

Technical Specifications

Symmetra PX 10–40 kW 208 V



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Table of Contents

Technical Data	1
Model List	1
Efficiency	1
Efficiency Curves.....	1
Batteries	2
Efficiency DC to AC.....	2
Battery Run-Times APC Solutions.....	3
Battery Discharge Current.....	4
End of Discharge Voltage.....	5
Battery Gassing Rates.....	5
Battery Material Safety Data Sheet.....	5
Emergency Power Off	6
Compliance	6
Facility Planning	7
AC Input Specifications	7
AC Bypass Input Specifications	7
AC Output Specifications	7
Battery Specifications	8
Recommended Cable Sizes	8
Recommended Cable Logs and Crimping Tool.....	9
Overcurrent Protective Devices in Single Systems	9
Physical	10
Weights and dimensions.....	10
Shipping Weights and dimensions.....	10
Environmental	10
Heat Dissipation.....	10
Drawings	11
Symmetra PX 40 kW UPS with ISX PDU	12
Options	13
Hardware Options	13
Battery Systems.....	13
Symmetra Accessories.....	13
UPS Network Management Cards.....	13

Symmetra Power Module	13
Configurable Power Distribution	13
Maintenance Bypass Panel.....	13
Configuration Options	14
APC by Schneider Electric Limited Factory Warranty	15
Three Phase Power Products or Cooling Solutions One-Year Factory Warranty	15
Terms of Warranty.....	15
Non-transferable Warranty	15
Assignment of Warranties	15
Drawings, Descriptions	15
Exclusions	15
Warranty Claims	16

Technical Data

Model List

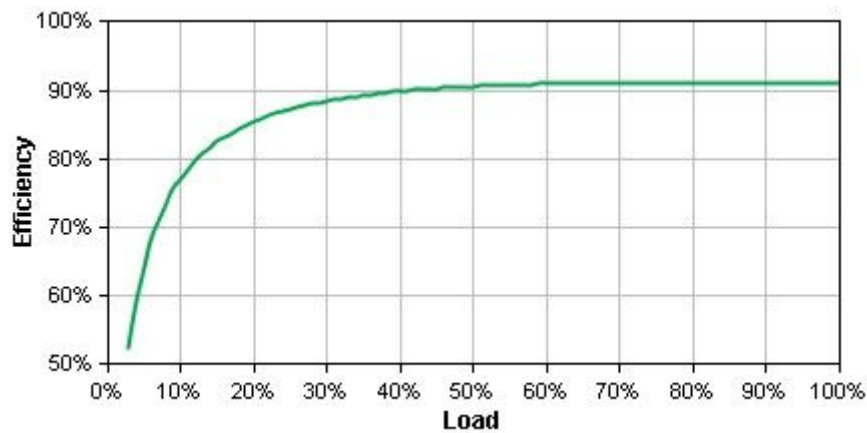
- Symmetra PX 10 kW Scalable to 40 kW N+1, 208 V
- Symmetra PX 20 kW Scalable to 40 kW N+1, 208 V
- Symmetra PX 30 kW Scalable to 40 kW N+1, 208 V
- Symmetra PX 40 kW Scalable to 40 kW N+1, 208 V

Efficiency

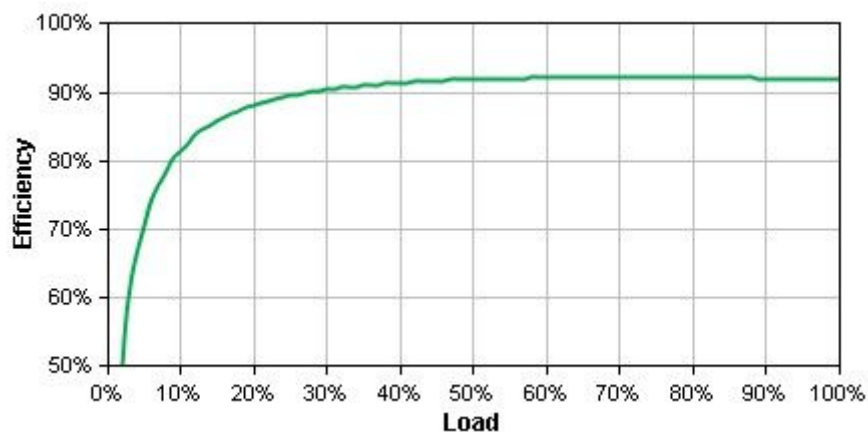
System	25% load	50% load	75% load	100% load
Symmetra PX 10 kW	87.3	90.6	91.2	91.1
Symmetra PX 20 kW	89.5	91.9	92.2	92.0
Symmetra PX 30 kW	90.4	92.4	92.6	92.3
Symmetra PX 40 kW	90.8	92.7	92.7	92.4

Efficiency Curves

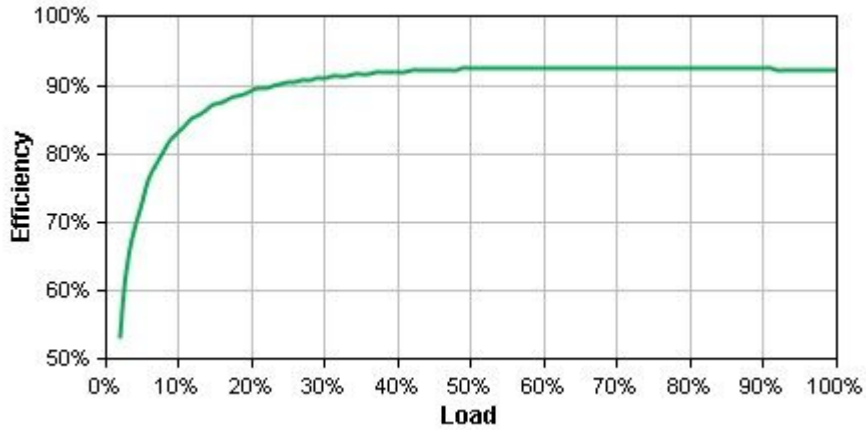
Symmetra PX 10 kW Scalable to 40 kW



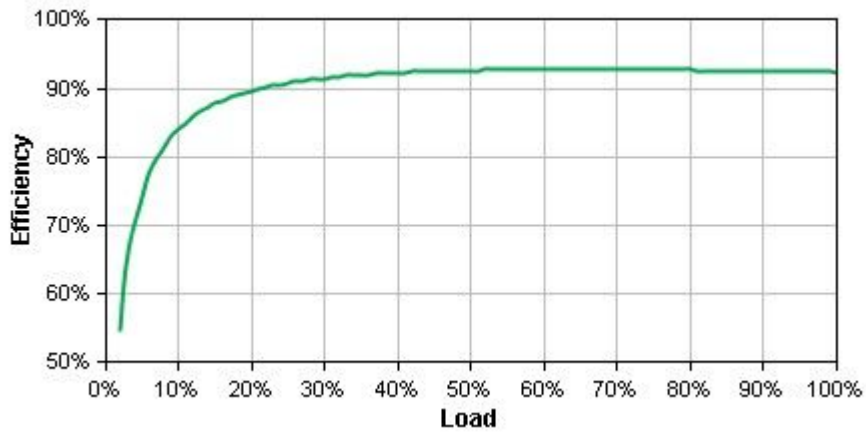
Symmetra PX 20 kW Scalable to 40 kW



Symmetra PX 30 kW Scalable to 40 kW



Symmetra PX 40 kW Scalable to 40 kW



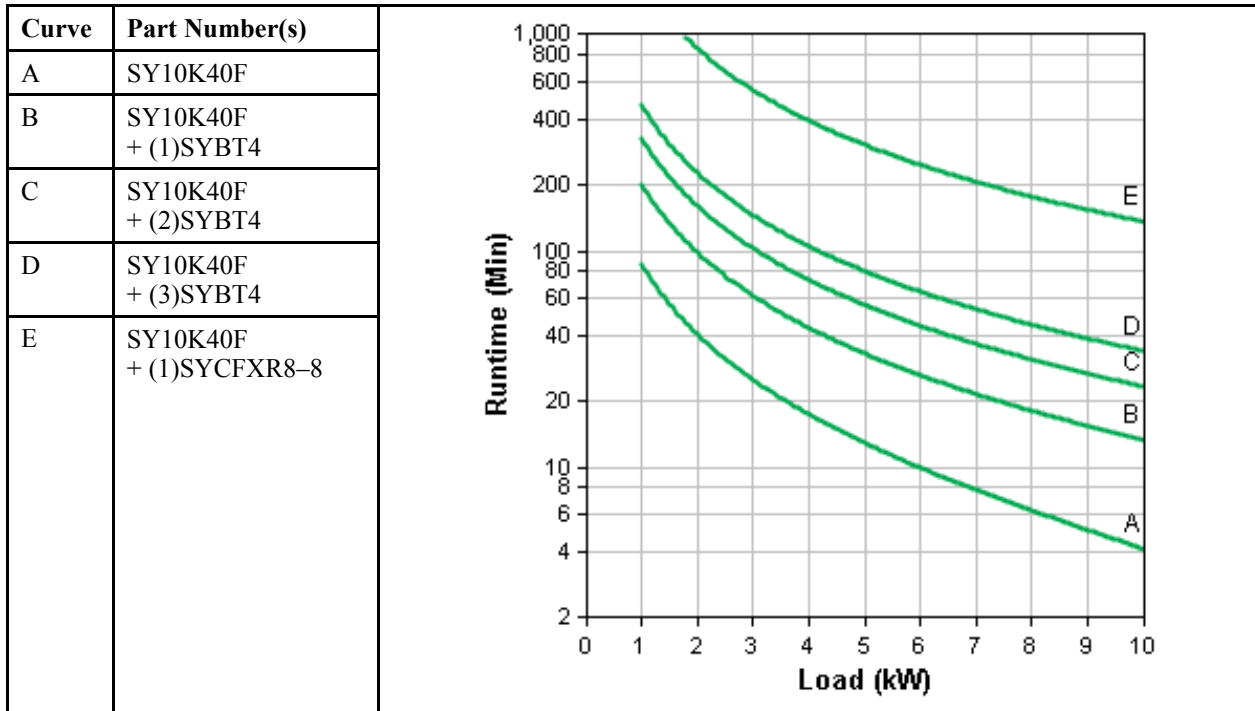
Batteries

Efficiency DC to AC

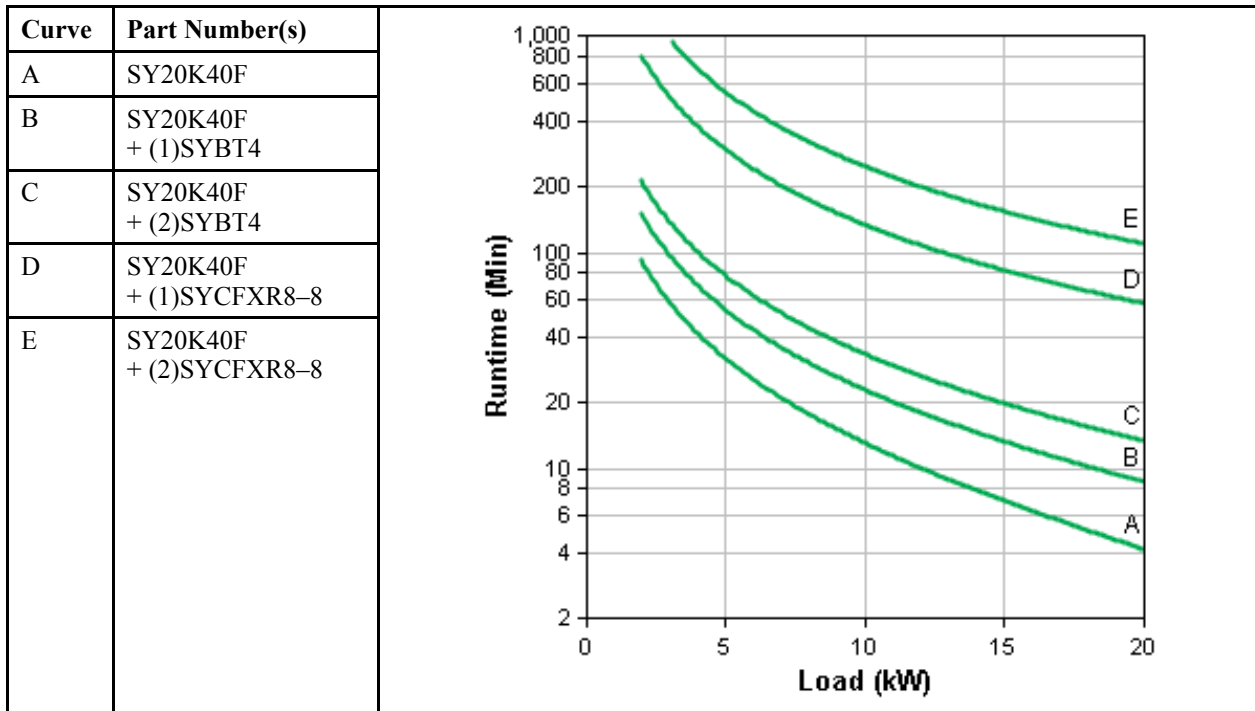
	Symmetra PX 10 kW Scalable to 40 kW	Symmetra PX 20 kW Scalable to 40 kW	Symmetra PX 30 kW Scalable to 40 kW	Symmetra PX 40 kW
Efficiency at nominal battery voltage (%)	89%	89%	89%	89%

Battery Run-Times APC Solutions

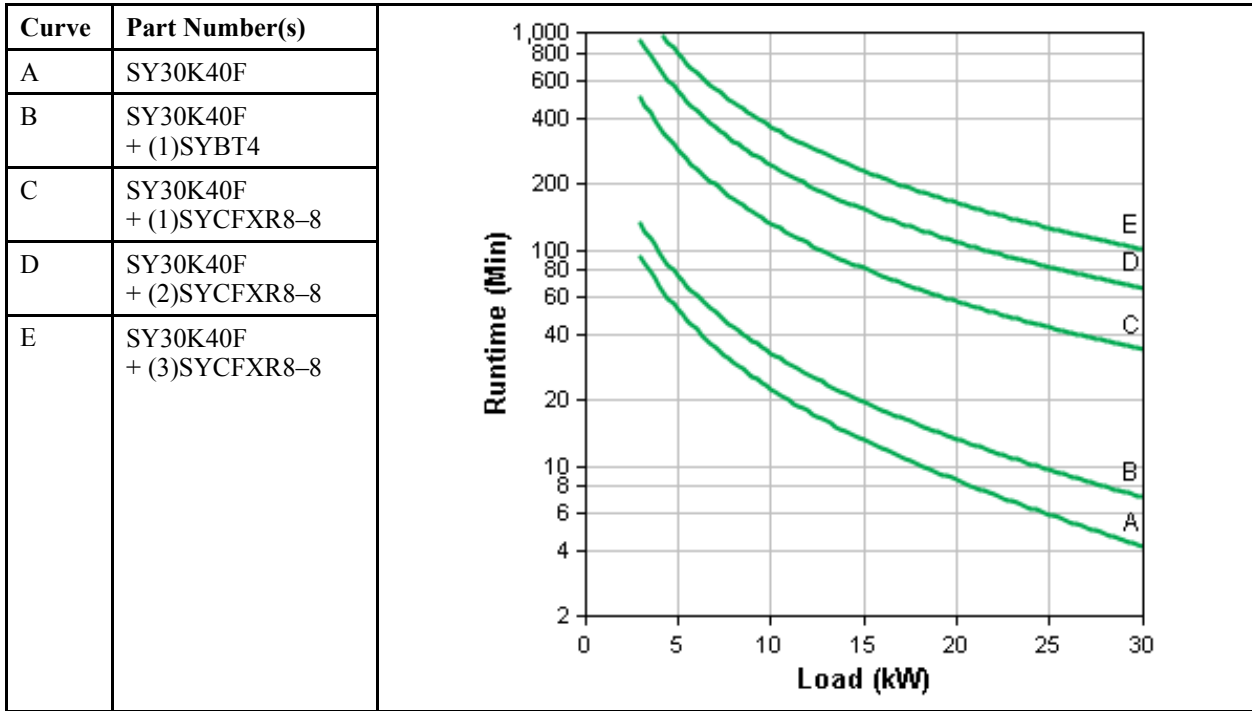
Symmetra PX 10 kW Scalable to 40 kW



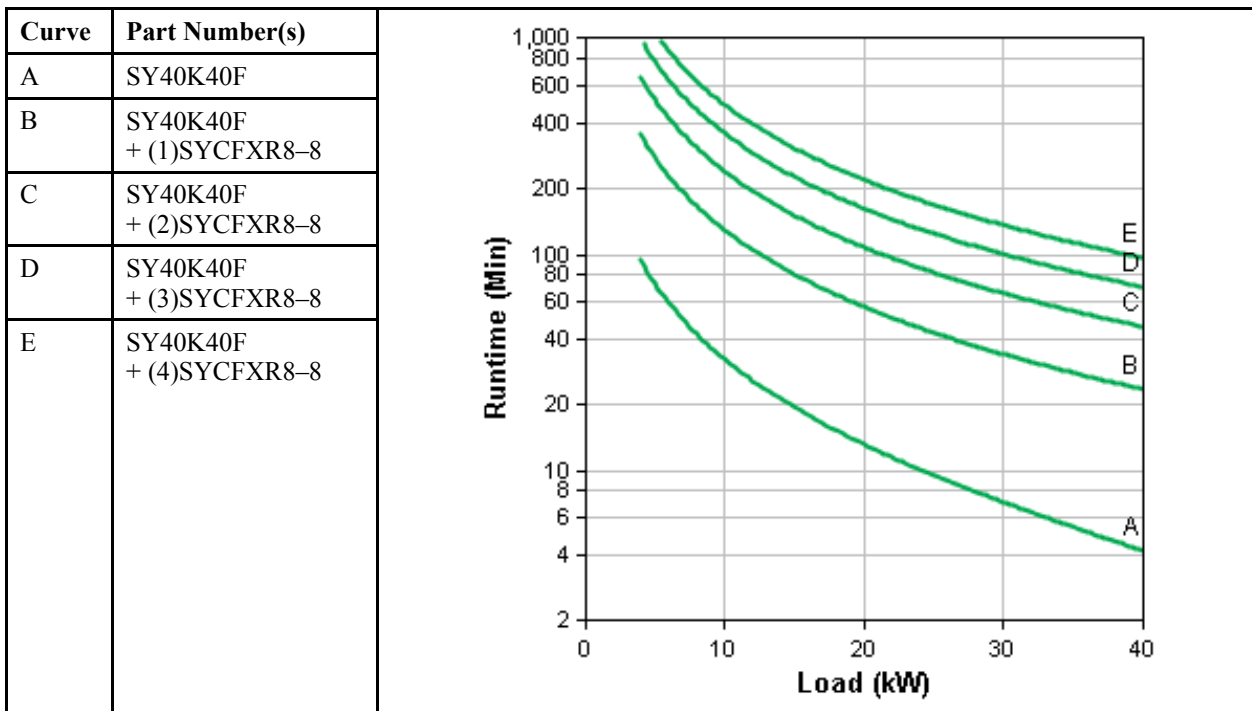
Symmetra PX 20 kW Scalable to 40 kW



Symmetra PX 30 kW Scalable to 40 kW



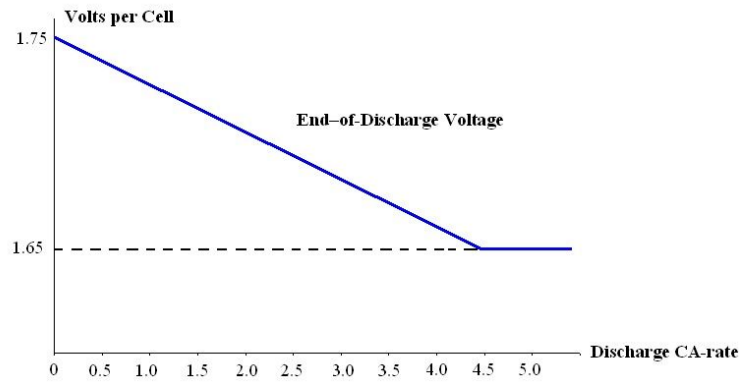
Symmetra PX 40 kW



Battery Discharge Current

	Symmetra PX 40 kW
I _{bat} @ V _{bat} nominal, 100% load	114.5
I _{bat} @ V _{bat} min, 100% load	139.1

End of Discharge Voltage



Battery Gassing Rates



Note: We recommend that room ventilation is based on maximum values.

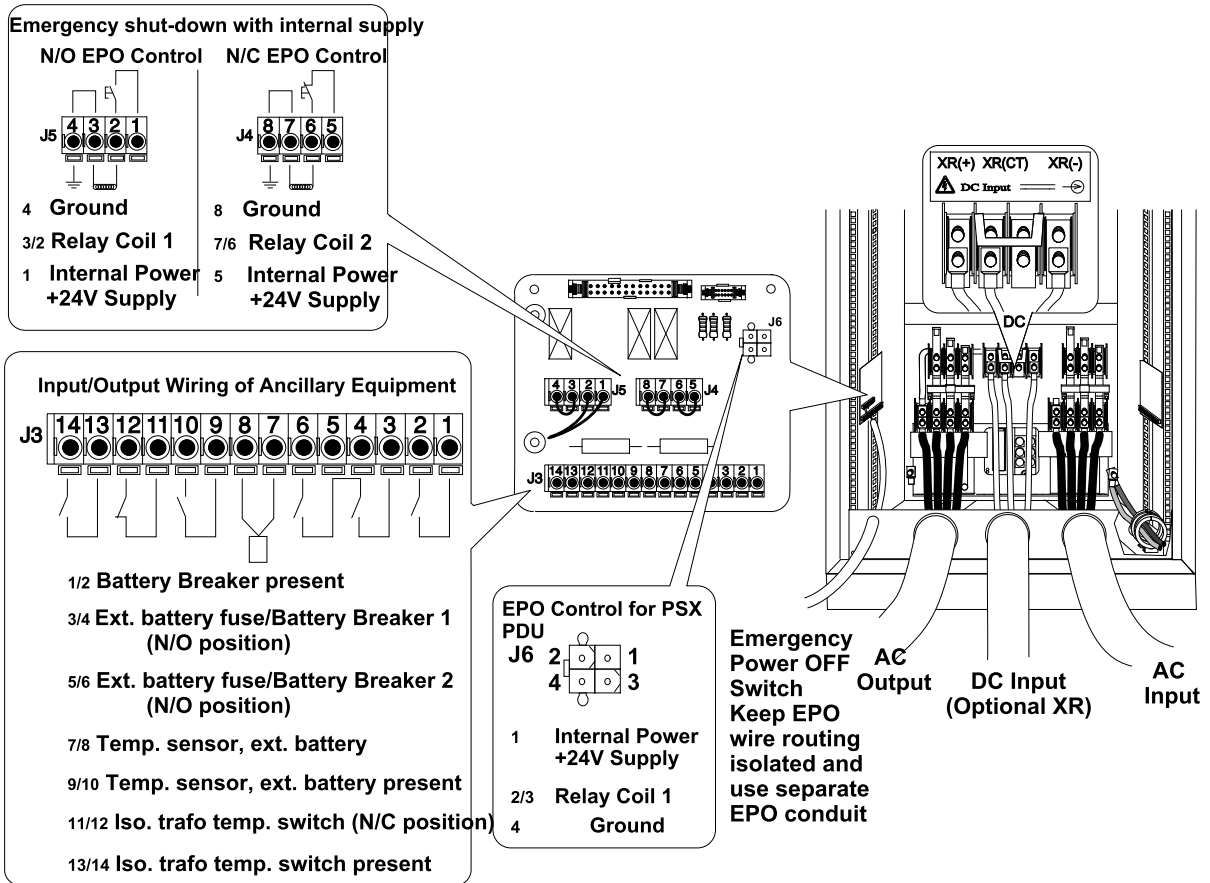
Gassing rate cc/hr (ml/hr) per battery string/row of 4 batteries	
Typical	Maximum
24	48

Battery Material Safety Data Sheet



Note: For Material Safety Data Sheet (MSDS), go to ["http://nam-en.apc.com/app/answers/detail/a_id/564/kw/msds"](http://nam-en.apc.com/app/answers/detail/a_id/564/kw/msds).

Emergency Power Off



Compliance

- FCC Part 15 Class A
- UL 1778
- cUL Listed

Facility Planning

AC Input Specifications



Note: All current values are based on a 40 kW maximum configuration.

	40 kW System
Connection type	3PH + N + G
Input voltage (V)	3-Phase 208 V (166 V - 240 V)
Input frequency (Hz)	40-70
THDI	< 6% at full load
Nominal input current (A)	123
Maximum input current – continuous, at minimum mains voltage (A)	154
Input current protection (external to UPS, not supplied) ¹	175
Maximum Short Circuit Withstand (kA)	30
¹ Input: 175 Amp. 3-Pole AC circuit breaker with 30 kAIC.	



Note: If your installation does not include an Isolation Transformer and a MBP (optional equipment), use a 175 Amp Class “J” current limiting fuse on each input phase.

AC Bypass Input Specifications

	40 kW System
Connection type	3PH + N + G
Input frequency (Hz)	40 – 70
Nominal input current (A)	111

AC Output Specifications

Output voltage	208 V
Connection type	3PH + N + G
Overload capacity	150% for 30 seconds (normal operation) 150% for 30 seconds (battery operation) 125% continuous (bypass operation) 1000% for 500 ms (bypass operation)
Nominal output current (A)	111
Maximum output current (in bypass only at 125% overload, per phase) (A)	139
Neutral output current with 100% switch mode load (A) ¹	192
Output current protection – external to UPS, not supplied (A) ²	150

Output frequency (on line, in bypass) ³	Synchronized to input over the range 57 Hz – 63 Hz
Output frequency (on battery) (Hz)	50/60
Slew rate (Hz/s)	Programmable to 0.25, 0.5, 1, 2, 4, and 6
THDU	< 2% linear < 5% non-linear
¹ Neutral output wires: rate for 173% of output phase current if feeding all Switch Mode Power Supply loads without power factor correction. ² Output: 150 Amp 3-pole AC circuit breaker with 30 kAIC. ³ The following ranges can be selected: 40-60 Hz, 47-53 Hz, 49.9-50.1 Hz, 50-70 Hz, 57-63 Hz, and 59.9–60.1 Hz	

Battery Specifications

Type	VRLA
Nominal voltage (VDC)	+/- 192 (96 cells at 2 V)
Float voltage (VDC)	+/- 219 (96 cells at 2.28 V) ¹
End of discharge voltage at full load (VDC)	+/- 158 (96 cells at 1.65 V)
Maximum charging power	4 kW (5 kW if redundant Power Module is present). It may drop to lower vales at low AC Mains.
Typical recharge time (to 80% of capacity)	3.5 hours
¹ Float voltage is temperature compensated. It is decreased 320 mV per °C for temperatures higher than 20°C	

Recommended Cable Sizes



Caution: All wiring must comply with all national and/or local electrical code.



Note: The recommended cable sizes are based in an environment with an ambient temperature of 40°C (104°F)



Note: Neutral output wires: rate for 173% of output phase current if feeding all Switch Mode Power Supply loads without power factor correction.



Note: Ground wires: sized in accordance with NEC Article 250-122 and Table 250-122.



Note: Maximum cable sizes: 250 kcmil.

Input	2/0 AWG 90°C (194°F) rated copper wire.
Output	1/0 AWG 90°C (194°F) rated copper wire

Recommended Cable Logs and Crimping Tool

Recommended cable lugs and crimping tools. Manufacturer: Framatome Connectors International (FCI).

Cable Size (AWG)	Terminal bolt diameter: 8 mm		
	Cable Lug Type	Crimping Tool	Die
8	YA8CL2TC38	MD7-34R	W8CVT
6	YA6CL2TC38	MD7-34R	W5CVT
4	YA4CL2TC38	MD7-34R	W4CVT
3	YA3CL2TC38	Y35	U3CRT
2	YA2CL2TC38	MD7-34R	W2CVT
1	YA1CL2TC38	MD7-34R	W1CVT
1/0	YA25CL2TC38	MD7-34R	W25VT
2/0	YA26CL2TC38	MD7-34R	W26VT
3/0	YA27CL2TC38	MD7-34R	W27VT
4/0	YA28CL2TC38	MD7-34R	W28VT

Overcurrent Protective Devices in Single Systems

	Symmetra PX 40 kW
Utility/mains input	175 Amp 3-Pole AC circuit breaker with 30 kAIC ¹
Output	150 Amp 3-pole AC circuit breaker with 30 kAIC
¹ If your installation does not include an Isolation Transformer and a Maintenance Bypass Panel (optional), use a 175 Amp class “J” current limiting fuse on each input phase.	

Physical

Weights and dimensions

UPS	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
Symmetra PX 10kW Scalable to 40kW N+1, 208V	406.18 (895)	2070 (81.5)	600 (23.62)	902 (35.50)
Symmetra PX 20kW Scalable to 40kW N+1, 208V	529.55 (1165)	2070 (81.5)	600 (23.62)	902 (35.50)
Symmetra PX 30kW Scalable to 40kW N+1, 208V	652.27 (1435)	2070 (81.5)	600 (23.62)	902 (35.50)
Symmetra PX 40kW Scalable to 40kW N+1, 208V	775 (1705)	2070 (81.5)	600 (23.62)	902 (35.50)

Shipping Weights and dimensions

UPS	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
Symmetra PX 10kW Scalable to 40kW N+1, 208V	453.18 (997)	2311 (91)	749 (29.5)	1054 (41.5)
Symmetra PX 20kW Scalable to 40kW N+1, 208V	586.82 (1291)	2311 (91)	749 (29.5)	1054 (41.5)
Symmetra PX 30kW Scalable to 40kW N+1, 208V	720.45 (1585)	2311 (91)	749 (29.5)	1054 (41.5)
Symmetra PX 40kW Scalable to 40kW N+1, 208V	854.1 (1879)	2311 (91)	749 (29.5)	1054 (41.5)

Environmental

Operating temperature	0 - 40 °C (32 - 104 °F)
Storage temperature	-15 - 40 °C (5 - 104 °F)
Operating relative humidity	0 - 95%
Storage relative humidity	0 - 95%
Operating elevation	0-3000 meters (0-10000 feet)
Storage elevation	0-15000 meters (0-50000 feet)
Audible noise – 1 meter from surface of unit	64 dBA
Protection Class	NEMA 1
Colour	Black

Heat Dissipation

	Symmetra PX 10kW Scalable to 40kW	Symmetra PX 20kW Scalable to 40kW	Symmetra PX 30kW Scalable to 40kW	Symmetra PX 40kW Scalable to 40kW
Heat dissipation kW (BTU/hr)	3381	5942	8913	11611

Drawings

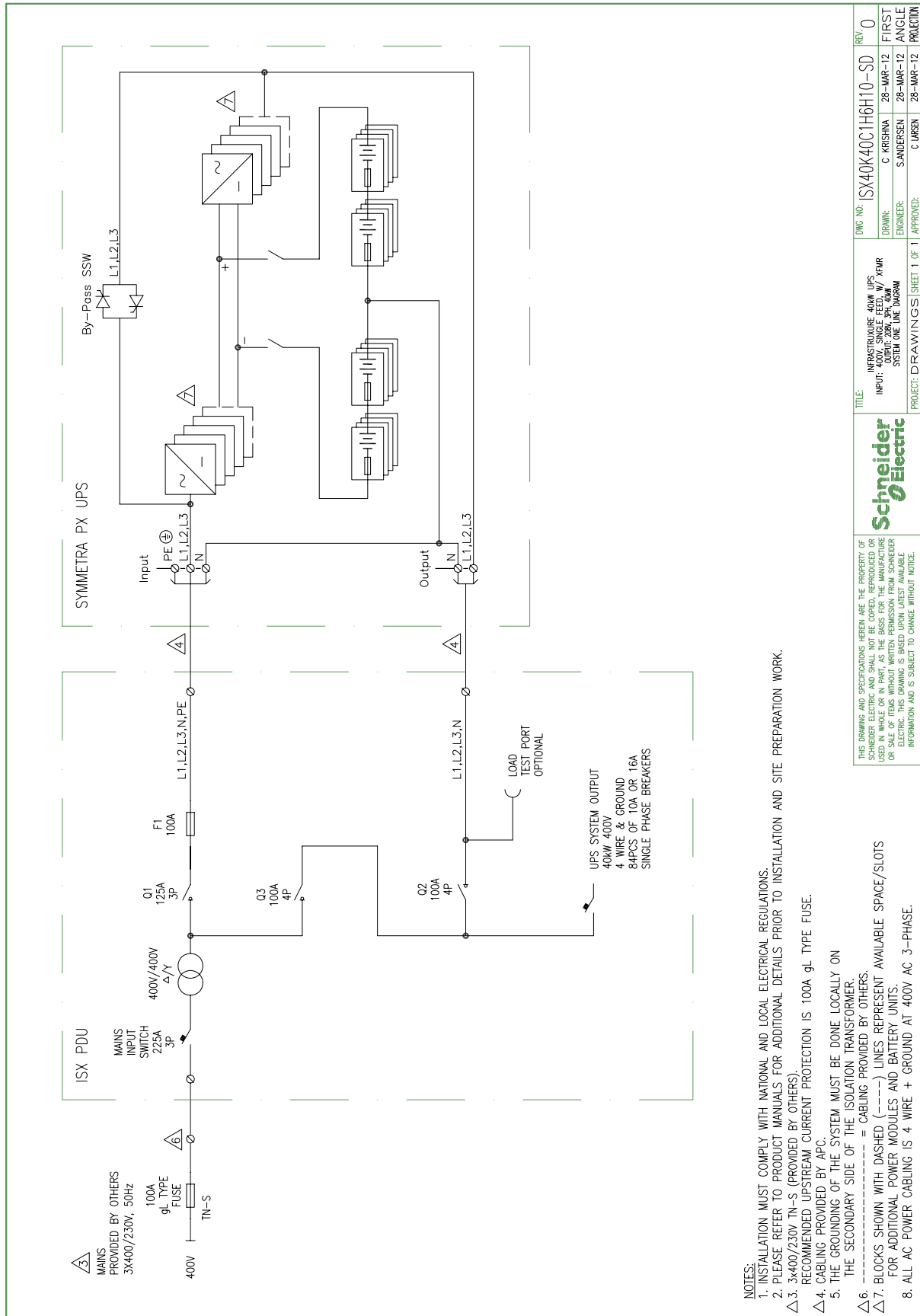


Note: A comprehensive set of drawings is available on the engineering website at www.engineer.apc.com.



Note: These drawings are for reference ONLY — subject to change without notice.

Symmetra PX 40 kW UPS with ISX PDU



Options

Hardware Options

Battery Systems

- Battery Module for Symmetra PX, Smart-UPS VT or Galaxy 3500 (SYBT4)
- Symmetra PX 40 kW Extended Run Battery Frame (SYCFXR8)
- Symmetra PX 40 KW Extended Run Battery Frame with 8 Battery Modules & Startup (SYCFXR8-8)
- Symmetra PX40 KW Extended Run Battery Frame with Startup (SYCFXR8S)

Symmetra Accessories

- Emergency Power Off (EPO) (EPW9)

UPS Network Management Cards

- UPS Network Management Card 2 (AP9630)
- UPS Network Management Card 2 with Environmental Monitoring (AP9631)

Symmetra Power Module

- Symmetra PX 10kW Power Module, 208V (SYMP10KF)

Configurable Power Distribution

- InfraStruxure PDU 208 V:208 V W/ MBP (PD40F6FK1-M)
- InfraStruxure PDU 40 kW 208V:208V Transformerless W/ MBP (PDRPPNX10-M)
- InfraStruxure PDU 40 kW 480V:208V W/ MBP (PD40G6FK1-M)
- InfraStruxure PDU 40 kW 600V:208V W/ MBP (PD40L6FK1-M)

Maintenance Bypass Panel

- APC 40 KW 208 V 1 MOD. 1 Maintenance Bypass Panel (SBP40KFC1M1)

Configuration Options

- Internal N+0 or N+1 redundancy
- Top or bottom feed
- Extended battery runtime
- Line-up/remote extended battery runtime enclosures
- StruxureWare Central compatible
- Secondary Network Management Card
- SmartSlot device management cards
- 40 kW InfraStruxure PDU with Maintenance Bypass Panel and optional isolation transformer
- Battery Breaker Box
- Service Bypass Panel

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