



**DOUBLE E**  
G R O U P

# TENSION CONTROLLER



**ONE CONTROLLER - MULTIPLE USES!** The Double E Group **tension controller** is a DIN rail mountable controller that is configurable for multiple uses. The unit can be used stand-alone with our color touch panel HMI or integrated into the user's logic system.

The Double E Group tension controller is available as part of a complete integrated tension control solution. The pre-wired and pre-plumbed UL approved control box provides terminations for external sensing devices and provides signals to the control devices. This economical and easy to implement unit is excellent for stand alone applications as well as end users who demand a high quality, low cost tension control answer. Single, dual, splicing and custom configurations are available.

## OPEN LOOP TORQUE CONTROLLER

The Double E Group controller uses a distance measurement sensor to monitor roll diameter as the roll unwinds. The controller compares values registered by the diameter sensor with set values then signals the brake or unwind drive to adjust accordingly.

## CLOSED LOOP UNWIND CONTROLLER

The controller uses a dancer roll system or load cells to directly sense web activity. This signal is then compared to a setpoint, and through a PID loop, provides real time feedback to an unwind brake or drive to correct for any variations in tension.



## CLOSED LOOP UNWIND CONTROLLER WITH INERTIA COMPENSATION

The controller operates as described above in closed loop mode, but also uses a diameter input to measure the diameter (and effectively the mass) of the unwinding roll. The roll size value is used to adapt the PID loop as well as the output signal when the roll is accelerating or decelerating for optimal system response at any roll size.

## INTERMEDIATE TENSION ZONE CONTROLLER

The controller is connected to load cells or a dancer in the middle of a web process between driven nip or pull rolls. The controller PID output adjusts the speed difference between the two drives and is either increased or decreased to correct for variations in tension.

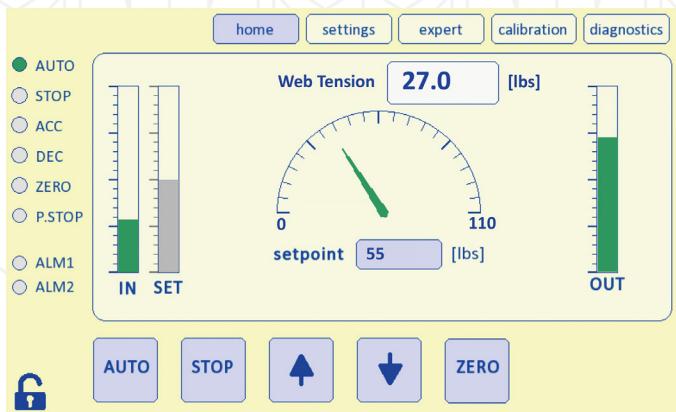
SCAN ME!



**ee-co.com**

## FEATURES

- One controller style for all applications
- Easy operator interface color touch screen HMI
- Simple calibration
- Optional prewired integrated system cabinet
- Measured tension output signal for secondary display
- Automatic/Stop mode through remote switch
- Optional remote tension setpoint through analog input
- Selectable analog inputs (mV load cells, 0-10V, 4-20mA)
- Selectable analog outputs (0-10V, 4-20mA)
- RS232 Modbus serial communication
- Can be used with Double E Group load cells or existing load cells



## Technical Specifications - Controller

### Analog Inputs (4) - 12bit with 10ms sampling time

AI0 – 0-40mV for non-amplified load cells

AI1 – 0-10V for remote tension setpoint

AI2 – selectable 0-10V or 4-20mA can be assigned to roll diameter or speed

AI3 – selectable 0-10V or 4-20mA can be assigned to amplified load cell or dancer

### Analog Outputs (2) - 16bit with 10ms refresh rate

AQ0 – selectable 0-10V or 4-20mA for control output to brake or motor driver

AQ1 – selectable 0-10V or 4-20mA for dancer air pressure or remote display

### Digital Inputs (6) - 3-30V range

DI0 – AUTO/STOP contact

DI1 – PRIORITY STOP contact

DI2 – ACCEL contact

DI3 – DECEL contact

DI4 – Speed encoder input – high speed pulse

DI5 – parameters set contact

### Digital Outputs (2) - 24V high state, max combined current draw 200mA

DQ0 – Alarm 1 (tension / position)

DQ1 – Alarm 2 (tension / position or diameter)

### Power Supply

24VDC / 500mA max

### Operating Temperature

0 to 50°C

### Ingress

IP20

### CE Certified

## Technical Specifications - HMI

### Display

7" 16:9 TFT

### Resolution

800 x 480 pixel

### Color

65,536 colors

### COM2

RS232 connected to controller

### Power Supply

24VDC / 200mA max

### Operating Temperature

0 to 50°C

### Operating Humidity

10 to 90% non-condensing

### Ingress

IP65 (front panel)

### FCC Compatibility

Complies with FCC Class A

### CE Certified