

## WA Workshop and Portable Load Banks

**Series WA-LCD Series Load Bank with Portable Remote Controller/Data Logger  
20kW – 3000kW**

**Mobile and trailer mounted systems for generators, power plant  
commissioning, testing in the field and OEM test cells.**



### Features

- Compact design
- Corrosion resistant
- Remote, touch type control
- Built to IP56 - Hose proof
- Vertical air discharge standard
- Expandable modular designs
- Manufactured under ISO9002 quality assurance
- Data Logging
- Controls Reactive Loading

Pictured with optional auxiliary power supply,  
Protection cage and power meter

## WA-LCD Series Description

WA-LCD Series load banks are designed to test a variety of sizes of generating sets and capturing the test data.

Typical applications include generator manufacturing, workshop type servicing and on site commissioning.

The units are portable or mobile, IP56 and are suitable for trailer mounting. WA series load banks are completely weatherproof, vertically fan cooled and incorporate SEPHCO SDL stainless steel immersion proof resistors. Safety protection includes the SEPHCO Triple Interlock load protection system which safeguards against fan failure, air flow restriction, high temperature and fan reversal. Optional features include a protection cage complete with lifting hooks and forklift pockets, auxiliary power socket for independent supply to fan and control operation, and digital display power meter.

The control system is a dedicated microprocessor designed to carry out power measurements, calculations, monitor load bank safety devices and control of applied loads. The system can manage several load banks looped together. The load banks can be of different sizes.

Each of the reactive and resistive groups are individually monitored and measured rather than combining together and averaging values. The individual system of monitoring and control guarantees better resolution and accuracy, accounting for tolerance shift or variations in the resistor and reactive components. Refer to LCD12 specification.

## WA-LCD Load Bank General Construction Specifications



Optional Trailer to suit load bank mounting, also with cable reels

SEPHCO load banks provide the capacity to meet acceptance, loading, testing and data recording requirements for the following world standards of emergency and standby power systems. European: ISO8528, IEC364-7-710, EN60034-9, USA NFPA70, NFPA99, NFPA110. Exercising of generator sets by utilizing building loads is generally impractical, due to insufficient building load available, and the interruption to the building operation. LS Series load banks are fan cooled, totally weatherproof units, incorporating full stainless steel resistors and corrosion proof housings. Safety features include the SEPHCO Triple Interlock load protection system, which guards against fan failure, air flow restriction, high temperature and fan reversal. WA series load banks are supplied as freestanding units incorporating switchgear and circuit breaker protection for each load group.



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## WA-LCD Load Bank General Construction Specifications

### WA-LCD Series Load Bank with Portable Remote Controller/Data Logger

#### LC12D Remote Controller/Data Logger



WA-LCD load banks incorporate the LC12D touch type LCD display computerized controller, featuring the most advanced load bank control/data capture system available. The LC12D controller is a computerized processor capable of controlling a series of load banks or inductive loads for variable power factor loading. Operating features include a four-line display screen with simple step-by-step instruction prompts, display of load values such as kW, V, Hz, Amps and load time. Choice of operation includes manual and automatic modes. The automatic loading feature enables loading routines with time duration and pause override function. Changes to the load routine such as load size and time can be edited any time during the test routine from the pause function key. Auto tuning makes load-correction in the event of any voltage or resistance fluctuation. The LC12D controller ensures that the load bank is fully protected against over voltage or frequency threshold, interrupting the test to proceed. All functions are fully displayed including warning messages such as voltage exceeded, frequency incorrectly set, emergency stop, cooling failure and load bank identification, load bank off-line and confirmation of load banks connected.

Optional connection to a PC or Laptop for remote on-line graphic display of actual load test. Choice of operational settings of voltage, frequency and power factor to suit generator to be tested. Test routines held in memory for repeated use. Test selection can be done in kW or in kVa @ 0.3 -1.0PF. Load test can be printed from the serial port connection during the testing process, print intervals is programmable from one minute to four hours.

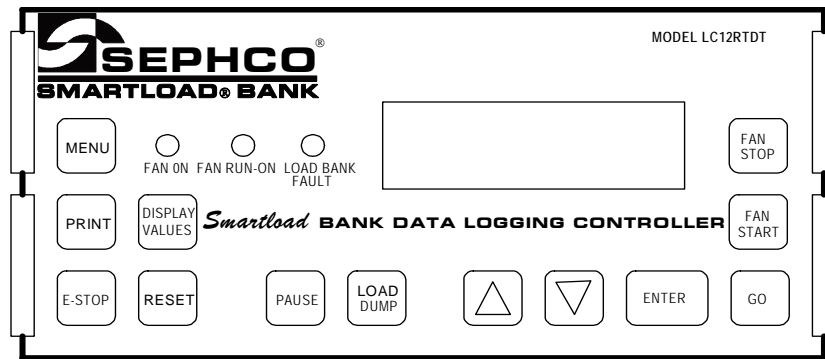
Safety features include load bank "System Diagnostics" ensuring voltage and current does not exceed load bank rating, cooling status of the load bank/s and load bank communication.

Auxiliary power sockets are available as an optional fitting to the load bank. WA Series load banks are available with an optional transportation frame supplied with both lifting hooks and fork lift pockets.

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## WA-LCD Load Bank General Construction Specifications



### Features

- MENU : Displays load profile in the Auto routine
- PRINT : Transfers load data to PC in manual or operation
- Display Values : Display of line to neutral Volts and Amp values.
- Emergency Stop: Total shutdown of machine.
- Reset : Resets the controller, goes back to start-up.
- PAUSE : Pauses running time during the Auto run operation.
- LOAD DUMP : Instant dumping of the load during manual or auto operation.
- ▲ KEY : Increases values.
- ▼ KEY : Decreases values.
- Enter : Enters selected values.
- GO : Actuates loading and start up routine.
- FAN START : Activates fan operation.
- FAN STOP : Shutting down of fan operation.

### TECHNICAL DATA

- Operating Voltage : 12 Volts
- Control Connection : Flexible Data Cable
- Operating Distance : Up To 100m (300Ft.)
- PC Interface : Via serial port connection
- Display Screen : Backlit 75x25
- Operating Mode Selection: Manual Loading in kW or kVa PF  
Auto Loading in kW or kVa PF with set time.
- Power Selection : Genset Voltage, PF, Hz.
- Auto Loading Memory : Up to six load routines can be stored
- Load Steps in Auto : Up to 10 per routine
- Load Process Time : Selectable to 600min, per load step
- Load Step Resolution : 1 kW & 5kW subject to load bank model
- Function Display : Number of load banks connected  
: Fan Start  
: Fan Stop Activated  
: Cooling Fault  
: Emergency Stop  
: Manual Selection  
: Auto Selection  
: Load Menu Profile  
: Input Volts exceeded  
: HZ Incorrectly set  
: Load Bank not responding  
: Load Bank Diagnostic
- Display And Printout : V = Phase to Phase, Phase to Neutral  
: Amps per phase  
: HZ, kW, kVa, PF
- Data Capture : Output to PC

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## WA-LCD Load Bank General Construction Specifications

### OPTIONS

WA Load Bank with Optional Protective Transportation Frame	
• PCLB2V	Transport Protection Frame to Suit 200 kW Models
• PCLB4V	Transport Protection Frame to Suit 400 kW Models
• PCLB6V	Transport Protection Frame to Suit 400 kW Models
• PCLB12V	Transport Protection Frame to Suit 1200 kW Models
• PCLB18V	Transport Protection Frame to Suit 1800 kW Models
• PCLB24V	Transport Protection Frame to Suit 2400 kW Models



#### Auxiliary Power Sockets for WA Series Load Banks

Auxiliary power sockets are available as an optional fitting to the load bank. Generally required, where generator voltage or frequency is incompatible with the load bank control and fan motor voltage (220/480V 60 Hz). The auxiliary plug socket is a reversed five pin type, supplied with a mating plug. The socket incorporates a selector switch for selection of the power source from generator supply or the utility supply.

#### DM-1 Digital Power meter

- Measurement display and communication of up to 23 major parameters.
- True RMS measurement for accurate measurement of distorted wave forms.
- Large red LED's for easy viewing.
- Tactile feedback keys for positive user interface.
- User programmable screen for custom applications.
- Weatherproofed to IP65 with transparent opening



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# WA-LCD Load Bank General Construction Specifications

## Design Concept

Sephco WA Series load banks are fan cooled, totally weatherproof units, incorporating full stainless steel resistors and corrosion proof housings. Safety features include the SEPHCO Triple Interlock load protection system which guard against fan failure, air flow restriction, high temperature and fan reversal. WA series load banks are supplied as free standing units incorporating switch gear and circuit breaker protection for each load group. Controls include remote touch-type operating panels.

**SEPHCO® WA Load Banks** are manufactured under ISO9002 quality assurance and are a product of fifty years of research and development associated with power generation.

The range is manufactured in various kW ratings and voltages. The standard design concept ensures total reliability and performance for years of trouble free operation.

### Construction

Load banks are constructed from 2 mm zinc-coated steel, incorporating removable panels for excess to resistors. The Load Bank shell is mounted onto a fully hot dipped galvanized chassis. Air inlet and outlet are fully protected by grills having 12 X 12 mm maximum opening. Air cooling on standard models is vertical discharge flow, horizontal discharge is available on special request.

The control and electrical cabinet is incorporated as an integral part of the load bank, facilities are provided for power cables and auxiliary connections. Load bank control cabinets are constructed with full gutter surround, fitted with lift off type hinges, security type locks and wire reinforced neoprene door gasket.



### Finish

All structural parts, frames, resistor supports are hot dipped galvanized. All screws, nuts and bolts are of #316 stainless steel. Painting of metal surfaces is two-pack polyurethane marine enamel.

### Weatherproofing

Load banks are designed for outdoor use, totally weather proofed to IP56, (hose proof) incorporating stainless steel type immersion proof resistors. The unique design of the Sephco® load bank, ensures complete resistance to water and moisture build-up.

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## WA-LCD Load Bank General Construction Specifications

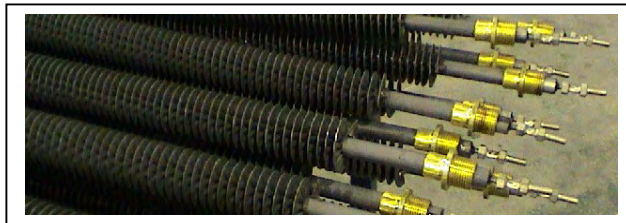


### Anti Corrosion

All metal panels are pre-treated prior to fabrication with a hot zinc coating process. Final painting and finish utilizes a triple coat of two pack polyurethane marine enamel. Metal structures such as load bank chassis, resistor supports and lifting bars are hot dipped galvanized. External screws and bolts are #316 stainless steel.

### Cable Connections

Connections are provided for external power supply to fan motors and connections to the main busbars for generator power. Cable entry is at the bottom of the marshalling box, designed for all weather conditions.



### Resistors

Load resistors are fully sealed SEPHCO® type SDL stainless steel finned, Incoloy sheath type, immersion proof, impervious to heavy rain, ice and snow build up, constructed to IP65. Resistors are calibrated to within 2.5% of their rated value and tested to 2kV. Resistor connections are in light gauge nickel-plated copper busbars in groups of 50kw maximum, arranged to minimize strain on resistor terminals. All connections of resistor groups are made using 105° C rated multi-stranded flexible cable.

### Cooling Fans

The load banks incorporate cooling fans to maintain cabinet temperature at no more than 20° C above ambient. Fan motors are 900 R.P.M. maximum IP 65 rated, protected by thermal overloads and circuit breakers.



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## WA-LCD Load Bank General Construction Specifications



### Safety Interlocks

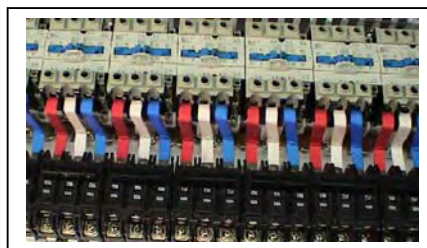
Load banks incorporate the SEPHCO® Triple Interlock protection system for each fan motor fitted, protection against fan failure, air flow restriction, high temperature and fan reversal.

### Fan Run On

An automatic fan run-on for a period of five minutes is automatically activated on load and fan shut down condition and on tripping of the fan interlock protection system.

### Switchgear and Auxiliaries

All load groups are evenly balanced and switched by suitably rated mechanical contactors. Each load group is protected by a resettable circuit breaker.



### Stainless Steel Construction

All Models are available with the body constructed from stainless steel.



### Warranty

All Smartload® Banks are covered by 12 months factory warranty, Sephco® SDL resistors come with 36 months warranty. Refer to Sephco Conditions of Sale and Warranty for full details

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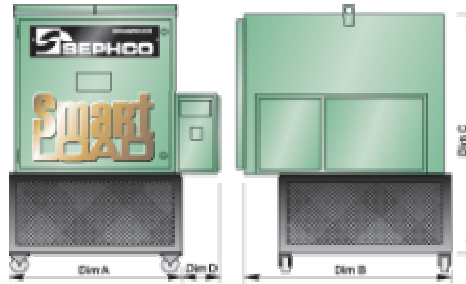
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## WA-LCD Load Bank General Construction Specifications

### SEPHCO WA Series Load Bank Dimensions (Metric)

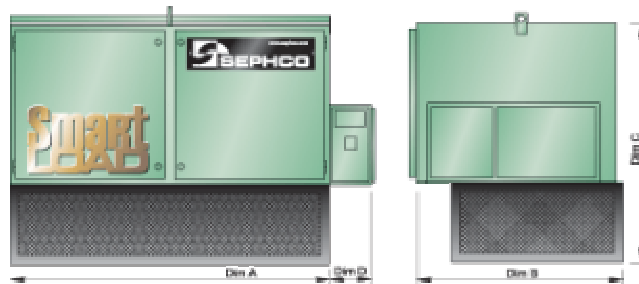
#### WA 100kW - 600kW Series - Single Voltage



Voltages: 415V Standard, Available 380V, 440V, 460V, 480V and 600V.

Model	Rating	Load Steps	Dim. 'A'	Dim. 'B'	Dim. 'C'	Weight	Noise
WA1V-100	100 kW	5 kW	650 mm	828 mm	920 mm	145 Kg.	62 dB
WA2V-200	200 kW	5 kW	750 mm	985 mm	1270 mm	250 Kg.	65 dB
WA4V-300	300 kW	5 kW	940 mm	1185 mm	1360 mm	345 Kg.	68 dB
WA4V-400	400 kW	5 kW	940 mm	1185 mm	1360 mm	395 Kg.	68 dB
WA6V-500	500 kW	5 kW	1050 mm	1285 mm	1575 mm	475 Kg.	72 dB
WA6V-600	600 kW	5 kW	1050 mm	1285 mm	1575 mm	510 Kg.	72 dB

#### WA 800kW - 1200kW Series - Single Voltage



Voltages: 415V Standard, Available 380V, 440V, 460V, 480V and 600V.

Model	Rating	Load Steps	Dim. 'A'	Dim. 'B'	Dim. 'C'	Weight	Noise
WA12V-800	800 kW	5 kW	2450 mm	1310 mm	1610 mm	1000 Kg.	76 dB
WA12V-1000	1000 kW	5 kW	2450 mm	1310 mm	1610 mm	1350 Kg.	76 dB
WA12V-1200	1200 kW	5 kW	2450 mm	1310 mm	1610 mm	1400 Kg.	76 dB

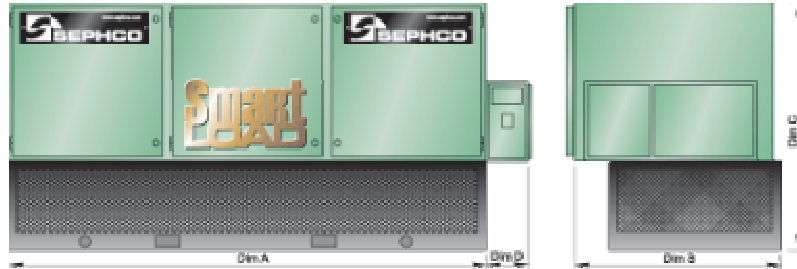
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## WA-LCD Load Bank General Construction Specifications

### SEPHCO WA Series Load Bank Dimensions (Metric)

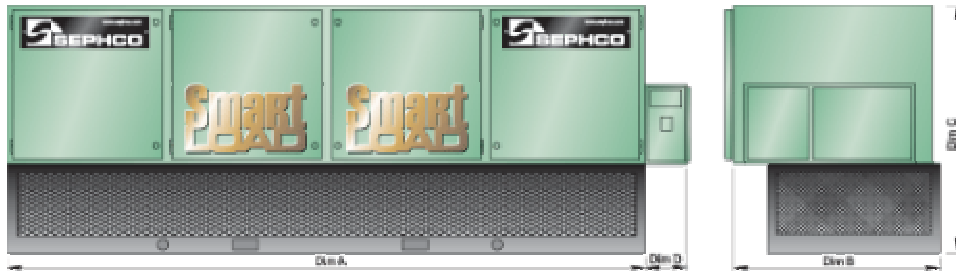
#### WA 1500kW - 1800kW Series - Single Voltage



Voltages: 415V Standard, Available 380V, 440V, 460V, 480V and 600V.

Model	Rating	Load Steps	Dim. 'A'	Dim. 'B'	Dim. 'C'	Weight	Noise
WA18V-1500	1500 kW	5 kW	3050 mm	1310 mm	1740 mm	1500 Kg.	76 dB
WA18V-1800	1800 kW	5 kW	3050 mm	1310 mm	1740 mm	1600 Kg.	76 dB

#### WA 2000kW - 2400kW Series - Single Voltage



Voltages: 415V Standard, Available 380V, 440V, 460V, 480V and 600V.

Model	Rating	Load Steps	Dim. 'A'	Dim. 'B'	Dim. 'C'	Weight	Noise
WA24V-2000	2000 kW	5 kW	4040 mm	1310 mm	1730 mm	1630 Kg.	76 dB
WA24V-2400	2400 kW	5 kW	4040 mm	1310 mm	1730 mm	1750 Kg.	76 dB

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