

2017210650 11 Feb 2019



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11 February 2019

Our Ref: 535 CS-AU

Subject: Response to Examination Report  
Patent Application No.: 2017210650  
In the Name of: LAA Industries Pty Ltd

Dear Sir,

This is in response to the second examination report.

In answer to the objections, the claims have been amended to distinguish the present invention – Please refer to the attached Statement of Proposed Amendments. Basis for amendments to the claims are indicated in the marked-up copy, together with the attached copy of the Description As Filed with relevant portions highlighted.

In particular, independent claim 1 is now amended to define:

- wherein parameter set points are set in the system controller, and the system controller receives sensor signals, and based on type of control selected - selected from fluid flow, fluid pressure and fluid level - the system controller is configured and operable to control the AVR and/or the ECU to vary the speed of the generator engine and the alternator voltage output by the generator assembly so that the speed of the electric motor or motors is appropriately varied to maintain the parameter set points, and
- wherein alternator voltage is controlled by the system controller and the AVR to increase or decrease in proportion to changes in engine speed which maintains the speed to voltage relationship required to suit the motor or motors' electrical characteristics.

The examiner cites 4 references:

D1 (Fukaya) - D1 is different in many ways and is not a direct equivalent to the present invention and not designed for the same purpose. The present invention does not include rectifier and inverter sections. The present invention uses the direct output of an engine driven alternator to produce variable frequency variable voltage, whereas D1 converts AC to DC then back to AC again. The present invention uses the alternator output to directly control the speed of an induction motor, said motor normally connected to a centrifugal pump. The present invention provides user selectable control via sensor inputs of fluid flow rate, fluid pressure and / or fluid level to control the engine speed, whereas D1 uses temperature of the case surrounding a motor and generator.

D2 (Hino) - D2 is specifically for vehicles and not for the industrial environment that the present invention is designed for. There is no common design basis and the applications are entirely different. The present invention contains no elements for the charging of high voltage batteries like D2. The engine in the present invention only powers an alternator, not a vehicle via CVT and a DC/DC converter for the battery like in D2. The present uses the direct output of an engine driven alternator to produce variable frequency variable voltage, whereas D2 converts AC to DC then back to AC again. The present invention uses the alternator output to directly control the speed of an induction motor, said motor normally connected to a centrifugal pump. The present invention provides user selectable control via sensor inputs of fluid flow rate, fluid pressure and / or fluid level to control the engine speed, whereas D1 uses temperature of the case surrounding a motor and generator.

D3 (Ebrahim) - D3 is based on a microturbine engine and a compressor to drive a high speed / high frequency generator and then drives a lower frequency inverter which in turn is connected to the load. There are few similarities to the present invention. The present invention is based on an internal combustion engine and does not contain a microturbine or inverter like D3. The engine in the present invention only powers an alternator, not an inverter like in D3. The present invention uses the direct output of an engine driven alternator to produce variable frequency variable voltage, whereas D3 uses a high frequency generator which cannot be directly connected to the induction motors used in industry. An interposing inverter is needed with D3. The present invention uses the alternator output to directly control the speed of an induction motor, said motor normally connected to a centrifugal pump.

D4 (Desai) - D4 does not use environmental sensor feedback and does not provide user selectable control from fluid flow, fluid pressure or fluid level to control engine speed. D4 uses current, voltage and power factor feedback. Specifically, D1 is a Generator Set (they use the term Gen-Set) control system, in particular a gen-set control system having proactive load relief. The present invention uses the direct output of an engine driven alternator to produce a wide range variable frequency, variable voltage for induction motors. It is not designed as a narrow speed band gen-set like D4, albeit D4 has enhanced features over common gen sets. The present invention uses the alternator output to directly control the speed of an induction motor, said motor normally connected to a centrifugal pump. The present invention uses sensor inputs of fluid flow rate, pressure and / or level to control the engine speed. The present invention does not monitor power quality for the purposes of engine and generator

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speed control, as does D4. D4 does not disclose or suggest using the AVR to increase or decrease alternator voltage in proportion to changes in engine speed which maintains the speed to voltage relationship required to suit the motor or motors' electrical characteristics.

It is respectfully submitted that the objections should now be withdrawn and that the application should be accepted.

We also request the postponement of acceptance be lifted.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Fidel Dela Paz', written in a cursive style.

Fidel Dela Paz

**STATEMENT OF PROPOSED AMENDMENTS**

Patent Application No.: 2017210650  
In the Name of: LAA Industries Pty Ltd

**Statement of Proposed Amendments:**

2. Replace all description and claims pages on file with new description and claims pages lodged herewith in duplicate.