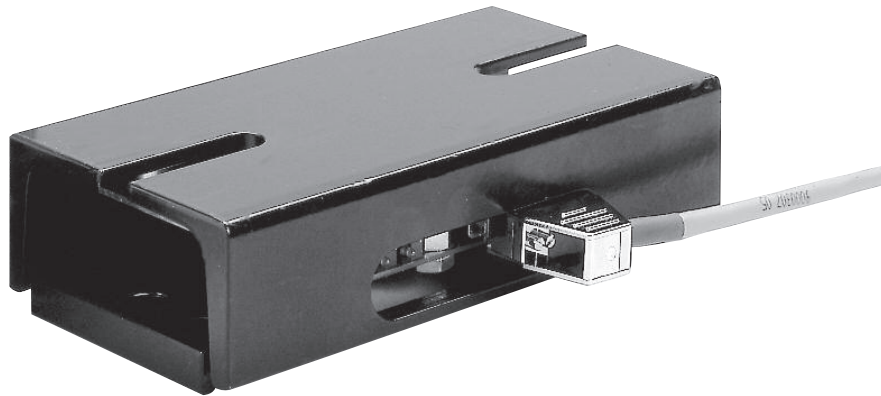


FM Series Foot Mounted Load Cells

P-2012-1
819-0401

Installation Instructions



 **Warner**[®]
Electric

An Altra Industrial Motion Company

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⚠ WARNING Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

The FM style load cell provides easy and convenient mounting to the roll that is being measured (used with pillow blocks). The load cell is a strain gauge style unit that is ideal for heavy tension applications. It can be mounted regardless of orientation, but has to work in compression. Only the perpendicular force (resultant) is measured by the load cell. The perpendicular force can be at a maximum permitted angle of +/- 30 degrees. Correct load cell sizing must be adhered to so potential overload forces do not damage cells.

Specifications:

Load Ratings	N	100	250	500	1000	2500	5000	10000
	(Lbs.)	(22)	(56)	(112)	(225)	(562)	(1124)	(2248)
Size		01	01	01	01	01	01	02

Input Power

±12 to ±15 VDC
@ 45 MA ±5%

Output Signal

5VDC output at rated load

Temperature Range

0-70 degrees C
(32 -158 degree F)

Temperature drift

0.1 % of rating per degree C

Non-linearity and Repeatability

< 0.5%

Power Consumption

1 Watt

Cable

16 ft. provided with load cell

Maximum Load Ratings (See Figure 6)

Overload

120% of rated load

Compression Overload

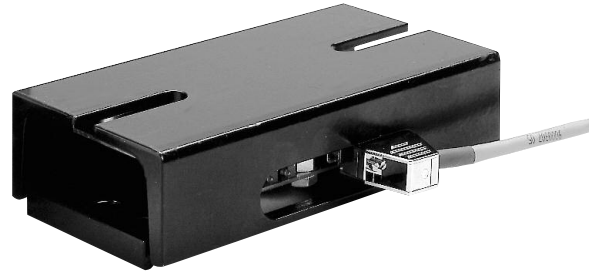
150% of rated load

Horizontal Load

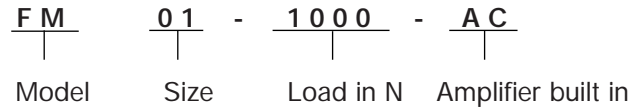
50% of rated load

Model Numbers/Part Numbers

FM01-100	6910-840-100
FM01-250	6910-840-102
FM01-500	6910-840-104
FM01-1000	6910-840-106
FM01-2500	6910-840-108
FM01-5000	6910-840-110
FM01-10K	6910-840-112



FM Series Part Numbers



Alignment



Figure 1

The sensor has been factory calibrated:

- 0VDC (No load)
- 5VDC (Rated load)

Two potentiometers and LED's are located near the "D" connector (See Figure 1) for visual indication. When used in the nominal range, both LED's are "ON". Although the load cell has been factory calibrated. The unit may be rescaled if necessary. It is recommended that a qualified technician do this procedure.

Attach a digital volt meter between the signal lead (yellow) and 0VDC (ground). With no load on the cell adjust the zero potentiometer for a 0VDC output. The zero setting LED should be "OFF". Any voltage above 0VDC, the zero LED will turn "ON".

Apply the maximum load to the cell. Adjust the gain potentiometer for a 5VDC output reading. The gain LED should be "OFF" at a 5VDC output level. Remove the load and insure the gain LED is "ON".

The zero and gain adjustments may need to be repeated a couple of times to insure proper setting.

Wiring Hookup:

The load cell requires a +15VDC and a -15VDC power supply. The 5V/15V switch inside the MCS2000-CTLC must set to +/-15VDC. Terminate all unused wires from cable.

Wiring example using One Load Cell with the MCS2000-CTLC control

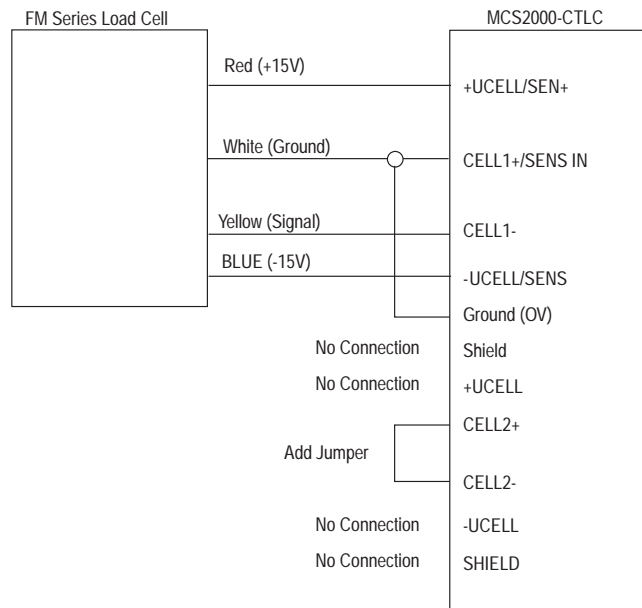


Figure 2

Wiring example using 2 load cells with the MCS2000-CTLC control

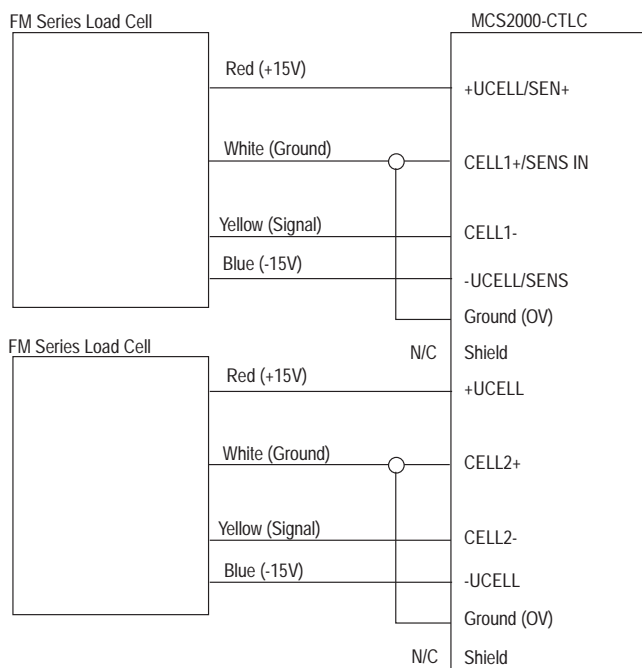


Figure 3

Notes: It is recommended to use the load cell in a compression application. It must be fitted on a flat surface in order to avoid original sensitive plate stress. Do not load the sensor before mounting it with screws on the mounting surface.

System Example:

FM Load Cell with an Electric Brake

This is a typical load cell unwind application example. The electric brake varies the tension on the web depending on the feedback from the load cell. The load cell signal is amplified and interpreted in the controller (MCS2000-CTLC). The controller then puts out a corresponding 0-10 VDC signal to the power supply and drive (MCS2000-PSDRV). The PSDRV then amplifies and interprets the signal from the controller and puts out a corresponding 0-24 VDC signal to the brake to apply either more or less braking.

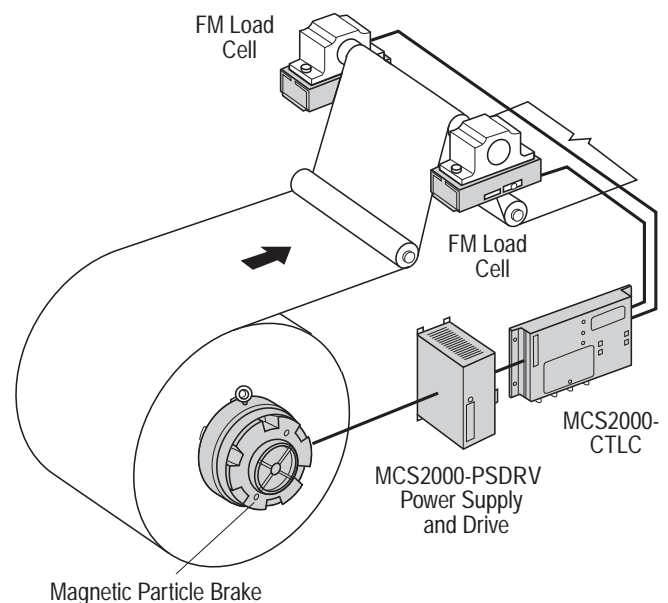
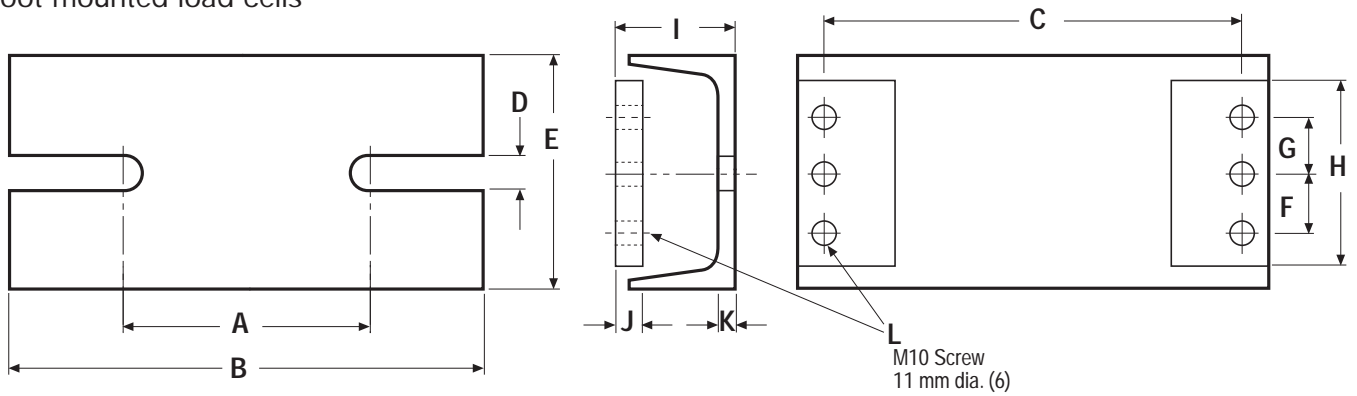


Figure 4

Dimensions

FM Series

Foot mounted load cells



(-) Denotes millimeters

Size	Load Ratings N (lbs.)	A	B	C	D	E	F	G	H	I	J	K	L
01	100 (22)												
	250 (56)												
	500 (112)	4.055	7.874	6.890	.512	4.016	.984	.984	3.150	2.047	.472	.236	.433
	1000 (225)	(103)	(200)	(175)	(13)	(102)	(25)	(25)	(80)	(52)	(12)	(6)	(11)
	2500 (562)												
	5000 (1124)												
02	10000 (2248)	5.591	8.858	7.677	.669	5.00	.984	.984	3.937	2.165	.709	.236	.433
		(142)	(225)	(195)	(17)	(127)	(25)	(25)	(100)	(55)	(18)	(6)	(11)

Figure 5

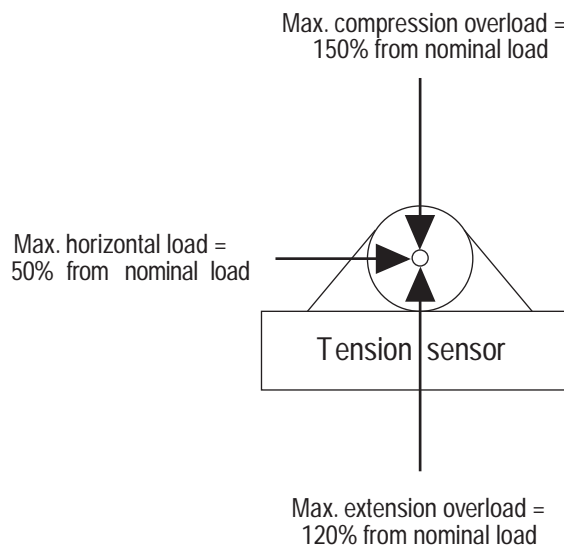


Figure 6

Warranty

Warner Electric LLC warrants that it will repair or replace (whichever it deems advisable) any product manufactured and sold by it which proves to be defective in material or workmanship within a period of one (1) year from the date of original purchase for consumer, commercial or industrial use.

This warranty extends only to the original purchaser and is not transferable or assignable without Warner Electric LLC's prior consent.

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A purchase receipt or other proof of original purchase will be required before warranty service is rendered. If found defective under the terms of this warranty, repair or replacement will be made, without charge, together with a refund for transportation costs. If found not to be defective, you will be notified and, with your consent, the item will be repaired or replaced and returned to you at your expense.

This warranty covers normal use and does not cover damage or defect which results from alteration, accident, neglect, or improper installation, operation, or maintenance.

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