jc714 U.S. PTO
09/695165
10/24/00

73	Class	118.1	Subclass	ISSUE CLASSIFICATION

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PATENT NUMBER
6588260
6588260

U.S. **UTILITY** Patent Application

O.I.P.E.	PATENT DATE
SCANNED 5/4 Q.A. LA	JUL 08 2003

APPLICATION NO.	CONT/PRIOR	CLASS	SUBCLASS	ART UNIT	EXAMINER
09/695165		~~123~~ 73	118.1	~~3747~~ 2855	McCall

APPLICANTS: Ross Pursifull

TITLE: Electronic throttle disable control test system

PTO-2040
12/99

ISSUING CLASSIFICATION

ORIGINAL		CROSS REFERENCE(S)	
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)
73	118.1		

INTERNATIONAL CLASSIFICATION: G01M 15/00

☐ Continued on Issue Slip Inside File Jacket

6/5/03 2 1 4/4/02

☐ TERMINAL DISCLAIMER	DRAWINGS			CLAIMS ALLOWED	
	Sheets Drwg.	Figs. Drwg.	Print Fig.	Total Claims	Print Claim for O.G.
	2	2	2	17	1

☐ The term of this patent subsequent to _____ (date) has been disclaimed.

_____ (Assistant Examiner) _____ (Date)

NOTICE OF ALLOWANCE MAILED: 4/24/03

☐ The term of this patent shall not extend beyond the expiration date of U.S Patent. No. _____

ERIC S. McCALL
PRIMARY EXAMINER
(Primary Examiner) 4/23/03 (Date)

ISSUE FEE

Amount Due	Date Paid
$1300	5/4/03

☐ The terminal ____months of this patent have been disclaimed.

TRACI WILSON (Legal Instruments Examiner) 4/24/03 (Date)

ISSUE BATCH NUMBER

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Drawing

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PATENT APPLICATION
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OCT 31 0094

INITIALS _____

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	Date Received (Incl. C. of M.) or Date Mailed		Date Received (Incl. C. of M.) or Date Mailed
1. Application _____ papers.		42.	
2. N. final Rej	2/4/025	43.	
3. [illegible]	[illegible]	44.	
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5. Amdt. B (AF)	9-25-02	46.	
6. Advisory Action	10.2.28	47.	
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PATENT APPLICATION SERIAL NO. _____

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PTO-1556
(5/87)

*U.S. GPO: 1999-459-082/19144

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Bib Data Sheet

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/695,165	10/24/2000 RULE _	123	3747	199-1919

APPLICANTS

Ross Dykstra Pursifull, Dearborn, MI ;

** CONTINUING DATA ********** NONE

** FOREIGN APPLICATIONS ********** NONE

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 12/18/2000

Foreign Priority claimed	35 USC 119 (a-d) conditions met	Verified and Acknowledged	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐ yes ☒ no	☐ yes ☒ no ☐ Met after Allowance	Examiner's Signature Initials	MI	2	17	3

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TITLE

Electronic throttle disable control test system

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10-25-00 A

10/24/00 Jc927 U.S. PTO

PATENT APPLICATION
ASSISTANT COMMISSIONER FOR PATENTS
Washington, D. C. 2023l

Case Docket No. 199-1919
Date: October 24, 2000

Sir:

Jc714 U.S. PTO 09/695165 10/24/00

Transmitted herewith for filing is the patent application of Inventor(s):
Ross Dykstra Pursifull

For: THROTTLE POSITION CONTROL METHOD AND SYSTEM
Enclosed are:

- [X] 2 sheet(s) of drawings
- [X] Declaration and Power of Attorney
- [X] Assignment and Cover Sheet
- [ ] Information Disclosure Statement, PTO Form 1449, and Copies of Citations
- [X] Postcards (2)

The filing fee has been calculated as shown below for OTHER THAN A SMALL ENTITY:

FOR	NO. FILED	NO. EXTRA	RATE	FEE
Basic Fee				$ 710
Total Claims	17-20	0	18	$ 0
Indep Claims	3-3	0	80	$ 0
Multiple Dependent Claims(s) Presented	0		270	$ 0
Assignment Recordal			40	$ 40
			TOTAL	$ 750

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199-1919

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ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

Ross Pursifull

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TECHNICAL FIELD

The present invention relates generally to control systems for internal combustion engines, and more particularly, to an electronic throttle disable control test system.

BACKGROUND ART

Many previously known motor vehicle throttle controls have a direct physical linkage between an accelerator pedal and the throttle body so that the throttle plate is pulled open by the accelerator cable as the driver presses the pedal. The direct mechanical linkage includes biasing that defaults the linkage to a reduced operating position, also known as idle, in a manner consistent with regulations. Nevertheless, such mechanisms are often simple and unable to adapt fuel consumption efficiency, minimize regulated emissions, improve driveability to changing traveling conditions, and add significant weight and components to the motor vehicle.

An alternative control for improving throttle control and the efficient introduction of fuel air mixtures into the engine cylinders is presented by electronic throttle control. The electronic throttle control includes a throttle control unit that positions the throttle plate by an actuator controlled by a microprocessor using position feedback sensors. The micro controllers (or

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micro processors) are often included as part of a powertrain electronic control that can adjust the fuel and air intake and ignition in response to changing conditions of vehicle operation as well as operator control. Protection may be provided so that an electronic system does not misread or misdirect the control and so that unintended operation is avoided when portions of the electronic control suffer a failure.

One previously known type of protection to avoid unintended actuation of excessive throttle is to use a disable function of the electronic throttle drive electronics. The disable function allows the PCM to shut down the electronic throttle drive electronics in the event that the PCM senses a throttle position differing from expected throttle position. Unfortunately, typical electronic throttle systems do not test the integrity of the disable function.

The disadvantages associated with these conventional electronic throttle disable techniques have made it apparent that a new technique for testing the electronic throttle disable function is needed. The new technique should not intrude on normal throttle operation while verifying function integrity at least once each time the vehicle is powered up. The present invention is directed to these ends.

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SUMMARY OF THE INVENTION

It is, therefore, an object of the invention to provide an improved and reliable electronic throttle disable control test system. Another object of the invention is to test the electronic throttle driver disable function. And additional object of the invention is to not intrude upon normal throttle operation.

In accordance with the objects of this invention, an electronic throttle disable control test system is provided. In one embodiment of the invention, a method for testing the integrity of an electronic throttle disable function begins by disabling the electronic throttle motor's drive electronics (which is an integrated H-driver in the preferred embodiment). The H-driver is commanded to apply dull closing voltage, however, since the H-driver is disabled, no voltage is applied to the motor and the throttle remains at its default position. The throttle position voltage is then compared to a predetermined default position voltage. If there is a significant difference between the two voltages, then failure mode management is engaged. These voltages can be either "absolute" meaning relative to system ground or "relative" meaning relative to the throttle position sensor voltage output at closed throttle, default position, or open stop position. This allows one to detect the voltage difference between default and closed stop.

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At this point, we have verified that the throttle does not move when disabled. Then we have to verify that it does move when enabled.

The present invention thus achieves an improved electronic throttle disable control test system. The present invention is advantageous in that the integrity of the electronic throttle disable function is tested at least once each time the vehicle is powered up.

Additional advantages and features of the present invention will become apparent from the description that follows, and may be realized by means of the instrumentalities and combinations particularly pointed out in the appended claims, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be well understood, there will now be described some embodiments thereof, given by way of example, reference being made to the accompanying drawings, in which:

FIGURE 1 is an electronic throttle disable control test system in accordance with one embodiment of the present invention; and

FIGURE 2 is a flow chart for an electronic throttle disable control test in accordance with one embodiment of the present invention.

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BEST MODES FOR CARRYING OUT THE INVENTION

In the following figures, the same reference numerals will be used to identify identical components in the various views. The present invention is illustrated with respect to an electronic throttle disable control test system, particularly suited for the automotive field. However, the present invention is applicable to various other uses that may require electronic throttle disable control test systems.

Referring to FIGURE 1, a motor vehicle powertrain system 10 including electronic throttle control system 12 includes an electronic control unit 14. In the preferred embodiment, the electronic control unit 14 includes a powertrain control module (PCM) 16 including a main processor and an electronic throttle monitor (ETM) 18 including an independent processor. The PCM and ETM share sensors 19 and actuators that are associated with the powertrain system 17 and control module 16. Preferably, the electronic throttle monitor 18 includes a processor physically located within the powertrain control module housing, although a separate housing, separate locations and other embodiments can also be employed in practicing the invention. Moreover, while the electronic throttle monitor 18 and the powertrain control module 16 have independent processors, they share the inputs and outputs of powertrain sensors 19

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and actuators 21 and 34, respectively, for independent processing.

A wide variety of inputs are represented in the FIGURE 1 diagram by the diagrammatic representation of redundant pedal position sensors 20. The sensors 20 are coupled through inputs 22 and are representative of many different driver controls that may demonstrate the demand for power. In addition, the electronic control unit 14 includes inputs 26a and 26b for detecting throttle position. A variety of ways for providing such indications is diagrammatically represented in FIGURE 1 by a first throttle position sensor 24a and a redundant second throttle position sensor 24b to obtain a power output indication. As a result of the many inputs represented at 19, 22, 26a and 26b, the electronic controller 14 provides outputs for limiting output power so that output power does not exceed power demand. A variety of outputs are also diagrammatically represented in FIGURE 1 by the illustrated example of inputs to a throttle control unit 28 that in turn powers an actuator and motive interface 30 for displacing the throttle plate 34. For example, an actuator and interface may comprise redundant drive motors powering a gear interface to change the angle of the throttle plate 34 in the throttle body 36.

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Likewise, the responsive equipment like motors may also provide feedback. For example, the motor position sensor 38 or the throttle position sensors 24a and 24b may provide feedback to the throttle control unit 28, as shown at 37, 27a and 27b, respectively, to determine whether alternative responses are required or to maintain information for service or repair.

The purpose of the present invention is to establish a method with which to test the ability to take an action (which is taken upon failure detection). For a number of detected electronic control system failures, the throttle plate 34 position control disables the drive electronics for the throttle motor 30. In normal operation, the system would never take this action.

The challenge is to design a test that does not intrude in normal throttle control operation. Since disabling the driver results in the plate 34 going to default, to test this function non-intrusively, one must test when the system is off-line but powered (initialization or shut-down) or when default is requested anyway. An advantage over previous technology is that the driver disable function (which is a significant contributor to system predictability when a system failure is detected) can now be tested at least once each time the vehicle is powered up.

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Referring to FIGURE 2, a flow chart for an electronic throttle disable control test 40 in accordance with one embodiment of the present invention is illustrated. In the present invention, control test 40 begins with step 42 and immediately proceeds to step 44 where PCM 16 learns the TPS output voltage for the default position of throttle plate 36. (At this point, no motor voltage is applied so that the plate will have attained the default position.) The sequence then proceeds to step 46.

In step 46, PCM 16 disables the drive electronics responsible for actuating motor 30. The sequence then proceeds to step 48 where PCM 16 commands full closing motor voltage. PCM 16 waits approximately 30 milliseconds and then records the resulting throttle position sensor voltage. The sequence then proceeds to step 50.

In step 50, the throttle position voltage corresponding to the default position of throttle plate 34, determined in step 44, is compared to the throttle position voltage obtained after disabling the drive electronics. If the two voltages are significantly different, it means that the motor drove the plate to a new position and the disable function is not working and then the PCM 16 will engage failure mode management in step 52 and proceed to the end of the sequence 64. If, however, the two

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voltages are not significantly different, then the sequence proceeds to step 54.

In step 54, PCM 16 commands zero volts and proceeds to step 56 where it enables the H-driver. In step 58 PCM 16 applies approximately five volts in the closing direction to throttle motor 30. PCM 16 then waits 30 milliseconds before applying full voltage in the closing direction to throttle motor 30. PCM 16 then waits another 30 milliseconds before learning the output voltage corresponding to a close stop of throttle plate 34. PCM 16 then records the close stop TPS output voltage and the sequence proceeds to step 60.

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In step 60, the voltage corresponding to the default position of throttle plate 34, determined in step 44, is compared to the close stop voltage obtained in step 58. If the two voltages are not significantly different, then the sequence proceeds to end step 64. If, however, the two voltages are significantly different, then throttle plate 34 may be potentially frozen. In this case, PCM 16 engages failure mode management, including ice breaking strategy.

While the present invention is shown with respect to testing the integrity of the drive electronics disable function after learning the default voltage corresponding to the default position of throttle plate 34, one skilled in the art would realize that testing may also occur before learning

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the default voltage by simply comparing the voltage obtained in step 48 with the close stop voltage. One skilled in the art would also recognize that various routine functions, such as checking memory, may occur before or after the test.

The present invention thus achieves an improved and reliable electronic throttle disable control test system by means to test the disable function without intruding on normal throttle operation. The present invention does this at least once each time the vehicle is powered up.

From the foregoing, it can be seen that there has been brought to the art a new and improved electronic throttle disable control test system. It is to be understood that the preceding description of the preferred embodiment is merely illustrative of some of the many specific embodiments that represent applications of the principles of the present invention. Clearly, numerous and other arrangements would be evident to those skilled in the art without departing from the scope of the invention as defined by the following claims:

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What is claimed is:

1. A electronic throttle disable control test apparatus for determining the integrity of a motor drive electronics disable test comprising:

a PCM having a drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic operative to disable said driver whereby said electronic throttle plate returns to a default position, said PCM also having control logic operative to disable said driver, command full closing motor voltage, compare full closing TPS output voltage to a predetermined default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different from each other.

2. The electronic throttle disable control test apparatus as recited in claim 1, wherein said PCM further includes control logic operative to enable said drive electronics.

3. The electronic throttle disable control test apparatus as recited in claim 1, wherein said PCM further includes control logic operative to apply close stop voltage to said motor.

4. The electronic throttle disable control test apparatus as recited in claim 3, wherein said PCM further includes control logic operative to compare said full closing TPS output voltage to said close stop TPS output voltage.

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5. The electronic throttle disable control test apparatus as recited in claim 4, wherein said PCM includes control logic operative to engage failure mode management when said full closing TPS output voltage and said close stop TPS output voltage are significantly different.

6. The electronic throttle disable control test apparatus as recited in claim 1, wherein said PCM includes control logic operative to test said drive electronics disable function before learning said default throttle position sensor output voltage.

7. The electronic throttle disable control test apparatus as recited in claim 1, wherein said PCM includes control logic operative to test said drive electronics disable function before checking PCM memory.

8. A electronic throttle disable control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

a PCM having a drive electronics for controlling said motor coupled to said motorized throttle plate, said PCM having control logic

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operative to disable said driver whereby said electronic throttle plate returns to (or remains at) a default position, said PCM also having control logic operative to disable said driver, command full closing motor voltage, compare said full closing TPS output voltage to a predetermined default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different.

9. The electronic throttle disable control test system as recited in claim 8, wherein said PCM includes control logic operative to test said driver disable function before learning said default throttle position sensor output voltage.

10. The electronic throttle disable control test system as recited in claim 8, wherein said PCM includes control logic operative to test said driver disable function before checking PCM memory.

11. A method for testing the integrity of an electronic throttle plate driver disable function controlled by a PCM comprising the steps of:

disabling said driver;

commanding full closing voltage;

comparing said full closing voltage to a predetermined default voltage; and

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engaging failure mode management when said full closing voltage and said predetermined default voltage are significantly different.

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12. The method for testing the integrity of an electronic throttle plate driver disable function as recited in claim 11, further comprising the step of enabling said driver.

13. The method for testing the integrity of an electronic throttle plate driver disable function as recited in claim 11, further comprising the step of applying close stop TPS output voltage to said motor.

14. The method for testing the integrity of an electronic throttle plate driver disable function as recited in claim 13, further comprising the step of comparing said full closing TPS voltage to said close stop TPS voltage.

15. The method for testing the integrity of an electronic throttle plate driver disable function as recited in claim 14, further comprising the step of engaging failure mode management when said full closing TPS output voltage and said close stop TPS output voltage are significantly different.

16. The method for testing the integrity of an electronic throttle plate drive electronics disable function as recited in claim 11, further comprising the step of testing said driver disable

Docket: 081660

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function before learning said default throttle position sensor output voltage.

17. The method for testing the integrity of an electronic throttle plate drive electronics disable function as recited in claim 11, further comprising the step of testing said drive electronics disable function before checking PCM memory.

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ABSTRACT

A method for testing the integrity of an electronic throttle disable function begins by disabling the drive electronics responsible for controlling the throttle motor. The microcontroller doing the plate position control commands full closing voltage from throttle motor drive electronics (while those electronics are disabled). Then the throttle position voltage is recorded. If the disable system is working, the H-driver will output zero volts even though a full motor closing voltage is requested. The throttle position voltage is then compared to a predetermined default throttle position voltage. If there is a significant difference between the two voltages, then failure mode management is engaged.

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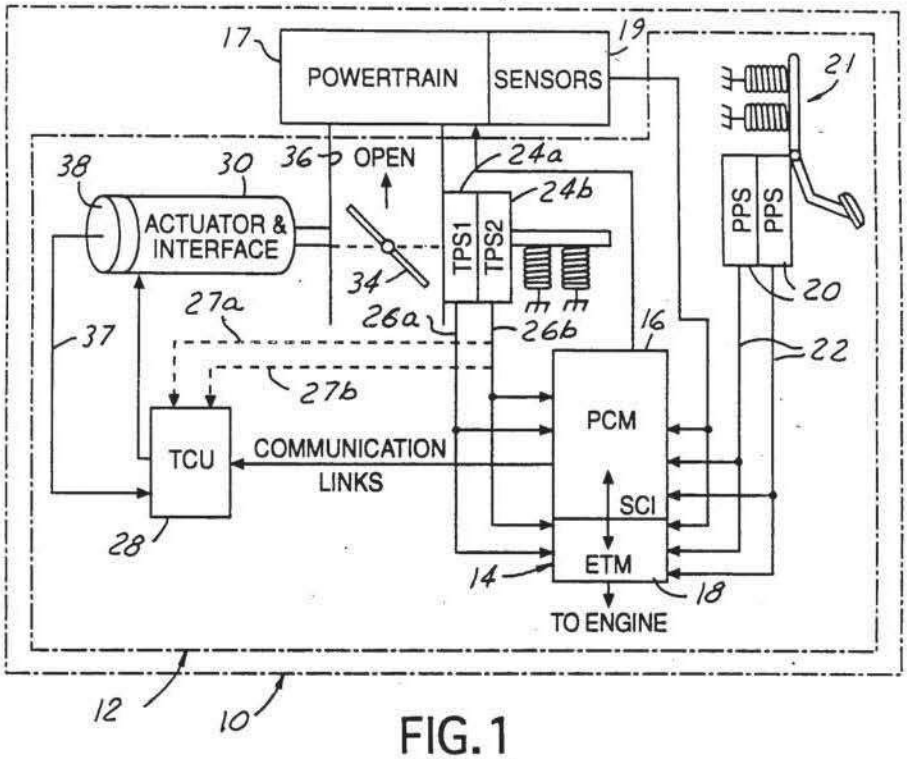


FIG. 1

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In re Application of:

	Ross Dykstra Pursifull
Serial No.:	Unassigned
Filed:	Herewith
For:	"ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM"
Attorney Docket No.:	199-1346 (FGT 1368 PA)

Sheet 1 of 2

IPR2023-01234 - Petitioner - Exhibit 1002

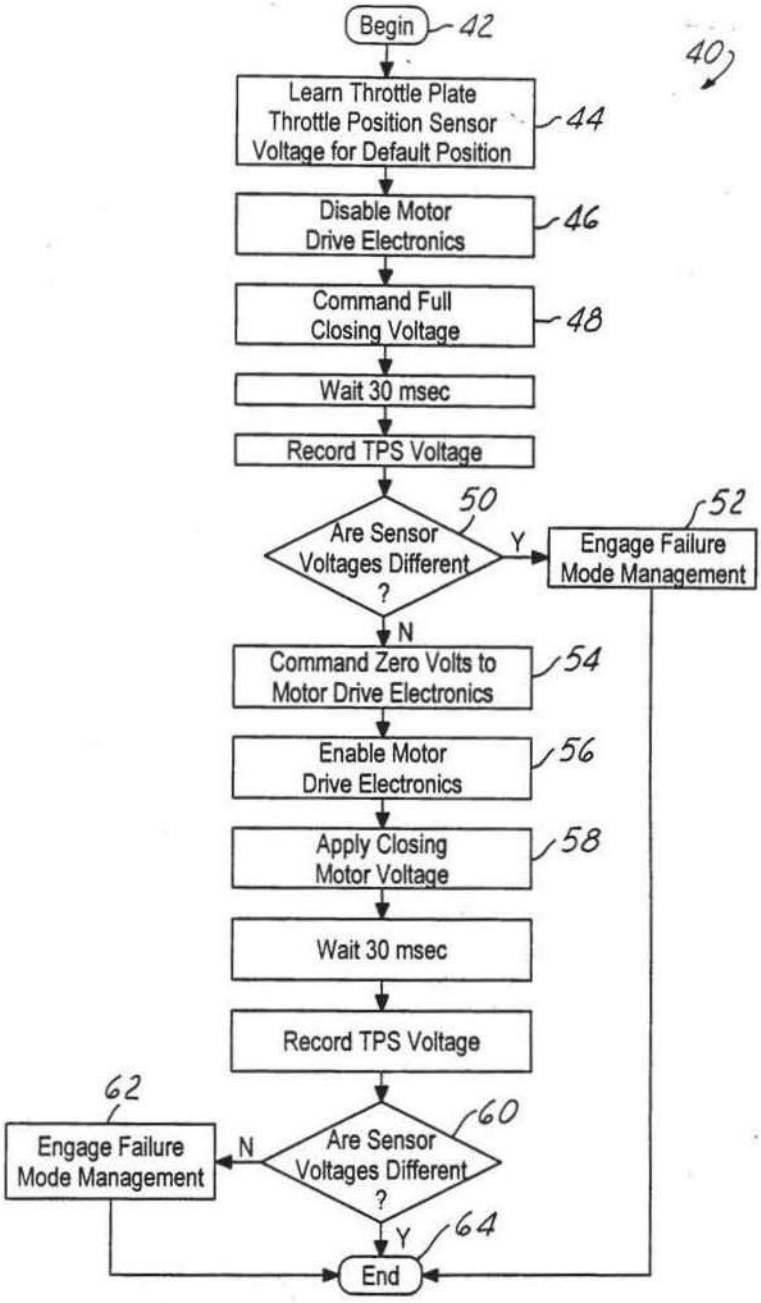


FIG. 2

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In re Application of:

Ross Dykstra Pursifull

Serial No.: Unassigned

Filed: Herewith

For: "ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM"

Attorney Docket No.:199-1346 (FGT 1368 PA)

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DECLARATION AND POWER OF ATTORNEY - ORIGINAL APPLICATION	Attorney's Docket No. 199-1919 (FGT 1368PA)

As a below named inventor, I hereby declare:
My residence, post office address and citizenship are as stated below next to my name;

I verily believe I am the original, first and sole inventor or an original, first and joint inventor of the subject matter that is claimed and for which a patent is sought on the invention entitled

ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

the specification of which is attached hereto.

I have reviewed and understand the contents of the specification identified above, including the claims.

I acknowledge my duty to disclose information of which I am aware that is material to the examination of this application in accordance with Section I.56(a), Title 37 of the Code of Federal Regulations; and

as to application for patents or inventor's certificate on the invention filed in any country foreign to the United States of America, prior to this application by me or my legal representatives or assigns,

[x] no such applications have been filed, or

[ ] such applications have been filed as follows:

COUNTRY	APPLICATION NO.	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)	PRIORITY CLAIMED UNDER 35 USC 119

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)
(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith and to act on my behalf before the competent International Authorities in connection with any and all international applications filed by me. (List name and registration number)

Rhonda McCoy-Pfau - 37,887
Leslie C. Hodges – 41,843
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Attorney Docket No: 199-1919 Please call 313-755-9106 if this paper becomes separated from the file.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

FULL NAME AND POST OFFICE ADDRESS OF INVENTOR:	RESIDENCE	CITIZENSHIP	SIGNATURE	DATE
Ross Dykstra Pursifull 21510 Donaldson Dearborn, MI 48124 US	Dearborn, MI 48124	US	Ross Pursifull	October 18, 2000

Attorney Docket No: 199-1919 Please call 313-755-9106 if this paper becomes separated from the file.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

7590 03/04/2002

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EXAMINER
MCCALL, ERIC SCOTT

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 03/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

IPR2023-01234 - Petitioner - Exhibit 1002

Office Action Summary	Application No.	Applicant(s)	
	09/695,165	PURSIFULL, ROSS DYKSTRA	
	Examiner	Art Unit	
	Eric S. McCall	2855	

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Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 24 October 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

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ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

FIRST OFFICE ACTION

DRAWINGS

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the reference sign "62" which is not mentioned in the description. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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CLAIMS

35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Claims 1-17 are replete with problems that need to be clarified in order to abide by 35 USC 112, second paragraph. Applicant is asked to thoroughly review all of the claims in order to overcome such problems (and any problem that might not be listed below).

Claim 1, line 2; the phrase "the integrity" lacks antecedent basis;

line 4; the phrase "a drive electronics" should be changed to --drive electronics--;

line 7; the phrase "said driver" lacks antecedent basis;

lines 8-10; the phrase "said PCM also having control logic operative to disable said driver" is redundant with that of lines 6-7;

lines 9/10; the phrase "said driver" lacks antecedent basis;

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Claim 1, line 11; the term "TPS" is indefinite, Applicant is advised to change all occurrences of the term to --throttle position sensor-- because in the later claims the Applicant refers back to the term "TPS" as "the throttle position sensor";

Claim 6, line 4; the phrase "said drive electronics disable function" lacks antecedent basis;

Claim 7, line 4; the phrase "said drive electronics disable function" lacks antecedent basis;

Claim 8, line 9; the phrase "a drive electronics" should be changed to --drive electronics--;

lines 10/11; the phrase "said motorized throttle plate" lacks antecedent basis;

line 12; the phrase "said driver" lacks antecedent basis;

lines 12/13; the phrase "said electronic throttle plate" lacks antecedent basis;

line 15; the phrase "said d·i er" lacks antecedent basis;

lines 16/17; the phrase "said full closing TPS output voltage" lacks antecedent basis;

lines 18/19; the phrase "said full closing TPS output voltage" lacks antecedent basis;

Claim 9, line 4; the phrase "said driver disable function" lacks antecedent basis;

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Claim 10, line 4; the phrase "said driver disable function" lacks antecedent basis;

Claims 11-17, line 1; the phrase "the integrity" lacks antecedent basis;

Claim 13, line 5; the phrase "said motor" lacks antecedent basis;

Claim 14, line 4; the phrase "said full closing TPS voltage" lacks antecedent basis;

Claim 15, line 5; the phrase "said full closing TPS output voltage" lacks antecedent basis;

Claims 16&17, lines 1/2; said claims refer to "The method for testing the integrity of an electronic throttle plate drive electronics disable function as recited in claim 11", but claim 11 refers to a method for testing the integrity of an electronic throttle plate driver disable function, thus a discrepancy exists;

Claim 16, lines 5/6; the phrase "said default throttle position sensor output voltage" lacks antecedent basis; and

Claim 17, lines 4/5; the phrase "said drive electronics disable function" lacks antecedent basis.

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35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohashi et al. (5,088,461).

Ohashi et al. teach an electronic throttle disable control test apparatus for determining integrity of a motor drive electronic disable test comprising:

a PCM (which the Applicant has defined as merely a control module) having drive electronics for controlling a motor (5) coupled to an electronic throttle plate (7), said PCM (4) having control logic operative to disable a driver whereby said electronic throttle plate returns to a default position, said PCM also having control logic operative to:

disable said driver (ie. overriding the PWM command),

command full closing motor voltage (col. 5, line 63 to col. 6, line 2),

compare full closing TPS output voltage to a predetermined default TPS output voltage (col. 5, lines 63/64),

and

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engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different from each other (in the prior art, col. 5, lines 63+, if the throttle sensor signal is higher than the stored throttle sensor signal, ie. the signals are "significantly different from each other", the present control is overridden and the throttle valve is fully closed which since the overriding condition occurs, a "failure mode management" is deemed as occurring).

With regard to claims 2-5, the prior art includes control logic operative to perform the functions as claimed.

With regards to claim 6, in the drawings of the prior art, the prior art teaches control logic operative to test the drive electronics disable function. No mention is made before such a test as to learning a default throttle position sensor output voltage. Thus, the prior art suggests testing the drive electronics disable function before learning a default throttle position sensor output voltage.

With regards to claim 7, in the drawings of the prior art, the prior art teaches control logic operative to test the drive electronics disable function. No mention is made before such a test as to checking the PCM memory. Thus, the prior art suggests testing the drive electronics disable function before checking the PCM memory.

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With regard to independent claims 8 and 11, said claims parallel that of claim 1, and thus the arguments as presented above apply to claims 8 and 11. No further comments are deemed necessary.

With regard to claims 9 and 16, said claims parallel that of claim 6. Applicant's attention is directed to the above remarks regarding claim 6.

With regard to claims 10 and 17, said claims parallel that of claim 7. Applicant's attention is directed to the above remarks regarding claim 7.

With regard to claims 12-15, said claims parallel that of claims 2-5 and as stated above, the prior art includes control logic operative to perform the functions as claimed.

RELEVANT ART

Applicant's attention is directed to the prior art made of record and not relied upon but considered pertinent to the Applicant's disclosure.

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CONCLUSION

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (703) 308-6968.

Eric S. McCall
Primary Examiner
Art Unit 2855
Feb. 26, 2002

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Notice of References Cited	Application/Control No. 09/695,165	Applicant(s)/Patent Under Reexamination PURSIFULL, ROSS DYKSTRA	
	Examiner Eric S. McCall	Art Unit 2855	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,318,337	11-2001	Pursifull, Ross Dykstra	123/396
	B	US-5,950,597	09-1999	Kamio et al.	123/397
	C	US-5,473,936	12-1995	Sasakura et al.	73/117.3
	D	US-5,088,461	02-1992	Ohashi et al.	123/353
	E	US-4,515,009	05-1985	Hasegawa et al.	123/478
	F	US-4,359,894	11-1982	Ikeura et al.	73/118.2
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

ARTZ & ARTZ P.C.
Law Offices

Intellectual Property and Technology Related Causes

FACSIMILE TRANSMITTAL SHEET

Fax: (248) 223-9522
Phone: (248) 223-9500

To: **Examiner Eric Scott McCall**

Fax No.: **(703) 872-9318** 2855

From: Robert P. Renke

Date: **June 4, 2002**

Our File No.: 199-1919 (VGT 0261 PA)

Serial No.: 09/695,165

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Comments: Please find attached Applicant's Amendment and Request for Reconsideration as it relates to the above referenced patent application serial number. Please file in your usual manner. Thank you.

Total Pages (incl. Cover sheet): 16

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If there are any problems during transmission, please call: (248) 223-9500.

Angie Moscowitz
(Operator)

28333 TELEGRAPH ROAD, SUITE 250, SOUTHFIELD, MICHIGAN 48034
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6.6.02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Pursifull

Group Art Unit: 2855

Serial No.: 09/695,165 Examiner: Eric Scott McCall

Filed: October 24, 2000

For: ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

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Attorney Docket No.: 199-1919 (VGT 0261 PA)

I hereby certify that this correspondence is being sent via facsimile to: Attn: Examiner Eric Scott McCall, Box Non-Fee Amendment, Assistant Commissioner for Patents, Washington, D.C. 20231 fax number (703) 872-9318 on:

June 4, 2002 Angie Moscowitz
Date of Deposit

Signature

AMENDMENT AND REQUEST FOR RECONSIDERATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Applicant submits this Amendment and Request for Reconsideration in response to the Office Action dated March 4, 2002. This response is timely because it is being filed within the three-month time period allowed for a response. Please amend the above-identified Application as follows:

In The Drawings:

Please substitute the one (1) sheet of drawings submitted herewith containing Figure 2, in place of the originally filed drawing sheet containing the same figure.

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In The Specification:

Please amend the second full paragraph on page 9 to read as follows:

In step 60, the voltage corresponding to the default position of throttle plate 34, determined in step 44, is compared to the close stop voltage obtained in step 58. If the two voltages are not significantly different, then the sequence proceeds to end step 64. If, however, the two voltages are significantly different, then throttle plate 34 may be potentially frozen. In this case, PCM 16 engages failure mode management in step 62, including ice breaking strategy.

In The Claims:

Please amend claims 1-17 to read as follows:

1. (Amended) An electronic throttle control apparatus for testing integrity of a motor drive electronics disable feature comprising:

a PCM having drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic operative to disable said drive electronics such that said electronic throttle plate returns to a default position, said PCM also having control logic operative to command full closing motor voltage, compare full closing TPS output voltage to a predetermined default throttle position sensor (TPS) output voltage, and engage failure mode management when said full closing TPS output

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voltage and said predetermined default TPS output voltage are significantly different from each other.

2. (Amended) The electronic throttle control apparatus of claim 1, wherein said PCM further includes control logic operative to enable said drive electronics.

3. (Amended) The electronic throttle control apparatus of claim 1, wherein said PCM further includes control logic operative to apply close stop voltage to said motor.

4. (Amended) The electronic throttle control apparatus of claim 3, wherein said PCM further includes control logic operative to compare said full closing TPS output voltage to said close stop TPS output voltage.

5. (Amended) The electronic throttle control apparatus of claim 4, wherein said PCM includes control logic operative to engage failure mode management when said full closing TPS output voltage and said close stop TPS output voltage are significantly different.

6. (Amended) The electronic throttle control apparatus of claim 1, wherein said PCM includes control logic operative to test said motor drive electronics disable feature before learning said default throttle position sensor output voltage.

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7. (Amended) The electronic throttle control apparatus of claim 1, wherein said PCM includes control logic operative to test said motor drive electronics disable feature before checking PCM memory.

8. (Amended) An electronic throttle control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

a PCM having drive electronics for controlling said motor coupled to said throttle plate, said PCM having control logic operative to disable said drive electronics such that said throttle plate returns to or remains at a default position, said PCM also having control logic operative to command full closing motor voltage, compare said full closing throttle position sensor (TPS) output voltage to a predetermined default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different.

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9. (Amended) The electronic throttle control test system of claim 8, wherein said PCM includes control logic operative to test disabling of said drive electronics before learning said default throttle position sensor output voltage.

10. (Amended) The electronic throttle control test system of claim 8, wherein said PCM includes control logic operative to test disabling of said drive electronics before checking PCM memory.

11. (Amended) A method for testing integrity of an electronic throttle plate driver disable function controlled by a powertrain control module (PCM) comprising the steps of:

disabling said driver;

commanding full closing voltage;

comparing said full closing voltage to a predetermined default voltage; and

engaging failure mode management when said full closing voltage and said predetermined default voltage are significantly different.

12. (Amended) The method of claim 11, further comprising the step of enabling said driver.

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13. (Amended) The method of claim 11, further comprising the step of applying close stop output voltage to a motor.

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14. (Amended) The method of claim 13, further comprising the step of comparing a throttle position sensor (TPS) output voltage at said full closing voltage to a TPS output voltage at said close stop voltage.

15. (Amended) The method of claim 14, further comprising the step of engaging failure mode management when said TPS output voltage at said full closing voltage and said TPS output voltage at said close stop voltage are significantly different.

16. (Amended) The method of claim 11, wherein said testing occurs before learning default throttle position sensor output voltage.

17. (Amended) The method of claim 11, wherein said testing occurs before checking PCM memory.

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REMARKS

Claims 1-17 are pending in the above application. All claims stand rejected under 35 U.S.C. §112, second paragraph, for indefiniteness and under 35 U.S.C. §102 as being anticipated by *Ohashi* U.S. 5,088,461.

In regard to the drawing objections set forth on page 2 of the Office Action, Applicant has amended Figure2 to conform with the specification. In particular, the "yes" and "no" decision indicators associated with decision block 60 have been corrected. The specification has also been amended to identify step 62 as indicated in Figure 2. No new matter has been added.

With regard to the rejections under 35 U.S.C. §112, second paragraph, Applicant, by the amendments above, has overcome the antecedent basis problems and indefiniteness problems noted by the Examiner, as well as made additional amendments to further clarify the Applicant's invention.

With regard to the rejections under 35 U.S.C. §102, Applicant submits that the invention is novel in view of the *Ohashi* reference because the present claims and the prior art differ. Each of Applicant's independent claims require that the powertrain control modular disable the throttle drive electronics such that the electronic throttle plate returns to a default position, which the *Ohashi* reference does not teach. This differs from commanding the drive electronics to control or command the throttle motor to a fully closed position. Applicant's invention is directed toward ensuring that a command to disable the throttle motor drive electronics results in the throttle plate actually returning to its default closed position. Applicant has recognized that all conventional electronic throttle control systems including *Ohashi* merely assume that the throttle plate returns to its default closed position when the throttle motor drive electronics is disabled.

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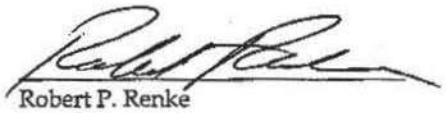
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The citation at columns five and six of the *Ohashi* reference do not disclose Applicant's throttle disable integrity test. Rather, the *Ohashi* reference compares the commanded throttle closed position to the stored default position and modifies the commanded closed position data based on the reference default closed position. The integrity of the default position itself, however, is never questioned. This is in contrast to the testing method of the present invention.

In view of the foregoing amendments and remarks, Applicant submits that claims 1-17 are allowable. The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully Submitted,

ARTZ & ARTZ P.C.



Robert P. Renke
Reg. No. 40,783
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: June 4, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Drawings:

Please substitute the one (1) sheet of drawings submitted herewith containing Figure 2, in place of the originally filed drawing sheet containing the same figure.

In The Specification:

Please amend the second full paragraph on page 9 as follows:

> In step 60, the voltage corresponding to the default position of throttle plate 34, determined in step 44, is compared to the close stop voltage obtained in step 58. If the two voltages are not significantly different, then the sequence proceeds to end step 64. If, however, the two voltages are significantly different, then throttle plate 34 may be potentially frozen. In this case, PCM 16 engages failure mode management **in step 62**, including ice breaking strategy.

In The Claims:

Please amend claims 1-17 as follows:

> 1. (Amended) **[A]** **An** electronic throttle **[disable]** control **[test]** apparatus for **[determining the]** **testing** integrity of a motor drive electronics disable **[test]** **feature** comprising:
>
> a PCM having **[a]** drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic operative to disable said drive**[r whereby]** **electronics such that** said electronic throttle plate

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returns to a default position, said PCM also having control logic operative to **[disable said driver,]** command full closing motor voltage, compare full closing TPS output voltage to a predetermined default **throttle position sensor** (TPS) output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different from each other.

2. (Amended) The electronic throttle **[disable]** control **[test]** apparatus **[as recited in]** **of** claim 1, wherein said PCM further includes control logic operative to enable said drive electronics.

3. (Amended) The electronic throttle **[disable]** control **[test]** apparatus **[as recited in]** **of** claim 1, wherein said PCM further includes control logic operative to apply close stop voltage to said motor.

4. (Amended) The electronic throttle **[disable]** control **[test]** apparatus **[as recited in]** **of** claim 3, wherein said PCM further includes control logic operative to compare said full closing TPS output voltage to said close stop TPS output voltage.

5. (Amended) The electronic throttle **[disable]** control **[test]** apparatus **[as recited in]** **of** claim 4, wherein said PCM includes control logic operative to engage failure

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mode management when said full closing TPS output voltage and said close stop TPS output voltage are significantly different.

6. (Amended) The electronic throttle **[disable]** control **[test]** apparatus **[as recited in]** **of** claim 1, wherein said PCM includes control logic operative to test said **motor** drive electronics disable **[function]** **feature** before learning said default throttle position sensor output voltage.

7. (Amended) The electronic throttle **[disable]** control **[test]** apparatus **[as recited in]** **of** claim 1, wherein said PCM includes control logic operative to test said **motor** drive electronics disable **[function]** **feature** before checking PCM memory.

8. (Amended) **[A]** **An** electronic throttle **[disable]** control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

a PCM having **[a]** drive electronics for controlling said motor coupled to said **[motorized]** throttle plate, said PCM having control logic operative to disable said drive**[r whereby]** **electronics such that** said **[electronic]** throttle plate returns to **[(]**or remains at**[)]** a default position, said

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PCM also having control logic operative to **[disable said driver,]** command full closing motor voltage, compare said full closing **throttle position sensor** (TPS) output voltage to a predetermined default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different.

9. (Amended) The electronic throttle **[disable]** control test system **[as recited in]** **of** claim 8, wherein said PCM includes control logic operative to test **disabling of** said drive**[r disable function]** **electronics** before learning said default throttle position sensor output voltage.

10. (Amended) The electronic throttle **[disable]** control test system **[as recited in]** **of** claim 8, wherein said PCM includes control logic operative to test **disabling of** said drive**[r disable function]** **electronics** before checking PCM memory.

11. (Amended) A method for testing **[the]** integrity of an electronic throttle plate driver disable function controlled by a **powertrain control module** (PCM) comprising the steps of:

disabling said driver;

commanding full closing voltage;

comparing said full closing voltage to a predetermined default voltage; and

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engaging failure mode management when said full closing voltage and said predetermined default voltage are significantly different.

12. (Amended) The method **[for testing the integrity of an electronic throttle plate driver disable function as recited in]** of claim 11, further comprising the step of enabling said driver.

13. (Amended) The method **[for testing the integrity of an electronic throttle plate driver disable function as recited in]** of claim 11, further comprising the step of applying close stop **[TPS]** output voltage to **[said]** a motor.

14. (Amended) The method **[for testing the integrity of an electronic throttle plate driver disable function as recited in]** of claim 13, further comprising the step of comparing **a throttle position sensor (TPS) output voltage at** said full closing **[TPS]** voltage to **a TPS output voltage at** said close stop **[TPS]** voltage.

15. (Amended) The method **[for testing the integrity of an electronic throttle plate driver disable function as recited in]** of claim 14, further comprising the step of engaging failure mode management when said **[full closing]** TPS output voltage **at said full closing voltage** and said **TPS output voltage at said** close stop **[TPS output]** voltage are significantly different.

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16. (Amended) The method **[for testing the integrity of an electronic throttle plate drive electronics disable function as recited in]** of claim 11, **[further comprising the step of testing said driver disable function]** wherein said testing occurs before learning **[said]** default throttle position sensor output voltage.

17. (Amended) The method **[for testing the integrity of an electronic throttle plate drive electronics disable function as recited in]** of claim 11, **[further comprising the step of]** wherein said testing **[said drive electronics disable function]** occurs before checking PCM memory.

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APPROVED
J.L. Mitchell
July 24, 2002

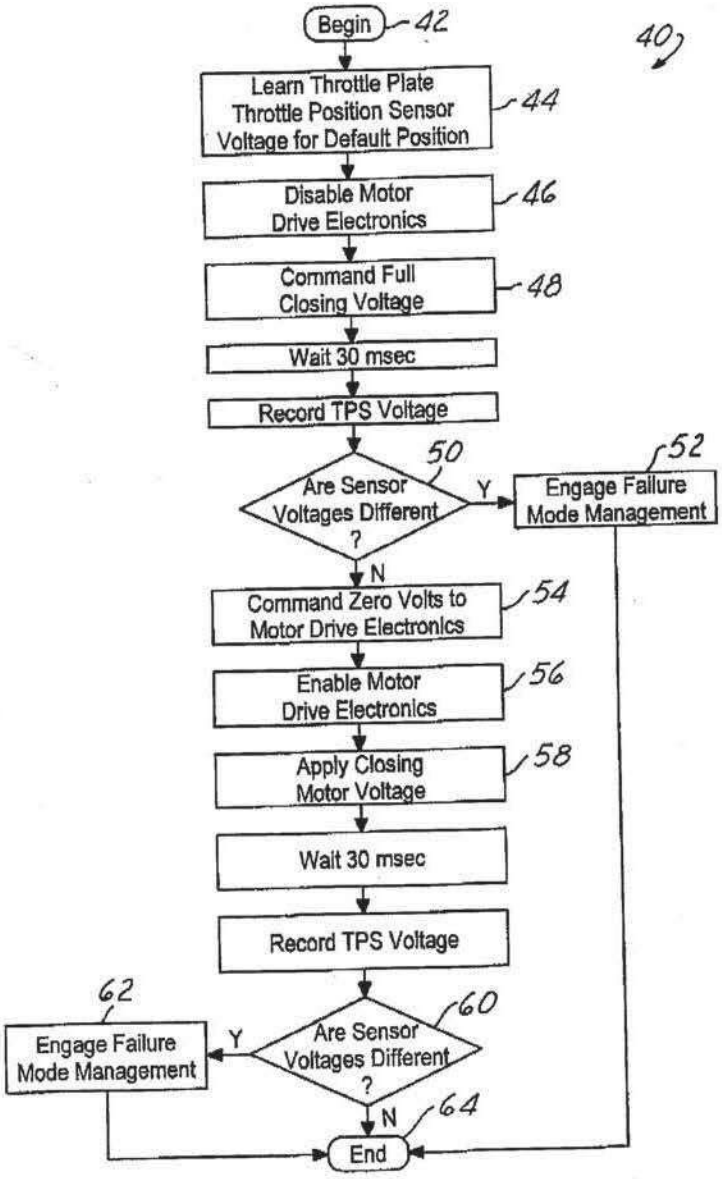


FIG. 2

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

7590 07/26/2002

Artz & Artz P C
28333 Telegraph Road
Suite 250
Southfield, MI 48034

EXAMINER	
MCCALL, ERIC SCOTT	
ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 07/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

IPR2023-01234 - Petitioner - Exhibit 1002

Office Action Summary	Application No.	Applicant(s)	
	09/695,165	PURSIFULL, ROSS DYKSTRA	
	Examiner	Art Unit	
	Eric S. McCall	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *04 June 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

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ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

FINAL OFFICE ACTION

In response to the Applicant's amendment (paper no. 3) dated June 04, 2002.

DRAWINGS

In view of the Applicant's amendments, the objection to the drawings as listed in the previous office action (3/04/02) has been overcome.

CLAIMS

35 U.S.C. § 112

In view of the Applicant's amendments, the rejection of claims 1-17 under 35 USC 112, second paragraph, as listed in said previous office action has been overcome.

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35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohashi et al. (5,088,461).

With respect to claim 1, Ohashi et al. teach an electronic throttle control apparatus for testing integrity of a motor drive electronic disable feature comprising:

a PCM (4), defined by the Applicant as a control module, having drive electronics for controlling a motor (5) coupled to an electronic throttle plate (7), said PCM having control logic operative to disable said drive electronics such that said throttle plate returns to a default position (col. 6, lines 12-16), said PCM also having control logic operative to:

command full closing motor voltage (col. 5, line 63 to col. 6, line 2 & col. 6, lines 12-15),

compare full closing TPS output voltage to a predetermined default TPS output voltage (col. 5, lines 63/64), and

engage failure mode management when said full closing TPS output voltage (ie. output voltage representing the detected closed position of the throttle plate) and said predetermined default TPS output voltage (ie. output voltage representing the actual closed position of the

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throttle plate) are significantly different from each other (the prior art suggests, col. 5, lines 63+, that if the detected throttle position sensor signal is higher than the actual throttle position sensor signal, ie. the signals are "significantly different from each other", the present control is overridden and the throttle valve is fully closed which since the overriding condition occurs, a "failure mode management" is deemed as occurring).

With regard to independent claims 8 and 11, said claims parallel that of claim 1, and thus the remarks as presented above also apply to claims 8 and 11.

Response to Arguments

In response to the Applicant's arguments pertaining to claim 1, the Applicant has argued that claim 1 requires that the PCM disable the throttle drive electronics such that the electronic throttle plate returns to a default position. The Applicant goes on to argue that this approach differs from the prior art which commands the throttle plate to a closed position.

In response, the Examiner points out that:

(1) The Applicant has only claimed that the PCM has control logic "operative" to disable the drive electronics such that the throttle plate returns to a default position. The Applicant has never positively claimed that the drive electronics is in fact disabled and the throttle plate returns to a default position as result thereof.

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(2) The Applicant has claimed that the PCM has a "full closing command voltage" and it is this voltage which is compared to a predetermined default position which suggests that closing is, in fact, done by command and not by disablement.

(3) The Applicant has claimed that full closing TPS output voltage is compared to a "predetermined" default throttle position. The Applicant has earlier claimed that the PCM is "operative" to disable the drive electronics to return the throttle plate to a "default position" and as claimed the "default position" and the "predetermined default position" are not one and the same. Thus, there is no suggestion that the "predetermined" default position is obtained via driver disablement.

In response to the Applicant's arguments pertaining to claim 8, the Applicant has argued that claim 8 requires that the PCM disable the throttle drive electronics such that the electronic throttle plate returns to a default position. The Applicant goes on to argue that this approach differs from the prior art which commands the throttle plate to a closed position.

In response, the Examiner points out that:

(1) The Applicant has only claimed that the PCM has control logic "operative" to disable the drive electronics such that the throttle plate returns to or remains at a default position. The Applicant has never positively claimed that the drive electronics is in fact disabled and the throttle plate returns to a default position as result thereof.

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(2) The Applicant has claimed that the PCM has a "full closing command voltage" and it is this voltage which is compared to a predetermined default position which suggests that closing is, in fact, done by command and not by disablement.

(3) The Applicant has claimed that full closing TPS output voltage is compared to a "predetermined" default throttle position. The Applicant has earlier claimed that the PCM is "operative" to disable the drive electronics to return the throttle plate to a "default position" and as claimed the "default position" and the "predetermined default position" are not one and the same. Thus, there is no suggestion that the "predetermined" default position is obtained via driver disablement.

In response to the Applicant's arguments pertaining to claim 11, the Applicant has argued that claim 11 requires that the PCM disable the throttle drive electronics such that the electronic throttle plate returns to a default position. The Applicant goes on to argue that this approach differs from the prior art which commands the throttle plate to a closed position.

In response, the Examiner points out that:

(1) The Applicant has claimed that the driver is disabled but has never claimed that, as a result thereof, the throttle plate achieves a predetermined default position.

(2) The Applicant has claimed that a full closing voltage is "commanded" and it is this voltage which is compared to a predetermined default voltage which suggests that closing is, in fact, done by command and not by disablement.

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Finally, it is noted that the Applicant has not provided any other arguments regarding any other claims.

CONCLUSION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (703) 308-6968.

Eric S. McCall
Primary Examiner
Art Unit 2855
July 24, 2002

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ARTZ & ARTZ P.C.
Law Offices

Intellectual Property and Technology Related Causes

2855

FACSIMILE TRANSMITTAL SHEET

Fax: (248) 223-9522
Phone: (248) 223-9500

To: **Examiner Eric Scott McCall**

Fax No.: **(703) 872-9319**

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SEP 25 2002
TECHNOLOGY CENTER 2800

From: Robert P. Renke

Date: **September 25, 2002**

Our File No.: 199-1919 (VGT 0261 PA)

Serial No.: 09/695,165

Comments: Please find attached Applicant's Amendment and Request for Reconsideration in response to the Final Office Action concerning the above referenced patent application serial number. Please file in your usual manner. Thank you.

Total Pages (incl. Cover sheet): 9

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Angie Moscowitz
(Operator)

28333 TELEGRAPH ROAD, SUITE 250, SOUTHFIELD, MICHIGAN 48034
TELEPHONE: (248) 223-9500 -- FACSIMILE: (248) 223-9522

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#5/B(2)
9-27-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Pursifull

Group Art Unit: 2855

Serial No.: 09/695,165

Examiner: Eric Scott McCall

Filed: October 24, 2000

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SEP 25 2002
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For: ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

Do Not Enter
J.I. 11/6/02
Sep. 30, 2002

Attorney Docket No.: 199-1919 (VGT 0261 PA)

I hereby certify that this correspondence is being sent via facsimile to: Attn: Examiner Eric Scott McCall, Box After Final, Assistant Commissioner for Patents, Washington, D.C. 20231 fax number (703) 872-9319 on:

September 25, 2002 — Date of Deposit
Angie Moscowitz — Signature

AMENDMENT AND REQUEST FOR RECONSIDERATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Applicant submits this Amendment in response to the Final Office Action dated July 26, 2002. This response is being filed within two months of the date of the Office Action so as to invoke an Advisory Action. Please amend the above-identified Application as follows:

In The Claims:

Please amend claims 1, 8 and 11 to read as follows:

1. (Twice Amended) An electronic throttle control apparatus for testing integrity of a motor drive electronics disable feature comprising:

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IPR2023-01234 - Petitioner - Exhibit 1002

a PCM having drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic to disable said drive electronics and return said electronic throttle plate to a default position, determine a default throttle position sensor (TPS) output voltage corresponding to said default position, command a full closing motor voltage, compare a full closing TPS output voltage to said default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said default TPS output voltage are significantly different from each other.

8. (Twice Amended) An electronic throttle control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

a PCM having drive electronics for controlling said motor coupled to said throttle plate, said PCM having control logic to disable said drive electronics such that said throttle plate returns to or remains at a default position, determine a default throttle position sensor (TPS) output voltage corresponding to said default position, command a full closing motor voltage, compare said full closing TPS output voltage to said default TPS output voltage, and engage failure mode management when said full closing

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TPS output voltage and said predetermined default TPS output voltage are significantly different.

11. (Twice Amended) A method for testing integrity of an electronic throttle plate driver disable function controlled by a powertrain control module (PCM) comprising the steps of:

disabling said driver;

determining a first throttle position value with said driver disabled;

commanding full closing voltage;

determining a second throttle position value at said full closing voltage;

comparing said first and second throttle position values; and

engaging failure mode management when said first and second throttle position values are significantly different.

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REMARKS

Claims 1-17 are pending in the above application. All claims stand rejected under 35 U.S.C. §102 as being anticipated by *Ohashi* U.S. Patent No. 5,088,461.

With regard to the rejections under 35 U.S.C. §102, Applicant submits that the invention is novel in view of the *Ohashi* reference because the present claims and the prior art differ. Each of Applicant's independent claims require that the powertrain control module disable the throttle drive electronics such that the electronic throttle plate returns to a default position, which the *Ohashi* reference does not teach. This default position is measured and compared to the commanded fully closed position. This differs from simply commanding the drive electronics to control or command the throttle motor to a fully closed position. Applicant's invention is directed toward ensuring that a command to disable the throttle motor drive electronics results in the throttle plate actually returning to its default closed position. Applicant has recognized that all conventional electronic throttle control systems, including *Ohashi*, merely assume that the throttle plate returns to its default closed position when the throttle motor drive electronics is disabled.

The citation at columns five and six of the *Ohashi* reference do not disclose Applicant's throttle disable integrity test. Rather, the *Ohashi* reference compares the commanded throttle closed position to the stored default position and modifies the commanded closed position data based on the reference default closed position. The integrity of the default position itself, however, is never questioned. This is in contrast to the testing method of the present invention which explicitly determines the default throttle position as opposed to relying on a stored value, the integrity of which, is unknown.

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In view of the foregoing amendments and remarks, Applicant submits that claims 1-17 are allowable. The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully Submitted,

ARTZ & ARTZ P.C.



Robert P. Renke
Reg. No. 40,783
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: September 25, 2002

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Claims:

Please amend claims 1, 8 and 11 to read as follows:

1. (Twice Amended) An electronic throttle control apparatus for testing integrity of a motor drive electronics disable feature comprising:

a PCM having drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic **[operative]** to disable said drive electronics **[such that]** **and return** said electronic throttle plate **[returns]** to a default position, **[said PCM also having control logic operative to]** **determine a default throttle position sensor (TPS) output voltage corresponding to said default position,** command **a** full closing motor voltage, compare **a** full closing TPS output voltage to **[a predetermined]** **said** default **[throttle position sensor (]TPS[)]** output voltage, and engage failure mode management when said full closing TPS output voltage and said **[predetermined]** default TPS output voltage are significantly different from each other.

8. (Twice Amended) An electronic throttle control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

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a PCM having drive electronics for controlling said motor coupled to said throttle plate, said PCM having control logic **[operative]** to disable said drive electronics such that said throttle plate returns to or remains at a default position, **[said PCM also having control logic operative to]** **determine a default throttle position sensor (TPS) output voltage corresponding to said default position,** command **a** full closing motor voltage, compare said full closing **[throttle position sensor (]**TPS**[)]** output voltage to **[a predetermined]** **said** default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different.

11. (Twice Amended) A method for testing integrity of an electronic throttle plate driver disable function controlled by a powertrain control module (PCM) comprising the steps of:

disabling said driver;

determining a first throttle position value with said driver disabled;

commanding full closing voltage;

determining a second throttle position value at said full closing voltage;

comparing said **[full closing voltage to a predetermined default voltage]** **first and second throttle position values;** and

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IPR2023-01234 - Petitioner - Exhibit 1002

engaging failure mode management when said **[full closing voltage and said predetermined default voltage]** first and second throttle position values are significantly different.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

7590 10/02/2002

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EXAMINER	
MCCALL, ERIC SCOTT	
ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 10/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

IPR2023-01234 - Petitioner - Exhibit 1002

Advisory Action	Application No.	Applicant(s)	
	09/695,165	PURSIFULL, ROSS DYKSTRA	
	Examiner	Art Unit	
	Eric S. McCall	2855	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 25 September 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☐ The period for reply expires _____months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☒ The proposed amendment(s) will not be entered because:

   (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *See Continuation Sheet*.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☐ The a)☐ affidavit, b)☐ exhibit, or c)☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☒ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: *(NONE)*.

   Claim(s) objected to: *(NONE)*.

   Claim(s) rejected: *1-17*.

   Claim(s) withdrawn from consideration: _____.

8. ☐ The proposed drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

/E. S. McCall/
Eric S. McCall
Primary Examiner
Art Unit: 2855

IPR2023-01234 - Petitioner - Exhibit 1002

Continuation Sheet (PTO-303)
09/695,165

Application No.

Continuation of 2. NOTE: The Applicant has proposed significant amendments to claims 1, 8, and 11 which, if entered, would raise new issues that would require further consideration and search.

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10-17-02 CPA/2800

PTO/SB/29 (10-00)
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OIPE JC95 OCT 15 2002 PATENT & TRADEMARK OFFICE

CONTINUED PROSECUTION APPLICATION (CPA) REQUEST TRANSMITTAL

Submit an original, and a duplicate for fee processing.

(Only for Continuation or Divisional applications under 37 CFR 1.53(d))

CHECK BOX, if applicable: ☐ DUPLICATE

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Address to:

Assistant Commissioner for Patents
Box CPA
Washington, DC 20231

Attorney Docket No. of Prior Application	199-1919 (VST 0261 PA)
First Named Inventor	Pursifull
Examiner Name	Eric Scott McCall
Group Art Unit	2855
Express Mail Label No.	EV167380555US

This is a request for a ☐ continuation or ☐ divisional application under 37 CFR 1.53(d), (continued prosecution application (CPA)) of prior application number 09 / 695,165, filed on 10/24/2000, entitled Electronic Throttle Disable Control Test System.

NOTES

FILING QUALIFICATIONS: *The prior application identified above must be a nonprovisional application that is either: (1) complete as defined by 37 CFR 1.51(b), or (2) the national stage of an international application in compliance with 35 U.S.C. 371. Effective May 29, 2000, a CPA may only be filed in a utility or a plant application if the prior nonprovisional application was filed before May 29, 2000. A CPA may be filed in a design application regardless of the filing date of the prior application. See "Request for Continued Examination Practice changes to and Provisional Application Practice," Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg.14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office (Apr. 11, 2000).*

C-I-P NOT PERMITTED: *A continuation-in-part application cannot be filed as a CPA under 37 CFR 1.53(d), but must be filed under 37 CFR 1.53(b).*

EXPRESS ABANDONMENT OF PRIOR APPLICATION: *The filing of this CPA is a request to expressly abandon the prior application as of the filing date of the request for a CPA. 37 CFR 1.53(b) must be used to file a continuation, divisional, or continuation-in-part of an application that is not to be abandoned.*

ACCESS TO PRIOR APPLICATION: *The filing of this CPA will be construed to include a waiver of confidentiality by the applicant under 35 U.S.C. 122 to the extent that any member of the public who is entitled under the provisions of 37 CFR 1.14 to access to, copies of, or information concerning, the prior application may be given similar access to, copies of, or similar information concerning, the other application or applications in the file jacket.*

35 U.S.C. 120 STATEMENT: *In a CPA, no reference to the prior application is needed in the first sentence of the specification and none should be submitted. If a sentence referencing the prior application is submitted, it will not be entered. A request for a CPA is the specific reference required by 35 U.S.C. 120 and to every application assigned the application number identified in such request, 37 CFR 1.78(a).*

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

1. ☑ Enter the unentered amendment previously filed on September 25, 2002 (enclosed herewith) under 37 CFR 1.116 in the prior nonprovisional application.
2. ☐ A preliminary amendment is enclosed.
3. This application is filed by fewer than all the inventors named in the prior application, 37 CFR 1.53(d)(4).
   a. ☐ ***DELETE*** the following inventor(s) named in the prior nonprovisional application:
   b. ☐ The inventor(s) to be deleted are set forth on a separate sheet attached hereto.
4. ☐ A new power of attorney or authorization of agent (PTO/SB/81) is enclosed.
5. Information Disclosure Statement (IDS) is enclosed:
   a. ☐ PTO-1449
   b. ☐ Copies of IDS Citations

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box CPA, Washington, DC 20231.

10/18/2002 AWONDAF1 00000059 09695165

01 FC:1006 740.00 OP

IPR2023-01234 - Petitioner - Exhibit 1002

PTO/SB/29 (10-00)
Approved for use through 10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c) or (j))	17 -20* =	0	x $ 18.00 =	$
	INDEPENDENT CLAIMS (37 CFR 1.16(b) or (i))	3 -3** =	0	x $ 84.00 =	
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			+ $ =	
				BASIC FEE (37 CFR 1.16)	$740.00
				Total of above Calculations =	$740.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.27).				
	* Reissue claims in excess of 20 and over original patent. ** Reissue independent claims over original patent.			TOTAL =	$740.00

6. ☐ Small entity status: Applicant claims small entity status. See 37 CFR 1.27.
7. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 50 - 0476:
   a. ☑ Fees required under 37 CFR 1.16.
   b. ☑ Fees required under 37 CFR 1.17.
   c. ☑ Fees required under 37 CFR 1.18.
8. ☑ A check in the amount of $ $740.00 is enclosed.
9. ☐ Payment by credit card. Form PTO-2038 is attached.
10. ☐ Applicant requests suspension of action under 37 CFR 1.103(b) for a period of _____ months (not to exceed 3 months) and the fee under 37 CFR 1.17(i) is enclosed.
11. ☐ New Attorney Docket Number, if desired _____
    [Prior application Attorney Docket Number will carryover to this CPA unless a new Attorney Docket Number has been provided herein.]
12. a. ☐ Receipt For Facsimile Transmitted CPA (PTO/SB/29A)
    b. ☑ Return Receipt Postcard (Should be specifically itemized, See MPEP 503)
13. ☑ Other: Copy of Amendment and Request for Reconsideration dated September 25, 2002

NOTE: ***The prior application's correspondence address will carry over to this CPA UNLESS a new correspondence address is provided below.***

14. NEW CORRESPONDENCE ADDRESS

☐ *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* or ☐ *New correspondence address below*

Name					
Address					
City		State		Zip Code	
Country		Telephone		Fax	

15. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print /Type)	Robert P. Renke
Signature	
Registration No. (Attorney/Agent)	40,783
Date	October 15, 2002

IPR2023-01234 - Petitioner - Exhibit 1002

PTO/SB/17 (10-01)
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OIPE OCT 15 2002 JC695 PATENT & TRADEMARK OFFICE

FEE TRANSMITTAL for FY 2002

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT ($) 740.00

Complete if Known	
Application Number	09/695,165
Filing Date	October 24, 2000
First Named Inventor	Pursifull
Examiner Name	Eric Scott McCall
Group Art Unit	2855
Attorney Docket No.	199-1919 (VGT 0261 PA)

RECEIVED OCT 21 2002 TC 2800 MAIL ROOM

METHOD OF PAYMENT

1. ☑ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:
   Deposit Account Number: 50-0476
   Deposit Account Name: John A. Artz, P.C.
   ☑ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17
   ☐ Applicant claims small entity status. See 37 CFR 1.27
2. ☑ **Payment Enclosed:** ☑ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	740.00
114	160	214	80	Provisional filing fee	CPA Req

SUBTOTAL (1) ($) 0.00

2. EXTRA CLAIM FEES

		Extra Claims	Fee from below	Fee Paid
Total Claims	-20** =		X	=
Independent Claims	- 3** =		X	=
Multiple Dependent				=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for *ex parte* reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	
Other fee (specify) CPA Request Fee					740.00

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($) 740.00

SUBMITTED BY				Complete (if applicable)	
Name (Print/Type)	Robert P. Renke	Registration No. (Attorney/Agent)	40,783	Telephone	248-223-9500
Signature				Date	October 15, 2002

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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OCT 15 2002
PATENT & TRADEMARK OFFICE
TC 2800

CONTINUED PROSECUTION APPLICATION (CPA) REQUEST TRANSMITTAL

Submit an original, and a duplicate for fee processing.
(Only for Continuation or Divisional applications under 37 CFR 1.53(d))

CHECK BOX, if applicable: ☒ DUPLICATE

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Address to:

Assistant Commissioner for Patents
Box CPA
Washington, DC 20231

Attorney Docket No. of Prior Application	199-1919 (VGT 0281 PA)
First Named Inventor	Pursifull
Examiner Name	Eric Scott McCall
Group Art Unit	2855
Express Mail Label No.	EV167380555US

This is a request for a ☐ continuation or ☐ divisional application under 37 CFR 1.53(d), (continued prosecution application (CPA)) of prior application number 09 / 695,165, filed on 10/24/2000, entitled Electronic Throttle Disable Control Test System.

NOTES

FILING QUALIFICATIONS: *The prior application identified above must be a nonprovisional application that is either: (1) complete as defined by 37 CFR 1.51(b), or (2) the national stage of an international application in compliance with 35 U.S.C. 371. Effective May 29, 2000, a CPA may only be filed in a utility or a plant application if the prior nonprovisional application was filed before May 29, 2000. A CPA may be filed in a design application regardless of the filing date of the prior application. See "Request for Continued Examination Practice changes to and Provisional Application Practice," Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg.14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office (Apr. 11, 2000).*

C-I-P NOT PERMITTED: *A continuation-in-part application cannot be filed as a CPA under 37 CFR 1.53(d), but must be filed under 37 CFR 1.53(b).*

EXPRESS ABANDONMENT OF PRIOR APPLICATION: *The filing of this CPA is a request to expressly abandon the prior application as of the filing date of the request for a CPA. 37 CFR 1.53(b) must be used to file a continuation, divisional, or continuation-in-part of an application that is not to be abandoned.*

ACCESS TO PRIOR APPLICATION: *The filing of this CPA will be construed to include a waiver of confidentiality by the applicant under 35 U.S.C. 122 to the extent that any member of the public who is entitled under the provisions of 37 CFR 1.14 to access to, copies of, or information concerning, the prior application may be given similar access to, copies of, or similar information concerning, the other application or applications in the file jacket.*

35 U.S.C. 120 STATEMENT: *In a CPA, no reference to the prior application is needed in the first sentence of the specification and none should be submitted. If a sentence referencing the prior application is submitted, it will not be entered. A request for a CPA is the specific reference required by 35 U.S.C. 120 and to every application assigned the application number identified in such request, 37 CFR 1.78(a).*

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

1. ☑ Enter the unentered amendment previously filed on September 25, 2002 (enclosed herewith) under 37 CFR 1.116 in the prior nonprovisional application.
2. ☐ A preliminary amendment is enclosed.
3. This application is filed by fewer than all the inventors named in the prior application, 37 CFR 1.53(d)(4).
   a. ☐ ***DELETE*** the following inventor(s) named in the prior nonprovisional application:
   b. ☐ The inventor(s) to be deleted are set forth on a separate sheet attached hereto.
4. ☐ A new power of attorney or authorization of agent (PTO/SB/81) is enclosed.
5. Information Disclosure Statement (IDS) is enclosed:
   a. ☐ PTO-1449
   b. ☐ Copies of IDS Citations

Burden Hour Statement: This form is estimated to take 0.4 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box CPA, Washington, DC 20231.

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PTO/SB/29 (10-00)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c) or (j))	17 -20* =	0	x $ 18.00 =	$
	INDEPENDENT CLAIMS (37 CFR 1.16(b) or (i))	3 -3** =	0	x $ 84.00 =	
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			+ $ =	
				BASIC FEE (37 CFR 1.16)	$740.00
				Total of above Calculations =	$740.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.27).				
	* Reissue claims in excess of 20 and over original patent. ** Reissue independent claims over original patent.			TOTAL =	$740.00

6. ☐ Small entity status: Applicant claims small entity status. See 37 CFR 1.27.
7. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 50 - 0476:
   a. ☑ Fees required under 37 CFR 1.16.
   b. ☑ Fees required under 37 CFR 1.17.
   c. ☑ Fees required under 37 CFR 1.18.
8. ☑ A check in the amount of $ $740.00 is enclosed.
9. ☐ Payment by credit card. Form PTO-2038 is attached.
10. ☐ Applicant requests suspension of action under 37 CFR 1.103(b) for a period of _____ months (not to exceed 3 months) and the fee under 37 CFR 1.17(i) is enclosed.
11. ☐ New Attorney Docket Number, if desired _____
    [Prior application Attorney Docket Number will carryover to this CPA unless a new Attorney Docket Number has been provided herein.]
12. a. ☐ Receipt For Facsimile Transmitted CPA (PTO/SB/29A)
    b. ☑ Return Receipt Postcard (Should be specifically itemized, See MPEP 503)
13. ☑ Other: Copy of Amendment and Request for Reconsideration dated September 25, 2002

NOTE: ***The prior application's correspondence address will carry over to this CPA UNLESS a new correspondence address is provided below.***

14. NEW CORRESPONDENCE ADDRESS

☐ *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* or ☐ *New correspondence address below*

Name					
Address					
City		*State*		*Zip Code*	
Country		*Telephone*		*Fax*	

15. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print / Type)	Robert P. Renke
Signature	
Registration No. (Attorney/Agent)	40,783
Date	October 15, 2002

IPR2023-01234 - Petitioner - Exhibit 1002

OIPE JC95 OCT 15 2002 PATENT & TRADEMARK OFFICE

RECEIVED OCT 21 2002 TC 2800 MAIL ROOM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Pursifull

Group Art Unit: 2855

Serial No.: 09/695,165

Examiner: Eric Scott McCall

Filed: October 24, 2000

For: ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

Attorney Docket No.: 199-1919 (VGT 0261 PA)

I hereby certify that this correspondence is being sent via facsimile to: Attn: Examiner Eric Scott McCall, Box After Final, Assistant Commissioner for Patents, Washington, D.C. 20231 fax number (703) 872-9319 on:

September 25, 2002
Date of Deposit

Angie Moscowitz

Signature

AMENDMENT AND REQUEST FOR RECONSIDERATION

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Applicant submits this Amendment in response to the Final Office Action dated July 26, 2002. This response is being filed within two months of the date of the Office Action so as to invoke an Advisory Action. Please amend the above-identified Application as follows:

In The Claims:

Please amend claims 1, 8 and 11 to read as follows:

1. (Twice Amended) An electronic throttle control apparatus for testing integrity of a motor drive electronics disable feature comprising:

IPR2023-01234 - Petitioner - Exhibit 1002

a PCM having drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic to disable said drive electronics and return said electronic throttle plate to a default position, determine a default throttle position sensor (TPS) output voltage corresponding to said default position, command a full closing motor voltage, compare a full closing TPS output voltage to said default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said default TPS output voltage are significantly different from each other.

8. (Twice Amended) An electronic throttle control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

a PCM having drive electronics for controlling said motor coupled to said throttle plate, said PCM having control logic to disable said drive electronics such that said throttle plate returns to or remains at a default position, determine a default throttle position sensor (TPS) output voltage corresponding to said default position, command a full closing motor voltage, compare said full closing TPS output voltage to said default TPS output voltage, and engage failure mode management when said full closing

IPR2023-01234 - Petitioner - Exhibit 1002

C 9 cont'd

TPS output voltage and said predetermined default TPS output voltage are significantly different.

C 3

11. (Twice Amended) A method for testing integrity of an electronic throttle plate driver disable function controlled by a powertrain control module (PCM) comprising the steps of:

disabling said driver;

determining a first throttle position value with said driver disabled;

commanding full closing voltage;

determining a second throttle position value at said full closing voltage;

comparing said first and second throttle position values; and

engaging failure mode management when said first and second throttle position values are significantly different.

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REMARKS

Claims 1-17 are pending in the above application. All claims stand rejected under 35 U.S.C. §102 as being anticipated by *Ohashi* U.S. Patent No. 5,088,461.

With regard to the rejections under 35 U.S.C. §102, Applicant submits that the invention is novel in view of the *Ohashi* reference because the present claims and the prior art differ. Each of Applicant's independent claims require that the powertrain control module disable the throttle drive electronics such that the electronic throttle plate returns to a default position, which the *Ohashi* reference does not teach. This default position is measured and compared to the commanded fully closed position. This differs from simply commanding the drive electronics to control or command the throttle motor to a fully closed position. Applicant's invention is directed toward ensuring that a command to disable the throttle motor drive electronics results in the throttle plate actually returning to its default closed position. Applicant has recognized that all conventional electronic throttle control systems, including *Ohashi*, merely assume that the throttle plate returns to its default closed position when the throttle motor drive electronics is disabled.

The citation at columns five and six of the *Ohashi* reference do not disclose Applicant's throttle disable integrity test. Rather, the *Ohashi* reference compares the commanded throttle closed position to the stored default position and modifies the commanded closed position data based on the reference default closed position. The integrity of the default position itself, however, is never questioned. This is in contrast to the testing method of the present invention which explicitly determines the default throttle position as opposed to relying on a stored value, the integrity of which, is unknown.

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In view of the foregoing amendments and remarks, Applicant submits that claims 1-17 are allowable. The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully Submitted,

ARTZ & ARTZ P.C.

Robert P. Renke
Reg. No. 40,783
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: September 25, 2002

IPR2023-01234 - Petitioner - Exhibit 1002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Claims:

Please amend claims 1, 8 and 11 to read as follows:

OIPE JC996 OCT 15 2002 PATENT & TRADEMARK OFFICE

1. (Twice Amended) An electronic throttle control apparatus for testing integrity of a motor drive electronics disable feature comprising:

a PCM having drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic **[operative]** to disable said drive electronics **[such that]** **and return** said electronic throttle plate **[returns]** to a default position, **[said PCM also having control logic operative to]** **determine a default throttle position sensor (TPS) output voltage corresponding to said default position,** command **a** full closing motor voltage, compare **a** full closing TPS output voltage to **[a predetermined]** **said** default **[throttle position sensor (]TPS[)]** output voltage, and engage failure mode management when said full closing TPS output voltage and said **[predetermined]** default TPS output voltage are significantly different from each other.

8. (Twice Amended) An electronic throttle control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

IPR2023-01234 - Petitioner - Exhibit 1002

a PCM having drive electronics for controlling said motor coupled to said throttle plate, said PCM having control logic **[operative]** to disable said drive electronics such that said throttle plate returns to or remains at a default position, **[said PCM also having control logic operative to]** **determine a default throttle position sensor (TPS) output voltage corresponding to said default position,** command **a** full closing motor voltage, compare said full closing **[throttle position sensor (]**TPS**[)]** output voltage to **[a predetermined]** **said** default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different.

11. (Twice Amended) A method for testing integrity of an electronic throttle plate driver disable function controlled by a powertrain control module (PCM) comprising the steps of:

disabling said driver;

determining a first throttle position value with said driver disabled;

commanding full closing voltage;

determining a second throttle position value at said full closing voltage;

comparing said **[full closing voltage to a predetermined default voltage]** **first and second throttle position values**; and

IPR2023-01234 - Petitioner - Exhibit 1002

engaging failure mode management when said **[full closing voltage and said predetermined default voltage]** **first and second throttle position values** are significantly different.

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

7590 12/19/2002

Artz & Artz P C
28333 Telegraph Road
Suite 250
Southfield, MI 48034

EXAMINER
MCCALL, ERIC SCOTT

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

IPR2023-01234 - Petitioner - Exhibit 1002

NV

Office Action Summary	Application No.	Applicant(s)	
	09/695,165	PURSIFULL, ROSS DYKSTRA	
	Examiner	Art Unit	
	Eric S. McCall	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 June 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

IPR2023-01234 - Petitioner - Exhibit 1002

ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

NON-FINAL OFFICE ACTION

In response to the Applicant's request for a continued examination (paper no. 7) dated Oct. 15, 2002.

CLAIMS

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohashi et al. (5,088,461).

With respect to claim 1, Ohashi et al. teach an electronic throttle control apparatus for testing integrity of a motor drive electronic disable feature comprising:

a PCM (4), defined by the Applicant as a control module, having drive electronics for controlling a motor (5) coupled to an electronic throttle plate (7), said PCM having control logic operative to disable said drive electronics and return said throttle plate returns to a default position (col. 6, lines 12-16; ie. the motor is not driven and the throttle plate is returned via a return spring), said PCM also having control logic operative to:

determine a default position sensor output voltage corresponding to said default position (col. 5, lines 28-34);

command a full closing motor voltage (col. 5, line 63 to col. 6, line 2),

compare full closing TPS output voltage (ie. "current throttle sensor signal") to said default TPS output voltage (ie. "stored throttle sensor signal"; col. 5, lines 63/64), and

engage failure mode management when said full closing TPS output voltage (ie. output voltage representing the current detected closed position of the throttle plate) and said default TPS output voltage (ie. output voltage representing the current actual closed position of the throttle plate) are significantly different from each other (the prior art suggests, col. 5, lines 63+, that if the detected throttle position sensor signal is higher than the actual throttle position sensor signal, ie. the signals are "significantly different from each other", the present control is

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overridden and the throttle valve is fully closed which since the overriding condition occurs, a "failure mode management" is deemed as occurring).

With regard to amended independent claims 8 and 11, said amended claims parallel that of amended claim 1, and thus the remarks as presented above also apply to claims 8 and 11.

Response to Arguments

In response to the Applicant's arguments, the Applicant has argued that the claimed invention requires that the PCM disable the throttle drive electronics such that the electronic throttle plate returns to a default position. The Applicant goes on to argue that this approach differs from the prior art which measures and compares the default position to the commanded fully closed position. In response, the Examiner points out that the prior art does disable the throttle drive electronics as well, as the Applicant has recognized in their last sentence of the second paragraph on page 4 of said amendment, and from this disablement, the throttle plate is returned to a fully closed (ie. default) position via a return spring.

Next, the Applicant has argued that their invention is directed toward ensuring that a command to disable the throttle motor drive electronics results in the throttle plate actually returning to its default closed position. In response, the Examiner points out that the prior art is also directed toward ensuring that the throttle plate "actually" returns to a default closed position. Thus, the reasoning for the specific measuring and comparing as taught by the prior art.

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Finally, the Applicant has argued, unlike their invention, the prior art compares the commanded throttle closed position to a "stored" default position and thus never questions the actual stored default position. In response , the Examiner points out that the stored default position of the prior art is stored during the actual procedure thereof and thus the actual default position is indeed questioned.

CONCLUSION

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (703) 308-6968.

Eric S. McCall
Primary Examiner
Art Unit 2855
Dec. 17, 2002

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ARTZ & ARTZ P.C.
Law Offices

Intellectual Property and Technology Related Causes

FACSIMILE TRANSMITTAL SHEET
Fax: (248) 223-9522
Phone: (248) 223-9500

To: **Examiner Eric Scott McCall**

Fax No.: **(703) 872-9319**

From: Robert P. Renke

Date: **February 24, 2003**

Our File No.: 199-1919 (VGT 0261 PA)

Serial No.: 09/695,165

Comments: Please find attached Applicant's Request for Reconsideration concerning the above referenced patent application serial number. Please file in your usual manner. Thank you.

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Total Pages (incl. Cover sheet): 5

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Angie Moscowitz
(Operator)

28333 TELEGRAPH ROAD, SUITE 250, SOUTHFIELD, MICHIGAN 48034
TELEPHONE: (248) 223-9500 -- FACSIMILE: (248) 223-9522

Received from < 248 223 9522 > at 2/24/03 1:42:53 PM [Eastern Standard Time]

IPR2023-01234 - Petitioner - Exhibit 1002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

10/Response 3-3-03

In re Application of:

Pursifull

Group Art Unit: 2855

Serial No.: 09/695,165

Examiner: Eric Scott McCall

Filed: October 24, 2000

For: ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

Attorney Docket No.: 199-1919 (VGT 0261 PA)

I hereby certify that this correspondence is being sent via facsimile to: Attn: Examiner Eric Scott McCall, Box Non-Fee Amendment, Assistant Commissioner for Patents, Washington, D.C. 20231 fax number (703) 872-9318 on:

February 24, 2003 Angie Moscowitz

Date of Deposit

Signature

REQUEST FOR RECONSIDERATION

FAX RECEIVED

FEB 2 4 2003

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Box Non-Fee Amendment
Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Applicant submits this Request for Reconsideration in response to the Office Action dated December 19, 2002. This response is timely because it is being filed within a time period allowed for a response.

Received from < 248 223 9522 > at 2/24/03 1:42:53 PM [Eastern Standard Time]

IPR2023-01234 - Petitioner - Exhibit 1002

REMARKS

Claims 1-17 are pending in the above application. All claims stand rejected under 35 U.S.C. §102, as being anticipated by *Ohashi* U.S. Patent No. 5,088,461. Applicant traverses the rejections under 35 U.S.C. §102 and maintains that all claims of the present application are novel and non-obvious in view of *Ohashi* because the present claims and the prior art significantly differ.

In particular, each of Applicant's independent claims require that the powertrain control module disable the throttle drive electronics as part of Applicant's throttle disable integrity test. In contrast, the *Ohashi* reference does not disable the throttle drive electronics as part of any test to determine whether the *assumed* default position of the electronic throttle plate is indeed a fully closed position. In the present application, the default position, with the throttle plate drive electronics disabled, is measured and compared to the commanded fully closed position with the throttle drive electronics enabled. Any significant measured difference between the electronic throttle plate position with the drive electronics disabled and the electronic throttle plate position with the throttle drive electronics enabled and commanding a fully closed position, indicates a potential fault with the electronic throttle system. No prior art systems, including the one disclosed in *Ohashi*, test the integrity of the default throttle position by the process claimed in the present invention. Applicant's invention is directed toward ensuring that a command to disable the throttle plate drive electronics results in the throttle plate actually returning to the default fully closed position.

A careful review of the *Ohashi* reference reveals that the claimed features of disabling the drive electronics for the throttle plate as part of a default throttle plate position integrity test are not disclosed or suggested. At column 5, lines 11-34, the *Ohashi* reference uses the motor direction monitoring signal 12 to determine whether the throttle plate drive motor is active. Specifically, "if an L-level monitor signal 12 is given, the transmission [line 12a] is determined to be disconnected, because the accel

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pedal 1 is not depressed and therefore the motor 5 is not yet being driven." (Column 5, lines 23-26). Importantly, if the transmission line is determined to be disconnected in step 104 of the *Ohashi* scheme, the controller "stores a previously determined reference full-close PWM command signal." (Column 5, lines 27-30). The controller will then generate the PWM command signal on the basis of the stored reference full-close PWM command signal. Otherwise, if the transmission line is determined to be connected in step 104, "control proceed to the following steps from 108 to 134, which are the main feature of the present invention." (Column 5, lines 37-40).

From the foregoing, it is clear that the *Ohashi* reference does not determine a default throttle position sensor output voltage corresponding to the default position with the drive electronics disabled as claimed in the present invention. Rather, if the motor monitoring signal of *Ohashi* is an L-level monitor signal, the transmission line is deemed "disconnected" and a previously stored reference value is used for the full-close PWM command signal. Whether the transmission line is "disconnected" also differs from the claimed feature of describing the throttle drive electronics. In any event, no positional measurements are determined when the transmission line is deemed "disconnected" in *Ohashi*. The value for the previously determined reference full-closed PWM command signal is assumed to be correct or, at least, trustworthy. The focus of the *Ohashi* reference, in contrast to the present invention, is not the integrity of the default fully closed throttle position. The main feature of the *Ohashi* invention is throttle position control in response to accelerator sensor signal input. (Column 5, lines 37-40).

Applicant also traverses the suggestion in the Office Action that the *Ohashi* reference discloses or suggests Applicant's claimed feature of engaging failure mode management when the full-closing TPS output voltage and the default TPS output voltage are significantly different from each other. The citation to the *Ohashi* reference at column 5, lines 63+, merely discloses feedback control on the sensed throttle position to drive it to the fully closed position corresponding to the stored fully closed position

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value. The *Ohashi* reference does not disclose or suggest that any failure mode or modified operating mode is engaged in response to determining that a presumed default fully closed throttle position is incorrect. For at least this additional reason, Applicant submits that claims 1-17 are novel and non-obvious in view of *Ohashi*.

In view of the foregoing remarks, Applicant submits that claims 1-17 are allowable. A Notice of Allowance indicating the same is therefore earnestly solicited. The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 223-9500 if any unresolved matters remain.

Respectfully Submitted,

ARTZ & ARTZ P.C.



Robert P. Renke
Reg. No. 40,783
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: February 24, 2003

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IPR2023-01234 - Petitioner - Exhibit 1002

Notice of Allowability	Application No.	Applicant(s)	
	09/695,165	PURSIFULL, ROSS DYKSTRA	
	Examiner	Art Unit	
	Eric S. McCall	2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the Applicant's request for reconsideration (paper 10) dated Feb. 24, 2003*.
2. ☒ The allowed claim(s) is/are *1-17*.
3. ☒ The drawings filed on *June 04, 2002* are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
   (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

8. ☐ CORRECTED DRAWINGS must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No. ____.
   (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
   (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the top margin (not the back) of each sheet. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1☐ Notice of References Cited (PTO-892)
2☐ Notice of Informal Patent Application (PTO-152)
3☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
4☐ Interview Summary (PTO-413), Paper No.____.
5☐ Information Disclosure Statements (PTO-1449), Paper No. ____.
6☐ Examiner's Amendment/Comment
7☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
8☐ Examiner's Statement of Reasons for Allowance
9☐ Other

Eric S. McCall
Primary Examiner
Art Unit: 2855

IPR2023-01234 - Petitioner - Exhibit 1002

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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 04/24/2003

Artz & Artz P C
28333 Telegraph Road
Suite 250
Southfield, MI 48034

EXAMINER	
MCCALL, ERIC SCOTT	
ART UNIT	**CLASS-SUBCLASS**
2855	073-118100

DATE MAILED: 04/24/2003

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

TITLE OF INVENTION: ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1300	$0	$1300	07/24/2003

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

☐ Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (REV. 04-02) Approved for use through 01/31/2004.

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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Box ISSUE FEE
Commissioner for Patents
Washington, D.C. 20231
Fax (703)746-4000

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

7590 04/24/2003

Artz & Artz P C
28333 Telegraph Road
Suite 250
Southfield, MI 48034

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above, or being facsimile transmitted to the USPTO, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

TITLE OF INVENTION: ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1300	$0	$1300	07/24/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
MCCALL, ERIC SCOTT	2855	073-118100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) ❑ individual ❑ corporation or other private group entity ❑ government

4a. The following fee(s) are enclosed:

❑ Issue Fee
❑ Publication Fee
❑ Advance Order - # of Copies _____

4b. Payment of Fee(s):

❑ A check in the amount of the fee(s) is enclosed.
❑ Payment by credit card. Form PTO-2038 is attached.
❑ The Commissioner is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature) (Date)

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

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TRANSMIT THIS FORM WITH FEE(S)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

7590 04/24/2003

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Southfield, MI 48034

EXAMINER	
MCCALL, ERIC SCOTT	
ART UNIT	**PAPER NUMBER**
2855	

DATE MAILED: 04/24/2003

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The patent term adjustment to date is 70 days. If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the term adjustment will be 70 days.

If a continued prosecution application (CPA) was filed in the above-identified application, the filing date that determines patent term adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system. (http://pair.uspto.gov)

Any questions regarding the patent term extension or adjustment determination should be directed to the Office of Patent Legal Administration at (703)305-1383.

PTOL-85 (REV. 04-02) Approved for use through 01/31/2004.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

7590 04/24/2003

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UNITED STATES

EXAMINER	
MCCALL, ERIC SCOTT	
ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 04/24/2003

Notice of Fee Increase on January 1, 2003

If a reply to a "Notice of Allowance and Fee(s) Due" is filed in the Office on or after January 1, 2003, then the amount due will be higher than that set forth in the "Notice of Allowance and Fee(s) Due" since there will be an increase in fees effective on January 1, 2003. See Revision of Patent and Trademark Fees for Fiscal Year 2003: Final Rule, 67 Fed. Reg. 70847, 70849 (November 27, 2002).

The current fee schedule is accessible from: http://www.uspto.gov/main/howtofees.htm.

If the issue fee paid is the amount shown on the "Notice of Allowance and Fee(s) Due," but not the correct amount in view of the fee increase, a "Notice to Pay Balance of Issue Fee" will be mailed to applicant. In order to avoid processing delays associated with mailing of a "Notice to Pay Balance of Issue Fee," if the response to the Notice of Allowance and Fee(s) due form is to be filed on or after January 1, 2003 (or mailed with a certificate of mailing on or after January 1, 2003), the issue fee paid should be the fee that is required at the time the fee is paid. If the issue fee was previously paid, and the response to the "Notice of Allowance and Fee(s) Due" includes a request to apply a previously-paid issue fee to the issue fee now due, then the difference between the issue fee amount at the time the response is filed and the previously paid issue fee should be paid. See Manual of Patent Examining Procedure, Section 1308.01 (Eighth Edition, August 2001).

Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

PTOL-85 (REV. 04-02) Approved for use through 01/31/2004.

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PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Box ISSUE FEE
Commissioner for Patents
Washington, D.C. 20231
Fax (703)746-4000

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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7590 04/24/2003

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28333 Telegraph Road
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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above, or being facsimile transmitted to the USPTO, on the date indicated below.

Angie Moscowitz (Depositor's name)
(Signature)
May 12, 2003 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,165	10/24/2000	Ross Dykstra Pursifull	199-1919	9510

TITLE OF INVENTION: ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1300	$0	$1300	07/24/2003

EXAMINER	ART UNIT	CLASS-SUBCLASS
MCCALL, ERIC SCOTT	2855	073-118100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 John Kajander
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the USPTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Visteon Global Technologies, Inc. Dearborn, Michigan, U.S.A.

Please check the appropriate assignee category or categories (will not be printed on the patent) ☐ individual ☒ corporation or other private group entity ☐ government

4a. The following fee(s) are enclosed:

☒ Issue Fee
☐ Publication Fee
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

☒ A check in the amount of the fee(s) is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
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Commissioner for Patents is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.

(Authorized Signature) (Date)
May 12, 2003

05/15/2003 MGEBREM2 00000134 09695165
01 FC:1501 1300.00 OP

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMIT THIS FORM WITH FEE(S)

IPR2023-01234 - Petitioner - Exhibit 1002

L Number	Hits	Search Text	DB	Time stamp
1	48	throttle and voltage$1 and pcm	USPAT	2002/02/25 15:34
2	16	(ross near3 pursifull).in.	USPAT	2002/02/25 15:51
3	1615	(throttle near50 control$4) and (clos$4 near30 volt$4)	USPAT	2002/02/25 15:54
4	687	(compar$4 near30 volt$4) and ((throttle near50 control$4) and (clos$4 near30 volt$4))	USPAT	2002/02/25 15:55
5	103738	73/$.ccls.	USPAT	2002/02/25 15:55
6	42	((compar$4 near30 volt$4) and ((throttle near50 control$4) and (clos$4 near30 volt$4))) and 73/$.ccls.	USPAT	2002/02/25 15:56
7	42	(((compar$4 near30 volt$4) and ((throttle near50 control$4) and (clos$4 near30 volt$4))) and 73/$.ccls.) not (throttle and voltage$1 and pcm)	USPAT	2002/02/25 15:56
8	42	((((compar$4 near30 volt$4) and ((throttle near50 control$4) and (clos$4 near30 volt$4))) and 73/$.ccls.) not (throttle and voltage$1 and pcm)) not ((ross near3 pursifull).in.)	USPAT	2002/02/25 16:19
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IPR2023-01234 - Petitioner - Exhibit 1002

L Number	Hits	Search Text	DB	Time stamp
5	743	engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position)	USPAT; US-PGPUB	2003/04/23 10:17
6	44	73/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))	USPAT; US-PGPUB	2003/04/23 10:39
7	15	340/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))	USPAT; US-PGPUB	2003/04/23 10:42
8	13	(340/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))) not (73/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position)))	USPAT; US-PGPUB	2003/04/23 10:40
9	79	701/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))	USPAT; US-PGPUB	2003/04/23 10:42
10	57	(73/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))) or (340/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position)))	USPAT; US-PGPUB	2003/04/23 10:42
11	73	(701/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))) not ((73/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))) or (340/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))))	USPAT; US-PGPUB	2003/04/23 10:55
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13	222	(throttle near10 position) and 73/118.1.CCLS.	USPAT; US-PGPUB	2003/04/23 11:12
14	124	voltage and ((throttle near10 position) and 73/118.1.CCLS.)	USPAT; US-PGPUB	2003/04/23 11:13
15	105	(voltage and ((throttle near10 position) and 73/118.1.CCLS.)) not ((73/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))) or (340/$.ccls. and (engine and (throttle near5 (valve or plate)) and (clos$4 near30 voltage) and (throttle near30 position))))	USPAT; US-PGPUB	2003/04/23 11:13
-	36	(ross near3 pursifull).in.	USPAT; US-PGPUB	2003/04/22 16:35
-	2	disable and ((ross near3 pursifull).in.)	USPAT; US-PGPUB	2003/04/22 16:36

Search History 4/23/03 11:32:54 AM Page 1

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IPR2023-01234 - Petitioner - Exhibit 1002

-	704	engine and (throttle near5 (valve or plate)) and disable	USPAT; US-PGPUB	2003/04/23 10:13
-	86	(throttle near5 (valve or plate)).ab. and (engine and (throttle near5 (valve or plate)) and disable)	USPAT; US-PGPUB	2003/04/22 16:38

IPR2023-01234 - Petitioner - Exhibit 1002

Application or Docket Number

PATENT APPLICATION FEE DETERMINATION RECORD
Effective October 1, 2001

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS		
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	17 minus 20=	* 20
INDEPENDENT CLAIMS	3 minus 3 =	* 3
MULTIPLE DEPENDENT CLAIM PRESENT		☐

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	370.00	OR	BASIC FEE	~~740.00~~
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL		OR	TOTAL	710.

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 17	Minus	** 20	= 1
Independent	* 3	Minus	*** 3	= 1
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 17	Minus	** 20	=
Independent	* 3	Minus	*** 3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

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X$ 9=		OR	X$18=	
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AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 17	Minus	** 20	=
Independent	* 3	Minus	*** 3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

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+140=		OR	+280=	
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* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

[redacted]

SEARCHED

Class	Sub.	Date	Exmr.
73	116	4/23/03	[illegible]
	117.2		
	117.3		
	118.1		
73	118.2	4/23/03	[illegible]

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	Date	Exmr.
EAST search (Text/Image)	2/25/02	[illegible]
EAST search (Text/Image)	4/22/03	[illegible]
EAST search (Text/Image)	4/23/03	[illegible]

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
73	116	4/23/03	[illegible]
	117.2		
	117.3		
	118.1		
73	118.2	4/23/03	[illegible]

IPR2023-01234 - Petitioner - Exhibit 1002

ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION			
O.I.P.E. CLASSIFIER	DW	3 x	10/31
FORMALITY REVIEW		71848	12-18-00
RESPONSE FORMALITY REVIEW			

INDEX OF CLAIMS

✓ ..... Rejected
= ..... Allowed
— (Through numeral)... Canceled
÷ ..... Restricted
N ..... Non-elected
I ..... Interference
A ..... Appeal
O ..... Objected

Claim Final	Claim Original	Date										
		2	7	12	4							
		26	24	17	23							
		00	02	02	08							
1	1	✓	✓	✓	=							
2	2	✓	✓	✓	=							
3	3	✓	✓	✓	=							
4	4	✓	✓	✓	=							
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Claim Final	Claim Original	Date
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If more than 150 claims or 10 actions staple additional sheet here

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US006588260B1

(12) **United States Patent**
Pursifull

(10) **Patent No.: US 6,588,260 B1**
(45) **Date of Patent: Jul. 8, 2003**

(54) **ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM**

(75) Inventor: **Ross Dykstra Pursifull**, Dearborn, MI (US)

(73) Assignee: **Visteon Global Technologies, Inc.**, Dearborn, MI (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 70 days.

(21) Appl. No.: **09/695,165**

(22) Filed: **Oct. 24, 2000**

(51) **Int. Cl.**[7] **G01M 15/00**
(52) **U.S. Cl.** **73/118.1**
(58) **Field of Search** 73/116, 117.2, 73/117.3, 118.1, 118.2

(56) **References Cited**

U.S. PATENT DOCUMENTS

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5,950,597 A * 9/1999 Kamio et al. 123/397
6,318,337 B1 * 11/2001 Pursifull 123/396

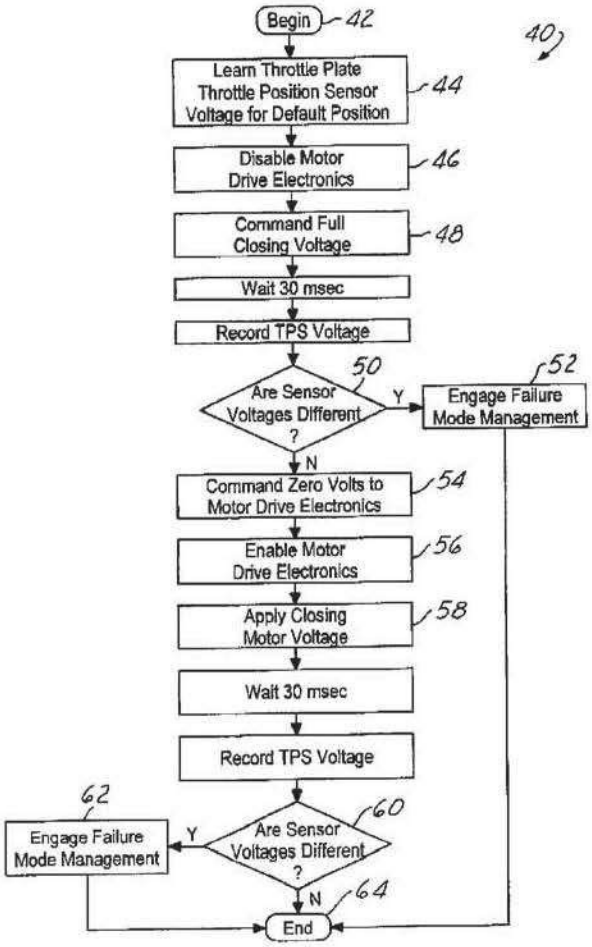
* cited by examiner

Primary Examiner—Eric S. McCall
(74) *Attorney, Agent, or Firm*—John Kajander

(57) **ABSTRACT**

A method for testing the integrity of an electronic throttle disable function begins by disabling the drive electronics responsible for controlling the throttle motor. The micro-controller doing the plate position control commands full closing voltage from throttle motor drive electronics (while those electronics are disabled). Then the throttle position voltage is recorded. If the disable system is working, the H-driver will output zero volts even though a full motor closing voltage is requested. The throttle position voltage is then compared to a predetermined default throttle position voltage. If there is a significant difference between the two voltages, then failure mode management is engaged.

17 Claims, 2 Drawing Sheets



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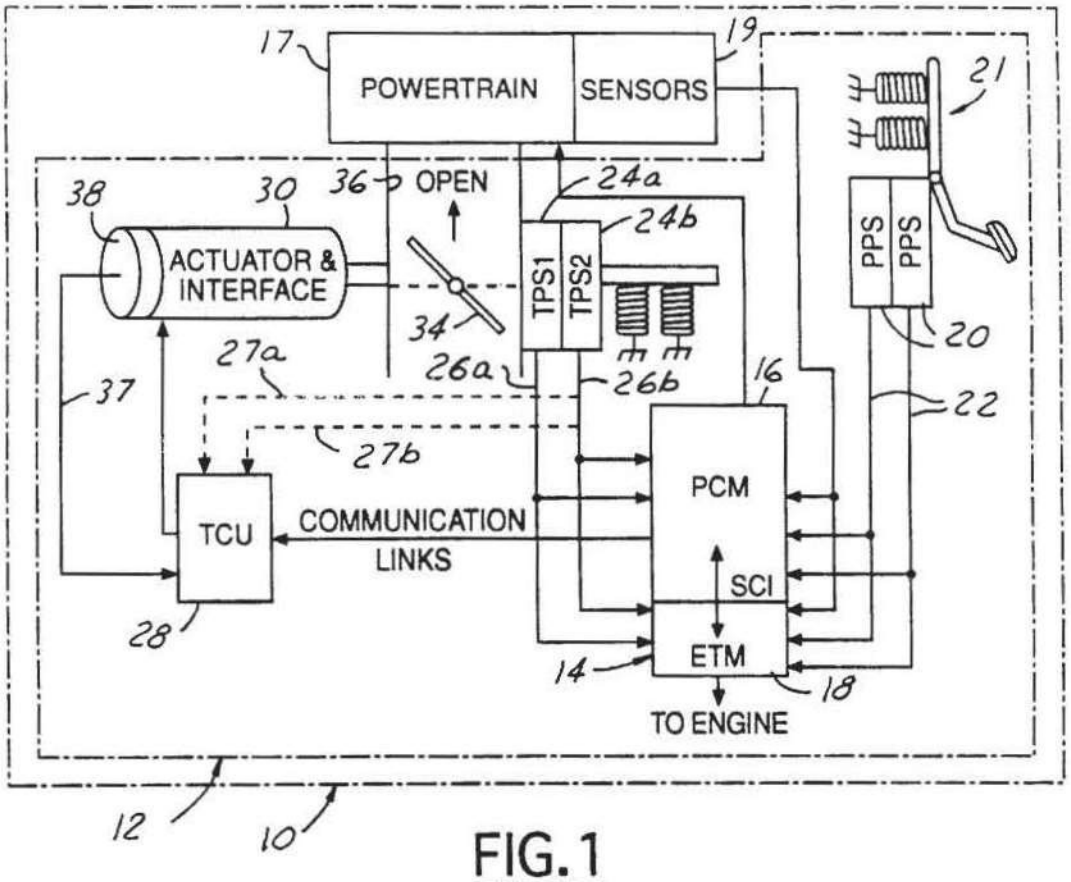


FIG. 1

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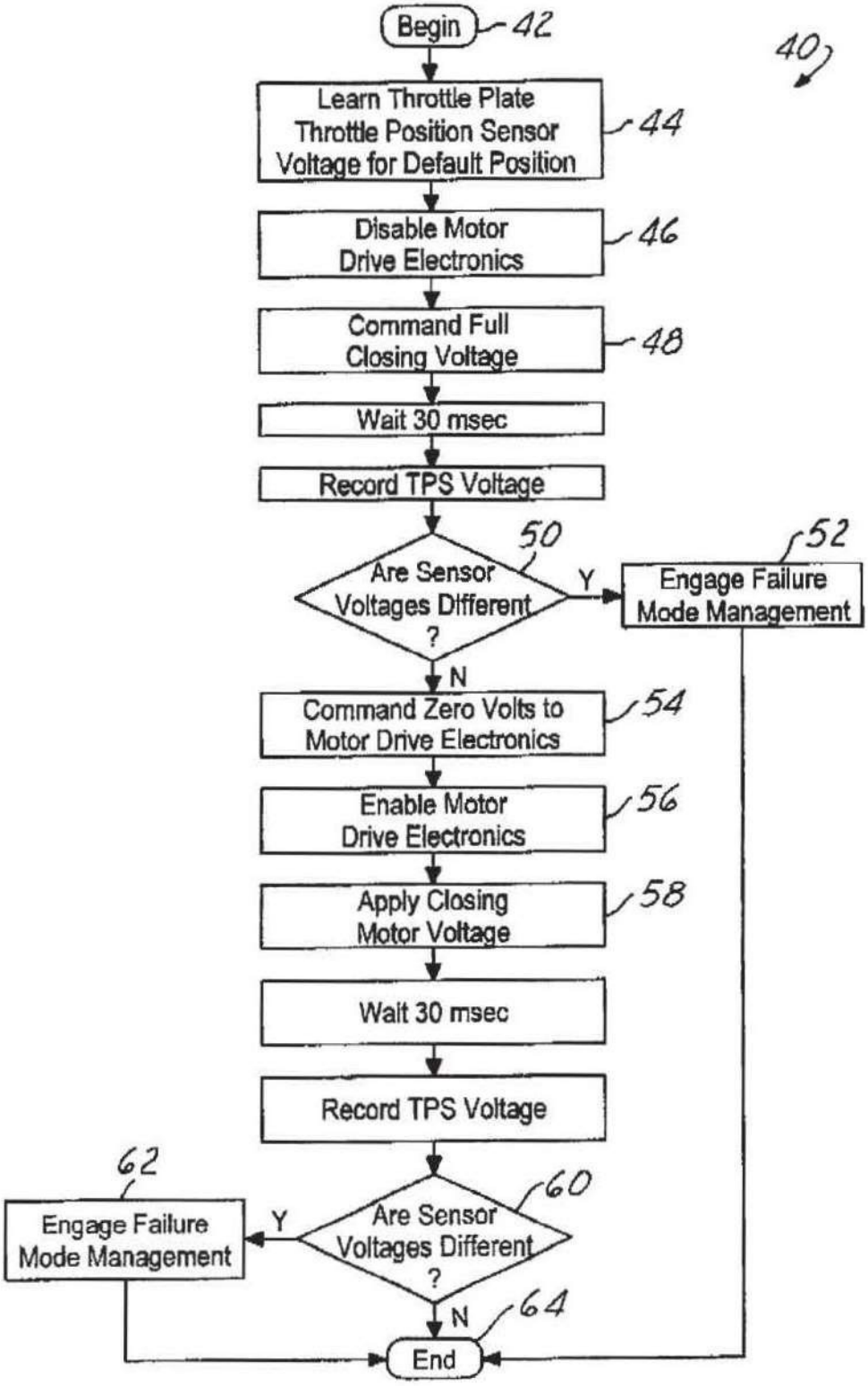


FIG. 2

IPR2023-01234 - Petitioner - Exhibit 1002

ELECTRONIC THROTTLE DISABLE CONTROL TEST SYSTEM

TECHNICAL FIELD

The present invention relates generally to control systems for internal combustion engines, and more particularly, to an electronic throttle disable control test system.

BACKGROUND ART

Many previously known motor vehicle throttle controls have a direct physical linkage between an accelerator pedal and the throttle body so that the throttle plate is pulled open by the accelerator cable as the driver presses the pedal. The direct mechanical linkage includes biasing that defaults the linkage to a reduced operating position, also known as idle, in a manner consistent with regulations. Nevertheless, such mechanisms are often simple and unable to adapt fuel consumption efficiency, minimize regulated emissions, improve driveability to changing traveling conditions, and add significant weight and components to the motor vehicle.

An alternative control for improving throttle control and the efficient introduction of fuel air mixtures into the engine cylinders is presented by electronic throttle control. The electronic throttle control includes a throttle control unit that positions the throttle plate by an actuator controlled by a microprocessor using position feedback sensors. The micro controllers (or micro processors) are often included as part of a powertrain electronic control that can adjust the fuel and air intake and ignition in response to changing conditions of vehicle operation as well as operator control. Protection may be provided so that an electronic system does not misread or misdirect the control and so that unintended operation is avoided when portions of the electronic control suffer a failure.

One previously known type of protection to avoid unintended actuation of excessive throttle is to use a disable function of the electronic throttle drive electronics. The disable function allows the PCM to shut down the electronic throttle drive electronics in the event that the PCM senses a throttle position differing from expected throttle position. Unfortunately, typical electronic throttle systems do not test the integrity of the disable function.

The disadvantages associated with these conventional electronic throttle disable techniques have made it apparent that a new technique for testing the electronic throttle disable function is needed. The new technique should not intrude on normal throttle operation while verifying function integrity at least once each time the vehicle is powered up. The present invention is directed to these ends.

SUMMARY OF THE INVENTION

It is, therefore, an object of the invention to provide an improved and reliable electronic throttle disable control test system. Another object of the invention is to test the electronic throttle driver disable function. And additional object of the invention is to not intrude upon normal throttle operation.

In accordance with the objects of this invention, an electronic throttle disable control test system is provided. In one embodiment of the invention, a method for testing the integrity of an electronic throttle disable function begins by disabling the electronic throttle motor's drive electronics (which is an integrated H-driver in the preferred embodiment). The H-driver is commanded to apply dull

closing voltage, however, since the H-driver is disabled, no voltage is applied to the motor and the throttle remains at its default position. The throttle position voltage is then compared to a predetermined default position voltage. If there is a significant difference between the two voltages, then failure mode management is engaged. These voltages can be either "absolute" meaning relative to system ground or "relative" meaning relative to the throttle position sensor voltage output at closed throttle, default position, or open stop position. This allows one to detect the voltage difference between default and closed stop.

At this point, we have verified that the throttle does not move when disabled. Then we have to verify that it does move when enabled.

The present invention thus achieves an improved electronic throttle disable control test system. The present invention is advantageous in that the integrity of the electronic throttle disable function is tested at least once each time the vehicle is powered up.

Additional advantages and features of the present invention will become apparent from the description that follows, and may be realized by means of the instrumentalities and combinations particularly pointed out in the appended claims, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be well understood, there will now be described some embodiments thereof, given by way of example, reference being made to the accompanying drawings, in which:

FIG. **1** is an electronic throttle disable control test system in accordance with one embodiment of the present invention; and

FIG. **2** is a flow chart for an electronic throttle disable control test in accordance with one embodiment of the present invention.

BEST MODES FOR CARRYING OUT THE INVENTION

In the following figures, the same reference numerals will be used to identify identical components in the various views. The present invention is illustrated with respect to an electronic throttle disable control test system, particularly suited for the automotive field. However, the present invention is applicable to various other uses that may require electronic throttle disable control test systems.

Referring to FIG. **1**, a motor vehicle powertrain system **10** including electronic throttle control system **12** includes an electronic control unit **14**. In the preferred embodiment, the electronic control unit **14** includes a powertrain control module (PCM) **16** including a main processor and an electronic throttle monitor (ETM) **18** including an independent processor. The PCM and ETM share sensors **19** and actuators that are associated with the powertrain system **17** and control module **16**. Preferably, the electronic throttle monitor **18** includes a processor physically located within the powertrain control module housing, although a separate housing, separate locations and other embodiments can also be employed in practicing the invention. Moreover, while the electronic throttle monitor **18** and the powertrain control module **16** have independent processors, they share the inputs and outputs of powertrain sensors **19** and actuators **21** and **34**, respectively, for independent processing.

A wide variety of inputs are represented in the FIG. **1** diagram by the diagrammatic representation of redundant

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pedal position sensors **20**. The sensors **20** are coupled through inputs **22** and are representative of many different driver controls that may demonstrate the demand for power. In addition, the electronic control unit **14** includes inputs **26***a* and **26***b* for detecting throttle position. A variety of ways for providing such indications is diagrammatically represented in FIG. **1** by a first throttle position sensor **24***a* and a redundant second throttle position sensor **24***b* to obtain a power output indication. As a result of the many inputs represented at **19**, **22**, **26***a* and **26***b*, the electronic controller **14** provides outputs for limiting output power so that output power does not exceed power demand. A variety of outputs are also diagrammatically represented in FIG. **1** by the illustrated example of inputs to a throttle control unit **28** that in turn powers an actuator and motive interface **30** for displacing the throttle plate **34**. For example, an actuator and interface may comprise redundant drive motors powering a gear interface to change the angle of the throttle plate **34** in the throttle body **36**.

Likewise, the responsive equipment like motors may also provide feedback. For example, the motor position sensor **38** or the throttle position sensors **24***a* and **24***b* may provide feedback to the throttle control unit **28**, as shown at **37**, **27***a* and **27***b*, respectively, to determine whether alternative responses are required or to maintain information for service or repair.

The purpose of the present invention is to establish a method with which to test the ability to take an action (which is taken upon failure detection). For a number of detected electronic control system failures, the throttle plate **34** position control disables the drive electronics for the throttle motor **30**. In normal operation, the system would never take this action.

The challenge is to design a test that does not intrude in normal throttle control operation. Since disabling the driver results in the plate **34** going to default, to test this function non-intrusively, one must test when the system is off-line but powered (initialization or shut-down) or when default is requested anyway. An advantage over previous technology is that the driver disable function (which is a significant contributor to system predictability when a system failure is detected) can now be tested at least once each time the vehicle is powered up.

Referring to FIG. **2**, a flow chart for an electronic throttle disable control test **40** in accordance with one embodiment of the present invention is illustrated. In the present invention, control test **40** begins with step **42** and immediately proceeds to step **44** where PCM **16** learns the TPS output voltage for the default position of throttle plate **36**. (At this point, no motor voltage is applied so that the plate will have attained the default position.) The sequence then proceeds to step **46**.

In step **46**, PCM **16** disables the drive electronics responsible for actuating motor **30**. The sequence then proceeds to step **48** where PCM **16** commands full closing motor voltage. PCM **16** waits approximately 30 milliseconds and then records the resulting throttle position sensor voltage. The sequence then proceeds to step **50**.

In step **50**, the throttle position voltage corresponding to the default position of throttle plate **34**, determined in step **44**, is compared to the throttle position voltage obtained after disabling the drive electronics. If the two voltages are significantly different, it means that the motor drove the plate to a new position and the disable function is not working and then the PCM **16** will engage failure mode management in step **52** and proceed to the end of the sequence **64**. If, however, the two voltages are not significantly different, then the sequence proceeds to step **54**.

In step **54**, PCM **16** commands zero volts and proceeds to step **56** where it enables the H-driver. In step **58** PCM **16** applies approximately five volts in the closing direction to throttle motor **30**. PCM **16** then waits 30 milliseconds before applying full voltage in the closing direction to throttle motor **30**. PCM **16** then waits another 30 milliseconds before learning the output voltage corresponding to a close stop of throttle plate **34**. PCM **16** then records the close stop TPS output voltage and the sequence proceeds to step **60**.

In step **60**, the voltage corresponding to the default position of throttle plate **34**, determined in step **44**, is compared to the close stop voltage obtained in step **58**. If the two voltages are not significantly different, then the sequence proceeds to end step **64**. If, however, the two voltages are significantly different, then throttle plate **34** may be potentially frozen. In this case, PCM **16** engages failure mode management in step **62**, including ice breaking strategy.

While the present invention is shown with respect to testing the integrity of the drive electronics disable function after learning the default voltage corresponding to the default position of throttle plate **34**, one skilled in the art would realize that testing may also occur before learning the default voltage by simply comparing the voltage obtained in step **48** with the close stop voltage. One skilled in the art would also recognize that various routine functions, such as checking memory, may occur before or after the test.

The present invention thus achieves an improved and reliable electronic throttle disable control test system by means to test the disable function without intruding on normal throttle operation. The present invention does this at least once each time the vehicle is powered up.

From the foregoing, it can be seen that there has been brought to the art a new and improved electronic throttle disable control test system. It is to be understood that the preceding description of the preferred embodiment is merely illustrative of some of the many specific embodiments that represent applications of the principles of the present invention. Clearly, numerous and other arrangements would be evident to those skilled in the art without departing from the scope of the invention as defined by the following claims:

What is claimed is:

1. An electronic throttle control apparatus for testing integrity of a motor drive electronics disable feature comprising:

a PCM having drive electronics for controlling a motor coupled to an electronic throttle plate, said PCM having control logic to disable said drive electronics and return said electronic throttle plate to a default position, determine a default throttle position sensor (TPS) output voltage corresponding to said default position, command a full closing motor voltage, compare a full closing TPS output voltage to said default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said default TPS output voltage are significantly different from each other.

2. The electronic throttle control apparatus of claim **1**, wherein said PCM further includes control logic operative to enable said drive electronics.

3. The electronic throttle control apparatus of claim **1**, wherein said PCM further includes control logic operative to apply close stop voltage to said motor.

4. The electronic throttle control apparatus of claim **3**, wherein said PCM further includes control logic operative to

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compare said full closing TPS output voltage to said close stop TPS output voltage.

5. The electronic throttle control apparatus of claim **4**, wherein said PCM includes control logic operative to engage failure mode management when said full closing TPS output voltage and said close stop TPS output voltage are significantly different.

6. The electronic throttle control apparatus of claim **1**, wherein said PCM includes control logic operative to test said motor drive electronics disable feature before leaning said default throttle position sensor output voltage.

7. The electronic throttle control apparatus of claim **1**, wherein said PCM includes control logic operative to test said motor drive electronics disable feature before checking PCM memory.

8. An electronic throttle control test system for an automobile having and internal combustion engine, said system comprising:

a motorized throttle located on the internal combustion engine, said motorized throttle having a throttle plate coupled to a motor for controlling an amount of airflow entering the internal combustion engine; and

a PCM having drive electronics for controlling said motor coupled to said throttle plate, said PCM having control, logic to disable said drive electronics such that said throttle plate returns to or remains at a default position, determine a default throttle position sensor (TPS) output voltage corresponding to said default position, command a full closing motor voltage, compare said full closing TPS output voltage to said default TPS output voltage, and engage failure mode management when said full closing TPS output voltage and said predetermined default TPS output voltage are significantly different.

9. The electronic throttle control test system of claim **8**, wherein said PCM includes control logic operative to test disabling of said drive electronics before learning said default throttle position sensor output voltage.

10. The electronic throttle control test system of claim **8**, wherein said PCM includes control logic operative to test disabling of said drive electronics before checking PCM memory.

11. A method for testing integrity of an electronic throttle plate driver disable function controlled by a powertrain control module (PCM) comprising the steps of:

disabling said driver;

determining a first throttle position value with said driver disabled;

commanding full closing voltage;

determining a second throttle position value at said full closing voltage;

comparing said first and second throttle position values; and

engaging failure mode management when said first and second throttle position values are significantly different.

12. The method of claim **11**, further comprising the step of enabling said driver.

13. The method of claim **11**, further comprising the step of applying close stop output voltage to a motor.

14. The method of claim **13**, further comprising the step of comparing a throttle position sensor (TPS) output voltage at said full closing voltage to a TPS output voltage at said close stop voltage.

15. The method of claim **14**, further comprising the step of engaging failure mode management when said TPS output voltage at said full closing voltage and said TPS output voltage at said close stop voltage are significantly different.

16. The method of claim **11**, wherein said testing occurs before learning default throttle position sensor output voltage.

17. The method of claim **11**, wherein said testing occurs before checking PCM memory.

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