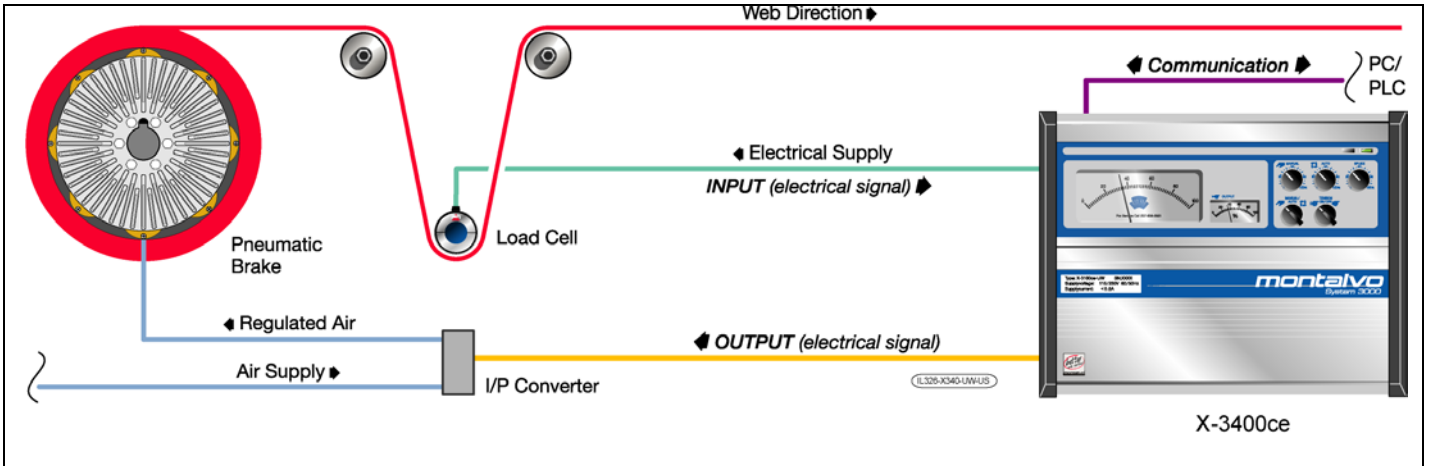
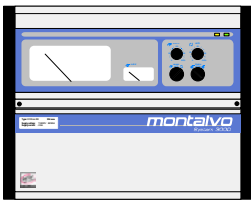


X-3400ce-UW Installation & Startup

Controller System



Mechanical Installation

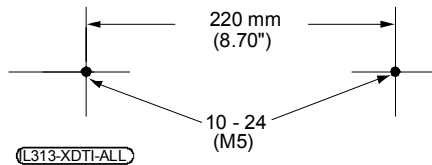


Mount the controller in a dry place, away from any source of heat.

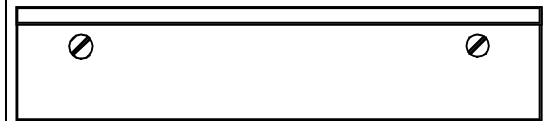
Mount the controller in an area free of excessive vibration.

If possible, mount the controller at eye level and in a location that is accessible to the operator.

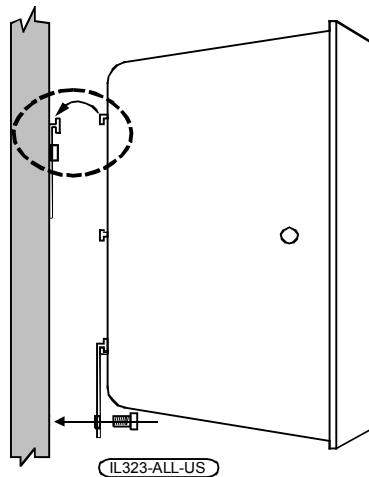
If an I/P converter is used, mount it as close to the brake as possible.



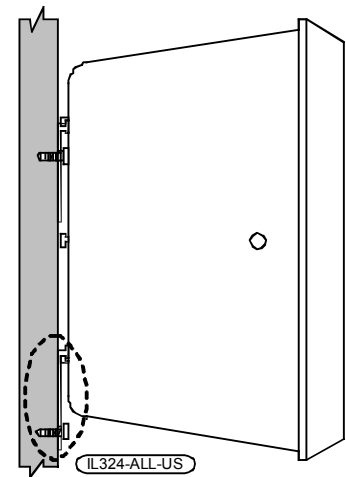
1. Drill 2 holes in the mounting surface 220mm (8.70") apart.



2. Secure the large bracket to the mounting surface with appropriate pan head or flat head fasteners.



3. Place the small bracket in the bottom slot on the back of the controller. Place the controller on the large bracket on the mounting surface. Slide the small bracket to the center of the controller and mark the mounting surface through the hole in the bracket.

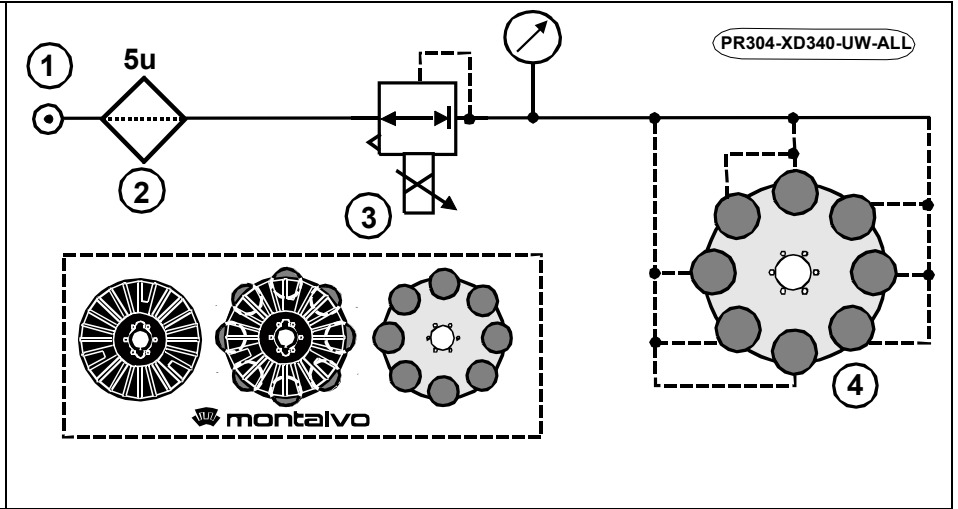


4. Slide the small bracket to one side. Drill a mounting hole for the small bracket as marked in step 3. Slide the small bracket back into place and secure with an appropriate pan head or flat head fastener.

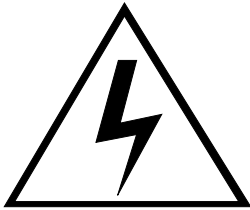
Pneumatic Installation

Connect main air supply (1) to the air filter (2), the air filter to the I/P-converter (3), and the I/P converter to the brake cylinders (4) (see diagram).

Recommended: Install an air pressure gauge / manometer in line with the brake if the gauge is not present on the I/P converter.



Electrical Installation



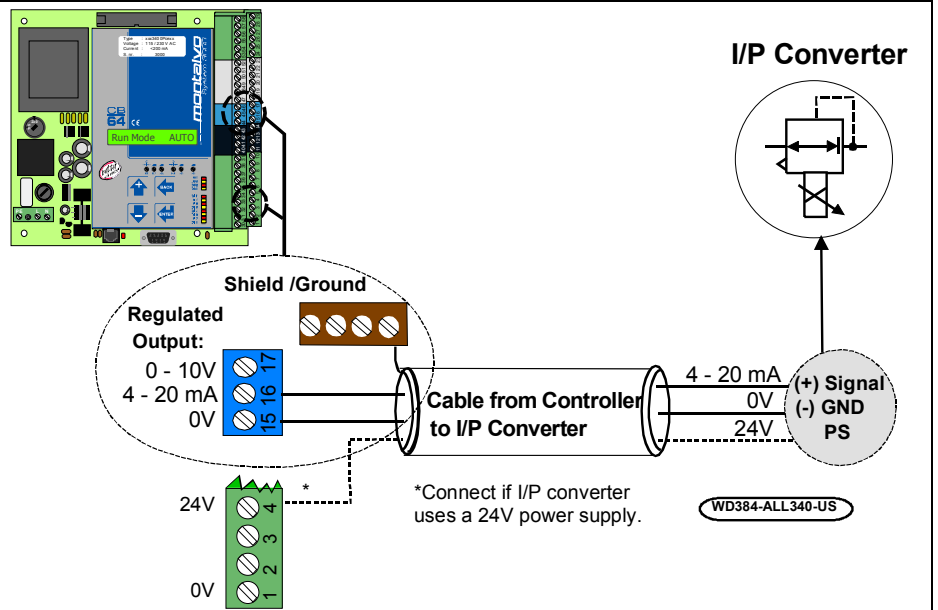
Failure to follow installation and setup instructions in this manual may result in equipment damage or personal injury.

Failure to follow wiring instructions in this manual may result in equipment damage, personal injury, or death.

WARNING: Electrical installation must be done by skilled personnel. Wiring must meet all applicable codes and standards.

I/P Converter

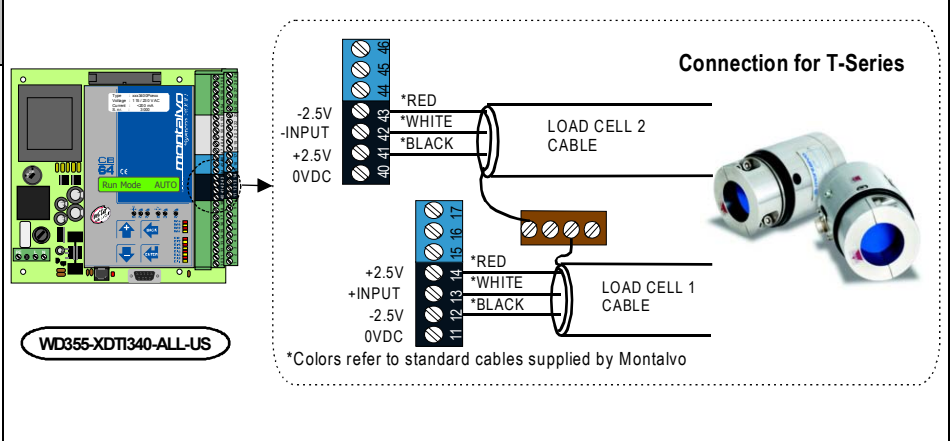
Connect the cable from the controller to the I/P converter (see diagram).



Load Cells

Plug the connector into the load cell and the other end of the cable into the X-3400ce-UW controller (see diagram).

Note: The above diagram shows the connection for the T-Series only.



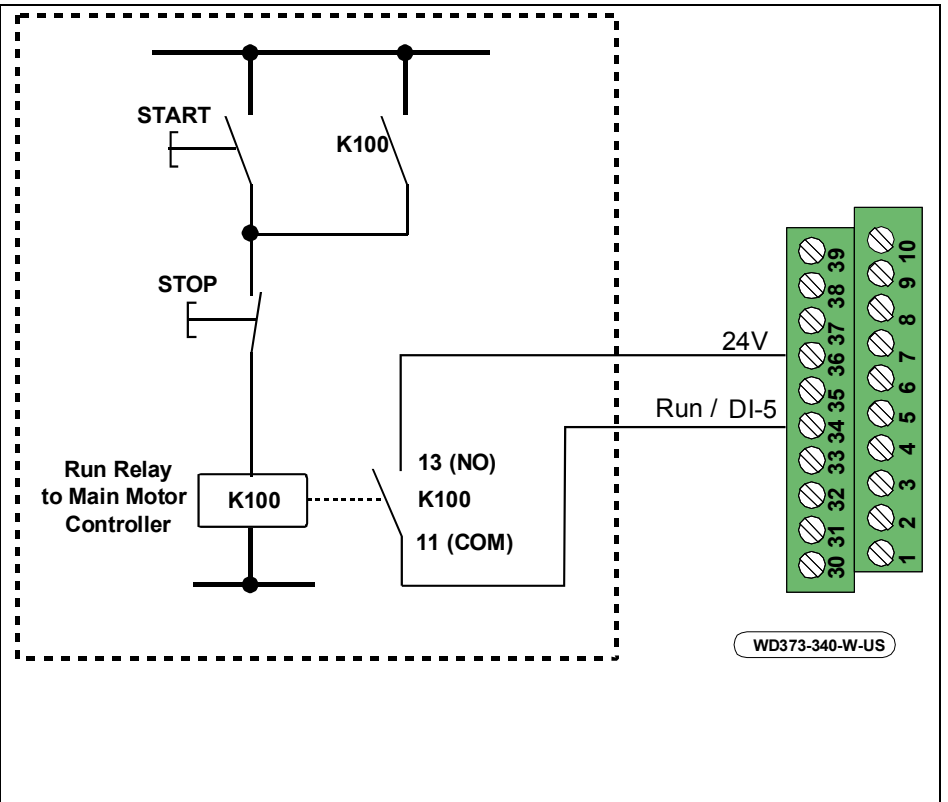
Connection of the Start/Stop (Run) Signal from the Machine Main Panel

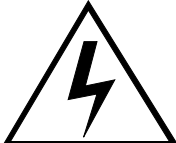
Connect the cable between the machine main panel and the controller. The signal must come from a relay with the following function:

The relay must:

- **energize** when the machine starts running or moving.
- **de-energize** when stop is pressed or when the machine comes to a complete stop (zero speed signal).

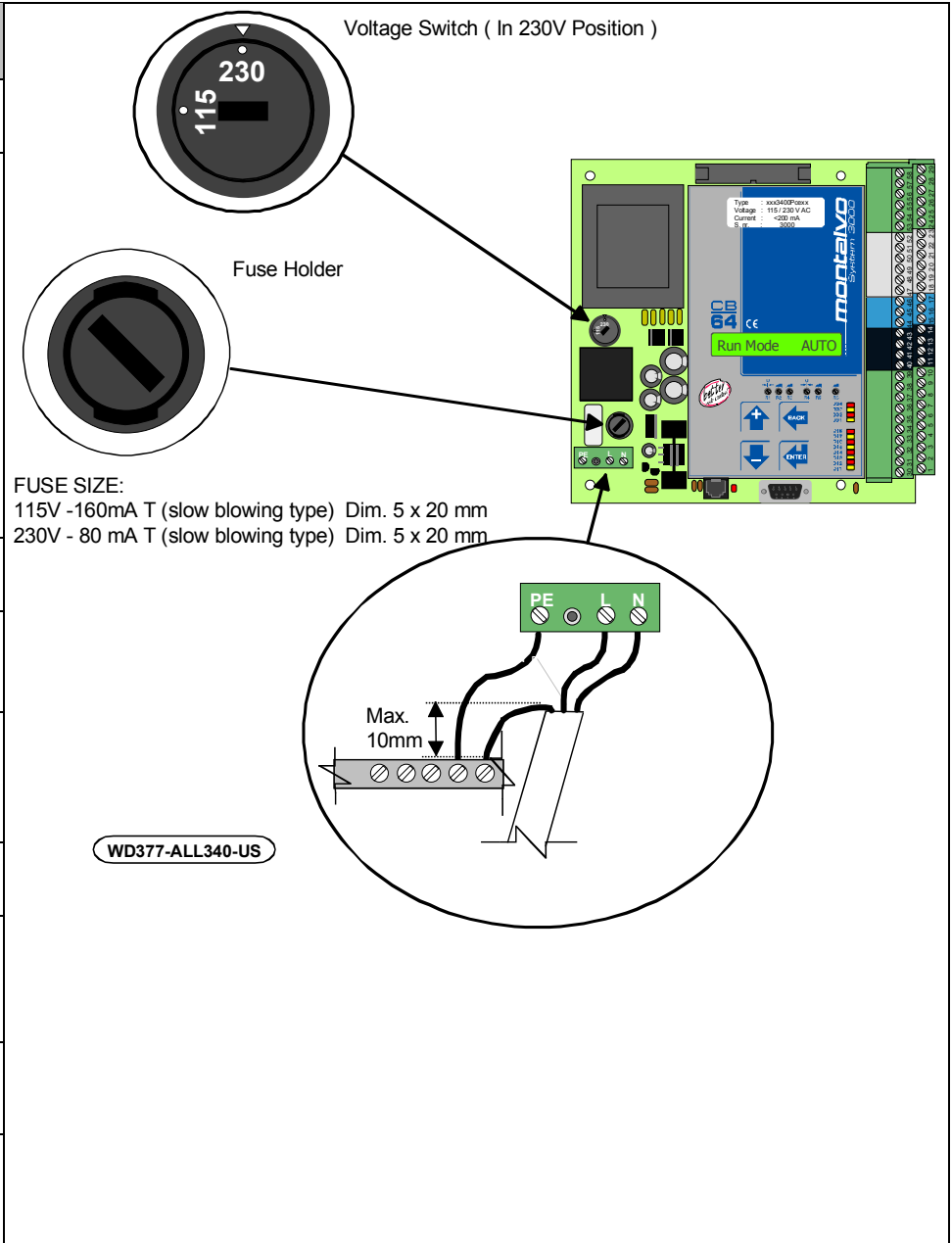
From this relay, use the closing function (NO). The relay contact must be closed during operation of the machine and open at stop (see diagram).



	<p>WARNING: Electrical installation must be done by skilled personnel. Wiring must meet all applicable codes and standards.</p>
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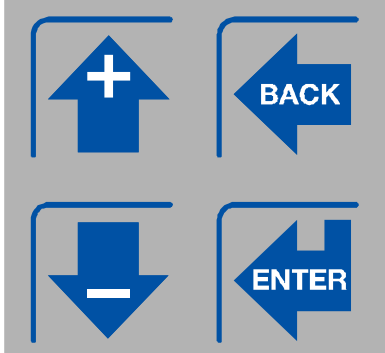




- Connection of Supply Voltage to the Controller**
1. Turn off the power in the machine main panel.
 2. Choose the supply voltage (230/115V AC) that is applied when the power to the machine main panel is turned on. Set up the voltage switch on the controller accordingly.

Note: We recommend to use the main supply before the emergency stop circuit so that the controller stays under power during emergency stop.
 3. Run a cable from the machine main panel to the controller.
 4. Remove the fuse from the fuse holder on the controller if a fuse is already installed.
 5. Connect the cable to the controller (see diagram) and connect the cable to the machine main panel (see item 2).
 6. Turn on the machine main panel again.
 7. Check the connection and voltage of the terminal points L, N and PE, using a voltmeter.
 8. Turn off the power to the machine main panel.
 9. Insert the correct fuse and turn on the power to the machine main panel.



Using the Keypad

The controller operates in two modes, **scroll** and **edit** (the cursor blinks) and has four types of menu items: parent menu, submenu, numeric parameter, and textual parameter. **Scroll** moves through the menu items; **edit** changes the numeric or textual value of the parameters.

		Scroll mode: moves to the <i>previous</i> menu or parameter.
		Edit mode: increases the numeric parameter value or moves to the <i>previous</i> textual parameter value.
		Scroll mode: moves to the <i>next</i> menu or parameter.
		Edit mode: decreases the numeric parameter value or moves to the <i>next</i> textual parameter value.
		Scroll mode: jumps one level <i>back</i> to the <i>previous</i> menu.
		Edit mode: <i>cancel</i> s edit mode, returning to the <i>previous</i> numeric or textual parameter value.
		Scroll mode: <i>enters</i> the <i>previous menu</i> or changes to edit mode, if a <i>numeric</i> or <i>textual</i> parameter.
		Edit mode: Press <i>once</i> (the cursor blinks) to <i>enter</i> a numeric or textual parameter. After change, press once again to store the change.

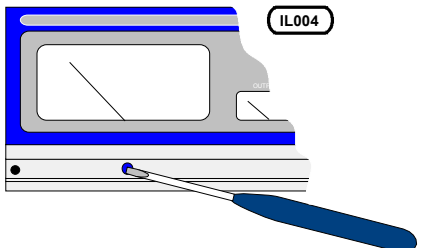
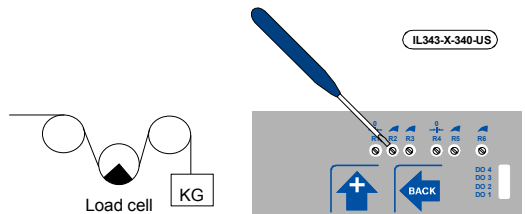
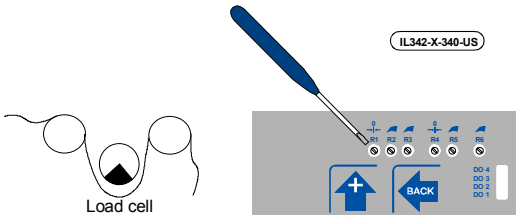
Complete Menu Tree

Run Mode	Regulator Menu	Range Exp Menu
Status Menu	Gain Menu	Aux1 Input Menu
Version	Gain Min	Aux2 Input Menu
Tension	Gain Max	Aux1 Output Menu
Setpoint	Source	Com Menu
Output	Gain Level	Com Type
I-Level	PID Menu	BaudRate
Gain Level	P Level	Remote Menu
Manual	I Time	Enable Menu
Diameter	D Level	Value Menu
Aux1 In	Roll Change Menu	
Aux2 In	New Output	
Aux3 In	Cal-2 Scale	
Aux1 Out	New Roll D	
Aux2 Out	Start Menu	
Password	Start Lev	
Setup Menu *)	Stop Menu	
Config Menu	Hold Menu	
Ctrl Type	Hold Delay	
Amplifier	Hold Level	
Restore Config	Diameter Menu	
Options Menu	Dia Source	
Use Stop	Dia Min	
Use Taper	Dia Max	
Use Dig Out	Dia Factor	
Use Splice	DF AutoSet	
Use Rng Exp	Diameter	
Use Aux1 In	Taper Menu	
Use Aux2 In	Digital Out Menu	
Use Aux1 Out	Splice Menu	
DI Mode Menu		
DI-5 Invert		
DI-8 Invert		

*) Access with password 5.

Note: The above menu tree is a standard configuration to be used in connection with the installation and startup of the X-3400ce-UW controller. Menus in black, bold text are visible and active menus. Menus in grey are optional functions that can be selected under the options menu [Options Menu]. If selected, the menus for the chosen functions become visible in the display. For a brief description of the options selection menu, see the last page of the installation and startup instructions for the X-3400ce-UW controller.

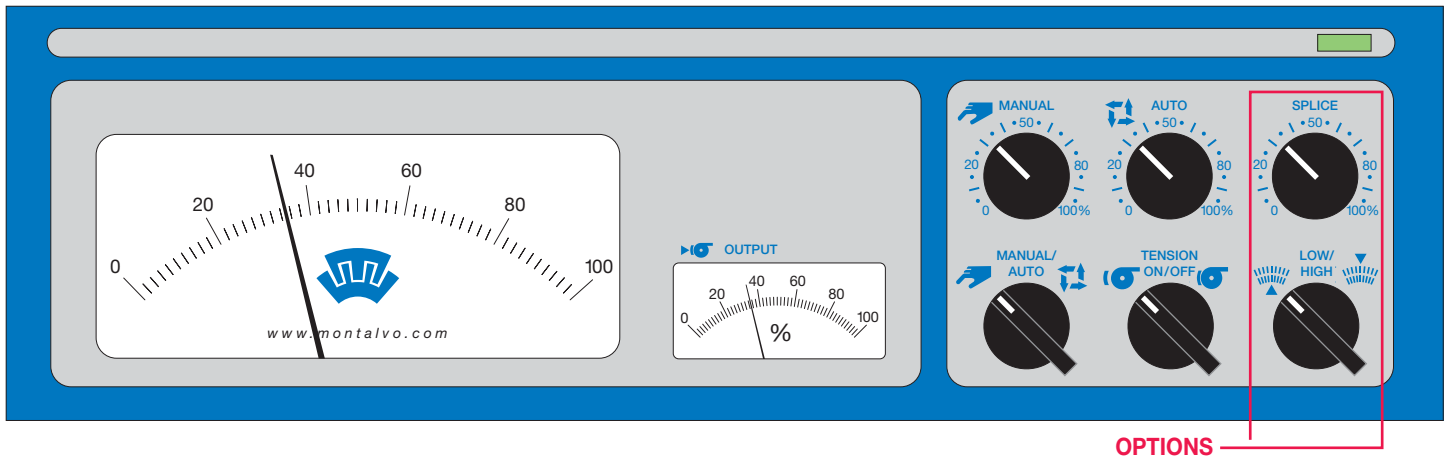
Tension Adjustment

<p>Status Menu Version Tension Setpoint Output I-Level Gain Level Manual Diameter Aux1 In Aux2 In Aux3 In Aux1 Out Aux2 Out</p>	<p>1. Check that the load cells are mounted and oriented properly. Refer to the load cell installation instructions.</p>	<p>5. Thread a rope over the center of the tension-sensing roller following the exact path of the web. Make sure that the rope extends at least one roller <i>before</i> and one roller <i>after</i> the sensing roller. Make sure that the rope does not pass over any dead bars or non-freewheeling rollers. Fasten one end of the rope securely.</p>
	<p>2. Before applying power, check that the tension meter is mechanically zeroed. If not, adjust the small screw below the meter scale until the meter reads zero.</p> 	<p>6. Attach a weight of a known value to the other end of the rope. For the best results, the weight should be at least 25% of the full-scale value of the analog meter. A tension value below 0% (with weight added) indicates that the signal from the load cells is reversed. In the event of such a reversal, switch wires 12 & 14 and 41 & 43 on the terminal block. To eliminate any friction, rotate rollers in the direction of the weight.</p>
	<p>3. Apply power to the controller and let it warm up for at least 10 minutes.</p>	<p>7. Adjust potentiometer R2 until the analog meter reading is identical to the added weight. (If non-cabinet version is used, see digital display: tension will appear as a percentage value [%]).</p> 
	<p>4. With web removed and no tension applied to the sensing roller, adjust potentiometer R1 until the analog tension meter reads zero. (If non-cabinet version is used, see digital display: tension should read 0%.) If value is below zero, turn R1 clockwise; if above, turn counter clockwise.</p>  <p>Note: R1 and R2 are 25-turn potentiometers, so many rotations may be required.</p>	<p>8. Remove weight and check that the tension meter returns to zero. If not, repeat steps 4 to 7.</p> <p>9. If a second calibration range is used, repeat steps 4 to 8, using potentiometer R3 for calibration of the second range.</p>

Startup and Adjustment

Status Menu Password Setup Menu Config Menu Ctrl Type Amplifier Restore Confg Options Menu . Regulator Menu Gain Menu Gain Min Gain Max Source Gain Level PID Menu P Level I Time D Level Start Menu Start Lev Hold Menu Hold Delay	<p>1. Scroll to the [Password] menu. Press ENTER, then UP key to change display to 5 and press ENTER again. Password 5 allows access to the [Setup Menu] .</p>	<p>7. Run the machine at low speed and adjust [Gain Max] until tension is steady but still responsive to variations.</p>
	<p>2. Scroll to the parameter [Gain Min] under the [Gain Menu] .</p>	
	<p>3. Place a small roll in the unwind stand.</p>	
	<p>4. Run the machine at low speed and adjust [Gain Min] until tension is steady but still responsive to variations.</p>	
	<p>5. Stop the machine and scroll to the parameter [Gain Max] under the [Gain Menu] .</p>	
	<p>6. Place a large roll in the unwind stand.</p>	

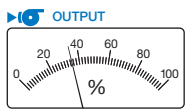
X-3400ce-UW (unwinder with load cells)



Green Power LED - Indicates that power is on.



Tension Meter - Displays actual web tension. The scale can be either in Newton, kg, lb or %.



Output Meter - Displays the regulated output of the controller in %. This output represents the pressure on the brake of the roll.



Manual / Auto - Switches between manual and auto mode.

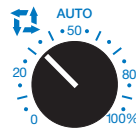
Manual: The operator controls the brake pressure directly by using the manual potentiometer.

Auto: Automatic regulation of the brake pressure to maintain a constant web tension. When switching from manual to auto mode, the controller continues to regulate from the manual level.

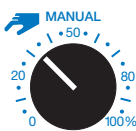
Note: The brake pressure automatically decreases along with the decrease of the roll diameter.



Tension On / Off - Turns tension on and off. Output is zero when off. Typically used for roll change or release of roll. After turning tension on, run the machine slowly for the first 10 seconds to ensure that the controller has calculated new data.



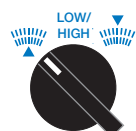
Auto Setpoint - In auto mode, sets the controller to run with a desired web tension. By increasing the setting, the web tension will be increased. The settings 0 to 100% represent 0 to full scale of the tension meter.



Manual Setpoint - In manual mode, controls directly the brake pressure. The setting 0 to 100% represents 0 to maximum brake pressure.

Note: Observe the tension on the tension meter, and adjust the manual setpoint accordingly. To maintain a constant tension – the operator has to decrease the brake pressure along with the decrease of the roll diameter by using the manual potentiometer.

OPTIONS



Low / High Scale - Switches between low and high scale. The setpoint settings represent the tension setting based on the selected tension scale (low/high).

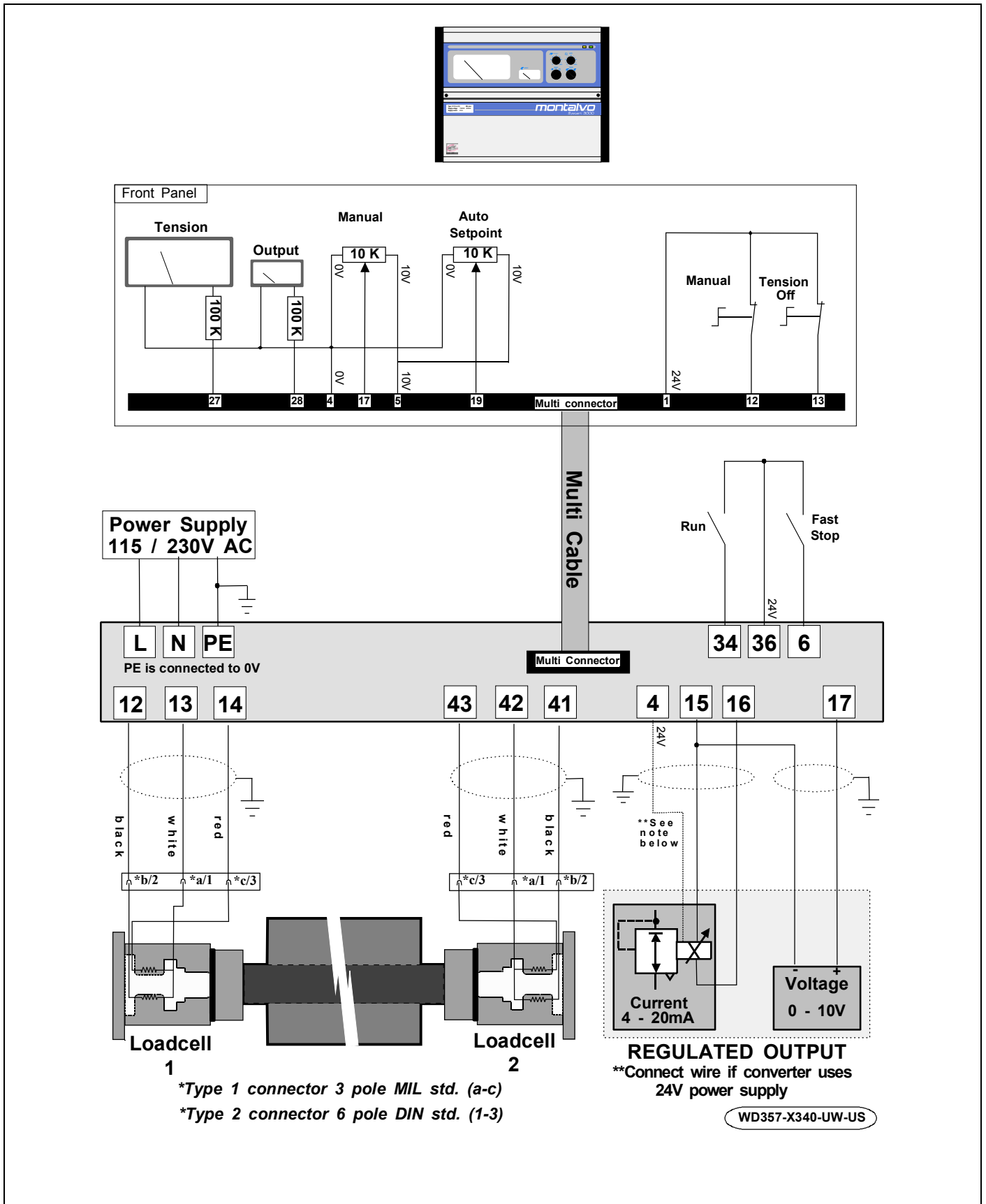
Note: When switching between low/high scales during operation, the controller will automatically regulate to the setpoint setting (in %) based on the new tension scale. We recommend changing the setpoint setting to the same % value of the new scale synchronously with the scale switching.



Splice Setpoint - Used in automatic roll change applications (flying splice). The setting applies for the new incoming roll diameter. The new diameter is transferred to the controller exactly when the knife is cutting the web.

Note: Before performing the flying splice, it is important to set the splice potentiometer approx. at the setting that represents the new incoming roll diameter (0-100%).

Basic Diagram - Cabinet Version



Customer Parameter Settings

Note: Menus in black, bold text are visible and active menus. Menus in grey are optional functions that can be selected under the options menu . If selected, the menus for the chosen functions become visible in the display.

Parameter Name		Value	Min.	Max.	Unit	
Config Menu	Ctrl Type		-	-	-	
	Amplifier		X1	X10	-	
	Restore Config		NO	YES	-	
Options Menu	Use Stop		NO	YES	-	
	Use Taper		NO	YES	-	
	Use Dig Out		NO	YES	-	
	Use Splice		NO	YES	-	
	Use Rng Exp		NO	YES	-	
	Use Aux1 In		NO	YES	-	
	Use Aux2 In		NO	YES	-	
	Use Aux1 Out		NO	YES	-	
	DI Mode Menu	DI-5 Invert		NO	YES	-
		DI-8 Invert		NO	YES	-
Regulator Menu	Gain Menu	Gain Min		0	50	%
		Gain Max		0	500	%
		Source		-	-	-
		Gain Level		0.0	100.0	%
	PID Menu	P Level		0	255	-
		I Time		10	255	-
		D Level		0	255	-
Roll Change Menu	New Output		0.0	500.0	%	
	Cal-2 Scale		20.0	50.0	%	
	New Roll D		0.0	100.0	%	
Start Menu	Start Lev		0.0	200.0	%	
Stop Menu	Source					
	F-Stop Min		-	-	-	
	F-Stop Max		0.0	50.0	%	
Hold Menu	Hold Delay		0	99.9	S	
	Hold Level		0	200	%	
Diameter Menu	Dia Source		-	-	-	
	*P/Rev Roll		0	8	-	
	*mm/Pulse		0	400	mm	
	Dia Min		5	3000	mm, %	
	Dia Max		5	3000	mm, %	
	**Dia Factor		0.0	900.0	%	
	**DF AutoSet		0.0	100.0	%	
	Diameter		0.0	100.0	%	
Taper Menu	Type		LIN	EXP	-	
	Tap Begin		5.0	50.0	%	
Digital Out Menu	DO Select Menu	Web Break		-	-	-
		Diameter		-	-	-
		Lo Tension		-	-	-
		Hi Tension		-	-	-

*Visible if and only if diameter source = PULSE. **Visible if and only if diameter source = OUTPUT.

Customer Parameter Settings

Parameter Name		Value	Min.	Max.	Unit
	Wbr Delay		0.1	20.0	S
	Wbr Level		-95.0	25.0	%
	Wbr Time		0.0	5.0	S
	Alarm Dia		0.0	100.0	%
	Lo Level		0.0	100.0	%
	Lo Delay		0.0	5.0	S
	Hi Level		0.0	100.0	%
	Hi Delay		0.0	5.0	S
Splice Menu	Spl Source		-	-	-
	Spl Delay		0.0	3.0	S
	Spl Level		0.0	200.0	%
	Spl Time		0.0	9.9	S
Range Exp Menu	RE Source		-	-	-
	Ranges		1	4	-
	Start No.		1	4	-
	Dn Level		0	100	%
	Up Level		0	100	%
	Range Time		0	60	S
	Brake Menu	Pads R1	0	20	-
		Pads R2	0	20	-
		Pads R3	0	20	-
		Pads R4	0	20	-
		Randomize	NO	YES	-
	Range Dia Menu	4->3 Dia	0.0	100.0	%
		3->2 Dia	0.0	100.0	%
		2->1 Dia	0.0	100.0	%
Aux1 Input Menu	Aux1 Calc		0.0	100.0	%
	Aux1 Raw		0.0	100.0	%
	Raw1 Min		0.0	100.0	%
	Raw1 Max		0.0	100.0	%
	Calc1 Min		0.0	100.0	%
	Calc1 Max		0.0	100.0	%
	Calc1 Invert		NO	YES	-
Aux2 Input Menu	Aux2 Calc		0.0	100.0	%
	Aux2 Raw		0.0	100.0	%
	Raw2 Min		0.0	100.0	%
	Raw2 Max		0.0	100.0	%
	Calc2 Min		0.0	100.0	%
	Calc2 Max		0.0	100.0	%
	Calc2 Invert		NO	YES	-
Aux1 Output Menu	Source		-	-	-
	Output		0.0	100.0	%
	Aux1 Min		0.0	100.0	%
	Aux1 Max		0.0	100.0	%
	Aux1 Offst		0.0	25.0	%
Com Menu	Com Type		-	-	-
	BaudRate		4800	38400	-
	Remote Menu	Enable Menu			
		Value Menu			

Options Selection Menu [Options Menu]

This menu offers a number of optional functions, to be enabled or disabled (choose NO or YES), and as such is building a supplement to the basic functions of the controller. If a controller is ordered including one or more options, they will be set up from the factory.

Note: If enabled, an optional function will appear in the menu tree, and if disabled, it will disappear from the menu tree.

Set up the parameter as follows:

[NO] = option is disabled

[YES] = option is enabled

	Name	Function Description
Setup Menu		
Config Menu		
.	Use Stop	The stop option is used to prevent a drop of tension when the machine is stopping. Typically it is necessary if the machine has a fast stop function or if the machine is stopping with a short ramp-down time.
.		
.		
Options Menu		
Use Stop	Use Taper	The taper options are only used in a single zone machine.
Use Taper		
Use Dig Out	Use Dig Out	The [Digital Out Menu] offers the options web break or diameter alarm .
Use Splice		
Use Rng Exp	Use Splice	The splice option is used to control a splice sequence (automatic roll change).
Use Aux1 In		
Use Aux2 In		
Use Aux1 Out	Use Rng Exp	The range expander option is used to divide the torque capabilities of a braking system into multiple ranges. The advantage of this function is that the required torque is controlled automatically.
DI Mode Menu		
Regulator Menu		
.	Use Aux1 In	When this parameter is enabled, the analog Aux1 input is available to use.
.		
.	Use Aux2 In	When this parameter is enabled, the analog Aux2 input is available to use.
.		
.	Use Aux1 Out	When this parameter is enabled, the analog Aux1 output is available to use.
.		
.	DI Mode Menu	Offers the possibility of inverting the functions of different input signals, e.g. DI-5 Run signal and DI-8 Fast Stop signal.

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