JOHANNES
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GIESSEN

ideas and solutions

中文 | ENGLISH

大型空心轴增量式编码器
FGH(I) 6, FGH 8, FGH 14, MAG
用于极端环境条件下的速度测量和监控

Incremental encoders with large hollow shafts
FGH(I) 6, FGH 8, FGH 14, MAG
For speed measurement and monitoring under extreme ambient conditions

Johannes Hübner Giessen

精确、优势、关注客户

我们专注于技术— 我们了解我们的客户。我们坚定的站在客户一边为其提供特殊的设想、定制的解决方案。为了支持我们的客户， 我们提供了强大的编码器系统、强大的传动技术和全球化的服务。我们将与我们的客户一起克服在重工业领域或其它极其恶劣条件领域的巨大的挑战，继而不断的增进客户的业务。你有什么挑战?

Precision. Strength. Customer focused.

We are fascinated by technology – and we understand our customers. We stand firmly at your side with exceptional ideas and tailor-made solutions; to support our customers we offer robust encoder systems, powerful drive technology and a worldwide service. That is how we overcome together with our customers the huge challenges in heavy industry and other fields subject to harsh conditions to sustainably improve their business. What challenges do you have?

我们的应用领域：

- 金属及轧制技术
- 港口和起重机技术
- 矿山工业
- 石油和天然气工业
- 运输
- 海洋工程
- 发电行业
- 其它应用领域

Our fields of applications:

- Metal and rolling mill technology
- Port and crane technology
- Mining industry
- Oil and gas industry
- Transport
- Marine engineering
- Power generation
- ... and many other applications

任务

Content

任务和解决方案
Task and Solution

任务

重工业对所用部件的可靠性和寿命提出了苛刻的要求。这尤其适用于安装用于测量和监测速度的增量编码器。

编码器持续高信号质量和长寿命的关键是机械最佳安装。使用联轴器在有限的空间或较大的轴向窜动不是一个有用的选择。这需要空心轴编码器，它节省空间可直接安装在应用轴上，也可以通过合适的适配法兰固定到应用轴上。

Task

Heavy industry places tough demands on the reliability and lifetime of the components utilized. That applies in particular to incremental encoders installed to measure and monitor speeds.

The key for constantly high signal quality as well as a long lifetime of the encoders is the mechanically optimal mounting. The use of couplings in restricted spaces or with larger shaft-eccentricity is not a useful option. This requires hollow shaft encoders, which can be mounted space-savingly either directly onto the application shaft or they can be fixed to the application shaft by using a suitable adapter flange.

FGH(I) 6

FGH 8

FGH 14

MAG
(分瓣脉冲轮/split pulse wheel)

解决方案

Johannes Hübner Fabrik elektrischer Maschinen GmbH 为这些具有挑战性的任务提供定制的编码器系统解决方案，包括空心轴编码器以及定制的适配轴和扭矩支架
本样本展示以下系列:

- FGH(I) 6: 用于轴径至 Ø 50 mm
- FGH 8: 用于轴径至 Ø 80 mm
- FGH 14: 用于轴径至 Ø 150 mm
- MAG: 用于轴径至 Ø 1500 mm

Solution

For such challenging tasks Johannes Hübner Fabrik elektrischer Maschinen GmbH offers customized encoder system solutions consisting of hollow shaft encoders as well as tailor-made adapter shafts and torque brackets.
This catalog presents the following series:

- FGH(I) 6: for shaft Ø up to 50 mm
- FGH 8: for shaft Ø up to 80 mm
- FGH 14: for shaft Ø up to 150 mm
- MAG: for shaft Ø up to 1500 mm

产品优势
Product benefits

可靠 / reliable	FGH(I) 6	FGH 8	FGH 14	MAG
寿命长，可靠性高 Long lifetime, high reliability	x	x	x	x
极其坚固的厚壁外壳 Extremely robust, thick-walled housing	x	x	x	x
高动载荷的大型轴承 Large bearings with high dynamic load rating	x	x	x	
无轴承设计（无磨损） Bearingless design (wear-free)				x
抗冲击、抗振动能力强 High shock and vibration resistance	x	x	x	x
防盐水，适用于轧钢厂的湿区 Saltwater-proof, wet areas in rolling mills	x	x	x	x
轴向窜动补偿 Compensation of large axial shaft movement	x	x	x	x
温度范围 -25 °C 至 +85 °C Temperature range -25 °C up to +85 °C	x	x	x	x
温度范围 -40 °C 至 +100 °C Temperature range -40 °C up to +100 °C				x

安全 / safe	FGH(I) 6	FGH 8	FGH 14	MAG
最先进的电子技术，坚固的厚壁外壳 State-of-the-art electronics in a robust, thick-walled housing	x	x	x	x
EMC 电缆密封套管 EMC cable glands	x	x	x	x
附加旋转方向 / 停止检测（可选） Additional direction of rotation / standstill detection (optional)	x	x	x	
绝缘设计（阻断轴电流） Isolated design (against shaft currents)	x			x
可选绝缘适配法兰 Optionally isolated adapter flange	x	x	x	
UL/CSA 认证 UL/CSA certification			x	x

产品优势
Product benefits

可定制 / tailor-made	FGH(I) 6	FGH 8	FGH 14	MAG
第二信号输出（增量） Second signal output (incremental)	x	x	x	x
FOC 输出（可选） FOC output (optional)	x	x	x	x
超速开关（可选） Overspeed switch (optional)	x	x	x	x
用于更多的编码器安装的连接底座 Attachment base for further encoders	x	x	x	
各种各样的装置和信号选项 Wide variety of further device and signal options	x	x	x	
可更换扫描头 Exchangeable scanning			x	x
改造没有自由轴端 Retrofitting without free shaft end				x
空心轴至 Ø 50 mm Hollow shaft Ø up to 50 mm	x			x
空心轴至 Ø 80 mm Hollow shaft Ø up to 80 mm		x		x
大空心轴至 Ø 150 mm Large hollow shaft Ø up to 150 mm			x	x
超大空心轴至大约 Ø 1500 mm Extra large hollow shaft Ø up to approx. 1500 mm				x

舒适 / comfortable	FGH(I) 6	FGH 8	FGH 14	MAG
尺寸大的接线盒 Generously dimensioned terminal box	x	x	x	x
带有状态输出的内部诊断 Internal diagnostics with status output	x	x	x	x
多种接头或电缆的连接选择 Connection options with a variety of connectors or cables	x	x	x	x
合适的机械附件和安装服务（可选） Suitable mechanical accessories and mounting service (optional)	x	x	x	x
为个别解决方案提供服务和咨询 Service and consultation for individual solutions	x	x	x	x

FGH(I) 6, FGH 8 系列技术参数
Technical data series FGH(I) 6, FGH 8

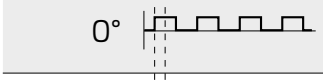
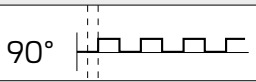
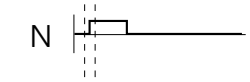
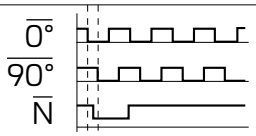
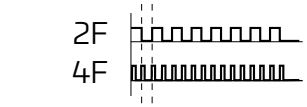
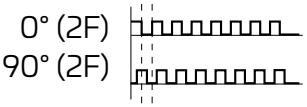
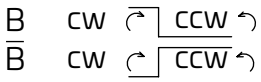
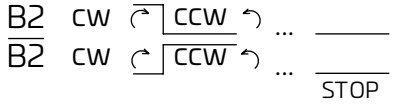
系列 / Series	FGH(I) 6	FGH 8
测量原理 Measuring principle	光电 Optical	光电 Optical
应用 Application	直接安装于轴上或通过绝缘适配法兰 (主传动) Direct mounting on shafts or with isolated adapter flange (main drives)	直接安装于轴上或通过绝缘适配法兰 (主传动) Direct mounting on shafts or with isolated adapter flange (main drives)
图像 Image		
空心轴带键（可达） Hollow shaft with keyway (up to)	Ø 50 mm (FGHI 6, FGHJ 5: Ø 40 mm)	Ø 80 mm
选项：绝缘版本 Optional: Isolated version	轴套绝缘 / Isolating sleeve: FGHI 6 (绝缘轴承 / Isolated bearings: FGHJ 5)	带有绝缘适配法兰的安装 Mounting with isolated adapter flange
编码器全长（轴向），最值: Encoder overall length (along shaft), minimum value:	85 mm	94 mm
电源电压 / Supply voltage	12 – 30 VDC (选项 / Option: 5 VDC)	12 – 30 VDC (选项 / Option: 5 VDC)
最大脉冲率（信号幅度） Pulse rate max. (signal amplitude)	5000 (HTL, TTL) IE INCREMENTAL ENCODER	8192 (HTL, TTL) IE INCREMENTAL ENCODER
输出信号 / Output signals	0°; 选项 / optional: 90°, N, 反向 / inverted	0°; 选项 / optional: 90°, N, 反向 / inverted
最多电子系统（增量）数量 Number of electronic systems (incremental) max.	2	2
机械允许速度（可达） Approved mechanical speed (up to)	4000 rpm (IP66: 1100 rpm)	3000 rpm (IP66: 1200 rpm)
保护等级（可达） Degree of protection (up to)	IP66	IP66
设备温度范围 Device temperature range	-25 ... +85 °C	-25 ... +85 °C
重量（约） Weight (approx.)	6 kg	13 kg
特色 Special features	–	–
认证 Certifications	–	–
选项 / Options		
附加超速开关 Additional overspeed switch	选项（2个开关，可编程） Optional (2 switches, programmable) OS OVERSPEED SWITCH	选项（2个开关，可编程） Optional (2 switches, programmable) OS OVERSPEED SWITCH
通过光缆 (FOC) 信号传输 Signal transmission via fiber optic cable (FOC)	50 / 125 µm 62,5 / 125 µm	50 / 125 µm
可更换扫描头（无需拆卸编码器） Exchangeable scanning (without encoder disassembly)	–	–
进一步拓展可能性 Possibility for further attachments	最多两个附件（编码器） Up to 2 attachments (encoders)	最多三个附件（编码器） Up to 3 attachments (encoders)

FGH14 和 MAG 系列技术参数
Technical data series FGH 14 and MAG

系列 / Series	FGH 14	MAG
测量原理 Measuring principle	光电 Optical	磁 Magnetic
应用 Application	直接安装于轴上（主传动） Direct mounting on shafts (main drives)	特殊空心轴尺寸、受限制的安装空间、改造 Special hollow shaft sizes, restricted installation spaces, retrofittings
图像 Image		
空心轴带键（可达） Hollow shaft with keyway (up to)	Ø 150 mm	Ø 1500 mm
选项：绝缘版本 Optional: Isolated version	带绝缘适配法兰安装 Mounting with isolated adapter flange	无需（无轴承） Not necessary (bearingless)
编码器总长（轴向），最小值 Encoder overall length (along shaft), minimum value:	100 mm	12 mm 脉冲轮 (扫描头 20 mm) 12 mm for pulse wheel (20 mm for scanning head)
电源电压 / Supply voltage	12 – 30 VDC	12 – 30 VDC (选项 / Option: 5 VDC)
最大脉冲率（信号幅度） Pulse rate max. (signal amplitude)	7200 (HTL, TTL) IE INCREMENTAL ENCODER	100000 (HTL, TTL) IE INCREMENTAL ENCODER
输出信号 / Output signals	0°; 选项 / optional: 90°, N, 反向 / inverted	0°; 90°, N, 状态; 对应反向 / Status; each inverted
最多电子系统（增量）数量 Number of electronic systems (incremental) max.	2	多扫描头（可指定） Multiple scanning heads (on request)
允许机械速度（可达） Approved mechanical speed (up to)	2500 rpm (IP66: 800 rpm)	取决于机械设计 Depends on mechanical design
保护等级（可达） Degree of protection (up to)	IP66	IP68
设备温度范围 Device temperature range	-25 ... +85 °C -25 ... +70 °C (UL/CSA)	-40 ... +100 °C -40 ... +85 °C (UL/CSA)
重量（约） Weight (approx.)	32 kg	取决于尺寸 Size dependent
特色 Special features	–	选项：分瓣脉冲轮（用于改造） Option: Split pulse wheel (for retrofitting)
认证 Certifications	UL/CSA c UL us LISTED	UL/CSA, ATEX/IECEx Ex c UL us LISTED
选项 / Options		
附加超速开关 Additional overspeed switch	选项（2 个开关，可编程）OS OVERSPEED SWITCH Optional (2 switches, programmable)	选项（1个开关，工厂设定）OS OVERSPEED SWITCH Optional (1 switch, set ex works)
通过光缆信号传输 (FOC) Signal transmission via fiber optic cable (FOC)	50 / 125 µm 62,5 / 125 µm	50 / 125 µm 62,5 / 125 µm
可替换电子头 （无需拆卸编码器） Exchangeable scanning (without encoder disassembly)	扫描系统（最高可更换 1024 ppr） Scanning system (exchangeable up to 1024 ppr)	独立扫描头 Separate scanning heads
进一步拓展可能性 Possibility for further attachments	最多四个附件（编码器） Up to 4 attachments (encoders)	可组合其它装置 Combined attachments possible

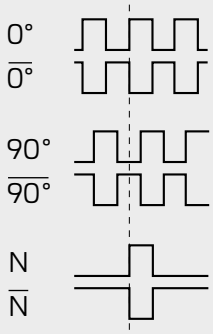
FGH(I) 6, FGH 8, FGH 14 信号输出选项
Options signal outputs FGH(I) 6, FGH 8, FGH 14

信号输出选项 / Options signal outputs

基本版本 基本通道 0° (A)	**Basic version** Basic channel 0° (A)	
选项 90 脉冲通道 90° (B)	**Option 90** Pulse channel 90° (B)	
选项 N 标志脉冲 (N) 机械定位; 每圈一个方波脉冲	**Option N** Reference pulse (N) mechanically defined; one square pulse per revolution.	
选项 G 0°, 90°, N, LED check 反向信号.	**Option G** Additionally inverted output signals for 0°, 90°, N, LED check.	
选项 2F / 4F 2 或 4 倍基础脉冲数. 倍频后的脉冲无法识别旋转方向。 要求: 选项 90	**Option 2F / 4F** With 2 or 4 times as many pulses as the basic version. No direction of motion can be derived from the multiple number of pulses. Required: Option 90	
选项 V 通过多重评估基本通道和 90° 通道使脉冲数倍频。 要求：选项 90	**Option V** Electronic pulse doubling of basic and 90° channel by multiple evaluation. Required: Option 90	
选项 B 在0°和 90° 通道的每个边沿快速识别旋转方向。 要求：选项 90	**Option B** Fast detection of the direction of rotation at each edge of the 0° and 90° channels. Required: Option 90	
选项 B2 同选项 B, 额外增加静止检测。 要求：选项 90	**Option B2** As Option B, but additional standstill recognition. Required: Option 90	
选项 L2 基础脉冲，90° 脉冲及对应的反向脉冲的输出功率可达 150 mA。 要求：选项 90	**Option L2** Power output up to 150 mA for basic channel, 90° channel and the corresponding inverted signals. Required: Option 90	
选项 J 通过光学调整脉冲盘减少旋转频率调制。	**Option J** Reduced rotational frequency modulation by means of optically adjusted pulse disk.	
选项 S 带有两个独立编程开关点的电子超速开关	**Option S** Electronic overspeed switch with two independently programmable switching points.	见 12 页 See page 12
选项 FOC 作为传统信号传输的替代，通过铜电缆编码器信号也可以通过光纤电缆传输。 见第 13 页	**Option FOC** As an alternative to conventional signal transmission via copper cable encoder signals can also be transmitted via fiber optic cable.	见 13 页 See page 13

MAG 信号输出选项
Options signal outputs MAG

信号输出选项 / Options signal outputs

基础版本 基本通道 0° (A), 脉冲通道 90° (B), 带状态输出的内部系统诊断 (状态); 每路带有反向信号 **选项** 标志脉冲 (N)	**Basic version** Basic channel 0° (A), Pulse channel 90° (B), Internal system diagnostics with status output (Status); Each with inverted signals **Option** Reference pulse (N)	
选项 S 带有一个固定切断点的电子 超速开关（工厂设定）	**Option S** Electronic overspeed switch with one fixed switching point (set ex works)	见 12 页 See page 12
选项 FOC 作为传统信号传输的替代，通过铜电缆 编码器信号也可以通过光纤电缆传输。	**Option FOC** As an alternative to conventional signal transmission via copper cable encoder signals can also be transmitted via fiber optic cable.	见 13 页 See page 13

可提供更多信号选项和输出配置 / Further signal options and output configurations available.

选项 S (速度开关) FGH(I) 6, FGH 8, FGH 14, MAG*
Option S (speed switch) FGH(I) 6, FGH 8, FGH 14, MAG*

选项 S:
电子超速开关

带有两个用来识别极限速度的可编程切断点的电子超速开关

更多优势
- 在整个切断速度范围内可编程的切断点
- 超速或欠速的监控
- 可调整切断延迟
- 切断速度从 0.63 rpm 到最大速度
- 切断触点受到电子监控
- 诊断输出

编程软件

可调参数
- 超速
- 欠速
- 旋转方向相关切断
- 切断延迟
- 切断迟滞
- ……附加功能

图形化用户界面（监控）
- 速度 / 时间图形和切断输出状态显示

将数据导入和导出到 PC
- 保存参数数据，设备数据，监控数据

Option S:
Electronic overspeed switch

Electronic overspeed switch with two independently programmable switching points for recognition of limit speeds.

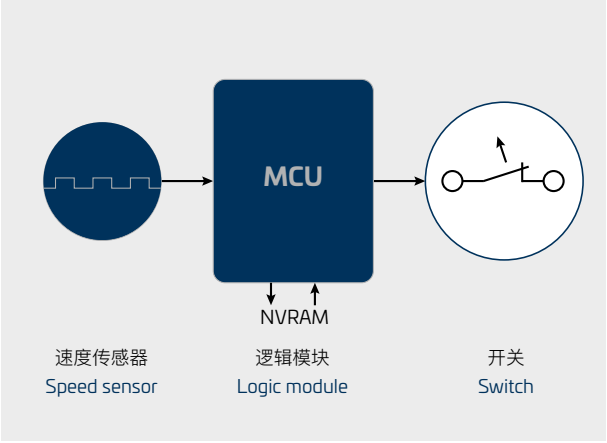
Further advantages
- Programmable switching points over the whole switching speed range
- Monitoring of overspeed or underspeed
- Adjustable switching delay
- Switching speed from 0.63 rpm to max. speed
- Switching contacts are electronically monitored
- Diagnostics output

Programming software

Adjustable parameters
- Overspeed
- Underspeed
- Rotation direction dependent switching
- Switching delay
- Switching hysteresis
- ... additional functions

Graphic user interface (monitoring)
- Speed / time graph and switching outputs status display

Importing and exporting data to a PC
- Save parameter data, device data, monitoring data



集成速度传感器由带有光学扫描仪的脉冲盘组成，产生与速度成比例的频率。

这是由逻辑模块 (MCU) 处理的。当前速度与存储在非易失性存储器 (NVRAM) 中的编程极限速度进行连续比较。
当达到极限速度时 (开关打开)，逻辑单元触发相应的开关。

The integrated speed sensor consists of a pulse disk with optical scanning and generates a frequency proportional to the speed.

This is processed by the logic module (MCU). The current speed is continuously compared with the programmed limit speeds stored in the nonvolatile memory (NVRAM).
The logic unit triggers the corresponding switch when a limit speed is reached (switch opens).

* MAG 切断速度仅由工厂设定 / MAG only with switching speed set ex works.

选项 FOC (光缆) FGH(I) 6, FGH 8, FGH 14, MAG
Option FOC (fiber optic cable) FGH(I) 6, FGH 8, FGH 14, MAG

选项 FOC:
信号传输通过光缆

- 无干扰信号传输
- 传输距离长达 1000 米
- 所有通道使用单芯光缆
- 带 2 个输出块的解码器
- FOC 电缆断开监测

操作模式

编码器信号 0° 、90° 和标志脉冲在通过光缆传输之前进行编码。在配电柜中解码并生成相应的反向信号。

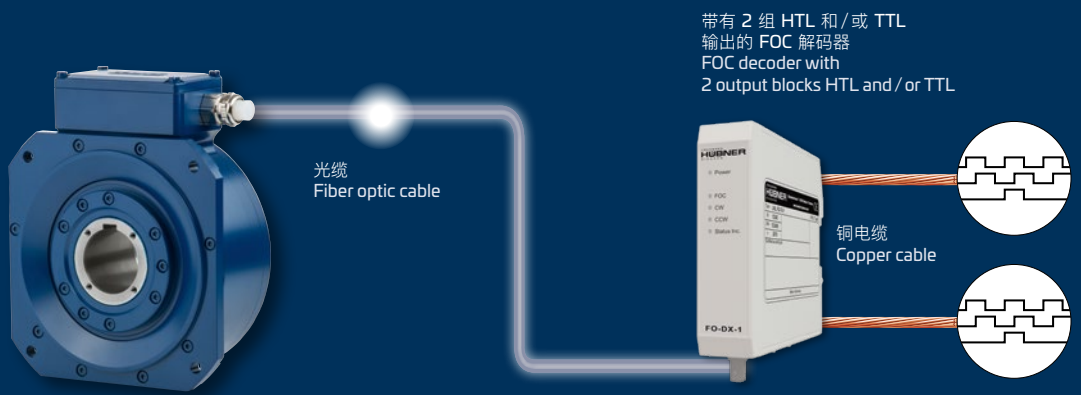
Option FOC:
Signal transmission via fiber optic cable

- Interference-free signal transmission
- For long transmission distances up to 1000 m
- A single fiber optic cable for all channels
- Decoder with 2 output blocks
- Optional: FOC cable break monitoring

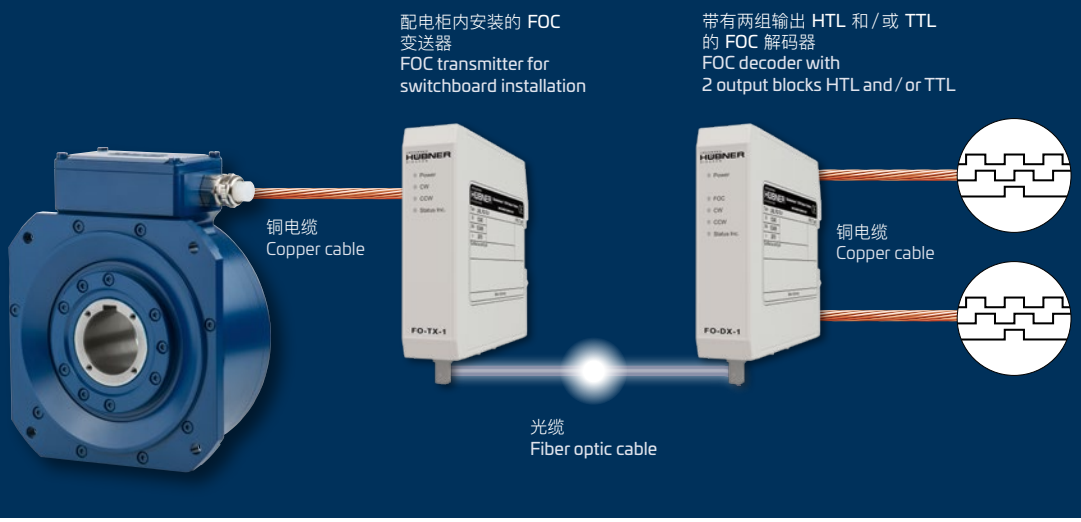
Mode of operation

The encoder signals 0°, 90° and reference pulse are coded before being transmitted via a fiber optic cable. They are decoded in the switchboard and issued with inverted signals.

集成 FOC 变送器的编码器
Encoder with integrated FOC transmitter



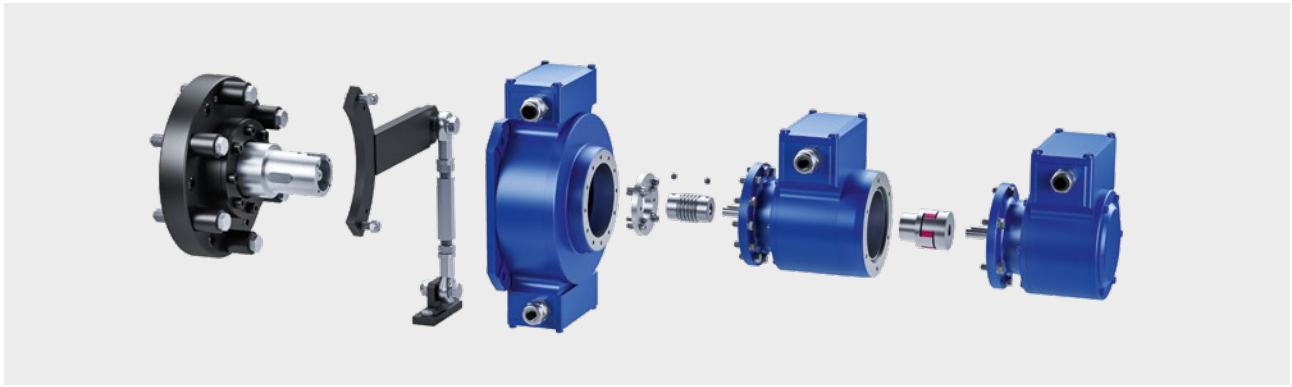
带有独立 FOC 变送器的编码器
Encoder with separate FOC transmitter



FGH(I) 6 和 FGH 8 的组合选项
Combination options FGH(I) 6 and FGH 8

FGH(I) 6 和 FGH 8 系列为需要多个相同信号或不同输出信号的应用提供了定制的系统组合选项。

The series FGH(I) 6 and FGH 8 offer tailor-made combination options for applications that require multiples of the same signals or different output signals.



FGH6 系列与 40 系列附件（增量编码器、绝对编码器或超速开关）的组合示例。
Example for the combination of the FGH 6 series with attachments of the series 40 (incremental encoders, absolute encoders or overspeed switches).

可提供输出信号

每个端子箱可容纳下列功能之一：

IE INCREMENTAL ENCODER
- HTL 或 TTL 可达 1000000 ppr
- Sin/Cos 可达 2500 正弦周期

OS OVERSPEED SWITCH
- 两个速度开关（可编程）
- 一个诊断开关

安装绝对编码器将提供以下功能:

AE ABSOLUTE ENCODER
- SSI
- SSI 带增量
- EtherCAT
- Parallel
- PROFIBUS-DP
- DeviceNet

Possible output signals

Each terminal box can house one of the following functions:

IE INCREMENTAL ENCODER
- HTL or TTL up to one million ppr
- Sin/Cos up to 2500 sine periods

OS OVERSPEED SWITCH
- Two speed switches (programmable)
- One diagnostics switch

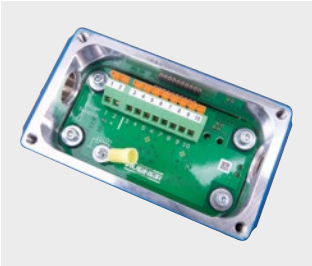
The addition of an absolute encoder will offer the following functions:

AE ABSOLUTE ENCODER
- SSI
- SSI with incremental
- EtherCAT
- Parallel
- PROFIBUS-DP
- DeviceNet

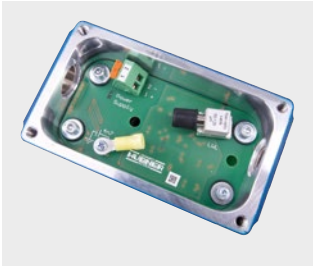
接线技术
Connection technology

可提供接线技术 **Possible connection technology**	FGH(I) 6	FGH 8	FGH 14	MAG
端子箱内端子排 Terminal strip in a terminal box	x	x	x	x
直出电缆 Fixed cable	x	x	x	x
端子箱内 FOC 接头 FOC connector in a terminal box	x	x	x	x
12 针 Burndy 圆接头 12-pole round connector Burndy	x	x	x	x
12 针 M23 圆接头 12-pole round connector M23				x
15 针工业接头r 15-pole industrial connector	x	x	x	
通过电缆连接的分体端子箱 Separate terminal box via connection cable	x	x	x	x

其它接线方式可指定 / *Other connection technologies on request.*



端子箱内端子排
Terminal strip in a terminal box



端子箱内 *FOC* 接头
FOC connector in a terminal box

直出电缆
Fixed cable

Burndy 接头
Burndy connector

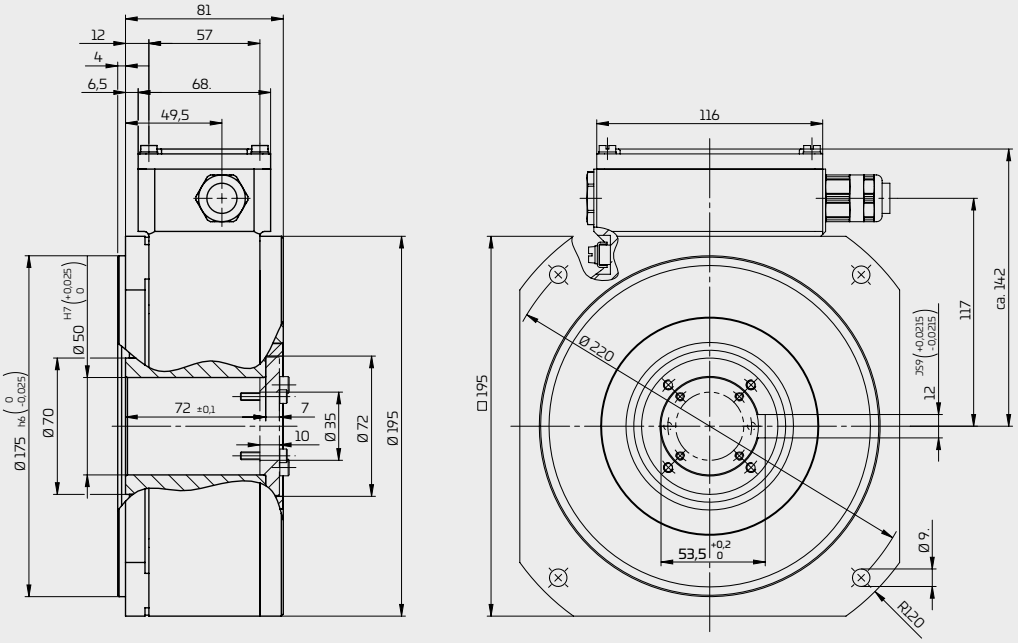
M23 接头
M23 connector

工业接头
Industrial connector

通过带有可选保护软管的连接电缆分离接线盒
Separate terminal box via connection cable with optional protection hose

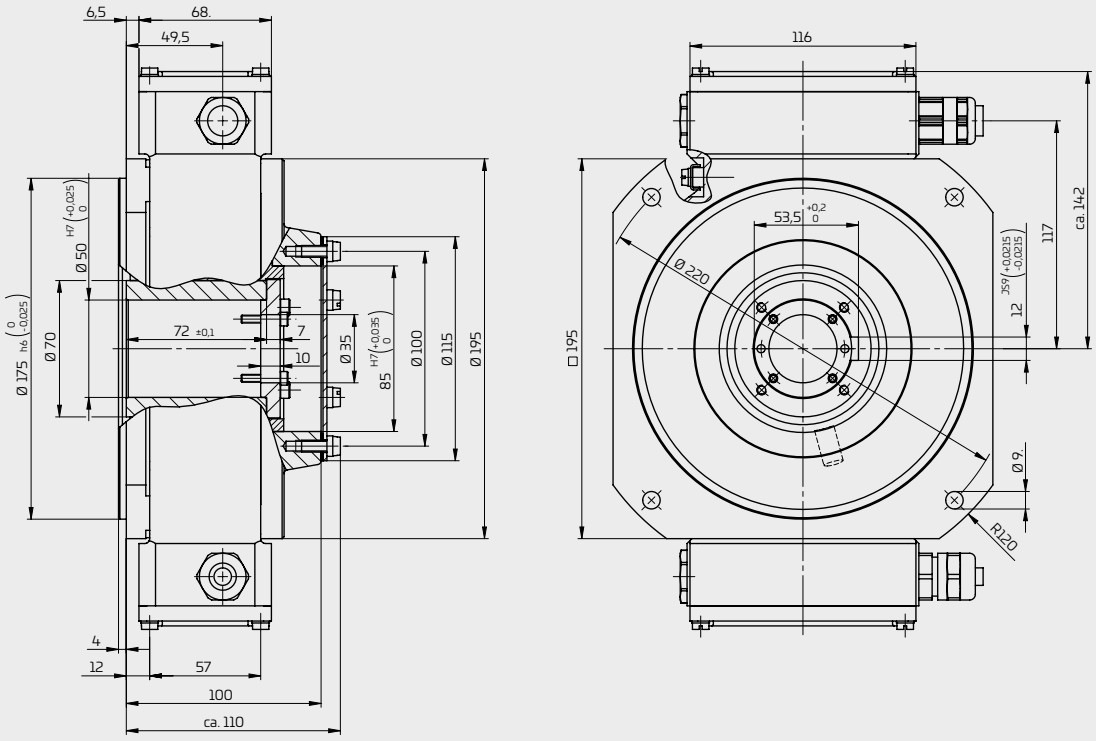
我们很高兴为您提供有关我们为极端环境条件量身定制的电缆保护系统。
We are pleased to advise you about our tailor-made cable protection systems for extreme environmental conditions.

尺寸图 FGH 6
Dimension drawings FGH 6



FGH 6 K

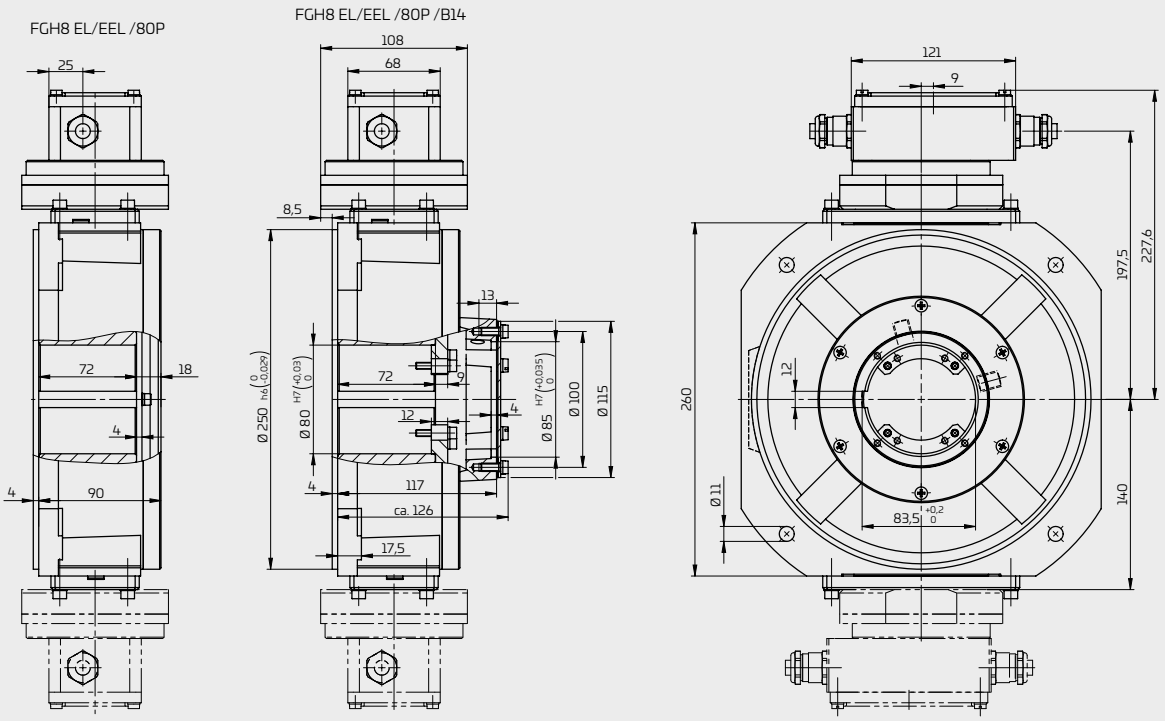
带一个端子箱的空心轴设计
Hollow shaft design with one terminal box



FGH 6 KK

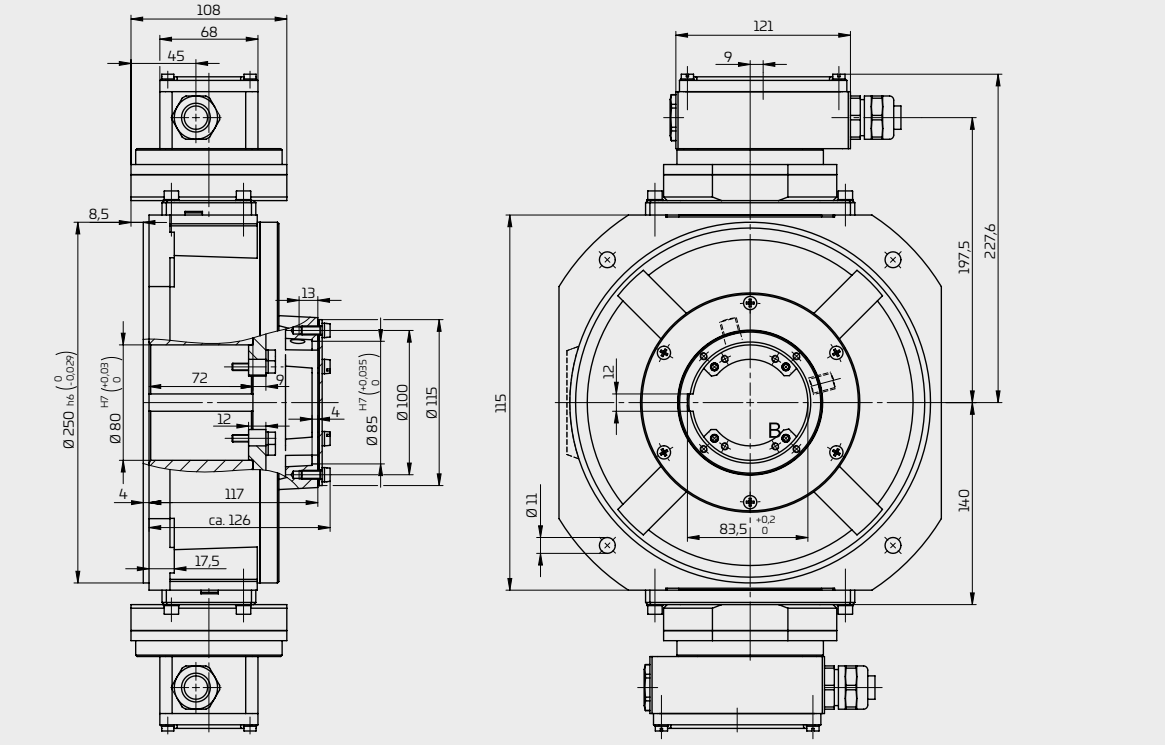
带两个端子箱（选项 S）的空心轴设计，B14 法兰用于编码器安装
Hollow shaft design with two terminal boxes (Option S) and B14 flange for encoder attachment

尺寸图 FGH 8
Dimension drawings FGH 8



FGH 8 EL / FGH 8 EEL

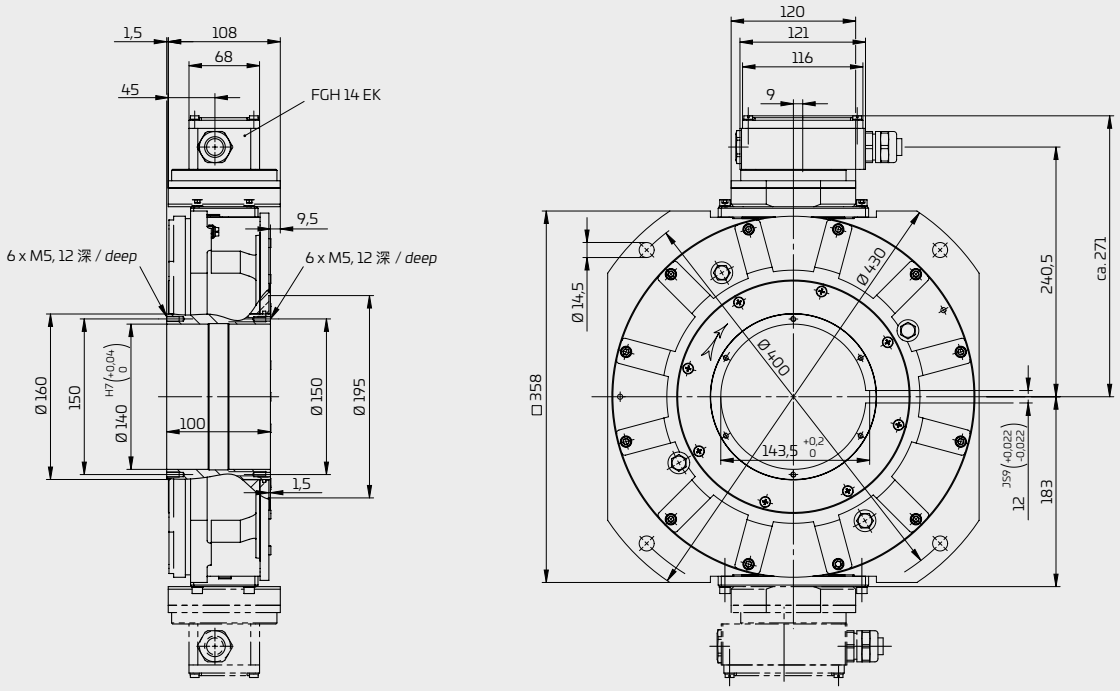
带 FOC 连接的空心轴设计，选项 B14 法兰用于编码器安装
Hollow shaft design with FOC connection, optional B14 flange for encoder attachment



FGH 8 EEK

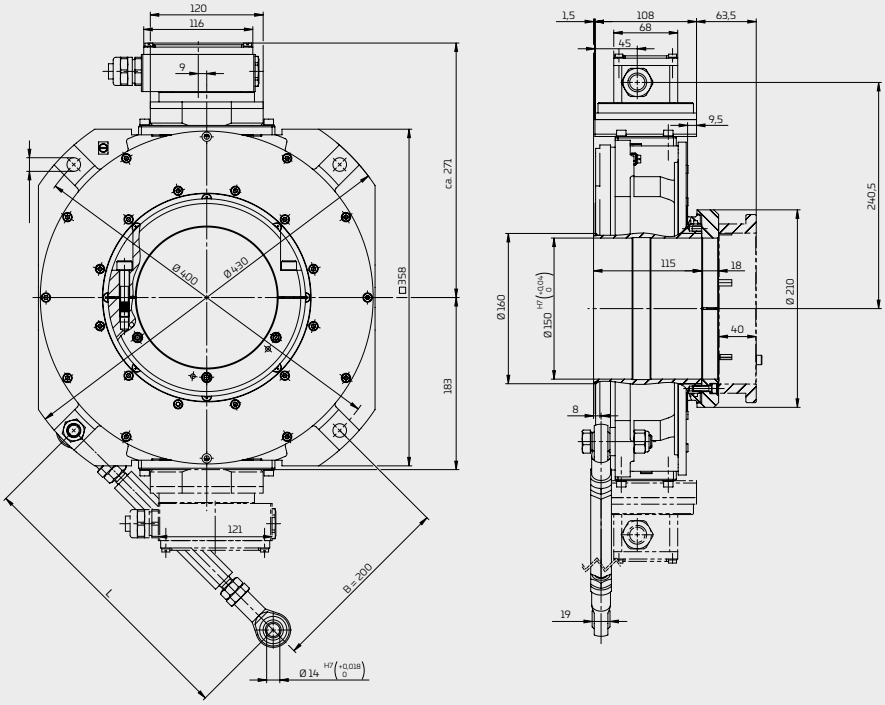
带有两个端子箱的空心轴设计， B14 法兰用于编码器安装
Hollow shaft design with two terminal boxes and B14 flange for encoder attachment

尺寸图 FGH 14
Dimension drawings FGH 14



FGH 14 ES / FGH 14 EES

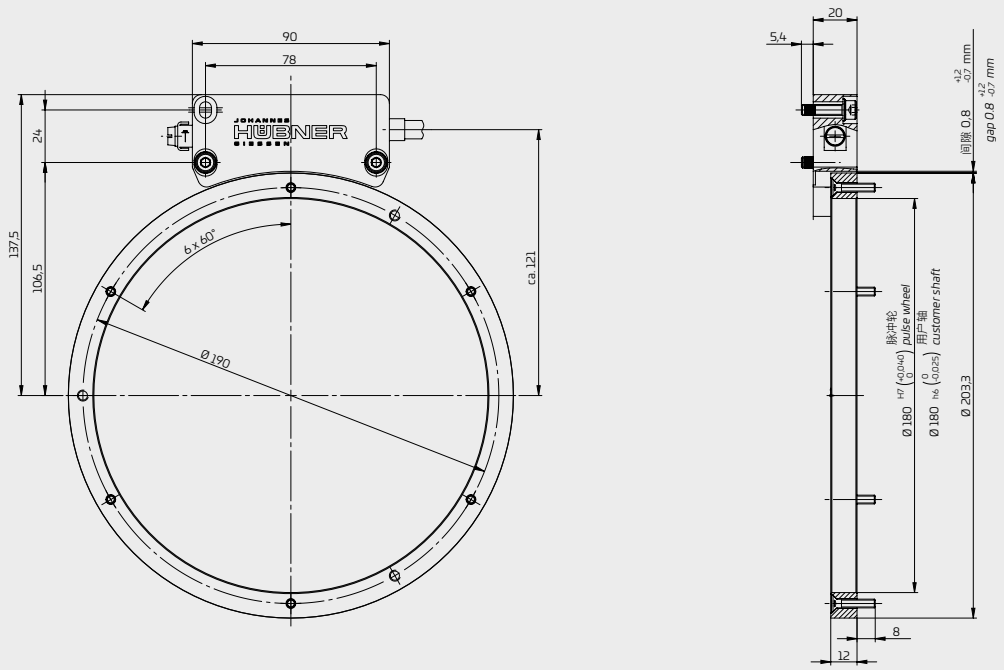
带扫描系统的空心轴设计
Hollow shaft design with scanning system



FGH 14 EK / FGH 14 EEK

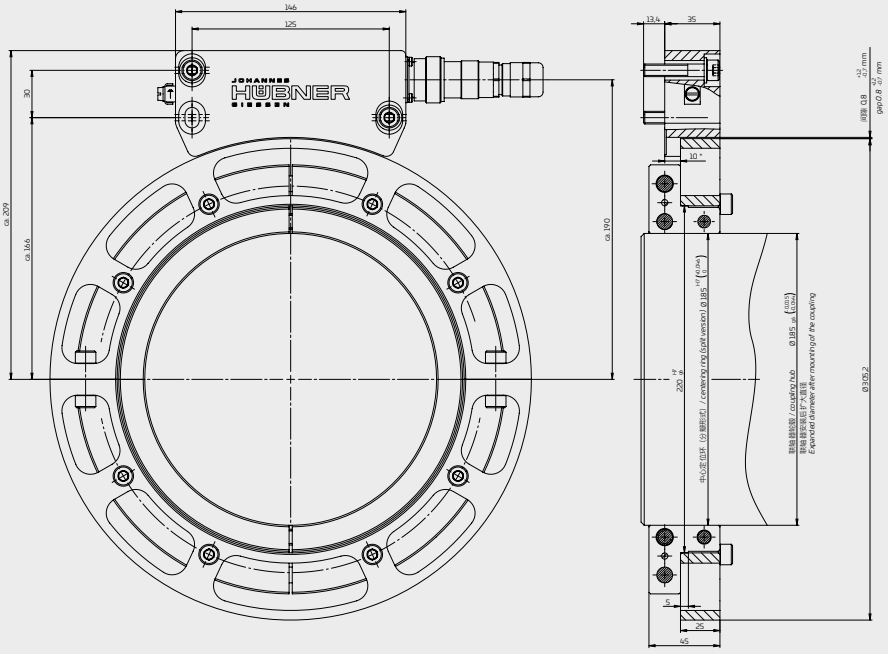
带有两个扫描系统的空心轴设计，夹紧支架和扭矩支架
Hollow shaft design with two scanning systems, clamping bracket and torque bracket

尺寸图 MAG
Dimension drawings MAG



MAG 200

带单轨脉冲轮的系统（轴向窜动可达 ±3 mm，超薄设计）
System with single track pulse wheel (axial movement up to ±3 mm, slim design)



MAG-G 300

带单轨分瓣式脉冲轮的系统（轴向窜动可达 ±8 mm）
System with single track split pulse wheel (axial movement up to ±8 mm)

Type code FGH(I) 6

FGH [ ] 6 [ ] [ ] - [ ] - [ ] (G) - [ ] (G) - [ ] - [ ] - [ ] / [ ]

增量编码器
Incremental encoder

绝缘版本 / Isolated version
(阻断轴电流 / against shaft currents)
- = 不绝缘 / Without isolation
I = 轴套绝缘 / Isolating sleeve
J = 绝缘轴承 (仅 FGHJ 5)
Isolated bearings (only FGHJ 5)

系列 / Series

单系统和双系统的电气连接
Electrical connection for 1 system / 2 systems
K/KK = 1x/2x 端子箱内端子排
Terminal strip in a terminal box
S/SS = 1x/2x 15 针工业接头
15-pole industrial connector
R/RR = 1x/2x 12 针 Burndy 圆接头
12-pole round connector Burndy
C/CC = 1x/2x 直出电缆 / Fixed cable
L/LL = 1x/2x 端子箱内 FOC 头
FOC connector in a terminal box
SK, RK, CK, LK = 第二端子箱带有用于选项 S
Each with second terminal box for Option S

每转脉冲数 / Pulses per rotation
方波 / Square pulses:
256, 600, 1000, 1024, 1200, 1920, 2000, 2048, 2500, 4000, 4096, 5000

反向信号 / Inverted output signals
- = 一般无反向信号 / Generally without inverted signals
G = 各路输出对应的反向信号 / Inverted for all output signals

附加 90 度轨道 / Additional 90 degree track
- = 无 / Without
90 = Option 90: 脉冲通道 90° (B) / Pulse channel 90° (B)

- = 无标志脉冲 / Without reference pulse
N = 带反向信号的标志脉冲 / Reference pulse with inverted signal

附加信号输出选项 (见第 10 页) / Additional options signal outputs (see p. 10)
- = 无 / Without **2F** = Option 2F **4F** = Option 4F **B** = Option B **B2** = Option B2

- = 无 / Without **S** = Option S **L2** = Option L2

- = 无 / Without **V** = Option V **J** = Option J

空心轴 / Hollow shaft
带键槽 / with feather keyway
40P = 空心轴 / Hollow shaft: Ø 40 H7 mm
50P = 空心轴 / Hollow shaft: Ø 50 H7 mm

Spieth 夹紧 / with Spieth clamping
30S = 空心轴 / Hollow shaft: Ø 30 H7 mm
锥形轴 1:10 / with taper 1:10
61C = 空心轴 / Hollow shaft: Ø 61,5 mm

其它类型轴可指定
Other shaft types on request

Type code FGH 8

FGH 8 ☐ ☐ - ☐ - ☐ (G) - ☐ (G) - ☐ - ☐ - ☐ / ☐

增量编码器
Incremental encoder

系列 / Series

单系统和双系统的电气连接
Electrical connection for 1 system / 2 systems
E = 扫描系统（无法在现场更换）
Scanning system (not exchangeable on site)
EK/EEK = 1x/2x 端子箱内端子排
Terminal strip in a terminal box
ES/EES = 1x/2x 15 针工业接头
15-pole industrial connector
ER/EER = 1x/2x 12 针 Burndy 圆接头
12-pole round connector Burndy
EC/EEC = 1x/2x 直出电缆/Fixed cable
EL/EEL = 1x/2x 端子箱内 FOC 头
FOC connector in a terminal box
EESK, EERK, EECK, EELK = 第二端子箱带有用于选项 S
Each with second terminal box for Option S

每转脉冲数 / Pulses per rotation
方波 / Square pulses:
600, 1000, 1200, 2800, 4096, 5600, 8192

反向信号 / Inverted output signals
- = 一般无反向信号 / Generally without inverted signals
G = 各路输出对应的反向信号 / Inverted for all output signals

附加 90 度轨道 / Additional 90 degree track
- = 无 / Without
90 = Option 90: 脉冲通道 90° (B) / Pulse channel 90° (B)

- = 无标志脉冲 / Without reference pulse
N = 带反向信号的标志脉冲 / Reference pulse with inverted signal

附加信号输出选项（见第 10 页）/ Additional options signal outputs (see p. 10)
- = 无 / Without **2F =** Option 2F **4F =** Option 4F **B =** Option B **B2 =** Option B2

- = 无 / Without **S =** Option S **L2 =** Option L2

- = 无 / Without **V =** Option V **J** = Option J

空心轴 / Hollow shaft
带键槽 / with feather keyway
50P = 空心轴 / Hollow shaft: Ø 50 H7 mm
80P = 空心轴 / Hollow shaft: Ø 80 H7 mm

其它类型轴可指定 / Other shaft types on request

Type code FGH 14

FGH 14 [ ] [ ] - [ ] - [ ] (G) - [ ] (G) - [ ] - [ ] - [ ] / [ ]

增量编码器
Incremental encoder

系列 / Series

单系统和双系统的电气连接
Electrical connection for 1 system / 2 systems
E = 扫描系统（低于 1024 ppr 时可现场更换）
Scanning system (exchangeable on site up to 1024 ppr)
- = 无扫描系统
Without scanning system
EK/EEK = 1x/2x 端子箱内端子排
Terminal strip in a terminal box
ES/EES = 1x/2x 15 针工业接头
15-pole industrial connector
ER/EER = 1x/2x 12 针 Burndy 圆接头
12-pole round connector Burndy
EC/EEC = 1x/2x 直出电缆I/Fixed cable
EL/EEL = 1x/2x 端子箱内 FOC 头
FOC connector in a terminal box
EESK, EERK, EECK, EELK = 第二端子箱带有用于选项 S
Each with second terminal box for Option S

每转脉冲数 / Pulses per rotation
方波 / Square pulses:
720, 1024, 1800, 2048, 3000, 7200

反向信号 / Inverted output signals
- = 一般无反向信号 / Generally without inverted signals
G = 各路输出对应的反向信号 / Inverted for all output signals

附加 90 度轨道 / Additional 90 degree track
- = 无 / Without
90 = Option 90: 脉冲通道 90° (B) / Pulse channel 90° (B)

- = 无标志脉冲 / Without reference pulse
N = 带反向信号的标志脉冲 / Reference pulse with inverted signal

附加信号输出选项 (见第 10 页) / Additional options signal outputs (see p. 10)
- = 无 / Without **2F =** Option 2F **4F =** Option 4F **B =** Option B **B2 =** Option B2

- = 无 / Without **S =** Option S **L2 =** Option L2

- = 无 / Without **V =** Option V **J** = Option J

空心轴 / Hollow shaft
带键槽 / with feather keyway
100P = 空心轴 / Hollow shaft: Ø 100 H7 mm
120P = 空心轴 / Hollow shaft: Ø 120 H7 mm
带夹紧 / with clamping
150K = 空心轴 / Hollow shaft: Ø 80 H7 mm
Spieth 夹紧 / with Spieth clamping
93S = 空心轴 / Hollow shaft: Ø 93 H7 mm
95S = 空心轴 / Hollow shaft: Ø 95 H7 mm
锥形轴 / with taper
92C = 空心轴 / Hollow shaft: Ø 92,5 mm (1:10)
148C = 空心轴 / Hollow shaft: Ø 148,42 mm (1:9,6)

其它类型轴可指定 / Other shaft types on request

询价表
Inquiry forms

如果你已经在做一个项目：我们支持你用我们的询价表，很容易地要求报价。

通过扫描本页二维码，你可以直接找到正确的询价表。

请将填好的表格发送至：
sales@huebner-giessen.com

我们很快会和你联系的。

If you are already working on a project: we support you with our inquiry forms to easily request a quote.

You will find the right inquiry form directly by scanning the QR codes on this page.

Please send the completed form to:
sales@huebner-giessen.com

We will get in touch with you shortly.

询价表

增量编码器

MAG

Inquiry forms

Incremental encoders

MAG

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Fax: +49 641 73645
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www.huebner-giessen.com

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