HeavyDuty encoders incremental

Size up to ø105 mm / hollow shaft

Blind hollow shaft or cone shaft.

- Precision signals in drive engineering
- Robust electrical and mechanical design
- Redundant sensing
- Integrated function monitoring EMS

HTL TTL

Features	■ Blind hollow shaft ■ High shock and vibration resistance	■ Cone shaft or blind hollow shaft ■ Rotatable terminal box ■ Isolated ball bearings	■ Cone shaft or blind hollow shaft ■ Rotatable terminal box ■ Corrosion protection C4 ■ Isolated ball bearings
Product family	**HOG 71**	**HOG 86E**	**HOG 86**
Sensing method	Optical		
Size (housing)	ø60 mm	ø99 mm	ø99 mm
Voltage supply	5 VDC ±5 %, 9...26 VDC		
Output stage			
- TTL/RS422	■	■	■
- HTL/push-pull	■	–	–
- HTL-P (Power Linedriver)	–	■	■
- LWL (fiber-optic interface)	With fiber-optic transducer (Outdoor-Box)		
Output signals	K1, K2, K0 + inverted		
Shaft type			
- Cone shaft 1:10	–	ø17 mm	
- Blind hollow shaft	ø12...14 mm	ø12...16 mm	
Connection	Terminals	Terminal box rotatable, flange connector M23	Terminal box rotatable, flange connector M23 or cable
Pulses per revolution	64...2048	512...2500	500...5000
Operating temperature	-20...+85 °C	-40...+100 °C	
Protection	IP 66		
Operating speed	≤10 000 rpm		
Max. shaft load	≤30 N axial, ≤40 N radial	≤350 N axial, ≤450 N radial	≤350 N axial, ≤450 N radial
Explosion protection	Ex II 3G IIC / 3D IIIC (ATEX)		
Options	–	Corrosion protection C4	Function monitoring EMS Hybrid bearings Redundant (HOG 86M)

Redundant sensing

Devices with redundant, i.e. double sensing support demanding applications, e.g. where high availability and functional safety are required. Our qualified and experienced experts would be glad to support you in the design of your safety-relevant application and its certification by the notified body.

HeavyDuty encoders incremental
Size up to ø105 mm / hollow shaft

With the HOG 86, HOG 9 and HOG 10 series from Hübner Berlin, you have a unique product portfolio at your disposal that combines more than 60 years of experience of the world market leader and the latest technologies to unrivalled robust and durable products.

HÜBNER BERLIN
A Baumer Brand

www.baumer.com/HD-incremental




Features	■ Cone shaft or blind hollow shaft ■ Pulses per revolution up to 5000 ■ Isolated ball bearings	■ Cone shaft or blind hollow shaft ■ Pulses per revolution up to 5000 ■ Hybrid bearings as standard ■ Corrosion protection CX (C5-M)	■ Cone shaft or blind hollow shaft ■ Corrosion protection CX (C5-M) ■ Hybrid bearings as standard ■ Protection class IP 67	■ Cone shaft or blind hollow shaft ■ Pulses per revolution up to 10 000 ■ Hybrid bearings as standard
Product family	**HOG 9**	**HOG 10**	**HOG 11**	**HOG 100**

Sensing method	Optical			
Size (housing)	ø97 mm	ø105 mm		
Voltage supply	5 VDC ±5 %, 9...30 VDC			5 VDC ±5 %, 9...26 VDC, 9...30 VDC
Output stage				
- TTL/RS422	■	■	■	■
- HTL/push-pull	–	–	–	–
- HTL-P (Power Linedriver)	■	■	■	■
- LWL (fiber-optic interface)	With fiber-optic transducer (Outdoor-Box)			
Output signals	K1, K2, K0 + inverted			
Shaft type				
- Cone shaft 1:10	ø17 mm			
- Through hollow shaft	ø12...16 mm	ø12...20 mm		
Connection	Flange connector M23	Terminal box axial, radial		
Pulses per revolution	300...5000			1024...10 000
Operating temperature	-30...+100 °C	-40...+100 °C (-50...+100 °C option)		-30...+85 °C
Protection	IP 56	IP 66	IP 67	IP 66
Operating speed	≤10 000 rpm	≤6000 rpm		
Max. shaft load	≤400 N axial, ≤500 N radial	≤450 N axial, ≤600 N radial		
Explosion protection	Ex II 3G IIC / 3D IIIC (ATEX)			
Options	Function monitoring EMS	Function monitoring EMS Redundant (HOG 10M)	Function monitoring EMS Redundant (HOG 11M) DNV certificate	Centrifugal switch (FSL) Speed switch (ESL) Redundant (HOG 100M)

Enhanced Monitoring System EMS

Enhanced Monitoring System EMS in incremental encoders monitors all crucial encoder functionalities throughout the encoder's entire speed range. EMS will signal connection errors and speed up commissioning. During operation, EMS facilitates error tracking and prevents cost-intensive downtime.

HeavyDuty encoders incremental
Large hollow shaft

Hollow shaft up to ø75 mm.

- Precise optical encoders for large drive shafts
- Outstanding high mechanical reserve capacity
- For use in permanently oily-wet environments
- Hybrid bearings as standard

HTL TTL




Features	■ Through hollow shaft ■ Corrosion protection CX (C5-M) ■ Integrated lightning protection ■ Shaft with special seals for offshore applications	■ Through hollow shaft up to ø38 mm	■ Through hollow shaft ■ Rotatable terminal box ■ Operating speed up to 6000 rpm ■ Pulses per revolution up to 5000	■ Blind hollow shaft ■ Surface protection for harsh environments ■ Corrosion protection CX (C5-M) ■ Protection IP 67 ■ Pulses per revolution up to 8192
Product family	HOG 131	HOG 16	HOG 163	HOG 165
Sensing method	Optical			
Size (housing)	ø130 mm	ø158 mm	ø158 mm	ø165 mm
Voltage supply	5 VDC ±5 %, 9...30 VDC			
Output stage				
- TTL/RS422	■	■	■	■
- HTL-P (Power Linedriver)	■	■	■	■
- LWL (fiber-optic)	With fiber-optic transducer (Outdoor-Box)			
Output signals	K1, K2, K0 + inverted			
Shaft type				
- Through hollow shaft	ø16...36 mm	ø20...38 mm	ø38...75 mm	–
- Blind hollow shaft	–	–	–	ø20...38 mm
Connection	Terminal box	Terminal box rotatable		
Pulses per revolution	1024...3072	250...2500	250...5000	1024...8192
Operating temperature	-40...+100 °C	-40...+100 °C	-40...+85 °C (-50...+100 °C optional)	-40...+100 °C
Protection	IP 56	IP 66	IP 56	IP 67
Operating speed	≤6000 rpm			
Max. shaft load	≤300 N axial, ≤500 N radial	≤450 N axial, ≤600 N radial	≤300 N axial, ≤500 N radial	≤500 N axial, ≤650 N radial
Explosion protection	Ex II 3G IIC / 3D IIIC (ATEX)			
Options	Redundant (HOG 131M)	Redundant (HOG 16M) Blind hollow shaft Hybrid bearings	Redundant (HOG 163M)	Redundant (HOG 165M) Through hollow shaft Long torque arm Hollow shaft with keyway