Tension Controller

The Hardy Instruments HI 3300 Tension Controller provides precision control of winding, unwinding, and intermediate zones in both web and strand processing applications.

PRECISION CONTROL

The Hardy Tension Controller incorporates an automatic closed loop process to provide precision control over the tension of a web or strand application. It features either a single or dual sensor input to allow for tension measurements on either web rolls, or strand pulleys.

The controller measures the tension of the actual product using WAVERSAVER®, Hardy's industry-proven technology that ignores machine vibration to provide accurate readings. Measuring the product's tension eliminates common problems found in web and strand processes including feathering, breakage, telescoping, wrinkling, and blocking.

The Controller utilizes a PID algorithm to control tension in unwind, rewind or intermediate zones. The standard output from the Tension Controller is 0-10V / 4-20 mA, which can be directed to a brake or a drive. Hardy also provides pneumatic systems to convert the analog output to a pneumatic signal for airbrake operation.

The user-friendly keypad and display provide a short learning curve for plant operators, and menu security levels allows greater control over process setpoints.

QUICK CALIBRATION

The Tension Controller is equipped to provide a quick and painless calibration, with minimal downtime. The Hardy C2® Electronic Calibration allows you to perform a calibration through one-touch initiation without the use of test weights. The Hardy Soft Calibration method allows you to calibrate by entering a reference value and the sensor sensitivity. Finally the Hard Calibration method allows traditional calibration with test weights.

ELECTRONICS DIAGNOSTICS TOOLS

The Smart Diagnostics capability of the Tension Controller allows you to pinpoint process issues from the front panel or remotely, via a PC and a web browser. This provides you with the tools to quickly troubleshoot problems such as tension signal fluctuations and zero shift issues, thus minimizing costly downtime.

MAPPING

Hardy's mapping feature allows any relay output, input, or alarm to be assigned to any of the states, parameters, or values in the instrument. This feature provides you with the flexibility to customize to your specific application without adding costly components.

NETWORK COMMUNICATIONS

Hardy provides network interfaces for all types of plant networks and PLC systems. Whether communicating with a PC, the internet, an Allen Bradley PLC®, or a Siemens controller, Hardy can provide the interface. With the integrated mapping capability, network communications can be set up in a click-and-drag format.

HARDY INSTRUMENTS

COMPONENTS TO COMPLETE YOUR HARDY NSTRUMENTS SYSTEM

Hardy provides the all the components you need to complete your tension control system:

Load Cells / Tension Sensors

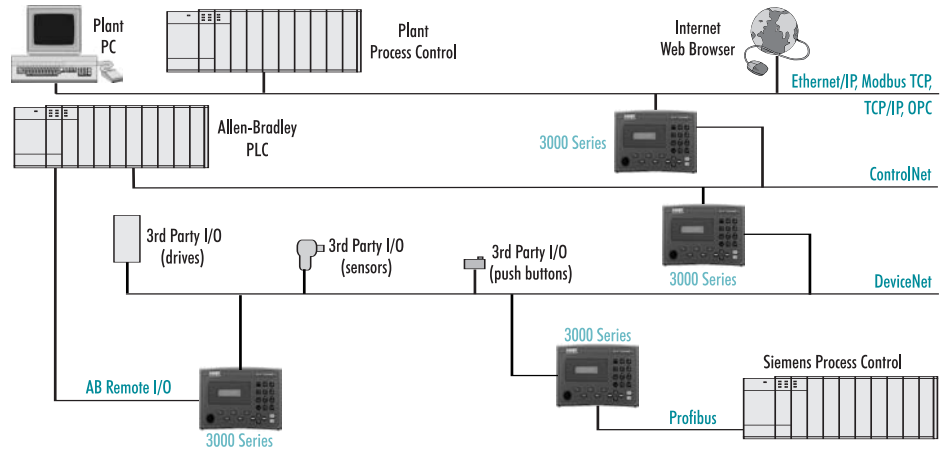Hardy offers strain gage and LVDT load cells in various mounting versions and in a wide range of capacities.
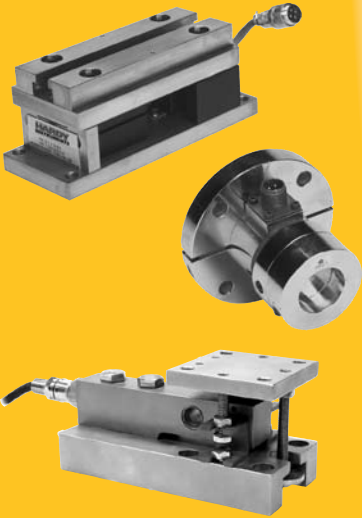
Pneumatic Brakes

Hardy Instruments supplies air brakes of all capacities for use on unwinding applications. Hardy also provides I/P (electrical to pneumatic) converters and air filters.

NETWORK CONFIGURATIONS

Plant PC
Plant Process Control
Internet Web Browser
Ethernet/IP, Modbus TCP, TCP/IP, OPC
3000 Series
Allen-Bradley PLC
ControlNet
3rd Party I/O (drives)
3rd Party I/O (sensors)
3rd Party I/O (push buttons)
3000 Series
DeviceNet
3000 Series
Siemens Process Control
AB Remote I/O
3000 Series
Profibus

SPECIFICATIONS

- **Display**
  64 x 128 Graphics Display with backlit LCD
- **Update Rate**
  55 times per second
- **Averaging**
  Sliding up to 250 readings in single unit increments
- **Resolution**
  Display 1:985,000 (3mv/v load cells)
  Internal 1:1,048,000
- **Standard Interfaces**
  Ethernet: 10/100base T; embedded web server
  Infrared (IR): wireless connection to Palm OS PDAs
- **Stable Weight Reading**
  WAVERSAVER® 0.25 Hz minimum
- **Calibration Techniques**
  C2®, Second Generation Calibration (elec-tronic Traditional calibration with test weights); soft calibration
- **Instrument Local I/O**
  Five mappable inputs optically isolated
  Four mappable outputs 48-240VAC Form A
  Third party mappable over DeviceNet®
  Dual 4-20 mA output
- **Load Sensors**
  Inputs from strain gage and LVDT load cells
- **Power Requirement**
  108-264VAC, 47-63hz or 12-24 VDC
  10 Watts maximum
- **Operating Temperature**
  -10° to 50° C (14° to 122°F)
- **Storage Temperature**
  -20° to 70° C (-4° to 158°F)
- **Enclosure**
  Panel Mount; Swivel Mount
- **Dimensions**
  Panel Mount
  - Depth 6.03" (153mm) with rear cap
  - Panel Cutout: 8.94"W x 6.63"H
              (227 mm W x 169mm H)
- **Approvals**
  CE, UL CUL

MODELS

HI 3300: includes dual analog output and single channel input

OPTIONS

- Dual sensor input
- Environmental real cap
- DC power
- DC relay outputs
- OPC
- Modbus TCP
- ControlNet
- Allen Bradley Remote I/O
- Profibus
- DeviceNet (master)
- EtherNet/IP

**To learn more about the Tension Controller, to download data sheets, drawings or manuals, visit:
www.hardyinstruments.com

Or call us:
800-821-5831
+1-858-278-2900**

ISO 9001:2000
C E R T I F I E D
Since 1993

HI 3300 Rev0107