

Pro Editor Software

Instruction Manual

Original Instructions
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206058

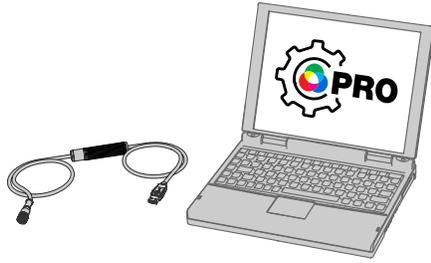
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1 Software Description

Software that Enables Field Configuration of Banner Pro Series-enabled Devices



- Allows configuration of Banner Pro Series-enabled lighting and indicator devices
- Free to download and available from the product page of any Pro Series-enabled device or at www.bannerengineering.com/proeditor
- Works on Microsoft® Windows® 7 and 10²
- Pro Converter Cable MQDC-506-USB required to connect PC-based Pro Editor software to Pro Series-enabled lighting and indicator devices
- Full preview capabilities are available with the use of power supply PSW-24-1 or PSD-24-4 and splitter CSB-M1251FM1251M. The power supply and splitter are required for connection to all Pro Series-enabled devices.



Note: Administrative rights are required to install the Pro Editor software.

1.1 Overview

Banner's Pro Editor software offers an easy way to configure Pro Series-enabled indication, touch, and illumination devices, allowing users full control of device states and device logic modes. The easy-to-use configuration software provides a variety of tools and capabilities to solve a wide range of applications such as indicating machine status or warm-up time, indicating unique steps in an assembly process, or incorporating status information into touch buttons.

Select Pro Editor devices include a preview mode that allows users to verify device performance before writing a configuration to a device.

Setup any Pro Series-enabled device using the free Pro Editor software, available for download at www.bannerengineering.com/proeditor.

To view Pro Series-enabled devices, visit www.bannerengineering.com/proeditor.

² Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries.

2 Specifications and Requirements

2.1 Pro Editor Software PC Requirements

Operating System

Microsoft® Windows® operating system versions 7³ or 10⁴

Hard Drive Space

120 MB

USB

Available USB port

Screen Resolution

1366 × 768 full-color minimum

Third-Party Software

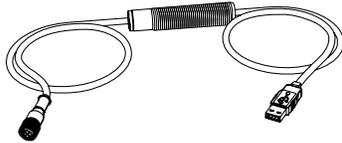
.NET version 4.6.2 or higher



Important: Administrative rights are required to install the Pro Editor software.

2.2 Pro Converter Cable – Required for use with Pro Editor

Pro Converter Cable, model MQDC-506-USB, is required for use with Pro Editor. Use the Pro Converter Cable to connect Pro Series-enabled devices to read, write, and preview device states.



- Connects Pro Series-enabled devices to the PC-based Pro Editor software
- Can be used with mating accessory ACC-PRO-CABLE5 for connection to devices with an integral cable or terminal connection
- Double-ended cordset MQDC-801-5M-PRO required to connect 8-pin devices to Pro Converter Cable; see [Accessories](#) on page 40 for more information
- Full preview capabilities are available with the use of power supply PSW-24-1 and splitter CSB-M1251FM1251M; see [Accessories](#) on page 40 for more information



Note: When connected to a Microsoft Windows 10 device for the first time, the Pro Converter Cable automatically installs the correct Microsoft driver. When connected to a Microsoft Windows 7 device for the first time, the Pro Converter Cable drivers must be installed manually. See [Install the Pro Converter Cable Driver \(Windows 7\)](#) on page 7 for more information.

2.2.1 Model

Model	Adapter	Length	Connections
MQDC-506-USB	Pro Editor Software	1.86 m (6 ft)	USB and 5-pin M12 quick disconnect

2.2.2 Features

Figure 1. Pro Converter Cable LED Indicators



PWR (Cable Power Indicator)

Off: No power

Slow flashing green (0.5 Hz): Normal Mode

INF (Device Information Indicator)

Off: Device power off

Solid amber: Device power on

Fast flashing red (10 Hz): Device power fault

³ Windows 7 requires manual installation of Pro Converter Cable driver. See [Install the Pro Converter Cable Driver \(Windows 7\)](#) on page 7 for more information.

⁴ Microsoft® and Windows® are registered trademarks of Microsoft® Corporation in the United States and/or other countries.

2.3 Pro Converter Cable Specifications

Input Voltage

5 V dc from USB Type A connector

Output Voltage

20 V dc

Banner Compatible Devices

View compatible devices at www.bannerengineering.com/proeditor

Certifications



Indicators

2 LED indicators:

Green Flashing: Power on

Amber Solid: Device on

Red Flashing: Device power fault

Communications

5-pin M12 quick disconnect connector compatible with Banner Pro Series-enabled devices

2.4 Banner Engineering Corp. Software Copyright Notice

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<https://www.bannerengineering.com/us/en/company/terms-and-conditions.html>

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3 Installation Instructions

3.1 Install the Software



Important: Administrative rights are required to install the Pro Editor software.

1. Download the latest version of the software from www.bannerengineering.com/proeditor.
2. Navigate to the downloaded file **ProEditorInstaller.exe**.
3. Double-click the installer to open **Banner Pro Editor Setup**.
4. Accept the terms in the License Agreement by selecting the checkbox.
5. Click **Install** to install the software.
6. Depending on your system settings, a pop-up window may appear prompting to allow Pro Editor to make changes to your computer. Click **Yes**.
7. Click **Close** to exit the installer after installation is complete.

3.1.1 Update the Software

The current version of the Pro Editor software is available for download from www.bannerengineering.com/proeditor.

When connected to a network, if a Pro Editor software update is available, a red icon  displays in the bottom right corner of Pro Editor. See [Device Connection Status and Software Update Notification](#) on page 32 for more information.

3.2 Install the Pro Converter Cable Driver (Windows 7)

When connected to a PC running Microsoft Windows 7 for the first time, the Pro Converter Cable drivers must be installed manually. To manually install the Pro Converter Cable driver on a Windows 7 device, follow these steps.



Note: After connecting the Pro Converter Cable to a PC running Microsoft Windows 7 the following message may appear: "Device driver software not successfully installed".

1. Download the latest driver file from www.bannerengineering.com/proeditor.
2. Unzip (extract) the file labeled ProConverterCable_driver to a new location.
3. Open **Control Panel**.
4. Open **Device Manager** (in the System and Security category). The Pro Converter Cable is listed as **Communications Translator** under **Other Devices** with an exclamation mark icon next to it indicating that the device driver has not been successfully installed.
5. Right-click on **Communications Translator** and select **Update Driver Software...**
6. Click **Browse my computer for driver software**.
7. Click on **Com ports**.
8. Click **Let me pick from a list of device drivers on my computer**.
9. Make sure that **Show All Devices** is selected and click **Next**.
10. Click **Have Disk...**
11. Click **Browse...** and select the driver file. For example, banner0x00D2_cdc.inf.
12. Click **OK**.
13. A message displays that the driver has an Authenticode signature. Click **Next**.
14. An update driver warning displays. Click **Yes**.
15. An installation message displays. Click **install**.

The Pro Converter Cable is listed as a COM Port under Ports in **Device Manager**.

3.3 Connect the Cables

There are two options for connecting a Pro Series-enabled device to Pro Editor.

1. Connect a device using a Pro Converter Cable, splitter, and power supply for full preview capabilities. For more information, refer to the [Pro Devices Technical Note](#) (p/n b_4485056).
2. Connect a device using a Pro Converter Cable for limited preview capabilities.

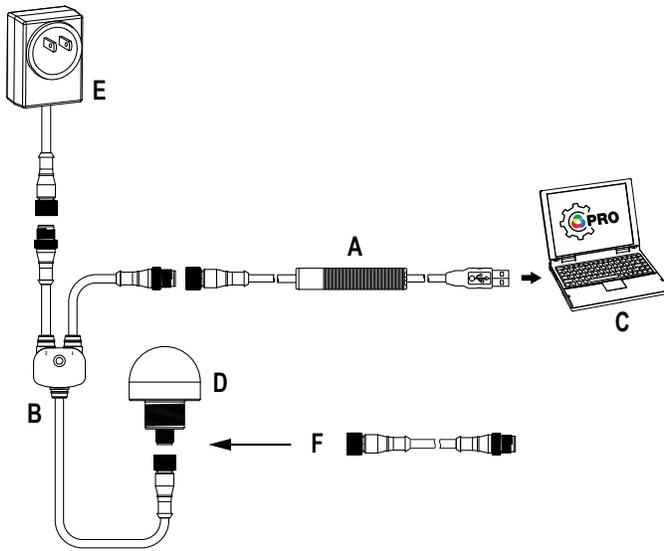


Note: If your Pro Series-enabled device has an integral cable or terminal connection, a mating accessory (ACC-PRO-CABLE5) is required to connect the device to the Pro Converter Cable. See [Accessories](#) on page 40 for more information.



Note: If your Pro Series-enabled device has an 8-pin connector, a double-ended cordset (MQDC-801-5M-PRO) is required to connect the device to the Pro Converter Cable. See [Accessories](#) on page 40 for more information.

3.3.1 Full Preview Connection



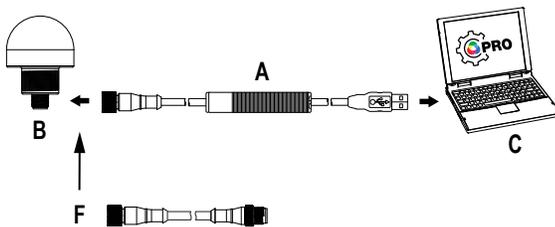
The full preview connection is recommended for all Pro-series enabled devices, and is required for the following devices:

- Tower Lights: TL50 Pro, TLF100 Pro
- Indicators: K90 Pro, K100 Pro, K100 Pro Beacon
- Strip Lights: All Pro-Series strip lights

- A = Pro Converter Cable (MQDC-506-USB)
- B = Splitter (CSB-M1251FM1251M)
- C = PC running Pro Editor software
- D = Any Banner Pro Series-enabled device (K50 shown)
- E = Power Supply (PSW-24-1 or PSD-24-4)
- F = 8-Pin to 5-Pin Double-Ended Cordset (MQDC-801-5M-PRO), required for 8-Pin models

3.3.2 Limited Preview Connection

Because of supply current restrictions when using a Pro Converter Cable to connect a device to Pro Editor, some preview features may be unavailable, including certain animations and colors. For information regarding device preview capabilities when using a Pro Converter Cable setup, contact a Banner applications engineer.



The limited preview connection is required for the following devices:

- Indicators: S22 Pro
- Touch Buttons: All Pro-Series touch buttons

- A = Pro Converter Cable
- B = Banner Pro Series-enabled device
- C = PC running Pro Editor software
- F = 8-Pin to 5-Pin Double-Ended Cordset (MQDC-801-5M-PRO), required for 8-Pin models

3.4 Connect a Device

After connecting a Pro Series-enabled device to a PC, follow these steps to connect the device to Pro Editor. Only one device can be connected to Pro Editor at a time.

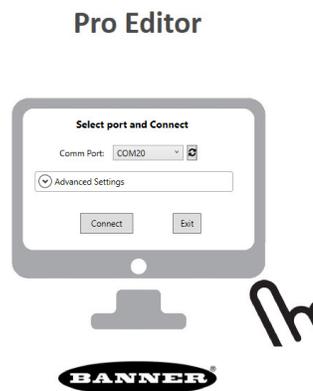
1. Open Pro Editor.

Figure 2. Pro Editor



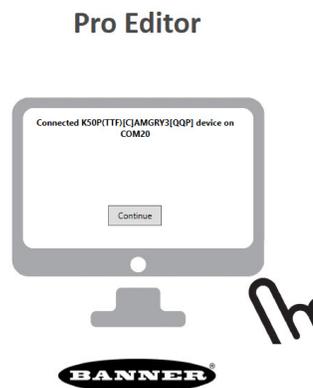
2. Click **Connect**.

Figure 3. Pro Editor Connection Dialog



3. Select the Comm Port from the drop-down list. If the communication port that you have connected the device to is not available, click the refresh button and then select the comm port from the drop-down list.
4. Click **Connect**.
5. When a device is successfully connected, the following message appears:

Figure 4. Successful Connection



6. Click **Continue**.



Note: For information regarding Advanced Settings, contact a Banner applications engineer.

After a device is successfully connected, Pro Editor reads the device configuration and displays it.

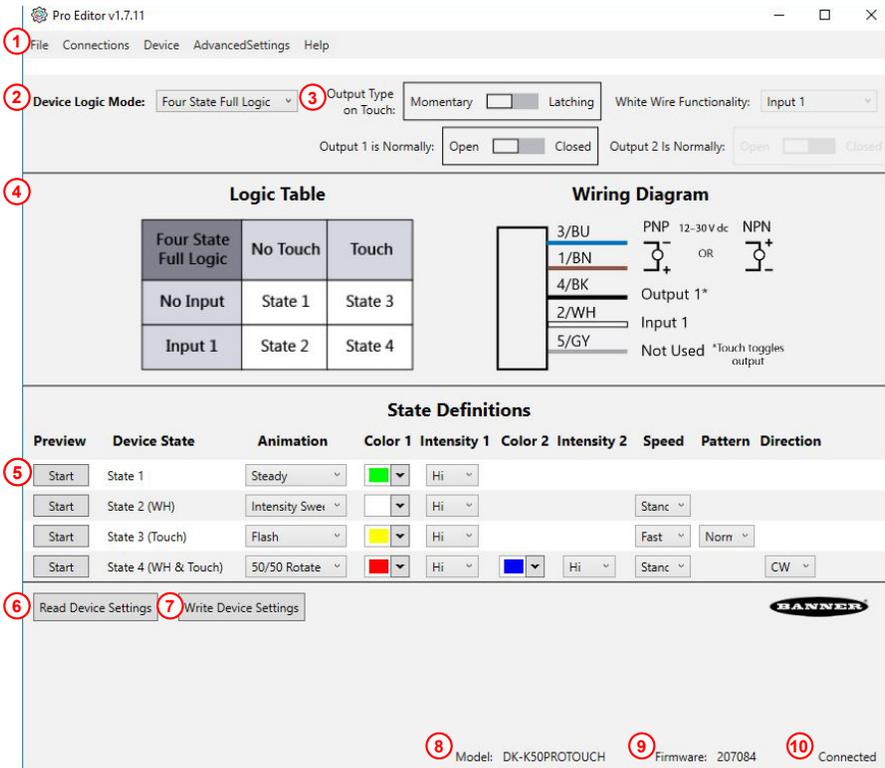
4 Navigating Pro Editor

Pro Editor provides access to read, write, and preview device states.



Note: This Instruction Manual covers Pro Editor v2.2. Interface and functionality details may be different in other versions of Pro Editor.

Figure 5. Pro Editor Configuration Navigation – K50 Pro Touch Shown



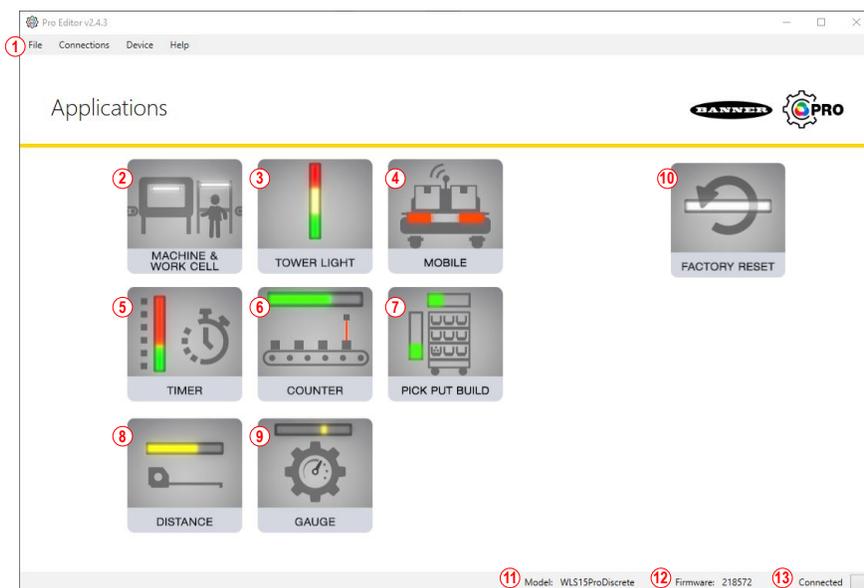
Key for Indicator, Touch, and Tower Light Devices

1. Menu Bar: File, Connections, Device, AdvancedSettings, Help
2. Device Logic Mode* or I/O State** Drop-down
3. Global Parameters*
4. Logic Table and Wiring Diagram*
5. Device Function Rows
6. Read Device Settings
7. Write Device Settings
8. Connected Device Information
9. Connected Device Firmware ID
10. Device Connection Status and Software Update Notification

*Touch device configuration only, Global Parameters change depending on the connected device

** Indicator device configuration only

Figure 6. Pro Editor Configuration Navigation – WLS15 Pro Shown



Key for Strip Light Devices

1. Menu Bar: File, Connections, Device, Help
2. Machine & Work Cell Application
3. Tower Light Application
4. Mobile Application
5. Timer Application
6. Counter Application
7. Pick Put Build Application
8. Distance Application
9. Gauge Application
10. Factory Reset
11. Connected Device Information
12. Connected Device Firmware ID
13. Device Connection Status and Software Update Notification

4.1 Menu Bar

File Menu Option	Description
Save Current Config	Saves the current configuration.
Open Config File	Opens a saved configuration file.
Exit	Exit Pro Editor.

Connections Menu Option	Description
Connect	Opens the Connection dialog.
Disconnect	Disconnects the connected Pro Series-enabled device.
Start Offline Mode	Opens the device list, and after selecting a required device, allows Pro Editor to be used while not connected to a network.

Device Menu Option	Description
Open Legacy Default Template	<p>Loads the selected Legacy configuration to replicate the functionality of select factory configured devices.</p> <p> Note: Menu option only available on touch devices.</p>
Restore Device Factory Configuration	<p> Important: Performing a Restore Device Factory Configuration deletes the configuration stored on the connected device and replaces it with the default factory configuration.</p> <p>To restore a device to its factory configuration, select Restore Device Factory Configuration. The current configuration on the device is deleted and replaced by the factory configuration, which will then be read by Pro Editor. If the Device Logic Mode drop-down reads "--Please Select--", manually select the appropriate logic mode.</p>



Note: **Advanced Settings** are only available for select Pro devices.

Click **Advanced Settings** to open the **Advanced Settings** configuration display. For more information, see [Global Parameters and Advanced Settings](#) on page 14.

Help—This Instruction Manual is accessible from within Pro Editor under **Help**.

4.2 Indicator Devices

Depending on the device connected to Pro Editor, one of three configuration parameters displays:

- When an indicator device is connected, **I/O State** configuration displays.
- When a touch device is connected, **Device Logic Mode** configuration displays. For touch device configuration, see [Touch and Sensor Devices](#) on page 12.
- When a strip light device is connected, a common applications selection displays. See [Strip Light Devices](#) on page 20.

By default, when an indicator device is connected, Pro Editor opens **I/O State** configuration in **Advanced**. Three **I/O States** are available:

- Basic
- Advanced
- I/O Block

4.2.1 I/O State – Basic

Four state control. Configurations made in I/O State Basic assign one wire to one state, with the following override control:

- Pin 1 (Brown) overrides Pin 4 (Black)
- Pin 2 (White) overrides Pins 1 and 4 (Brown and Black)

- Pin 5 (Gray) overrides Pins 1, 2, and 4 (Brown, White, and Black)

4.2.2 I/O State – Advanced

Default I/O state with full 15 state options for maximum configurability. Configurations made in Advanced assign binary wiring combinations of all valid inputs to each state.

4.2.3 I/O State – I/O Block

Three state control for use with I/O block. Configurations made in I/O Block assign states to the black, white, and combination of black and white wires for use with I/O blocks for which power (brown) and common (blue) are always on for five pin connections.

4.3 Touch and Sensor Devices

Depending on the device connected to Pro Editor, one of two configuration parameters displays:

- When a touch device is connected, **Device Logic Mode** configuration displays.
- When an indicator device is connected, **I/O State** configuration displays. For indicator device configuration, see [Indicator Devices](#) on page 11.

By default, when a touch device is connected, Pro Editor opens **Device Logic Mode** configuration populated with the configuration written to the device. If no device logic mode is selected, use the **Device Logic Mode** drop-down to select a logic mode, then write the configuration to the device. Three **Device Logic Modes** are available:

- Four State Full Logic
- Three State Advanced Control
- Seven State Advanced Control

4.3.1 Device Logic Mode – Four State Full Logic

When using Four State Full Logic, four device states are activated by one input wire and the touch button. The touch button also toggles the output(s).

Assuming power is on using the blue and brown wires:

State 1: Input Inactive, Touch Inactive

State 2: Input Active, Touch Inactive

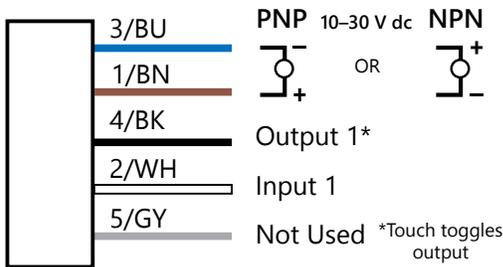
State 3: Input Inactive, Touch Active

State 4: Input Active, Touch Active

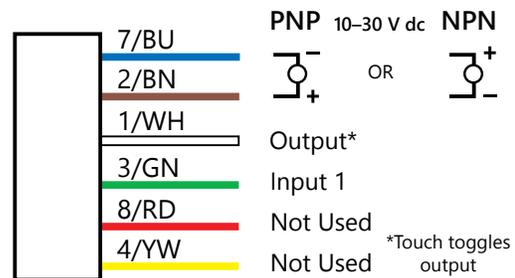
Figure 7. Four State Full Logic Table – Pro Editor

Four State Full Logic	No Touch	Touch
No Input	State 1	State 3
Input 1	State 2	State 4

5-Pin/5-Wire Pro Devices ⁵

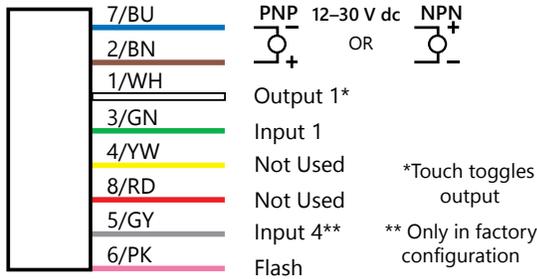


8-Pin/6-Wire Models (S22 Pro Touch and K30 RGB7 Devices Only) ⁵



⁵ Voltage values shown in wiring diagrams vary depending on the connected device.

8-Pin/8-Wire Models ⁵



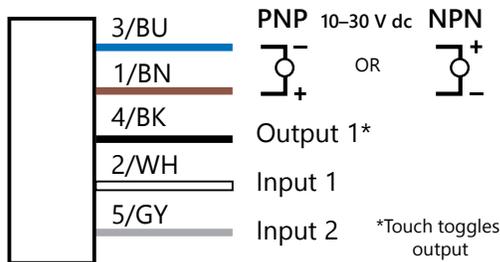
4.3.2 Device Logic Mode – Three State Advanced Control

When using Three State Advanced Control, four device states are activated by two input wires. The touch button toggles the output(s) with no device state change. ⁶

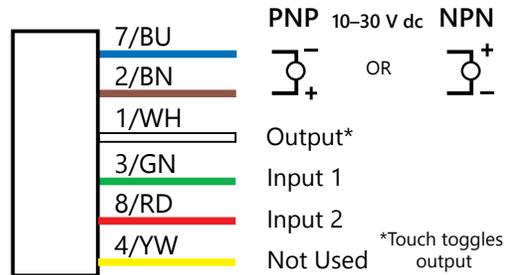
Figure 8. Three State Advanced Control Table – Pro Editor



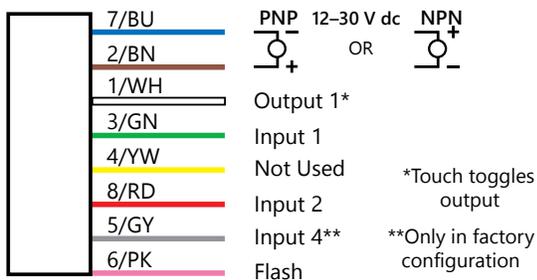
5-Pin/5-Wire Pro Devices ⁵



8-Pin/6-Wire Models (S22 Pro Touch Devices Only) ⁵



8-Pin/8-Wire Models ⁵



⁶ When configuring a 5-Wire K50 Pro Touch device to use two outputs, the Three State Advanced Control Device Logic Mode has two device states that are toggled by a single input wire.

4.3.3 Device Logic Mode – Seven State Advanced Control



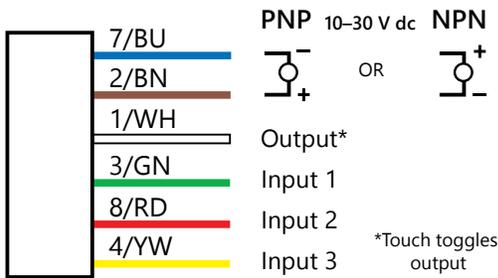
Note: Seven State Advanced Control is only available on 8-Pin (6-Wire or 8-Wire) Pro Series-enabled devices.

When using Seven State Advanced Control, seven device states are activated by three input wires. An additional power state can be defined. The touch button toggles the output(s) with no device state change.

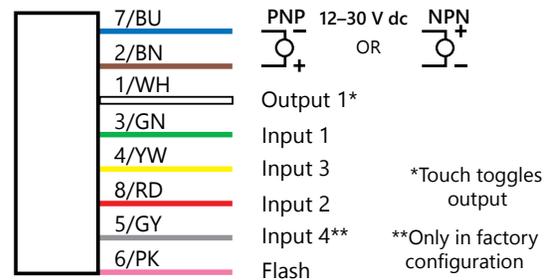
Figure 9. Seven State Advanced Control Table – Pro Editor



8-Pin/6-Wire Models (S22 Pro Touch Devices Only) ⁵



8-Pin/8-Wire Models ⁵



4.3.4 Global Parameters and Advanced Settings

Depending on the connected Pro Series-enabled device, the following global parameters appear in the configuration display.

Figure 10. S22 Pro Touch Global Parameters – Pro Editor

Output is Normally: Open Closed

Touch "On" Delay (ms):

Output Type on Touch: Momentary Latching

Touch "Off" Delay (ms):

S22 Touch Parameter	Description
Output is Normally	In Open mode, the output is turned ON with touch input. In Closed mode, the output is turned OFF with touch input.
Output Type on Touch	In Momentary mode, the output is toggled only while the touch button is touched. In Latching mode, the output toggles each time the touch button is pressed. ⁷
Touch "On" Delay (ms)	The length of time the touch button needs to be pressed to trigger "touch active" state.
Touch "Off" Delay (ms)	The length of time before the device returns to "touch inactive" state after the touch button is released.

Figure 11. K50 Pro Touch Global Parameters – Pro Editor

Output Type on Touch: Momentary Latching

Gray Wire Functionality: Output 2

Output 1 is Normally: Open Closed

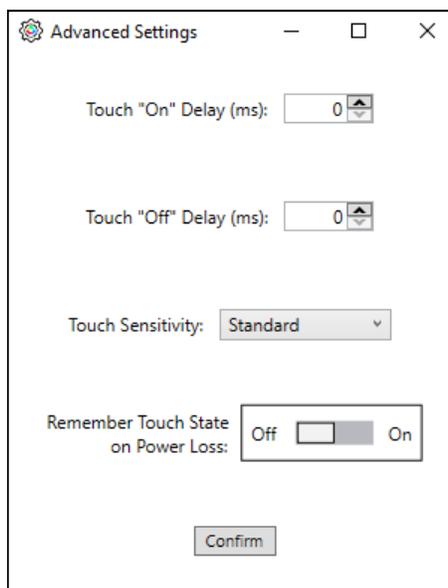
Output 2 is Normally: Open Closed

⁷ When **Output Type on Touch** is set to Latching mode, output state and device state transitions both occur on the leading edge of touch input.

K50 Pro Touch Parameter	Description
Output Type on Touch	In Momentary mode, the output only toggles while the touch button is touched. In Latching mode, the output toggles each time the touch button is pressed. ⁷
Output 1 is Normally	In Open mode, output 1 is turned ON with touch input. In Closed mode, output 1 is turned OFF with touch input.
White/Gray Wire Functionality ⁸	Determines whether the configurable wire should behave as an input or an output.
Output 2 is Normally	In Open mode, output 2 is turned ON with touch input. In Closed mode, output 2 is turned OFF with touch input.

When an actuator device is connected, the following **Advanced Settings** can be accessed by clicking on the **AdvancedSettings** menu.

Figure 12. K50 Pro Touch Advanced Settings – Pro Editor



K50 Pro Touch Setting	Description
Touch "On" Delay (ms)	The length of time the touch button needs to be pressed to trigger "touch active" state.
Touch "Off" Delay (ms)	The length of time before the device returns to "touch inactive" state after the touch button is released.
Touch Sensitivity	The touch button is easily toggled in High mode, and resists unintentional toggling in Low mode.
Remember Touch State on Power Loss	When the Global Parameter Output Type on Touch is set to Latching the Remember Touch State on Power Loss setting, determines whether touch state should be reset or retained when power is restored. When ON the touch state will be retained when power to the device is lost. When OFF the touch state will be reset when power to the device is lost.

4.3.5 K30 Pro Optical Adjustable Field (AF) Sensors

Set sensor parameters for the following applications:

- Detection
- Distance
- Coarse Distance

⁸ The configurable wire color depends on the wire count of the connected device. 5-Wire devices do not allow for custom wire configuration when in Four State Full Logic Mode. See [Device Logic Mode – Four State Full Logic](#) on page 12.

Detection

Detect materials or objects using an adjustable field up to a specific distance, ignoring objects beyond this distance (background suppression), or within a windowed range.

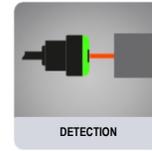


Figure 13. Detection settings

Device Logic Mode: Output Switchpoint Low(mm): Output Switchpoint High(mm):

Preview	Device State	Animation	Color 1		Color 2		Speed	Pattern	Direction
			Color	Intensity	Color	Intensity			
<input type="button" value="Start"/>	Power	<input type="text" value="Off"/>							
<input type="button" value="Start"/>	WH	<input type="text" value="Steady"/>	<input type="text" value="Green"/>	<input type="text" value="Hi"/>	<input type="text" value="Red"/>	<input type="text" value="Hi"/>			
<input type="button" value="Start"/>	GY	<input type="text" value="Steady"/>	<input type="text" value="Red"/>	<input type="text" value="Hi"/>	<input type="text" value="Yellow"/>	<input type="text" value="Hi"/>			
<input type="button" value="Start"/>	WH & GY	<input type="text" value="Steady"/>	<input type="text" value="Yellow"/>	<input type="text" value="Hi"/>					

Distance

Set the device to operate as a gauge, which allows the user to configure a background color and a fill color to display how far an object is within the Detection Area.

As an object moves along the sensing range, the proportion of fill color to background color changes in a clockwise (CW) or counter-clockwise (CCW) direction. The proportion of fill color increases as an object approaches the maximum range, and decreases as it moves towards the minimum.



Figure 14. Distance settings

Output Switchpoint Low(mm): Output Switchpoint High(mm):

State	Animation	Fill		Background		Speed	Pattern	Direction	Visual Range	
		Color	Intensity	Color	Intensity				Low	High
In Range		<input type="text" value="Green"/>	<input type="text" value="Hi"/>	<input type="text" value="Green"/>	<input type="text" value="Hi"/>				<input type="text" value="20"/>	<input type="text" value="1000"/>
Out of Range	<input type="text" value="Steady"/>	<input type="text" value="Green"/>	<input type="text" value="Hi"/>					<input type="text" value="CCW"/>		

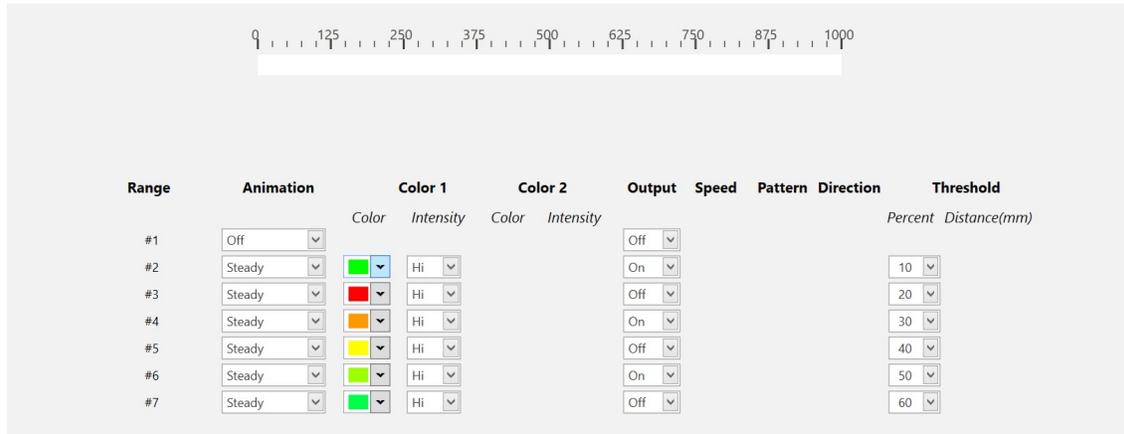
Coarse Distance

Divide the Detection Area into custom zones to generate a unique animation when an object is present within that zone distance.

Configure up to six zones for animation and output state. The minimum zone distance is 50 mm.



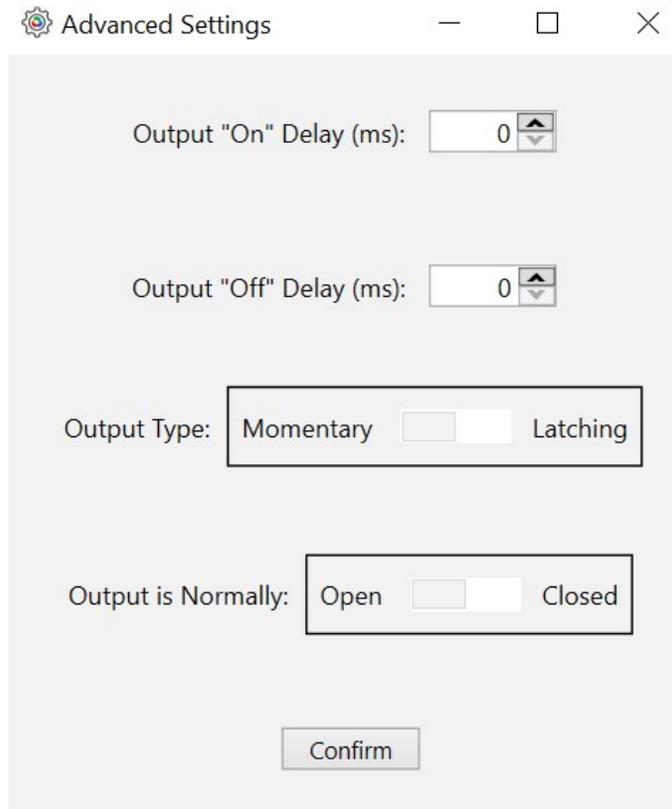
Figure 15. Coarse distance settings



Advanced Settings

When a sensor device is connected, the following **Advanced Settings** can be accessed by clicking on the **AdvancedSettings** menu.

Figure 16. K30 Pro Optical AF Sensor Advanced Settings – Pro Editor



4.4 Tower Light Devices

Set tower light parameters for the following applications:

- Tower Light
- Process Visualization
- Timer
- Counter
- Level



Note: The TLF100 has a separate, but functionally identical application list.

The wiring diagrams for tower light devices are updated based on the input wires selected for each mode. By default, tower lights are in segment mode. For more information about segment mode default inputs, see the corresponding tower light datasheet.

All wiring diagrams display a seven segment tower light. For devices that do not have seven segments, the wiring diagram shows these inputs/segments as NOT PRESENT.

4.4.1 Application: Tower Light

Activate each segment and control the input wire, color, animation, intensity, and speed. For information about the animation settings, see [Animation](#) on page 34.



In the Tower Light application, a single input can be assigned to one or multiple segments. The dedicated audible input overrides audible functions that have been assigned to segment inputs.

Figure 17. Wiring diagram for tower light application

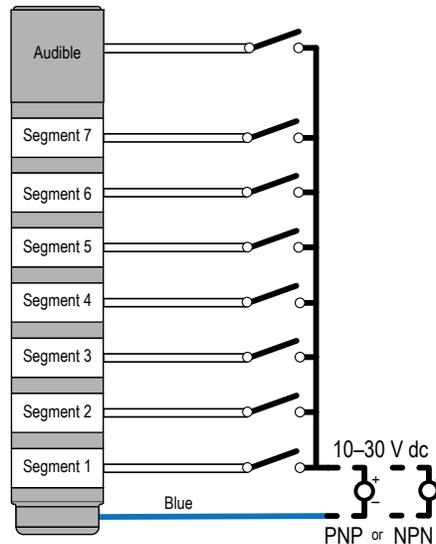


Figure 18. Tower light application settings

State Definitions: Segments											
Preview	Segment	Wire	Animation	Color 1	Intensity	Color 2	Intensity	Speed	Pattern	Direction	Audible
Start	Audible	Gray (5)									Off
Start	3	White (2)	Steady	Red	Hi						Off
Start	2	Brown (1)	Steady	Yellow	Hi						Off
Start	1	Black (4)	Steady	Green	Hi						Off
	Action	Disable									

4.4.2 Application: Process Visualization

The process visualization option enables a choice of colors, animations, speeds, and intensities to provide visual information that corresponds to equipment or process status. Single color illumination states are also available.

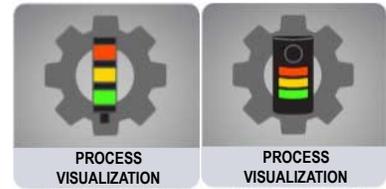


Figure 19. Process visualization settings

Presets:		Standard Settings		Colors		Intensities		Speed	Pattern	Direction
Preview	Input	Animation	Color 1	Color 2	Color 1	Color 2				
Start	Input 1:	Steady	Green		High					
Start	Input 2:	Two Color Flash	Red	Yellow	High	High	Standard	Normal		
Start	Input 3:	Color Spectrum	Blue		High		Standard			Up
Start	Input 4:	Steady	Yellow		High					

Read Write

4.4.3 Application: Timer

Set a total time and up to four thresholds. Start and stop the timer counting up or down with discrete control. Colors change across threshold values.



Figure 20. Timer settings

Count seconds: 8 Direction: Up Dominance: Disabled Subsegment Style: Analog Reset Input: Disabled Auto Restart: Enabled

Background color: Background intensity: Off

Presets: Standard Settings

Threshold	Enabled	Percent	Animation	Colors		Intensities		Speed	Pattern	Direction Shift
				Color 1	Color 2	Color 1	Color 2			
#4 - Top:	<input checked="" type="checkbox"/>	100	Steady	Red		High				
#3:	<input checked="" type="checkbox"/>	75	Steady	Yellow		High				
#2:	<input checked="" type="checkbox"/>	50	Steady	Blue		High				
#1 - Connector:	<input checked="" type="checkbox"/>	25	Steady	Green		High				

Preview Start 0% 100% 50 Read Write Wiring Diagram

4.4.4 Application: Counter

Set a total count and up to four thresholds. Discrete, rising edge pulses count up or down. Colors change across threshold values.

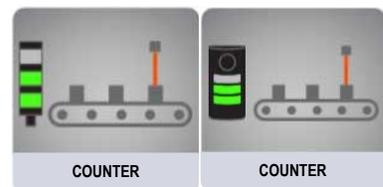
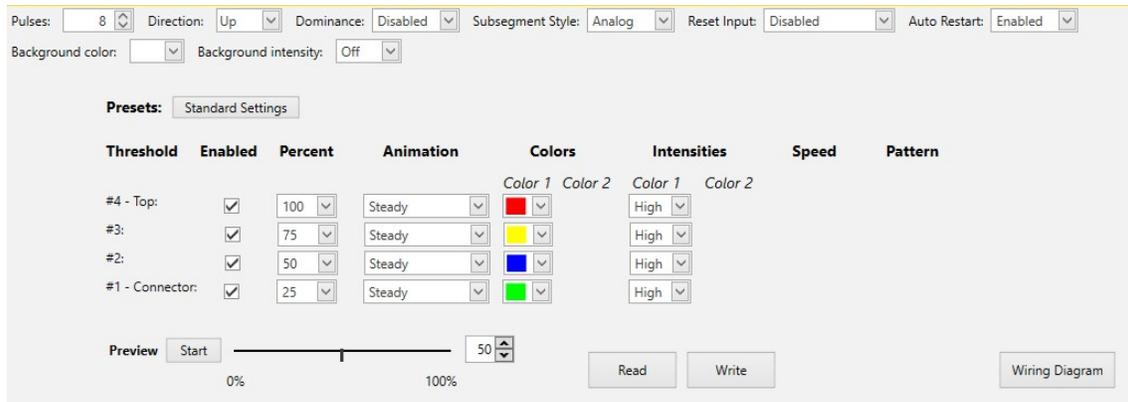


Figure 21. Counter settings



4.4.5 Application: Level

Adjust position and color continuously based on the PFM or PWM input value and defined animation in up to four thresholds while maintaining an optional steady background for the segments outside of the active threshold range. The PFM signal frequency range can be from 100 to 5,000 Hz. The PWM duty cycle range can be from 0 to 100%.

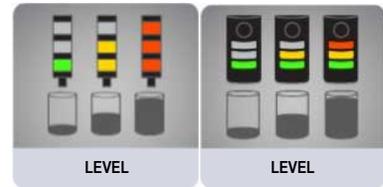


Figure 22. Level settings



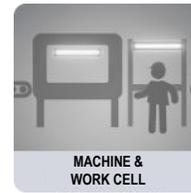
4.5 Strip Light Devices

Set strip light parameters for the following applications:

- Machine and Work Cell
- Tower Light
- Timer
- Counter
- Distance
- Gauge
- Mobile (WLS15 Pro only)
- Pick Put Build (WLS15 Pro only)

4.5.1 Application: Machine and Work Cell

Choose colors and animations to create up to seven discretely controlled illumination and status states. Spans functionality from single segment to two-colored animations.



By default, when the sub-applications for Machine and Work Cell are selected, Pro Editor opens **I/O State** configuration in **Advanced**. Three **I/O states** are available:

I/O State Configuration Settings	Description
Basic	Configurations made in this state assign one wire to one state, with the following override control: <ul style="list-style-type: none"> Pin 4 (Black) overrides Pin 1 (Brown) Pin 2 (White) overrides Pins 1 and 4 (Brown and Black)
Advanced	I/O state with full seven state options for maximum configuration. Configurations made in Advanced assign binary wiring combinations of all valid inputs to each state.
I/O Block	Three state control for use with I/O block. Configurations made in I/O Block assign states to the black, white, and combination of black and white wires for use with I/O blocks for which power (brown) and common (blue) are always on for five pin connections.

Single Segment

The single segment option shows the strip light in one solid color. The input wires are used to change colors. Flashing and intensity options are available. Presets are available for common configurations, which can be adjusted as desired.



Figure 23. Single segment settings

Choose I/O states: Advanced

Presets: White Temp White Dim EZ STATUS RGB

Input Wire Connections	Flash	Segment Color	Intensity	Speed	Pattern
Brown(Pin 1):	<input type="checkbox"/> Flash	Daylight White	High	Standard	Normal
Black(Pin 2):	<input type="checkbox"/> Flash	Green	High	Standard	Normal
White(Pin 4):	<input type="checkbox"/> Flash	Red	High	Standard	Normal
Brown/Black:	<input type="checkbox"/> Flash	Yellow	High	Standard	Normal
Brown/White:	<input type="checkbox"/> Flash	Blue	High	Standard	Normal
Black/White:	<input type="checkbox"/> Flash	Daylight White	High	Standard	Normal
All:	<input type="checkbox"/> Flash	Warm White	High	Standard	Normal

Read Write

End Status

The end status option shows the inside section of the strip light in one color and the ends of the light in another. The size of the two sections are customizable. The input wires are used to change color states. Flashing and intensity options are available.



Figure 24. End status settings

Choose I/O states: Advanced

Presets: Call For Help

Input Wire Connections	Ends	Segment Colors		Intensities		Speed	Pattern	Center%
		Center	Ends	Center	Ends			
Brown(Pin 1):	<input type="checkbox"/> Flash	Daylight White	Red	High	High	Standard	Normal	50
Black(Pin 2):	<input type="checkbox"/> Flash	Green	Red	High	High	Standard	Normal	50
White(Pin 4):	<input type="checkbox"/> Flash	Red	Red	High	High	Standard	Normal	50
Brown/Black:	<input type="checkbox"/> Flash	Yellow	Red	High	High	Standard	Normal	50
Brown/White:	<input type="checkbox"/> Flash	Blue	Red	High	Med	Standard	Normal	20
Black/White:	<input checked="" type="checkbox"/> Flash	Daylight White	Red	High	High	Standard	Normal	60
All:	<input type="checkbox"/> Flash	Warm White	Red	High	High	Standard	Normal	50

Read Write

Process Visualization

The process visualization option enables a choice of colors, animations, speeds, and intensities to provide visual information that corresponds to equipment or process status. Single color illumination states are also available.

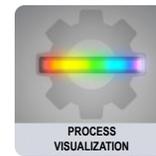


Figure 25. Process visualization settings

Choose I/O states: Advanced

Presets: Standard Settings

Input Wire Connections	Animation	Colors		Intensities		Speed	Pattern
		Color 1	Color 2	Color 1	Color 2		
Brown(Pin 1):	Steady	Daylight White		High		Standard	Normal
Black(Pin 2):	Steady	Green		High		Standard	Normal
White(Pin 4):	Steady	Red		High		Standard	Normal
Brown/Black:	Steady	Yellow		High		Standard	Normal
Brown/White:	Bounce	Blue	Red	High	Med	Standard	Normal
Black/White:	Ends Flash	Daylight White	Red	High	High	Standard	Normal
All:	Steady	Warm White		High		Standard	Normal

Read Write

4.5.2 Application: Tower Light

Choose colors and animations to create a discretely controlled two or three segment indicator.



Two Segment

The two segment option uses the strip light as a tower light with two defined segments. The segments are controlled independently with input wires. Animations, colors, and intensities are configurable.

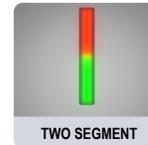


Figure 26. Two segment settings

Segments	Animation	Colors		Intensities	
		Color 1	Color 2	Color 1	Color 2
Seg 2 - Top: <small>(Brown, Pin 1)</small>	Steady	Red		High	
Seg 1 - Connector: <small>(Black, Pin 4)</small>	Steady	Green		High	

Read Write

Three Segment

The three segment option uses the strip light as a tower light with three defined segments. The segments are controlled independently with input wires. Animations, colors, and intensities are configurable.



Figure 27. Three segment settings

Segments	Animation	Colors		Intensities	
		Color 1	Color 2	Color 1	Color 2
Seg 3 - Top: <small>(White, Pin 2)</small>	Steady	Red		High	
Seg 2: <small>(Brown, Pin 1)</small>	Steady	Yellow		High	
Seg 1 - Connector: <small>(Black, Pin 4)</small>	Steady	Green		High	

Read Write

4.5.3 Application: Timer

Set a total time and up to four thresholds. Start and stop the timer counting up or down with discrete control. Colors change across threshold values.



Basic Timer

The timer option uses the strip light as a timer, counting up or counting down. Thresholds are available to change the visual appearance of the light as time advances. The timer starts when the supply voltage is applied to the timer run input wire, and paused when left floating or tied to ground. The timer resets when the supply voltage is applied to the reset wire. The timer automatically resets when it reaches the final count. Threshold markers⁹ can be applied, from which color and intensity can be defined.



Figure 28. Basic timer settings

Count seconds:	<input type="text" value="5"/>	Direction:	<input type="text" value="Up"/>	Dominance:	<input type="text" value="Disabled"/>	Threshold Marker:	<input type="text" value="Dominant"/>	Marker color:	<input type="text" value="Pink"/>	Marker Intensity:	<input type="text" value="High"/>
Presets: <input type="text" value="Standard Settings"/>											
Threshold	Enabled	Percent	Seconds	Flash	Color	Intensity	Speed	Pattern			
#4 - Top:	<input checked="" type="checkbox"/>	<input type="text" value="100"/>	5	<input type="checkbox"/>	<input type="text" value="Red"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
#3:	<input checked="" type="checkbox"/>	<input type="text" value="75"/>	4	<input type="checkbox"/>	<input type="text" value="Yellow"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
#2:	<input checked="" type="checkbox"/>	<input type="text" value="50"/>	3	<input type="checkbox"/>	<input type="text" value="Blue"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
#1 - Connector:	<input checked="" type="checkbox"/>	<input type="text" value="25"/>	1	<input type="checkbox"/>	<input type="text" value="Green"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
				<input type="text" value="Read"/>	<input type="text" value="Write"/>	<input type="text" value="Wiring Diagram"/>					

Timer with Background

The timer option uses the strip light as a timer, counting up or counting down. Thresholds are available to change the visual appearance of the light as time advances. The timer starts when the supply voltage is applied to the timer run input wire, and paused when left floating or tied to ground. The timer resets when the supply voltage is applied to the reset wire. The timer automatically resets when it reaches the final count. A steady global background or threshold markers⁹ can be applied, from which color and intensity can be defined.

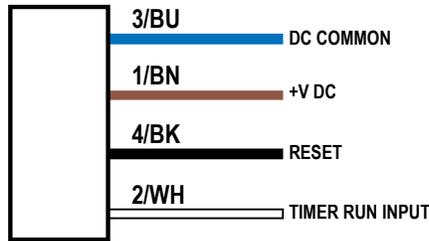


Figure 29. Timer with background settings

Count seconds:	<input type="text" value="5"/>	Direction:	<input type="text" value="Up"/>	Dominance:	<input type="text" value="Disabled"/>	Threshold Marker:	<input type="text" value="Dominant"/>	Marker color:	<input type="text" value="Pink"/>	Marker Intensity:	<input type="text" value="High"/>
Background color:	<input type="text" value=""/>	Background intensity:	<input type="text" value="Off"/>								
Presets: <input type="text" value="Standard Settings"/>											
Threshold	Enabled	Percent	Seconds	Flash	Color	Intensity	Speed	Pattern			
#4 - Top:	<input checked="" type="checkbox"/>	<input type="text" value="100"/>	5	<input type="checkbox"/>	<input type="text" value="Red"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
#3:	<input checked="" type="checkbox"/>	<input type="text" value="75"/>	4	<input type="checkbox"/>	<input type="text" value="Yellow"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
#2:	<input checked="" type="checkbox"/>	<input type="text" value="50"/>	3	<input type="checkbox"/>	<input type="text" value="Blue"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
#1 - Connector:	<input checked="" type="checkbox"/>	<input type="text" value="25"/>	1	<input type="checkbox"/>	<input type="text" value="Green"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>			
				<input type="text" value="Read"/>	<input type="text" value="Write"/>	<input type="text" value="Wiring Diagram"/>					

⁹ Threshold markers only apply to WLS15 Pro devices.

Figure 30. Wiring diagram for timer



4.5.4 Application: Counter

Set a total count and up to four thresholds. Discrete, rising edge pulses count up or down. Colors change across threshold values.



Basic Counter

The counter option converts input pulses to movement of LEDs along the length of the light based on thresholds that define colors, intensity, and flashing. When the rising edge of the supply voltage pulse is applied to the counter input wire, the count changes by one. The counter resets when the supply voltage is applied to the reset wire. The counter automatically resets when it reaches the final count. Threshold markers ¹⁰ can be applied, from which color and intensity can be defined.



Figure 31. Basic counter settings

The screenshot shows the 'Basic counter settings' window. At the top, there are several dropdown menus: 'Pulses' (set to 5), 'Direction' (Up), 'Dominance' (Disabled), 'Threshold Marker' (Dominant), 'Marker color' (Pink), and 'Marker Intensity' (High). Below these is a 'Control Input Function' dropdown set to 'Reset'. A 'Presets' button is set to 'Standard Settings'. The main area contains a table with columns for Threshold, Enabled, Percent, Pulses, Flash, Color, Intensity, Speed, and Pattern. At the bottom are 'Read', 'Write', and 'Wiring Diagram' buttons.

Threshold	Enabled	Percent	Pulses	Flash	Color	Intensity	Speed	Pattern
#4 - Top:	<input checked="" type="checkbox"/>	100	5	<input type="checkbox"/>	Red	High	Standard	Normal
#3:	<input checked="" type="checkbox"/>	75	4	<input type="checkbox"/>	Yellow	High	Standard	Normal
#2:	<input checked="" type="checkbox"/>	50	3	<input type="checkbox"/>	Blue	High	Standard	Normal
#1 - Connector:	<input checked="" type="checkbox"/>	25	1	<input type="checkbox"/>	Green	High	Standard	Normal

Counter with Background

The counter option converts input pulses to movement of LEDs along the length of the light based on thresholds that define colors, intensity, and flashing. When the rising edge of the supply voltage pulse is applied to the counter input wire, the count changes by one. The counter resets when the supply voltage is applied to the reset wire. The counter automatically resets when it reaches the final count. A steady global background or threshold markers ¹¹ can be applied, from which color and intensity can also be defined.



¹⁰ Threshold markers only apply to WLS15 Pro devices.

¹¹ Threshold markers only apply to WLS15 Pro devices.

Figure 32. Counter with background settings

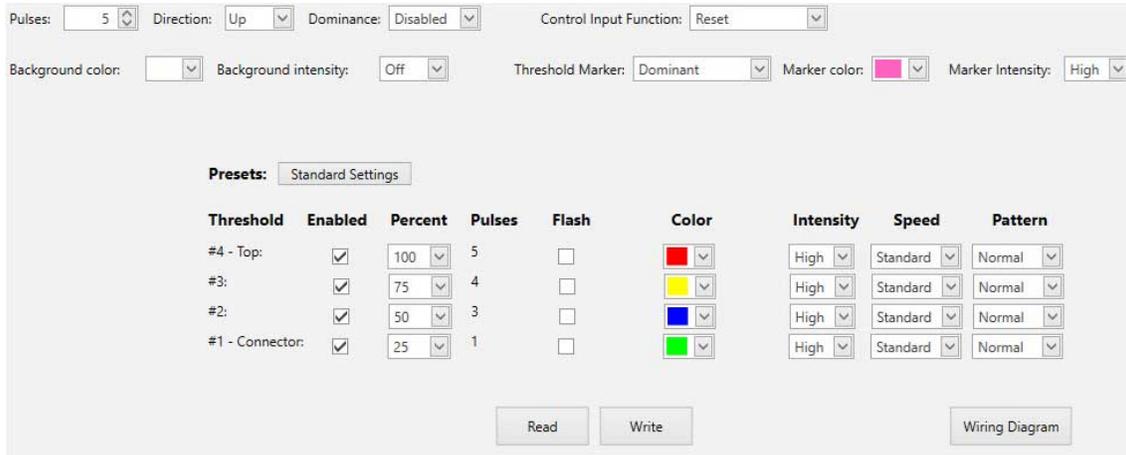


Figure 33. Wiring diagram for counter input

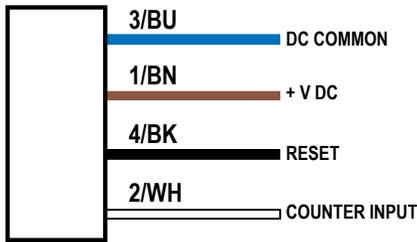
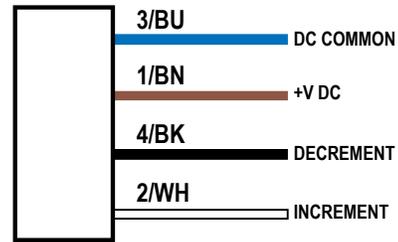


Figure 34. Wiring diagram for counter increment-decrement



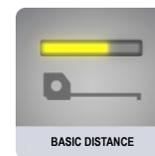
4.5.5 Application: Distance

The distance mode uses the light to display colored LEDs proportional to a PFM (pulse frequency modulation) or PWM (pulse width modulation) input. Four thresholds are available to change color, flashing, and intensity as the input value changes.



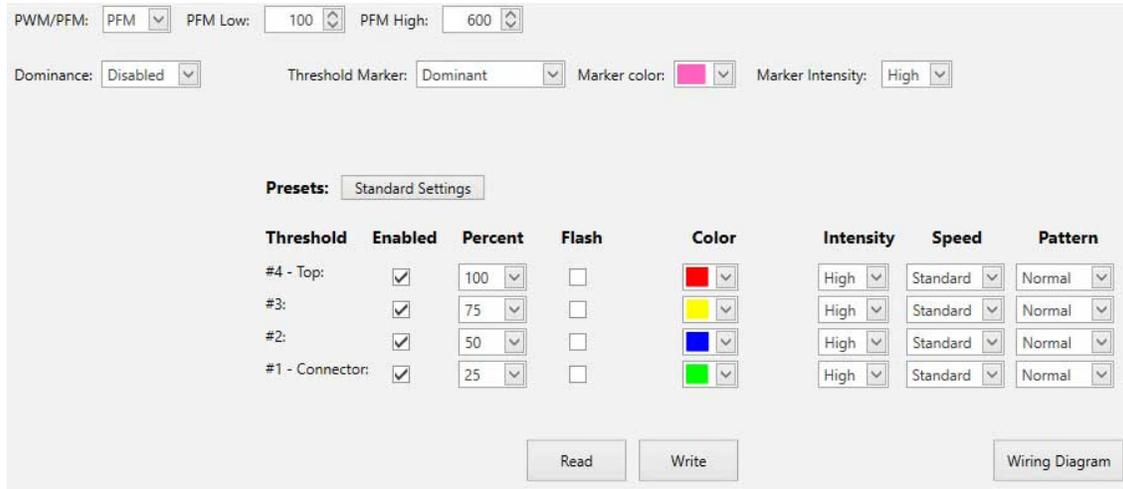
Basic Distance

The distance option controls the color and position of the LEDs based on a defined PFM or PWM input range. The PFM signal frequency range can be from 100 to 10,000 Hz. The PWM duty cycle range can be from 0 to 100%. The light adjusts position and color continuously based on the input value and defined color, flash, and intensity in up to four thresholds. Threshold markers¹² can be applied, from which color and intensity can also be defined.



¹² Threshold markers only apply to WLS15 Pro devices.

Figure 35. Basic distance settings



Distance with Background

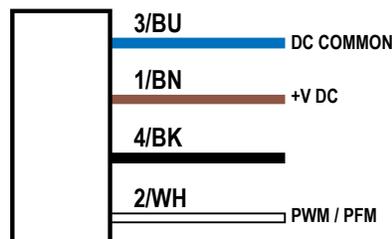
The distance option controls the color and position of the LEDs based on a defined PFM or PWM input range. The PFM signal frequency range can be from 100 to 10,000 Hz. The PWM duty cycle range can be from 0 to 100%. The light adjusts position and color continuously based on the input value and defined color, flash, and intensity in up to four thresholds while maintaining a steady background for LEDs outside the active threshold range. A steady global background or threshold markers ¹² can be applied, from which color and intensity can be defined.



Figure 36. Distance with background settings



Figure 37. Wiring diagram for distance



Coarse Distance (WLS15 Pro only)

Choose colors, intensities, and flash patterns to create up to seven discretely controlled levels based on input wiring logic states for simple distance and level indication.



Figure 38. Coarse distance settings

Number of Levels: Background Color: Background Intensity: Direction:

Presets:

Level	Input Wire	Flash	Color	Intensity	Speed	Pattern
#1 - (Connector)	Brown(Pin 1):	<input type="checkbox"/>	<input type="text" value="Green"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>
#2	Black(Pin 4):	<input type="checkbox"/>	<input type="text" value="Green"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>
#3	White(Pin 2):	<input type="checkbox"/>	<input type="text" value="Yellow"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>
#4	Brown/Black:	<input type="checkbox"/>	<input type="text" value="Yellow"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>
#5	Brown/White:	<input type="checkbox"/>	<input type="text" value="Yellow"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>
#6	Black/White:	<input type="checkbox"/>	<input type="text" value="Red"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>
#7 - (Top)	All:	<input type="checkbox"/>	<input type="text" value="Red"/>	<input type="text" value="High"/>	<input type="text" value="Standard"/>	<input type="text" value="Normal"/>

4.5.6 Application: Gauge

The gauge mode uses the light to display a colored band of LEDs in a position proportional to a PFM or PWM input. Upper, lower, and center thresholds are available to change color, animation, and intensity as the input signal changes. The width of the band is configurable.



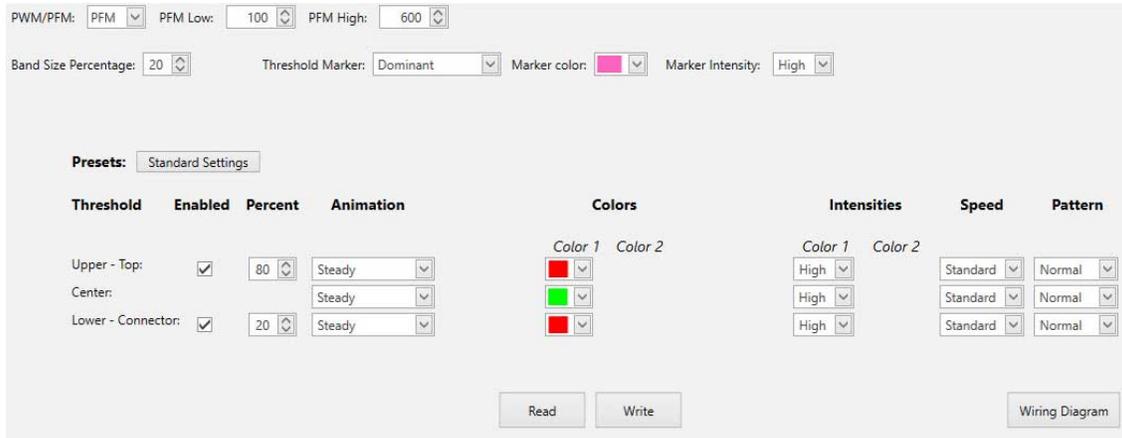
Basic Gauge

The gauge option controls the color and position of a band of LEDs based on a defined PFM or PWM input range. The PFM signal frequency range can be from 100 to 10,000 Hz. The PWM duty cycle range can be from 0 to 100%. The width of the band is defined as a percentage of total lighted length. The light adjusts the position and color of the band continuously based on the input signal and defined color, flash, intensities, and animations in upper, lower, and center thresholds. Threshold markers ¹³ can be applied, from which color and intensity can also be defined.



¹³ Threshold markers only apply to WLS15 Pro devices.

Figure 39. Basic gauge settings



Gauge with Background

The gauge option controls the color and position of a band of LEDs based on a defined PFM or PWM input range. The PFM signal frequency range can be from 100 to 10,000 Hz. The PWM duty cycle range can be from 0 to 100%. The width of the band is defined as a percentage of total lighted length. The light adjusts the position and color of the band and background continuously based on the input signal and defined color, flash, intensities, and animations in upper, lower, and center thresholds. A steady global background or threshold markers¹³ can be applied, from which color and intensity can be defined.



Figure 40. Gauge with background settings

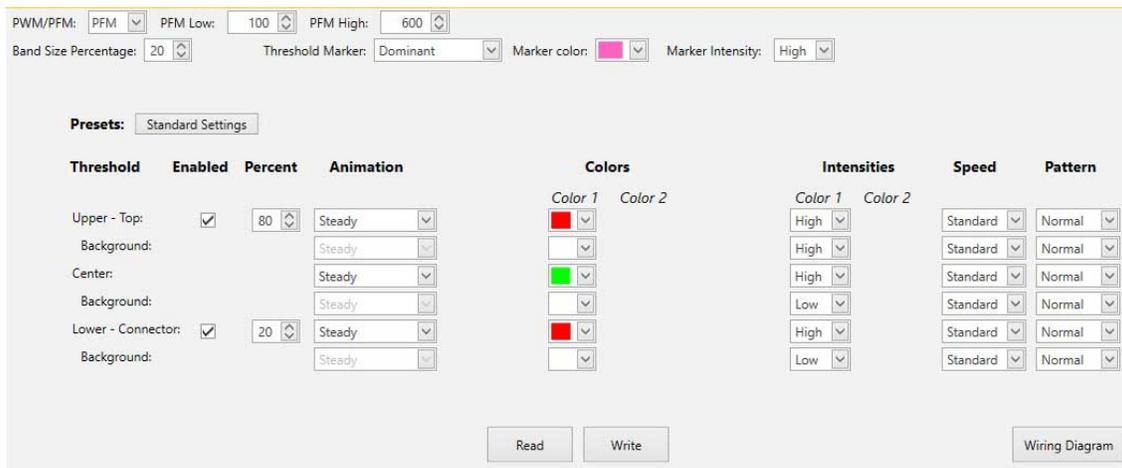
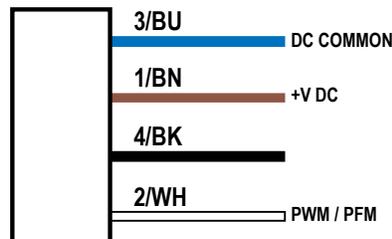


Figure 41. Wiring diagram for gauge



4.5.7 Application: Mobile (WLS15 Pro only)

Choose colors and animations to create states that can be used for advanced and intuitive indication on mobile equipment.



Basic Warning

Choose colors, intensities, and animations to create a discretely controlled, three segment indicator for the communication of equipment status. The segments are controlled independently with input wires.



Figure 42. Basic warning settings

Presets: Standard Settings

Segments	Animation	Colors		Intensities		Speed	Pattern	Level %	Direction
		Color1	Color2	Color1	Color2				
Seg 3 - Top: (White.Pin 2)	Scroll	<input type="color"/>	<input type="color"/>	High	High	Standard	Normal		←
Seg 2: (Brown.Pin 1)	Intensity Sweep	<input type="color"/>	<input type="color"/>	High		Standard	Normal		
Seg 1 - Connector: (Black.Pin 4)	Scroll	<input type="color"/>	<input type="color"/>	High	High	Standard	Normal		→

Read Write

Advanced Warning

Create up to seven discretely controlled status indicators, and use presets for Loading and Emergency Stop conditions. Colors, animations, speeds, and intensities provide equipment status.



Figure 43. Advanced warning settings

Choose I/O states: Advanced

Presets: Standard Settings

Input Wire	Preset	Animation	Colors		Intensities		Speed	Pattern	Level %	Direction
			Color 1	Color 2	Color 1	Color 2				
Brown(Pin 1):	Stop	Steady	<input type="color"/>	<input type="color"/>	High		Standard	Normal		
Black(Pin 4):	Left Blinker	Single End Fla...	<input type="color"/>	<input type="color"/>	High	Off	Standard	Normal		
White(Pin 2):	Right Blinker	Single End Fla...	<input type="color"/>	<input type="color"/>	High	Off	Standard	Normal		
Brown/Black:	Reverse	Two Color Sw...	<input type="color"/>	<input type="color"/>	High	Med	Fast	Normal		
Brown/White:	In Motion	Center Scroll	<input type="color"/>	<input type="color"/>	High	Low	Standard	Normal		
Black/White:	Loading	Center Bounce	<input type="color"/>	<input type="color"/>	High	High	Standard	Normal		
All:	Emergency...	Flash	<input type="color"/>	<input type="color"/>	High		Standard	3Pulse		

Read Write

4.5.8 Application: Pick Put Build (WLS15 Pro only)

Choose colors and animations to create states that can be used to guide operators, signal material status, enable light-guided assembly, create pick-to-light operations, and enable kitting operations.



Basic Segment

Choose colors, intensities, and animations to create a discretely controlled, two or three segment indicator for the communication of processes.



Figure 44. Basic segment settings

Segment Mode: 3 Segment | Background Color: | Background Intensity: Off

Presets: Standard Settings

Segment	Animation	Colors		Intensities		Speed	Pattern	Level %	Direction
		Color1	Color2	Color1	Color2				
Segment 3: <i>(White, Pin 2)</i>	Intensity Sweep	Green		High		Standard	Normal		
Segment 2: <i>(Brown, Pin 1)</i>	Intensity Sweep	Green		High		Standard	Normal		
Segment 1: <i>(Black, Pin 4)</i>	Intensity Sweep	Green		High		Standard	Normal		

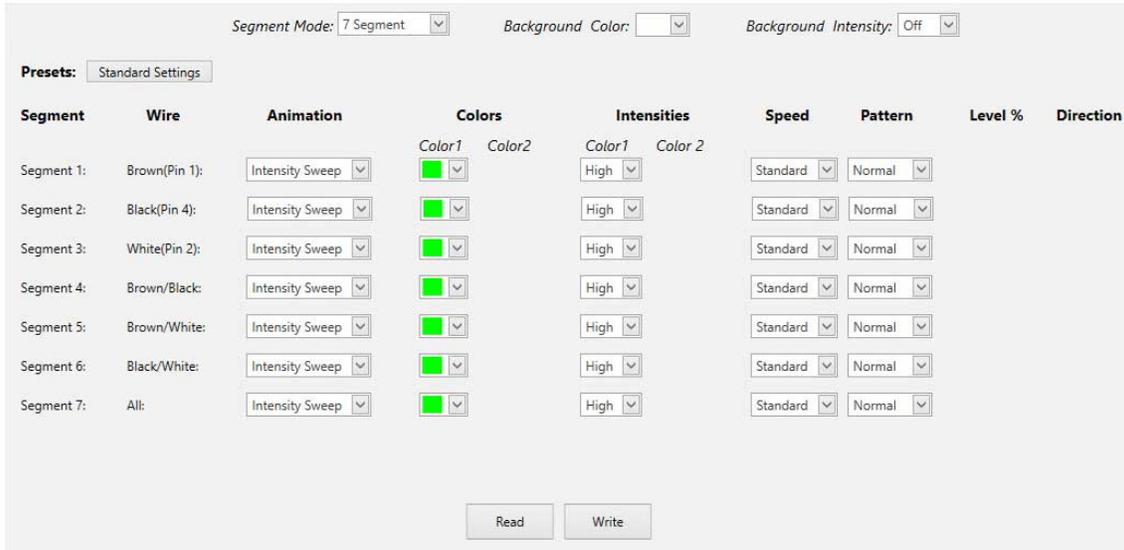
Read Write

Advanced Segment

Enable up to seven discretely controlled segments to be used as individual indication states. Only one segment can be enabled at once.



Figure 45. Advanced segment settings



4.6 Read Device Settings

To read the settings of the connected device, click **Read Device Settings**. Upon successful completion, the message "Device Read Success" displays momentarily. Pro Editor populates the settings of the connected device.

4.7 Write Device Settings

To write settings to a device, select **Write Device Settings**. Once successful, the message "Device Write Success" appears momentarily. The connected device is ready for use.

4.8 Connected Device Information

The model number and firmware information of the connected device is shown at the bottom of the screen.

4.9 Device Connection Status and Software Update Notification

Status	Description
Connected	A Pro Series-enabled device is connected to the Pro Editor software.
Not Connected	A Pro Series-enabled device is not connected to the Pro Editor software.
	When connected to a network, if a Pro Editor software update is available, a red icon displays in the bottom right corner of Pro Editor. To update Pro Editor, click on the notification icon and click Upgrade when prompted. Pro Editor closes, and an installer is downloaded to the desktop on your computer. Double-click the installer to begin the update.

5 Configure a Device

Read, write, and preview device states using the following controls.



Note: After editing a device state setting or loading a configuration file, any settings that are not written to the connected device are highlighted yellow. Disconnecting the device from Pro Editor before writing device settings will result in these settings being lost.

Devices can still be written to or configured with Pro Editor while in Offline Mode. See **Start Offline Mode** in [Menu Bar](#) on page 11.

5.1 Preview

To preview a device state, click **Start** on the desired device function row. The selected row remains available for editing while all other rows are locked and shown as grayed out. If any options are changed during this time they are highlighted yellow while all other rows and the **File** and **Device** menu items are locked ¹⁵.

Figure 46. Pro Editor Configuration – Preview Active

Preview	Device State	Animation	Color 1	Intensity 1	Color 2	Intensity 2	Speed	Pattern	Direction	Audible
<input type="button" value="Start"/>	Black Wire (Pin 4)	Steady		Hi						Off
<input type="button" value="Stop"/>	Brown Wire (Pin 1)	50/50		Hi		Med				Off
<input type="button" value="Start"/>	White Wire (Pin 2)	Steady		Hi						Off
<input type="button" value="Start"/>	Gray Wire (Pin 5)	Demo								



To stop preview, click **Stop**. Any device state options that were changed will remain but are not written to the device unless **Write Device Settings** is clicked. In segment mode, multiple tower light device states can be previewed at once. For all other devices and modes, only one state can be previewed at a time.



Note: By default, when not in preview mode, a connected 5-pin indicator device displays the configured Brown and Gray Device State function. An 8-pin indicator device displays the configured Brown and Yellow Device State functions.



Note: If using the limited preview capabilities setup, some preview features may be unavailable, including certain animations and colors.



Note: If using the limited preview capabilities setup, a red flashing LED on the Pro Converter Cable indicates a device power fault. See [Troubleshooting](#) on page 39 for more information.



Note: The preview function is not currently available for strip light devices.

5.2 Device State

The **Device State** table lists the animation configurations which can be activated by input wires. The listed wire color(s) must be ON for the device state to display.



Note: For indicator and tower light devices, the blue or brown wire should always be connected to ground, depending on desired polarity.



Note: For touch devices, the blue and brown wires should always be connected to power and ground, depending on desired polarity.



Note: For touch devices in Four State Full Logic mode, wire colors are replaced with state numbers corresponding to the active logic mode.

¹⁵ When applicable, the **File** and **Device** items are disabled when a device is in Preview Mode.

5.3 Animation

One animation can be configured for each wire status. Some animations have additional options available once selected. For example, if the 50/50 rotate animation is selected the Color 1, Intensity 1, Color 2, Intensity 2, Speed, and Direction controls become available.

Indicators and Tower Lights

Animations	Description	All Indicators	Tower Lights	K100 Beacon	K100 Indicator
Off	Device or segment is off	X	X	X	X
Steady	Color 1 is on at the defined intensity	X	X	X	X
Flash	Color 1 flashes at the defined speed, color intensity, and pattern (normal, strobe, three pulses, SOS, or random)	X	X	X	X
Two Color Flash	Color 1 and Color 2 flash alternately at the defined speed, color intensities, and pattern (normal, strobe, three pulses, SOS, or random)	X	X		X
50/50	Color 1 displays on 50% and Color 2 displays on the other 50% statically at the defined color intensities	X	X		
50/50 Rotate	Color 1 displays on 50% and Color 2 displays on the other 50% while rotating at the defined speed, color intensities, rotational direction	X			
Chase	Color 1 is displayed as a single spot against the background of Color 2 while rotating at the defined speed, color intensities, rotational direction	X			
Scroll	Color 1 fills two segments and those segments move in one direction, up or down against the background of Color 2 at the defined speed, color intensities, and rotational direction		X		
Bounce	Color 1 fills two segments and those segments move up and down between the top and bottom of the tower against the background of Color 2 at the defined speed, color intensities, and rotational direction		X		
Rotate	Color 1 circles the device at the defined speed, intensity, and direction			X	
Intensity Sweep	Color 1 continuously increases and decreases intensity between 0% to 100% on each device or on every segment at the defined speed and color intensity	X	X		X
Color Sweep	The device continuously shifts between Color 1 and Color 2 at the defined speed and intensities	X			X
Sequence	Color 1 displays steady on at the defined Color 1 percentage and Color 2 displays steady on the remaining percentage of the device at their defined intensities	X			
Wave	Color 1 and Color 2 spin in the defined direction around the device's circumference continuously, alternating between the primary and background colors, at the defined speed and intensities	X			X
Double Wave	Color 1 and Color 2 expand bidirectionally around the device's circumference continuously, alternating between the primary and background colors, at the defined speed and intensities	X			X

Animations	Description	All Indicators	Tower Lights	K100 Beacon	K100 Indicator
Color Spectrum	The device scrolls through the 14 predefined colors with a different color on each segment at the defined speed, Color 1 intensity, and rotational direction		X		

Strip Lights and TLF100

Animations	Description
Off	Device or segment is off
Steady	Color 1 is on at the defined intensity
Flash	Color 1 flashes at the defined speed, color intensity, and pattern (normal, strobe, three pulses, SOS, or random)
Two Color Flash	Color 1 and Color 2 flash alternately at the defined speed, color intensities, and pattern (normal, strobe, three pulses, SOS, or random)
Two Color Shift	Color 1 and Color 2 flash alternately on adjacent LEDs at the defined speed and color intensities
Ends Steady	Color 1 defines the center 75% of the light. Color 2 defines the 12.5% of the light on each end. Center and ends are on steady. Center proportion can be defined in End Status mode
Ends Flash	Color 1 defines the center 75% of the light. Color 2 defines the 12.5% of the light on each end. The ends will flash at defined speed and pattern. Center proportion can be defined in End Status mode
Scroll	Color 1 defines a band 20% of the length of the light that moves in one direction from one end of the light to the other end of the light against the background of Color 2 at the defined speed and color intensity
Center Scroll	Color 1 defines a band 10% the length of the light that moves from the center of the light to the ends of the light against the background of Color 2 at the defined speed and color intensities
Bounce	Color 1 defines a band 20% of the length of the light that moves from one end of the light to the other end of the light against the background of Color 2 at the defined speed and color intensity
Center Bounce	Color 1 defines a band 10% the length of the light that moves from the center of the light to the ends of the light and then back to the center against the background of Color 2 at the defined speed and color intensity
Intensity Sweep	Color 1 continuously increases and decreases intensity between 0% to 100% on each device or on every segment at the defined speed and color intensity
Two Color Sweep	Color 1 and Color 2 define the end values of a line across the color gamut. The light continuously displays a color by moving along the line at the defined speed and color intensity
Color Spectrum	The light scrolls through the 13 predefined colors with a different color on each LED at the defined speed, Color 1 intensity, and direction
Single End Steady (WLS15 Pro and TLF100 only)	Color 1 is solid on at the defined intensity on one end of the device
Single End Flash (WLS15 Pro and TLF100 only)	Color 1 flashes at the defined speed, color intensity, and pattern (normal, strobe, three pulse, SOS, or random) on one end of the device
Spectrum (TLF100 only)	The tower light scrolls through the 14 predefined colors with a different color on each segment at the defined speed, Color 1 intensity, and rotational direction

5.4 Pattern

The Pattern control sets the pattern of the flash animation.

Pattern	Description
Normal	Alternating Color 1; Color 2 at 50% duty cycle
Strobe	Continuous Color 1; Color 2 flashes at 20% duty cycle
3-Pulse	Three consecutive Color 1 pulses at 10% duty cycle on Color 2 background

Pattern	Description
SOS	Short pulse, short pulse, short pulse, long pulse, long pulse, long pulse, short pulse, short pulse, short pulse alternating Color 1 and Color 2
Random	Random sequence of light signals

5.5 Color 1 or Color 2

The following colors are available for Color 1 and Color 2. ¹⁶

- Red
- Green
- Yellow
- Blue
- Magenta
- Cyan
- White
- Amber
- Rose
- Lime Green
- Orange
- Sky Blue
- Violet
- Spring Green
- Neutral White (5700K) ¹⁷
- Warm White (3000K) ¹⁷
- Fluorescent White (4100K) ¹⁷
- Daylight White (5000K) ¹⁷
- Incandescent White (2700K) ¹⁷
- Cool White (6500K) ¹⁷

5.6 Intensity 1 or Intensity 2

The Intensity control sets the intensity of a color. Color 1 is controlled by Intensity 1. Color 2, if applicable, is controlled by Intensity 2.

Intensity	Indicator, Touch, and Tower Light Devices	Strip Light Devices
Hi	100%	100%
Med	60%	50%
Low	25%	20%
Off	0%	0%

5.7 Speed

The Speed control sets the speed of five animation options: flash, chase, rotate, scroll, and bounce.

Flash, Scroll, and Bounce Animation Speed

Speed	Description
Slow	0.5 Hz
Standard	1 Hz
Fast	5 Hz

Rotational and Chase Animation Speed

Speed	Description
Slow	1 Hz
Standard	2 Hz
Fast	4Hz

K100-Specific Rotational Speeds

Speed	Description
Slow	80 rpm

¹⁶ The following colors are uncalibrated to achieve higher saturation: Red, Green, and Blue. They may show greater variance between devices than other colors.

¹⁷ Only available on strip light devices.

Speed	Description
Standard	120 rpm
Fast	160 rpm

5.8 Direction

The Direction control sets the direction of the animation.

Direction	Description
Clockwise (CW)	Animation rotates in clockwise direction. Applies to 50/50 rotate and chase.
Counterclockwise (CCW)	Animation rotates in counterclockwise direction. Applies to 50/50 rotate and chase.
Up	Animation originates from the connector end
Down	Animation originates from the non-connector end

5.9 Shift Enable

Shift enable controls the 50/50, 50/50 Rotate, and Chase animations in Run and Action Mode.

When applied, the shift enable consecutively offsets each segment animation by one LED.

5.10 Audible

The Audible control sets Audible options.



Note: This setting is only available with Pro Series-enabled audible devices.

For advanced audible devices (A) only: when configuring the device's Pattern setting, the audible tone will match the pattern of the flash animation * (Steady, Strobe, Pulse, SOS, Random).

Audible	K50 Pro Touch (A)	K50 Pro Compact (A)	K100 (A)	K50 Indicator	TLF100	Other Pro-Series Devices
OFF	X	X	X	X	X	X
Steady*	X	X	X ¹⁸	X		X
Pulse*	X	X	X ¹⁸	X		X
SOS*	X	X	X ¹⁸	X		X
Strobe*	X	X	X	X		
Random*	X	X	X	X		
Wobble	X	X	X		X	
Siren	X	X	X		X	
Whoop	X	X	X		X	
Jingle	X	X	X		X	
Melody 1	X	X	X		X	
Melody 2	X	X	X		X	
Melody 3	X	X	X		X	
Staccato	X	X	X		X	
Continuous 1	X	X	X		X	
Continuous 2	X	X	X		X	

¹⁸ Only available in the Pro Indicator model.

5.11 Vibration

The Vibration control sets Vibration options.



Note: Only available with Pro Series-enabled vibration feedback devices.

The vibration is contingent on touch and has a maximum total on-time per touch of 3 seconds.

In Four State Full Logic mode, Vibration can only be defined for States 3 and 4 in which the touch conditions occur. In Three State and Seven State Advanced Control, the vibration can be defined for any state and is contingent on both the input(s) and a touch condition.

Vibration	Description
Off	No vibration on touch
On	Steady vibration on touch
Pattern	Only available if Animation is defined as Flash or Two Color Flash. The vibration follows the defined animation Pattern (Normal, Strobe, 3-Pulse, SOS, Random) and animation Speed (Slow, Standard, Fast).

6 Troubleshooting

6.1 Pro Editor Error Messages

Error Message	Recommended Solution
Found device (#) with Firmware ID/Version (##), which does not match the selected device (#) with Firmware ID/version (##). Advanced Settings fields have not been updated. Please contact the manufacturer for device updates.	The detected device has outdated firmware. Connect a different device or contact Banner support regarding firmware updates.
Error reading device information. Unable to update Advanced Settings fields.	Autodetect failed to read the device settings. Try again or attempt to connect with manual settings. If the error persists, contact Banner support regarding firmware updates.
No device found. Please check your USB connection or try a different COM Port.	Autodetect did not find any devices on the specified COM port. Ensure the Device Type and COM Port selections are correct, and that the device is properly connected and powered.
Connection failed: No connector box was detected on the selected port.	No Banner Pro Series-enabled device found on the specified COM port. Ensure the COM Port selection is correct, and that the device is properly connected and powered (if applicable).
Device (#) with Firmware ID (#) does not match the selected device (#) with Firmware ID (#). Please select the correct device or contact the manufacturer for updates.	Ensure that the correct Device Type is selected and attempt to connect again. If the error persists, contact Banner support regarding firmware updates.
Device (#) with Firmware version (#) does not match the selected device (#) with Firmware version (#). Please select the correct device or contact the manufacturer for updates.	Ensure that the correct Device Type is selected and attempt to connect again. If the error persists, contact Banner support regarding firmware updates.
Connection failed: Window was manually closed during connection attempt.	Open the Connection dialog and re-configure your connection. Do not close the Connection dialog while a connection attempt is in progress.
Connection failed: Unable to read device model and firmware info.	Try to connect again. If the error persists, contact Banner support regarding firmware updates.
Connection failed: Device was not detected. Please check the wired connection.	Verify that the device is properly connected and powered, and ensure the connection settings are correct.
Checksum mismatch: This file contains a bad checksum. It was either modified outside of Pro Editor or created by an earlier version of Pro Editor. Would you like to open the file anyway? If it's a valid file, re-saving it once it's opened will repair its checksum.	If the configuration file was created by an earlier version of Pro Editor, click yes and re-save the file to update the checksum. If the file may have been changed manually, click no to avoid loading bad configuration parameters.

6.2 Pro Converter Cable Error

LED Behavior	Error	Recommended Solution
Fast flashing red (10 Hz)	Device Power Fault	Connect the device using the recommended full preview capabilities setup. To continue using the limited preview capabilities setup, disconnect the cable and reconnect the device to the PC. If error persists, contact Banner support.

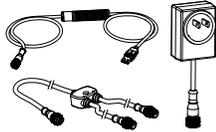
7 Accessories

7.1 Pro Editor Hardware

PRO-KIT

Includes:

- Pro Converter Cable (MQDC-506-USB)
- Splitter (CSB-M1251FM1251M)
- Power Supply (PSW-24-1)



PRO-KIT-K50

Includes:

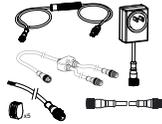
- Pro Series-enabled K50 (K50L2RGB7Q)
- Pro Converter Cable (MQDC-506-USB)
- Splitter (CSB-M1251FM1251M)
- Power Supply (PSW-24-1)



PRO-KIT-ACC

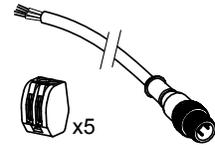
Includes:

- Pro Converter Cable (MQDC-506-USB)
- Splitter (CSBM1251FM1251M)
- Power Supply (PSW-24-1)
- 8-pin to 5-pin double-ended cordset (MQDC-801-5M-PRO)
- Mating accessory for cabled and terminal models (ACC-PRO-CABLE5)



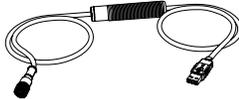
ACC-PRO-CABLE5

- Mating accessory for cabled and terminal models
- 150 mm (6 inch) PVC cable with M12 quick disconnect
- Lever wire nuts included (qty 5)
- Required to connect cabled models and screw terminal models to Pro Converter Cable, sold separately



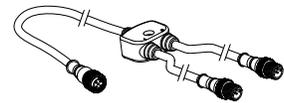
MQDC-506-USB

- Pro Converter Cable
- 1.83 m (6 ft) length 5-pin M12 quick disconnect to Device and USB to PC
- Required for connection to Pro Editor



CSB-M1251FM1251M

- 5-pin parallel Y splitter (Male-Male-Female)
- For full Pro Editor preview capability
- Requires external power supply, sold separately



PSW-24-1

- 24 V DC, 1 A power supply
- 2 m (6.5 ft) PVC cable with M12 quick disconnect
- Provides external power with splitter cable, sold separately



MQDC-801-5M-PRO

- 8-pin to 5-pin double-ended cordset
- 0.31 m (1 ft) PVC cable with M12 quick disconnects
- Required to connect 8-pin Pro Series-enabled devices to Pro Converter Cable (MQDC-506-USB), sold separately



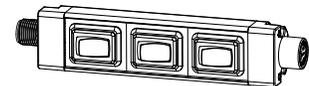
PSD-24-4

- 90 to 264 V AC 50/60 Hz input
- Includes a 1.8 m (6 ft) US style 5-15P input plug
- 24 V DC UL Listed Class 2 M12 connector output
- 4 A total current



LC28PB2-3Q

- In-line switch with M12 connectors
- Rugged metal housing
- Perfect for dc-powered task lights, indicators, and tower lights
- Rated for up to 30 V dc



8 Product Support and Maintenance

8.1 Maintenance

Maintenance tasks include updating the Pro Editor as new versions become available.

8.1.1 Update the Software

The current version of the Pro Editor software is available for download from www.bannerengineering.com/proeditor.

When connected to a network, if a Pro Editor software update is available, a red icon  displays in the bottom right corner of Pro Editor. See [Device Connection Status and Software Update Notification](#) on page 32 for more information.

8.2 Pro Editor Release Notes

Version	Devices	General
2.8	Added support for K100 Pro, K70 Pro, and K30 Pro devices	K30 Pro Indicator view control highlights correct indexes now Corrected Sequence Animation scaling for K30 Pro
2.3	Added support for WLS15 Pro, K90 Pro, and K50 Pro Beacon	--
2.2	Added support for WLS27 Pro	--
1.9	Added support for vibration-enabled K50 Pro Touch devices	--
1.8	Added support for TL50 Pro	Changed connection screen
1.7	Added support for K50 Pro Touch Added AdvancedSettings menu for K50 Pro Touch devices Added Device menu Moved Open Legacy Default Template and Restore Device Factory Configuration commands from File menu to new Device menu	Updated config file checksum to ignore comments; opening an existing config file in Pro Editor and re-saving it will update it to the new checksum format Added Sentry integration to automatically report crash data and usage statistics; for more information see the README.txt file located in the Pro Editor installation directory
1.5	Added support for S22 Pro Touch Added support for S22 Pro Indicator Replaced Open Factory Default File option in File menu with Restore Device Factory Configuration command Added  Help button next to Choose I/O states drop-down for indicator devices Indicator devices now default to Advanced I/O state when connected Added tooltips for Read Device Settings and Write Device Settings buttons	Connection Window—Device type is now auto-detected when connecting a device. Scan for Device functionality in Advanced Settings can now scan for all supported device types at once. Comm Port selection is remembered when the Connection window is opened within a Pro Editor session. General—New Config file format saves I/O state parameter and reduces file size; users are prompted to re-save their existing files on load to upgrade to new format

8.3 Contact Us

Banner Engineering Corp. headquarters is located at:

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Minneapolis, MN 55441, USA
Phone: + 1 888 373 6767

For worldwide locations and local representatives, visit www.bannerengineering.com.

8.4 Banner Engineering Corp. Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

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For patent information, see www.bannerengineering.com/patents.

8.5 FCC Part 15 Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

8.6 Industry Canada

This device complies with CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme NMB-3(B). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.