米朗 MIRAN®

中国工信部高精度传感器一条龙应用计划示范项目

国家级专精特新“小巨人”企业，国家级高新技术企业

中国工业强基重点产品，中国工信部传感器一条龙应用计划示范企业

磁感应直线位移传感器

Magnetic Induction Linear Displacement Sensors



磁感应直线位移传感器

Magnetic Induction Linear Displacement Sensors

- Demonstration project of one-stop application plan for high-precision sensors of Ministry of Industry and Information Technology of China
- National level specialized and special new "little giant" enterprise, national level high-tech enterprise
- Key products of strong industrial base in China, demonstration enterprise of sensor one-stop application plan of Ministry of Industry and Information Technology of China

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GTM磁感应位移传感器

GTM Magnetic Induction Displacement Sensor

产品实物图Product Picture





产品概述Product Overview

GTM系列微型霍尔磁感应自复位式位移传感器，是一款非接触式霍尔磁感应传感器，内部采用感应磁缸和单片机芯片处理电路两部分，内部磁缸来回伸缩，电路中的霍尔磁感应编程芯片产生磁性感应，通过内部处理电路输出不同的模拟量或数字量信号，输出信号的大小值与实际位移距离呈正比例线性关系。

GTM series miniature Hall magnetic induction self-resetting displacement sensor, is a non-contact Hall magnetic induction sensor, the internal use of induction magnetic cylinder and microcontroller chip processing circuit in two parts, the internal magnetic cylinder back and forth retraction, the circuit of the Hall magnetic induction programmer chip to produce magnetic induction, through the internal processing circuit output different analog or digital signals, the size of the output signal value and the actual displacement distance is a linear relationship of proportional to the size of the signal. The size of the output signal is proportional to the actual displacement distance.

产品特点Product Features

1.体型设计小巧，便于客户狭小空间安装。

1.Compact design for easy installation in tight spaces for customers.

2.封闭外壳，内部灌封，防护等级高达IP68。

2.Enclosed housing, internally potted, protection class up to IP68.

3.尺身采用定制不锈钢材质，防腐蚀，耐油污，适用于相对环境较复杂的工况。

3.The body of the ruler is made of customized stainless steel, corrosion-resistant, oil-resistant, suitable for relatively complex environmental conditions.

4.内部感应部分采用非接触式原理设计，杜绝长期使用带来的磨损给传感器的稳定性及寿命造成影响。

4.The internal sensing part adopts the non-contact principle design, eliminating the wear and tear caused by long-term use to the stability and life of the sensor.

性能参数Performance Parameters

性能指标Performance indicators

量程 Range	2.5mm	5mm	10mm	15mm	20mm
分辨率(mm) Resolution (mm)	0.001	0.001	0.002	0.003	0.005
线性精度(mm) Linear accuracy (mm)	0.005	0.008	0.01	0.02	0.03
重复精度(mm) Repeatability (mm)	0.001	0.001	0.005	0.005	0.01
供电电压 Supply voltage	DC12-24V				
输出信号 Output signal	0-5V、0-10V、4-20mA、RS485				
驱动方式 Driving method	内置弹簧自复位式 built-in spring-loaded self-returning type				
动态响应频率 Dynamic response frequency	1KHZ				
工作温度 Operating temperature	-35°C～+65°C				
防护等级 Protection class	IP68				
引线方式 Lead wire method	标准1M屏蔽线尾部直出线(可选:尾部侧出线) standard 1M shielded cable tail straight out (optional: tail side out)				

产品型号选型Product Model Selection

GTM - □□ - □□ - □□ - □

霍尔磁感应微型自复位式位移传感器
Hall magnetic induction miniature self-resetting displacement sensors

可选测量：
Optional Measurements:
(2.5, 5, 10, 15, 20mm)

V1:0-5V 输出
V1:0-5V output

V2:0-10V 输出
V2:0-10V output

A :4-20mA 输出
A :4-20mA output

R :RS485输出
R:RS485 output

DL:尾部直出线
DL:tail straight out line

SL:尾部侧出线
SL:tail inclined out line

Y:圆管（不带螺纹）
Y:Round pipe (without threads)

Y1:圆管（带螺纹）
Y1:Circular tube (with threads)

F:方管（不带螺纹）
F: Square tube (without threads)

F1:方管（带螺纹）
F1: Square tube (with threads)

例如Example:

GTM-10mm-V1-DL-Y1：霍尔磁感应微型自复位式位移传感器，量程为10mm，0-5V输出，尾部直出线，圆管（带螺纹）。

GTM-10mm-V1-DL-Y1: Hall magnetic induction micro self-resetting displacement sensor, with a measurement range of 10mm, 0-5V output, straight-out terminal at the tail, round tube (with threads).

注：4-20mA输出的GTM磁感应位移传感器正在研发中，如有需要请先与技术沟通。

Note: The GTM magnetic induction displacement sensor with 4-20mA output is under development. If needed, please consult with the technical team first.

电气连接Electrical Connection

	棕色 BROWN	黑色 BLACK	蓝色 BLUE	屏蔽线 SHIELDED WIRE
电压三线制接线方式 Voltage 3-wire wiring	供电电源(+) power supply (+) DC12-24V	供电电源(-) power supply (-) 0V	电压输出 voltage output 0-5V/0-10V	GND

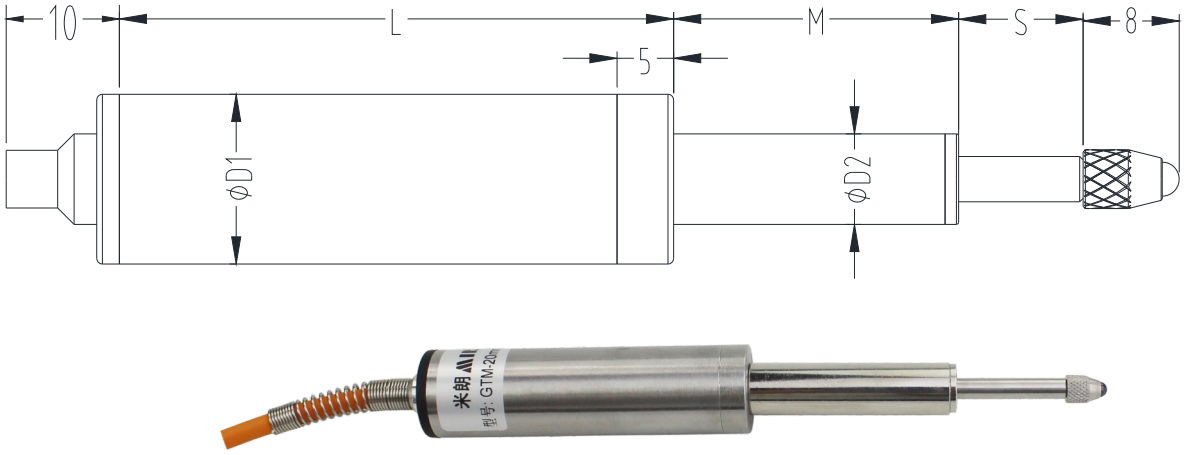
	红色 RED	黑色 BLACK	蓝色 BLUE	绿色 GREEN	屏蔽线 SHIELDED WIRE
RS485接线方式 RS485 wiring method	供电电源(+) power supply (+) DC12-24V	供电电源(-) power supply (-) 0V	RS485 A+	RS485 B-	GND

以上仅为参考，具体接线定义以产品实物标签上的标注为准。
The above is for reference only, the specific wiring definition of the product physical labeling shall prevail.

产品尺寸图Product Dimension Drawing

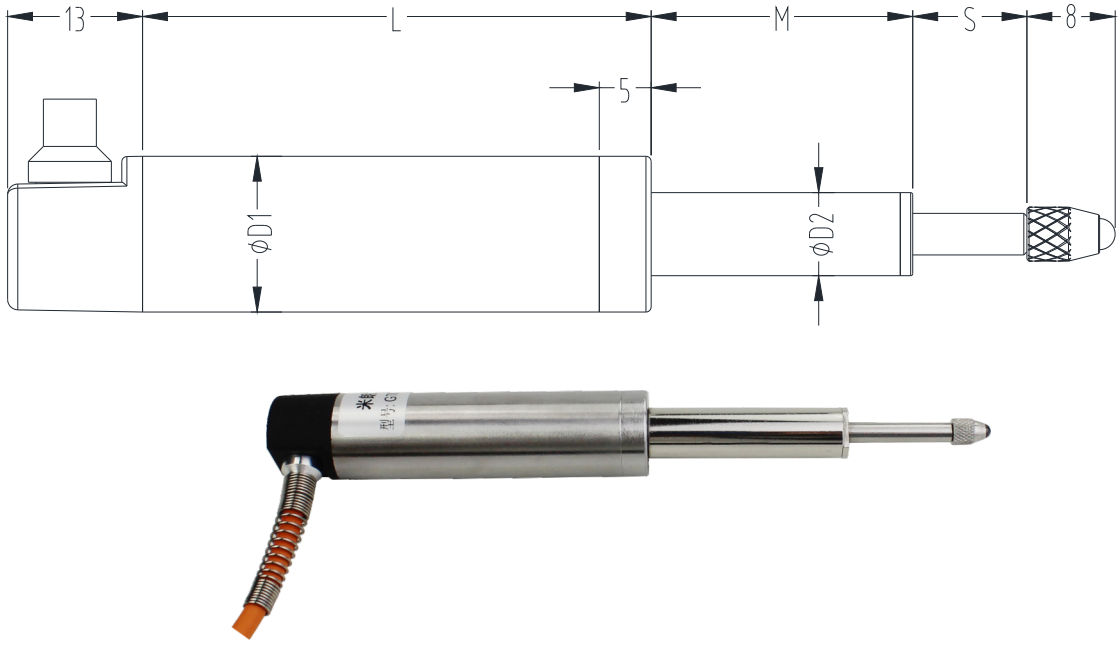
GTM圆管结构-尾部直出线-支架安装-模拟量输出:

GTM round tube structure - straight outlet at rear - bracket installation-analog output:



GTM圆管结构-尾部侧出线-支架安装-模拟量输出:

GTM round tube structure - tail side outlet line - bracket installation-analog output:

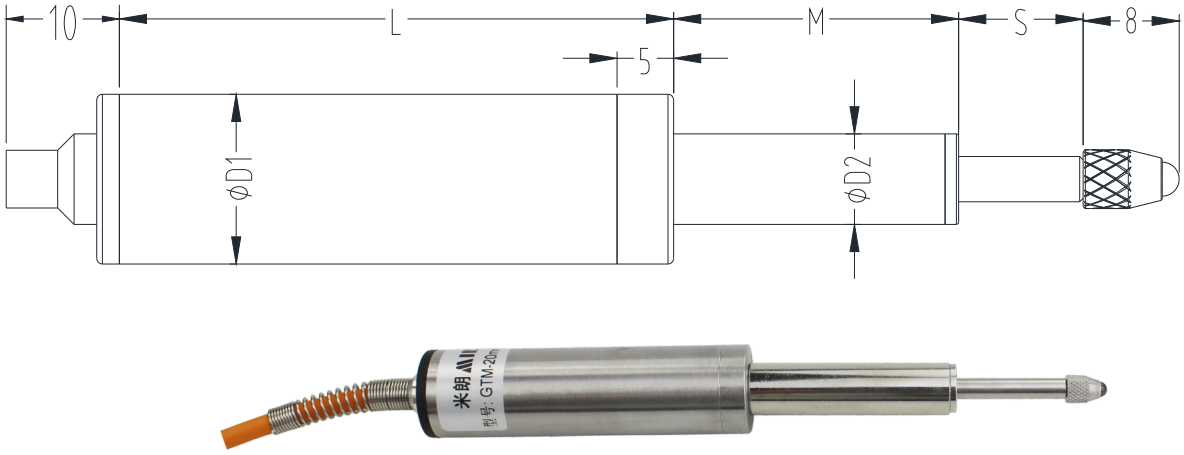


量程 range	D1	D2	L	M	S
5mm	15mm	8mm	49mm	19.2mm	6mm
10mm	15mm	8mm	49mm	25.2mm	11mm
20mm	17mm	10mm	61mm	39.2mm	21mm

产品尺寸图Product Dimension Drawing

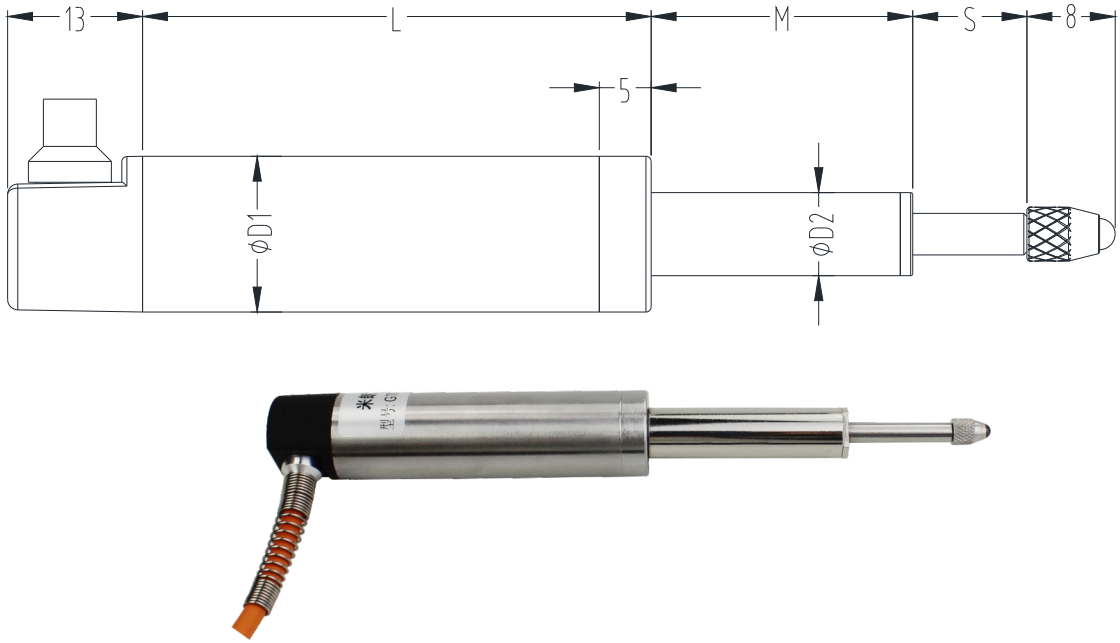
GTM圆管结构-尾部直出线-支架安装-数字量输出:

GTM round tube structure - straight outlet at rear - bracket installation-digital output:



GTM圆管结构-尾部侧出线-支架安装-数字量输出:

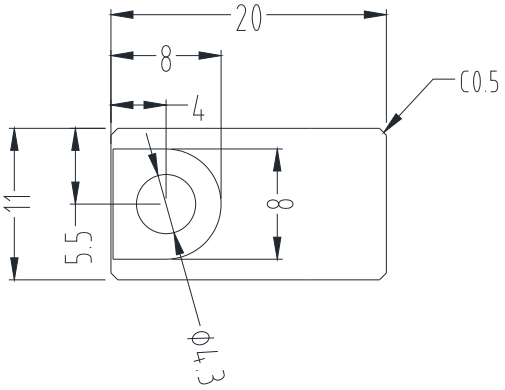
GTM round tube structure - tail side outlet line - bracket installation-digital output:

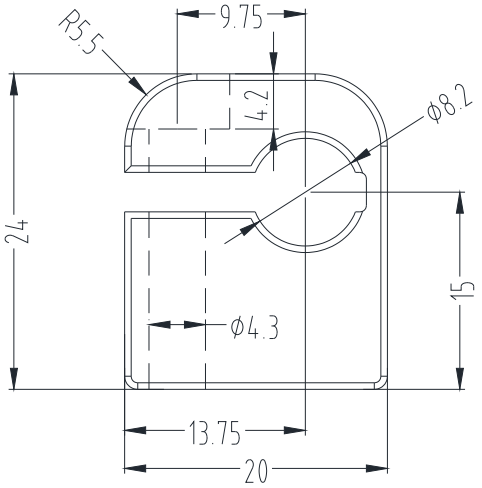


量程 range	D1	D2	L	M	S
5mm	15mm	8mm	63mm	19.2mm	6mm
10mm	15mm	8mm	63mm	25.2mm	11mm
20mm	17mm	10mm	63mm	39.2mm	21mm

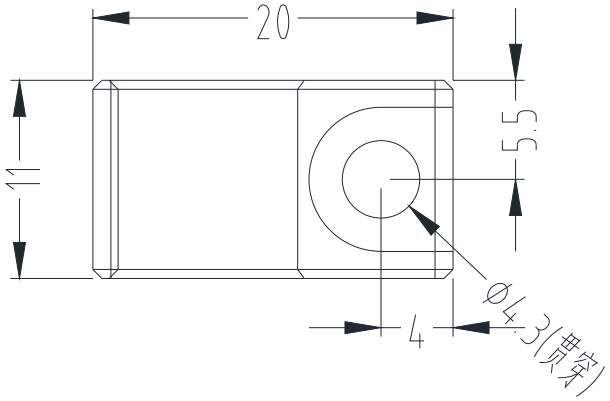
安装支架(默认)
Mounting bracket (default)

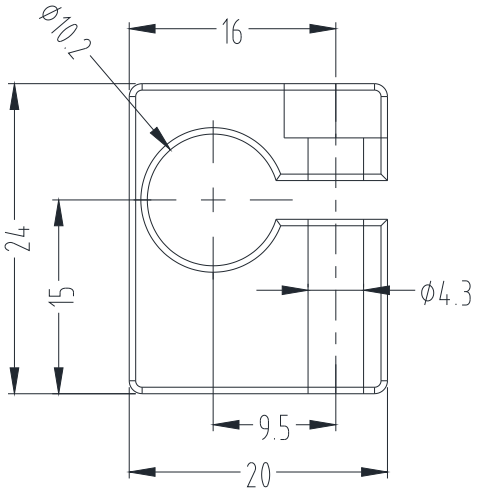
量程5mm,10mm安装支架:
range 5mm, 10mm mounting bracket:





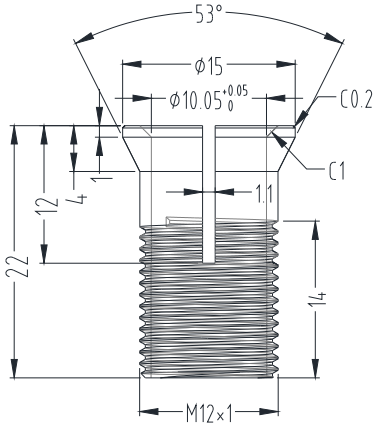
量程20mm安装支架:
range 20mm mounting bracket:

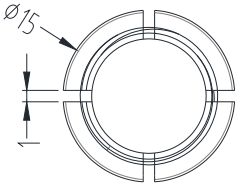


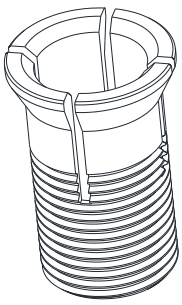


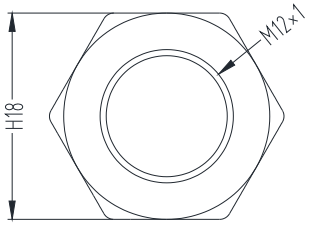
金属安装支架(选配)
Metal mounting bracket (optional)

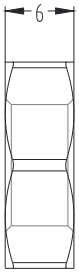
量程20mm安装支架:
range 20mm mounting bracket:





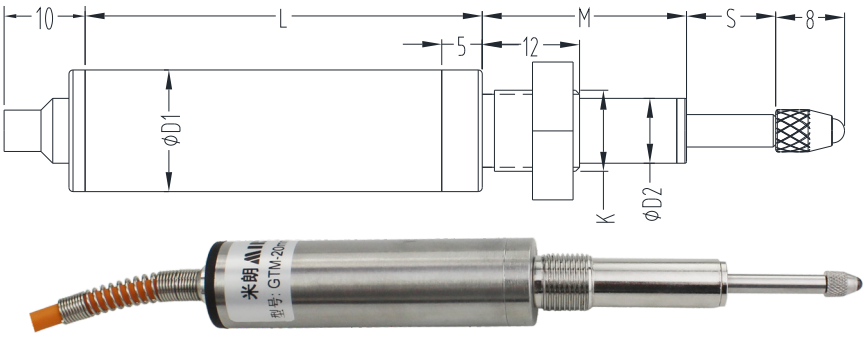




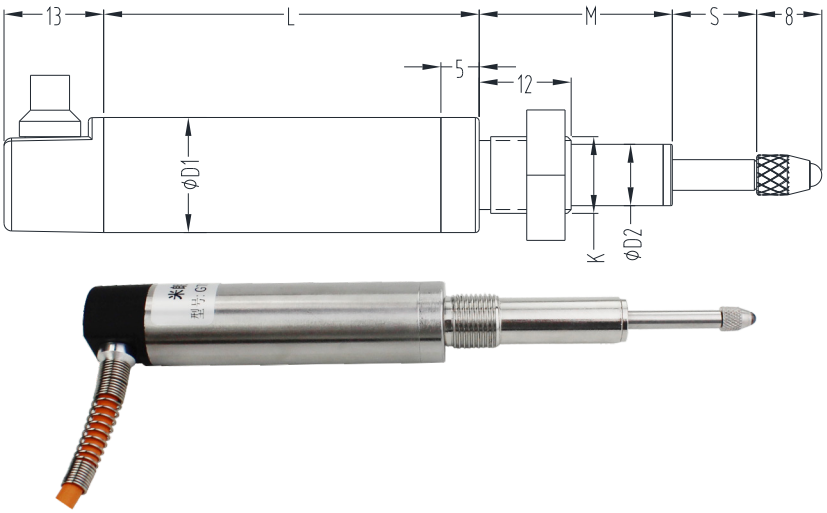


产品尺寸图Product Dimension Drawing

GTM圆管结构-尾部直出线-螺纹安装-模拟量输出:
GTM round tube structure - straight outlet at rear - threaded mounting-analog output:

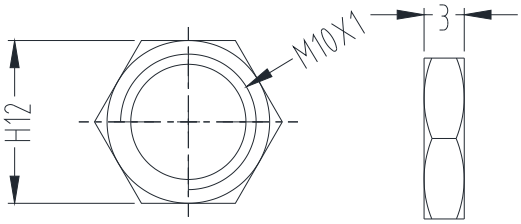


GTM圆管结构-尾部侧出线-螺纹安装-模拟量输出:
GTM round tube structure - tail side outlet line - threaded mounting-analog output:

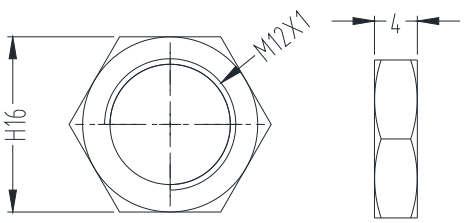


量程 range	D1	D2	L	M	S	K
5mm	15mm	8mm	49mm	19.2mm	6mm	M10*1
10mm	15mm	8mm	49mm	25.2mm	11mm	M10*1
20mm	17mm	10mm	61mm	39.2mm	21mm	M12*1

安装螺母Install nut:



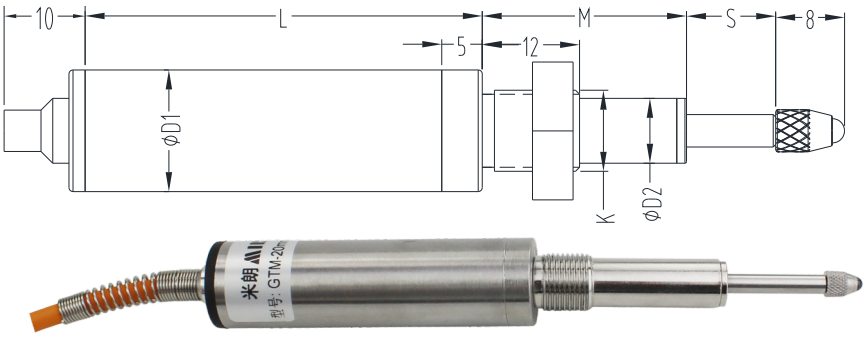
量程5mm,10mm安装螺母
range 5mm, 10mm install nut



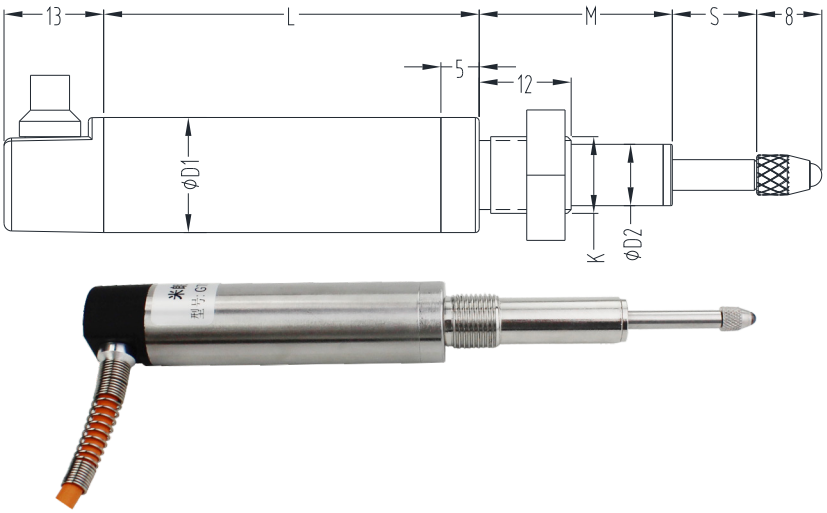
量程20mm安装螺母
range 20mm install nut

产品尺寸图Product Dimension Drawing

GTM圆管结构-尾部直出线-螺纹安装-数字量输出:
GTM round tube structure - straight outlet at rear - threaded mounting-digital output:

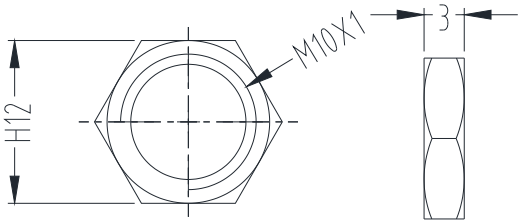


GTM圆管结构-尾部侧出线-螺纹安装-数字量输出:
GTM round tube structure - tail side outlet line - threaded mounting-digital output:

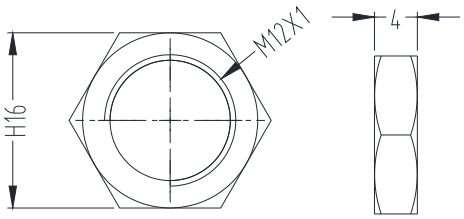


量程 range	D1	D2	L	M	S	K
5mm	15mm	8mm	63mm	19.2mm	6mm	M10*1
10mm	15mm	8mm	63mm	25.2mm	11mm	M10*1
20mm	17mm	10mm	63mm	39.2mm	21mm	M12*1

安装螺母Install nut:



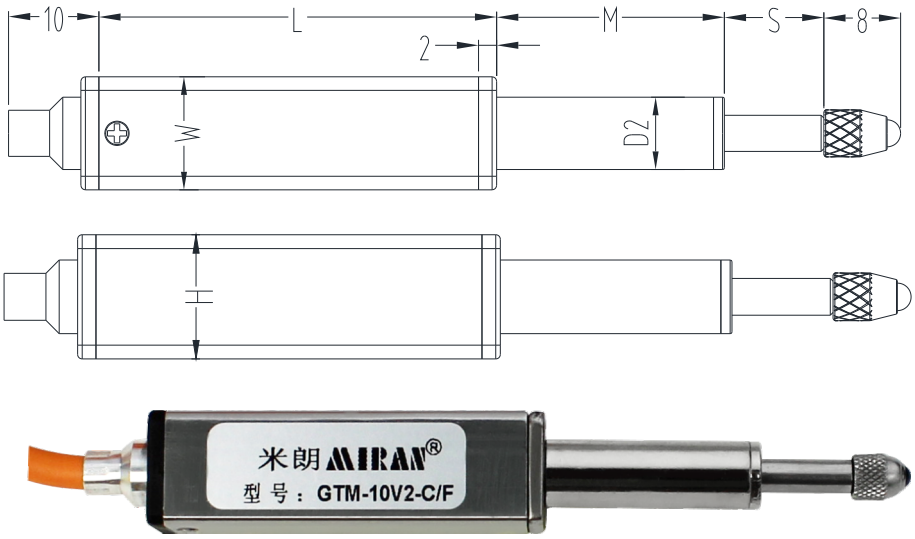
量程5mm,10mm安装螺母
range 5mm, 10mm install nut



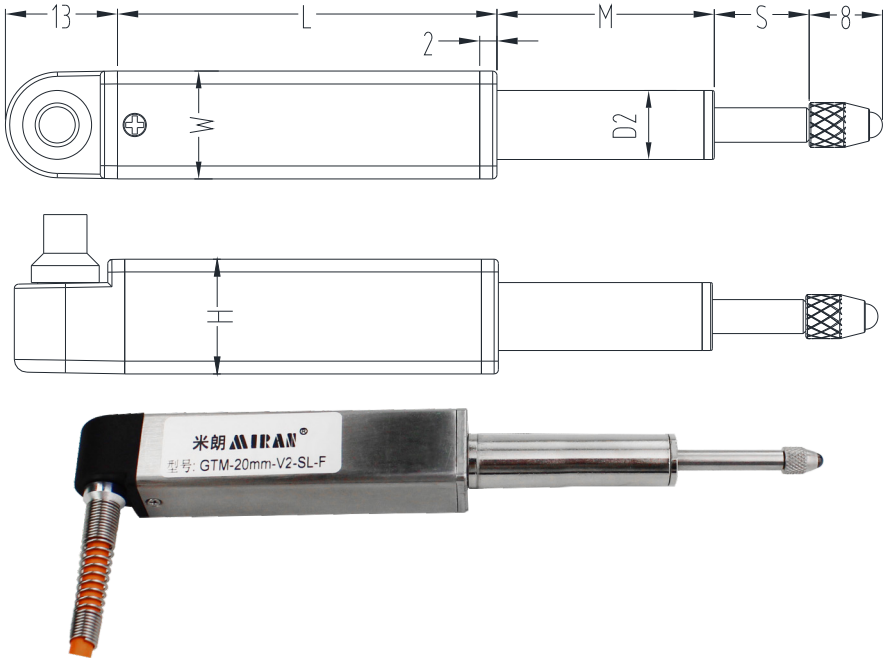
量程20mm安装螺母
range 20mm install nut

产品尺寸图Product Dimension Drawing

GTM方管结构-尾部直出线-支架安装-模拟量输出:
GTM square tube structure - straight outlet at rear - bracket installation-analog output:



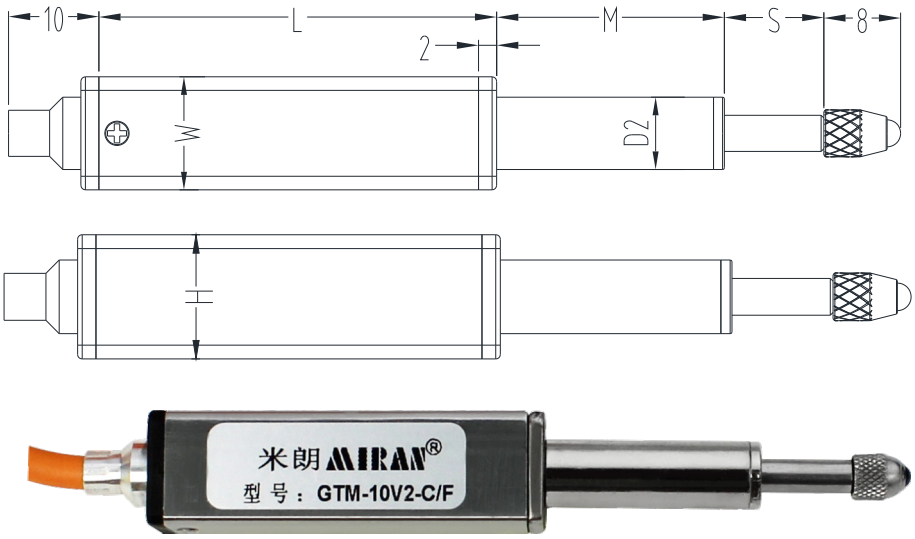
GTM方管结构-尾部侧出线-支架安装-模拟量输出:
GTM square tube structure - tail side outlet line - bracket installation-analog output:



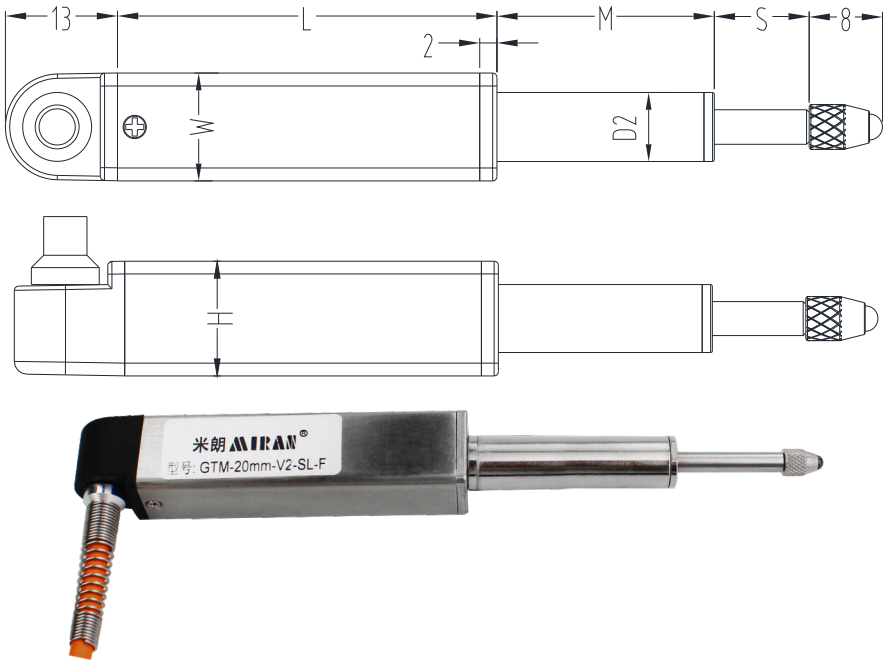
量程 range	W	H	L	M	D2	S
5mm	12.5mm	13.5mm	49mm	19.2mm	8mm	6mm
10mm	12.5mm	13.5mm	49mm	25.2mm	8mm	11mm
20mm	14mm	16mm	61mm	39.2mm	10mm	21mm

产品尺寸图Product Dimension Drawing

GTM方管结构-尾部直出线-支架安装-数字量输出:
GTM square tube structure - straight outlet at rear - bracket installation-digital output:



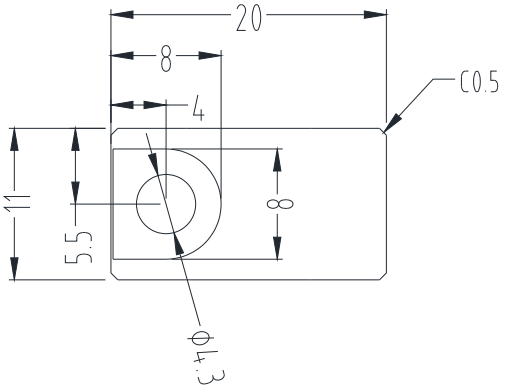
GTM方管结构-尾部侧出线-支架安装-数字量输出:
GTM square tube structure - tail side outlet line - bracket installation-digital output:

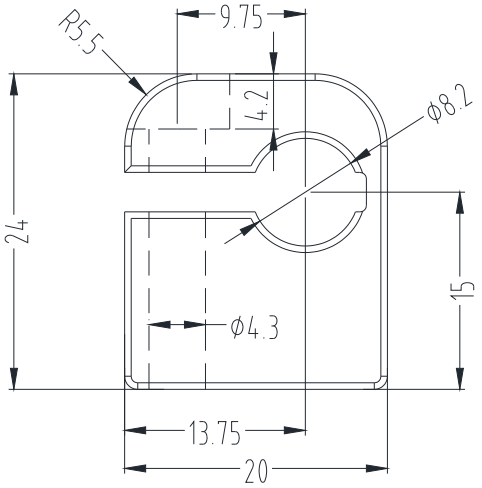


量程 range	W	H	L	M	D2	S
5mm	12.5mm	13.5mm	63mm	19.2mm	8mm	6mm
10mm	12.5mm	13.5mm	63mm	25.2mm	8mm	11mm
20mm	14mm	16mm	63mm	39.2mm	10mm	21mm

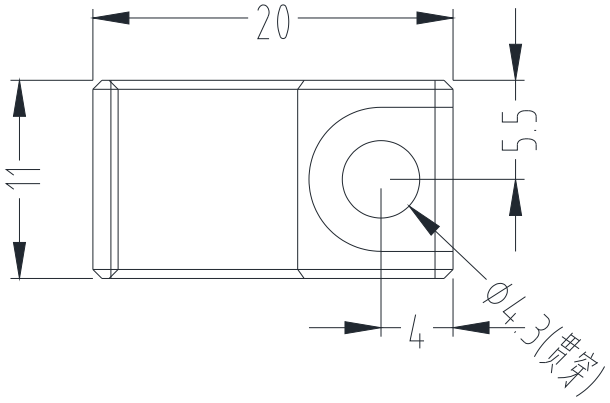
安装支架(默认)
Mounting bracket (default)

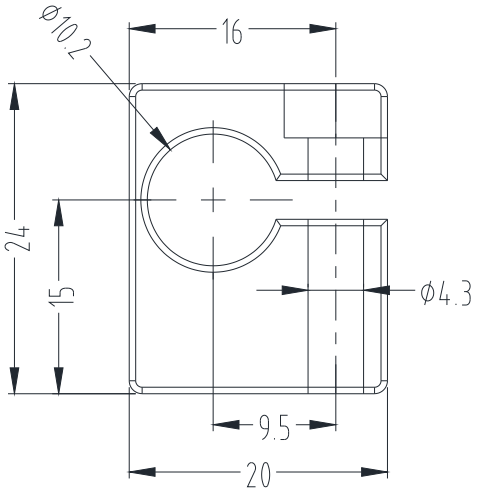
量程5mm,10mm安装支架:
range 5mm, 10mm mounting bracket:





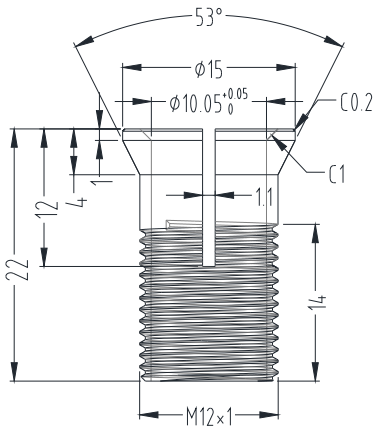
量程20mm安装支架:
range 20mm mounting bracket:

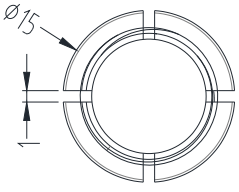


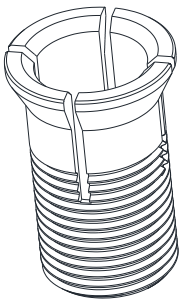


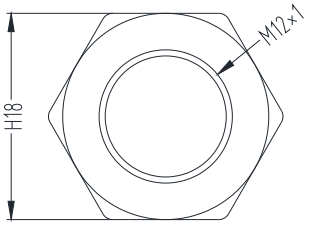
金属安装支架(选配)
Metal mounting bracket (optional)

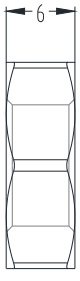
量程20mm安装支架:
range 20mm mounting bracket:





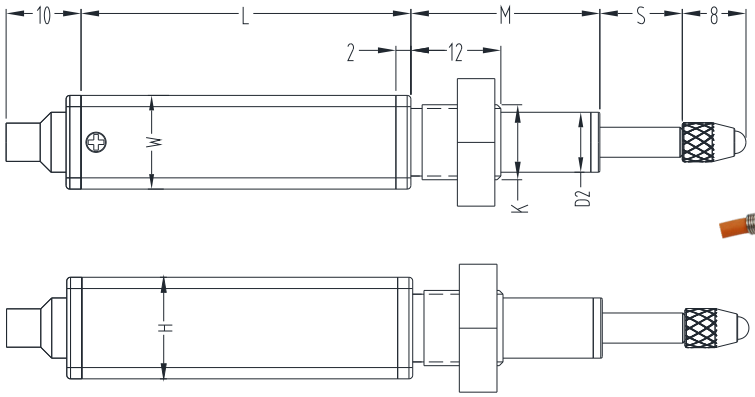






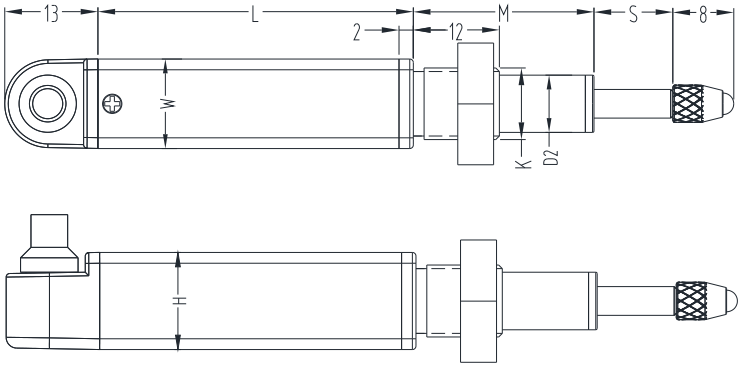
产品尺寸图Product Dimension Drawing

GTM方管结构-尾部直出线-螺纹安装-模拟量输出:
GTM square tube structure - straight outlet at rear - threaded mounting-analog output:





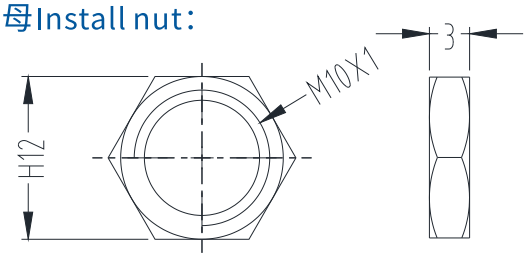
GTM方管结构-尾部侧出线-螺纹安装-模拟量输出:
GTM square tube structure - tail side outlet line - threaded mounting-analog output:



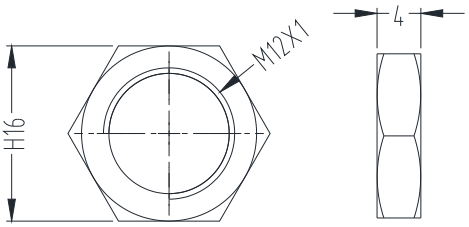


量程 range	W	H	L	M	D2	S	K
5mm	12.5mm	13.5mm	49mm	19.2mm	8mm	6mm	M10*1
10mm	12.5mm	13.5mm	49mm	25.2mm	8mm	11mm	M10*1
20mm	14mm	16mm	61mm	39.2mm	10mm	21mm	M12*1

安装螺母Install nut:



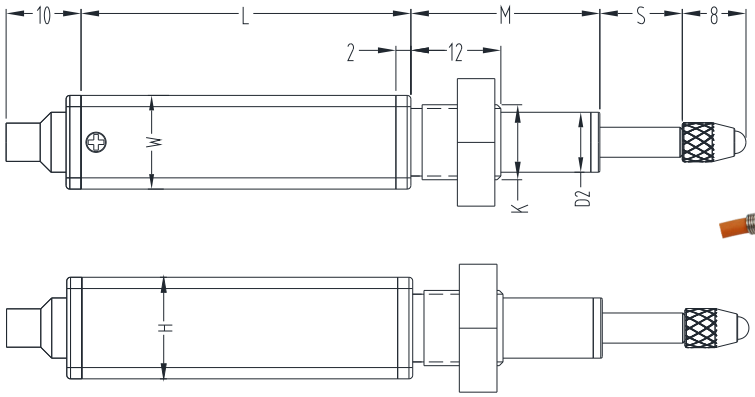
量程5mm,10mm安装螺母
range 5mm, 10mm install nut



量程20mm安装螺母
range 20mm install nut

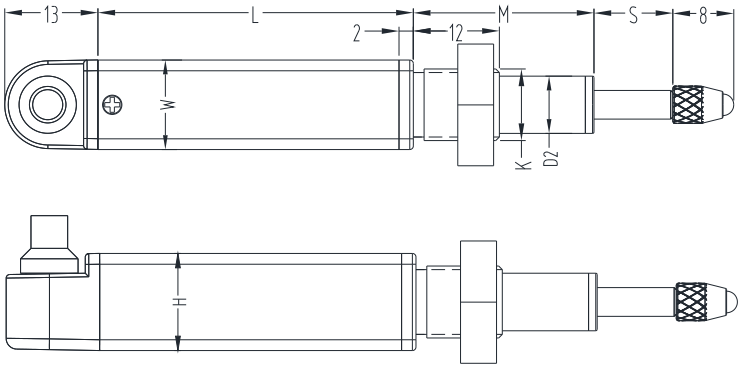
产品尺寸图Product Dimension Drawing

GTM方管结构-尾部直出线-螺纹安装-数字量输出:
GTM square tube structure - straight outlet at rear - threaded mounting-digital output:





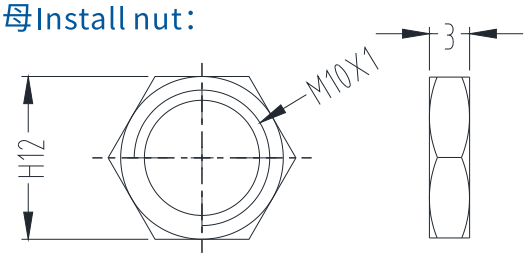
GTM方管结构-尾部侧出线-螺纹安装-数字量输出:
GTM square tube structure - tail side outlet line - threaded mounting-digital output:



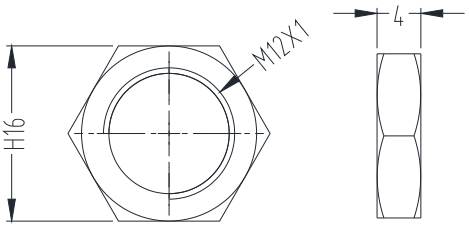


量程 range	W	H	L	M	D2	S	K
5mm	12.5mm	13.5mm	63mm	19.2mm	8mm	6mm	M10*1
10mm	12.5mm	13.5mm	63mm	25.2mm	8mm	11mm	M10*1
20mm	14mm	16mm	63mm	39.2mm	10mm	21mm	M12*1

安装螺母Install nut:



量程5mm,10mm安装螺母
range 5mm, 10mm install nut



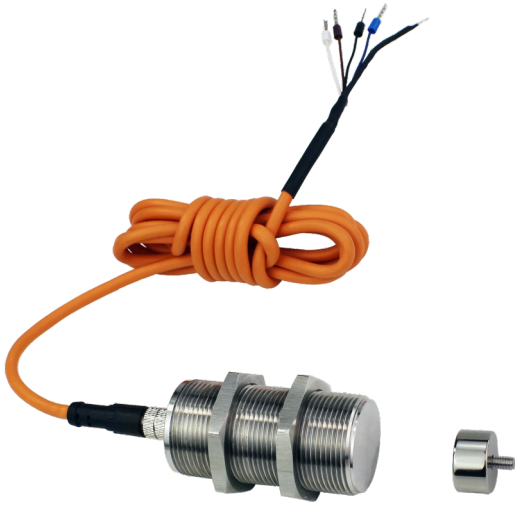
量程20mm安装螺母
range 20mm install nut

MDC磁感应位移传感器

MDC Magnetic Induction Displacement Sensor

产品实物图Product Picture





产品概述Product Overview

MDC系列磁感应位移传感器可用于非接触式的位移和距离测量及轴和齿轮转速测量等，其原理是将电感式传感器与磁式传感器的优点相结合，以磁铁作为检测目标，固定在测量对象上，磁铁的移动会改变传感器内线圈的磁流变化，由于相互抵消的物理效应，线圈感应的信号强弱与磁铁的距离远近会产生线性关系。传感器通过检测被测物体上固定磁铁的位移变化，即可输出连续线性信号。也可通过改变使用不同强度的磁铁，来改变传感器的测量范围。

MDC series magnetic displacement sensors can be used for non-contact displacement and distance measurement and shaft and gear speed measurement, etc. Its principle is to combine the advantages of inductive sensors and magnetic sensors, with the magnet as the detection target, fixed on the measurement object, the movement of the magnet will change the magnetic current change of the coil inside the sensor, due to the physical effect of mutual offset, the strength of the coil-induced signals with the distance of the magnet will produce a linear relationship. Due to the physical effect of mutual offset, the strength of the signal induced by the coil and the distance from the magnet will have a linear relationship. The sensor can output a continuous linear signal by detecting the displacement change of the fixed magnet on the measured object. The measuring range of the sensor can also be changed by changing the use of magnets of different strengths.

磁感应位移传感器有一个明显的优势是可透过非铁磁性材料（如不锈钢、铝、铜）检测磁铁位置，可在封闭系统或带防护外壳的应用中传感器与磁铁分开安装，避免直接接触污染或机械损伤，适用于灰尘、油污、化学物质及食品级环境。

Magnetic inductive displacement sensors have the distinct advantage of detecting the magnet position through non-ferromagnetic materials (e.g., stainless steel, aluminum, copper), and can be installed separately from the magnet in closed systems or applications with protective housings, avoiding direct contact with contamination or mechanical damage, and are suitable for use in dusty, oily, chemical, and food-grade environments.

磁感应位移传感器相较于感应式传感器即使在测量范围的末端灵敏度仍可保持在较高水平，是替代开关元件的理想选择，用户可以根据需要从连续的模拟信号中生成任意数量的开关点。无需进行复杂的机械调整来设定切换点。

Magnetic inductive displacement sensors are ideal for replacing switching elements compared to inductive sensors that maintain a high level of sensitivity even at the end of the measuring range, allowing the user to generate any number of switching points from a continuous analog signal as needed. No complex mechanical adjustments are required to set the switching points.

安装方式多样化，因该传感器可透过非铁磁性材料，在安装时可以浸入非铁磁性物体中安装、与物体平齐安装或突出安装则都不会影响测量精度。安装极其简便，传感器在线性区域无需校准，使用之前只需将传感器和磁铁对齐来设置零点即可，短时间内即可投入使用。磁铁可以以轴向或侧面方式安装，在几毫米的偏移量下不会影响特性曲线，较大偏移量则会影响到线性度和斜率。特别是在安装空间受限的情况下，侧向安装提供了一种节省空间的替代方案。

Because the sensor is permeable to non-ferromagnetic materials, it can be mounted by immersing it in a non-ferromagnetic object, mounting it flush with an object, or mounting it protruding from an object without affecting the measurement accuracy. Installation is extremely easy, as the sensor does not require calibration in the linear region, and can be put into operation in a short time by simply aligning the sensor and magnet to set the zero point before use. The magnet can be mounted axially or laterally, and offsets of a few millimeters will not affect the characteristic curve, while larger offsets will affect the linearity and slope. Lateral mounting offers a space-saving alternative, especially where installation space is limited.

注意事项 Caveat

1.传感器为磁性传感器，安装的固定部件及所使用的螺丝必须是非铁磁性的。
1.The sensor is a magnetic sensor, the mounting fixing parts and the screws used must be non-ferromagnetic.

2.铁磁性材料以及传感器测量区域内存在的磁场都会影响传感器的性能。
2.Ferromagnetic materials and the presence of magnetic fields in the sensor's measurement area can affect the sensor's performance.

3.传感器使用时，工作环境不应该有强烈的电磁干扰。
3.When the sensor is used, the working environment should not have strong electromagnetic interference.

4.传感器在进行设置零点调整前，请先确保传感器已正常工作至少15分钟。
4.Make sure the sensor has been operating properly for at least 15 minutes before making set zero adjustments.

5.多个传感器安装，为互不影响到传感器的精度，请以传感器为圆心，其他传感器的磁铁距离圆心请保持半径8倍于量程范围之外。
5.When installing multiple sensors, in order not to affect each other's accuracy, please take the sensor as the center of the circle, and keep the magnets of other sensors 8 times the radius from the center of the circle beyond the measuring range.

性能参数Performance Parameters

性能指标Performance indicators

产品型号 product model	MDC10mm-X-X-X	MDC20mm-X-X-X	MDC30mm-X-X-X	MDC40mm-X-X-X	MDC50mm-X-X-X
测量量程 measuring range	10mm	20mm	30mm	40mm	50mm
分辨率 resolution	0.05%FS / RS485:16bit		工作电压 operating voltage	12～30VDC	
重复精度 Repeatability	⩽±0.05%FS		线性精度 linear accuracy	⩽±2%FS	
工作温度 operating temperature	-20°C～+80°C		储藏温度 storage temperature	-40°C～+85°C	
频率响应(-3dB) frequency response	1000Hz				
输出方式 output method	0-10V/4-20mA/RS485				
温度漂移 temperature drift	⩽300ppm FSO/K				
防护等级 protection class	IP67，其它等级可定制 IP67, other ratings can be customized				
最大工作电流 max operating current	电压＜20mA；电流＜40mA；RS485<35mA voltage <20mA; current <40mA; RS485 <35mA				
磁体温度 magnet temperature	默认最大工作温度：80°C；可定制高温磁体250°C default maximum operating temperature: 80℃; can be customized high temperature magnet 250℃				

产品型号选型Product Model Selection

MDC □□ - □□ - □□ - □

磁感应位移传感器
magnetic displacement sensors

可选测量：
optional measurements:
(10, 20, 30, 40, 50mm)

V2:0-10V 输出
V2:0-10V output

A :4-20mA 输出
A :4-20mA output

R :RS485输出
R:RS485 output

M18:直径18mm长螺纹电子仓(仅限模拟量输出)
M18:18mm diameter long thread electronic compartment (analog output only)

M30:直径30mm长螺纹电子仓
M30:30mm diameter long thread electronic compartment

M18C:M18短螺纹电子仓直径40mm垂直出线安装
M18C:M18 short thread electronic compartment diameter 40mm vertical outlet installation

C:防水接头出线
C:waterproof connector outlet

P:航空插头出线
P:aviation plug outlet

例如Example:

MDC10mm-V2-M30-C：磁感应位移传感器，量程为10mm，0-10V 输出,直径30mm长螺纹电子仓，防水接头出线。
MDC10mm-V2-M30-C: magnetic displacement sensor, range 10mm, 0-10V output, 30mm diameter long thread electronic compartment, waterproof connector outlet.

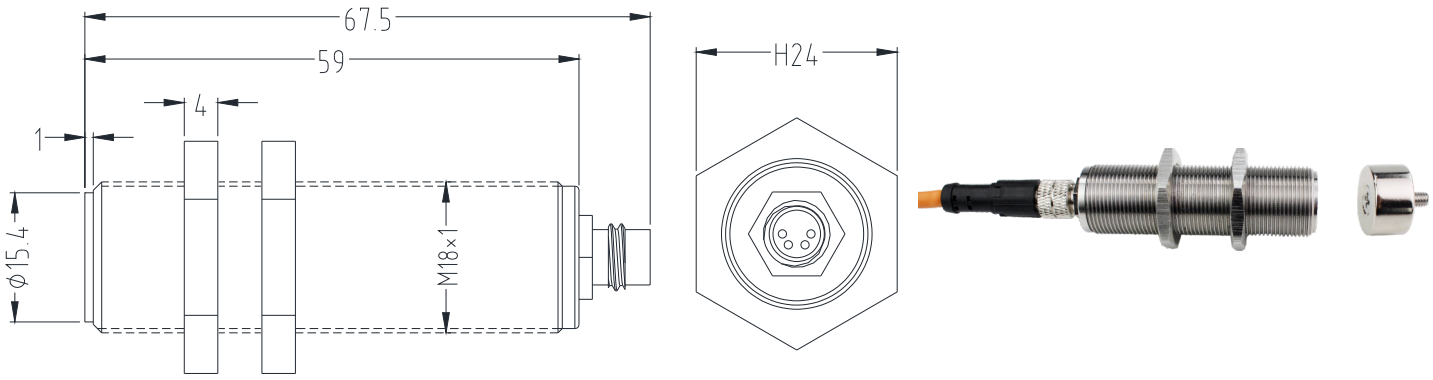
电气连接Electrical Connection

	棕色 BROWN	白色 WHITE	蓝色 BLUE	黑色 BLACK
电流三线制接线方式 Current 3-wire wiring	供电电源(+) power supply (+) DC24V	电流输出 current output 4-20mA	供电电源(-) power supply (-) GND	NC
电压三线制接线方式 Voltage 3-wire wiring	供电电源(+) power supply (+) DC24V	NC	供电电源(-) power supply (-) GND	0-10V
RS485接线方式 RS485 wiring method	供电电源(+) power supply (+) DC24V	RS485 B-	供电电源(-) power supply (-) GND	RS485 A+

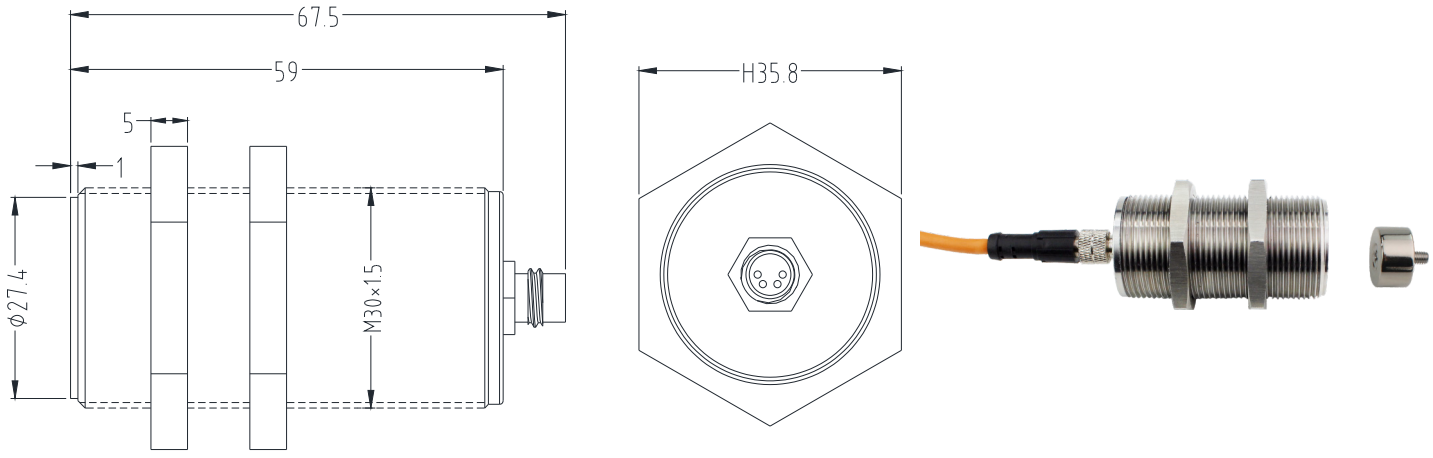
以上仅为参考，具体接线定义以产品实物标签上的标注为准。
The above is for reference only, the specific wiring definition of the product physical labeling shall prevail.

产品尺寸图Product Dimension Drawing

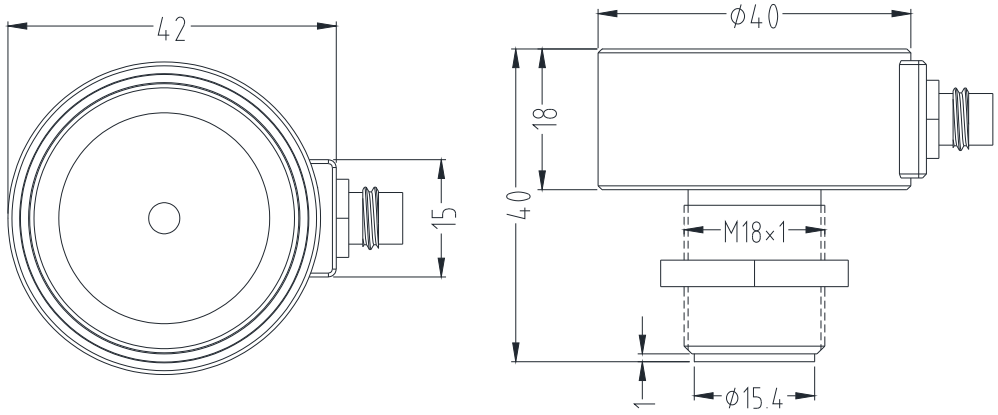
MDC-M18安装尺寸mounting dimensions:



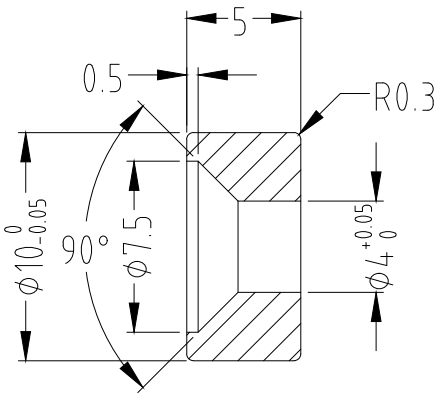
MDC-M30安装尺寸mounting dimensions:



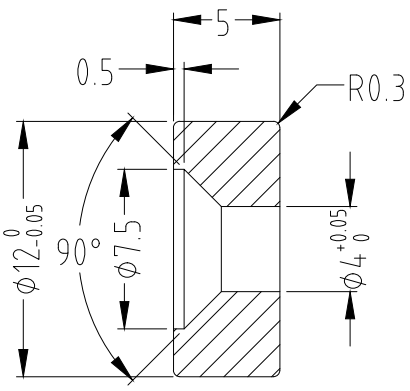
MDC-M18C安装尺寸mounting dimensions:



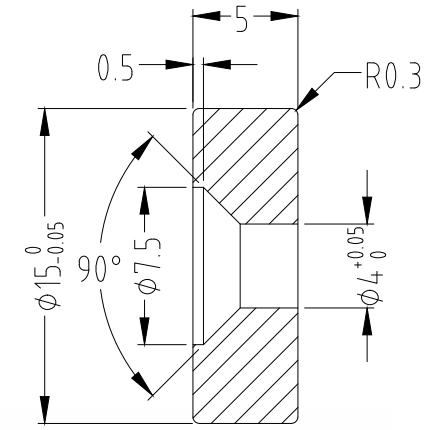
磁铁安装尺寸图Magnet Installation Dimension Diagram



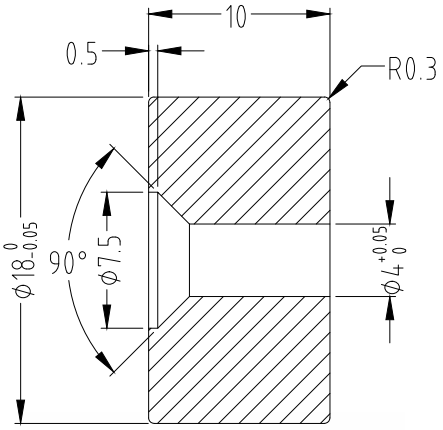
行程10mm,磁铁φ10mm
range 10mm, magnet φ10mm



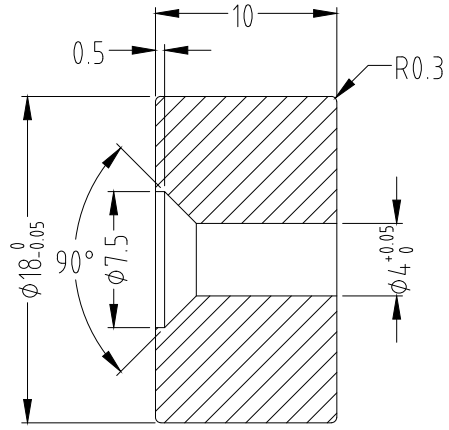
行程20mm,磁铁φ12mm
range 20mm, magnet φ12mm



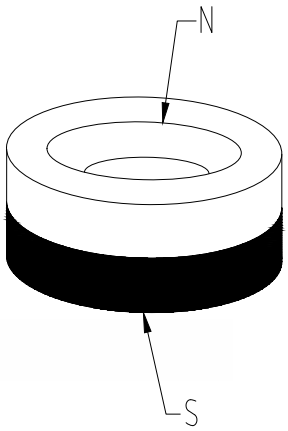
行程30mm,磁铁φ15mm
range 30mm, magnet φ15mm



行程40mm,磁铁φ18mm
range 40mm, magnet φ18mm



行程50mm,磁铁φ18mm
range 50mm, magnet φ18mm

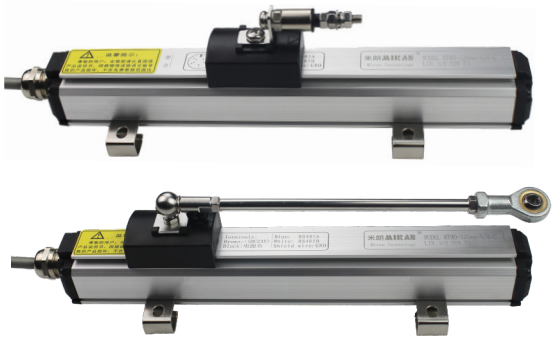


磁铁 N极/S极
magnetic N pole / S pole

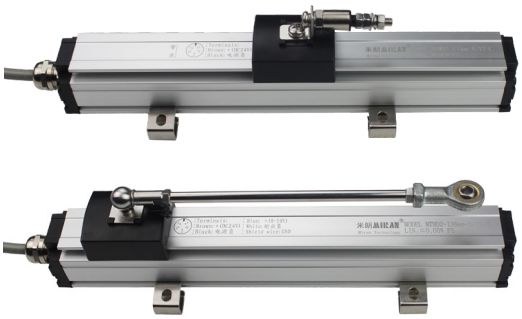
MTMD/MTMD2滑块式位移传感器

MTMD/MTMD2 Slide Type Displacement Sensor

产品实物图Product Picture



MTMD



MTMD2

产品概述Product Overview

MTMD与MTMD2仅外形尺寸略有不同，该系列磁感应滑块式直线位移传感器其核心电子部件磁感应芯片由米朗公司自主研发生产，可选择数字信号输出与模拟量信号输出，产品均为绝对位置输出型；360mm以内的任意行程都可定制。是替代小量程直线位移传感器的绝佳选择。

The MTMD and MTMD2 are only slightly different in external dimensions. The series of magnetic slider linear displacement transducers have a magnetic sensor core, the core electronic component of which was developed and manufactured in-house, and are available with either digital or analog outputs. They can be customized for any range up to 360 mm. They are an excellent alternative to small-range linear displacement sensors.

MTMD/MTMD2系列磁感应滑块式直线位移传感器为非接触式，永不磨损。具有高分辨率、高精度、高稳定性、高可靠性、响应时间快、工作寿命长等优点。传感器不用重新标定，也不用定期维护。

MTMD/MTMD2 series magnetic induction slider type linear displacement sensor is non-contact and never wear. They offer the advantages of high resolution, high accuracy, high stability, high reliability, fast response time, and long operating life. The sensors do not require recalibration or regular maintenance.

性能参数Performance Parameters

性能指标Performance indicators

线性精度 Linear accuracy	±0.02%FS	消耗电流 Current consumption	⩽50mA
重复性精度 Repeatability accuracy	±0.01mm	分辨率 Resolution	0.01mm
工作温度 Operating temperature	-25～85℃	采样频率 Sampling frequency	1000Hz
信号模式 Signal mode	RS485/0-5V/0-10V/4-20mA	防护等级 Protection class	IP65
有效测量长度 Effective measuring length	80mm、120mm、160mm、220mm、260mm、320mm、360mm （其他行程可定制）（other strokes can be customized）		
供电电压 Supply voltage	默认default：DC24V±1V（0-5V/0-10V/4-20mA/RS485）		
	可选optional：DC5V（RS485）		

产品型号选型Product Model Selection

MTMD/MTMD2 - □□□ - □ / □ - □

MTMD/MTMD2：磁感应微型滑块式位移传感器
magnetic induction miniature slider displacement sensors

□□□：可选测量范围：
optional measuring range:
(80,120,160,220,260,320,360mm)
其它量程需定制
other ranges to be customized

□：输出逻辑output logic：

N：为滑块由接线端向另一端移动时，数值变大
N: the value that becomes larger as the slider moves from one end of the wiring to the other

S：为滑块由接线端向另一端移动时，数值变小
S: the value that becomes smaller as the slider moves from one end of the wiring to the other

□：
V1:0-5V 输出
V1:0-5V output
V2:0-10V 输出
V2:0-10V output
A :4-20mA 输出
A :4-20mA output
M:RS485输出
M:RS485 output

□：
C:防水接头
C:waterproof connector
P:航空插头
P:aviation plug
H:赫斯曼插头
H:hussman plug

注：RS485输出默认24V供电，如需5V供电RS485信号输出下单时需备注
Note: RS485 output default 24V power supply, such as the need for 5V power supply RS485 signal output orders need to be noted

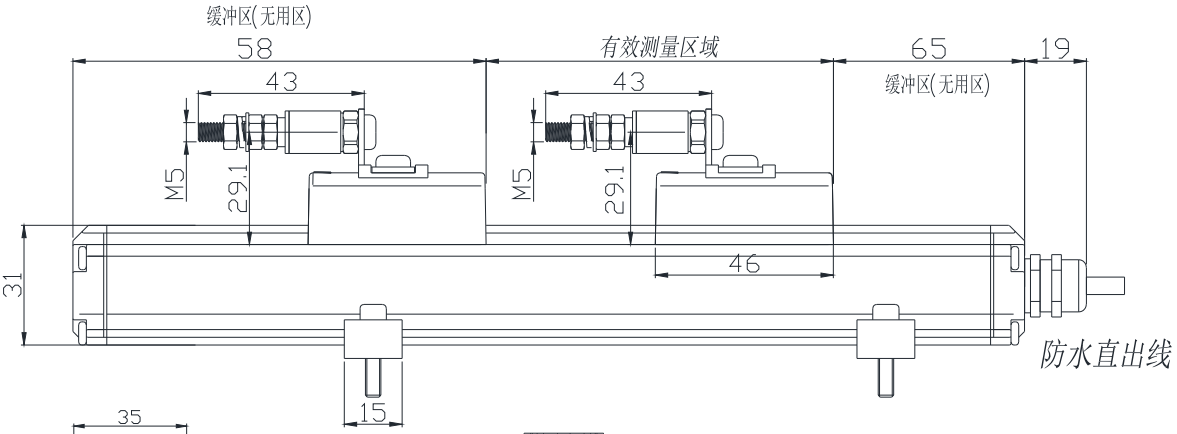
例如Example:

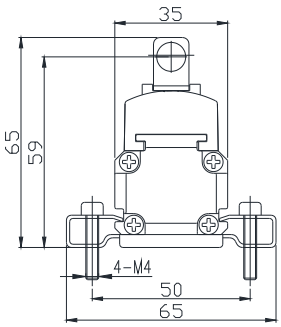
MTMD-160mm-N/V1-P：磁感应微型滑块式位移传感器，量程为160mm，为滑块由接线端向另一端移动时，数值变大，0-5V 输出，航空插头。
MTMD-160mm-N/V1-P: miniature slider type displacement sensor with magnetic induction has a range of 160mm, the value becomes larger when the slider moves from one end of the terminal to the other, 0-5V output, aviation plug.

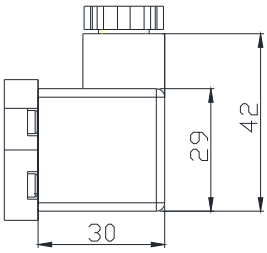
产品尺寸图Product Dimension Drawing

MTMD滑块式 MTMD slider type：

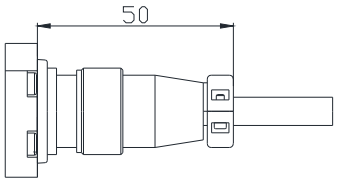
线长标配1米



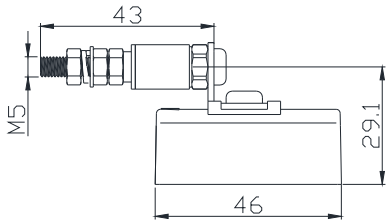




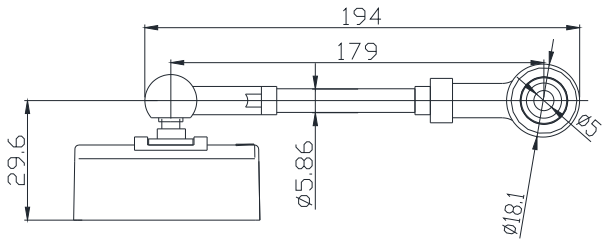
赫斯曼插头式



航空插头式



默认万向节滑块1



拉杆鱼眼式滑块2

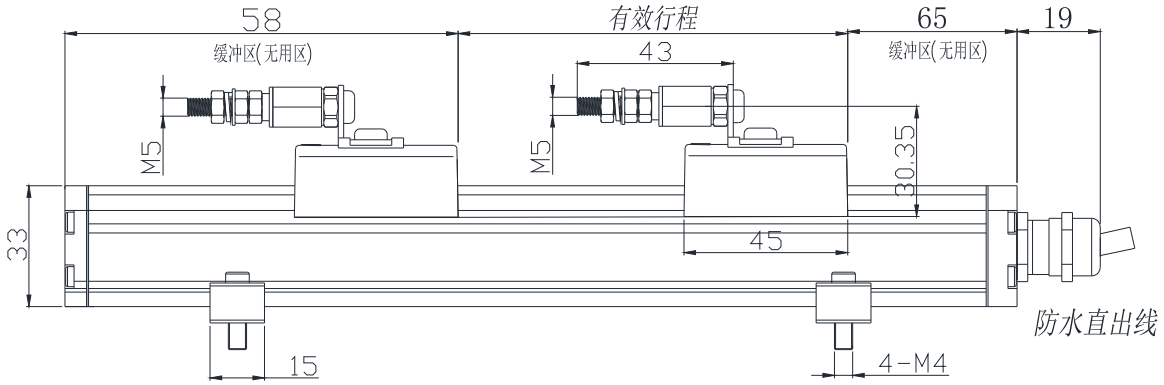


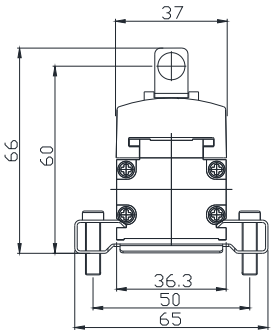
行程MM Itinerary MM	前缓冲区A/MM front buffer A/MM	后缓冲区B/MM back buffer B/MM	有效行程/MM effective stroke/MM	尺身总长/MM total length/MM
10-80	65	58	80	203
81-120	65	58	120	243
121-160	65	58	160	283
161-220	65	58	220	343
221-260	65	58	260	383
261-320	65	58	320	443
321-360	65	58	360	483

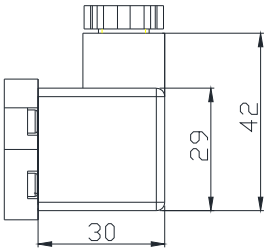
产品尺寸图Product Dimension Drawing

线长标配1米

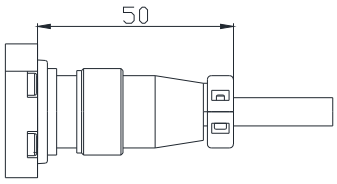
MTMD2滑块式 MTMD2 slider type：



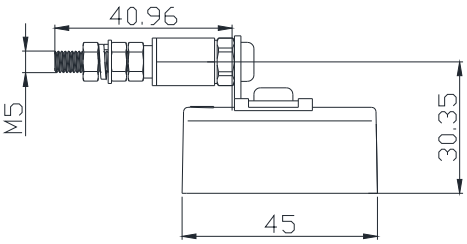




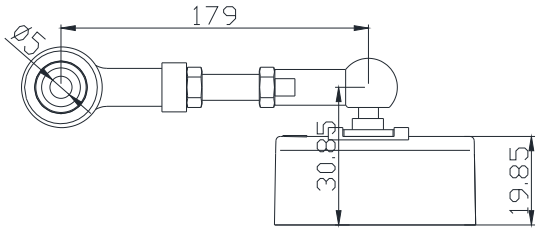
赫斯曼插头式



航空插头式



默认万向节滑块1



拉杆鱼眼式滑块2



行程MM ltinerary MM	前缓冲区A/MM front buffer A/MM	后缓冲区B/MM back buffer B/MM	有效行程/MM effective stroke/MM	尺身总长/MM total length/MM
10-80	65	58	80	203
81-120	65	58	120	243
121-160	65	58	160	283
161-220	65	58	220	343
221-260	65	58	260	383
261-320	65	58	320	443
321-360	65	58	360	483

电气安装Electrical installation

传感器接线前注意事项:
Precautions before wiring the sensor:

一、传感器的屏蔽电缆线必须避开大功率电源，射频信号源和其它有噪声的传输线等。

一、The sensor's shielded cable must avoid high-power power supplies, radio frequency signal sources and other noisy transmission lines.

二、用户在接线前，请检查供电电源是否满足要求，并且电源输出功率必须大于产品总功耗。如果电源不能满足要求，请更换供电电源以保证传感器能够正常工作。

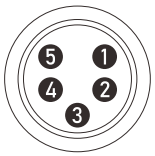
二、Before wiring, check that the power supply is adequate and that the power output is greater than the total power consumption of the product. If the power supply is not adequate, replace the power supply to ensure that the sensor operates properly.

三、警告！禁止将电子仓浸入液体中！

三、Warning! It is prohibited to immerse the electronic compartment in liquid!

三线制/四线制模拟信号输出接线方式
3-wire/4-wire analog signal output wiring method

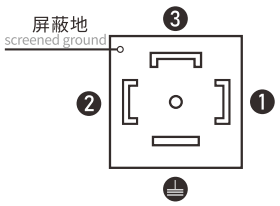
航空插头/防水接头接线图 Aviation plug/waterproof connector wiring diagram



公接头针号排列（面向传感器头）
Male connector pin number arrangement (facing the sensor head)

针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	黑 black	电源负 power negative
3	蓝 blue	信号输出+ signal output +
4	白 white	信号输出- signal output -
5	屏蔽线 shield wire	壳体地 shell ground

赫斯曼插头接线图 Hersman plug wiring diagram



针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	蓝 blue	信号输出+ signal output +
3	黑.白 black. white	电源负.信号- power negative. signal-
4	屏蔽线 shield wire	壳体地 shell ground

RS485信号输出接线方式
RS485 signal output wiring

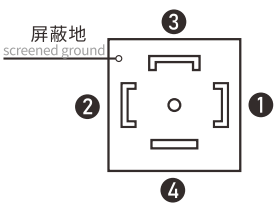
航空插头/防水接头接线图 Aviation plug/waterproof connector wiring diagram



公接头针号排列（面向传感器头）
Male connector pin number arrangement (facing the sensor head)

针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	黑 black	电源负 power negative
3	蓝 blue	RS485A
4	白 white	RS485B
5	屏蔽线 shield wire	壳体地 shell ground

赫斯曼插头接线图 Hersman plug wiring diagram



针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	蓝 blue	RS485A
3	白 white	RS485B
4	黑 black	电源负 power negative

注：以上仅为参考，具体接线定义以产品实物标签上的标注为准!

Note: the above is for reference only, the specific wiring definition is subject to the labeling on the product physical label!

MTD磁感应位移传感器

MTD Magnetic Induction Displacement Sensor

产品实物图Product Picture



默认万向节滑块
default universal joint slider



可选加长拉杆滑块
optional extended tie rod slider

产品概述Product Overview

MTD磁感应轨检小车专用位移传感器其核心电子部件磁感应芯片由米朗公司自主研发生产，可选择数字信号输出与模拟量信号输出，绝对位置输出型；360mm以内的任意行程都可定制，是完美替代小量程直线位移传感器的绝佳选择。

MTD magnetic induction track inspection trolley special displacement sensor its core electronic components magnetic induction chip developed and produced by miran company, you can choose the digital signal output and analog signal output, absolute position output type; any travel within 360mm can be customized, is the perfect alternative to small-range linear displacement sensors. It is an excellent choice to replace the small range linear displacement sensor.

MTD磁感应（微型）滑块式直线位移传感器为非接触式，永不磨损。具有高分辨率、高精度、高稳定性、高可靠性、响应时间快、工作寿命长等优点。传感器不用重新标定，也不用定期维护。

MTD magnetic induction (miniature) slider type linear displacement sensors are non-contact and never wear out. It has the advantages of high resolution, high accuracy, high stability, high reliability, fast response time and long working life. The sensors do not need to be recalibrated or regularly maintained.

性能参数Performance Parameters

性能指标Performance indicators

线性精度 Linear accuracy	±0.02%FS	消耗电流 Current consumption	≤50mA
重复性精度 Repeatability accuracy	±0.01mm	分辨率 Resolution	0.01mm
工作温度 Operating temperature	-25～85℃	采样频率 Sampling frequency	1000Hz
信号模式 Signal mode	RS485/0-5V/0-10V/4-20mA	防护等级 Protection class	IP65
有效测量长度 Effective measuring length	80mm、120mm、160mm、220mm、260mm、320mm、360mm （其他行程可定制） (other strokes can be customized)		
供电电压 Supply voltage	默认default：DC24V±1V（0-5V/0-10V/4-20mA/RS485）		
	可选optional：DC5V（RS485）		

产品型号选型Product Model Selection

MTD - □□□ - □□ / □

MTD：米朗科技磁感应微型滑块式位移传感器
Miran technology magnetic induction miniature slider displacement sensors

□□□：可选测量范围：
optional measuring range:
（80,120,160,220,260,320,360mm）
其它量程需定制
other ranges to be customized

□□：
V1:0-5V 输出
V1:0-5V output
V2:0-10V 输出
V2:0-10V output
A :4-20mA 输出
A :4-20mA output
R :RS485输出
R:RS485 output

□：
C:防水接头
C:waterproof connector
P:航空插头
P:aviation plug

注1：RS485输出默认12-24V DC供电，如需5V DC供电RS485信号输出下单时需备注
Note1: RS485 output default 12-24V DC power supply, if you need 5V DC power supply RS485 signal output need to be noted when you place an order

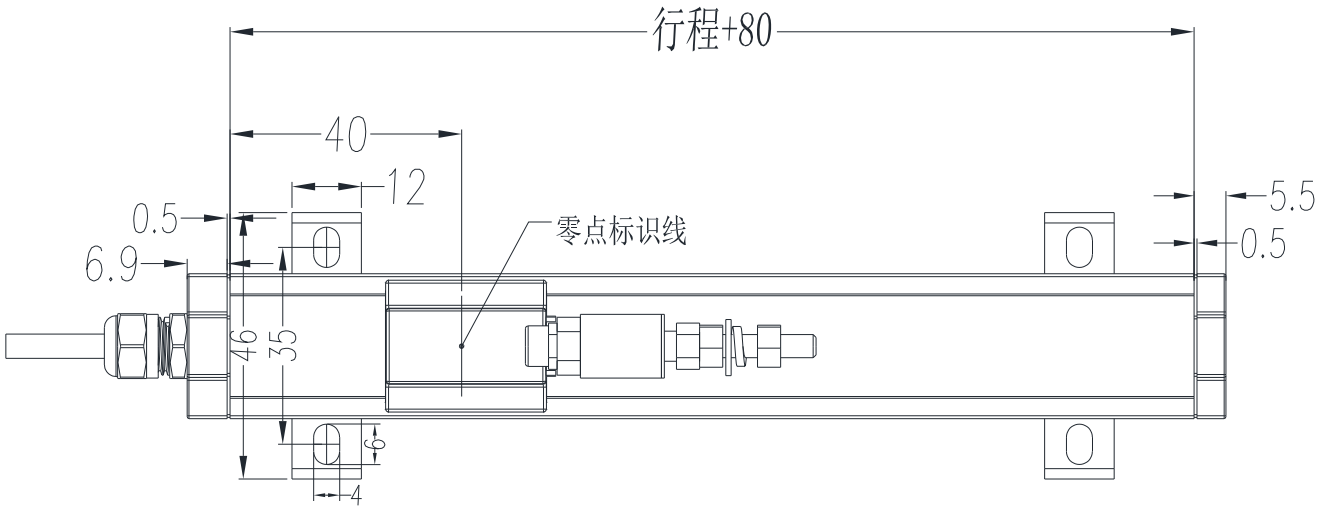
注2：传感器默认从接线端向另一端移动时数值从小变大，如需改变输出逻辑大小方向，下单需备注
Note2: sensor default from the terminal to the other end of the movement of the value from small to large, such as the need to change the direction of the output logic size, the order should be noted.

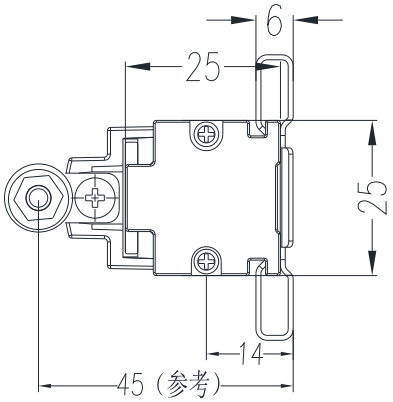
例如Example:

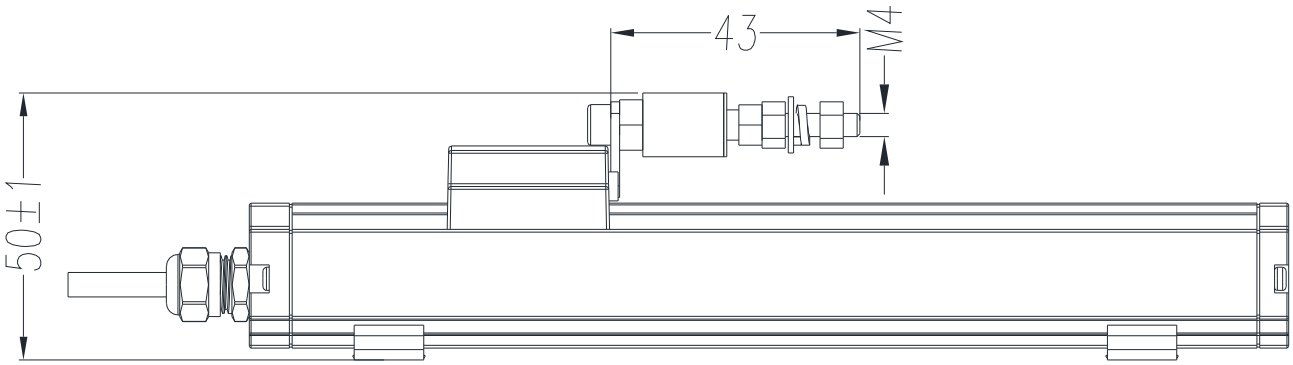
MTD-160mm-V1/C：米朗科技磁感应微型滑块式位移传感器，量程为160mm，0-5V 输出，防水接头。
MTD-160mm-V1/C: Miran technology's magnetic miniature slider type displacement sensor, with a range of 160mm, 0-5V output and waterproof connector.

产品尺寸图Product Dimension Drawing

磁感应轨检小车专用:
Magnetic induction rail inspection trolley:









电气安装Electrical installation

传感器接线前注意事项:
Precautions before wiring the sensor:

一、传感器的屏蔽电缆线必须避开大功率电源，射频信号源和其它有噪声的传输线等。

一、The sensor's shielded cable must avoid high-power power supplies, radio frequency signal sources and other noisy transmission lines.

二、用户在接线前，请检查供电电源是否满足要求，并且电源输出功率必须大于产品总功耗。如果电源不能满足要求，请更换供电电源以保证传感器能够正常工作。

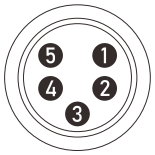
二、Before wiring, check that the power supply is adequate and that the power output is greater than the total power consumption of the product. If the power supply is not adequate, replace the power supply to ensure that the sensor operates properly.

三、警告！禁止将电子仓浸入液体中！

三、Warning! It is prohibited to immerse the electronic compartment in liquid!

三线制/四线制模拟信号输出接线方式
3-wire/4-wire analog signal output wiring method

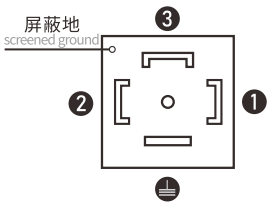
航空插头/防水接头接线图 Aviation plug/waterproof connector wiring diagram



公接头针号排列(面向传感器头) Male connector pin number arrangement (facing the sensor head)

针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	黑 black	电源负 power negative
3	蓝 blue	信号输出+ signal output+
4	白 white	信号输出- signal output-
5	屏蔽线 shield wire	壳体地 shell ground

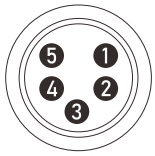
赫斯曼插头接线图 Hersman plug wiring diagram



针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	蓝 blue	信号输出+ signal output+
3	黑.白 black. white	电源负.信号- power negative. signal-
4	屏蔽线 shield wire	壳体地 shell ground

RS485信号输出接线方式
RS485 signal output wiring

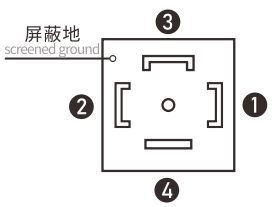
航空插头/防水接头接线图 Aviation plug/waterproof connector wiring diagram



公接头针号排列(面向传感器头) Male connector pin number arrangement (facing the sensor head)

针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	黑 black	电源负 power negative
3	蓝 blue	RS485A
4	白 white	RS485B
5	屏蔽线 shield wire	壳体地 shell ground

赫斯曼插头接线图 Hersman plug wiring diagram

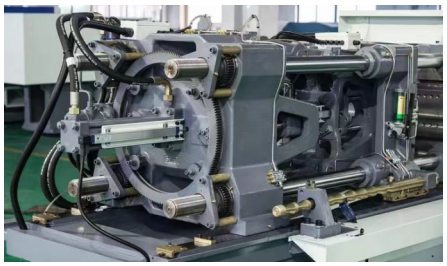


针号 Gauge	颜色 Color	定义 Define
1	棕 brown	电源正 power positive
2	蓝 blue	RS485A
3	白 white	RS485B
4	黑 black	电源负 power negative

注：以上仅为参考，具体接线定义以产品实物标签上的标注为准!

Note: the above is for reference only, the specific wiring definition is subject to the labeling on the product physical label!

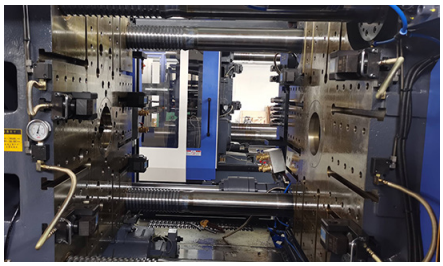
应用领域Areas of application



• EVA注塑机
EVA injection molding machine



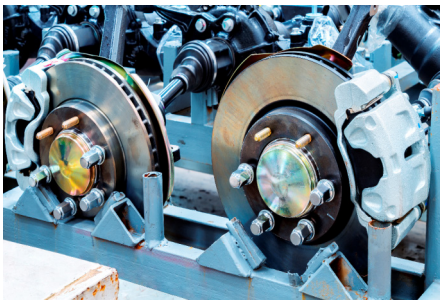
• 中空吹瓶机
Hollow blow molding machine



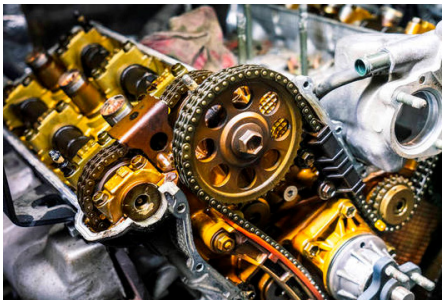
• 注塑机
Injection molding machine



• 液压机
Hydraulic press



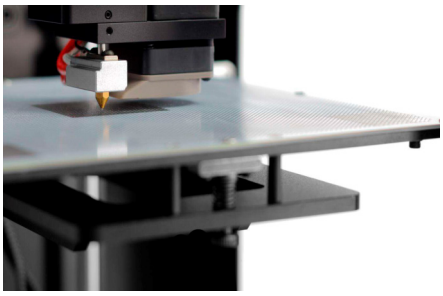
• 车辆制动装置磨损测量
Vehicle brake wear measurement



• 汽车零件检测
Automotive parts inspection



• 机床及工具定位
Positioning of machines and tools



• 精密平台自动调平
Precision platform with automatic leveling

• • •

磁感应直线位移传感器可广泛应用于各类型设备的位置检测，如：注塑机、中空吹瓶机、EVA注塑机、车辆制动装置磨损测量、汽车零件检测、液压机、机床及工具定位、精密平台自动调平等。是替代小量程直线位移传感器的绝佳选择。

Magnetic induction linear displacement sensors can be widely used in the position detection of various types of equipment, such as: injection molding machines, hollow blowing machines, EVA injection molding machines, vehicle brake wear measurement, automotive parts inspection, hydraulic presses, machine tools and tool positioning, precision platforms, such as automatic leveling. It is an excellent choice to replace the small range linear displacement sensor.



辐射全国 放眼世界

Radiate to the whole country and see the world

质量第一 Quality First

用户至上 Customer First

诚信为本 Credit First

本彩页内产品尺寸，性能等参数仅作为参考，随着产品的不断更新换代，或可能有所调整改变，恕不另行通知，最终尺寸要以产品实物为准。实际产品尺寸和性能参数等，需要在实际购买的时候，与我司业务或者技术人员沟通确认最终数据，以最终书面确认的尺寸和数据为准。

（尤其是在尺寸方面要求特别严格的，或者在产品实物没收到之前，就要先在自己设备上加工做好安装孔位和确定安装空间位置的，要特别注意,要在购买前3天内与我们书面再次确认好产品的实际尺寸，以免造成不必要的返工等损失，若没有在购买前3天内与我们书面确认尺寸而造成后续安装困难等损失，我司不予承担，最终尺寸要以产品实物为准。）

将致力于位移、物位、角度等测控领域

Will be committed to the field of displacement, level, angle measurement and control

为客户提供一站式解决方案的产品与服务

Products and services that provide one-stop solutions for our customers

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