

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

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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 % (Digit)
Switching delay time	≤40 ms

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

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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 ²
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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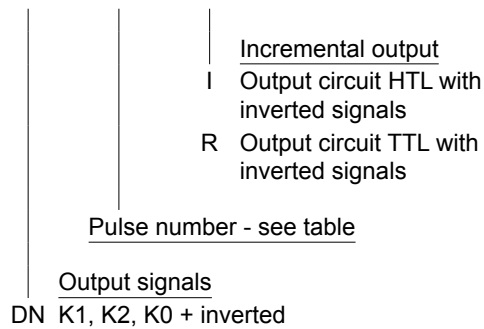
Part number

Encoder with digital speed switch

HOG 165

DN					
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 + DSL.E

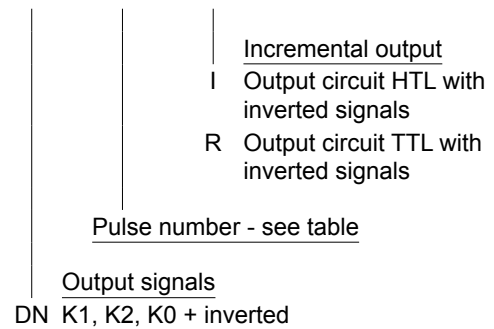


Encoder with digital speed switch

HOG 165

DN					
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 + DSL.R



Pulse number

512 | 1024 | 2048 | 2500 | 4096

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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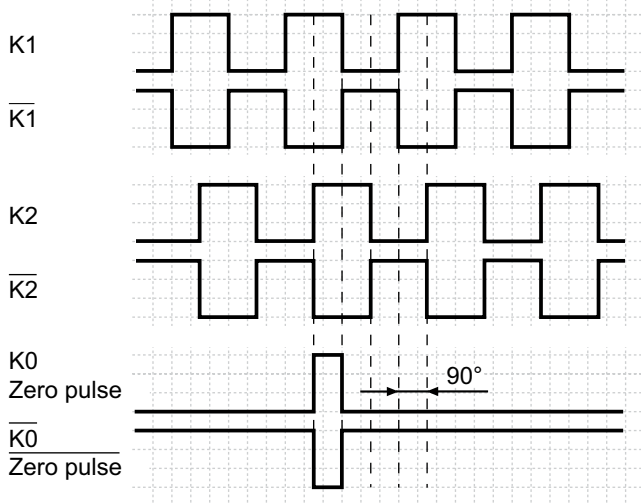
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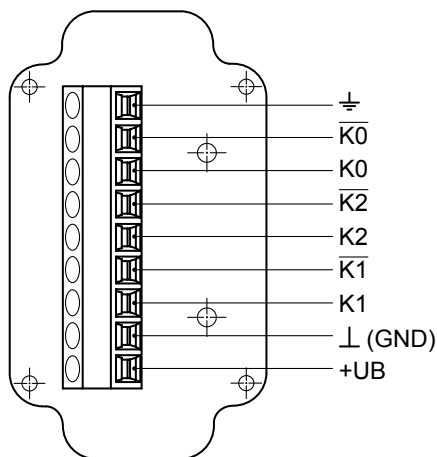
Output signals

At positive rotating direction

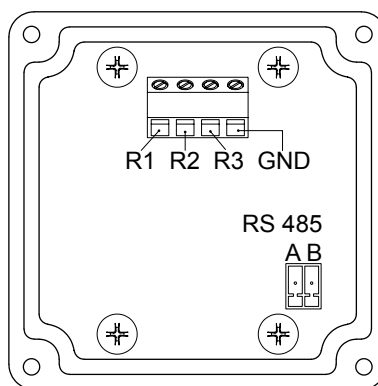


Terminal assignment

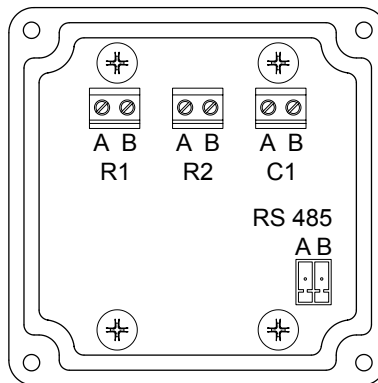
View A - Connecting terminal in terminal box



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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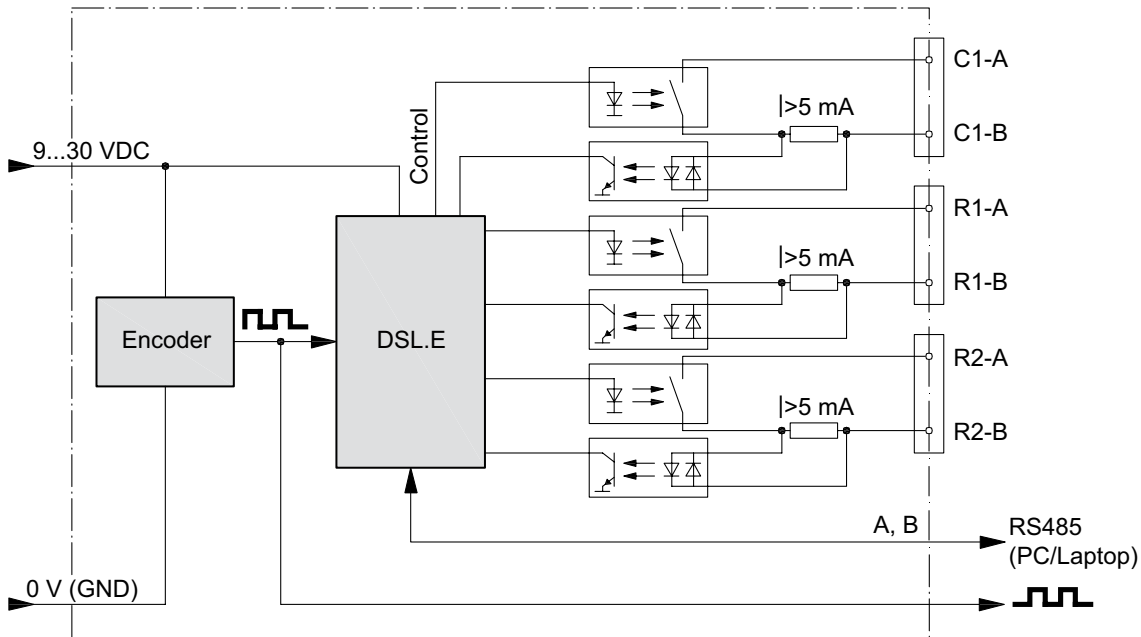
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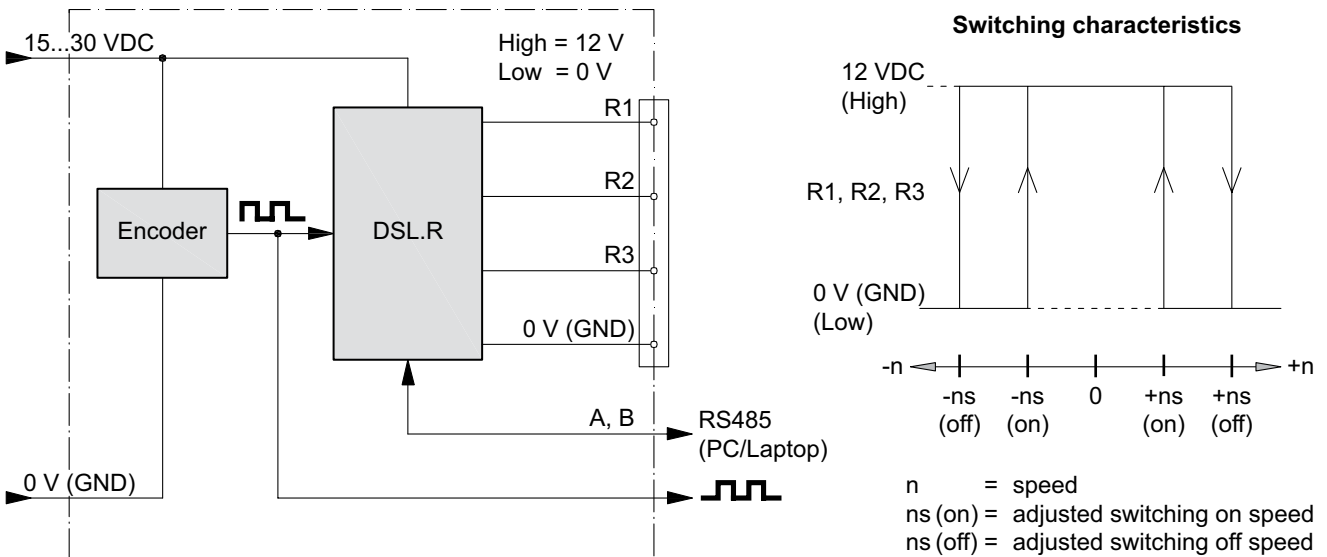
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Block circuit diagram

Version with DSL.E



Version with DSL.R



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Dimensions

