



# REHLKO *EW* 6000

Transformerless standalone uninterruptible power supply range

(10–1200 kVA)

Parallelable options

# Compact design, *critical* protection.

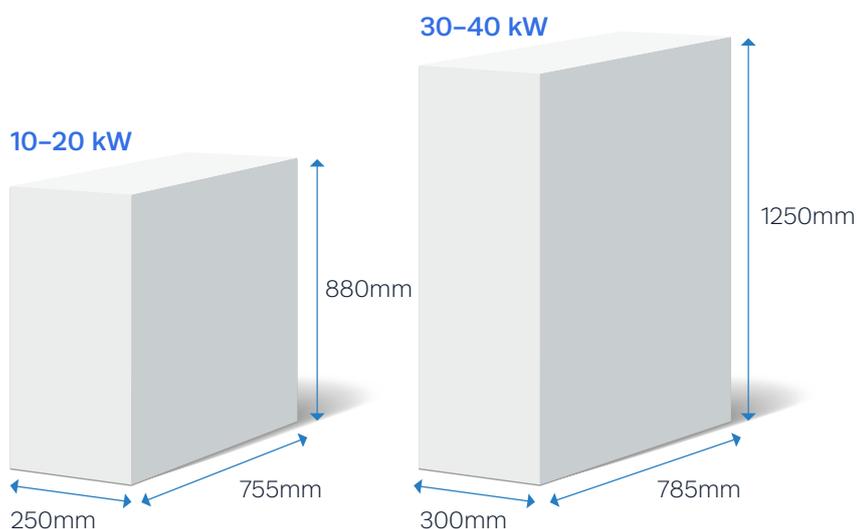
## REHLKO EW 6000 10–40 kW

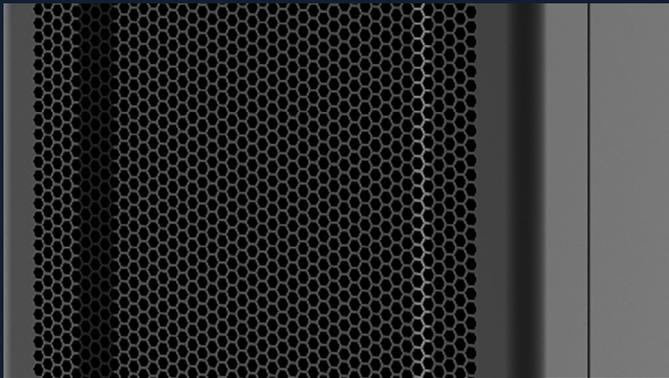
An advanced, compact three-phase (3:3 / 3:1) UPS ideally suited to applications in finance companies, server rooms, healthcare, government and national defence, retail, leisure and hospitality, transportation and telecommunications.



## REHLKO EW 6000 10–40 kW

- | Compact, transformerless design
- | High efficiency, up to 96% (online VFI mode)
- | Advanced IGBT inverter
- | Unity (1.0) output power factor
- | Clear display with easy to use menu
- | Intelligent, service-life extending battery management system





## Compact and efficient

- Exceptional power density and high output power factor ( $\geq 0.99$ ) result in a highly compact, leading edge footprint
- Efficiency up to 96% (at 50–100% load), reducing running costs and environmental impact

## Performance and reliability

- Low THDi (<3%), advanced 3-level IGBT inverter for cleanest sine waveform output
- Wide input voltage range (80–285 Vac) and input frequency range (40–70 Hz) keep UPS on mains longer, reducing use / wear of generator and batteries
- Intelligent fan control – reduces noise and energy use while prolonging life
- Coated PCBs as standard – protects from humidity, dust and corrosion
- Separate bypass and mains power breakers to increase supply reliability

## Flexible design

- Use with either internal, external or combined battery strings
- Flexible battery configurations (10kW  $\pm 8$ –20 blocks and 20–40kW  $\pm 12$ –20 blocks) maximise resilience and use of existing batteries
- Diverse range of inputs and outputs comprising 1:1, 3:1 and 3:3 for 10–20kW and 3:1 and 3:3 for 30–40kW
- Definable charge current: 1–10A for 10–20kW, 1–20A for 30–40kW
- RS 485, EPO and dry contact outputs as standard. Optional SNMP output

## User-friendly

- LCD screen with flow through menu to access functions and settings
- Authority management and two-button design to reduce risk of mistakes
- Easy troubleshooting via history log and fault alarm record



LCD Display

# Advanced technology, *responsible* power.

## REHLKO EW 6000 60–200 kW

Next generation, three level IGBT technology UPS for three phase applications in finance, server rooms, data centres, healthcare, government, transportation and utilities.



## REHLKO EW 6000 60–200 kW

- | IGBT rectifier and inverter
- | High efficiency, up to 96.5% (online VFI mode)
- | Unity (1.0) output power factor
- | Compact, transformerless design
- | Advanced dual DSP control
- | Touch screen user interface
- | Innovative fan and air flow systems

160–200 kW

60–120 kW





## Advanced technology

- | Built on latest three level IGBT technology
- | Advanced dual DSP control increases performance and removes single point of failure
- | Intelligent fan control
- | Touch screen control with 4.3" (60-120kW) or 7" (160-200kW) display plus LED and colour mode indications

## Responsible power

- | High online VFI mode efficiency of up to 96.5% reduces cooling and energy costs
- | High efficiency maintained even at low loads - up to 95% VFI efficiency at 30% load
- | High input power factor (up to 0.99) and low input THDi (<3.0% at full load) reduces grid pollution

## Intelligent control

- | Communication via RS485, MODBUS and dry contacts
- | Protective notifications include output short circuit, overload, temperature and voltage
- | Intelligent standby mode maximises efficiency and reduces energy use at reduced loads in paralleled systems

## Options

- | RS232, BMS, SNMP and extended dry contact card options

## Reliability

- | Dual digital signal processor (DSP) control
- | Coated PCBs increase life
- | Separate internal air channels drive air to heat sink without stressing PCBs or other sensitive components
- | Redundant fan design - 40% load supported when 1 fan fails, 15% load even when both fans fail
- | Comprehensive event log for fast fault diagnosis and repair

# Maximised efficiency, *powerful* protection.

## REHLKO EW 6000 300–1200 kW

High efficiency, advanced UPS for larger loads in data centre, financial services, process / production, utility, healthcare, government and national defence applications.

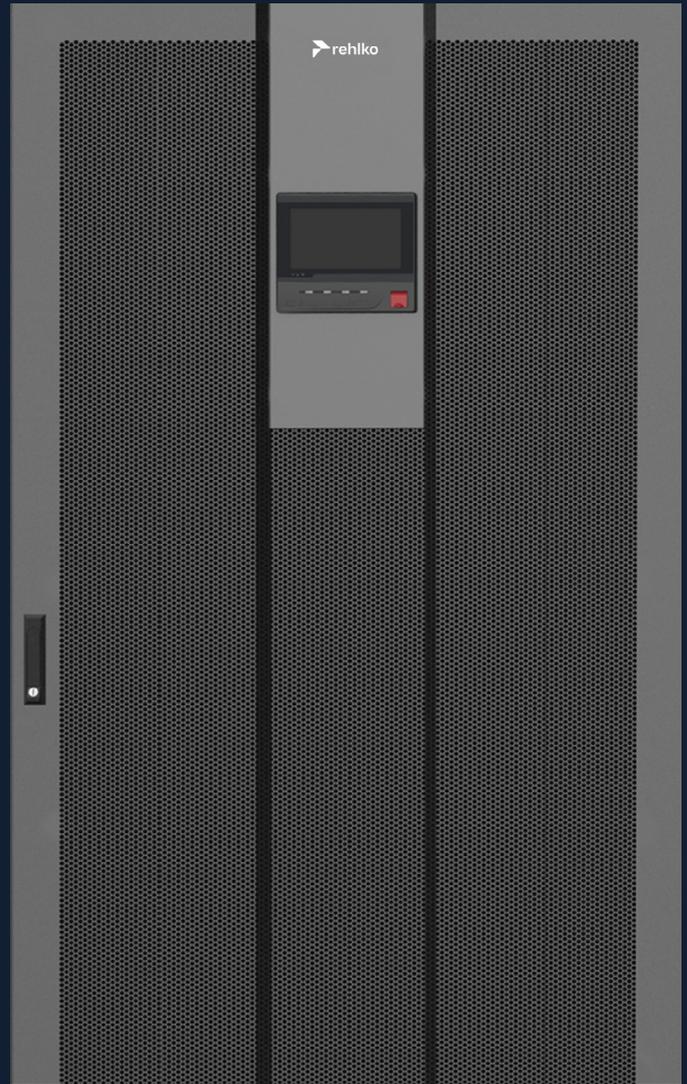
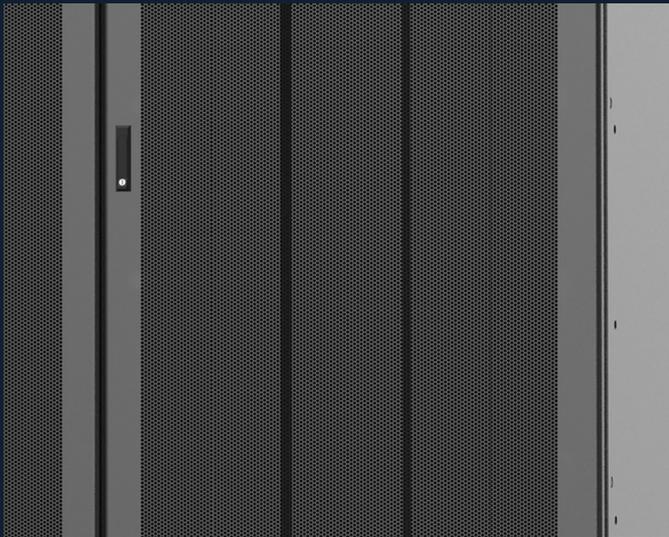


## REHLKO EW 6000 300–1200 kW range

- | Advanced IGBT rectifier
- | High efficiency, up to 97%
- | Output PF 1.0
- | Sophisticated display and menu
- | Transformerless
- | Intelligent battery management
- | Parallel 8 units up to 9.6MW

## User-friendly

- | Clear, configurable 7" touch screen to quickly access functions and settings
- | Large 10,000 point event log with data and graphical representation options
- | Fault trace management aid via 100ms waveform record before and after fault



## Performance and reliability

- | Efficiency up to 97%, reducing running costs and environmental impact
- | Low THDi ( $\leq 2\%$  at full load) and high input power factor ( $\geq 0.99$ )
- | Advanced 3-level IGBT inverter for cleanest sine waveform output
- | Wide input voltage range ( $-40\%$  to  $+25\%$ ) keeps UPS on mains longer, reducing use / wear of generator and batteries
- | Dual DSP and power board remove single point of failure
- | Eco and Smart Eco modes to further improve energy efficiency (in Smart Eco mode inverter provides harmonic compensation and power factor correction whilst bypass supplies load)
- | Coated PCBs as standard – protects from humidity, dust and corrosion

## Intelligent, advanced design

- | Advanced parallel expansion technology, enabling connection of up to 8 units and 9.6 MW
- | Self-load test function for easy onsite testing and faster commissioning
- | Battery temperature compensation – increases performance and lifespan
- | Three-stage battery charging to prolong battery life
- | Multiple communication options including Smart programmable dry contact communication function
- | Supports external input / output transformer connection
- | Common bypass cabinet
- | Intelligent fan control – reduces noise and energy use while prolonging life

# Technical specifications



# Technical specification

## REHLKO EW 6000 (10–40kW)

General Data		10	20	30	40
<b>Input</b>					
Phase	3:3/3:1/1:1			3:3/3:1	
Voltage (Vac)	80–280 (L–N) / 138–485 (L–L)			138–485 (L–L)	
Frequency (Hz)	40–70				
Dual main input	Yes				
Power factor	≥0.99				
THDi at full linear load	< 3%				
<b>Output</b>					
Capacity (kW)	10	20	30	40	
Power factor	1.0				
Voltage (Vac)	220 / 230 / 240 ±1% (L–N) 380 / 400 / 415 ±1% (L–L)				
Frequency (Hz)	50/60±0.1 (battery mode)				
Phase	3φ4W+PE (can be set to 1φ2W+PE )				
Unbalanced load	100% possible				
THDv	≤2% (linear load), ≤4% (non-linear load)			≤1% (linear load), ≤4% (non-linear load)	
Transfer time (ms)	0ms for mains mode to battery mode, 1ms for inverting mode to bypass mode				
Max efficiency, online	96%				
Efficiency eco mode	≥99%				
Overload	110% load for 60 mins, 130% load for 10 mins, 155% load for 1 min, above 155%–200% load for 200ms				
<b>Battery</b>					
Voltage (Vdc)	±192 (±96 to ±240 adjustable)		±192 (±144 to ±240 adjustable)*		
Internal battery	16 to 40x9AH/12V	24 to 40x9AH/12V	48 to 80x9AH/12V		
Charging current (A)	1–10 settable			1–20 settable	
<b>Other</b>					
Communication interface	RS 485, Emergency Power Off (EPO), dry contact (1 input, 5 output) and optional SNMP				
Display	4.3" touch screen, LED and physical buttons				
Alarm	AC input abnormal, low battery, overload, UPS failure				
Protection	Output short-circuit, overload, over-temperature, low battery				
Cold start	Yes				
EPO (Emergency Power Off)	Remote and local				
Smart fan speed control	Yes				
Noise	<55dB				
Working temperature	–5°C to +40°C				
Relative humidity	0–95%, no condensation				
Altitude	Up to 2000m without derating				
IP rating	IP20				
Standards	Electrical safety: IEC EN 62040–1 EMC: IEC EN 62040–2 EN 62040–3:2011				
Dimensions (mm) W x D x H	250 x 755 x 880			300 x 785 x 1250	
Weight (kg)	with battery	98 (20 x 9AH)	132 (32 x 9AH)	240 (64 x 9AH)	240 (64 x 9AH)
	without battery	50			85

\*Capacity will derate when battery voltage between ±144 and ±180

See page 2 for full product overview.

# Technical specification

## REHLKO EW 6000 (60–200kW)

General Data	60	80	100	120	160	200
<b>Input</b>						
Voltage (Vac)	380/400/415 (138–485 L-L)					
Frequency (Hz)	40–70					
Bypass voltage (Vac)	380/400/415: –30% to +25%					
Power factor	≥0.99					
Phase	3φ4W+PE					
<b>Output</b>						
Capacity (kW)	60	80	100	120	160	200
Power factor	1					
Voltage (Vac)	380/400/415±1%					
Frequency (Hz)	50/60±0.1 (battery mode)					
Phase	3φ4W+PE					
Unbalanced load	100% possible					
THDv	<1% at linear load, <4% at non-linear load					
Transfer time (ms)	0ms for mains mode to battery mode, 1ms for inverting mode to bypass mode					
Max efficiency, online	96.5% AC-AC					
Efficiency eco mode	≥99%					
Overload	101–105% long run, 106–110% load for 60 mins, 111%–125% load for 10 mins, 126%–150% load for 1 min over 150% load transfer to bypass					
<b>Battery</b>						
Battery voltage (Vdc)	±192 (±168 to ±288 adjustable)		±240 (±168 to ±288 adjustable)			
Battery type	External					
Charging current (A) MAX	30				60	
<b>Other</b>						
Communication interface	RS 485, MODBUS, dry contact (Optional SNMP, RS 232, BMS or expanded dry contacts cards)					
Display	4.3" touch screen, LED and LED bar				7" touch screen, LED and LED bar	
Alarm	AC input abnormal, low battery, overload, failure					
Protection	Output short-circuit, overload, over-temperature, battery low voltage, output over/low voltage					
Noise	<65 dB		<70 dB			
Working temperature	0°C to +40°C with no derating, +40°C to +50°C auto derated					
Relative humidity	0–95%, no condensation					
IP rating	IP20					
Standards	Electrical safety: IEC EN 62040-1 EMC: IEC EN 62040-2 EN 62040-3:2011					
Dimensions (mm) W x D x H	400 x 960 x 1200				600 x 900 x 1600	
Weight (kg)	145	161				312

See page 4 for full product overview.

# Technical specification

## REHLKO EW 6000 (300–1200kW)

General Data	300	400	500	600	800	1000	1200
<b>Input</b>							
Voltage (Vac)	380/400/415						
Frequency (Hz)	50 / 60 ±10% (±5% selectable)						
Bypass voltage (Vac)	380/400/415: -30% to +25%						
Power factor	≥0.99						
Phase	3φ4W+PE						
<b>Output</b>							
Capacity (kW)	300	400	500	600	800	1000	1200
Power factor	0.9-1.0 (1.0 when environmental temperature ≤35°C and input voltage >210V)						
Voltage (Vac)	380 / 400 / 415 ±1%						
Frequency (Hz)	50/60±0.5%						
Phase	3φ4W+PE						
Unbalanced load	100% possible						
Waveform	Pure sine wave, THD <1% at linear and <3% at non-linear load						
Transfer time (ms)	0ms for mains mode to battery mode, 1ms for inverting mode to bypass mode						
Efficiency online	Up to 97%						
Overload	105%–115% for 60 min, 116–125% for 10 min, 126 –150% for 1 min, above 150% for 1s						
<b>Battery</b>							
Battery voltage (Vdc)*	480 (12V battery from 32 to 44 cells selectable)				528 (12V from 32 to 48 cells selectable)		
Charging current (A)	25-100				25-200		
<b>Other</b>							
Communication interface	RS232, RS485, dry contact, MODBUS and optional SNMP						
Display	7" touch screen and LED						
Alarm	Input abnormal, low battery, overload, failure, UPS failure						
Protection	Output short-circuit, overload, over-temperature, battery low voltage, input / low voltage						
Noise	<75dB						
Working temperature	-5°C to +40°C						
Relative humidity	0–95%, no condensation						
Altitude	1500m without derating						
IP rating	IP20						
Standards	Electrical safety: IEC EN 62040-1 EMC: IEC EN 62040-2 EN 62040-3:2011						
Dimensions (mm) W x D x H	1000 x 900 x 1950		1400 x 900 x 1950		1900 x 900 x 1950	3000 x 900 x 1950	
Weight (kg)	750		1100		1450	2400	

\*When battery below 38 blocks output power will derate by 300–600kVA, when below 40 blocks output power will derate by 800–1200kVA

See page 6 for full product overview.

rehlko



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Exceptional 24/7/365  
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Rehlko is the new name for Kohler Uninterruptible Power