

VLR/VL系列型录

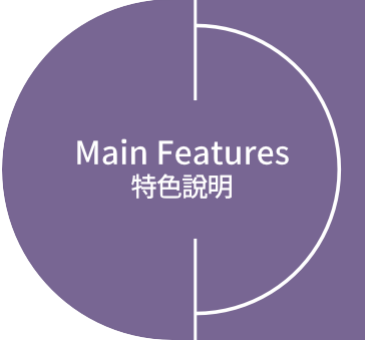




TOYO 2025
LINEAR ROTARY ACTUATOR & Voice Coil Actuator

VLR16 / VLR20 / VLR25 / Series

智领未来 驱动无限



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订购型号说明

Ordering Method

VLR直线旋转执行器

VLR Linear Rotary Actuator

VLR16 - S15 - A 10 - 05 - S E - N - A001

型号 Model	宽度 Width		增量 / 绝对 Incremental/Absolute		分辨率 Resolution		线缆长度 Cable length		驱动器 Controller	总线 CAN bus	是否有驱动器 With controller or not	特注式样 Customization order no.
VLR16	S15	15 mm	无 Incremental	增量	05	0.5 μ	05	5 m	S 高创 Servotronix G 固高 Googol tech E Elmo	无 None	N	出货无驱动器 No controller inside the package
	S25	25 mm	A 绝对 Absolute	绝对	10	1 μ	08	8 m		P 脉冲 Pulse	无	出货有驱动器 Controller inside the package
					50	5 μ	12	12 m		EC Ether CAT		
										RS RS485		

VLR20 - S15 - A 10 - 05 - S E - N - A001

型号 Model	宽度 Width		增量 / 绝对 Incremental/Absolute		分辨率 Resolution		线缆长度 Cable length		驱动器 Controller	总线 CAN bus	是否有驱动器 With controller or not	特注式样 Customization order no.
VLR20	S15	15 mm	无 Incremental	增量	05	0.5 μ	05	5 m	S 高创 Servotronix G 固高 Googol tech E Elmo	无 None	N	出货无驱动器 No controller inside the package
	S25	25 mm	A 绝对 Absolute	绝对	10	1 μ	08	8 m		P 脉冲 Pulse	无	出货有驱动器 Controller inside the package
	S45	45 mm			50	5 μ	12	12 m		EC Ether CAT		
										RS RS485		



VLR25 - S30 - A 10 - 05 - S E - N - A001

型号 Model	宽度 Width	增量 / 绝对 Incremental/Absolute	分辨率 Resolution	线缆长度 Cable length	驱动器 Controller	总线 CAN bus	是否有驱动器 With controller or not	特注式样 Customization order no.																																								
VLR25	<table border="1"> <tr><td>S30</td><td>30 mm</td></tr> <tr><td>S45</td><td>45 mm</td></tr> <tr><td>S65</td><td>65 mm</td></tr> </table>	S30	30 mm	S45	45 mm	S65	65 mm	<table border="1"> <tr><td>无</td><td>增量 Incremental</td></tr> <tr><td>A</td><td>绝对 Absolute</td></tr> </table>	无	增量 Incremental	A	绝对 Absolute	<table border="1"> <tr><td>05</td><td>0.5 μ</td></tr> <tr><td>10</td><td>1 μ</td></tr> <tr><td>50</td><td>5 μ</td></tr> </table>	05	0.5 μ	10	1 μ	50	5 μ	<table border="1"> <tr><td>05</td><td>5 m</td></tr> <tr><td>08</td><td>8 m</td></tr> <tr><td>12</td><td>12 m</td></tr> </table>	05	5 m	08	8 m	12	12 m	<table border="1"> <tr><td>S</td><td>高创 Servotronics</td></tr> <tr><td>G</td><td>固高 Googol tech</td></tr> <tr><td>E</td><td>Elmo</td></tr> </table>	S	高创 Servotronics	G	固高 Googol tech	E	Elmo	<table border="1"> <tr><td>无</td><td>None</td></tr> <tr><td>P</td><td>脉冲 Pulse</td></tr> <tr><td>EC</td><td>Ether CAT</td></tr> <tr><td>RS</td><td>RS485</td></tr> </table>	无	None	P	脉冲 Pulse	EC	Ether CAT	RS	RS485	<table border="1"> <tr><td>N</td><td>出货无驱动器 No controller inside the package</td></tr> <tr><td>无</td><td>出货有驱动器 Controller inside the package</td></tr> </table>	N	出货无驱动器 No controller inside the package	无	出货有驱动器 Controller inside the package	
S30	30 mm																																															
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特色说明

Features

VLR直线旋转执行器

VLR Linear Rotary Actuator

软着陆 Soft landing

以高速度、低力量的方式接触物体表面，最小软触力**20g**，提升贴装良率，减少损失

Contact the surface of an object with high speed and low force, with a minimum soft touch force of 20g, to improve the assembly yield and reduce losses.

3种控制模式 3 control mode



速度模式
Speed Mode



力控模式
Force Control Mode



位置模式
Position Mode

位置精度高 High positional accuracy

1. Z轴位置重复精度 $\pm 3 \mu\text{m}$
Z-axis position repeatability accuracy $\pm 3 \mu\text{m}$

2. θ 轴分辨率高达17Bit
The θ axis resolution reaches up to 17 bits



径向跳动小 Small radial runout

1. 旋转轴径向跳动 $\leq \pm 3 \mu\text{m}$

Radial runout of the rotating shaft is $\leq \pm 3 \mu\text{m}$

2. 满足高端半导体设备芯片取放需求

Meet the demand for chip placement and retrieval in high-end semiconductor equipment

应用场景 Application scenarios



半导体
Semiconductor



3C
3C

IGBT芯片贴装
IGBT chip mounting

芯片测试、分选
Chip testing and sorting

半导体芯片精密贴
Precision SMT of semiconductor chips

手机镜头组装
Mobile phone lens assembly

3C电子辅料贴装
3C electronic accessory mounting

FPC贴装、钢片补强
FPC mounting, steel sheet reinforcement

精准力控 Precise force control

1. 贴装力度可调20-400g

The mounting force can be adjusted from 20-400g

2. 力控精度 $\pm 5\text{g}$

Force control accuracy $\pm 5\text{g}$

3. 部分内置力闭环传感器，力控精度 $\pm 2\text{g}$

Partial built-in force closed-loop sensor with force control accuracy of $\pm 2\text{g}$

体积小 Compact

1. 轻量化、紧凑结构设计

Lightweight and compact structural design

2. VLR厚度最小达到16mm

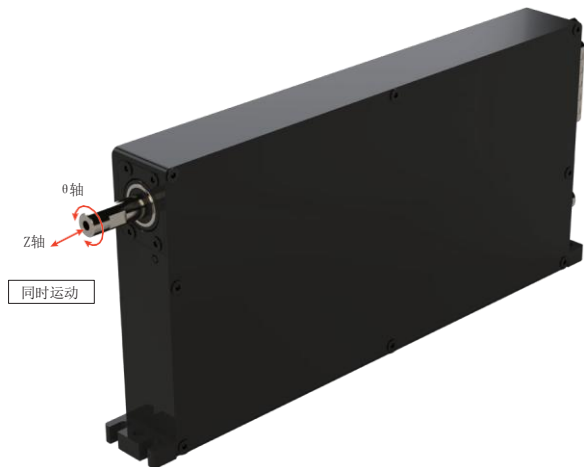
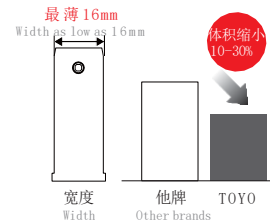
The minimum thickness of the VLR reaches 16mm

3. 支持零距离阵列安装

Support zero distance array installation

4. 同等规格、，体积比竞品缩小10-30%

Same specifications, with a volume reduction of 10-30% compared to competitors

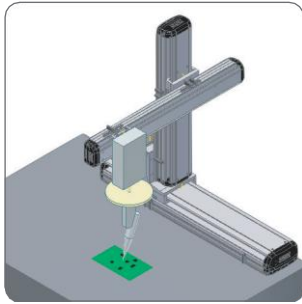


应用场景

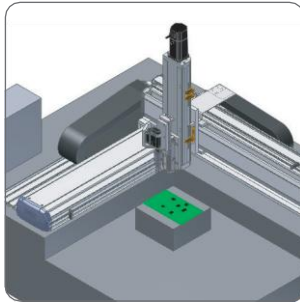
Application Scenarios

主要应用于：半导体行业、3C手机PAD键盘测试、光通讯行业、新能源汽车行业、汽车电子零部件行业、IGBT芯片封装、手机镜头精密组装、激光行业、医疗行业

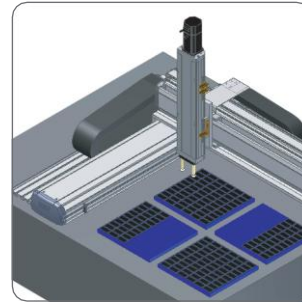
Mainly used in: semiconductor industry, 3C mobile phone PAD keyboard testing, optical communication industry, new energy vehicle industry, automotive electronic components industry, IGBT chip packaging, precision assembly of mobile phone lenses, laser industry, medical industry



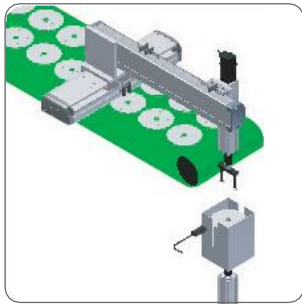
自动锡焊机
Automatic tin welder



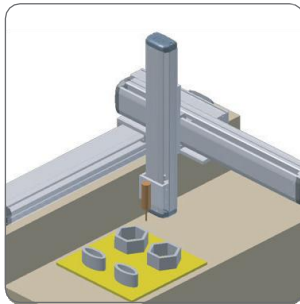
锁螺丝机
Locking screw machine



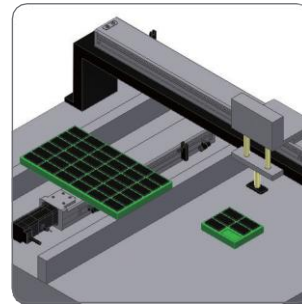
料架零件盒取放
Parts box handling



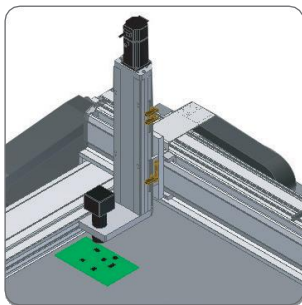
小型堆栈
Small stack



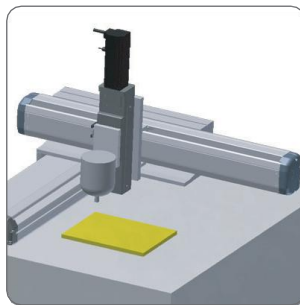
黏胶涂布机
Viscose coater



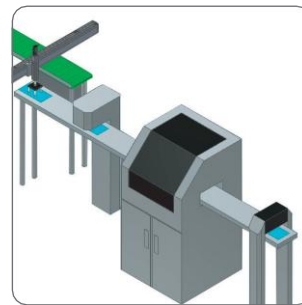
零附件取放搬运
Parts handling



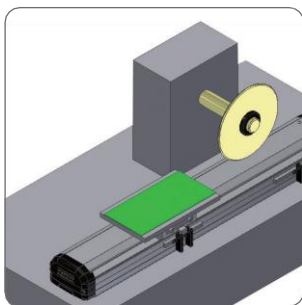
CCD镜头移动
CCD lens movement



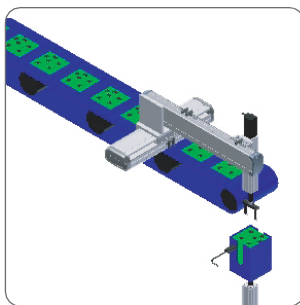
自动喷漆机
ZLD-ZDPLL



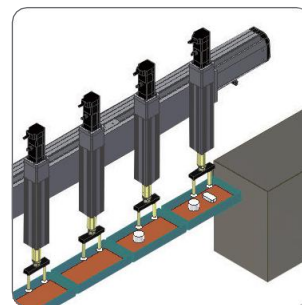
自动上下料装置
Loading and unloading



切割机
Cutting machine



电子元件生产设备
Production equipment



小型装配线
Small assembly line

VLR16

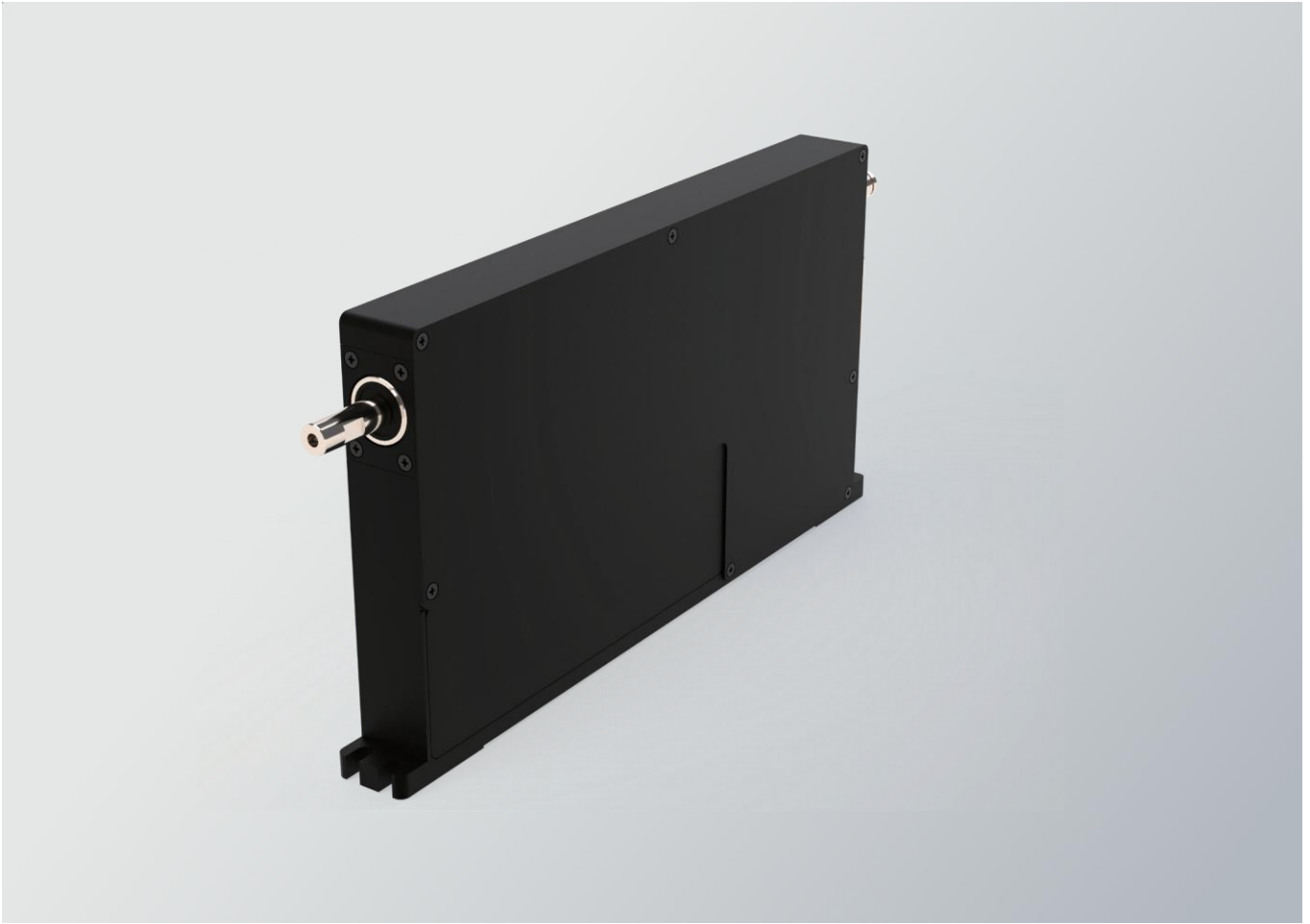
直线旋转执行器 Linear Rotary Actuator

Contents

VLR16	直线旋转执行器		本体宽度 16 mm Width 有效行程 15 mm 013 Effective stroke 持续推力 5.8N Continuous thrust
VLR16-S1 5			
VLR16	直线旋转执行器		本体宽度 16 mm Width 有效行程 25 mm 015 Effective stroke 持续推力 5.8N Continuous thrust
VLR16-S25			

VLR16-S15

直线旋转执行器 Linear Rotary Actuator



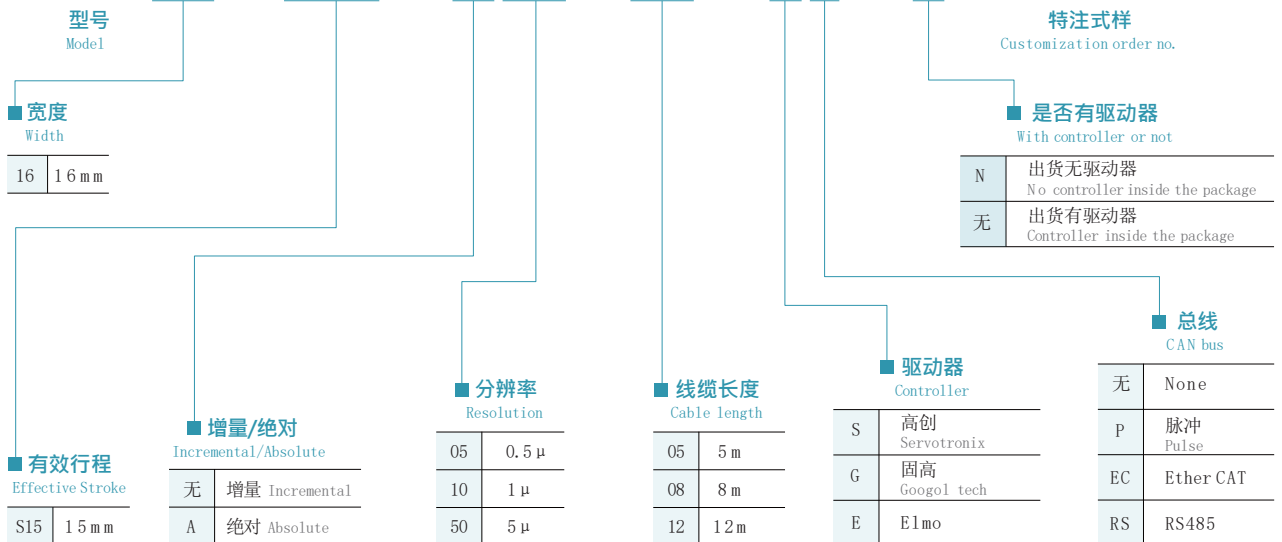
最大推力
Maximum Thrust 13.2N

有效行程
Effective stroke 15mm

最大扭力
Maximum Torque 48N

型號表示方式 Ordering Method

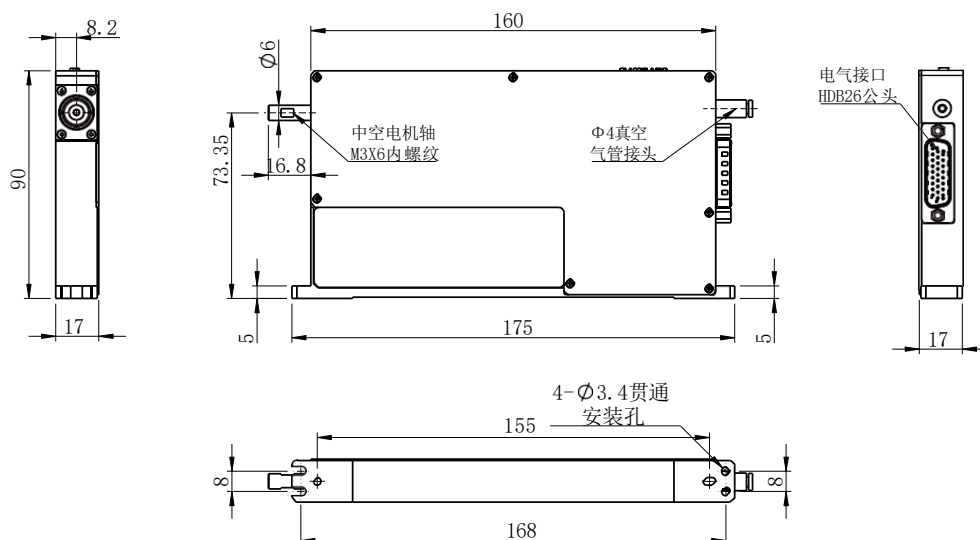
VLR16 - S15 - A10 - 05 - SE - N - A001



基本仕様 Specification

Spec	操作电压 Operating Voltage (V)	24
	有效行程 Effective Stroke (mm)	15
	最大推力 Maximum Thrust (N)	13.2
	持续推力 Continuous Thrust (N)	5.8
	峰值电流 Peak Current (A)	2.1
	持续电流 Continuous Current (A)	0.9
	力常数 Force constant (N/A)	6.8
	力控范围 Power Control Range (g)	20 - 400
	力控精度 Power Control Accuracy (g)	20 - 100, ± 5 ; 100 - 400, $\pm 5\%$
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 可选 Optional
	重复定位精度 Repeatability (μm)	± 2
	额定转速 Rated Speed (RPM)	1000
	峰值扭力 Peak Torque (mN.m)	48
	旋转分辨率 Rotation Resolution (CPR)	32768脉冲/圈, 相当于分辨率 0.01° 32768 pulses per revolution, which is equivalent to a resolution of 0.01°
	动子重量 Weight Of The Moving Object (g)	130
	总重量 Total Weight (g)	550
	尺寸 Size (mm)	160 * 90 * 17
	运行温度 Operating Temperature (°C)	0 - 45°C

安装尺寸图 Installation Size



VLR16-S25

直线旋转执行器 Linear Rotary Actuator



最大推力
Maximum Thrust

13.2N

有效行程
Effective stroke

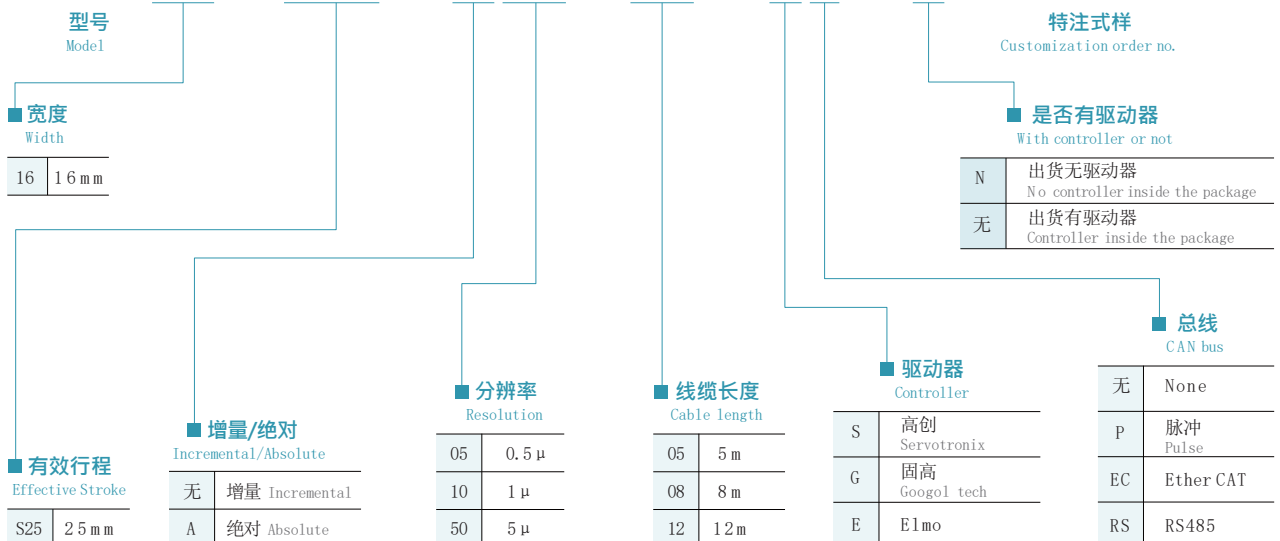
25mm

最大扭力
Maximum Torque

48N

型号表示方式 Ordering Method

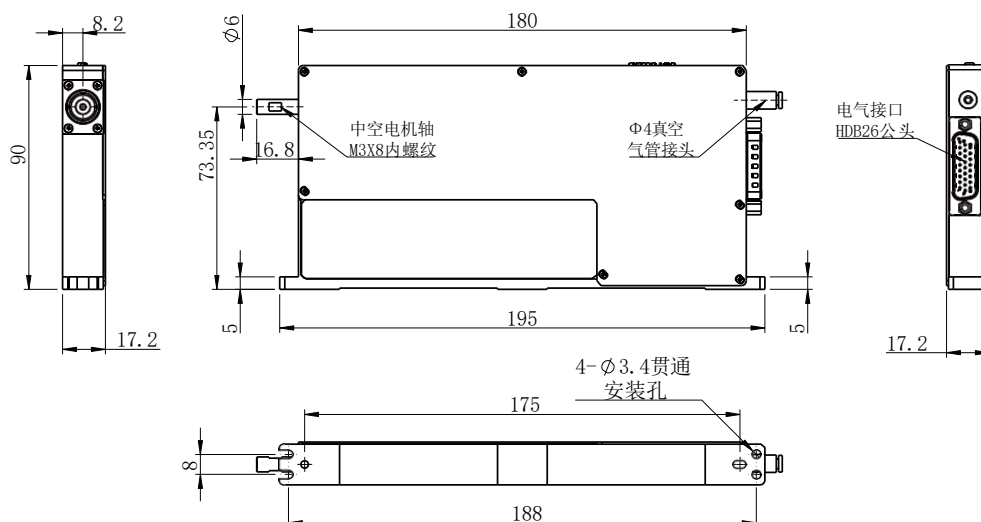
VLR16 - S25 - A10 - 05 - SE - N - A001



基本仕様 Specification

Spec	操作电压 Operating Voltage (V)	24
	有效行程 Effective Stroke (mm)	25
	最大推力 Maximum Thrust (N)	13.2
	持续推力 Continuous Thrust (N)	5.8
	峰值电流 Peak Current (A)	2.1
	持续电流 Continuous Current (A)	0.9
	力常数 Force constant (N/A)	6.8
	力控范围 Power Control Range (g)	20 - 400
	力控精度 Power Control Accuracy (g)	20 - 100, ± 5 ; 100 - 400, $\pm 5\%$
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 可选 Optional
	重复定位精度 Repeatability (μm)	± 2
	额定转速 Rated Speed (RPM)	1000
	峰值扭力 Peak Torque (mN.m)	48
	旋转分辨率 Rotation Resolution (CPR)	32768脉冲/圈, 相当于分辨率 0.01° 32768 pulses per revolution, which is equivalent to a resolution of 0.01°
	动子重量 Weight Of The Moving Object (g)	136
	总重量 Total Weight (g)	580
	尺寸 Size (mm)	180 * 90 * 17
	运行温度 Operating Temperature (°C)	0 - 45°C

安装尺寸图 Installation Size



Memo

VLR20

直线旋转执行器 Linear Rotary Actuator

Contents

VLR20 直线旋转执行器

VLR20-S15



本体宽度 20 mm

Width

有效行程 15 mm 019

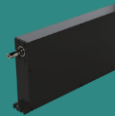
Effective stroke

持续推力 5.8N

Continuous thrust

VLR20 直线旋转执行器

VLR20-S25



本体宽度 20 mm

Width

有效行程 25 mm 021

Effective stroke

持续推力 5.8N

Continuous thrust

VLR20 直线旋转执行器

VLR20-S45



本体宽度 20 mm

Width

有效行程 45 mm 023

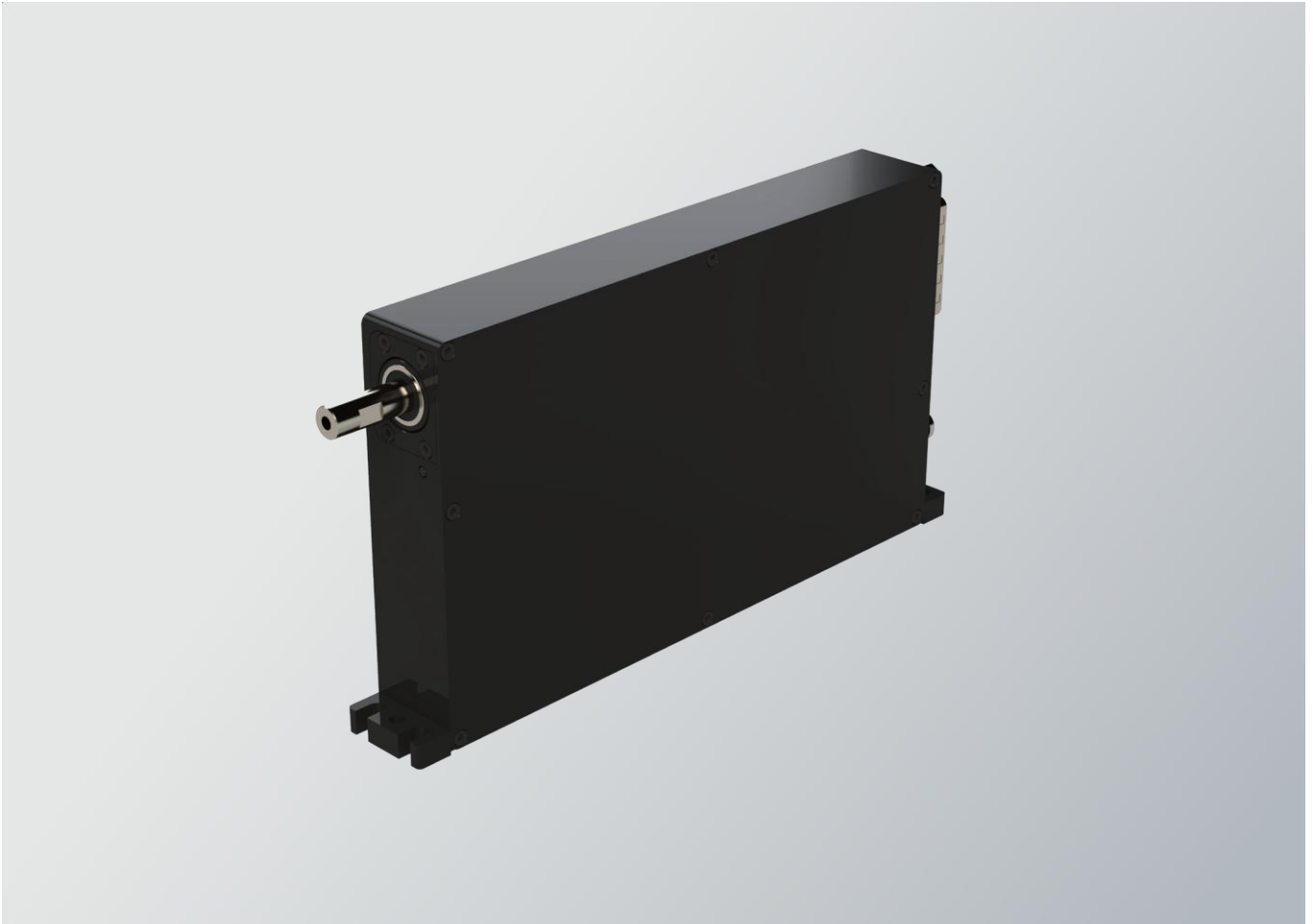
Effective stroke

持续推力 11.2N

Continuous thrust

VLR20-S15

直线旋转执行器 Linear Rotary Actuator



最大推力
Maximum Thrust

13.2N

有效行程
Effective stroke

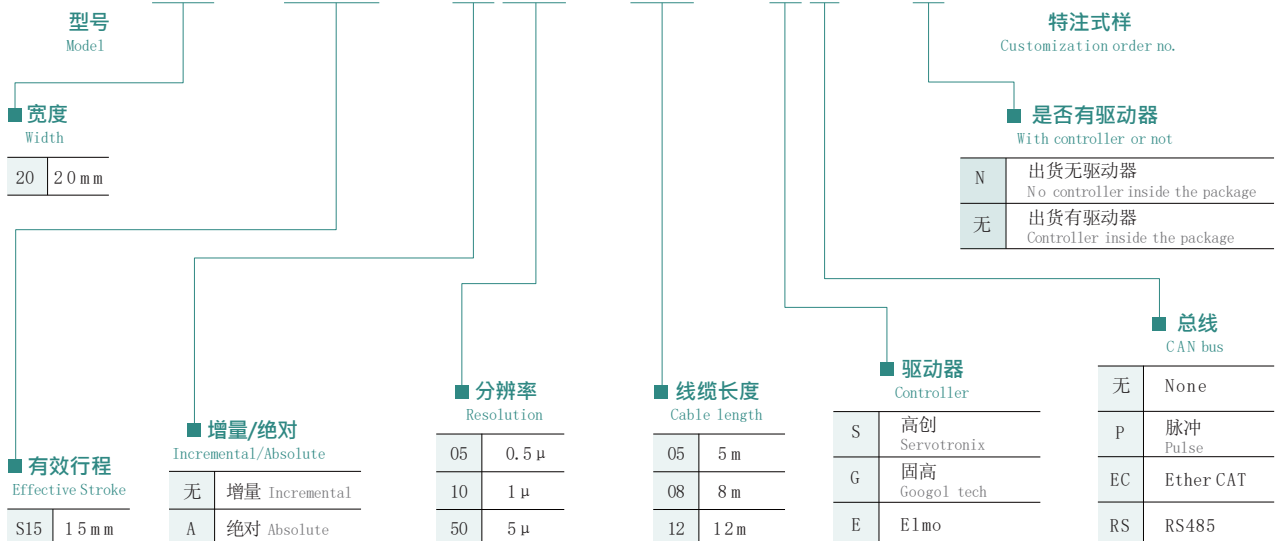
15mm

最大扭力
Maximum Torque

48N

型號表示方式 Ordering Method

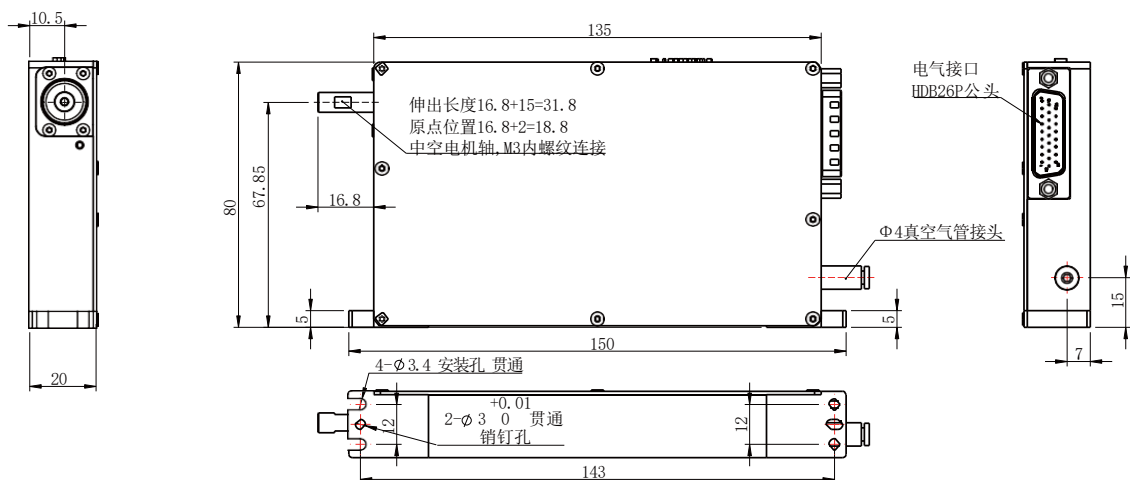
VLR20 - S15 - A10 - 05 - SE - N - A001



基本仕様 Specification

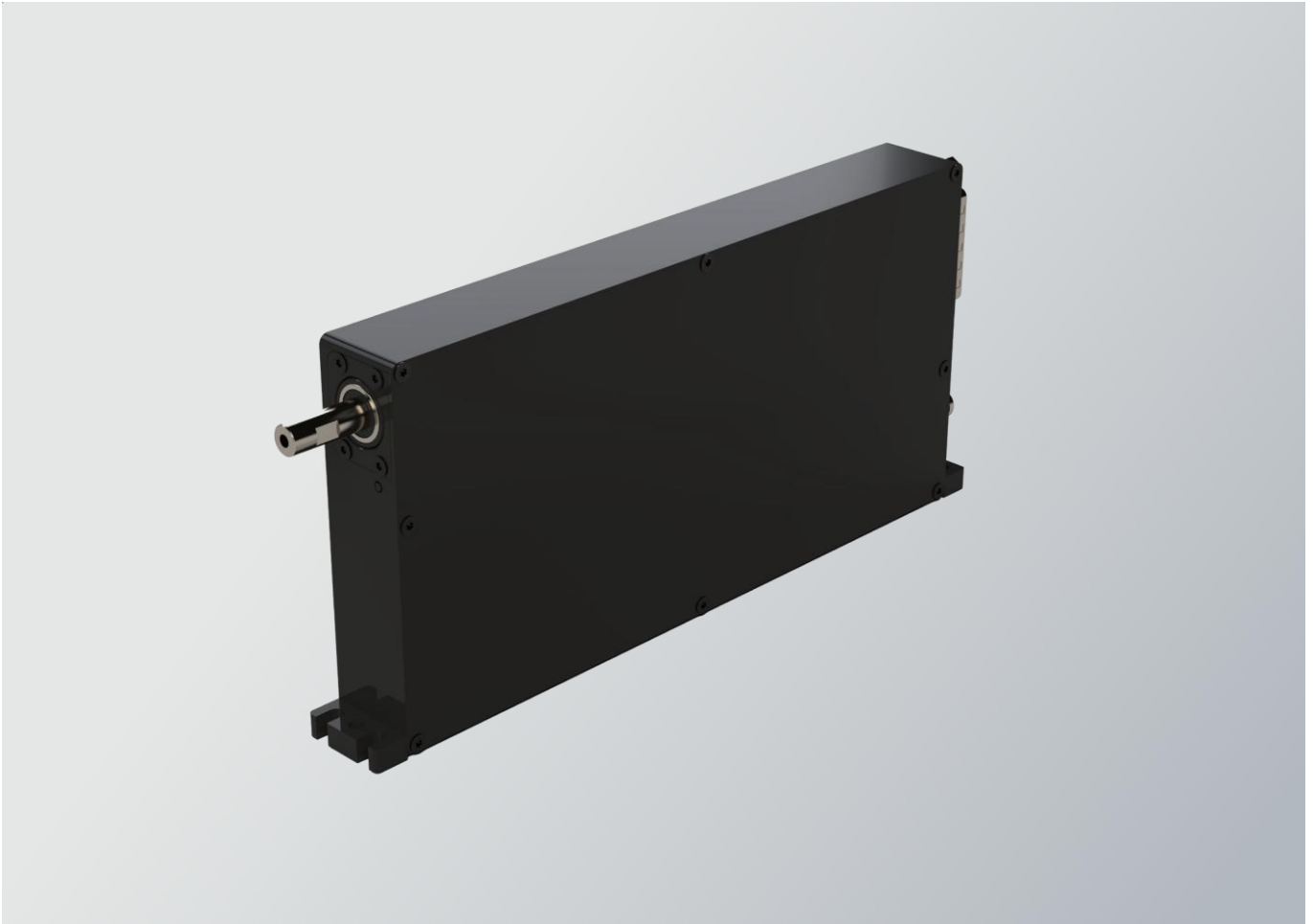
Spec	操作电压 Operating Voltage (V)	24
	有效行程 Effective Stroke (mm)	15
	最大推力 Maximum Thrust (N)	13.2
	持续推力 Continuous Thrust (N)	5.8
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	力常数 Force constant (N/A)	6.8
	力控范围 Power Control Range (g)	20 - 400
	力控精度 Power Control Accuracy (g)	20 - 100, ± 5 ; 100 - 400, $\pm 5\%$
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 可选 Optional
	重复定位精度 Repeatability (μm)	± 2
	额定转速 Rated Speed (RPM)	1000
	峰值扭力 Peak Torque (mN.m)	48
	旋转分辨率 Rotation Resolution (CPR)	32768脉冲/圈, 相当于分辨率 0.01° 32768 pulses per revolution, which is equivalent to a resolution of 0.01°
	动子重量 Weight Of The Moving Object (g)	136
	总重量 Total Weight (g)	580
	尺寸 Size (mm)	130 x 80 x 20
	运行温度 Operating Temperature (°C)	0 - 45°C

基本仕様 Specification



VLR20-S25

直线旋转执行器 Linear Rotary Actuator



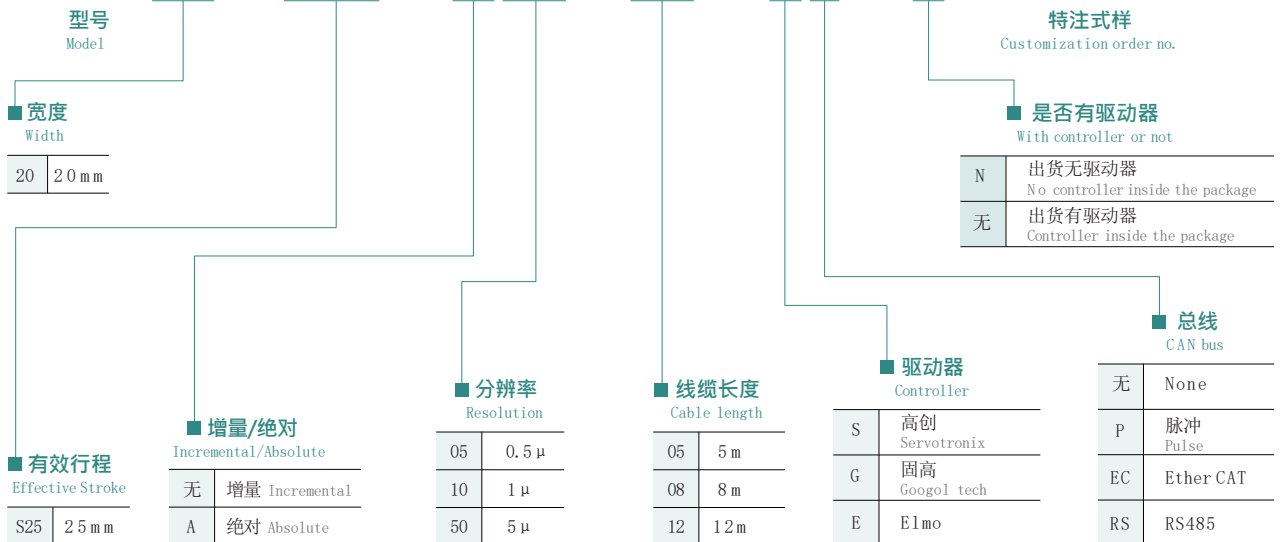
最大推力
Maximum Thrust 13.2N

有效行程
Effective stroke 25mm

最大扭力
Maximum Torque 48N

型號表示方式 Ordering Method

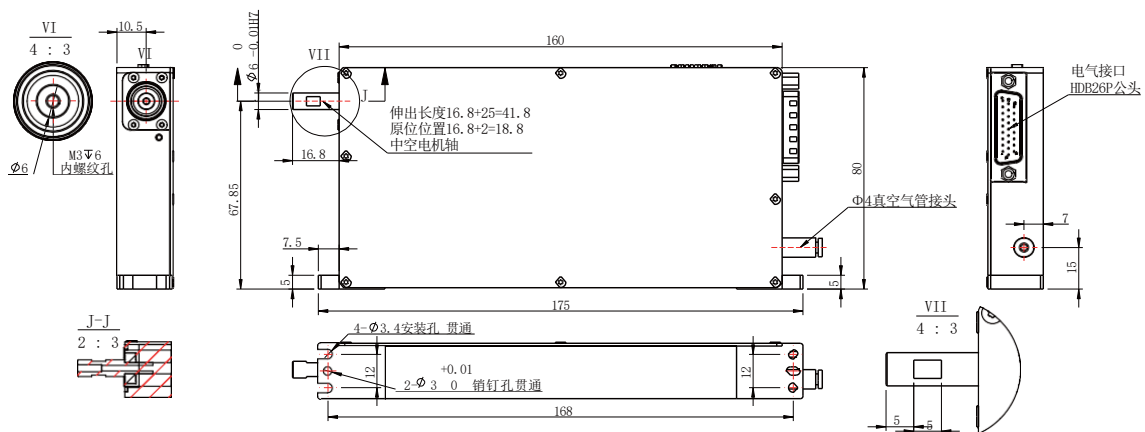
VLR20 - S25 - A10 - 05 - SE - N - A001



基本仕様 Specification

Spec	操作电压 Operating Voltage (V)	24
	有效行程 Effective Stroke (mm)	25
	最大推力 Maximum Thrust (N)	13.2
	持续推力 Continuous Thrust (N)	5.8
	峰值电流 Peak Current (A)	2.1
	持续电流 Continuous Current (A)	0.9
	力常数 Force constant (N/A)	6.8
	力控范围 Power Control Range (g)	20 - 400
	力控精度 Power Control Accuracy (g)	20 - 100, ± 5 ; 100 - 400, $\pm 5\%$
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 μm 可选 Optional
	重复定位精度 Repeatability (μm)	± 2
	额定转速 Rated Speed (RPM)	1000
	峰值扭力 Peak Torque (mN.m)	48
	旋转分辨率 Rotation Resolution (CPR)	32768脉冲/圈, 相当于分辨率 0.01° 32768 pulses per revolution, which is equivalent to a resolution of 0.01°
	动子重量 Weight Of The Moving Object (g)	148
	总重量 Total Weight (g)	680
	尺寸 Size (mm)	155 x 80 x 20
	运行温度 Operating Temperature (°C)	0 - 45°C

安装尺寸图 Installation Size



VLR20-S45

直线旋转执行器 Linear Rotary Actuator



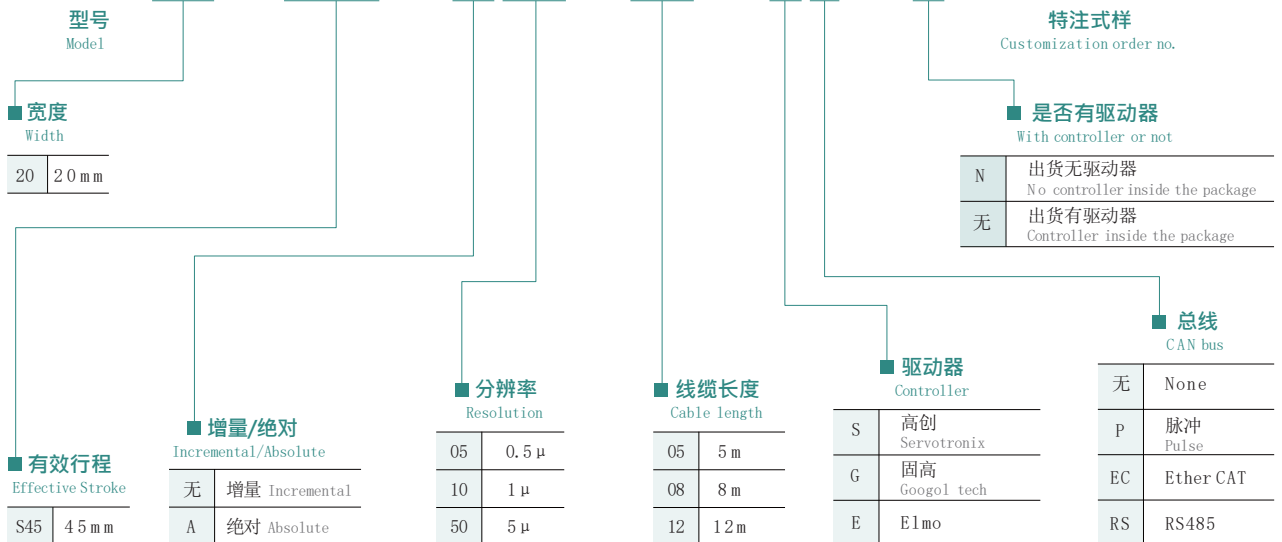
最大推力
Maximum Thrust 28N

有效行程
Effective stroke 45mm

最大扭力
Maximum Torque 48N

型號表示方式 Ordering Method

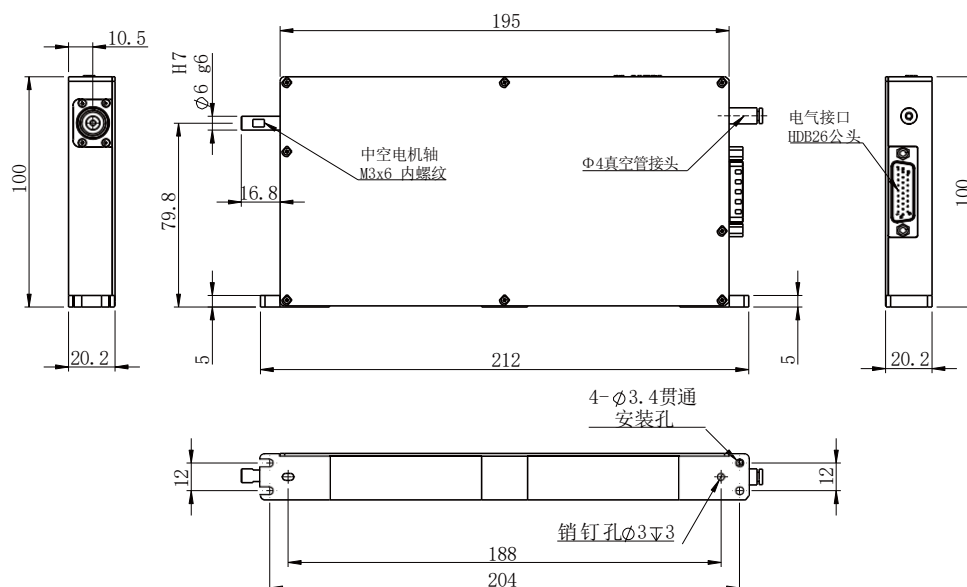
VLR20 - S45 - A10 - 05 - SE - N - A001



基本仕様 Specification

Spec	操作电压 Operating Voltage (V)	24
	有效行程 Effective Stroke (mm)	45
	最大推力 Maximum Thrust (N)	28
	持续推力 Continuous Thrust (N)	11.2
	峰值电流 Peak Current (A)	3.0
	持续电流 Continuous Current (A)	1.2
	力常数 Force constant (N/A)	9.4
	力控范围 Power Control Range (g)	20 - 400
	力控精度 Power Control Accuracy (g)	20 - 100, ± 5 ; 100 - 400, $\pm 5\%$
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 μm 可选 Optional
	重复定位精度 Repeatability (μm)	± 2
	额定转速 Rated Speed (RPM)	1000
	峰值扭力 Peak Torque (mN.m)	48
	旋转分辨率 Rotation Resolution (CPR)	32768脉冲/圈, 相当于分辨率 0.01° 32768 pulses per revolution, which is equivalent to a resolution of 0.01°
	动子重量 Weight Of The Moving Object (g)	175
	总重量 Total Weight (g)	700
	尺寸 Size (mm)	195 x 100 x 20
	运行温度 Operating Temperature (°C)	0 - 45°C

安装尺寸图 Installation Size



Memo

VLR25

直线旋转执行器 Linear Rotary Actuator

Contents

VLR25 直线旋转执行器

VLR25-S3 0



本体宽度 25 mm

Width

有效行程 30 mm

Effective stroke

持续推力 16N

Continuous thrust

..... 027

VLR25 直线旋转执行器

VLR25-S4 5



本体宽度 25 mm

Width

有效行程 45 mm

Effective stroke

持续推力 16N

Continuous thrust

..... 029

VLR25 直线旋转执行器

VLR25-S6 5



本体宽度 25 mm

Width

有效行程 65 mm

Effective stroke

持续推力 16N

Continuous thrust

..... 031

VLR25-S30

直线旋转执行器 Linear Rotary Actuator



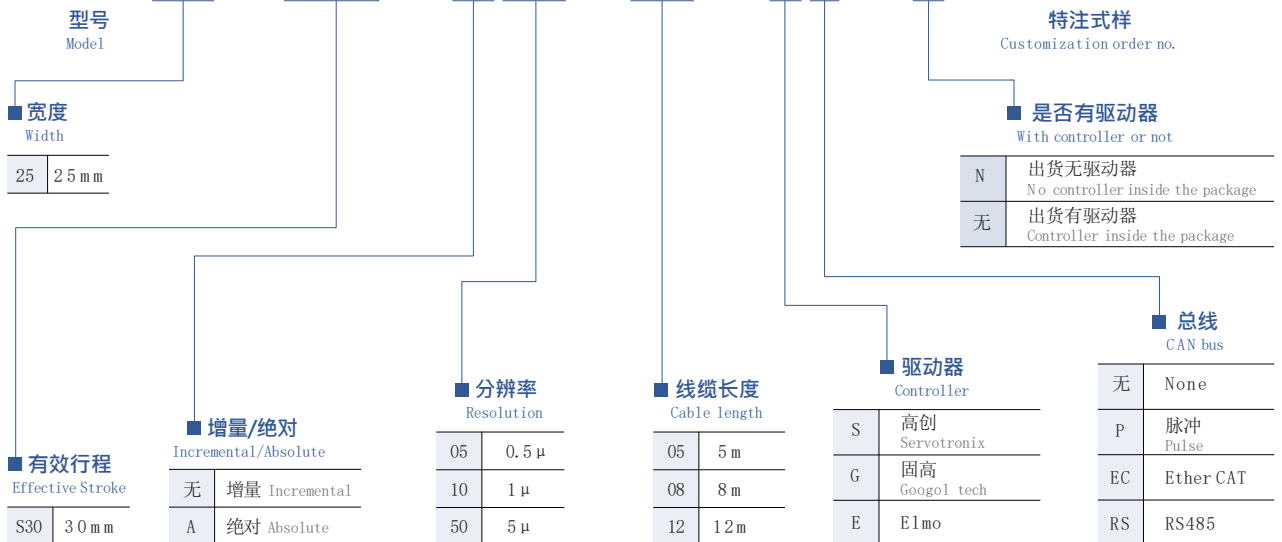
最大推力
Maximum Thrust 36N

有效行程
Effective stroke 30mm

最大扭力
Maximum Torque 76N

型号表示方式 Ordering Method

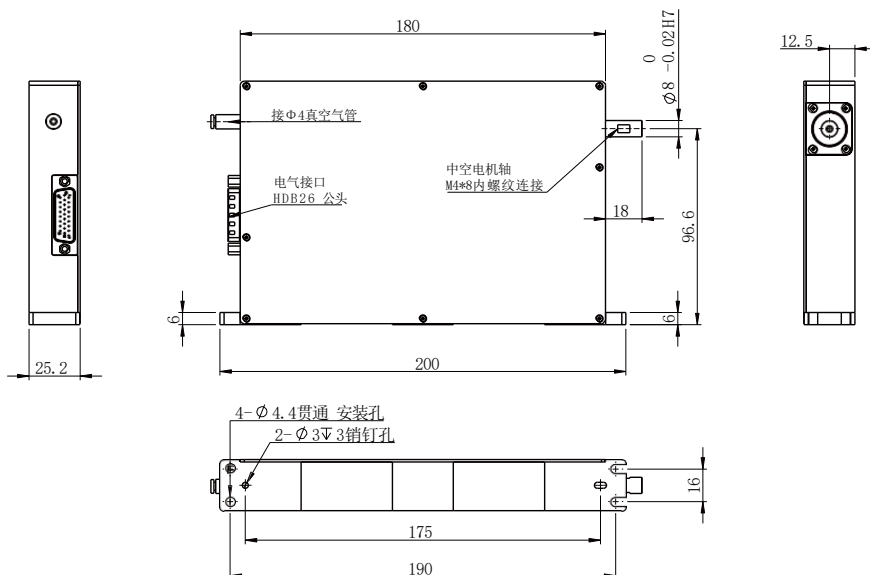
VLR25 - S30 - A10 - 05 - SE - N - A001



基本仕様 Specification

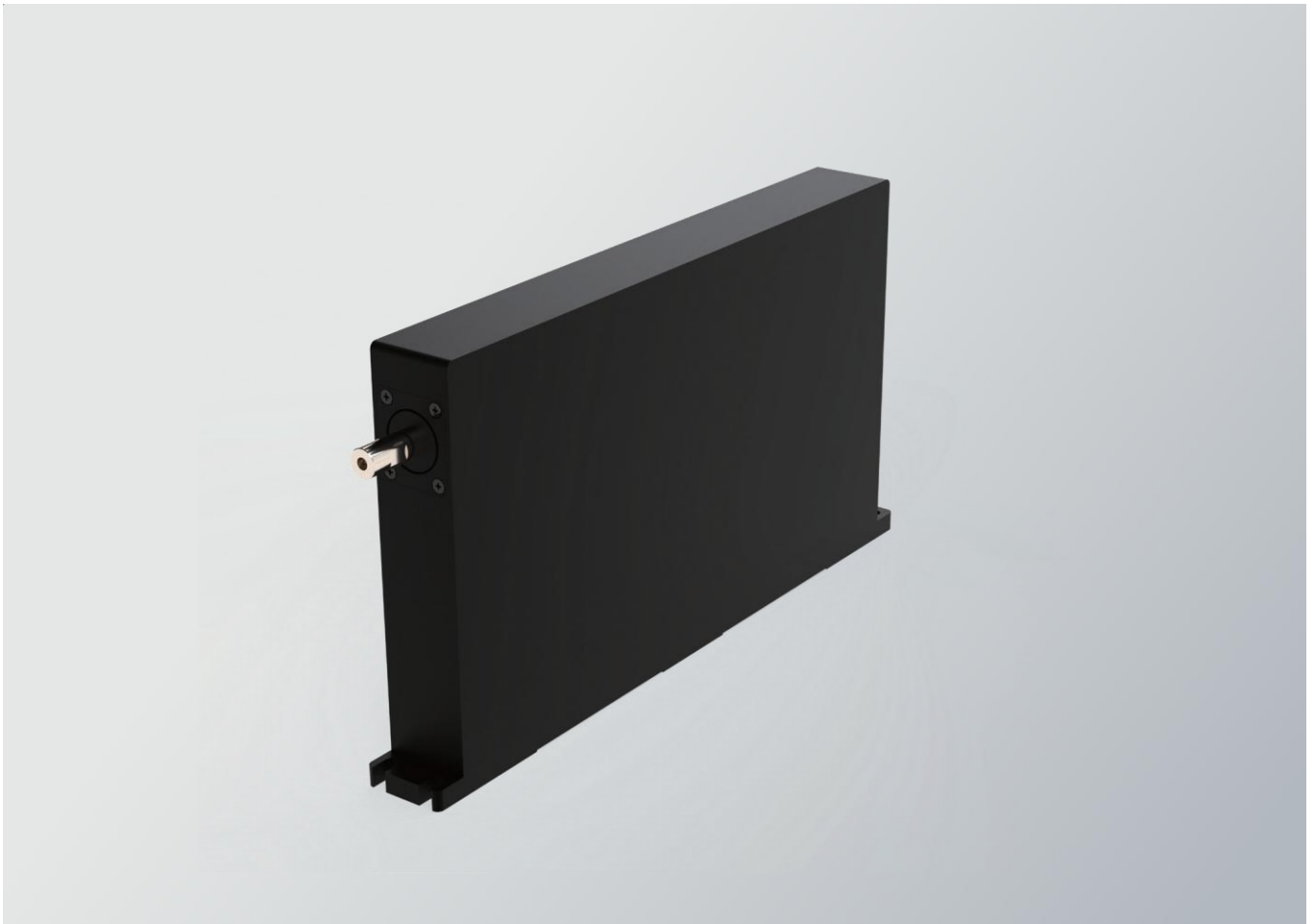
Spec	操作电压 Operating Voltage (V)	48
	有效行程 Effective Stroke (mm)	30
	最大推力 Maximum Thrust (N)	36
	持续推力 Continuous Thrust (N)	16
	峰值电流 Peak Current (A)	3.0
	持续电流 Continuous Current (A)	1.3
	力常数 Force constant (N/A)	12.3
	力控范围 Power Control Range (g)	50 - 800
	力控精度 Power Control Accuracy (g)	50 - 200, ±10; 200-800, ±5%
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 可选 Optional
	重复定位精度 Repeatability (μm)	±2
	额定转速 Rated Speed (RPM)	1000
	峰值扭矩 Peak Torque (mN.m)	76
	旋转分辨率 Rotation Resolution (CPR)	增量式: 17Bit Incremental: 17Bit
	动子重量 Weight Of The Moving Object (g)	135
	总重量 Total Weight (g)	545
	尺寸 Size (mm)	180 x 120 x 25
	运行温度 Operating Temperature (°C)	0 - 45°C

基本仕様 Specification



VLR25-S45

直线旋转执行器 Linear Rotary Actuator



最大推力
Maximum Thrust

36N

有效行程
Effective stroke

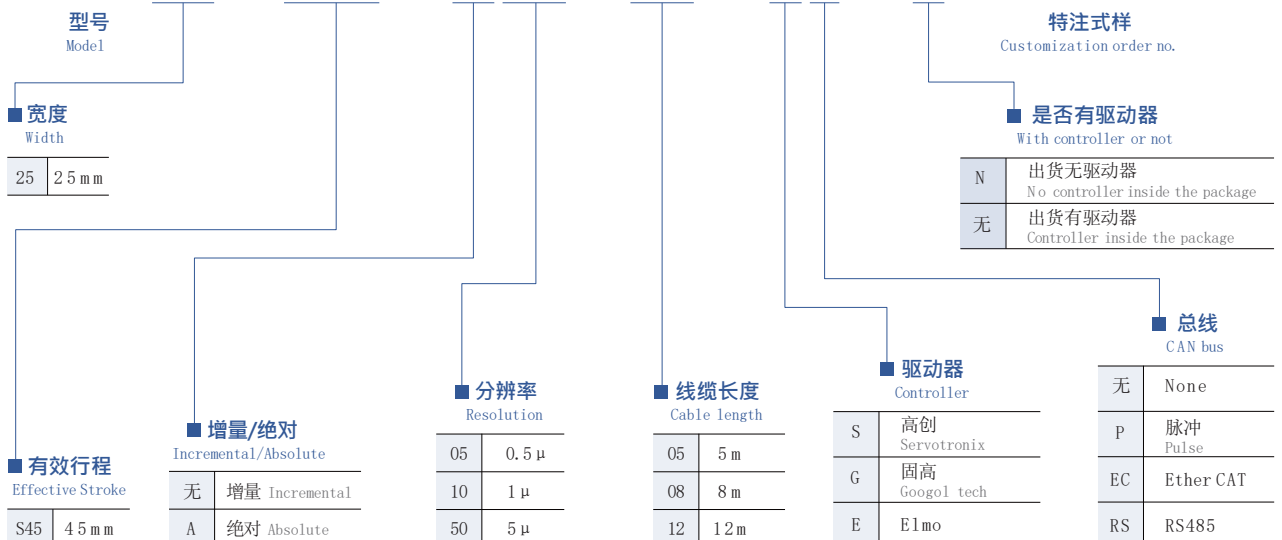
45mm

最大扭力
Maximum Torque

135N

型號表示方式 Ordering Method

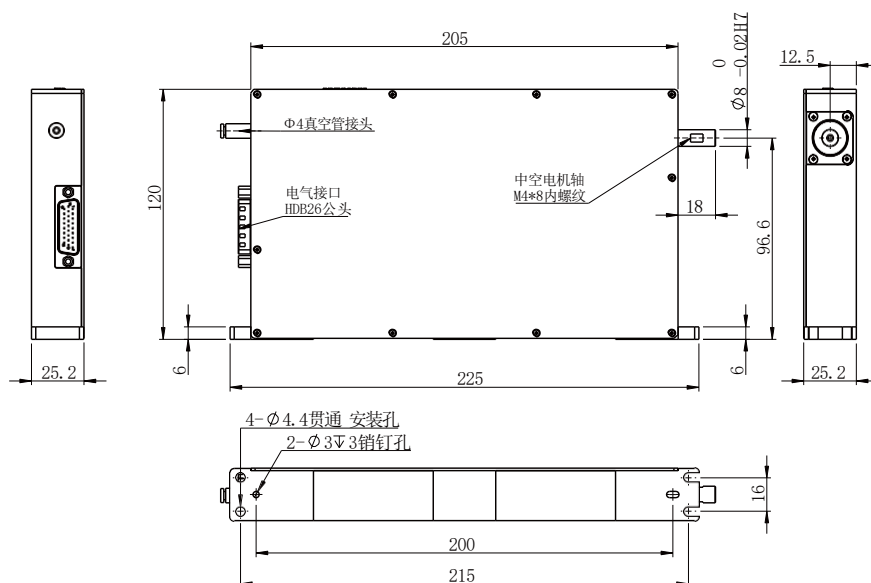
VLR25 - S45 - A10 - 05 - SE - N - A001



基本仕様 Specification

Spec	操作电压 Operating Voltage (V)	48
	有效行程 Effective Stroke (mm)	45
	最大推力 Maximum Thrust (N)	36
	持续推力 Continuous Thrust (N)	16
	峰值电流 Peak Current (A)	3.0
	持续电流 Continuous Current (A)	1.3
	力常数 Force constant (N/A)	12.3
	力控范围 Power Control Range (g)	50 - 800
	力控精度 Power Control Accuracy (g)	50 - 200, ±10; 200-800, ±5%
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 可选 Optional
	重复定位精度 Repeatability (μm)	±2
	额定转速 Rated Speed (RPM)	1000
	峰值扭力 Peak Torque (mN.m)	135
	旋转分辨率 Rotation Resolution (CPR)	增量式: 17Bit Incremental: 17Bit
	动子重量 Weight Of The Moving Object (g)	225
	总重量 Total Weight (g)	900
	尺寸 Size (mm)	205 x 120 x 25
	运行温度 Operating Temperature (°C)	0 - 45°C

基本仕様 Specification



VLR25-S65

直线旋转执行器 Linear Rotary Actuator



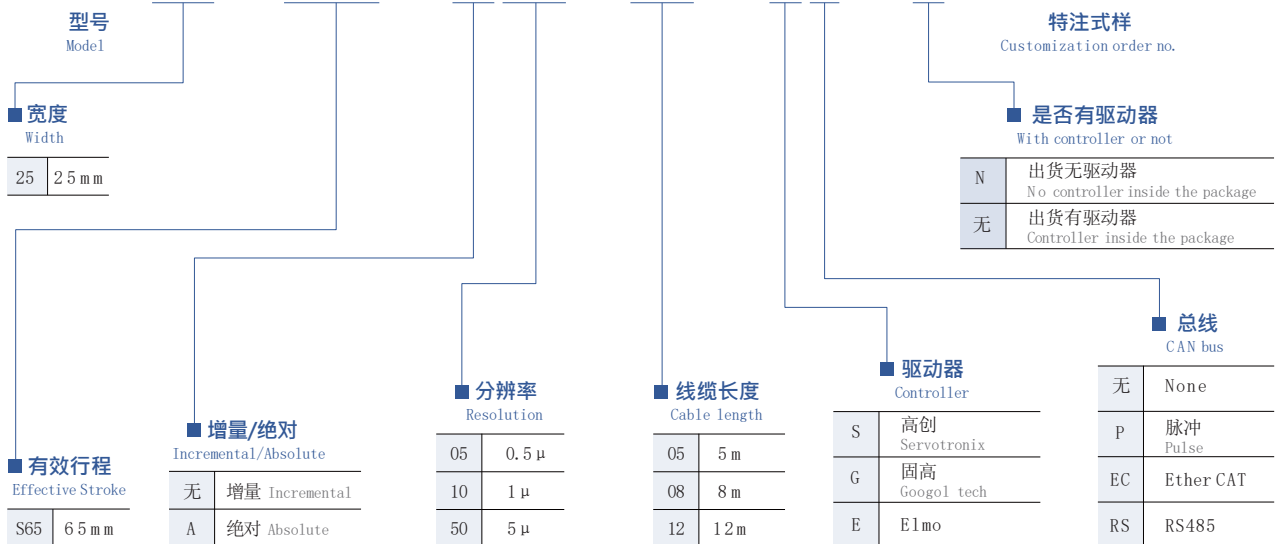
最大推力
Maximum Thrust **36N**

有效行程
Effective stroke **65mm**

最大扭力
Maximum Torque **135N**

型号表示方式 Ordering Method

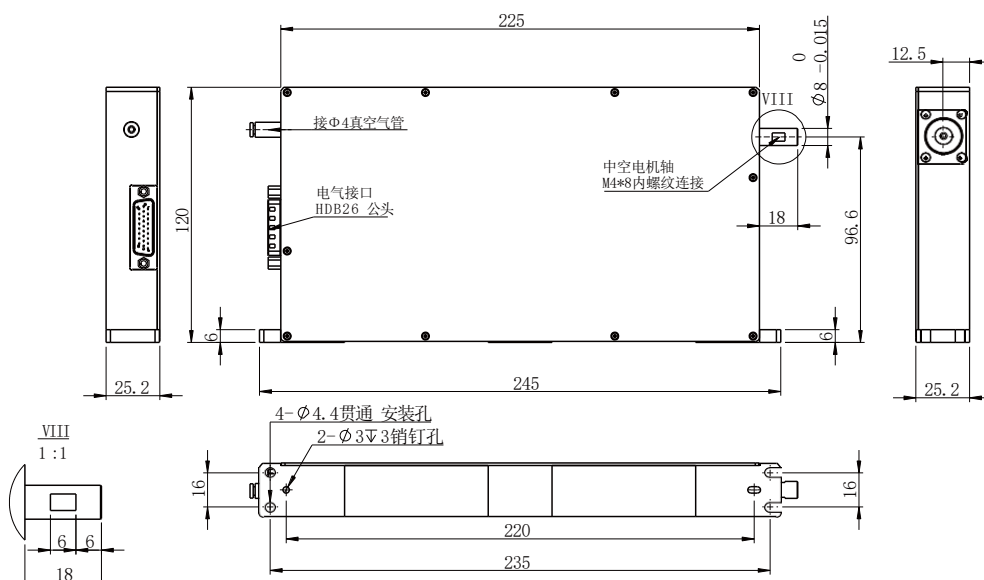
VLR25 - S65 - A10 - 05 - SE - N - A001



基本仕様 Specification

Spec	操作电压 Operating Voltage (V)	48
	有效行程 Effective Stroke (mm)	65
	最大推力 Maximum Thrust (N)	36
	持续推力 Continuous Thrust (N)	16
	峰值电流 Peak Current (A)	3.0
	持续电流 Continuous Current (A)	1.3
	力常数 Force constant (N/A)	12.3
	力控范围 Power Control Range (g)	50 - 800
	力控精度 Power Control Accuracy (g)	50 - 200, ±5; 200 - 800, ±5%
	直线分辨率 Linear Resolution (μm)	0.5 / 1 / 5 可选 Optional
	重复定位精度 Repeatability (μm)	±2
	额定转速 Rated Speed (RPM)	1000
	峰值扭矩 Peak Torque (mN.m)	135
	旋转分辨率 Rotation Resolution (CPR)	增量式: 17Bit Incremental: 17Bit
	动子重量 Weight Of The Moving Object (g)	240
	总重量 Total Weight (g)	1000
	尺寸 Size (mm)	225 x 120 x 25
	运行温度 Operating Temperature (°C)	0 - 45°C

基本仕様 Specification



Memo

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