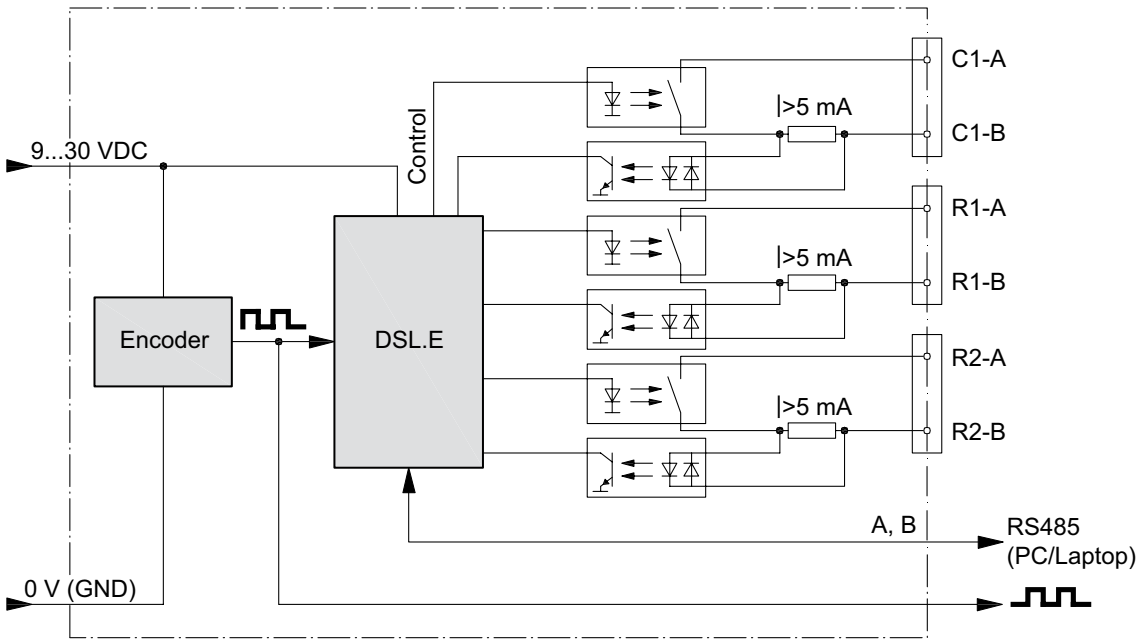
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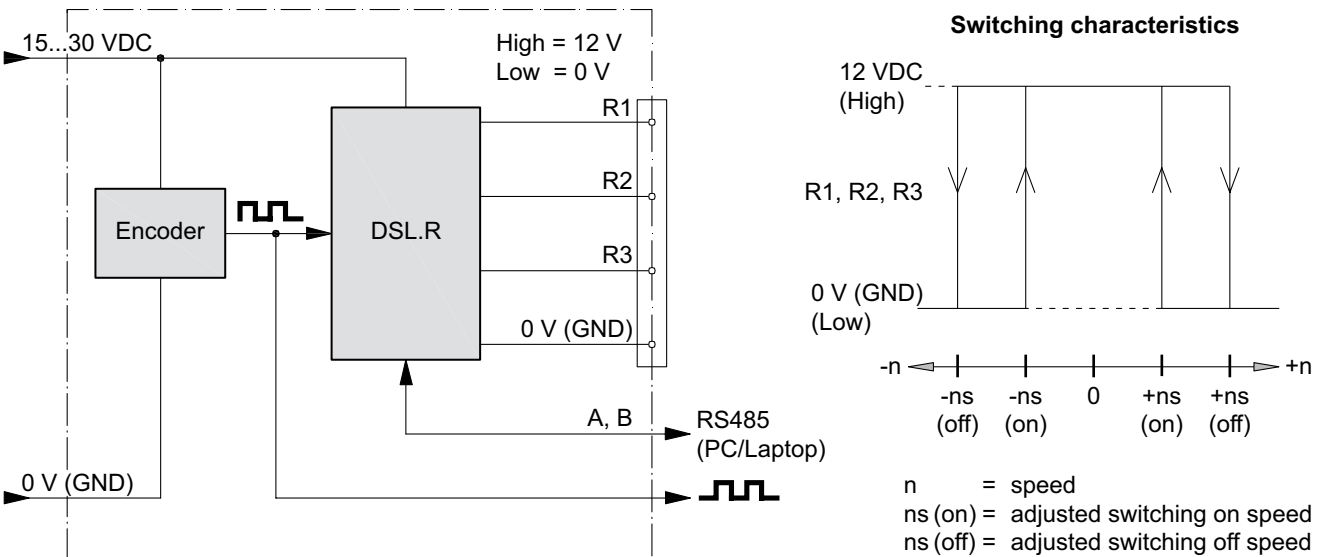
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## Block circuit diagram

### Version with DSL.E



### Version with DSL.R



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## Dimensions

