Exlar GTX Series Product Catalog

Electric Integrated Motor Actuator

Specifications | Drawings | Ordering | And More...

GTX
一体式伺服电动缸

Power | Precision | Proven

April 2024

目录

GTX 系列

描述

对于在恶劣的工况下需要长寿命和连续工作的应用，GTX系列一体式伺服电动缸将是一个理想的解决方案。受益于成熟的行星滚柱丝杠技术，GTX系列一体式伺服电动缸在可在提供大推力与高速度的同时使用寿命达到相同体积的滚珠丝杠电动缸的15倍。

长寿命/低维护要求

GTX系列集成了伺服电机与反置式行星丝杠，空心丝杠直接作为电机的转子，并将所有的零件封装于壳体之内，在伸缩杆前端使用优质的密封。不论所处的工作环境如何恶劣，它仍可以可靠有效地工作。

相比上一代GSX系列，GTX系列采用标准模块化生产，显著提高产品生产率，缩短交货期并提高质量稳定性。

精度与使用环境温度		
精度:		
丝杠导程误差	µm / 300 mm	25
	in/ft	0.001
丝杠行程误差	µm / 300 mm	30
	in/ft	0.0012
反向间隙	in	0.006
	mm	0.1524
标准使用环境温度	°C	0 to 25
	°F	0 to 77
非标使用环境温度	°C	65*
	°F	149*
典型摩擦扭矩	Frame Size (Nm)	060 (0.12) 080 (0.23) 100 (0.34)
IP 等级		IP66S

* 需要计算温度衰减系数

标准与认证		
UL		UL 1004-1
		UL 1004-6
CSA		CSA C22.2 NO. 100
CE	EMC	EN 55014-1
		EN 55014-2
	Safety	IEC/EN 60034-1
	RoHS	RoHS 2011/65/EU and amended with directive 2015/863

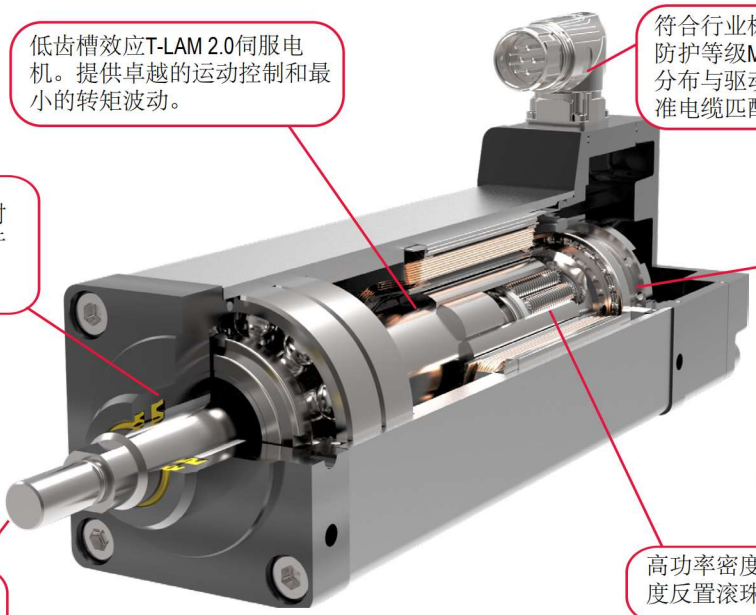
评估使用环境温度

本手册上速度/扭矩曲线基于25℃的环境条件。但执行机构可以在高达65℃的环境温度下工作。

$$\text{Elevated Ambient Temp Factor (\%)} = 100\% \times \sqrt{\frac{\text{Max Rated Temp [~130 °C] - Environment Temp [in °C]}}{\text{Max Rated Temp [~130 °C] - Rated Ambient [~25 °C]}}} =$$

$$100\% \times \sqrt{\frac{\text{130 °C - Environment Temp}}{\text{105 °C}}} = \text{\% of published continuous @ 25 °C}$$

产品特点



低齿槽效应T-LAM 2.0伺服电机。提供卓越的运动控制和最小的转矩波动。

符合行业标准的可旋转IP67防护等级M23连接器，针脚分布与驱动器制造商的标准电缆匹配。

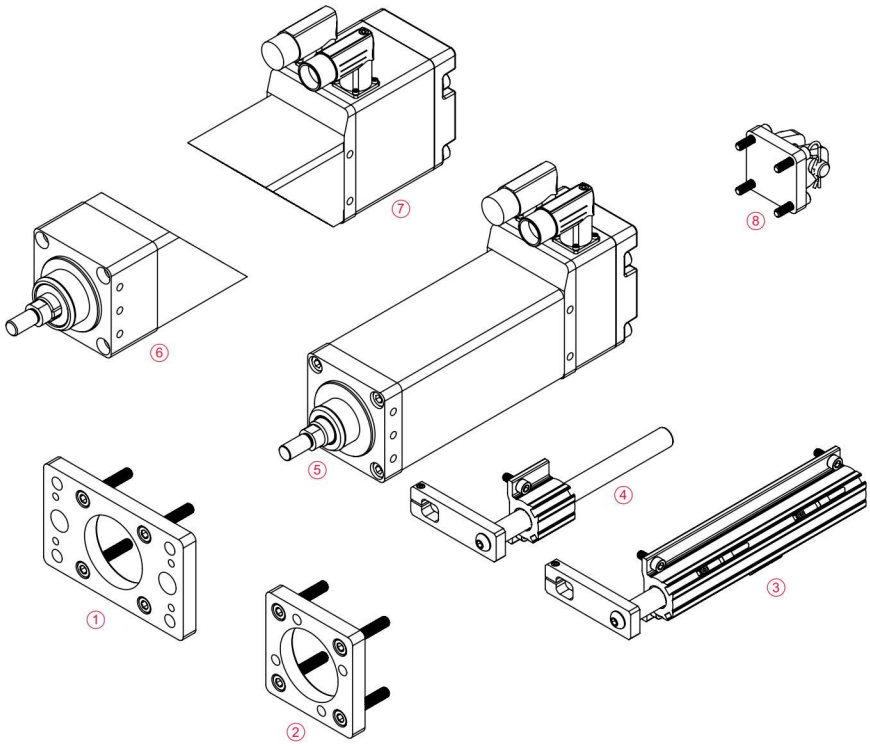
高压密封、高负载衬套和刮片集成在易于更换的前板内。

反馈装置按驱动器制造商要求校准。

可选反馈装置包括:
SICK
Hiperface SICK
Hiperface DSL
Heidenhain Endat 2.2
Resolver
Incremental Encoder

高功率密度、高精度反置滚珠丝杠。

感应淬火表面镀铬动力杆，在最恶劣的应用中提供最大耐磨性。



1 - 前法兰*
2 - 前安装面板
3 - 外置限位开关总成**
4 - 外置防转机构总成
5 - 杆端螺纹***
6 - 内置防转 (花键伸缩杆)***
7 - 制动器
8 - 尾部铰接安装*

* 公制/英制
** 限位开关单独订购
*** 可选 公制/英制 与 外螺纹/内螺纹

机械参数

GTX060

	行程 mm (in)	导程 mm (in)	额定持续推力 N (lbf)		最大速度 mm/s (in/s)		额定动载 N (lbf)	转动惯量 kg-m^2 (in-lb-s^2)
			4 (VAC)	D (VDC)	4 (VAC)	D (VDC)		
GTX060-80-01	80 (3.2)	2.54 (0.1)	2,668 (600)	2,668 (600)	318 (12.5)	212 (8.3)	9,230 (2,075)	0.00007367 (0.000652)
GTX060-80-02		5.08 (0.2)	1,900 (427)	1,610 (392)	635 (25.0)	423 (16.7)	6,850 (1,540)	
GTX060-80-04		10.2 (0.4)	1,006 (226)	852 (192)	1,270 (50.0)	847 (33.3)	5,471 (1,230)	
GTX060-150-01	150 (5.9)	2.54 (0.1)	2,668 (600)	2,668 (600)	318 (12.5)	212 (8.3)	9,230 (2,075)	0.00008689 (0.000769)
GTX060-150-02		5.08 (0.2)	1,900 (427)	1,610 (392)	635 (25.0)	423 (16.7)	6,850 (1,540)	
GTX060-150-04		10.2 (0.4)	1,006 (226)	852 (192)	1,270 (50.0)	847 (33.3)	5,471 (1,230)	
GTX060-300-01	300 (11.8)	2.54 (0.1)	2,668 (600)	2,668 (600)	318 (12.5)	212 (8.3)	9,230 (2,075)	0.00011537 (0.001021)
GTX060-300-02		5.08 (0.2)	1,900 (427)	1,610 (392)	635 (25.0)	423 (16.7)	6,850 (1,540)	
GTX060-300-04		10.2 (0.4)	1,006 (226)	852 (192)	1,270 (50.0)	847 (33.3)	5,471 (1,230)	

注：最高速度需要运行于最大电压下
定制行程请联系销售工程师

不要超过2倍连续推力额定值
基于25°C环境条件测试连续推力

GTX080

	行程 mm (in)	导程 mm (in)	额定持续推力 N (lbf)		最大速度 mm/s (in/s)		额定动载 N (lbf)	转动惯量 kg-m^2 (in-lb-s^2)
			4 (VAC)	D (VDC)	4 (VAC)	D (VDC)		
GTX080-100-01	100 (3.9)	2.54 (0.1)	8,365 (1,881)	7,101 (1,596	254 (10.0)	102 (4.0)	24,535 (5,516)	0.000340 (0.003013)
GTX080-100-02		5.08 (0.2)	4,740 (1,066)	4,024 (905)	508 (20.0)	203 (8.0)	25,798 (5,800)	
GTX080-100-05		12.7 (0.5)	2,008 (451)	1,704 (383)	1,270 (50.0)	508 (20.0)	21,795 (4,900)	
GTX080-150-01	150 (5.9)	2.54 (0.1)	8,365 (1,881)	7,101 (1,596	254 (10.0)	102 (4.0)	24,535 (5,516)	0.000369 (0.003267)
GTX080-150-02		5.08 (0.2)	4,740 (1,066)	4,024 (905)	508 (20.0)	203 (8.0)	25,798 (5,800)	
GTX080-150-05		12.7 (0.5)	2,008 (451)	1,704 (383)	1,270 (50.0)	508 (20.0)	21,795 (4,900)	
GTX080-300-01	300 (11.8)	2.54 (0.1)	8,365 (1,881)	7,101 (1,596	254 (10.0)	102 (4.0)	24,535 (5,516)	0.000455 (0.004029)
GTX080-300-02		5.08 (0.2)	4,740 (1,066)	4,024 (905)	508 (20.0)	203 (8.0)	25,798 (5,800)	
GTX080-300-05		12.7 (0.5)	2,008 (451)	1,704 (383)	1,270 (50.0)	508 (20.0)	21,795 (4,900)	
GTX080-450-01	450 (17.7)	2.54 (0.1)	8,365 (1,881)	7,101 (1,596	254 (10.0)	102 (4.0)	24,535 (5,516)	0.000541 (0.004790)
GTX080-450-02		5.08 (0.2)	4,740 (1,066)	4,024 (905)	508 (20.0)	203 (8.0)	25,798 (5,800)	
GTX080-450-05		12.7 (0.5)	2,008 (451)	1,704 (383)	1,270 (50.0)	508 (20.0)	21,795 (4,900)	

注：最高速度需要运行于最大电压下
定制行程请联系销售工程师

不要超过2倍连续推力额定值 基于25°C环境条件测试连续推力

GTX100

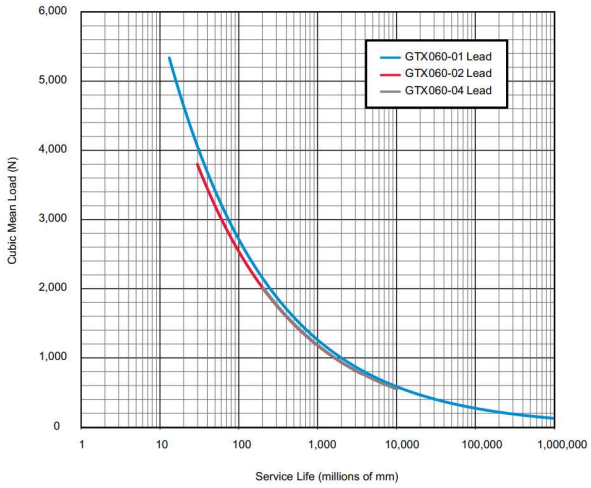
	行程 mm (in)	导程 mm (in)	额定持续推力 N (lbf) 4 (VAC)	最大速度 mm/s (in/s) 4 (VAC)	额定动载 N (lbf)	转动惯量 kg-m^2 (in-lb-s^2)
GTX100-150-01	150 (5.9)	2.54 (0.1)	15,392 (3,460)	191 (7.5)	54,557 (12,266)	0.0014085 (0.012467)
GTX100-150-02		5.08 (0.2)	12,098 (2,720)	381 (15.0)	55,972 (12,584)	
GTX100-150-05		12.7 (0.5)	5,444 (1,224)	953 (37.5)	37,141 (8,350)	
GTX100-300-01	300 (11.8)	2.54 (0.1)	15,392 (3,460)	191 (7.5)	54,557 (12,266)	0.0017399 (0.015399)
GTX100-300-02		5.08 (0.2)	12,098 (2,720)	381 (15.0)	55,972 (12,584)	
GTX100-300-05		12.7 (0.5)	5,444 (1,224)	953 (37.5)	37,141 (8,350)	

注：最高速度需要运行于最大电压下
定制行程请联系销售工程师

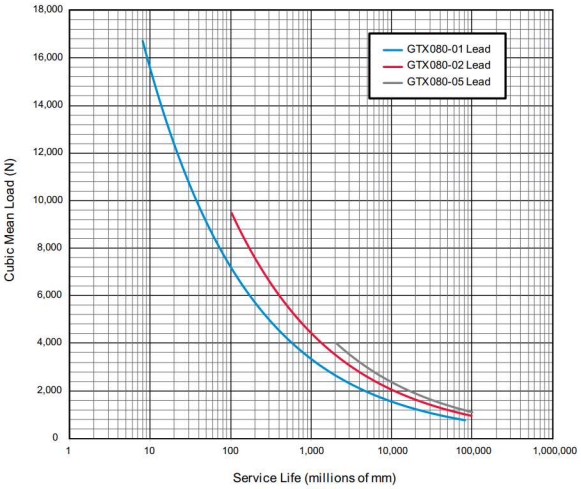
不要超过2倍连续推力额定值
基于25°C环境条件测试连续推力

预期使用寿命

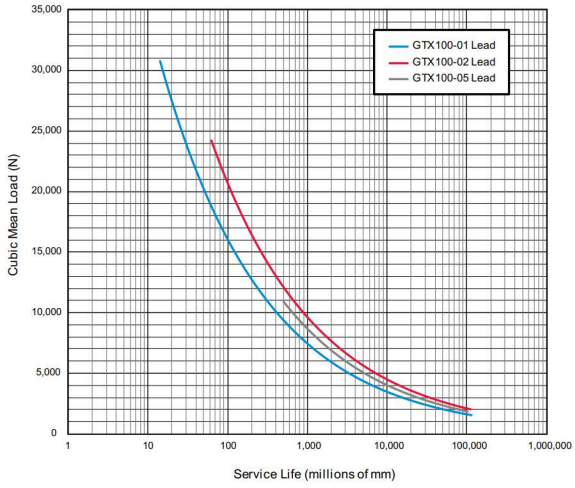
GTX060



GTX080



GTX100



寿命曲线基于以下条件：
在整个使用期间保持充分良好的润滑
温度在20°C和40°C之间
无意外机械停止或冲击载荷
无侧向载荷
注意：此曲线不适用于短行程、高频率的应用工况

对于推力较大而受力行程小于螺母或导程长度的应用（如压装），请与Exlar联系以获取有关短行程大推力应用使用寿命估算的更多详细信息。 您也可以从www.exlar.com下载“Calculating Life Expectency”。

L_{10}的定义是行星滚柱丝杠的预期寿命里程。在正确的维护下90%的丝杠均能够达到或超过计算出来的理论预期寿命。
预期使用寿命计算值仅是电动缸选型时的一个参考因素，计算结果并不等于对丝杠寿命的保证。

计算公式定义如下 (计算结果为 km):

Ca=额定动载 (N)
F_{cml}=立方根平均载荷 (N)
ℓ=丝杠导程 (mm)

$$L_{10} = \left(\frac{C_a}{F_{cml}}\right)^3 \times \ell$$

更多信息请参考 www.exlar.com.

电气参数

GTX060

电压		4 (AC)			D (DC)		
最高总线电压	VAC	230/460 Vac			24/48 Vdc		
转速 @总线电压	RPM	5000/7500			2400/5000		
导程	in	0.1	0.2	0.4	0.1	0.2	0.4
RMS 正弦波整流							
电机连续扭矩	Nm	1.35	1.81	1.81	1.35	1.53	1.53
	lbf-in	11.9	16.0	16.0	11.9	13.6	13.6
额定电流	A	3.0	4.0	4.0	18.3	20.8	20.8
峰值电流	A	6.0	8.0	8.0	36.7	41.7	41.7
扭矩常数 (Kt) (+/– 10% @ 25˚C)	Nm/A	0.5			0.08		
	lbf-in/A	4.5			0.7		
电压常数 (Ke) (+/– 10% @ 25˚C)	V/kRPM	30.5			5.0		
0 - Peak 正弦波整流							
电机连续扭矩	Nm	1.81			1.5		
	lbf-in	16			13.6		
额定电流	A	5.7			29.5		
峰值电流	A	11.3			58.9		
扭矩常数 (Kt) (+/– 10% @ 25˚C)	Nm/A	0.35			0.06		
	lbf-in/A	3.2			0.5		
电压常数 (Ke) (+/– 10% @ 25˚C)	V/kRPM	43.1			7.0		
电机极数	Number of Poles	8			8		
绕组电阻 (L-L) (+/– 5% @ 25˚C)	Ohms	2.8			0.1		
绕组电感 (L-L)(+/– 15%)	mH	13.8			0.3		
电气时间常数	ms	4.9			3.1		
绝缘等级	460 Vac Max, 180 °C (Class H)						

*数据如有变更恕不另行通知
*测试数据基于美国国家能源协会推荐铝散热器10”*10”*1/4”。
*环境温度25 C
*AC 绕组最高电压460伏
*DC 绕组最高电压48 VDC
*转速与输入电压成正比

GTX060 重量	
部件	kg (lb)
GTX060-80	3.2 (7.0)
GTX060-150	3.7 (8.1)
GTX060-300	4.8 (10.5)
制动器	0.7 (1.4)
前法兰 (1)	0.4 (0.9)
前安装面板 (3)	0.3 (0.5)
尾部铰接 (5)	0.2 (0.5)
英制前法兰 (F)	0.3 (0.7)
英制尾部铰接(C)	0.3 (0.7)
防转机构(80 mm 行程)	0.46 (1.0)
防转机构(150 mm 行程)	0.54 (1.2)
防转机构 (300 mm 行程)	0.72 (1.6)
限位开关+防转机构 (80 mm 行程)	0.67 (1.5)
限位开关+防转机构 (150 mm 行程)	0.81 (1.8)
限位开关+防转机构 (300 mm 行程)	1.11 (2.5)

制动器		
最小制动扭矩	Nm	2.5
	lbf-in	22
制动电压	Vdc	24 (-10%/+6%)
制动电流 @ 24 VDC	A	0.46
接触/释放 时间	ms	10/25

GTX080

电压		4 (AC)	D (DC)
最高总线电压		230/460 Vac	24/48 Vdc
转速 @总线电压	rpm	3000/6000	1000/2400
RMS 正弦波整流			
电机连续扭矩	Nm	4.51	3.83
	lbf-in	39.9	33.9
额定电流	A	4.9	24.2
峰值电流	A	9.9	48.5
扭矩常数 (Kt) (+/– 10% @ 25˚C)	Nm/A	1.02	0.18
	lbf-in/A	9.0	1.6
电压常数 (Ke) (+/– 10% @ 25˚C)	V/krpm	61.6	10.7
0 - Peak 正弦波整流			
电机连续扭矩	Nm	4.51	3.83
	lbf-in	39.9	33.9
额定电流	A	6.6	34.6
峰值电流	A	13.3	69.2
扭矩常数 (Kt) (+/–10% @ 25˚C)	Nm/A	0.72	0.13
	lbf-in/A	6.4	1.1
电压常数 (Ke) (+/– 10% @ 25˚C)	V/krpm	87.1	15.1
电机极数	Number of Poles	8	8
绕组电阻 (L-L) (+/– 5% @ 25˚C)	Ohms	2.5	0.1
绕组电感 (L-L)(+/– 15%)	mH	17.3	0.46
电气时间常数	ms	6.8	6.9
绝缘等级		460 Vac Max, 180 °C (Class H)	

*如有变更，恕不另行通知

*测试数据基于美国国家能源协会推荐铝散热器10”*10”*1/4”。

*环境温度25˚C

*AC 绕组最高电压460伏

*DC绕组最高电压48 VDC

*转速与输入电压成正比

GTX080 重量	
部件	kg (lb)
GTX080-100	6.1 (13.5)
GTX080-150	6.8 (14.9)
GTX080-300	8.6 (19.0)
GTX080-450	10.5 (23.1)
制动器	1.1 (2.5)
前法兰 (1)	1.0 (2.2)
前安装面板 (3)	0.6 (1.2)
尾部铰接 (5)	0.4 (0.8)
英制前法兰 (F)	0.8 (1.8)
英制尾部铰接(C)	0.8 (1.7)
防转机构 (100 mm 行程)	0.5 (1.1)
防转机构 (150 mm 行程)	0.6 (1.3)
防转机构 (300 mm 行程)	0.8 (1.8)
防转机构 (450 mm 行程)	1.1 (2.4)
防转机构+限位开关 (100 mm 行程)	0.9 (1.9)
防转机构+限位开关 (150 mm 行程)	1.0 (2.3)
防转机构+限位开关 (300 mm 行程)	1.6 (3.5)
防转机构+限位开关 (450 mm 行程)	2.1 (4.7)

制动器		
制动保持扭矩 (最小)	Nm	4.5
	lbf-in	40
制动器电压	Vdc	24 (-10%/+6%)
额定电流 @ 24 VDC	A	0.5
接触/释放 时间	ms	18/35

GTX100

电压		4 (AC)
最高总线电压		230/460 Vac
转速 @总线电压	rpm	3000/4500
RMS 正弦波整流		
电机连续扭矩	Nm	12.23
	lbf-in	108.2
额定电流	A	12.3
峰值电流	A	24.7
扭矩常数 (Kt) (+/– 10% @ 25˚C)	Nm/A	1.11
	lbf-in/A	9.8
电压常数 (Ke) (+/– 10% @ 25˚C)	V/krpm	67.0
0 - Peak 正弦波整流		
电机连续扭矩	Nm	12.23
	lbf-in	108.2
额定电流	A	17.4
峰值电流	A	34.8
扭矩常数 (Kt) (+/–10% @ 25˚C)	Nm/A	0.78
	lbf-in/A	6.92
电压常数 (Ke) (+/– 10% @ 25˚C)	V/krpm	94.8
电机极数	Number of Poles	8
绕组电阻 (L-L) (+/– 5% @ 25˚C)	Ohms	0.65
绕组电感 (L-L)(+/– 15%)	mH	4.9
电气时间常数	ms	7.6
绝缘等级	460 Vac Max, 180 °C (Class H)	

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*测试数据基于美国国家能源协会推荐铝散热器10”*10”*1/4”。
*环境温度25˚C
*AC 绕组最高电压460伏
*DC 绕组最高电压48 VDC
*转速与输入电压成正比

*对于导程为0.1inch的型号，扭矩和电流必须限制于8.89Nm/9.0A，不要超过第6页机械规格表中规定的连续额定值。

电机能达到的峰值扭矩和电流值将是连续值的2倍，0.1inch导程在扭矩超过额定值时，产生的推力将可能会损坏电动缸或外部机构。

GTX100 重量	
部件	kg (lb)
GTX100-150	13.1 (28.8)
GTX100-300	16.0 (35.2)
制动器	1.2 (2.7)
前法兰 (1)	2.2 (4.7)
前安装面板 (3)	1.1 (2.4)
尾部铰接 (5)	0.8 (1.8)
英制前法兰 (F)	1.9 (4.1)
英制尾铰接 (C)	1.1 (2.5)
防转机构 (150 mm 行程)	1.5 (3.2)
防转机构 (300 mm 行程)	2.0 (4.5)
限位开关+防转机构 (150 mm 行程)	2.0 (4.5)
限位开关+防转机构 (300 mm 行程)	2.8 (6.2)

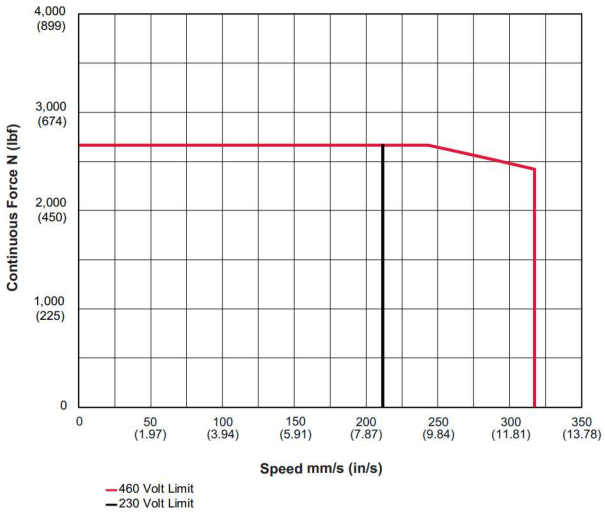
制动器		
制动保持扭矩 (最小)	Nm	11
	lbf-in	97
制动器电压	Vdc	24 (-10%/+6%)
额定电流 @ 24 VDC	A	0.75
接触/释放 时间	ms	25/40

速度/推力曲线

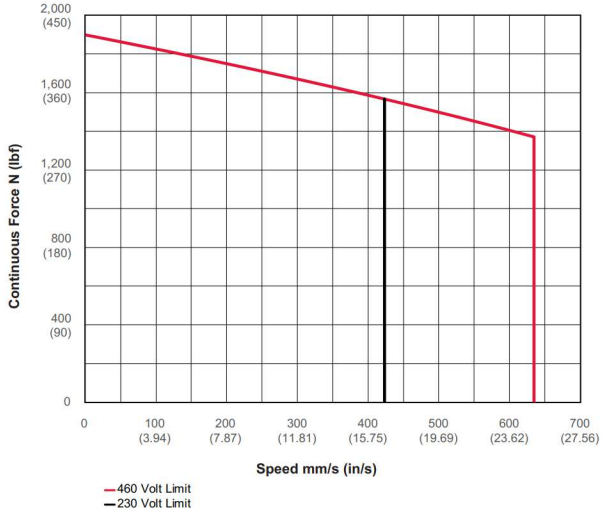
以下曲线表明GTX电动缸使用普通伺服驱动器的典型的速度与推力曲线。GTX系列电动缸能够与不同厂家的伺服驱动器兼容，搭配不同的驱动器可能对电动缸的性能产生不同的影响，因此下列的曲线仅供参考。
(请与当地销售代表或代理商联系以获得更多信息)

AC Voltage Winding

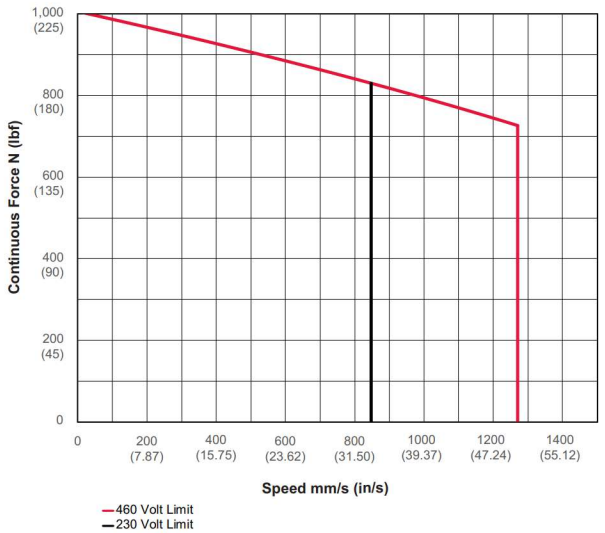
GTX060 - 01
2.54 mm (0.1 in) Screw Lead



GTX060 0- 04
10.16 mm (0.4 in) Screw Lead



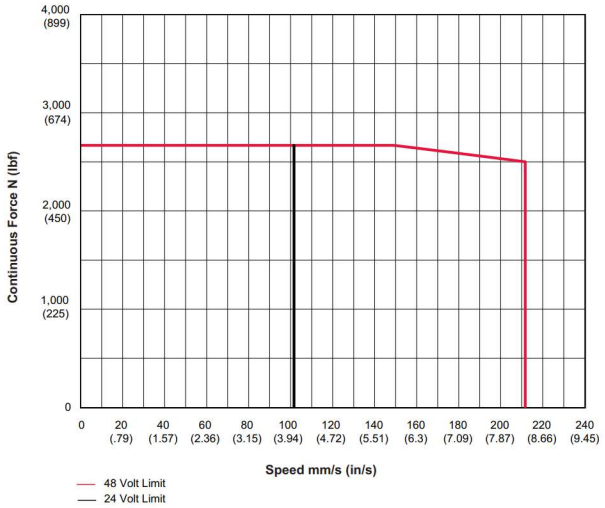
GTX060 - 02
5.08 mm (0.2 in) Screw Lead



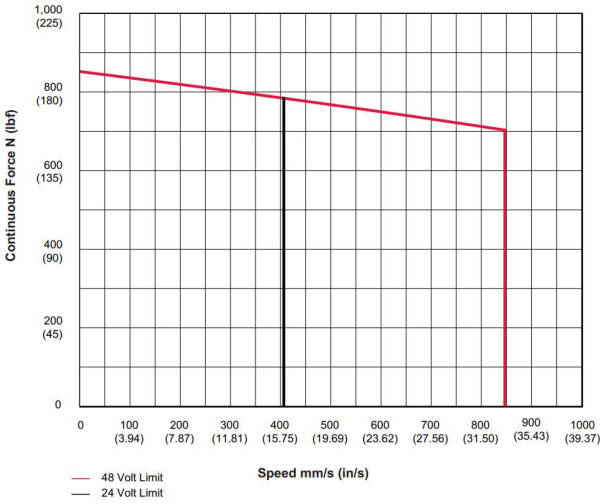
Test data derived using NEMA recommended aluminum heatsink 10" x 10" x 1/4" for GTX080.

DC Voltage Winding

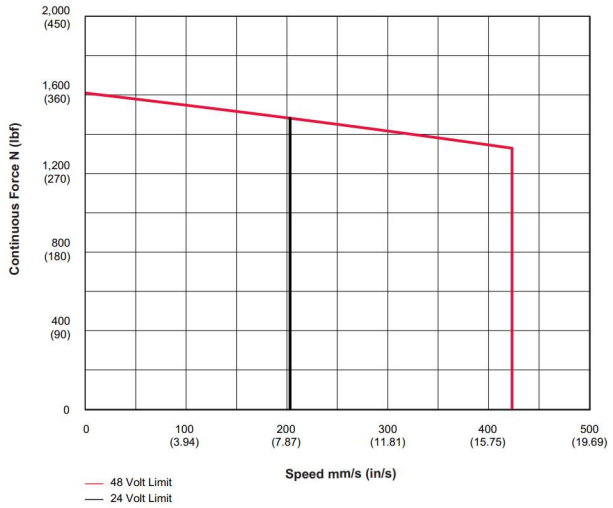
GTX060 - 01
2.54 mm (0.1 in) Screw Lead



GTX060 - 04
10.16 mm (0.4 in) Screw Lead

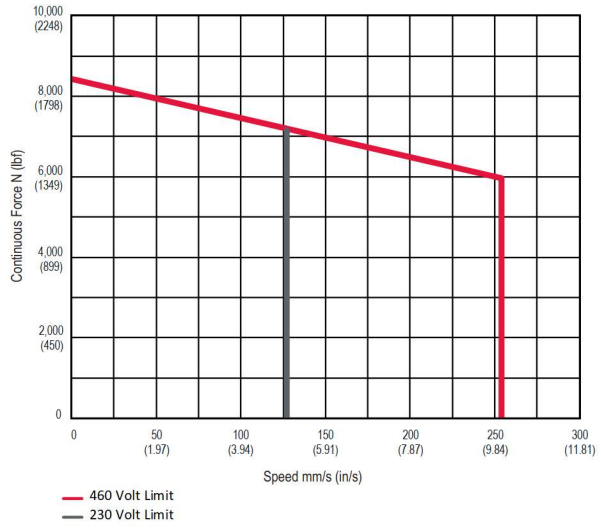


GTX060 - 02
5.08 mm (0.2 in) Screw Lead

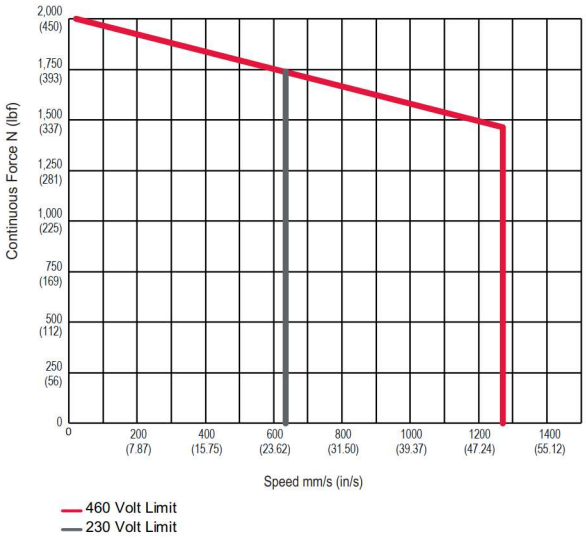


AC Voltage Winding

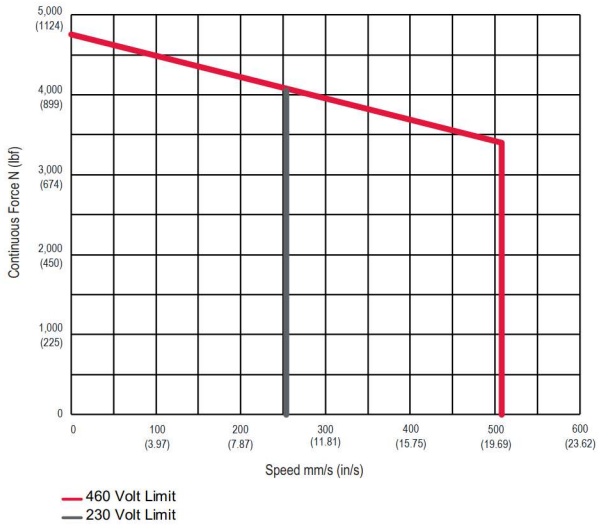
GTX080 - 01
2.54 mm (0.1 in) Screw Lead



GTX080 - 05
12.7 mm (0.5 in) Screw Lead

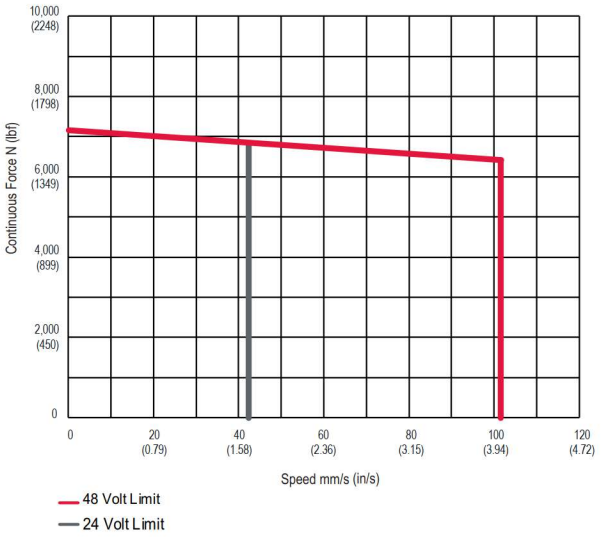


GTX080 - 02
5.08 mm (0.2 in) Screw Lead

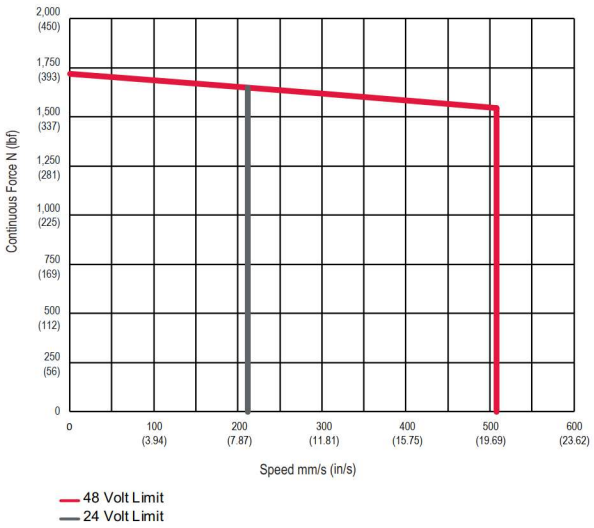


DC Voltage Winding

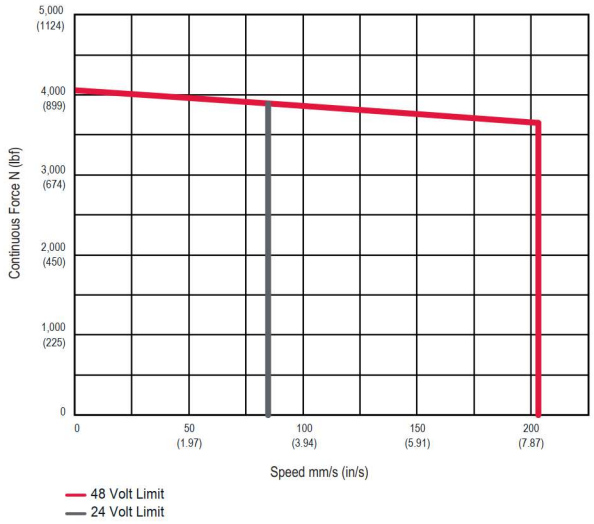
GTX080 - 01
2.54 mm (0.1 in) Screw Lead



GTX080 0- 05
12.7 mm (0.5 in) Screw Lead



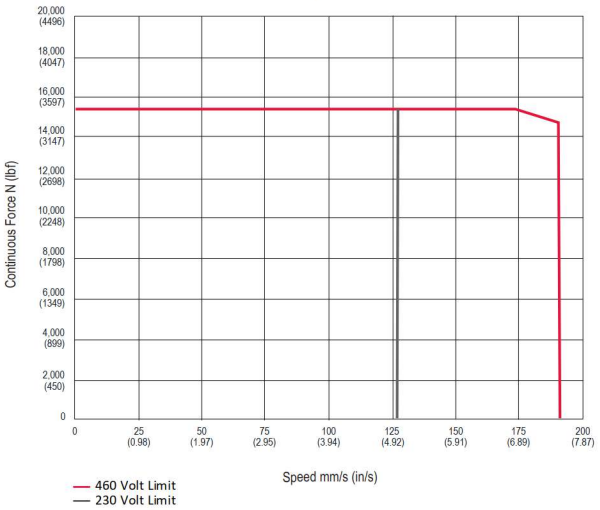
GTX080 - 02
5.08 mm (0.2 in) Screw Lead



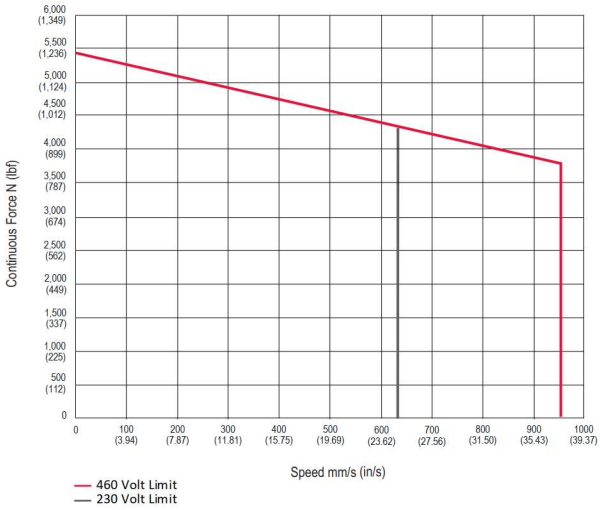
Test data derived using NEMA recommended aluminum heatsink 10" x 10" x 1/4" for GTX080.

AC Voltage Winding

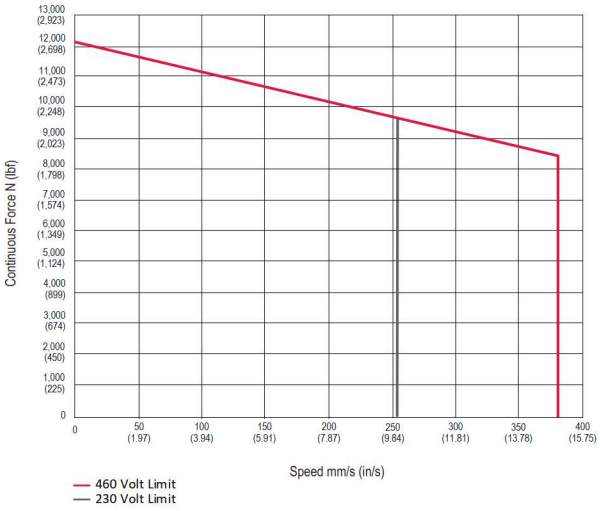
GTX100 - 01
2.54 mm (0.1 in) Screw Lead



GTX100 - 05
12.7 mm (0.5 in) Screw Lead



GTX100 - 02
5.08 mm (0.2 in) Screw Lead



Test data derived using NEMA recommended aluminum heatsink 12" x 12" x 1/2" at 25°C ambient for GTX100.

配置

电机绕组/电压

GTX执行器可以在较大的电压范围(高达460 VAC)下工作。有关直流电压应用请参阅订购指南"D"标注。请参阅机械/电气规范。

4	460 Vac Max
D	48 Vdc Max

制动器

内置制动器为失电制动。请参阅有关制动器的机械/电气规范。

反馈装置

旋转变压器
增量式编码器绝
对式编码器

Exlar GTX系列可以与市场上大部分主流伺服驱动器兼容。Exlar根据伺服驱动器制造商使用的标准电机接头形式及针脚定义来制造GTX系列伺服电动缸(详细信息请参阅反馈部分)。如果您使用的驱动器未有列出，请咨询Exlar。

外部防转机构

标准GTX系列电动缸的设计中，伸缩杆可以自由旋转以便于客户在测试或安装时旋转伸缩杆以获得所要的行程位置。
然而在测试与安装结束后这个旋转应该被限制以保证伸缩杆在直线方向的运动。在很多应用中电动缸会与直线导轨或直线轴承配合，伸缩杆的旋转自由度被固定限制不能旋转，此种应用不需要在电动缸上增加外置防转机构。
对于无法限制旋转的应用工况，Exlar提供外置防转机构作为可选配置。

花键杆防转

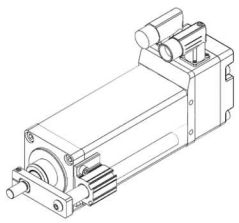
花键杆是一种内部防旋转选项，使用花键伸缩杆来限制旋转而不需要外部防转机构。但因为花键伸缩杆的特殊截面导致密封性能受限，它不能满足IP66S防护。
另外在垂直安装杆端向下的工况中，润滑脂会因为发热而流动性变强而有一定可能性会从花键杆前端密封处渗出。

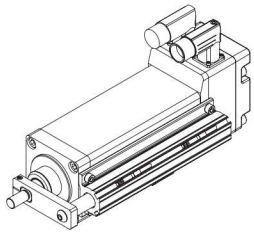
不锈钢接头

GTX产品线的所有螺纹选项均可提供17-4不锈钢材质选项。该选项可提高执行器主杆的耐腐蚀性，适用于在可能暴露于恶劣化学品或户外环境的应用。

限位开关+防转装置

外部限位开关安装到GTX系列的防转装置上。选配限位开关必须选择防转装置。
限位开关位置可调(需要在型号标识上选择"L"，选配带限位开关支架的防转机构）。
限位开关作为配件单独采购。



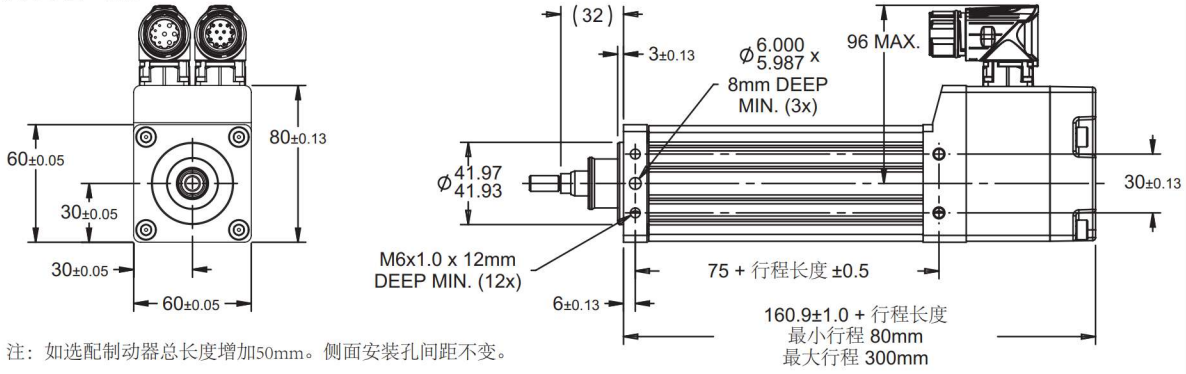


开关类型	Exlar Part Number	Turck Part Number
常闭, PNP	43404	BIM-UNT-RP6X
常开, PNP	43403	BIM-UNT-AP6X
常闭, NPN	67635	BIM-UNT-RN6X
常开, NPN	67634	BIM-UNT-AN6X

安装尺寸

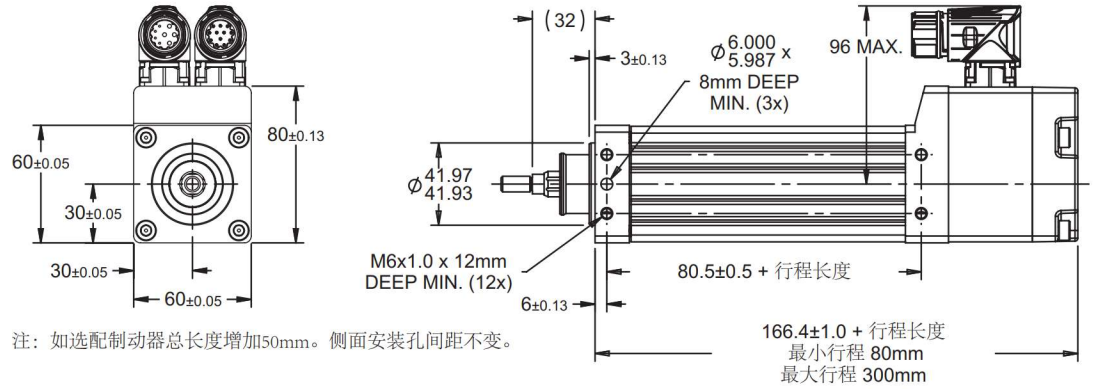
GTX060 基本单元

尺寸单位 “mm”



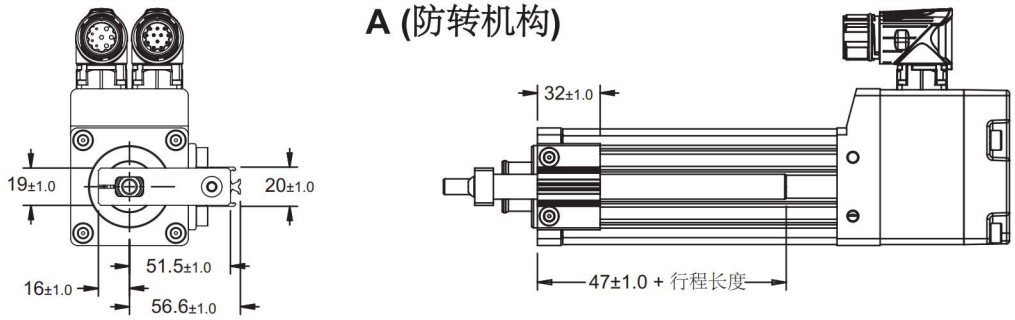
注：如选配制动器总长度增加50mm。侧面安装孔间距不变。

GTX060 花键防转基本单元

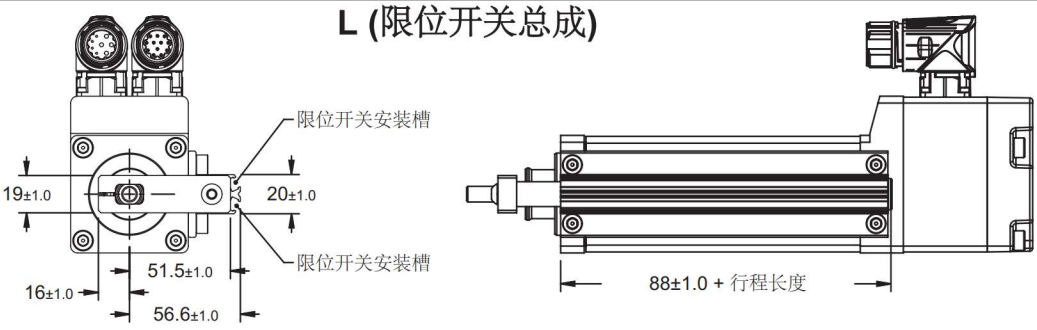


注：如选配制动器总长度增加50mm。侧面安装孔间距不变。

A (防转机构)

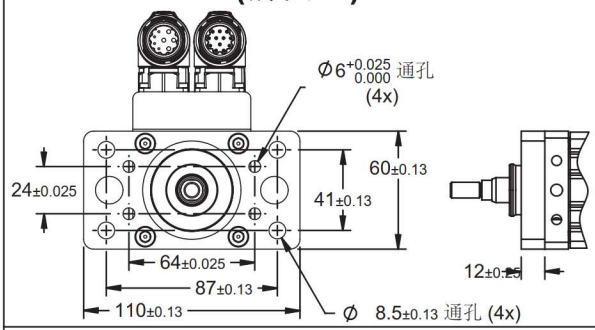


L (限位开关总成)

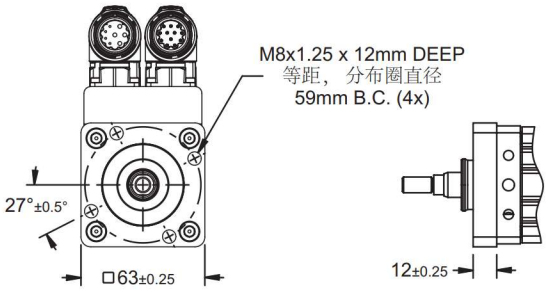


Pre-sale drawings and models are representative and are subject to change. Visit exlar.com to download a 3D model of your desired configuration.

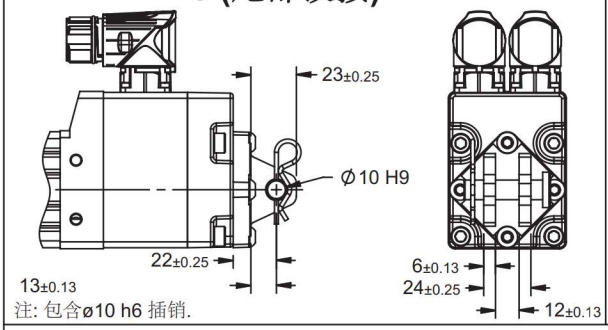
1 (前法兰)



3 (前安装面板)

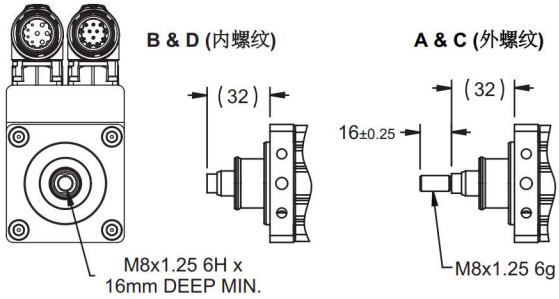


5 (尾部铰接)



注: 包含ø10 h6 插销.

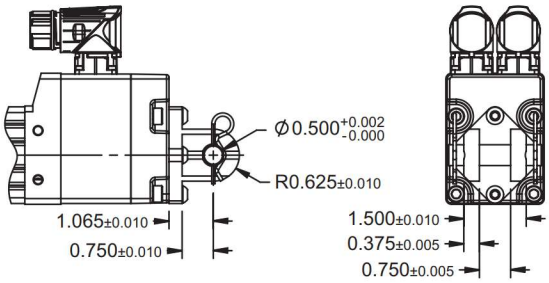
公制前杆端螺纹



GTX060 英制尺寸

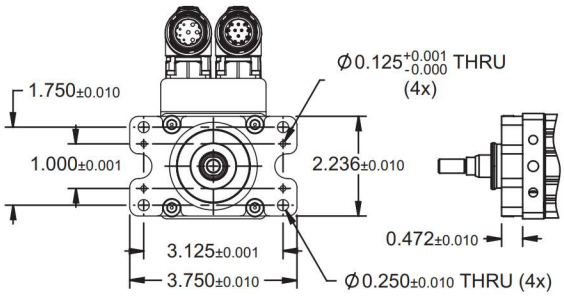
尺寸单位 “inch”

C (GSX20 尾部铰接)

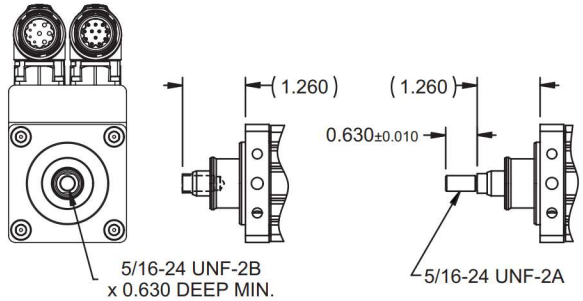


注: 包含ø0.499/ø0.498 插销

F (GSX20 前法兰)

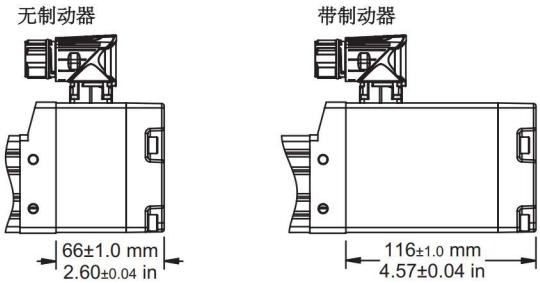


英制杆端螺纹



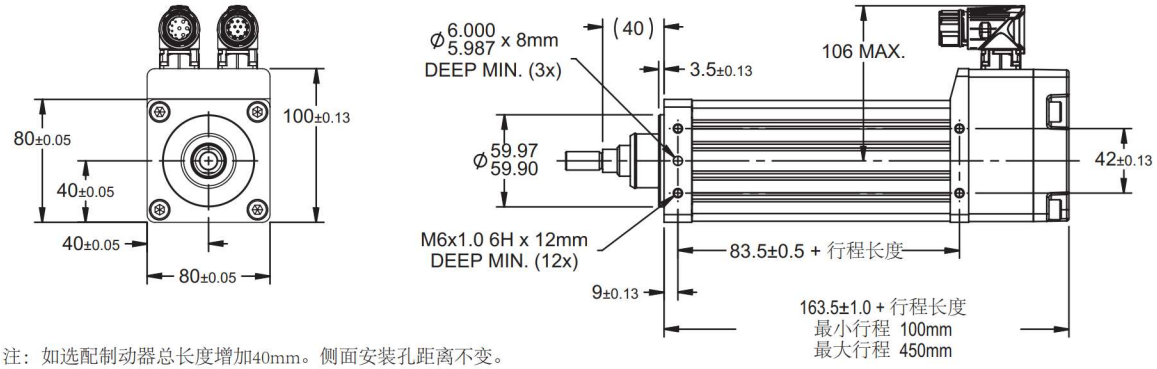
制动器

增加**50mm (1.969 in)**



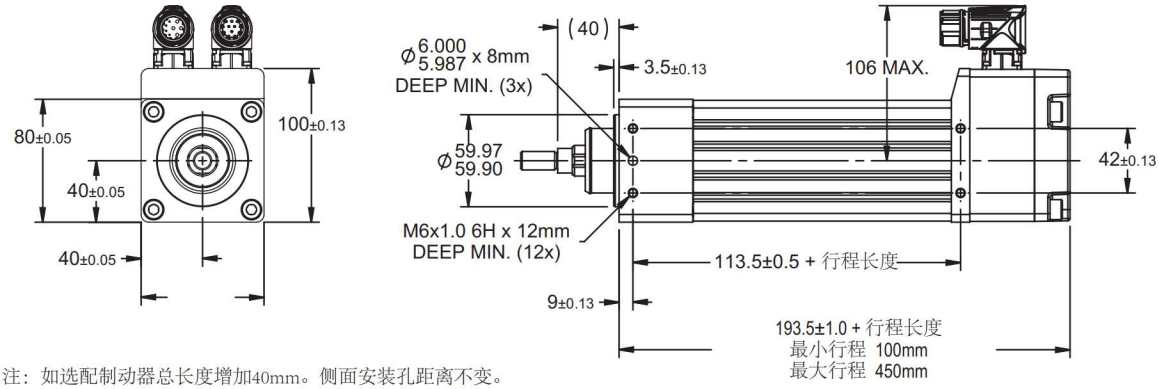
GTX080 基本单元

尺寸单位 **"mm"**



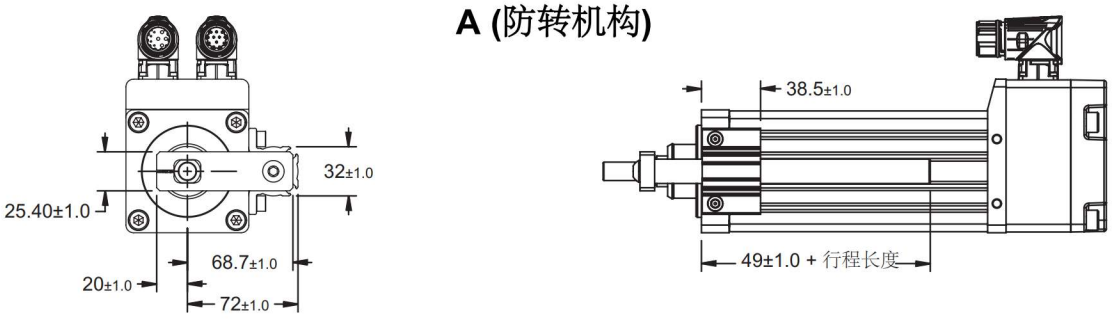
注：如选配制动器总长度增加40mm。侧面安装孔距离不变。

GTX080 花键防转基本单元

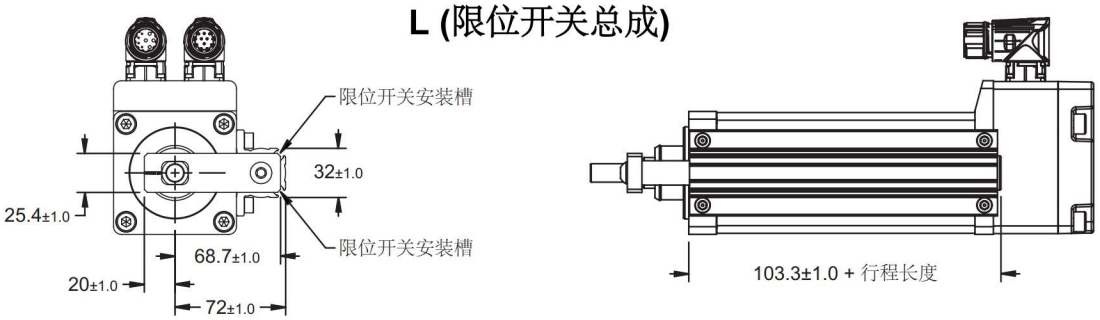


注：如选配制动器总长度增加40mm。侧面安装孔距离不变。

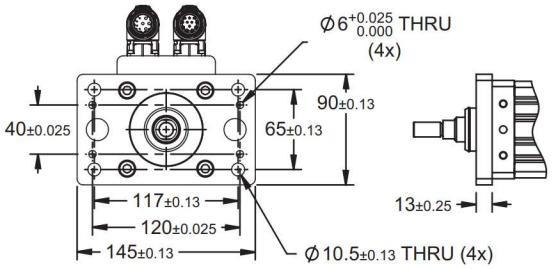
A (防转机构)



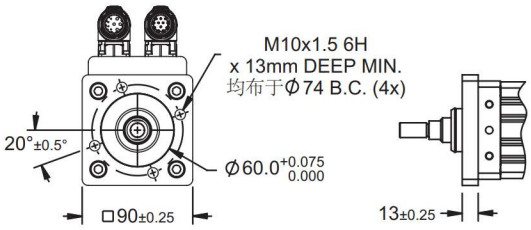
L (限位开关总成)



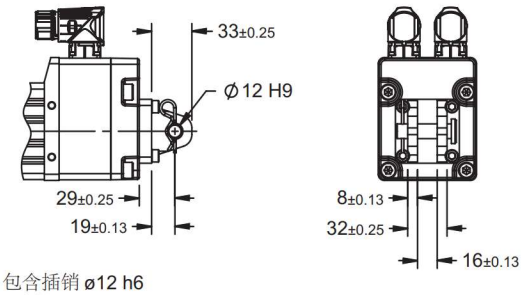
1 (前法兰)



3 (前安装面板)

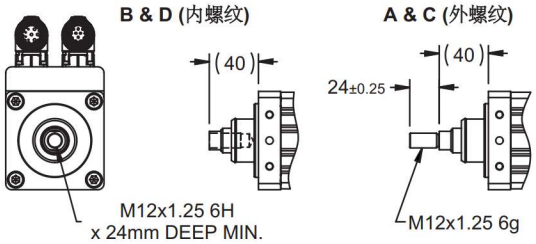


5 (尾部铰接)



注: 包含插销 ø12 h6

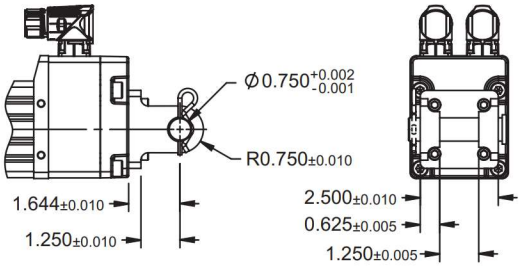
公制杆端螺纹



GTX080 英制尺寸

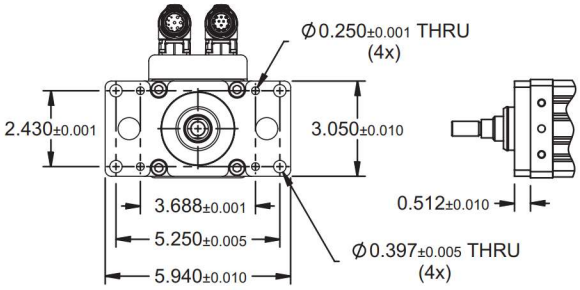
尺寸单位 "inch"

C (GSX30 尾部铰接)

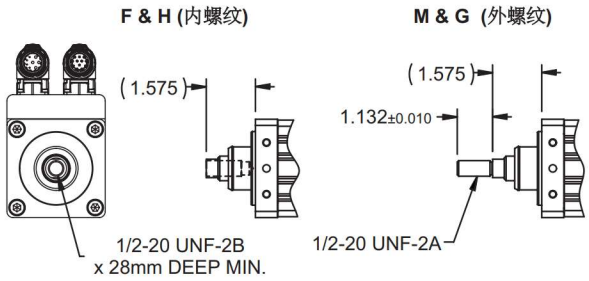


注: 包含ø0.746/ø0.741 插销

F (GSX30 前法兰)

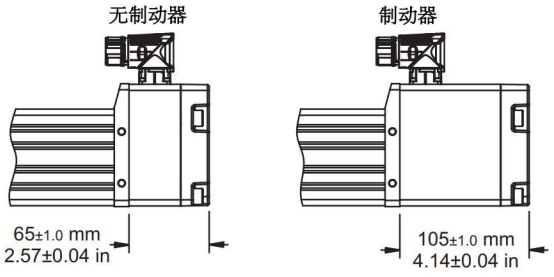


英制杆端螺纹



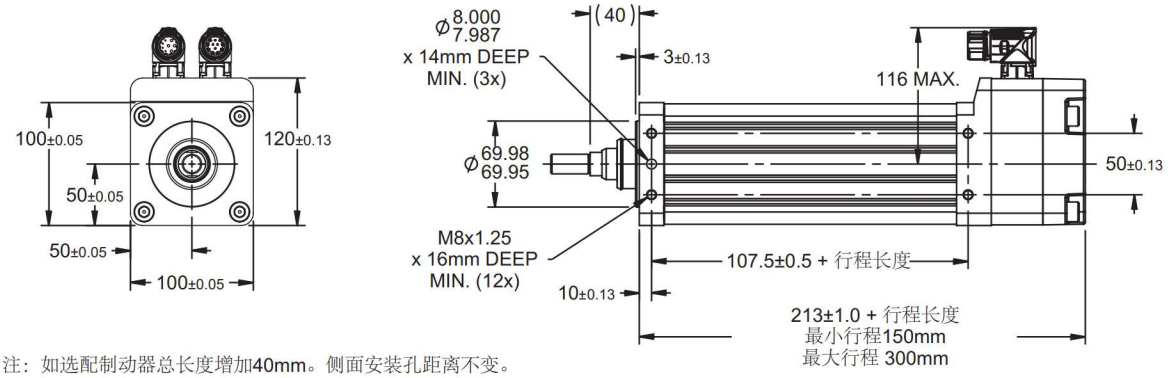
制动器

增加 **40mm (1.575 in)**



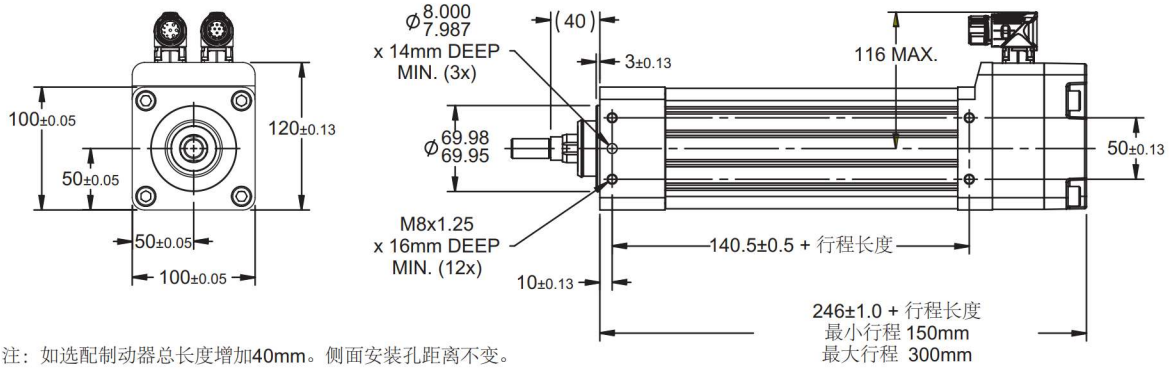
GTX100 基本单元

尺寸单位 “mm”



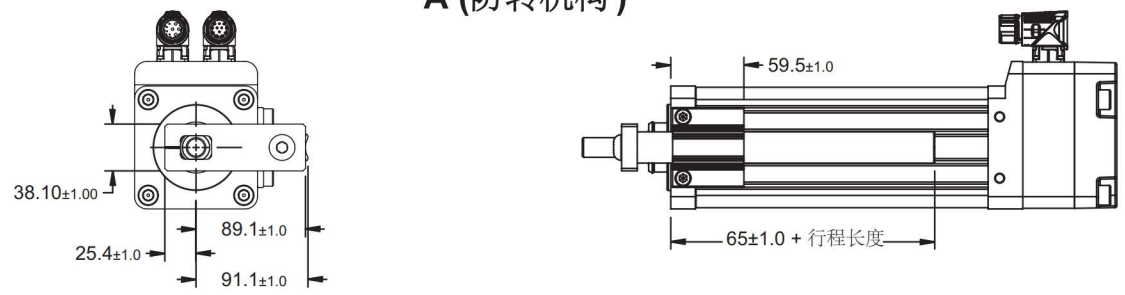
注：如选配制动器总长度增加40mm。侧面安装孔距离不变。

GTX100 花键防转基本单元

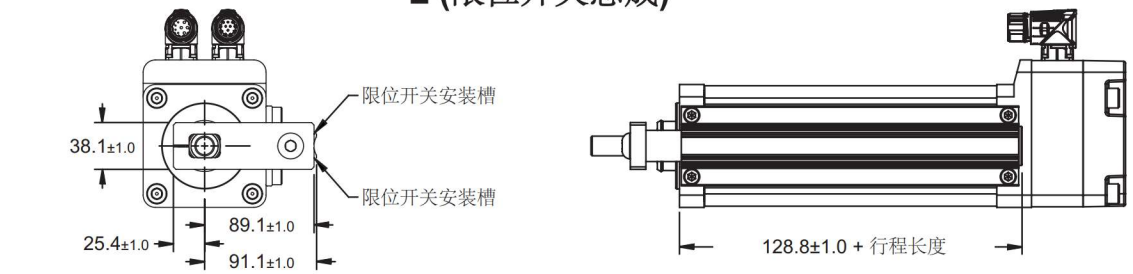


注：如选配制动器总长度增加40mm。侧面安装孔距离不变。

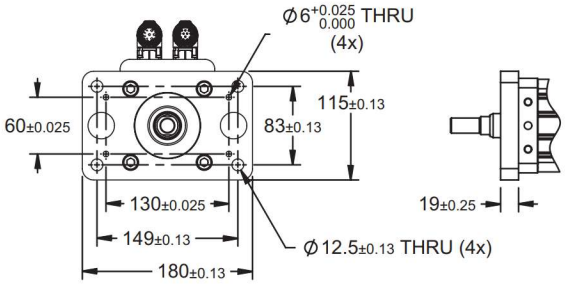
A (防转机构)



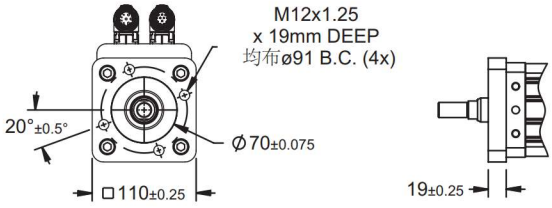
L (限位开关总成)



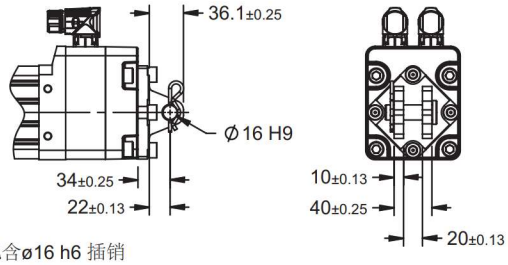
1 (前法兰)



3 (前安装面板)

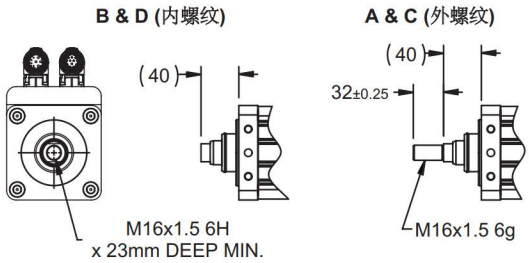


5 (尾部铰接)



注: 包含ø16 h6 插销

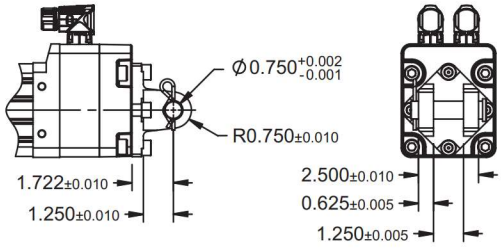
公制杆端螺纹



GTX100 英制尺寸

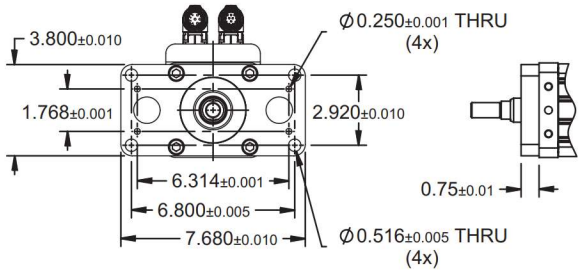
尺寸单位 “inch”

C (GSX40 尾部铰接)

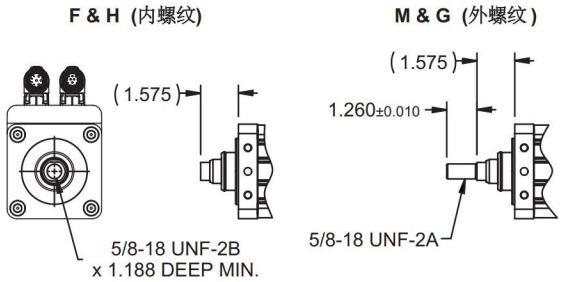


注: 包含ø0.746/ø0.741 插销

F (GSX40 前法兰)

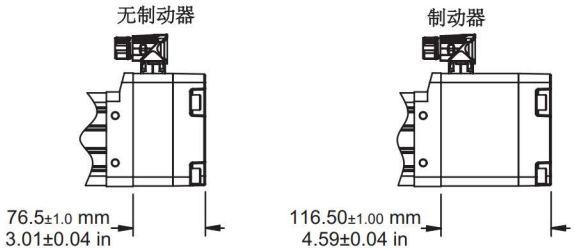


英制杆端螺纹

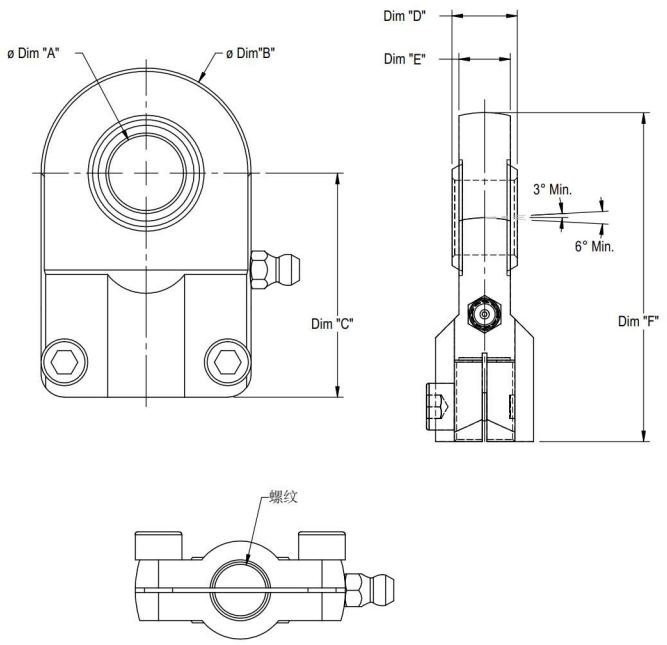


制动器

增加**40mm (1.575 in)**



球形铰接

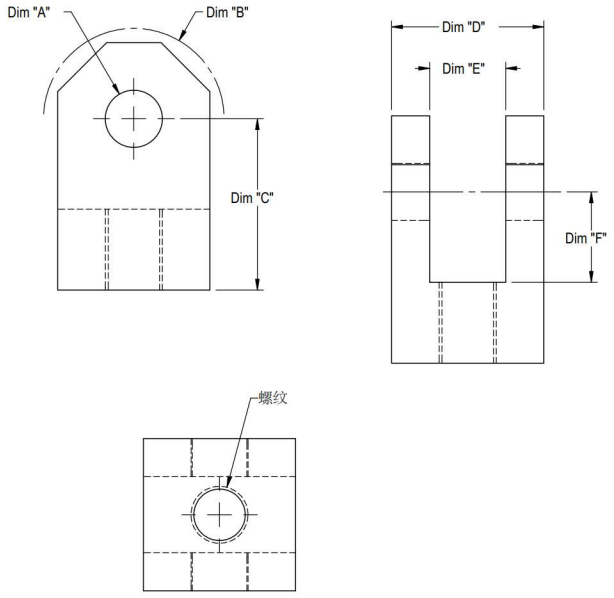


	尺寸		
	GTX060	GTX080	GTX100
ø Dim "A"	8.065 7.988	16.000 15.992	25.021 25.000
ø Dim "B"	22.25	45.0	65.0
Dim "C"	36.0	48.0	68.0
Dim "D"	12.0	14.0	20.0
Dim "E"	8.0	11.0	17.0
Dim "F"	47.1	70.5	100.5
螺纹	M8x1.2	M12x1.25	M16x1.5
重量 (kg)	0.21	0.21	0.66

注：电动缸杆端螺纹选择'A'形式

订购代码	
GTX060	GTX060-REI-KIT
GTX080	GTX080-REI-KIT
GTX100	GTX100-REI-KIT

U形接头



	尺寸		
	GTX060	GTX080	GTX100
ø Dim "A"	8.065 7.988	12.043 12.000	20.052 20.000
ø Dim "B"	20.0	34.0	58.0
Dim "C"	32.0	36.0	54.0
Dim "D"	16.0	34.0	52.0
Dim "E"	8.0	16.0	30.0
Dim "F"	16.0	19.0	32.0
螺纹	M8x1.25	M12x1.25	M16x1.5
重量 (kg)	0.25	0.25	1.0

注：电动缸杆端螺纹选择'A'形式

订购代码	
GTX060	GTX060-RC1-KIT
GTX080	GTX080-RC1-KIT
GTX100	GTX100-RC1-KIT

Pre-sale drawings and models are representative and are subject to change. Visit exlar.com to download a 3D model of your desired configuration.

GTX反馈装置

驱动器 / 反馈装置 选型表

驱动器品牌	反馈选项编码	旋转变压器	增量式编码器	SICK Hiperface 绝对值编码器	SICK Hiperface DSL 绝对值编码器	Heidenhain Endat 2.1 绝对值编码器 [1]	Heidenhain Endat 2.2 绝对值编码器 [2]
AMK	AK	R1A1				H1A1	
B&R Automation	BR	R1A1				H1A2	H3A8[3]
Baldor	BD	R1A1				H1A1	
Baumueller	BM	R1A1		S1A1		H1A2	
Beckhoff Automation	BE				S4C0[3]	H1A2	H3C2[3]
Control Technologies / Nidec	CT	R2B1	E1B2	S1B1		H1B2	
Elau / Schneider	EU			S1A1[4]			
Elmo Motion Control	EL	R1B1	E1B2			H1B2	
Currtiss-Wright Exlar	EX	R1A1	E1A2	S1A2		H1A2	
Infranor	IF	R1B2		S1B2			
Bosch-Rexroth	IN			S2D3[4]		H1D3	
Kollmorgen	KM	R2A1	E1A2			H1A2	
LTI	LS	R2A1		S1A2			
Lenze	LZ	R1B1		S1B1			
Parker	PC	R1B1	E1B2			H1B2	
Rockwell Automation	RA		E1C2	S1C2[4]	S3C0[4]		
Siemens	SM	R1B1				H1B2	
Stober Drives	SB	R4A1				H1A1	

[1]Synchronous serial EnDat 2.1 带 1 Vpp 增量信号 (EnDat01)
[2]Synchronous serial EnDat 2.2 不带增量信号 (EnDat22)
[3]支持 Functional Safety
[4]编码器内部预编程，可由伺服驱动器直接驱动。

反馈形式
R1 – Resolver, 2-pole, 5 kHz, 4 V, Transformation Ratio 0.5±10%
R2 – Resolver, 2-pole, 7 kHz, 4.25 V, Transformation Ratio 0.47±5%
R3 – Resolver, 2-pole, 5 kHz, 7 V, Transformation Ratio 0.5±10%
R4 – Resolver, 2-pole, 10 kHz, 7 V, Transformation Ratio 0.5±5%
R5 – Resolver, 8-pole, 8 kHz, 6 V, Transformation Ratio 0.46±5%
E1 – Incremental Encoder, 2048 PPR (8192 counts), 8-pole, 5 V, Index Pulse, Hall commutation, 5 Vdc
S1 – SICK HIPERFACE, SKM36 Multi-turn Absolute Encoder, 18-bit
S2 – SICK HIPERFACE, SKM36 Multi-turn Absolute Encoder, 18-bit, Bosch-Rexroth
S3 – SICK HIPERFACE DSL, EKM36 Multi-turn Absolute Encoder, 18-bit
S4 – SICK HIPERFACE DSL, EKM36 Multi-turn Absolute Encoder, 18-bit, Functional Safety
H1 – Heidenhain EnDat 2.1, EQN 1125 Multi-turn Absolute Encoder, 13-bit
H3 – Heidenhain EnDat 2.2, EQN 1135 Multi-turn Absolute Encoder, 23-bit, Functional Safety

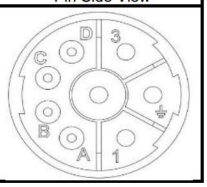
动力线缆连接器	反馈线缆连接器
A = 8 pin M23 Size 1, 90度弯头插座	0 = 反馈信号通过动力接头输出
B = 6 pin M23 Size 1, 90度弯头插座	1 = 12 pin M23 Size 1, P Type, 90度弯头插座
C = 9 pin M23 Size 1, 90度弯头插座	2 = 17 pin M23 Size 1, E Type, 90度弯头插座
D = 4+5 pin M23 size 1, 90度弯头插座	3 = 10 pin M23 Size 1, 90度弯头插座
	5 = 8 pin M12, 直式插座
	8 = 12 pin M23 Size 1, Series 615 ITEC, 90度弯头插座

针脚定义及电缆选型

AMK-Resolver (AK-R1A1) -
Standard Resolver w/M23 connectors

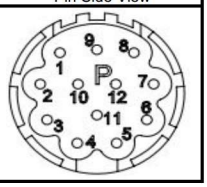
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	U
2	PE
3	W
4	V
A	TH
B	TH
C	BR +
D	BR 0V

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	+ Sin
2	- Sin
3	+ Cos
4	- Cos
5	-
6	-
7	-
8	Shield
9	+ UREF
10	- UREF
11	-
12	-
Actuator Case	-

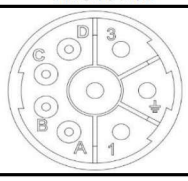
Pin Side View



AMK-Heidenhain (AK-H1A1) - EnDat 2.1 Heidenhain EQN1125
multi-turn absolute encoder – ED/EK motor wiring w/M23 connectors

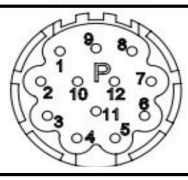
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	U
2	PE
3	W
4	V
A	TH
B	TH
C	BR +
D	BR 0V

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	G2N
2	G2I
3	G1N
4	G1I
5	05P
6	GND
7	CLK+
8	CLK-
9	DAT+
10	DAT-
11	05P
12	GND
Actuator Case	-

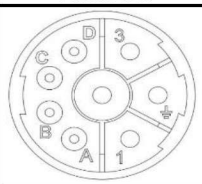
Pin Side View



B & R Automation-Resolver (BR-R1A1) -
Standard Resolver w/M23 connectors

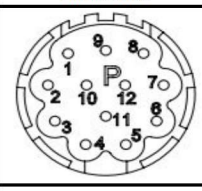
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	PE
3	W
4	V
A	PT1000
B	PT1000
C	Brake+
D	Brake-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	-
2	-
3	Cos+
4	Sin+
5	Ref+
6	-
7	Cos-
8	Sin-
9	Ref-
10	-
11	-
12	-
Actuator Case	-

Pin Side View

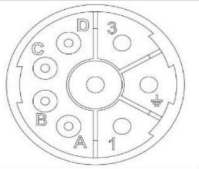


Mfg's Cable Part Number-
8CRXXX.12-1

B & R Automation-Heidenhain (BR-H1A2) -
EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder –
8LS/8LM motor wiring w/M23 connectors

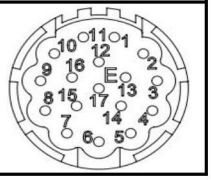
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	PE
3	W
4	V
A	PT1000
B	PT1000
C	Brake+
D	Brake-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Up Sense
2	-
3	-
4	0V Sense
5	-
6	-
7	Up voltage supply
8	Clock
9	Clock-
10	0V voltage supply
11	-
12	B+
13	B-
14	Data
15	A+
16	A-
17	Data-
Actuator Case	-

Pin Side View

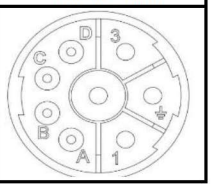


Mfg's Cable Part Number-
8CEXXX.12-1

Baldor-Resolver (BD-R1A1) -
Standard Resolver w/M23 connectors

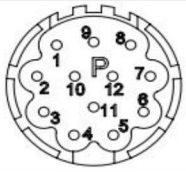
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	U
2	GND
3	W
4	V
A	Therm
B	Therm
C	Brake+
D	Brake-

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	R1 Ref Hi
2	R2 Ref Lo
3	S1 Cos+
4	S3 Cos-
5	S2 Sin+
6	S4 Sin-
7	-
8	-
9	-
10	-
11	-
12	-
Actuator Case	Shield

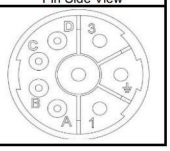
Pin Side View



Baumueller-Resolver (BM-R1A1) -
Standard Resolver w/M23 connectors

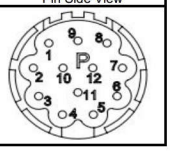
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	Phase U
2	PE
3	Phase W
4	Phase V
A	Brake+
B	Brake-
C	-
D	-

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	Cos -
2	-
3	-
4	-
5	Sin -
6	Sin +
7	-
8	Cos +
9	-
10	Ref +
11	-
12	Ref -
Actuator Case	Shield

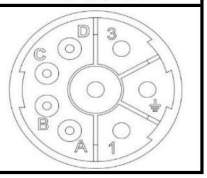
Pin Side View



Baldor-Heidenhain (BD-H1A1) - EnDat 2.1 Heidenhain
EQN1125 multi-turn absolute encoder – ED/EK motor wiring w/M23 connectors

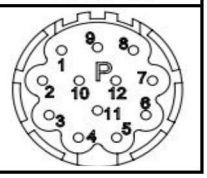
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	T1
2	Earth/Ground
3	T3
4	T2
A	Thermal Switch
B	Thermal Switch
C	Brake+
D	Brake-

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	Data-
2	Sin+
3	0
4	Cos+
5	Clock-
6	-
7	Clock+
8	Cos-
9	5 volt
10	DGND
11	Sin-
12	Data+
Actuator Case	-

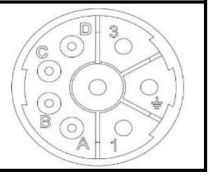
Pin Side View



Baumueller-SICK (BM-S1A1) - SICK Hiperface SKM36
multi-turn absolute encoder – SH motor wiring w/M23 connectors

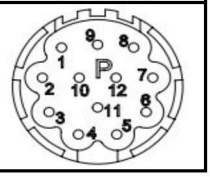
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	Phase U
2	PE
3	Phase V
4	Phase W
A	Brake+
B	Brake-
C	PT1000
D	PT1000

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	Ref Cos
2	Daten +
3	-
4	-
5	Sin
6	Ref Sin
7	Daten -
8	Cos
9	-
10	GND
11	-
12	+V
Actuator Case	-

Pin Side View

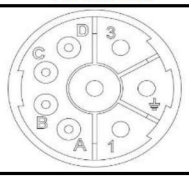


Baumueller-Heidenhain (BM-H1A2) -

EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder –
8LS/8LM motor wiring w/M23 connectors

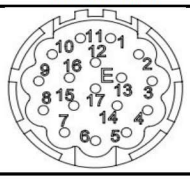
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	Phase U
2	PE
3	Phase V
4	Phase W
A	Brake+
B	Brake-
C	-
D	-

Pin Side View



Feedback Connector Pin-Out	
20494 Connector	Drive Terminology
1	Up Sense
2	-
3	-
4	0V Sense
5	PT1000
6	PT1000
7	Up voltage supply
8	Clock
9	Clock -
10	0V voltage supply
11	-
12	B+
13	B-
14	Data
15	A+
16	A-
17	Data -
Actuator Case	-

Pin Side View

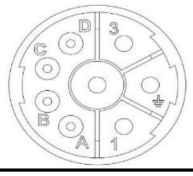


Beckhoff Automation-Heidenhain (BE-H1A2) -

EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder –
AM3XXXX motor wiring w/M23 connectors

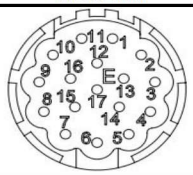
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	PE
3	W
4	V
A	Brake+
B	Brake-
C	PT1000
D	PT1000

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	B-
2	0V voltage supply
3	A-
4	Up voltage supply
5	Data
6	-
7	-
8	Clock
9	B+
10	0V Sense
11	A+
12	Up Sense
13	Data -
14	-
15	Clock -
16	-
17	-
Actuator Case	-

Pin Side View

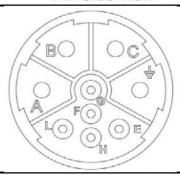


Beckhoff Automation-Heidenhain (BE-H3C2) -

EnDat 2.2 Heidenhain EQN1135 multi-turn absolute encoder –
23 bit, Functional Safety w/M23 connectors

Power Connector Pin-Out	
25967 Connector	Drive Terminology
A	U
	V
C	W
D	PE
E	PT1000-
F	Shield
G	Brake+
H	PT1000+
L	Brake-

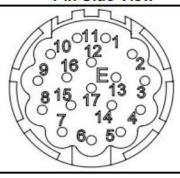
Pin Side View



Power cable: ZK4800-8023-xxxx
ZK4800-8024-xxxx

Feedback Connector Pin-Out	
20494 Connector	Drive Terminology
1	-
2	GND
3	-
4	5 Vdc (±10%)
5	Data; DX+ Data
6	Us 11 Vdc
7	-
8	Clock; CLK+
9	-
10	GND sense
11	-
12	5V sense
13	Data; DX-
14	-
15	Clock; CLK-
16	-
17	-
Actuator Case	-

Pin Side View



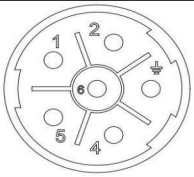
Feedback Cable: ZK4810-8020-xxxx
ZK4810-8020-xxxx

Control Techniques-Resolver (CT-R2B1) -

Standard Resolver – FM/HD motor wiring w/M23 connectors

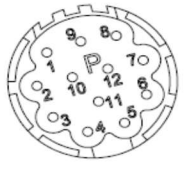
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	R
2	S
¥	GND
4	T
5	Brake+
6	Brake-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Excitation High
2	Excitation Low
3	Cos High
4	Cos Low
5	Sin High
6	Sin Low
7	Therm Switch
8	Therm Switch
9	-
10	-
11	-
12	-
Actuator Case	Shield

Pin Side View



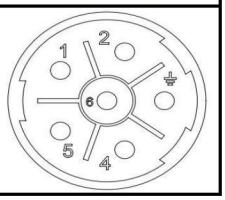
Mfg's Cable Part Number-
SRBBBBXXXX /
SRBBABXXXX

Control Techniques-Encoder (CT-E1B2) -

Standard Incremental Encoder –
FM/HD motor wiring w/M23 connectors

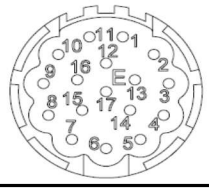
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	R
2	S
¥	GND
4	T
5	Brake+
6	Brake-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Therm Switch
2	Therm Switch
3	-
4	U
5	U/
6	V
7	V/
8	W
9	W/
10	A
11	Z
12	Z/
13	A/
14	B
15	B/
16	+ 5 VDC
17	0V
Actuator Case	-

Pin Side View



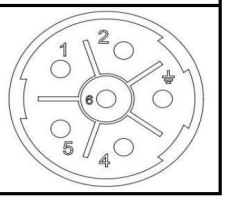
Mfg's Cable Part Number-
S1BAAAXXXX

Control Techniques-Heidenhain (CT-H1B2) -

EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder Unidrive M75x w/ M23 connectors

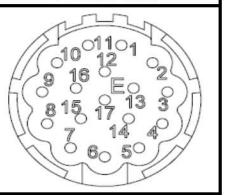
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	R
2	S
¥	GND
4	T
5	Brake+
6	Brake-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	PT1000
2	PT1000
3	-
4	-
5	-
6	-
7	-
8	Clock +
9	Clock -
10	A+
11	Data +
12	Data -
13	A-
14	B+
15	B-
16	+ 5 VDC
17	COM
Actuator Case	Shield

Pin Side View

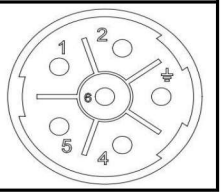


Control Techniques-SICK (CT-S1B1)– SICK Hiperface

SKM36 multi-turn absolute encoder – FM/HD motor wiring w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	R
2	S
¥	GND
4	T
5	Brake+
6	Brake-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Ref Cos
2	Daten +
3	Daten -
4	Cos
5	Sin
6	Ref Sin
7	Therm Switch
8	Therm Switch
9	Screen
10	Com
11	-
12	+V
Actuator Case	-

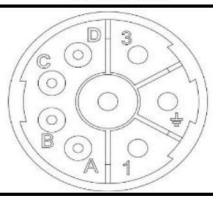
Pin Side View

Mfg's Cable Part Number-
SSBCABXXXX

Elau-SICK (EU-S1A1) - SICK Hiperface SKM36 multi-turn absolute encoder – SH motor wiring w/M23 connectors

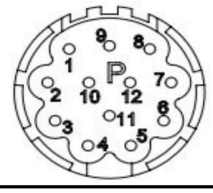
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	U (1)
2	PE
3	W (3)
4	V (2)
A	br+ (8)
B	br- (7)
C	PT1000
D	PT1000

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	REFCOS
2	RS485+
3	-
4	-
5	SIN
6	REFSIN
7	RS485-
8	COS
9	-
10	GND
11	-
12	Us
Actuator Case	-

Pin Side View

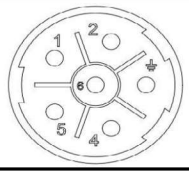


Mfg's Cable Part Number-
SH Series Absolute Encoder Cable

Elmo-Resolver (EL-R1B1) - Standard Resolver w/M23 connectors

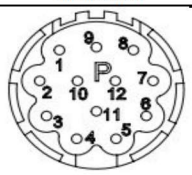
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	M1
2	M3
⏚	PE
4	Brake-
5	M2
6	Brake+

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	-
2	-
3	Sin- S4
4	Cos- S3
5	Ref R2
6	-
7	Sin+ S2
8	Cos+ S1
9	Ref R1
10	-
11	-
12	-
Actuator Case	Shield

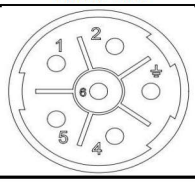
Pin Side View



Elmo-Heidenhain (EL-H1B2) - EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder w/M23 connectors

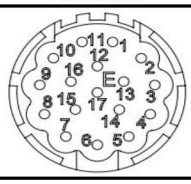
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	W
⏚	PE
4	Brake-
5	V
6	Brake+

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	B-
2	0V voltage supply
3	A-
4	Up voltage supply
5	Data
6	-
7	Therm Switch
8	Clock
9	B+
10	0V Sense
11	A+
12	Up Sense
13	Data -
14	Therm Switch
15	Clock -
16	-
17	-
Actuator Case	-

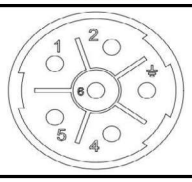
Pin Side View



Elmo-Encoder (EL-E1B2) - Standard Incremental Encoder w/M23 connectors

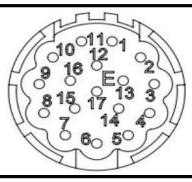
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	M1
2	M3
⏚	PE
4	Brake-
5	M2
6	Brake+

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Power Supply 5V
2	Therm Switch
3	Power Supply 0V
4	HC +
5	HC -
6	HA +
7	HA -
8	HB +
9	HB -
10	A +
11	A -
12	B +
13	B -
14	Z +
15	Z -
16	-
17	Therm Switch
Actuator Case	-

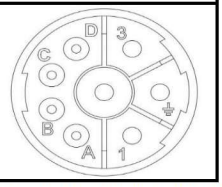
Pin Side View



Exlar-Resolver (EX-R1A1) - Standard Resolver w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	R
2	GND
3	T
4	S
A	Brake+
B	Brake-
C	-
D	-

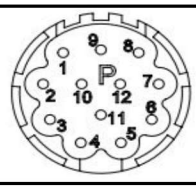
Pin Side View



AC (4): CBL-PWRB1-SMI-XXX
DC (D): CBL-PWRB2-SMI-XXX

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	-
2	Therm Switch
3	- Cos
4	- Sin
5	- Exc
6	Therm Switch
7	+ Cos
8	+ Sin
9	+ Exc
10	-
11	-
12	-
Actuator Case	Shield

Pin Side View

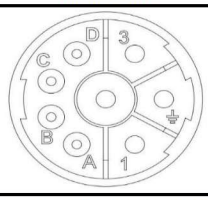


CBL-RESOL-SMI-XXX

Exlar-Encoder (EX-E1A2) -
Standard Incremental Encoder 2048 Line w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	R
2	GND
3	T
4	S
A	Brake+
B	Brake-
C	-
D	-

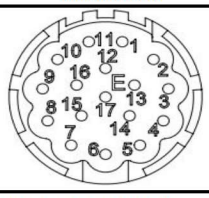
Pin Side View



AC (4): CBL-PWRB1-SMI-XXX
DC (D): CBL-PWRB2-SMI-XXX

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	B-
2	B
3	A
4	A-
5	Z
6	Z-
7	GND
8	Therm Switch
9	Therm Switch
10	+5VDC
11	-
12	W-
13	V-
14	U-
15	W
16	V
17	U
Actuator Case	-

Pin Side View

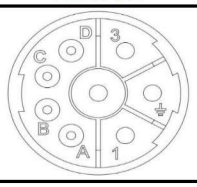


CBL-ENCOD-SMI-XXX

Exlar-Heidenhain (EX-H1A2) - EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	PE
3	W
4	V
A	Brake+
B	Brake-
C	-
D	-

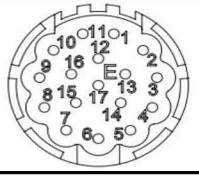
Pin Side View



AC (4): CBL-PWRB1-SMI-XXX
DC (D): CBL-PWRB2-SMI-XXX

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	B-
2	0V voltage supply
3	A-
4	Up voltage supply
5	Data+
6	-
7	Therm Switch
8	Clock
9	B
10	0V Sense
11	A
12	Up Sense
13	Data -
14	Therm Switch
15	Clock -
16	-
17	-
Actuator Case	-

Pin Side View

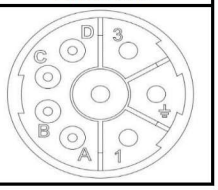


CBL-ABSOL-SMI-XXX

Exlar-SICK (EX-S1A2) - SICK Hiperface SKM36 multi-turn absolute encoder w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	R
2	GND
3	T
4	S
A	Brake+
B	Brake-
C	-
D	-

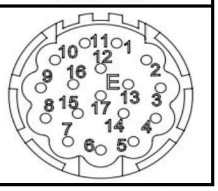
Pin Side View



AC (4): CBL-PWRB1-SMI-XXX
DC (D): CBL-PWRB2-SMI-XXX

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Sin +
2	Com
3	Cos +
4	+ 5V
5	Ref +
6	-
7	Therm Switch
8	-
9	Sin -
10	-
11	Cos -
12	-
13	Ref -
14	Therm Switch
15	-
16	-
17	-
Actuator Case	-

Pin Side View

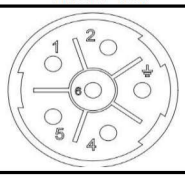


CBL-ABSOL-SMI-XXX

Infranor-Resolver (IF-R1B2) - Standard Resolver w/M23 connectors

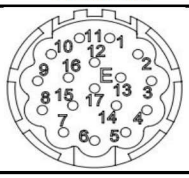
Power Connector Pin-Out	
20453 Connector	Drive Terminology
1	R
2	S
¥	GND
4	T
5	Brake+
6	Brake-

Pin Side View



Feedback Connector Pin-Out	
20494 Connector	Drive Terminology
1	S2
2	S4
3	S3
4	S1
5	R1
6	R2
7	-
8	-
9	-
10	-
11	-
12	Therm
13	Therm
14	-
15	-
16	-
17	-
Actuator Case	-

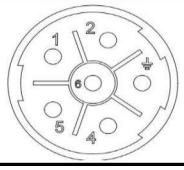
Pin Side View



Infranor-SICK (IF-S1B2) - SICK Hiperface SKM36 multi-turn absolute encoder w/M23 connectors

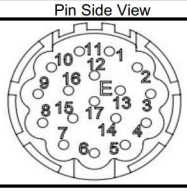
Power Connector Pin-Out	
20453 Connector	Drive Terminology
1	R
2	S
¥	GND
4	T
5	Brake+
6	Brake-

Pin Side View



Feedback Connector Pin-Out	
20494 Connector	Drive Terminology
1	Sin +
2	Sin -
3	Cos +
4	Cos -
5	Ref +
6	Ref -
7	-
8	-
9	-
10	Com
11	+ 5V
12	PT1000
13	PT1000
14	-
15	-
16	-
17	0
Actuator Case	-

Pin Side View

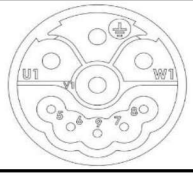


Bosch-Rexroth-Heidenhain (IN-H1D3)- EnDat 2.1

Heidenhain EQN1125 multi-turn absolute Indradrive wiring w/M23 connectors

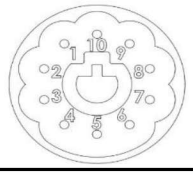
Power Connector Pin-Out	
M23 Connector	Drive Terminology
U1	Phase U
V1	Phase V
W1	Phase W
PE	Earth
5	PT1000
6	PT1000
7	Brake+
8	Brake-
9	-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Vcc_Encoder
2	GND_Encoder
3	A+
4	A-
5	B+
6	B-
7	Data +
8	Data -
9	Clock
10	Clock -

Pin Side View

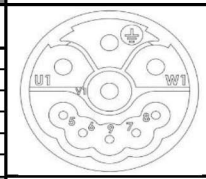


Bosch-Rexroth-SICK (IN-S2D3)- SICK Hiperface multi-turn absolute encoder –

MSK motor wiring w/M23 connectors

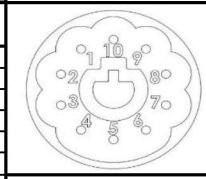
Power Connector Pin-Out	
M23 Connector	Drive Terminology
U1	Phase U
V1	Phase V
W1	Phase W
PE	Earth
5	PT1000
6	PT1000
7	Brake+
8	Brake-
9	-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Vcc_Encoder
2	GND_Encoder
3	A+
4	A-
5	B+
6	B-
7	EncData+
8	EncData-
9	-
10	-

Pin Side View

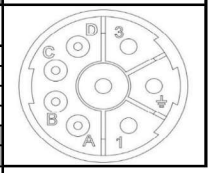


Mfg's Cable Part Number-
RKG4200

Kollmorgen-Resolver (KM-R2A1) - Standard Resolver – AKM motor wiring w/M23 connectors

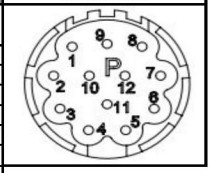
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	GND
3	W
4	V
A	Brake+
B	Brake-
C	-
D	-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	-
2	Therm Switch
3	Cos Lo (S4)
4	Sin Lo (S3)
5	Ref Lo (R2)
6	Therm Switch
7	Cos Hi (S2)
8	Sin Hi (S1)
9	Ref Hi (R1)
10	-
11	-
12	-
Actuator Case	Shield

Pin Side View



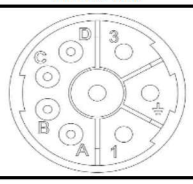
Mfg's Cable Part Number-
VF-RA2474N-XX

Kollmorgen-Encoder (KM-E1A2) -

Standard Incremental Encoder – AKM motor wiring w/ M23 connectors

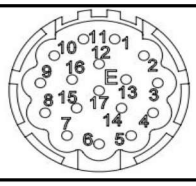
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	PE
3	W
4	V
A	Brake+
B	Brake-
C	-
D	-

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	B+
2	B-
3	A+
4	A-
5	Z
6	Z-
7	GND
8	Therm Switch
9	Therm Switch
10	Vcc
11	-
12	U-
13	V-
14	W-
15	U
16	V
17	W
Actuator Case	-

Pin Side View

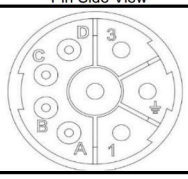


Mfg's Cable Part Number-
CF-CB7374N-XX

LTI-SICK (LS-S1A2) - SICK Hiperface SKM36 multi-turn absolute encoder w/M23 connectors

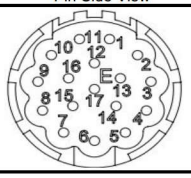
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	Phase U
2	Protective Earth
3	Phase W
4	Phase V
A	Brake+
B	Brake-
C	PT1000
D	PT1000

Pin Side View



Feedback Connector Pin-Out	
20494 Connector	Drive Terminology
1	COS+
2	REFCOS
3	SIN+
4	REFSIN
5	-
6	-
7	GND
8	-
9	Us 7-12v
10	Dataen+ RS485
11	Dataen- RS485
12	-
13	-
14	-
15	-
16	-
17	-
Actuator Case	-

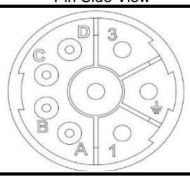
Pin Side View



LTI-Resolver (LS-R2A1) - Standard Resolver – AKM motor wiring w/M23 connectors

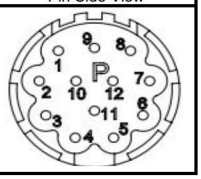
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	U
2	GND
3	W
4	V
A	Brake+
B	Brake-
C	-
D	-

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	(S1) Cos +
2	(S3) Cos -
3	(S2) Sin +
4	(S4) Sin -
5	-
6	(R1) Ref +
7	(R2) Ref -
8	-
9	-
10	-
11	PT1000+
12	PT1000-
Actuator Case	-

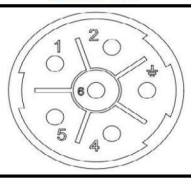
Pin Side View



Lenze-Resolver (LZ-R1B1) - Standard Resolver – MCS motor wiring w/M23 connectors

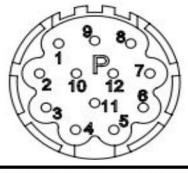
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	Y1 / BD1
2	Y2 / BD2
¥	PI
4	U
5	V
6	W

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	+ Ref
2	- Ref
3	-
4	+ Cos
5	- Cos
6	+ Sin
7	- Sin
8	-
9	-
10	-
11	PT1000
12	PT1000
Actuator Case	-

Pin Side View

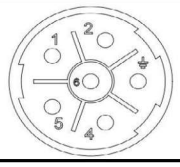


Mfg's Cable Part Number-
MCS Series Resolver Cable

Lenze-Encoder (LZ-S1B1) - SICK Hiperface SKM36 multi-turn absolute encoder w/M23 connectors

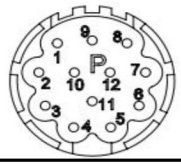
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	Y1 / BD1
2	Y2 / BD2
¥	PI
4	U
5	V
6	W

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	+ SIN
2	- COS
3	+ COS
4	+ 8 V
5	Mass
6	- RS485
7	+ RS485
8	-
9	- SIN
10	-
11	PT1000
12	PT1000
Actuator Case	-

Pin Side View

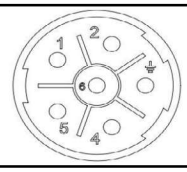


Mfg's Cable Part Number- MCS Series Absolute Encoder Cable

Parker-Encoder (PC-E1B2) - Standard Incremental Encoder – MPP series motor wiring w/M23 connectors

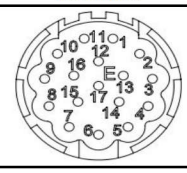
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	W
¥	PE
4	Brake+
5	Brake-
6	V

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	A-
2	A+
3	-
4	Hall 1
5	Hall 3
6	Hall 2
7	Ground
8	+5 vdc
9	Therm Switch
10	-
11	B
12	B -
13	Therm Switch
14	-
15	Z+
16	Z-
17	-
Actuator Case	-

Pin Side View

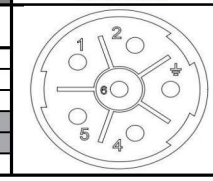


Mfg's Cable Part Number- SMH Series Resolver Cable

Parker-Resolver (PC-R1B1) - Standard Resolver – SMH motor wiring w/M23 connectors

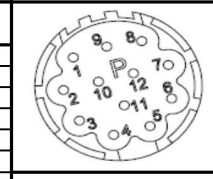
Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	V
¥	PE
4	Brake+
5	Brake-
6	W

Pin Side View



Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Sin -
2	Sin +
3	-
4	-
5	-
6	-
7	Ref -
8	PT1000
9	PT1000
10	Ref +
11	Cos +
12	Cos -
Actuator Case	Shield

Pin Side View



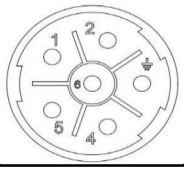
Mfg's Cable Part Number- SMH Series Incremental Encoder Cable

Parker-Heidenhain (PC-H1B2) -

EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder w/M23 connectors

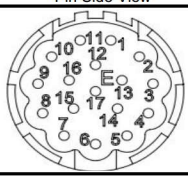
Power Connector Pin-Out	
20453 Connector	Drive Terminology
1	U
2	V
¥	GND
4	Brake+
5	Brake-
6	W

Pin Side View



Feedback Connector Pin-Out	
20494 Connector	Drive Terminology
1	CH A-
2	CH A+
3	-
4	CLK +
5	CLK -
6	-
7	Gound
8	Vcc
9	Therm
10	-
11	CH B+
12	CH B-
13	Therm
14	Up
15	Data +
16	Data -
17	-
Actuator Case	-

Pin Side View

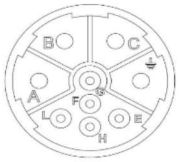


Rockwell Automation-Encoder (RA-E1C2) -

Standard Incremental Encoder - MPL Type M feedback w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
A	Phase U
B	Phase V
C	Phase W
D	Ground
E	-
F	Brake+
G	Brake-
H	-
L	-

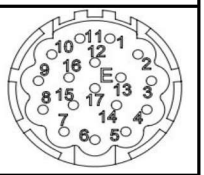
Pin Side View



See Below*

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	A(+)
2	A(-)
3	B(+)
4	B(-)
5	I(+)
6	I(-)
7	-
8	-
9	EPWR_5V
10	Common
11	-
12	-
13	Therm Switch
14	Therm Switch
15	S1
16	S2
17	S3
Actuator Case	-

Pin Side View



Mfg's Cable Part Number-
2090-CFBM7DF-CDAxyy

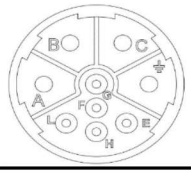
*GTX060 & GTX080:
2090-CPBM7DF-16Axyy
GTX100: 2090-CPBM7DF-
14Axyy

Rockwell Automation-SICK (RA-S1C2) -

Hiperface, SKM36 multi-turn absolute encoder. MPL Type V feedback (128 sin/cos) /M23 connectors[1]

Power Connector Pin-Out	
M23 Connector	Drive Terminology
A	Phase U
B	Phase V
C	Phase W
D	Ground
E	-
F	Brake+
G	Brake-
H	-
L	-

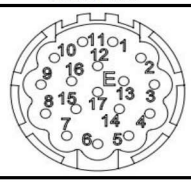
Pin Side View



See Below*

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	Sine +
2	Sine -
3	Cos +
4	Cos -
5	Data +
6	Data -
7	-
8	-
9	-
10	ECOM
11	+ 9 vdc
12	-
13	Therm Switch
14	Therm Switch
15	-
16	-
17	-
Actuator Case	-

Pin Side View



Mfg's Cable Part Number-
2090-CFBM7DF-CDAxyy

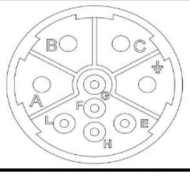
1. Not compatible with Kinetix 300 Drives.

*GTX060 & GTX080:
2090-CPBM7DF-16Axyy
GTX100: 2090-CPBM7DF-
14Axyy

Rockwell Automation-SICK Absolute DSL Encoder (RA-S3C0) - Hiperface, EKM36 multi-turn absolute encoder w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
A	Phase U
B	Phase V
C	Phase W
D	Ground
E	Data +
F	Brake+
G	Brake-
H	Data -
L	-

Pin Side View

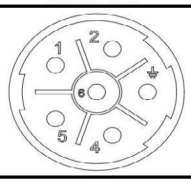


Mfg's Cable Part Number-
2090-CSBM1DE-14AA05

Siemens-Resolver (SM-R1B1) - Standard Resolver – 1FK7 motor wiring w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	V
¥	GNYE
4	BD1+
5	BD2-
6	W

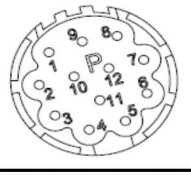
Pin Side View



See Below*

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	SIN
2	*SIN
3	-
4	-
5	-
6	Shield
7	-Vpp
8	PT1000
9	PT1000
10	+Vpp
11	COS
12	*COS
Actuator Case	Shield

Pin Side View



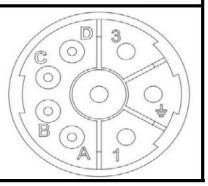
Mfg's Cable Part Number-
6FX5002-2CF02-...

*GTX060 & GTX080:
6FX5002-5DA01-...
GTX100: 6FX5002-5DA11-....

Stober-Resolver (SB-R4A1) - Standard Resolver ED/EK motor wiring w/M23 connector

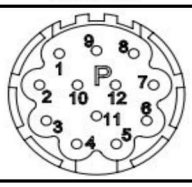
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	U
2	GND
3	V
4	W
A	Brake
B	Brake
C	Therm Switch
D	Therm Switch

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	Sin + (S4)
2	Sin - (S2)
3	Cos + (S3)
4	Cos - (S1)
5	-
6	-
7	Erreg+ (R2)
8	Erreg- (R1)
9	-
10	-
11	-
12	-
Actuator Case	-

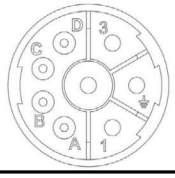
Pin Side View



Stober-Heidenhain (SB-H1A1) - EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder – ED/EK motor wiring w/M23 connectors

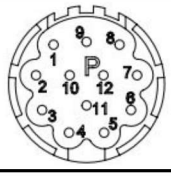
Power Connector Pin-Out	
19819 Connector	Drive Terminology
1	U
2	GND
3	S
4	T
A	Brake
B	Brake
C	Therm Switch
D	Therm Switch

Pin Side View



Feedback Connector Pin-Out	
19820 Connector	Drive Terminology
1	Clock +
2	Up Sense
3	-
4	-
5	Data -
6	Data
7	-
8	Clock -
9	-
10	0V
11	-
12	Up
Actuator Case	-

Pin Side View

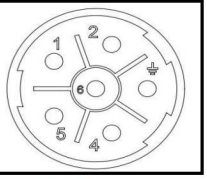


Mfg's Cable Part Number-
Stober Absolute Encoder
Cable

Siemens-Heidenhain (SM-H1B2) - EnDat 2.1 Heidenhain EQN1125 multi-turn absolute encoder – 1FK7 motor wiring w/M23 connectors

Power Connector Pin-Out	
M23 Connector	Drive Terminology
1	U
2	V
¥	GNYE
4	BD1+
5	BD2-
6	W

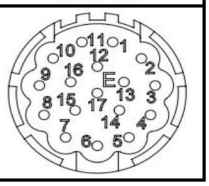
Pin Side View



See Below*

Feedback Connector Pin-Out	
M23 Connector	Drive Terminology
1	A+
2	A-
3	+ data
4	-
5	+clock
6	-
7	M-Encoder
8	PT1000
9	PT1000
10	P-Encoder
11	B+
12	B-
13	- data
14	-clock
15	0 V Sense
16	5 V Sense
17	-
Actuator Case	-

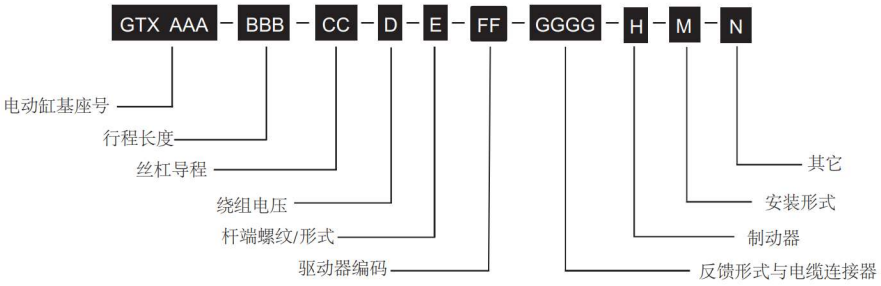
Pin Side View



Mfg's Cable Part Number-
6FX.002-2DC36-....

*GTX060 & GTX080:
6FX5002-5DA01-...
GTX100: 6FX5002-5DA11-....

订购指南



AAA = GTX 一体式伺服电动缸
060 = 60 mm (2.36 in)
080 = 80 mm (3.15 in)
100 = 100 mm (3.94)

BBB = 标准行程 [1]

GTX060	GTX080	GTX100
80	-	-
100	100	-
150	150	150
300	300	300
-	450	-

CC = 丝杠导程
01 = 2.54 mm (0.1 in)
02 = 5.08 mm (0.2 in)
04 = 10.2 mm (0.4 in), (GTX060)
05 = 12.7 mm (0.5 in), (GTX080, GTX100)

D = 绕组电压
4 = 460 VAC Max
D = 48 VDC Max (GTX060, GTX080)

E = 杆端螺纹/形式
A = 公制外螺纹
B = 公制内螺纹
C = 公制外螺纹, 花键[2]
D = 公制内螺纹, 花键[2]
F = 英制内螺纹
G = 英制外螺纹, 花键[2]
H = 英制内螺纹, 花键[2]
L = 公制内螺纹, 17-4 不锈钢
M = 英制外螺纹
R = 公制外螺纹, 17-4 不锈钢
V = 英制内螺纹, 17-4 不锈钢
W = 英制外螺纹, 17-4 不锈钢

FF = 驱动器编码
见下表

GGGG = 反馈形式与连接器
见下表

H= 制动器
N = 无制动器
B = 带制动器，失电制动形式

M = 安装形式
N = 基本单元
1 = 公制前法兰
3 = 公制前安装面板
5 = 公制尾部铰接
F = 英制前法兰
C = 英制尾部铰接

N = 其它
N = 无
A = 防转机构
L = 外部防转+限位开关支架[3]

NOTES:
[1] 非标行程以 25 mm递增，需要延长交货期。
[2] 花键动力杆将降低防护等级。
[3] 限位开关单独另外销售。

For options or specials not listed here or for extended temperature operation, please contact Exlar

驱动器 / 反馈装置 选型表

驱动器品牌	反馈选项编码	旋转变压器	增量式编码器	SICK Hiperface 绝对值编码器	SICK Hiperface DSL 绝对值编码器	Heidenhain Endat 2.1 绝对值编码器 [1]	Heidenhain Endat 2.2 绝对值编码器 [2]
AMK	AK	R1A1				H1A1	
B&R Automation	BR	R1A1				H1A2	H3A8[3]
Baldor	BD	R1A1				H1A1	
Baumueller	BM	R1A1		S1A1		H1A2	
Beckhoff Automation	BE				S4C0[3]	H1A2	H3C2[3]
Control Technologies / Nidec	CT	R2B1	E1B2	S1B1		H1B2	
Elau / Schneider	EU			S1A1[4]			
Elmo Motion Control	EL	R1B1	E1B2			H1B2	
Currtiss-Wright Exlar	EX	R1A1	E1A2	S1A2		H1A2	
Infranor	IF	R1B2		S1B2			
Bosch-Rexroth	IN			S2D3[4]		H1D3	
Kollmorgen	KM	R2A1	E1A2			H1A2	
LTI	LS	R2A1		S1A2			
Lenze	LZ	R1B1		S1B1			
Parker	PC	R1B1	E1B2			H1B2	
Rockwell Automation	RA		E1C2	S1C2[4]	S3C0[4]		
Siemens	SM	R1B1				H1B2	
Stober Drives	SB	R4A1				H1A1	

[1]Synchronous serial EnDat 2.1 带 1 Vpp 增量信号 (EnDat01)
[2]Synchronous serial EnDat 2.2 不带增量信号 (EnDat22)
[3]支持 Functional Safety
[4]编码器内部预编程，可由伺服驱动器直接驱动。

Warranty and Limitations of Liability

WARRANTY AND LIMITATION OF LIABILITY: Please see our warranty on our website here: *Division Policies | About | Actuation Division | Curtiss-Wright Actuation Group (cw-actuation.com)* for details.

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