GENERATION 2

DANGER

ISOLATE DEVICE FROM POWER

Failure to isolate power supply before installation or maintenance may result in fire, serious injury, electric shock, death and may damage the luminaire.

Product Warranty is void if product is not installed as per installation instructions and in compliance with the local electrical code.

NO POWER TOOLS | DO NOT USE SILICONE ON OUTSIDE SURFACE | KEEP ELECTRONICS FREE FROM DIRECT AND MOISTURE | DO NOT HOSE OR PRESSURE CLEAN

READ ALL SAFETY INSTRUCTIONS FIRST

- Follow instructions carefully; failure to do so will void warranty.
- Ensure installation complies with local laws and applicable standards
- Only use Lumascape power supply, control equipment and leader cables.
- Ensure mains input power is surge protected.
- Never make connections whilst power is connected.
- Do not make modifications or alter product.
- Connectors are to be kept clean and dry at all times.
- Once installed, all connectors are to be mated and a PowerSync™ terminator is required on the last fitting of run.

Products and specifications are subject to change without notice.
IN0226-230823

GENERATION 2

Table of Contents

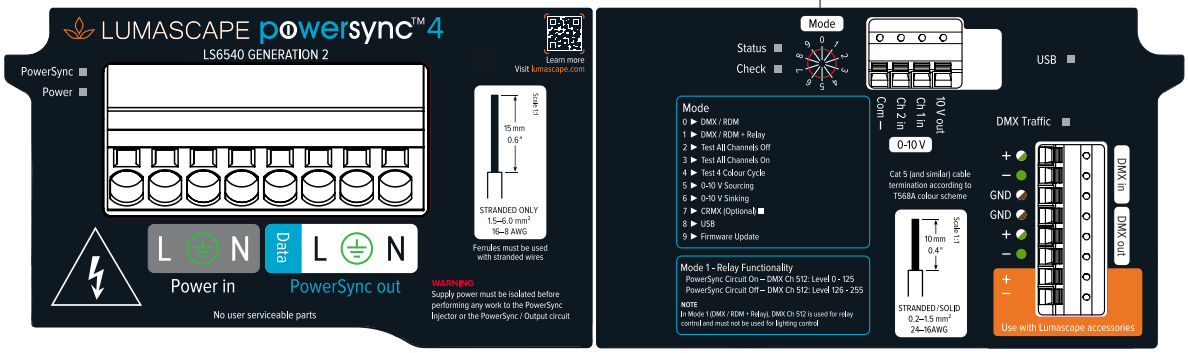
GENERATION 2

Mode Switch and Indicator Light Descriptions

10 Position Mode Switch

Label	Descriptions
0	DMX/RDM
1	DMX/RDM + Relay
2	Test All Channels Off
3	Test All Channels On
4	Test 4 Color Cycle
5	0-10 V Sourcing
6	0-10 V Sinking
7	CRMX (Optional)
8	USB
9	Firmware Update

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.



Indicator Light

LED Indicator	Event	Appearance	Note
Power	Main Input Power	Illuminates	
PowerSync™	PowerSync™ output enabled	Illuminates	
Status	Start Up	3 flashes	
	Normal Operation	1 flash, every 5 seconds	
	Circuit Fault: Over Voltage	2 flashes, every 5 seconds	
	PowerSync™ Fault	4 flashes, every 5 seconds	
Check	Start Up	On	
	Normal Operation	Off	
	Relay Open: Fault Detected	On	
	Relay Open: Manual Override	Flashing	
USB	USB Connected	Illuminates / flashes with data	
DMX Traffic	DMX Traffic Detected	Flashing with DMX frames	

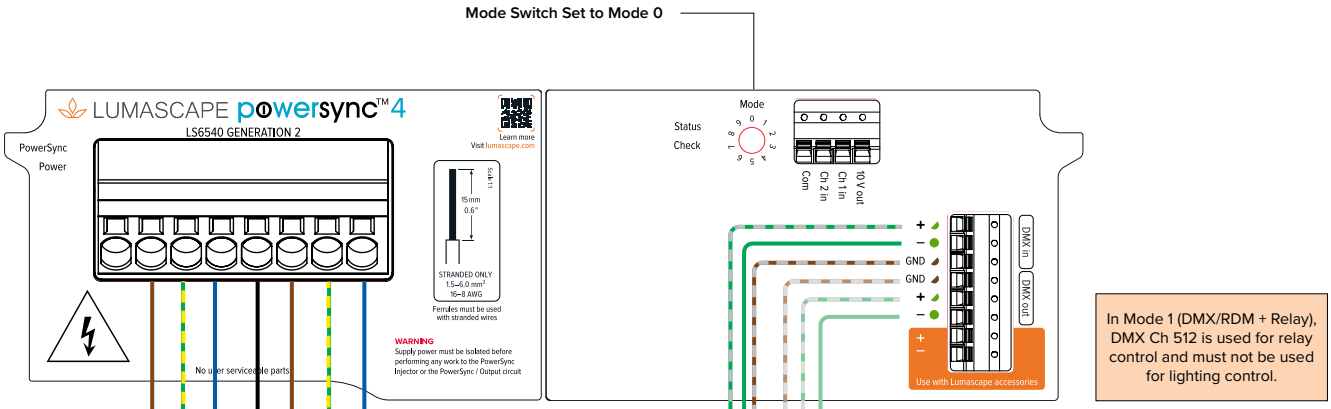
GENERATION 2

Wiring for DMX Controllers (International)

10 Position Mode Switch

Label	Descriptions
0	DMX/RDM
1	DMX/RDM + Relay
2	Test All Channels Off
3	Test All Channels On
4	Test 4 Color Cycle

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.



In Mode 1 (DMX/RDM + Relay), DMX Ch 512 is used for relay control and must not be used for lighting control.

DMX Out to next PowerSync™ Data Injector (optional)

Colour T-568A	Colour T-568B	Label	Designation
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +
White / Brown	White / Brown	GND	Ground

Connect to DMX in terminals of next PowerSync™ Data Injector for DMX loop-through functionality.

NOTE: If the output is not used, either LS6407 DMX Terminator (included with PowerSync™ Injector) or a 120 Ω, 0.125 W resistor must be inserted between Data + and Data – of the DMX out terminals.

DMX In

Colour T-568A	Colour T-568B	Label	Designation
White / Brown	White / Brown	GND	Ground
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +

Refer to third party installation instructions for details on dimmer installation.

PowerSync™ Out to Luminaires

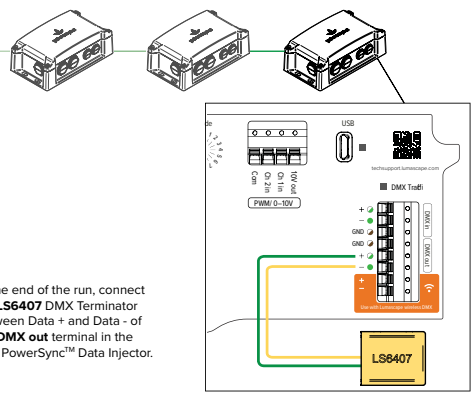
Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Brown	L	Live (110-240 V)
Black*	Data	PowerSync™ Data

* Connecting high voltage to data terminal will cause permanent damage and void warranty.

Power In (International)

Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Brown	L	Live (110-240 V)

DMX Termination



At the end of the run, connect the **LS6407** DMX Terminator between Data + and Data - of the **DMX out** terminal in the final PowerSync™ Data Injector.

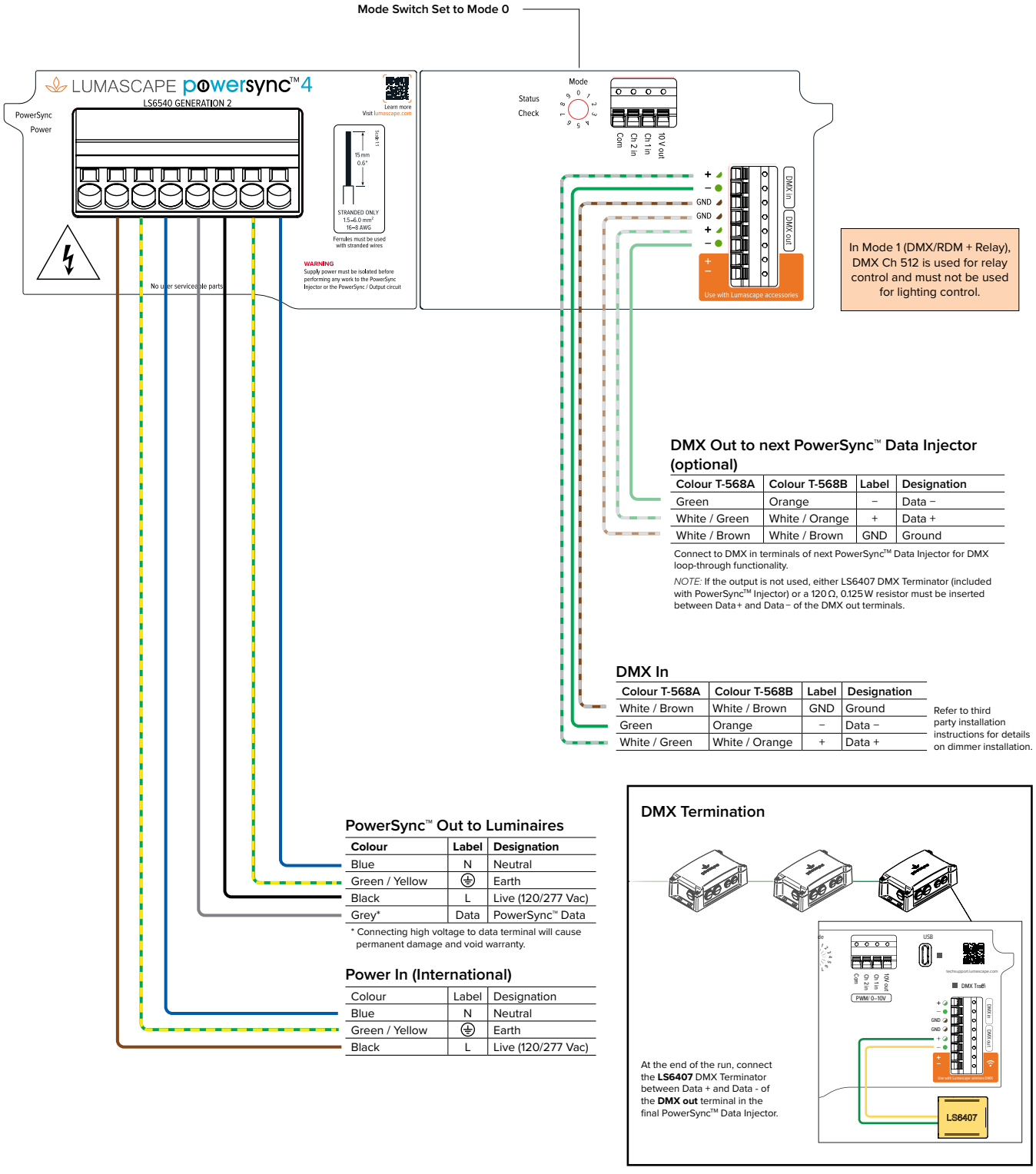
GENERATION 2

Wiring for DMX Controllers (North America)

10 Position Mode Switch

Label	Descriptions
0	DMX/RDM
1	DMX/RDM + Relay
2	Test All Channels Off
3	Test All Channels On
4	Test 4 Color Cycle

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.



DMX Out to next PowerSync™ Data Injector (optional)

Colour T-568A	Colour T-568B	Label	Designation
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +
White / Brown	White / Brown	GND	Ground

Connect to DMX in terminals of next PowerSync™ Data Injector for DMX loop-through functionality.

NOTE: If the output is not used, either LS6407 DMX Terminator (included with PowerSync™ Injector) or a 120 Ω, 0.125 W resistor must be inserted between Data+ and Data – of the DMX out terminals.

DMX In

Colour T-568A	Colour T-568B	Label	Designation
White / Brown	White / Brown	GND	Ground
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +

Refer to third party installation instructions for details on dimmer installation.

PowerSync™ Out to Luminaires

Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Black	L	Live (120/277 Vac)
Grey*	Data	PowerSync™ Data

* Connecting high voltage to data terminal will cause permanent damage and void warranty.

Power In (International)

Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Black	L	Live (120/277 Vac)

DMX Termination

At the end of the run, connect the **LS6407** DMX Terminator between Data + and Data - of the **DMX out** terminal in the final PowerSync™ Data Injector.

GENERATION 2

Wiring for 0-10 V Sinking Dimmers (International)

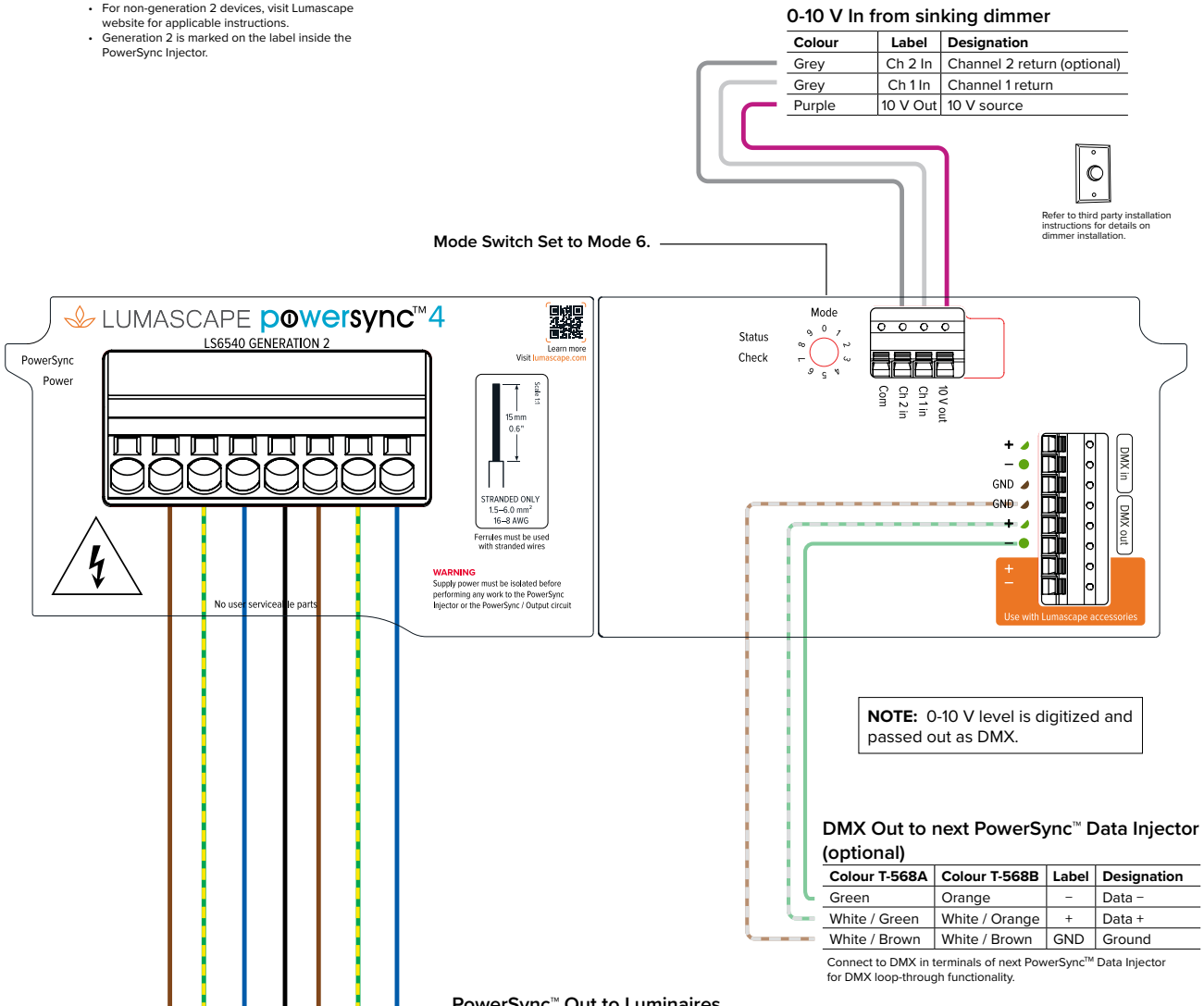
10 Position Mode Switch

Label	Descriptions
2	Test All Channels Off
3	Test All Channels On
6	0-10 V Sinking

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.

0-10 V In from sinking dimmer

Colour	Label	Designation
Grey	Ch 2 In	Channel 2 return (optional)
Grey	Ch 1 In	Channel 1 return
Purple	10 V Out	10 V source



NOTE: 0-10 V level is digitized and passed out as DMX.

DMX Out to next PowerSync™ Data Injector (optional)

Colour T-568A	Colour T-568B	Label	Designation
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +
White / Brown	White / Brown	GND	Ground

Connect to DMX in terminals of next PowerSync™ Data Injector for DMX loop-through functionality.

PowerSync™ Out to Luminaires

Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Brown	L	Live (110-240 V)
Black*	Data	PowerSync™ Data

* Connecting high voltage to data terminal will cause permanent damage and void warranty.

Power In

Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Brown	L	Live (110-240 V)

Note:

Attached luminaires need to be configured as single channel, DMX address (Channel 1 In only) or Tunable White (Channel 1 In & Channel 2 In).

GENERATION 2

Wiring for 0-10 V Sinking Dimmers (North America)

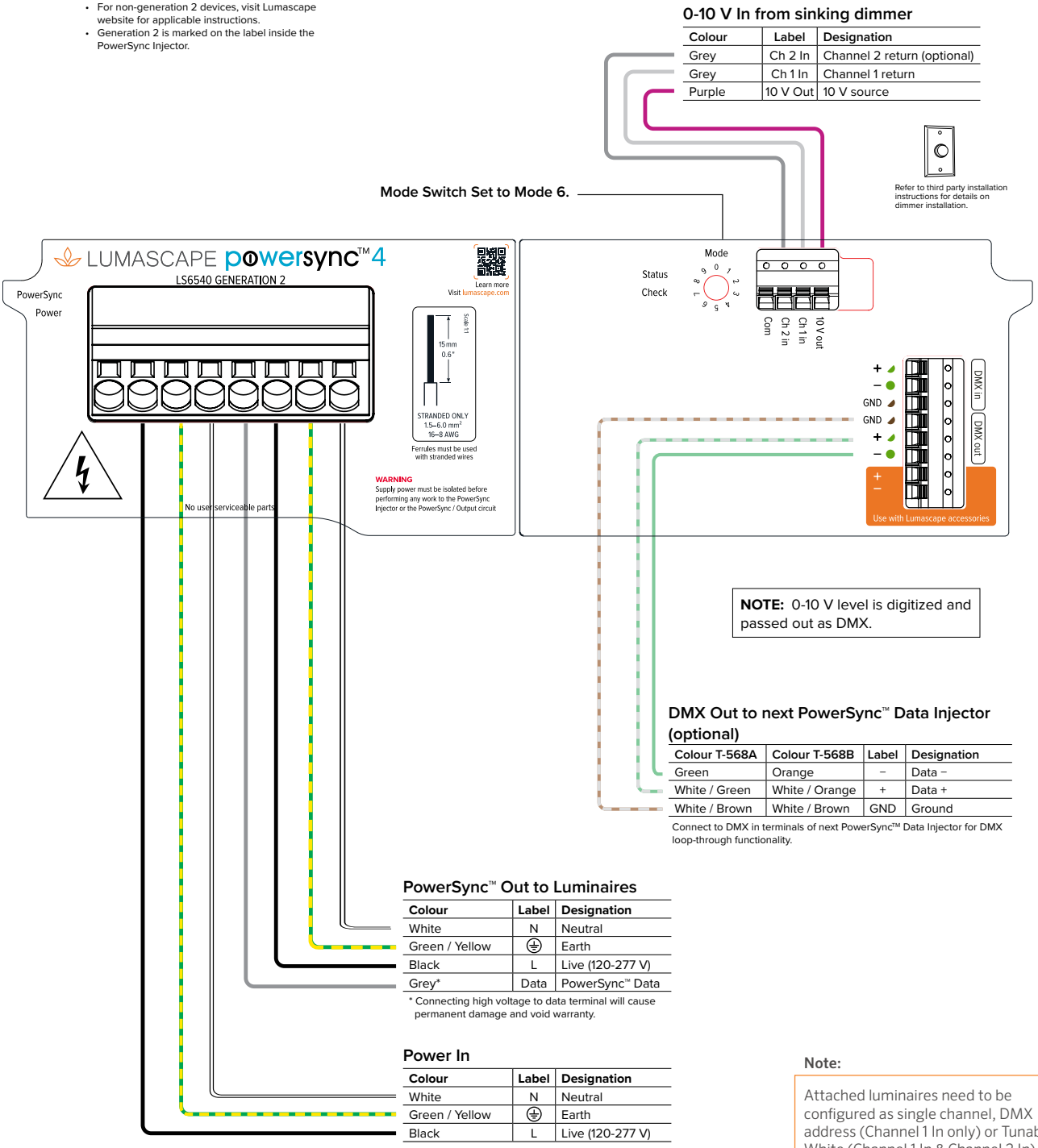
10 Position Mode Switch

Label	Descriptions
2	Test All Channels Off
3	Test All Channels On
6	0-10 V Sinking

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.

0-10 V In from sinking dimmer

Colour	Label	Designation
Grey	Ch 2 In	Channel 2 return (optional)
Grey	Ch 1 In	Channel 1 return
Purple	10 V Out	10 V source



NOTE: 0-10 V level is digitized and passed out as DMX.

DMX Out to next PowerSync™ Data Injector (optional)

Colour T-568A	Colour T-568B	Label	Designation
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +
White / Brown	White / Brown	GND	Ground

Connect to DMX in terminals of next PowerSync™ Data Injector for DMX loop-through functionality.

PowerSync™ Out to Luminaires

Colour	Label	Designation
White	N	Neutral
Green / Yellow	⏚	Earth
Black	L	Live (120-277 V)
Grey*	Data	PowerSync™ Data

* Connecting high voltage to data terminal will cause permanent damage and void warranty.

Power In

Colour	Label	Designation
White	N	Neutral
Green / Yellow	⏚	Earth
Black	L	Live (120-277 V)

Note:

Attached luminaires need to be configured as single channel, DMX address (Channel 1 In only) or Tunable White (Channel 1 In & Channel 2 In).

GENERATION 2

Wiring for 0-10 V Sourcing Dimmers (International)

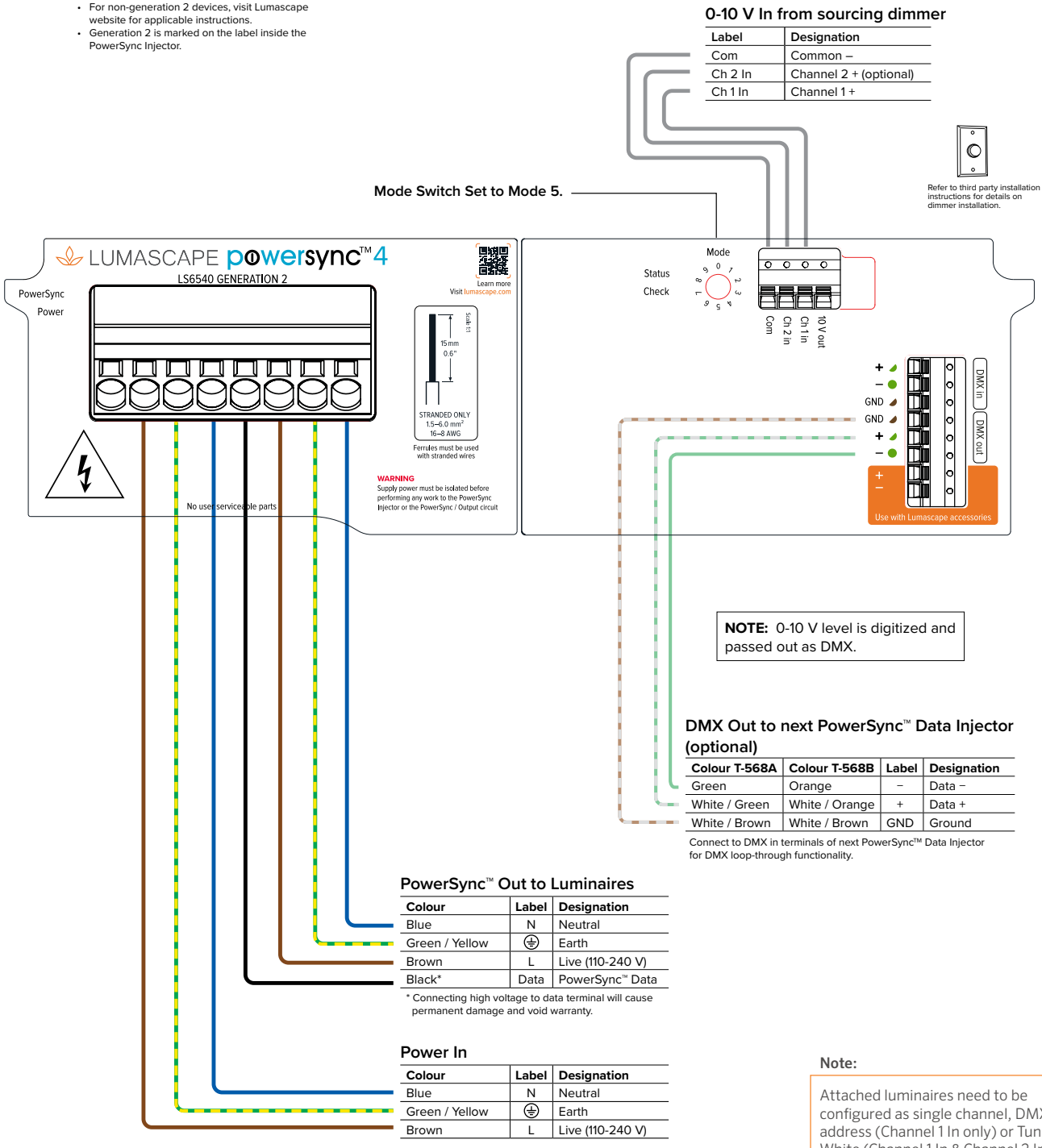
10 Position Mode Switch

Label	Descriptions
2	Test All Channels Off
3	Test All Channels On
5	0-10 V Sourcing

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.

0-10 V In from sourcing dimmer

Label	Designation
Com	Common –
Ch 2 In	Channel 2 + (optional)
Ch 1 In	Channel 1 +



NOTE: 0-10 V level is digitized and passed out as DMX.

DMX Out to next PowerSync™ Data Injector (optional)

Colour T-568A	Colour T-568B	Label	Designation
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +
White / Brown	White / Brown	GND	Ground

Connect to DMX in terminals of next PowerSync™ Data Injector for DMX loop-through functionality.

PowerSync™ Out to Luminaires

Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Brown	L	Live (110-240 V)
Black*	Data	PowerSync™ Data

* Connecting high voltage to data terminal will cause permanent damage and void warranty.

Power In

Colour	Label	Designation
Blue	N	Neutral
Green / Yellow	⏚	Earth
Brown	L	Live (110-240 V)

Note:

Attached luminaires need to be configured as single channel, DMX address (Channel 1 In only) or Tunable White (Channel 1 In & Channel 2 In).

GENERATION 2

Wiring for 0-10 V Sourcing Dimmers (North America)

10 Position Mode Switch

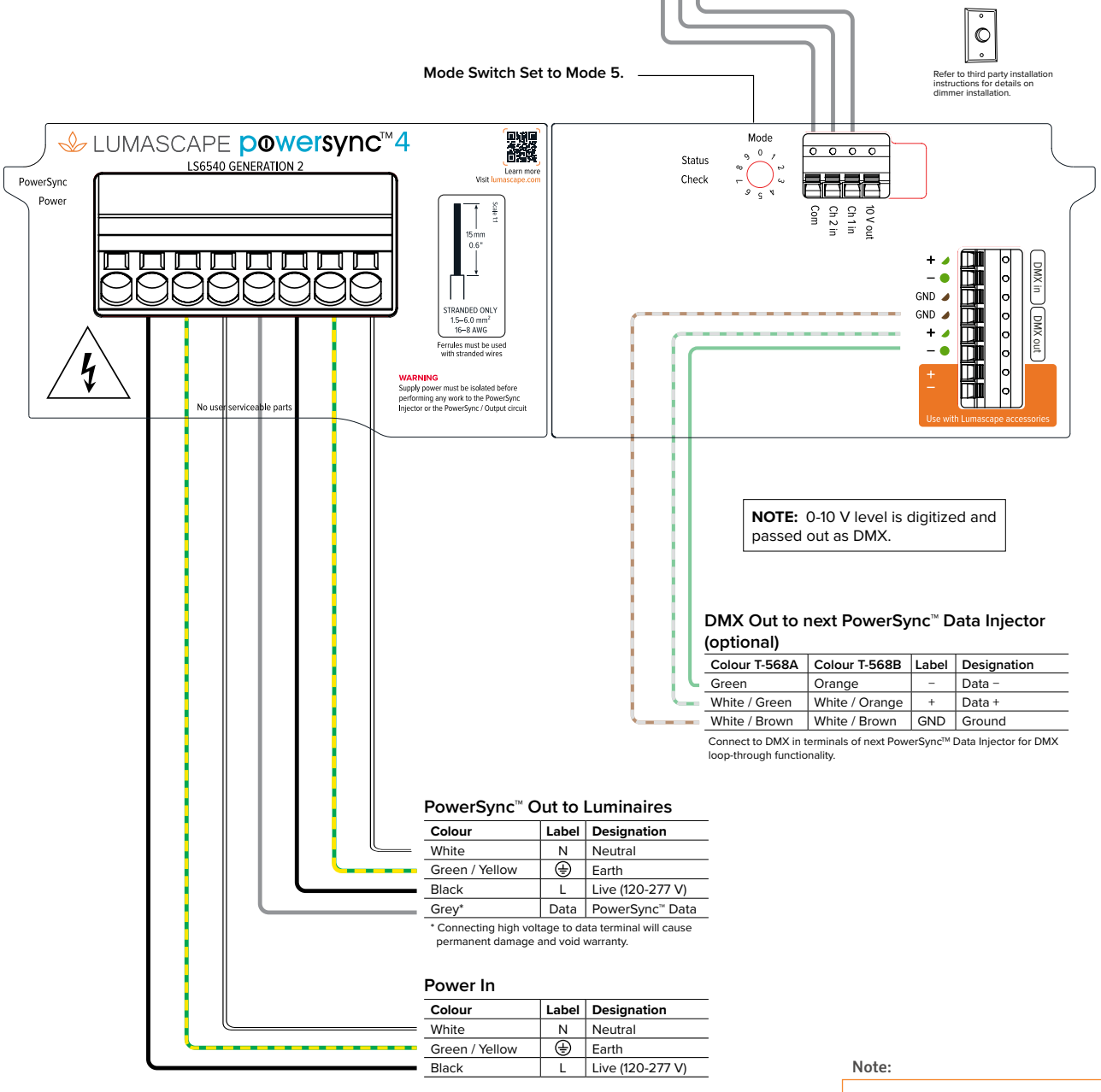
Label	Descriptions
2	Test All Channels Off
3	Test All Channels On
5	0-10 V Sourcing

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.

0-10 V In from sourcing dimmer

Label	Designation
Com	Common –
Ch 2 In	Channel 2 + (optional)
Ch 1 In	Channel 1 +

Mode Switch Set to Mode 5.



NOTE: 0-10 V level is digitized and passed out as DMX.

DMX Out to next PowerSync™ Data Injector (optional)

Colour T-568A	Colour T-568B	Label	Designation
Green	Orange	–	Data –
White / Green	White / Orange	+	Data +
White / Brown	White / Brown	GND	Ground

Connect to DMX in terminals of next PowerSync™ Data Injector for DMX loop-through functionality.

PowerSync™ Out to Luminaires

Colour	Label	Designation
White	N	Neutral
Green / Yellow	⏚	Earth
Black	L	Live (120-277 V)
Grey*	Data	PowerSync™ Data

* Connecting high voltage to data terminal will cause permanent damage and void warranty.

Power In

Colour	Label	Designation
White	N	Neutral
Green / Yellow	⏚	Earth
Black	L	Live (120-277 V)

Note:

Attached luminaires need to be configured as single channel, DMX address (Channel 1 In only) or Tunable White (Channel 1 In & Channel 2 In).

GENERATION 2

Testing Functions

To assist with installation, the **LS6540** provides three (3) test modes for PowerSync™ luminaires. These require only connected luminaires and power, and no connected input signal.

If an input signal is connected, the **LS6540** will not respond to this signal in any of the modes below.

NOTE: These test signals apply to the relevant unit's PowerSync™ output only –– it will not be passed through on the DMX / RDM connectors if multiple **LS6540** units are connected.

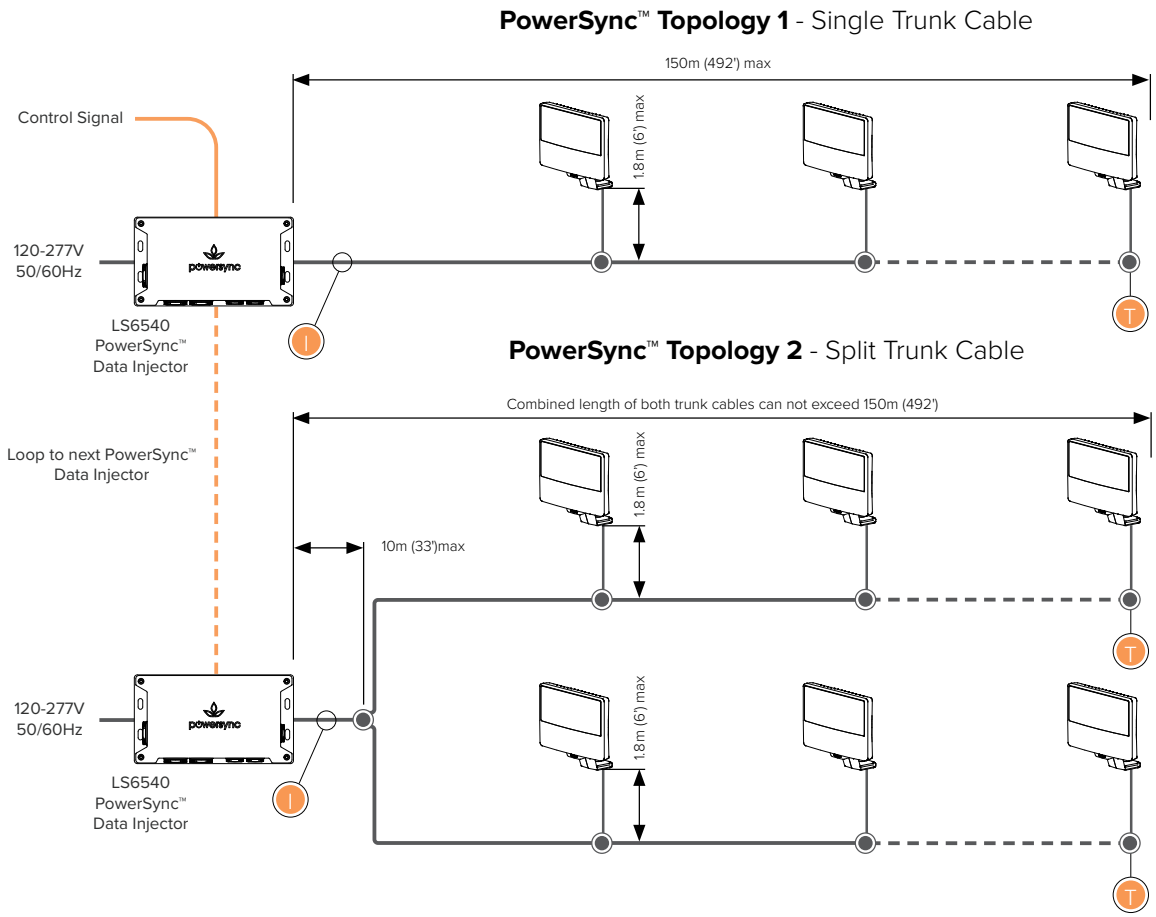
10 Position Mode Switch

Label	Descriptions	
0	DMX/RDM	
1	DMX/RDM + Relay	
2	Test All Channels Off	TEST MODES
3	Test All Channels On	
4	Test 4 Color Cycle	
5	0-10 V Sourcing	
6	0-10 V Sinking	
7	CRMX (Optional)	
8	USB	
9	Firmware Update	

NOTE:
- This function list is ONLY for Generation 2 PowerSync Injectors.
- For non-generation 2 devices, visit Lumascape website for applicable instructions.
- Generation 2 is marked on the label inside the PowerSync Injector.

GENERATION 2

Network Topology – PowerSync Dimmable



Up to 45 luminaires per run under the following conditions:

- Max total cable run length 150m (492') in up to two trunk cables
- For run lengths in excess of 30m (100'), the data wire gauge cannot exceed 12-14 AWG (2.5mm²)
- For run lengths up to 30m (100'), the data wire gauge is not governed
- Refer to 'Maximum Circuit Load' table for circuit limitations
- Always observe local electrical codes for branch circuit current limitations

Terminator

Use PowerSync™ terminator, supplied with leader cable to terminate last luminaire in chain.

Maximum Current

≤16.0A through LS6540 Data Injector.

Connection Type

Circuits can be configured as either connectorised or hardwired. For details consult installation instructions and comply with local electrical codes.

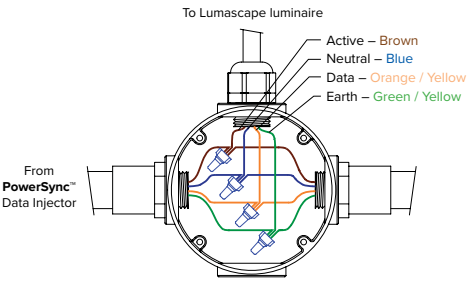
PLEASE CHECK LUMINAIRE DATASHEETS FOR CIRCUIT LOADING AND ELECTRICAL LIMITATIONS.

GENERATION 2

Network Installations

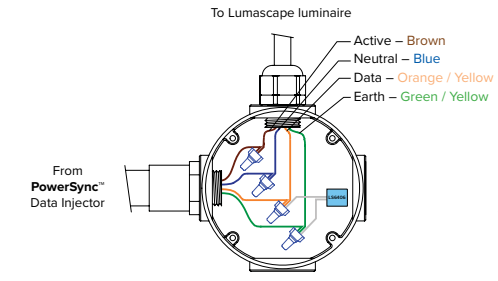
International

Junction Box



Trunk cable and junction box supplied by others.

Terminator

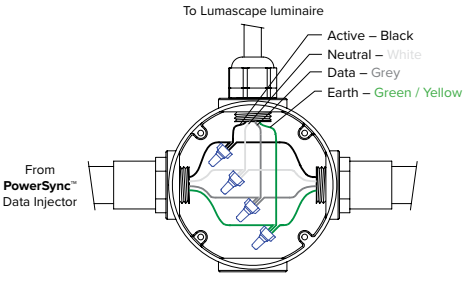


Trunk cable and junction box supplied by others.

Fit **LS6406** PowerSync™ Terminator between earth and data wires. 3 x PowerSync™ terminators have been supplied with the **LS6540** PowerSync™ Data Injector for this purpose.

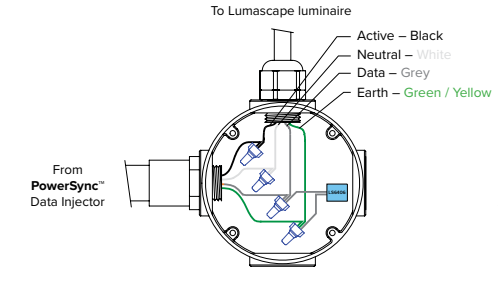
North America

Junction Box



Trunk cable and junction box supplied by others.

Terminator



Trunk cable and junction box supplied by others.

Fit **LS6406** PowerSync™ Terminator between earth and data wires. 3 x PowerSync™ terminators have been supplied with the **LS6540** PowerSync™ Data Injector for this purpose.

Please Note: The above diagrams are intended to show electrical pathways between luminaires and ancillary device. These diagrams are not intended to show type or colour of cord / wire, luminaire input voltage rating, wire gauge or approved use of the cord / wire supplied with luminaires.