INDUSTRAIL UPS SYSTEM DATA SHEET

The BEC AFZAR range of industrial UPS provides an extremely reliable and high quality source of continuous AC power. These are true on-line UPS systems built to client specifications with each element of the system design chosen to match project requirements.

This type of UPS system is widely used in the harsh operating environments encountered in power generation and distribution, petro-chemical, industrial process control and onshore or offshore oil and gas applications.

The Industrial UPS comprises:

DC Charger, Thyristor controlled charger converts the AC mains supply to a regulated DC bus from which the battery is charged and inverter powered.
Battery, which is used for energy storage and is generally of lead acid or nickel cadmium type. The battery autonomy is sized to the requirement of the UPS load.
Inverter, IGBT based pulse width modulated inverter generates a regulated sinusoidal AC output from the DC bus. A transformer in the inverter output provides galvanic isolation between the UPS output and battery.

Static Switch, the UPS output is controlled by the static switch that selects the inverter output or bypass supply dependant on operating mode.
Maintenance Bypass provides capability to isolate the static elements of the UPS and power the load from the bypass supply during UPS maintenance.
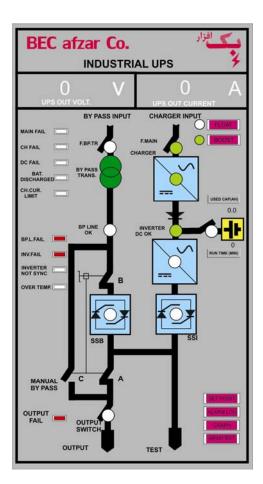
- Output ratings available from 5kVA to 200kVA

- 110V DC /220 VDC /360VDC bus.

- HMI Touch screen display, alarm & control panel

- Compatible with lead acid or nickel cadmium batteries

- Input and output voltage options

- Custom alarm and monitoring configuration options

- Control and distribution options

- Enclosure, IP and paint color options

- 110V/220V/380VAC single phase / three phase output

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- Bypass transformer option.

- Bypass Stabilizer option.

- Redundant (parallel / hot standby) option.

Standard Specification

Ac input	
Supply phase & voltage:	Three phase 400VAC/440VAC,3ph 4wire with protective earth
Supply voltage variation:	+/-10%
Supply frequency:	50Hz with option for 60Hz
Supply frequency variation:	+/-5%

UPS Output	
Output voltage:	110VAC/220VAC, 380VAC single phase / three phase
Static voltage regulation:	+/-2% for 0 -100% load variation
Dynamic voltage regulation:	+/-7% for 100% load step,500ms recovery to within static limits
Overload capability:	150% for 1 m inute,125% for 10 m inutes,110% for 20 minutes
Short circuit capability:	2 x rated output current for 5 seconds
Waveform :	Sinusoidal
Distortion:	<3% with linear load <5% with non linear load
Crest Factor (Load Current):	3:1
Frequency:	50Hz with option for 60H z,+/-0.1% controlled or synchronized to the bypass supply
Efficiency	Charger 90-95% at full load Inverter 80-90% depends on model and rating

Mechanical	
Protection Rating	IP42 (IP52 option)
Enclosure Finish	RAL7032 / RAL 7035
Cooling	power module assisted cooling dependant on rating
Audible Noise Level	50 - 65dBA dependant on rating and load

General	
Operating temperature range:	-10oC to +50°C
Storage temperature range:	-20oC to +70°C
Operating altitude:	0 to 1000m
Operating humidity:	10% to 90% RH - non condensing

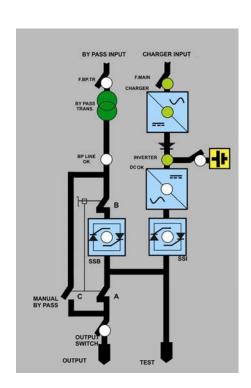| instrumentation & monitoring	
HMI touch Screen Display	The UPS user interface provides indication of measured UPS operating values. The settings can be changed and operating mode selected.
	Measured values are displayed on the measurement page. Main measured value including output voltage and current are displayed on the main page. The status of all parts of UPS comprising battery charger and Inverter and static switch and manual bypass switch and position of input and output switches and battery circuit breaker indicate on the HMI panel.
	A password system protects the UPS configuration against unauthorized changes.
measurements	Rectifier input voltage, output voltage & current
	Battery terminal voltage, current & charge state
	UPS output voltage, current
Alarm s & Status	Comprehensive set of UPS, rectifier, inverter, bypass and battery alarms and status indications.
Event History	The history log can hold up to 1000 events.
Graph	The trends of Important parameters such as output current and voltage and battery current and voltage and main input voltage are displayed on the graph page.

Analog measurements:	
Rectifier measurements	Rectifier input voltage, and input current Rectifier output voltage and current
Battery measurements	Battery terminal voltage, current
Inverter /bypass /output measurements	AC voltage, AC current and frequency for INV/BYPASS/OUTPUT (equipped with selector switch for choosing inverter output /bypass line/UPS output)

Other Specification

- Rectifier input isolation transformers

- Bypass isolation transformers option

- Bypass automatic voltage regulators (stabilizer) option

- Charger and battery MCCB

- BYPASS Input MCCB

- Manual Bypass switch (make before break)

- Panel lighting

- Battery autonomies to suit customer requirements

- Remote alarm relay contacts (Rectifier fail - DC fail - Inverter fail- Bypass fail)

HMI mimic panel:

Standard Ups single line diagram