



PRO I/O MODULE OPERATION GUIDE



FOR RED DSMC CAMERAS
RED.COM

PRO I/O MODULE OPERATION GUIDE

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FEATURES

For advanced configurations, the PRO I/O MODULE attaches to the rear of your DSMC brain to provide a central hub for essential I/O connections. Professional I/O support for audio and video is critical for large productions and the PRO I/O MODULE bundles them conveniently into one compact DSMC module.

The PRO I/O MODULE brings together the essential I/O connections into one module, providing a central hub for professional audio and video components.

- Centralized ports make it easy to manage connections and cables
- LCD/EVF port allows you to connect an additional RED LCD or EVF
- Customize triggers and interface with 3rd party GPIO and RS232 control devices using RED Pro I/O cables
- Attach an additional DSMC module or a REDMOTE to the back of the PRO I/O MODULE for additional expansion
- Internal cooling system maintains appropriate operating temperature



*RED EPIC DSMC CAMERA
with PRO I/O MODULE*

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SAFETY

Important Safety Instructions
Read Before Using Your Pro I/O MODULE

- Heed all cautions and warnings in these instructions
- Follow these instructions when using the PRO I/O MODULE
- Keep these instructions with the PRO I/O MODULE at all times



WARNING: Do not modify, dismantle or open this accessory as doing so may expose you to electric shock and serious injury.

To reduce the risk of fire or electric shock, do not expose the PRO I/O MODULE to rain or moisture. The unit is not waterproof. Contact with water or other liquids could cause permanent damage to the unit.

There are no user-serviceable parts inside. Alteration or repairs made to this accessory, except by a RED authorized service facility, will void the Limited Warranty.



CAUTION: The Pro I/O Module is **NOT HOT SWAPPABLE** – meaning you cannot remove or install it while the camera is powered on. Before installing or removing the PRO I/O MODULE, you **MUST** power down

CONNECTIONS

Default pin assignments are shown. Pins may be reassigned to different functions. See your camera's *Operation Guide* for programming instructions. Mating cables are available from RED.COM.

AUDIO INPUTS (3,4)

- Two three-pin XLR connectors provide input for audio channels 3 & 4
- Each port supports 48V 10mA phantom power
- Each input may be independently set to either line or microphone level
- If a channel is set to microphone, user can independently enable its 48V phantom power output

PIN	DESCRIPTION
1	Camera ground
2	Mic/Line input (+) 48V phantom power
3	Mic/Line input (-) 48V phantom power

the camera. Failure to do so may result in damage to the accessory and / or camera brain that will not be covered under warranty.

Do not block any ventilation openings or obstruct cooling fan airflow. Proper ventilation requires a minimum 1/2" (1,25cm) clearance between the camera ventilation openings and external surfaces. Verify that objects that can block the fan intake and exhaust ports do not impede airflow. Failure to permit adequate airflow may result in overheating of the Pro I/O Module, degraded operation and in extreme situations, damage to the PRO I/O MODULE.

Clean only using a dry cloth. **DO NOT** use soaps, detergents, ammonia, alkaline cleaners, and abrasive cleaning compounds or solvents. These substances may damage electronic circuitry.

Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.

Only use attachments/accessories specified by the RED.

Refer all service and repair to qualified RED service personnel.

MOUNTING

Follow mounting instructions included in your camera's Operation Guide



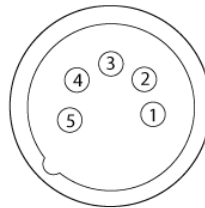
3-PIN XLR
Facing PRO I/O MODULE

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AUDIO OUTPUT (OUT)

- A 5-pin XLR connector supports two channels of balanced analog audio output

PIN	DESCRIPTION
1	(+) Line output, left channel
2	Camera Ground
3	(-) Line output, left channel
4	(+) Line output, right channel
5	(-) Line output, right channel

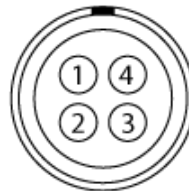


5-PIN XLR
Facing PRO I/O MODULE

AUXILIARY POWER OUTPUT (PWR)

- Supplies unregulated (+) 11.5 to 17V battery pass-through power between pins 1 and 4
- Maximum sustained current draw: 1.5 Amp

PIN	DESCRIPTION
1	Camera Ground
2	Not Used
3	Not Used
4	(+) 9-17V unregulated battery loop through output



LEMO EAG.0B.304.CLN
Facing PRO I/O MODULE

DIGITAL AUDIO INPUT (AES)

- 2 or 4 channels of 24-bit, nominal 48KHz AES digital audio
- SMPTE 12M Timecode Output
- Pins 2 & 3 replace the analog audio inputs 1 & 2
- Pins 5 & 6 replace the analog audio input 3 & 4

Note: Audio samples in the range of 32-96KHz are supported, but will be re-synchronized to 48KHz.

PIN	DESCRIPTION
1	Ground A
2	Line A (+)
3	Line A (-)
4	Ground B
5	Line B (+)
6	Line B (-)
7	SMPTE 12 M Time Code Out



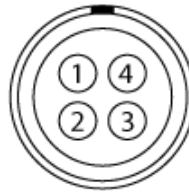
LEMO EAG.1B.307.CLN
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GENERAL PURPOSE INPUT/OUTPUT (GPIO)

- Auxiliary power output connector with GPIO trigger/tally function
- Auxiliary output supplies unregulated 9-17V battery pass-through power between pins 1 and 4
- Maximum sustained current draw: 1.5 Amp

PIN	DESCRIPTION
1	Camera Ground
2	GPI A - Programmable trigger input Default: "record: toggle" To activate, momentarily short pin 2 to 1
3	GPO A - Programmable tally output Default: "in record" When active, present 3.3V @ 0.04 amps maximum between pins 1 and 3
4	(+) 9-17V unregulated battery loop through output

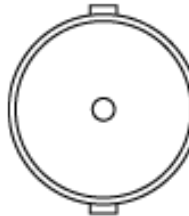


LEMO EAG.0B.304.CLN
Facing PRO I/O MODULE

GENLOCK

- Supports SMPTE 274 / RS170A Tri-Level Sync

PIN	DESCRIPTION
Center	Sync
Shield/Screen	Camera ground

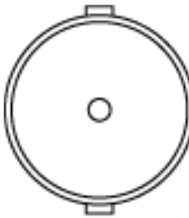


75Ω BNC CONNECTOR
Facing PRO I/O MODULE

PROGRAM OUTPUT (PGM)

- Default setting provides clean video output
- Up to two channels of 48KHz Audio

PIN	DESCRIPTION
Center	SMPTE-292M HD-SDI
Shield/Screen	Camera ground

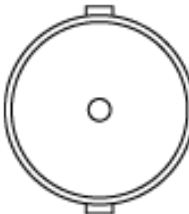


75Ω BNC CONNECTOR
Facing PRO I/O MODULE

PREVIEW OUTPUT

- Default setting provides preview video output
- Up to two channels of 48KHz Audio

PIN	DESCRIPTION
Center	SMPTE-292M HD-SDI
Shield/Screen	Camera ground



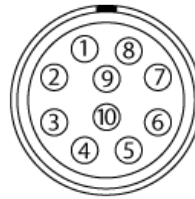
75Ω BNC CONNECTOR
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RS232 PORT (AUX)

- 10 pin interface fixed programmable function GPIO pins
- Regulated 12V power at nominal 750 mA
- RS232 remote camera control

PIN	DESCRIPTION
1	Camera ground
2	Primary RS232 TX
3	(+) 12V
4	GPO B - Programmable tally output Default: "record complete" When active, present 3.3 V @0.04 amps maximum between pins 1 and 4
5	SW 2 - Programmable function trigger Default: "record: toggle" To activate, momentarily short pin 5 to 1
6	GPI - Programmable trigger input Default: "record start/stop" To activate GPI trigger, momentarily short pin 6 to 1
7	SW 1 - Programmable function trigger Default: "go to playback" To activate, momentarily short pin 7 to 1
8	Primary RS232 RX
9	Secondary RS232 TX
10	Secondary RS232 RX



LEMO EAG.1B.310.CLN
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TIMECODE (TCODE)

- Pin 5 is time code output
- This connector supports SMPTE Timecode input and output
- Pins 2 and 3 may be used together to receive a balance SMPTE 12M serial timecode input, or pin 2 may be used by itself (leave pin 3 open) to receive a single-ended SMPTE 12M serial time code input

PIN	DESCRIPTION
1	Camera Ground
2	Time code input - SMPTE single ended
3	Time code input - SMPTE double ended
4	48.00 KHz World Clock Output
5	Time code output



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EVF/LCD

- Custom digital video and power interconnection between the camera and a RED EVF or RED LCD Monitor
- The pin-out of this interface is not published
- Contact RED technical support for available RED EVF cable lengths



EVF/LCD Connector

SPECIFICATIONS

WEIGHT

2.4 lbs

CURRENT DRAW

24W when used with RED 5" LCD TOUCHSCREEN

AUXILIARY POWER OUTPUT

1.5 Amp continuous load at 11.5-17VDC

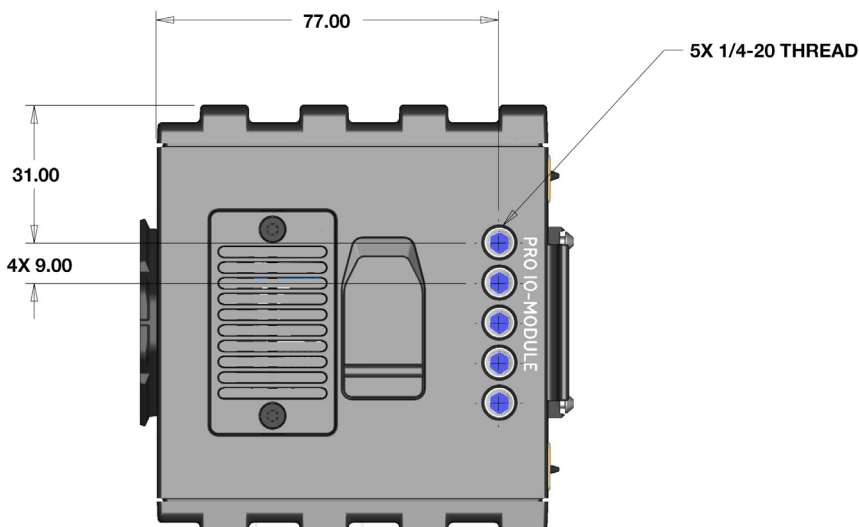
TEMPERATURE RATING

Operating Range: 0°C to +40°C (32°F to 104°F)

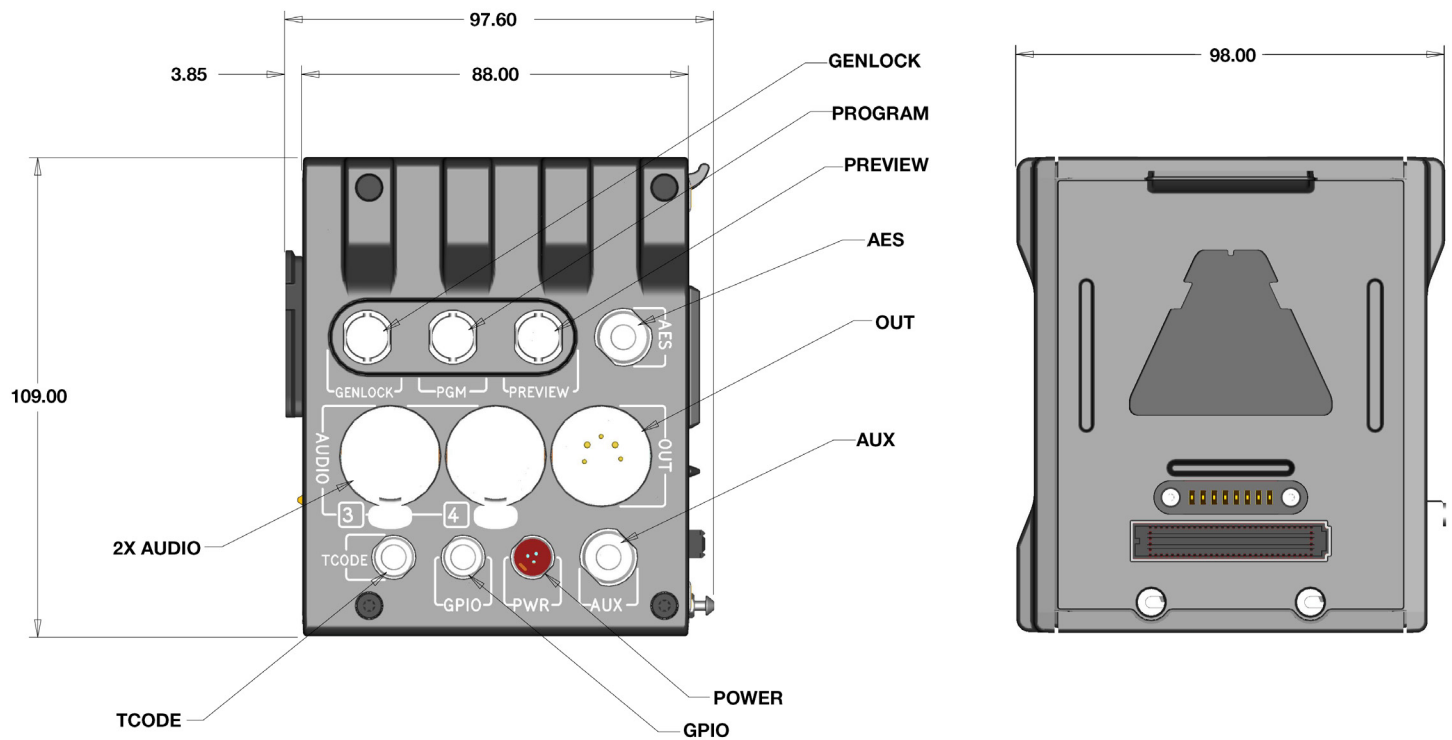
Storage Range: -20°C to +50°C (-4°F to 122°F)

DIMENSIONED DRAWINGS

Unless otherwise specified dimensions are in millimeters



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COMPLIANCE

INDUSTRIAL CANADA EMISSION COMPLIANCE STATEMENTS

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENT

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.



If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

NOTE: This device complies with Part 15 of the FCC Rules.

Operations subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable interference.

CAUTION: If the device is changed or modified without permission from RED, the user may void his or her authority to operate the equipment.

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AUSTRALIA AND NEW ZEALAND STATEMENT

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to EN 55022:2006



JAPAN STATEMENTS This is a Class B product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used near a radio or television receiver in a domestic environment, it may cause radio

interference. Install and use the equipment according to the instruction manual.



The Waste Electrical and Electronic Equipment (WEEE) mark applies only to countries within the European Union (EU)

and Norway. This symbol on the product and accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product to designated collection points where it will be accepted free of charge. Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product. Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For business users in the European Union, If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

この装置は、情報処理装置等電波障害自主規制協議会 (VCCI) の基準に基づくクラス B 情報技術装置です。この装置は家庭環境で使用することを目的としていますが、ラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをしてください。



EUROPEAN UNION COMPLIANCE STATEMENTS

Red declares that the equipment described in this document is in conformance with the requirements of the European Council EMC

Directive 2004/108/EC, Low Voltage Directive 2006/95/EC, RoHS Directive 2002/95/EC and WEEE Directive 2002/96/EC.

This declaration is based upon compliance of the product to the following standards:

- EN 55022, Information Technology Equipment - Radio Disturbance Characteristics
- EN 55024, Information Technology Equipment - Immunity Characteristics
- EN 61000-3-2, Limits for harmonic current emissions
- EN 61000-3-3, Limits for harmonic current emissions
- EN 60065, Audio, video and similar electronic apparatus, Safety requirements

Responsible party:
Red Digital Cinema.
34 Parker
Irvine, CA 92618
USA

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DISCLAIMER

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