



中文 | ENGLISH

电子式超速开关 EGS® (HJ) 2/40/41
在极端环境条件下用于监测速度和零速度

**Electronic overspeed switches
EGS® (HJ) 2/40/41**
For monitoring speed and zero speed
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？

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

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 rugged 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?

Our fields of applications:

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



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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使用寿命提出了很高的要求。经验表明，仍在许多工业工厂中使用的用于超速保护的机械式超速开关不满足安全、准确和可靠性方面的所有要求。例如，这些装置通常表现出低的抗冲击和抗振动的能力，有限的切断精度，以及在低的切断速度时需要增速齿轮箱。



EGS 2 系列 / Series EGS 2

Task

Heavy industry places tough demands on the reliability and service life of the utilized components. Experience shows that mechanical overspeed switches, which are still used in many industrial plants for overspeed protection purposes do not fulfil all requirements with regard to safety, accuracy and reliability. For instance, these devices often exhibit low resistance to shock and vibration, limited switching accuracy as well as requiring speed increasing gear for low switching speeds.



EGS 40/41 系列 / Series EGS 40/41

解决方案

Johannes Hübner Giessen EGS® 系列电子超速开关是对精度和可靠性要求最高的重载制应用的理想解决方案。这些装置在整个速度范围内以最高精度监控超速和欠速成为可能。此外，还可进行静止监测。

各种系列和设计变化可适用于不同的应用：

- EGS 2: 适用于基本应用；一个切断点输出；工厂设置。
- EGS 40: 适用于标准重载制应用；2个或4个切断点输出，用户设置。
- EGS 41: 适用于安全应用(SIL 2 / PL d)，2个或4个切断点输出；用户设置。

Solution

The EGS® series of electronic overspeed switches from Johannes Hübner Giessen are the ideal solution for heavy-duty applications that demand the highest levels of precision and reliability. These devices make it possible to monitor both overspeeds and underspeeds across the complete speed range with utmost precision. Furthermore standstill monitoring is possible. A variety of series and design variations are available to suit different applications:

- EGS 2: for basic applications; one switching output; preset ex works
- EGS 40: for standard heavy-duty applications; two or four switching outputs; user configurable
- EGS 41: for safety applications (SIL 2 / PL d); two or four switching outputs; user configurable

产品的优点 Product benefits

| 安全 / safe | EGS 2 | EGS 40 | EGS 41 |
|--|-------|--------|--------|
| 电气绝缘半导体开关 Electrically insulated semi-conductor switches | x | x | x |
| 开关触点状态监视 Status monitoring of switching contacts | x | x | x |
| 滑动检测 (停止/爬行运动) Slip detection (standstill / crawling movement) | x | | x |
| 带有诊断开关的内部系统监测 Internal system monitoring with diagnostics switch | | x | x |
| 根据旋转方向编程切断点 / Program switching points according to direction of rotation possible | | x | x |
| 断线检测 Broken wire detection | | x | x |
| 过电流切断 Overcurrent switch off | | x | x |
| 认证 (SIL 2 / PL d) Certified (SIL 2 / PL d) | | | x |

| 精确 / precise | EGS 2 | EGS 40 | EGS 41 |
|--|-------|--------|--------|
| 切断精度高 High switching accuracy | x | x | x |
| 不需要增速齿轮箱 No speed increasing gear necessary | x | x | x |
| 无磨损电子切断触点 Wear-free electronic switching contacts | x | x | x |
| 带滑键的轴 / 带键槽或夹紧的空心轴 Shaft with feather key / hollow shaft with keyway or clamp mount | x | x | x |
| 测试功能 (开关测试) Test functions (switch test) | | x | x |
| 可调切断延迟 Adjustable switch-off delay | | x | x |



产品的优点

Product benefits



| 可靠 / reliable | EGS 2 | EGS 40 | EGS 41 |
|---|-------|--------|--------|
| 长寿命, 高可靠性 Long service life, high levels of availability | x | x | x |
| 坚固的厚壁外壳 Robust, thick-walled housing | x | x | x |
| 具有高动载荷的大型轴承 Large bearings with high dynamic load rating | x | x | x |
| 带绝缘混合轴承的空心轴 (可选) 和带球关节的扭矩支架 / Hollow shaft design with insulated hybrid bearings (optional) and torque bracket with ball joints | x | x | x |
| 抗冲击、抗振动力强 High shock and vibration resistance | x | x | x |
| 防护等级高至 IP66 / IP67 High degree of protection up to IP66 / IP67 | x | x | x |
| 温度范围 -25 °C 至 +85 °C Temperature range from -25 °C to +85 °C | x | x | x |

| 灵活 / flexible | EGS 2 | EGS 40 | EGS 41 |
|---|-------|--------|--------|
| 各种轴径 Variety of shaft diameters | x | x | x |
| 特殊环境 (例如含盐环境) Special environments (e.g. saliferous environment) | x | x | x |
| 附加增量输出 (可选) Additional incremental output (optional) | x | x | x |
| 电源电压范围高达 240 V AC Wide supply-voltage range up to 240 V AC | | x | x |
| 切断电压高达 230 V AC / DC Switching voltages up to 230 V AC / DC | | x | x |
| 带 B14 法兰的第二轴端用于组合安装 Second shaft end with B14 flange for attachments | | x | x |
| 操作软件, 易于组态 Operating software for easy configuration | | x | x |
| 多达 4 个速度开关 Up to 4 speed switches | | x | x |
| 可编程的超速和欠速 Programmable for overspeed and underspeed | | x | x |
| 工厂设置 (切断速度) Preset ex-works (switching speed) | x | | |

技术参数 Technical data

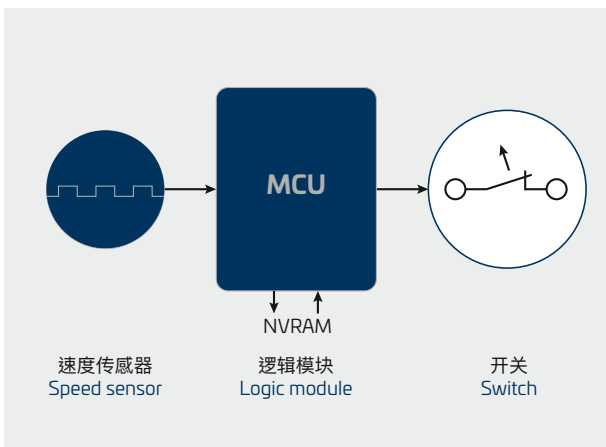
| 系列 / Series | EGS 2 / EGSJ 2w | |
|---|--|---|
| 供电电源; 最大电流 / Supply voltage; max. current | 12 – 30 V DC, 50 mA | |
| 速度开关 / Speed switch 切断电压; 最大电流 / Switching voltage; max. current | 1 0 – 30 V DC, 500 mA |  OS OVERSPEED SWITCH |
| 诊断开关 / Diagnostics switch 切断电压; 最大电流 / Switching voltage; max. current | - - | |
| 切断速度 / Switching speed | 工厂设定 / Preset ex works: 1-6300 rpm 对于实心轴 / for solid shaft 1-5400 rpm 对于空心轴 / for hollow shaft | |
| 保护等级 / Degree of protection | IP66 | |
| 装置温度范围 / Device temperature range | -25 ... +85 °C | |
| 抗振动 / Vibration resistance | 20 g ($\approx 200 \text{ m/s}^2$) | |
| 抗冲击 / Shock resistance | 200 g ($\approx 2000 \text{ m/s}^2$) | |
| 接线 / Connection | 端子排 / Terminal strip | |
| 认证 / certification | UL / CSA |  UL LISTED |
| 增量输出 (选项) Incremental output (optional) | 见 FG 2 选项 S see FG 2 with option S |  IE INCREMENTAL ENCODER |
| 实心轴设计 / Solid shaft design | EGS 2 | |
| 图片 / Figure |  | |
| 结构形式 / Construction type | B5 | |
| 轴端 / Shaft end | Ø 11 mm | |
| 允许机械速度 / Approved mechanical speed | 最大. / max. 7000 rpm | |
| 更多连接 (非传动端) / Further attachments (non-drive end) | - | |
| 空心轴设计 / Hollow shaft design | EGSHJ 2 | |
| 图形 / Figure |  | |
| 空心轴 / Hollow shafts | Ø 12 mm / Ø 16 mm 带夹紧绝缘轴承 (选项: 锥形轴 1:10, Ø 17 mm) / Ø 12 mm / Ø 16 mm with clamping insulated bearings (Option: tapered shaft 1:10, Ø 17 mm) | |
| 允许机械速度 / Approved mechanical speed | 最大. / max. 6000 rpm | |

技术参数 Technical data

| EGS 40 / EGS(H) 40 | EGS 41 / EGS(H) 41 |
|--|--|
| 12 – 30 V DC, 50 mA 100 – 240 V AC, 3 VA | 12 – 30 V DC, 3 W 100 – 240 V AC, 3 VA |
| 2 或 /or 4 2 – 30 V DC, 300 mA; 30 – 230 V AC/DC, 300 mA | 2 或 /or 4 0 – 30 V DC, 500 mA; 30 – 230 V AC/DC, 250 mA |
| 1 或 /or 2 2 – 30 V DC, 300 mA; 30 – 230 V AC/DC, 300 mA | 1 或 /or 2 0 – 30 V DC, 50 mA; 30 – 230 V AC/DC, 250 mA |
| 可编程 / Programmable: 0.63-6000 rpm 对于实心轴 / for solid shaft 0.63-4000 rpm 对于空心轴 / for hollow shaft | 可编程 / Programmable: 0.5-5400 rpm 对于实心轴 / for solid shaft 0.5-3600 rpm 对于空心轴 / for hollow shaft |
| 可达 / up to IP66 / IP67 | 可达 / up to IP66 / IP67 |
| -25 ... +85 °C | -25 ... +85 °C |
| 20 g (≈ 200 m/s ²) | 20 g (≈ 200 m/s ²) |
| 100 g (≈ 1000 m/s ²) | 100 g (≈ 1000 m/s ²) |
| 端子排 / Terminal strip | 端子排 / Terminal strip |
| UL / CSA  | UL / CSA SIL 2 (IEC 61508) / PL d (DIN EN ISO 13849)   |
| 见 FG 40 选项 S see FG 40 with option S  | 带有附加的,集成的 FG 40 with additional, integrated FG 40  |
| EGS 40 | EGS 41 |
|  |  |
| B5 / B35 | B5 / B35 |
| ø 11 mm / ø 14 mm | ø 11 mm / ø 14 mm |
| 最大. / max 6000 rpm | 最大. / max 6000 rpm |
| B14 法兰 + 12 mm 出轴 或 B14 法兰 + 集成半个联轴器 B14 flange + 12 mm shaft end or B14 flange + integrated coupling half | B14 法兰 + 集成半个联轴器 B14 flange + integrated coupling half |
| EGSH(J) 40 | EGSH(J) 41 |
|  |  |
| ø 16 mm / ø 19 mm / ø 20 mm 带键槽 / with keyway ø 16 mm / ø 25 mm 带夹紧 / with clamp mount | ø 16 mm / ø 19 mm / ø 20 mm 带键槽 / with keyway |
| 最大. / max. 4000 rpm | 最大. / max. 4000 rpm |



功能
Function



集成速度传感器由带有光电扫描的脉冲盘组成，产生与速度成比例的频率。

这是由逻辑模块(MCU)处理。当前速度与存储在非易失性存储器(NVRAM)中的程序限制速度连续比较。

当达到限速时，逻辑单元触发相应的开关（开关打开）。

The integrated speed sensor consists of a pulse disk with optical scanner 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).



编程软件 (EGS 40 / 41) Programming software (EGS 40 / 41)



EGS 40 和 EGS 41 的超速值很容易通过 EGS4xPro/EGS41Pro 软件配置。
Parameters of overspeed switches EGS 40 and EGS 41 are easily configured with the software EGS4xPro/EGS41Pro

可调整参数

- 超速
- 欠速
- 旋转方向相关开关
- 切断延迟
- 旋转角度 (用于静止监测)
- 开关迟滞
- ...附加功能

图形用户界面 (监控)

- 速度 / 时间画面及开关输出状态显示

将数据导入和导出到 PC

- 保存参数数据、设备数据、监控数据

Adjustable parameters

- Overspeed
- Underspeed
- Rotation direction dependent switching
- Switching delay
- Rotational angle (for stillstand monitoring)
- Switching hysteresis
- ...additional functions

Graphic user interface (monitoring)

- Speed / time graph and switching outputs status display

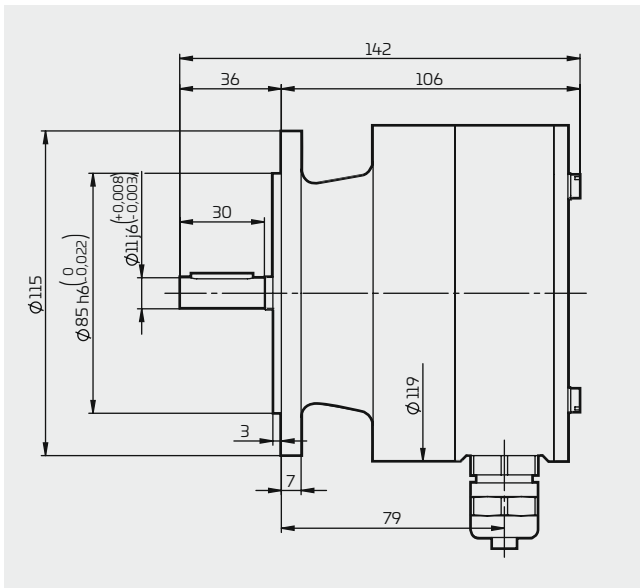
Importing and exporting data to a PC

- Save parameter data, device data, monitoring data



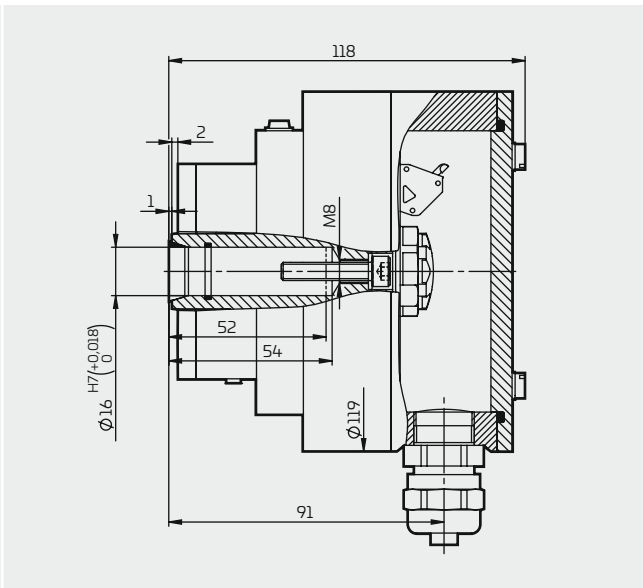
尺寸图 Dimension Drawings

更多尺寸图可登录我们网站或直接索取
Further dimension drawings on our website or on request



EGS 2 AK

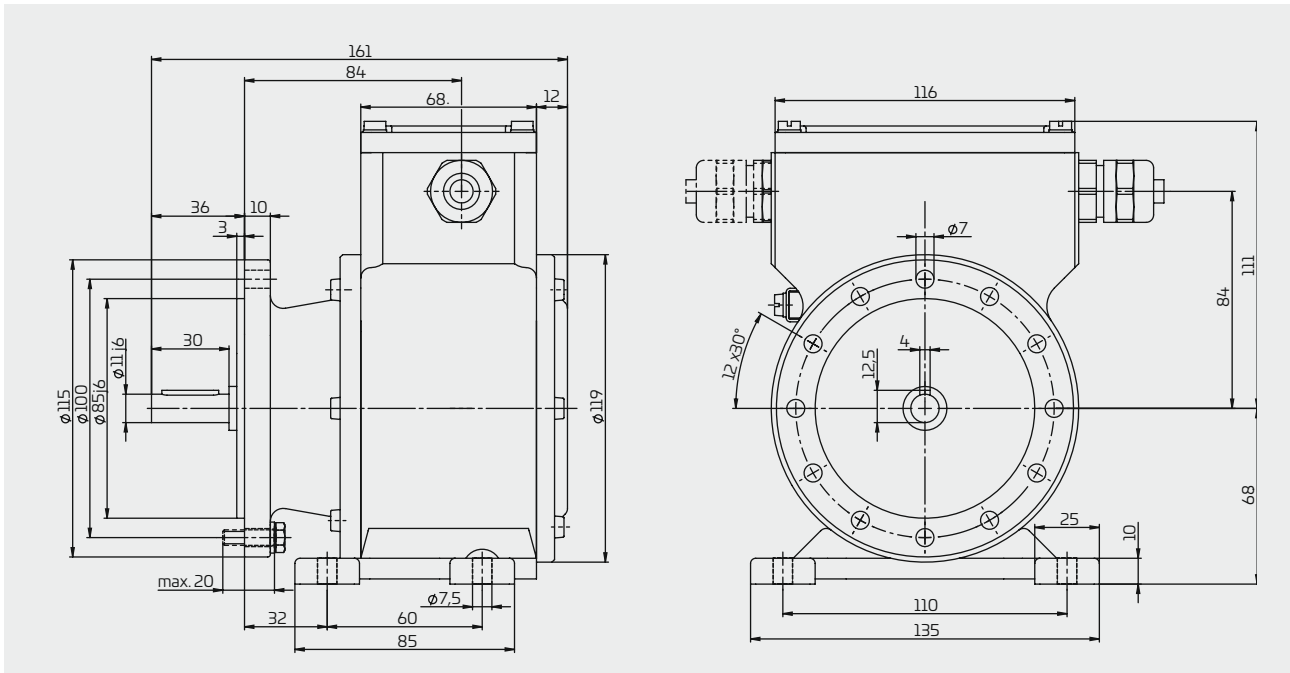
结构形式 B5 带圆柱形实心轴 $\varnothing 11$ mm
Construction type B5 with cylindrical solid shaft $\varnothing 11$ mm



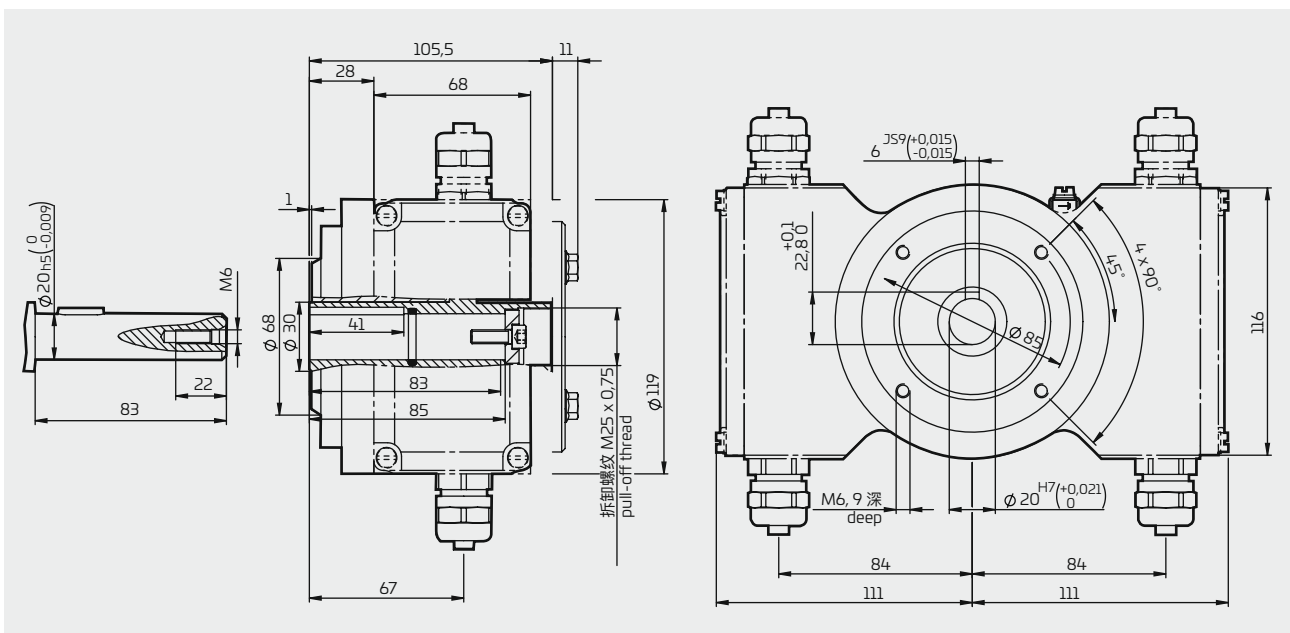
EGSHJ 2 AK

带圆柱形空心轴 $\varnothing 16$ mm;
圆柱形 $\varnothing 12$ mm 及锥形 $\varnothing 17$ mm
with cylindrical hollow shaft
 $\varnothing 16$ mm; cylindrical $\varnothing 12$ mm and
tapered $\varnothing 17$ mm also available

尺寸图
Dimension Drawings



EGS40/41K 结构形式 B35 带圆柱形实心轴 $\varnothing 11$ mm 或 $\varnothing 14$ mm
Construction type B35 with cylindrical solid shaft $\varnothing 11$ mm or $\varnothing 14$ mm



EGSH(J)40/41KK 带圆柱形空心轴 $\varnothing 20$ mm; $\varnothing 16$ mm / $\varnothing 19$ mm. EGS(H)40: 空心轴 或者夹紧: $\varnothing 16$ mm 或 $\varnothing 25$ mm
with cylindrical hollow shaft $\varnothing 20$ mm; $\varnothing 16$ mm / $\varnothing 19$ mm also available. EGS(H)40: Hollow shaft alternatively with clamp mount: $\varnothing 16$ mm or $\varnothing 25$ mm



选型表
Type code

| | | | | | | |
|--|------------|--|----------|-----------|----------|--|
| EGS(HJ) 2 | EGS | | 2 | AK | / | |
| 电子超速开关 / Electronic overspeed switch | | | | | | |
| 结构形式 / Construction type - = 结构形式 B5 (法兰) / Construction type B5 (flange) HJ = 带绝缘轴承的空心轴设计 Hollow shaft design with insulated ball bearings | | | | | | |
| 系列 / Series | | | | | | |
| 外壳设计 / Housing design AK = 轴向端子箱 / Axial terminal box | | | | | | |
| 轴 / Shaft - = 实心轴 Ø 11 j6 x 30 mm 带键 / Solid shaft Ø 11 j6 x 30 mm with feather key 12K = 空心轴 Ø 12 H7 mm 带夹紧 / Hollow shaft Ø 12 H7 mm with clamp mount 16K = 空心轴 Ø 16 H7 mm 带夹紧 / Hollow shaft Ø 16 H7 mm with clamp mount 17C = 空心轴 Ø 17 mm 锥形轴 1:10 / Hollow shaft Ø 17 mm tapered shaft 1:10 | | | | | | |
| 有关附加增量输出的设计版本，请参见FG 2系列选项S For design version with additional incremental output see series FG 2 with option S | | | | | | |

选型表

Type code

EGS(HJ) 40 / 41

EGS

-

/

电子超速开关
Electronic overspeed switch

结构形式 / Construction type

- = 结构形式 B5 (法兰) 或 B35 (法兰+底座)
Construction type B5 (flange) or B35 (flange+foot)
- H = 空心轴设计
Hollow shaft design
- HJ = 带有绝缘球轴承的空心轴设计
Hollow shaft design with insulated ball bearings

系列 / Series

- 40 = 无安全认证
Without safety certification
- 41 = 带安全认证 SIL 2 / PL d
With safety certification SIL 2 / PL d

外壳设计 / Housing design

- K = 一个端子箱 / One terminal box
- KK = 两个端子箱 / Two terminal boxes

切断电压 / Switching voltage

- = 0 – 30 V DC (EGS 40)
2 – 30 V DC (EGS 41)
- HS = 30 – 230 V AC / DC

供电电压 / Supply voltage

- = 12 – 30 V DC
- HV = 100 – 240 V AC

轴 / Shaft

- 带键/键槽 / with feather key / keyway
- = 实心轴 Ø 11 j6 mm (可选14 j6) / Solid shaft Ø 11 j6 mm (optional 14 j6)
- 16P = 空心轴 Ø 16 H7 mm / Hollow shaft Ø 16 H7 mm
- 19P = 空心轴 Ø 19 H7 mm / Hollow shaft Ø 19 H7 mm
- 20P = 空心轴 Ø 20 H7 mm / Hollow shaft Ø 20 H7 mm

带夹紧 (EGS 40) / with clamp mount (EGS 40)

- 16K = 空心轴 Ø 16 H7 mm / Hollow shaft Ø 16 H7 mm
- 25K = 空心轴 Ø 25 H7 mm / Hollow shaft Ø 25 H7 mm

有关附加增量输出的设计版本，请参见FG 40系列选项S
For design version with additional incremental output see series FG 40 with option S

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