

Preliminary Information

UPS Model	FlexiPro 30
Nominal power	30kVA
Operating temperature	0 ÷ 45 °C
Max. relative humidity during operation	95 % (no condensation)
Max. installation height	1000 m at nominal power rating (-1% power for every 100 m over 1000 m) max 4000 m
Dimensions W x D x H	710 x 1051 X 1956 mm
Weight with no batteries	650 kg
Heat dissipation full load pf=0.9 with battery charge ⁽¹⁾	1.10 kW 946 kcal/h 3755 B.T.U./h
Power dissipated with resistive nominal load (pf=0.7) and with battery charge ⁽¹⁾	0,99 kW 852 kcal/h 3380 B.T.U./h
Flow rate of the fans to remove heat from the installation area ⁽²⁾	Approx. 490 mc/h
Current dispersion to earth ⁽³⁾	< 50 mA
Protection level	IP23
Cable input	Bottom

(1) 3,97 B.T.U./h = 1 kcal/h

(2) The following formula can be used to calculate the air flow rate: $Q [mc/h] = 3,1 \times P_{diss} [kcal/h] / (t_a - t_e) [°C]$ P_{diss} is the power expressed in kcal/h dissipated by all the devices installed in the installation environment. t_a = ambient temperature, t_e =external temperature. In order to take leaks into account, it is necessary to increase the value obtained by 10%.

The table shows an example of a flow rate with $(t_a - t_e) = 5°C$ and a rated resistive load (pf=0.9). (Note: This formula is applicable only if $t_a > t_e$. If not, the UPS system installation requires an air-conditioning system).

(3) The dispersion current of the load is added to that of the UPS on earth wire.

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INPUT STAGE

Nominal voltage	380-400-415 Vac 3-phase with neutral (4 wire)
Nominal frequency	50-60Hz
Accepted input voltage tolerance due to no intervention of the battery (referred to 400Vac)	± 20% @ 100% load -40% +20% @50% load
Accepted input frequency tolerance due to no intervention of the battery (referred to 50/60Hz)	± 20% 40-72Hz
Technology	High frequency IGBT or CoolMos with an independent digital PFC average current mode control on each phase
Input current harmonic distortion	THDi ≤ 3 % ⁽¹⁾
Input power factor	≥ 0.99
Power Walk In mode	Programmable from 1 to 125 sec. in steps of 1 sec.

OUTPUT STAGE

Nominal voltage ⁽²⁾	380/400/415 Vac 3-phase with neutral (4wire)
Nominal frequency ⁽³⁾	50/60Hz
Nominal apparent output power	30kVA
Nominal active output power	27kW
Output power factor	0,9
Short circuit current	1,5 x I _n for t ≥ 500ms
Precision of output voltage (referred to a 400Vac output voltage)	± 1%
Static stability ⁽⁴⁾	± 0.5%
Dynamic stability	± 3% resistive load ⁽⁵⁾
Voltage harmonic distortion with linear and normalised distorting load	≤ 1% with linear load ≤ 3% with distorting load
Crest factor allowed with nominal load	3:1
Frequency precision in free running mode	0,01%
Inverter overload (V _{in} >345V AC)	Load ≤ 103% → Infinite Load = 110% → 10 min Load = 125% → 1 min Load = 150% → 5 sec
Bypass Overload	Load ≤ 110% → Infinite Load = 125% → 60 minutes Load = 150% → 10 minutes Load >200% → 2 sec
Technology	High efficiency inverter with digital multiprocessor (DSP+μP) voltage/current control, based on signal processing techniques with feedforward



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BATTERY CHARGER STAGE

Nominal voltage	±240Vdc
Maximum recharge current ⁽⁶⁾	10A
Battery charger algorithm	Two levels with temperature compensation
Technology	Analogue switching current under μ P control (PWM voltage and charge current adjustment)
Input voltage tolerance for recharging at maximum current	345-480Vac

MODES AND EFFICIENCY

Operating modes	True on line double conversion ECO mode Smart Active mode Stand-By Off (Emergency) Frequency Converter (with batteries)
AC/AC performance in on line mode	Up to 96.5%
AC/AC performance in Eco mode	≥ 99%

OTHER FEATURES

Noise	≤ 48dB(A)
Colour	RAL 7016
Ambient temperature ⁽⁷⁾	0 – 40 °C

⁽¹⁾ @ 100% load & THDv ≤ 1%

⁽²⁾ In order to keep the output voltage within the indicated precision range, a recalibration may be necessary, following a long period of use.

⁽³⁾ If the mains frequency is within ± 5% of the selected value, the UPS is synchronized with the mains. If the frequency is out of the tolerance range, or in battery operation, the frequency will be the selected +0.01%

⁽⁴⁾ Mains/Battery @ 0% -100% load

⁽⁵⁾ @ Mains / battery / mains @ 0% / 100% / 0% resistive load

⁽⁶⁾ The recharge current is adjusted automatically, depending on the capacity of the battery installed.

⁽⁷⁾ 20 – 25 °C for a longer battery life

