

PROTECT FLEX

Uninterruptible Power Supply
10 – 40 kVA

Technical Data Sheet



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Model	Protect FLEX		
Type rating (kVA)	20	30	40
Applicable standards			
General and safety requirements for UPS	IEC / EN 62040-1		
Electromagnetic compatibility (EMC)	IEC / EN 62040-2		
Performance and test requirements	IEC / EN 62040-3		
Environmental characteristics			
Sound power level at 1 metre (dB)	62	64	66
Max. altitude (m)	1000, up to 2000 m, load reduced by 1% per 100 m		
Relative air humidity (%)	0 to 95, non-condensing		
Operating temperature (°C)	0 to 40 (for UPS only), 20°C recommended for batteries		
UPS storage temperature (°C)	-20 to +70		
Mechanical characteristics			
Dimensions W x D x H (mm)	600 x 800 x 1800		
Weight (cabinet without power modules in kg)	165	165	172
Colour	RAL 7035		
IEC 60529 degree of protection (Standard)	IP20		
Terminal strip X1: bolt connection	U, V, W, N, PE : 16-70mm ²		
Terminal strip X2: bolt connection	L+, N, L- : 16-70mm ²		
Terminal strip X3: bolt connection	U, V, W, N : 16-70mm ²		
Terminal strip X4: bolt connection	U, V, W : 16-70mm ²		
At dry contact board, terminals J2 – J10, screw connection	1, 2 or 1-3 plugs : 1.5mm ²		
Module characteristics			
Nominal output (kVA)	10 / 15		
Dimensions W x D x H (mm)	436 x 590 x 85		
Weight (kg)	15.3 / 15.5		

Electrical characteristics (Input Rectifier)		3 phases + neutral + earth
AC nominal input voltage (V AC)		380 / 400 / 415
Frequency (Hz)		50 / 60
Input voltage range (V AC)		-40% to +25%
Input frequency range (Hz)		40 to 70
Input power factor		0.99
THDi (%)		<4
Electrical characteristics (Intermediate DC Link)		
Battery voltage (V DC)		±240, one end in range: 198 V to 288 V
Number of lead batteries (12 V/block)		40 can be adjusted between 36 and 44 blocks
Trickle charge voltage (V/cell VRLA)		2.25 (selectable: 2.2 to 2.35)
Temperature compensation (mV/°C)		-3.0 (selectable: 0 to -5.0, or inhibit)
Ripple voltage (%)		<1
Current ripple (%)		<5
Final discharge voltage (V/cell VRLA)		1.65 (selectable: 1.6 to 1.75) at 0.6C discharge current
		1.75 (selectable: 1.65 to 1.8) at 0.15C discharge current
Battery charge (V/cell)		2.4 (selectable: 2.3 to 2.45)
Battery charging power		10% x UPS power (selectable: 0 to 20% x UPS power)
<p>Caution! The number of battery blocks is set to 40 by default. If there are a different number of battery blocks, make sure that the actual and set number of battery blocks are the same. If they are not, this will result in damage to the battery.</p>		

Electrical characteristics (Inverter Output)			
Nominal output (kVA)	10 to 40		
AC nominal voltage (V AC)	380 / 400 / 415		
Stationary voltage stability (%)	±1 % with even load distribution ±1.5 % with 100 % uneven load distribution		
Frequency (Hz)	50 / 60		
Frequency regulation (Hz)	50 / 60 (±0.1%)		
Overload capacity (%)	110 % load, 60 min 125 % load, 10 min <150 % load, 1 min >150 % load, 200 ms		
Fault current (%)	300 % short circuit current for 200 ms		
Current carrying capacity of neutral conductor	170 % of I_n		
Output power factor	0.9 for capacitive or inductive load		
Synchronisation range (Hz)	Adjustable, ±1 to ±5, default: ±2		
Synchronisation speed (Hz/s)	Adjustable, 0.1 to 5, default: 1		
Output voltage THDu	<1 % linear load <5.5 % non-linear load with load fluctuation 0% - 100 % - 0 %		
Electrical characteristics (Bypass Mains Input) 3 phases + neutral			
Type rating (kVA)	20	30	40
AC nominal voltage (V AC)	380 / 400 / 415		
AC nominal current (A)	30 @ 380 V 29 @ 400 V 28 @ 415 V	45 @ 380 V 43 @ 400 V 42 @ 415 V	60.6 @ 380 V 58 @ 400 V 55.5 @ 415 V
Overload capacity (%)	<125 long-term <130 for 10 min <150 for 1 min >150 for 300 ms	<110 long-term <130 for 5 min <150 for 1 min >150 for 300 ms	<125 long-term <130 for 10 min <150 for 1 min >150 for 300 ms
Nominal current of the neutral conductor (A)	1.7 x I_n		
Rated frequency (Hz)	50 / 60		
Switching time (bypass and inverter) (ms)	Synchronised switching: ≤1 ms		
Bypass voltage range (%) limit	Upper: +10, +15, +20, +25 default: +15		
	Lower: -10, -15, -20, -30, -40 default: -20		

Bypass frequency range (Hz)	Adjustable ± 2.5 , ± 5 , ± 10 , ± 20 default: ± 10		
Synchronisation range (Hz)	Adjustable, ± 0.5 to ± 5 , default: ± 2		
Display and interface			
Display	7" LCD colour touchscreen + LEDs		
Interface	Standard: RS232, RS485, USB, potential-free contacts		
	Option: SNMP		
Efficiency			
System (kVA)	20	30	40
Normal mode (%)	Module 95 max. / system 94		
ECO mode (%)	99 / 98		
Battery discharge mode (%)	94.5 at 480 V DC and full load		