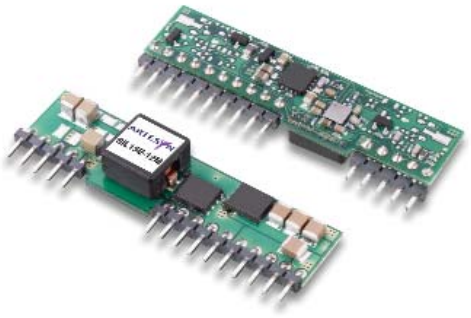
SIL15E-12M Series

12 Vin single output

ARTESYN TECHNOLOGIES

NEW Product

- **15 A current rating**
- **Input voltage range: 10 Vdc to 14 Vdc**
- **Output voltage range: 0.8 Vdc to 3.63 Vdc**
- **Ultra high efficiency: 92% @ 12 Vin and 3.3 Vout**
- **Built-in I²C™ bus interface provides open-architecture control approach**
- **I²C programmable features include precision setting of both the output voltage and voltage margining facilities**
- **An Evaluation Kit is available to demonstrate the functionality of the SIL15E-12M, including the I²C™ interface capability**
- **Available RoHS compliant**



The SIL15E-12M significantly extends current POL converters power management features by integrating a programmable active dc output control function. During product development, the converter's voltage set-point can be programmed – via the built-in I²C™ interface – to a very high degree of accuracy, and the active control function will maintain this setting very precisely during normal operation, by automatically compensating for different load conditions. The same function is used when performing voltage margining during production test, to ensure accurate results and prevent devices being over-stressed. Each converter is supplied pre-programmed to standard default values stored in non-volatile memory and only requires additional programming by customers if they wish to change an operational function.

2 YEAR WARRANTY

All specifications are typical at nominal input, full load at 25 °C unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability (See Notes 2 and 3)	With external trim resistor	0.8-3.63 Vdc
Setpoint accuracy		±0.75% typ.
Line regulation		±1.0% typ.
Load regulation		±1.0% typ.
Total error band		±2.0% typ.
Minimum load		0 A
Overshoot/undershoot	(See Note 2)	None
Ripple and noise	5-20 MHz	40 mV pk-pk 25 mV rms
Temperature co-efficient		±0.01%/°C
Transient response		100 mV max. deviation 100 µs recovery to within ±1.0%
Remote sense		10% Vo compensation

INPUT SPECIFICATIONS

Input voltage range		10-14 Vdc
Input current	No load	100 mA
Input current (max.)		5.5 A max. @ Io max. and Vout = 3.3 V
Input reflected ripple		100 mA rms
Remote ON/OFF		(See Note 1)
Start-up time		5 ms

EMC CHARACTERISTICS

Electrostatic discharge	EN61000-4-2, IEC801-2
Conducted immunity	EN61000-4-6
Radiated immunity	EN61000-4-3

GENERAL SPECIFICATIONS

Efficiency	(12 Vin @ 3.3 Vout)	92% typ.
Insulation voltage		Non-isolated
Switching frequency	Fixed	200 kHz typ.
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions	(LxWxH)	50.8 x 8.5 x 12.7 mm 2.0 x 0.34 x 0.5 inches
Pin length		0.135 ±0.02 in (3.43 ±0.5 mm)
Weight		7 g (0.25 oz)
MTBF	Telcordia SR-332	3,559,000 hours min.

ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient, temperature	-40 °C to +85 °C
	Non-operating	-40 °C to +125 °C

PROTECTION

Short-circuit	Continuous
Thermal	Automatic recovery

International Safety Standard Approvals

UL/cUL CAN/CSA 22.2 No. 60950
UL 60950 File No. 174104

I²C™ is a registered trade mark of Philips Electronics N.V.

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For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE[2,3]	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER [1,5,6]
						LINE	LOAD	
49.5 W	10-14 Vdc	0.8-3.63 Vdc	0 A	15 A	92%	±1.0%	±1.0%	SIL15E-12M001J

Part Number System with Options

SIL15E-12MJ

- **Product Family**: SIL = Single In Line
- **Rated Output Current**: 15 = 15 Amps
- **Performance**: E = Enhanced Performance
- **Input Voltage**: 12 = 10 Vdc to 14 Vdc
- **Type of Output**: I^2C Programmable Features
- **Packaging Options [6]**: J = Pb-free (RoHS 6/65compliant)

Notes

1. The SIL15E-12M features a 'Positive Logic' Remote ON/OFF operation. If not using the Remote ON/OFF pin, leave the pin open (the converter will be on). The Remote ON/OFF pin is referenced to ground.

   The following conditions apply for the SIL15E-12M:

Configuration	Converter Operation
Remote pin open circuit	Unit is ON
Remote pin pulled low [Von/off <0.8 V]	Unit is OFF
Remote pin pulled high [Von/off >1.6 V]	Unit is ON

   A 'Negative Logic' Remote ON/OFF version is also possible with this converter. To order please place the Suffix '-R' at the end of the model number, e.g. SIL15E-12M001-RJ.
2. To avoid over-shoot on start-up the appropriate trim resistor must be placed on the trim pin. See Figure 3 on page 3.
3. Output voltage setpoint is set to 1.8 Vdc. To change the nominal setpoint value the unit will have to be reprogrammed and in addition an appropriate trim resistor placed on the trim pin.
4. An evaluation kit is available to demonstrate the functionality of the SIL15E-12M, including the I^2C interface capability. To apply for an evaluation kit you need to fill out an on-line request form.
5. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
6. NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at http://www.artesyn.com/powergroup/products.htm to find a suitable alternative.

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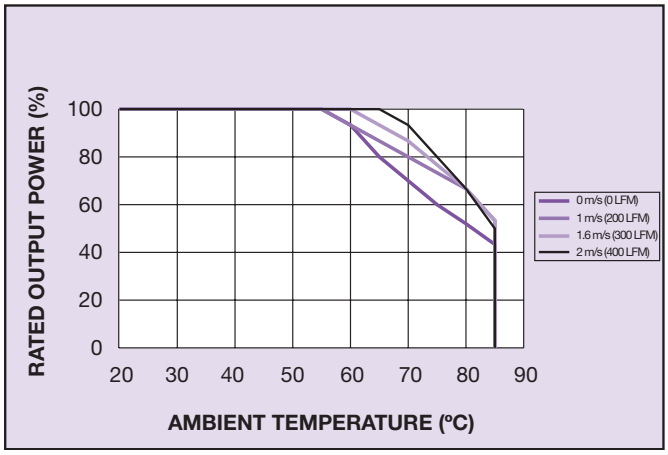

Figure 1 - Derating Curve (See Note A)
Vin = 12 V; Vout = 3.3 V

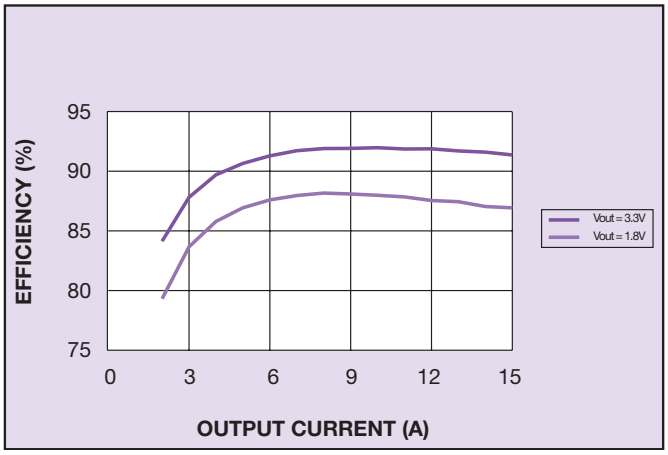

Figure 2 - Efficiency Curve
Vin = 12 V

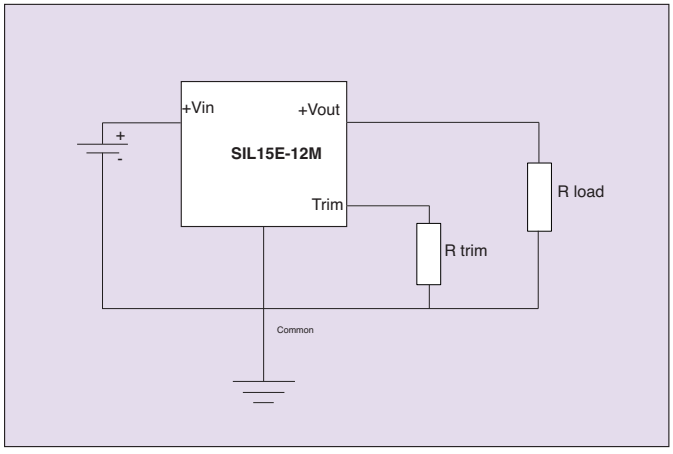

Figure 3 - Output Trim-up Resistor to Ground

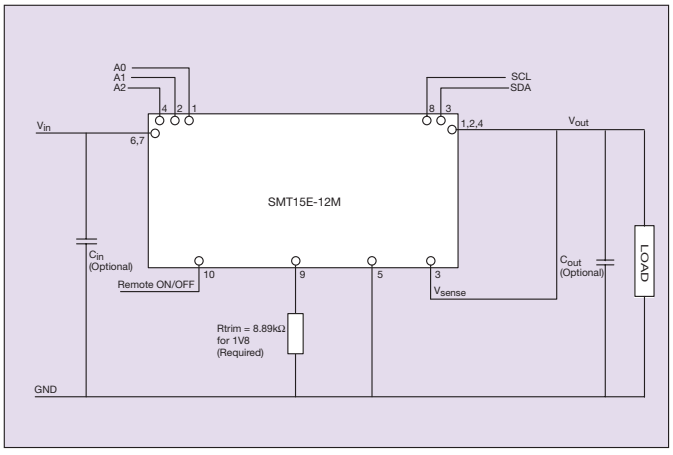

Figure 4 - Standard Application

Notes

A The derating curve represents the conditions at which internal components are within the Artesyn derating guidelines.

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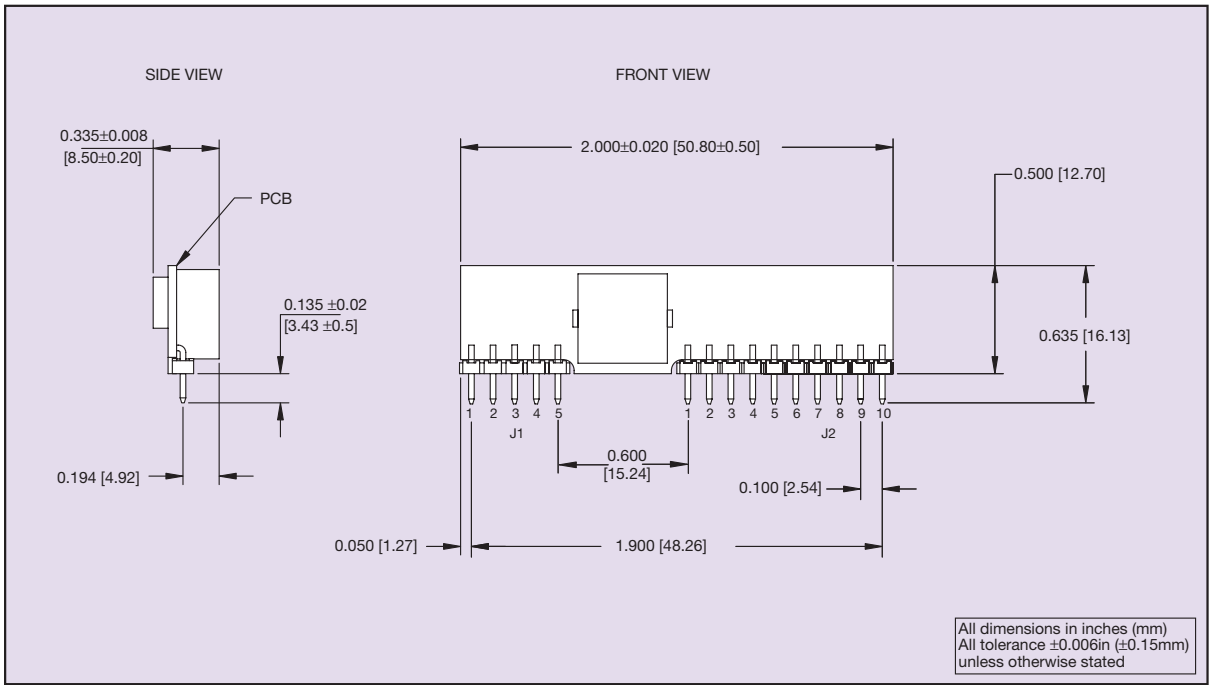

J1 PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	+Vout
2	+Vout
3	Vsense
4	+Vout
5	Ground

J2 PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	A0
2	A1
3	SDA
4	A2
5	Ground
6	+Vin
7	+Vin
8	SCL
9	Trim
10	Remote ON/OFF