



**Australian Government**  
**National Measurement  
Institute**

Bradfield Road, West Lindfield NSW 2070

**Cancellation  
Certificate of Approval  
No 5/6A/205**

Issued by the Chief Metrologist under Regulation 60  
of the  
*National Measurement Regulations 1999*

This is to certify that the approval for use for trade granted in respect of the  
Transponder Technologies Model VNP1B-E Fuel Dispenser for Motor Vehicles

submitted by      Transponder Technologies Pty Ltd  
                                 2 Hamra Drive, Export Park  
                                 Adelaide Airport    SA    5950

has been cancelled in respect of new instruments as from 1 January 2009.

Signed by a person authorised by the Chief Metrologist  
to exercise his powers under Regulation 60 of the  
*National Measurement Regulations 1999*.

A handwritten signature in black ink, appearing to be 'J. G. T.', written in a cursive style.



**Australian Government**  

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**National Measurement  
Institute**

12 Lyonpark Road, North Ryde NSW 2113

**Certificate of Approval**  
**No 5/6A/205**

Issued by the Chief Metrologist under Regulation 60  
of the  
National Measurement Regulations 1999

This is to certify that an approval for use for trade has been granted in respect of the  
Transponder Technologies Model VNP1B-E Fuel Dispenser for Motor Vehicles  
submitted by Transponder Technologies Pty Ltd  
2 Hamra Drive, Export Park  
Adelaide Airport SA 5950.

**NOTE:** This Certificate relates to the suitability of the pattern of the instrument for use for trade only in respect of its metrological characteristics. This Certificate does not constitute or imply any guarantee of compliance by the manufacturer or any other person with any requirements regarding safety.

**CONDITIONS OF APPROVAL**

This approval becomes subject to review on 1 March 2005.

Instruments purporting to comply with this approval shall be marked with approval number 'NSC 5/6A/205' and only by persons authorised by the submittor.

It is the submitter's responsibility to ensure that all instruments marked with this approval number are constructed as described in the documentation lodged with the National Measurement Institute (NMI) and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with document NMI P 106.

The National Measurement Institute reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0/A.

**Special:**

This approval becomes subject to review on 1 March 2005.

The submitter shall provide NMI with details of the service/maintenance/calibration history of each instrument purporting to comply with this approval.

DESCRIPTIVE ADVICE

**Pattern:** approved 27 February 2004

- A Transponder Technologies model VNP1B-E fuel dispenser for motor vehicles approved to dispense biodiesel and biodiesel/distillate blends.

**Variants:** approved 27 February 2004

1. With two meters/hoses/nozzles.
2. With a maximum flow rate of 80 L/min.
3. With a pre-set facility.
4. With a submersible turbine pump hydraulic system.
5. With additional communication hardware to provide Gilbarco communication protocol.

Technical Schedule No 5/6A/205 describes the pattern and variants 1 to 5.

FILING ADVICE

The documentation for this approval comprises:

- Certificate of Approval No 5/6A/205 dated 11 August 2004
- Technical Schedule No 5/6A/205 dated 11 August 2004 (incl. Test Procedure)
- Figures 1 and 2 dated 11 August 2004

Signed by a person authorised by the Chief Metrologist to exercise his powers under Regulation 60 of the National Measurement Regulations 1999.



## TECHNICAL SCHEDULE No 5/6A/205

**Pattern:** Transponder Technologies Model VNP1B-E Fuel Dispenser for Motor Vehicles

**Submittor:** Transponder Technologies Pty Ltd  
2 Hamra Drive, Export Park  
Adelaide Airport SA 5950

### 1. Description of Pattern

A Transponder Technologies model VNP1B-E fuel dispenser for motor vehicles (Figure 1) approved to dispense biodiesel and biodiesel/distillate blends (to Australian government standard), in attendant-operated mode. The meter is adjusted to be correct for the liquid for which it is to be verified/certified.

#### 1.1 Field of Operation

The field of operation of the measuring system is determined by the following characteristics:

- Minimum measured quantity,  $V_{min}$  2 L
- Maximum flow rate,  $Q_{max}$  50 L/min
- Minimum flow rate,  $Q_{min}$  5 L/min
- Maximum pressure of the liquid,  $P_{max}$  300 kPa
- Minimum pressure of the liquid,  $P_{min}$  100 kPa
- Nature of liquids to be measured e.g. biodiesel
- Kinematic viscosity range 1 to 20 mPa.s (at 20°C)
- Maximum temperature of the liquid,  $T_{max}$  40°C
- Minimum temperature of the liquid,  $T_{min}$  5°C
- Ambient temperature range -10°C to 55°C

#### 1.2 System Components

The pattern, model VNP1B-E, is a VN series fuel dispenser with an internal pump (P), 1 meter/hose/nozzle (1), dispensing biodiesel and biodiesel/distillate blends (B), and is in a conventional (end-oriented) housing (E). The model VNP1B-E fuel dispenser (Figure 2) has the following components or features:

- One Dresser-Wayne model 33-044059 pump/gas separator with a gas test valve that has provision for sealing.
- One Dresser-Wayne model 2PM6 2-piston positive displacement meter.
- One Fuelquip model VN pulse generator.
- Two Fuelquip model Vision price, volume and unit price displays.
- One ZVA nozzle or any other compatible approved nozzle.

The hydraulics (Figure 2) used incorporate a gas detection device which stops the delivery when the gas separator cannot perform within the maximum permissible errors.

The dispenser may also be connected to a compatible (#) approved control system approved for use with Fuelquip (Email)/Vision communication protocol to provide self-service operation.

(#) "Compatible" is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including all checking facilities.

### 1.3 Calculator/Indicator

The Fuelquip model Vision calculator/indicator comprises a computing unit and display units for volume, total price and unit price. The indicators display the following maximum values:

Volume	To 999.90 L in 0.01 L increments
Unit price	To 500.0 c/L in 0.1 cent increments
Total price	To \$990.00 in 1 cent increments
Totaliser (*)	To 99999 or 9999999999 L in 1 L increments

(\*) Electronic totaliser (software driven and resettable - can be configured to display 5 or 10 digits) and mechanical totaliser (non-resettable).

The software version number for the calculator/indicator is VN-5.5.0.

On one side of the dispenser the lower left corner of the indicator has a row of four black dots that are used to access the manager's functions once the keyswitch (with red ring) located underneath the indicator has been unlocked. The black dots, from left to right respectively, are Test, Manager, Up and Down pushbuttons used to change the following functions:

- Set price
- Set Communications Mode
- Set dispenser (pump) numbers

The following functions can be viewed by using the abovementioned procedure; these functions can be changed by a Calibration button located in the Vision printed circuit board (upper left hand side) behind a sealing cover, which is sealed after calibration:

- Display communications protocol type
- Display status
- Display LCD tests
- Display k-factors
- Display type pump/dispenser
- Display model type
- Display products
- Display electronic totals format
- Display mechanical totals format
- Display pre-set type
- Display pre-set dollar amount
- Display pre-set litre amount
- Display pre-set active digits
- Display software version

## 1.4 Descriptive Markings

Instruments are marked with the following data, together in one location on a data plate:

Pattern approval sign	NSC 5/6A/205
Manufacturer's identification mark or trade mark	.....
Manufacturer's designation (model number)	.....
Serial number	.....
Year of manufacture	.....
Environmental class	class N (#1)
Maximum flow rate ( $Q_{max}$ )	..... L/min
Minimum flow rate ( $Q_{min}$ )	..... L/min
Maximum operating pressure ( $P_{max}$ )	..... kPa
Minimum operating pressure ( $P_{min}$ )	..... kPa
Nature of the liquids to be measured	..... (#2)
Maximum temperature of the liquid, $T_{max}$	40°C
Minimum temperature of the liquid, $T_{min}$	5°C

(#1) See clause 1.1 **Field of Operation**.

(#2) Shall be in the form 'Biodiesel' or 'biodiesel/distillate blend' or 'B'."

The minimum measured quantity ( $V_{min}$ ) shall be clearly visible on any indicating device visible to the user during measurement, in the form "minimum delivery 2 L".

## 1.5 Sealing Provision

The meters, calibration button and the gas separator test valve have provision for sealing.

## 1.6 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

## 2. Description of Variants

### 2.1 Variant 1

With two meters/hoses/nozzles, e.g. model VNP2BB-E.

### 2.2 Variant 2

For high flow rate use with a maximum flow rate of 80 L/min, e.g. model VNP1BH-E.

### 2.3 Variant 3

With a pre-set facility in which case the model number includes a K, e.g. VNP2BB-K-E. The pre-set facility includes an ASCO two-stage solenoid-operated control valve between the meter and the hose.

The pre-set facility also includes a price pre-set display on the front of the indicator panel and four buttons marked \$5, \$10, \$20 and CLR which are used to set the desired pre-set price.

## 2.4 Variant 4

With one or more approved submersible turbine pump hydraulic systems. These hydraulic systems replace the equivalent components (i.e. motor, pump/strainer/gas separator, and associated pipework) in any fuel dispenser covered by this approval in which case the model number has a VND prefix, e.g. the pattern (model VNP1B-E) becomes model VND1B-E. More than one fuel dispenser may be connected to the same submersible turbine pump hydraulic system.

## 2.5 Variant 5

With the Gilbarco auxiliary board installed in the calculator/indicator of the pattern, in which case the dispenser may then be connected to a compatible (#) approved control system approved for use with Gilbarco (Marconi) communication protocol to provide self-service operation.

(#) "Compatible" is defined to mean that no additions/changes to hardware/software are required for satisfactory operation of the complete system including all checking facilities.

## TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the Uniform Test Procedures.

### Maximum Permissible Errors at Verification/Certification

The maximum permissible errors applied during a verification test of the fuel dispenser using the liquid for which it is to be verified/certified, and from normal flow rate to the minimum flow rate specified in the Certificate of Approval or Technical Schedule are:

- ±0.3% for the calibration/adjustment of the meter; and
- ±0.5% for in-service inspection of the complete measuring system.

Note: Adjusting the errors of a meter to values OTHER than as close as practical to zero is forbidden, even when these values are within the maximum permissible errors.

Other applicable maximum permissible errors are:

- ±1.0% for gas elimination device for liquids having a dynamic viscosity exceeding 1 mPa.s;
- ±20 mL for deliveries equal to the minimum measured quantity; and
- ±20 mL due to hose dilation.

Check the software version number; refer to clause **1.3 Calculator/Indicator** in the Technical Schedule for how this is achieved.



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**Notification of Change**  
**Certificate of Approval No 5/6A/205**  
**Change No 1**

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*National Measurement Regulations 1999*

The following changes are made to the approval documentation for the

Transponder Technologies Model VNP1B-E Fuel Dispenser for Motor Vehicles

submitted by Transponder Technologies Pty Ltd  
2 Hamra Drive, Export Park  
Adelaide Airport SA 5950.

In Certificate of Approval No 5/6A/205 dated 11 August 2004;

1. The Condition of Approval referring to the review of the approval should be amended to read:  
"This approval becomes subject to review on 1 January 2008, and then every 5 years thereafter."
2. The Special Conditions of Approval should be deleted.

Signed by a person authorised by the Chief Metrologist  
to exercise his powers under Regulation 60 of the  
*National Measurement Regulations 1999*.

A handwritten signature in black ink, appearing to be 'J. H. T.', is written over the signature line.



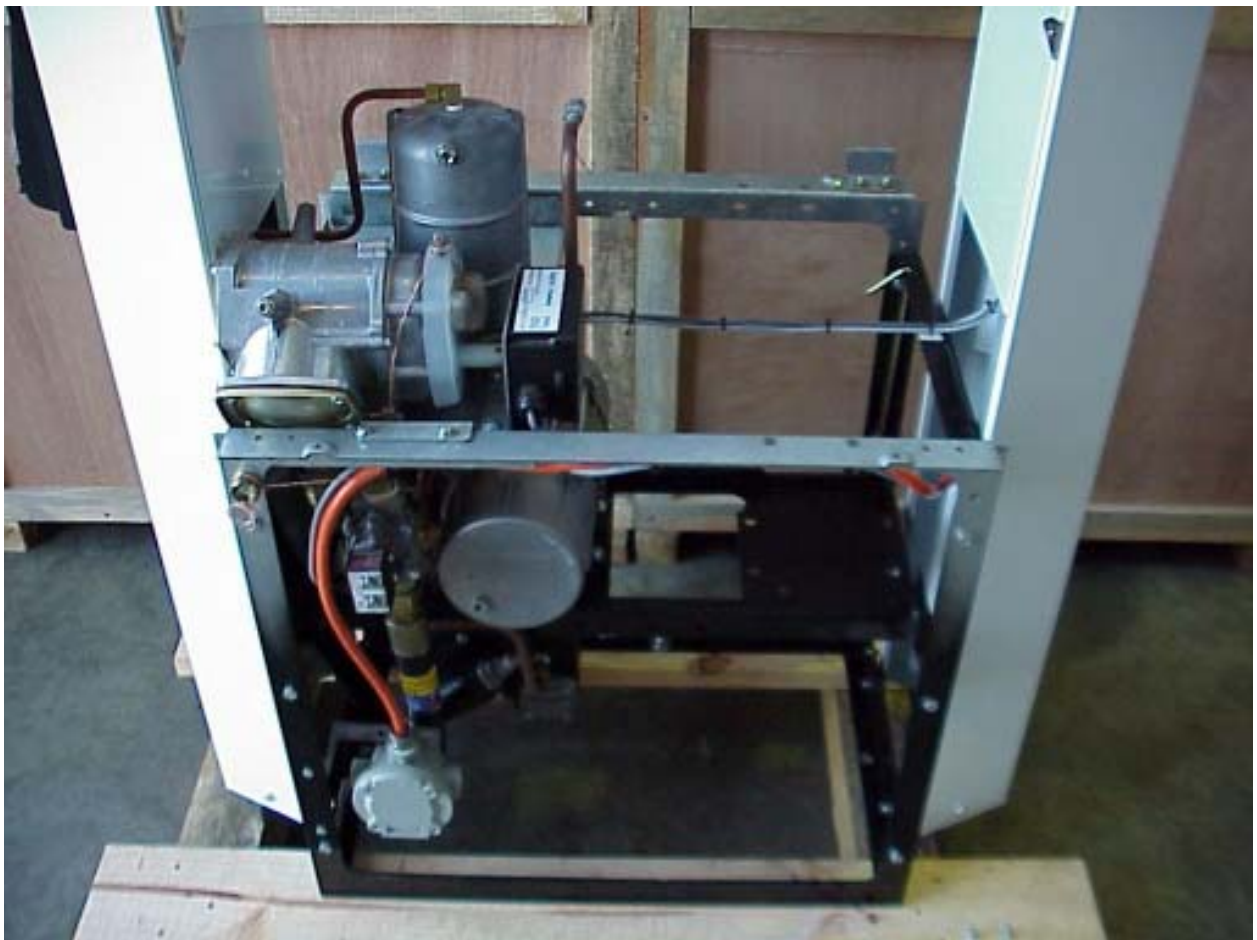
FIGURE 5/6A/205 – 1



Transponder Technologies Model VNP1B-E Fuel Dispenser

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FIGURE 5/6A/205 – 2



Model VNP1B-E – Hydraulics