

Contact Closure Input Output Module

Datasheet



Description

The NuLEDs Input Output Module is a versatile and scalable solution designed to enhance system integration and control. Featuring 3 dry contact closure inputs and 2 configurable output relays (NO or NC), this board provides both input signal processing and output control. Its robust design enables seamless communication between the NuLEDs PoE lighting system and other devices, making it ideal for centralized management, automation, and tailored system configurations.

The Input Output Module delivers exceptional flexibility, reliability, and scalability, making it an essential component for orchestrating and managing interconnected systems within any space effectively.

Stock#	Description
CONT-INOP-05-TP	Contact Closure Input Output Module

Features

1. Dual Functionality

- Combines input and output capabilities for streamlined system integration.
- Receives input signals via 3 dry contact closures and controls external devices through 2 output relays.

2. Input Signal Processing

- Accepts signals from sensors, switches, and external devices.
- Inputs can trigger specific actions within the NuLEDs PoE lighting system or other integrated systems.

3. Output Relay Flexibility

- Includes 2 relays configurable as Normally Open (NO) or Normally Closed (NC).
- Supports diverse equipment control by activating or deactivating connected devices.

4. Seamless Integration

- Automates responses based on external triggers, such as occupancy sensors or manual switches.
- Enables automatic lighting adjustments and custom scene activations.

5. Automation and Centralized Control

- Enables automatic responses based on input signals, such as occupancy detection or manual switches.
- Centralizes management for enhanced system coordination.

6. Customization and Configuration

- Configurable inputs and outputs allow for tailored system responses.
- Adapts to unique requirements for specific scenarios and environments.

7. Scalability and Adaptability

- Modular design supports expansion and integration of additional devices as needed.
- Ensures compatibility with evolving technologies and system upgrades.

8. Plug-and-Play Installation

- Uses CAT cables for quick and easy setup.
- Designed for fast integration into NuLEDs PoE systems for efficient operation.

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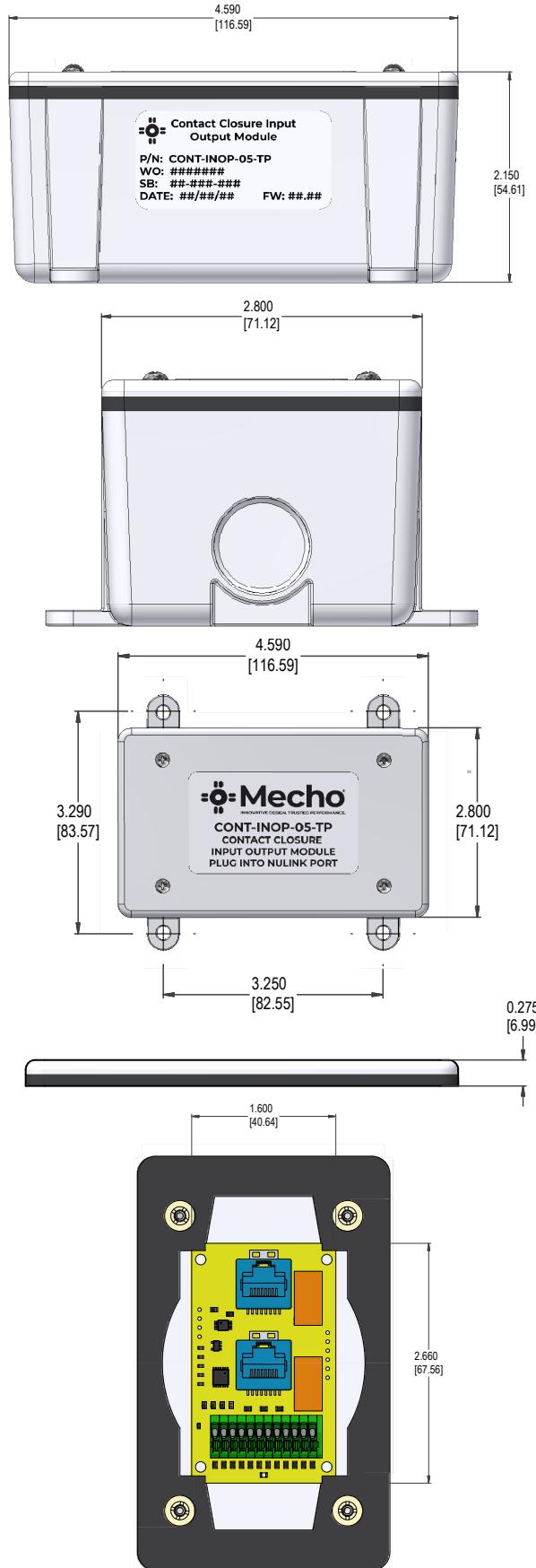
Specifications

Equipment Kit	
Contact Closure Input Output Module, Installation Guide	
Hardware	
Standby Power	<1 Watt
Power Supply	SPICEbox™ NuLINK™ Bus
RJ45 Ports	2 Ports
Protocols	NuSPICE™
Wiring	Category 5e/6 Ethernet cable to EIP SPICEBox
Maximum Wiring Length	50 ft. from SPICEbox
Mechanical	
Dimensions (L X W X H)	6.4 in. x 5.08 in. x 1.48 in. (162.56 mm x 129.03 mm x 37.59 mm)
Weight	0.49 lbs. (0.22 kg)
Mounting	Wall mount with screws and wall anchors or industry standard low voltage ring or mud ring.
Dimming	Programmable with NuSPICE™
Environmental	
Operating Temperature	32° to 104°F (0° to 40°C) ambient
Humidity	10-80% Non-Condensing
Agency Listings and Compliance	
FCC Class A Compliant, CE Compliant, RoHS	

⚠ Warning

- **Caution** - Observe precautions for handling electrostatic sensitive devices.
- Do not use outdoors.
- **Warning** - Risk of Electric Shock. Do not handle energized module with wet hands or when standing on wet or damp surfaces.
- Conforms to CE, FCC standards
- **Warranty** - Voided if device has been modified from its original configuration.

Dimensions

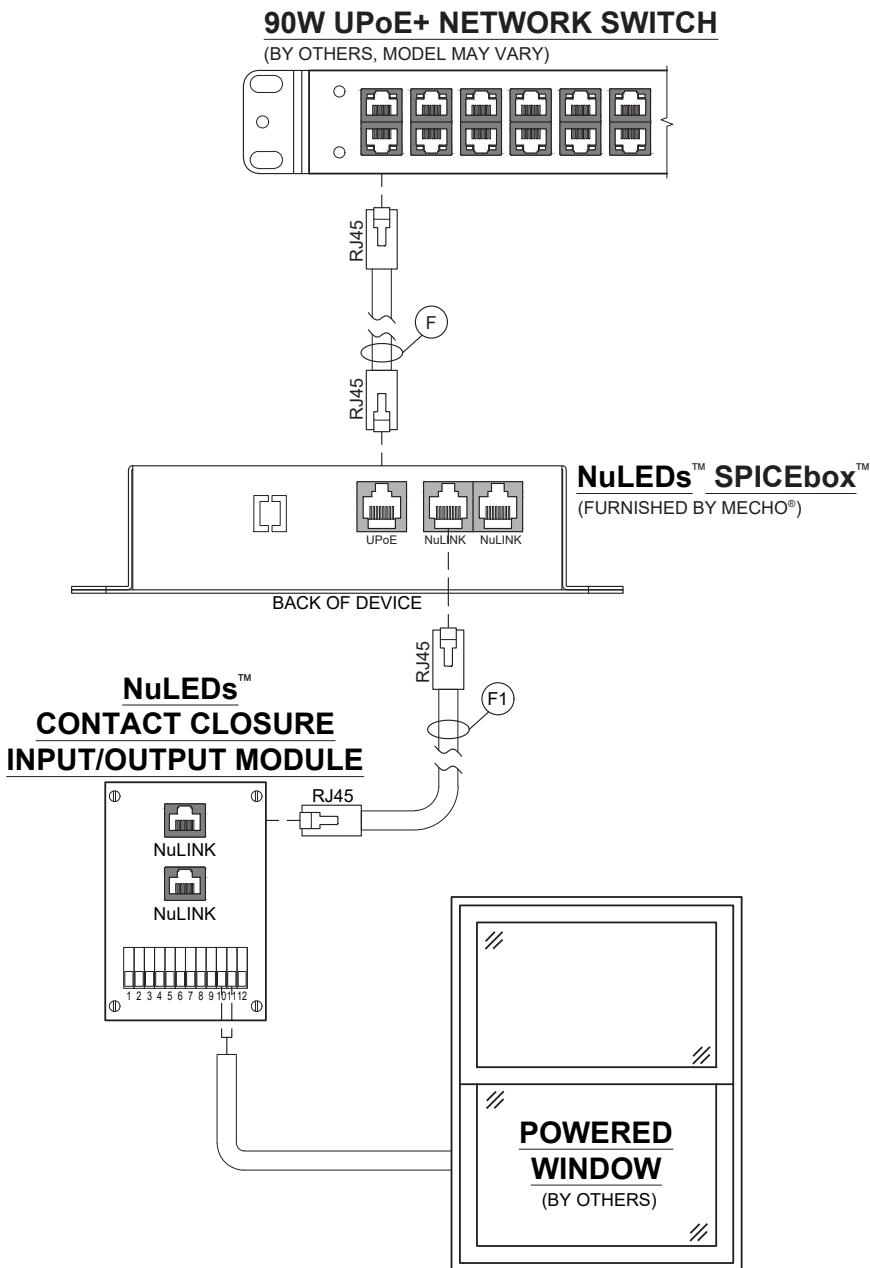


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Contact Closure Input Module on UPoE & NuLink™ Network

NOTE: Only one Contact Closure Input Output Module can be connected per SPICEbox™.

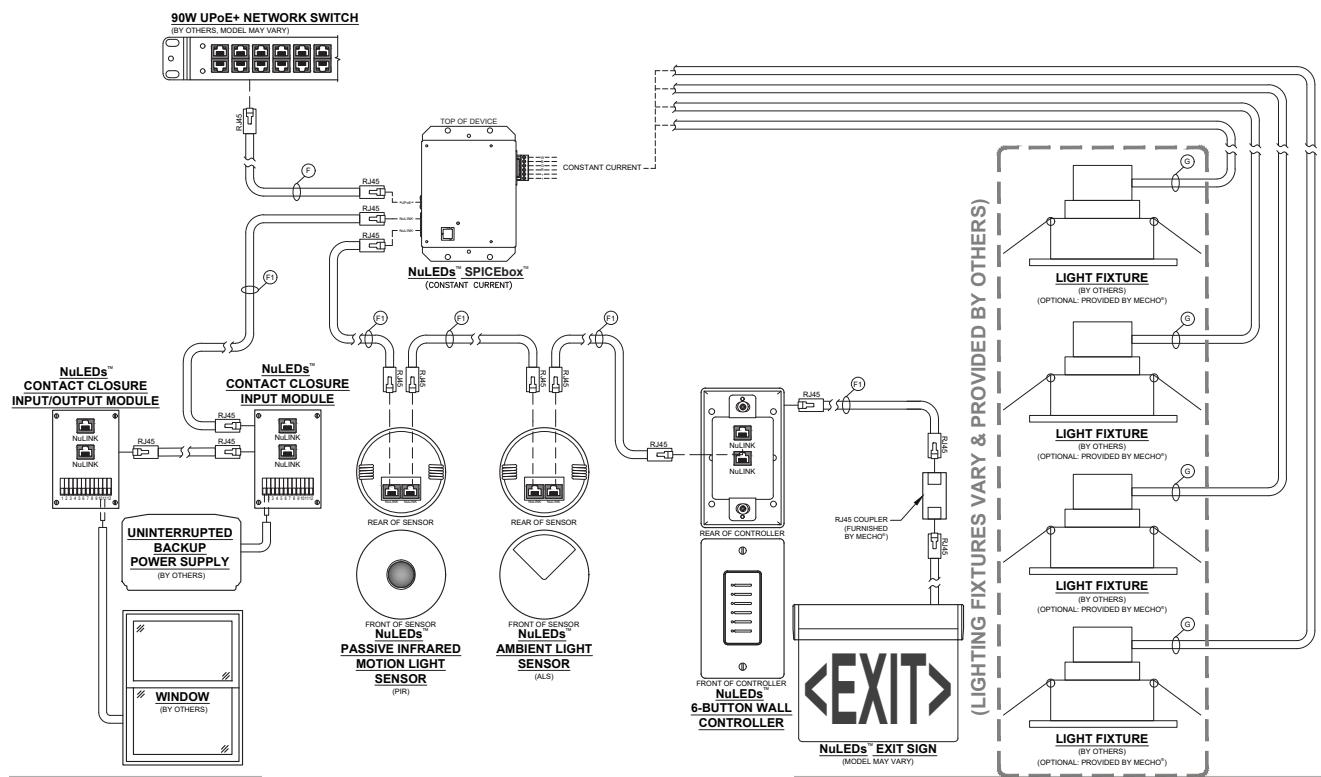


NOTE: Refer to page 7 for the Low Voltage Cable Legend and Crimping Instructions.

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Point-to-Point Diagram



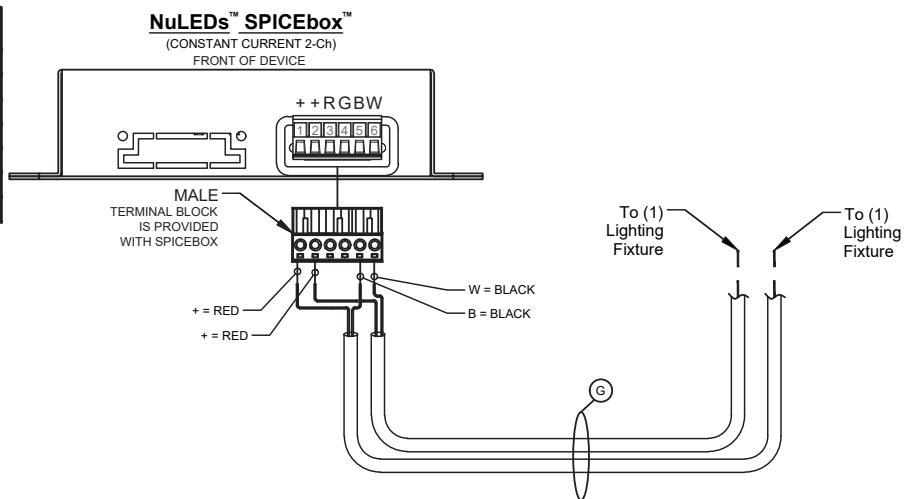
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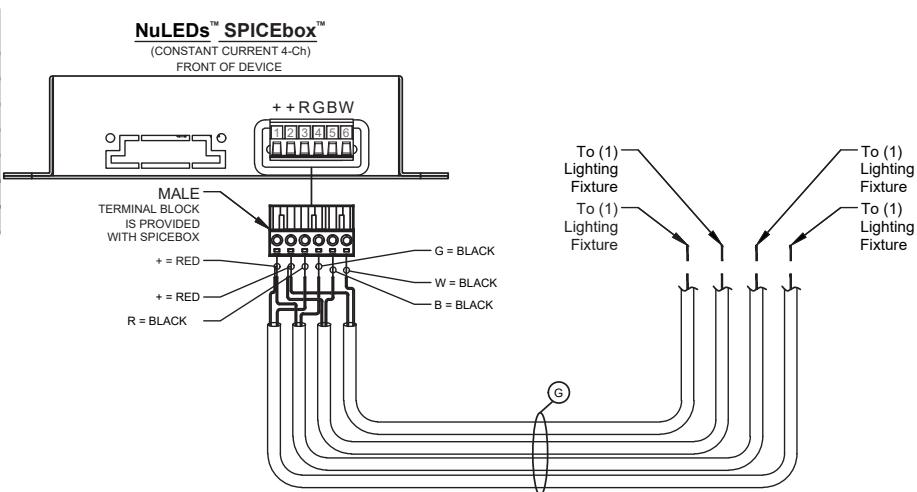
Point-to-Point Diagram - Constant Current 2 Channel Port Connections

SPICEBOX LOAD PORT WIRING PIN OUT		
PIN#	FUNCTION	PIN#
1	POWER (+)	1
2	POWER (+)	2
3	R CHANNEL	3
4	G CHANNEL	4
5	B CHANNEL	5
6	W CHANNEL	6



Point-to-Point Diagram - Constant Current 4 Channel Port Connections

SPICEBOX LOAD PORT WIRING PIN OUT		
PIN#	FUNCTION	PIN#
1	POWER (+)	1
2	POWER (+)	2
3	R CHANNEL	3
4	G CHANNEL	4
5	B CHANNEL	5
6	W CHANNEL	6



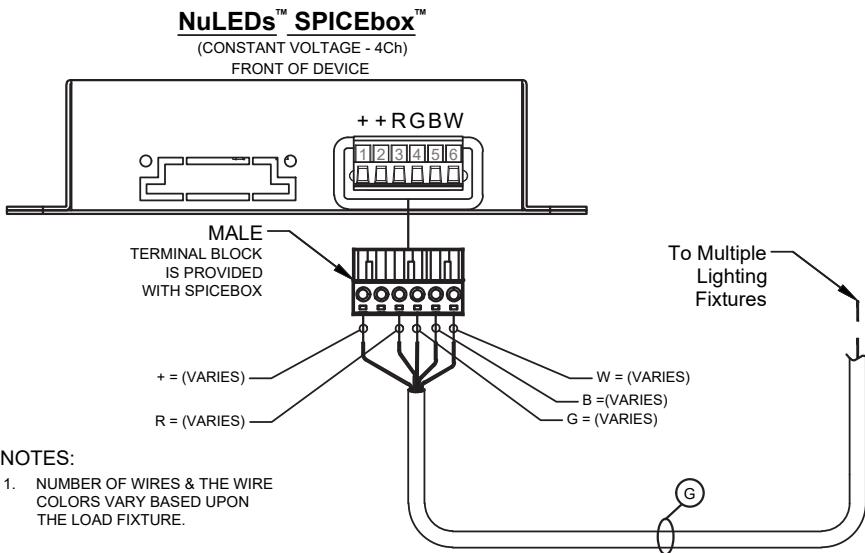
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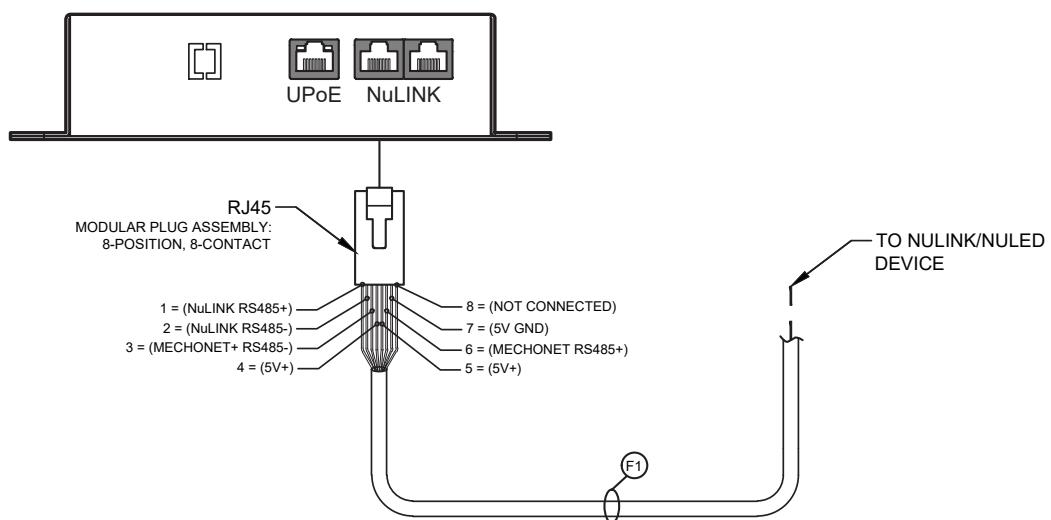
Point-to-Point Diagram - Constant Voltage Port Connections

SPICEBOX LOAD PORT WIRING PIN OUT		
PIN#	FUNCTION	PIN#
1	POWER (+)	1
2	POWER (+)	2
3	R CHANNEL	3
4	G CHANNEL	4
5	B CHANNEL	5
6	W CHANNEL	6



NuLINK MECHONET+ (RS485) PINOUT		
CABLE TYPE: CAT5/CAT5e/CAT6		
CAT5X CRIMP	PIN#:	WIRE COLOR:
	1	ORANGE/WHITE STRIPE
	2	ORANGE SOLID
	3	GREEN/WHITE STRIPE
	4	BLUE SOLID
	5	BLUE/WHITE STRIPE
	6	GREEN SOLID
	7	BROWN/WHITE STRIPE
	8	BROWN SOLID
		FUNCTION:
		NuLINK RS485+
		NuLINK RS485-
		MECHONET+ RS485-
		5V+
		5V+
		MECHONET RS485+
		5V GND
		N/C

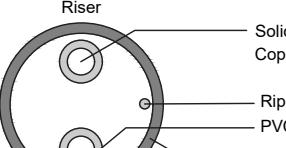
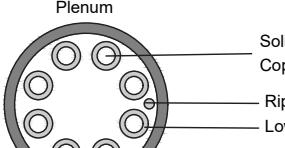
Point-to-Point Diagram - NuLINK Port Connections



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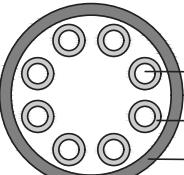
Cable Reference Drawing

CABLE G REFERENCE DRAWING								
 <p>Riser</p> <p>Solid OR Stranded Annealed Copper Conductor</p> <p>Rip Cord</p> <p>PVC Insulation</p> <p>Flame Retardant PVC Jacket</p> <p>Drawing not to scale</p>				 <p>Plenum</p> <p>Solid OR Stranded Annealed Copper Conductor</p> <p>Rip Cord</p> <p>Low Smoke PVC Insulation</p> <p>Flame Retardant PVC Jacket</p> <p>Drawing not to scale</p>				
SPECIFICATIONS:								
CONDUCTOR COUNT: 2 THRU 12 CONDUCTORS				PERFORMANCE COMPLIANCE: NEC ARTICLE 725 NEC ARTICLE 800 NEC ARTICLE 760 UL®13 CL3R/CL3P UL 444 CMR/CMP* UL 1424 FPLR/FPLP UL 1666 NFPA 262 CALIFORNIA STATE FIRE MARSHALL RoHS-COMPLIANT/RoHS 2-COMPLIANT				
CONDUCTOR: FULLY ANNEALED, SOLID OR STRANDED BARE COPPER				NRTL PROGRAMS: UL LISTED CL3R, CMR, FPLR UL LISTEN CL3P, CMP, FPLP				
AWG (mm): 18 (1.16)								
INSULATION: LOW SMOKE PVC								
INSULATION COLORS: CONDUCTOR 1: BLACK CONDUCTOR 2: RED CONDUCTOR 3: WHITE CONDUCTOR 4: GREEN CONDUCTOR 5: BROWN CONDUCTOR 6: BLUE CONDUCTOR 7: ORANGE CONDUCTOR 8: YELLOW CONDUCTOR 9: VIOLET CONDUCTOR 10: GRAY CONDUCTOR 11: PINK CONDUCTOR 12: TAN								
JACKET: RISER: GRAY, FLAME RETARDANT (FR) PVC PLENUM: WHITE, LOW SMOKE PVC								
PACKAGE: BLACK, RIBBED, PLASTIC RECYCLABLE SPOOL, REEL-IN-A-BOX OR WOOD REEL								
Part Numbers and Physical Characteristics:								
Listing	Part Number ¹	Conductor Count	AWG (mm)	Conductor Type	Jacket Color ²	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)	
CL3R/CMR/FPLR	2F-C1x-31	2	18 (1.16)	7 x 26 AWG	GRAY	0.16 (4.1)	17 (25)	
CL3R/CMR/FPLR	2F-C2x-31	3	18 (1.16)	7 x 26 AWG	GRAY	0.17 (4.3)	22 (9)	
CL3R/CMR/FPLR	2F-C3x-31	4	18 (1.16)	7 x 26 AWG	GRAY	0.19 (4.8)	30 (45)	
CL3R/CMR/FPLR	2F-C4x-31	6	18 (1.16)	7 x 26 AWG	GRAY	0.23 (5.8)	43 (64)	
CL3R/CMR/FPLR	2F-C5x-31	8	18 (1.16)	7 x 26 AWG	GRAY	0.25 (6.4)	56 (83)	
CL3R/CMR/FPLR	2F-C7x-31	12	18 (1.16)	7 x 26 AWG	GRAY	0.30 (7.6)	83 (124)	
CL3P/CMP/FPLP	2F-C1x-43	2	18 (1.16)	7 x 26 AWG	WHITE	0.16 (4.1)	17 (25)	
CL3P/CMP/FPLP	2F-C2x-43	3	18 (1.16)	7 x 26 AWG	WHITE	0.17 (4.3)	22 (9)	
CL3P/CMP/FPLP	2F-C3x-43	4	18 (1.16)	7 x 26 AWG	WHITE	0.19 (4.8)	30 (45)	
CL3P/CMP/FPLP	2F-C4x-43	6	18 (1.16)	7 x 26 AWG	WHITE	0.23 (5.8)	44 (65)	
CL3P/CMP/FPLP	2F-C5x-43	8	18 (1.16)	7 x 26 AWG	WHITE	0.25 (6.4)	57 (85)	
CL3P/CMP/FPLP	2F-C7x-43	12	18 (1.16)	7 x 26 AWG	WHITE	0.30 (7.6)	85 (126)	
Packaging Options:								
	Plastic Spool		Reel-in-a-Box		Wood Reel	Shrink Wrap		
	1,000'	500'	1,000'	500'	1,000'	250'	500'	
'Replace "x" with:	2	3	4	5	6	7	8	

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Cable Reference Drawing

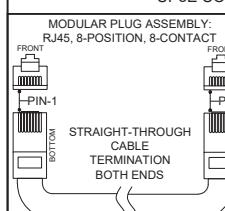
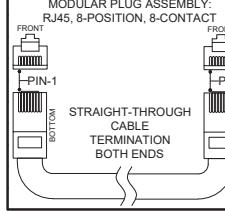
CABLE F REFERENCE DRAWING					
 Solid Annealed Copper Conductor Thermoplastic Insulation Flame Retardant PVC Jacket Drawing not to scale					
SUPERIOR ESSEX (www.superioressex.com) PART No. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM)					
SPECIFICATIONS (SOLID): CATEGORY 5E+					
PAIR COUNT: 4 CONDUCTOR: SOLID ANNEALED COPPER AWG (mm): 22 (0.51) INSULATION: CMR: POLYOLEFIN CMP: FEP INSULATION COLORS: PAIR 1: COLORTIP LIGHT BLUE, BLUE PAIR 2: COLORTIP LIGHT ORANGE, ORANGE PAIR 3: COLORTIP LIGHT GREEN, GREEN PAIR 4: COLORTIP LIGHT BROWN, BROWN JACKET: CMR: FLAME RETARDANT (FR) PVC CMP: FR, LOW SMOKE PVC					
CHARACTERISTIC IMPEDANCE Ohms: 100 ± 15 NOMINAL VELOCITY OF PROPAGATION %: CMR: 71 CMP: 74 PERFORMANCE COMPLIANCE: UL 444 CSA C22.2 No. 214-08 UL 1666 NFPA 262 ANSI/TIA-568-C.2 ANSI/ICEA S-90-661-2012 Article 800, NEC (NFPA 70) HDBaseT Class A and B			NRTL PROGRAMS: UL Verified CAT 5e UL, c(UL) Listed CMR UL, c(UL) Listed CMP HDBaseT Certified SUSTAINABILITY: UL Certified EPD HPD USGBC® Member RoHS-compliant/RoHS 2-compliant REACH-compliant Temperature cable rating: 75°C for CMR and 90°C for CMP		
PART NUMBERS AND PHYSICAL CHARACTERISTICS					
Listing	Part Number ¹	Nominal Diameter in (mm)	Approx. Weight lbs/kft (kg/km)	Package	Packages per Pallet
CMR	PW52-H46-x5	0.23 (4.6)	28 (25)	1,000 ft BrakeBox®	12
CMR	PW52-H72-x5	0.23 (4.6)	28 (25)	1,000 ft Plywood Reel	16
CMP	PW52-H46-x8	0.23 (4.8)	37 (28)	1,000 ft BrakeBox	12
CMP	PW52-H72-x8	0.23 (4.8)	37 (28)	1,000 ft Plywood Reel	16
JACKET COLORS					
1Replace "x" with: Blue = 2 Gray = 3 White = 4 Green = 5 Yellow = 6 Purple = 7 Red = 9 Black = E					

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Low Voltage Cable Legend and Crimping Instructions

LOW VOLTAGE CABLE LEGEND - EIA568B	
NOTES: 1. PARALLEL WIRING TO NEXT DEVICE PER BRANCH CIRCUIT CAPACITY. ALL CONNECTION MUST MEET NATIONAL AND LOCAL CODES AND REGULATIONS. 2. ADDRESS SCHEDULES REQUIRED. 3. MAXIMUM VOLTAGE FOR ALL UNMARKED CABLE IS 43.5 VDC. 4. LOW VOLTAGE CABLES SHOULD NOT BE ROUTED NEAR POWER LINES OR ELECTRICAL DEVICES SUCH AS LIGHTING BALLASTS, DIMMERS AND LED DRIVERS THAT MAY EXPOSE THE SYSTEM TO EXCESSIVE ELECTRICAL NOISE.	
(F)	<p>CAT5E+ - CABLE FOR UPoE NETWORK WIRING CONNECTIONS: SPECIFICATION: 22AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM) PART NO. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM) OR COMPATIBLE CABLE</p> <p>DISTANCE LIMITATION: 328'. MAX. NODES: 1 SEE "CABLE F" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>
(F1)	<p>CAT5E+ - CABLE FOR NuLED NETWORK WIRING CONNECTIONS: SPECIFICATION: 22AWG 4UTP (8-CONDUCTOR SOLID UNSHIELDED TWISTED PAIR) TERMINATION: RJ-45 MODULAR PLUG CRIMPED (EIA568B) ON BOTH ENDS RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM) PART NO. PW52-H46-X5 (NON-PLENUM) & PW52-H46-X8 (PLENUM) OR COMPATIBLE CABLE</p> <p>DISTANCE LIMITATION: 50'. MAX. EIPS: 15 SEE CABLE "F" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>
(G)	<p>CABLE FOR SPICEBOX TO LIGHT (LOAD) FIXTURE WIRING CONNECTIONS: SPECIFICATION: 2 TO 12-CONDUCTOR, (18AWG UNSHIELDED) RECOMMENDED: SUPERIOR ESSEX (WWW.SUPERIORESSEX.COM 1-800-551-8948) LISTING NO. CL3R/CMR/FPLR (NON-PLENUM), & CL3P/CMP/FPLP (PLENUM)</p> <p>DISTANCE LIMITATION: VARIES PER LOAD. MAX. LOADS: VARIES BY WATTS SEE CABLE "G" REFERENCE DRAWING FOR DETAILED SPECIFICATION. (FURNISHED & INSTALLED BY OTHERS)</p>

EIA 568B CRIMPING - 8 CONDUCTOR CABLE																													
UPoE CONNECTIONS ON UPoE NETWORK																													
MODULAR PLUG ASSEMBLY: RJ45, 8-POSITION, 8-CONTACT	CABLE TYPE: CAT5/CAT5e/CAT6																												
	<table border="1"><thead><tr><th>PIN#:</th><th>WIRE COLOR:</th><th>FUNCTION:</th></tr></thead><tbody><tr><td>• 1</td><td>ORANGE/WHITE STRIPE</td><td>DATA A+/POWER-</td></tr><tr><td>2</td><td>ORANGE SOLID</td><td>DATA A-/POWER+</td></tr><tr><td>3</td><td>GREEN/WHITE STRIPE</td><td>DATA B+/POWER+</td></tr><tr><td>4</td><td>BLUE SOLID</td><td>DATA C+/POWER+</td></tr><tr><td>5</td><td>BLUE/WHITE STRIPE</td><td>DATA C-/POWER+</td></tr><tr><td>6</td><td>GREEN SOLID</td><td>DATA B-/POWER+</td></tr><tr><td>7</td><td>BROWN/WHITE STRIPE</td><td>DATA D+/POWER-</td></tr><tr><td>8</td><td>BROWN SOLID</td><td>DATA D-/POWER-</td></tr></tbody></table>	PIN#:	WIRE COLOR:	FUNCTION:	• 1	ORANGE/WHITE STRIPE	DATA A+/POWER-	2	ORANGE SOLID	DATA A-/POWER+	3	GREEN/WHITE STRIPE	DATA B+/POWER+	4	BLUE SOLID	DATA C+/POWER+	5	BLUE/WHITE STRIPE	DATA C-/POWER+	6	GREEN SOLID	DATA B-/POWER+	7	BROWN/WHITE STRIPE	DATA D+/POWER-	8	BROWN SOLID	DATA D-/POWER-	CATX CRIMP
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PIN#:	WIRE COLOR:	FUNCTION:																											
• 1	ORANGE/WHITE STRIPE	NuLINK RS485+																											
2	ORANGE SOLID	NuLINK RS485-																											
3	GREEN/WHITE STRIPE	MECHONET+ RS485-																											
4	BLUE SOLID	5V+																											
5	BLUE/WHITE STRIPE	5V+																											
6	GREEN SOLID	MECHONET RS485+																											
7	BROWN/WHITE STRIPE	5V GND																											
8	BROWN SOLID	N/C																											
STRAIGHT-THROUGH CABLE TERMINATION BOTH ENDS																													

Warranty

Mecho's warranty ensures its products against defects in materials and workmanship for up to 25 years. The warranty timeline shall vary for different products. For complete warranty information, please visit <https://www.mechoshade.com/warranty> or contact your Mecho® Representative.

Mecho® reserves the right to make improvements or changes to its products without prior notice. Every attempt is made to ensure the information herein is accurate and up to date. Verify with the Mecho® staff to confirm the product's availability, latest specifications, and suitability for your application.

Technical support

Mecho

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