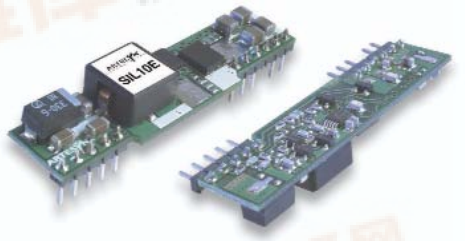
SIL10E Series

3.0 Vin to 5.5 Vin single output

ARTESYN TECHNOLOGIES

NEW Product

- **10 A Current rating**
- **Input voltage range: 3.0 Vdc to 5.5 Vdc**
- **Output voltage range: 0.8 Vdc to 3.63 Vdc**
- **Ultra high efficiency: 96% @ 5 Vin and 3.3 Vout**
- **Extremely low internal power dissipation**
- **Minimal thermal design concerns**
- **Designed in reliability: MTBF of >7 million hours per Telcordia SR-332**
- **Ideal solution where board space is at a premium or tighter card pitch is required**
- **Industry standard footprint and pin out**
- **Available RoHS compliant**



The SIL10E series are non-isolated dc-dc converters packaged in a single-in-line footprint giving designers a cost effective solution for conversion from either a 5 V or a 3.3 V source. The SIL10E offers a range of fixed outputs and one wide trim output unit at an industry leading 10 A which allows maximum design flexibility and a pathway for future upgrades. The SIL10E is designed for applications that include distributed power, workstations, optical network and wireless applications. Implemented using state of the art surface mount technology and automated manufacturing techniques, the SIL10E offers compact size and efficiencies of up to 96%.

2 YEAR WARRANTY

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

SPECIFICATIONS

OUTPUT SPECIFICATIONS

Voltage adjustability (See Note 1)	Fixed output versions 5 Vin with wide trim 3.3 Vin with wide trim	±10% 0.8-3.63 Vdc 0.8-2.75 Vdc
Setpoint accuracy		±0.4%
Line regulation		±0.2%
Load regulation		±1.0%
Minimum load		0 A
Overshoot/undershoot		None
Ripple and noise 0 to 20MHz BW		50 mV pk-pk 25 mV rms max.
Temperature co-efficient		±0.01%/°C
Transient response		50 mV max. deviation 50 µs recovery to within ±1.0%
Remote sense		10% Vo compensation

INPUT SPECIFICATIONS

Input voltage range		3.0-5.5 Vdc
Input current	No load	70 mA
Input current (max.)		8 A max. @ Io max. and Vout = 3.3 V
Input current ripple		65 mA rms
Remote ON/OFF		(See Note 2)
Start-up time		20 ms

International Safety Standard Approvals

UL/cUL CAN/CSA-C22.2 No. 60950-1-03/UL 60950-1, File No. E174104

TÜV Product Service (EN60950) Certificate No. B 03 10 38572 037

CB Report and Certificate to IEC60950, Certificate No. DE3-51686M1

EMC CHARACTERISTICS

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

GENERAL SPECIFICATIONS

Efficiency		See table
Insulation voltage		Non-isolated
Switching frequency	Fixed	300 kHz typ.
Approvals and standards		EN60950 UL/cUL60950
Material flammability		UL94V-0
Dimensions (vertical version)	(LxWxH)	50.8 x 7.8 x 12.7 mm 2.0 x 0.31 x 0.5 inches
Pin length	(Vertical)	0.135 ±0.02 in (3.43 ±0.5 mm)
Weight		5 g (0.18 oz)
MTBF	Telcordia SR-332 MIL-HDBK-217F	7,042,000 hours 680,000 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 3)	Operating ambient, temperature	-40 °C to +100 °C
	Non-operating	-40 °C to +125 °C

PROTECTION

Short-circuit	Continuous
Thermal	Automatic recovery

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DC-DC CONVERTERS | E Class Non-isolated

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

NEW Product

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER (4,5,6)
						LINE	LOAD	
8.8 W	3.-5.5 V	0.8 V	0 A	10 A	83%	±0.2%	±1.5%	SIL10E-05S0V8-VJ
11 W	3.0-5.5 V	1 V	0 A	10 A	86%	±0.2%	±1.5%	SIL10E-05S1V0-VJ
13.2 W	3.0-5.5 V	1.2 V	0 A	10 A	88%	±0.2%	±1.0%	SIL10E-05S1V2-VJ
16.5 W	3.0-5.5 V	1.5 V	0 A	10 A	90%	±0.2%	±1.0%	SIL10E-05S1V5-VJ
19.8 W	3.0-5.5 V	1.8 V	0 A	10 A	92%	±0.2%	±1.0%	SIL10E-05S1V8-VJ
22 W	3.0-5.5 V	2 V	0 A	10 A	93%	±0.2%	±1.0%	SIL10E-05S2V0-VJ
27.5 W	3.0-5.5 V	2.5 V	0 A	10 A	94%	±0.2%	±1.0%	SIL10E-05S2V5-VJ
36.3 W	4.5-5.5 V	3.3 V	0 A	10 A	95%	±0.2%	±1.0%	SIL10E-05S3V3-VJ
36.3 W	4.5-5.5 V	0.8-3.63 V	0 A	10 A	95%	±0.2%	±1.0%	SIL10E-05W3V3-VJ

Part Number System with Options

SIL10E-05S3V3-VJ

- **Product Family**: SIL = Single In Line
- **Rated Output Current**: 10 = 10 Amps
- **Performance**: E = Enhanced Performace
- **Input Voltage**: 05 = 3.0 V to 5.5 V; 12 = 10 V to 14 V
- **Packaging Options (5)**: J = Pb-free (RoHS 6/6 compliant)
- **Mounting Option**: V = Vertical Mount; H = Horizontal Mount
- **Output Voltage**: 2.5 V, 3.3 V etc
- **Number of Outputs**: S = Single; W = Wide

Output Voltage Adjustment of the SIL10E-05W3V3J Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL10E-05W3V3J. It is no longer necessary to purchase a variety of modules in order to cover different output voltages. The output voltage can be trimmed in a range of 0.8 Vdcto 3.63 Vdc. When the SIL10E-05W3V3J converter leaves the factory the output has been adjusted to the default voltage of 3.3 V.

- When Vin ≥ 4.5 V, then Vout can be adjusted from 0.8 Vdc to 3.6 Vdc
- When Vin < 4.5 V, then Vout can be adjusted from 0.8 Vdc to 2.75 Vdc

Notes

1 When Vin ≥ 4.5 V, then Vout can be adjusted from 0.8 V to 3.6 V. When Vin < 4.5 V, then Vout can be adjusted from 0.8 V to 2.75 V.

2 The SIL10E features a 'Negative Logic' Remote ON/OFF operation. If you are 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 SIL10E:

Configuration	Converter Operation
Remote pin open circuit	Unit is ON
Remote pin pulled low	Unit is ON
Remote pin pulled high [Von/off >1.2 V]	Unit is OFF

A 'Positive Logic' Remote ON/OFF version is also possible with this converter. To order please place the suffix 'R' towards the end of the model number e.g. SIL10E-05S3V3-VRJ.

Notes Cond.

3 Full derating curves available in both the Longform Datasheet and Application Note 136.

4 For certain applications that use low ESR capacitors on the output of the convertor and to insure maximum converter stability, please add the suffix '02' to the model, e.g. SIL10E-05S2V5-V02J.

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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NEW Product

J1 PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	+Vout
2	+Vout
3	Remote Sense (+)
4	+Vout
5	Ground
J2 PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	Ground
2	+Vin
3	+Vin
4	No Pin
5	Trim
6	Remote ON/OFF

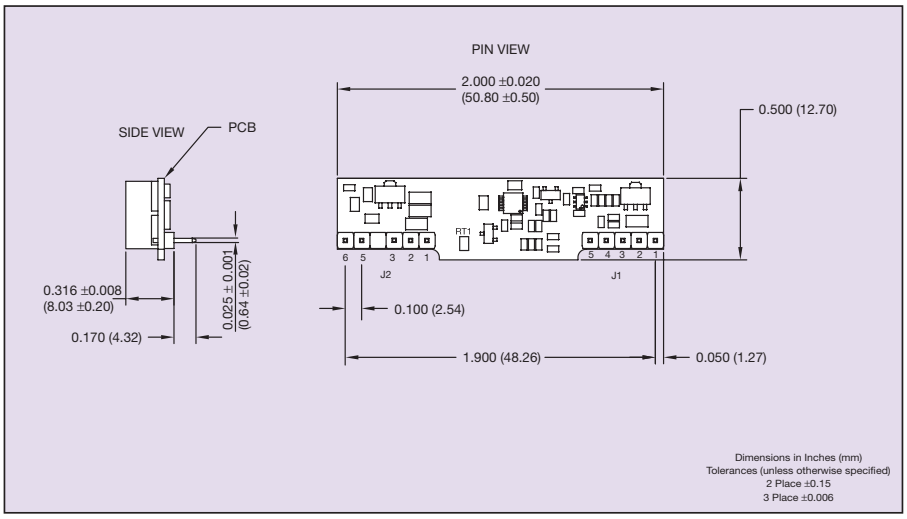

Figure 1: Mechanical Drawing - Horizontal Mount Version

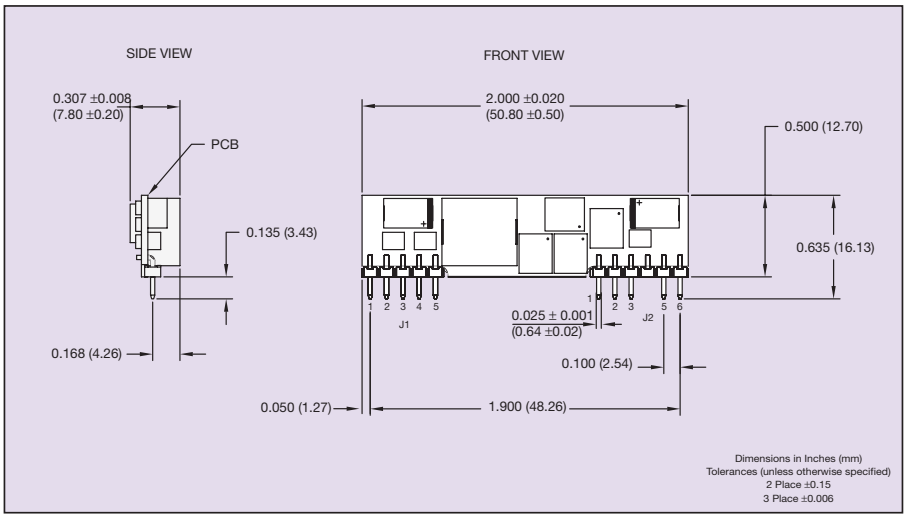

Figure 2: Mechanical Drawing - Vertical Mount Version