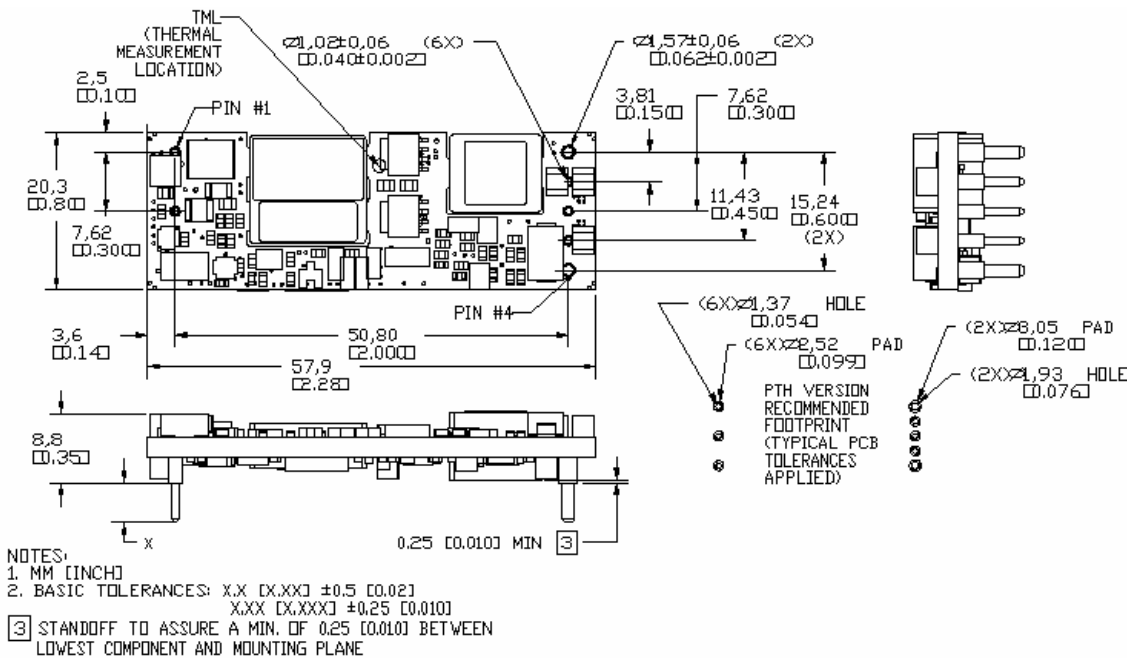


Model	1.5V		Units
Parameter			
Output Voltage Setpoint	1.48 – 1.52		Vdc
Line/Load Regulation	Max	0.1% / 0.2%	% Vo
Output total regulation	1.45 – 1.55		Vdc
Output adjust (note 4)	90-110		%Vo,nom
Remote-sense Comp.	10%		V
Output Ripple & Noise (note 2)	Max	100	mVp-p
Output Current	0-20		A
Efficiency (48V, Full load, 25C)	Typ	86%	%
External Capacitance	1,000 – 10,000		μF
Transient Response (typ) (note 3)	ΔVo	150	mV
25% step, 1A/μs	Ts	400	μs
Over-voltage trip point (latching)	1.80 – 2.03		V
Over-current trip point (non-latching)	Typ	25	A

All specifications, waveforms, charts at Ta=25C, Vin=48V, unless otherwise specified



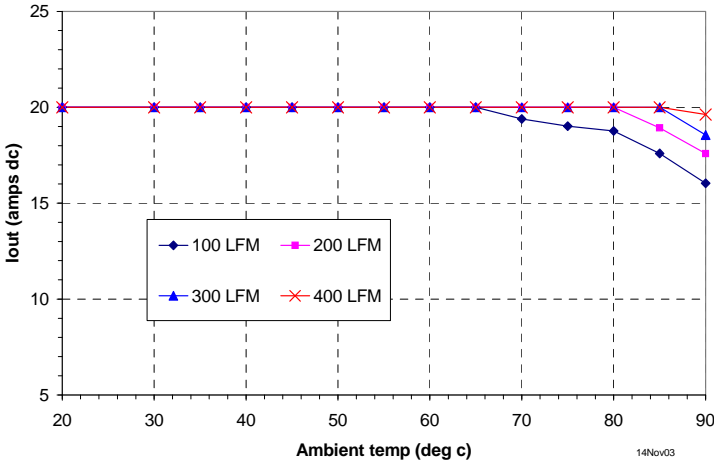
Parameter	Conditions	Min.	Typ.	Max.	Units
Input	Input Voltage (Vin)	36	48	75	Vdc
	Reflected Ripple Current	See note (1)		25	'mA p-p
	Inrush Transient			0.2	A ² s
	Input Voltage Transient	100mS 10% duty cycle		100	V
Undervoltage Lockout	Turn-on	32		35	Vdc
	(non-latching) Turn-off	31		34	Vdc
Over-voltage lockout	(non-latching) Turn-off	77		81	Vdc
Isolation	Input-Output	1500			Vdc
	Resistance; input-output	10			Mohm
Temperature	Operating Ambient	-40		90	°C
	Storage	-40		125	°C
Protection	Over-Temperature (non-latching) Measured on PCB	125		°C	
Physical Information	Dimensions	2.30"L x 0.82" W x 0.36"H (58.4 x 20.8 x 9.3 mm)			
MTBF	Calculated at 40C ambient, (Bellcore)	1,000,000 Hrs		EHS15/20 Series	
	Demonstrated at 40C ambient with 90% confidence:	2,800,000 Hrs			
Safety	Complies with IEC/EN/CSA/UL 60950, provides basic insulation, input to output. c-UL-us (US and Canada) recognized, TUV certified (Bauart).				



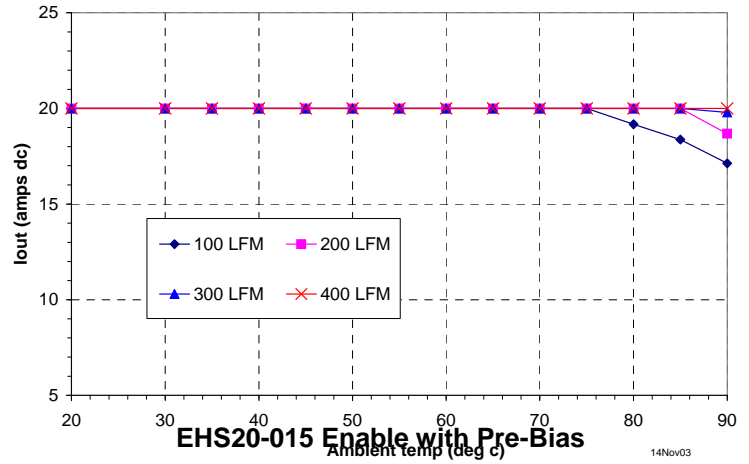
Pin Assignments

Pin #	Description	Pin #	Description	Pin #	Description
1	Vin (+)	4	Vout(-)	7	Sense +
2	Enable	5	Sense -	8	Vo (+)
3	Vin(-)	6	Vo adj		

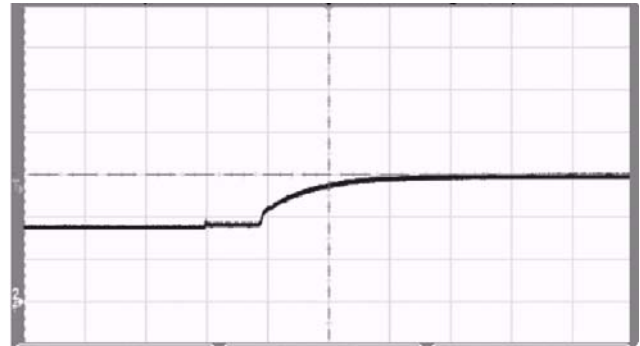
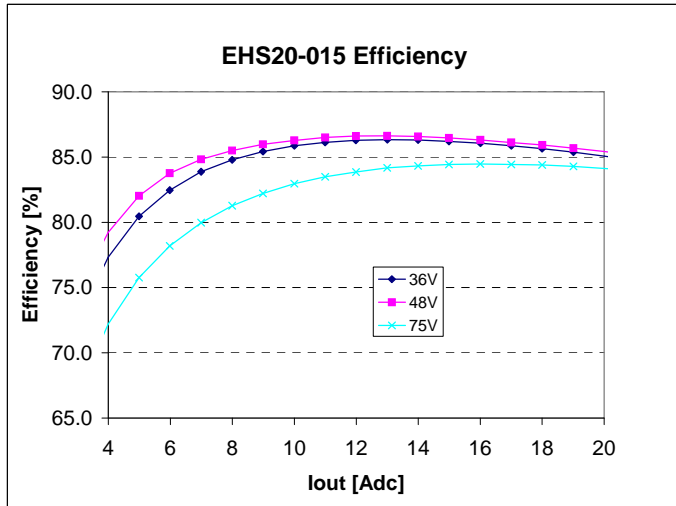
EHS20-015 TEMPERATURE DERATING
Airflow from Input to Output, Tj=120C



EHS20-015 TEMPERATURE DERATING
Airflow from Vin(-) to Vin(+), Tj=120C



EHS20-015 Enable with Pre-Bias



Output Voltage @ 0.5 V/div., 2 ms/div.
Prebias voltage =0.9 Vdc. Input Voltage 48 V
Load current = 0, Load capacitance = 2,200 uF.

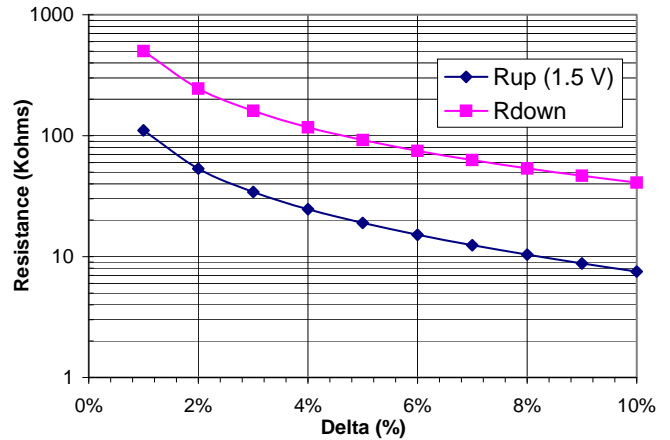
EHS20-015 Trim-up and Trim-down Resistance

Trim Up/Down Formula : 1.5V model

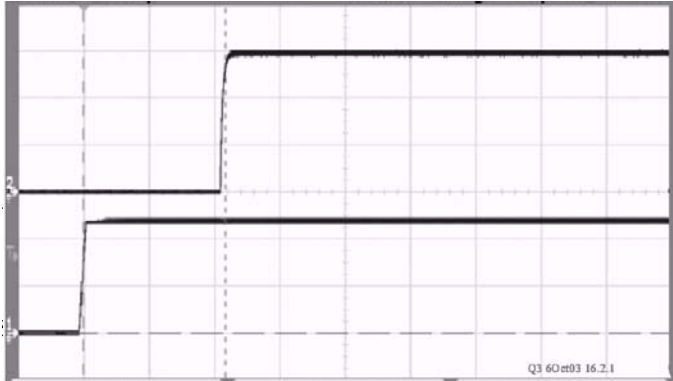
$$R_{up} := \left[\frac{5.10 V_{nom} (100 + \%)}{1.225 \%} - \frac{510}{\%} - 10.2 \right] K$$

Where $\% := \frac{(V_{out} - V_{nom}) 100}{V_{nom}}$ and, V_{out} = Target output voltage

$$R_{down}(\%) := \left(\frac{510}{\%} - 10.2 \right) K \quad \text{Where } \% := \frac{(V_{nom} - V_{out}) 100}{V_{nom}}$$

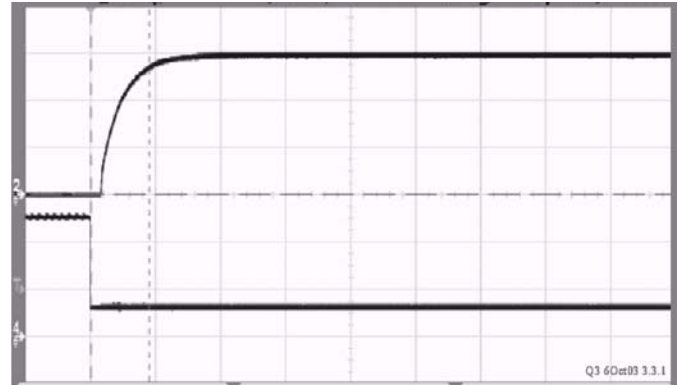


EHS20-015 Startup Sequence from Vin



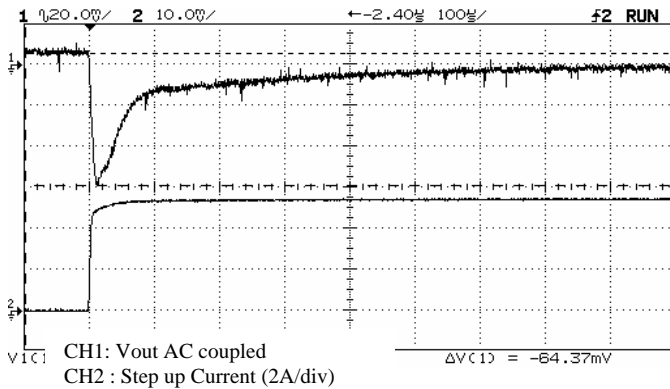
Top Trace: Vout @ 0.5 V/div.
 Bot. Trace: Vin @ 20V/div. (48Vdc)
 Horiz. @ 50 ms/div.
 Load: 20 A, Turn-on delay: 110mS

EHS20-015 Startup Sequence from Enable

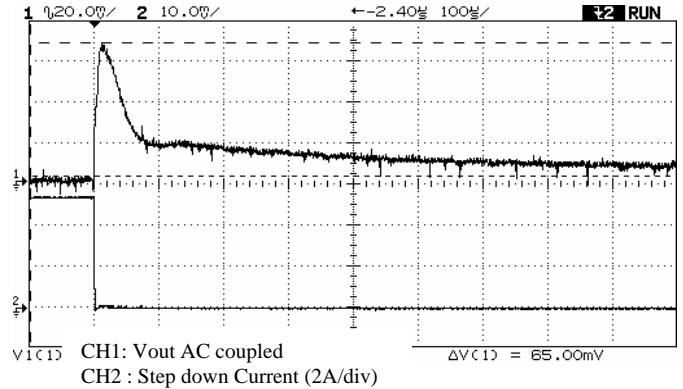


Top Trace: Vout @ 0.5 V/div.
 Bot. Trace: Venable @ 2 V/div.
 Horiz. @ 5 ms/div. Vin= 36Vdc
 Load: 20 A., 10,000 uF, Turn-on delay: 4.8 ms

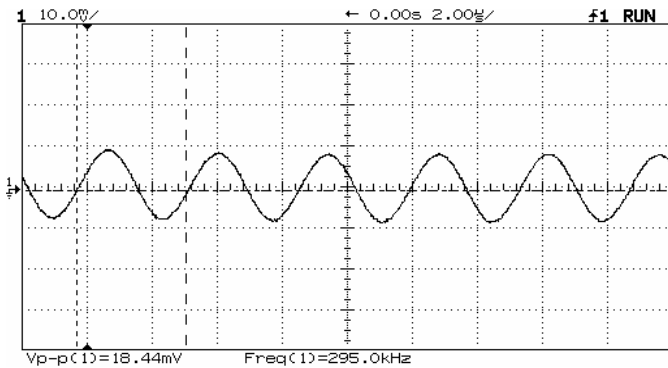
EHS20-015 Transient Response, 50-75% step, 1A/μs



EHS20-015 Transient Response, 50-25% step, 1A/us

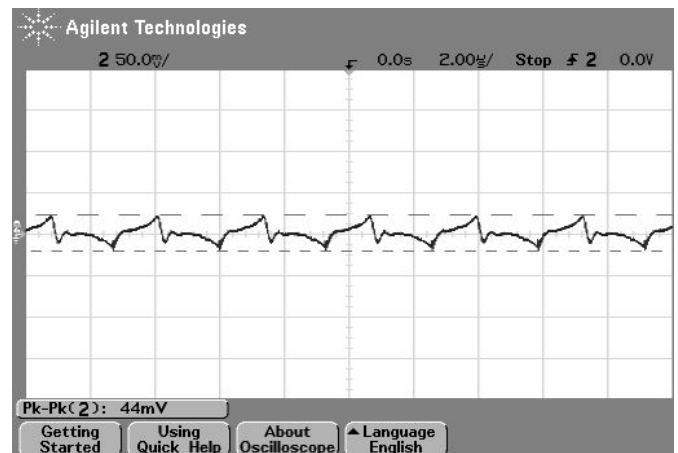


EHS20-015 Input Reflected Ripple Current, Iout = 20 A



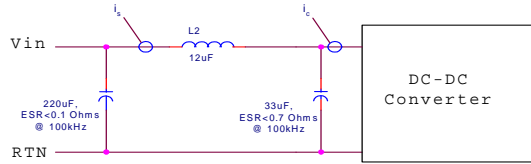
Input Current @ 5.0 mA/div., 20 us/div. (14 mApp)
 Input Voltage: 48 V, Load Current: 20A
 Note: refer to test circuit schematic

EHS20-015 Output Ripple Voltage, Iout = 20A



Notes:

1. Input Reflected Ripple is specified when measured with the filter shown below



2. Output Ripple and noise is specified when measured with a 10uF tantalum and a 1uF ceramic capacitor at the converter output pins
3. Transient response is specified with a 470uF tantalum capacitor at the output of the converter
4. Trim resistor connection: Rtrim-up connected from Vo adj to Vo(+), Rtrim –down connected from Vo adj to Vo(-).

EHS20-015 Enable Pin Connection Table

	ENABLE POWER SUPPLY	DISABLE POWER SUPPLY
NEGATIVE LOGIC VERSION	0V < Venable < 0.8V (internal pull-up > 50Kohms @ 5V)	2.5V < Venable < 15V (external pull-up > 1Kohms)
POSITIVE LOGIC VERSION	2.5V < Venable < 15V (external pull-up > 1Kohms)	0V < Venable < 0.8V (internal pull-up > 50Kohms @ 5V)

Note: Power Supply has internal pull-up resistor. Enable pin is in a valid “high” state if left open-circuit.

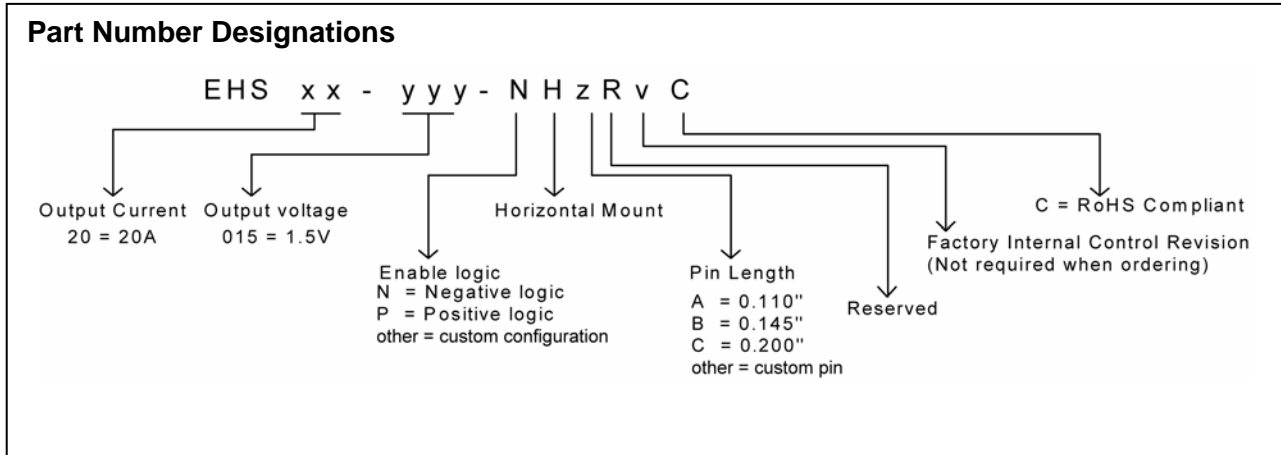
Safety considerations

The EHS series of converters are certified to IEC/EN/CSA/UL 60950. If this product is built into information technology equipment, the installation must comply with the above standard.

An external input fuse (5A to 30A recommended), must be used to meet the above requirements.

The output of the converter [Vo(+)/Vo(-)] is considered to remain within SELV limits when the input to the converter meets SELV or TNV-2 requirements.

The converters and materials meet UL 94V-0 flammability ratings.



RoHS Compliant

The EHS series of converters is in compliance with the European Union Directive 2002/95/EC (RoHS) with respect to the following substances: lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE).