

CYBERWAVE

UPS

UNINTERRUPTIBLE POWER SUPPLY



CI SERIES

10 kVA / 8 kW

20 kVA / 16 kW

30 kVA / 24 kW

40 kVA / 32 kW

60 kVA / 48 kW

80 kVA / 64 kW

100 kVA / 80 kW

120 kVA / 96 kW

140 kVA / 112 kW

160 kVA / 128 kW

 **CYBEREX**

CYBERWAVE UPS CI SERIES

UNINTERRUPTIBLE POWER SUPPLY

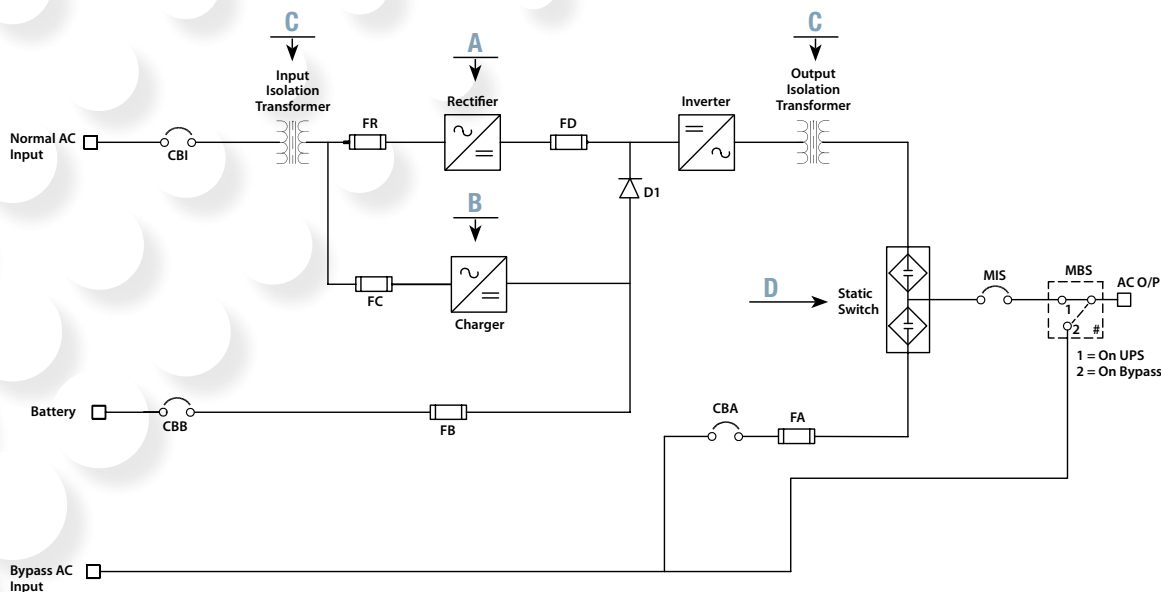


The market leader for nearly 50 years, Thomas and Betts Power Solutions offers a true online, double conversion UPS system developed to IEC standards as an optimal and cost effective solution for applications in oil and gas, power generation, and heavy manufacturing processes. Ranging from 10-160kVA, the Cyberwave CI Series incorporates state of the art system topology for increased system efficiency and battery life. Designed for a 20 year life, these systems feature PWM inverter technology, DSP digital controls, parallel redundancy, and rugged overload and fault clearing capabilities. In addition, the CI Series includes fiber optic data paths for enhanced and accurate controls and communication, an input and output isolation transformer, and a fully rated, rugged static transfer switch. For critical industrial applications, the CI Series ensures increased system reliability and security that only come from having truly uninterruptible power.

FEATURES

- IEC 62040 compliant; ideal for international applications
- IGBT based PWM inverter; digital signal processor for accurate and reliable controls
- Input power factor near unity at full loads with reducing reflected harmonics
- Single phase fully rated static switch for increased reliability and security
- Internal communication facilitates high-speed CAN bus for improved signal transfer and between processors
- High-speed branch fuse clearing design provides enhanced fault clearing capability
- Input and output isolation transformer provides continuous, clean and regulated power without external effects
- Monitoring via LAN through SNMP or modbus communication for accurate system analysis

HARDWARE CONFIGURATION



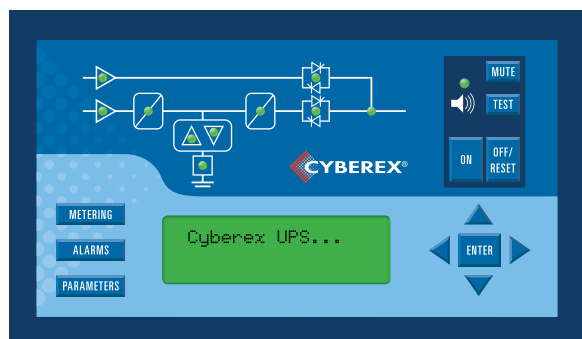
HARDWARE CONFIGURATION KEY

- A** Unregulated bus enables flexible battery string configurations and low reflected harmonics
- B** Separate battery charger reduces ripple on battery for increased battery life and efficiency
- C** Input and output isolation transformer for maximum reliability
- D** Fully rated static switch for increased redundancy and reliability – make before break operation to ensure no load droop

For more information go to www.tnbpowersolutions.com



MIMIC DISPLAY



MIMIC/LED INDICATIONS

- Mains Input
- Bypass Input
- Load on Bypass
- Charger Status
- Inverter Operation
- Load on Inverter
- Synchronization – Bypass Inverter
- Battery Operations
- Battery Discharge
- Battery MCCB
- Alarm Indication

OPTIONS

- Parallel or Hot Standby Redundancy
- Input Isolation Transformer
- Bypass Line Regulator
- AC Distribution Panel
- PC Based Monitoring and Recording Unit
- RS-485 Communication Port
- Monitoring on LAN through SNMP
- Monitoring on LAN through Profibus
- Battery Monitoring System
- Remote Annunciator
- Automatic Shutdown Kit
- DCS Connectivity through Modbus / Profibus
- Individual Battery Health Monitoring Systems (BHMS)
- IGBT-Based Rectifier (<5% THDI)
- 12 Pulse Rectifier for Input Harmonic Reduction (<10)
- Harmonic Filter (5th, 7th, 11th, & 13th)



MAIN INPUT

Voltage	415 VAC (Std) 480 VAC (Optional)
Voltage Range	+15 – 20% at Full Load +15 – 25% at 75% Load
Phase	3 Phase, 3 Wire
Frequency	50 Hz (Standard) 60 Hz (Optional)
Frequency Range	+/- 6%
Input Power Factor	> 0.95 at Full Load
Input Current Harmonics	< 28% at Full Load

DC BUS CHARGER

Voltage	110, 120, 220, 240, 360
Maximum DC Bus Ripple without Battery	< 2% RMS 100% load
Maximum DC Bus Ripple with Battery	< 1% RMS 100% load

OUTPUT

Nominal Voltage	220/230/240V (Standard) 110/115/120V (Optional)
Load Power Factor Rated	0.80
DC – AC Efficiency	92%
Load Crest Factor	3:1
Voltage Regulation Steady State	< +/- 1%
100% Step Load	+/- 5%
Recovery Time	< 20 msec return to 98.9% nominal voltage
Overload	125% 10 minutes • 150% 1 minute
Fault Clearing Capability	Fast acting fuse (4 msec)
Bypass Synchronization Window	+/- 1% to 6% Field Programmable
Internal Oscillator	+/- 0.1%
Slew Rate	1 Hz/Sec
Total Harmonic Distortion Linear Load	< 3%
Nonlinear Load (Crest Factor 3:1)	< 5%
Frequency	50 Hz (Standard) • 60 Hz (Optional)

OPERATING CONDITIONS

Ambient Temperature	0–45° C
Altitude	up to 1000 Meters from MSL
Humidity	90% Non-Condensing
Audible Noise @	55–75 dBA at 1 meter (Model Dependent)

ENCLOSURE

Construction	CRCA Steel Sheet
Protection Class	IP21 (Standard) • IP31, IP41 (Optional)
Finish (Powder Coated)	RAL 7032 (Other Colors Optional)
Ventilation	Forced Air (Internal Fans)
Cable Entry	Bottom – (Top Optional)

DIMENSIONS

kVA	Width	Depth	Height	Weight
10	1870 (mm) 6.1 (ft)	750 (mm) 2.46 (ft)	1800 (mm) 5.90 (ft)	700 (kg) 1540 (lbs)
20	2630 (mm) 8.6 (ft)	750 (mm) 2.46 (ft)	1900 (mm) 6.23 (ft)	750 (kg) 1650 (lbs)
30	2630 (mm) 8.6 (ft)	850 (mm) 2.79 (ft)	2000 (mm) 6.56 (ft)	1100 (kg) 2420 (lbs)
40	2900 (mm) 9.5 (ft)	850 (mm) 2.79 (ft)	2000 (mm) 6.56 (ft)	1500 (kg) 3300 (lbs)
60	3700 (mm) 12.1 (ft)	1000 (mm) 3.28 (ft)	2000 (mm) 6.56 (ft)	1600 (kg) 3520 (lbs)
80	3900 (mm) 12.8 (ft)	1000 (mm) 3.28 (ft)	2000 (mm) 6.56 (ft)	2000 (kg) 4400 (lbs)
100	3900 (mm) 12.80 (ft)	950 (mm) 3.12 (ft)	2000 (mm) 6.56 (ft)	2100 (kg) 4630 (lbs)
120	3900 (mm) 12.80 (ft)	1050 (mm) 3.44 (ft)	2000 (mm) 6.56 (ft)	2250 (kg) 4960 (lbs)
140	4200 (mm) 13.78 (ft)	1050 (mm) 3.44 (ft)	2000 (mm) 6.56 (ft)	2400 (kg) 5291 (lbs)
160	4200 (mm) 13.78 (ft)	1050 (mm) 3.44 (ft)	2000 (mm) 6.6 (ft)	2600 (kg) 5732 (lbs)

* Dimensions are for PR systems

METERS – DIGITAL – LC DISPLAY

Metering with true RMS measurement

VOLTAGE METERS	Input (Mains)	CURRENT METERS	Input (Mains)
	Alternate		Battery
	Battery		Inverter
	Inverter		Load
	Load	POWER METERS	
			Total KVA
FREQUENCY METERS			Total KW
	Mains		Total Power Factor
	Alternate		UPS KVA
	Inverter		UPS KW
			UPS Power Factor

MAJOR ALARMS

TEXT READOUT

LC DISPLAY

INPUT	Under voltage	Input Low
	Over voltage	Input High
DC	Over voltage	High DC Shutdown
	Discharging	Bat Discharge
	Under voltage	Low Battery
BATTERY	End of battery discharge	Low Battery Trip
	Under voltage	Inv Low
	Over voltage	Inv High
INVERTER	IGBT limb fault	Inv Sat Trip
	Overload	Overload
	Overload Trip (Inverse time)	Inv Over LD Trip
	Over temperature	Inv Over Temp
	Under voltage	Alt. Low
ALTERNATE	Over voltage	Alt. High
	Frequency out of range	Alt. FO
	Transfer to Bypass	Load On Bypass

Battery Voltage (VDC)	110	125	220	250 & 260	360
UPS Rating (kVA)	10	10	10	10	–
	15	15	15	15	–
	20	20	20	20	–
	30	30	30	30	–
	40	40	40	40	–
	–	–	50	50	–
	–	–	60	60	–
	–	–	80	80	–
	–	–	100	100	–
	–	–	–	–	120
–	–	–	–	160	

Higher ratings and other voltages available on request.



www.tnbpowersolutions.com
 Thomas & Betts Corporation
 Power Solutions Group
 5900 Eastport Blvd., Bldg. V • Richmond, VA 23231-4453
 T: 804.236.3300 • F: 804.236.4841

