BW***-DA230-250 DA series

Industrial 4/5/6 kVA inverter, 19" rack mount

Features:

- True sine wave output (T.H.D <3%)
- Standard 19” Rack mount case
- Power-on self-test, Soft output start
- Auto switch function: DC to AC, AC bypass, less than 5ms
- By-pass AC 230V input filtering
- Start auto restart while AC or DC is recovering
- Automatic temperature control fan
- Build in voltage regulator Stabilize AC voltage
- Maintenance bypass /DC available
- Protection: Short circuit protection, over load protection, battery over/under voltage protection, over current, over temperature
- 5 Routes Dry contact for system (DC input fault, AC input fault, overload information, by-pass information and output fault)
- RS232 and RS485 & Optional SNMP communication Port
- Audible and visual alarm
- Real-time monitoring of the system operating status
- Large 128*64 digital LCD display
- 4 status leds
- Unattended operation: the system switches automatically to provide AC Power to the load between the DC input and AC input

CE RoHS

Description

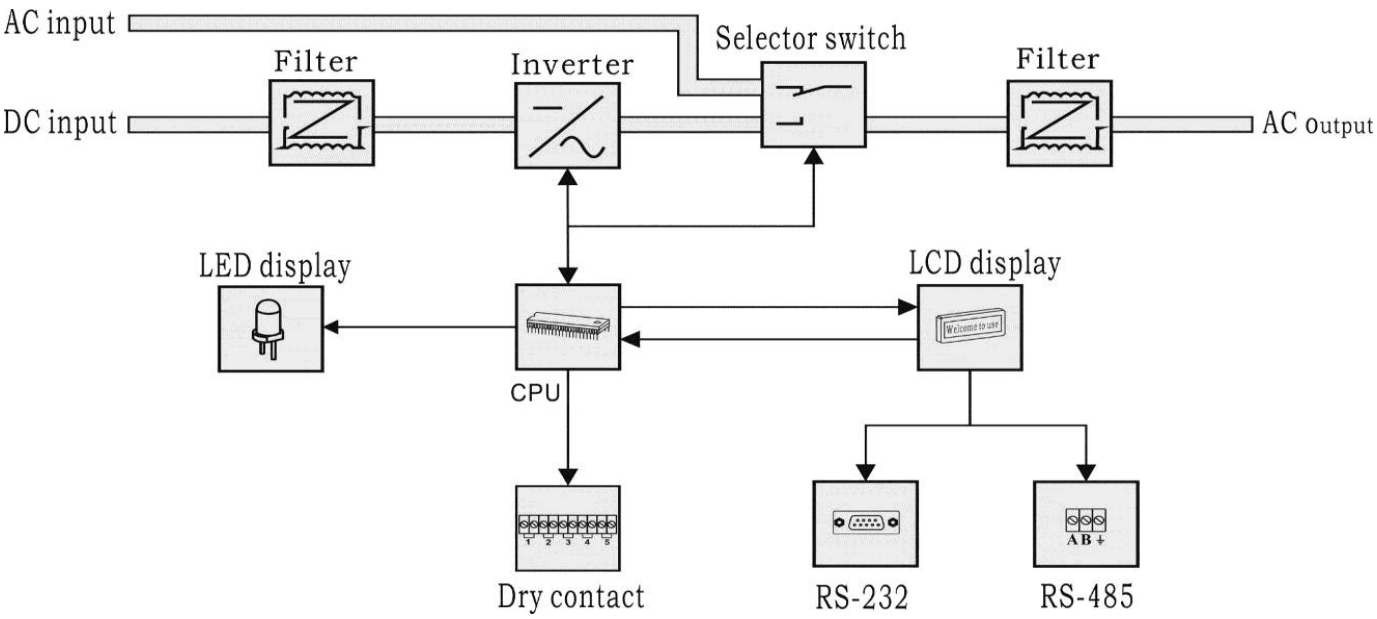
BW***-DA series inverter is a new generation of dual input inverter solution designed for the field of communication applications, which is suitable for the high reliability of the communication system.
The solution is equipped with a 96V/110V/115V/120V/220V/230V AC power supply and a 48V/110V/125V/220V DC power supply, which fills the gap between the traditional UPS power supply and common pure sine wave inverter solutions.

It uses a novel design structure that helps users to provide clean, stable and durable AC power for critical loads, and has the same high reliability as the DC power supply system. The design characteristics of the dedicated communication pure sine wave inverter ensure the seamless conversion between the AC and DC power supply, almost no conversion delay, and no need to use a static switch.

Specifications

	BW****-DA48	BW****-DA110	BW****-DA125	BW****-DA220
Input DC voltage	48V	110V	125V	220V
DC voltage range	45.5 - 57V	104 – 131V	100 – 150V	208 – 260V
Low voltage alarm	45V ±0.5V	103.5V ±0.5V	99.5V ±0.5V	207.5V ±0.5V
Low voltage shutdown	40V ±0.5V	90V ±0.5V	90V ±0.5V	180V ±0.5V
Over voltage shutdown	60V ±0.5V	135V ±0.5V	155V ±0.5V	275V ±0.5V
Max DC input current **BW4000-DA**** **BW5000-DA**** **BW6000-DA****	 103A 129A 155A	 45A 57A 68A	 47A 59A 71A	 23A 28A 34A
Output AC voltage	BW****-DA** BW****-DA**-115	230VAC ±1.5% 115VAC ±1.5%		
Output AC current	BW4000-DA** BW5000-DA** BW6000-DA**	14.5A 18.2A 21.8A		
AC Regulation	THD≤3%			
Power factor	>0.8			
Wave form	Pure Sine Wave			
By-pass Switch time	≤5ms			
Frequency	BW****-DA** BW****-DA**-115	50Hz, auto sync with bypass input 60Hz, auto sync with bypass input		
Efficiency	≥85% (80% linear load)			
Output capacity	BW4000-DA** BW5000-DA** BW6000-DA**	4kVA 5kVA 6kVA		
Output power	BW4000-DA** BW5000-DA** BW6000-DA**	3200W 4000W 4800W		
Overload	100%-120%: 60s 121%-150%: 10s			
Start	Soft-start			
Cooling	6 fans, Intelligent Cooling			
Protection	Internal Protection	Overload Protection, Over temperature protection, Short load protection, battery over/under voltage protection, Over current.		
	Input DC Voltage Alarm	Battery Under-voltage		
	LCD Audible and visual alarm	Flash Red LED light and Beeb		
	Temperature	Temperature control fan		
	Short Circuit	LED Red light on		
	Alarm record	Standard is 1000 events, minimum is 100		
Interface	5 Dry relay contacts	For remote indication of alarm / shut down conditions		
	RS232 & RS485	For remote operation and monitoring		
	Option	SNMP, TCP/IP		
Isolation	between output and input	3500Vdc/10mA/1min.		
	between output and chassis	3500Vdc/10mA/1min.		
	between input and chassis	7500Vdc/10mA/1min.		
Working temp.	-20°C - +50°C			
Humidity	0…90%, non-condensing			
Operating Altitude	Full power up to 2000m. Above: derating -2% / 100m, max altitude 5000m			
Noise (1m distance)	≤55dB			
Safety Standards	EN IEC 62368-1:2024 + AMD.11:2024			
EMC Emission	EN 55032:2015 + AMD.1:2020 + A11:2020		EN 55035:2017 + A11:2020	
EMC Immunity	EN IEC 61000-3-2:2019 / A1:2021 EN 61000-3-3:2013 + AMD.1:2019 + AMD.2:2021		EN 61000-6-5:2015 / AC:2018-01 EN IEC 61000-6-1:2019 EN IEC 61000-6-1:2019	
Dimensions (WxDxH)	482 x 430 x 88mm 2U			

Hardware structure and working principle

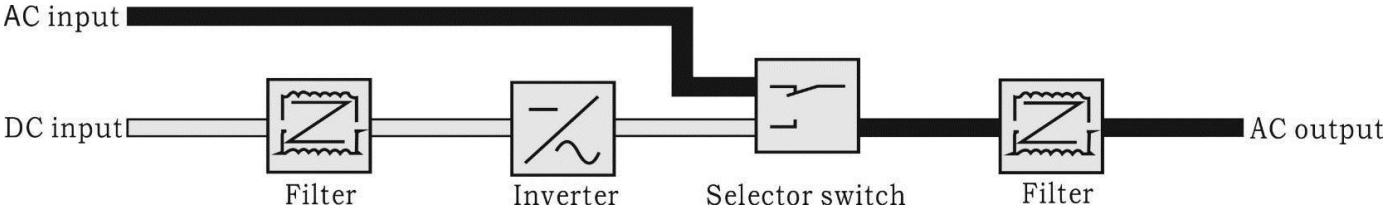


Power supply mode

The inverter can be used with AC or DC as the primary power source. Default setting is AC priority. This setting can be changed in the menu, accessible by the LCD screen and menu buttons.

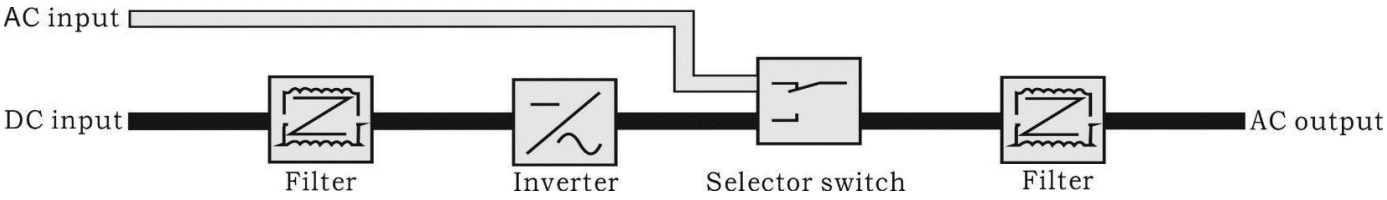
AC priority mode

The AC output comes from the AC input (mains connection).
When the AC input is outside the input range, the inverter switches to the DC input within 5ms.



DC priority mode

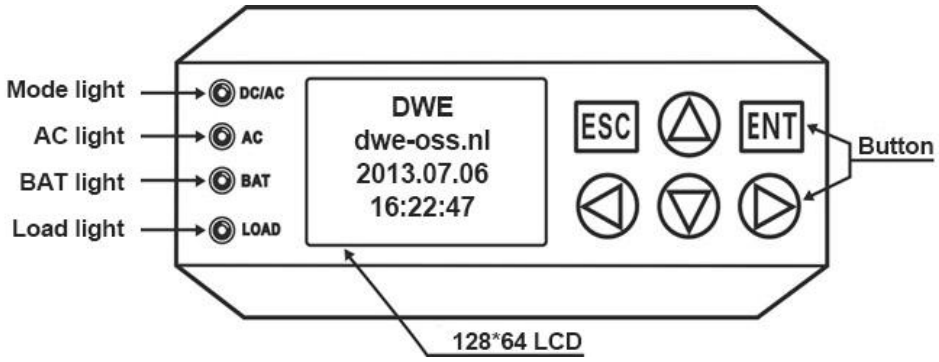
The AC output comes from the DC input via the inverter. When the DC input is outside the input range, it will switch to the AC input within 5ms.



Interface

Display

The front of the inverter features four status LEDs and an LCD display.
Through this display, the status can be read and settings can be adjusted.



Communication

On the rear side of the inverter are the serial port(s) and possibly the Ethernet port. As standard, the inverter can be read via RS232/RS485 serial port with the ModBus protocol. Versions with model extension -SNMP are equipped with an Ethernet connection with the SNMP protocol.
SNMP, which stands for Simple Network Management Protocol, is the standard protocol for monitoring remote devices via TCP/IP.
The inverter version -SNMP has, in addition to the Ethernet connection, only an RS485 connection with the ModBus protocol.

Alarm contacts

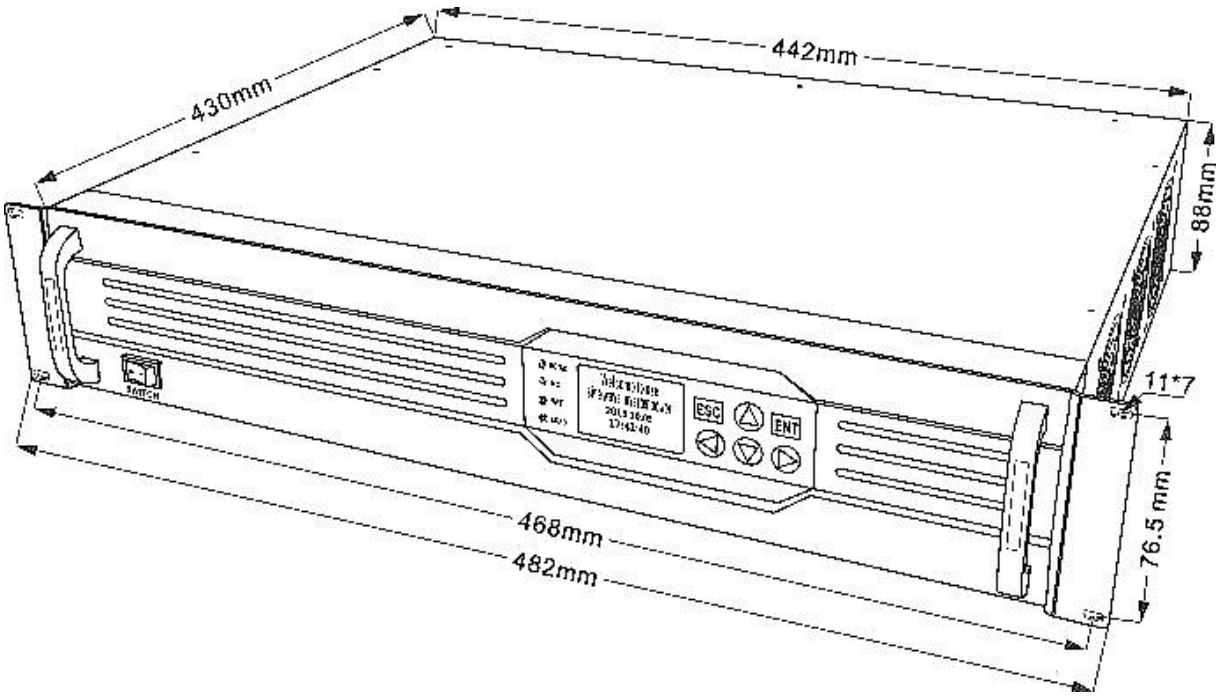
On the back of the inverter are also the five alarm contacts. These are potential-free normally-open contacts.
The following alarms are indicated by these contacts:

- Contact 1 - DC fault; signal circuit is closed for low or high DC input voltage
- Contact 2 - AC fault; signal circuit is closed for low or high AC input voltage
- Contact 3 - overload signal; signal circuit is closed for equipment output overload
- Contact 4 - by-pass signal; signal circuit is closed for equipment in by-pass operation
- Contact 5 - output fault; signal circuit is closed for equipment output fault

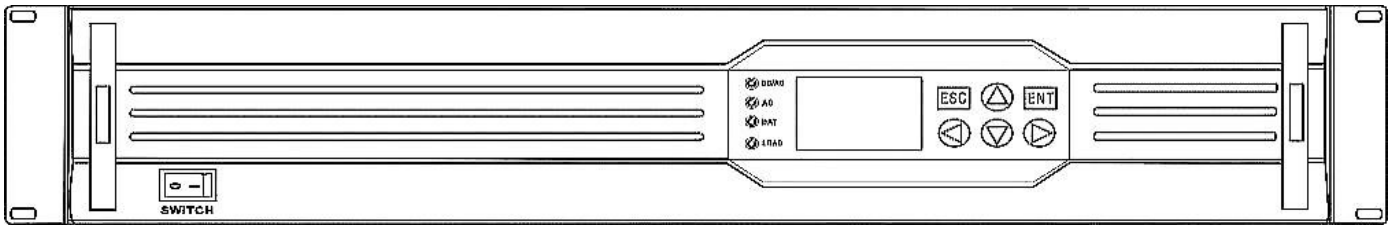
The contact capacity of each dry contacts is 60V 0.5A.

Enclosure

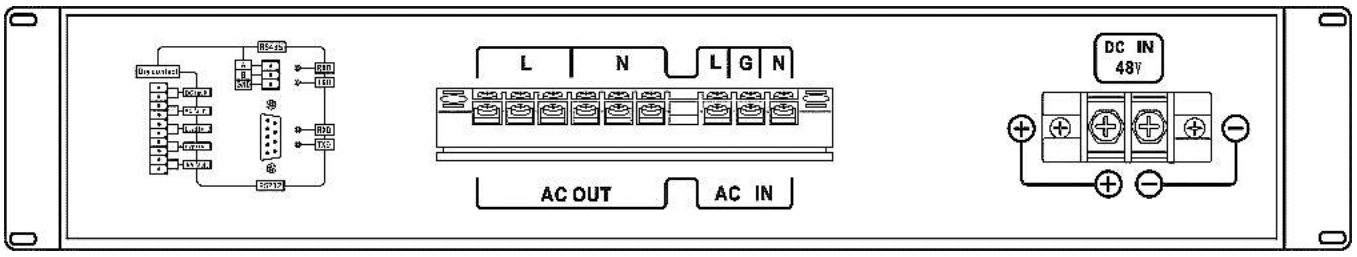
Dimensions



Front panel



Back panel



Model selection

	AC input/output voltage	DC input voltage	Output capacity	Dry relay contacts	RS232 Modbus	RS485 Modbus	TCP/IP SNMP
BW4000-DA48	230V 50Hz	48V	4000VA	✓	✓	✓	
BW4000-DA48-SNMP	230V 50Hz	48V	4000VA	✓		✓	✓
BW4000-DA48-115	115V 60Hz	48V	4000VA	✓	✓	✓	
BW4000-DA48-115-SNMP	115V 60Hz	48V	4000VA	✓		✓	✓
BW5000-DA48	230V 50Hz	48V	5000VA	✓	✓	✓	
BW5000-DA48-SNMP	230V 50Hz	48V	5000VA	✓		✓	✓
BW5000-DA48-115	115V 60Hz	48V	5000VA	✓	✓	✓	
BW5000-DA48-115-SNMP	115V 60Hz	48V	5000VA	✓		✓	✓
BW6000-DA48	230V 50Hz	48V	6000VA	✓	✓	✓	
BW6000-DA48-SNMP	230V 50Hz	48V	6000VA	✓		✓	✓
BW6000-DA48-115	115V 60Hz	48V	6000VA	✓	✓	✓	
BW6000-DA48-115-SNMP	115V 60Hz	48V	6000VA	✓		✓	✓
BW4000-DA110	230V 50Hz	110V	4000VA	✓	✓	✓	
BW4000-DA110-SNMP	230V 50Hz	110V	4000VA	✓		✓	✓
BW4000-DA110-115	115V 60Hz	110V	4000VA	✓	✓	✓	
BW4000-DA110-115-SNMP	115V 60Hz	110V	4000VA	✓		✓	✓
BW5000-DA110	230V 50Hz	110V	5000VA	✓	✓	✓	
BW5000-DA110-SNMP	230V 50Hz	110V	5000VA	✓		✓	✓
BW5000-DA110-115	115V 60Hz	110V	5000VA	✓	✓	✓	
BW5000-DA110-115-SNMP	115V 60Hz	110V	5000VA	✓		✓	✓
BW6000-DA110	230V 50Hz	110V	6000VA	✓	✓	✓	
BW6000-DA110-SNMP	230V 50Hz	110V	6000VA	✓		✓	✓
BW6000-DA110-115	115V 60Hz	110V	6000VA	✓	✓	✓	
BW6000-DA110-115-SNMP	115V 60Hz	110V	6000VA	✓		✓	✓
BW4000-DA125	230V 50Hz	125V	4000VA	✓	✓	✓	
BW4000-DA125-SNMP	230V 50Hz	125V	4000VA	✓		✓	✓
BW4000-DA125-115	115V 60Hz	125V	4000VA	✓	✓	✓	
BW4000-DA125-115-SNMP	115V 60Hz	125V	4000VA	✓		✓	✓
BW5000-DA125	230V 50Hz	125V	5000VA	✓	✓	✓	
BW5000-DA125-SNMP	230V 50Hz	125V	5000VA	✓		✓	✓
BW5000-DA125-115	115V 60Hz	125V	5000VA	✓	✓	✓	
BW5000-DA125-115-SNMP	115V 60Hz	125V	5000VA	✓		✓	✓
BW6000-DA125	230V 50Hz	125V	6000VA	✓	✓	✓	
BW6000-DA125-SNMP	230V 50Hz	125V	6000VA	✓		✓	✓
BW6000-DA125-115	115V 60Hz	125V	6000VA	✓	✓	✓	
BW6000-DA125-115-SNMP	115V 60Hz	125V	6000VA	✓		✓	✓

Model selection continues on next page.

BW***-DA230-250 DA series

Industrial 4/5/6 kVA inverter, 19" rack mount

	AC input/output voltage	DC input voltage	Output capacity	Dry relay contacts	RS232 Modbus	RS485 Modbus	TCP/IP SNMP
BW4000-DA220	230V 50Hz	220V	4000VA	✓	✓	✓	
BW4000-DA220-SNMP	230V 50Hz	220V	4000VA	✓		✓	✓
BW4000-DA220-115	115V 60Hz	220V	4000VA	✓	✓	✓	
BW4000-DA220-115-SNMP	115V 60Hz	220V	4000VA	✓		✓	✓
BW5000-DA220	230V 50Hz	220V	5000VA	✓	✓	✓	
BW5000-DA220-SNMP	230V 50Hz	220V	5000VA	✓		✓	✓
BW5000-DA220-115	115V 60Hz	220V	5000VA	✓	✓	✓	
BW5000-DA220-115-SNMP	115V 60Hz	220V	5000VA	✓		✓	✓
BW6000-DA220	230V 50Hz	220V	6000VA	✓	✓	✓	
BW6000-DA220-SNMP	230V 50Hz	220V	6000VA	✓		✓	✓
BW6000-DA220-115	115V 60Hz	220V	6000VA	✓	✓	✓	
BW6000-DA220-115-SNMP	115V 60Hz	220V	6000VA	✓		✓	✓