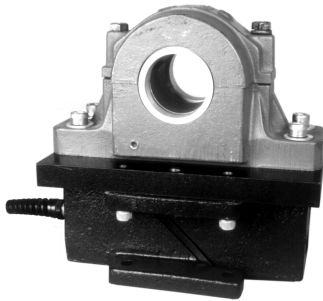


Web Tension Measurement Modules



FEATURES

- Capacity range: 500, 1K, 2K, 5K, 10K, 20K and 50K lb (227, 454, 907, 2.27K, 4.54K, 9K and 22.7K kg)
- Rugged stainless steel 'I' beam sensing section
- Resultant forces measure in the up or down direction
- Full Wheatstone bridge with SR-4® foil strain gages
- Factory calibration eliminates need for on-site test weights
- Optional adapter plate designed for on-site installation of overload safety stops
- FM and CSA approved

DESCRIPTION

HTZ-3 Web Tension Measurement Modules are designed to mount directly below roller pillow blocks in new or existing installations. Each module includes an integral mounting pad for use with an optional pillow block adapter plate. Adapter plate design allows upward or downward measurement and provides safety stop installation points at each corner. Transducers are machined from high strength stainless steel to yield a rugged 'I' Beam sensing section. A full Wheatstone bridge array of temperature compensated, Foil SR-4® Strain Gages are attached to this section and calibrated for precision accuracy. Resulting temperature stability is due to closely matching the expansion coefficient of the sensing section to the gages.

Module sealing meets NEMA 4 and IP65 requirements. An integral cable conduit fitting, epoxy sealed strain gages, and a stainless steel transducer ensure long-term reliability in wet or washdown locations.

Space required below the pillow block bearing is minimal, resulting in negligible line profile changes on retrofit installations. Overall height of the 1000 pound module is 2 inches. BLH provides HTZ-3 sizing recommendations based upon the actual sensing roll configuration.

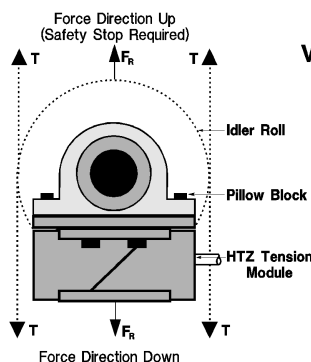
Modules are calibrated and certified with matched output signals to permit on-site, push-button system calibration.

APPLICATIONS

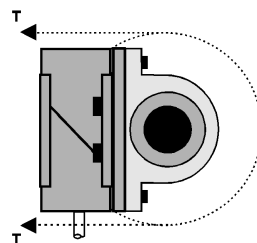
- Paper producing machines
- Roofing shingle manufacturing
- Printing presses
- Laminator zones
- Dryer zones
- Coating zones
- Felt measurement

CONFIGURATION - SYMMETRICAL WRAP ANGLES ONLY

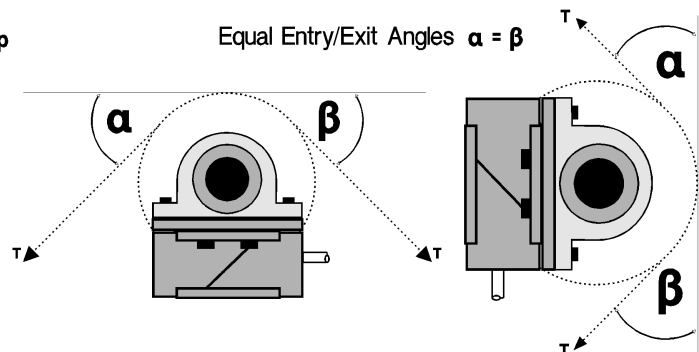
Horizontal Mounting 180° Wrap with Force Directed Up or Down



Vertical Mounting 180° Wrap



Equal Entry/Exit Angles $\alpha = \beta$



SPECIFICATIONS

Performance (% Rated Output)

| | |
|---------------------------|--|
| Capacity | 500, 1K, 2K, 5K, 10K, 20K, 50K lb (227, 454, 907, 2.27K, 4.54K, 9K and 22.7K kg) |
| Rated Output (R.O.) | 2.0 mV/V±0.1% |
| Repeatability | 0.01% R.O. |
| Combined Error (best fit) | 0.10% R.O. |
| Zero Balance | 5% R.O. |
| Creep (20 minutes) | 0.03% R.O. |
| Temperature Effects: | |
| Zero Balance | 0.0017% R.O/°F (0.003%/°C) |
| Output | 0.0020% Reading/°F (0.0036%/°C) |

Electrical

| | |
|---------------------------|----------------|
| Input & Output Resistance | 350Ω±3Ω |
| Recommended Excitation | 10 or 15Vac/dc |
| Maximum Excitation | 18Vac/dc |

Temperature

| | |
|-------------------|-----------------------------|
| Operating Range | -40 to 220°F (-40 to 105°C) |
| Compensated Range | 30 to 130°F (-1 to 54°C) |

Overload Rating - % Rated Capacity

| | |
|---------------|-----|
| Safe Load | 150 |
| Ultimate Load | 300 |

Material

| | |
|---------------------|---|
| Beam | 15-5PH Stainless Steel |
| Brackets | Ductile Iron with Enamel Paint* |
| Environmental Class | NEMA 4/IP65 |
| Moisture Protection | IEC Recommendation 68-2-4 Test D, 100 Cycles |

Deflection Under Load Unit Weight

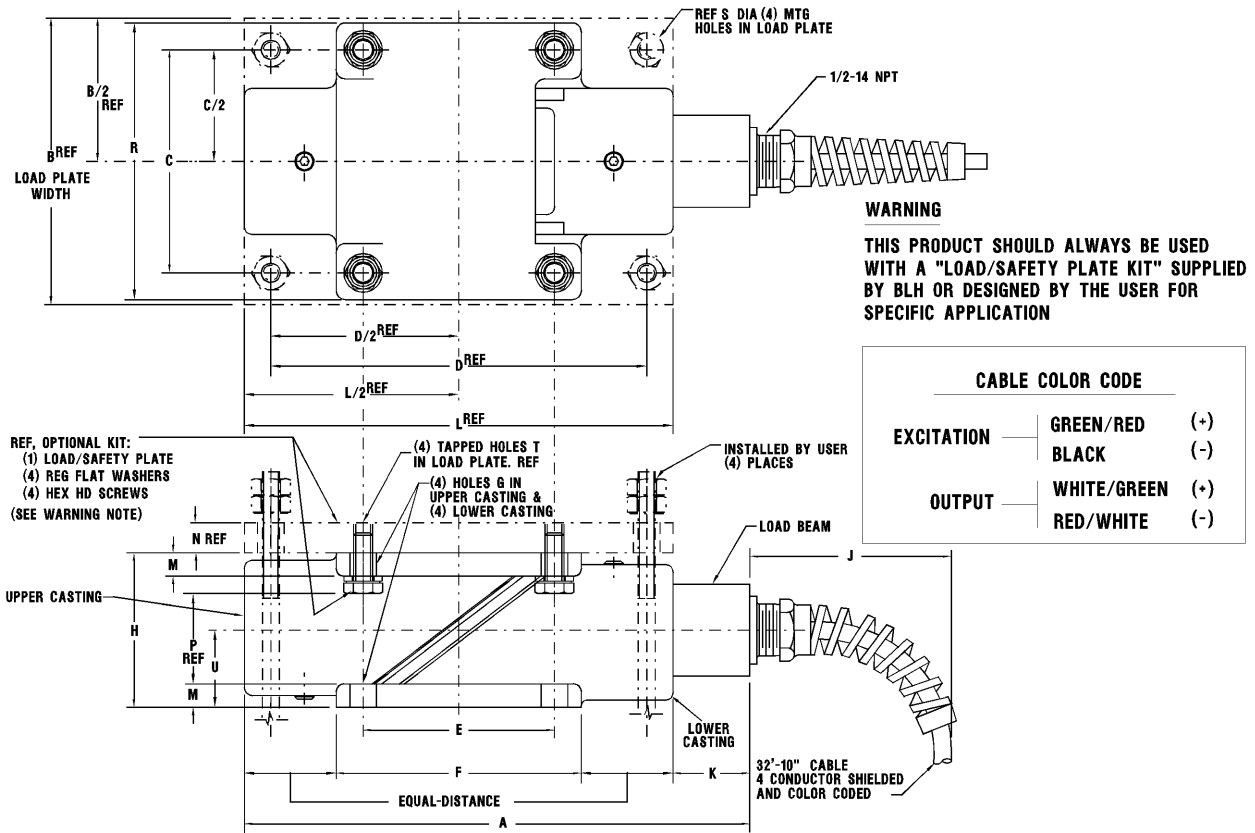
| Capacity (lb) | Deflection | Weight |
|---------------|------------|--------|
| 500, 1K | 0.012 in. | 10 lb |
| 2K | 0.013 in. | 15 lb |
| 5K | 0.027 in. | 15 lb |
| 10K | 0.023 in. | 35 lb |
| 20K | 0.047 in. | 50 lb |
| 50K | 0.066 in. | 75 lb |

Approvals

| | |
|---------------------|--|
| FM (Factory Mutual) | 3611 (Class I, II, III; Div.1,2; Groups A-G) |
| CSA | C22.2 (Class I, II, III; Div.1,2; Groups A-G) |

* single component, waterborne polyurethane copolymer - high gloss

OUTLINE DIMENSIONS



| CAPACITY (lb) | A | B REF | C | D REF | E | F | G | H | J | K | L REF | M TYP | N REF | P REF | R | S REF | T REF | U |
|---------------|-------|-------|------|-------|------|-----|-----|------|---|----------------------|-------|-------|-------|-------|------|-------|---------|------|
| 500 | 7.50 | 4 | 3.0 | 5.0 | 2.56 | 3.5 | .32 | 2.00 | 3 | 1.50 | 6 | .31 | 1/2 | 1.16 | 3.88 | .50 | 1/4-20 | 1.00 |
| 1,000 | | | | | | | | | | 1.25 | 7 | .38 | 5/8 | 1.43 | 4.5 | .62 | 3/8-16 | 1.25 |
| 2,000 | 8.25 | 4 1/2 | 3.62 | 6.0 | 3.12 | 4.0 | .43 | 2.50 | | | 9 | .56 | 3/4 | 1.91 | 5.5 | .75 | 3/8-16 | 1.67 |
| 5,000 | | | | | | | | | | | 10 | .75 | 7/8 | 2.03 | 6.38 | .88 | 7/16-14 | 1.94 |
| 10,000 | 9.00 | 5 1/2 | 4.42 | 8.0 | 3.92 | 5.0 | .43 | 3.34 | | | 12 | 1.00 | 1 1/4 | 2.03 | 7.50 | 1.00 | 5/8-11 | 2.30 |
| 20,000 | 10.00 | 6 1/2 | 5.06 | 8 3/4 | 4.18 | 5.5 | .50 | 3.88 | | FLUSH WITHIN +/- .12 | | | | | | | | |
| 50,000 | 12.00 | 8 | 6.00 | 10 | 5.00 | 6.5 | .69 | 4.60 | | | | | | | | | | |

Dimensions shown in inches.

BLH is continually seeking to improve product quality and performance. Specifications may change accordingly.

Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Vishay Precision Group, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay Precision Group"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

The product specifications do not expand or otherwise modify Vishay Precision Group's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

Vishay Precision Group makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, Vishay Precision Group disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on Vishay Precision Group's knowledge of typical requirements that are often placed on Vishay Precision Group products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of Vishay Precision Group.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay Precision Group products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay Precision Group for any damages arising or resulting from such use or sale. Please contact authorized Vishay Precision Group personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.