



CTL50 Continuous Tower Light Product Manual

Original Instructions

p/n: 255157 Rev. A

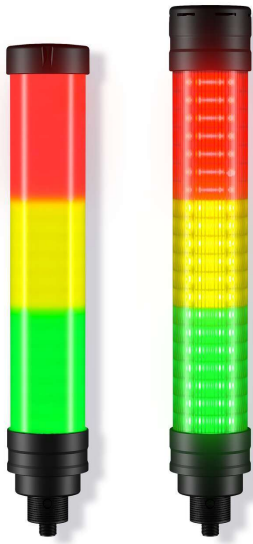
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Chapter 1 Features



- Standardize visual communication across machines and applications with configurable 8-, 12-, and 20-cell models offering up to 20 individually controllable cells
- Adapt appearance as needs change with 14 configurable colors, 17 animations, and adjustable brightness
- Visualize machine status, process values, and operating conditions with built-in Level, Timer, and Counter modes that convert machine and sensor inputs into indication
- Meet the visibility requirements of the environment with diffuse models for a clean, blended appearance and beacon-style models for higher visibility
- Retrofit existing machines and standardize across discrete control architectures with an integral M12 quick-disconnect connector
- Draw operator attention to status changes with models that add configurable audible alerts to visual indication for alarms, warnings, and process changes
- Install directly in washdown environments with an IP66- and IP69-rated design that needs no additional protective enclosure

Models

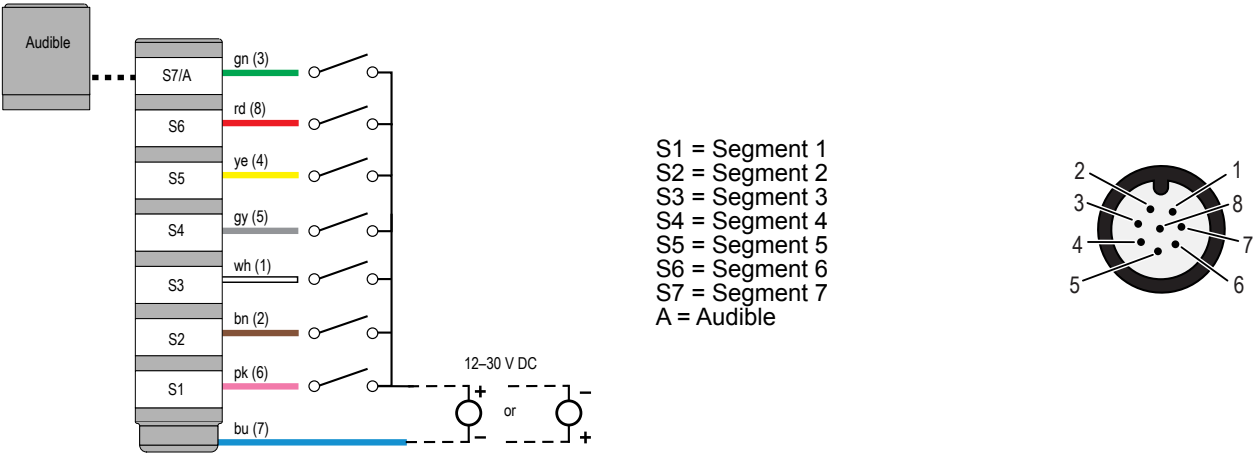
Family	Window	Number of Cells	Audible	Control	Housing Color	Connector ⁽¹⁾
CTL50		20	A			Q
50 mm Continuous Tower Light	D = Diffuse BL = Beacon Light	20 = 20 cells 12 = 12 cells 8 = 8 cells	Blank = No audible A = Audible	Blank = Discrete	Blank = Black	Q = Integral 8-pin M12 male quick-disconnect connector

Default Segment Colors

Number of Segments	Colors (Bottom to Top)
1	Red
2	Green, Red
3 (Default Factory Setting)	Green, Yellow, Red
4	Blue, Green, Yellow, Red
5	White, Blue, Green, Yellow, Red
6	Orange, White, Blue, Green, Yellow, Red
7	Magenta, Orange, White, Blue, Green, Yellow, Red

⁽¹⁾ Models with a quick-disconnect connector require a mating cordset.

Chapter 2 Wiring

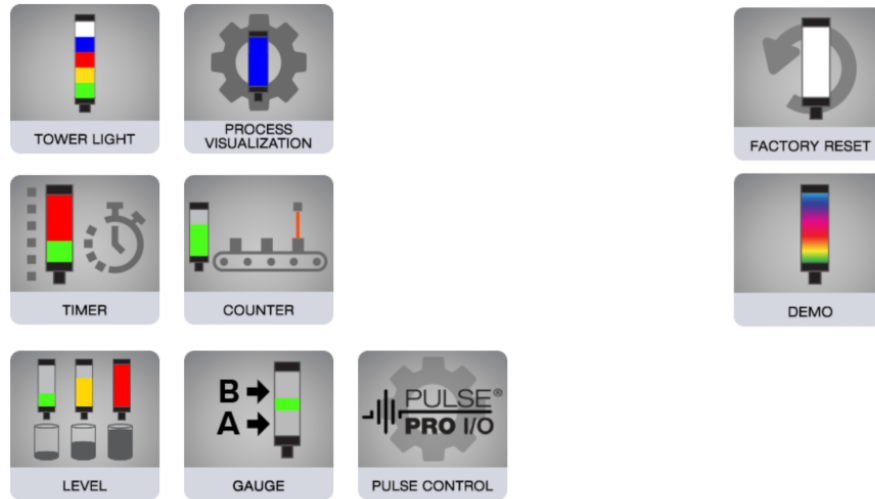


Pin	Color	Segment Mode	Advanced Mode
7	blue	Common	Common (PNP) or 12 V DC to 30 V DC (NPN)
6	pink	Segment 1	Reset Input
2	brown	Segment 2	12 V DC to 30 V DC (PNP) or Common (NPN)
1	white	Segment 3	PWM, PFM, Counter, or Timer input
5	gray	Segment 4	N/A
4	yellow	Segment 5	N/A
8	red	Segment 6	N/A
3	green	Segment 7/Audible	N/A

NOTE: The CTL50 supports operation with an 8-pin to 5-pin M12 cable or pigtail by mapping the corresponding pins and wire colors between the connectors. Because only a subset of the CTL50 inputs are available when using a 5-pin to 8-pin M12 connection, Pro Editor supports up to three configured segments in Traditional and Manual Segment Modes, or up to four configured segments when using AutoSpan. See [CTL50 8-Pin to Standard 5-Pin Mapping](#).

Chapter 3 Pro Editor Configuration for the CTL50

Applications

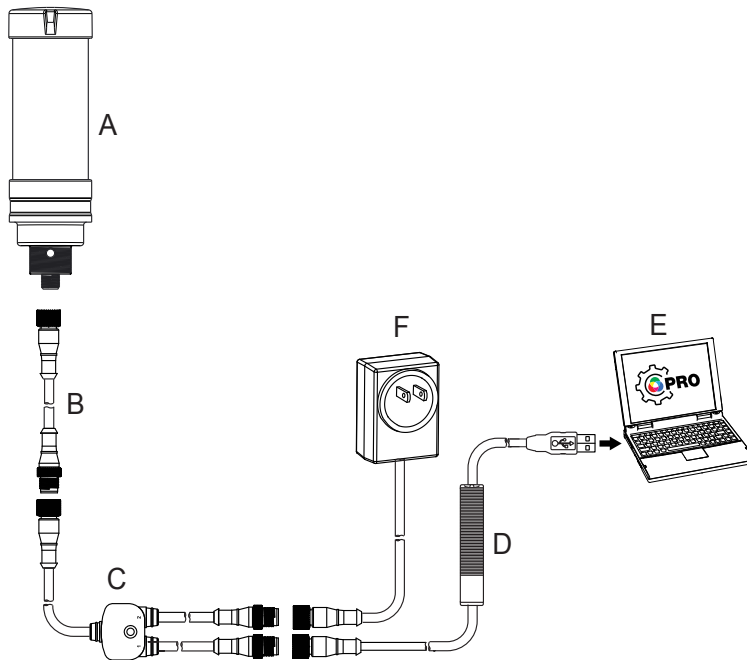


Banner's Pro Editor software offers an easy way to configure Pro Series-enabled indication, touch, and illumination devices, allowing users full control of device states and device logic modes. The easy-to-use configuration software provides a variety of tools and capabilities to solve a wide range of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

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

Full Preview Connection (Required)

The full preview connection must be used for the CTL50 Continuous Tower Light.



A = CTL50 Pro Editor-enabled device
 B = 8-Pin to 5-Pin Double-Ended Cordset (MQDC-801-5M-PRO)
 C = Splitter (CSB-M1251FM1251M)
 D = Pro Converter Cable (MQDC-506-USB)
 E = PC running Pro Editor software
 F = Power Supply (PSW-24-1, PSW-24-2, or PSD-24-4)

Animation Types and Parameters

Below is a list of animations and their parameters used throughout the various Pro Editor modes for the CTL50.

NOTE: Not all parameters are used by every animation. Parameters that do not apply to the selected animation are ignored.

Animations

Animation	Description
Off	Light 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 pulse, SOS, or random)
Two Color Flash	Color 1 and Color 2 flash alternately at the defined speed, color intensities, and pattern (normal, strobe, three pulse, 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 is on in the center of the light as defined by Percent Width of Color 1 at the defined color intensity while Color 2 is on for half of the remaining percentage on each end of the light at the defined color intensity
Ends Flash	Color 1 is on in the center of the light as defined by Percent Width of Color 1 at defined color intensity while Color 2 flashes for half of the remaining percentage on each end of the light at defined speed, color intensity, and pattern (normal, strobe, three pulse, SOS, or random)
Scroll	Color 1 fills the light as defined by Percent Width of Color 1 and moves in one direction up or down against the background of Color 2 at the defined speed, color intensities, style, and direction
Center Scroll	Color 1 fills the light as defined by Percent Width of Color 1 and moves in or out from the center of the light against the background of Color 2 at the defined speed, color intensities, style, and direction

Continued on page 7

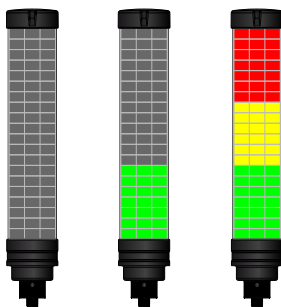
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Animation	Description
Chase	Color 1 is displayed as a single spot against the background of Color 2 while rotating at the defined speed, color intensities, and rotational direction
Bounce	Color 1 fills the light as defined by Percent Width of Color 1 and moves up and down against the background of Color 2 at the defined speed, color intensities, and style
Center Bounce	Color 1 fills the light as defined by Percent Width of Color 1 and moves in and out from the center of the light against the background of Color 2 at the defined speed, color intensities, and style
Intensity Sweep	Color 1 repeatedly increases and decreases intensity between 0% to 100% at 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 intensities
Spectrum	The light scrolls through 13 predefined colors with a different color on each LED at the defined speed, Color 1 intensity, and direction
Single End Steady	Color 1 is on at the defined intensity on one end of the device
Single End Flash	Color 1 flashes at the defined speed, color intensity, and pattern (normal, strobe, three pulse, SOS, or random) on one end of the device
50/50 Rotate	Color 1 is displayed on 50% of the segment and Color 2 is displayed on the other 50% of the segment while rotating at the defined speed, color intensities, and rotational direction

Animation Parameters

Parameters	Description
Color 1	Defines the primary color used by the animation.
Color 2	Defines the secondary color used by animations that support multiple colors.
Speed	Defines the rate at which the animation is displayed. Higher speed settings create faster visual movement or transitions.
Pattern	Defines the flash pattern used by supported animations. Available patterns include Normal, Strobe, 3-Pulse, SOS, and Random.
Direction	Defines the direction of supported animations. Normal displays the default animation direction, while Backward reverses the animation direction.
Color 1 Percentage	Defines the percentage of the animation occupied by Color 1. Higher values increase the amount of Color 1 visible within the animation.
Scroll / Bounce Style	Defines how supported Scroll and Bounce animations are displayed. Available styles include Solid, Smooth Tail, and Smooth Centered.
Audio Type	Defines the audible indication associated with the animation. Available options include Off, Pulse, Wobble, Strobe, Whoop, Staccato, Siren, Continuous, Sync, Jingle, Melody, and Custom sounds.
Volume	Defines the volume level of the selected audio indication. Available options include Low, Medium-Low, Medium-High, and High.

Tower Light (Segment Mode)



Tower Light (also known as Segment Mode) is used to create tower light indications with traditional segment layouts, manual segment configuration, or the AutoSpan feature.

Each segment supports unique colors, animations, intensity levels, speeds, and directions.

Traditional Segment Layouts

Automatically divides the tower into a fixed number of evenly sized segments, up to 7 segments. This mode provides a simple way to emulate traditional tower light behavior while maintaining consistent segment sizing throughout the tower light.

← Applications -> Tower Light



Presets: Standard Settings

Number of Segments: 3Background Color: Background Intensity: Off

Segment	Animation	Colors		Intensities		Speed	Pattern	Direction	Color 1 %	Scroll/Bounce	Audio	Volume
		Color 1	Color 2	Color 1	Color 2							
Segment 3: (White, Pin 1)	Steady			High							Off	Low
Segment 2: (Brown, Pin 2)	Steady			High							Off	Low
Segment 1 - Connector: (Pink, Pin 6)	Steady			High							Off	Low

Read

Write

Manual
Allows each segment to be assigned a custom width and offset, providing complete control over segment size and location within the tower light

← Applications -> Tower Light



Presets: Standard Settings

Number of Segments: ManualBackground Color: Background Intensity: Off

Provides complete control over segment placement. Create custom segment layouts by defining the width and position of each segment within the tower.

Segment	Animation	Colors		Intensities		Speed	Pattern	Direction	Color 1 %	Scroll/Bounce	Audio	Volume	Offset	Width
		Color 1	Color 2	Color 1	Color 2									
Segment 7: (Green, Pin 3)	Steady			High							Off	Low	0	0
Segment 6: (Red, Pin 8)	Steady			High							Off	Low	0	0
Segment 5: (Yellow, Pin 4)	Steady			High							Off	Low	0	0
Segment 4: (Gray, Pin 5)	Steady			High							Off	Low	0	0
Segment 3: (White, Pin 1)	Steady			High							Off	Low	0	0
Segment 2: (Brown, Pin 2)	Steady			High							Off	Low	0	0
Segment 1 - Connector: (Pink, Pin 6)	Steady			High							Off	Low	0	0

Read

Write

Auto (AutoSpan)
Automatically divides the available light cells into the selected number of segments and scales those segments proportionally across the span of the tower light. Segment numbers are displayed from lowest (bottom) to highest (top).

← Applications -> Tower Light

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Presets: Standard Settings

Number of Segments: AutoBackground Color: Background Intensity: Off

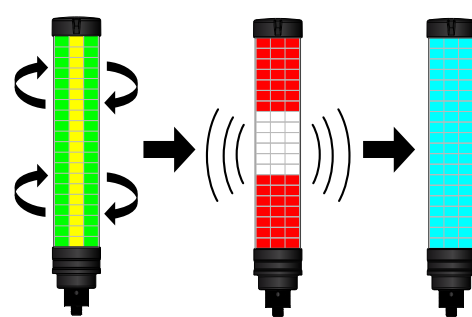
Each segment corresponds to an input. When an input is active, its segment is displayed. Auto redistributes active segments across the tower automatically, eliminating unused segments and maintaining segment order from bottom (lowest) to top (highest).

Segment	Animation	Colors		Intensities		Speed	Pattern	Direction	Color 1 %	Scroll/Bounce	Audio	Volume
		Color 1	Color 2	Color 1	Color 2							
Segment 7: (Green, Pin 3)	Steady			High							Off	Low
Segment 6: (Red, Pin 8)	Steady			High							Off	Low
Segment 5: (Yellow, Pin 4)	Steady			High							Off	Low
Segment 4: (Gray, Pin 5)	Steady			High							Off	Low
Segment 3: (White, Pin 1)	Steady			High							Off	Low
Segment 2: (Brown, Pin 2)	Steady			High							Off	Low
Segment 1 - Connector: (Pink, Pin 6)	Steady			High							Off	Low

ReadWrite

Number of Segments	Select how segments are created on the tower light. Choose a traditional 1-7 segment layout, Manual for custom segment widths and positions, or Auto to automatically distribute active segments across the tower light.
Width	Defines the size of the segment within the tower light. Larger values create larger indication areas. Available in Number of Segments > Manual only.
Offset	Defines the starting position of the segment within the tower light. Available in Number of Segments > Manual only.
Background Color	Defines the color displayed behind the active indication, segments, or threshold states.
Background Intensity	Defines the intensity of the background displayed behind the active indication, segments, or threshold states.
Animation	Defines the visual behavior displayed by the active segment. See Animation Types and Parameters for a complete list of available animations and descriptions.

Process Visualization (Run Mode)



Process Visualization (also known as Run Mode) controls the entire tower light as a single indication.

Configure colors, animations, intensity, speed, pulse patterns, direction, and audible alarms to create clear visual communication for machine status, process conditions, warnings, and faults.

Selecting the Process Visualization tile displays three I/O State tiles:

- Basic
- Advanced
- I/O Block

Basic I/O State
Basic seven-state control. Configurations made in Basic I/O State assign one wire to one state.

← Applications -> Process Visualization -> Basic

Device State	Animation	Color 1	Intensity 1	Color 2	Intensity 2	Speed	Pattern	Direction	Color 1 %	Scroll/Bounce	Audio Type	Volume
Pink (Pin 6)	Steady		High								Off	Low
Brown (Pin 2)	Steady		High								Off	Med-Low
White (Pin 1)	Steady		High								Off	Low
Gray (Pin 5)	Steady		High								Off	Low
Yellow (Pin 4)	Off										Off	Low
Red (Pin 8)	Off										Off	Low
Green (Pin 3)	Off										Off	Low

ReadWrite

Wiring Diagram

Advanced I/O State

Advanced, default I/O state, with fifteen state options for maximum configuration ability. Configurations made in Advanced I/O State assign binary wiring combinations of all valid inputs to each state.

← Applications -> Process Visualization -> Advanced

Device State	Animation	Color 1	Intensity 1	Color 2	Intensity 2	Speed	Pattern	Direction	Color 1 %	Scroll/Bounce	Audio Type	Volume
Pink (Pin 6)	Steady		High								Off	Low
Brown (Pin 2)	Steady		High								Off	Med-Low
White (Pin 1)	Steady		High								Off	Low
Gray (Pin 5)	Steady		High								Off	Low
Pink & Brown	Steady		High								Off	Low
Pink & White	Steady		High								Off	Low
Pink & Gray	Steady		High								Off	Low
Brown & White	Steady		High								Off	Low
Brown & Gray	Steady		High								Off	Low
White & Gray	Steady		High								Off	Low
Pink & Brown & White	Steady		High								Off	Low
Pink & Brown & Gray	Steady		High								Off	Low
Pink & White & Gray	Steady		High								Off	Low
Brown & White & Gray	Steady		High								Off	Low
All 4 Wires	Steady		High								Off	Low

ReadWrite

Wiring Diagram

I/O Block I/O State

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

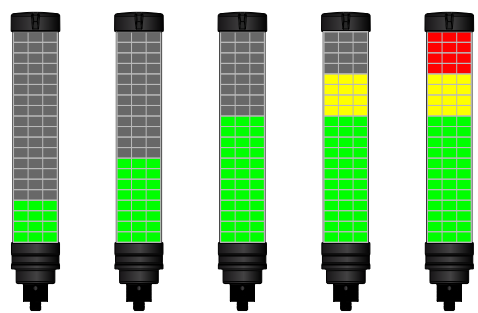
← Applications -> Process Visualization -> I/O Block

Device State	Animation	Color 1	Intensity 1	Color 2	Intensity 2	Speed	Pattern	Direction	Color 1 %	Scroll/Bounce	Audio Type	Volume
Pink (Pin 6)	Steady		High								Off	Low
White (Pin 1)	Steady		High								Off	Low
Pink & White	Steady		High								Off	Low

ReadWrite

Wiring Diagram

Level Mode



Level Mode converts a PFM/PWM signal into a visual level indicator.

Configure thresholds, colors, animations, threshold markers, filtering, hysteresis, and background indication to highlight operating ranges, warnings, alarms, and process conditions along the entire tower light.

← Applications -> Level



PWM/PFM: PFM PFM Low: 100 PFM High: 600 Dominance: Non-Dominant Subsegment Style: Analog

Background Color: Background Intensity: Low Filter Level: None Hysteresis Level: None

Threshold Marker: Disabled

Presets: Standard Settings

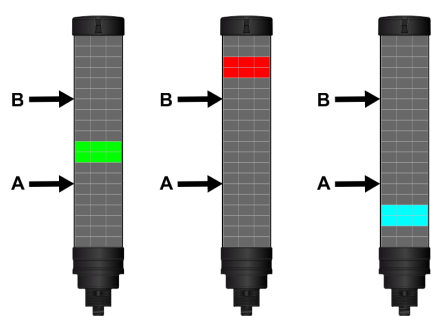
Threshold	Enabled	Percent	Animation	Colors		Intensities		Speed	Pattern	Direction	Color 1%	Scroll/Bounce	Audio Type	Volume
				Color 1	Color 2	Color 1	Color 2							
Threshold 4:	☒	100	Steady			High							Off	Low
Threshold 3:	☒	77	Steady			High							Off	Low
Threshold 2:	☒	66	Steady			High							Off	Low
Threshold 1:	☒	33	Steady			High							Off	Low

Read Write

Wiring Diagram

PWM / PFM	Selects the input signal type used to determine the displayed value. PWM (Pulse Width Modulation) uses duty cycle, while PFM (Pulse Frequency Modulation) uses pulse frequency.
Low Value	Sets the lower limit of the displayed range.
High Value	Sets the upper limit of the displayed range.
Dominance	Defines how active thresholds are displayed. Non-Dominant displays each threshold individually. Dominant allows the highest active threshold to control the active display. Full Dominant applies the highest active threshold's color and animation to the entire tower light.
Subsegment Style	Defines how partial light cells are displayed. Steady shows the next cell fully on. Analog gradually adjusts brightness to create a smoother visual transition between values.
Background Color	Defines the color displayed behind the active indication, segments, or threshold states.
Background Intensity	Defines the intensity of the background displayed behind the active indication, segments, or threshold states.
Filter Level	Smooths changes to the displayed value. Higher filter levels reduce rapid visual changes and create a more stable indication.
Hysteresis Level	Prevents rapid threshold changes when the displayed value fluctuates near a threshold. Higher settings provide greater stability.
Threshold Markers	Defines how threshold markers are displayed. Disabled hides threshold markers. Non-Dominant displays threshold markers behind the displayed visual. Dominant displays threshold markers over the displayed visual to maintain constant visibility.
Thresholds	Each threshold value defines the upper limit of that threshold range. A threshold becomes active when the displayed value is greater than the previous threshold value and less than or equal to the current threshold value. For example, if Threshold 3 is set to 75 and Threshold 4 is set to 100, then Threshold 4 is active from 75 to 100. Values above the highest configured threshold are not displayed.

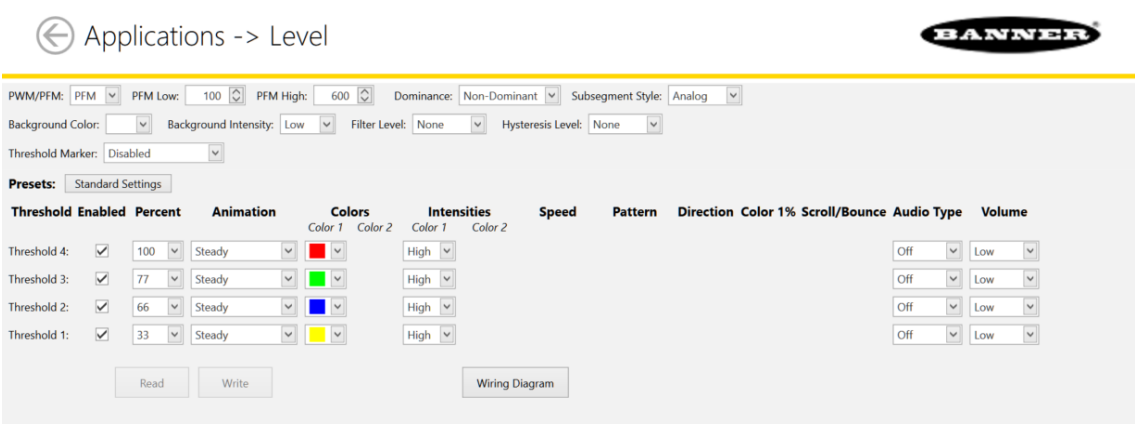
Gauge Mode



Gauge Mode controls the color and position of a band of LEDs based on a defined PFM or PWM input value and range.

The width of the band is defined as a percentage of the 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. Threshold markers can be applied, from which color and intensity can also be defined. The PFM signal frequency range can be from 100 to 10000 Hz (default 100 to 600 Hz). The PWM duty cycle range can be from 0 to 100%.

A = Threshold 1
B = Threshold 2



PWM / PFM	Selects the input signal type used to determine the displayed value. PWM (Pulse Width Modulation) uses duty cycle, while PFM (Pulse Frequency Modulation) uses pulse frequency.
Low Value	Sets the lower limit of the displayed range.
High Value	Sets the upper limit of the displayed range.
Filter Level	Smooths changes to the displayed value. Higher filter levels reduce rapid visual changes and create a more stable indication.
Hysteresis Level	Prevents rapid threshold changes when the displayed value fluctuates near a threshold. Higher settings provide greater stability.
Band Size Percentage	Defines the width of the indication band as a percentage of the tower. Larger values create a wider band, while smaller values create a narrower band. Limited to 50%.
Threshold Markers	Defines how threshold markers are displayed. Disabled hides threshold markers. Non-Dominant displays threshold markers behind the displayed visual. Dominant displays threshold markers over the displayed visual to maintain constant visibility.
Thresholds	Each threshold value defines the upper limit of that threshold range. A threshold becomes active when the displayed value is greater than the previous threshold value and less than or equal to the current threshold value. For example, if Threshold 3 is set to 75 and Threshold 4 is set to 100, then Threshold 4 is active from 75 to 100. Values above the highest configured threshold are not displayed.

Timer Mode

Timer Mode uses the light as a timer, counting up or counting down.

The timer starts when 12 V DC to 30 V DC is applied to the timer run input wire, and pauses when left floating or tied to ground. The timer resets when 12 V DC to 30 V DC is applied to the reset wire. The timer automatically resets when it

reaches the final count. A steady global background or threshold markers can be applied, from which color and intensity can be defined.

NOTE: Timer Mode can be configured with up to four thresholds, each with independent colors, animations, and audio settings to indicate progression through the timing cycle.

← Applications -> Timer



Count seconds: 8 | Direction: Up | Dominance: Non-Dominant | Subsegment Style: Analog | Reset Input: Enabled | Auto Restart: Enabled

Background Color: | Background Intensity: Low | Threshold Marker: Disabled

Presets: Standard Settings

Threshold	Enabled	Percent	Animation	Colors		Intensities		Speed	Pattern	Direction	Color 1%	Scroll/Bounce	Audio Type	Volume
				Color 1	Color 2	Color 1	Color 2							
Threshold 4:	☒	100	Steady			High							Off	Low
Threshold 3:	☒	77	Steady			High							Off	Low
Threshold 2:	☒	66	Steady			High							Off	Low
Threshold 1:	☒	33	Steady			High							Off	Low

Read

Write

Wiring Diagram

Count	Defines the total count value for the timer. The display updates as the timer progresses toward this value.
Direction	Defines the timer direction. Up displays the effect from bottom to top. Down displays the effect from top to bottom.
Dominance	Defines how active thresholds are displayed. Non-Dominant displays each threshold individually. Dominant allows the highest active threshold to control the active display. Full Dominant applies the highest active threshold's color and animation to the entire tower light.
Subsegment Style	Defines how partial light cells are displayed. Steady shows the next cell fully on. Analog gradually adjusts brightness to create a smoother visual transition between values.
Reset Input	The pink wire functions as a reset input. Activate to reset the current mode or displayed value.
Auto Restart	Defines whether the mode automatically restarts after reaching its final value.
Background Color	Defines the color displayed behind the active indication, segments, or threshold states.
Background Intensity	Defines the intensity of the background displayed behind the active indication, segments, or threshold states.
Threshold Markers	Defines how threshold markers are displayed. Disabled hides threshold markers. Non-Dominant displays threshold markers behind the displayed visual. Dominant displays threshold markers over the displayed visual to maintain constant visibility.
Thresholds	Each threshold value defines the upper limit of that threshold range. A threshold becomes active when the displayed value is greater than the previous threshold value and less than or equal to the current threshold value. For example, if Threshold 3 is set to 75 and Threshold 4 is set to 100, then Threshold 4 is active from 75 to 100. Values above the highest configured threshold are not displayed.

Counter Mode

Counter Mode counts up or down by converting input pulses into movement of LEDs along the length of the light based on up to four thresholds that define colors, intensity, and flashing.

When the rising edge of a 12 V DC to 30 V DC pulse is applied to the counter input wire, the count increases by one. The user can choose whether the counter resets or the count decreases by one when 12 V DC to 30 V DC is applied to the control input wire. The counter automatically resets when it reaches the final count. A steady global background or threshold markers can be applied, from which color and intensity can also be defined.

← Applications -> Counter



Pulses: 8

Direction: Up

Dominance: Non-Dominant

Subsegment Style: Analog

Reset Input: Enabled

Auto Restart: Enabled

Background Color:

Background Intensity: Low

Threshold Marker: Disabled

Presets: Standard Settings

Threshold	Enabled	Percent	Animation	Colors		Intensities		Speed	Pattern	Direction	Color 1%	Scroll/Bounce	Audio Type	Volume
				Color 1	Color 2	Color 1	Color 2							
Threshold 4:	☒	100	Steady			High							Off	Low
Threshold 3:	☒	77	Steady			High							Off	Low
Threshold 2:	☒	66	Steady			High							Off	Low
Threshold 1:	☒	33	Steady			High							Off	Low

Read

Write

Wiring Diagram

Pulses	Defines the pulse count at which the counter reaches its final value. If Auto Restart is enabled, then the counter resets and restarts on the next input pulse after reaching this value.
Direction	Defines the count direction. Up displays the effect from bottom to top. Down displays the effect from top to bottom.
Dominance	Defines how active thresholds are displayed. Non-Dominant displays each threshold individually. Dominant allows the highest active threshold to control the active display. Full Dominant applies the highest active threshold's color and animation to the entire tower light.
Subsegment Style	Defines how partial light cells are displayed. Steady shows the next cell fully on. Analog gradually adjusts brightness to create a smoother visual transition between values.
Reset Input	The pink wire functions as a reset input. Activate to reset the current mode or displayed value.
Auto Restart	Defines whether the mode automatically restarts after reaching its final value.
Background Color	Defines the color displayed behind the active indication, segments, or threshold states.
Background Intensity	Defines the intensity of the background displayed behind the active indication, segments, or threshold states.
Threshold Markers	Defines how threshold markers are displayed. Disabled hides threshold markers. Non-Dominant displays threshold markers behind the displayed visual. Dominant displays threshold markers over the displayed visual to maintain constant visibility.
Thresholds	Each threshold value defines the upper limit of that threshold range. A threshold becomes active when the displayed value is greater than the previous threshold value and less than or equal to the current threshold value. For example, if Threshold 3 is set to 75 and Threshold 4 is set to 100, then Threshold 4 is active from 75 to 100. Values above the highest configured threshold are not displayed.

Pulse Control

Selecting the Pulse Control tile displays up to sixteen states that correspond to input frequencies on the white wire. The number of states (1) and input characteristics (2) are user-defined. Ranges are calculated (3).

← Applications -> Pulse Control

1

2

3

Number of States: 16

PWM/PFM: PFM

PFM Low: 100

PFM High: 600

State	Animation	Color 1	Intensity 1	Color 2	Intensity 2	Speed	Pattern	Direction	Color 1 %	Scroll/Bounce	Range (Hz)	Audio Type	Volume
1	Off										100-131Hz	Off	Low
2	Steady		High								131-163Hz	Off	Low
3	Steady		High								163-194Hz	Off	Med-Low
4	Steady		High								194-225Hz	Off	Low
5	Steady		High								225-256Hz	Off	Low
6	Steady		High								256-288Hz	Off	Low
7	Steady		High								288-319Hz	Off	Low
8	Steady		High								319-350Hz	Off	Low
9	Steady		High								350-381Hz	Off	Low
10	Steady		High								381-413Hz	Off	Low
11	Steady		High								413-444Hz	Off	Low
12	Steady		High								444-475Hz	Off	Low
13	Steady		High								475-506Hz	Off	Low
14	Steady		High								506-538Hz	Off	Low
15	Steady		High								538-569Hz	Off	Low
16	Steady		High								569-600Hz	Off	Low

Read

Write

Wiring Diagram

Number of States	Defines the number of discrete indication states available. The configured PWM or PFM input range is automatically divided across the selected number of states.
PWM / PFM	Selects the input signal type used to determine the active state. PWM (Pulse Width Modulation) uses duty cycle, while PFM (Pulse Frequency Modulation) uses pulse frequency.
PWM / PFM Low	Sets the lower limit of the input range used to calculate active states. Values below this setting will activate the lowest state.
PWM / PFM High	Sets the upper limit of the input range used to calculate active states. Values above this setting will activate the highest state.

Factory Reset

Restore the CTL50 to default settings.

Demo Mode

Selecting the Demo tile writes the CTL50 into Demo Mode, which highlights the various modes available to the device.

Chapter 4 Specifications

Supply Voltage and Current

Voltage: 12 V DC to 30 V DC

Maximum Current:

Voltage (V DC)	20 Cell Device (mA)	12 Cell Device (mA)	8 Cell Device (mA)	Per Cell (mA)
12	830	410	390	42
18	550	280	260	28
24	410	210	200	21
30	330	170	165	17

NOTE: If calculating the maximum current for a 2-segment configuration, each cell will consume half of the current in the table above. If configured as a 3-segment configuration, it will consume a third, and so on. Per-cell values are for the smallest cell width configurable.

Maximum Current for Audible:

High: 40 mA
Med-High: 25 mA
Med-Low: 15 mA
Low: 6 mA

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Input Rating

Leakage Current Immunity: 400 uA
Indicator On/Off Response Time: 250 ms (maximum)
PWM Duty Cycle Range: 0 to 100%
PFM Frequency Range: 100 to 600 Hz

Connections

Integral 8-pin M12 male quick-disconnect connector
Models with a quick-disconnect connector require a mating cordset

Construction

Bases, Covers, and Light Cells: Polycarbonate

Operating Conditions

Non-Audible: -40 °C to +50 °C (-40 °F to +122 °F)

Audible: -20 °C to +50 °C (-4 °F to +122 °F)

95% at +50 °C maximum relative humidity (non-condensing)

Environmental Rating

UL Type 1
IP66, IP69

Vibration and Mechanical Shock

Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6

Shock: 15G 11 ms duration, half sine wave per IEC 60068-2-27

Audible Adjustment

Omni-Directional Sealed Audible Alarm: Software adjustable

Audible Alarm

Audible Frequency	2.8 kHz ± 500Hz
	Maximum Intensity at 1 m (SPL) ⁽²⁾
High	99 dB
Med-High	97 dB
Med-Low	92 dB
Low	84 dB

Certifications



Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM



Advanced Capabilities



Required Overcurrent Protection



WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	2.0	30	0.5

⁽²⁾ Up to. Actual SPL varies depending on setup. Ratings reflect maximum on-axis measurement.

Indicator Characteristics

Color	Dominant Wavelength (nm) or Color Temperature (CCT)	Color Coordinates		Lumen Output - Fully Lit			
		X	Y	20 Cell	12 Cell	8 Cell	Per Cell
Blue	465	0.1405	0.0521	22	12	11.9	1.1
Green	512	0.1267	0.6549	89.7	52.8	51.3	4.5
Red	618	0.6888	0.3092	55.1	30.4	28.8	2.8
Orange	602	0.6006	0.3633	61.4	35.1	33	3.1
Amber	592	0.5369	0.4022	65.8	38.1	35.8	3.3
Yellow	579	0.4526	0.4541	72.2	42	39.3	3.6
Lime Green	563	0.3688	0.5058	78.8	45	44.7	3.9
Spring Green	504	0.1294	0.5133	84	47.6	47.9	4.2
Cyan	489	0.1345	0.2973	67.9	38.3	38.9	3.4
Sky Blue	483	0.1366	0.2088	57	31.7	32.8	2.8
Blue	465	0.1405	0.0521	22	12	11.9	1.1
Violet	-	0.2136	0.0864	32.1	16.8	17.1	1.6
Magenta	-	0.3676	0.1652	43.3	24.3	23.3	2.2
Rose	-	0.4985	0.22	49.1	27.1	25.9	2.5
Daylight White	5000K	0.3384	0.3329	65.9	36.4	37.3	3.3

NOTE: If using a 20-cell device in a 2-segment configuration, divide lumen values by 2. If using a 3-segment configuration, divide lumen values by 3, and so on.

FCC Part 15 Class B for Unintentional Radiators

(Part 15.105(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.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

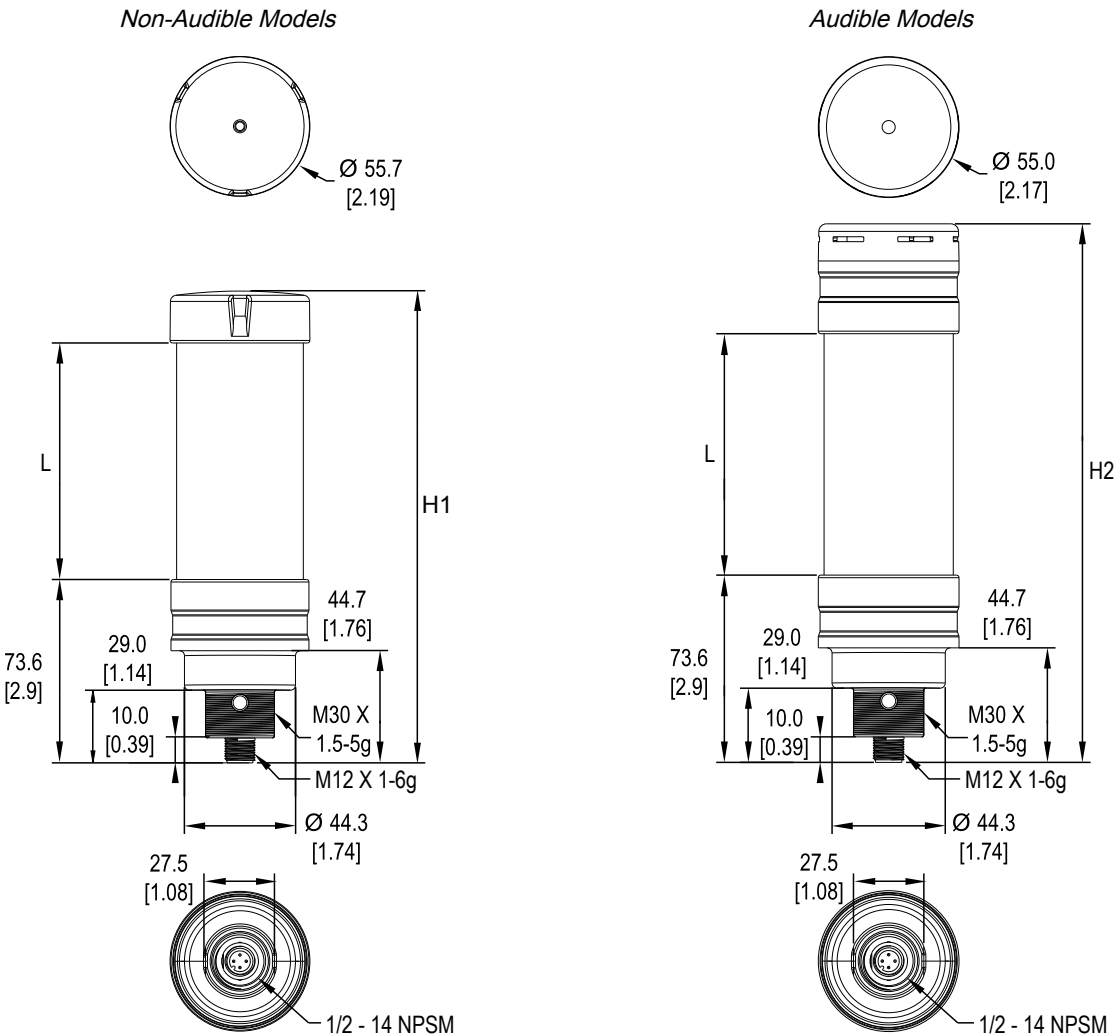
Industry Canada ICES-003(B)

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.

Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.



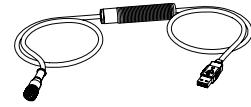
Cells	Tower Height - Non-Audible Models (H1)	Tower Height - Audible Models (H2)	Window Length (L)
20 Cells	332.1	354.3	237.3
12 Cells	236.1	258.3	141.3
8 Cells	188.1	210.3	93.3

Chapter 5 Accessories

Pro Editor Hardware

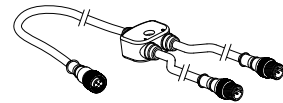
MQDC-506-USB

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



CSB-M1251FM1251M

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



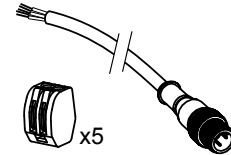
PSW-24-2

- 24 V DC, 2 A power supply
- 3.5 m (11.5 ft) PVC cable with M12 quick disconnect
- Provides external power with splitter cable, sold separately



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

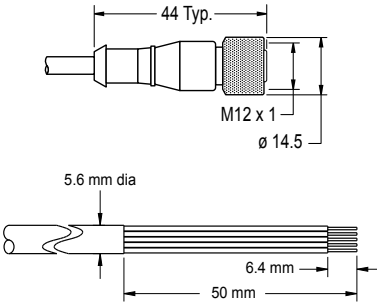
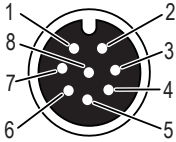


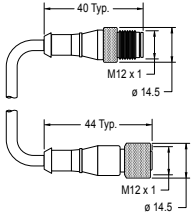
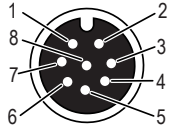
MQDC-801-5M-PRO

- 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

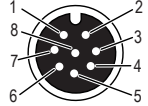
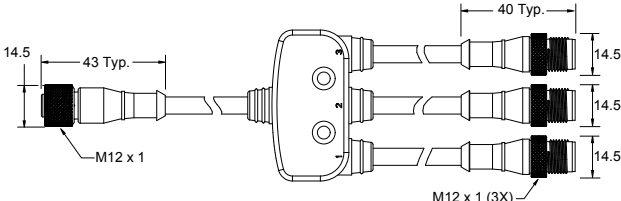


Cordsets

8-Pin A-Code Single-Ended M12 Female Cordsets (datasheet p/n 235941)				
Model	Length	Dimensions (mm)	Pinout (Female)	
BC-M12F8-24-1	1 m (3.28 ft)			1 = White 2 = Brown 3 = Green 4 = Yellow 5 = Gray 6 = Pink 7 = Blue 8 = Red
BC-M12F8-24-2	2 m (6.56 ft)			
BC-M12F8-24-5	5 m (16.4 ft)			
BC-M12F8-24-10	10 m (30.81 ft)			

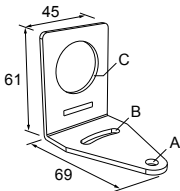
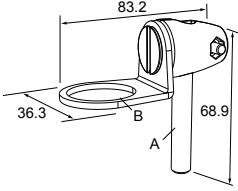
8-Pin A-Code Double-Ended M12 Female to M12 Male Cordsets (datasheet p/n 235955)				
Model	Length	Dimensions (mm)	Pinouts (Female)	Pinouts (Male)
BC-M12F8-M12M8-24-1	1 m (3.28 ft)			
BC-M12F8-M12M8-24-2	2 m (6.56 ft)			
BC-M12F8-M12M8-24-5	5 m (16.4 ft)		1 = White 2 = Brown 3 = Green 4 = Yellow	5 = Gray 6 = Pink 7 = Blue 8 = Red
BC-M12F8-M12M8-24-8	8 m (26.25 ft)			
BC-M12F8-M12M8-24-10	10 m (30.81 ft)			
BC-M12F8-M12M8-24-15	15 m (49.2 ft)			

Splitter Cables for Use with IO-Blocks

8-Pin M12 Female to 4-Pin M12 Male Combiner Flat Junction Splitter Cordsets																																														
Model	Branches (Male)	Trunk (Female)	Pinout																																											
CSF3A-M12F81M12M41	4-pin M12 Quick Disconnect, 3 × 0.3 m (0.98 ft)	8-pin M12 Quick Disconnect, 0.3 m (0.98 ft)	Female																																											
			Male																																											
			<table><tr><th></th><th>Trunk</th><th>Branch 1</th><th>Branch 2</th><th>Branch 3</th></tr><tr><td>1</td><td>White</td><td>NC</td><td>NC</td><td>NC</td></tr><tr><td>2</td><td>Brown</td><td>Brown</td><td>Gray</td><td>Red</td></tr><tr><td>3</td><td>Green</td><td>Blue</td><td>Blue</td><td>Blue</td></tr><tr><td>4</td><td>Yellow</td><td>Pink</td><td>White</td><td>Yellow</td></tr><tr><td>5</td><td>Gray</td><td></td><td></td><td></td></tr><tr><td>6</td><td>Pink</td><td></td><td></td><td></td></tr><tr><td>7</td><td>Blue</td><td></td><td></td><td></td></tr><tr><td>8</td><td>Red</td><td></td><td></td><td></td></tr></table>			Trunk	Branch 1	Branch 2	Branch 3	1	White	NC	NC	NC	2	Brown	Brown	Gray	Red	3	Green	Blue	Blue	Blue	4	Yellow	Pink	White	Yellow	5	Gray				6	Pink				7	Blue				8	Red
	Trunk	Branch 1	Branch 2	Branch 3																																										
1	White	NC	NC	NC																																										
2	Brown	Brown	Gray	Red																																										
3	Green	Blue	Blue	Blue																																										
4	Yellow	Pink	White	Yellow																																										
5	Gray																																													
6	Pink																																													
7	Blue																																													
8	Red																																													

Mounting Brackets

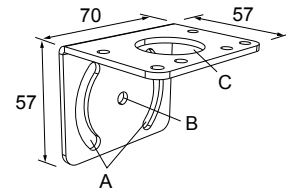
All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

SMB30A • Right-angle bracket with curved slot for versatile orientation • Clearance for M6 (¼ in) hardware • Mounting hole for 30 mm sensor • 12-gauge stainless steel • CAD Files: DXF, PDF, IGS, STP Hole center spacing: A to B=40 Hole size: A=ø 6.3, B= 27.1 × 6.3, C=ø 30.5	
SMB30FA • Swivel bracket with tilt and pan movement for precise adjustment • Mounting hole for 30 mm sensor • 12-gauge 304 stainless steel • Easy sensor mounting to extrude rail T-slot • Metric- and inch-size bolt available • CAD Files: DXF, PDF, IGS, STP Bolt thread: SMB30FA, A=3/8 - 16 × 2 in; SMB30FAL, A=3/8 - 16 × 4 in; SMB30FAM10, A=M10 - 1.5 × 50 Hole size: B=ø 30.1	

SMB30MM

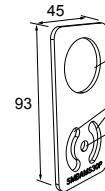
- 12-gauge stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (1/4 in) hardware
- Mounting hole for 30 mm sensor
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)

Hole center spacing: A=51, A to B=25.4
Hole size: A=42.6 × 7, B=∅ 6.4, C=∅ 30.1

**SMBAMS30P**

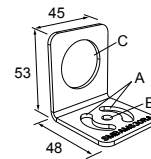
- Flat SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-gauge 300 series stainless steel
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)

Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 × 7.0, B=∅ 6.5, C=∅ 31.0

**SMBAMS30RA**

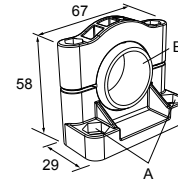
- Right-angle SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-gauge (2.6 mm) cold-rolled steel
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)

Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 × 7.0, B=∅ 6.5, C=∅ 31.0

**SMB30SC**

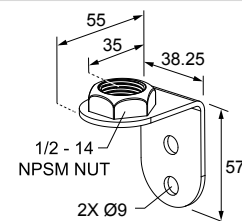
- Swivel bracket with 30 mm mounting hole for sensor
- Black reinforced thermoplastic polyester
- Stainless steel mounting and swivel locking hardware included
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)

Hole center spacing: A=∅ 50.8
Hole size: A=∅ 7.0, B=∅ 30.0

**LMBE12RA35**

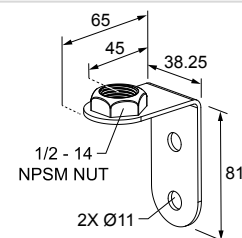
- Direct mounting of stand-off pipe, with common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the center of the 1/2-14 NPSM nut is 35 mm
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)

Hole center spacing: 20.0

**LMBE12RA45**

- Direct mounting of stand-off pipe, with common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the center of the 1/2-14 NPSM nut is 45 mm
- CAD Files: [DXF](#), [PDF](#), [IGS](#), [STP](#)

Hole center spacing: 35.0

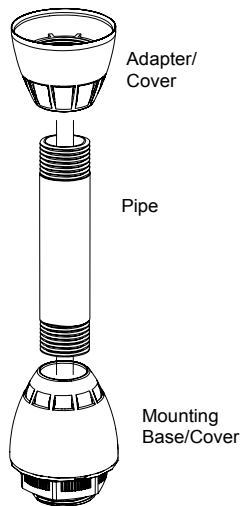


LMB Sealed Right-Angle Bracket

Model	Description	
LMB30RA - Black polycarbonate CAD Files: DXF , PDF , IGS , STP LMB30RAC - Gray polycarbonate CAD Files: DXF , PDF , IGS , STP	• Direct-Mount Models • Bracket kit with base, 30 mm adapter, set screw, fasteners, O-rings, and gaskets.	
LMBE12RA - Black polycarbonate CAD Files: DXF , PDF , IGS , STP LMBE12RAC - Gray polycarbonate CAD Files: DXF , PDF , IGS , STP	• Pipe-Mount Models • Bracket kit with base, 1/2-14 pipe adapter, set screw, fasteners, O-rings, and gaskets • For use with stand-off pipe (listed and sold separately)	

Elevated Mount System

Example Assembly

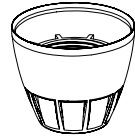


This example uses:

1. Adapter/Cover
2. Pipe
3. Mounting Base

Other compatible parts are listed in the following tables.

Adapters/Covers

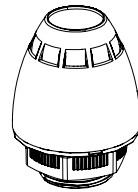
Adapter/Cover Model	Description	
SA-M30TE12 - Black acetal SA-M30TE12C - White UHMW	• Streamlined black acetal or white UHMW stand-off pipe adapter/cover • Adapter from 30 mm light base to 1/2 in. NPSM/DN15 pipe • Typically used for the CL50 Column Light, TL50 Tower Light, and K50 series • Mounting hardware included • CAD files: DXF, PDF, IGS, STP	

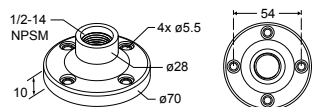
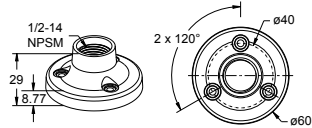
Pipes

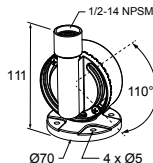
Black Anodized Aluminum, ½ in. NPT Pipe Models	Clear Anodized Aluminum, ½ in. NPT Pipe Models	Description
SOP-E12-150A, 150 mm (6 in) long	SOP-E12-150AC, 150 mm (6 in) long	- Elevated-use stand-off pipe - Threaded at both ends - Compatible with most industrial environments - CAD Files: - SOP-E12-150A: DXF, PDF, IGS, STP - SOP-E12-300A: DXF, PDF, IGS, STP - SOP-E12-600A: DXF, PDF, IGS, STP - SOP-E12-900A: DXF, PDF, IGS, STP
SOP-E12-300A, 300 mm (12 in) long	SOP-E12-300AC, 300 mm (12 in) long	
SOP-E12-600A, 600 mm (24 in) long	-	
SOP-E12-900A, 900 mm (36 in) long	SOP-E12-900AC, 900 mm (36 in) long	

304 Stainless Steel, ½ in. NPT Pipe Models	Description
SOP-E12-150SS, 150 mm (6 in) long	- Elevated-use stand-off pipe - Threaded at both ends - Compatible with most industrial environments - CAD Files: - SOP-E12-150x: DXF, PDF, IGS, STP - SOP-E12-300x: DXF, PDF, IGS, STP - SOP-E12-600x: DXF, PDF, IGS, STP - SOP-E12-900x: DXF, PDF, IGS, STP
SOP-E12-300SS, 300 mm (12 in) long	
SOP-E12-600SS, 600 mm (24 in) long	
SOP-E12-900SS, 900 mm (36 in) long	

Bottom Covers and Mounting Bases

Mounting Base Model	Description	
SA-E12M30 - Black acetal	- Streamlined black acetal or white UHMW mounting base adapter/cover - Adapter from ½ in. NPSM/DN15 pipe to 30 mm (1-3/16 in) drilled hole - Mounting hardware included - CAD files: DXF, PDF, IGS, STP	
SA-E12M30C - White UHMW		

Pipe Mounting Flange			
Model	Description	Construction	
SA-F12	- Elevated-use stand-off pipes (½ in, NPSM/DN15) - M5 mounting hardware and nitrile gasket included	Die-cast zinc base with black paint	
SA-F12-3	- Elevated-use stand-off pipes (½ in, NPSM/DN15) - M4 mounting hardware and nitrile blend gasket included	Black Polycarbonate	

Foldable Mounting Brackets			
Model	Description	Construction	
SA-FFB12	- For use with 1/2 inch stand-off pipes - Stainless steel hardware	Black polycarbonate	
SA-FFB12C		Gray polycarbonate	

Power Supply

PSW-24-1

- 24 V DC, 1 A Class 2 UL Listed power supply
- 100 V AC to 240 V AC 50/60 Hz input
- 2 m (6.5 ft) PVC cable with M12 quick disconnect
- Includes Type A (US, Canada, Japan, Puerto Rico, Taiwan), Type C (Germany, France, South Korea, Netherlands, Poland, Spain, Turkey), Type G (United Kingdom, Ireland, Singapore, Vietnam), and Type I (China, Australia, New Zealand) AC detachable input plugs



Chapter 6 Product Support and Maintenance

CTL50 8-Pin to Standard 5-Pin Mapping

Pro Editor Segment	CTL50 Pin Number	CTL50 Wire Color	5-Pin Pin Number	5-Pin Wire Color
Segment 7	3	Green	N/A	N/A
Segment 6	8	Red	N/A	N/A
Segment 5	4	Yellow	5	Gray
Segment 4	5	Gray	N/A	N/A
Segment 3	1	White	2	White
Segment 2	2	Brown	1	Brown
Segment 1	6	Pink	4	Black
N/A	7	Blue	3	Blue

Clean with Mild Detergent and Warm Water

Wipe down the device with a soft cloth dampened with a mild detergent and warm water solution. Do not use any other chemicals for cleaning.

Repairs and Translations (No Field-Replaceable Parts)

English

Contact Banner Engineering for troubleshooting of this device. **Do not attempt any repairs to this Banner device; it contains no field-replaceable parts or components.** If the device, device part, or device component is determined to be defective by a Banner Applications Engineer, they will advise you of Banner's RMA (Return Merchandise Authorization) procedure.

IMPORTANT: If instructed to return the device, pack it with care. Damage that occurs in return shipping is not covered by warranty.

Obtain assistance with product repairs by contacting your local Banner Engineering Corp distributor or by calling Banner directly at (763) 544-3164. Access literature translated into your native language on the Banner website at www.bannerengineering.com or contact Banner directly at (763) 544-3164.

Deutsch

Wenden Sie sich zur Fehlerbehebung dieses Geräts an Banner Engineering. **Versuchen Sie nicht, Reparaturen an diesem Banner-Gerät vorzunehmen. Das Gerät enthält keine am Einsatzort auszuwechselnden Teile oder Komponenten.** Wenn ein Banner-Anwendungstechniker zu dem Schluss kommt, dass dieses Gerät, ein Teil oder eine Komponente davon defekt ist, erhalten Sie von dem Techniker Erläuterungen zu Banners RMA-Verfahren (Return Merchandise Authorization) für die Warenrückgabe.

WICHTIG: Wenn Sie der Techniker anweist, das Gerät zurückzusenden, verpacken Sie es bitte sorgfältig. Transportschäden bei der Rücksendung werden von der Garantie nicht abgedeckt.

Unterstützung bei Produktreparaturen erhalten Sie von Ihrem örtlichen Banner Engineering Corp Händler oder direkt von Banner unter Tel. (763) 544-3164. Die in Ihre Muttersprache übersetzte Literatur finden Sie auf der Banner-Website unter www.bannerengineering.com oder kontaktieren Sie Banner direkt unter Tel. (763) 544-3164.

Français

Pour plus d'informations sur le dépannage du produit, contactez Banner Engineering. **Ne tentez pas de réparer ce dispositif Banner. Il ne contient aucun composant ou pièce qui puisse être remplacé sur place.** Si un ingénieur de Banner conclut que le dispositif ou l'une de ses pièces ou composants est défectueux, il vous informera de la procédure à suivre pour le retour des produits (RMA).

Important : Si vous devez retourner le dispositif, emballez-le avec soin. Les dégâts occasionnés pendant le transport de retour ne sont pas couverts par la garantie.

Pour vous aider lors de la réparation de produits, contactez votre distributeur Banner local ou appelez directement Banner au (763) 544-3164. La documentation traduite dans votre langue est disponible sur le site internet de Banner www.bannerengineering.com ou contactez directement Banner au (763) 544-3164.

Italiano

Per le procedure di individuazione e riparazione dei guasti di questo dispositivo, contattare Banner Engineering. **Non tentare di riparare questo dispositivo Banner, in quanto non contiene parti o componenti sostituibili dall'utente.** Se il dispositivo, una parte del dispositivo o un componente del dispositivo viene riscontrato difettoso da un tecnico Banner, il nostro personale vi comunicherà la procedura da seguire per ottenere l'autorizzazione al reso.

Importante: Se si ricevono istruzioni di rispedire il dispositivo al produttore, imballarlo con cura. I danni dovuti al trasporto non sono coperti dalla garanzia.

Per assistenza nelle riparazioni dei prodotti, contattare il distributore locale Banner Engineering Corp o contattare direttamente Banner al numero (763) 544-3164. È possibile accedere alla documentazione tradotta nella propria lingua madre sul sito Web Banner all'indirizzo www.bannerengineering.com o contattare direttamente Banner al numero (763) 544-3164.

Español

Comuníquese con Banner Engineering para solucionar de problemas de este dispositivo. **No intente ninguna reparación a este dispositivo de Banner, contiene piezas o componente que no se pueden cambiar en terreno.** Si algún ingeniero de aplicaciones de Banner determina que el dispositivo, alguna de las piezas o alguno de los componentes del dispositivo está defectuoso, le informará el procedimiento de autorización de devolución de mercancía (RMA, por sus siglas en inglés) de Banner.

Importante: Si se le solicita devolver el dispositivo, empáquelo con cuidado. Puede haber daños durante el envío de devolución que no estén cubiertos por la garantía.

Para reparaciones de productos, por favor contacte a su distribuidor local de Banner Engineering o llame a Banner directamente al 00 1 (763) 544-3164. Vea la literatura traducida en su idioma en el sitio web Banner en www.bannerengineering.com o comuníquese con Banner directamente al 00 1 (763) 544-3164.

中国人

如需对本装置进行故障排查, 请联系邦纳。请勿尝试自行维修该邦纳装置; 本装置不包含任何可在现场更换的部件或组件。若经邦纳应用工程师确认设备、设备部件或组件存在缺陷, 他们将告知您邦纳退货授权 (RMA) 流程。

重要注意事项: 如被要求退回装置, 请妥善包装后寄回。退货运输过程中发生的损坏不在保修范围内。

请联系当地的 Banner Engineering Corp 经销商或直接致电 Banner +1 (763) 544-3164, 以获得产品维修帮助。请访问邦纳网站 www.bannerengineering.com 或直接拨打 +1 (763) 544-3164 联系邦纳, 获取翻译成您母语的资料。

한국인

이 장치의 문제를 해결하려면 Banner Engineering에 문의하십시오. 이 Banner 장치에는 현장에서 교체할 수 있는 부품 또는 구성품이 없으므로 수리를 시도하지 마십시오. Banner 애플리케이션 엔지니어가 장치, 장치 부품 또는 장치 구성품에 결함이 있는 것으로 판정하면, Banner의 RMA(제품 반송 승인) 절차에 대해 안내해 드립니다.

중요: 제품을 반송하도록 안내 받으셨다면 잘 포장해주시십시오. 반송 도중에 발생한 손상은 보증 서비스가 적용되지 않습니다.

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日本語

この装置のトラブルシューティングについては、バナーエンジニアリングにお問い合わせください。このバナー装置には、現場では交換できない部品またはコンポーネントが含まれているため、修理を試みてはいけません。バナーのアプリケーションエンジニアが装置、装置の部品、または装置のコンポーネントに欠陥があると判断した場合、バナーのRMA（返品承認）手続きについてお知らせします。

重要： 返品を指示された場合は、装置を丁寧に梱包してください。返品時に発生した破損は保証の対象外となります。

製品の修理については、最寄りのBanner Engineering Corp代理店にお問い合わせいただくか、米国+1 (763) 544-3164まで直接お電話でお問い合わせください。バナーのウェブサイト (www.bannerengineering.com) でお客様の言語に翻訳された資料にアクセスするか、米国+1 (763) 544-3164まで直接お電話でお問い合わせください。

čeština

Pro řešení problémů se zařízením kontaktujte společnost Banner Engineering. **Neprovádějte žádné opravy zařízení Banner. Neobsahují žádné komponenty nebo části, které by byly vyměnitelné.** Pokud je zařízení, jeho část nebo díl označen technikem společnosti Banner jako poškozený, bude Vám doporučeno vyplnit reklamační RMA protokol.

Důležité: Pokud byl vydán požadavek na vrácení zařízení, pečlivě ho zabalte. Poškození vzniklé při dopravě není považováno za záruční opravu.

Pokud produkt potřebuje opravu, vyžádejte si pomoc od místního distributora společnosti Banner Engineering Corp nebo přímo na telefonním čísle (763) 544-3164. Dokumentaci přeloženou do vašeho jazyka si vyhledejte na webových stránkách společnosti Banner na adrese www.bannerengineering.com nebo se obraťte přímo na společnost Banner na telefonním čísle (763) 544-3164.

Polski

W celu rozwiązania problemów z urządzeniem należy skontaktować się z działem technicznym firmy Banner Engineering. **Pod żadnym pozorem nie próbuj naprawiać tego urządzenia firmy Banner; nie zawiera ono części ani elementów, które można wymieniać samodzielnie.** Jeśli urządzenie, jego część lub element zostaną uznane za wadliwe przez inżyniera technicznego Banner, poinformuje on użytkownika o firmowej procedurze zwrotu towaru (RMA) firmy Banner.

Ważne: Jeśli urządzenie ma zostać zwrócone, należy je starannie zapakować. Uszkodzenia powstałe podczas odsyłki nie są objęte gwarancją.

Aby uzyskać pomoc w zakresie naprawy produktu, należy skontaktować się z lokalnym dystrybutorem Banner Engineering Corp lub zadzwonić bezpośrednio do firmy Banner pod numer (763) 544-3164. Dostęp do literatury przetłumaczonej na swój język ojczysty można uzyskać na stronie internetowej firmy Banner pod adresem www.bannerengineering.com lub kontaktując się bezpośrednio z firmą Banner pod numerem (763) 544-3164.

Português

Entre em contato com a Engenharia da Banner para a solução de problemas deste dispositivo. **Não tente fazer nenhum reparo neste dispositivo Banner; ele não contém peças ou componentes substituíveis em campo.** Se um técnico de aplicações da Banner determinar que o dispositivo, peça ou componente do dispositivo está com defeito, ele o informará sobre o procedimento de RMA (Autorização de Devolução de Mercadoria) da Banner.

Importante: Se for instruído a devolver o dispositivo, embale-o com cuidado. Os danos ocorridos no transporte de devolução não são cobertos pela garantia.

Obtenha assistência para reparos do produto entrando em contato com o distribuidor local da Banner Engineering Corp ou ligando diretamente para a Banner no telefone (763) 544-3164. Acesse a literatura traduzida para seu idioma nativo no site da Banner em www.bannerengineering.com ou entre em contato diretamente com a Banner pelo telefone (763) 544-3164.

Türkçe

Bu cihazda sorun giderme işlemleri için Banner Engineering ile iletişime geçin. **Bu Banner cihazını onarmaya çalışmayın; cihaz sahada değiştirilebilir parça veya bileşen içermez.** Bir Banner Uygulama Mühendisi tarafından cihazın, cihazın bir parçasının veya bir cihaz bileşeninin kusurlu olduğu tespit edilirse, Banner RMA (İade Mal Yetkilendirme) prosedürü hakkında bilgilendirilirsiniz.

ÖNEMLİ: İade etmeniz istenirse, cihazı dikkatli bir şekilde paketleyin. İade nakliyesinde meydana gelecek hasarlar garanti kapsamında değildir.

Yerel Banner Engineering Corp distribütörünüzle iletişime geçerek veya doğrudan (763) 544-3164 numaralı telefondan Banner'ı arayarak ürün onarımlarıyla ilgili yardım alın. Ana dilinize çevrilmiş dokümanlara www.bannerengineering.com adresindeki Banner web sitesinden erişilebilir veya (763) 544-3164 numaralı telefondan doğrudan Banner ile iletişime geçebilirsiniz.

Contact Us

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

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