SIL40C Series

12 Vin single output

ARTESYN TECHNOLOGIES

NEW Product

- **40 A current rating**
- **Input voltage range: 10.2 Vdc to 13.8 Vdc**
- **Output voltage range: 0.9 Vdc to 5.0 Vdc**
- **Industry leading value**
  - **Cost optimized design**
- **Excellent transient response**
- **Output Voltage adjustability**
  - **Pathway for future upgrades**
  - **Supports silicon voltage migration**
  - **Resulting in reduced design-in and qualification time**
- **Designed in reliability: MTBF of >4 million hours per Telcordia SR-332**
- **Current share**
- **Available RoHS compliant**

RoHS 2002/95/EC

The SIL40C Series is a new high density open frame non-isolated converter for space-sensitive applications. Each model has a wide input range (10.2 Vdc to 13.8 Vdc) and offer a wide 0.9 Vdc to 5.0 Vdc output voltage range with a 40 A load. An external resistor adjusts the output voltage from its pre-set value of 0.9 V to any value up to 5 V. Typical efficiencies are 92% at full load conditions. The SIL40C series offers remote ON/OFF and overcurrent protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SIL40C reduces compliance costs and time to market.

c UL us TÜV

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 5)	0.9-5.0 Vdc
Output setpoint accuracy	1.0% trim resistors	±3.0%
Line regulation	Low line to high line	±0.2% max.
Load regulation	Full load to min. load	±1.5% max.
Min/max load		0 A/40 A
Overshoot	At turn-on	1.0% max.
Undershoot	At turn-off	100 mV max.
Ripple and noise 5 Hz to 20 MHz	(See Note 1)	50 mV pk-pk 15 mV rms
Transient response (See Note 2)	Deviation	75 mV 50 µs recovery to within regulation band

INPUT SPECIFICATIONS

Input voltage range		10.2-13.8 Vdc
Input current	Minimum load Remote OFF	290 mA 30 mA
Input current (max.)		22 A max @ Io max and Vin = 10.2 V
Input reflected ripple	(See Note 4)	150 mA pk-pk
Remote ON/OFF Logic compatibility ON OFF		 Active high >2.4 Vdc <0.8 Vdc
Start-up time (See Note 9)	Power up Remote ON/OFF	<30 ms <30 ms
Turn ON threshold		9.0 Vdc
Turn OFF threshold		7.6 Vdc

GENERAL SPECIFICATIONS

Efficiency		See table
Switching frequency	Fixed	300 kHz typ.
Approvals and standards	(See Note 7)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		28.3 g (1.0 oz)
MTBF	Telcordia SR-332, method II @ 40 °C	4,585,991 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 10)	Operating ambient, temperature Non-operating	0 °C to +80 °C -40 °C to +125 °C

PROTECTION

Short-circuit	Foldback, non-latching
Overtemperature	Hiccup, non-latching

RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	(See Note 11)	2 x 270 µF/20 mΩ esr max.
Output capacitance	(See Note 11)	3 x 680 µF/10 mΩ esr max.

International Safety Standard Approvals

c UL us — UL/cUL CAN/CSA 22.2 No. E139421
UL60950 file No. E139421

TÜV — TÜV Product Service (EN60950) Certificate No. B 03 08 19870 219
CB report and certificate to IEC60950

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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	OVP	OUTPUT VOLTAGE (12)	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY	REGULATION		MODEL NUMBER (8,13,14,15)
							LINE	LOAD	
200 W	10.2-13.8 Vdc	N/A	0.9-5.0 Vdc	0 A	40 A	92%	±0.2%	±1.5%	SIL40C-12SADJ-VJ

Part Number System with Options

SIL40C-12SADJ-VJ

- **Product Family**: SIL = Single in Line
- **Rated Output Current**: 40 = 40 Amps
- **Performance**: C = Cost Optimized
- **Packaging Options**: J = Pb-free (RoHS 6/6 compliant) (14)
- **Mounting Option**: V = Vertical Mount; H = Horizontal Mount
- **Number of Outputs**: SADJ = Single Adjustable Output
- **Input Voltage**: 12 = 10.2 Vdc to 13.8 Vdc

Output Voltage Adjustment of the SIL40C-12SADJ Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL40C-12SADJ series. 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 0.9 Vdc to 5.0 Vdc When the SIL40C-12SADJ series converter leaves the factory the output has been adjusted to the default voltage of 0.9 V

Notes

1 Measured as per recommended set-up. 2 x Cin = 270 µF (20 mΩ esr max, 3 x Cout = 680 µF (10 mΩ esr max).
2 di/dt = 10 A/µs, Vin = Nom, Tc = 25 °C, load change = 0.50 Io max. to 0.75 Io max. and 0.75 Io max. to 0.50 Io max.
3 External input fusing is recommended.
4 Measured with external filter. See Application Note 132 for details.
5 Uses external resistor from trim pin to output ground. See Application Note 132 for details.
6 Signal line assumed <3 m in length
7 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
8 The standard unit with the suffix '-V' is for vertical mounting. To order a unit with horizontal mounting, please add the suffix '-H' to the model number, e.g. SIL40C-12SADJ-HJ.
9 Power-up is the time from application of dc input to Power Good enabled. Remote ON/OFF is from ON/OFF asserted high to power good enabled.
10 See Application Note 132 for operation above 50 °C.
11 See Application Note 132 for ripple current requirements.
12 These models have a wide trim output. The unit has an output of 0.9 Vdc to 5 Vdc. An external resistor adjusts the output voltage.
13 To order a unit with a pin length of 0.150", please add suffix 'P4' to the model number, e.g. SIL40C-12SADJ-HP4J.
14 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
15 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.

PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	Trim
2	No Pin
3	Ground
4	Power good
5	Not connected
6	Current share
7	Ground
8	Ground
9	Remote ON/OFF
10	Remote sense -
11	Remote sense +
12	Vin
13	Vin
14	Vin
15	Vout
16	Vout
17	Ground
18	Vout
19	Ground
20	Vout
21	Ground
22	Vout
23	Ground
24	Vout

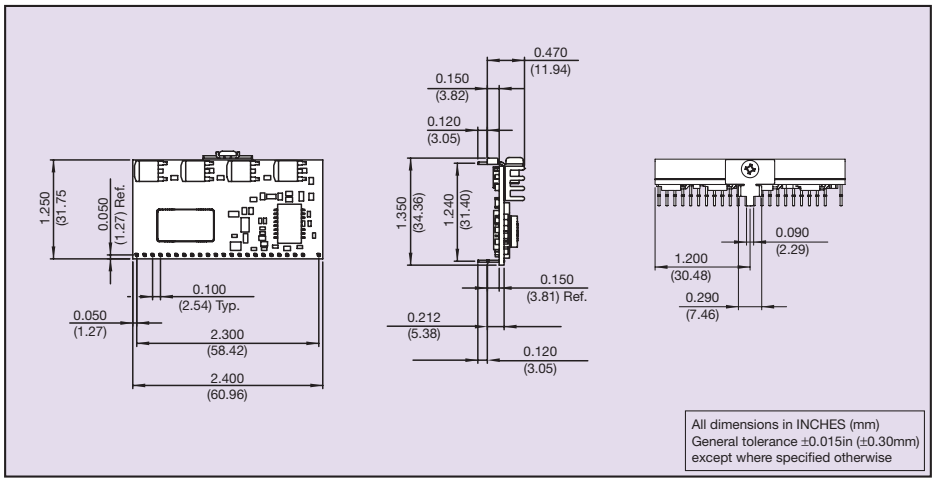

Figure 1: Mechanical Drawing - Horizontal Mount Version

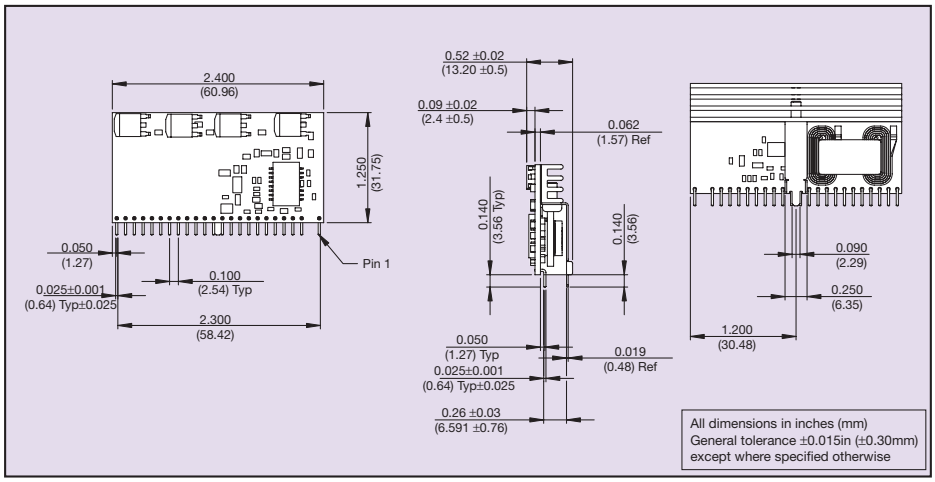

Figure 2: Mechanical Drawing - Vertical Mount Version