

# SXE15 Series

## Single output

- High efficiency topology, 87% typical at 5V
- Wide operating temperature, up to and exceeding 70°C (natural convection)
- 90% to 110% output trim
- No minimum load
- Overvoltage protection
- Remote on/off control



The SXE15 is a new high efficiency open frame isolated 15 Watt converter series in an industry standard footprint. All models in the series feature an input voltage range of 33 to 75VDC and are available in output voltages of 12V, 5V, 3.3V, 2.5V and 1.8V. The output voltage on each model is adjustable from 90% to 110% of the nominal value. Typical efficiencies for the models are 87% for the 5V, 86% for the 3.3V, 85% for the 2.5V and 12V and 83% for the 1.8V version. The SXE15 series also has a remote on/off capability with active high or active low logic. Overcurrent and overvoltage protection features are included as standard. With full international safety approval including EN60950 and cUL1950, the SXE15 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		90% to 110%
Total error band	(See Note 14)	±4% max.
Line regulation	1V8 and 2V5 models	0.5% max.
Low line to high line	3V3 and S05 models	0.1% max.
Load regulation	1V8 model	2.0% max.
Full load to min. load	2V5 model	1.5% max.
	3V3 and S05 models	0.5% max.
Minimum load	(See Note 13)	0%
Overshoot	1V8 and 2V5 models	4% max.
At turn-on and turn-off	3V3 and S05 models	None
Undershoot		None
Ripple and noise	1V8 and 2V5 models	40mV pk-pk
(See Note 1)		14mV rms
5Hz to 20MHz	3V3 and S05 models	70mV pk-p
		20mV rms
Transient response	1V8 and 2V5 models	150mV
(See Note 2)	3V3 and S05 models	100mV
Typical deviation		400µs recovery to within total error band

#### INPUT SPECIFICATIONS

Input voltage range	48Vin nominal	33 to 75VDC
Input current	No load	35mA max.
	Remote OFF	25mA max.
Input current (max.)	(See Note 4)	0.55A max. @ Io max. and Vin = 33 to 75V
Input reflected ripple	(See Note 6)	5mA (pk-pk) typ.
Active high remote ON/OFF		(See Note 8)
Logic compatibility	Open collector ref to -input	
ON	Open circuit or >2VDC	
OFF	<1.2VDC	
Undervoltage lockout	Power up	33V (typ.)
	Power down	30V (typ.)
Start-up time	Power up	1.5ms (typ.)
(See Note 7)	Remote ON/OFF	2.5ms (typ.)

#### EMC CHARACTERISTICS

Conducted emissions	EN55022 (See Note 3)	Level A
	EN55022 (See Note 3)	Level B
Radiated emissions	EN55022 (See Longform data sheet)	Level B
Immunity:		
ESD air	EN61000-4-2 8kV, 15kV	
ESD contact	EN61000-4-2 6kV, 8kV	
Radiated field enclosure	EN61000-4-3 10V/m	
Conducted (DC power)	EN61000-4-6 10V	
Conducted (signal)	EN61000-4-6 10V	(See Note 12)
Input transients	ETS 300 132-2, ETR 283	

#### GENERAL SPECIFICATIONS

Efficiency		See table
Operational insulation	Input/output	1500VDC
Switching frequency	Fixed	265kHz typ.
Approvals and standards		UL/cUL1950, EN60950 TÜV Rheinland
(See Notes 5 and 11)		
Material flammability		UL94V-0
Weight		12g (0.42oz)
MTBF	MIL-HDBK-217F	>600,000 hours
Representative model:	48S05 @ 48Vin, 40°C, 100% load ground benign BELLCORE 332	>1,500,000

#### ENVIRONMENTAL SPECIFICATIONS

Thermal performance	Operating ambient temp. (5V and 3.3V)	-40°C to +65°C
(See Note 9)	Operating ambient temp. (1.8V, 2.5V and 12V)	-40°C to +70°C
	Non-operating (All models)	-40°C to +120°C

# SXE15 Series

## Single output

DC/DC CONVERTERS | 10.8-15W High Efficiency DC/DC Converters

2

For the most current data and application support visit [www.artesyn.com/powergroup/products.htm](http://www.artesyn.com/powergroup/products.htm)

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION		MODEL NUMBER <sup>(8)</sup>
							LINE	LOAD	
10.8W	33-75VDC	2.3VDC	1.8V	0A	6A	83%	0.3%	2.0%	SXE15-48S1V8
15W	33-75VDC	3.2VDC	2.5V	0A	6A	85%	0.3%	1.5%	SXE15-48S2V5
15W	33-75VDC	4VDC	3.3V	0A	4.5A	86%	0.1%	0.5%	SXE15-48S3V3
15W	33-75VDC	6VDC	5.0V	0A	3A	87%	0.1%	0.5%	SXE15-48S05
15W	33-75VDC	15VDC <sup>(10)</sup>	12.0V	0A	1.25A	85%	0.1%	0.5%	SXE15-48S12

### Notes

- Measured as per recommended set-up. See Application Note 116 for details.  $di/dt = 0.1A/\mu s$ ,  $V_{in} = 48VDC$ ,  $T_c = 25^\circ C$ , load change = 0.5 lo max. to 0.75 lo max. and 0.75 lo max. to 0.5 lo max.
- The SXE15 meets level A and level B conducted emissions only with external components connected before the input pins to the converter. See Application Note 116 for details.
- Recommended input fusing is a 2A HRC 200V rated fuse.
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- Measured with external Pi filter. See Application Note 116 for further details.
- Start-up into resistive load.
- Active low remote on/off is available. Standard product is active high. Designate with the Suffix '-R' e.g. SXE15-48S05-R.
- Operating ambient temperatures are specified at natural convection. Higher operating temperatures are possible with increased airflow. See Application Note 116 for further details.
- SXE15-48S12 below 0.2A loading. OVP is TVS and 17V typical.
- Approvals pending for the SXE12-48S12.
- Signal line assumed < 3m in length.
- A 5% minimum load is required to maintain the output voltage regulation over all operating conditions for the SXE15-48S12.
- This parameter is calculated at worst case line, load, temperature and initial settings.

### PROTECTION

Short circuit protection	Continuous
Overvoltage protection	Latching clamp

### TELECOM SPECIFICATION

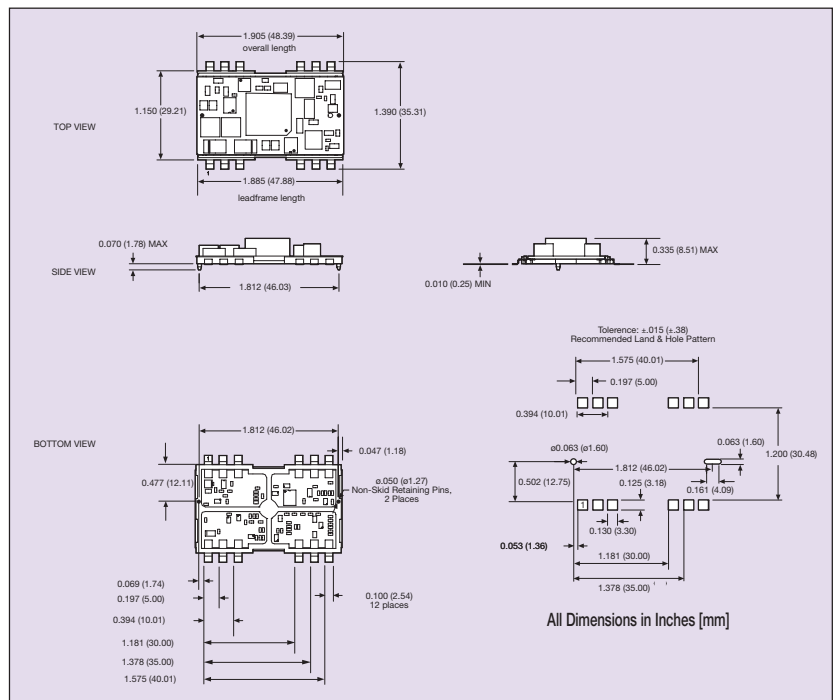
Central office interface A	ETS300-132-2, input voltage and current requirements
----------------------------	--

**CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.**

### International Safety Standard Approvals

**UL** UL/cUL 1950 3rd edition. File No. E135734  
**TÜV** TÜV Rheinland. Certificate No. R2074133

PIN CONNECTIONS	
PIN NUMBER	FEATURE
1	Vout +
2	Vout -
3	N/C
4	Trim
5	N/C
6	N/C
7	N/C
8	On/Off
9	N/C
10	N/C
11	Vin -
12	Vin +



Data Sheet © Artesyn Technologies® 2002

The information and specifications contained in this data sheet are believed to be correct at time of publication. However, Artesyn Technologies accepts no responsibility for consequences arising from printing errors or inaccuracies. Specifications are subject to change without notice. No rights under any patent accompany the sale of any such product(s) or information contained herein.

Please consult our website for the following items: ✓ Application Note ✓ Longform Data Sheet

[www.artesyn.com](http://www.artesyn.com)