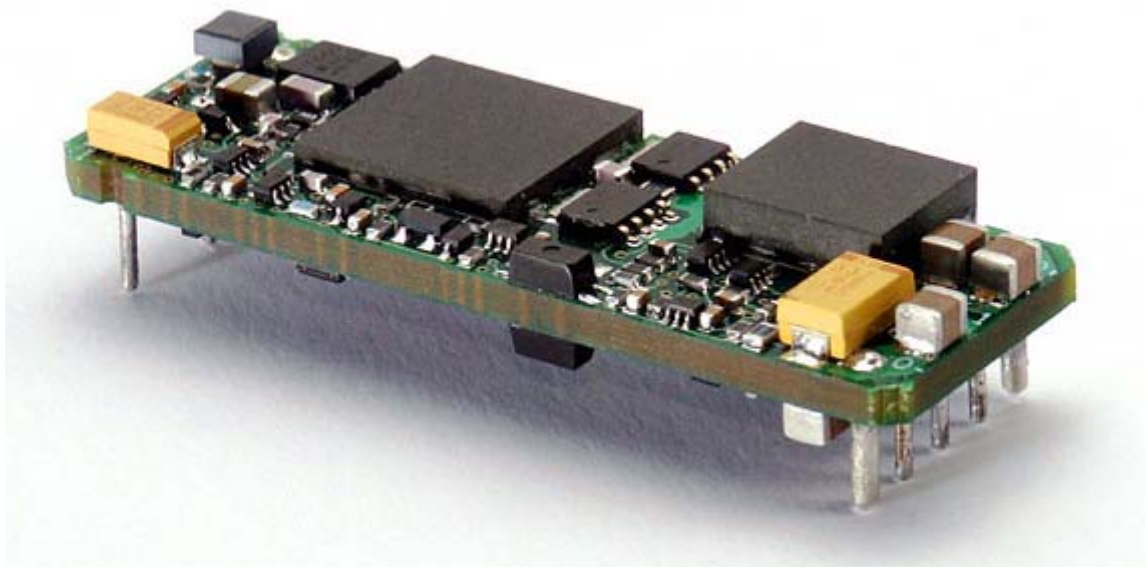


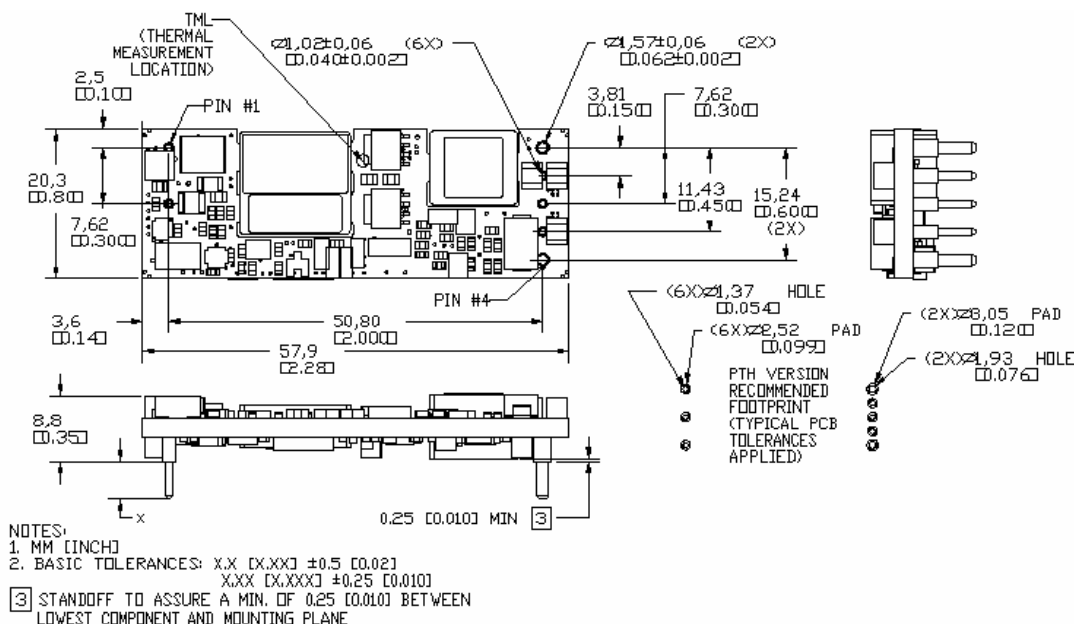


Model		1.2V	Units
Parameter			
Output Voltage Setpoint		1.18 – 1.22	Vdc
Line/Load Regulation	Max	0.1% / 0.2%	% Vo
Output total regulation		1.16 – 1.24	Vdc
Output adjust (note 4)		90-110	%Vo,nom
Remote-sense Comp.		10%	V
Output Ripple & Noise (note 2)	Max	100	mVp-p
Output Current		0-20	A
Efficiency (48V, Full load, 25C)	Typ	85%	%
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)		1.5 – 1.8	V
Over-current trip point (non-latching)	Typ	25	A

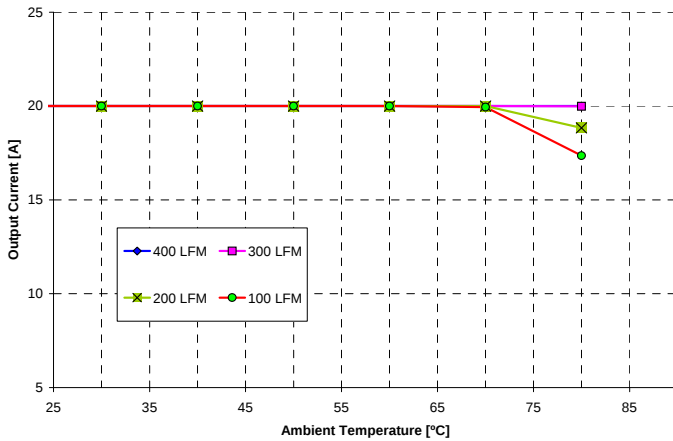
All specifications, waveforms, charts at Ta=25C, Vin=48V, unless otherwise specified



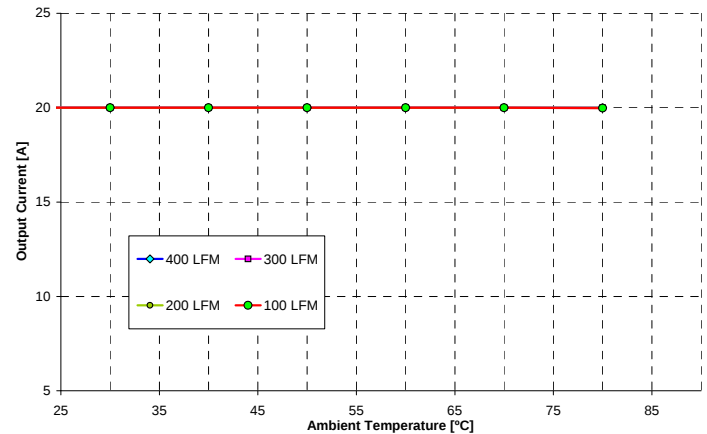
Parameter	Conditions	Min.	Typ.	Max.	Units
Input	Input Voltage (Vin)	36	48	75	Vdc
	Reflected Ripple Current	See note (1)		25	'mA p-p
	Inrush Transient			0.2	A ² s
	Input Voltage Transient	100mS 10% duty cycle		100	V
	Undervoltage Lockout	Turn-on	32	35	Vdc
		(non-latching)Turn-off	31	34	Vdc
	Over-voltage 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		130	°C
Physical Information	Dimensions	2.30"L x 0.82" W x 0.37"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).				



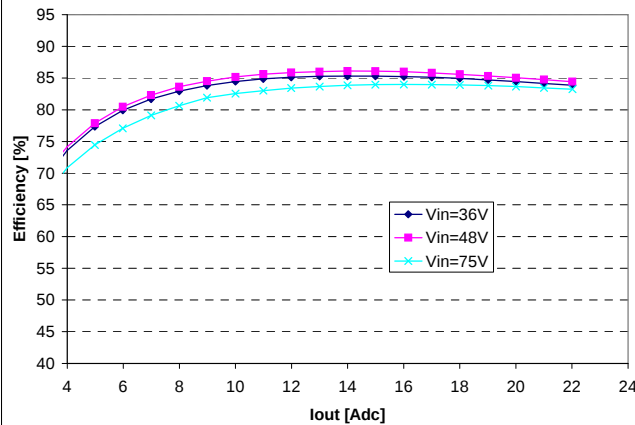
EHS20-012 Thermal Derating
Airflow from Vin to Vo, Tj = 120°C



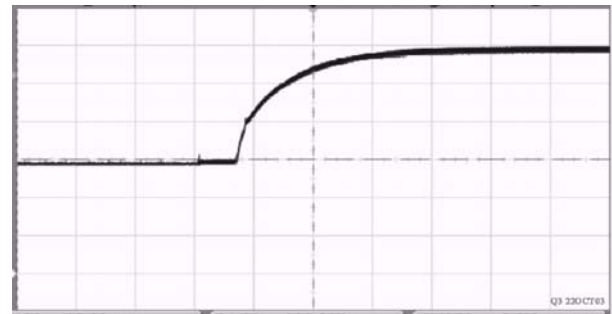
EHS20-012 Thermal Derating
Airflow from Vo(-) to Vo(+), Tj = 120°C



EHS20-012 Efficiency

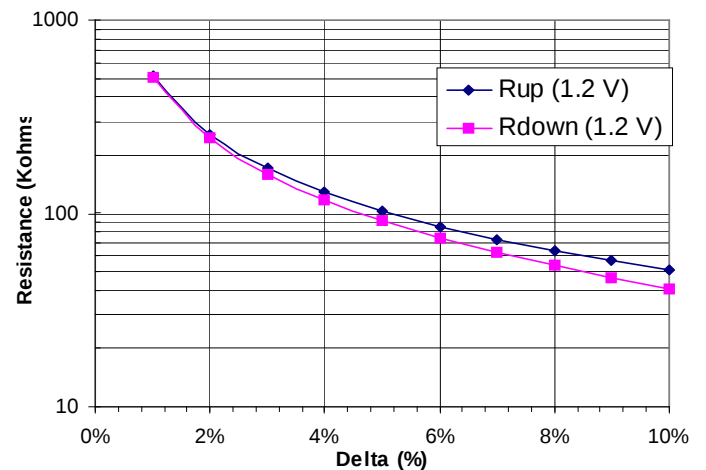


EHS20-012 Enable with Pre-Bias



Output Voltage @ 0.2 V/div., 2 ms/div.
Prebias voltage = 0.6 Vdc. Input Voltage 48 V
Load = 0 A, Load capacitance = 10000 uF.

EHS20-012 Trim-up and Trim-down Resistance



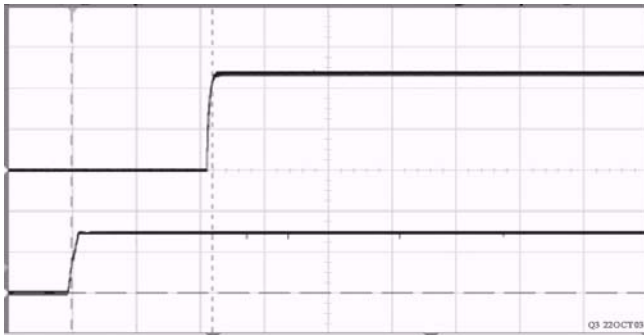
Trim Up/Down Formula : 1.2V model

$$R_{up} := \left[\frac{5.10 V_{nom} (100 + \%)}{0.6 \%} - \frac{510}{\%} - 10.2 \right] K$$

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

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

EHS20- 012 Startup Sequence from Vin

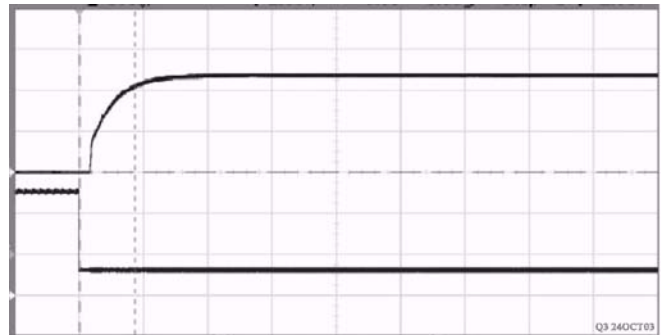


Top Trace: Vout @ 0.5 V/div.
Bot. Trace: Vin @ 50V/div.
Horiz. @ 50 ms/div.
Load: 20 A. Turn-on delay: 110ms

EH

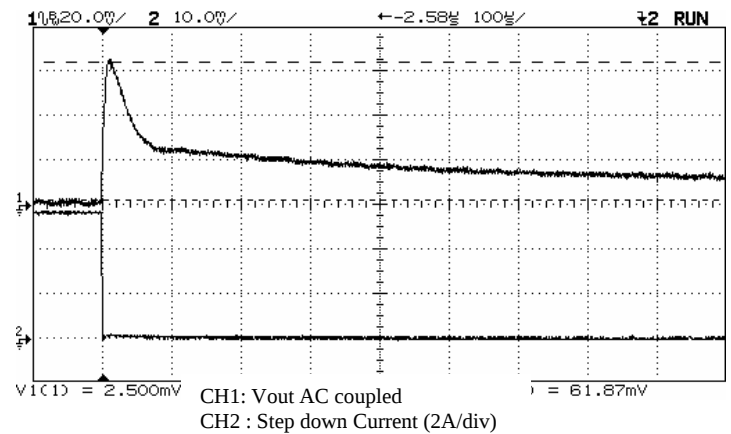
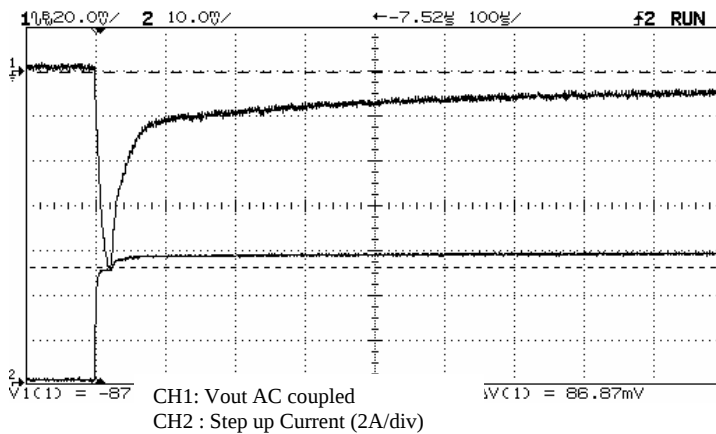
step ,1A/μs

EHS20- 012 Startup Sequence from Enable

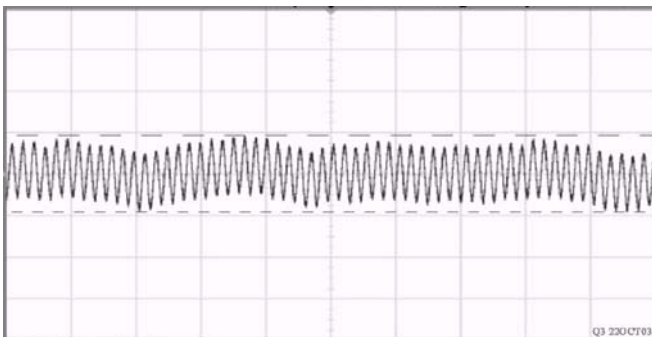


Top Trace: Vout @ 0.5 V/div.
Bot. Trace: Venable @ 2 V/div.
Horiz. @ 5 ms/div.
Load: 20 A, 10000 uF Turn-on delay: 4.38 ms

EH

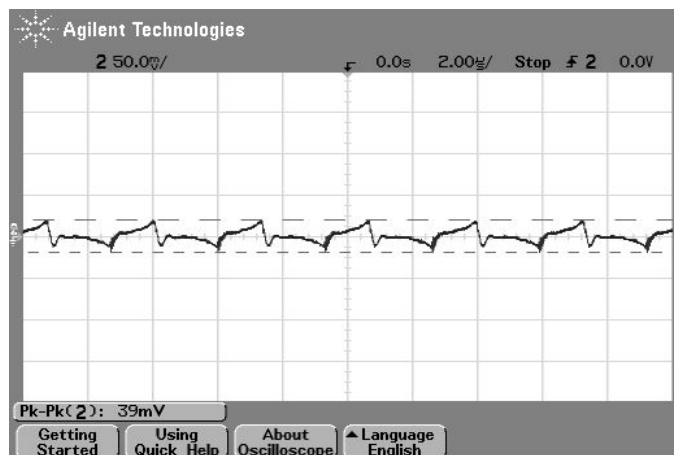


EHS20- 012 Input Reflected Ripple Current



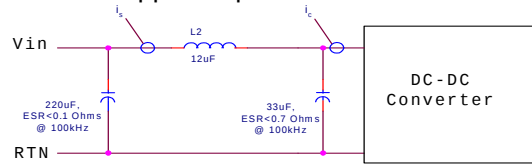
Input Current @ 5 mA/div., 20 us/div. (9.2 mApp)
Input Voltage: 48 V, Load Current: 20 A
Note: see test circuit on following page.

EHS20-012 Output Ripple Voltage, Io=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(-).

EHS20-012 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

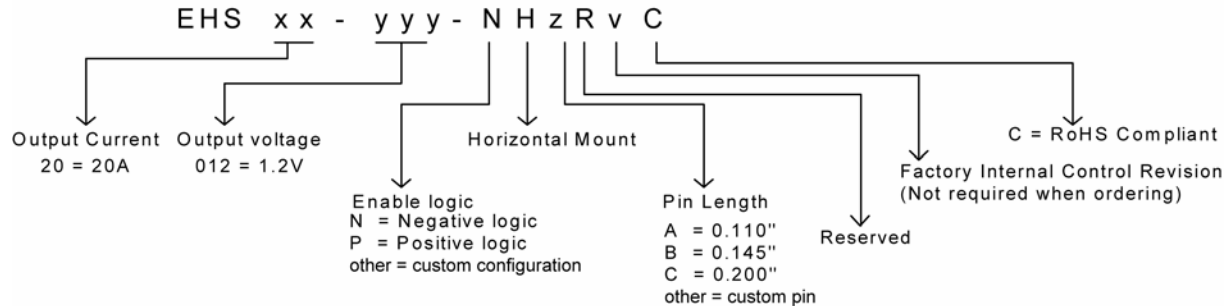
The EHS series of converters are certified to IEC/EN/CSA/UL 60950. If this product is built into information technology equipment, the installation must comply with the above standard.

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.

Part Number Designations



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).