FN1010 Load Pin

- **Load Pin Design**
- **10 to 2000 kN (2 to 400 kLbf)**
- **Other Ranges on Request**
- **Voltage or Current Output**

DESCRIPTION

Measurement-Specialties' load pins, model FN1010, are designed to fit in the place of the regular mounting unit. The implantation is facilitated by the possibility of modifying a certain number of dimensions. The FN1010 is suitable for numerous applications on lifting motors and handling equipment. The load pins can be used to measure forces on rotating components (pulleys, sheaves, etc.) and can be directly mounted on shackles.

The sensing element is fitted with thin film strain gauges in a Wheatstone bridge circuit. All FN1010 Load Pins incorporate a keyed anti-rotation slot.

Optionally, the load pins may be made watertight for certain applications while resting insensitive to hydrostatic pressure effects. Additionally, the FN1010 is available with an integrated high-level analogue output.

With many years of experience as a designer and manufacturer of sensors, Measurement-Specialties often works with customers to design or customize sensors for specific uses and testing environments.

To meet your needs we also offer complete turnkey systems. The matched components (sensor, power, amplifier and digital display) are formatted, calibrated and ready for immediate use.

FEATURES

- Full Scale Range : from 0-10 to 0-2000 kN (0-2 to 0-400 kLbf)
- Tension and Compression
- Optional: Watertight
- High Coefficient of Security
- Optional: Watertight
- Bidirectional Versions Available
- High Level Output Model with Integrated Amplifier

APPLICATIONS

- Crane Monitoring
- Building Machine Monitoring
- Load-Limited Device
- Offshore

STANDARD RANGES

F.S. Ranges in N	10K	20K	50K	100K	200K	500K	1000K	2000K
F.S. Ranges in Lbf	2K	4K	10K	20K	40K	100K	200K	400K

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PERFORMANCE SPECIFICATIONS

Ambient Temperature: 20±1ºC (unless otherwise specified)

PARAMETERS	
Operating Temperature Range (OTR)	-20 to 80 ℃ [-4 to 176 °F]
Compensated Temperature Range (CTR)	0 to 60 ℃ [32 to 140 °F]
Zero Shift in CTR	<0.5% F.S. / 50℃ [100 °F]
Sensitivity Shift in CTR	$<2.10^{-4}$ / ℃ of reading [$<1.10^{-4}$ / °F of reading]
Range (F.S.)	0-10 kN to 0-2000 kN [0-2 klbf to 0-400 klbf]
Over-Range	
Without Damage	1.5 x F.S.
Without Destruction	5 x F.S.
Accuracy	
Combined Non-Linearity & Hysteresis	±1% F.S.

Electrical Characteristics

Model	FN1010	FN1010-A1	FN1010-A2	FN1010-A3 (2 wires)
Supply Outage	10Vdc	10–30Vdc	±15Vdc (±12 to ±18Vdc)	12-36Vdc
F.S. Output	1.5mV/V	0.5 to 4.5V	±5V	4–20mA (4-12-20)
Zero Offset	<±5% F.S.	2.5V ±5% F.S.	0V ±5% F.S.	4 (or 12mA)
Input Impedance/Consumption	350 to 700Ω	<50mA	<50mA	-
Output Impedance	350 to 700Ω	<10Ω	<10Ω	-
Insulation under 50Vdc	≥100MΩ	≥100MΩ	≥100MΩ	≥100MΩ

Notes

1. Electrical Termination: Shielded cable; standard length 2m [6.5ft]
2. Materials: Body in stainless steel

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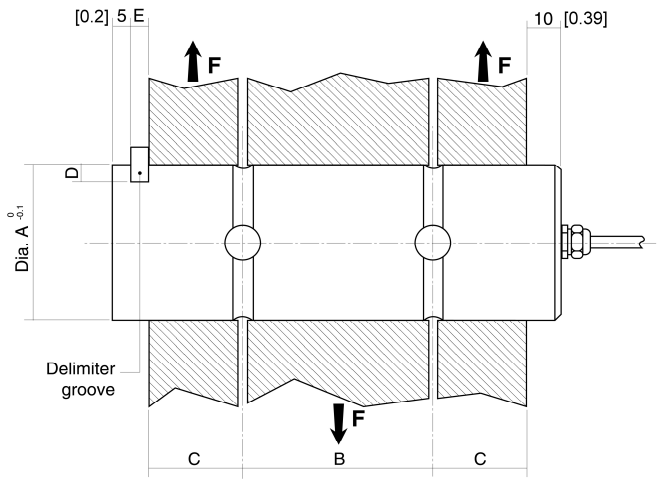
DIMENSIONS & WIRING SCHEMATIC (IN METRIC AND IMPERIAL)

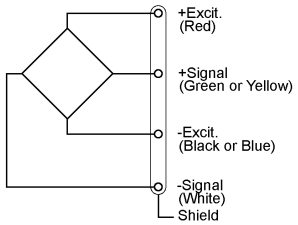


All dimensions correspond to a standard. They can be modified, if necessary, for mounting. Please consult us for details.
In order to simplify the use of load pins and limit the mechanical modifications associated with their implantation, all dimensions are given between two limits within which performances and characteristics can be maintained without increasing financial cost to the user.

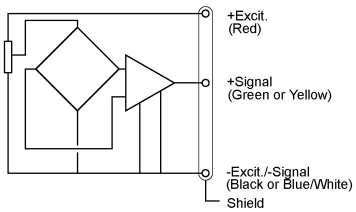
Note: The delimiter groove can be placed on the output cable side.

Wiring Schematic

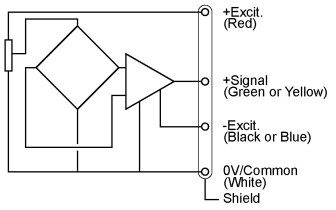
FN1010



FN1010-A1



FN1010-A2



Dimensions in mm [inch]

F.S. Ranges in N [Lbf]		10K [2K]	20K [4K]	50K [10K]	100K [20K]	200K [40K]	500K [100K]	1000K [200K]	2000K [400K]
A	Min.	22 [0.87]	27 [1.06]	30 [1.18]	42 [1.65]	54 [2.13]	82 [3.23]	110 [4.33]	150 [5.91]
	Nominal	25 [0.98]	30 [1.18]	35 [1.38]	45 [1.77]	60 [2.36]	90 [3.54]	120 [4.72]	160 [6.30]
	Max	30 [1.18]	35 [1.38]	40 [1.57]	50 [1.97]	65 [2.56]	100 [3.94]	130 [5.12]	170 [6.69]
B	Min.	25 [0.98]	25 [0.98]	30 [1.18]	40 [1.57]	50 [1.97]	65 [2.56]	80 [3.15]	120 [4.72]
	Nominal	30 [1.18]	30 [1.18]	40 [1.57]	50 [1.97]	70 [2.76]	90 [3.54]	110 [4.33]	160 [6.30]
	Max.	35 [1.38]	35 [1.38]	50 [1.97]	65 [2.56]	90 [3.54]	115 [4.53]	140 [5.51]	200 [7.87]
C	Min.	10 [0.39]	10 [0.39]	15 [0.59]	20 [0.79]	25 [0.98]	30 [1.18]	40 [1.57]	60 [2.36]
	Nominal	15 [0.59]	15 [0.59]	20 [0.79]	25 [0.98	30 [1.18]	40 [1.57]	55 [2.17]	80 [3.15]
	Max.	20 [0.79]	20 [0.79]	25 [0.98]	30 [1.18]	35 [1.38]	50 [1.97]	70 [2.76]	100 [3.94]
D	D	3 [0.12]	3 [0.12]	4 [0.16]	5 [0.20]	5 [0.20]	5 [0.20]	5 [0.20]	5 [0.20]
E	E	5 [0.20]	5 [0.20]	5 [0.20]	10 [0.39]	10 [0.39]	10 [0.39]	15 [0.59]	15 [0.59]

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OPTIONS

A1 : Unipolar Tension
A2 : Bipolar Tension (ex.±15Vdc)
A3 : Current output (2 wires)

ORDERING INFO