TL70 Pro Modbus Modular Tower Light Product Manual

Original Instructions
p/n: 243130 Rev. E
10-Jun-26
© Banner Engineering Corp. All rights reserved. www.bannerengineering.com

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

Contents

Chapter 1 Features 3
Models 3
Specifications 3
FCC Part 15 Class A for Unintentional Radiators 4
Industry Canada ICES-003(A) 5
Dimensions 5

Chapter 2 Installation Instructions 6
Assembling the Modules 6

Chapter 3 Wiring 7

Chapter 4 Modbus TCP Register Map 8
Tower Light Segment Modes 15

Chapter 5 Accessories 16
Cordsets 16
Mounting Brackets 17
Elevated Mount System 18
LMB Sealed Right Angle Bracket 19
Top Replacement Cover 20

Chapter 6 Product Support and Maintenance 21
Clean with Mild Detergent and Warm Water 21
Repairs 21
Contact Us 21
Banner Engineering Corp Limited Warranty 21

© Banner Engineering Corp. All rights reserved. www.bannerengineering.com

Chapter Contents

Models 3
Specifications 3

Chapter 1 Features



Banner's TL70 Pro Modbus Modular Tower Light is a 70 mm, modular LED indicator with bright and uniform light. The modularity gives the user flexibility to customize tower lights as needed and change positions in the field. The TL70 is also available preassembled for easy installation.

- Modbus control allows access to full color, flashing, and dimming settings, as well as advanced animations and audible tones
- Up to five indicator segments and one audible segment in one device
- Rugged, water-resistant IP65 and IP66 housing with UV-stabilized material
- Bright, uniform indicator segments appear gray when off to eliminate false indications from ambient light
- Simple and fast connection with M12 quick-disconnect connector

Models

Segment Models

Model	Description
SG-TL70P-L	RGB light segment
SG-TL70P-A	Audible segment

Pre-Assembled Models

Model	Description
TL70PM3Q	Modbus RS-485 with three RGB segments
TL70PM3AQ	Modbus RS-485 with three RGB segments and an audible segment

Base Models

Model	Description
B-TL70PM-Q	Modbus RS-485 base module with an integral 4-pin M12 A-Code male quick-disconnect connector

Specifications

Supply Voltage
18 V DC to 30 V DC

Supply Current

Device	Typical Current (mA) per Device			Max Current (mA)
	18 V DC	24 V DC	30 V DC	
Modbus Base	60	45	40	75
Light and Audible segment	110	85	75	125

Environmental Rating
IP65, IP66

Supply Protection Circuitry
Protected against reverse polarity and transient voltages

Initial Startup Time
30 seconds

Construction
Bases, segments, and covers: polycarbonate

Operating Temperature
–40 °C to +50 °C (–40 °F to +122 °F)
95% at +50 °C maximum relative humidity (non-condensing)

Connections
See "Wiring" on page 7

Audible Alarm
Tone 0: 1.7 kHz ± 250 Hz oscillation frequency; maximum intensity (typical) 81 dB at 1 m (3.3 ft)
Tone 1: 2.2 kHz ± 250 Hz oscillation frequency; maximum intensity (typical) 100 dB at 1 m (3.3 ft)
Tone 2: 2.7 kHz ± 250 Hz oscillation frequency; maximum intensity (typical) 104 dB at 1 m (3.3 ft)

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Vibration and Mechanical Shock

Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 0.5 mm amplitude, 5 minutes sweep, 30 minutes dwell)

Meets IEC 60068-2-27 requirements (Shock: 15G 11 ms duration, half sine wave)

Certifications

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

Turck Banner LTD Blenheim House
Blenheim Court
Wickford, Essex SS11 8YT
GREAT BRITAIN

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

Default Light Segment Characteristics

Color	Dominant Wavelength (nm) or Color Temperature (CCT)	Color Coordinates[1]		Lumen Output Per Segment (Typical at 25 °C)
		X	Y	
Green	532	0.181	0.735	34.8
Red	621	0.691	0.308	15.4
Yellow	578	0.473	0.474	21
Blue	467	0.137	0.056	27.6
White	5700K	0.328	0.337	29.7
Cyan	492	0.150	0.334	20.9
Magenta	-	0.379	0.177	18.7
Amber	590	0.552	0.414	6.6
Rose	-	0.508	0.230	9.3
Lime Green	565	0.393	0.535	23.8
Sky Blue	485	0.146	0.241	14.1
Orange	600	0.611	0.370	24.1
Violet	-	0.212	0.091	19.6
Spring Green	509	0.157	0.553	12.7

FCC Part 15 Class A for Unintentional Radiators

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(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.

[1] Refer to CIE 1931 chromaticity diagram or color chart to show equivalent color with indicated color coordinates. Actual coordinates may differ by 10%.

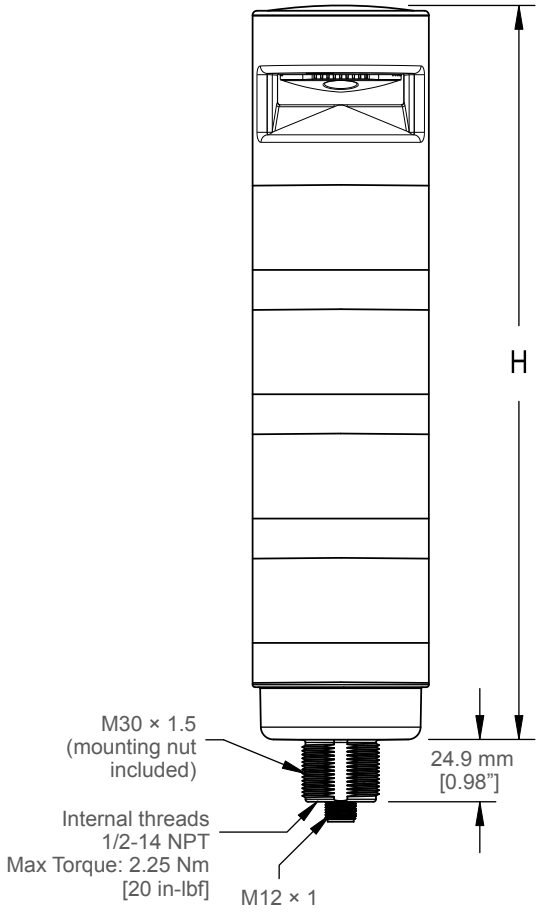
© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Industry Canada ICES-003(A)

This device complies with CAN ICES-3 (A)/NMB-3(A). 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(A). 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



Model	Height (H)
1 light module	87.6 mm (3.45 in)
1 light module, 1 audible module	144.3 mm (5.68 in)
2 light modules	137.3 mm (5.41 in)
2 light modules, 1 audible module	194 mm (7.64 in)
3 light modules	187 mm (7.36 in)
3 light modules, 1 audible module	243.7 mm (9.59 in)
4 light modules	236.7 mm (9.32 in)
4 light modules, 1 audible module	293.4 mm (11.55 in)
5 light modules	286.4 mm (11.28 in)
5 light modules, 1 audible module	343.1 mm (13.51 in)

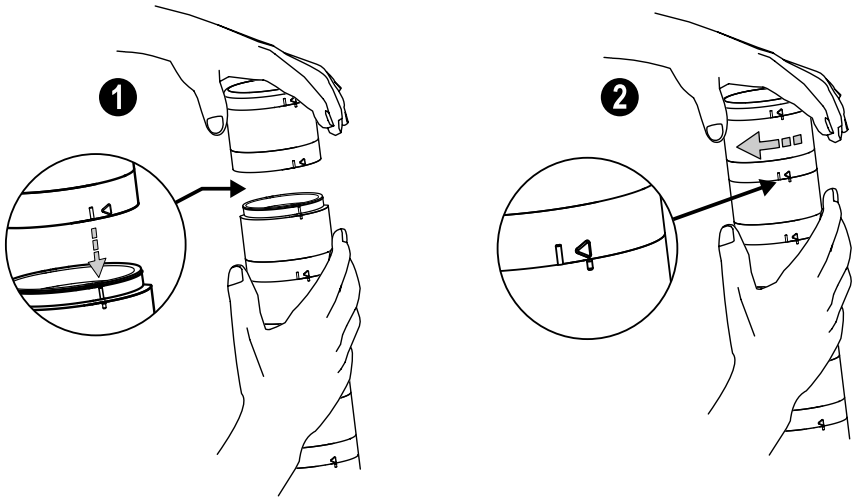
© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Chapter Contents

Assembling the Modules 6

Chapter 2 Installation Instructions

Assembling the Modules



IMPORTANT:

- Do not assemble or swap segments while the unit is powered on.
- Ensure power is off when assembling or swapping segments.

To assemble the modules:

1. Align the notches on each module and press together.
2. Rotate the top module clockwise to lock into place (notches shown in the locked position).

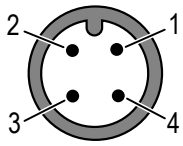
NOTE: DIP switches should remain in the default off position.

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Chapter Contents

Chapter 3 Wiring

Wiring for Modbus Models

Integral 4-pin A-Code M12 Male Quick-Disconnect Connector Pinout	Pin	Wire Color	Connection
	1	Brown	18 V DC to 30 V DC
	2	White	RS-485 (+)
	3	Blue	DC common
	4	Black	RS-485 (-)

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Chapter Contents

Tower Light Segment Modes 15

Chapter 4 Modbus TCP Register Map

Name	Register	With Offset	Description	Holding Register Representation	Access
Read only	0	1	Number of segments Read	#1 - 5	-
	1	2	Mode Read	1 = Basic Mode, 2 = Advanced Mode	RO
Modbus Addressing	600	601	Baud Rate	0 = 9600 1 = 19200 2 = 38400	WO
	601	602	Parity	1 = None 2 = Odd 3 = Even	WO
	602	603	Address	1 - 254	WO
	603	604	Reserved	NA	WO
	604	605	Factory Reset	1 = Soft Reset, 2 = Hard Reset (with comms)	WO
Device Information	605-614	606-615	Banner Name	0..65535	RO
	615-630	616-631	Product Name	0..65535	RO
	631	632	Item H	0..65535	RO
	632	633	Item L	0..65535	RO
	633	634	Serial Number 1 (H)	0..65535	RO
	634	635	Serial Number 2	0..65535	RO
	635	636	Serial Number 3	0..65535	RO
	636	637	Serial Number 4 (L)	0..65535	RO
	637	638	Firmware PN H	0..65535	RO
	638	639	Firmware PN L	0..65535	RO
	639	640	Firmware Version H	0..65535	RO
	640	641	Firmware Version L	0..65535	RO
	641	642	Firmware Build Number H	0..65535	RO
	642	643	Firmware Build Number L	0..65535	RO
	643-658	644-659	User Define Tag	0..65535	RO
Basic Mode Control	5000	5001	Segment 1 State	0 = Off 1 = Basic On 2 = Basic Flash 3 = Animation	RW
	5001	5002	Segment 2 State	0 = Off 1 = Basic On 2 = Basic Flash 3 = Animation	RW

Continued on page 9

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Continued from page 8

Name	Register	With Offset	Description	Holding Register Representation	Access
	5002	5003	Segment 3 State	0 = Off 1 = Basic On 2 = Basic Flash 3 = Animation	RW
	5003	5004	Segment 4 State	0 = Off 1 = Basic On 2 = Basic Flash 3 = Animation	RW
	5004	5005	Segment 5 State	0 = Off 1 = Basic On 2 = Basic Flash 3 = Animation	RW
	5005	5006	Basic Audible	0 = Off, 1 = Basic On	RW
Advanced Mode Control	5000	5001	Segment 1 Animation	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = 50/50 5 = 50/50 Rotate 6 = Chase 7 = Intensity Sweep 8 = Demo	RW
	5001	5002	Segment 1 Color 1	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White	RW

Continued on page 10

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Continued from page 9

Name	Register	With Offset	Description	Holding Register Representation	Access
	5002	5003	Segment 1 Color 2	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White	RW
	5003	5004	Segment 1 Color 1 Intensity	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	RW
	5004	5005	Segment 1 Color 2 Intensity	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	RW
	5005	5006	Segment 1 Speed	0 = Slow 1 = Medium 2 = Fast 3 = Custom	RW
	5006	5007	Segment 1 Pattern	0 = Normal 1 = Strobe 2 = 3-Pulse 3 = SOS 4 = Random	RW
	5007	5008	Segment 2 Animation	-	RW
	5008	5009	Segment 2 Color 1	-	RW
	5009	5010	Segment 2 Color 2	-	RW
	5010	5011	Segment 2 Color 1 Intensity	-	RW
	5011	5012	Segment 2 Color 2 Intensity	-	RW
	5012	5013	Segment 2 Speed	-	RW
	5013	5014	Segment 2 Pattern	-	RW
	5014	5015	Segment 3 Animation	-	RW
	5015	5016	Segment 3 Color 1	-	RW

Continued on page 11

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Continued from page 10

Name	Register	With Offset	Description	Holding Register Representation	Access
	5016	5017	Segment 3 Color 2	-	RW
	5017	5018	Segment 3 Color 1 Intensity	-	RW
	5018	5019	Segment 3 Color 2 Intensity	-	RW
	5019	5020	Segment 3 Speed	-	RW
	5020	5021	Segment 3 Pattern	-	RW
	5021	5022	Segment 4 Animation	-	RW
	5022	5023	Segment 4 Color 1	-	RW
	5023	5024	Segment 4 Color 2	-	RW
	5024	5025	Segment 4 Color 1 Intensity	-	RW
	5025	5026	Segment 4 Color 2 Intensity	-	RW
	5026	5027	Segment 4 Speed	-	RW
	5027	5028	Segment 4 Pattern	-	RW
	5028	5029	Segment 5 Animation	-	RW
	5029	5030	Segment 5 Color 1	-	RW
	5030	5031	Segment 5 Color 2	-	RW
	5031	5032	Segment 5 Color 1 Intensity	-	RW
	5032	5033	Segment 5 Color 2 Intensity	-	RW
	5033	5034	Segment 5 Speed	-	RW
	5034	5035	Segment 5 Pattern	-	RW
	5035	5036	Audible State	0 = Off 1 = Tone 2 = Sync	RW
	5036	5037	Audible Volume	0 = Off 1 = Low 2 = Medium 3 = High	RW
	5037	5038	Audible Tone	0 = Freq 1 1 = Freq 2 2 = Freq 3	RW
	5038	5039	Custom Speed	dHz	RW
	5039	5040	Custom Intensity	0-100%	RW
Operating Mode	5040	5041	Operation Mode Write	1 = Basic Mode, 2 = Advanced Mode	WO

Continued on page 12

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Continued from page 11

Name	Register	With Offset	Description	Holding Register Representation	Access
Basic Mode Segment 1 Configuration	5110	5111	Basic Color	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White	RW
	5111	5112	Basic Flash Speed	0 = Standard 1 = Fast 2 = Slow 3 = Custom	RW
	5112	5113	Basic Animation	0 = Off 1 = Steady 2 = Flash 3 = Two Color Flash 4 = 50/50 5 = 50/50 Rotate 6 = Chase 7 = Intensity Sweep 8 = Demo	RW
	5113	5114	Basic Color 1	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White	RW

Continued on page 13

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Continued from page 12

Name	Register	With Offset	Description	Holding Register Representation	Access
	5114	5115	Basic Color 2	0 = Green 1 = Red 2 = Orange 3 = Amber 4 = Yellow 5 = Lime Green 6 = Spring Green 7 = Cyan 8 = Sky Blue 9 = Blue 10 = Violet 11 = Magenta 12 = Rose 13 = White	RW
	5115	5116	Basic Intensity 1	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	RW
	5116	5117	Basic Intensity 2	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	RW
	5117	5118	Basic Speed	0 = Slow 1 = Medium 2 = Fast 3 = Custom	RW
	5118	5119	Basic Pattern	0 = Normal 1 = Strobe 2 = 3-Pulse 3 = SOS 4 = Random	RW
Segment Mode Segment 2 Configuration	5120	5121	Basic Color	-	RW
	5121	5122	Basic Flash Speed	-	RW
	5122	5123	Basic Animation	-	RW
	5123	5124	Basic Color 1	-	RW
	5124	5125	Basic Color 2	-	RW
	5125	5126	Basic Intensity 1	-	RW
	5126	5127	Basic Intensity 2	-	RW
	5127	5128	Basic Speed	-	RW
	5128	5129	Basic Pattern	-	RW

Continued on page 14

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Continued from page 13

Name	Register	With Offset	Description	Holding Register Representation	Access
Segment Mode Segment 3 Configuration	5130	5131	Basic Color	-	RW
	5131	5132	Basic Flash Speed	-	RW
	5132	5133	Basic Animation	-	RW
	5133	5134	Basic Color 1	-	RW
	5134	5135	Basic Color 2	-	RW
	5135	5136	Basic Intensity 1	-	RW
	5136	5137	Basic Intensity 2	-	RW
	5137	5138	Basic Speed	-	RW
	5138	5139	Basic Pattern	-	RW
Segment Mode Segment 4 Configuration	5140	5141	Basic Color	-	RW
	5141	5142	Basic Flash Speed	-	RW
	5142	5143	Basic Animation	-	RW
	5143	5144	Basic Color 1	-	RW
	5144	5145	Basic Color 2	-	RW
	5145	5146	Basic Intensity 1	-	RW
	5146	5147	Basic Intensity 2	-	RW
	5147	5148	Basic Speed	-	RW
	5148	5149	Basic Pattern	-	RW
Segment Mode Segment 5 Configuration	5150	5151	Basic Color	-	RW
	5151	5152	Basic Flash Speed	-	RW
	5152	5153	Basic Animation	-	RW
	5153	5154	Basic Color 1	-	RW
	5154	5155	Basic Color 2	-	RW
	5155	5156	Basic Intensity 1	-	RW
	5156	5157	Basic Intensity 2	-	RW
	5157	5158	Basic Speed	-	RW
	5158	5159	Basic Pattern	-	RW
Basic Segment Audio Configuration	5160	5161	Audible State	0 = Off 1 = Tone 2 = Sync	RW
	5161	5162	Audible Volume	0 = Off 1 = Low 2 = Medium 3 = High	RW
	5162	5163	Audible Tone	0 = Freq 1 1 = Freq 2 2 = Freq 3	RW

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Tower Light Segment Modes

Basic Segment Mode

Use a single run time register per LED segment to set it to Off, On, Flash, or Animation mode.

Use a single run time register for an audible segment to set it to Off or On.

Use additional configuration registers to change color, intensity, flash speed, and select animation type on LED segments and change volume and tone on audible segment.

Advanced Segment Mode

Use multiple run time registers per LED segment to control color, intensity, flash, and other animation types.

Use multiple run time registers for an audible segment to control sync, volume, and tone settings.

Use additional configuration registers to create custom intensity and flash speeds.

LED Segment Control

Animation	Description
Off	Segment is off
Steady	Color 1 is solid on at defined intensity
Flash	Color 1 flashes at defined speed, color intensity, and pattern
Two Color Flash	Color 1 and Color 2 flash alternately at defined speed, color intensities, and pattern
50/50	Color 1 is displayed on 50% of the segment and Color 2 is displayed on the other 50% of the segment at the defined color intensities
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 and color intensities
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
Intensity Sweep	Color 1 repeatedly increases and decreases intensity between 0% to 100% at defined speed and color intensity
Demo	Demo sequence cycles through several sets of colors and configurations to highlight example applications

Audible Segment Control

Setting	Description
Audible State	Sets the segment to off, on, or synced to flash pattern of last LED segment
Audible Volume	Defines the volume of the audible tone
Audible Tone	Defines the audible tone frequency

© Banner Engineering Corp. All rights reserved.

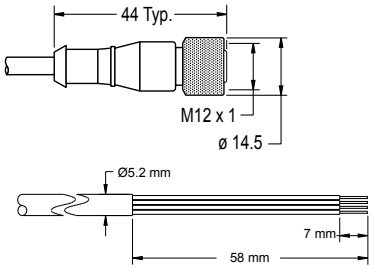
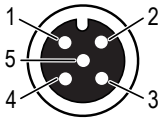
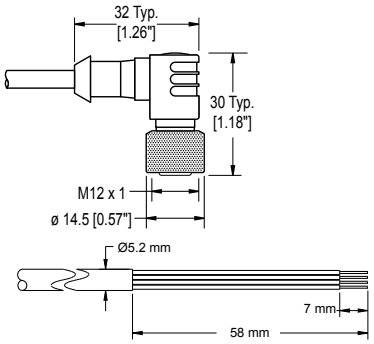
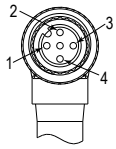
Chapter Contents

Cordsets 16
Mounting Brackets 17
Elevated Mount System 18
LMB Sealed Right Angle Bracket 19
Top Replacement Cover 20

Chapter 5 Accessories

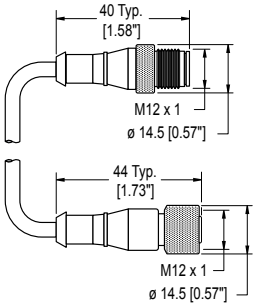
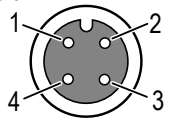
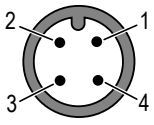
Cordsets

4-Pin Single-Ended, M12 Female Cordsets

Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	2 m (6.56 ft)	Straight		
MQDC-415	5 m (16.4 ft)			
MQDC-430	9 m (29.5 ft)			
MQDC-450	15 m (49.2 ft)			
MQDC-406RA	2 m (6.56 ft)	Right-Angle		
MQDC-415RA	5 m (16.4 ft)			
MQDC-430RA	9 m (29.5 ft)			
MQDC-450RA	15 m (49.2 ft)			

1 = Brown
2 = White
3 = Blue
4 = Black
5 = Unused

4-Pin Double-Ended, M12 Female-M12 Male Cordsets

Model	Length	Style	Dimensions	Pinout
MQDEC-401SS	0.31 m (1 ft)	Male Straight/ Female Straight		Female  Male  1 = Brown 2 = White 3 = Blue 4 = Black
MQDEC-403SS	0.91 m (2.99 ft)			
MQDEC-406SS	1.83 m (6 ft)			
MQDEC-412SS	3.66 m (12 ft)			
MQDEC-415SS	4.58 m (15 ft)			
MQDEC-420SS	6.10 m (20 ft)			
MQDEC-430SS	9.14 m (30.2 ft)			
MQDEC-450SS	15.2 m (49.9 ft)			

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

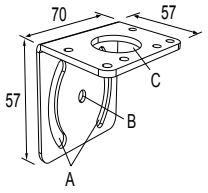
Mounting Brackets

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

SMB30MM

- 12-gauge stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- CAD Files: DXF, PDF, IGS, STP

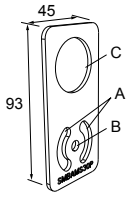
Hole center spacing: A=51, A to B=25.4
Hole size: A=42.6 × 7, B=ø 6.4, C=ø 30.1



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

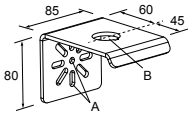
Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 × 7.0, B=ø 6.5, C=ø 31.0



SSA-MBK-EEC1

- Single 30 mm hole
- 8 gauge steel, black finish (powder coat)
- Front surface for customer-applied labels
- CAD Files: DXF, PDF, IGS, STP

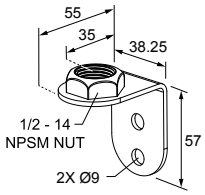
Hole size: A = ø 7 , B = ø 30



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

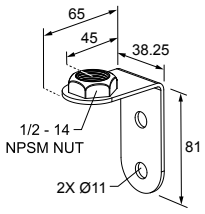
Hole center spacing: 20.0



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

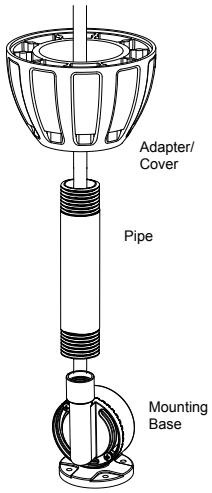
Hole center spacing: 35.0



© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Elevated Mount System

Example Assembly for a TL70 Tower Light

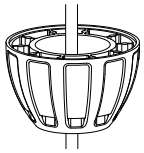


This example uses:

1. Adapter/Cover (SA-M30 shown)
2. Pipe
3. Mounting Base (SA-FFB12 shown)

Other compatible parts are listed in the following tables.

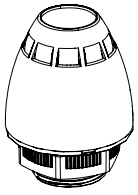
Adapters/Covers

Adapter/Cover Model	Description	
SA-M30 - Black polycarbonate	• Streamlined black PC or Gray PC thread cover • Covers the outer M30 threads on the light's base • Typically used for the TL70 Tower Light and K90 series • Mounting hardware included • CAD files: DXF, PDF, IGS, STP	
SA-M30C - Gray polycarbonate		

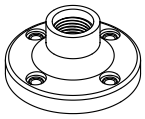
Pipes

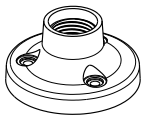
Black Anodized Aluminum, ½ in. NPT Pipe Models	Clear Anodized Aluminum, ½ in. NPT Pipe Models	Description
SOP-E12-150A, 150 mm (6 in) long	**SOP-E12-150AC**, 150 mm (6 in) long	• Elevated-use stand-off pipe • Threaded at both ends • Compatible with most industrial environments • CAD Files: ◦ **SOP-E12-150A**: 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	

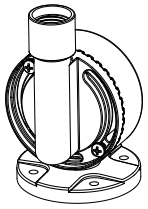
Bottom Covers and Mounting Bases

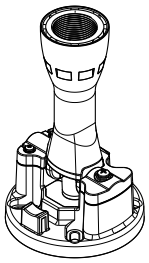
Mounting Base Model	Description	
SA-E12M30 - Black acetal	• Streamlined black acetal or white UHMW mounting base adapter/cover • Adapter from ½ in. NPSM/DN15 pipe to 30 mm (1-3/16 in) drilled hole • Mounting hardware included • CAD files: DXF, PDF, IGS, STP	
SA-E12M30C - White UHMW		

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Mounting Base Model	Description	
SA-F12	• Die-cast zinc base with black paint • Elevated-use stand-off pipes (½ in, NPSM/DN15) • M5 mounting hardware and nitrile gasket included • CAD files: DXF, PDF, IGS, STP	

Mounting Base Model	Description	
SA-F12-3	• Black polycarbonate • Elevated-use stand-off pipes (½ in, NPSM/DN15) • M4 mounting hardware and nitrile blend gasket included • CAD files: DXF, PDF, IGS, STP	

Mounting Base Model	Description	
SA-FFB12 - Black polycarbonate	• For use with ½ in. stand-off pipes • 110° rotation • Stainless steel hardware • CAD files: DXF, PDF, IGS, STP	
SA-FFB12C - Gray polycarbonate		

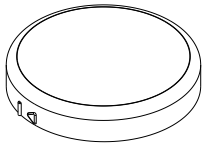
Mounting Base Model	Description	
SOKTL150R4	• Black polycarbonate • Foldable stand model with upright and 90° folding states • Elevated-use stand-off pipes (½ in, NPSM/DN15) • Mounting hardware included • CAD files: DXF, PDF, IGS, STP	

LMB Sealed Right Angle Bracket

Model	Description	Construction	
LMB30RA CAD Files: DXF, PDF, IGS, STP	**Direct-Mount Models:** Bracket kit with base, 30 mm adapter, set screw, fasteners, O-rings, and gaskets.	Black polycarbonate	
LMBE12RA CAD Files: DXF, PDF, IGS, STP	**Pipe-Mount Models:** Bracket kit with base, ½-14 pipe adapter, set screw, fasteners, O-rings, and gaskets. For use with stand-off pipe (listed and sold separately).	Black polycarbonate	

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Top Replacement Cover

C-TL70 Replacement Top Cover • Black polycarbonate housing • Fits TL70 tower lights • IP65 rated • CAD Files: DXF, PDF, IGS, STP	

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Chapter Contents

Clean with Mild Detergent and Warm Water 21
Repairs 21
Contact Us 21
Banner Engineering Corp Limited Warranty 21

Chapter 6 Product Support and Maintenance

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

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.

Contact Us

Banner Engineering Corp. | 9714 Tenth Avenue North | Plymouth, MN 55441, USA | Phone: + 1 888 373 6767

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

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.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. **IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.**

Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp. Any misuse, abuse, or improper application or installation of this product or use of the product for personal protection applications when the product is identified as not intended for such purposes will void the product warranty. Any modifications to this product without prior express approval by Banner Engineering Corp will void the product warranties. All specifications published in this document are subject to change; Banner reserves the right to modify product specifications or update documentation at any time. Specifications and product information in English supersede that which is provided in any other language. For the most recent version of any documentation, refer to: www.bannerengineering.com.

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

© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

LinkedIn

X

Facebook

Instagram



© 2026. All rights reserved.