Tension Controls

Modular Control Components

BXCTRL
Tension Control
(P/N 6910-448-306)

Tension Controller

The BXCTRL controller is a solid state electronic control that receives signal from a Dancer pivot point sensor or 2 Load cells. It integrates 2 separate Digital PID Controllers and 2 separate Open Loop controls.

All setup can be made through a user friendly application and saved to the integrated memory, an SD card or your computer. Wire up to two Load cells or a Dancer arm to get a closed loop control with a linear or auto. compensation.

When associated with the BX2DRV, the controller becomes the BXCTRL-BX2DRV. Power supply, input and communication will be made by an internal connection.

Specifications

Main Supply Voltage	24VDC +/-5%
2 Channels Sensors Input	Dancer Arm or up to two Load Cells (customer provided)
2 Channels Output	Selectable 0-10V or 4-20mA through an application
2 PID Controller	PID Gain adjustable with the application
USB Connection	Connect your BXCTRL to your computer with a USB cable and get access to the application
User Friendly Application	Setup all parameters through a user friendly application and get a graphic overview.
Parameters Partitions Saving	Through the application save your parameter partitions on your computer or in an SD card.
Open Loop Control	Get an open loop control by wiring an external sensor. Selectable 0-10V or 4-20mA
Linear and Auto. Compensation	Get a closed loop control with a linear or auto. compensation. Selectable with the application

BX2DRV
Driver
(P/N 6910-448-305)

Tension Controller

This double channel driver can accept both voltage (0-10V) or current loop (4-20mA) input signals.

With being associated to a remote potentiometer, it will become an Open Loop Control, permitting then to manually control the braking torque.

Optional Rail DIN fixation available.

For use with TB, ATT and MPB or MPC unit.
POB, PRB-H, PTB, PMC, PHC or POC.
Sizes 10 or smaller.

Specifications

Main Supply Voltage	24V DC +/-5%
2 Channels 4A Output	0-24V or 0-4A Selectable with Anti residual
2 Analog Input	0-10V or 4-20mA Selectable
Easy to set up	ON and OFF Mode Inputs
2 Auxiliary Inputs with a Calibration Feature	Get an open loop control with a roll diameter compensation Sensor Input 0-10V or 4-20mA Selectable

BXCTRL-BX2DRV
Driver
(P/N 6910-448-307)

Tension Control/Driver

Combines control and driver characteristics of BXCTRL and BX2DRV with a 24 volt driver in a single housing.

Tension Controls

Modular Control Components

DRV2
Driver Control
(P/N 6910-448-109)

Tension Controller

Dual Channel/Dual Voltage Driver for 24 VDC or 48 VDC Operation. For use with MTB brakes or POB, PRB-H, PTB, PMC, PHC or POC. Size 20 or smaller.

Specifications

Input Voltage	24 Volts DC or 48 Volts DC, + / - 10%
Output Voltage	24 VDC or 48 VDC depending on power supply input voltage. In Overvoltage mode, output voltage is limited to 48 volts DC for 30 seconds before reducing to 24 VDC.
Output Current	Maximum of 4.5 amps DC per channel. Overload capacity to 6 amps maximum per channel for 30 seconds, to be followed by maximum 3 amps for a period of minimum 120 seconds.
Anti-Residual Output	10% of input power supply voltage. Adjustable for each channel. -2.4 volts DC with 24 VDC power supply input -4.8 volts DC with 48 VDC power supply input
Analog Input Voltage:	0 to 10 Volts DC on Input A or Input B. When operating with 48 volt DC power, input of 0 to 5 volts corresponds to 24 Volt DC output, and from 5 to 10 volts input overvoltage mode from 24 to 48 volts DC with timed limitation
Status and Diagnostic Indicators:	2 LED's on each channel indicate normal operation and fault conditions during operation. One Green and one Red LED.
Input	Polarity protected to prevent damage in the event of inversion of DC power supply voltages.
Output	Short circuit protected during operation and power up. Output is also protected from overload conditions. Once short circuit is detected, drive locks out for 10 msec and resets. After 4 cycles, drive trips out and requires reset.
Reset Mode	Requires power off and then power on to reset driver.
Wiring	Via 10 position pluggable terminal block.

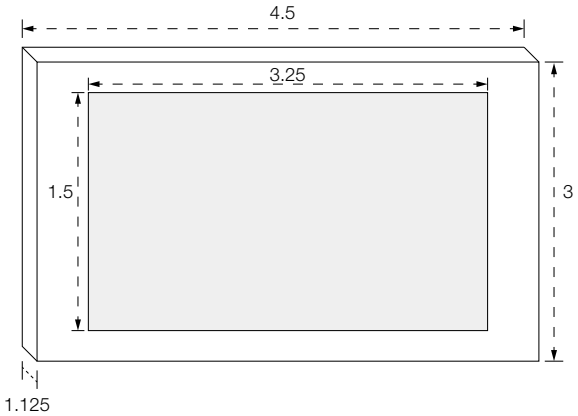
XPRO
Tension Control System
(P/N 6910-448-308)

Tension Control System

The XPRO human interface is an optional component to the Warner Electric BXCTRL control which is providing to the user an easy way to get access to the PID regulation SetPoint.

It is generally used with load cells application when the current Tension needs to be changed when running.

It's offering some display screens which could be setup to show some curves or some other data as the current tension, the real time output voltage.



Electro-Pneumatic Transducer

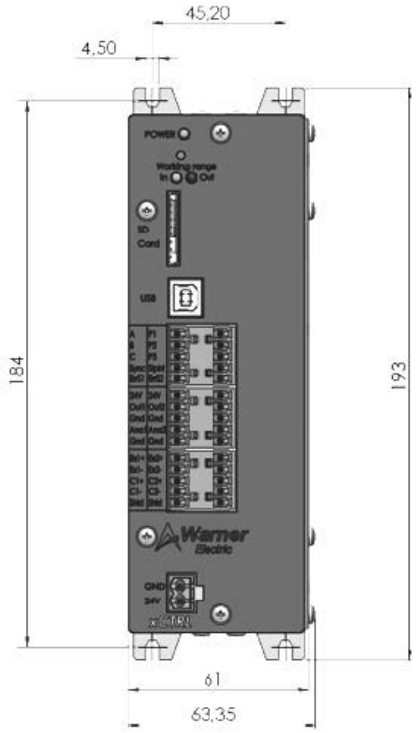
(P/N 6910-101-066)

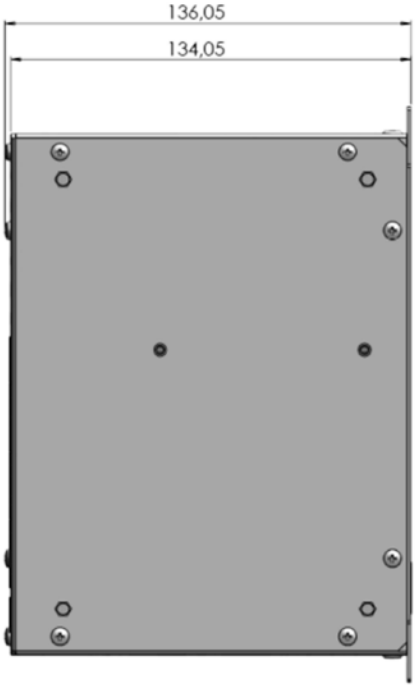
Used for interfacing with pneumatic brakes. Warner Electric offers a convenient package that consists of an air filter with automatic moisture drain, together with one I/P (current-pressure) transducer.

Specifications

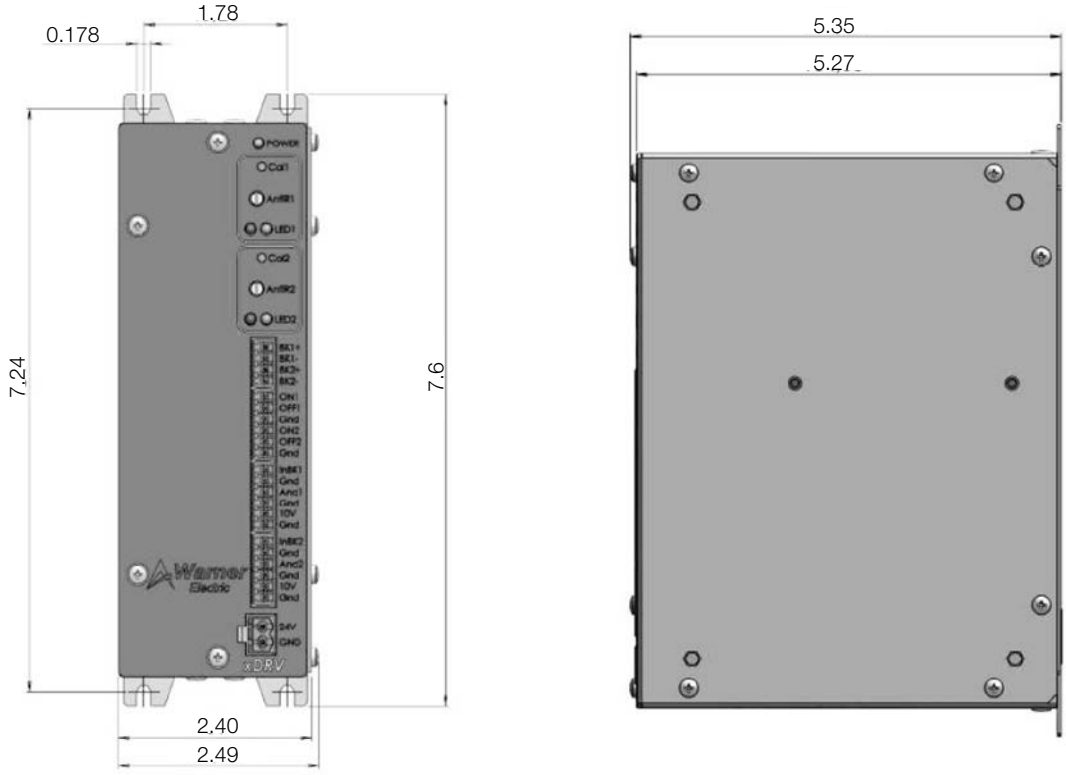
Input signal	4–20mA
Output range	0–120 Psig.
Supply pressure	20–150 Psig. **Note:** Supply pressure to the transducer must always be at least 5 Psig. above the maximum output pressure required for the brake.
Temperature range	-20°F to 150°F
Minimum air consumption	6.0 (SCFH) at 15 Psig.
Supply pressure effect	1.5 Psig. for 25 Psig. supply change
Pipe size	1/4" NPT (transducer and filter)

BXCTRL Dimensions

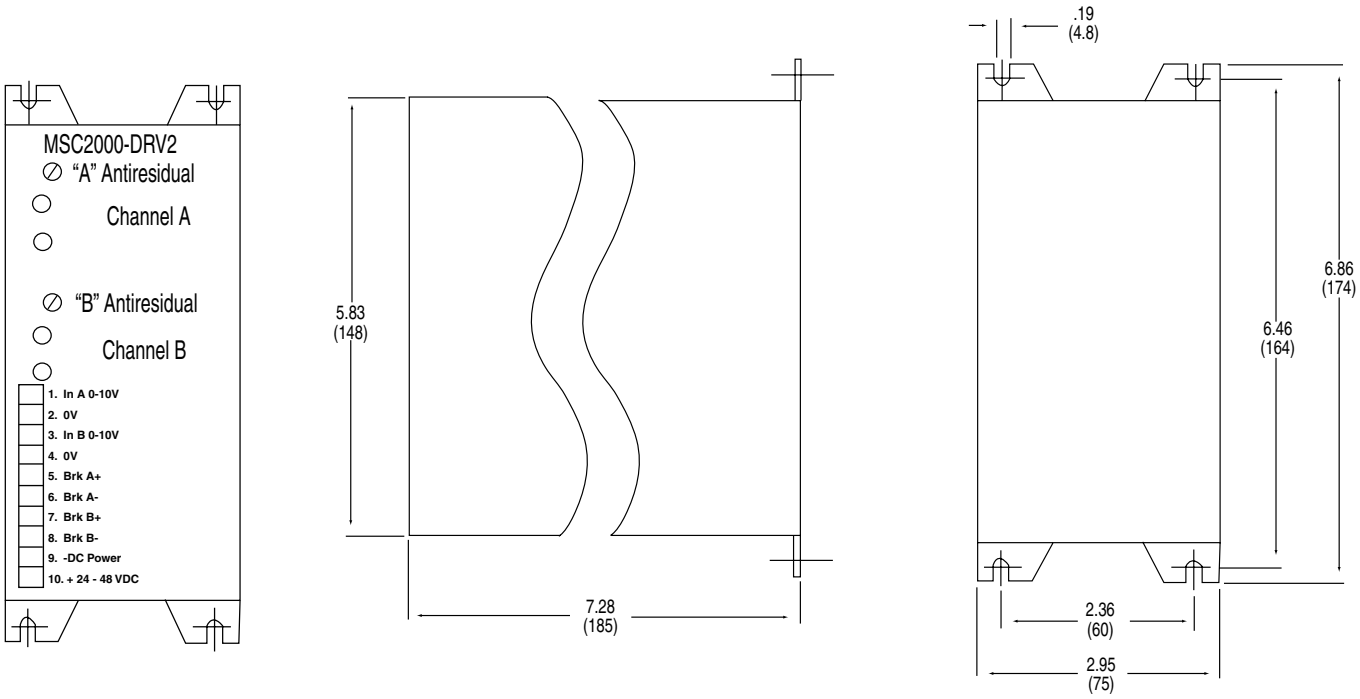




BX2DRV Dimensions



DRV2 Dimensions



Tension Controls

Analog/Manual Control for Electric Brake Systems

TCS-200-1
(P/N 6910-448-086)

TCS-200-1H
(P/N 6910-448-087)

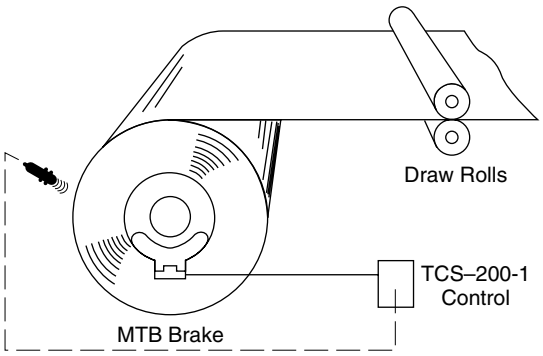
TCS-200
(P/N 6910-448-126)

TCS-200-1-C
(P/N 6910-448-089)
(not shown)

Analog/Manual Control

The Analog/Manual Control is a basic, low cost, open loop control for manual type operation of Electro Disc tension brakes. A remote torque control function is available that enables the operator to control the desired tension from any convenient location. A roll follower feature provides automatic adjustment of brake torque proportional to roll diameter change. For the TCS-200-1 and TCS-200-1H analog inputs can be followed.

Typical System Configuration



The complete system consists of:

1. Tension brake
2. Analog tension control
3. Control power supply
4. Optional sensor inputs (customer supplied)

The control unit maintains a current output to the tension brake based on an analog input or the manual setting of the control tension adjustment dials. Varying the current from the control creates more or less brake torque for tension adjustability.

Specifications

Input	
TCS-200	24–30 VAC, ±10%, 56/60 Hz, single phase
TCS-200-1, TCS-200-1H	115/230 VAC, ±10%, 50/60 Hz, single phase
Output	
TCS-200	PWM full wave rectified, 0–3.24 amps current controlled
TCS-200-1	Adjustable 0–24 VDC, 4.25 amps maximum continuous
TCS-200-1H	Adjustable 0–24 VDC Maximum of 5.8 amps continuous
	Can be used with any 24 VDC tension brake. TCS-200 requires sense coil for operation. Sense Coil – 275-3893 TCS-200-1 and TCS-200-1H can be used with or without sense coil.
Ambient Temperature	
TCS-200	–20° to +115°F (–29° to +46°C)
TCS-200-1, TCS-200-1H	–20° to +125°F (–29° to +51°C)
Sensor Inputs	
Remote Torque Adjust **TCS-200, TCS-200-1, TCS-200-1H**	1000 ohms
Roll Follower	
TCS-200	10K ohms
TCS-200-1, TCS-200-1H	1000 ohms
Analog Voltage Input	
TCS-200-1, TCS-200-1H	0–10 VDC (optically isolated when used with an external 15–35 VDC supply)
Analog Current Input	
TCS-200-1, TCS-200-1H	4–20 mA (optically isolated when used with an external 15–35 VDC supply)
Auxiliary Inputs	
Brake Off (all models)	Removes output current to the brakes. Puts the brake at zero current.
Brake On (all models)	Applies full voltage to the connected brake.
Front Panel Adjust	
Tension Adjust (all models)	Provides current adjust to the brake from 0–100%. In the remote mode, provides for maximum output level set to the brake.
Brake Mode Switch (all models)	Allows for full brake on, run, or brake off modes of operation to the brake.
Indicators (all models)	Green LED power indicator showing AC power is applied to the control. Red LED short circuit indicator showing shorted output condition. Resettable by going to brake off mode with front panel switch.
General (all models)	The control chassis must be considered NEMA 1 and should be kept clear of areas where foreign material, dust, grease, or oil might affect control operation.

Note: When used with other than MTB magnets, inductive load must be supplied – PN 275-3843. Consult factory for details.