SEC America, LLC

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USER MANUAL

700HS Series

DC-DC Converters

Applies to Models:

721HS **737HS**

749HS

Aug 15, 2015

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I Introduction

After removing the unit from its packaging and ensuring that it has suffered no damage in shipment, it is important to read this manual and follow its instructions to ensure proper connection and mounting.

700HS Series models are fully isolated dc-dc converters capable of delivering up to 850 Watts in extreme ambient temperatures and adverse operating conditions. See specification sheets at the end of this manual for the ratings of a particular model.

II Installation

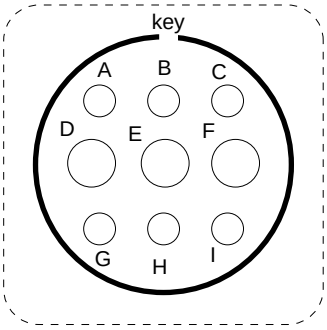
2.1 Mounting

The converters are designed to be mounted to flat metal surfaces offering optimum heat transfer from the converter base in environments where air flow may be restricted. For best results, thermal transfer compound is a recommended interface between the converter and mounting surface. The [4] mounting slots in the flanges will accommodate mounting hardware up to ¼ inch diameter. (See figure #2 for mounting centers)

2.2 Connections

The Input/Output connector on the converter is shown in Figure 1 with designated pin functions.

Input/Output Connector



Canon 3102E24-11PB
Front View

Pin

A - Output Positive Sense

B - No Connection

C - Output Negative Sense

D - Input Positive

E - Housing Ground

F - Input Negative

G - Output Positive

H - Remote Turn On/Off

I - Output Negative

Figure 1

Cable side mating connector
Canon P/N 3106E24-11SB

Figure 1A

Pins	Maximum Wire Sizes
D,E,F	#8
Others	#12

An option for users who wish to purchase a manufactured cable assembly is P/N 68-0749-8 which is of 8 feet length and is a standard SEC part.

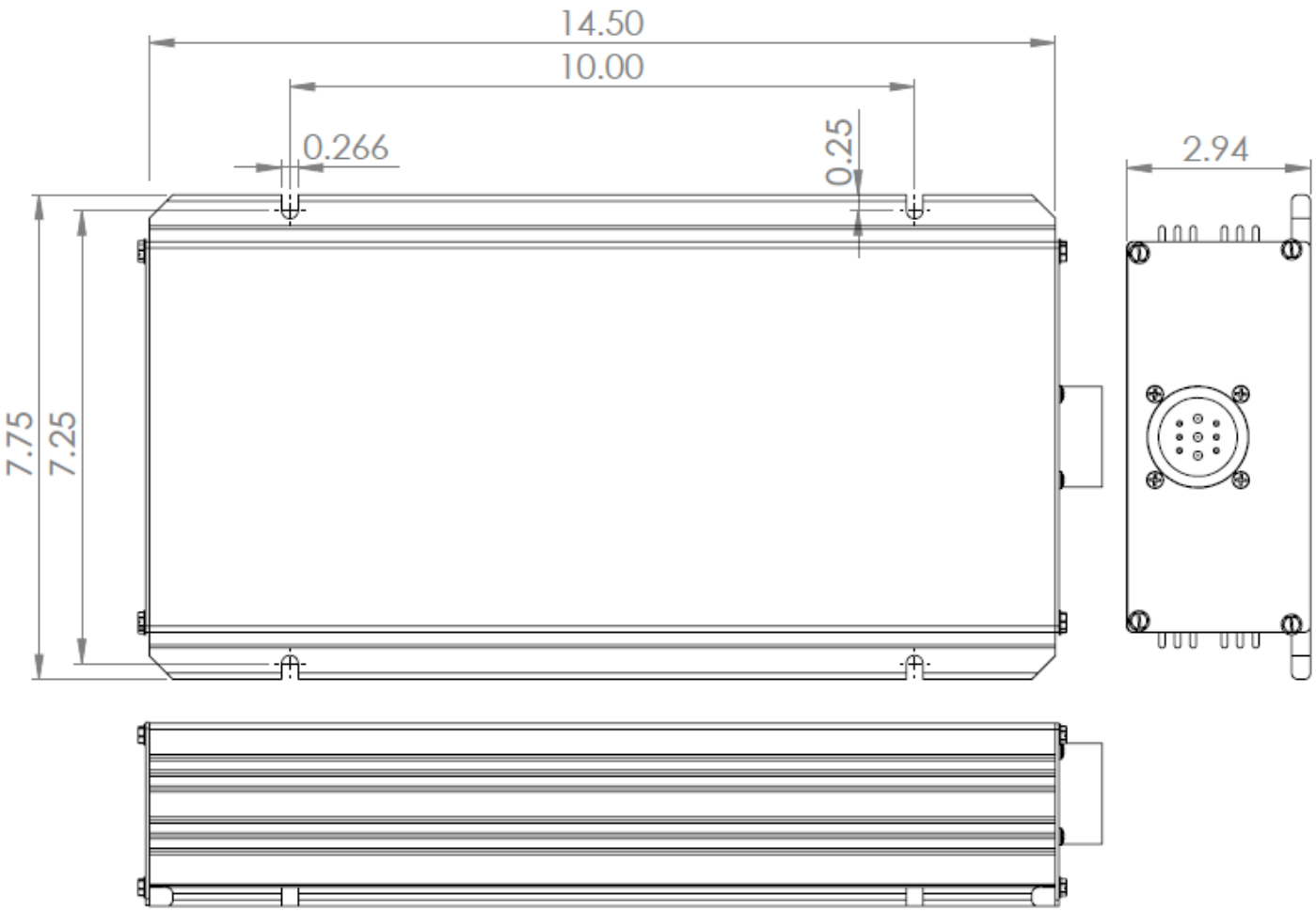


Figure 2

All dimensions are in inches

III Regulation With Remote Sense

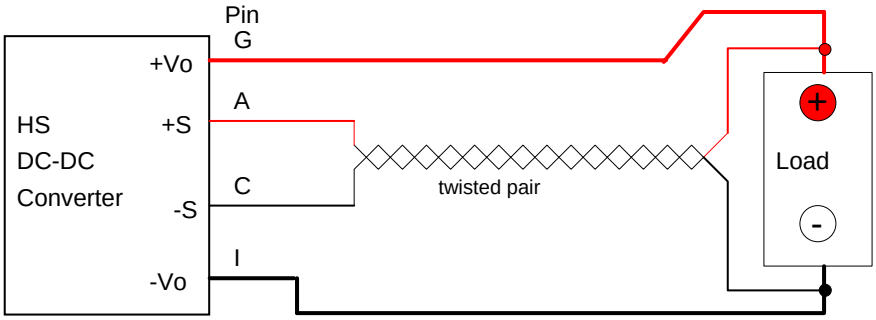


Figure 3

The HS Series provides regulated outputs at the output terminals. When there is a large current and/or the output cable is of some length, the voltage at the end of the cable may be noticeably lower than at the terminals. The converter can compensate up to 0.75V of voltage drop through remote sense terminals. To ensure accurate regulation, users should run two separate wires (twisted from the desired regulation points to the remote sense terminals. Even if the load current is low, users should still connect +Vo to +S and –Vo to –S.

IV User Adjustments

700HS Series units are gasket-sealed. Changes or adjustments to the operating modes of any unit are accomplished internally:

1) To gain access, remove the 4 corner screws retaining the front connector plate as shown in Figure #4.

Figure 4

2) Proceed to raise the front plate by pulling the edge, next to the mounting surface, upwards until the view in Figure #5 can be attained.

Figure 5

Accessible Adjustments:

A) **Output voltage** is trimmed by adjusting the potentiometer P1.
B) **Remote "Turn On" Disabled:** Units are shipped from factory with pins 2 and 3 of the connector [CON1] jumpered as shown. This programs the unit to be "ON" when source power is applied.
C) **Remote "Turn On" Enabled:** To program the unit for remote enable, shift the jumper from pin positions 2 and 3 of [CON1] to positions 1 and 2. In this mode the unit will energize when pin H is connected to the negative input line pin F.

D) **Fuse Replacement:** In the unlikely event that fuses F1,2,3 will open, disabling the unit, DO NOT CHANGE FUSES WITH THE POWER APPLIED. In order to restore normal operation, the user will need to ensure that the cause of the failure has been removed. Then the blown fuses need to be removed by gently prying them out of their clips and replacing them with ones of identical ratings. Notwithstanding the above the user should take every precaution to ensure that a reversed polarity input is avoided. Any polarity reversals may result in permanent damage.

3) Restore the front plate to its orginal position by replacing the securing screws and making sure the gasket is compressed.

IV Warranty and Repair

Should your investigations indicate that your product is defective or damaged and the unit is still under warranty, contact your dealer (purchase point of origin) and obtain a return merchandise authorization (RMA number) for corrective action.

If the warranty period has expired or if the warranty has been violated due to operator error or misuse call: SEC America, LLC, 802-865-8388 to receive an authorization for return for an assessment and possible repair.

Warranty

700HS Series models come with a 2 year factory warranty covering parts and labor per the following:

LIMITED WARRANTY

We warrant each instrument, sold by us, or our authorized agents, to be free from defects in material and workmanship and that it will perform within applicable specifications for a period of two year after original shipment. Our obligation under this guarantee is limited to repairing or replacing any instrument or any part thereof,except fuses and pilot lights, which shall within one year after delivery to the original purchaser, be returned to us with transportation charges prepaid, prove after our examination to be thus defective.

The above limited warranties take the place of all other warranties, expressed or implied, and correction of such defects by replacement or repair shall constitute a fulfillment of all obligations under the terms of the warranties. The warranties do not cover any unit that has been damaged either in transit or by misuse, accident or negligence. No warranty or representation by anyone other than this Company shall be binding on us.

To return a unit to factory, send only to the following address:

SEC America, LLC
78 Ethan Allen Drive
South Burlington, Vermont 05403 Tel: 802-865-8388

PLEASE RETAIN YOUR ORIGINAL BILL OF SALE. IT MUST BE SUBMITTED WHEN MAKING ANY WARRANTY CLAIM

SEC AMERICA, LLC

850W

DC-DC Converter
HS Sealed Series

Model 721 HS

Design Features

- Wide Range Input Voltage
- High Efficiency Design
- Hi Ingress Rating, IP 676
- Adjustable Output Voltage
- Optional Remote Output Voltage Sensing
- Optional Remote On/Off switching
- Low Voltage cutout
- High Voltage cutout
- Electronically Current Limited
- Thermally Protected
- Low No Load Power Consumption
- I/O Bayonet Quick Connection

	MODEL NO.	721 HS
INPUT	NOMINAL INPUT VOLTAGE RANGE	12 VDC to 28 VDC
	MAXIMUM INPUT VOLTAGE RANGE	10.5 to 32.0 (+,- 0.5) VDC
	INPUT CURRENT AT 32A OUTPUT CURRENT	**80A @ 11.5 Vin; 25.5 Vout**
	INPUT CURRENT AT NO LOAD	< 160 mA over entire input and output ranges
OUTPUT	OUTPUT VOLTAGE NOMINAL	26.0 VDC (factory adjusted)
	OUTPUT VOLTAGE ADJUSTMENT RANGE	16.0 VDC to 28.0 VDC (internally accessible to user)
	OUTPUT LOAD REGULATION	250 mV (without remote sensing) 50 mV (with remote sensing)
	OUTPUT VOLTAGE REGULATION	< 0.2%
	OUTPUT RIPPLE	50 mV RMS at maximum load (measured at 25C)
	MAXIMUM CONTINUOUS OUTPUT POWER	850 W
	POWER SURGE	1000 W
	MAXIMUM LOAD CURRENT	32 ADC, for output voltage setting 16.0 VDC - 28.0 VDC
	WORST CASE EFFICIENCY	91.5% @ 50% max. power, 86.5% @ max. power
PROTECTION	LOW INPUT VOLTAGE SHUTDOWN	< 10.5 +/-0.3 VDC
	HIGH INPUT VOLTAGE SHUTDOWN	> 32.0 +/- 1.0 VDC
	OVERLOAD SHUTDOWN	Set to shut off at 110% of maximum current with continuous automatic retry
	OVER TEMPERATURE SHUTDOWN	Via internal thermostat, self resetting
	COOLING	By conduction through base plate and convection cooling
	FUSING	Customer accessible
CONNECTIONS	INPUT/ OUTPUT CONNECTION	Via 9 pin Bayonet connector
	REMOTE TURN ON	Via pin to -ve on input connector, may be disabled via internal jumper
	REMOTE SENSE	Via 2 pins on the output connector usage is optional
GENERAL	OPERATING TEMPERATURE RANGE	-40C to 70C, 100% loading
	OPERATING HUMIDITY	100%
	INGRESS RATING	IP 676
	MOUNTING SLOT CENTERS (in./cm.)	10.0 x 7.3 / 25.4 x 18.5
	DIMENSIONS, (in./cm.) (L x W x H)	15.5 x 8.0 x 2.9 / 39.4 x 20.3 x 7.4
	HOUSING MATERIAL	All Aluminum
	WEIGHT, (lb./kg.)	18 / 8.2

NOTE: Specifications are subject to change without notice.

Rev 7/15/2015

SEC AMERICA, LLC

850W

DC-DC Converter
HS Sealed Series

Model 737 HS

Design Features

- Wide Range Input Voltage
- High Efficiency Design
- Hi Ingress Rating, IP 676
- Adjustable Output Voltage
- Optional Remote Output Voltage Sensing
- Optional Remote On/Off switching
- Low Voltage cutout
- High Voltage cutout
- Electronically Current Limited
- Thermally Protected
- Low No Load Power Consumption
- I/O Bayonet Quick Connection

	MODEL NO.	737 HS
INPUT	NOMINAL INPUT VOLTAGE RANGE	12 VDC to 28 VDC
	MAXIMUM INPUT VOLTAGE RANGE	10.5 to 32.0 (+,- 0.5) VDC
	INPUT CURRENT AT 20A OUTPUT CURRENT	**71A @ 11.5 Vin; 36.1 Vout**
	INPUT CURRENT AT NO LOAD	< 220 mA over entire input and output ranges
OUTPUT	OUTPUT VOLTAGE NOMINAL	36.0 VDC (factory adjusted)
	OUTPUT VOLTAGE ADJUSTMENT RANGE	32.0 VDC to 42.0 VDC (internally accessible to user)
	OUTPUT LOAD REGULATION	250 mV (without remote sensing) 50 mV (with remote sensing)
	OUTPUT VOLTAGE REGULATION	<2%
	OUTPUT RIPPLE	50 mV RMS at maximum load (measured at 25C)
	MAXIMUM CONTINUOUS OUTPUT POWER	850 W
	POWER SURGE	1000 W
	MAXIMUM LOAD CURRENT	20 ADC, for output voltage setting 32.0 VDC - 42.0 VDC
	WORST CASE EFFICIENCY	92.0% @ 50% max. power, 88.0% @ max. power
PROTECTION	LOW INPUT VOLTAGE SHUTDOWN	< 10.5 +/-0.3 VDC
	HIGH INPUT VOLTAGE SHUTDOWN	> 32.0 +/- 1.0 VDC
	OVERLOAD SHUTDOWN	Set to shut off at 110% of maximum current with continuous automatic retry
	OVER TEMPERATURE SHUTDOWN	Via internal thermostat, self resetting
	COOLING	By conduction through base plate and convection cooling
	FUSING	Customer accessible
CONNECTIONS	INPUT/ OUTPUT CONNECTION	Via 9 pin Bayonet connector
	REMOTE TURN ON	Via pin to -ve on input connector, may be disabled via internal jumper
	REMOTE SENSE	Via 2 pins on the output connector usage is optional
GENERAL	OPERATING TEMPERATURE RANGE	-40C to 70C, 100% loading
	OPERATING HUMIDITY	100%
	INGRESS RATING	IP 676
	MOUNTING SLOT CENTERS (in./cm.)	10.0 x 7.3 / 25.4 x 18.5
	DIMENSIONS, (in./cm.) (L x W x H)	15.5 x 8.0 x 2.9 / 39.4 x 20.3 x 7.4
	HOUSING MATERIAL	All Aluminum
	WEIGHT, (lb./kg.)	18 / 8.2

NOTE: Specifications are subject to change without notice.

Rev 7/15/2015

SEC AMERICA, LLC

850W

DC-DC Converter
HS Sealed Series

Model 749 HS

Design Features

- Wide Range Input Voltage
- High Efficiency Design
- Hi Ingress Rating, IP 676
- Adjustable Output Voltage
- Optional Remote Output Voltage Sensing
- Optional Remote On/Off switching
- Low Voltage cutout
- High Voltage cutout
- Electronically Current Limited
- Thermally Protected
- Low No Load Power Consumption
- I/O Bayonet Quick Connection

	MODEL NO.	749 HS
INPUT	NOMINAL INPUT VOLTAGE RANGE	12 VDC to 28 VDC
	MAXIMUM INPUT VOLTAGE RANGE	10.5 to 32.0 (+,- 0.5) VDC
	INPUT CURRENT AT 15A OUTPUT CURRENT	**67A @ 12.2 Vin; 48.5 Vout**
	INPUT CURRENT AT NO LOAD	< 220 mA over entire input and output ranges
OUTPUT	OUTPUT VOLTAGE NOMINAL	48.0 VDC (factory adjusted)
	OUTPUT VOLTAGE ADJUSTMENT RANGE	42.0 VDC to 55.0 VDC (internally accessible to user)
	OUTPUT LOAD REGULATION	250 mV (without remote sensing) 50 mV (with remote sensing)
	OUTPUT VOLTAGE REGULATION	< 0.2%
	OUTPUT RIPPLE	50 mV RMS at maximum load (measured at 25C)
	MAXIMUM CONTINUOUS OUTPUT POWER	850 W
	POWER SURGE	1000 W
	MAXIMUM LOAD CURRENT	15 ADC, for output voltage setting 42.0 VDC - 55.0 VDC
	WORST CASE EFFICIENCY	93.5% @ 50% max. power, 89.5% @ max. power
PROTECTION	LOW INPUT VOLTAGE SHUTDOWN	< 10.5 +/-0.3 VDC
	HIGH INPUT VOLTAGE SHUTDOWN	> 32.0 +/- 1.0 VDC
	OVERLOAD SHUTDOWN	Set to shut off at 110% of maximum current with contiuous automatic retry
	OVER TEMPERATURE SHUTDOWN	Via internal thermostat, self resetting
	COOLING	By conduction through base plate and convection cooling
	FUSING	Customer accessible
CONNECTIONS	INPUT/ OUTPUT CONNECTION	Via 9 pin Bayonet connector
	REMOTE TURN ON	Via pin to -ve on input connector, may be disabled via internal jumper
	REMOTE SENSE	Via 2 pins on the output connector usage is optional
GENERAL	OPERATING TEMPERATURE RANGE	-40C to 70C, 100% loading
	OPERATING HUMIDITY	100%
	INGRESS RATING	IP 676
	MOUNTING SLOT CENTERS (in./cm.)	10.0 x 7.3 / 25.4 x 18.5
	DIMENSIONS, (in./cm.) (L x W x H)	15.5 x 8.0 x 2.9 / 39.4 x 20.3 x 7.4
	HOUSING MATERIAL	All Aluminum
	WEIGHT, (lb./kg.)	18 / 8.2

NOTE: Specifications are subject to change without notice.

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