



# Predator News

The official newsletter of C & R Industries cc for their Predator Power Generation Products Range & Services

**Edition 2.4 / August 2009**

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# Powering YOUR World

## Editors note



2009 started slowly due to the effects of the current global recession and negative growth rates the world economy is currently experiencing. This has prompted companies and consumers alike to take a step back and change the way they run their businesses and their purchasing habits.

To a certain degree Predator has also experienced the negative effects of the tough current economic climate, however we are happy to report that our financial year to date is a positive one. April 2009 was a record sales & manufacturing month for us despite the elections and numerous public holidays. Just before the final editing of this edition of Predator News, July 2009 was also a record breaker with the interim figures painting a re-assuring picture.

Our positive year and record months though were also accompanied by slow trading months and June 2009 was a particularly trying month for businesses in most industries, including ourselves.

News from our Products and Development departments are the arrival of further new Yanmar TNV Series engines, a research & development program with our soon to be updated Iveco powered IDL110 Series generator and the return of the successful Briggs & Stratton Pro Max 9000EA generator model with a number of new specification upgrades.

July 2009 has also been a busy period for our control panel designs with two new Deep Sea controller models added to our control panel range for improved generator features, functionality and controllability. In depth information on our Deep Sea controllers is provided in this issue of Predator News.

The June and July 2009 period has also seen an increase in the size of our distributor network, which is assisting in sustaining our product sales growth in several regions. A big thank you goes out to all our new distributors.

August & September 2009 are going to be busy trading months for Predator with the start of several large manufacturing projects which we will provide news on in our next issue.

We would like to wish everyone a successful August and September 2009 and will provide you with further details on Predator's products and developments in our next Predator News release in October.

Goodbye for now!

Bradley Duncan  
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## Predator at work



### Sustained sales growth

In conjunction with our Botswana distributor, we have been fortunate to maintain our strong presence in the Botswana market place. More VDL300 Series generators were moved to the Botswana market during July 2009 and we are expecting further growth in August & September 2009.

In July 2009 we were able to assist one of our local Durban based distributors to close a deal for the supply of a VDL150 Series generator for a Type M6 mortuary being built on the Kwa-Zulu Natal South Coast region. The unit being supplied is an open mounted set with wall mounted AMF Control Panel incorporating an On Load Bypass Switch. Extra features provided were a set mounted manual fuel transfer pump, connection points for the bulk diesel fuel tank system and low level fuel alert system.

After a slow sales performance over the second quarter of 2009, the demand for our popular CRG Series has started to slowly increase again with the CRG15 Series generator continuing the tradition of being the most popular model in our CRG range. Two areas where CRG sales are starting to show good growth again are the Mphumalanga and Kwa-Zulu Natal regions.

May 2009 saw the supply of four YDL Series generators to our distributor in Tanzania. The sets supplied were single phase, manual electric start models designed to work in the harsh Tanzanian bush market.



### New & updated products

Our presence in the smaller "portable" market has been boosted again by the arrival of the recently updated Briggs & Stratton Pro Max 9000EA petrol powered generator set. 60 Units landed in mid-July 2009 and their popularity will ensure they move quickly. We were without the highly successful 9000EA model for over 6 months due to Briggs & Stratton upgrading their international assembly plants. Added features over the previous generator model include a voltmeter, stronger fuel tank design, new alternator with heavy duty AVR, slight frame modifications and easier service access points. A fully automated AMF Control Panel is available for the 9000EA as an optional extra. The 9000EA can be viewed at [www.powerproducts.co.za](http://www.powerproducts.co.za) or you can call us for more information.



### Research & development programs

July 2009 saw the start of a Research & Development project between Predator, Iveco SA and Mecc Alte SA for the development of a new generation of standby generators for the African market. Iveco engines are well known in the power generation industry for their ruggedness and compact frame designs and in conjunction with the use of Mecc Alte alternators, the new range we are developing will provide innovative design features and increased reliability levels.



The first model currently being updated is the IDL110, which is a 100 kVA prime power generator powered by an Iveco NEF45TM2 power generation engine. The IDL110 is not an all out new design as we have supplied this model for almost five years now, but as with every product, it is time to upgrade the IDL Series to meet the latest manufacturing trends.



Development of the new generation IDL110 Series generator should be completed by mid-August 2009 and will feature a new base frame, canopy and control panel designs to keep it at the forefront of the standby power generation market. Further details will be provided in late August.

## Supplier news



### Yanmar engines

As mentioned before in previous newsletters, the Yanmar TNE Series is being replaced with the new TNV Series of emission compliant and re-engineered engines. Initially only the 3TNV88 and 4TNV88 were available to OEM's in South Africa but we are pleased to announce that the range of new TNV Series engines available now includes the following engines:

- 3TNV82A.HAGR naturally aspirated, 3000 RPM, 21.9 kW maximum rated
- 3TNV88-GAGR naturally aspirated, 1500 RPM, 13.5 kW maximum rated
- 4TNV88-GAGR naturally aspirated, 1500 RPM, 18.0 kW maximum rated
- 4TNV84T-GAGR turbocharged, 1500 RPM, 21.3 kW maximum rated



**Note:** 4TNV98 & 4TNV106(T) engines will also be added to the TNV range at a later date.

While current stocks last the 4TNE98, 4TNE106 & 4TNE106T Series engines will continue to be used on our YDL35 to YDL60 Series generators.

### Mecc Alte alternators

Mecc Alte SA has a range of competitively priced alternators for the 10 kVA - 15 kVA, 4-pole generator range. The ECO3 Series alternators are an alternative offering to the established ECO28 Series and offer excellent reliability and efficiency levels at a competitive pricing structure.

The ECO3 Series has been added to our YDL10 & YDL15 Series generator models in an attempt to keep pricing in this small standby diesel generator segment as competitive as possible without compromising our YDL Series' excellent quality, durability and reliability record.

Another positive is the pricing structure of Mecc Alte alternators is now one of the most competitive in the South African OEM market and has allowed us to provide reduced prices across most of our standby generators range while maintaining, and on some models, increasing overall quality levels.



You will notice that our latest price list that is due for release on the 1<sup>st</sup> August 2009 reflects an increase in the number of Mecc Alte alternators we are using in our 10 kVA - 4900 kVA standby diesel generator sets. This is in line with our favourable experiences with Mecc Alte products and the competitive OEM pricing, warranty assistance and service back up they provide ourselves and our distributors in the Southern African region.

Mecc Alte Italy provides a full range of 2-pole & 4-pole alternators from 1 kVA – 3000 kVA.



Reliability and performances at the top  
from one to three thousand kVA

# Product updates



## New Deep Sea controllers for Predator standby generators

We are pleased to announce that some of our control panels for our Predator Standby Diesel Generators range have had Deep Sea controller upgrades to keep in line with the latest technology offerings available to the power generation industry.

Our baseload panels will now be fitted with DSE3110 LCD readout controllers which replace the older DSE701 controller we were previously using. Our AMF panels from 10 kVA - 110 kVA will continue to utilize the DSE720 controller while our 125 kVA - 1100 kVA AMF panels will now be fitted with upgraded DSE7320 controllers which replace the older DSE5320 controller we were previously using. In this issue we will be reviewing the two new controllers as well as the rest of the controller line-up used on our standby diesel generators range.

### DSE3110 For Baseload Panels (10 kVA - 4900 kVA)




The DSE3110 can be utilized as a Manual or Auto Start Module for single generator applications and forms a part of Deepsea's next generation of control modules. The module has been designed to work with electronic and non electronic engines providing advanced engine monitoring and protection features.

The DSE3110 includes a backlit LCD display which clearly shows the status of the engine at all times. The module monitors generator speed, frequency, voltage and running hours and also displays the warning and shutdown status of the generator.


The module includes six digital inputs and four outputs. Two of the outputs are configurable. The module can either be programmed using the front panel or by using the DSE Configuration Suite PC software. The module is available in two variants: Magnetic Pick-up or Canbus.

### Operation

#### Manual Mode


The engine is started using the  Start button on the front of the module.

Once pressed the module instructs the engine to initiate its pre-heat sequence and then starts the engine.

To stop the engine the Stop  button on the front of the module should be pressed.



#### Automatic Mode

The Auto  button needs to be pressed to put the unit in Auto Mode.

The module start sequence is initiated by the activation of the remote start input.

The pre-heat sequence is then initiated and the engine is started.

To stop the engine the remote start signal needs to be removed or the Stop button on the module needs to be pressed.

## DSE7320

For AMF Panels (125 kVA - 1100 kVA)



The DSE7320 is a new control module for single generator applications. The module has been developed from the successful DSE5320 Series and incorporates a number of advanced features to meet the most demanding on-site applications.

The DSE7320 is an Auto Mains (Utility) Failure Control Module. It has been designed to start and stop diesel and gas generator sets that include electronic and non-electronic engines.

The module includes USB, RS232 and RS485 ports as well as dedicated DSENet terminals for expansion device connectivity.

The module is simple to operate and features a newly designed menu layout for improved clarity. Enhanced features include a real time clock for enhanced event and performance monitoring, Ethernet communications for low cost monitoring, mutual standby to reduce engine wear and tear, trend analysis to assist in the detection of patterns in engine status and preventative maintenance designed to detect if engine parts have developed fault conditions so they can be replaced before a major problem occurs.

### Operation & New Features

The module is operated via the START, STOP, AUTO and MANUAL soft touch membrane buttons on the front panel. The DSE7320 also has a TEST button. The module includes a load switch button. The main menu system is accessed using the navigation buttons next to the LCD display.

- True dual mutual standby with load balancing timer
- Fan control for additional cooling
- "Protections Disabled" facility
- Fuel usage monitoring and low fuel alarm
- Support for up to three remote display units
- Automatic sleep mode
- Easy access, configurable diagnostics page shows summary of output states
- Improved programmable event log (250) showing date and time
- Manual fuel pump control
- Alternative configuration
- Multiple date and time scheduler
- 3 Programmable maintenance alarms with comms alert
- Customizable status screens
- Low fuel level alarm delay
- Charge alternator fail warning and shutdown alarms with user programmable delay
- Independent Earth fault trip
- Sleep mode
- Load switching (Load shedding and dummy load outputs)
- Manual speed trim (on CAN engines that support this feature)
- Additional display screens to help with modem diagnostics
- Security levels – PC software has password system to control access to PC software features
- Operator configurable virtual LED's visible in SCADA

## Current Deep Sea controllers for Predator standby generators

Completing our range of standard controllers used on our Predator Standby Diesel Generators range is the DSE720 Auto Mains Failure controller (for 10 kVA - 110 kVA), the DSE5510 Synchronising Auto Mains Failure controller (for 800 kVA - 4900 kVA synchronised models) used to synchronise up to 16 of our VDLSYN and PDLSYN Series generators and the DSE2548 Expansion Module.

### **DSE720** For AMF Panels (10 kVA - 110 kVA)



The DSE720 is an Automatic Mains (Utility) Failure Control Module. It offers an advanced range of engine monitoring and protection features. The module has been designed to monitor generator frequency, volts, current, engine oil pressure, coolant temperature, running hours and battery volts.

When the module detects a fault condition it automatically shuts down the generator and indicates the exact fault on the modules LCD display or relevant LED indicator. The module can be configured using the front panel or via

the DSE810 interface and a PC. The module can also be controlled from a PC located up to 100 meters away.

### **Operation & Features**

The module is operated using the front STOP/RESET, MANUAL, AUTO, TEST and START push buttons. An additional push button next to the LCD display is used to scroll through the modules metering displays.

**Benefits are** - transfer between mains (utility) and generator power, on-site module configuration using PC software, user friendly setup button layout, multiple engine parameters are monitored simultaneously and license free PC software.

- PC configurable
- Digital and analogue inputs
- Digital outputs
- Automatic mains (utility) supply monitoring
- Automatic shutdown or warning when fault conditions are detected
- Manual start
- Engine pre-heat
- Engine monitoring and protection features
- Protected Solid State (PSS) outputs
- Front panel mounting
- Front panel programming
- Tamper proof engine running hours counter
- Remote start
- LED indicators
- Configurable timers
- Configurable outputs
- Configurable inputs
- Backlit character/icon LCD display

## DSE5510

For synchronised AMF Panels (800 kVA - 4900 kVA)



The DSE5510 is an Automatic Engine Control Module designed to provide advanced load sharing functionality for diesel and gas powered generators that include non electronic and electronic engines. The module also provides excellent engine monitoring and protection features.

The modules load sharing functions include, automatic synchronising with built in synchroscope and closing to dead bus. Direct and flexible outputs from the module are provided to allow connection to the most

commonly used speed governors and automatic voltage regulators (AVR's).

The module has been designed to combine a maximum of 16 generators and 16 mains (utility) supplies up to a maximum of 20 in one system (e.g. 16 generators and 4 mains supplies, a DSE5560 is required to synchronise with the mains).

The module has the ability to monitor under/over generator volts, over current, under/over generator frequency, under speed, over speed, charge fail, emergency stop, low oil pressure, high engine temperature, fail to start, low/high DC battery volts, fail to stop, generator short circuit protection, reverse power, generator phase rotation error, earth fault protection, loss of speed signal, fail to open, fail to close, out of sync, MPU open circuit failure, negative phase sequence and loss of excitation.

### Operation, Features & Load Share Features

The module is operated using the front STOP/RESET, MANUAL, AUTO and START push buttons. Three of these buttons include an LED indicator. Additional push buttons provide LCD display scroll, lamp test, mute functionality and breaker control.

- Electronic engine capability
- RS232 or RS485 remote communications
- Modbus RTU
- Pin number protected front panel programming
- Engine exercise timer
- Backlit LCD 4 line text display
- Multiple display languages
- Voltage measurement
- Configurable inputs (9)
- Configurable outputs (5)
- Automatic start
- Manual start
- Audible alarm
- LED indicators
- Built in governor and AVR control
- Engine history event
- Engine protection
- Fault condition notification to a designated PC
- Front panel mounting

- PC configurable
  - Bus failure detection
  - Configurable alarm timers
  - Configurable start & stop timers
  - Automatic load transfer
  - SMS alert messaging
  - Remote monitoring
  - Magnetic pick-up
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- ROCOF & vector shift
  - Automatic starting & stopping of generator on load demand
  - Automatic hours run balancing of generator sets
  - Dead bus sensing
  - Module has the ability to interface with existing load share lines
  - Direct communication from the module to the governor and AVR
  - Link up to 16 generators
  - Volts & frequency matching
  - kW and kVA load sharing with multiple generators

### System Benefits

- Sends SMS messages to engineers to notify specific generator problems (GSM Modem and SIM card required)
- On-site remote (modem required) module configuration
- In-built engine diagnostics removes the requirement for service equipment
- Full engine protection & instrumentation without the need for additional senders (electronic engines only)
- Remote monitoring of the module using comprehensive DSE PC software
- License free PC software

### **DSE2548** Expansion Module (used with DSE7320 & DSE5510)



The DSE2548 is an LED expansion module that can be used with all DSENet compatible control modules (used with the DSE7320 & DSE5510 on Predator Standby Diesel Generators). The module has been designed to display a maximum of eight individual LED indications up to a distance of 1000 meters away from the host controller (DSE7320 or DSE5510).

It includes an alarm sounder that is triggered whenever the host controller detects an alarm condition. This alarm can be muted directly from the DSE2548 module using the front push button. The DSE2548 includes individual LED's for each channel and a power on LED that flashes when the link with the host controller is lost.

### Features

- Eight configurable LED's
- Works up to 1000 meters away from the host controller (DSE7320 or DSE5510)
- 10 modules can be linked together on one host controller
- Mounted in a white wall mounted electrician's type steel housing
- Supplied standard with 10m of comms cables from the generator to the DSE2548 module

## The technician's desk



**Subject:** Correct standby diesel generator service intervals and inspection procedures

The most important procedures to be carried out on any standby diesel generator is the monthly / bi-monthly inspections and annual / 250 hour service intervals.

### Monthly / bi-monthly inspections

These inspections are important as they allow a service technician to spot any potential problems before they cause any major damage to the standby generator.

- Look for any visible fluid leaks on the engine block, radiator, battery and diesel fuel tank
- Look for any signs of rodent activity
- Confirm that there are no obstructions in front of the radiator outlet point (of the generator room louver or canopy enclosure louver)
- Check all fluid levels are full including diesel fuel, engine oil, radiator coolant and battery water (if not maintenance free)
- Confirm all engine and alternator AV mounts are secured and there are no loose bolts/nuts on the generator assembly
- Look for any signs of corrosion
- Test run the generator for at least 15 minutes and, if possible, simulate a MAINS failure test and run the generator with a load applied
- After test running the generator confirm there are no failure notices/indicators on the generator controller LCD display and /or LED indicators
- Fill in an inspection form with the inspection procedures performed with the date
- Ensure the generator room and/or canopy enclosure doors are locked before leaving the site

### Annual / 250 hour service intervals

Service intervals are imperative to ensure the standby generator operates at its maximum efficiency and extends its operational lifespan.

- Always isolate the generator from potential start-up before performing any service work
- Change all fluids including engine oil, coolants and if required, drain and refill the standby generators diesel fuel tank with fresh diesel fuel
- Replace all oil, fuel and water separator filters during the service
- Air filters may not need to be changed at each service interval, especially Donaldson systems, but they must at least be cleaned at each interval (do not use liquids or compressed air to clean paper element air filters)
- Test run the generator for at least 15 minutes and check all fluid levels that were changed are correct (some fluids may need to be topped up after the test run) and re-check for any signs of fluid leaks
- Remove all old service components from the generator room/site
- Return the generator back to its normal standby settings on the generator controller before leaving the site
- Fill in an inspection form with the service procedures performed with the date
- Ensure the generator room and/or canopy enclosure doors are locked before leaving the site

## Talk to us



Correspondence can be sent to [info@powerproducts.co.za](mailto:info@powerproducts.co.za) or fax us on + 27 31 464 9930.