

# Z4-NL

NIP Tension Controller



## Z4-NL NIP (Intermediate) Tension Controller

The Z4-NL provides accurate, repeatable tension control in NIP (intermediate) web processing. Utilizing feedback from load cells and a tachometer, the Z4 outputs to a drive. A wide range of functions and features ensures maximum process quality right from the start.

### Features & Benefits

#### ODVA Ethernet/IP Communication Option

Z4 Controllers are available with ODVA Certified Ethernet/IP Communication

#### Web Break Detection

Triggers an alarm output should the controller detect a sudden change in tension, such as when the web breaks, minimizing waste and loss of productivity and protecting valuable machine components.

#### Hybrid Controller

Digitally controlled analog processing optimized to produce accurate, repeatable web tension.

#### Set It & Forget It Technology

Set-up and operation parameters reduce the need for constant monitoring.

#### 7" Interface Display Screen (optional)

A high definition, crystal clear, and easy to navigate HMI blending form and function into one convenient package.

#### Multiple Mounting Options

- Standalone circuit board
- Circuit board with remote HMI
- Circuit board and HMI in a dust proof, water resistant enclosure

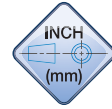
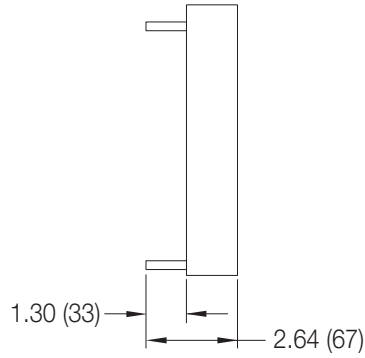
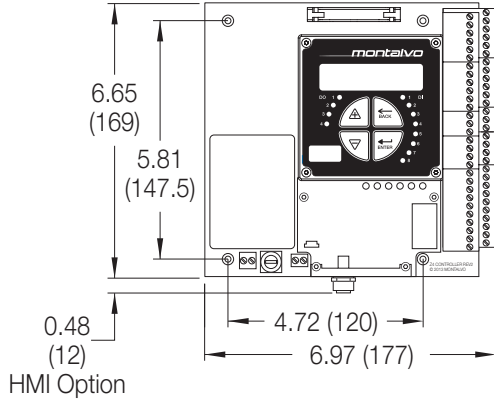


#### Additional Z4 Controller Types

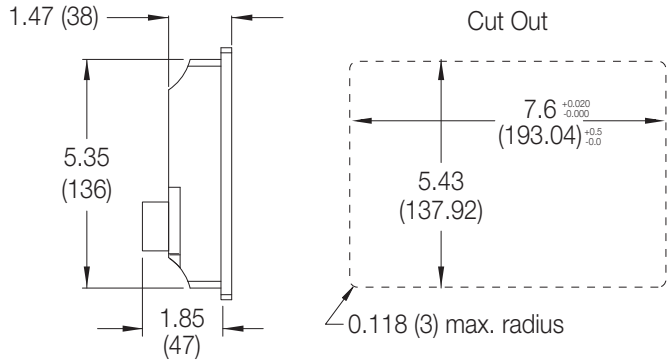
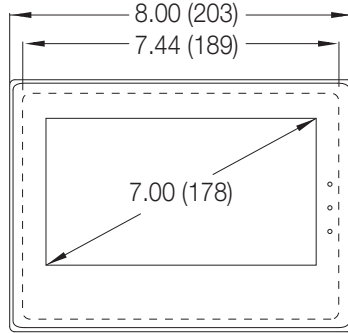
- ✓ Unwind/Load Cell
- ✓ Rewind/Load Cell
- ✓ Dancer/Tension Indication
- ✓ Dancer

**Dimensions**

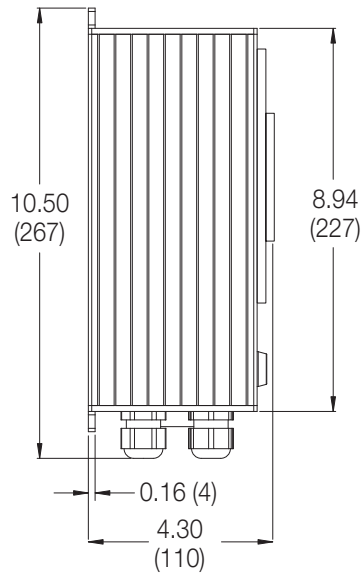
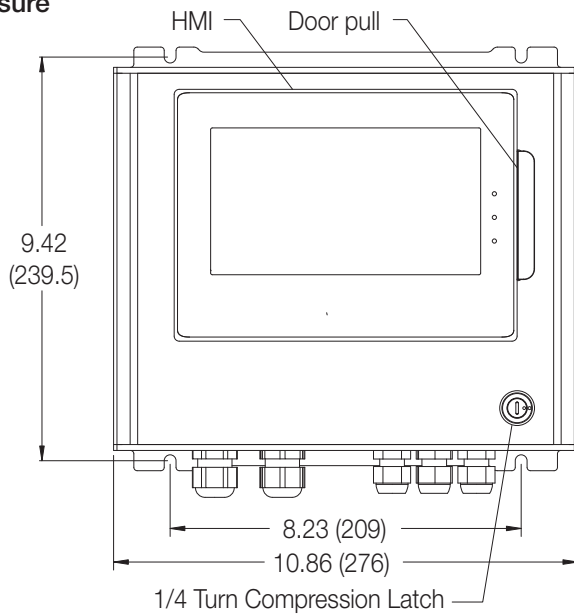
**Circuit Board**



**HMI**



**Enclosure**



**How to Specify**

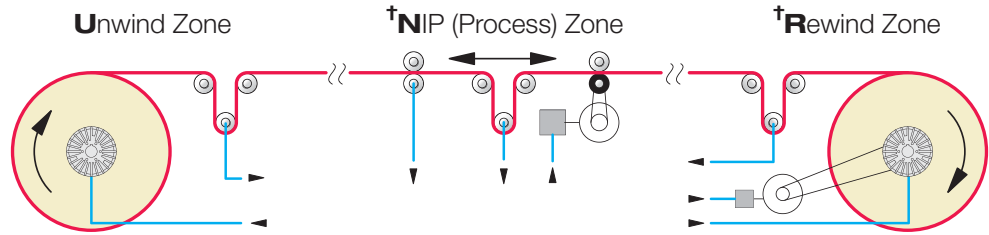
**Series**

Z4

**Type**

U, N, R

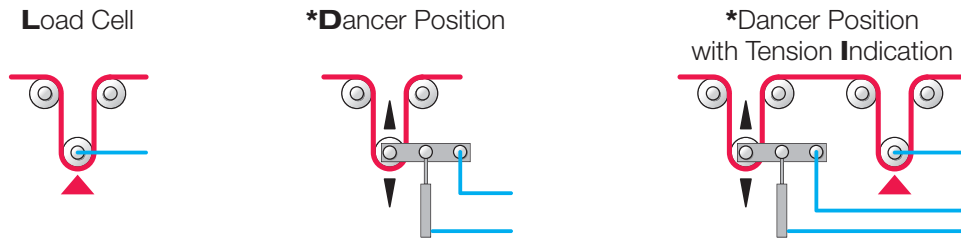
† **NIP** and **Rewind** type controllers work in conjunction with **Load Cell** Input only - see Input below.



**Input**

L, D, I

\* **Dancer Position** Input (**D** and **I**) available for **Unwind Zone** controllers only - see Type above.



**Supply**

A, D      100-240 VAC      24 VDC

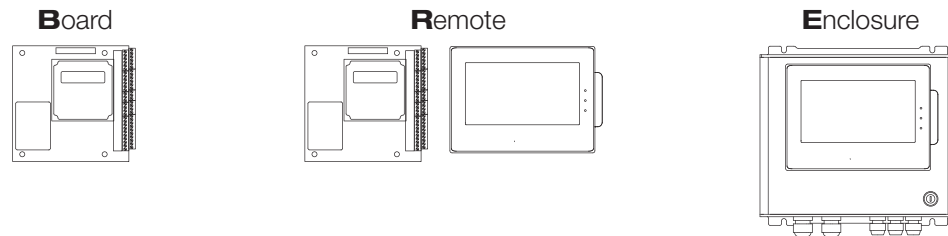
**Communications (module option)**

N, U, E      **None**      **\*\*USB** (used for configuration only with PC) (HMI connector onboard)      **Ethernet** (USB and HMI connectors onboard)

**\*\*USB** module is *standard* with **Remote** and **Enclosure** version controllers (*required* for connection to HMI).

**Version**

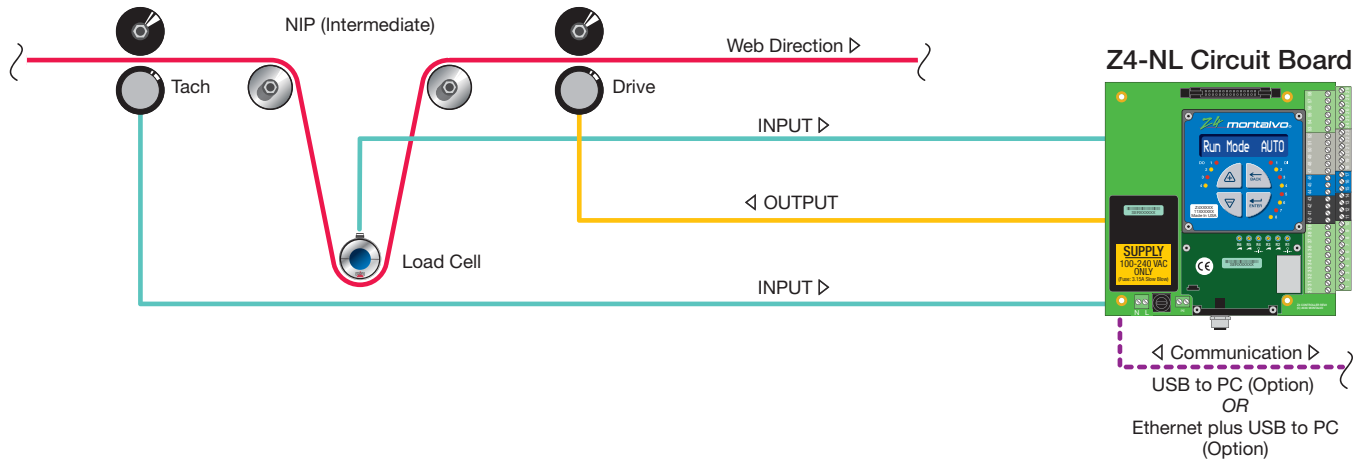
B, R, E



**ORDER CODE EXAMPLE:**



**How It Works**



**Specifications**

**Electrical**

Supply Voltage  
 Standard ..... 100 -240 VAC ±10% (IEC-60204-1) 47 to 63 Hz  
 Fuse ..... 3.15A Slow Blow  
 Option (factory configured) ..... 24VDC  
 Fuse ..... 1.0A Slow Blow  
 Overvoltage Category ..... II (IEC 664)  
 Test Voltage ..... 3.75 kV in 1 min. primary to secondary  
 Max Power Consumption AC Version ..... 25VA typ. (50VA max.)  
 Max Power Consumption DC Version ..... 12VA typ. (25VA max.)  
 Noise Immunity ..... EN 50082-2 industrial  
 Noise Emission ..... EN 50081-1  
 Load Cell Supply ..... ±2.5V ±5%  
 Load Cell Input ..... 0 to ±250mV  
 Load Cell Input (optional) ..... 0 to 10V  
 Zero Range (tare) ..... 50% of load cell rating  
 Calibration Range ..... 11 to 480  
 Regulator Outputs ..... 0 to 10V (max. load -5mA)  
 ..... 4 to 20mA / 0 to 20mA (RL = 0 to 1000Ω)  
 Meter Outputs ..... 0 to 100µA (RO = 100kΩ)  
 ..... 0 to 10V (max. load -5mA)  
 Analog Input Voltage ..... 0 to 10V (RI = 1000Ω)  
 Digital Input Voltage ..... 15 to 30V (RI = 10kΩ)  
 Digital Output Voltage ..... 24V ±15% (max. load 100mA)  
 ..... Total load 4 outputs 350mA  
 Standards ..... Designed to meet UL 508 and EN 60204

**Environmental**

Temperature Range  
 Operating  
 Circuit Board ..... 32 to 122°F (0 to 50°C)  
 HMI ..... 32 to 113°F (0 to 45°C)  
 Enclosure Version ..... 32 to 113°F (0 to 45°C)  
 Storage  
 Circuit Board ..... 14 to 176°F (-10 to 80°C)  
 HMI ..... 14 to 140°F (-10 to 60°C)  
 Enclosure Version ..... 14 to 140°F (-10 to 60°C)  
 Degree of Protection  
 Circuit Board ..... IP10  
 HMI ..... IP65  
 Enclosure Version **IP54**  
 Certification ..... CE

**Functions**

Auto Setpoint ..... Standard  
 Manual / Auto ..... Standard  
 Manual Setpoint ..... Standard  
 Tension Off / On ..... Standard  
 Dual Calibration ..... Configurable

**Communications**

USB (used to configure controller from PC)  
 ..... Optional (with **B**oard only controller)  
 ..... Standard ( with **R** and **E** controller versions)  
 Ethernet I/P (includes USB) ..... Optional (**B**, **R** and **E** controller versions)



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