Eaton 9PHD Heavy Duty UPS

30–200 kW

Designed, Manufactured and Tested in Finland

Strong and Smart Power Protection

Reliable, Safe and Cost Efficient

Strong design for demanding industrial environments

- Protection against dirt, dust, water and moist with cover options from IP23 to IP54
- Conformally coated PCB boards
- Strong cabinet for vibration and seismic environments
- 1.5mm cover plates for robust use

Smart technology for maximizing reliability

- Touch screen display for easier operation
- Modular design allows building fault tolerant N+1 units
- Redundant monitored cooling fans in each power module
- Battery start feature
- Eaton's unique Hot Sync wireless paralleling for building n+1 systems with several UPS units

Smart technology for minimizing operating cost

- The 9PHD UPS sets new standards, with an operating efficiency level up to 97% in double conversion mode
- > 99% superior efficiency is delivered in Energy Saver System mode (ESS)
- Power factor 1 increases unit power by 10-20% compared to average UPS

Easy deployment for optimizing installation costs

- Front access for installation and service
- Lifting lugs for easier unit handling during installation
- Suitable for 3-wire and 4-wire networks and voltage range of 380V-480V without transformers
- Small footprint due compact power electronics and internal transformer options
- Cabinet supports use of halogen free cables, double cables or large cables for installation

Safe installation and operation

- Unit has halogen free cables
- Connectors in battery strings to increase safety during battery replacement
- Battery breaker inside battery cabinet isolated from hydrogen gases
- Internal maintenance bypass switch and rectifier input switch up to 150kW

Powering Business Worldwide

Eaton 9PHD Industrial UPS 30–200 kW

Technical specifications

General	
UPS output power rating (1.0 p.f.)	30, 40, 50, 80, 100, 120, 150,160, 200 kW
Efficiency in double conversion mode	Up to 97%
Efficiency in Energy Saver System (ESS)	> 99%
Inverter/rectifier topology	Transformer-free IGBT with PWM
Audible noise	30–50 kW: < 60 dBA 80–200 kW: < 65 dBA ESS operation: < 47 dBA
Ambient temperature	0°C to 40°C at 1000m altitude, higher temperatures are optional
Ingress protection	IP23, Optional: IP33;IP54

Input	
Input wiring	3ph + N + PE / 3ph + PE
Nominal voltage rating (configurable)	380 V-480 V, 50/60 Hz
With optional transformer	208 V- 690 V, 50/60 Hz
Input voltage range	Rectifier input + 20%, if voltage > 440 V +10% Low -15% at 100% load, -40% at 50% load without battery discharge Bypass +10% - (-15%)
Input frequency range	40-72 Hz
Input Power Factor	0.99
Input ITHD	30 kW: < 4.5% 40-200 kW: < 3%
Soft start capability	Yes
Internal backfeed protection	Yes

Battery	
Battery type	VRLA, Ni-Cd
Charging method	ABM technology or Float
Temperature compensation	Optional
Battery nominal voltage (VRLA)	From 432 V (36 x 12 V, 216 cells) to 480 V (40 x 12 V, 240 cells) **Note:** Strings with different battery voltage may not be paralleled!
Charging current maximum*	30–50 kW 29.3 A 80–100 kW 58.6 A 120–150 kW 87.9 A 160–200 kW 117.2 A
Battery start capability	Yes

* when load level ≤ 40 kW/UPM

Output	
Output wiring	3ph + N + PE/ 3ph + PE
Nominal voltage rating (configurable)	380 V-480 V, 50/60 Hz
With optional transformer	208 V- 690 V, 50/60 Hz
Output UTHD	< 1% (100% linear load) < 5% (reference non-linear load)
Rated output power factor	1.0
Permitted load power factor	0.8 lagging - 0.8 leading
Overload on inverter	10 min 102-110%; 60 sec 111-125%; 10 sec 126-150% 300 ms > 150%. On battery mode 300 ms > 126%
Overload when bypass available	Continuous < 125%, 10 ms 1000% **Note:** Bypass fuses may limit the overload capability

Accessories

Accessories for UPS:
Internal transformers; Cabinet protection IP33, IP54; Vibration dampers with mounting brackets; Seismic kit; ATS automatic transfer switch; Single feed kit; Earth fault monitoring; 24V Emergency Power Off (EPO); Special system voltages

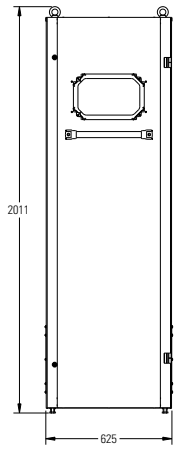
Accessory cabinets:
Industrial battery cabinets with long-life batteries; Matching transformer cabinet for one or two transformers; External maintenance bypass switch.

Communication options:
Web/SNMP; ModBus/Jbus; Industrial Relay

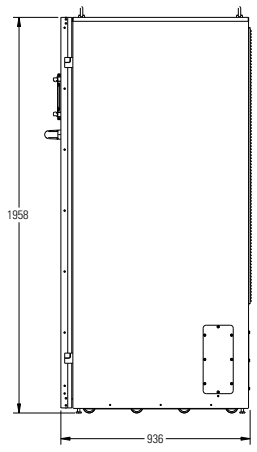
Communications	
MiniSlot	4 communication bays
Serial ports	Built-in host and device USB
Relay inputs/outputs	5 relay inputs and dedicated EPO 1 relay output

Compliance with standards	
Safety (CB certified)	IEC 62040-1
EMC	IEC 62040-2
Performance	IEC 62040-3
Seismic testing	meets NEBS GR-63-CORE, Zone 4 requirements with seismic withstand on up to 1g acceleration/8.3 Richter Magnitude

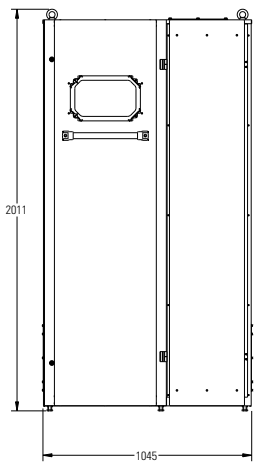
Due to continuous product imrovement programmes, specifications are subject to change without notice.



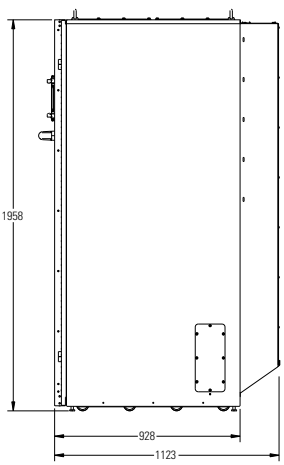
Eaton 9PHD Industrial 30kW–100kW



Rear Exhaust



Eaton 9PHD Industrial 80kW–200kW



Top Exhaust

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