Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S422

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 instruments herein described.

Transponder Technologies Model TransTech FC6000 Control System for Fuel Dispensers 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.

This approval has been granted with reference to document NMI R 117-1, *Measuring Systems for Liquids Other than Water*, dated June 2011.

This approval becomes subject to review on 1/10/24, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 & 2 provisionally approved – interim certificate issued	2/07/03
1	Pattern & variant 1 approved – interim certificate issued	3/03/04
2	Pattern & variants 1 & 2 provisional approval cancelled	6/03/04
3	Pattern & variant 1 – certificate issued	16/07/04
4	Pattern & variant 1 reviewed – notification of change issued	20/01/09
5	Pattern & variant 1 updated – certificate issued	11/11/11
6	Pattern & variant 1 reviewed – Variant 2 approved – certificate issued	18/09/19

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with approval number 'NMI (or NSC) S422' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI (or NSC) S422' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

Instruments purporting to comply with this approval and currently marked 'NSC PS422' may be re-marked 'NMI (or NSC) S422' but only by persons authorised by the submittor.

It is the submittor'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.

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

Special

Certain aspects of this instrument (in particular transaction record printing formats) are able to be configured by the user. Whilst NMI believes that acceptable formats can be achieved for typical basic sales modes, it is also possible for the instrument to be configured to produce unacceptable formats, and use of some formats may be inappropriate for different sales modes. It is the responsibility of the user to ensure that acceptable and appropriate formats are used in any particular situation.

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

Mario Zamora
A/g Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No S422

1. Description of Pattern

approved on 3/03/04
updated on 11/11/11

A Transponder Technologies model TransTech FC6000 control system to provide self-service operation for fuel dispensers fitted with Transponder Technologies model T5 indicators or other compatible (#) approved fuel dispensers.

1.1 Field of Operation

- The Transponder Technologies model TransTech FC6000 control system is approved for environmental class B for indoor use in a climate-controlled environment between -10°C and 40°C.
- The system can provide a self-service arrangement for up to 32 approved fuel dispensers equipped with Transponder Technologies model T5 indicators (as described in the documentation of NSC approval No S414) or other compatible (#) approved indicators.
- The system allows post-payment or pre-payment deliveries; in the latter case the fuel dispenser must incorporate a pre-set device.
- The system allows up to two transactions per fuel dispenser, i.e. current sale on the fuel dispenser and a stored transaction.
- The system can be used in a 'multi mode' operation, allowing the authorisation of fuel dispensers via the FC6000 attended method or from an approved unattended self-service control device (e.g. Transponder Technologies model 3400 or model 3500 Customer Authorisation Station).
- The nominal supply voltage is 240 V AC.

(#) "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.

1.2 System Description

(i) FC6000 Controller (Figures 1 and 2)

The FC6000 control system contains the TransHub controller circuit board, using software BAA01040, BBA01040 or BFA01040, and provides communication and control of the fuel dispensers and connection to peripheral devices at the operators control console and point of sale.

An LCD display and a keypad are built into the face of the FC6000 controller unit, and are used for configuration and setup options.

(ii) Operators Console

The operators' console includes a visual display unit and keyboard (Figures 1 and 3a) for use by the operator and which are connected directly to the FC6000 controller.

A TransTech model DSP-2022 or Epson model DM-D110-111 or Bixolon model BDC 1000 or any other equivalent (*) customers' indicator (Figure 3b) is connected to the FC6000 controller at the console location.

(*) "Equivalent" is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system including all checking facilities.

An Epson model TM-U210PD or model TM-T88V or any other equivalent (*) receipt printer (Figure 3b) may be connected. (Note: Mandatory for pre-payment operation.)

A Sola model 305 or Upsonic model DS600 or any other equivalent (*) uninterruptible power supply unit (Figure 3c) is connected to provide operation under power failure condition.

(*) "Equivalent" is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system including all checking facilities.

(iii) Additional System Facilities

- Point of sale facilities (POS) including a cash drawer, magnetic card reader and electronic funds transfer (EFT) facility. The facilities shall not interact with the console in a way that would cause an incorrect indication of the measured volume or price.
- Dispenser ('pump') status icons indicate the condition of the fuel dispensers controlled by the FC6000 controller (e.g. 'In use', 'On Hold', 'Prepaid' or controlled by unattended authorisation device).

1.3 Checking Facilities

The FC6000 controller features checking facilities that monitor communication between the peripheral devices and verifies by checking transmitted data against echoed reply from the peripheral device.

(i) Uninterruptible Power Supply

The system monitors the condition of the uninterruptible power supply, and if an error condition is detected (e.g. principal supply failure, battery failure or communication error) the system will disable the temporary storage mode.

(ii) Customers' Indicator

The system monitors the condition of the customers' indicator and if an error condition is detected (e.g. disconnection) the system will disable the temporary storage mode. A visual segment checking routine is provided to ensure the display is operating correctly.

(iii) Receipt Printer

The system monitors the condition of the receipt printer and provides visual warning of an error.

(iv) Unattended Authorisation

The system displays a row of black chevrons above the dispenser ('pump') icons to indicate control from an unattended self-service device.

1.4 Verification Provision

Provision is made for the application of a verification mark.

1.5 Descriptive Markings and Notices

The FC6000 control system is marked with the following data, together in one location:

Manufacturer's name or mark	……
Manufacturer's designation (model number)	FC6000
Serial number	……
Approval number	NMI (or NSC) S422
Environmental class	Class B

2. Description of Variant 1 approved on 3/03/04

With Transponder Technologies Email and/or Gilbarco protocol communication converters (Figure 4) for use with up to 32 compatible (#) approved Email and/or Gilbarco/Marconi fuel dispenser indicators.

(#) "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.

3. Description of Variant 2 approved on 18/09/19

The Operator Console of the pattern described in **1.2 System Description** replaced by the TPOS Operator Console to provide an attended self-service facility for compatible (#) approved fuel dispensers for motor vehicles.

3.1 System Description

(i) TPOS Operators Console

The TPOS Operator Console (Figure 5) comprises a Telpo model PS680I POS terminal or equivalent (*) using a Linux operating system running Transponder Technologies' TPOS version 1.x.y software.

The TPOS Operator Console is connected to the FC6000 Forecourt Controller, running version BTA02005 software. An interface between the FC6000 Forecourt Controller and other POS devices is shown in Figure 6.

(*) 'Equivalent' is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system including all checking facilities

(ii) Electronic Displays

The TPOS Operator Console has an integral touch sensitive display to provide an indication for the operator (Figure 7) and another integral display to provide an indication for the customer (Figure 8).

(iii) Receipt Printer

An Epson model TM-T88V receipt printer or equivalent (*) is connected to the TPOS Operator console. A typical receipt is shown in Figure 9.

The TPOS operator console uses the receipt printer to print a transaction record with the measurement details each time temporary storage is required. In the event of a power failure the customer is able to view details of a prior unpaid transaction.

(*) 'Equivalent' is defined to mean other proprietary equipment of the same or better specifications requiring no changes to software for satisfactory operation of the complete system including all checking facilities.

3.2 Checking Facilities

(i) Receipt Printer

The TPOS operator console monitors the condition of the receipt printer and if an error is detected the ability to authorise a stored or held sale will be prevented until the detected error condition is resolved.

3.3 Descriptive Markings and Notices

The TPOS Operator Console, in addition to the FC6000 controller of the Pattern, marked with the following data:

Manufacturer's name or mark	……
Manufacturer's designation (model number)	FC6000
Serial number	……
Approval number	NMI S422
Environmental class	Class B

TEST PROCEDURE No S422

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

Maximum Permissible Errors

The maximum permissible errors applicable are those applicable to the fuel dispensers to which the instrument approved herein is fitted, as stated in the approval documentation for the fuel dispensers or in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Tests

Points 2-7 are required at commissioning; thereafter they may be conducted at the discretion of the inspecting officer.

1. Check the FC6000 software version number. The version number can be viewed from the front mounted LCD during power-up sequence.
2. Check that the unit price change for the grade of fuel is implemented to the allocated fuel dispensers when they are available for authorisation.
3. Check that the control console identifies, displays and prints the correct data for the corresponding number allocated to the fuel dispenser.
4. Check that when the customers' indicator is disconnected from the POS console (simulation of fault) the fuel dispenser cannot be authorised for a second delivery unless the transaction for the first delivery has been completed.

   Note: Test 4 is not applicable for systems of Variant 2
5. Check that when principal power supply is disconnected from the uninterruptible power supply, the fuel dispenser cannot be authorised for a second delivery unless the transaction for the first delivery has been completed.

   Note: Test 5 is not applicable for systems of Variant 2
6. A pre-paid delivery is only possible for fuel dispensers with pre-set facility. For a pre-paid delivery check that the amount displayed on the fuel dispenser equals the pre-paid amount.
7. For systems with fuel dispensers incorporating a pre-set facility, check that the printed receipt contains the correct format and data as per the typical samples in Figure 3d.

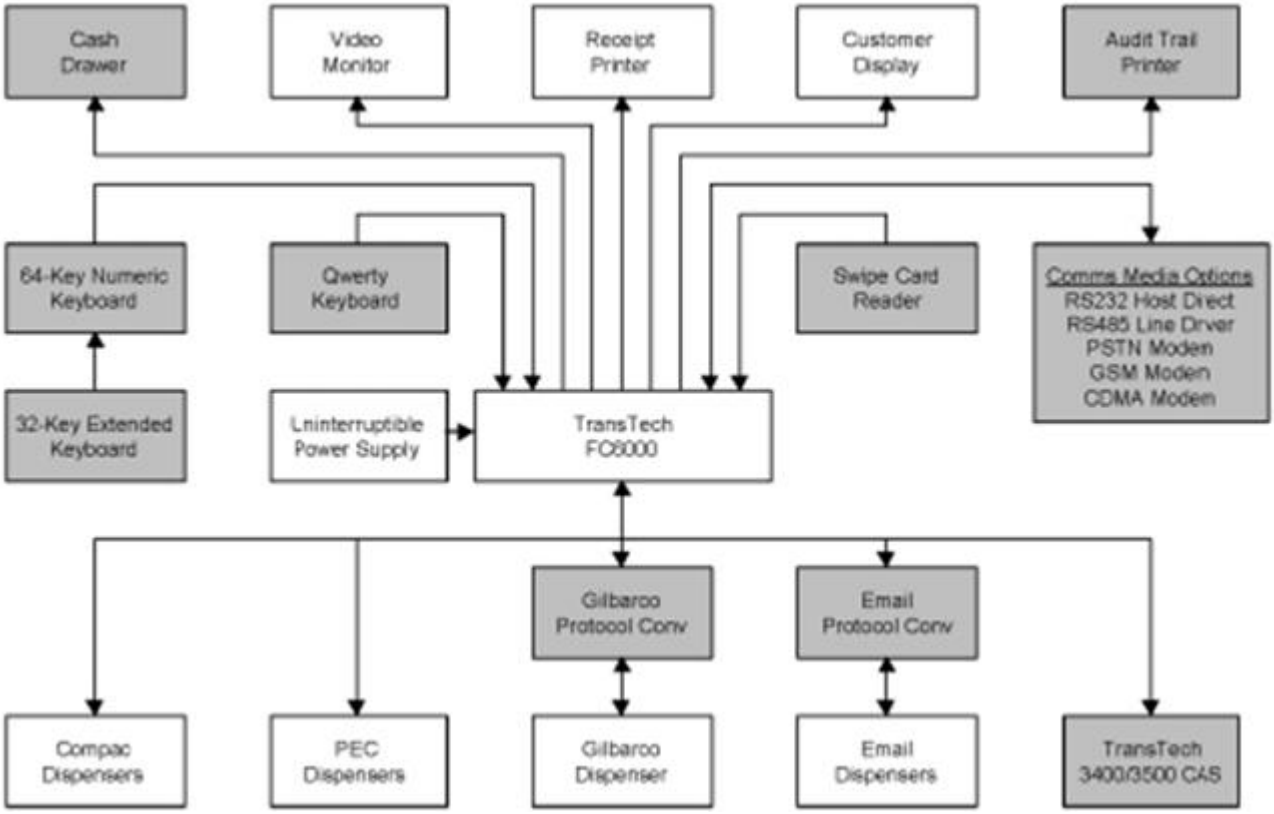
For systems with the TPOS Operators Console (Variant 2)

8. Remove paper from the receipt printer to check that when the receipt printer is unavailable, the ability to authorise a stored delivery is disabled.

FIGURE S422 – 1

Transponder Technologies Model TransTech FC6000 Control System

FIGURE S422 – 2



(A shaded box indicates an optional item)

Transponder Technologies Model TransTech FC6000 Control System

FIGURE S422 – 3

(a) An alterntive keyboard

(b) Receipt printer and customers display

(c) An uninterruptible power supply

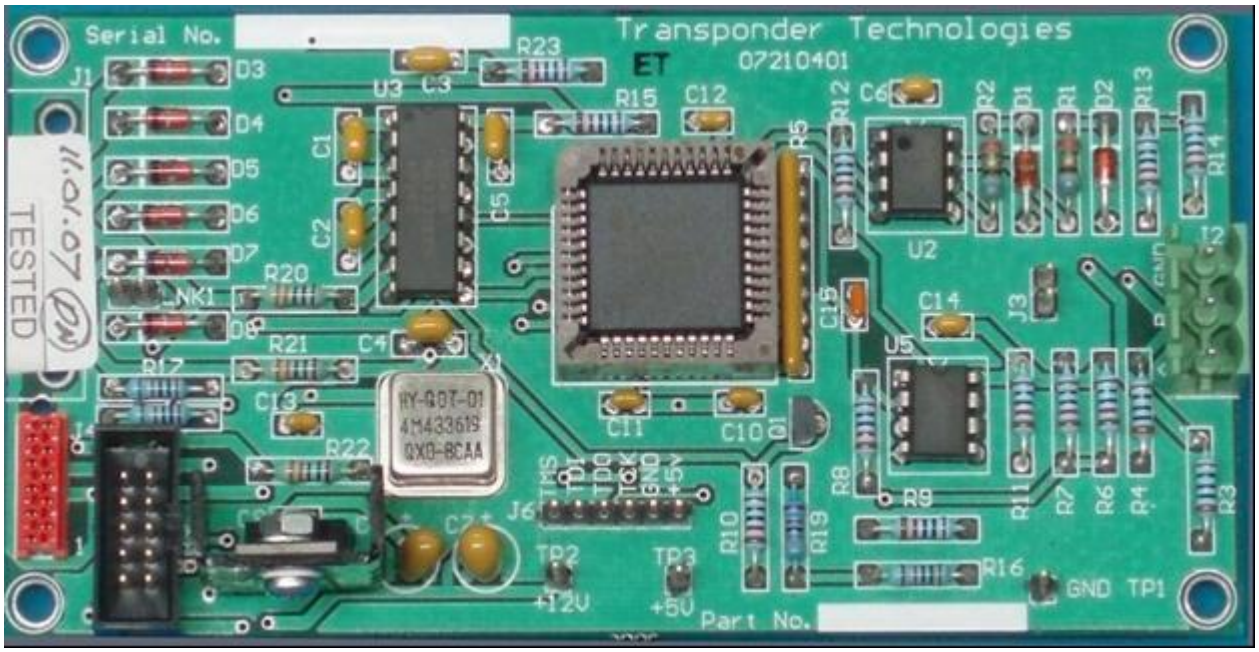
(d) A sample receipt

Tax Invoice
CANNAN Service Station
CANNAN Service Station
P. O. Box 2009
BOROKO, NCD
Site number 5505
Date 06/10/11
Time 03:36pm
Ref number 0095

P03 Diesel	* 2.730$/L	1.56L	$4.27
Total			$4.25
Tendered			$5.00
Change			$0.75
GST			$0.39

Items with * include GST

FIGURE S422 – 4



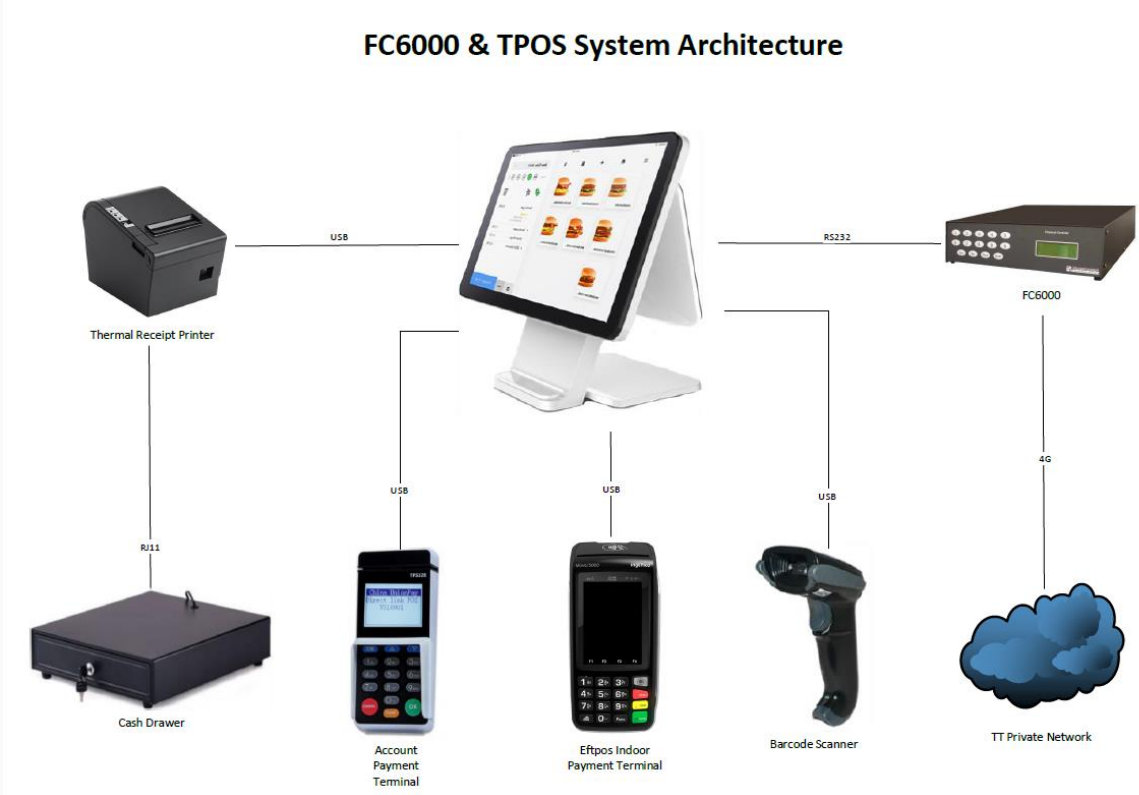
(a) Transponder Technologies Email Protocol Communication Converter

(b) Transponder Technologies Gilbarco Protocol Communication Converter

FIGURE S422 – 5

TPOS Operator Console (Variant 2)

FIGURE S422 – 6

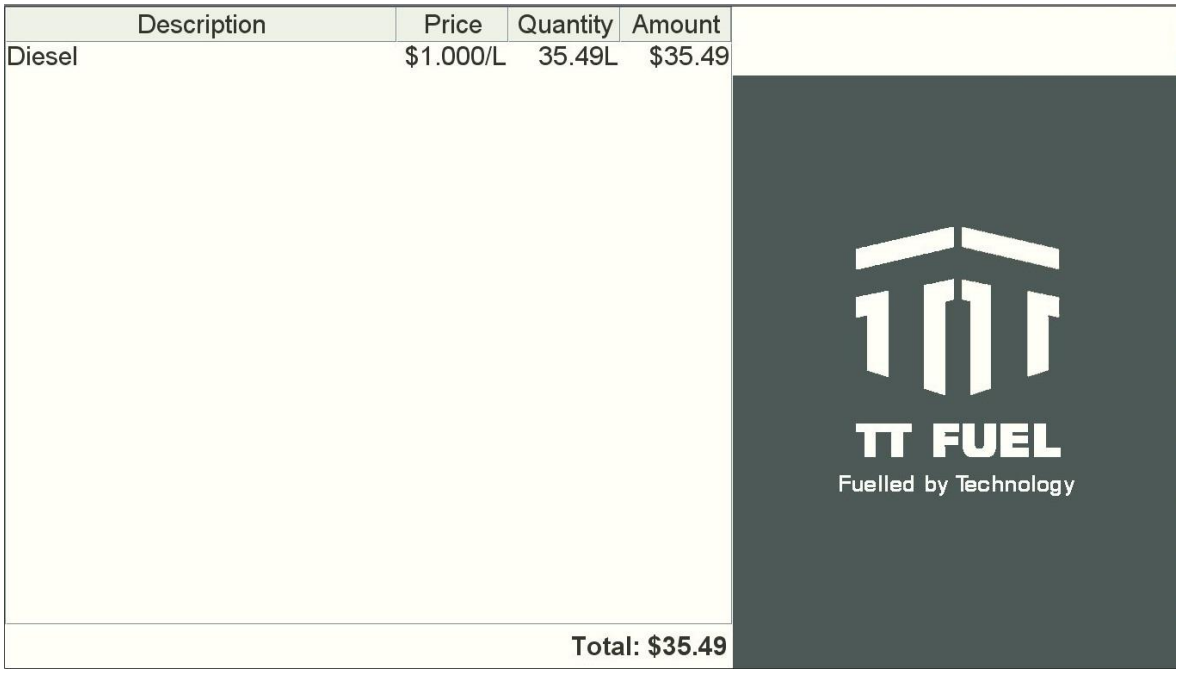


FC6000 & TPOS System Architecture (Variant 2)

FIGURE S422 – 7

Typical TPOS Operators Console Operator Display (Variant 2)

FIGURE S422 – 8



Typical TPOS Operators Console Customer Display (Variant 2)

FIGURE S422 – 9

Fast Fuel Motors
1234 Old Digger Highway
Kangaroo Creek NSW
Tax Invoice
Ph: 0800 382 5631
ABN: 123-456-789
Date: 11/09/2019 13:11
Reference: 000013

* Diesel - Dispenser #:2	
35.49L @ $1.000/L	$35.49
Sale Total:	$35.49
Cash	$35.50
Rounding:	$0.01
Payment Total:	$35.50
GST included in Total:	$3.23

Items with * include GST

Thank you for shopping at Fast Fuel Motors

Like us on Facebook
Complaints can addressed to our
complaints service PH:0800 NO PROBLEMO
24/7

A typical sample receipt TPOS Operator Console (Variant 2)

~ End of Document ~