



APT-CC-Vx MODULES



Features

- > APT-CC controllers add advanced control features to constant current (CC) drivers
- > Integrated between the CC driver and LED light engines, the DC modules are powered directly from the CC driver
- > Controlling 2 output channels, Correlated Color Temperature (CCT) can be calibrated precisely, independent of intensity
- > APT Programmer enables in-factory and in-field changes to control settings and addresses
- > 0-10V option for controlling CCT or DMX/DALI options for controlling overall intensity and CCT
- > Wireless modules with Casambi Bluetooth Mesh, Silvrair Qualified Bluetooth Mesh, WIZ Connected Wi-Fi, and LumenRadio DMX

Ordering Information

Product Code		Description
APT-CC-Vx- www		Vx – Hardware version www – Internal code provided by Arkalumen as a simplified configuration code for repeat orders

Hardware Version	Functionality
VA	DMX512
VB	DALI Type 8
VC	0-10V
VW	Wireless

System Architecture

Design Requirements	
1.	Color mixing of light is produced by adjusting the intensity ratio between two LED channels. Therefore, the maximum current should be determined by the LED channel with the lower maximum current of the two.
2.	Intensity control in APT-CC controllers requires the use of constant current drivers equipped with an isolated 0-10V dimming port (VA, VW), or a DALI dimming port (VB).

Operating Conditions

Environmental	
Ambient Temperature, Range	-40 to +50°C
Material	Plastic

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Mechanical Specifications

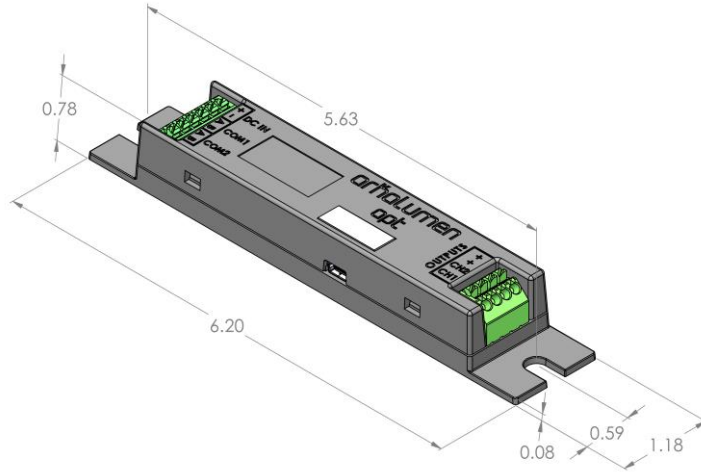


Figure 1 - APT-CC-Vx Mechanical Drawing

Dimensions	Inches
Length	6.20
Width	1.18
Height	0.78

APT-CC-VA MODULE (DMX512)

Electrical Specifications

Input

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
DC IN +/-	12	60 V	55	4,100 mA	-	100 W
COM1 A (0-10V Sink, +)	0	12 V	0	90 μ A	-	-
COM1 B (DMX Com)	-	-	-	-	-	-
COM2 A (DMX Data+)	-15	15 V	-0.8	1 mA	-	-
COM2 B (DMX Data-)	-15	15 V	-0.8	1 mA	-	-

Output

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
+	-	60 V	0	4,045 mA	-	100 W
CH1	-	60 V	0	4,045 mA	-	-
CH2	-	60 V	0	4,045 mA	-	-

Wiring Diagram

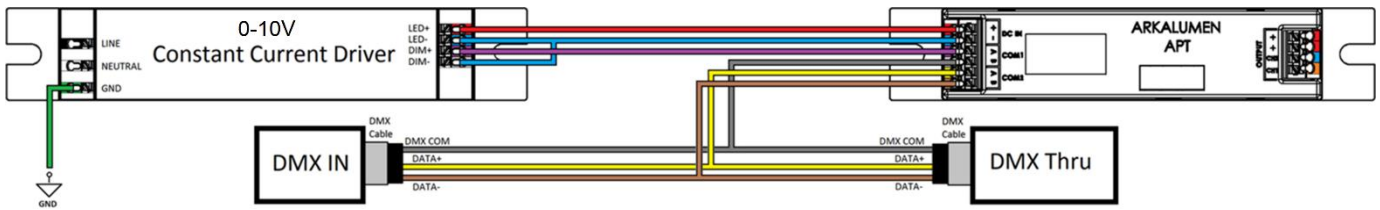


Figure 2 - APT-CC-VA DMX Configuration

APT

Ordering Information

Product Code	Description
APT-CC-VA-<i>wwww</i>	VA – DMX hardware version <i>wwww</i> – Internal code provided by Arkalumen as a simplified configuration code for repeat orders

Configuration Code	Description
<i>DMXn-Ammm-pppp-Hxxx-Lyyy</i>	<i>DMXn</i> – Number of DMX addresses assigned <i>Ammm</i> – Base DMX address <i>pppp</i> – Output control feature <i>Hxxx</i> – Max current threshold <i>Lyyy</i> – Min current threshold

Configuration Code Details

Code	Description	Option	Configuration Trait
<i>DMXn</i>	<i>DMXn</i> denotes DMX wired communication using <i>n</i> addresses.	DMX1	DMX wired communication using 1 DMX address
		DMX2	DMX wired communication using 2 DMX addresses
<i>Ammm</i>	<i>mmm</i> denotes the base address of the controller on a DMX bus.	A001	Lowest base address option
		A####	Base address specified between 1 and 512
		A512	Highest base address option
<i>pppp</i>	<i>pppp</i> denotes the output control features enabled on the controller.	IN00	Intensity control enabled, CCT control disabled
		00CT	Intensity control disabled, CCT control enabled
		INCT	Intensity and CCT control enabled
<i>Hxxx</i>	<i>xxx</i> denotes the maximum current as configured in the controller's firmware in 20mA increments.	0000	Intensity control disabled
		H####	Maximum current specified up to 4,100mA
		H410	Maximum current of 4,100mA (Default)
<i>Lyyy</i>	<i>yyy</i> denotes the minimum current as configured in the controller's firmware in 20mA increments.	0000	Intensity control disabled
		L####	Minimum current specified as low as 20mA
		L006	Minimum current of 60mA (Default)

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APT-CC-VB MODULE (DALI TYPE 8)

Electrical Specifications

Input

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
DC IN +/-	12	60 V	10	4,100 mA	-	100 W
COM1 A (DALI1, Driver)	0	22.5 V	-	2 mA	-	-
COM1 B (DALI2, Driver)	0	22.5 V	-	2 mA	-	-
COM2 A (DALI1)	-6.5	22.5 V	-	2 mA	-	-
COM2 B (DALI2)	-6.5	22.5 V	-	2 mA	-	-

Output

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
+	-	60 V	0	4,090 mA	-	100 W
CH1	-	60 V	0	4,090 mA	-	-
CH2	-	60 V	0	4,090 mA	-	-

Wiring Diagram

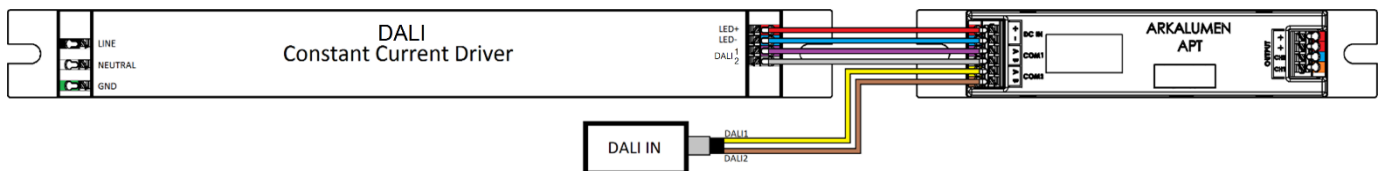


Figure 3 - APT-CC-VB DALI Configuration

APT

Ordering Information

Product Code	Description
APT-CC-VB-<i>wwww</i>	VB – DALI hardware version wwww – Internal code provided by Arkalumen as a simplified configuration code for repeat orders

Configuration Code	Description
DALI-0000-<i>pppp</i>-<i>Hxxx</i>-<i>Lyyy</i>	DALI – DALI type 8 Control 0000 – No base address to be specified pppp – Output control feature Hxxx – Max current threshold Lyyy – Min current threshold

Configuration Code Details

Code	Description	Option	Configuration Trait
pppp	pppp denotes the output control features enabled on the controller.	IN00	Intensity control enabled, CCT control disabled
		00CT	Intensity control disabled, CCT control enabled
		INCT	Intensity and CCT control enabled
Hxxx	xxx denotes the maximum current as configured in the controller's firmware in 20mA increments.	0000	Intensity control disabled
		H####	Maximum current specified up to 4,100mA
		H410	Maximum current of 4,100mA (Default)
Lyyy	yyy denotes the minimum current as configured in the controller's firmware in 20mA increments.	0000	Intensity control disabled
		L###	Minimum current specified as low as 20mA
		L006	Minimum current of 60mA (Default)

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APT-CC-VC MODULE (0-10V)

Electrical Specifications

Input

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
DC IN +/-	12	60 V	10	4,100 mA	-	100 W
COM1 A/B (0-10V Sink)	0	10 V	0	90 μ A	-	-
COM1 A/B (0-10V Source)	0	10 V	0	700 μ A	-	-
COM2 A/B (0-10V Sink)	0	10 V	0	90 μ A	-	-
COM2 A/B (0-10V Source)	0	10 V	0	700 μ A	-	-

Output

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
+	-	60 V	0	4,090 mA	-	100 W
CH1	-	60 V	0	4,090 mA	-	-
CH2	-	60 V	0	4,090 mA	-	-

Wiring Diagram

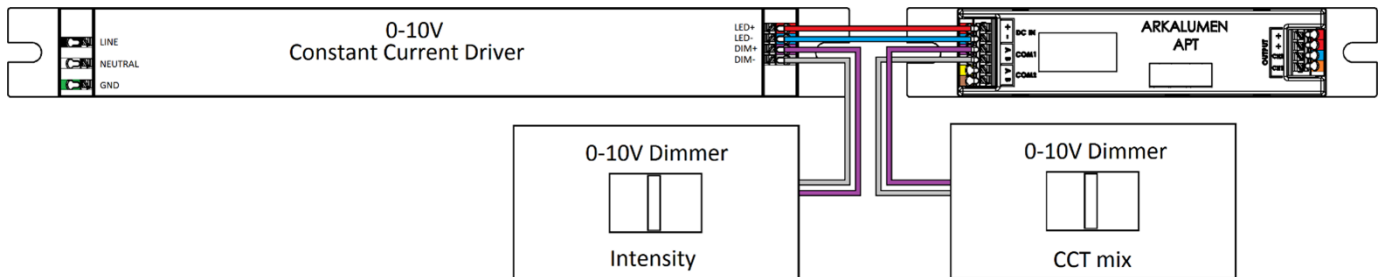


Figure 4 - APT-CC-VC Dual 0-10V Dimmer Configuration (COM1 and COM2 are interchangeable)

APT

Ordering Information

Product Code	Description
APT-CC-VC-<i>www</i>	VC – 0-10V hardware version <i>www</i> – Internal code provided by Arkalumen as a simplified configuration code for repeat orders

Configuration Code	Description
CCTD-0000-00CT-0000-0000	CCTD – CCT control using a 0-10V dimmer 0000 – No base address to be specified 00CT – CCT control enabled 0000 – Max current determined by the driver 0000 – Min current determined by the driver

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APT-CC-VW MODULE (WIRELESS)

Electrical Specifications

Input

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
DC IN +/-	12	60 V	30	4,100 mA	-	100 W
COM1 A (0-10V Sink)	0	10 V	0	90 μ A	-	-
COM1 B (0-10V Sink)	0	10 V	0	90 μ A	-	-
COM2 A (Not used)	-	-	-	-	-	-
COM2 B (Not used)	-	-	-	-	-	-

Output

Port	Voltage		Current		Power	
	Min	Max	Min	Max	Min	Max
+	-	60 V	0	4,070 mA	-	100 W
CH1	-	60 V	0	4,070 mA	-	-
CH2	-	60 V	0	4,070 mA	-	-

Wireless Operating Conditions ¹	
Maximum Transmitter Power	+4dBm
Operating Frequencies	2.36-2.5GHz
Maximum Open-Air Range	300m

Wireless signal range of the controller will decrease if placed in a metal enclosure or placed near other wireless devices operating at similar frequencies, keep the VW controller at least 20cm away from other VW controllers or wireless devices.

Wiring Diagram

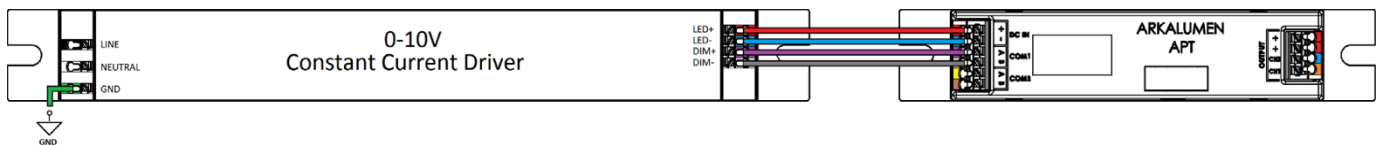


Figure 5 - APT-CC-VW Wireless Communication Configuration

APT

Ordering Information

Product Code	Description
APT-CC-VW-<i>wwww</i>	VW – Wireless hardware version wwww – Internal code provided by Arkalumen as a simplified configuration code for repeat orders

Configuration Code	Description
<i>nnnn-0000-pppp-Hxxx-Lyyy</i>	nnnn – Wireless communication source 0000 – No base address to be specified pppp – Output control feature Hxxx – Max current threshold Lyyy – Min current threshold

Configuration Code Details

Code	Description	Option	Configuration Trait
<i>nnnn</i>	<i>nnnn</i> denotes the wireless communication source implemented.	CBM	Wireless via Casambi Bluetooth Mesh
		QBM	Wireless via Silvair Qualified Bluetooth Mesh
		WIZ	Wireless via WiZ Connected Wi-Fi
		LRX	Wireless DMX via LumenRadio
<i>pppp</i>	<i>pppp</i> denotes the output control features enabled on the controller.	IN00	Intensity control enabled, CCT control disabled
		00CT	Intensity control disabled, CCT control enabled
		INCT	Intensity and CCT control enabled
<i>Hxxx</i>	<i>xxx</i> denotes the maximum current as configured in the controller's firmware in 20mA increments.	0000	Intensity control disabled
		H####	Maximum current specified up to 4,100mA
		H410	Maximum current of 4,100mA (Default)
<i>Lyyy</i>	<i>yyy</i> denotes the minimum current as configured in the controller's firmware in 20mA increments.	0000	Intensity control disabled
		L###	Minimum current specified as low as 20mA
		L006	Minimum current of 60mA (Default)

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