Australian Government
National Measurement Institute
Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 5/6A/207

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 805-DW-P11-P40S-RR-N-P-M 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.

This approval has been granted with reference to document NMI R 117-1, Measuring Systems for Liquids Other than Water, July 2004.

This approval becomes subject to review on 1/11/15, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variant 1 approved – interim certificate issued	8/10/04
1	Pattern & variant 1 approved – certificate issued	31/01/05
2	Pattern amended (pulse generator) – certificate issued	25/06/08
3	Variant 2 provisionally approved – interim certificate issued	9/06/09
4	Variant 2 approved – interim certificate issued	3/08/09
5	Variant 2 approved – certificate issued	25/09/09
6	Variant 3 provisionally approved – interim certificate issued	1/11/10
7	Variant 3 approved – notification of change to interim certificate issued	30/06/11
8	Variant 3 approved – certificate issued	11/08/11
9	Variants 4 & 5 approved – certificate issued	22/09/11
10	Variant 6 approved – certificate issued	19/04/12
11	Variant 7 approved – interim certificate issued	27/11/14
12	Variant 8 approved – interim certificate issued	27/05/15
13	Pattern & variants 1 to 6 updated – variants 7 & 8 approved – certificate issued	3/06/15

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 5/6A/207' and 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 Certificates No S1/0/A or No S1/0B.

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

Mario Zamora

TECHNICAL SCHEDULE No 5/6A/207

1. Description of Pattern approved on 8/10/04

A Transponder Technologies model 805-DW-P11-P40S-RR-N-P-M fuel dispenser for motor vehicles (Figure 1) approved to dispense various grades of petrol, in attendant-operated mode. The meter is adjusted to be correct for the liquid for which it is to be verified.

The pattern, model 805-DW-P11-P40S-RR-N-P-M, is an 805 series with a **D**resser-**W**ayne meter (DW), an internal **P**ump and **1** inlet and **1** outlet (P11), dispensing **P**etrol at up to **40** L/min and has a **S**olenoid valve (P40S), has a **R**etail display (price-computing) on both sides of the dispenser (RR), is **N**MI approved (N), has a **P**re-set facility (P), and has a hose **M**ast (M).

1.1 Field of Operation

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

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

•	Minimum measured quantity, *Vmin*	2 L	
•	Maximum flow rate, *Qmax*	40 L/min	
•	Minimum flow rate, *Qmin*	4 L/min	
•	Maximum pressure of the liquid, *Pmax*	300 kPa	
•	Minimum pressure of the liquid, *Pmin*	100 kPa	(#1)
•	Viscosity range (at 20^{o}C)	0.5 to 20 mPa.s	(#2)
•	Nature of liquids to be measured e.g. petrol		
•	Maximum temperature of the liquid, *Tmax*	40^{o}C	
•	Minimum temperature of the liquid, *Tmin*	5^{o}C	
•	Ambient temperature range	–10^{o}C to 55^{o}C	

(#1) Required minimum pressure for effective operation of the gas elimination device.

(#2) The flowmeter is adjusted for use with one product viscosity. Fuels include kerosene, distillate and various grades of petrol (which may include up to 10% ethanol).

1.2 Hydraulic System

The Transponder Technologies model 805-DW-P11-P40S-RR-N-P-M fuel dispenser (Figures 1 and 2) incorporates the following components:

(i) An STM model 4-47579 pumping unit (Figure 2) driven by an external motor. The pumping unit incorporates an integral bypass, strainer and gas elimination device.

Any vapour or gas separated by the gas separator is exhausted to the vent tube. A gas detection switch is connected to the vent tube; the switch stops the flow when excessive amount of vapour or gas is entrained in the liquid. To prevent reverse flow, a check valve is fitted upstream of the gas separator.

(ii) A gas/air test valve is provided for checking the operation of the gas elimination device. The device has provision for sealing.

(iii) A Dresser-Wayne model 2PM6 2-piston positive displacement meter (Figure 3).

(iv) A Transponder Technologies model TTMRT86 pulse generator (Figure 4).

(v) A Transponder Technologies model T5b calculator/indicator as described in the documentation of approval NSC S414.

(vi) Asco two-stage solenoid valves for pre-set operations are fitted downstream of the meter.

(vii) An Elaflex model BS3395/1989 16 mm hose or any other compatible hose that meets the maximum permissible errors for hose dilation.

(viii) An Elaflex model ZVA slimline nozzle or any other approved nozzle. Note that the submittor must be consulted regarding the acceptability of any alternative nozzles.

1.3 Measurement Transducer

The measurement transducer is a Dresser-Wayne model 2PM6 2-piston positive displacement flowmeter fitted with a Transponder Technologies model TTMRT86 or model TTSTM or other compatible (#) approved pulse generator. The pulse generator is a dual channel pulse output device, each channel producing 25 for one revolution of the meter/pulse generator shaft.

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

1.4 Transfer Device

The transfer device is any approved nozzle that maintains the hose full of liquid at all times and is designed so that the nozzle cannot be placed in a hang up position other than to end the delivery.

1.5 Pre-set Facility

The pre-set keypad facility (Figure 5) allows pre-set values to be entered in '$1' and '$10' dollar increments up to a maximum of $999. The pre-set amount is displayed on the price ($) indicator of the display; the pre-set amount can be viewed before and after the delivery is complete by pressing the 'RCL' button situated in the pre-set pad. To cancel the pre-set amount, or to start again, the 'CLR' button is pressed.

1.6 Totaliser

The instrument has a Jenm Chicago model P2G729A 4.5 V DC electronic totaliser for the volume throughput in one litre graduations up to a maximum of 9 999 999 litres. The totaliser is located above the nozzle.

1.7 Checking Facilities

Removing the nozzle from its normal hang-up position initiates a segment check of the price, volume, and unit price displays.

- 'Error 19' is displayed and the delivery stopped if excessive amounts of air/vapour are detected;

- ‘Error 17’ is displayed and the delivery stopped when pulse output errors are detected; and
- ‘Error 12’ when the non-return valve is faulty and the pulser is measuring reverse flow.

1.8 Calculator/Indicator

The Transponder Technologies model T5b calculator/indicator as described in the documentation of approval NSC S414 comprises a computing unit and two display units. Separate displays are provided for volume, price and unit price. The indicators display the following maximum values:

Total price: $9 999.99 in 0.01 cent increments
Volume: 9 999.99 in 0.01 L increments
Unit price: 999.9 ¢/L in 0.1 cent increments

The software version number for the calculator/indicator is 01291.

1.9 Descriptive Markings and Notices

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

Pattern approval number	NMI 5/6A/207	
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 liquids to be measured	.....	(#2)
Maximum temperature of the liquid, T_{max}	40^{o}C	
Minimum temperature of the liquid, T_{min}	5^{o}C	

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

(#2) e.g. petrol or P.

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’.

1.10 Sealing Provision

The gas separator test valve and the meter are sealed as shown in Figure 6.

The electronic calibration switch in the model T5b calculator/indicator has provision for sealing as described in the documentation of approval NSC S414.

1.11 Verification Provision

Provision is made for the application of a verification mark.

2. Description of Variant 1 approved on 8/10/04

Certain other models and configurations of the 805 series of fuel dispensers. Model numbers are made up of a series of fields representing the various approved components/features, as follows in Table 1: (For example, the pattern is a model 805-DW-P11-P40S-RR-N-P-M)

TABLE 1 – Model Designations for the Pattern and Variant 1

- Instrument series field – always:
  805 representing the 805 series.
- Meter field – always:
  DW representing the Dresser-Wayne meter.
- Hydraulic system field – either:
  P – representing the 'pump' version with internal pump/s; or
  D – representing the'dispenser' version with one or more approved submersible turbine pump (STP) 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, e.g. refer Figure 7.
- Inlet/outlet field – either **11, 12, 21, 22** or **24**, comprised of:
  1 or **2** as the first digit – representing the number of inlets; and
  1, **2** or **4** as the second digit – representing the number of outlets.
- End configuration field/s, one field for a single dispenser (e.g. the pattern, *-P40*) and two fields for dispensers with 2 or 4 outlets (e.g. *-P40*-P40*-*, refer Figure 8), representing the product/s and maximum flow rate/s.
- Product – either:
  B – representing biodiesel or biodiesel/distillate blends (to Australian government standard);
  D – representing distillate;
  K – representing kerosene; or
  P – representing petrol.
  Note that a gas detection switch is fitted to all units dispensing distillate, kerosene or biodiesel which stops the flow when excessive amount of vapour or gas is entrained in the liquid.
- Maximum flow rate, *Qmax* – either:
  40 – representing 40 L/min; or
  80 – representing 80 L/min (*Qmin* = 8 L/min and *Vmin* = 5 L). An Elaflex model Contislimline BS3395/1989 25 mm hose and an Elaflex model ZVA 25 mm nozzle or any other compatible approved components are used.
- Solenoid field – always:
  S representing that solenoid valves are fitted.
- Display field – comprised of two characters representing the type of display fitted to each side of the dispenser (e.g. *-RR-*), either:
  R representing a retail display (price-computing);
  C representing a commercial display (volume only; or
  B representing no display fitted, to 2nd side only.
- Approval field – always:
  N representing NMI approved.
- Pre-set field – either:
  P – representing that the pre-set facility is fitted; or
  X – representing that no pre-set facility is fitted.
- Hose support field – either:
  H – representing that hose hooks are fitted;
  M – representing that hose masts are fitted; or
  X – representing that no hose supports are fitted.

3. Description of Variant 2 provisionally approved on 9/06/09 approved on 3/08/09

The Transponder Technologies 801 series of fuel dispensers which are a range of modular instruments in which the hydraulic unit is housed separately to the indicator module(s). Instruments of the 801 series utilise the same components originally approved for the 805 series but in a different physical configuration. Model numbers are comprised of a series of fields representing the various configurations, as follows in Table 2: (For example, the model number of a typical 801 series dispenser (Figure 9) is 801-DW-D22-D40S-D80S-N-N-X.)

TABLE 2 – Model Designations for Variant 2

- Instrument series field – always:
  801 – representing the 801 series.
- Meter field – always:
  DW – representing the Dresser Wayne 2PM-6 model meter.
- Hydraulic system field – either:
  P – representing the 'pump' version with internal pump/s; or
  D – representing the 'dispenser' version with one or more approved submersible turbine pump (STP) 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 (refer Figure 7).
- Inlet/outlet field – either **11**, **12**, or **22**, comprised of:
  1 or **2** as the first digit – representing the number of inlets; and
  1 or **2** as the second digit – representing the number of outlets.
- End configuration field/s, one field for a single dispenser and two fields for dispensers with 2 outlets representing the product/s and maximum flow rate/s.
- Product – either:
  B – representing biodiesel or biodiesel/distillate blends (to Australian government standard); or
  D – representing distillate;
  K – representing kerosene; or
  P – representing petrol.
  Note that a gas detection switch is fitted to all units dispensing distillate, kerosene or biodiesel which stops the flow when excessive amount of vapour or gas is entrained in the liquid.
- Maximum flow rate, Q_{max}, either:
  40 – representing 40 L/min; or
  80 – representing 80 L/min (Q_{min} = 8 L/min and V_{min} = 5 L). An Elaflex model Contislimline BS3395/1989 25 mm hose and an Elaflex model ZVA 25 mm nozzle or any other compatible approved components are used.
- Solenoid field – always:
  S representing that solenoid valves are fitted.
- Approval field – always:
  N – representing NMI-approved.
- Forecourt Communications Protocol field – either:
  E – representing that Email FCN protocol is fitted; or
  G – representing that Gilbarco FCN protocol is fitted; or
  N – representing that New Zealand FCN protocol is fitted; or
  X – representing that no FCN protocol is fitted.
- Pre-set field – either:
  P – representing that the pre-set facility is fitted; or
  X – representing that no pre-set facility is fitted.

3.1 Calculator/Indicator

The calculator/indicator used in the 801 series (Variant 2) is the Transponder Technologies model T5b calculator/indicator as described in the documentation of approval NMI S414, with the processor and power supply unit housed in the top compartment of the dispenser housing (Figure 10), but with the indicator units housed in a model T5RDM remote display module (Figure 11).

The configurations (*) of the various indicator units are shown in Figure 12 (*).

(*) CRIP ('card reader in pump') versions (which may also be known as CIM 'customer interface module') must only be used in conjunction with an approved compatible Transponder Technologies control system such as a model TT3000 DCA as described in the documentation of approval NMI S423.

4. Description of Variant 3 provisionally approved on 1/11/10 approved on 30/06/11

Certain models of the Transponder Technologies 801-DW-WM40 and 805-DW-WM40 series of fuel dispensers for motor vehicles. The instruments are fitted with a Dresser Wayne model 2PM6 flowmeter and a Macnaught model WM40 flowmeter (Figures 13 to 15).

The Dresser Wayne flowmeter is approved for use as described for the pattern, over a flow rate range of 8 to 80 L/min.

The Macnaught flowmeter is approved for use only with distillate, biodiesel and biodiesel/distillate blends over a flow rate range of 50 to 160 L/min.

4.1 Field of Operation

The field of operation of the Dresser Wayne model 2PM6 flowmeter is as described for the pattern.

The field of operation of the Macnaught model WM40 flowmeter is determined by the following characteristics:

• Minimum measured quantity, V_{min}	50 L	
• Maximum flow rate, Q_{max}	160 L/min	
• Minimum flow rate, Q_{min}	32 L/min	
• Maximum pressure of the liquid, P_{max}	1800 kPa	
• Minimum pressure of the liquid, P_{min}	90 kPa	(#1)
• Range of liquids viscosity (at 20°C)	0.5 to 20 mPa.s	(#2)
• Nature of liquid to be measured, e.g. distillate	……	
• Maximum temperature of the liquid, T_{max}	50°C	
• Minimum temperature of the liquid, T_{min}	-10°C	
• Ambient temperature range	25 to 55°C	
• Accuracy class	0.5	

(#1) Minimum pressure required for effective operation of the gas elimination device.

(#2) The flowmeter is adjusted for use with one product viscosity. Fuels include distillate, various grades of pure biodiesel and biodiesel/distillate blends (to Australian government standard).

Model numbers are comprised of a series of fields representing the various configurations, as follows in Table 3: (For example, the model number of a typical dispenser of this variant is 805-DW-WM40-D22-D80S-D160S-RR-N-N.)

TABLE 3 – Model Designations for Variant 3

- Instrument series field – either:
  801 – representing the 801 series (refer to variant 2); or
  805 – representing the 805 series (refer to the pattern and variant 1).
- Meter fields – always:
  DW – representing the Dresser Wayne 2PM-6 model flowmeter; and
  WM40 – representing the Macnaught WM40 model flowmeter.
- Hydraulic system field – either:
  P – representing the 'pump' version with internal pump/s; or
  D – representing the 'dispenser' version with one or more approved submersible turbine pump (STP) 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 (refer Figure 7).
- Inlet/outlet field – either **11**, **12**, or **22**, comprised of:
  1 or **2** as the first digit – representing the number of inlets; and
  1 or **2** as the second digit – representing the number of outlets.
- End configuration fields, one for each outlet representing the product/s and maximum flow rate/s.
- Product fields, for each flowmeter – either:
  B – representing biodiesel or biodiesel/distillate blends (to Australian government standard); or
  D – representing distillate; or
  K – representing kerosene; or
  P – representing petrol (Dresser Wayne 2PM-6 model flowmeters only).
  Note that a gas detection switch is fitted to all units dispensing distillate, kerosene or biodiesel which stops the flow when excessive amount of vapour or gas is entrained in the liquid.
- Flow rate fields:
  for Dresser Wayne 2PM-6 model flowmeters, either
  40 – representing 40 L/min; or
  80 – representing 80 L/min; and
  for Macnaught WM40 model flowmeters, always
  160 – representing 160 L/min.
- Solenoid field – always:
  S representing that solenoid valves are fitted.
- Display field – comprised of two characters representing the type of display fitted to each side of the dispenser (e.g. *-RR-*), either:
  R – representing a retail display (price-computing);
  C – representing a commercial display (volume only; or
  B – representing no display fitted, to 2nd side only.
- Approval field – always:
  N – representing NMI-approved.
- Forecourt Communications Protocol field – either:
  E – representing that Email FCN protocol is fitted; or
  G – representing that Gilbarco FCN protocol is fitted; or
  N – representing that New Zealand FCN protocol is fitted; or
  X – representing that no FCN protocol is fitted.
- Pre-set field – either:
  P – representing that the pre-set facility is fitted; or
  X – representing that no pre-set facility is fitted.

5. Description of Variant 4 approved on 22/09/11

Certain models of the Transponder Technologies 805-DW-WM50 series of fuel dispensers for motor vehicles (Table 4 and Figures 16 & 17). The instruments are fitted with a Macnaught model WM50 flowmeter which is approved for use only with distillate, biodiesel and biodiesel/distillate blends over a flow rate range of 70 to 350 L/min, in attendant-operated mode

5.1 Field of Operation

The field of operation is determined by the following characteristics:

• Minimum measured quantity, V_{min}	200 L	
• Maximum flow rate, Q_{max}	350 L/min	
• Minimum flow rate, Q_{min}	70 L/min	
• Maximum pressure of the liquid, P_{max}	300 kPa	
• Minimum pressure of the liquid, P_{min}	100 kPa	(#1)
• Range of liquids viscosity (at 20°C)	0.5 to 20 mPa.s	(#2)
• Maximum temperature of the liquid, T_{max}	50°C	
• Minimum temperature of the liquid, T_{min}	-10°C	
• Ambient temperature range	-10 to 55°C	
• Accuracy class	0.5	

(#1) Minimum pressure required for effective operation of the gas elimination device.

(#2) The flowmeter is adjusted for use with one product viscosity. Fuels include distillate, various grades of pure biodiesel and biodiesel/distillate blends (to Australian government standard).

5.2 Transfer Device

The transfer device is in the form of a drybreak nozzle/coupling.

6. Description of Variant 5 approved on 22/09/11

With an external centrifugal or vane type pump installed in flooded suction and with the supply tank installed above ground. The supply tanks are fitted with a low level device which prevents deliveries when the device is activated.

These hydraulic systems replace the equivalent components (i.e. submersible turbine pump (STP), and associated pipework) for any ‘dispenser’ version fuel dispenser covered by this approval.

The hydraulic system field in the model number (refer various Tables and lists in this approval) has a ‘**D’** representing the ‘dispenser’ version.

7. Description of Variant 6 approved on 19/04/12

The pattern and variants now approved for use to dispense aviation fuels.

The product code used in the model number is ‘V’, e.g. the pattern (a model 805-DW-P11-P40S-RR-N-P-M) would become a model 805-DW-P11-**V**40S-RR-N-P-M.

TABLE 4– Model Designations for Variant 4

Model numbers for instruments complying with variant 4 are comprised of a series of fields representing the various configurations, as follows:

(For example, the model number of a typical dispenser of this variant is 805-WM50-D21(#)-D350S(##)-RR.) (# & ##) – refer notes below.

- Instrument series field – either:

  805 – representing the 805 series.

- Meter fields – always:

  WM50 – representing the Macnaught model WM50 flowmeter.

- Hydraulic system field – always:

  D – representing the 'dispenser' version with one or more approved submersible turbine pump (STP) hydraulic systems or with an external centrifugal or vane type pump (refer Variant 5).

- Inlet/outlet field always **21**, comprised of:

  2 as the first digit – representing the number of inlets; and

  1 as the second digit – representing the number of outlets.

- Product fields, for each flowmeter – always:

  D – representing distillate.

  Note that a gas detection switch is fitted to all units dispensing distillate, or biodiesel which stops the flow when excessive amount of vapour or gas is entrained in the liquid.

- Flow rate fields – always:

  350 – representing 350 L/min.

- Solenoid field – always:

  S representing that solenoid valves are fitted.

- Display fields – comprised of two characters representing the type of display fitted to each side of the dispenser (e.g. *-RR-*):

  R – representing a retail display (price-computing).

  B – representing a blank display on the rear of the instrument.

- Pre-set field – either:

  P – representing that the pre-set facility is fitted; or

  X – representing that no pre-set facility is fitted.

(#) **D21** – Manifold feeding through a Y-strainer to the WM50 meter and primary solenoid to control flow rate. When pre-sets are required a secondary ½" solenoid valve is provided for accuracy of cut off.

(##) **D350S** – Dispensing diesel at a nominal flow rate of 350 L/min with a Parker Hannifin model 7321BGV02 2in" solenoid valve for primary flow control, and a Parker Hannifin model 7121K01 ½" solenoid valve for secondary flow control.

8. Description of Variant 7 approved on 27/11/14

A Transponder Technologies model 805-OM050-D11-D450S-RR fuel dispenser for motor vehicles (Figure 18) to dispense various grades of fuel having the following field of operation:

Minimum measured quantity, V_{min}	100 L
Maximum flow rate, Q_{max}	450 L/min
Minimum flow rate, Q_{min}	45 L/min

8.1 System Components

The model 805-OM050-D11-D450S-RR is an 805 series fuel dispenser configured as follows:

- OM050 – One Trimec Industries OM050 positive displacement meter.
- D11 – Single inlet straight pipe feeding into OM050 and primary 2" Solenoid to control flow rate. When pre-sets are required a secondary ¼" Solenoid valve is provided for accuracy of cut off
- D450S – Dispensing diesel at a nominal flow rate of 450 litres per minute with a Parker Hannifin model 7321BGV02 2in" solenoid valve for primary control of flow, and Parker Hannifin - 7121K01 ¼" solenoid valve for secondary control of flow.
- RR – Two Transponder Technologies model T5 price, volume and unit-price (i.e. retail) displays.
- N – One "New Zealand Pump Protocol" (i.e. PEC, Compac and TT native protocols) Forecourt Communications Interface Board.

8.2 Measurement Transducer

The measurement transducer is a Trimec Industries model OM050 positive displacement flowmeter incorporating two independent Hall Effect electronic pulse generators, which produce 13 pulses per litre in quadrature.

8.3 Transfer Device

The transfer device is any approved dry break nozzle but is part of the loading arm not supplied by Transponder Technologies.

9. Description of Variant 8 approved on 27/05/15

A Transponder Technologies model 805-OM050E-D11-D580S-RR fuel dispenser for motor vehicles (Figure 18) to dispense various grades of fuel having the following field of operation:

Minimum measured quantity, V_{min}	100 L
Maximum flow rate, Q_{max}	580 L/min
Minimum flow rate, Q_{min}	58 L/min

9.1 System Components

The model 805-OM050E-D11-D580S-RR is an 805 series fuel dispenser configured as follows:

- OM050E – One Trimec Industries OM050E positive displacement meter.

- D11 – Single inlet straight pipe feeding into OM050E and primary 2” Solenoid to control flow rate. When pre-sets are required a secondary ¼” Solenoid valve is provided for accuracy of cut off
- D580S – Dispensing diesel at a nominal flow rate of 580 litres per minute with a Parker Hannifin model 7321BGV02 2in” solenoid valve for primary control of flow, and Parker Hannifin - 7121K01 ¼” solenoid valve for secondary control of flow.
- RR – Two Transponder Technologies model T5 price, volume and unit-price (i.e. retail) displays.
- N – One “New Zealand Pump Protocol” (i.e. PEC, Compac and TT native protocols) Forecourt Communications Interface Board.

TEST PROCEDURE

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

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

Tests

Tests should be conducted in conjunction with any tests specified in the approval documentation for any components used, including indicator/controller and submersible turbine pump (STP) hydraulic systems.

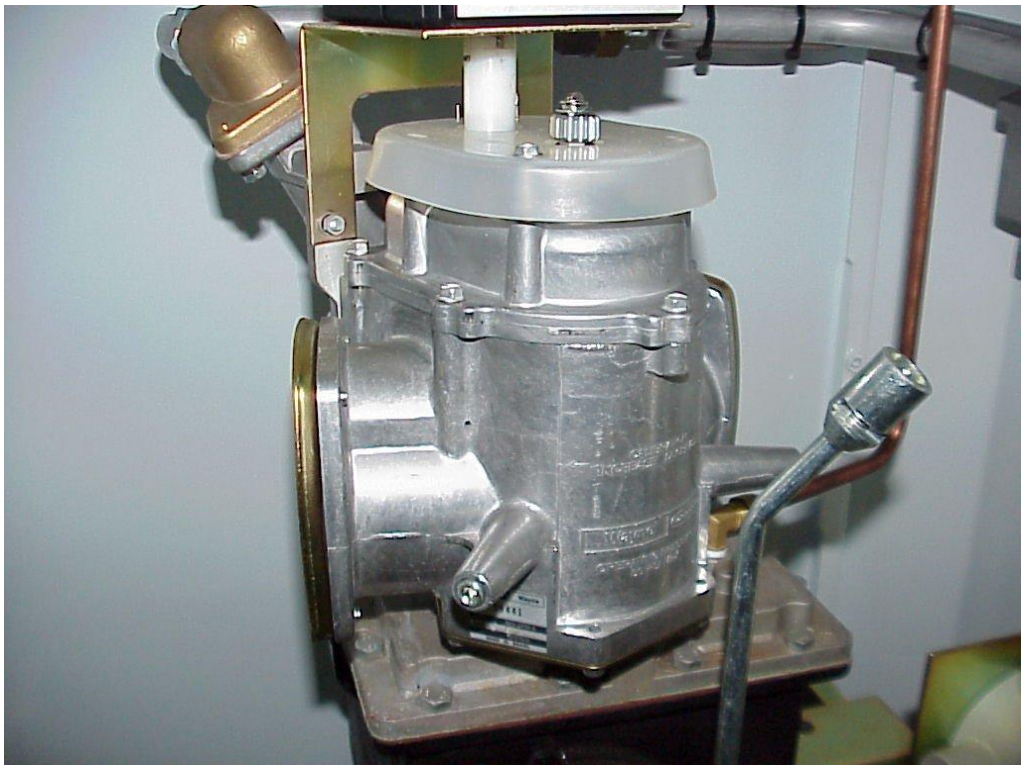
FIGURE 5/6A/207 – 1

Transponder Technologies Model 805-DW-P11-P40S-RR-N-P-M Fuel Dispenser – The Pattern

FIGURE 5/6A/207 – 2

Model 805-DW-P11-P40S-RR-N-P-M Hydraulics – The Pattern

FIGURE 5/6A/207 – 3

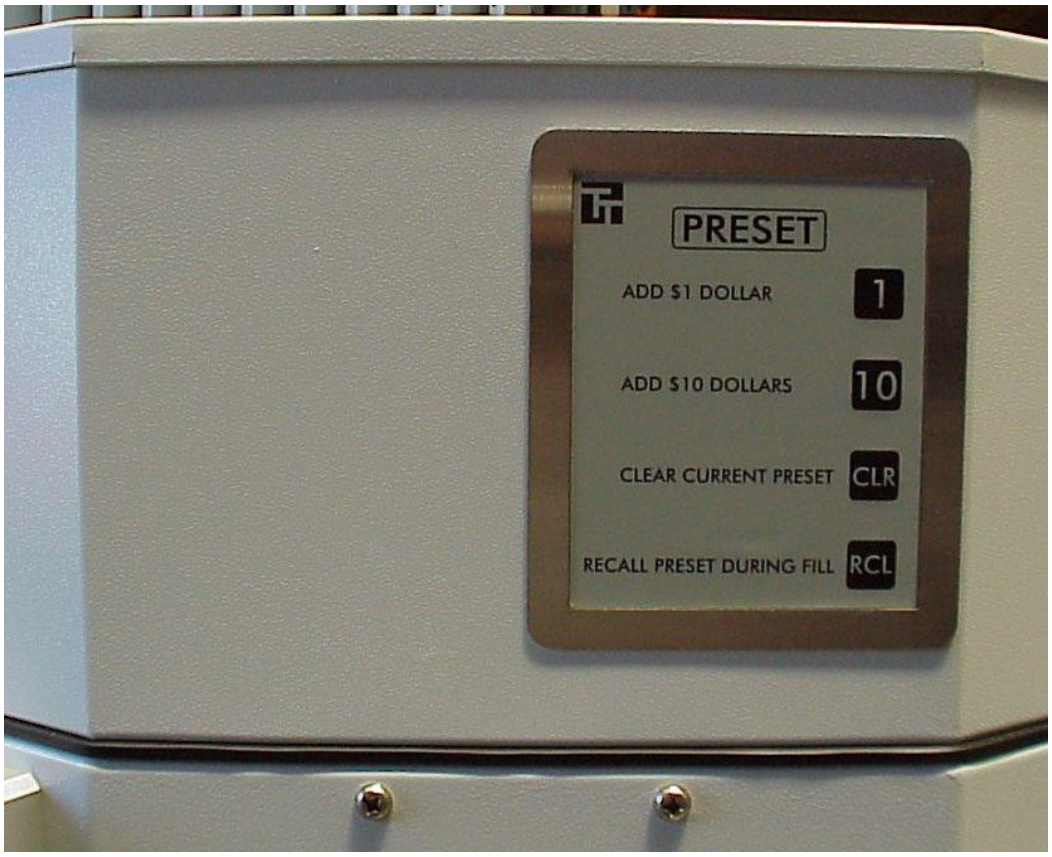


Dresser- Wayne Model 2PM6 Meter

FIGURE 5/6A/207 – 4

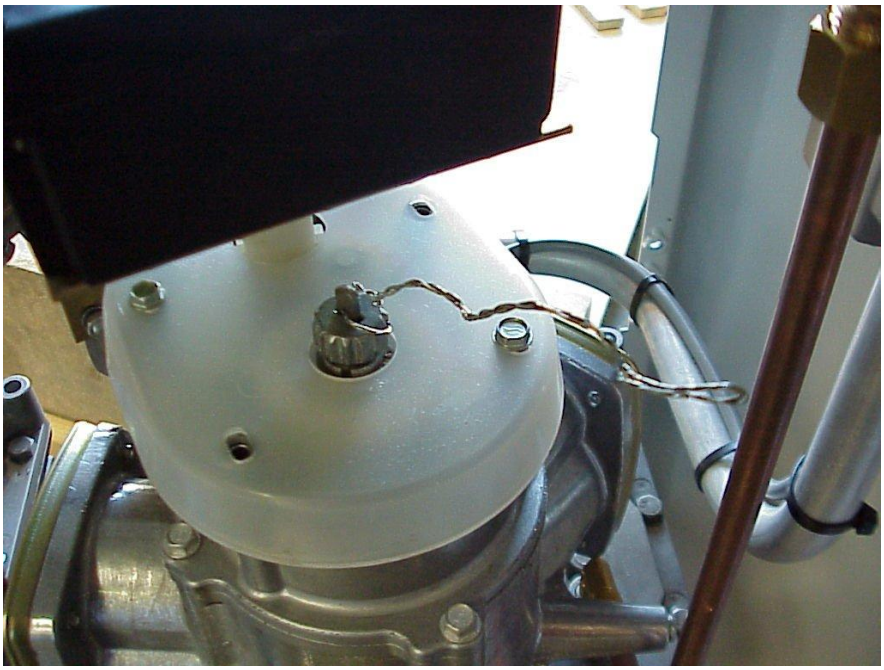
Transponder Technologies Model TTMRT86 Pulse Generator

FIGURE 5/6A/207 – 5



Typical Pre-set Keypad

FIGURE 5/6A/207 – 6



Typical Sealing of Gas Separator Test Valve and Meter

FIGURE 5/6A/207 – 7

Typical Fuel Dispenser With Fuel Supplied From STP Hydraulic System – Variant 1

FIGURE 5/6A/207 – 8

Typical Two Inlet/Two Outlet Fuel Dispenser for Motor Vehicle – Variant 1

FIGURE 5/6A/207 – 9

Typical 801 Series Fuel Dispenser (2 inlet/2 outlet, with and without covers) – Variant 2

FIGURE 5/6A/207 – 10

Dispenser Viewed From Above Showing Processor and Power Supply Unit Housed in The Top Compartment of The Dispenser Housing – Variant 2

FIGURE 5/6A/207 – 11

(a) Model 092250 Single Retail Display Unit

(b) Model T5RDM Remote Display Module (rear view)

Model 092250 and T5RDM Displays – Variant 2

FIGURE 5/6A/207 – 12

Single Commercial	Single Commercial with CRIP
	
Single Retail	**Single Retail with CRIP**
	
Dual Commercial	**Dual Retail**
	

Component Orientation of Various Display Units – Variant 2

FIGURE 5/6A/207 – 13

Typical Hydraulics – Model 805-DW-WM40-D22-D80-** – Variant 3

FIGURE 5/6A/207 – 14

Typical Hydraulics – Model 805-DW-WM40-D22-D80-** – Variant 3

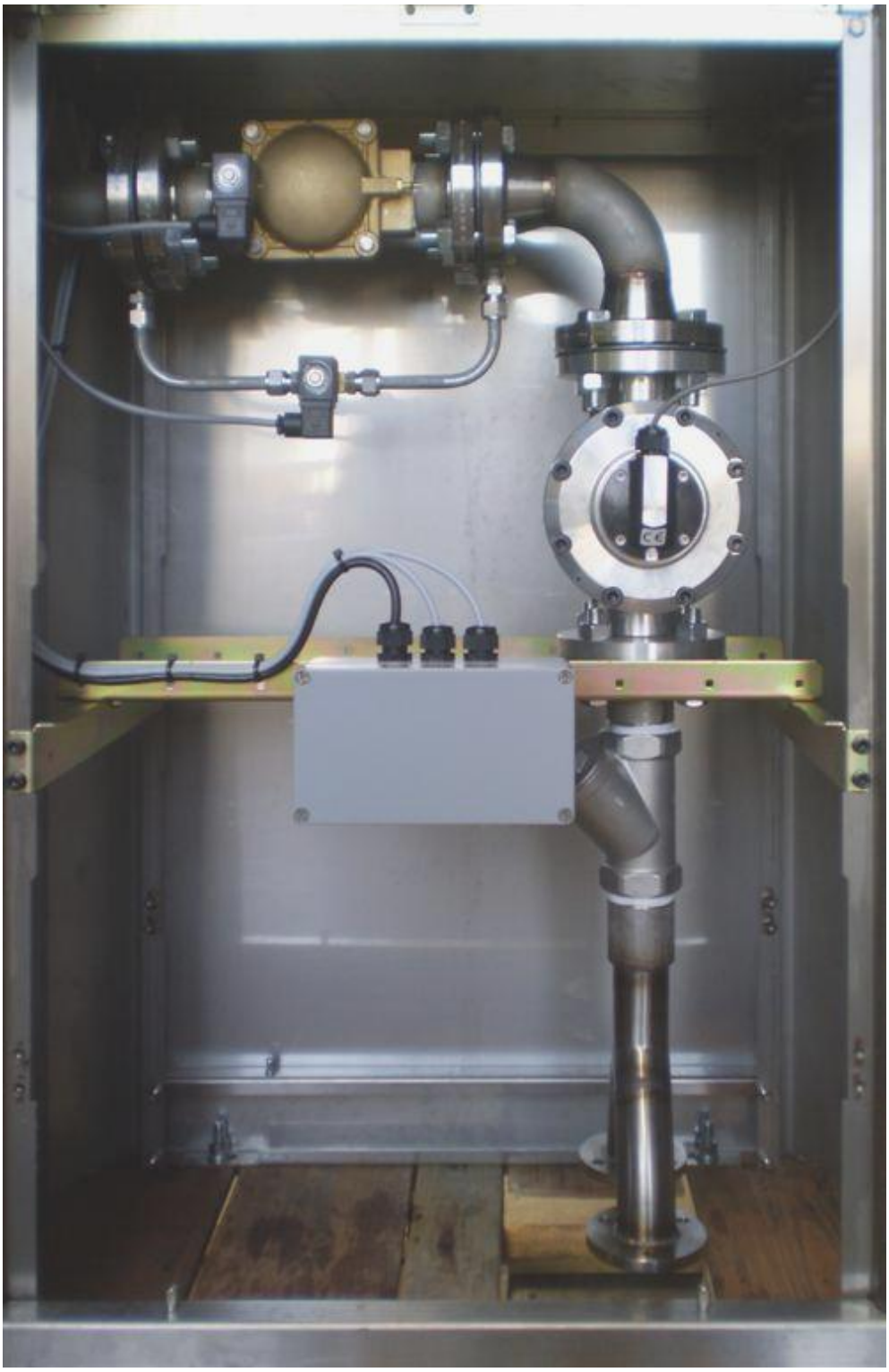
FIGURE 5/6A/207 – 15

Typical Hydraulics – Model 805-DW-WM40-D22-****-D160-*** – Variant 3

FIGURE 5/6A/207 – 16

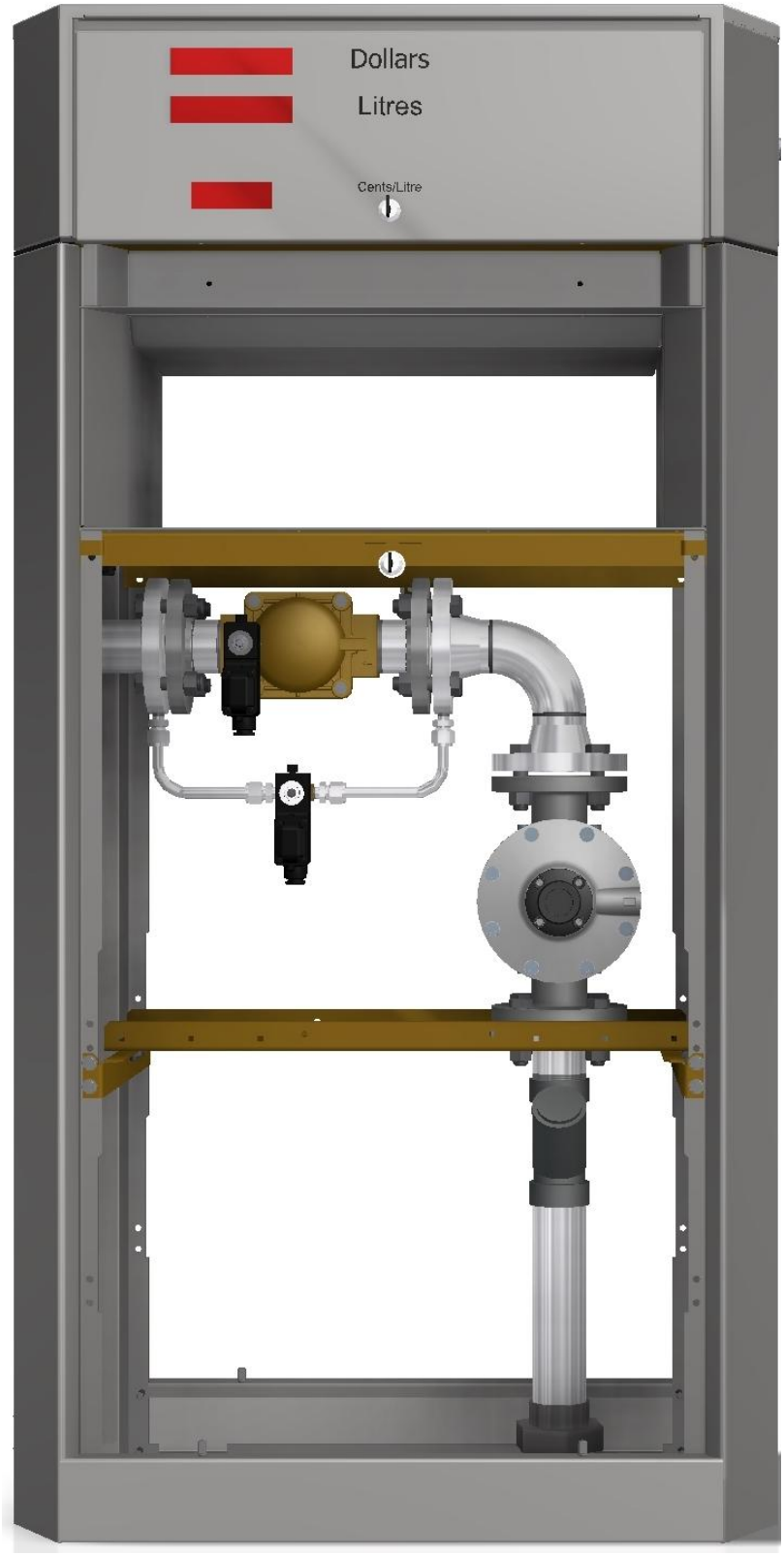
Typical 805-WM50-D21-D350S Series Dispenser – Variant 4

FIGURE 5/6A/207 – 17



Typical Hydraulics – 805-WM50-D21-D350S Series – Variant 4

FIGURE 5/6A/207 – 18



Typical Hydraulics – 805-OM050 & 805-OM050E Series – Variants 7 & 8

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