

# 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

**EATON**

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% <b>Low</b> -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)
	<b>Note:</b> 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

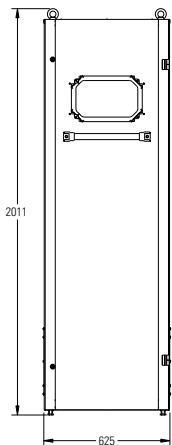
Output	
Output wiring	3ph + N + PE/ 3ph + PE
Nominal voltage rating (configurable)	380 V-480 V, 50/60 Hz
With optional transformer	208 V- 690 V, 50/60 Hz
Output UTHD	< 1% (100% linear load)
	< 5% (reference non-linear load)
Rated output power factor	1.0
	Permitted load power factor 0.8 lagging - 0.8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

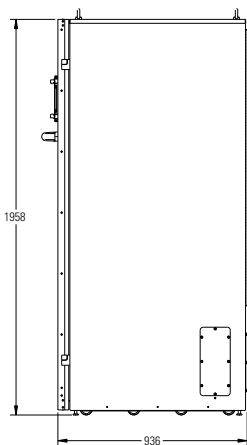
Communications	
MiniSlot	4 communication bays
Serial ports	Built-in host and device USB
Relay inputs/outputs	5 relay inputs and dedicated EPO
	1 relay output

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

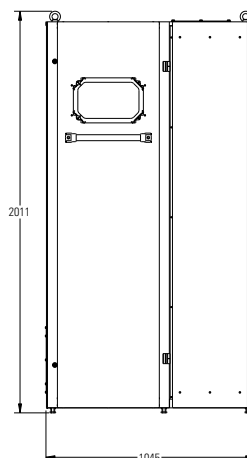
Due to continuous product improvement programmes, specifications are subject to change without notice.



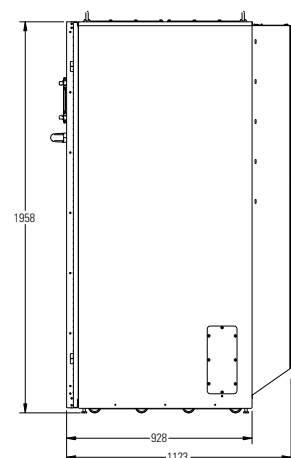
Eaton 9PHD Industrial 30kW–100kW



Rear Exhaust



Eaton 9PHD Industrial 80kW–200kW



Top Exhaust