SIL06C Series

5Vin and 12Vin single output

ARTESYN TECHNOLOGIES

NEW Product

- **6A current rating**
- **Input voltage range: 4.5V - 5.5V or 10.2V - 13.8V**
- **Output voltage range: 0.9V - 5.0V**
- **Industry leading value**
  - **Cost optimised 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 >7 million hrs per Telcordia SR-332**



The SIL06C series is a new high density open frame non-isolated converter for space sensitive applications. Each model has a wide input range (4.5 - 5.5VDC or 10.2 - 13.8VDC) and offer a wide 0.9 - 5V output voltage range with a 6A load. An external resistor adjusts the output voltage from its pre-set value of 0.9V to any value up to the 5V maximum. Typical efficiencies for the models are 89% for the 5V input version and 91% for the 12V input version. The SIL06C series offers remote ON/OFF and over-current protection as standard. With full international safety approval including EN60950 and UL/cUL60950, the SIL06C reduces compliance costs and time to market.

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 7)	5V input models 12V input models	0.9V to 3.3V 0.9V to 5.0V
Output setpoint accuracy	With 1.0% trim resistors	±2.5%
Line regulation	Low line to high line	±0.2% max.
Load regulation	Full load to min. load	±0.5% max.
Min./max. load		0A/6A
Overshoot (at turn on)	5V input models 12V input models	3.0% max. 1.0% max.
Undershoot		100mV max.
Ripple and noise	5Hz to 20MHz (See Note 2)	See table
Transient response (See Note 1)	Deviation	75mV 150µs recovery to within regulation band

INPUT SPECIFICATIONS

Input voltage range	5V input model 12V input model	4.5 to 5.5VDC 10.2 to 13.8VDC
Input current	No load Remote OFF	50mA 5mA
Input current (max.) (See Note 9)	5V input model 12V input model	5.1A @ Io max. 1.6A @ Io max.
Input reflected ripple (See Note 2)	5V input model 12V input model	52mA (pk-pk) 56mA (pk-pk)
Remote ON/OFF Logic compatibility ON OFF		Active high >2.4VDC <0.8VDC
Start-up time (See Note 3)	Power up Remote ON/OFF	<20ms <20ms

INPUT SPECIFICATIONS (CONTD.)

Turn ON threshold	5Vin 12Vin	4.5VDC 9.0VDC
Turn OFF threshold	5Vin 12Vin	4.3VDC 7.5VDC

GENERAL SPECIFICATIONS

Efficiency		See Table
Switching frequency	Fixed	200kHz
Approvals and standards (pending)	(See Note 4)	TÜV Product Services IEC60950, UL/cUL60950
Material flammability		UL94V-0
Weight		9.3 (0.3oz)
MTBF	Telcordia SR-332	7,562,142 hours

ENVIRONMENTAL SPECIFICATIONS

Thermal performance (See Note 8)	Operating ambient, temperature Non-operating	0°C to +80°C -40°C to +125°C

PROTECTION

Short-circuit protection	Hiccup, non-latching

RECOMMENDED SYSTEM CAPACITANCE

Input capacitance	(See Note 11)	270µF/20mΩ esr max.
Output capacitance	(See Note 11)	680µF/10mΩ 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. B0211 19870 205
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 (TYP.)	REGULATION		MODEL NUMBER [5]
							LINE	LOAD	
20W	4.5-5.5VDC	N/A	0.9V - 3.3V	0A	6A	89%	±0.2%	±0.5%	SIL06C-05SADJ-V
30W	10.2-13.8VDC	N/A	0.9V - 5.0V	0A	6A	91%	±0.2%	±0.5%	SIL06C-12SADJ-V

Part Number System with Options

SIL06C-12SADJ-V

- **Product Family**: SIL = Single in Line
- **Rated Output Current**: 06 = 6Amps
- **Performance**: C = Cost Optimised
- **Mounting Option**: V = Vertical Mount, H = Horizontal Mount
- **Number of Outputs**: SADJ = Single Adjustable Output
- **Input Voltage**: 05 = 4.5V - 5.5V, 12 = 10.2V - 13.8V

Output Voltage Adjustment of the SIL06C Series

The ultra-wide output voltage trim range offers major advantages to users who select the SIL06C 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 0.9V to 5.0V. When the SIL06C series converter leaves the factory the output has been adjusted to the default voltage of 0.9V

Notes

1. di/dt = 10A/µs, Vin = Nom, Tc = 25°C, load change = 0.5 Io max. to 0.75 Io max. and 0.75 Io max. to 0.5 Io max.
2. Measured with external filter. See Application Note 131 for details.
3. 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
4. This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
5. 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. SIL06C-05SADJ-H.
6. Measured as per recommended set-up. Cin = 270µF (20mΩ esr max.). Cout = 680µF (10mΩ esr max.).
7. Uses external resistor from trim to output ground. Minimum value 485Ω for 5V model, 280Ω for 12V model. See Applications Note 131 for details.
8. Signal line assumed <3m.
9. External input fusing recommended.
10. See Application Note 131 for operation above 50°C.
11. See Application Note 131 for more details.
12. These models have a wide trim output. 5Vin has an output of 0.9V to 3.3V and 12 Vin has an output of 0.9V to 5V. An external resistor adjusts the output voltage.

Ripple and Noise Specification

Model	Output Voltage	Pk - Pk	RMS
5V input models	0.9 to 2.5V	30mV	15mV
	3.3V	40mV	15mV
12V input models	0.9 to 2.5V	40mV	20mV
	3.3 to 5V	50mV	20mV

CAUTION: High internal temperatures. Ensure that unit is not user accessible.

PIN CONNECTIONS	
PIN NUMBER	**FUNCTION**
1	Vout
2	Trim
3	Ground
4	Power Good
5	Remote ON/OFF
6	Vin
7	Mechanical support
8	Mechanical support
9	Mechanical support on horizontal version only

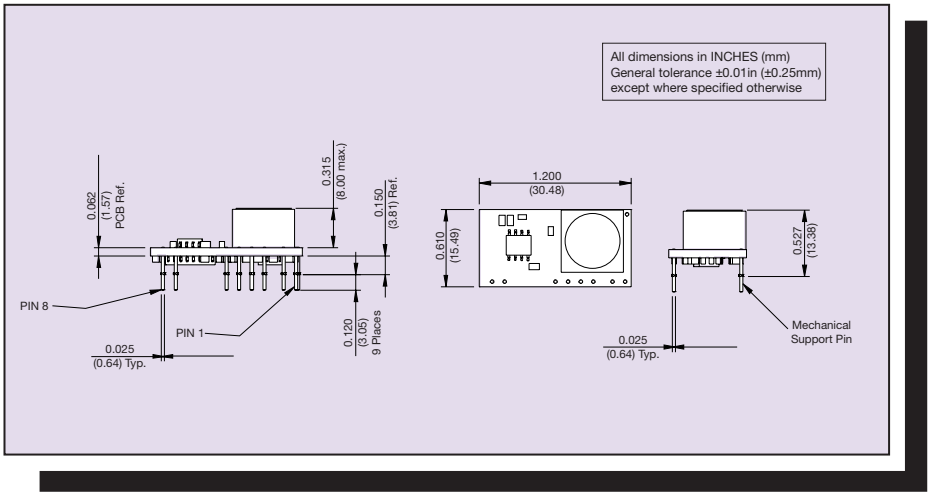


Figure 1: Mechanical Drawing - Horizontal Mount Version

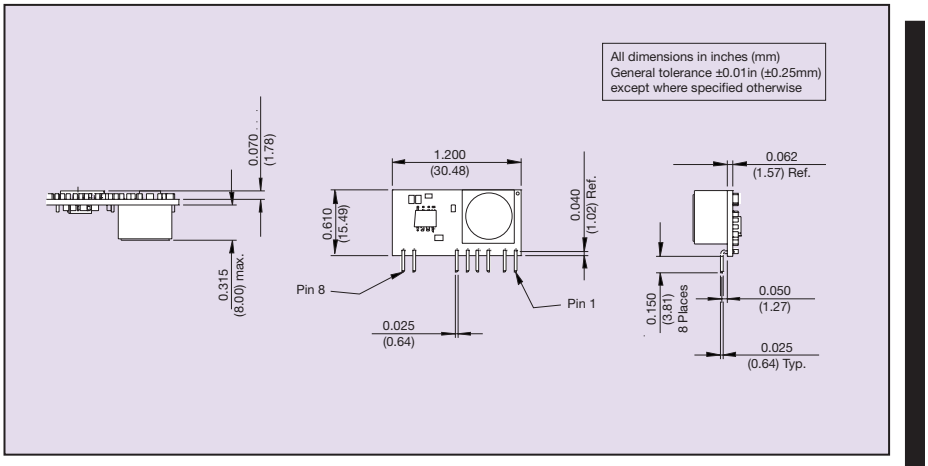


Figure 2: Mechanical Drawing - Vertical Mount Version

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