

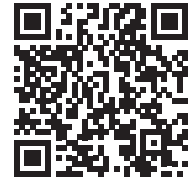
SMART TRACK LIGHTING APPLICATION GUIDE

Preface

The document provides basic information on installation and operational instructions for a qualified, trained installer. These instructions provide information for the following product:

ALTMAN SMART TRACK LIGHTING

Additional product information can be found on our web site at www.altmanlighting.com or by scanning the QR code to the right.



Have a question regarding this manual?

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Should you have a suggestion or question regarding your Altman Lighting product, we would love to hear from you.

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Note: Information contained in this document may not be duplicated in full or in part by any person without prior written approval of Altman Lighting. Its sole purpose is to provide the user with conceptual information on the equipment mentioned. The use of this document for all other purposes is specifically prohibited.

Our Commitment

Altman Lighting continually engages in research related to product improvement. New materials, production methods and design refinements are introduced into existing products without notice as a routine expression of the philosophy. For this reason any current Altman Lighting product may differ in some respect from its published description, but will always equal or exceed the original design specifications unless otherwise noted.

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Smart Track Lighting Application Guide
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Important Information

Product Safety Notices

When using electrical equipment, basic safety precautions should always be followed including the following:



1. READ AND FOLLOW ALL SAFETY INSTRUCTIONS.
2. Do not mount near gas or electric heaters.
3. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
4. Operate only in approved environments. Do not operate outside unless product is designed to do so.
5. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
6. Do not use this equipment for other than intended use.
7. Refer service to qualified personnel.

SAVE THESE INSTRUCTIONS.

Warnings



WARNING: You must have access to a main circuit breaker or other power disconnect device before installing any wiring. Be sure that power is disconnected by removing fuses or turning the main circuit breaker off before installation. Installing the device with power on may expose you to dangerous voltages and damage the device. A qualified electrician must perform this installation.

WARNING: Refer to National Electrical Code® and local codes for cable specifications. Failure to use proper cable can result in damage to equipment or danger to personnel.

WARNING: This equipment is intended for installation in accordance with the National Electric Code® and local regulations. Before any electrical work is performed, disconnect power at the circuit breaker or remove the fuse to avoid shock or damage to the control. It is recommended that a qualified electrician perform this installation.

WARNING: This Lighting Fixture IS NOT for residential installation or use.

WARNING: The structure where fixture(s) is to be mounted must be capable of supporting the weight of the fixture and its accessories. This fixture is for temporary, portable mounting only.

WARNING: The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person.

THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED.

CE PRODUIT DOIT ÊTRE INSTALLÉ SELON LE CODE D'INSTALLATION PERTINENT, PAR UNE PERSONNE.

**CONSULT A QUALIFIED ELECTRICIAN TO ENSURE CORRECT BRANCH CIRCUIT CONDUCTOR.
CONSULTER UN ÉLECTRICIEN QUALIFIÉ POUR VOUS ASSURER QUE LES CONDUCTEURS DE LA
DÉRIVATION SONT ADÉQUATS.**

FCC Notice

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.

Altman Lighting Product Warranty

Warranty Terms

Altman Lighting, Inc., a subsidiary of Altman Stage Lighting Company, Inc., herein referred to as Altman, warrants each new product (except for spare parts or products Altman does not manufacture) for a period of TWO (2) years from date of shipment to correct by repair or replacement any part defect due to faulty material or workmanship. Under these same terms products with an LED light source shall be warranted for a period of FIVE (5) years and One (1) day.

Altman warrants for NINETY (90) days any spare part it manufactures. On spare parts or products Altman does not manufacture, including, but not limited to, lamps, sockets, lenses, roundels, electronics, ignitors, ballasts, etc.; Altman will grant the same warranty given Altman by its vendors. Altman assumes no responsibility for damage or faulty performance caused by misuse, improper installation, careless handling or where repairs have been attempted by others. This warranty is in lieu of all warranties or guarantees expressed or implied and no representative or person is authorized to assume Altman any other liability with the sale of Altman's products.

Altman assumes no responsibility for damage or faulty performance caused by misuse, improper installation, careless handling or where repairs have been attempted by others.

This warranty is in lieu of all warranties or guarantees expressed or implied and no representative or person is authorized to assume Altman any other liability with the sale of Altman's products.

Warranty Service

The customer must receive a Return Material Authorization (RMA) number prior to return, return shipment must be visibly marked with the RMA number and the product must be returned (shipping prepaid) to the factory at:

1400 East. 66th Avenue
Denver, CO 80229 USA
+1-303-500-7072
support@altmanlighting.com

The return must be within THIRTY (45) days of receiving the RMA from Altman. Altman warrants for NINETY (90) days any spare part it manufactures. On spare parts or products Altman does not manufacture, such as lamps, sockets, lenses, roundels, electronics, ignitors, ballasts, etc. Altman will grant the same warranty given Altman by its vendors.

Table Of Contents

Important Information	3	Track, Components, and DMX Contacts	18
Product Safety Notices	3	Coupler Examples	19
Warnings	3	Examples Of Dmx Termination	19
Altman Lighting Product Warranty	4	Examples Of Systems Layout	19
Warranty Terms	4	Planning Aid - Track/Components	20
Warranty Service	4	Single Track Straight Run-Feed Left and Right	20
Preface	6	Independent Tracks Sharing DMX Data / AC Feeds	21
About this Manual	6	3 Straight Runs of Smart Track with "L" Coupler	22
About Smart Track Lighting	6	2 Straight Runs of Smart Track with "L" Coupler	22
DMX512A/RDM Standards	7	Straight Runs of Smart Track with Flex Coupler	23
Altman Smart Track Overview	8	Sample Installation & Guidelines	24
Smart Track Standard Lighting Track	8	Easy to Cut on Site	24
Smart Track Standard Couplers	8	Smart Track Mounting	24
Smart Track Standard Live End Feeds	8	Pre-Punch Mounting Holes	24
Smart Track Standard Dead End Cap	8	Smart Track Load Distributions	24
Electrical Straight Coupler (Data and Power)	8	Pendant Style Mounting	25
Smart Track Standard Straight I Coupler	8	Aircraft Cable Mounting	25
Smart Track Flexible Coupler	9	Track-to-Track Connections	25
Smart Track Standard L-Coupler	9	Power Wiring	26
Smart Track Standard T-Coupler	9	Live Feed Coupler Installation and Wiring	26
Smart Track Standard X-Coupler	9	Recessed Cover Installation	27
Smart Track Recessed Lighting Track	10	Monopoint Ceiling Adapter Installation	27
Smart Track Recessed Couplers	10	Recessed Monopoint Ceiling Adapter Install	28
Smart Track Recessed Live End Feeds	10	Adapter Mounting Into The Track	28
Smart Track Recessed Dead End Cap	10	Installing Circuit Limiting Feed Device	29
Smart Track Recessed Straight I Coupler	10		
Smart Track Recessed L-Coupler	10		
Smart Track Recessed T-Coupler	11		
Smart Track Recessed X-Coupler	11		
Smart Track Cutting Tool For Track Conductors	11		
Smart Track Current Limiting Devices	12		
End-Feed With Current Limiting Feeds	12		
Middle-Feed With Current Limiting Feeds	12		
End-Feed With Small Current Limiting Feeds	12		
Smart Track Ceiling Monopoint	12		
Smart Track Aircraft Mount Kits	13		
Smart Track Pendant Mount Kits	15		
Planning and Design	16		
General Product Information	16		
Smart Track Lighting 2-Circuit Specification	16		
Smart Track Luminaire Specification	16		
Warning and Notices	17		

Preface

About this Manual

This document only provides general information for Altman Lighting's Smart Track Lighting system and products. Refer to the product's installation and operation manual for specific product information.

About Smart Track Lighting

Altman Smart Track Lighting Systems are a revolutionary way to bring DMX control and power to addressable architectural / theatrical luminaires. Smart Track eliminates the need for additional data wiring.

Smart Track Lighting is easy to lay out, install, and offers lighting professionals the opportunity to create and activate new lighting scenes time after time. Smart Track Lighting is a track based lighting system that carries both power and data down the same track system. This system allows for simple installation of "smart luminaires" which when connected to the Smart Track can be controlled via DMX. As with all DMX systems - DMX rules need to be followed for proper fixture control.

The Smart Track Lighting System works in conjunction with numerous Altman luminaires from Incandescent to LED. These fixtures include but are not limited to the Altman Gallery, IQ Series, UV, LED and Micro series products. Luminaires fitted with smart track adapters have an addressable DMX dimmer for quartz units and DMX interface for LED color changing and white lighting units. Units fitted with "Non-Smart" track heads work through direct power and cannot be addressed or controlled via data but can be controlled if the head end of the track is outfitted with a mains dimmer. Note that the fixtures attached to the track must also be suitable for use with a phase cut dimmer.

These unique features and capabilities of Altman Smart Track Lighting System make it the ideal solution for many applications. The system is suitable for retail stores, museums, churches, restaurants, theme parks, night clubs and much more. Altman Smart Track Lighting System is a comprehensive system of components that offer innovative solutions for transporting control signals as well as power to individual luminaires. The heavy duty extruded aluminum track is ideal for demanding applications where a low profile look is desired and numerous luminaires are required. The Altman Smart Track luminaires retain their identity and programming, even when moved from location to location along the track.

Smart Track Lighting System is compatible with DMX and many are RDM enabled (Remote Device Management) luminaires. It can also be integrated into existing systems to transform into new designs. By incorporating the digital control signal into the track, this system allows dimming and lighting effects to be obtained when using any of the numerous compatible Altman luminaires.

DMX512A/RDM Standards

DMX512A (DIGITAL MULTIPLEX) is a standard for digital communication networks that are commonly used to control architectural and stage lighting. The ANSI standard of E1.11 employs a differential signal at its physical layer in conjunction with a variable size packet based communication protocol.

The DMX512 standard requirements are:

- Maximum length: 1000 feet
- Wiring type recommended: Belden 9842, 9729, 9829, Proplex, Cat5 UTP/STP (Note: A Network is only as good as its Cable)
- Maximum units per bus: 32 (20 RDM devices) - breaking your DMX512 network links and units per data link into smaller segments is always more desirable
- 120 ohm termination at the end of each run, if a DMX512 network is not terminated, the DMX signal arrives at the far end of the chain and is “reflected” back up the line to the transmitter, also note that “over terminating” a DMX512 network is just as bad as this will overload the driver circuit.

All Devices in a DMX512 system must be connected in a “daisy chain” fashion and should never be run in a “WYE/2-fer” fashion. Utilization of DMX splitters and networked devices is always recommended when long runs or multiple DMX LANs are needed for One or more DMX networks. DMX splitters Permit a star layout without breaking the rules. Each output of the splitter is driving a new DMX512 link on the network. These generally have one (1) DMX input and multiple outputs. Please know that a repeater will be needed for each DMX universe.

Common Data issues with DMX Networks

- Too many devices on the line (Maximum units per bus: 32 DMX or 20 RDM devices)
- Improper termination on the line.
- DMX can “sometimes work” with the Data - (minus) missing.
- If a DMX splitter “cleans up” an issue check the system for ground loops.

XLN-5 Pin Out

- 1) Signal Common
- 2) Data 1- (Primary Data Link)
- 3) Data 1+ (Primary Data Link)
- 4) Data 2- (Optional Secondary Data Link)
- 5) Data 2+ (Optional Secondary Data Link)

RJ-45 Pin Out

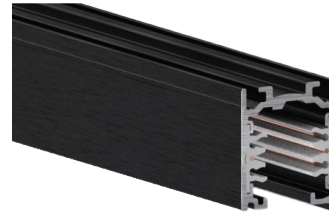
- 1) Data 1+
- 2) Data 1-
- 3) Data 2+
- 4) Not Assigned
- 5) Not Assigned
- 6) Data 2-
- 7) Signal Common (0 V) for Data 1
- 8) Signal Common (0 V) for Data 2

Altman Smart Track Overview

Smart Track Standard Lighting Track

The track is available in black or white powder coat or silver anodized. All system components and adapters are available in white, black or silver painted finish. Please refer to the specific luminaire's data sheet for available color choices for your specified Smart Track Luminaire.

Model	Description
AST-9000-UL4-ST2-*	4' - 2-circuit Smart Track™ - Standard
AST-9000-UL8-ST2-*	8' - 2-circuit Smart Track™ - Standard
AST-9000-UL12-ST2-*	12' - 2-circuit Smart Track™ - Standard



Smart Track Standard Couplers

Smart Track Standard Live End Feeds

Live end feeds are utilized in the track system to bring both power and data to the “feed” or beginning of the track. These live feeds are wired to the input power and data and make contact with the appropriate bus ways in the track to transfer power and data to the luminaires. With gold plated DMX / data bus contacts and nickel plated line voltage springs for feeding AC and DMX in or out.

Model	Description
AST-9001-*	Live End, Polarity Right
AST-9002-*	Live End, Polarity Left

See Page 26 for Installation and wiring of the Live End Feed



Smart Track Standard Dead End Cap

End cap for end of track run.

Model	Description
AST-9004-*	End Cap for Standard Track



Electrical Straight Coupler (Data and Power)

Straight coupler for joining two pieces of Smart Track. Can be used as a feed for either DMX / data and AC. Note: DMX / data must run linear.

Model	Description
AST-9003-*	Straight Coupler / Jointing Connector



Smart Track Standard Straight I Coupler (Data and Power)

Straight I coupler for joining two pieces of Smart Track. Can be used as a feed for either DMX / data and AC. Note: DMX / data must run linear.

Model	Description
AST-9010-*	I-Coupler / Middle Feed



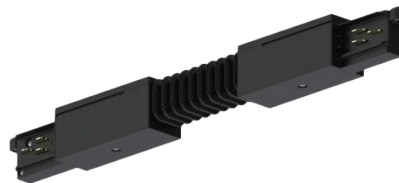
*Note: * Add one of the following codes for finish: B - Black, W - White and S - Silver, . Some items are only available in color noted in their description.*

Smart Track Standard Couplers

Smart Track Flexible Coupler

The flexible connector can be used from 30° to 330°. Can be used as a DMX/ data & AC feed or as a pass through. Note: DMX/ data must be run linear.

Model	Description
AST-9018-*	Flexible Straight Coupler



Smart Track Standard L-Coupler

L-Coupler with DMX / data contacts. Can be used as a feed for either DMX / data or AC. Note: DMX / data must be run linear. Smart Track L-Coupler.

Model	Description
AST-9011-*	L-Coupler, Polarity Inside
AST-9012-*	L-Coupler, Polarity Outside



Smart Track Standard T-Coupler

T-Coupler for joining three track sections. Can be used as a DMX / data and AC feed or as a pass through.

Model	Description
AST-9013-*	T-Coupler with Polarity Outside Left / Ground Inside Right
AST-9014-*	T-Coupler with Polarity Outside Right / Ground Inside Left
AST-9015-*	T-Coupler with Polarity Inside Left / Ground Outside Right
AST-9016-*	T-Coupler with Polarity Inside Right / Ground Outside Left



IMPORTANT! Special care must be taken when laying out and wiring DMX / data in and out of the T-Coupler to keep the DMX running linear. This means breaks inside the T-Coupler on the control signal may be necessary. If more than one DMX/ data line is necessitated for the control wiring layout.

Smart Track Standard X-Coupler

Four-way, 90° track joiner. Can be used as a DMX / data and AC feed or as a pass through.

Model	Description
AST-9017-*	X-Coupler



IMPORTANT! Special care must be taken when laying out and wiring DMX / data in and out of the X-Coupler to keep the DMX running linear. This means breaks inside the X-coupler on the control signal may be necessary. More than one DMX / data line may need to be run.

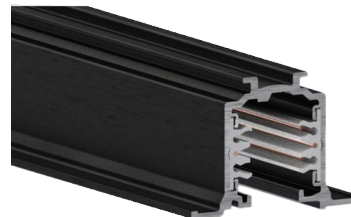


Note: * Add one of the following codes for finish: B - Black, W - White and S - Silver, . Some items are only available in color noted in their description.

Smart Track Recessed Lighting Track

The track is available in black or white powder coat or silver anodized. All system components and adapters are available in white, black or silver painted finish. Please refer to the specific luminaire's data sheet for available color choices for your specified Smart Track Luminaire.

Model	Description
AST-9000-UL4-RE2-*	4' - 2-circuit Smart Track™ - Recessed
AST-9000-UL8-RE2-*	8' - 2-circuit Smart Track™ - Recessed
AST-9000-UL12-RE2-*	12' - 2-circuit Smart Track™ - Recessed



Smart Track Recessed Couplers

Smart Track Recessed Live End Feeds

Live end feeds are utilized in the track system to bring both power and data to the “feed” or beginning of the track. These live feeds are wired to the input power and data and make contact with the appropriate bus ways in the track to transfer power and data to the luminaires. With gold plated DMX / data bus contacts and nickel plated line voltage springs for feeding AC and DMX in or out.

Model	Description
AST-9001-RE2-*	Live End, Polarity Right
AST-9002-RE2-*	Live End, Polarity Left

See Page 26 for Installation and wiring of the Live End Feed



AST-9001-RE2-*/AST-9002-RE2-* Includes AST-9001-R-6-* Recessed Cover

Smart Track Recessed Dead End Cap

End cap for end of track run.

Model	Description
AST-9004-RE2-*	End Cap for Recessed Track



Smart Track Recessed Straight I Coupler (Data and Power)

Straight I coupler for joining two pieces of Smart Track. Can be used as a feed for either DMX / data and AC. Note: DMX / data must run linear.

Model	Description
AST-9010-RE2-*	I-Coupler / Middle Feed

See Page 27 for Recessed Cover Installation



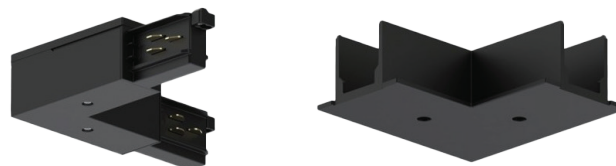
AST-9010-RE2-* Includes AST-9010-R-6-* Recessed Cover

Smart Track Recessed L-Coupler

L-Coupler with DMX / data contacts. Can be used as a feed for either DMX / data or AC. Note: DMX / data must be run linear. Smart Track L-Coupler.

Model	Description
AST-9011-RE2-*	L-Coupler, Polarity Inside
AST-9012-RE2-*	L-Coupler, Polarity Outside

See Page 27 for Recessed Cover Installation



AST-9011-RE2-*/AST-9012-RE2-* Includes AST-9011-R-6-* Recessed Cover

*Note: * Add one of the following codes for finish: B - Black, W - White and S - Silver, . Some items are only available in color noted in their description.*

Smart Track Recessed Couplers

Smart Track Recessed T-Coupler

T-Coupler for joining three track sections. Can be used as a DMX / data and AC feed or as a pass through.

Model	Description
AST-9013-RE2-*	T-Coupler with Polarity Outside Left / Ground Inside Right
AST-9014-RE2-*	T-Coupler with Polarity Outside Right / Ground Inside Left
AST-9015-RE2-*	T-Coupler with Polarity Inside Left / Ground Outside Right
AST-9016-RE2-*	T-Coupler with Polarity Inside Right / Ground Outside Left



AST-9013-RE2-*/AST-9014-RE2-*/AST-9015-RE2-*/AST-9016-RE2-*/
Includes AST-9013-R-6-* Recessed Cover

See Page 27 for Recessed Cover Installation



IMPORTANT! Special care must be taken when laying out and wiring DMX / data in and out of the T-Coupler to keep the DMX running linear. This means breaks inside the T-Coupler on the control signal may be necessary. If more than one DMX / data line is necessitated for the control wiring layout.

Smart Track Recessed X-Coupler

Four-way, 90° track joiner. Can be used as a DMX / data and AC feed or as a pass through.

Model	Description
AST-9017-RE2-*	X-Coupler

See Page 27 for Recessed Cover Installation



IMPORTANT! Special care must be taken when laying out and wiring DMX / data in and out of the X-Coupler to keep the DMX running linear. This means breaks inside the X-coupler on the control signal may be necessary. More than one DMX / data line may need to be run.



AST-9017-RE2-*/ Includes AST-9017-R-6-* Recessed Cover

Note: * Add one of the following codes for finish: B - Black, W - White and S - Silver, . Some items are only available in color noted in their description.

Smart Track Cutting Tool For Track Conductors

Model	Description
AST-S-9000/T	Cutting Tool



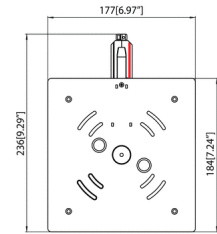
Smart Track Programming Devices and Adapters

Model	Description
61-DMXCAT	DMXcat for addressing fixtures via RDM (Required for DMX Model)
ST-STU-PD0	AP-150 / Pegasus Track Mounting Kit with and Data/ PowerCon and Fixture Mount
ST-STU-PD0-PK	AIP200 Track Mounting Kit with Seetronic Power and Data with Fixture Mount
ST-STU-PT0	AP-150 / Pegasus Track Mounting Kit with PowerCon and Fixture Mount (No Data)
ST-STU-PT0-PK	AIP200 Track Mounting Kit with Seetronic Power with Fixture Mount (No Data)

Smart Track Current Limiting Devices

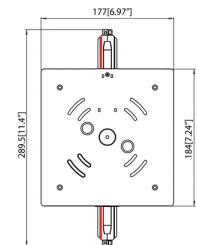
End-Feed With Current Limiting Feeds

Model	Description
AST-9001-CL-*	Live End Feed with Circuit Limiting Feed, Polarity Right
AST-9002-CL-*	Live End Feed with Circuit Limiting Feed, Polarity Left



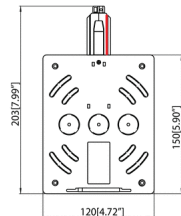
Middle-Feed With Current Limiting Feeds

Model	Description
AST-9010-CL-*	Middle Feed with Circuit Limiting Feed



End-Feed With Small Current Limiting Feeds

Model	Description
AST-9001-CL-S-*	Live End Feed with Small Circuit Limiting Feed, Polarity Right
AST-9002-CL-S-*	Live End Feed with Small Circuit Limiting Feed, Polarity Left



Note: * Add one of the following codes for finish: B - Black, W - White and S - Silver, . Some items are only available in color noted in their description.

Note: End Feeds require at least one circuit breaker and can have a maximum of two. I-Couplers must have two circuit breakers. Circuit breakers for current limiting products are found at the end of this section.

Note: Circuit Breakers are sold separately

[See Page 29 for Current Limiting Feeds Installation](#)

Smart Track Ceiling Monopoint

Model	Description
AST-9000-BPU-D-*	Ceiling Monopoint Adapter with Data bus
AST-9000-BRU-D-*	Ceiling Monopoint Adapter for Base for Recessed Fixing



Note: * Add one of the following codes for finish: B - Black, W - White. Some items are only available in color noted in their description.

Note: The AST-9000-BRU-D-* does not include the Monopoint Adapter

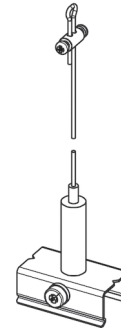
[See Page 27 for Ceiling Monopoint Installation](#)

[See Page 28 for Recessed Ceiling Monopoint Installation](#)

Smart Track Aircraft Mount Kits

Suspension Kit with Screw Gripper with Steel Cable

Model	Description
AST-9000-KIT1-1.5	Suspension Kit with Screw Gripper + Steel Cable (Diameter 1.5 mm, Length 1.5 m) + Clamp with Auto Gripper
AST-9000-KIT1-3	Suspension Kit with Screw Gripper + Steel Cable (Diameter 1.5 mm, Length 3 m) + Clamp with Auto Gripper



Suspension Kit with Ceiling Clamp

Model	Description
AST-9000-KIT2-1.5-*	Suspension Kit with Ceiling Clamp + Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 1.5 m) with a Spherical End + Fast Fixing Clamp
AST-9000-KIT2-3-*	Suspension Kit with Ceiling Clamp + Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 3m) with a Spherical End + Fast Fixing Clamp..
AST-9000-KIT2-5-*	Suspension Kit with Ceiling Clamp + White Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 5 m) with a Spherical End + Fast Fixing Clamp



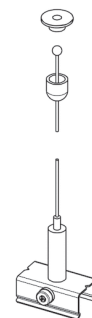
Suspension Kit with Screw Gripper-Steel Cable

Model	Description
AST-9000-KIT3-1.5-*	Suspension Kit with Screw Gripper + Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 1.5 m) + Bracket with Automatic Gripper
AST-9000-KIT3-3-*	Suspension Kit with Screw Gripper + Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 3m) + Bracket with Automatic Gripper
AST-9000-KIT3-5-*	Suspension Kit with Screw Gripper + Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 5m) + Bracket with Automatic Gripper



Suspension Kit with Round Head Ceiling Attachment

Model	Description
AST-9000-KIT4-1.5-*	Suspension Kit with Round Head Ceiling Attachment + Steel Cable (Diameter 1.5mm - Length 1.5 m) with a Spherical End + Clamp with Automatic Gripper
AST-9000-KIT4-5-*	Suspension Kit with Round Head Ceiling Attachment + Steel Cable (Diameter 1.5mm - Length 5m) with a Spherical End +Clamp with Automatic Gripper



Note: * Add one of the following codes for finish: B - Black, W - White. Some items are only available in color noted in their description.

Smart Track Aircraft Mount Kits

Suspension Kit with Screw Gripper-Black Plastic Cup-Steel Cable

Model	Description
AST-9000-KIT5-1.5	Suspension Kit with Screw Gripper + Black Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 1.5 m) with a Spherical End + Short Pendant Bracket for Suspensions
AST-9000-KIT5-5	Suspension Kit with Screw Gripper + Black Plastic Cup + Steel Cable (Diameter 1.5 mm - Length 3m) with a Spherical End + Short Pendant Bracket for Suspensions



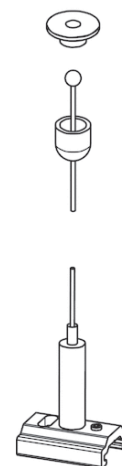
Suspension Kit with Screw Gripper-Black Plastic Cup-Steel Cable

Model	Description
AST-9000-KIT6-1.5-*	Suspension Kit with Screw Gripper + Plastic Cup + Steel Cable (Diameter 1.5mm - Length 1.5m) + Short Pendant Bracket with Countersunk Hole for Suspensions with Automatic Gripper
AST-9000-KIT6-3-*	Suspension Kit with Screw Gripper + Plastic Cup + Steel Cable (Diameter 1.5mm - Length 3m) + Short Pendant Bracket with Countersunk Hole for Suspensions with Automatic Gripper
AST-9000-KIT6-5-*	Suspension Kit with Screw Gripper + Plastic Cup + Steel Cable (Diameter 1.5mm - Length 5m) + Short Pendant Bracket with Countersunk Hole for Suspensions with Automatic Gripper



Suspension Kit with Round Head Ceiling Attachment-Steel Cable

Model	Description
AST-9000-KIT8-1.5-*	Suspension Kit with Round Head Ceiling Attachment + Steel Cable (Diameter 1.5 mm - Length 1.5 m) with a Spherical end + Short Pendant Bracket with Countersunk Hole for Suspensions with Automatic Gripper
AST-9000-KIT8-3-*	Suspension Kit with Round Head Ceiling Attachment + Steel Cable (Diameter 1.5 mm - Length 3m) with a Spherical end + Short Pendant Bracket with Countersunk Hole for Suspensions with Automatic Gripper
AST-9000-KIT8-5-*	Suspension Kit with Round Head Ceiling Attachment + Steel Cable (Diameter 1.5 mm - Length 5m) with a Spherical end + Short Pendant Bracket with Countersunk Hole for Suspensions with Automatic Gripper



Note: * Add one of the following codes for finish: B - Black, W - White. Some items are only available in color noted in their description.

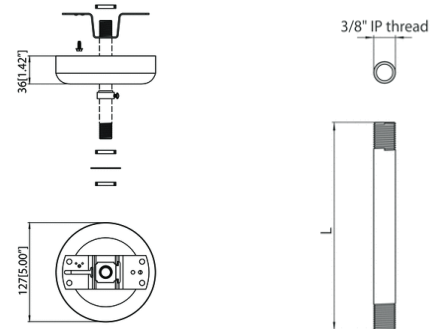
Smart Track Pendant Mount Kits

Suspension Set Pendant Mount with Metal Cup Canopy

Model	Description
AST-S-9000-P1-UL-SF-***-*	Suspension Set- Crossbar + Metal cup + Mounting bracket + Stem*

Note: * Add one of the following codes for finish: B - Black, W - White. Some items are only available in color noted in their description.

Note: *** - Add one of the following codes for Stem Length: 12 - 12 inches, 24 - 24 inches and 48 - 48 inches

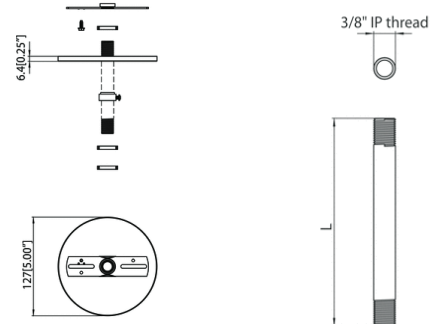


Suspension Set Pendant Mount with Flat Canopy

Model	Description
AST-S-9000-P2-UL-SF-***-*	Suspension Set- Crossbar + Flat Canopy + Mounting bracket + Stem*

Note: * Add one of the following codes for finish: B - Black, W - White. Some items are only available in color noted in their description.

Note: *** - Add one of the following codes for Stem Length: 12 - 12 inches, 24 - 24 inches and 48 - 48 inches



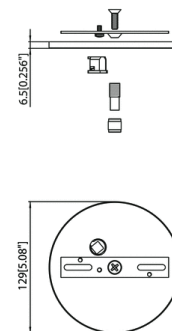
Suspension Set with Power Cord Gasket

Model	Description
AST-S-9000-P3-P-UL-****-*	Suspension Set - With power cord gasket (power cord not included)

Note: * Add one of the following codes for finish: B - Black, W - White. Some items are only available in color noted in their description.

Note: **** - Add one of the following codes for Cable Length: 36 - 36 inches, 120 - 120 inches and 200 - 200 inches

Note: Cable Gripper and Track Bracket not included



Planning and Design

General Product Information

Before you begin planning, this section contains some basic product specification and precautions when planning, designing, and installing a Smart Track Lighting system.

Smart Track Lighting 2-Circuit Specification

The Track Lighting System shall consist of high quality aluminum extruded lighting track with integral data distribution, rugged multi adapters to support fixtures & transfer power/ data from the track to controllable devices such as lighting fixtures. It shall be possible to field cut Track Sections to necessary lengths for each project and location. The top of the track shall have an extruded profile to allow for the mounting a manufacturer supplied bracket/ hanging supports for connecting with contractor supplied stem, cable or threaded rod. Track Sections shall distribute two 20 Amp, 120 VAC power circuits with independent neutrals and shall include integral distribution of DMX-512A (ANSI E.1.11-2004) and RDM (ANSI E1.20- 2006) control signals to lighting fixtures and controllable devices mounted on the Smart Track.

Connection points shall be available for both wired and wireless connection of controls to the Lighting System. The Lighting System shall have a complete line of components to join data and electrify separate track pieces, including: Live End Feeds, Dead End Caps, In-Line Couplers, Feed Thru Connectors, L Turns (left and right), Flexible Couplers, X-Connectors, T-Connectors, and Data Terminators. All components of the Lighting System shall be UL or ETL listed.

Smart Track Luminaire Specification

Fixtures for use on the DMX track system shall include an on-board DMX interface and an installed Multi-Adapter designed to mechanically hang, power and feed data. Fixtures compatible with the Lighting System shall include incandescent, low voltage, CDM, and LED sources. Luminaires shall be compatible with DMX-512A (ANSI E.1.11-2004) and RDM (ANSI E1.20-2006) control protocols. LED fixtures shall feature integral power supplies, drivers, pre-programmed modes and DMX interface. Quartz fixtures shall have an integral, on-board DMX controlled phase-forward (leading edge) dimmer compatible with incandescent, low voltage, and certain phase-dimmable LED loads. Metal Halide (CDM) fixtures shall have an on-board DMX on/off relay rated for a maximum of 70 Watts.

DMX addressing for all system fixtures shall be conducted via either (a) manual setting of the rotary dials for Dimmer & CDM luminaires (b) push button display for LED or (c) RDM from a remote location by a compatible hand held programmer or personal computer. Luminaires shall retain their identity and programming, even when moved to a new location. Data input on all fixtures shall have high voltage protection circuitry. Fixtures may be connected to the system at any point along the track. All fixtures shall be UL or ETL listed.

Warning and Notices

When installing or using the Altman Smart Track Lighting System, basic safety precautions should always be followed.

Including:

1. Read and understand all of these installation instructions before installing the Smart Track fixtures and lighting track. Also refer to “Important Information” on page 2.
2. Only a qualified electrician in accordance with the National Electrical Code and all local codes and ordinances should perform installation of the Smart Track system.
3. Do not install the track in damp or wet locations.
4. Do not install any parts of the track system less than five (5) feet above the floor.
5. Do not install any fixtures closer than six inches from combustible materials.
6. Do not use this track with a power supply cord or convenience receptacle adapter.
7. Smart Track must be mounted flat and horizontal, facing down and is not compatible for walls, floors, sloped or curved ceilings.
8. The Altman Smart Track System is intended for use only with Altman Smart Track components and fixtures marked for use with the Altman Smart Track System. To reduce the risk of fire and electric shock, do not use other components as part of this system.
9. Data Cable shall be suitable for transport of USITT DMX-512A (ANSI E1.11-2004) and RDM (ANSI E1.20-2006) control information between Smart Track Sections and the Lighting Control System (example: Belden 9842) or CAT-5 Ethernet cable (Example: Belden 1583A) can be used.
10. Do not connect DMX Pin 1 / Digital Common directly to earth AC ground at the track power / data feeds.
11. DMX/ Data Digital Common is allowed to float at track Power / Data feeds and remains unterminated.
12. The 2-circuit track contains 2 hot circuits and 2 neutral conductors, allowing a maximum load of two 20 Amp circuits at 120 VAC.
13. Insure that ALL lighting branch circuits for the Smart Track are dedicated and NOT connected to an in-line dimmer (unless the Smart Track lighting fixtures are Mains Dimmable models. Do not mix Mains Dimmable models and non-Mains Dimmable models on the same track).
14. Do not attempt to energize anything other than Lighting Track Fixtures on the lighting track. To reduce the risk of fire and electrical shock, do not attempt to connect power tools, extension cords, appliances, and the like to the lighting track.
15. Data Control Wires (+/-) on the 2-circuit adapters and track are to be used for DMX or RDM control signals only, rated max. 5 volts, 1 Amp.
16. During installation, do not connect data control cables to the lighting track with electric power connected. Power off the lighting track first, insert the data control cable, and then turn power back onto the lighting track. Voltage spikes can damage the fixtures.
17. Keep the data rail control circuits on the lighting track as clean as possible. Use a clean lint-free cloth with isopropyl alcohol to clean the data rail control circuits in the event of dirt and dust collection. The data control lines have to be absolutely clean and free

Track, Components, and DMX Contacts

The Altman Lighting two circuit Smart Track incorporates a two contact DMX/track bus running along the inside of the track profile.



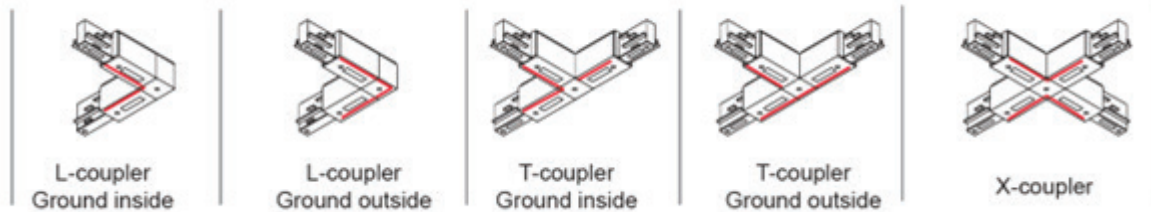
IMPORTANT! When planning the layout make sure the course of the DMX/Data Bus is continuous without change or intersection. Please take special care when changing linear direction of the track to ensure that the proper DMX connector is chosen. For example, if you have an inside DMX track with a right hand turn to another make sure that you pick the L coupler with an inside DMX contact.

Symbol	Model	Description
	AST-9000-UL4-*	4-foot Smart Track
	AST-9000-UL8-*	8-foot Smart Track
	AST-9000-UL12-*	12-foot Smart Track
	AST-9001-*	Live End with DMX / Data - Ground Inside
	AST-9002-*	Live End with DMX / Data - Ground Outside
	AST-9003-*	Straight Coupler
	AST-9011-*	L-Coupler with DMX Data Contact Inside
	AST-9012-*	L-Coupler with DMX Data Contact Outside
	AST-9018-*	Flex Connector
		DMX Terminator
	AST-9004-*	Dead End Cap

Note: For all available track components and accessories, refer to [“Altman Smart Track Lighting” on page 8](#).

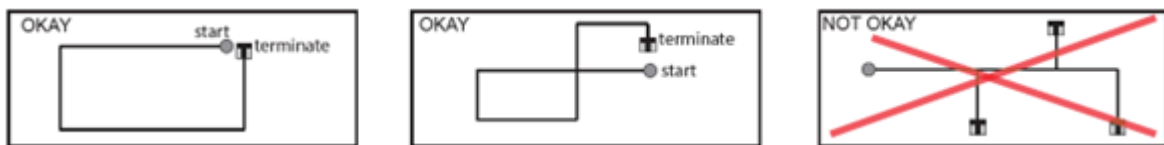
Coupler Examples

Below are a few examples of the couplers available for Smart Track Lighting. Also to refer to **“Smart Track Accessories”** on page 8.



Examples Of Dmx Termination

There are a variety of configurations that can be assembled using the available Smart Track couplers. It is recommended that you layout the DMX cable path to ensure that no loops, stars or Y's are created within the data line.



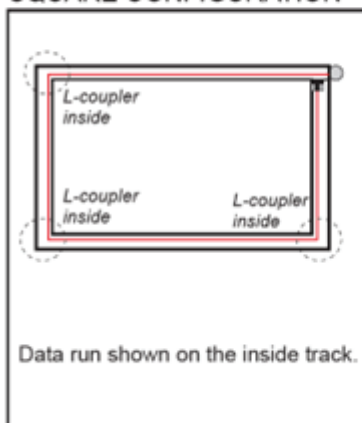
IMPORTANT! Data transmission will become unreliable if DMX is not installed according to standard protocols. it is highly recommended to lay out the data path for your track configuration **BEFORE** ordering all track and couplers.

Examples Of Systems Layout

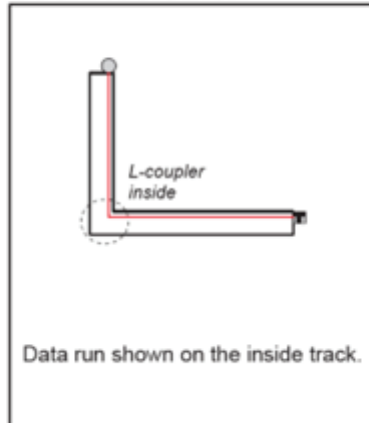
KEY OF SYMBOLS



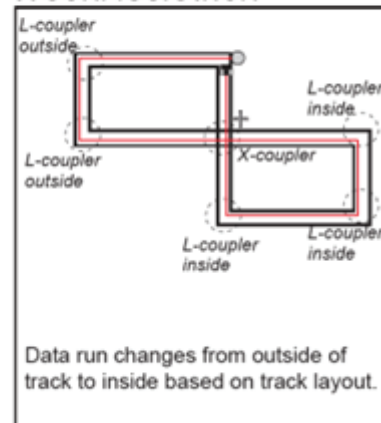
SQUARE CONFIGURATION



L CONFIGURATION



X CONFIGURATION



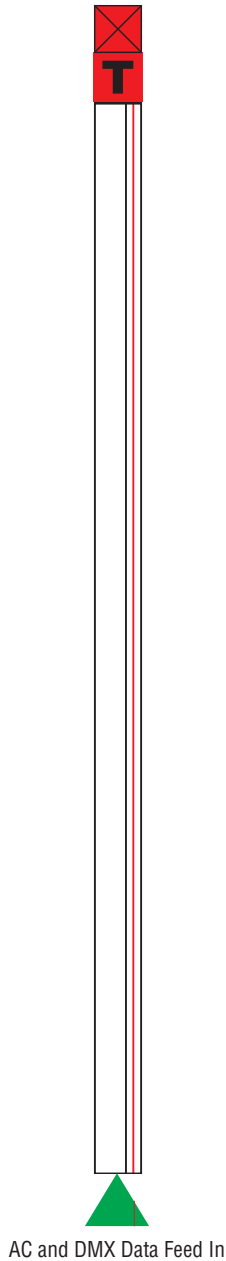
Planning Aid - Track/Components/DMX Contacts

Below are some examples to assist in planning a Smart Track Lighting System.

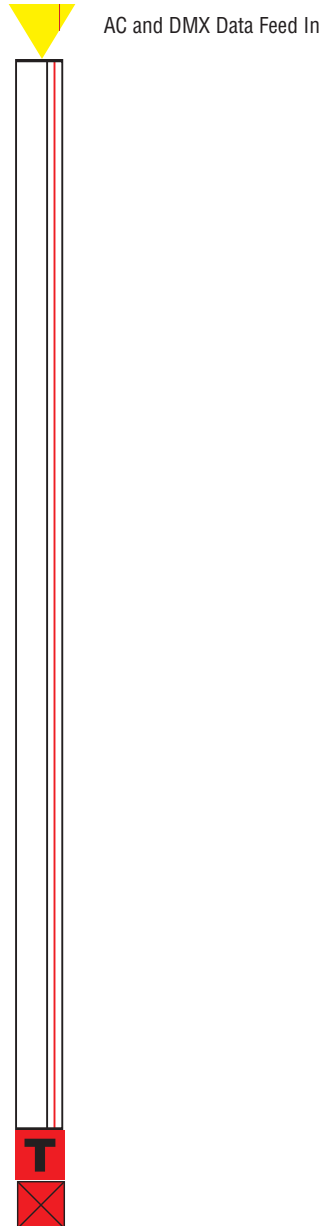
Note: The layout examples in this guide shows dead end caps at the end of the run. Altman Lighting recommends the use of live end data feeds at the end of the track. This will allow for an easy additions to the system - for data daisy-chain connections from the track.

Examples:

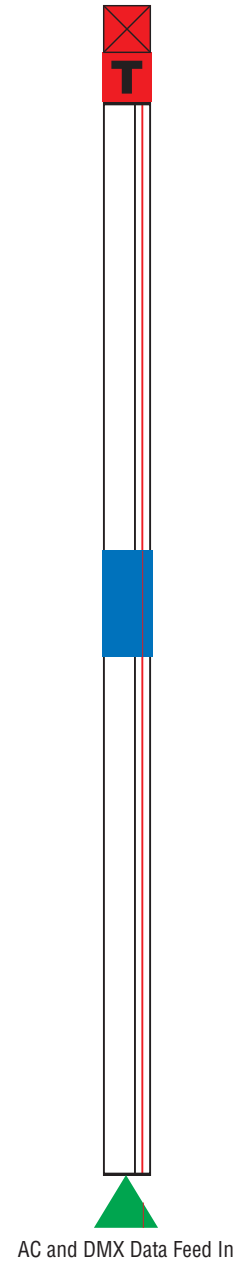
*Example 1 - Single Smart Track,
Straight Run-Feed Right*



*Example 2 - Single Smart Track
Straight Run-Feed Left*

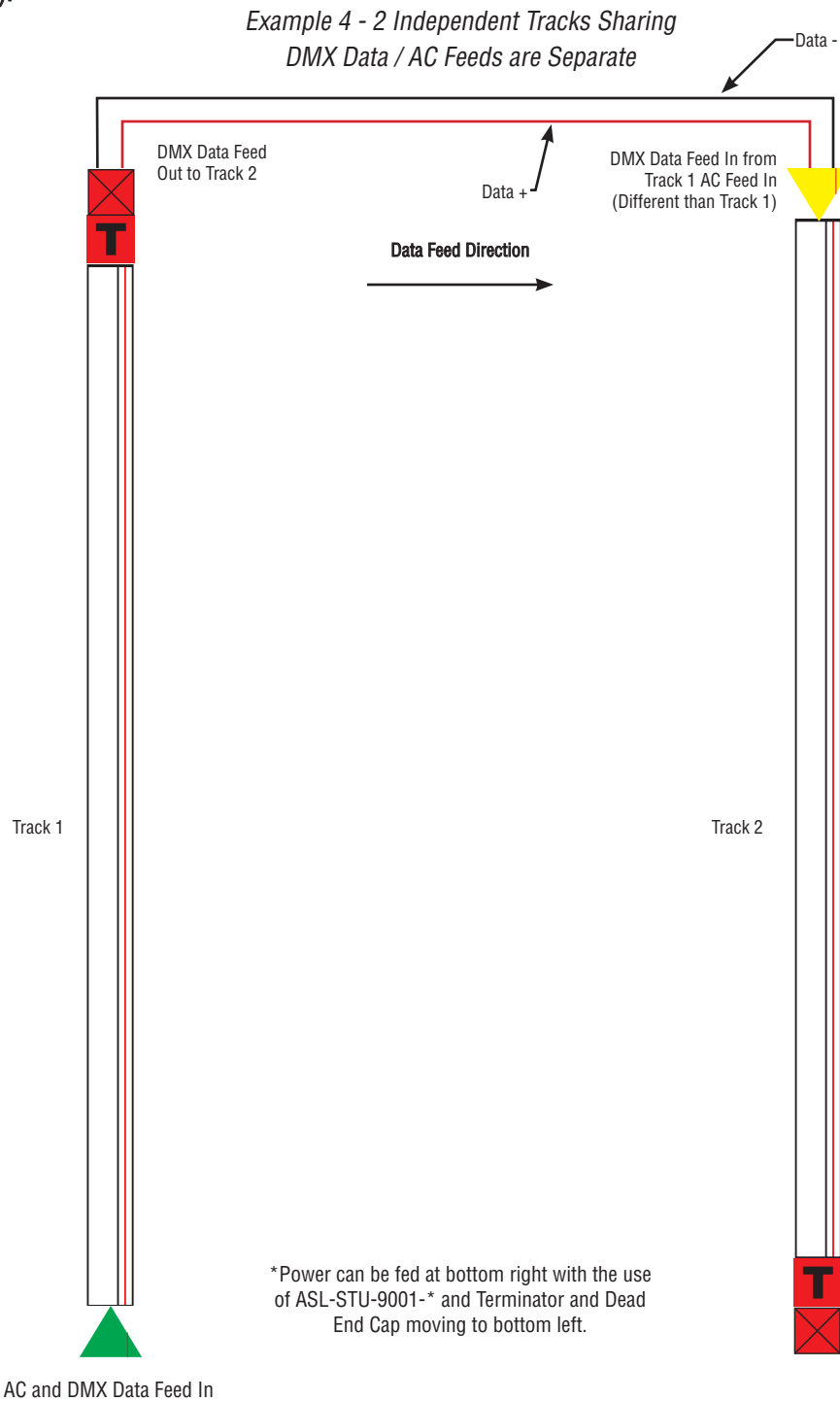


*Example 3 - Straight Run with
2 Tracks and Middle Joiner*



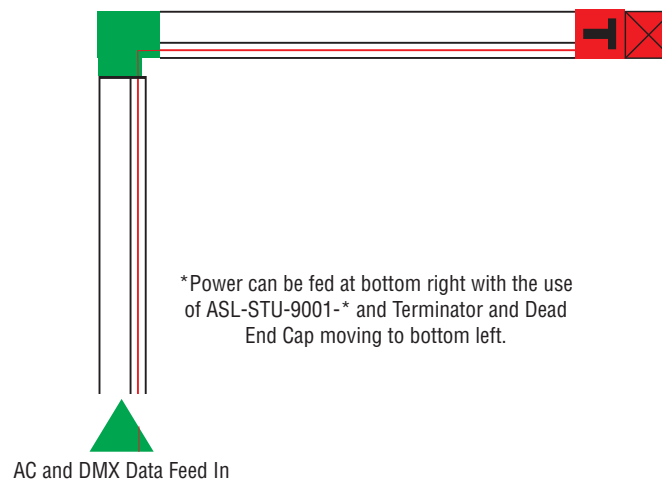
Note: The examples show track seen from above. The opening of the track shows downwards.

Examples (continued):

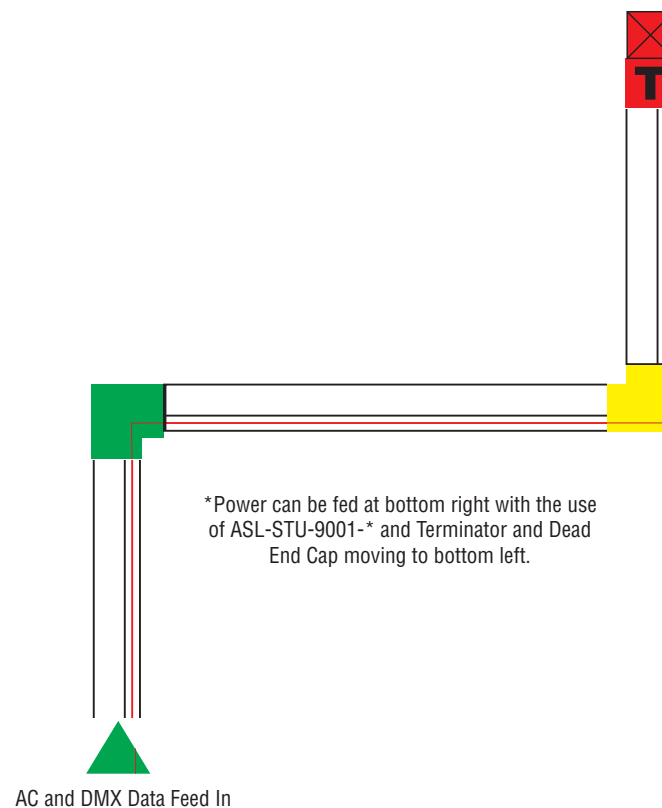


Note: The examples show track seen from above. The opening of the track shows downwards.

Examples (continued):

Example 5 - 2 Straight Runs of Smart Track with 1 "L" Coupler

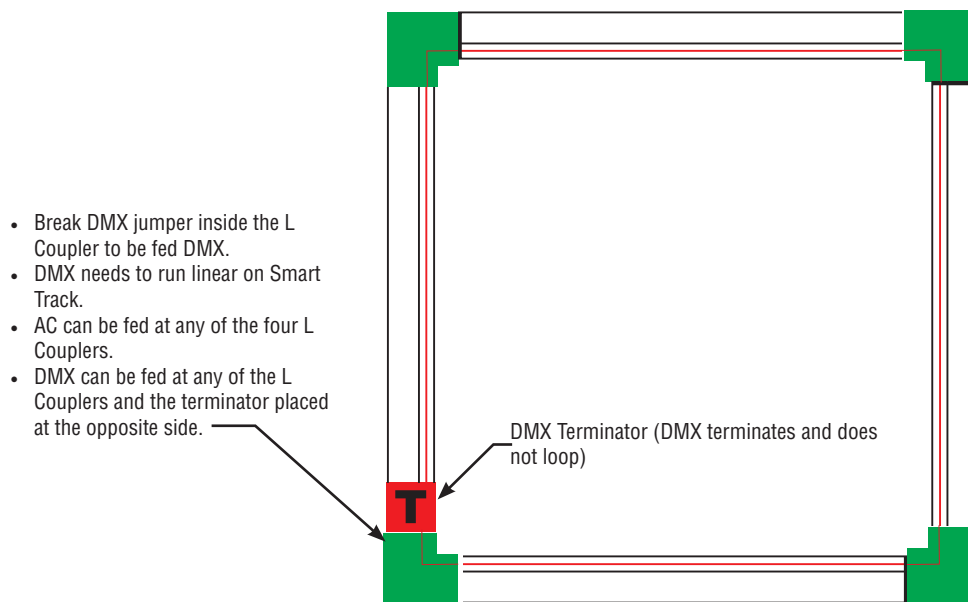
Note: The examples show track seen from above. The opening of the track shows downwards.

Example 6 - 3 Straight Runs of Smart Track With Two Opposite "L" Couplers

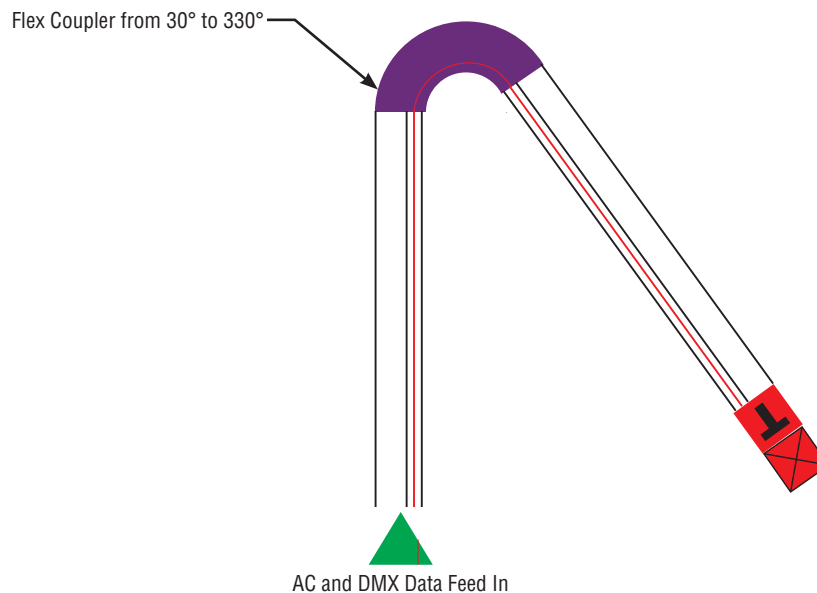
Note: The examples show track seen from above. The opening of the track shows downwards.

Examples (continued):

Example 7 - Closed Square or Rectangle Grip (comprised of four straight tracks and four "L" Couplers)



Example 8 - 2 Straight Runs of Smart Track with 1 Flex Coupler



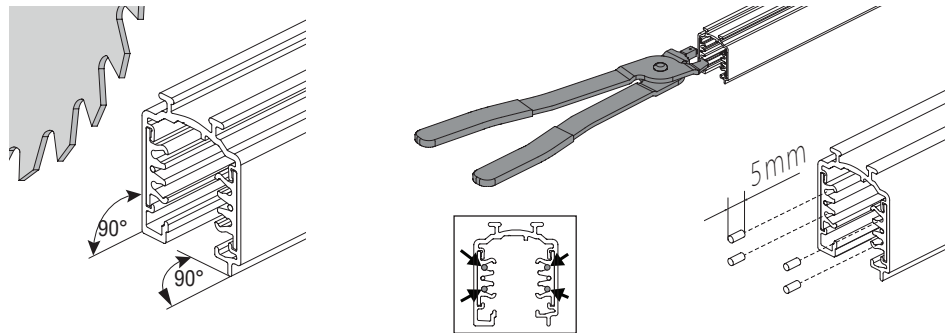
Power can be fed at bottom right with the use of ASL-STU-9001- and Terminator and Dead End Cap moving to bottom left.

Sample Installation & Guidelines

Easy to Cut on Site

Any given track can be easily cut to length on site.

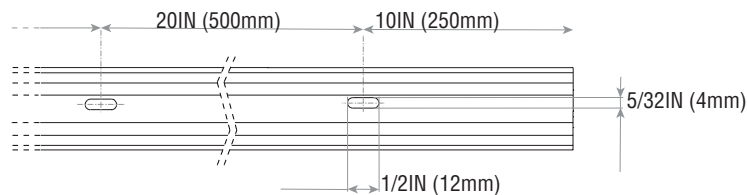
Note: If it is necessary to shorten the track during installation, after the cut it is necessary to use the special cutting tool (AST-S-9000/T) (to recess the 4 conductors (L1-L2-L3-N) at least of 5mm so that the correct air, surface and electrical distances are respected.



Smart Track Mounting

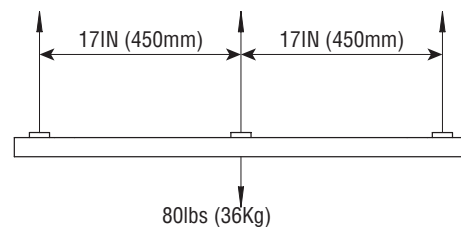
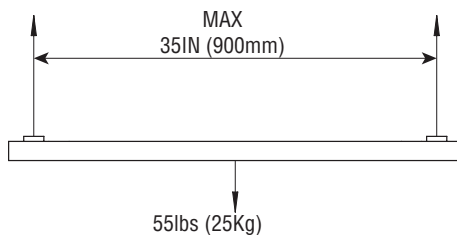
Pre-Punch Mounting Holes

The track has pre-punched holes 5/32-inch (4mm) x 1/2-inch (12mm) for surface mounting. The holes are spaced 20-inches (500mm).



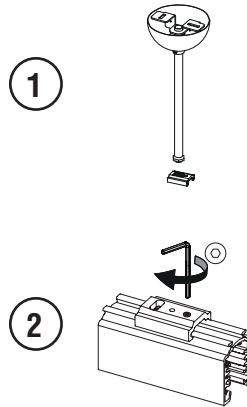
Smart Track Load Distributions

The Altman Smart Track, should be mounted evenly. Below is recommended load distribution examples.



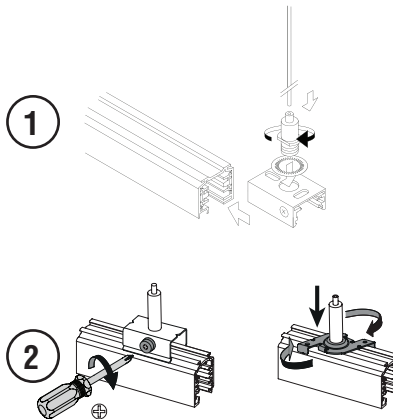
Pendant Style Mounting

If using pendant-style mounting, there are accessories (sold separately) available to accommodate this method of installation. Follow the spacing and weight information in **Figure 5** when using pendant-style mounting.



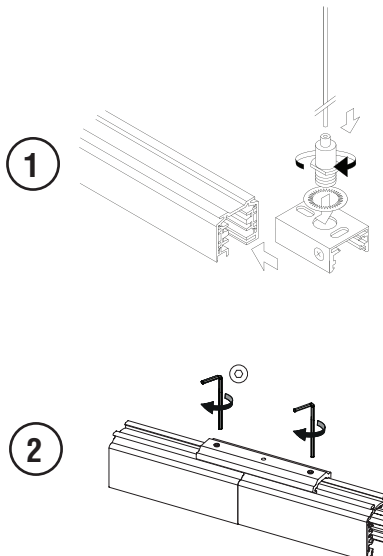
Aircraft Cable Mounting

If using aircraft cable to mount the track, there are accessories (sold separately) available to accommodate this method of installation. Follow the spacing and weight information in Figure 6 when using aircraft cable to mount the track system.



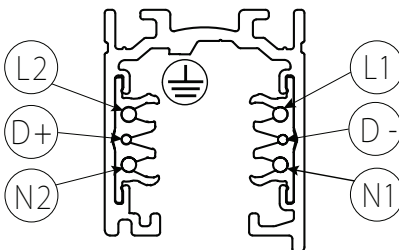
Track-to-Track Connections

When making track-to-track connections using pendant-style or aircraft cable mounting methods, a Pendant Clip (refer to “Smart Track Accessories” on page 8 for available clips) must be used between track joints as illustrated in Figure 7.



Power Wiring

120 VAC Smart Track can be wired with two different circuits (two hots and two neutrals). The 120VAC power wiring is very straightforward. Two 20 Amp, 120 VAC circuit and they neutrals can reside on the same track. Fixture track heads are designed to select one or the other circuit by simply turning the fixture selection knob located on the track head.



Live Feed Coupler Installation and Wiring

DANGER: Before beginning procedure BE SURE AC LINE POWER IS DISCONNECTED.

The following Tools will be needed to complete this task

1 x Phillips Head Screwdriver with #1
1 x Wire Strippers

The following Material will be needed to complete this task

1 x AST-9001-* - Live End, Polarity Right
1 x AST-9002-* - Live End, Polarity Left

The following steps will walk you thru how to install and wire a Altman Smart Track Live End Feed

1. Using your Phillips Screwdriver, unscrew the screw that is holding the outer cover to the Live End Feed. **Figure 1**
2. Using your Phillips Screwdriver, remove the knock out for the wire entry point for the Smart Track Live End Feed. **Figure 2**
3. Using Wire Strippers, strip back the wires to the desired length. **Figure 3**
4. Using your Phillips Screwdriver, attach the wires to there correct location. **Figure 4**
5. Attach cover and then plug the Smart Track Live End Feed into the Track. Using a screwdriver, screw in the live end feed to the track. **Figure 5**

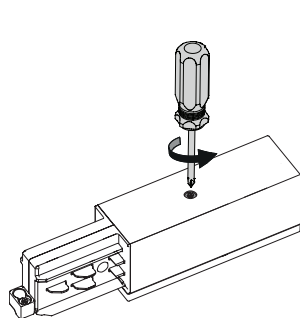


Figure 1

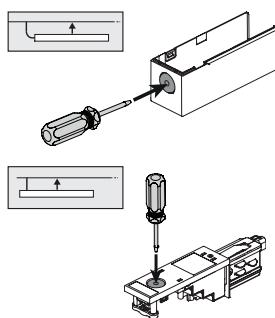


Figure 2

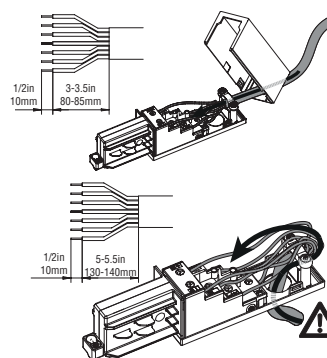


Figure 3

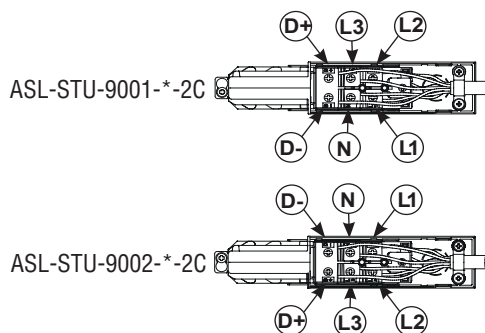


Figure 4

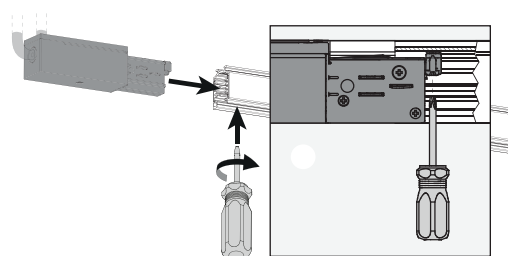


Figure 5

Recessed Cover Installation

The following steps will walk you thru how to install a Recessed Cover onto a Live End Feed Coupler.

1. Using your Phillips Screwdriver, unscrew the screw that is holding the outer cover to the Live End Feed. **Figure 1**
2. Remove Standard cover from the Coupler.
3. Install Recess Cover to the Coupler. **Figure 2**

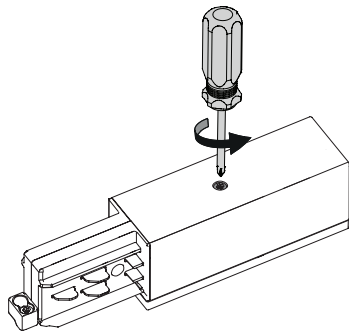


Figure 1

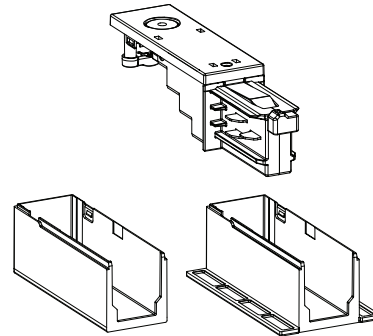


Figure 2

Monopoint Ceiling Adapter Installation

The following steps will walk you thru how to install a Monopoint Ceiling Adapter.

1. Using your Phillips Screwdriver, unscrew the outer cover of the Monopoint Ceiling Adapter. **Figure 1**
2. Remove Cover from the Monopoint Ceiling Adapter. **Figure 2**
3. Feed Power and Data Wire into either F1 and F2 holes and attach power and data wires to the following terminals in **Figure 3**
4. Once the unit is wire, mount the Monopoint Adapter to the ceiling and then attach cover.
5. Select L1 on the Adapter.

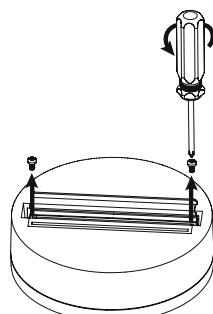


Figure 1

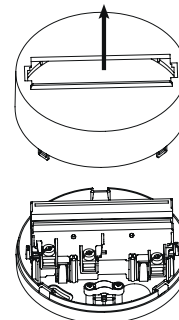


Figure 2

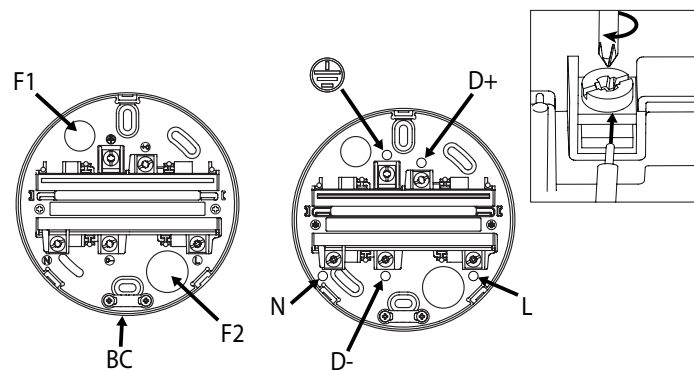


Figure 3

Recessed Monopoint Ceiling Adapter Installation

The following steps will walk you thru how to install a Monopoint Ceiling Adapter.

1. See **Figure 1** for Hole and Mounting requirements
2. To Mount the Recessed Monopoint Ceiling Adapter to the ceiling you will need to loosen the two screws that are holding the mounting arms in place. Tighten down screws once mounting arms are in desired location. **Figure 2**
3. Feed Wiring into Monopoint Ceiling Adapter. **Figure 3**
4. Wire the Power and Data to the Terminal on the Monopoint Ceiling Adapter per **Figure 4**
5. Attach the Monopoint Ceiling Adapter Cover to the device. **Figure 5**
6. Select L1 on the Adapter.

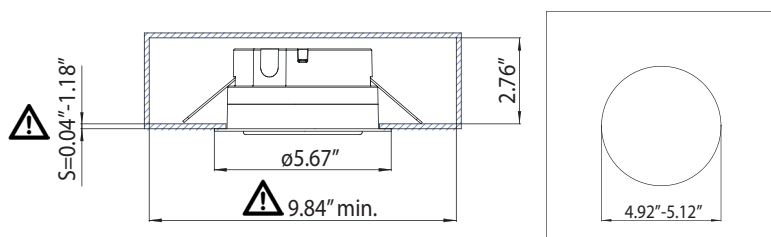


Figure 1

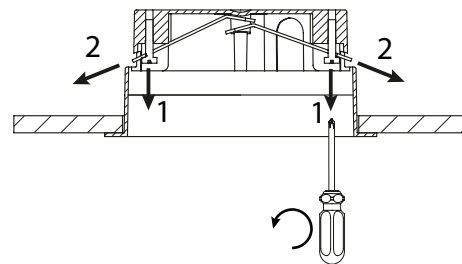


Figure 2

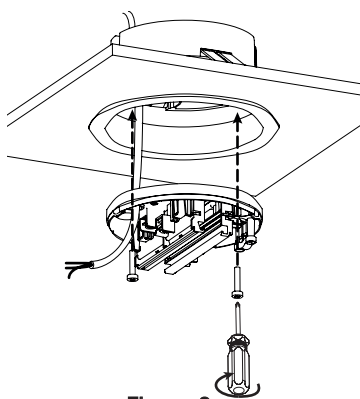


Figure 3

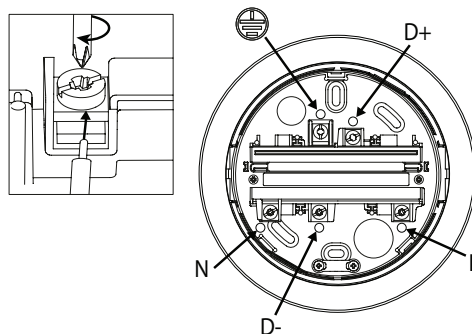


Figure 4

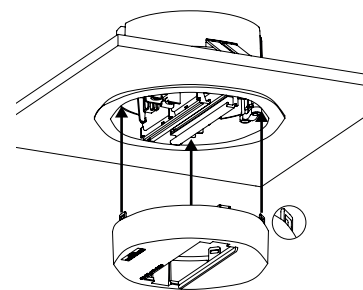


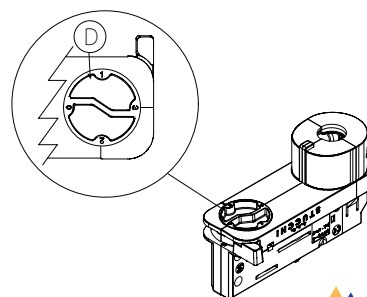
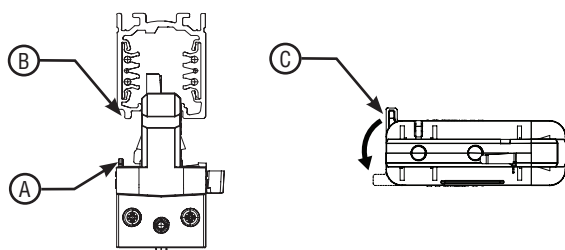
Figure 5

Adapter Mounting Into The Track

DANGER: Before beginning procedure BE SURE AC LINE POWER IS DISCONNECTED.

The following steps will walk you thru how to install the Track Adapter into the track

1. Insert the adapter into the track, so that the mechanical key (A) in the adaptor matches the groove (B) in the track.
2. Rotate the lever cam 90° (C) until they reach the locking position or until parallel to the track.
3. When the track is connected to a 2 circuit system it is possible to select the circuit (L1 or L2) to distribute the single luminaires in the system, by means of the proper selector (D). The phase selector must be switched on only during the installation and with no power supplied



Installing Circuit Limiting Feed Device

DANGER: Before beginning procedure **BE SURE AC LINE POWER IS DISCONNECTED.**

The following Tools will be needed to complete this task
 1 x Phillips Head Screwdriver with #1
 1 x Wire Strippers

The following steps will work with the following parts

AST-9001-CL-* - Live End, Polarity Right, Circuit Limiting
 AST-9001-CL-S-* - Live End Feed / Stacked Circuit Limiting, Polarity Right
 AST-9002-CL-* - Live End, Polarity Left, Circuit Limiting
 AST-9001-CL-S-* - Live End Feed / Stacked Circuit Limiting, Polarity Left
 AST-9010-CL-* - Middle Feed with Circuit Limiting Feed

The following steps will walk you thru how to install and wire a Altman Smart Track Circuit Limiting Device

1. Suspended Use: Create an anchor point for the wiring. **Figure 1**
2. Using your Wire Strippers, wire the circuit for AST-9001-CL-* / AST-9002-CL-* / AST-9010-CL-* see **Figure 2** and for AST-9001-CL-S-* / AST-9002-CL-S-* see **Figure 3**

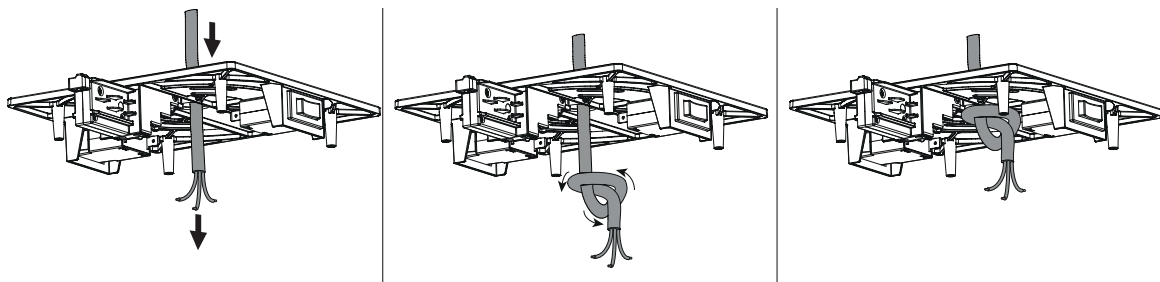


Figure 1

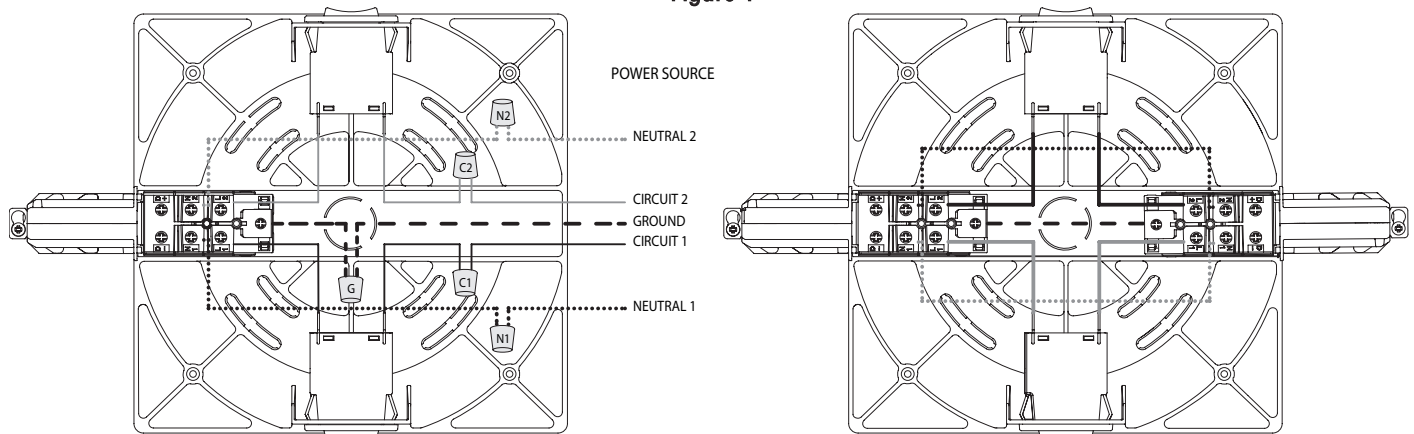


Figure 2

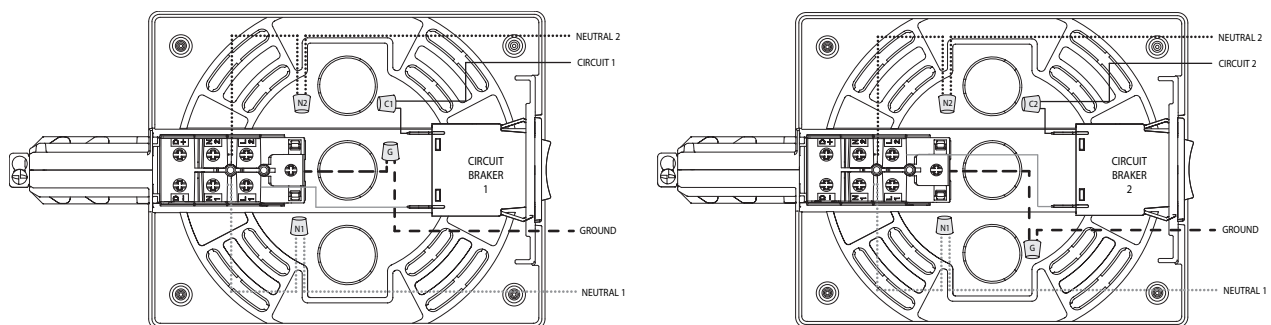


Figure 3