

SX Series



- Chassis & Eurocard Mounting
- Rail Input Applications Options
- UL Approved
- Internal Redundancy Diodes Available
- Non-standard Configurations Available
- Current Share & Monitor Signals
- Remote On/Off

Specification

Input

Input Voltage	• See tables
Input Current	• See tables
Inrush Current	• See tables
Rail Input	• 110 V nominal, 77-250 VDC range 385 VDC - 20 ms surge 1800 VDC - 50 μ s fast transients 66 VDC - 100 ms droop (200 & 300 W models only)
Input Protection	• Reverse polarity protection standard on all inputs except 12 V units

Output

Output Voltage	• See tables
Output Voltage Trim	• See tables
Initial Set Accuracy	• $\pm 1\%$ max
Minimum Load	• 10% on output V1 of multi-output models and when operating single output models in parallel
Start Up Delay	• 600 ms max
Start Up Rise Time	• 150 ms max
Hold Up Time	• 12-28 ms depending on model
Line Regulation	• <0.5% single output & V1 of multi-output units, <1% aux outputs V min to V max
Load Regulation	• Single output models: <1% for a 0-100% load change. Multi-output models: V1 <1% for 20-80% load change, V2 <4% for 20-80% load change, V3, V4 & V5 <2% for 20-80% load change
Transient Response	• 2% max. deviation, recovery to within 0.25% in 1 ms for a 10% load change
Ripple & Noise	• See tables, measured at 20MHz BW
Overvoltage Protection	• See tables
Overtemperature Protection	• Fitted as standard to fan-cooled models
Overload Protection	• Single output models, constant current at approx 110% I nom. Multi-output models, V1, V4 & V5 approx. 3x I nom for 10 s then foldback, V2 & V3 1500 A ² s by Polyswitch™
Short Circuit Protection	• Constant current
Temperature Coefficient	• 0.02% / °C single output models & main output of multi-output models. 0.04% / °C on auxiliary outputs
Remote Sense	• Compensates for up to 0.5 V cable drop ⁽¹⁾

General

Efficiency	• 75% typical (depending on model)
Isolation	• 6000 VDC Input to Output (Y caps disconnected), input voltage >100 VDC 1000 VDC Input to Output, input voltage <100 VDC 2200 VDC Input to Ground 2200 VDC Output to Chassis
Switching Frequency	• 30 kHz typical
Signals	• See SX (AC) signals table
MTBF	• Typically 110 kHrs at 20 °C per MIL-HDBE-217E. Consult sales for individual models

Environmental

Operating Temperature	• -20 °C to +40 °C, see SX (AC) derating curves
Operating Humidity	• 90% RH, non-condensing
Storage Temperature	• -25 °C to +85 °C
Operating Altitude	• 3000 m max
Shock	• Non-operating, 100 mm drop on to chassis face
Vibration	• Operating 5-50 Hz, 0.05 mm pk-pk, 50-100 Hz 0.025 mm pk-pk

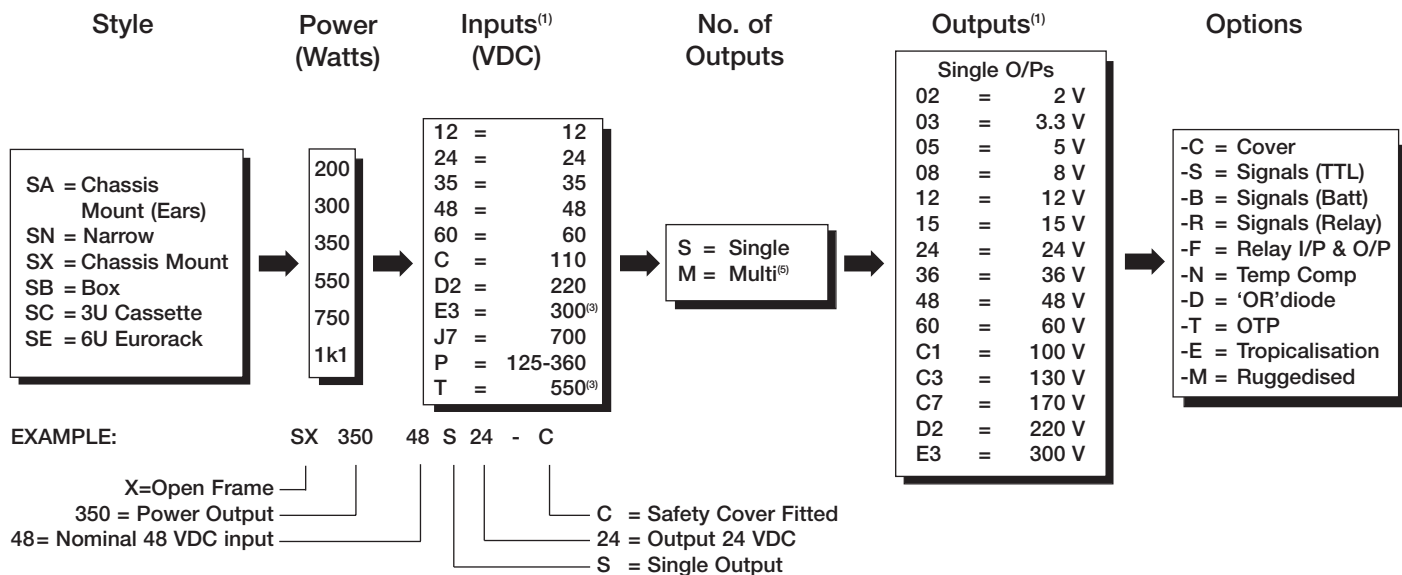
EMC & Safety

Emissions	• EN55022, level B conducted EN55022, level A radiated
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
ESD Immunity	• EN61000-4-2, level 3 Perf Criteria A
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria B
Surge	• EN61000-4-5, level 3 Perf Criteria B
Conducted Immunity	• EN61000-4-6, level 3 Perf Criteria A
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms Perf Criteria A, B, B
Safety Approvals	• IEC950, UL60950

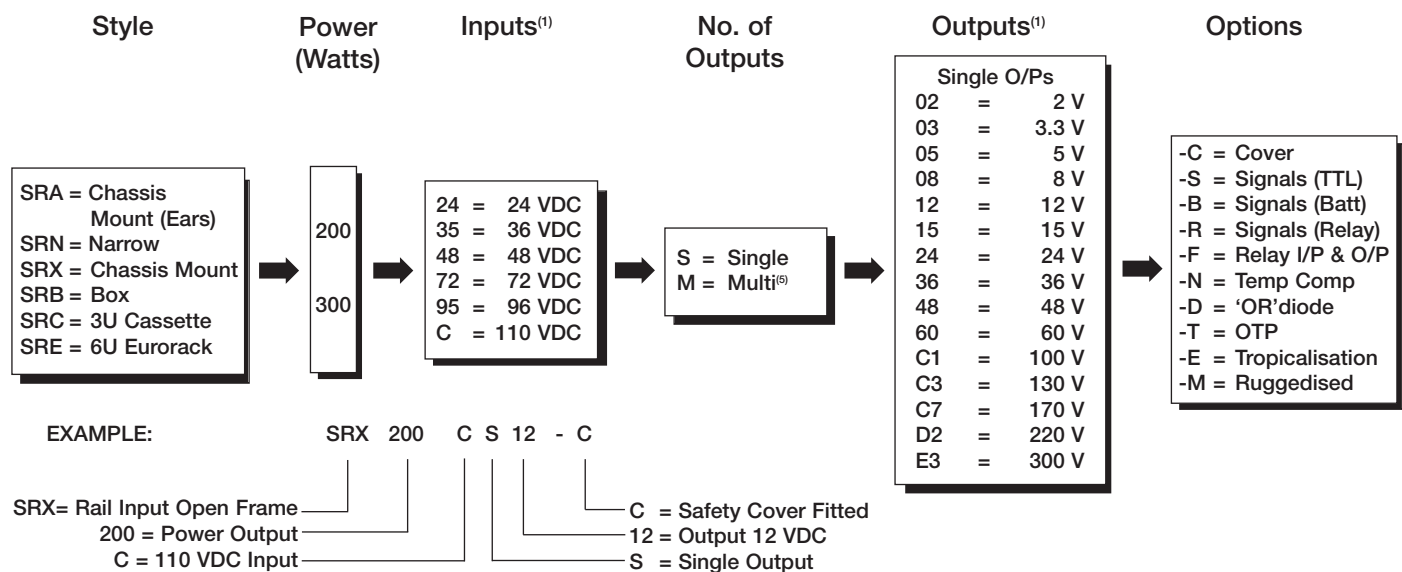
Notes

1. Fitted to single output models both positive & negative line. Fitted to multi-output models positive line only. Not available when operating in parallel.

Model Numbering - Standard Unit



Model Numbering - Rail Input Unit



Input Specification - Standard Unit

Nominal Input Voltage (VDC)	Input Voltage Range	Full Load Input Current						Inrush Current						Code
		200	300	350	550	750	1k1	200	300	350	550	750	1k1	
12 VDC	11-15 V	23 A	34 A	40 A	63 A			100 A	100 A	200 A	200 A			12
24 VDC	21-30 V	11 A	16 A	19 A	30 A			100 A	100 A	200 A	200 A			24
35 VDC	30-45 V	8 A	11 A	13 A	20 A			30 A	30 A	50 A	50 A			35
48 VDC	40-60 V	5 A	9 A	9 A	14 A	19 A		30 A	30 A	50 A	50 A	50 A		48
60 VDC	48-75 V	4 A	6 A	7 A	11 A	15 A		30 A	30 A	50 A	50 A	50 A		60
110 VDC	90-135 V	3 A	4 A	5 A	7 A	10 A	13.0 A	30 A	30 A	50 A	50 A	50 A	50 A	C
220 VDC	180-270 V	1 A	2 A	2 A	3 A	5 A	6.0 A	25 A	25 A	25 A	25 A	25 A	25 A	D2
300 VDC	250-370 V	1 A	1 A	1 A	2 A	3 A	4.5 A	25 A	25 A	25 A	25 A	25 A	25 A	E3
125-360 VDC	125-360 V	2 A	3 A	4 A	6 A	8 A		25 A	25 A	25 A	25 A	25 A		P
550 VDC	425-635 V	1 A	1 A	1 A	2 A	2 A	2.5 A	40 A	40 A	40 A	40 A	40 A	40 A	T
700 VDC	600-800 V	0.3 A	0.5 A	0.6 A	0.9 A	1.2 A	2.0 A	60 A	60 A	60 A	60 A	60 A	60 A	J7

Notes

1. Other non-standard inputs and outputs available. Contact sales for details.
2. For options, application notes and mechanical details, see SX AC datasheet.
3. Not UL approved.

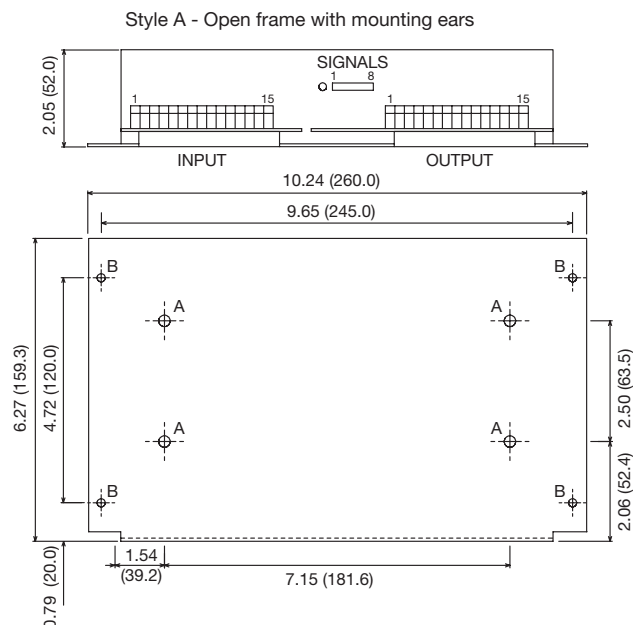
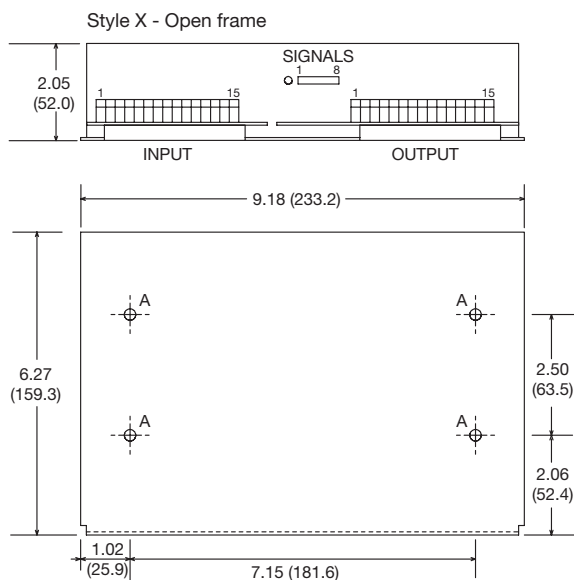
4. Rail input units not UL approved.
5. Multi outputs available. Contact sales for details.

Output Voltage & Current Ratings

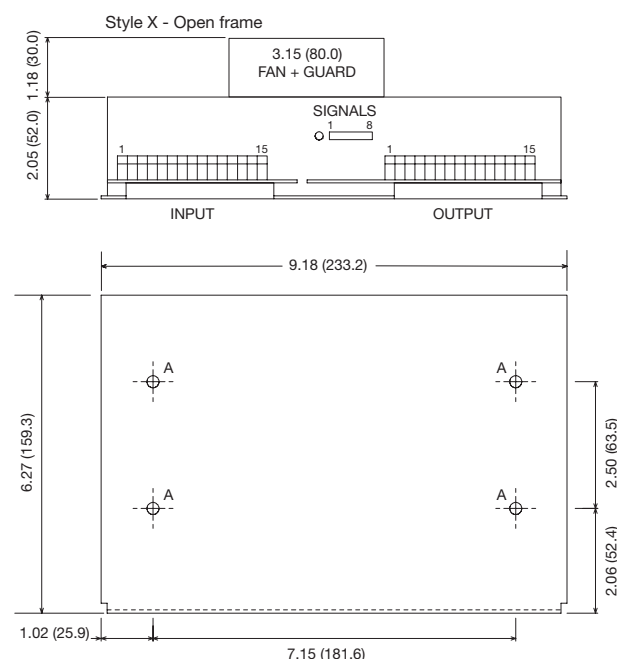
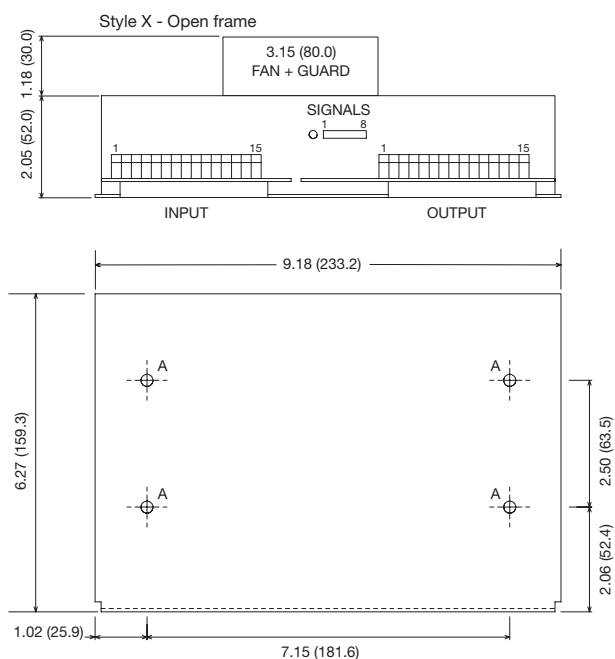
CODE:	S02	S03	S05	S08	S12	S15	S24	S36	S48	S60	SC1	SC3	SC7	SD2	SE3
Nom. Output Voltage	2.0 V	3.3 V	5.0 V	8.0 V	12.0 V	15.0 V	24.0 V	36.0 V	48.0 V	60.0 V	96.0 V	130.0 V	170.0 V	220.0 V	300.0 V
Voltage Adjustment	Min	1.6 V	2.6 V	4.0 V	7.0 V	11.0 V	13.8 V	22.0 V	33.0 V	44.0 V	55.0 V	88.0 V	120.0 V	155.0 V	200.0 V
	Max	2.4 V	4.0 V	6.0 V	9.0 V	14.0 V	17.5 V	29.0 V	42.0 V	57.0 V	70.0 V	114.0 V	155.0 V	202.0 V	260.0 V
OVP Setting (typ.)	2.5 V	4.2 V	6.4 V	10.2 V	15.3 V	19.1 V	30.7 V	45.9 V	61.2 V	76.5 V	127.5 V	166.5 V	217.5 V	281.5 V	383.5 V
Output Current	200W	62.0 A	47.0 A	36.0 A	24.0 A	17.0 A	14.0 A	8.4 A	5.6 A	4.2 A	3.3 A	2.1 A	1.6 A	1.2 A	1.0 A
	300W	92.0 A	70.0 A	53.0 A	36.0 A	25.0 A	20.0 A	12.5 A	8.3 A	6.3 A	5.0 A	3.0 A	2.3 A	1.8 A	1.4 A
Ripple & Noise	<0.2% rms, <2% pk-pk					<0.1% rms, <1% pk-pk					<0.05% rms, <0.5% pk-pk				

Mechanical Details

200 Watt Models



300 Watt Models



Notes

1. For alternative mechanical formats see SX AC series datasheet.

Output Voltage & Current Ratings



350 & 550 Watt Models

CODE:	S02	S03	S05	S08	S12	S15	S24	S36	S48	S60	SC1	SC3	SC7	SD2	SE3
Nom. Output Voltage	2.0 V	3.3 V	5.0 V	8.0 V	12.0 V	15.0 V	24.0 V	36.0 V	48.0 V	60.0 V	96.0 V	130.0 V	170.0 V	220.0 V	300.0 V
Voltage Adjustment	Min	1.6 V	2.6 V	4.0 V	7.0 V	11.0 V	13.8 V	22.0 V	33.0 V	44.0 V	55.0 V	88.0 V	120.0 V	155.0 V	200.0 V
	Max	2.4 V	4.0 V	6.0 V	9.0 V	14.0 V	17.5 V	29.0 V	42.0 V	57.0 V	70.0 V	114.0 V	155.0 V	202.0 V	260.0 V
OVP Setting (typ.)	2.5 V	4.2 V	6.4 V	10.2 V	15.3 V	19.1 V	30.7 V	45.9 V	61.2 V	76.5 V	127.5 V	166.5 V	217.5 V	281.5 V	383.5 V
Output Current	350W	108.0 A	82.0 A	62.0 A	42.0 A	29.0 A	23.0 A	15.0 A	10.0 A	7.3 A	5.8 A	3.5 A	2.7 A	2.1 A	1.6 A
	550W	169.0 A	128.0 A	98.0 A	65.0 A	46.0 A	37.0 A	23.0 A	15.0 A	11.0 A	9.0 A	5.5 A	4.2 A	3.2 A	2.5 A
Ripple & Noise	<0.2% rms, <2% pk-pk				<0.1% rms, <1% pk-pk				<0.05% rms, <0.5% pk-pk						

750 Watt Models

CODE:	S02	S03	S05	S08	S12	S15	S24	S36	S48	S60	SC1	SC3	SC7	SD2	SE3
Nom. Output Voltage	2.0 V	3.3 V	5.0 V	8.0 V	12.0 V	15.0 V	24.0 V	36.0 V	48.0 V	60.0 V	96.0 V	130.0 V	170.0 V	220.0 V	300.0 V
Voltage Adjustment	Min				11.0 V	13.8 V	22.0 V	33.0 V	44.0 V	55.0 V	88.0 V	120.0 V	155.0 V	200.0 V	250.0 V
	Max				14.0 V	17.5 V	29.0 V	42.0 V	57.0 V	70.0 V	114.0 V	155.0 V	202.0 V	260.0 V	360.0 V
OVP Setting (typ.)					15.3 V	19.1 V	30.7 V	45.9 V	61.2 V	76.5 V	127.5 V	166.5 V	217.5 V	281.5 V	383.5 V
Output Current					63.0 A	50.0 A	31.0 A	21.0 A	16.0 A	12.5 A	7.5 A	5.8 A	4.4 A	3.4 A	2.5 A
Ripple & Noise					<0.1% rms, <1% pk-pk				<0.05% rms, <0.5% pk-pk						

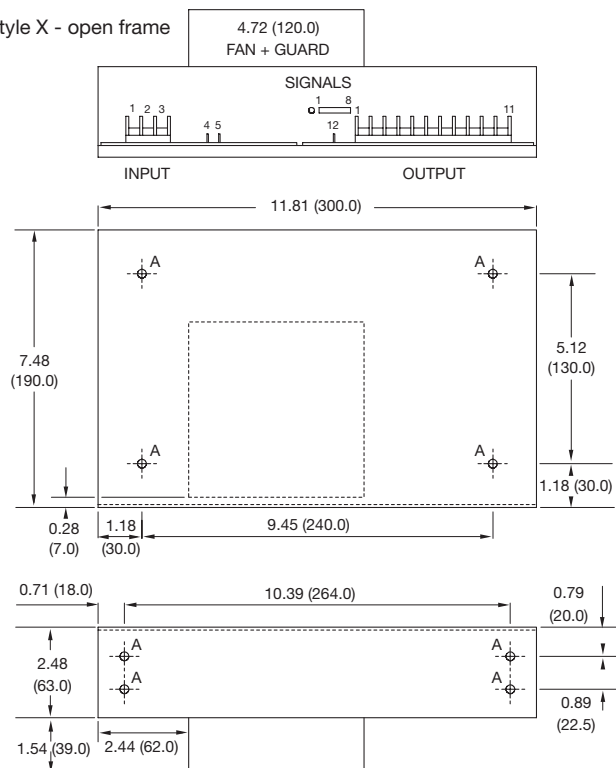
1k1 Watt Models

CODE:	S02	S03	S05	S08	S12	S15	S24	S36	S48	S60	SC1	SC3	SC7	SD2	SE3
Nom. Output Voltage	2.0 V	3.3 V	5.0 V	8.0 V	12.0 V	15.0 V	24.0 V	36.0 V	48.0 V	60.0 V	96.0 V	130.0 V	170.0 V	220.0 V	300.0 V
Voltage Adjustment	Min						22.0 V	33.0 V	44.0 V	55.0 V	88.0 V	120.0 V	155.0 V	200.0 V	250.0 V
	Max						29.0 V	42.0 V	57.0 V	70.0 V	114.0 V	155.0 V	202.0 V	260.0 V	360.0 V
OVP Setting (typ.)							30.7 V	45.9 V	61.2 V	76.5 V	127.5 V	166.5 V	217.5 V	281.5 V	383.5 V
Output Current							46.0 A	31.0 A	23.0 A	18.5 A	11.0 A	8.5 A	6.5 A	5.0 A	3.7 A
Ripple & Noise					<0.1% rms, <1% pk-pk				<0.05% rms, <0.5% pk-pk						

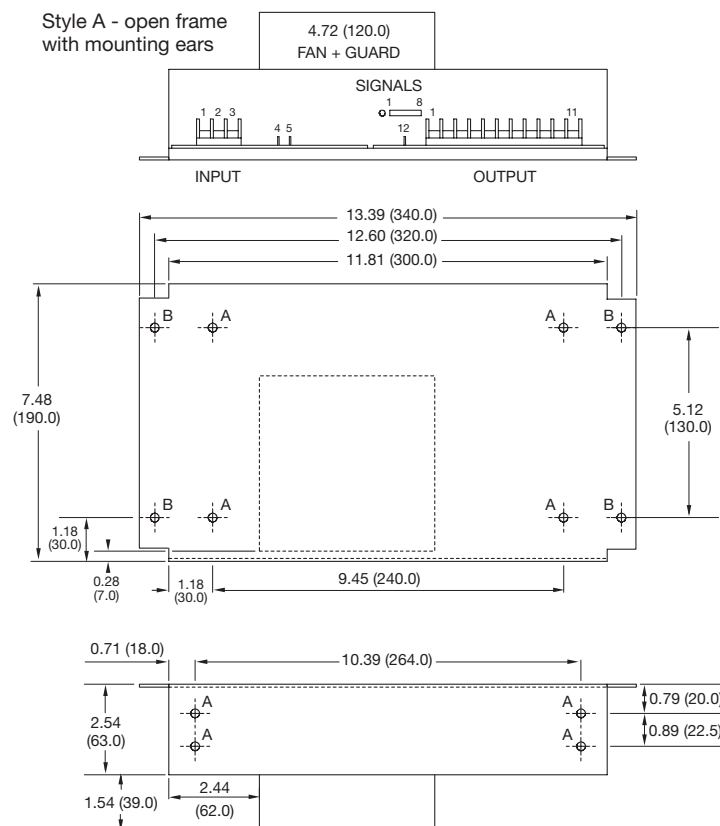
Mechanical Details

350, 550, 750 & 1k1 Watt Models

Style X - open frame



Style A - open frame
with mounting ears



Notes

1. For alternative mechanical formats see SX AC series datasheet.
2. 350 Watt models do not have a fan & fan guard.