Speed switches

Programmable, digital speed switch

With incremental encoder HOG 10

HOG 10 + DSL

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Features

- **Freely programmable on and off switching speed**
- **Operation via included software (RS485 interface)**
- **Additional incremental signals (HTL/TTL)**
- **Combination with end shaft ø16 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	≤200 mA
Resolution (steps/turn)	512...2500
Phase shift	90° ±20°
Interface	RS485
Scan ratio	40...60 %
Switching accuracy	±2 % (Digit)
Switching delay time	≤40 ms
Reference signal	Zero pulse, width 90°
Output signals	K1, K2, K0 + inverted
Output circuit	HTL (power linedriver) TTL (RS422)
Output frequency	≤120 kHz
Sensing method	Optical
Interference immunity	DIN EN 61000-6-2
Emitted interference	DIN EN 61000-6-4
HOG 10 + DSL.E	
Voltage supply	9... 30 VDC
Switching outputs	2 outputs, speed control 1 control output
Output switching capacity	5...230 VAC/VDC 5...250 mA
HOG 10 + DSL.R	
Voltage supply	15...30 VDC
Switching outputs	3 outputs, speed control
Output switching capacity	12 V High: ns 0 V Low: n≥ns ≤40 mA

Technical data - mechanical design

Dimensions (flange)	ø105 mm
Shaft	ø16 mm end shaft
Protection DIN EN 60529	IP 66
Speed (n)	≤6000 rpm
Range of switching speed (ns)	Resolution = 512: ±16...6000 rpm Resolution = 1024: ±8...6000 rpm Resolution = 2048: ±4...3500 rpm Resolution = 2500: ±3...2900 rpm
Operating torque	≤2 Ncm
Rotor moment of inertia	340 gcm²
Shaft loading	≤250 N axial ≤400 N radial
Materials	Housing: aluminium die-cast 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	II3G Ex nA IIC T4 Gc (gas) II3D Ex tc IIIC T135°C Dc (dust)
Weight approx.	3.1 kg
Connection	Terminal box

15/6/2012

HOG 10 + DSL

Part number

HOG 10 DN | | | | | + DSL.E

Incremental output
- I Output circuit HTL with inverted signals
- R Output circuit TTL with inverted signals

See part number (pulses)

Output signals
- DN K1, K2, K0

HOG 10 DN | | | | | + DSL.R

Incremental output
- I Output circuit HTL with inverted signals
- R Output circuit TTL with inverted signals

See part number (pulses)

Output signals
- DN K1, K2, K0

Part number (pulses)

512	1024	2048	2500

Accessories

Adapter USB → RS485	
Connectors and cables	
HEK 8	Sensor cable for encoders
Mounting accessories	
DMS 6	Torque arm size M6
Diagnostic accessories	
HENQ 1100	Analyzer for encoders
Relay module for HOG 10 + DSL.R	
DS 93 R	Relay modul

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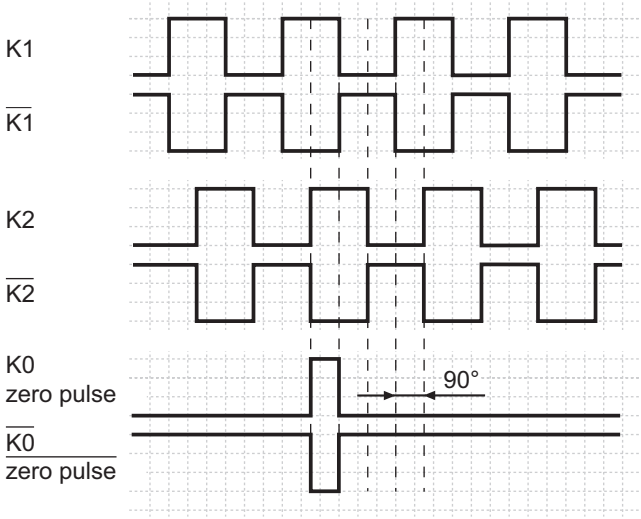
Output signals

at positive rotating direction

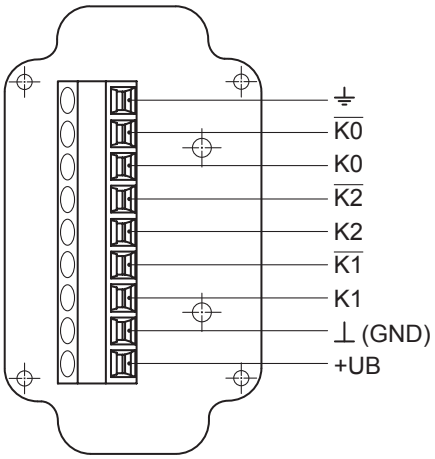


Terminal significance

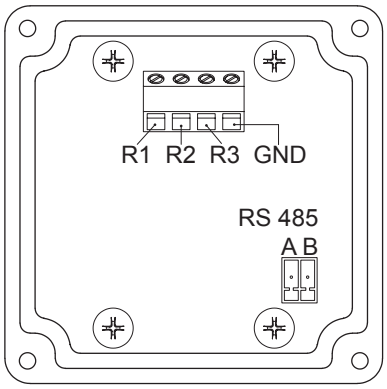
Speed switch version DSL.R	
R1*	Transistor switching output 1, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
R2*	Transistor switching output 2, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
R3*	Transistor switching output 3, individually adjustable switching speed, High (12 V), Low (0 V), max. 20 mA
GND*	Ground connection
RS 485	Interface for PC or Laptop (adapter required). Operation 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). Operation of the DSL via the included software.

Terminal assignment

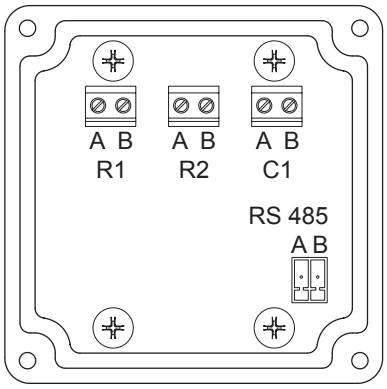
View A - Connecting terminal in terminal box



View B - Connecting terminal speed switch Version DSL.R



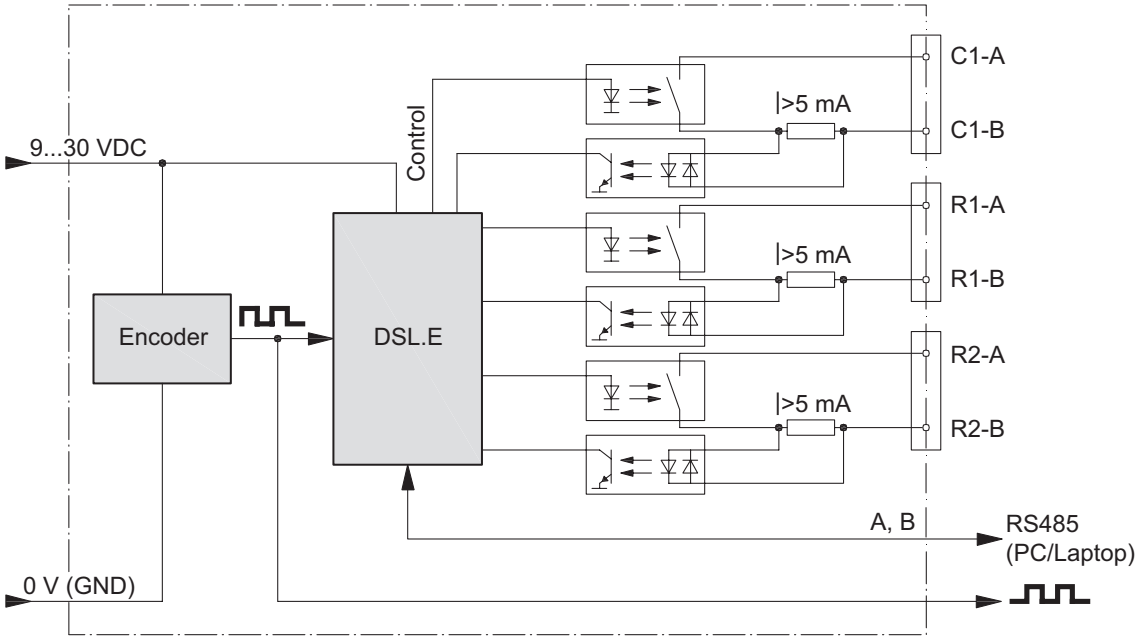
View B - Connecting terminal speed switch Version DSL.E



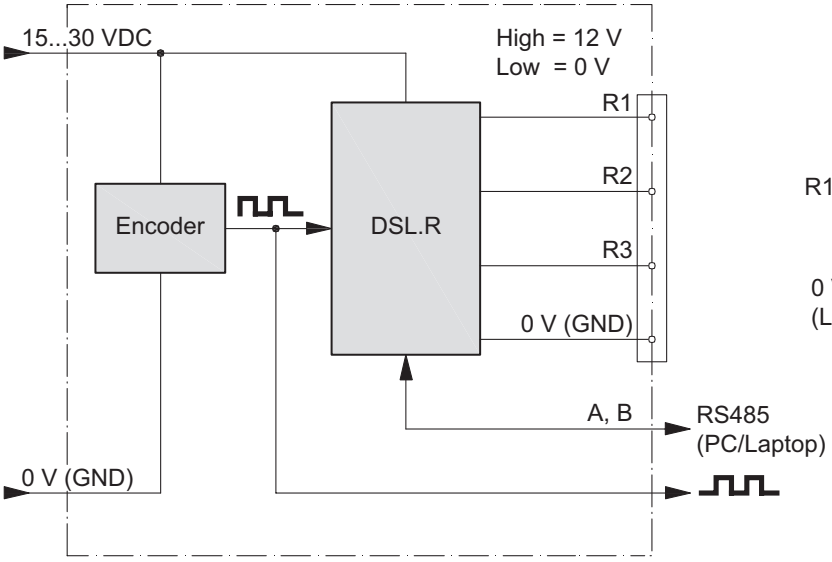
HOG 10 + DSL

Block circuit diagram

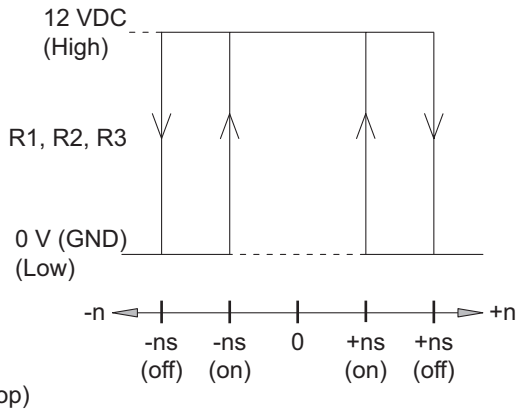
Version with DSL.E



Version with DSL.R



Manner of output circuit



n = speed
ns (on) = adjusted switching on speed
ns (off) = adjusted switching off speed

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Dimensions