

# Model 3156

## Tension/Compression Canister Load Cell



### DESCRIPTION

The Model 3156 fatigue-resistant load cells are extremely resistant to extraneous bending and side loading forces. The structure virtually eliminates bending strains at the strain gage,

minimizing the primary cause of load cell failure. Dual bridge option available for feedback control and redundancy.

### FEATURES

- English threads (metric configuration available: 3156-133)
- Resist fatigue failure
- Minimize bending strains
- Dual bridges available on all models
- Multi-beam structure design
- Enhanced resistance to side loads and bending moments

# Model 3156

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Load range <sup>1</sup>	100K, 200K, 500K, 750K N
Non-linearity	±0.2 % of rated output
Hysteresis	±0.2 % of rated output
Repeatability	±0.05 % of rated output
Output @ rated capacity	±2 mV/V (nominal)
Operation	Tension/compression
Resolution	Infinite
Standard calibration	Tension (+) and compression (-)

## ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-54 °C to 93 °C [-65 °F to 200 °F]
Temperature, compensated	21 °C to 77 °C [70 °F to 170 °F]
Temperature effect, zero	±0.003 % of rated output/°F
Temperature effect, output	±0.003 % of reading/°F

## ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Strain gage type	Foil
Excitation (maximum)	30 Vdc or Vac RMS
Insulation resistance	> 5000 mOhm @ 50 Vdc
Bridge resistance (tolerance)	350 ohm
Number of bridges	1 or 2
Zero balance	±1.0 %
Electrical termination	MS-3102E-14S-5P

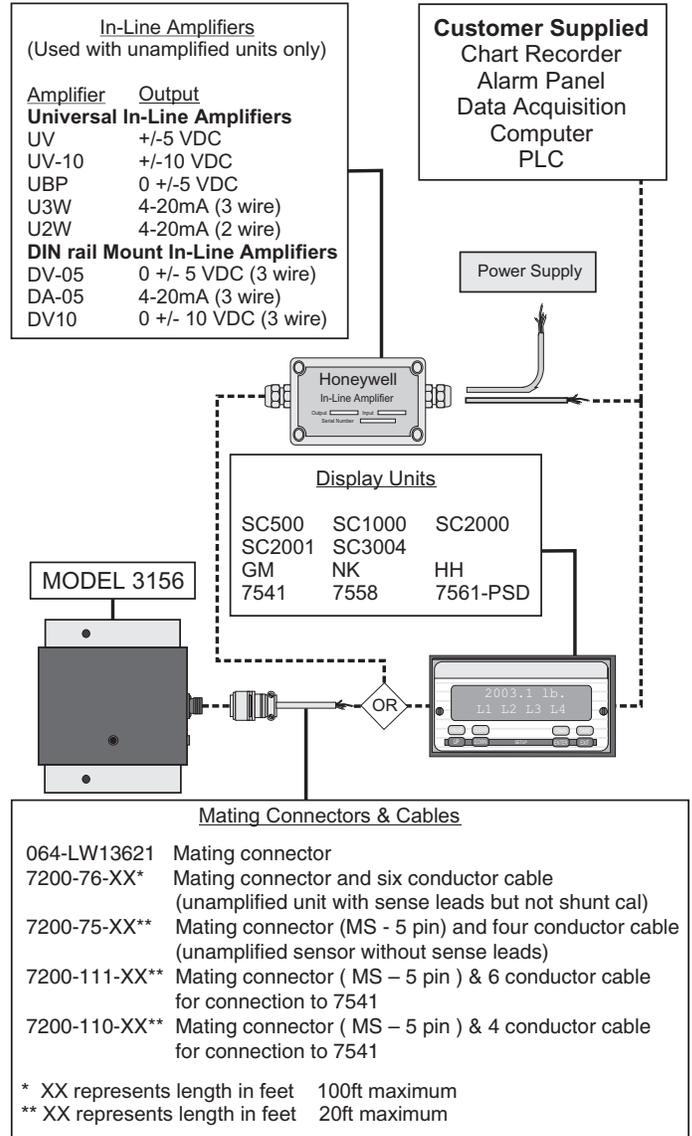
## MECHANICAL SPECIFICATIONS

Characteristic	Measure
Static overload capacity	150 % of nominal capacity
Material	Carbon steel
Fatigue life (0 to full fatigue load)	100 x 10 <sup>6</sup> cycles
Fatigue life (full fatigue tension to compression)	50 x 10 <sup>6</sup> cycles
Natural frequency	See table

## WIRING CODES

Wire	
Red	(+) excitation
Black	(-) excitation
Green	(+) output
White	(-) output

## TYPICAL SYSTEM DIAGRAM



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## NATURAL FREQUENCY

Nominal load limit capacity $F_z$		Static extraneous load limits						
lb	N	Static overload capacity (% of nominal capacity)	Fatigue capacity (% of nominal capacity)	Shear $F_x$ or $F_y$ (lb)	Bending $M_x$ or $M_y$ (lb-in)	Torque $M_z$ (lb-in)	Deflection at nominal load limit (in)	Ringing frequency (Hz)
25K	100K	150	100	2K	68K	10K	0.003	2100
50K	200K	150	100	6K	130K	20K	0.003	3000
100K	500K	150	100	10K	220K	85K	0.003	4200
150K	750K	150	100	20K	220K	85K	0.003	4800

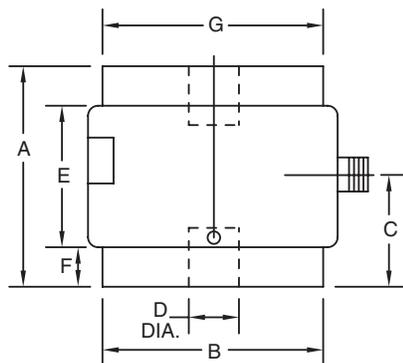
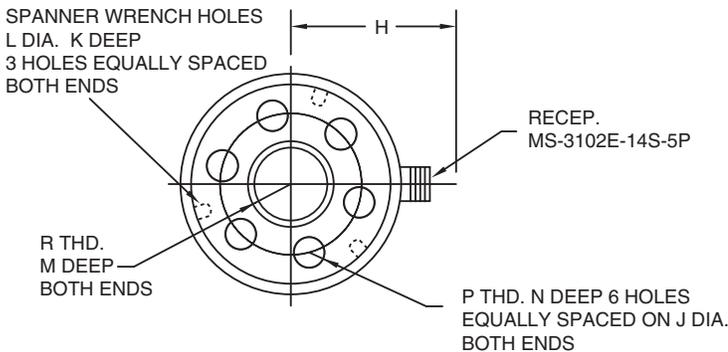
## MOUNTING DIMENSIONS

Model	A cm [in]	B cm [in]	C cm [in]	D cm [in]	E cm [in]	F cm [in]	G cm [in]
3156	17,78 [7]	13,97 [5.50]	8,89 [3.50]	5,41 [2.13]	12,07 [4.75]	2,87 [1.13]	13,84 [5.45]

H cm [in]	J cm [in]	K cm [in]	L cm [in]	M cm [in]	N cm [in]	P cm [in]	*R cm [in]
9,12 [3.59]	8,89 [3.50]	0,79 [0.31]	0,95 [0.38]	5,08 [2]	3,18 [1.25]	M20 x 2.5 [3/4-10]	M52 x 2 [2-12]

\* 3156-133 • P and R are metric thread measures  
 \* 3156 standard • P and R are English thread measures



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## NOTES

1. This unit calibrated to Imperial (non-Metric) units.

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

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Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

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### **WARNING** **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING** **MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

Sensing and Control  
Automation and Control Solutions  
Honeywell  
1985 Douglas Drive North  
Golden Valley, MN 55422 USA  
+1-815-235-6847

[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

SUNSTAR自动化 <http://www.sensor-ic.com/> TEL: 0755-83376489 FAX:0755-83376182 E-MAIL:szss20@163.com

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