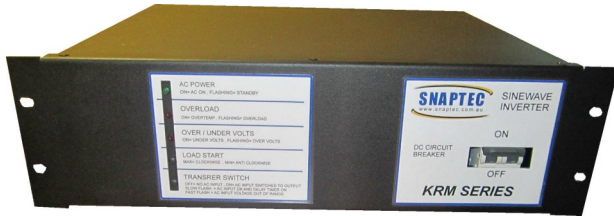




- Pure Sinewave Waveform
- Massive Inrush and overload capability
- Rugged Construction
- DC Circuit breaker / Battery Isolator switch
- High efficiency toroidal transformer
- Galvanically Isolated



SPECIFICATIONS All specifications are typical at nominal input, full load and at 20°C unless otherwise stated.

KRM SERIES INVERTER FEATURES

Frequency 50/60Hz Selectable	Fully selectable between 50/60Hz via a set of internal dip switches.
Heavy Duty DC Battery Leads	High quality, high current DC leads for low loss power delivery.
AC/DC Isolation	Full 3500V AC/DC isolation.
Pure Sinewave Output	Provides the ideal power source for all modern electronics.
High Surge Rating	High surge rating allows easy starting of motors and high inrush current devices.
High Efficiency Toroidal Transformer	Toroidal transformers provide the highest efficiency and durability.
Short Circuit Proof	Indestructible design protects itself against any AC shorts.
Full Electronic Protection	Sophisticated circuitry provides protection against overload, short circuit and overtemperature.
DC Circuit Breakers	Provides full isolation from your batteries along with the important safety of a
LED Status Indicators	A full set of LED's keeps the user informed of its operation at all times.

KRM SERIES INVERTER OPTIONS

AC Transfer Switch	Full automatic transfer switching between auxilary and inverter power.
Alarm Output	General purpose fault alarm with voltage free contacts.
AC Output Voltage	Full customisable AC output voltages.
DC Input Voltages	Full customisable DC input voltages.
International Power Outlets	Full range of international outlets available.
Anderson Connectors	Secure industrial connectors for fool proof connection and high reliability.
Stackable	Stackable for redundancy systems.
Psophonometric Noise Filter	Full telecommunications compliant to ETS 3000132-2 standard.
Conformal Coating	Reduces the effects of harsh environments such as salt spray on electronic components. (To Mil Spec. MIL-I-46058C)
Vibration Proofing	Special attention is given to components which might become suspect to vibration damage. Additional fixing points and extra protection is provided.

KRM SERIES INVERTER SELECTION TABLE (Part 1)

Inverter Model	KRM-500-12	KRM-600-24	KRM-600-48	KRM-600-96	KRM-600-120	KRM-1000-12	KRM-1200-24	KRM-1200-48	KRM-1200-96	KRM-1200-120
Nominal DC Voltage	12V	24V	48V	96V	120V	12V	24V	48V	96V	120V
DC Voltage Range	10-17V	21-34V	42-68V	80-140V	96-160V	10-17V	21-34V	42-68V	80-140V	96-160V
Continuous Power	500W	600W	600W	600W	600W	1000W	1200W	1200W	1000W	1000W
30 min Rating	550W	750W	750W	750W	750W	1150W	1600W	1600W	1600W	1600W
Surge Rate - 5sec	1500W	2000W	2000W	2000W	2000W	3000W	3600W	3600W	3600W	3600W
Standby Current	27mA	22mA	19mA	16mA	15mA	37mA	28mA	22mA	18mA	17mA
Inverter ON Idle Current	0.42A	0.31A	0.18A	0.15A	0.14A	0.45A	0.25A	0.19A	0.16A	0.14A
Output Waveform	True Sinewave <4% THD									
Output Voltage	240Vac +/-4%@50Hz+/-0.1%									
Power Factor	All Conditions									
Operating Temp	-10° C to +50° C									
Load Start Sensitivity	0-20W									
DC to AC Isolation	3500V									
Peak Efficiency	90%	92%	93%	93%	93%	91%	92%	94%	94%	94%
Dimensions	3U x 280mm Deep									
Weight	5.5kg	5.5kg	5.5kg	5.5kg	5.5kg	11kg	11kg	11kg	11kg	11kg
DC Circuit Breaker	2 Pole	2 Pole	2 Pole	2 Pole	2 Pole	1 Pole	1 Pole	2 Pole	2 Pole	2 Pole
Output Wiring	Hardwire 3 Terminal Junction Box Standard (Various Socket Outlets available as options)									
Cooling	Thermostatically controlled 2 speed fan									
LED Status Indicators	ON, Standby Mode, Over Temperature, Over Load, Battery Under Voltage, Battery Over Voltage									
Protection Circuitry	Full Electronic Protection against Over Temperature, Overload, Short Circuit, Battery Under Voltage and Over Voltage									
Standards	AS 2279, AS 3000, AS 3100, EN 55014 & C-Tick									
Psophonometric Noise (option)	No	No	No	No	No	No	No	Yes	No	No
AC Transfer Switch 25Amps (option)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alarm Output (option)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ratings	Specifications @ 25°C Ambient, Nominal Battery Voltage & Unity Power Factor									

KRM SERIES INVERTER SELECTION TABLE (Part 2)

Inverter Model	KRM-1500-12	KRM-1800-24	KRM-1800-48	KRM-1800-96	KRM-1800-120
Nominal DC Voltage	12V	24V	48V	96V	120V
DC Voltage Range	10-17V	21-34V	42-68V	80-140V	96-160V
Continuous Power	1500W	1800W	1800W	1800W	1800W
30 min Rating	1600W	2200W	2200W	2200W	2200W
Surge Rate - 5sec	4500W	5400W	5400W	5400W	5400W
Standby Current	42mA	30mA	24mA	18mA	17mA
Inverter ON Idle Current	0.67A	0.32A	0.18A	0.16A	0.16A
Output Waveform	True Sinewave <4% THD				
Output Voltage	240Vac +/-4%@50Hz+/-0.1%				
Power Factor	All Conditions				
Operating Temp	-10° C to +50° C				
Load Start Sensitivity	0-20W				
DC to AC Isolation	3500V				
Peak Efficiency	91%	94%	94%	94%	94%
Dimensions	3U x 280mm Deep				
Weight	15kg	15kg	15kg	15kg	15kg
DC Circuit Breaker	1 Pole	1 Pole	2 Pole	2 Pole	2 Pole
Output Wiring	Hardwire 3 Terminal Junction Box Standard (Various Socket Outlets available as options)				
Cooling	Thermostatically controlled 2 speed fan				
LED Status Indicators	ON, Standby Mode, Over Temperature, Over Load, Battery Under Voltage, Battery Over Voltage				
Protection Circuitry	Full Electronic Protection against Over Temperature, Overload, Short Circuit, Battery Under Voltage and Over Voltage				
Standards	AS 2279, AS 3000, AS 3100, EN 55014 & C-Tick				
Psophonometric Noise (option)	No	No	Yes	No	No
AC Transfer Switch 25Amps (option)	Yes	Yes	Yes	Yes	Yes
Alarm Output (option)	Yes	Yes	Yes	Yes	Yes
Ratings	Specifications @ 25°C Ambient, Nominal Battery Voltage & Unity Power Factor				

KRM SERIES INVERTER SELECTION TABLE (Part 4)

Inverter Model	KRM-2000-12	KRM-2300-24	KRM-2500-48	KRM-2500-96	KRM-2500-120
Nominal DC Voltage	12V	24V	48V	96V	120V
DC Voltage Range	10-17V	21-34V	42-68V	80-140V	96-160V
Continuous Power	2000W	2300W	2500W	2500W	2500W
30 min Rating	2200W	2800W	3000W	3000W	3000W
Surge Rate - 5sec	6000W	7000W	7500W	7500W	7500W
Standby Current	75mA	45mA	35mA	24mA	22mA
Inverter ON Idle Current	1.1A	0.51A	0.3A	0.22A	0.21A
Output Waveform	True Sinewave <4% THD				
Output Voltage	240Vac +/-4%@50Hz+/-0.1%				
Power Factor	All Conditions				
Operating Temp	-10° C to +50° C				
Load Start Sensitivity	0-20W				
DC to AC Isolation	3500V				
Peak Efficiency	90%	94%	94%	94%	94%
Dimensions	3U x 280mm Deep				
Weight	22kg	22kg	22kg	22kg	22kg
DC Circuit Breaker	1 Pole	1 Pole	1 Pole	2 Pole	2 Pole
Output Wiring	Hardwire 3 Terminal Junction Box Standard (Various Socket Outlets available as options)				
Cooling	Thermostatically controlled 2 speed fan				
LED Status Indicators	ON, Standby Mode, Over Temperature, Over Load, Battery Under Voltage, Battery Over Voltage				
Protection Circuitry	Full Electronic Protection against Over Temperature, Overload, Short Circuit, Battery Under Voltage and Over Voltage				
Standards	AS 2279, AS 3000, AS 3100, EN 55014 & C-Tick				
Psophonometric Noise (option)	No	No	Yes	No	No
AC Transfer Switch 25Amps (option)	Yes	Yes	Yes	Yes	Yes
Alarm Output (option)	Yes	Yes	Yes	Yes	Yes
Ratings	Specifications @ 25°C Ambient, Nominal Battery Voltage & Unity Power Factor				

KRM SERIES INVERTER SELECTION TABLE (Part 5)

Inverter Model	KRM-3000-24	KRM-3500-48	KRM-3500-96	KRM-3500-120	KRM-5000-48
Nominal DC Voltage	24V	48V	96V	120V	48V
DC Voltage Range	21-34V	42-68V	80-140V	96-160V	42-68V
Continuous Power	3000W	3500W	3500W	3500W	5000W
30 min Rating	3700W	4100W	4100W	4100W	6000W
Surge Rate - 5sec	9000W	10500W	10500W	10500W	15000W
Standby Current	50mA	40mA	28mA	26mA	55mA
Inverter ON Idle Current	0.6A	0.33A	0.24A	0.23A	0.5A
Output Waveform	True Sinewave <4% THD				
Output Voltage	240Vac +/-4%@50Hz+/-0.1%				
Power Factor	All Conditions				
Operating Temp	-10° C to +50° C				
Load Start Sensitivity	0-20W				
DC to AC Isolation	3500V				
Peak Efficiency	93%	94%	94%	95%	95%
Dimensions	3U x 280mm Deep				
Weight	24kg	24kg	24kg	24kg	30kg
DC Circuit Breaker	1 Pole	1 Pole	2 Pole	2 Pole	1 Pole
Output Wiring	Hardwire 3 Terminal Junction Box Standard (Various Socket Outlets available as options)				
Cooling	Thermostatically controlled 2 speed fan				
LED Status Indicators	ON, Standby Mode, Over Temperature, Over Load, Battery Under Voltage, Battery Over Voltage				
Protection Circuitry	Full Electronic Protection against Over Temperature, Overload, Short Circuit, Battery Under Voltage and Over Voltage				
Standards	AS 2279, AS 3000, AS 3100, EN 55014 & C-Tick				
Psophonometric Noise (option)	No	No	NO	No	No
AC Transfer Switch 25Amps (option)	Yes	Yes	Yes	Yes	Yes
Alarm Output (option)	Yes	Yes	Yes	Yes	Yes
Ratings	Specifications @ 25°C Ambient, Nominal Battery Voltage & Unity Power Factor				

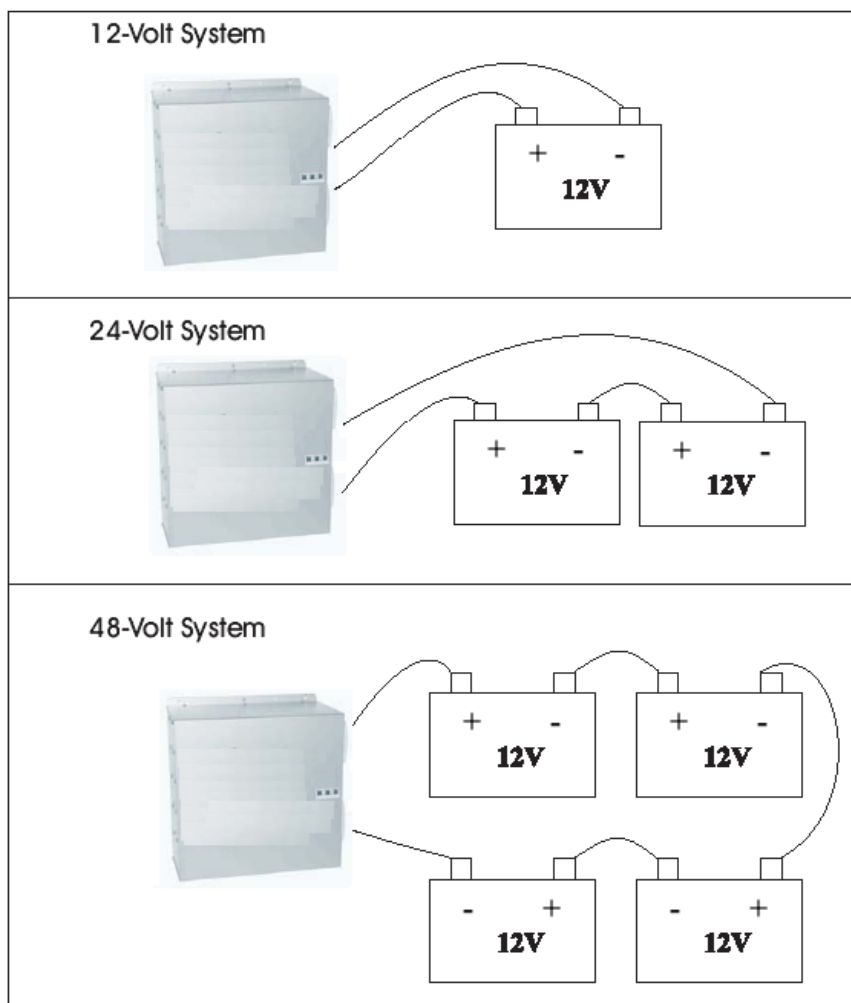
INSTALLATION

- ◆ Ensure the Inverter has not been damaged in transit.
- ◆ The unit must be placed in a well-ventilated and protected area, not exposed to the open environment, and free from contaminants (i.e. exhaust gases, sea air, battery gases, dust).
- ◆ A space of 10cm is needed on each side of the Inverter for adequate transfer internal heat.
- ◆ The Inverter can be mounted vertically on a wall or horizontally on a table or shelf.
- ◆ For best performance, the unit should be placed as close as possible, but not directly on top of the Battery Supply.
- ◆ The Inverter DC input voltage is stated on the identification label of the Inverter. Check that it is the same voltage as the Battery Supply.
- ◆ The Inverter is designed to operate on a Battery Supply only.
- ◆ The Inverter is fitted with a circuit breaker in line with the Battery Positive Lead, which negates the need for a Battery Fuse.
- ◆ Ensure the Inverter is switched OFF before connecting the DC supply. Turn the Circuit Breaker switch to the OFF position.
- ◆ Connect the Inverter DIRECTLY to the Battery Terminals for best performance.
- ◆ Input leads marked RED = (positive), & BLACK = (negative).

OBSERVE POLARITY

NOTE Cables connecting the Inverter to the Battery are designed to achieve maximum efficiency and output power: **DC CABLES SHOULD NOT BE EXTENDED**

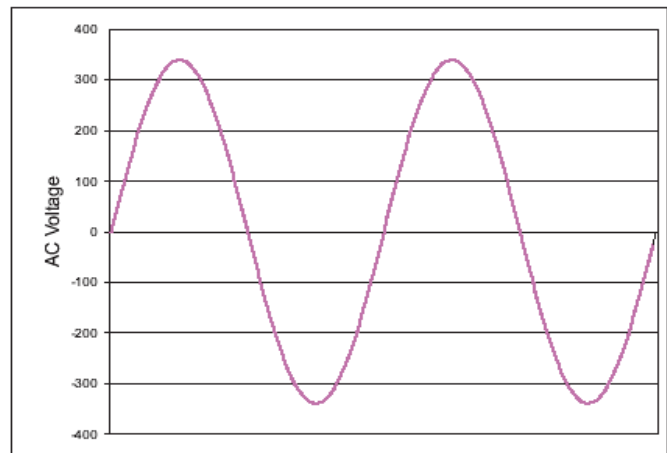
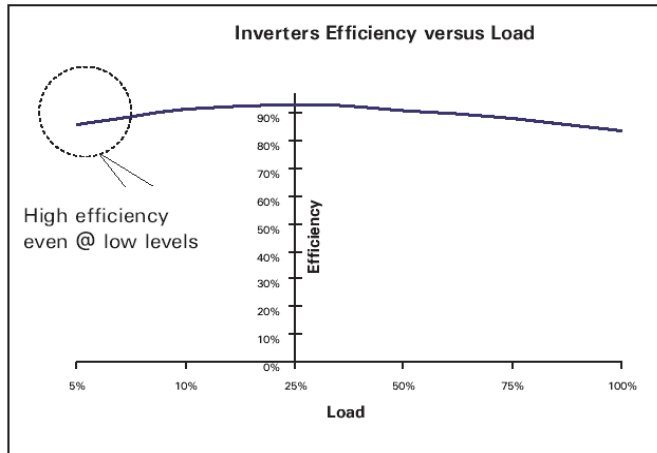
WIRING DIAGRAM FOR 12V, 24V & 48V DC Systems



BATTERIES

- ◆ **BATTERY SIZING:** It is important to match your Battery size according to the power rating of the Inverter.
- ◆ To ensure peak performance, it is important to choose the right Battery for your Inverter. The Battery size required will depend on the load and intended running time. Use this formula as a general guide:
 - ◆ **Recommended Battery Size=** Inverter rating in watts ÷ input voltage × 10 e.g. 1200W ÷ 12V x 10 = 1000Ah
 - ◆ **Minimum Battery Size =** Inverter rating in watts ÷ input voltage × 3 e.g. 1200W ÷ 12V x 3 = 300Ah.
- ◆ Do not use an undersized Battery as this may result in an Inverter that does not start or that will rapidly discharge the Battery and may cause damage to the Battery.
- ◆ Battery Terminals require frequent care and maintenance. Very high current (up to several hundred amps), is drawn by the Inverter when starting electrical motors and other high power appliances. We recommend an inspection of the Batteries and the interconnecting cable connections once every 1-3 months or as recommended by the Battery manufacturer.
 - ◆ **Regularly check all connections:** make sure they are always tight. Battery terminals are made of soft lead which will slowly compress over time eventually causing loose connections.
 - ◆ **Check all connections are free of corrosion:** Remove any corrosion and coat the terminals with Vaseline or grease to help prevent future corrosion.
 - ◆ **Take specific gravity or SG readings of each cell using a hydrometer to check the level and performance of each Battery:** Alternatively a Battery Voltage reading for each cell will suffice but may not be accurate for multiple Batteries connected in parallel. Report any serious imbalance to your system installer or Battery supplier for corrective action.
- ◆ When working on Batteries protective clothing and eye wear should be worn. Extreme care should be taken not to short circuit any Battery terminals especially with tools. If in doubt have the work carried out by qualified personnel.

INVERTER EFFICIENCY & OUTPUT WAVEFORM



INVERTER SAFETY

- ◆ KRM Inverters have an isolation rating of 3500V between AC and DC via the toroidal transformer, which ensures extremely safe and risk free operation.
- ◆ All the switching electronics and control circuitry are on the DC input.
- ◆ The single pole circuit breaker assembly ensures that when the inverter is switched off, it is isolated from the battery supply.
- ◆ Please refer to relevant Australian Standards for safety procedures.
- ◆ Make sure the Inverter is switched OFF before working on the mains wiring. Turn the circuit breaker switch into OFF position.
- ◆ The active and neutral of the 240V AC output are electrically isolated from the battery negative, battery positive, and earth connections.
- ◆ The Inverter AC output is connected directly to the Transformer output winding.
- ◆ KRM Inverters have the AC output (active and neutral) floating with respect to the DC and Earth. The Earth connection is connected to the case only. This configuration provides the highest safety and most flexibility for installation wiring.
- ◆ KRM inverters are suitable for MEN connection.
- ◆ The Earth is connected internally to the Inverter case.
- ◆ **Ensure that power will never be fed into the Inverter AC output Junction Box from the Mains or Generator. This would result in the destruction of the unit and will not be covered by warranty.**
- ◆ **WARNING: The Inverter output is just as lethal as normal mains electricity, thus it is important that all AC wiring complies with the requirements of the relevant wiring standards, (AS 3000). Any work carried out on AC/Mains wiring is to be performed by Qualified and Licensed personnel only.**

RADIO FREQUENCY INTERFERENCE

Radio Frequency Interference (RFI) is a phenomenon that exists in modern society and is a problem in many areas of electronics. For Inverter users, RFI normally presents itself in the form of static and/or interference when listening to an AM radio and in unusual cases may interfere with TV reception.

The KRM series is a result of many years of continuous and significant investment in time and effort in the reduction of RFI related emissions from the entire product range, so that they comply with the appropriate International and/or Australian Standards. Even with this compliance, there are situations where RFI may still be a cause for concern, and can differ greatly from installation to installation. Accordingly, the following is a list of recommendations made to assist in the overall reduction of RFI.

- NK **Separate DC and AC wiring:** avoid running DC and AC cables in the same conduits and/or cable trenches. It is strongly recommended that DC and AC wiring be separated by the greatest distance possible. In extreme cases, the use of shielded conduit may be necessary.
- OK **Minimize length of DC cabling:** DC cables can act as an aerial, therefore all such cables should be kept as short as is practicable. For best performance minimize DC cable length to Inverter and Batteries and if possible avoid the use of auxiliary DC loads.
- PK **240Vac Earth:** For household installations, it is recommended that a $\pm 0.5 \text{m}$ earth wire be located as nearby the Inverter as is possible.
- QK **AM and HF Radios:** These types of radio equipment inherently suffer from all forms of RFI, especially when the received signal level is weak. In such cases reception can sometimes be improved by relocation of the radio itself, alternatively the use of an appropriate external antenna and co-axial cable may be necessary. External antennas should be located in a manner that ensures maximum signal strength whilst affording the greatest possible distance away from the Inverter and Batteries.
- RK **Televisions:** TV signals are transmitted as FM waveforms. This type of signal fundamentally reduces the effects of RFI, therefore the use of a good antenna and feeder cable is normally sufficient to ensure quality reception. Locating the television as far as possible from the Inverter may also improve picture clarity.
- SK **Mobile Installations:** Due to the limitations of this type of installation, the best results for the minimization of RFI are usually obtained by maximizing the distance between the Inverter and the Radio/Television.

FAULT FINDING

Should the Inverter appear to be malfunctioning we suggest the following to eliminate any external problems:

1. Turn the Inverter "OFF" via the Circuit Breaker switch on the front panel.
2. Disconnect all AC wiring from the Inverter.
3. Disconnect DC Battery leads from Battery. Clean all terminals by removing all grease/corrosion on both DC leads and Battery terminals.
4. Ensure you have sufficient Battery capacity at the nominal voltage (specified on the compliance label of your Inverter). Please note: Use minimum 100AH Battery or the size of a substantial Car Battery.
5. Make connection directly to Battery terminals and ensure all connections are tight.
6. Ensure Battery voltage is within the correct limits as outlined in the section **INVERTER SPECIFICATIONS** of this manual. If you do not have a DC voltmeter or multimeter check the front panel for Overvolts and Undervolts LED'S.
7. Turn the Inverter ON via the Circuit Breaker switch on the front panel. Observe the lights on the front left of your Inverter. Refer to **INVERTER OPERATION** for explanation of Indicator lights.
8. Plug in various appliances and monitor the Inverters operation.

HELPFUL HINTS

- ◆ Remember that the Inverter automatically starts when a load is applied.
- ◆ Make sure leads and terminals are not corroded or faulty in any way.
- ◆ Make sure the Inverter goes into STANDBY with no load switched on.
- ◆ Make sure the Circuit Breaker is reset properly. If unsure switch OFF and ON again.

RADIO FREQUENCY INTERFERENCE

Radio Frequency Interference (RFI) is a phenomenon that exists in modern society and is a problem in many areas of electronics. For Inverter users, RFI normally presents itself in the form of static and/or interference when listening to an AM radio and in unusual cases may interfere with TV reception.

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4. Ensure you have sufficient Battery capacity at the nominal voltage (specified on the compliance label of your Inverter). Please note: Use minimum 100AH Battery or the size of a substantial Car Battery.
5. Make connection directly to Battery terminals and ensure all connections are tight.
6. Ensure Battery voltage is within the correct limits as outlined in the section **INVERTER SPECIFICATIONS** of this manual. If you do not have a DC voltmeter or multimeter check the front panel for Overvolts and Undervolts LED'S.
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8. Plug in various appliances and monitor the Inverters operation.

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- ◆ Make sure leads and terminals are not corroded or faulty in any way.
- ◆ Make sure the Inverter goes into STANDBY with no load switched on.
- ◆ Make sure the Circuit Breaker is reset properly. If unsure switch OFF and ON again.

WARRANTY CONDITIONS

- ◆ All conditions and warranties expressed or implied by statute, common law, equity, trade, custom, usage, or otherwise howsoever are hereby expressly excluded to the maximum extent permitted by law. Where so permitted the liability of Snaptec for a breach of condition or warranty that cannot be excluded is limited (at Snaptec option) to the replacement or repair of the goods or of acquiring equivalent goods or the cost of replacing or repairing the goods or of acquiring equivalent goods. Snaptec shall not be liable in any way whatsoever for indirect or consequential loss or damage whatsoever (whether based on tort or contract or otherwise).
- ◆ Damage caused by unauthorized repair, alteration or substitution of non-standard parts, incorrect installation, misuse, negligence, accident or similar cause, or usage other than in accordance with the operating instructions, is not covered under warranty.
- ◆ Unauthorized opening of the goods will render the Warranty invalid. The company may, at its discretion, agree to act as agent for the owner where delivery is requested and all costs for cartage and insurance will be for the owners account.
- ◆ The replacement of any part or labor involved will not have the effect of extending the period of the warranty of the goods.
- ◆ Any faulty part replaced under Warranty becomes the property of the Company for purpose of examination and claim under proprietary Warranty.
- ◆ Keep your receipt as proof of purchase, should any difficulties arise concerning the return of the registration card.
- ◆ Inverters are supplied by the manufacturer, or the manufactures agents, under the express condition that no responsibility is implied or accepted by the above parties for any damage to any appliance, equipment or property associated with the correct or otherwise operation of the Inverter.
- ◆ If service is required contact your local supplier/installer, or contact Snaptec direct. Please ensure that you have the Inverter Model and Serial number available to enable prompt processing.

OPTIONS AVAILABLE FOR THE KRM SERIES

Other AC Output and DC Input Voltages (Available for all KRM power levels): As an alternative to 240 V AC 50 Hz, the output can be 110 V AC 60 Hz, 110V AC 50 HZ or 220V AC 50HZ.

Other DC Input Voltages (Available for all KRM power levels): DC Input voltages are available in a range from 12V DC to 125V DC.

Conformal-coating of circuit boards to Mil Spec MIL-I-46058C : Reduces the effects of harsh environments such as salt spray on electronic components.

Vibration Proofing : Special attention is given to components which might become suspect to vibration damage. Additional fixing points and extra protection is provided. "Ruggedised" KRM series inverters have been used extensively by Railways and Service Vehicles throughout Australia.

Transfer Switch (extra j-box included) (available only KRM 800W - 5000W): When fitted with this option the AC output is switched between mains AC and Inverter AC. An auxiliary AC source can be connected to the mains input junction box on the rear of the inverter. While this AC source is present, it will be connected to the AC output junction box on the rear and the power outlet on the front. Should the auxiliary AC source fail, the changeover switch automatically diverts the Inverter's AC source to the AC output junction box on the rear and power outlet on the front.

Alarm Contact Output (extra j-box included) (available only KRM 800W - 5000W): The alarm output is provided by a relay contact. Wiring is via fixed terminals located in the junction box marked "Alarm Output" on the rear of the Inverter. The relay contact changes state when the Inverter's AC output is not present.

Automatic Reset (Standard Option): This feature is designed to restart the Inverter and maintain power in the event of an external fault. Should the Inverter shut down due to under voltage, over temperature or any fault condition it will attempt to reset every 8 minutes until the fault condition clears and normal operation resumes. For overload shutdown the Inverter will only attempt 5 restarts. If the Inverter can not resume normal operation within 5 restarts, it will remain OFF until reset manually. This prevents continuous re-application of power to faulty appliances or wiring. For under voltage shutdown the Inverter will restart when the battery voltage reaches the reconnect value.

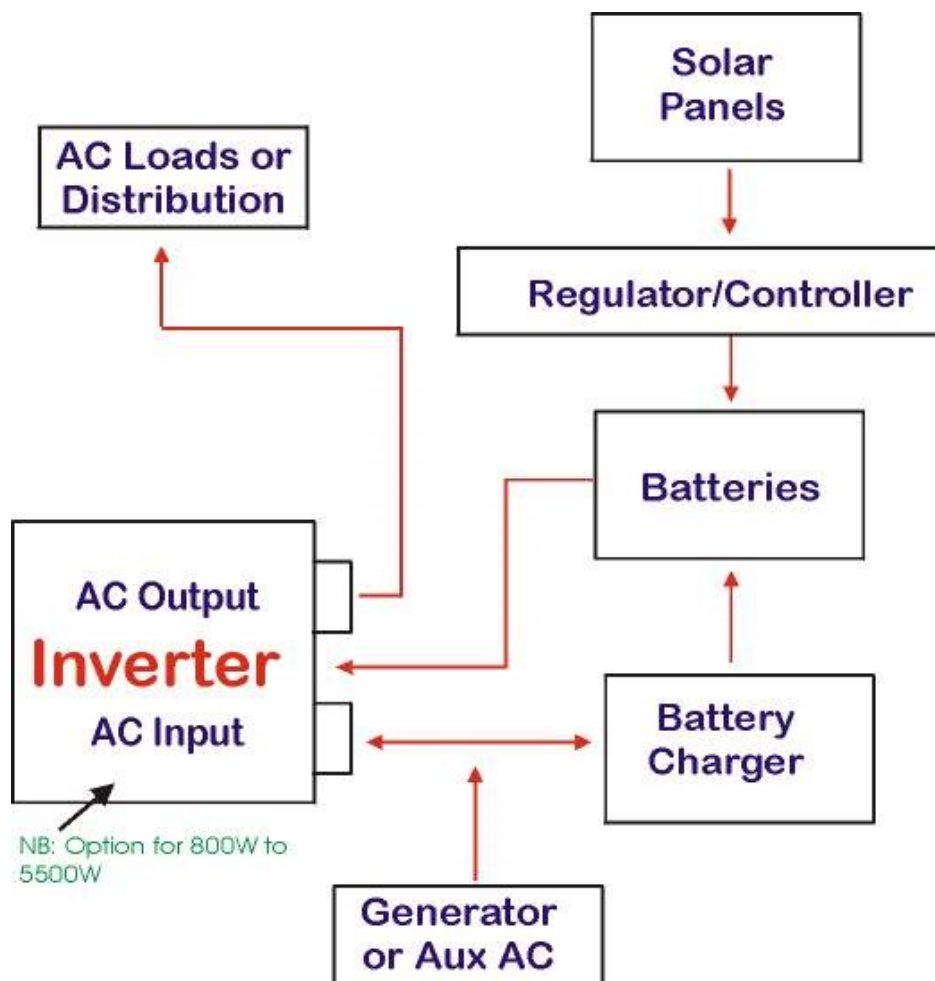
Instantaneous Undervolts (Standard Option): If you operate the Inverter on a Transformer Powersupply with only a small battery attached, the Inverter might shut down in instantaneous undervolts when trying to start bigger loads!

AC TRANSFER SWITCH OPTION SPECIFICATIONS OPTION TRF FOR INVERTER FROM 500W to 5000W

Features

- Available 500W to 5000W models
- No break changeover time of 0.02 second (< One cycle)
- Double pole contactor switching both active and neutral
- Minimise and simplify system wiring
- Eliminate the need to manually switch your power source between inverter and generator. It automatically senses generator AC power and switches the output between inverter and generator accordingly.
- Take the hassle out of wiring a changeover switch between inverter and generator. Have this option fitted to your KRM series inverter to simplify your power system wiring. Simply connect the generator to the hardwire terminals its that easy!

System Block Diagram



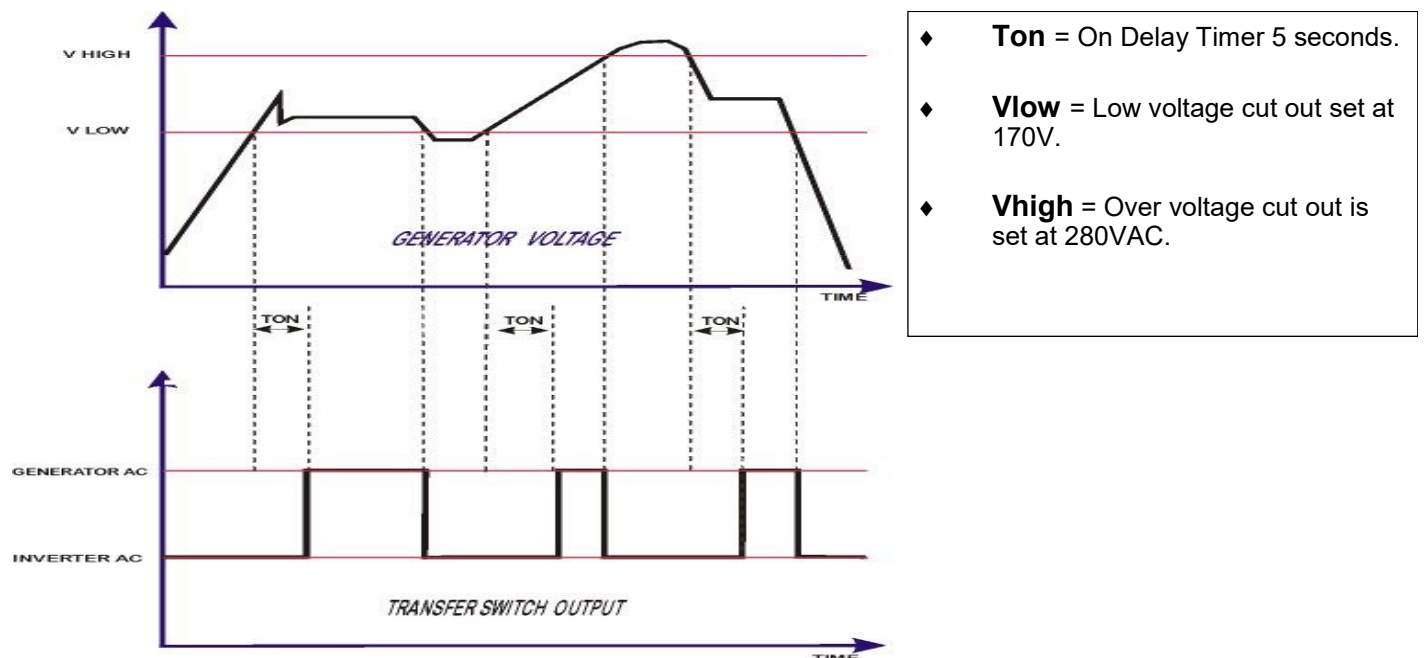
Installation of system components and associated interconnecting wiring, should be performed by qualified and licensed personnel only.

AC TRANSFER SWITCH WITH DELAY TIMER SPECIFICATIONS OPTION TRF

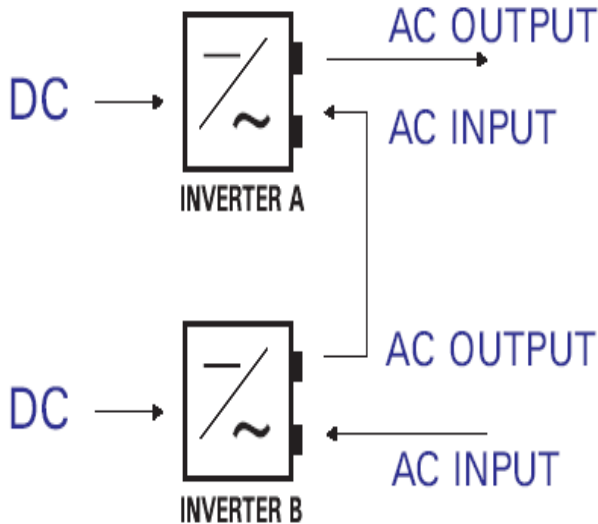
Upon the starting of a generator, its output voltage will rise and stabilise as the generator speed increases and stabilises. Once the generator voltage is within the required limits the ON delay timer provides a short 5 sec delay before switching the generator power to the output. This ensures the generator is warmed up and the output voltage is stable. The generator output voltage is continuously monitored and if it is outside the set limits the transfer switch will switch back to inverter. This prevents brown outs due to low voltage and over voltage surges, which can harm appliances.

Voltage Interlock – monitors the generator output voltage and if too high or too low the transfer switch will switch back to inverter output until the generator output restabilises.

Note: Highly recommended for generators with large fly wheels, that ramp up and down slowly at start up and shut down. Settings are adjustable via DIP switches located inside the Generator Input Junction Box.



WIRING FOR MULTIPLE REDUNDANCY SYSTEMS



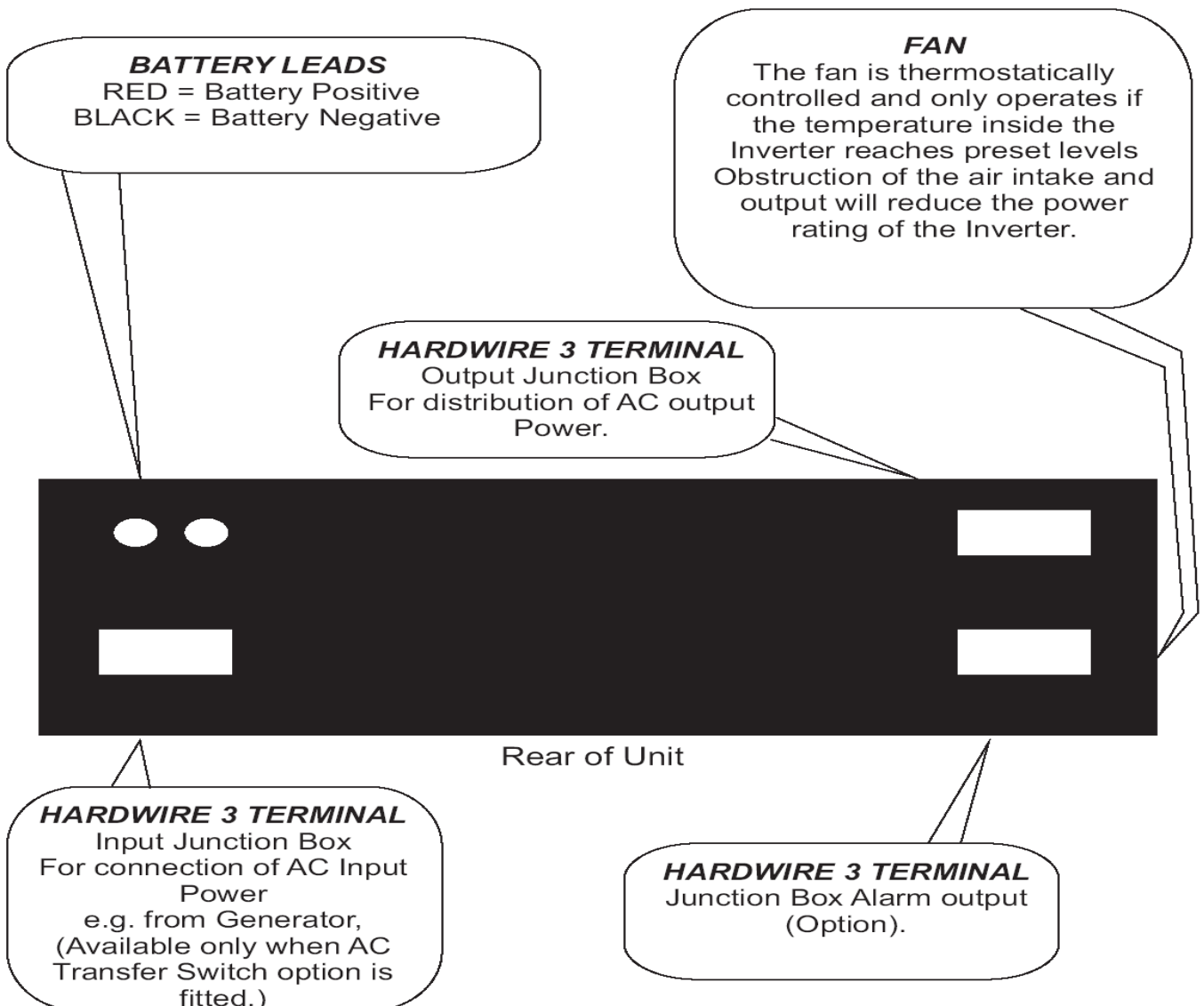
- **Dual Inverter Backup Systems** AC Output will be available as long as Inverter A or Inverter B is operational.

- **Mains with Inverter Backup** Inverter B would be replaced via mains AC and Inverter A will then backup the mains.

- **Mains with Dual Inverter Backup** Mains AC is connected to the AC input of Inverter B.

Ultimately there is no limit to the number of units that can be connected.

INVERTER WIRING AND CONNECTIONS



INVERTER OPERATION

When the Inverter is switched on all 3 LED'S light up for 1 second while the microprocessor performs a start up and system check procedure.

Over temp./Over load (Red LED)

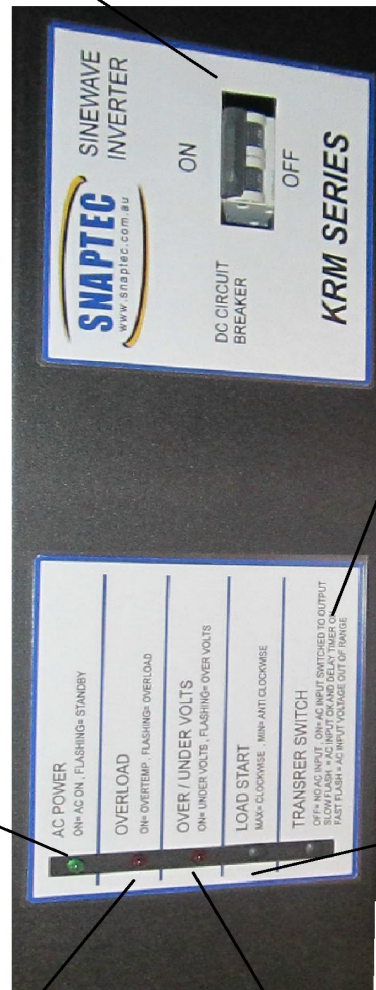
If the internal temperature exceeds safe operating limits of the components for more than five seconds, the Inverter will shut down in Over temp with this LED on continuously. Allow 5 minutes for the Inverter to cool and reset the unit. If the APPLIED load demands more current than the Inverter can safely supply for more than 5 seconds, the Inverter will shutdown in Over load and this LED will flash.

POWER INDICATOR (Green LED)

This LED flashes when in Standby mode (i.e. no loads connected). When a load is applied the LED will illuminate continuously to indicate that 230V AC is being supplied.

CIRCUIT BREAKER BATTERY ISOLATOR ON/OFF Switch

The circuit breaker is designed for ease of operation and safety. If the Inverter shuts down due to Overload, Undervolts or Overvolts it can be reset by turning the Circuit Breaker OFF, waiting 10 seconds (or until LED goes out), then turning it on again.



Undervolts/Overvolts (Red LED)

In order to protect the battery the Inverter will shutdown after 5 seconds if the battery voltage falls below its limit, (Undervolts), or exceeds the maximum, (Overvolts), as specified in the Electrical Specifications table.

For Undervolts the LED will remain on continuous, while for an Overvolts situation the LED will continue to flash.

AutoStart Sensitivity Adjustment

The screwdriver adjustment slot permits the operator to adjust sensitivity between 0- 20W. Due to lengthy 240V AC cables the Inverter may sense fake loads. To combat this, turn the control clockwise. Alternatively turning the control in the opposite direction increases sensitivity. Turning the control fully anti-clockwise will disable the Auto Start feature and the Inverter will remain constantly ON.

TRANSFER SWITCH INDICATOR

OFF	=	No AC input present
Fast flash	=	AC input voltage out of range
Slow flash	=	AC input voltage OK and delay timer ON - 1 flash per second
ON	=	AC input switched through to output