



PEPP 3 Phase UPS Systems Training

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Powering Business Worldwide

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Agenda

UPS Design
& Features

Power
Capacity

Voltage

Bypass

Power Factor

What's new??

Battery Type

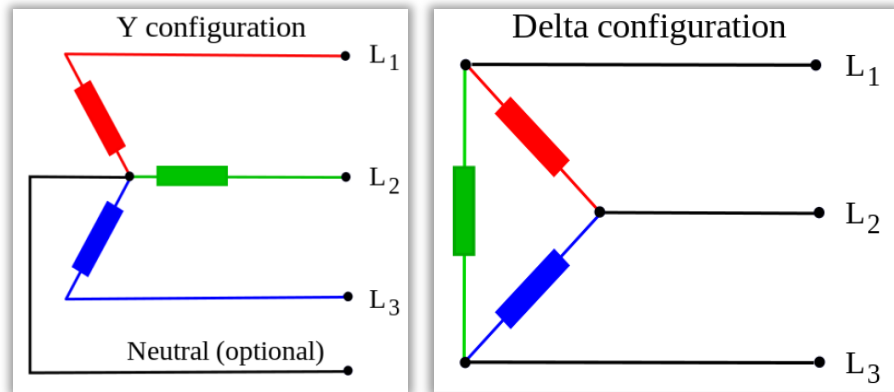
Applications

What is 3-Phase power?

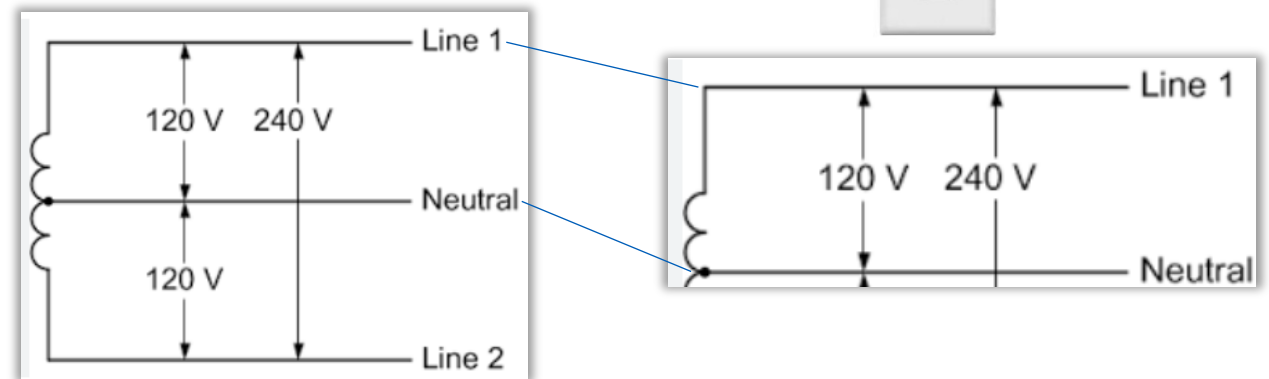


Three-phase electric power is a common type of alternating current (AC) used in electricity generation, transmission, and distribution. It is a type of polyphase system employing **three wires** (or **four including** an optional neutral return wire)

Three Phase



Single Phase



More Power Capacity compared to single phase

More efficient power transmission

93PM – Design



Modular “Pay as you grow”



93PM – Power (PF 1.0)



$$pf = \frac{\text{real power}}{\text{apparent power}}$$



- PF 1.0: kVA = kW
- Hardwired in/out
- Modular
- Firmware capacity upgrade



→ 57,142.00

400kW

20kW



Capacity Options

93PM – Voltage



Voltage Options

120/208VAC

127/220VAC

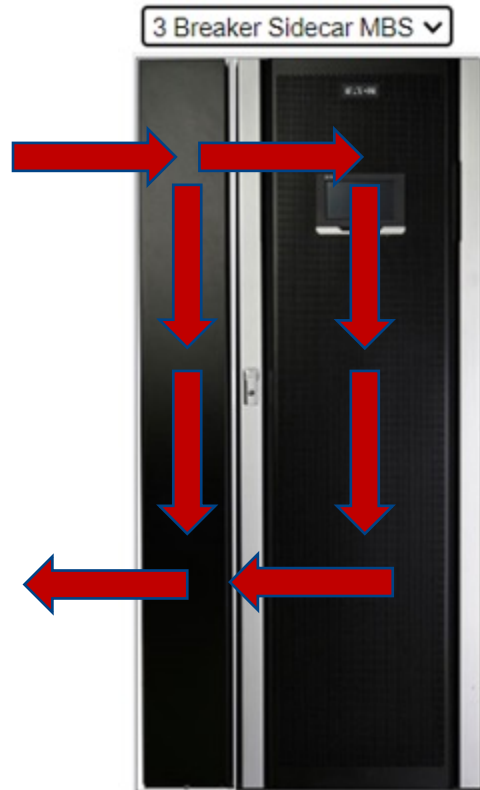
230/400VAC

277/480VAC

480VAC

480VAC to 120/208VAC

93PM – Bypass Options



93PM – Battery Cabinet Options

Eaton three-phase VRLA battery solutions



- a. 3-5 Year life
- b. Sealed lead acid
- c. Upfront cost lower



Integrated battery cabinet – small welded

The IBC-SW cabinet is our newest and smallest battery cabinet offering, with one large string of batteries inside. This welded cabinet offers flexibility in adding runtime with a small footprint addition to the overall system.

| Dimensions | Height x depth x width | DC voltage |
|---------------------|------------------------|--------------|
| All 93PM UPS models | 74" x 42" x 16.7" | 432V or 480V |

Integrated battery cabinet – large welded

The IBC-LW cabinet is a larger battery cabinet that can be used with six different battery models, giving customers runtime flexibility at different price points. Additionally, a single cabinet can support up to 150kW of load. This cabinet can also be configured as a high rate cabinet (IBC-LHW) to support up to 200kW of load with a single cabinet.

| Dimensions | Height x depth x width | DC voltage |
|---------------------|------------------------|--------------|
| All 93PM UPS models | 74" x 42" x 34.2" | 432V or 480V |

Samsung Lithium

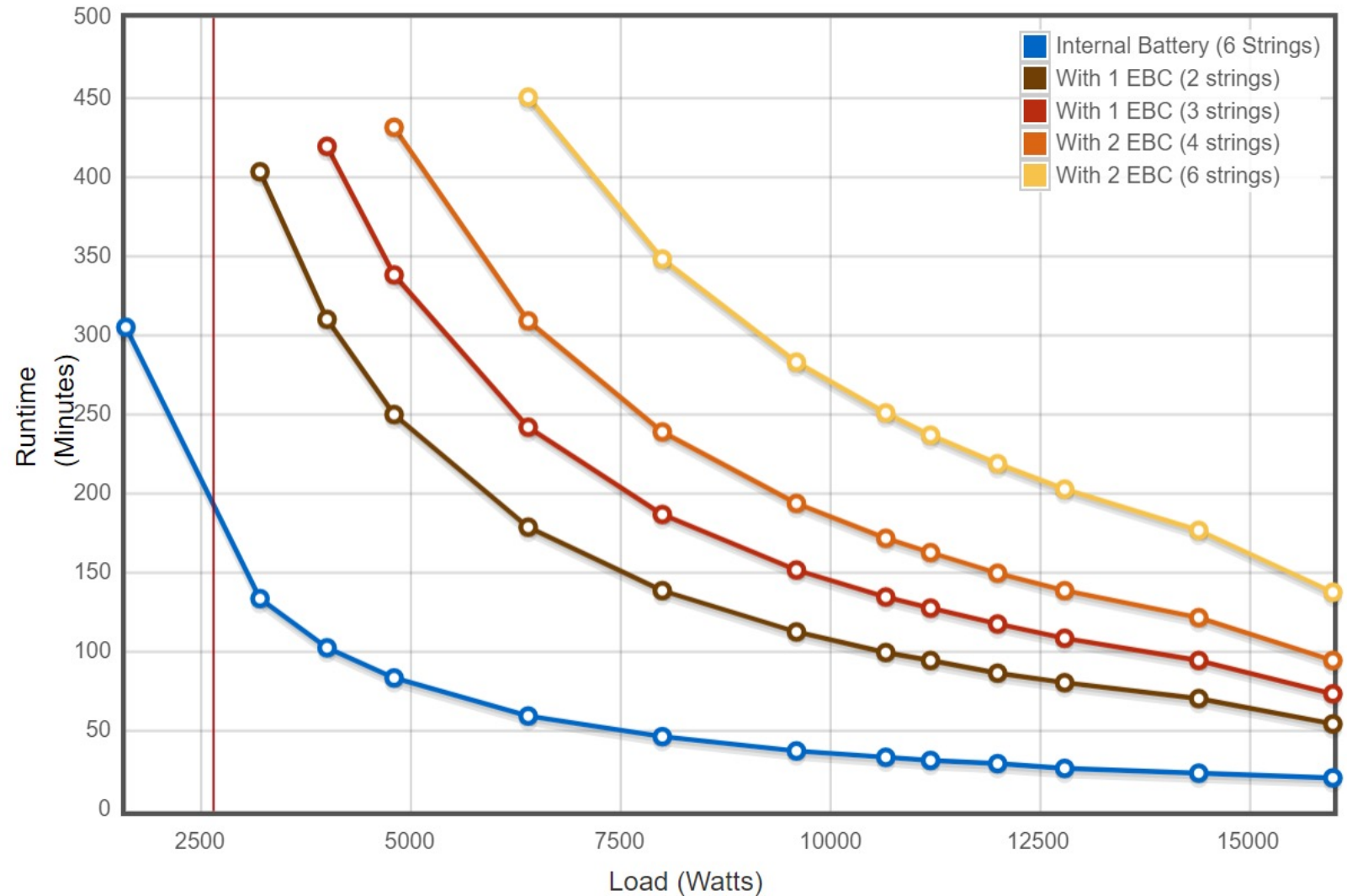


- a. Less weight
- b. More compact
- c. 10yr warranty
- d. No gassing rate

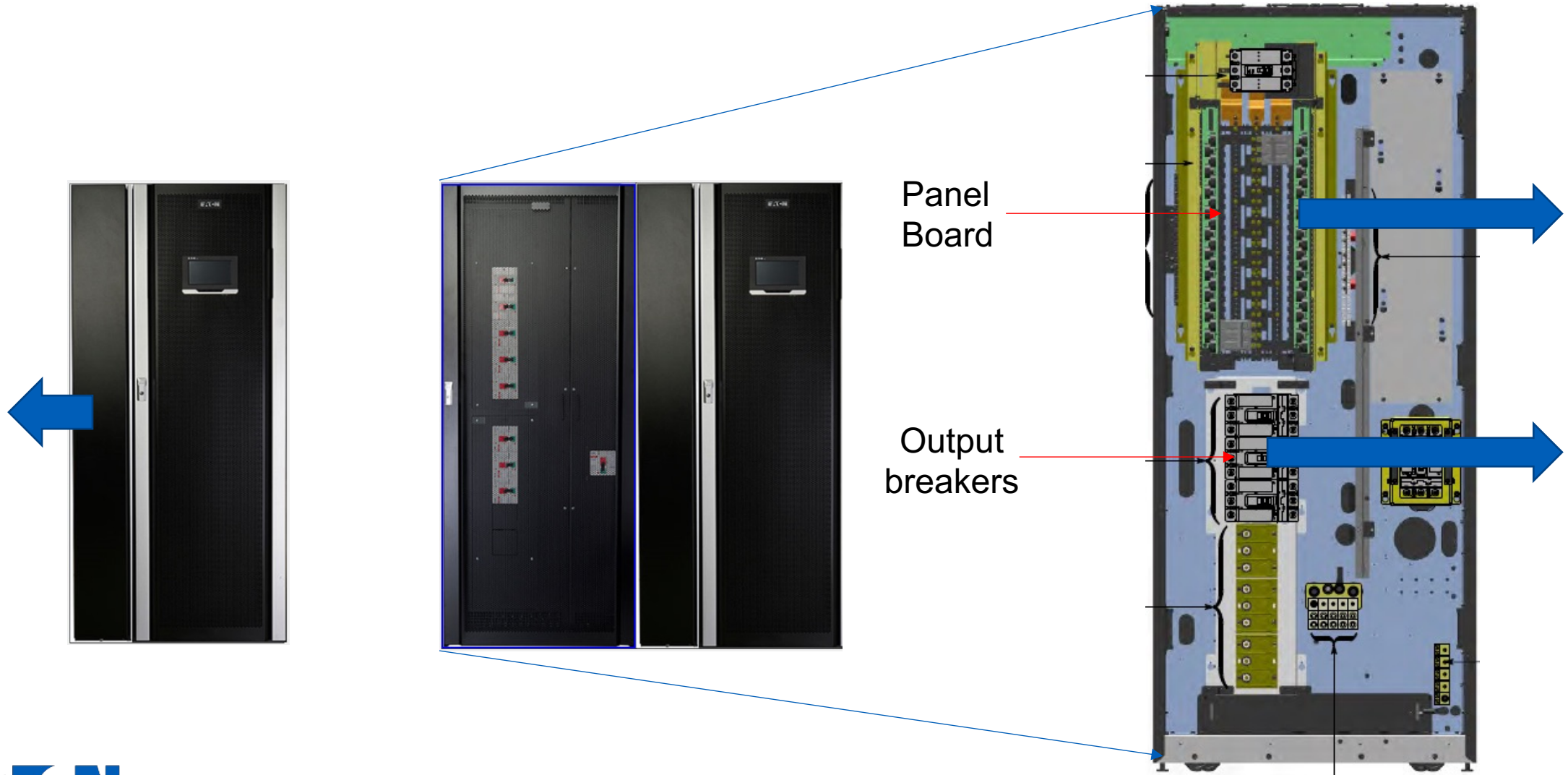
Runtime: Load vs. Battery Qty

More batteries =
More runtime

More batteries ≠
More UPS
capacity



93PM – Distribution Options

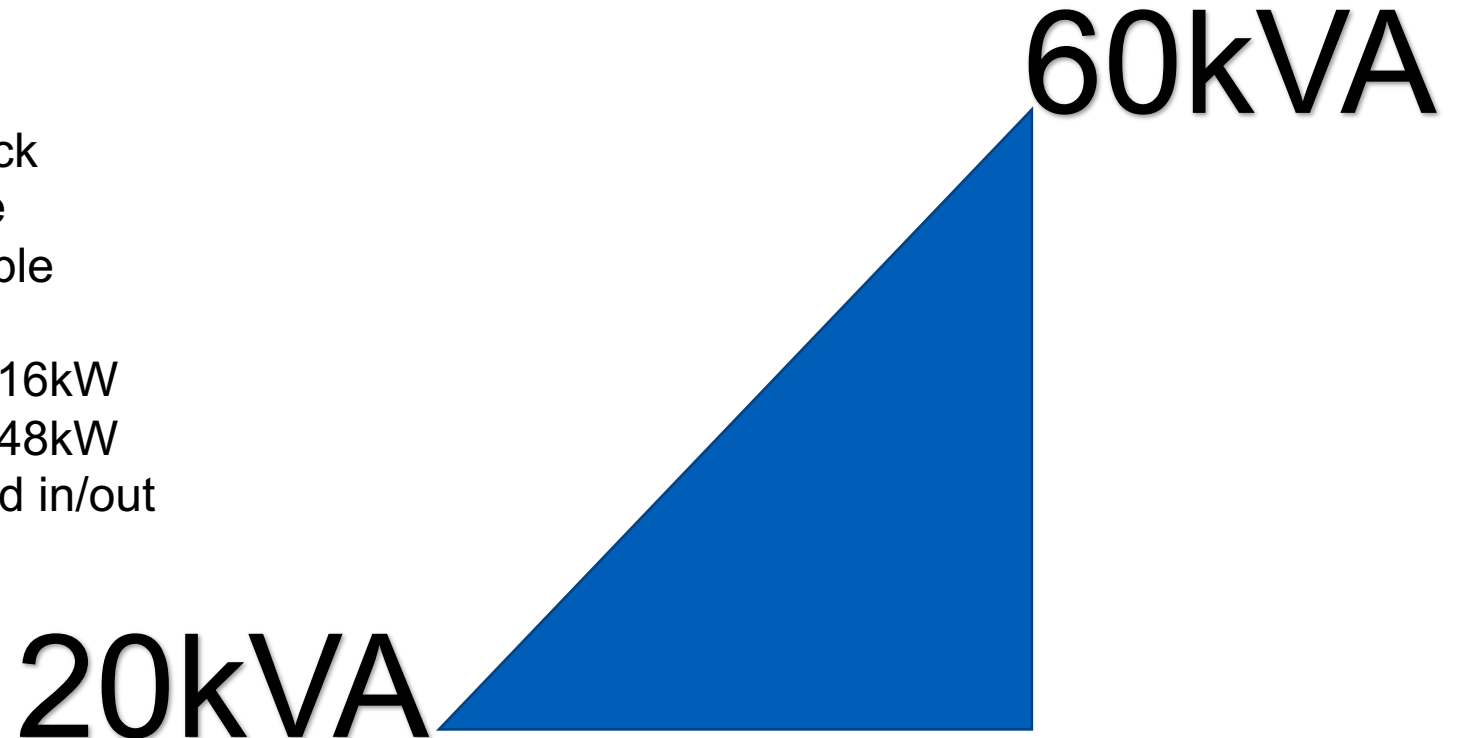


93E – Economy Option to the 93PM



- Monoblock
- Firmware expandable
- PF 0.8
- 20kVA = 16kW
- 60kVA = 48kW
- Hardwired in/out

“Pay as you grow”



93E – Voltage



Voltage Options

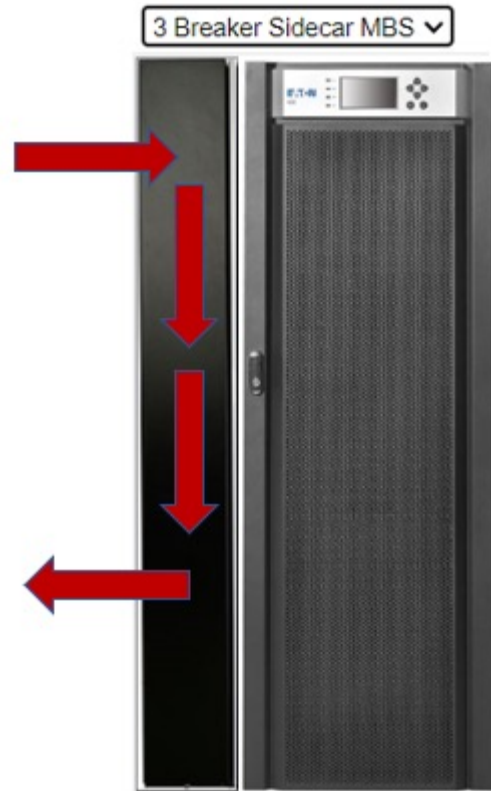
120/208VAC

127/220VAC

480VAC to 120/208VAC

480VAC

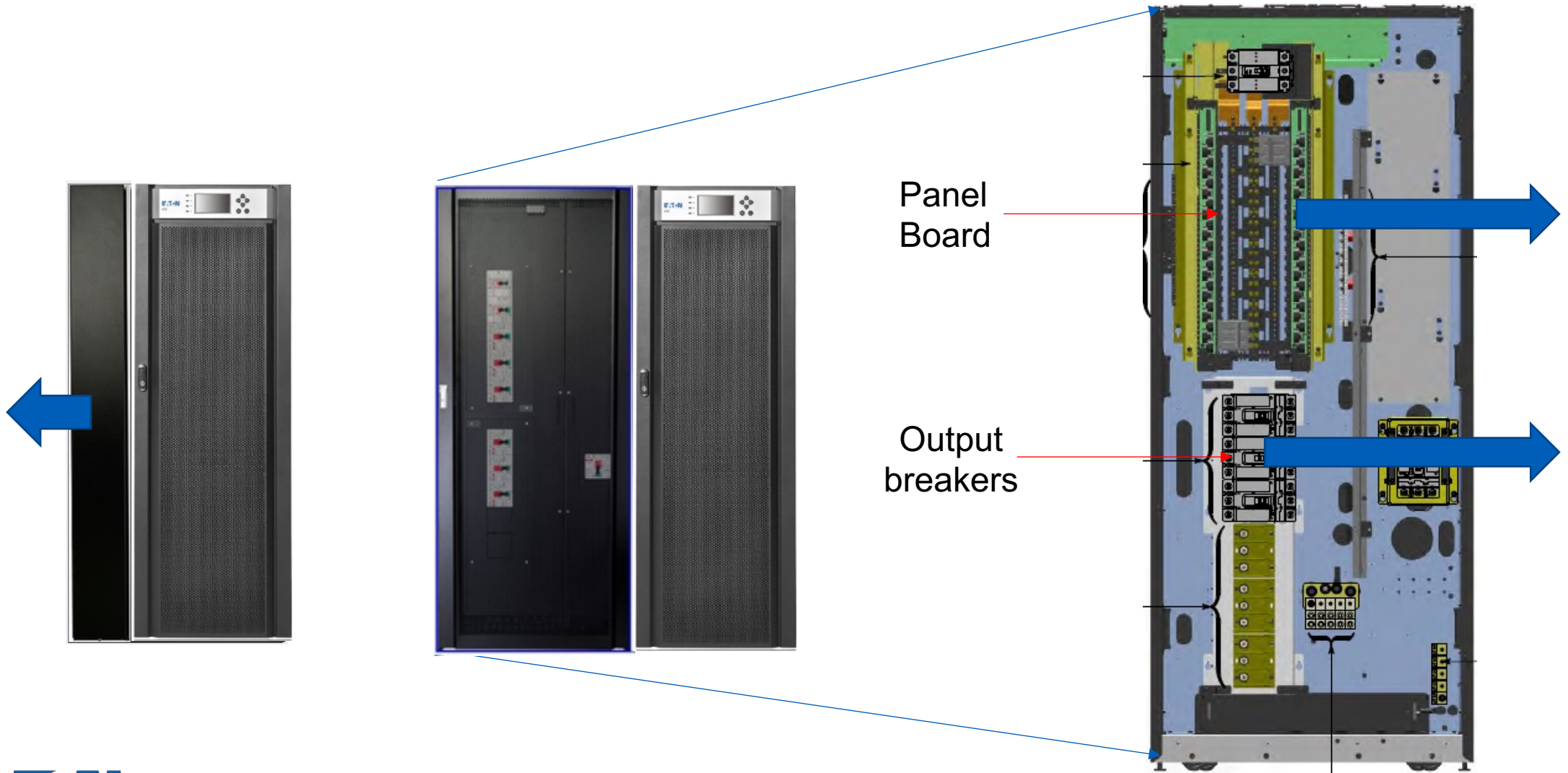
93E – Bypass Options



Wall-mount maintenance bypass panel



93E – Distribution Options



93E – Battery Cabinets



VRLA-lead acid Only

Line and match only

3 – 5yr life span

9355 – Robust and Reliable



“Pay as you grow”

- Mono block
- Firmware expandable
- PF 0.9
- 20kVA = 18kW
- 30kVA = 27kW
- Receptacle options
- HW in/out (20-30kVA)
- HW or Receptacles (10-15kVA)

30kVA

10kVA



9355 – Voltage



Voltage Options

120/208VAC

127/220VAC

480VAC to 120/208VAC

480VAC

600VAC to 120/208VAC

9355 – Bypass Options



Wall-mount maintenance bypass panel

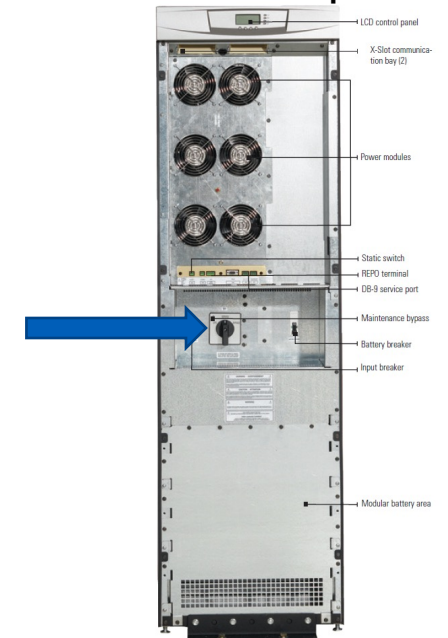


9355 10-15kVA Standard Option



Integrated power distribution module

9355 20-30kVA Standard Option



9355 – Battery Cabinets



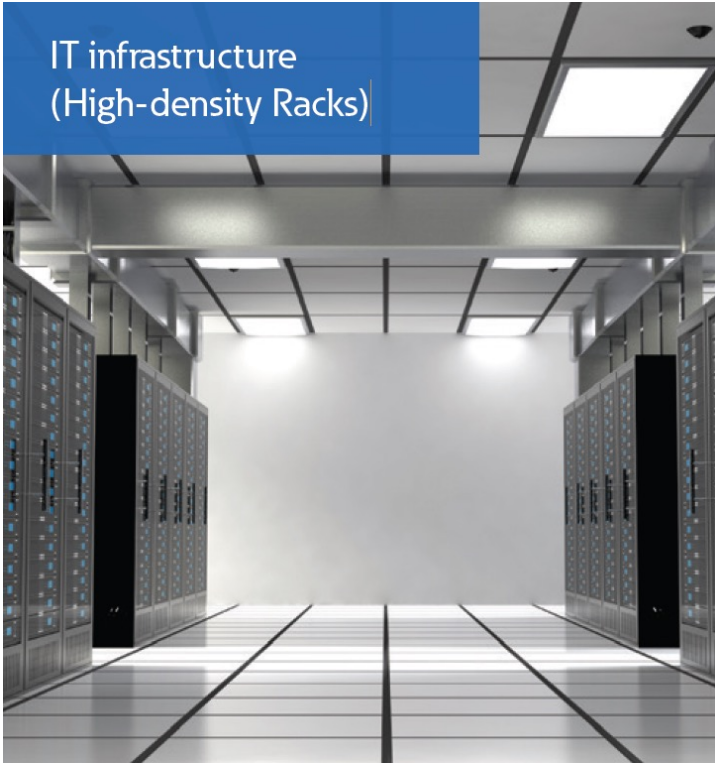
VRLA-lead acid only

Line and match only

3 – 5yr life span

Segments/Applications

IT infrastructure
(High-density Racks)



Industrial &
Manufacturing



Medical
Applications

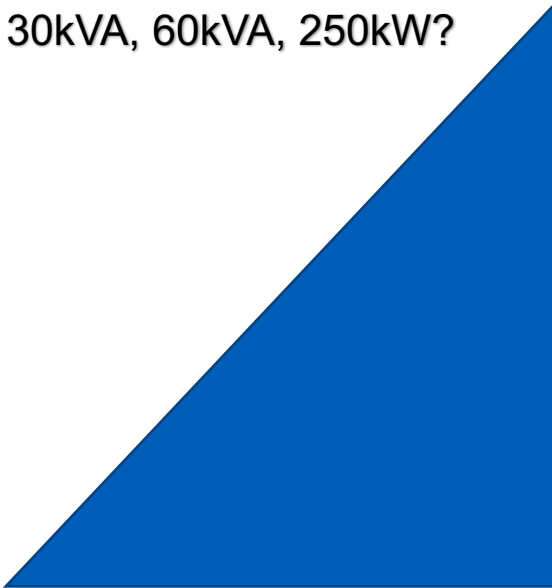


Considerations for Applications:

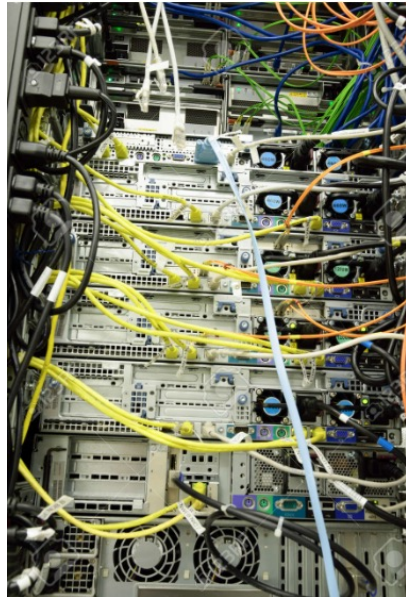
Future Growth

30kVA, 60kVA, 250kW?

20kVA



Space



Cost \$\$

Multiple units
vs
Centralized

Electrical Infrastructure



Codes



Other Features: 93PM, 93E and 9355

| UPS | Monitoring | Parallel Capable | Dual Feed** | Seismic Option | UL924 (Lighting) |
|-------------|-------------------------------|-------------------------------------|-------------|----------------------|------------------|
| 93PM | Yes, Gateway card, Relay Card | Yes, for redundancy and/or capacity | Yes | Yes | Yes |
| 93E | Yes, Gateway card, Relay card | Yes, for redundancy and/or capacity | Yes | No | No |
| 9355 | Yes, Gateway card, Relay card | Yes, for redundancy and/or capacity | Yes | UPS, Yes EBMs, No | Yes |

**Dual feed systems are typically designed to receive electrical power from two different sources. Ex. two different utility companies.

What's NEW coming up??



93PX 208V Option – Rack mounted

Estimated release Q3 2024

93PXi 400V Option – Rack mounted

Estimated release Q2 2024

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