APT-CC-VWC-LN Modules

Features

> APT-CC controllers add advanced control features to constant current (CC) drivers

> Integrated between the CC driver and LED modules, 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 including CCT range and CCT mapping

> Wireless version available (VWC) with Casambi BLE Mesh

> Wireless controller versions available with either embedded antenna (EA) or whip antenna (WA)

Ordering Information

Product Code	Description
APT-CC-V*x*-LN-*wwww*	**V*x*** – Hardware version **LN** – Linear form factor ***wwww*** – Internal code provided by Arkalumen as a simplified configuration code for repeat orders

Hardware Version	Functionality
VWC	Wireless – Casambi BLE Mesh

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. This requirement applies to the DMX/RDM (VA) and wireless (VWx) versions.
3. APT controllers are designed to work with a wide range of drivers, but a fixture manufacturer must test the APT controller for driver compatibility and ensure proper system operation before installation.
4. Contact Arkalumen for information on compatibility of drivers and overall system architectures. The light fixture manufacturer is responsible for testing of all third party components and the overall system before installation.

Contact Arkalumen for technical support at **support@arkalumen.com**

Arkalumen Products may be covered by patents in the US and elsewhere. www.arkalumen.com/patents

Warnings

1. Do not connect/disconnect input or output wiring while powered
2. Do not connect APT Programmer while APT controller is powered by DC power source
3. Follow ESD protection procedures while handling input or output wiring, and programming port
4. Do not attach an AC input to the APT controller; DC input only
5. Use only with a driver providing an isolated DC output (ie. the output has no earth or protective ground reference).
6. Read and respect all voltage, current and power limits outlined in the electrical specifications section of the hardware version being used
7. Carefully follow and check all wiring diagrams in this document for the correct hardware version being used
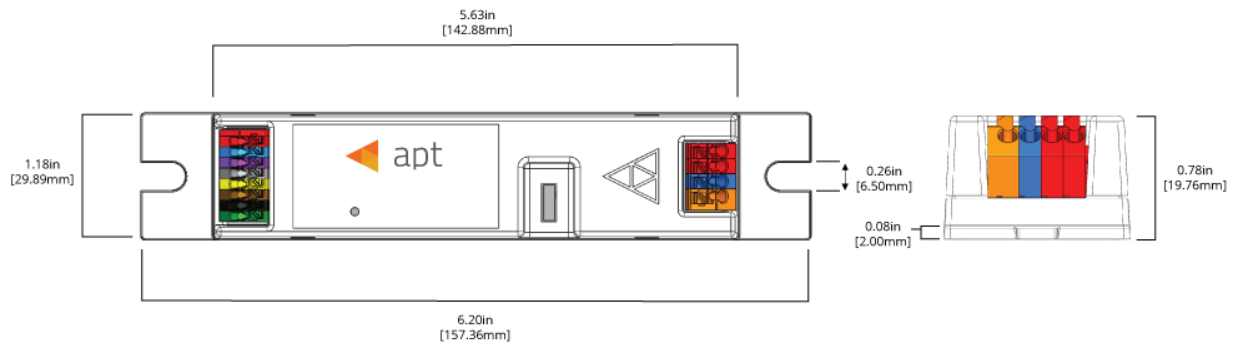
Mechanical Specifications

Figure 1 – APT-CC-Vx Mechanical Drawing

Dimensions	Inches
Length	6.20
Width	1.18
Height	0.78

Encasement Specifications	
Material	Plastic
RTI Elec	130 C

APT-CC-VWC-LN MODULE (WIRELESS)

Electrical Specifications

Input

Port	Voltage			Current			Power		
	Min	Max		Min	Max		Min	Max	
DC IN +/-	24	60	V	12	4,100	mA	-	100	W
0-10V OUT +/-	0	12	V	0	90	µA	-	-	

Output

Port	Voltage			Current			Power		
	Min	Max		Min	Max		Min	Max	
CH1	24	60	V	0	4,088	mA	-	100	W
CH2	24	60	V	0	4,088	mA	-	100	W

Wireless Operating Conditions[1]	
Maximum Transmitter Power	+4dBm
Operating Frequencies	2.4GHz
Maximum Open-Air Range	270m

Contains modular transmitter with FCC ID: X8WBM832, IC (Industrial Canada) ID: 4100A-BM832

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 VWx controller at least 20cm away from other VWx controllers or wireless devices. The end product with this module may subject to perform FCC part 15 unintentional emission test requirement and be properly authorized.

This device is intended for OEM integrator only.

If used with ANT020 antenna or integrated PCB trace antenna, device does not require routine evaluation or SAR testing.
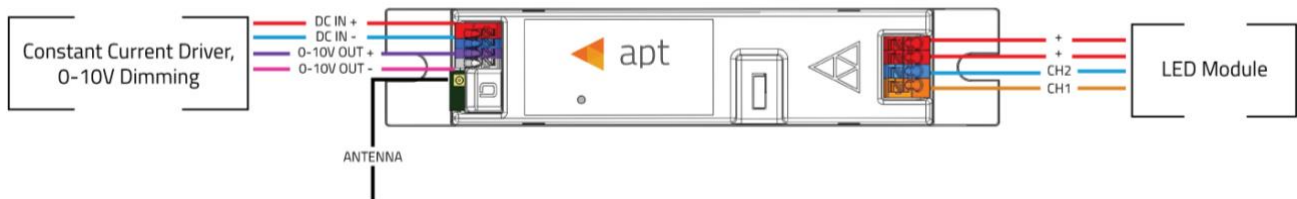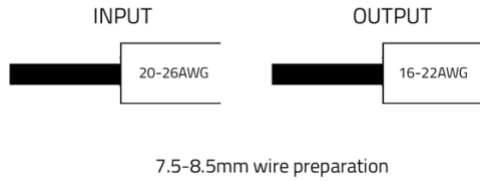
Wiring Diagram

Figure 2 - APT-CC-VWx-LN Wireless Communication Configuration

Wiring	AWG
Input	20-26
Output	16-22
Antenna	ANT020*

*Integrated embedded PCB trace antenna option available on request, ANT020 antenna does not come with device by default, please include request for antenna if necessary

INPUT   OUTPUT

20-26AWG   16-22AWG

7.5-8.5mm wire preparation

Operating Conditions

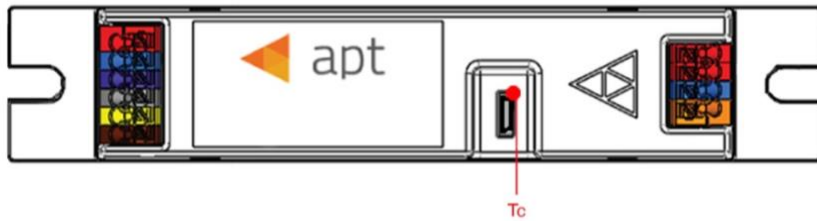| Temperature Limits	
Max Temperature, Tc	58°C
Min Ambient Temperature, Ta	-40°C

Tc

Fig. 4 - Tc is measured on metal sleeve of micro-USB programming port in location specified above

Ordering Information

Product Code	Description
APT-CC-VWx-LN-yA-*wwww*	**VWx** – Wireless - BLE Mesh hardware version (VWC – Casambi BLE) **LN** – Linear form factor **yA** – Antenna version (EA – embedded antenna, WA -whip antenna) ***wwww*** – Internal code provided by Arkalumen as a simplified configuration code for repeat orders

Configuration Code	Description
nnn-**0000**-*pppp*-H*xxx*-L*yyy*	***nnn*** – Wireless communication source **0000** – Reserved ***pppp*** – Output control feature **H*xxx*** – Max current threshold **L*yyy*** – Min current threshold

Configuration Code Details

Code	Description	Option	Configuration Trait
nnn	*nnn* denotes the wireless communication source implemented.	CBM	Wireless via Casambi BLE Mesh
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
H*xxx*	*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)
L*yyy*	*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)