

HRT-3mm Running Line Tensiometer



Running line tensiometers are ideal for retrofitting existing winches to enable line tension, speed, and payout monitoring - key variables for oceanographic applications and land-based winch operations.

The lightweight HRT-3mm tensiometer is a line rider comprised of three (3) matching sheaves within a pair of side plates. A shear-beam load cell is mounted underneath the centre sheave assembly. This design results in a compact, easily mounted/unmounted unit that is perfect for instrumenting winches that do not currently have tension or payout sensing capabilities. Tensiometer measurements are converted into an electrical signal that can be processed and displayed as tension, payout, and speed readings on an LCI-90.

With the LCI-90 display, this system provides winch operators with real-time line parameter monitoring and maximum flexibility in line control, sensor calibration, and data logging.

For line tension loads from 0-13,250 pounds

- Quick installation or removal via removable upper sheaves.
- Frame made of high quality stainless steel plate for marine and offshore applications.
- Stainless steel shafts and pins, with zinc plated alloy steel sheaves hardened to Rockwell C58-C60.
- Sheaves can be sized for wires of 9, 12, 14, 16, or 20mm.
- Sealed ball bearings.
- Unit rated for tension loads up to 6 Tonne (13,250 lbs).
- Compact and rugged, the HRT-3mm can be easily removed and relocated, as needed.

LCI Display Systems - For Superior Line Control

HRT-3mm Tensiometer

HRT-3mm Specifications

Max Wire Rope Diameter: 20mm (0.79")
Tension Capacity: 6 Tonne (13,250 lbs)
Available Sheave Sizes:
9mm / 12mm / 14mm / 16mm / 20mm
Overall Dimensions:
298mm x 79mm x 190mm High
(11.75" x 3.1" x 7.5" High)
Weight: 11.4 kg (25 lbs)

Hall Effect Sensor Specifications

Single barrel construction
24 VDC power requirement
4-20mA signal output
NPN type sensor
Stainless steel construction
Cable is potted into barrel of sensor

Construction Specifications

Frame: Stainless Steel
Hardware: Stainless Steel
Sheaves: Zinc Plated Hardened Alloy Steel
Bearings: Sealed Ball Bearings
Outputs: Payout, Speed, and Tension
Load Sensor: Beam Cell, m/V
Internally gauged
4-20mA amplifier
24VDC excitation
Count Sensor: Hall Effect
(Quadrature output)
Payout: 4 targets per sheave revolution

Beam Cell Specifications

Linearity: 0.03% nominal
Repeatability: >0.03%
Hysteresis: <0.03%
Creep: <0.03%
Zero Balance: $\pm 1\%$
Output: 3mV/V @ F.S.
Excitation: 4VDC (Up to 15VDC Max.)
Overload: 200% (No Electrical Damage)
>400% (Ultimate)
Temperature Effects: <0.005% / °C
Compensated Range: -10 to +70°C
Sealing: IP68 Fully Encapsulated

General Assembly

