轮辐式传感器
Spoke Load Cell

本公司自主研发生产的轮辐式拉压力传感器采用轮辐式弹性体结构利用剪切应力原理，具有低外形、抗偏载、精度高强度好、安装方便，拉压输出对称性好等特点。
(仅展示部分常规品，支持非标定制。)

Spoke Load Cell:
Our company's independently developed and manufactured spoke-type tension and compression sensors employ a spoke-type elastic structure based on the principle of shear stress. They feature a low profile, resistance to off-centre loading, high precision and strength, ease of installation, and excellent symmetry in tension and compression output.
(Please note that the products showcased represent only a portion of our standard offerings, as we also support OEM&ODM.)





主要应用于:
工业系统中力的测量和天车秤、轨道衡、料斗秤、地磅、伺服压机等各种称重、测力的工业自动化测量控制系统。

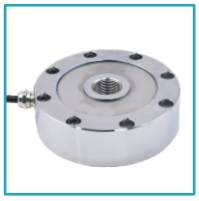
Applications:
Force measurement in industrial systems and industrial automation measurement and control systems for various weighing and force measurement applications, including overhead crane scales, rail scales, hopper scales, weighbridges, and servo presses.

专业生产传感器

目录
Contents

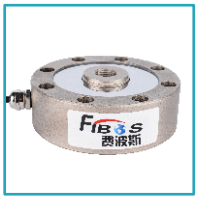
Spoke-type Sensor Series


FA196A 28


FA196B 29

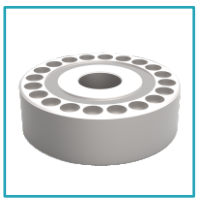

FA196C 30

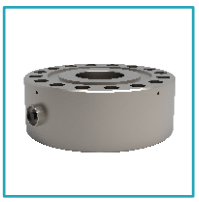

FA120A 31

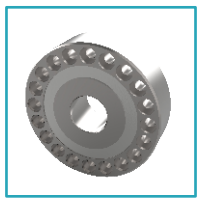

FA120B 32

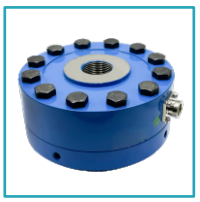

FA120C 33

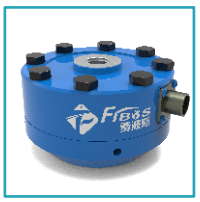

FA120D 34

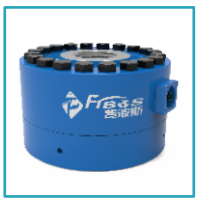

FA120E 35

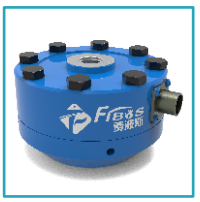

FA120F 36

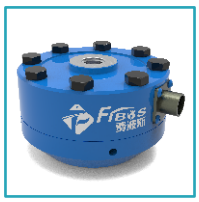

FA120G 37


FA1141 38


FI10 Series 39
Low Range


FI10 Series 41
High Range


FI11 Series 43


FI12 Series 45
Low Range

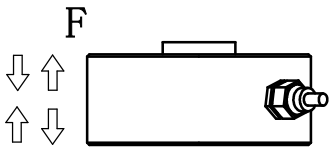

FI12 Series 47
High Range


FA1588 49

FA196A

Spoke-type sensor

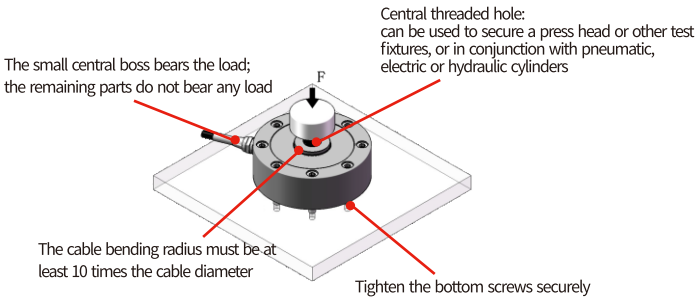
受力方向 Load Direction





安装方式 Installation

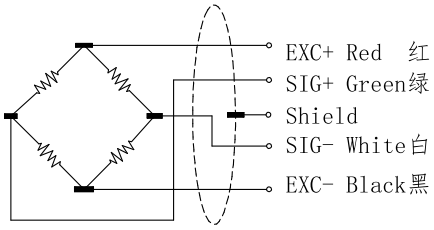
●轮辐式安装 Spoke-type mounting



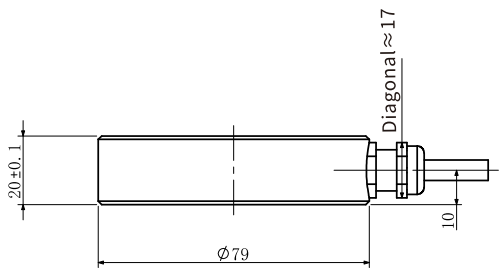
技术参数 Specifications

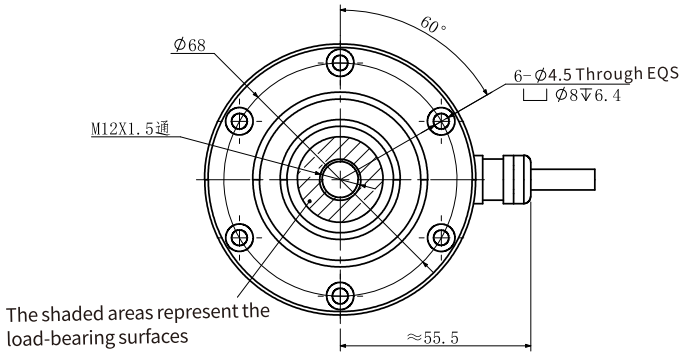
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	kg	200,300,500,100,2000kg
满量程位移量 Deflection at Full Scale	mm	<0.049
固有频率 Natural Frequency	Hz	>3K
过载能力 Safe Overload	%	120
工作温度 Operating Temperature	°C	-10~60
防护等级 Ingress Protection (IP)	IP	65
电缆长度 Cable	M	φ5×3m
弹性体材料 Spring Element Material	-	17-4PH
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.2
线性误差 Non-linearity	%	≤0.2
相对滞后 Hysteresis	%	≤0.2
重复误差 Repeatability	%	≤0.05
负载蠕变 Creep (30 min)	%	≤0.05
温度漂移 Temperature Effect on Output	%	0.1%/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±10%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

接线图 Wiring



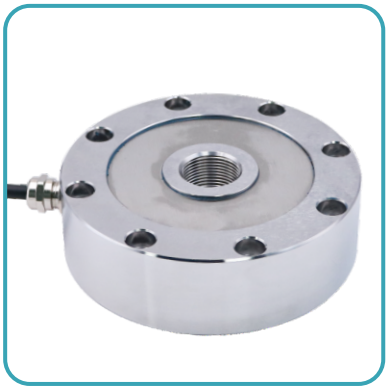
安装尺寸 Dimensions



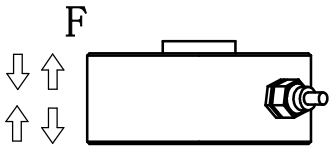


Spoke-type sensor

FA196B



受力方向 Load Direction

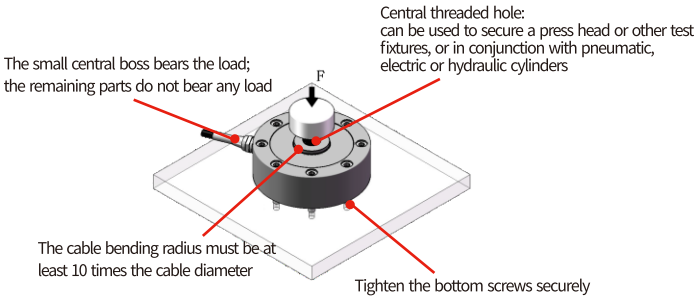


技术参数 Specifications

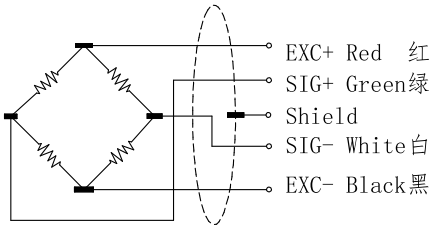
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	1,2,3,5,7t
满量程位移量 Deflection at Full Scale	mm	＜0.071
固有频率 Natural Frequency	Hz	＞4K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	℃	-10~60
防护等级 Ingress Protection (IP)	IP	65
电缆长度 Cable	M	φ5×3m
弹性体材料 Spring Element Material	-	17-4PH
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.1
线性误差 Non-linearity	%	≤0.05
相对滞后 Hysteresis	%	≤0.1
重复误差 Repeatability	%	≤0.05
负载蠕变 Creep (30 min)	%	≤0.05
温度漂移 Temperature Effect on Output	%	0.1%/10℃
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±10%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

安装方式 Installation

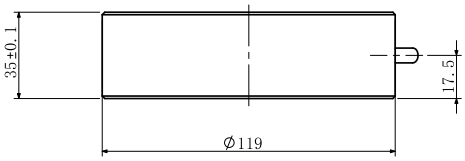
●轮辐式安装 Spoke-type mounting

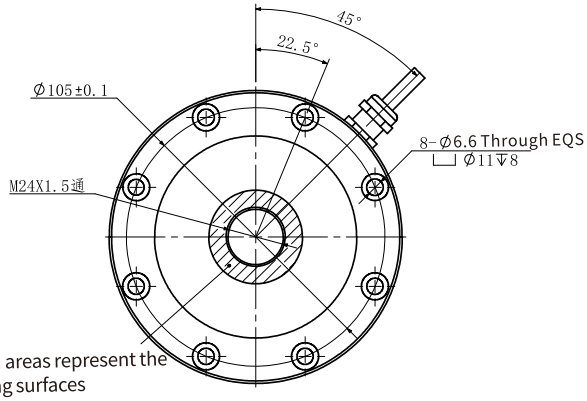


接线图 Wiring



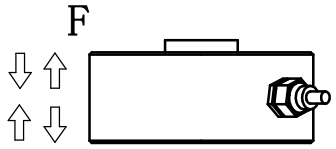
安装尺寸 Dimensions





FA196C

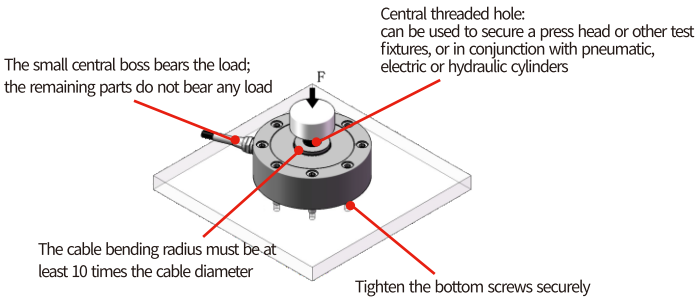
受力方向 Load Direction





安装方式 Installation

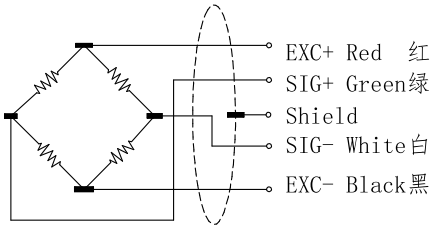
●轮辐式安装 Spoke-type mounting



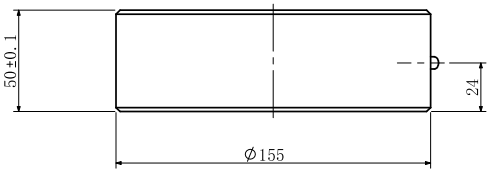
技术参数 Specifications

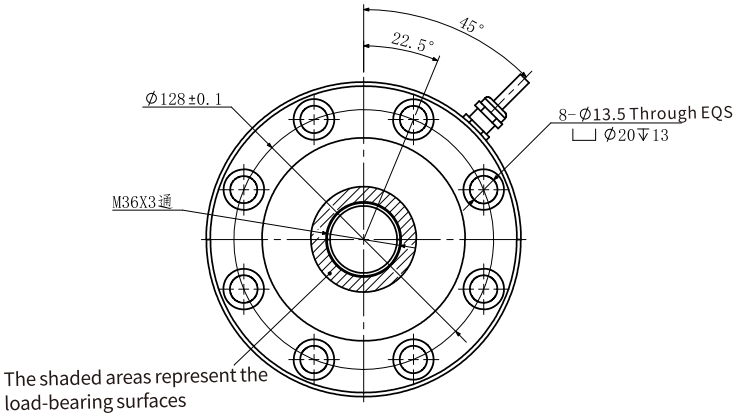
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	10,15,20t
满量程位移量 Deflection at Full Scale	mm	＜0.088
固有频率 Natural Frequency	Hz	＞5K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	°C	-10~60
防护等级 Ingress Protection (IP)	IP	65
电缆长度 Cable	M	φ5×3m
弹性体材料 Spring Element Material	-	17-4PH
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.2
线性误差 Non-linearity	%	≤0.1
相对滞后 Hysteresis	%	≤0.2
重复误差 Repeatability	%	≤0.05
负载蠕变 Creep (30 min)	%	≤0.1
温度漂移 Temperature Effect on Output	%	0.1%/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±10%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

接线图 Wiring



安装尺寸 Dimensions



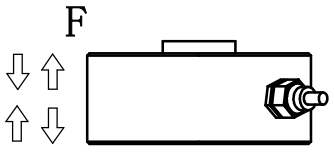


Spoke-type sensor

FA120A



受力方向 Load Direction

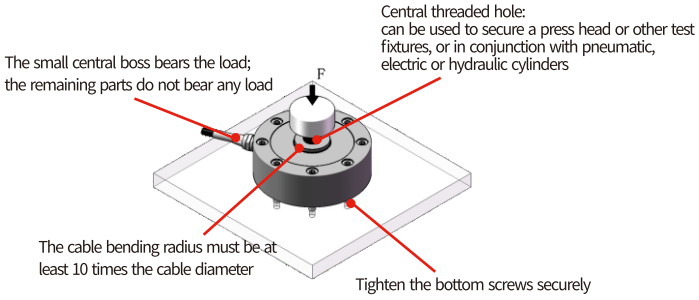


技术参数 Specifications

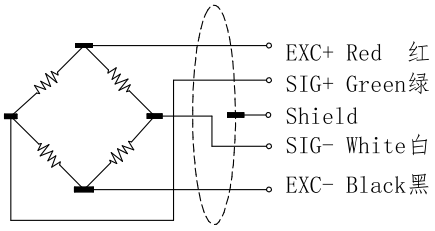
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	kg/t	50,100,200,500kg/1t
满量程位移量 Deflection at Full Scale	mm	＜0.048
固有频率 Natural Frequency	Hz	＞1K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	℃	-20~70
防护等级 Ingress Protection (IP)	IP	65
电缆长度 Cable	M	φ6×3m
弹性体材料 Spring Element Material	-	合金钢Alloy steel
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.05
线性误差 Non-linearity	%	≤0.05
相对滞后 Hysteresis	%	≤0.05
重复误差 Repeatability	%	≤0.03
负载蠕变 Creep (30 min)	%	≤0.03
温度漂移 Temperature Effect on Output	%	0.05%/10℃
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

安装方式 Installation

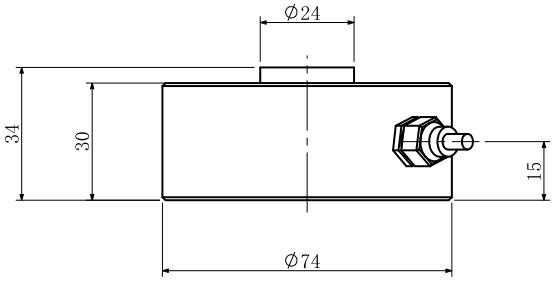
●轮辐式安装 Spoke-type mounting

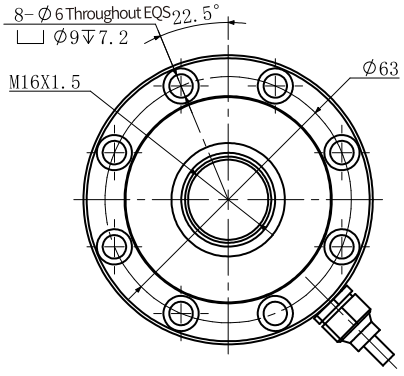


接线图 Wiring



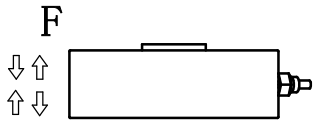
安装尺寸 Dimensions

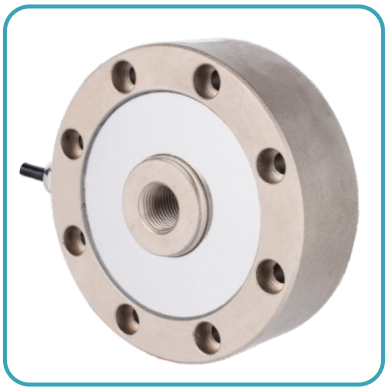




FA120B

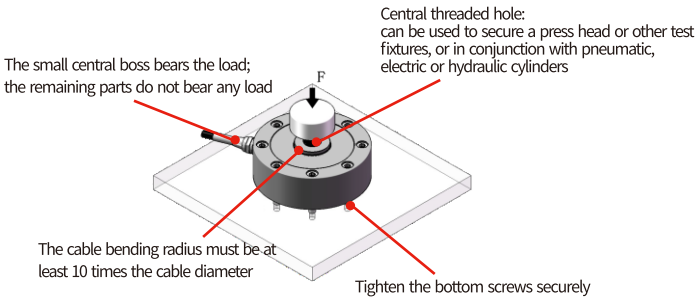
受力方向 Load Direction





安装方式 Installation

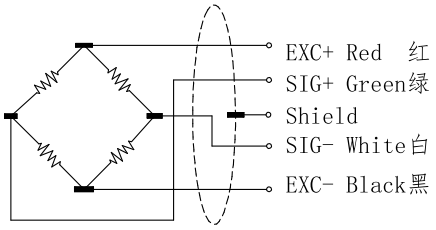
●轮辐式安装 Spoke-type mounting



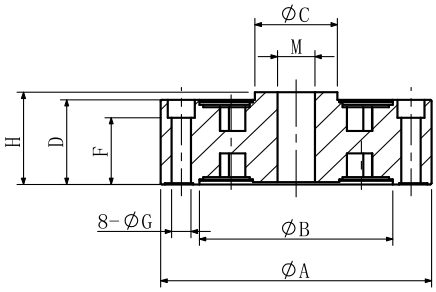
技术参数 Specifications

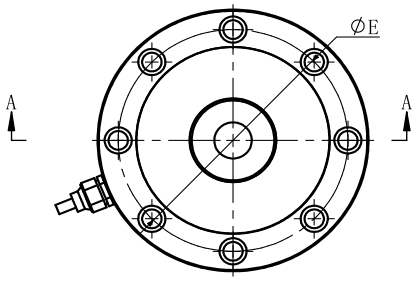
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	0.1,0.2,1,2,3,5,7,10,15,20,30t
满量程位移量 Deflection at Full Scale	mm	<0.12
固有频率 Natural Frequency	Hz	>4K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	°C	-10~70
防护等级 Ingress Protection (IP)	IP	66
电缆长度 Cable	M	Φ6x5m
弹性体材料 Spring Element Material	-	合金钢Alloy steel
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.05
线性误差 Non-linearity	%	≤0.05
相对滞后 Hysteresis	%	≤0.05
重复误差 Repeatability	%	≤0.03
负载蠕变 Creep (30 min)	%	≤0.05
温度漂移 Temperature Effect on Output	%	0.05%/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

接线图 Wiring



安装尺寸 Dimensions

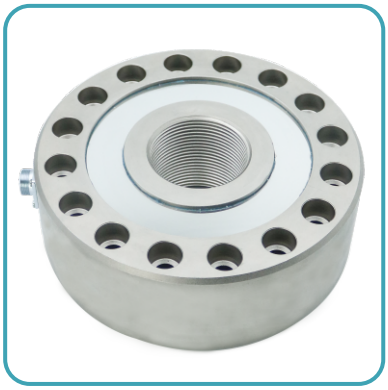




Cap(t)	A	B	C	D	E	F	G	H	M
0.1,0.2,1,2,3,5,7	105	75	32	34	89	26.8	7.5	37	M16*1.5
10,15,20	120.6	83	39	41	101.8	30.5	8.5	53.5	M32*1.5
30	141	96.9	50.4	50.8	116.8	39.8	11	57.2	M40*1.5

Spoke-type sensor

FA120C



受力方向 Load Direction

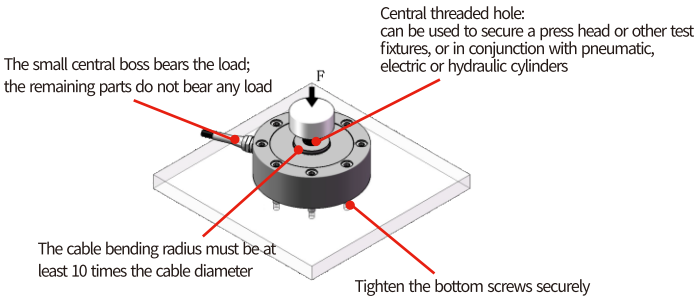


技术参数 Specifications

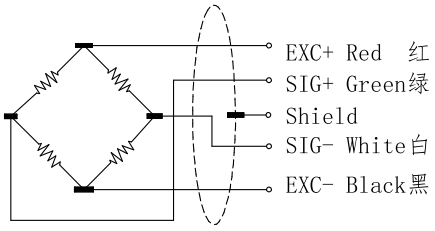
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	50,70t
满量程位移量 Deflection at Full Scale	mm	＜0.09
固有频率 Natural Frequency	Hz	＞5K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	℃	-10~70
防护等级 Ingress Protection (IP)	IP	66
电缆长度 Cable	M	φ6x5m
弹性体材料 Spring Element Material	-	合金钢Alloy steel
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.1
线性误差 Non-linearity	%	≤0.1
相对滞后 Hysteresis	%	≤0.1
重复误差 Repeatability	%	≤0.05
负载蠕变 Creep (30 min)	%	≤0.1
温度漂移 Temperature Effect on Output	%	0.05%/10℃
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

安装方式 Installation

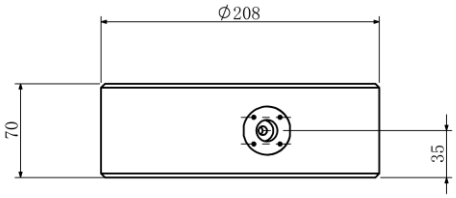
●轮辐式安装 Spoke-type mounting

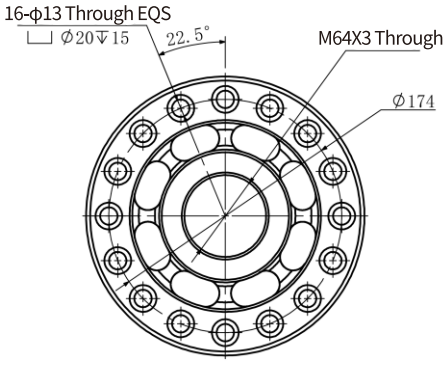


接线图 Wiring



安装尺寸 Dimensions

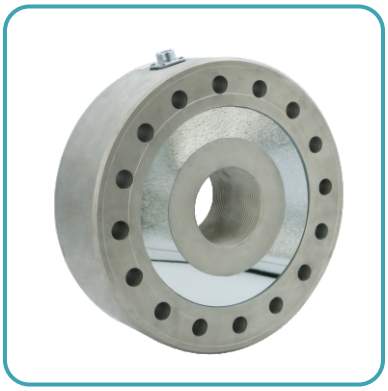




FA120D

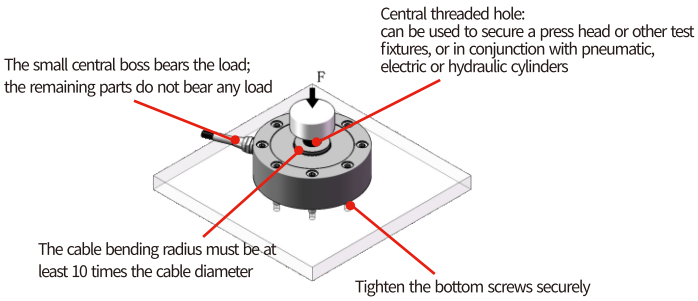
受力方向 Load Direction





安装方式 Installation

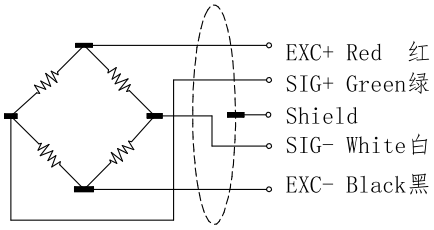
●轮辐式安装 Spoke-type mounting



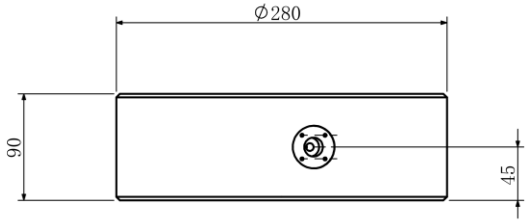
技术参数 Specifications

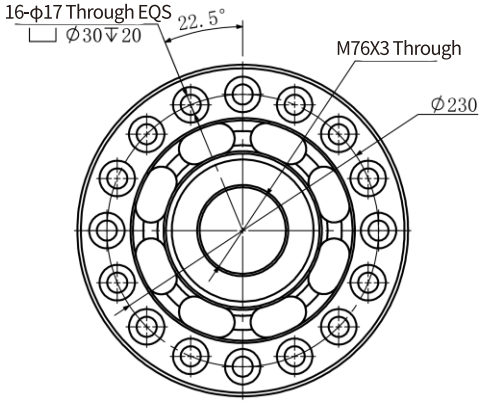
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	100,150t
满量程位移量 Deflection at Full Scale	mm	<0.12
固有频率 Natural Frequency	Hz	>5K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	°C	-10~70
防护等级 Ingress Protection (IP)	IP	66
电缆长度 Cable	M	ϕ6x5m
弹性体材料 Spring Element Material	-	合金钢Alloy steel
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.1
线性误差 Non-linearity	%	≤0.1
相对滞后 Hysteresis	%	≤0.4
重复误差 Repeatability	%	≤0.05
负载蠕变 Creep (30 min)	%	≤0.1
温度漂移 Temperature Effect on Output	%	0.05%/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

接线图 Wiring



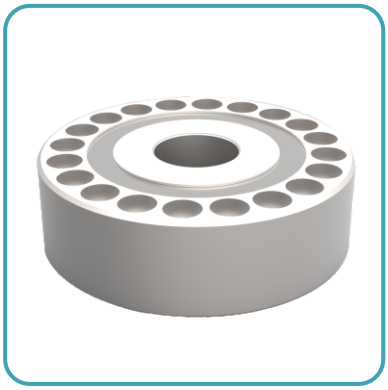
安装尺寸 Dimensions





Spoke-type sensor

FA120E



受力方向 Load Direction

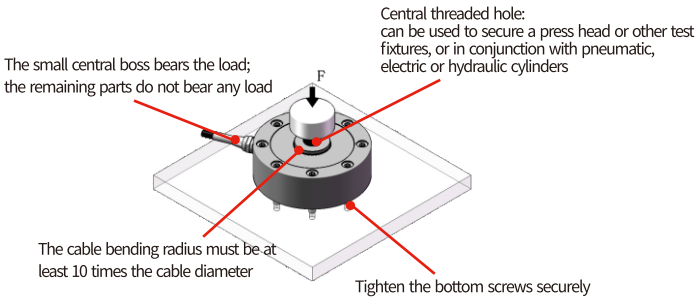


技术参数 Specifications

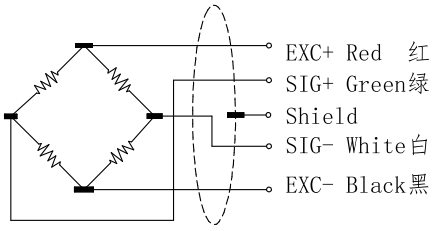
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	200,250,300t
满量程位移量 Deflection at Full Scale	mm	＜0.15
固有频率 Natural Frequency	Hz	＞5K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	℃	-20~70
防护等级 Ingress Protection (IP)	IP	66
电缆长度 Cable	M	ф6x5m
弹性体材料 Spring Element Material	-	合金钢Alloy steel
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.1
线性误差 Non-linearity	%	≤0.1
相对滞后 Hysteresis	%	≤0.1
重复误差 Repeatability	%	≤0.03
负载蠕变 Creep (30 min)	%	≤0.1
温度漂移 Temperature Effect on Output	%	0.05%/10℃
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

安装方式 Installation

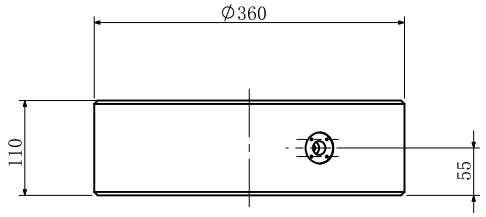
●轮辐式安装 Spoke-type mounting

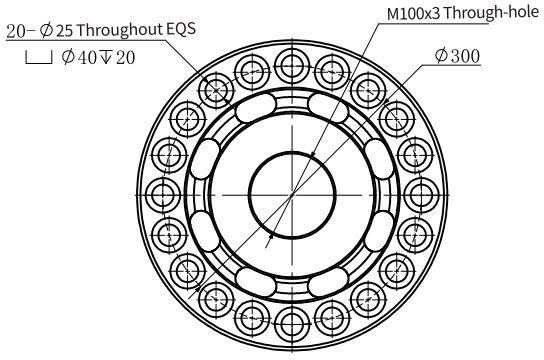


接线图 Wiring



安装尺寸 Dimensions

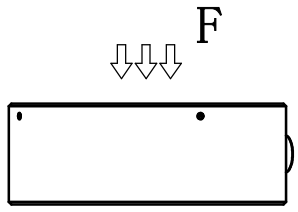


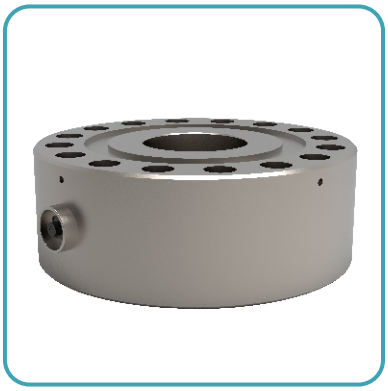


Spoke-type sensor

FA120F

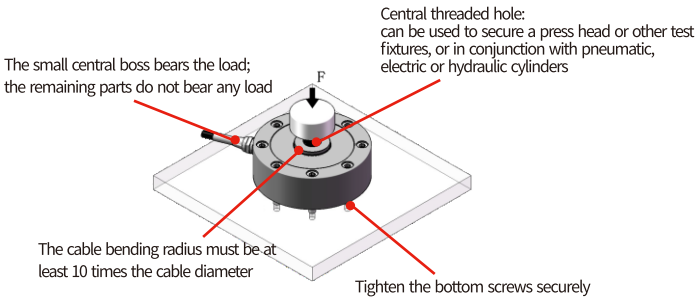
受力方向 Load Direction





安装方式 Installation

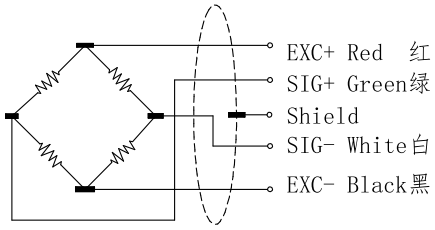
●轮辐式安装 Spoke-type mounting



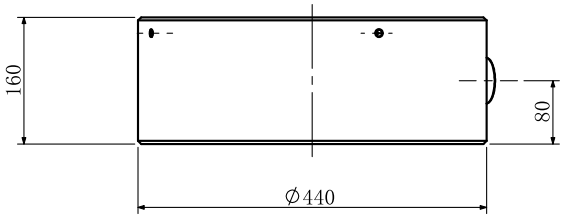
技术参数 Specifications

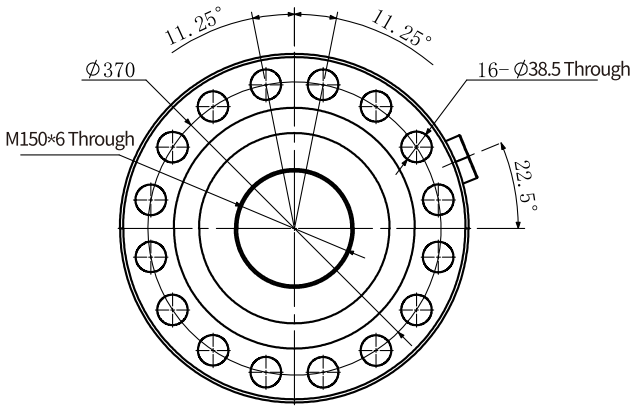
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	500t
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	°C	-20~70
防护等级 Ingress Protection (IP)	IP	66
电缆长度 Cable	M	φ6x5m
弹性体材料 Spring Element Material		合金钢Alloy steel
测量方向 Loading Direction		Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.3
线性误差 Non-linearity	%	≤0.3
相对滞后 Hysteresis	%	≤0.3
重复误差 Repeatability	%	≤0.3
负载蠕变 Creep (30 min)	%	≤0.1
温度漂移 Temperature Effect on Output	%	0.1%/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

接线图 Wiring



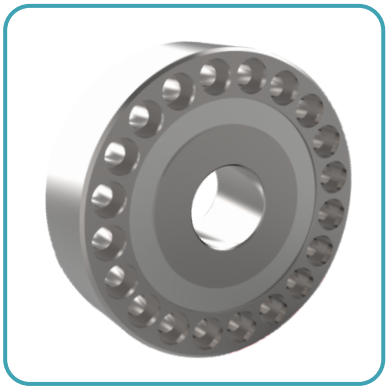
安装尺寸 Dimensions



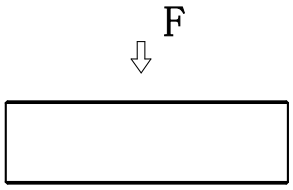


Spoke-type sensor

FA120G



受力方向 Load Direction

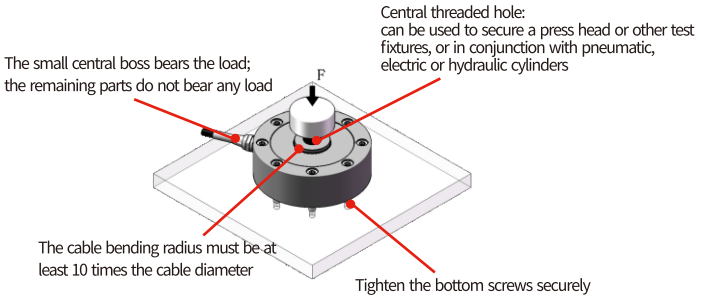


技术参数 Specifications

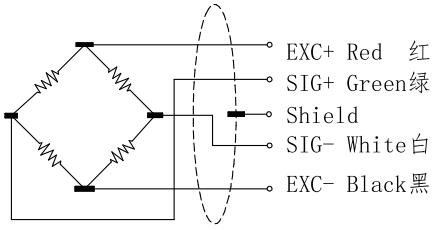
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	t	压向:1200t
过载能力 Safe Overload	%	120
工作温度 Operating Temperature	°C	-20~80
防护等级 Ingress Protection (IP)	IP	66
电缆长度 Cable	M	3m
弹性体材料 Spring Element Material		合金钢Alloy steel
测量方向 Loading Direction		Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.3
线性误差 Non-linearity	%	≤0.3
相对滞后 Hysteresis	%	≤0.3
重复误差 Repeatability	%	≤0.2
负载蠕变 Creep (30 min)	%	≤0.1
温度漂移 Temperature Effect on Output	%	0.05%/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

安装方式 Installation

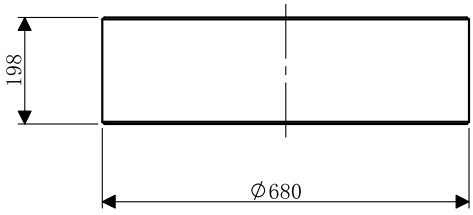
●轮辐式安装 Spoke-type mounting

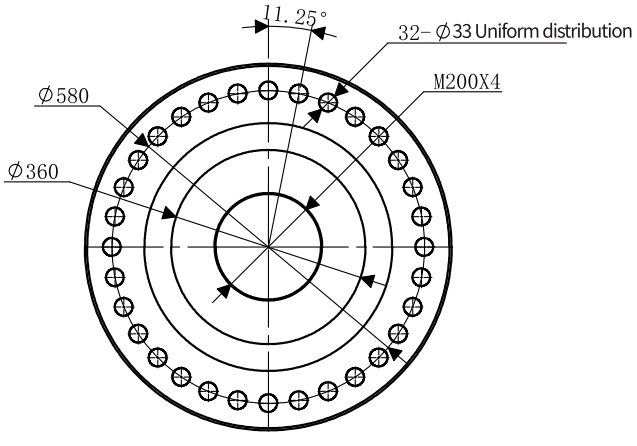


接线图 Wiring



安装尺寸 Dimensions

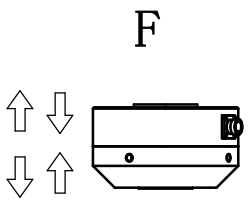


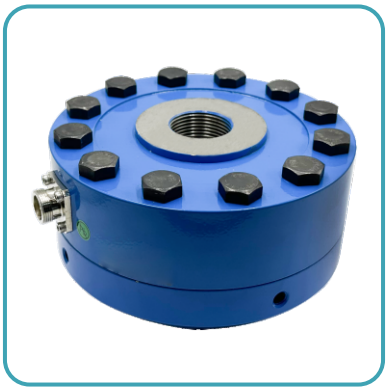


FA1141

Spoke-type sensor

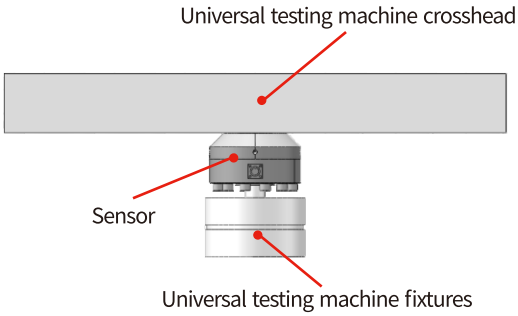
受力方向 Load Direction





安装方式 Installation

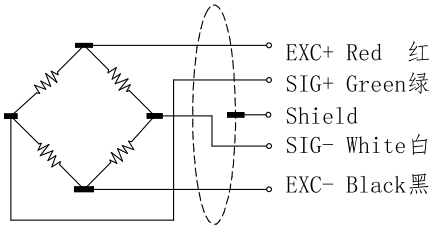
●轮辐式安装 Spoke-type mounting



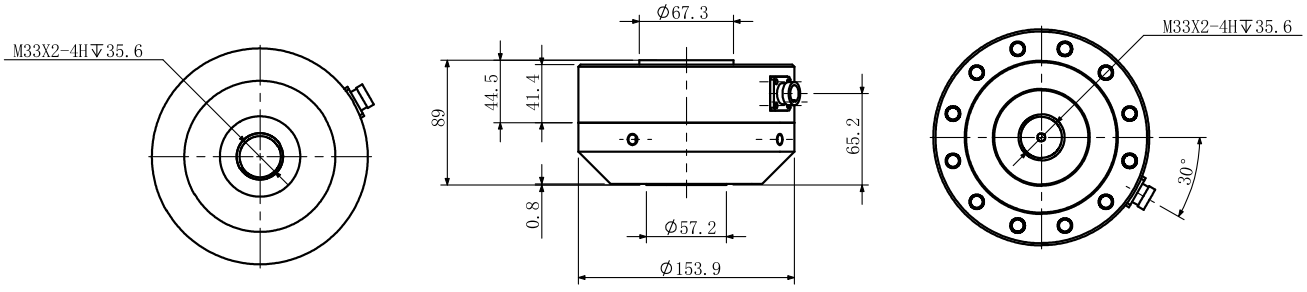
技术参数 Specifications

传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	kN	100,250kN
满量程位移量 Deflection at Full Scale	mm	＜0.12
固有频率 Natural Frequency	Hz	＞5K
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	℃	-20~70
防护等级 Ingress Protection (IP)	IP	66
电缆长度 Cable	M	3m
弹性体材料 Spring Element Material	-	Alloy steel
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤0.03
线性误差 Non-linearity	%	≤0.03
相对滞后 Hysteresis	%	≤0.03
重复误差 Repeatability	%	≤0.02
负载蠕变 Creep (30 min)	%	≤0.02
温度漂移 Temperature Effect on Output	%	0.15%/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±1%
激励电压 Excitation Voltage	V(DC)	5~12
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

接线图 Wiring

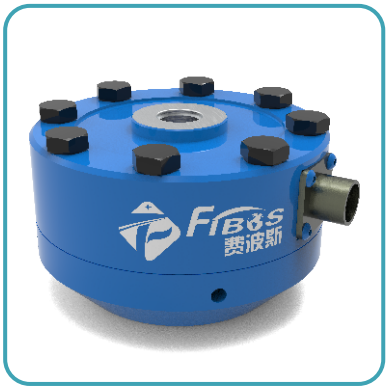


安装尺寸 Dimensions

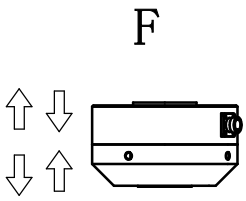


Spoke-type sensor

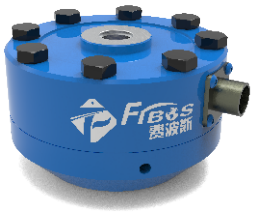
FI10 Series – Low Range

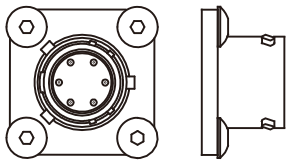


受力方向 Load Direction

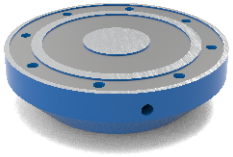


产品机械接口 Product Mechanical Interface





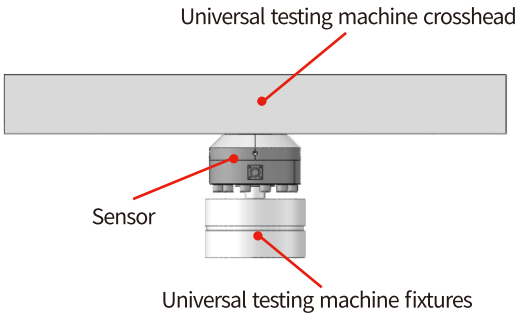
ACK Snap-in Connector



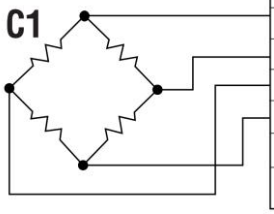
Base

安装方式 Installation

●轮辐式安装 Spoke-type mounting



接线图 Wiring

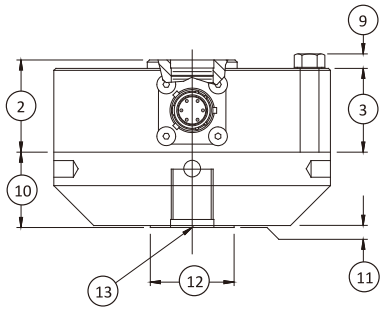


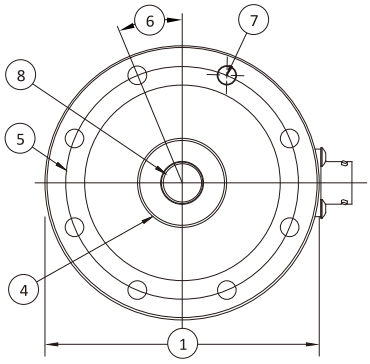
PIN	FUNCTION
A	+ EXCITATION
B	+ OUTPUT
C	- OUTPUT
D	- EXCITATION
E	NO CONNECTION
F	NO CONNECTION

Cable length: 3 m (standard)

安装尺寸参数 Installation Dimensions

See the specifications table on the next page





安装尺寸参数 Installation Dimensions

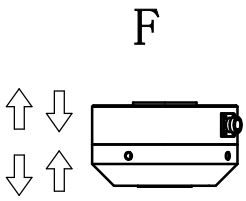
Model	FI-1010A	FI-1010B	FI-1020	FI-1032
Range	1.25,2.5,5kN	12.5,25kN	50,125kN	225kN
1	φ104.8	φ104.8	ϕ153.9	ϕ203.2
2	34.9	34.9	44.5	63.5
3	31.7	31.7	41.4	57.2
4	ϕ34.0	ϕ34.0	ϕ67.3	ϕ95.2
5	ϕ88.9	ϕ88.9	ϕ130.3	ϕ165.1
6	22.5°C	22.5°C	15°C	11.25°C
7	8-ϕ7.1	8-ϕ7.1	12-ϕ10.4	16-ϕ13.5
8	M16x2-4H ↧ 28.4mm	M16x2-4H ↧ 28.4mm	M33x2-4H ↧ 35.6mm	M42x2-4H ↧ 54.6mm
9	5.1	5.1	7.6	10.2
10	28.6	28.6	44.5	50.8
11	0.8	0.8	0.8	0.80
12	ϕ31.8	ϕ31.8	ϕ57.2	ϕ76.2
13	M16x2-4H ↧ 22.1mm	M16x2-4H ↧ 22.1mm	M33x2-4H ↧ 35.6mm	M42x2-4H ↧ 44.5mm
Non-linearity	±0.05%FS	±0.05%FS	±0.05%FS	±0.05%FS
Hysteresis	±0.03%FS	±0.04%FS	±0.05%FS	±0.05%FS
Repeatability	±0.02%RO	±0.02%RO	±0.02%RO	±0.02%RO
Side load effect	±0.25%	±0.25%	±0.25%	±0.25%
Comp. temp. range	-20~70°C	-20~70°C	-20~70°C	-20~70°C
Oper. temp.	-30~70°C	-30~70°C	-30~70°C	-30~70°C
Zero drift	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C
Sens. (mV/V)	1.0mV/V	1.0mV/V	1.0mV/V	1.0mV/V
Exc. voltage	15VDC	15VDC	15VDC	15VDC
Bridge res. (Ω)	350Ohm	350Ohm	350Ohm	350Ohm
Zero balance	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO
Ins. resistance	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ
Safe OL	±150%CAP	±150%CAP	±150%CAP	±150%CAP
Base (opt.)	Type B (see drawing)	Type B (see drawing)	Type B (see drawing)	Type B (see drawing)
Connection	ACK	ACK	ACK	ACK
Calibration	Tension/compression	Tension/compression	Tension/compression	Tension/compression
Material	Aluminium alloy	Alloy steel	Alloy steel	Alloy steel

Spoke-type sensor

FI10 Series – Wide Range

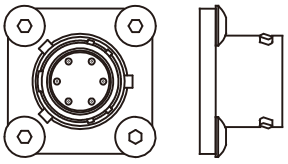


受力方向 Load Direction

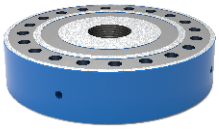


产品机械接口 Product Mechanical Interface





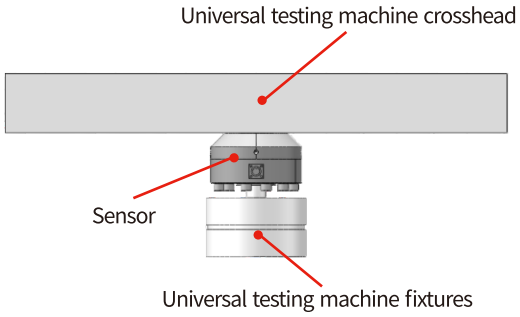
ACK Snap-in Connector



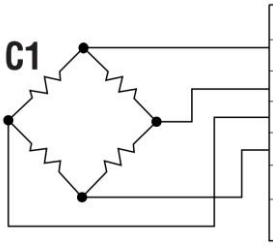
Base

安装方式 Installation

●轮辐式安装 Spoke-type mounting



接线图 Wiring

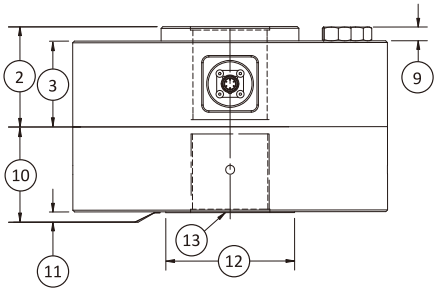


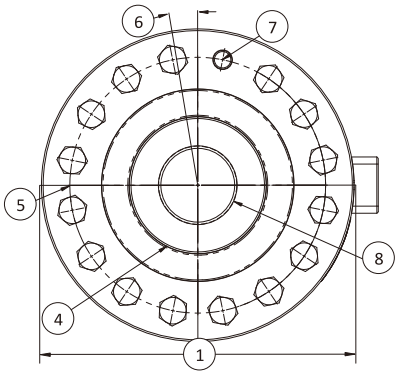
PIN	FUNCTION
A	+ EXCITATION
B	+ OUTPUT
C	- OUTPUT
D	- EXCITATION
E	NO CONNECTION
F	NO CONNECTION

Cable length: 3 m (standard)

安装尺寸参数 Installation Dimensions

See the specifications table on the next page



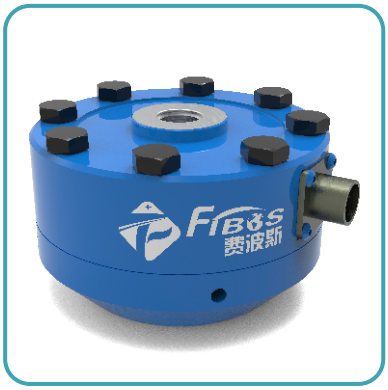


安装尺寸参数 Installation Dimensions

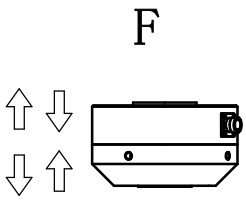
Model	FI-1040	FI-1044	FI-1052	FI-1060	FI-1080	FI-1090
Range	450kN	600kN	900kN	1500kN	2250kN	4500kN
1	ϕ279.0	ϕ279.0	ϕ304.8	φ393.7	φ520.7	φ660.4
2	88.9	101.6	114.3	139.7	158.8	196.9
3	76.2	82.6	108.0	127.0	152.4	190.5
4	ϕ122.2	ϕ122.2	ϕ114.3	ϕ196.3	ϕ267.9	ϕ350.3
5	ϕ228.6	ϕ222.2	ϕ250.8	ϕ322.1	ϕ419.1	ϕ520.7
6	11.25°C	11.25°C	9.00°C	7.50°C	6.43°C	5.63°C
7	16-ϕ16.5	16-ϕ20.1	20-ϕ21.0	24-ϕ23.9	28-ϕ27.0	32-ϕ33.3
8	M72x2-4H ↧ 82.6mm	M72x2-4H ↧ 96.3mm	M90x3-4H ↧ 95.3mm	M120x4-4H ↧ 108.0mm	M150x4-4H ↧ 130.0mm	M200x4-4H ↧ 178.0mm
9	12.7	12.7	15	17.5	5.1	31.3
10	76.2	101.6	114.3	127.0	28.6	228.6
11	0.8	0.8	0.8	0.8	0.8	2.5
12	ϕ114.3	ϕ114.3	ϕ152.4	ϕ196.9	ϕ31.8	ϕ355.6
13	M72x2-4H ↧ 69.8mm	M72x2-4H ↧ 95.3mm	M90x3-4H ↧ 95.3mm	M120x4-4H ↧ 108.0mm	M150x4-4H ↧ 162.0mm	M200x4-4H ↧ 184.0mm
Non-linearity	±0.06%FS	±0.07%FS	±0.09%FS	±0.10%FS	±0.15%FS	±0.20%FS
Hysteresis	±0.06%FS	±0.08%FS	±0.09%FS	±0.10%FS	±0.15%FS	±0.20%FS
Repeatability	±0.06%RO	±0.08%RO	±0.09%RO	±0.10%RO	±0.15%RO	±0.20%RO
Side load effect	±0.1%	±0.25%	±0.25%	±0.25%	±0.25%	±0.25%
Comp. temp. range	-20~70°C	-20~70°C	-20~70°C	-20~70°C	-20~70°C	-20~70°C
Oper. temp.	-30~70°C	-30~70°C	-30~70°C	-30~70°C	-30~70°C	-30~70°C
Zero drift	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C
Sens. (mV/V)	1.0mV/V	1.0mV/V	1.0mV/V	1.0mV/V	1.0mV/V	1.0mV/V
Exc. voltage	15VDC	15VDC	15VDC	15VDC	15VDC	15VDC
Bridge res. (Ω)	350Ohm	350Ohm	350Ohm	350Ohm	350Ohm	350Ohm
Zero balance	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO
Ins. resistance	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ
Safe OL	±150%CAP	±150%CAP	±150%CAP	±150%CAP	±150%CAP	±150%CAP
Base (opt.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)
Connection	ACK	ACK	ACK	ACK	ACK	ACK
Calibration	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.
Material	Alloy steel	Alloy steel	Alloy steel	Alloy steel	Alloy steel	Alloy steel

Spoke-type sensor

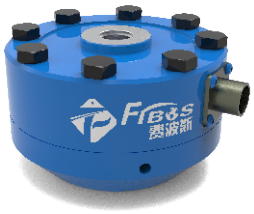
FI11系列高精度

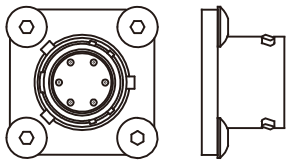


受力方向 Load Direction

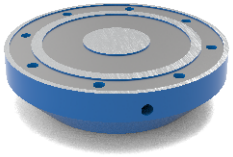


产品机械接口 Product Mechanical Interface





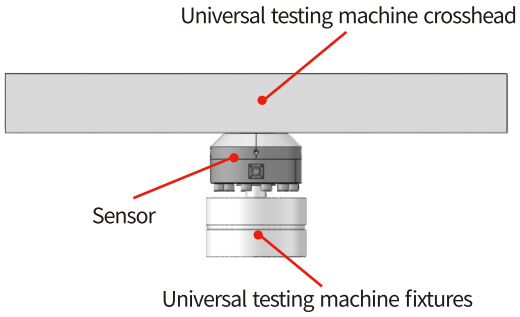
ACK Snap-in Connector



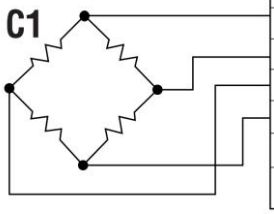
Base

安装方式 Installation

●轮辐式安装 Spoke-type mounting



接线图 Wiring

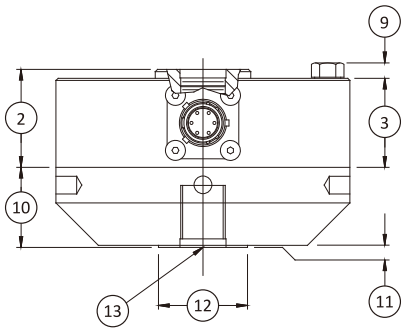


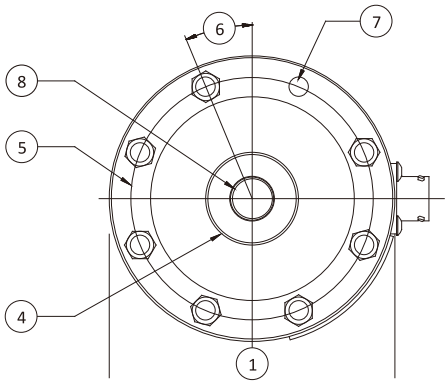
PIN	FUNCTION
A	+ EXCITATION
B	+ OUTPUT
C	- OUTPUT
D	- EXCITATION
E	NO CONNECTION
F	NO CONNECTION

Cable length: 3 m (standard)

安装尺寸参数 Installation Dimensions

See the specifications table on the next page



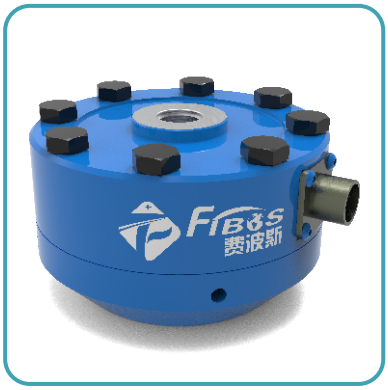


安装尺寸参数 Installation Dimensions

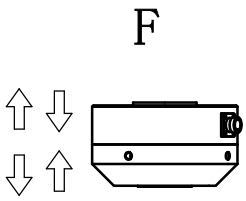
Model	FI-1110A	FI-1110B	FI-1120	FI-1132	FI-1140
Range	1.5,2.5,5.10kN	25,50kN	100,250kN	450kN	900kN
1	ϕ104.8	ϕ104.8	φ153.9	φ203.2	φ279.0
2	34.9	34.9	44.5	63.5	88.9
3	31.7	31.7	41.4	57.2	76.2
4	ϕ34.0	ϕ34.0	ϕ67.3	ϕ95.2	ϕ122.2
5	ϕ88.9	ϕ88.9	ϕ130.3	ϕ165.1	ϕ228.6
6	22.5°C	22.5°C	15°C	11.25°C	11.25°C
7	ϕ7.1	ϕ7.1	ϕ10.4	ϕ13.5	ϕ16.5
8	M16x2-4H ↧ 28.4mm	M16x2-4H ↧ 28.4mm	M33x2-4H ↧ 35.6mm	M42x2-4H ↧ 54.6mm	M72x2-4H ↧ 82.6mm
9	5.10	5.1	7.60	5.1	12.7
10	28.6	28.6	44.5	28.6	76.2
11	0.8	0.8	0.8	0.8	0.8
12	ϕ31.8	ϕ31.8	ϕ57.2	ϕ76.2	ϕ114.3
13	M16x2-4H ↧ 22.1mm	M16x2-4H ↧ 22.1mm	M33x2-4H ↧ 35.6mm	M42x2-4H ↧ 44.5mm	M72x2-4H ↧ 69.8mm
Non-linearity	±0.03%FS	±0.035%FS	±0.035%FS	±0.05%FS	±0.06%FS
Hysteresis	±0.02%FS	±0.04%FS	±0.045%FS	±0.04%FS	±0.06%FS
Repeatability	±0.01%RO	±0.01%RO	±0.01%RO	±0.01%RO	±0.01%RO
Side load effect	±0.25%	±0.25%	±0.25%	±0.25%	±0.25%
Comp. temp. range	-20~70°C	-20~70°C	-20~70°C	-20~70°C	-20~70°C
Oper. temp.	-30~70°C	-30~70°C	-30~70°C	-30~70°C	-30~70°C
Zero drift	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C
Sens. (mV/V)	1.0mV/V	1.0mV/V	1.0mV/V	1.0mV/V	1.0mV/V
Exc. voltage	15VDC	15VDC	15VDC	15VDC	15VDC
Bridge res. (Ω)	350Ohm	350Ohm	350Ohm	350Ohm	350Ohm
Zero balance	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO
Ins. resistance	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ
Safe OL	±150%CAP	±150%CAP	±150%CAP	±150%CAP	±150%CAP
Base (opt.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)
Connection	ACK	ACK	ACK	ACK	ACK
Calibration	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.
Material	Aluminium alloy	Alloy steel	Alloy steel	Alloy steel	Alloy steel

Spoke-type sensor

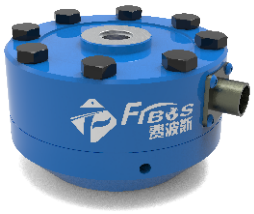
FI12 Series – Low Range

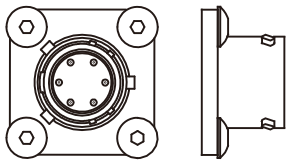


受力方向 Load Direction

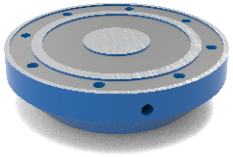


产品机械接口 Product Mechanical Interface





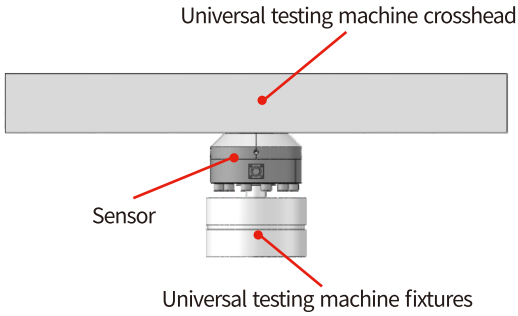
ACK Snap-in Connector



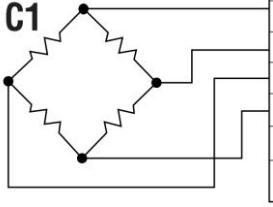
Base

安装方式 Installation

●轮辐式安装 Spoke-type mounting



接线图 Wiring

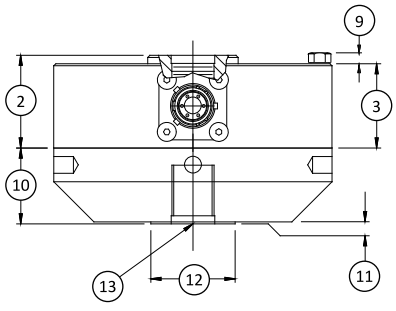


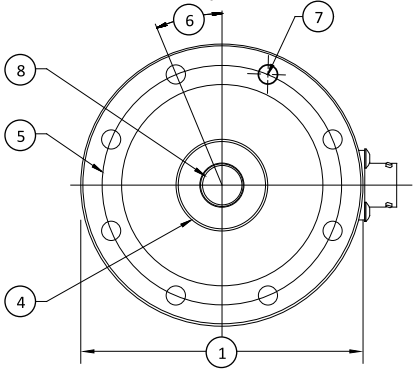
PIN	FUNCTION
A	+ EXCITATION
B	+ OUTPUT
C	- OUTPUT
D	- EXCITATION
E	NO CONNECTION
F	NO CONNECTION

Cable length: 3 m (standard)

安装尺寸参数 Installation Dimensions

See the specifications table on the next page





安装尺寸参数 Installation Dimensions

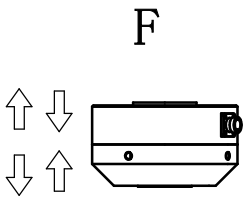
Model	FI-1210A	FI-1210B	FI-1220	FI-1232
Range	1.5,2.5,5,10kN	25,50kN	100,250kN	450kN
1	φ104.8	φ104.8	ϕ153.9	ϕ203.2
2	34.9	34.9	44.5	63.5
3	31.7	31.7	41.4	57.2
4	ϕ34.0	ϕ34.0	ϕ67.3	ϕ95.2
5	ϕ88.9	ϕ88.9	ϕ130.3	ϕ165.1
6	22.5°C	22.5°C	15°C	11.25°C
7	8-ϕ7.1	8-ϕ7.1	12-ϕ10.4	16-ϕ13.5
8	M16x2-4H ↧ 28.4mm	M16x2-4H ↧ 28.4mm	M33x2-4H ↧ 35.6mm	M42x2-4H ↧ 54.6mm
9	5.1	5.1	7.6	10.2
10	28.6	28.6	44.5	50.8
11	0.8	0.8	0.8	0.80
12	ϕ31.8	ϕ31.8	ϕ57.2	ϕ76.2
13	M16x2-4H ↧ 22.1mm	M16x2-4H ↧ 22.1mm	M33x2-4H ↧ 35.6mm	M42x2-4H ↧ 44.5mm
Non-linearity	±0.05%FS	±0.05%FS	±0.05%FS	±0.05%FS
Hysteresis	±0.05%FS	±0.05%FS	±0.05%FS	±0.05%FS
Repeatability	±0.05%RO	±0.05%RO	±0.05%RO	±0.05%RO
Side load effect	±0.25%	±0.25%	±0.25%	±0.25%
Comp. temp. range	-10~45°C	-10~45°C	-10~45°C	-10~45°C
Oper. temp.	-30~70°C	-30~70°C	-30~70°C	-30~70°C
Zero drift	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C
Sens. (mV/V)	2.0mV/V	2.0mV/V	2.0mV/V	2.0mV/V
Exc. voltage	15VDC	15VDC	15VDC	15VDC
Bridge res. (Ω)	350Ohm	350Ohm	350Ohm	350Ohm
Zero balance	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO
Ins. resistance	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ	⩾2000MΩ
Safe OL	±150%CAP	±150%CAP	±150%CAP	±150%CAP
Base (opt.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)
Connection	ACK	ACK	ACK	ACK
Calibration	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.
Material	Aluminium alloy	Alloy steel	Alloy steel	Alloy steel

Spoke-type sensor

FI12系列-大量程

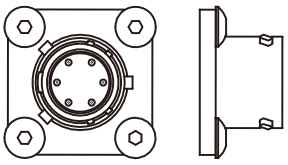


受力方向 Load Direction

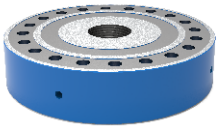


产品机械接口 Product Mechanical Interface





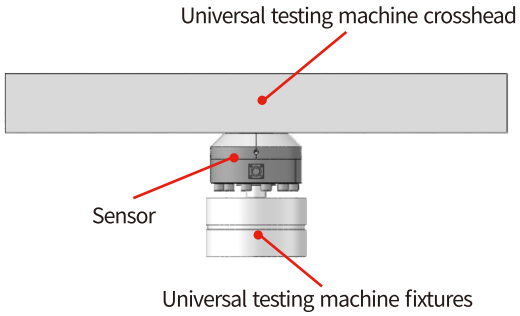
ACK Snap-in Connector



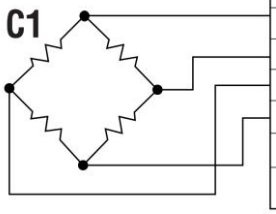
Base

安装方式 Installation

●轮辐式安装 Spoke-type mounting



接线图 Wiring

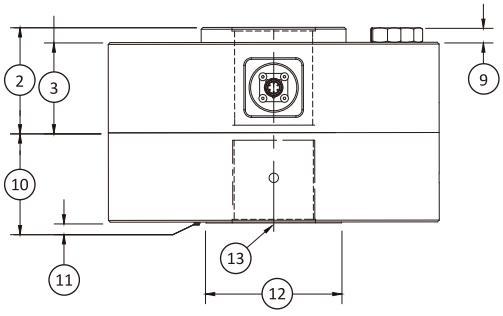


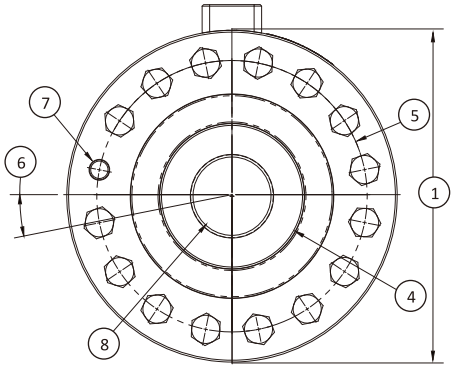
PIN	FUNCTION
A	+ EXCITATION
B	+ OUTPUT
C	- OUTPUT
D	- EXCITATION
E	NO CONNECTION
F	NO CONNECTION

Cable length: 3 m (standard)

安装尺寸参数 Installation Dimensions

See the specifications table on the next page





安装尺寸参数 Installation Dimensions

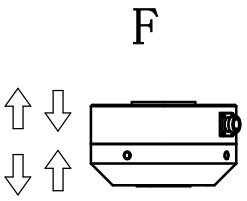
Model	FI-1240	FI-1244	FI-1252	FI-1260	FI-1280	FI-1290
Range	900kN	1200kN	1800kN	2700kN	4500kN	9000kN
1	ϕ279.0	ϕ279.0	ϕ304.8	φ393.7	φ520.7	φ660.4
2	88.9	101.6	114.3	139.7	158.8	196.9
3	76.2	82.6	108.0	127.0	152.4	190.5
4	ϕ122.2	ϕ122.2	ϕ114.3	ϕ196.3	ϕ267.9	ϕ350.3
5	ϕ228.6	ϕ222.2	ϕ250.8	ϕ322.1	ϕ419.1	ϕ520.7
6	11.25°C	11.25°C	9.00°C	7.50°C	6.43°C	5.63°C
7	16-ϕ16.5	16-ϕ20.1	20-ϕ21.0	24-ϕ23.9	28-ϕ27.0	32-ϕ33.3
8	M72x2-4H ↧ 70mm	M72x2-4H ↧ 95.3mm	M90x3-4H ↧ 104.9mm	M120x4-4H ↧ 108.0mm	M150x4-4H ↧ 143.0mm	M200x4-4H ↧ 178.0mm
9	12.7	12.7	15	17.5	25.4	31.3
10	76.2	101.6	114.3	127.0	177.8	228.6
11	0.8	0.8	0.8	0.8	0.8	2.5
12	ϕ114.3	ϕ114.3	ϕ152.4	ϕ196.9	ϕ267.9	ϕ355.6
13	M72x2-4H ↧ 69.8mm	M72x2-4H ↧ 69.8mm	M90x3-4H ↧ 95.3mm	M120x4-4H ↧ 108.0mm	M150x4-4H ↧ 162.0mm	M200x4-4H ↧ 184.0mm
Non-linearity	±0.07%FS	±0.08%FS	±0.10%FS	±0.12%FS	±0.15%FS	±0.20%FS
Hysteresis	±0.01%FS	±0.08%FS	±0.10%FS	±0.12%FS	±0.15%FS	±0.20%FS
Repeatability	±0.01%RO	±0.02%RO	±0.02%RO	±0.02%RO	±0.02%RO	±0.02%RO
Side load effect	±0.25%	±0.25%	±0.25%	±0.25%	±0.25%	±0.25%
Comp. temp. range	-20~70°C	-20~70°C	-20~70°C	-20~70°C	-20~70°C	-20~70°C
Oper. temp.	-30~70°C	-30~70°C	-30~70°C	-30~70°C	-30~70°C	-30~70°C
Zero drift	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C	±0.005%RO/°C
Sens. (mV/V)	2.0mV/V	2.0mV/V	2.0mV/V	2.0mV/V	2.0mV/V	2.0mV/V
Exc. voltage	15VDC	15VDC	15VDC	15VDC	15VDC	15VDC
Bridge res. (Ω)	350Ohm	350Ohm	350Ohm	350Ohm	350Ohm	350Ohm
Zero balance	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO	±3.0%RO
Ins. resistance	≥2000MΩ	≥2000MΩ	≥2000MΩ	≥2000MΩ	≥2000MΩ	≥2000MΩ
Safe OL	±150%CAP	±150%CAP	±150%CAP	±150%CAP	±150%CAP	±150%CAP
Base (opt.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)	Type B (see dim.)
Connection	ACK	ACK	ACK	ACK	ACK	ACK
Calibration	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.	Tens./comp.
Material	Alloy steel	Alloy steel	Alloy steel	Alloy steel	Alloy steel	Alloy steel

Spoke-type sensor

FA1588



受力方向 Load Direction

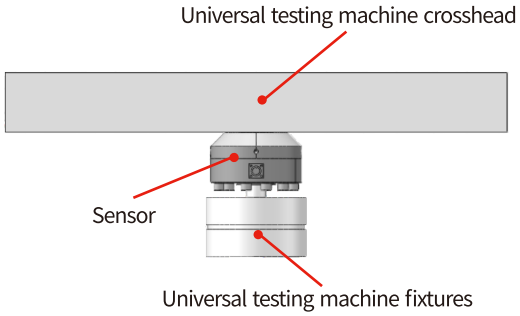


技术参数 Specifications

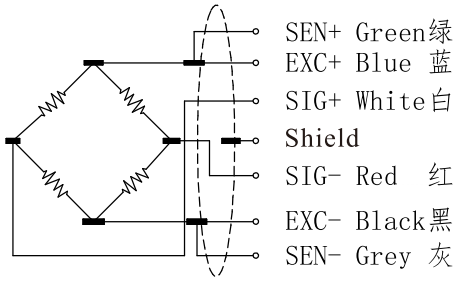
传感器物理参数 Sensor Physical Parameters		
额定量程 Nominal Capacity	kN	1.25,2.5,5,12.5,25,50,125,250,500,1250
满量程位移量 Deflection at Full Scale	mm	<0.1
固有频率 Natural Frequency	Hz	>3.8KHZ
过载能力 Safe Overload	%	150
工作温度 Operating Temperature	°C	-20~80
防护等级 Ingress Protection (IP)	IP	65
电缆长度 Cable	M	ϕ6x5m
弹性体材料 Spring Element Material	-	17-4PH
测量方向 Loading Direction	-	Tension & compression
传感器精度参数 Sensor Accuracy Parameters		
综合精度 Combined Error	%	≤±0.05
线性误差 Non-linearity	%	≤±0.05
相对滞后 Hysteresis	%	≤±0.05
重复误差 Repeatability	%	≤±0.05
负载蠕变 Creep (30 min)	%	≤±0.05(30min)
温度漂移 Temperature Effect on Output	%	≤±0.05/10°C
传感器电气参数 Electrical Parameters		
满量程输出 Rated Output	mV/V	2.0±10%
激励电压 Excitation Voltage	V(DC)	1~15
绝缘电阻 Insulation Resistance	MΩ/VDC	≥5000/100

安装方式 Installation

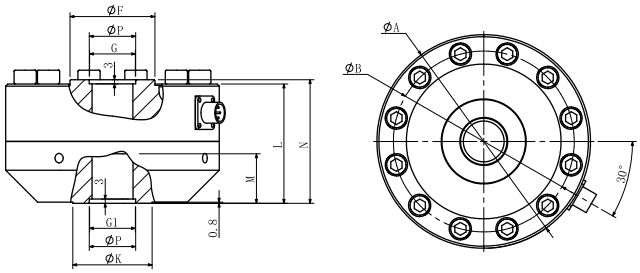
●轮辐式安装 Spoke-type mounting



接线图 Wiring



安装尺寸 Dimensions



Cap(kN)	ϕA	ϕB	ϕF	G	G1	ϕP_{H8}	ϕK	L	M	N
1.25~5kN	104.8	88.9	30.4	M16X2-4H	M16X2-4H ↧22.1	16.5	31.8	60.3	22	63.5
12.5~25kN	104.8	88.9	31.5	M16X2-4H	M16X2-4H ↧22.1	16.5	31.8	60.3	22	63.5
50kN	153.9	130.3	61.2	M33X2-4H	M33X2-4H ↧35.6	33.5	57.2	85.9	35.5	89
125kN	153.9	130.3	67.3	M33X2-4H	M33X2-4H ↧35.6	33.5	57.2	85.9	35.5	89
250kN	203.2	165.1	95.5	M42X2-4H	M42X2-4H ↧54.6	43	76.2	108	44	114.3
500kN	279	229	122.2	M72X2-4H	M72X2-4H ↧82.6	73	114	152.4	69.5	165.1
1.25MN	390	322	190	M120X4-4H	M120X4-4H ↧125	123	190	239	112	254