DCS-800E Controller

Quad X2 Controller

Product Highlights

- 8 Independent Channels, 2 Output Connectors
- Includes built-in pre-programmed sequencing.
- Provides control for computational imaging, including photometric stereo, extended depth of field, combined bright field + dark field, high dynamic range, and high resolution color.
- Ideal for multi-channel lights and multi-light stations. Due to power output constraints, some configurable light lengths may be limited.



General Specifications

Controller Style	Discrete Control System (External, Detachable)
User Interface	Software GUI, Web Browser
Operating Modes	Sequence, Pulse (Overdrive Strobe), Continuous
Light Head Connection	Via Proprietary 2 x 8-Post Header Blocks with Embedded EEPROM on Light Head Cable (Q1 or Q4)**
Input Supply Requirements	24V DC Nominal, 4.5A Recommended 21V Min - 48V Max; Power Inputs Reverse-Polarity Protected
Output Channels	Number of Outputs: 2 Number of Channels per Output: 4
Output Power	Continuous: 120W Max Total, 30W per Channel* Pulsed: 960W Peak Total, 120W Peak per Channel*
Output Current	Continuous: 4A Max Total, 0.5A per Channel* Pulsed: 80A Max Total, 10A per Channel*

Output Voltage	Continuous: Vin - 1V, Channel Independent Pulsed: 45V Max*, Channel Independent
Trigger Signal	TTL Compatible 3.7V Min - 30V Max, <=5mA
Trigger Protection	Protected up to 30V
Trigger Delay	20µs + 10µs LED rise-time
Trigger Frequency Limit	2KHz
Pulse Width Range	30µs - 3600ms
Programmable Pulse Delay	1µs - 1000s
Duty Cycle Range	Typical <1% for high current overdrive, up to 15% Dependent on the limitations of the connected light.
Dimming Range	0% - 100%, 1mA Increments via Software Settings
Status Indicator LEDs	Green: Power Yellow: Communication Red: Error
Communication	10/100 Ethernet Standard TCP-IP, UDP .NET Library Compatible w/ C#, F# and VB
Operating System Software Support	GUI: Windows 7+ (requires .NET Framework 4.5+)
Operating Temperature Range	0°C to +55 °C
Storage Temperature Range	-25°C to +85 °C
IP Rating	Not Rated
Dimensions	4.20" x 1.63" x 5.14" (106.6mm x 41.5mm x 130.6mm)
Weight	1.03lb (467g)
Mounting	DIN Rail
Case Material	Aluminum and Steel
Warranty	5 Years
Compliance	CE, RoHS

*Values shown are based on controller component limitations. Actual limitations will vary depending on the limits set for the connected light head. These limits are determined using Advanced Illumination's proprietary SignaTechTM (Signature Technology) in order to ensure safe peak performance.

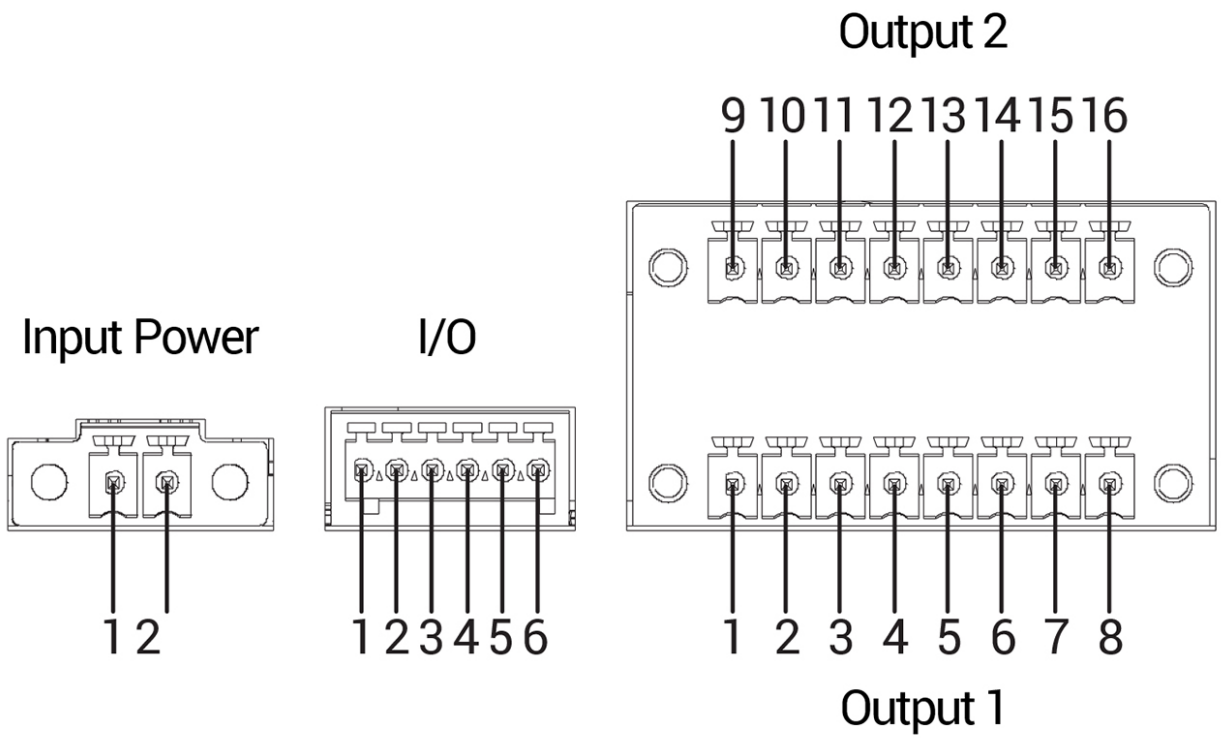
** Various light head configurations available, including 1 x 4-channel quadrant (Q1) control or multiple single light heads (Q4) per block.

Part Number Key

Model	—	Controller	Connection Type
DCS	—	XXX	X
DCS	—	800	E

Example light part numbers for the DCS-800E connectors:
DF198-115WHI***Q1***
SL244-WHI***Q4***

Electrical Specs



Input Power

Pin	Description	Note
1	24-48VDC	Reserve polarity protected
2	DC GND	

I/O

Pin	Description	Note
1	TRIGGER-IN1	ACTIVE-HIGH -- pull high to activate (Channels 1 - 4)
2	TRIGGER-IN2	ACTIVE-HIGH -- pull high to activate (Channels 4 - 8)
3	TRIGGER-OUT1	Frame Start - output signal, occurs at the beginning of each channel pulse
4	TRIGGER-OUT2	Frame Stop - output signal, occurs at the end of each channel pulse
5	TRIGGER GND	Same as DC ground
6	TRIGGER GND	Same as DC ground

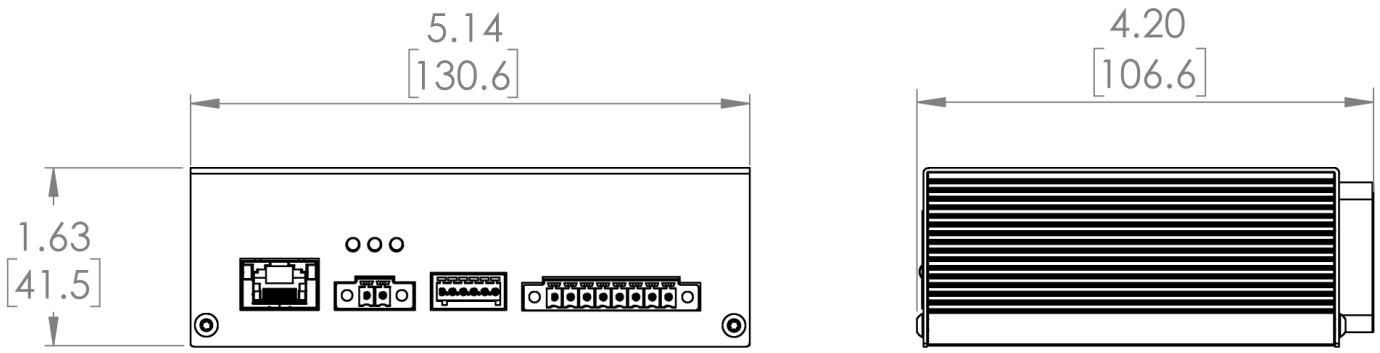
Output 1 & 2

Output 1		Output 2		Notes
Pin	Description	Pin	Description	
1	SignaTech™ GND	9	SignaTech™ GND	Reserved (Common*)
2	SignaTech™	10	SignaTech™	SignaTech™ Light Protection - NOT USER SERVICEABLE
3	CH3 & CH4 -	11	CH7 & CH8 -	LED Cathode (Common*)
4	CH4 +	12	CH8 +	LED Anode
5	CH3 +	13	CH7 +	LED Anode
6	CH1 & CH2 -	14	CH5 & CH6 -	LED Cathode (Common*)
7	CH2 +	15	CH6 +	LED Anode
8	CH1 +	16	CH5 +	LED Anode

*LED Cathode pins, pin 1, and pin 9 are COMMON and may be tied together.

This controller requires SignaTech to operate correctly. SignaTech is included with lights purchased from Advanced Illumination. It is not possible to drive a non-SignaTech protected light source without instruction from Advanced Illumination.

Mechanical Specs



MEASUREMENTS IN INCHES [MILLIMETERS]

Configurable Lights

Multi-light stations are currently limited to the following group of identical light heads. A future development will allow the Quad Controllers to drive up to eight different configured lights simultaneously.

DF198 - Dark Field Ring Light
DF241 - Small Low Angle Dark Field Ring Light
DF242 - Large Low Angle Dark Field Ring Light
LL174 - High Intensity Bar Light
AL295 - MicroBrite™ Bar Light
AL116 - High Dispersion Wide Bar Light
AL126 - High Dispersion Narrow Bar Light
LL232 - MicroBrite™ Line Light
SL243 - MicroBrite™ Small Spot Light
SL244 - MicroBrite™ Spot Light

Note: due to power output constraints, some configurable light lengths may be limited.

Warranty Information

Every Advanced illumination, Inc. (Ai) product is thoroughly inspected and tested before leaving the factory. Products are warranted to be free of defects in workmanship and materials for a period of FIVE YEARS from the original date of purchase. Should a defect develop during this period, customers may return the complete product, freight prepaid, to one of Ai's distributors or to the Ai factory. All product warranty returns require a Return Merchandise Authorization (RMA) number which is obtained from Customer Service. The RMA number must be clearly marked on the outside of the package. Ai will inspect the unit, and if a defect is found will, at our option, repair or replace the product without charge. Ai disclaims liability for any implied warranties, including implied warranties of "merchantability" and "fitness for a specific purpose." For products under warranty that have since been discontinued, Ai will make an effort to replace with equivalent parts; for circumstances that do not allow for equivalent replacement, Ai reserves the right to repair or replace these products with an updated version. Ai cannot be held responsible for the unauthorized or inappropriate use of its products. Any unauthorized repair or modifications will result in a voided warranty.
No Liability for Consequential Damages: In no event shall Ai be liable for any consequential, special, incidental, or indirect damages of any kind arising from the sale or use of the products.

Electromagnetic Compatibility

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) as stated in the product specifications. These requirements and limits are designed to provide reasonable protection against harmful interference only when the product is operated in its intended industrial electromagnetic environment. To minimize the potential for electromagnetic interference or unacceptable performance degradation, install and use this product in strict accordance with the instructions in the product documentation.

Customer Service

For information on existing orders, or to make an order adjustment, contact us Monday through Friday 8:00 am to 5:00 pm ET or send an email to orders@advancedillumination.com.

Company Information

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