

FLEXUS FM 10-20kVA

Uninterruptible Power Supply

Absolute protection

The FLEXUS series is suitable for protecting information and telecommunications systems, information networks and critical systems in general, where the risks connected with a power supply of poor quality energy could put the continuity of activities and services at risk, entailing high costs. The FLEXUS series is available in 10-12-15-20 kVA three-phase and single-phase input and single-phase output models, with double conversion on-line technology according to the VFI-SS-111 classification, as defined by the IEC EN 62040-3 standard. Flexus has been designed and produced with state-of-the-art technologies and components, in order to guarantee maximum protection for the users powered, no impact on the supply mains and energy saving.

Zero Impact Source

Thanks to the technology used, Flexus can solve any problem of connection in installations where the supply mains has a limited installed power, where the UPS is also powered by a generator set or where there are problems of compatibility with loads that generate current harmonics; Flexus has indeed zero impact on the power supply source, be it the mains or a generator set:

- low distortion of input current
- less than 3% - input power factor 0.99
- power walk-in function

that guarantees progressive start-up of the rectifier - delayed switching-on function, to restart the rectifier igniters when the mains returns, in case of systems with various UPS. The Flexus also acts as a filter and phaseshift mechanism in respect of the supply mains ahead of the UPS, since it removes the harmonic components and the reactive power generated by the users powered.

Battery Care System

Management of the batteries is fundamental to guaranteeing operation of the power supply unit under emergency conditions. The Battery Care System consists of a series of functions and performances that permit management of the storage batteries in such a way as to obtain the best performance and to extend battery life. Battery recharge: Flexus is suitable for working with hermetically sealed (VRLA), AGM and GEL lead batteries, and openvase and Nickel-Cadmium batteries. According to the type of battery, various recharge methods are available.

- One-level recharge, typical for the most commonly used VRLA AGM batteries
- Two voltage levels recharge according to the IU characteristic
- Charge block system to reduce consumption of the electrolyte and further extend the life of VRLA batteries.

Compensation of the recharge voltage according to temperature



in order to avoid excessive charges and battery overheating. Battery Test in order to detect any falloff in performance or failure of the batteries in good time. Protection against deep discharges: in case of long low load discharges, the end-of-discharge voltage tension will be increased, as prescribed by the battery manufacturers, in order to avoid damage to or a drop in performance of the storage batteries. Ripple Current: the recharge current ripple (residual AC component) is one of the most important causes that reduce battery reliability and life. Flexus, thanks to the high-frequency battery charger, reduces this value to negligible levels, extending battery

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life and maintaining high performance for a long time. Wide voltage range: the rectifier is made to be operated with a wide range of values of the input voltage (up to - 40% with half load), reducing the need to discharge the batteries and, as a result, extending battery life.

Low Management Cost

The technology used and the choice of high performance components mean that Flexus can obtain exceptional performance and efficiency levels, from a very low footprint and dimensions: - the lowest footprint in this category, only 0.26 sq. m. for 20kVA Flexus, batteries included - high performance up to 94% that permits 35% of the energy dissipated in one year to be saved, compared to similar products present on the market (with average performance 91%). This exceptional performance value makes it possible to recover the initial investment in less than 4 years in operation. - output power with power factor 0.9 that provides up to 15% more active power compared to a normal UPS in commerce, guaranteeing the greatest margin in sizing of the UPS for further load increases.

Flexibility

Flexus can be used for a wide range of applications, thanks to its characteristics of configuration flexibility, accessories and options

available and performance levels: - suitable for powering capacitive loads such as blade servers, without any reduction of the active power, from 0.9 leading to 0.9 lagging - modes of operation: On Line, Eco, Smart Active and Stand By Off - frequency converter mode - Power Share sockets that can be configured in order to maintain the back-up time for the most critical loads or to be activated only when the mains goes down - Cold Start to switch on the UPS including when the supply mains is off - battery cabinets of various dimensions and capacity, for longer back-up times - option to connect a temperature sensor for external battery cabinets, for recharge voltage compensation - additional battery chargers to optimize recharge times - optional double input of the supply mains - isolation transformers to modify the neutral arrangements, in case of separate sources or for galvanic isolation between input and output.

Advanced Communication

Flexus is equipped with a graphic display that provides information, measures, states and alarms regarding the UPS in 5 different languages. - Advanced multiplatform communication, for all operating systems and network environments: Watch&Save 3000 monitoring and shutdown software included with SNMP agent - Compatible with PowerNetGuard for the remote assistance service RS232 or USB serial port - 3 slots for the

installation of optional communication accessories such as network adapters, zero-potential contacts, etc. - REPO (Remote Emergency Power Off) with which to power down the UPS through a remote emergency pushbutton - Input for connection of the auxiliary contact of an external manual bypass - Input for synchronization from an external source - Graphic mimic panel display for remote connection

Applications

Cash Registers, Data centers, e.Business (Server Farms, ISP/ASP/POP), Electro-medical devices, Emergency Engines, Industrial PLCs, Local Area Networks (LAN), Personal computers, Point Of Sales Systems (POS), Servers, Small computer networks, Telecommunication Engines, Workstations

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INPUT	FM 10	FM 12	FM 15	FM 20
Rated power	380-400-415V 3phase with Neutral or 220-230-240V 1phase			
Voltage tolerance	400V \pm 20%			
Frequency	50-60Hz			
Accepted frequency	\pm 20%			
Current distorsion	THDi \leq 3%			
Power factor	\Rightarrow 0,99			
Input phases	3			
Soft start (Power Walk In)	Programmable from 5 to 30 sec. in steps of 1 sec.			
BY PASS	FM 10	FM 12	FM 15	FM 20
Rated voltage	220-230-240V 1phase			
Voltage tolerance	-20%; -15% (selectable in step of 1V)			
Rated frequency	50-60Hz			
Frequency tolerance	\pm 5% (selectable)			
BATTERIES	FM 10	FM 12	FM 15	FM 20
Type	Maintenance-free sealed lead acid			
Batteries number	40/12V/7Ah-9Ah			40/12V/9Ah
Recharge time	8 hours			
OUTPUT	FM 10	FM 12	FM 15	FM 20
Rated power	10000 VA	12000 VA	15000 VA	20000 VA
Active power	8kW	9,6kW	12kW	16kW
Phases number	1			
Waveform	Sinewave			
Rated voltage	220-230-240V 1phase			
Voltage distortion with distorting load	\leq 3%			
Voltage distortion with linear load	\leq 1%			
Frequency	50-60Hz (also frequency converter with batteries)			
Dynamic stability	\pm 3% in 20msec.			
Static stability	\pm 1%			
Crest factor (Ipeak/Irms)	3:1			
Output phases	1			
Overload	110% for 10 minutes; 133% for 1 minute; 150% for 5 seconds			
Load power factor	0,9			
SYSTEM	FM 10	FM 12	FM 15	FM 20
AC/AC efficiency	\Rightarrow 94% On-line; \Rightarrow 98% Eco-Mode			
Operating altitude	1000 m a.s.l.			
Noise	\leq 48dbA			
Operating temperature	0 \div 40°C			
Relative humidity	90% non condensing			
Safety compliance	EN 62040-1-1 and directive 2006/95/EC			
EMC conformance	EN 62040-2 and directive 2004/108/EC			
Protection degree	IP20			

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Communication	1 RS232 or 1 USB, 1 input AS400, 2 slots for optional communication cards			
Remote signals	1 slot for rely card			
Remote controls	Remote Emergency Power Off (REPO), input battery, temperature probe, input external synchronism			
Cooling	forced ventilation			
Colour	RAL 7016 (Dark Grey)			
Technology	On-line double conversion			
Weight (kg)	180 Kg	182 Kg	190 Kg	From 85 to 190 Kg
Dimensions (WxDxH) mm	320x840x930 mm			
Classification as per IEC 6240-3	(Voltage Frequency Independent) VFI-SS-111			

DATA	FM 10	FM 12	FM 15	FM 20
Installation	Tower			
Configuration	Parallel Unit			

OPTIONS	FM 10	FM 12	FM 15	FM 20
Battery cabinets for longer runtimes	Yes			
Empty battery cabinets for longer runtimes	Yes			
Parallel kit	Yes			
Isolation transformer module (WxDxH)	Yes			
Auxiliary serial connection	Yes			
LCD-based remote control panel	Yes			
Communication software 'professional' versio	Yes			

OPTIONS	FM 10	FM 12	FM 15	FM 20
MultiCom 351	X	X	X	X
MultiCom 352	X	X	X	X
MultiCom 301	X	X	X	X
MultiCom 302	X	X	X	X
NetMan 101 Plus	X	X	X	X
NetMan 102 Plus	X	X	X	X
MultiCom 362	X	X	X	X
MultiCom 372	X	X	X	X
MultiCom 382	X	X	X	X
Multi I/O	X	X	X	X
IRMS Multi-Switch	X	X	X	X
AS/400 interface kit	X	X	X	X
MultiCom 401	X	X	X	X