

MINISTRY OF CONSUMER AFFAIRS
MANATŪ KAIHOKOHOKO

MINISTRY OF CONSUMER AFFAIRS

Wellington, New Zealand

CERTIFICATE OF APPROVAL

Weights and Measures Regulations 1999
Part 1 Regulations 5 and 6

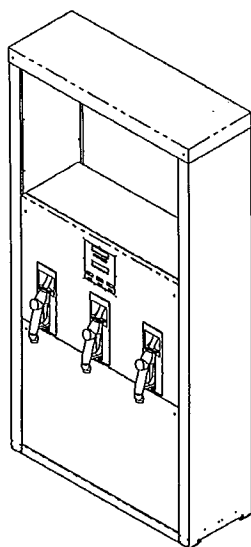
Current Date of Issue: 18 September 2007
Original Date of Issue: 27 July 2000

Certificate 1584

Overseas Certificate No: 5/6A/91A

This certifies that the Compac MR40P, Liquid Measuring Instrument described overleaf has been approved as suitable for trade use subject to any conditions stated in the schedule:

Legend Model



J P Crane

S R Bobbala

Under delegated authority from the Chief Executive of The Ministry of Economic Development

Note: This is not an approval to any person but only with respect to the type and pattern of weight, measure, or weighing or measuring instrument.

SCHEDULE

Pattern:	Liquid Measuring Instrument
Make:	Compac
Model:	MR40P
Manufacturer:	Compac Industries Ltd, Auckland, New Zealand.
Submitter:	Compac Industries Ltd, Auckland, New Zealand
Display capacity:	999.99 L
Display interval:	0.010 L
Minimum Delivery:	2 L
Maximum flowrate:	40 L/min
Minimum flowrate:	4 L/min

Description:

The Compac Industries model MR40P is an attendant-operated liquid fuel dispenser. The fuel dispenser may be interfaced to any approved compatible self-service device operating in attended or unattended service mode.

The instrument may dispense hydrocarbons with 0.5 to 20mPa,s (at 20 C).

Certain other models include the following: -

- 1) Model MR80P with a maximum flow rate of 80 L/min and a minimum measured quantity of 2 L.
- 2) With the calculator/indicator displaying volume (litres) only, provided that the indicator carries a notice stating
" NOT FOR RETAIL SALES "
- 3) In alternative housing e.g. model L40P, LL40P, MMR40P, PR40P and PPR40P
- 4) With up to four metering systems in the same housing, e.g. model MR40PQ
- 5) With a pre-set facility, including a price pre-set panel and a two-stage flow control valve, e.g. model MR40P-P
- 6) With one or more compatible submersible turbine pumps (STPs) incorporate a leak detection system. The STP replaces the equivalent components (i.e. motor, pump/strainer/gas separator, and associated pipe work) in any fuel dispenser covered by this approval. The model number of the pattern (MR40P) would then become model MR40S. More than one fuel dispenser may be connected to the same submersible turbine pump
- 7) With hydraulics modified for use with the COM-125 meter and two pumps connected in parallel. A pump selector switch is connected in the vicinity of the nozzle hang-up which enables the use of either one or two pumps depending on the flow rate required.
 - i) Maximum flow rate, Q_{max} is 80 L/min with single pump selected or up to 160 L/min with two pumps selected.
 - ii) Minimum flow rate, Q_{min} is 15 L/min.
 - iii) Minimum measured quantity is 10 L
- 8) With hydraulics modified for use with the COM-250 meter and with a compatible submersible turbine pump incorporating a leak detection system. The volume indicator is set for 0.1 L scale interval.
 - i) Maximum flow rate, Q_{max} is 400 L/min
 - ii) Minimum flow rate, Q_{min} is 20 L/min
 - iii) Minimum measured quantity is 20 L

Table 1 shows the various models and configurations.

COMPONENTS

- 1) A Bennet type 75 model 190701 integral pump/strainer/gas separator.
- 2) A Compac gas detection system fitted to the pump/strainer/gas separator.
- 3) A Compac model COM 50 rotary vane positive displacement flowmeter with integral magnetic drive pulse generator.
- 4) A Compac model C4000 calculator/indicator.
- 5) A ZVA or any other approved compatible nozzle.
- 6) A Xide 16 mm nozzle.

Compac Model C4000 Calculator/Indicator

The Compac Model C4000 calculator/indicator as approved in NSC Certificate of Approval No 377 interfaced to a Compac model CU-3000-3CH pulse generator or any approved measurement transducer generating compatible pulse output proportional to volume throughput, for use in any approved liquid measuring system. The pattern is approved without enclosure and may be mounted in any housing designed for a multi-product fuel dispenser.

The model C4000 comprises a processing circuit board and a separate indicator circuit board. Each processing board may be connected with up to three single or double-sided indicator boards.

The indicator board has a five digit liquid crystal display (LCD) for volume and another for total price; three separate four digit unit price LCDs are provided, one for each grade of fuel, and three separate electromechanical totalisers.

The model C4000 incorporates a pre-set control facility for use with approved fuel dispensers incorporating a compatible pre-set control valve.

The field of operation is determined by a number of characteristics including:

- i) Maximum input frequency 1500Hz

The indicators display the following values:

- i) Volume to 999.99 L
- ii) Unit price to 9.999 \$/L
- iii) Total price to \$999.99

VARIANTS

With certain alternative configurations of liquid crystal displays (LCD), and with the electromechanical totalisers separate from the main indicator board, as follows

- i) Five digit LCD (displays volume to 999.99 L, price to \$999.99 and unit price to 9.999 \$/L) and with only a single unit price display.

- ii) Six digit LCD (displays volume to 9999.99 L, price to \$9999.99 and unit price to 9.999 \$/L) and with only a single unit price display.

- iii) Six digit LCD (displays volume to 9999.99 L). This commercial version is without price and unit price displays and the instrument carries a notice stating " NOT FOR RETAIL SALES " or similar wording.

METROLOGICAL MARKINGS

The following information should be placed on a data plate affixed to the measuring instrument:-

Manufacturer's identification mark or trade mark designation.

Pattern Approval No
 Serial number.
 Year of manufacture.
 Minimum measured quantity (MMQ)
 Maximum flowrate (Qmax)
 Minimum flowrate (Qmin)
 Maximum pressure
 Minimum pressure
 Liquids
 Temperature range.
 Table 1. Masters/Premiers/Lasers and legend Series

FRAME TYPE

MR 1 inlet, 1 computing unit.
 MMR 2 inlets, 1 computing unit
 PR 1 inlet, 1 computing unit.
 PPR 2 inlets, 1 computing unit.
 L 1 inlet, 1 computing unit.
 LL 2 inlets, 1 computing unit.

MAXIMUM FLOWRATE L/MIN

40 4-40 l/min with COM50 meter.
 80 8-80 l/min with COM50 meter.
 160 16-160 l/min with COM 125 meter.
 400 40-400 l/min with COM250 meter.

PUMP TYPE

P Self-contained Bennett pump within the fuel dispenser housing.
 S Submersible turbine pump.

SINGLE OR DUAL OUTLET

(blank) 1 hose per inlet
 D 2 hoses single inlet.
 Q 4 hoses, two inlets. One display per side. Only one hose per side will operate at any time.
 QA 4 hoses, two inlets. One display per hose. All hoses may operate together.

OPTIONS (may be blank)

-P, -C, -PP, -CK
 Various options including preset, card-reader, PIN pad, PIN pad with receipt printer

The model MMR80SQ would be 4-40 l/min, 4 hose, and two inlet fuel dispenser requiring an external pump. Only one hose per side may operate at any time, and there is only one display per side.

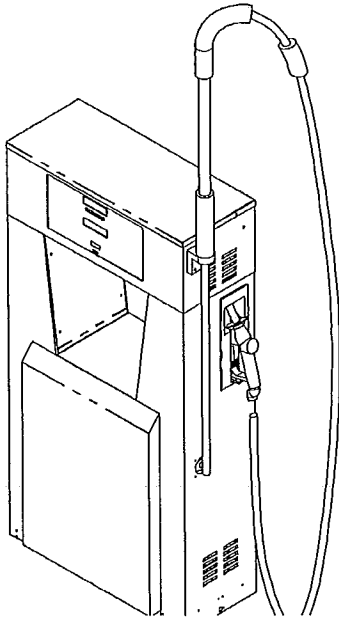
MULTI-HOSE FUEL DISPENSERS

Series	Model	Features
Legend	MD2	2 hose, 1 inlet, 1 display per side, external pump.
	MP2	2 hose, 1 inlet, 1 display per hose, internal pump.
	MD4	4 hose, 2 inlet, 1 display per side, external pump.
	MP4	4 hose, 2 inlet, 1 display per side, internal pump.
	MD4N	4 hose, 2 inlet, 1 display per side, external pump. Narrow frame.
	MP4N	4 hose, 2 inlet, 1 display per side, internal pump. Narrow frame.
	MD6	6 hose, 3 inlet, 1 indicator per side, 1 display per side, external pump.
	MP6	6 hose, 3 inlet, 1 indicator per side, 1 display per side, internal pump.

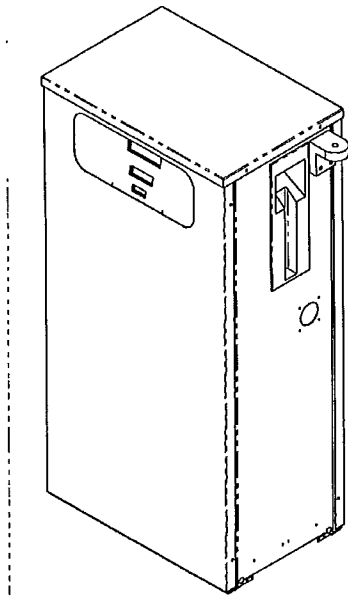
Sealing:

The mechanical calibrator for the meter and the K-factor switch are both sealed with approved type seals. These seals shall carry the Mark of Verification.

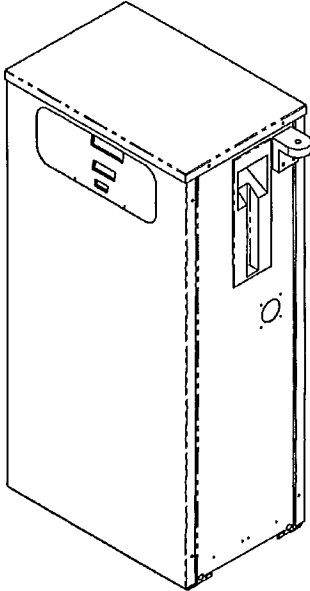
Laser Model



Premier Model



Master Model



SCHEDULE

Variant: 1584.1

Current Date of Issue: 07 May 2001

Pattern:	Liquid Measuring Instrument
Make:	Compac
Model:	MR40P
Manufacturer:	Compac Industries Ltd, Auckland, New Zealand.
Submitter:	Compac Industries Ltd, Auckland, New Zealand
Display capacity:	999.99 L
Display interval:	0.010 L
Minimum Delivery:	2 L
Maximum flowrate:	40 L/min
Minimum flowrate:	8 L/min
Description:	

This variant approves the use of the Compac model Premier PR-LPG-D attendant-operated liquefied petroleum gas (LPG), fuel dispenser for motor vehicles, over a flow rate range of 8 L/min to 40 L/min.

The instrument may be used in attended or unattended self-serve operation and may be used with any approved compatible fuel dispenser control.

The Premier model PR-LPG-D LPG dispenser is approved with the following components or features:

Two Compac model VAPCOM vapour elimination devices.

Two temperature measuring devices.

Two density measuring devices.

Two Compac model COM50 positive displacement LPG flowmeters each with an integral pulse generator.

Two Compac model C4000 LPG price-computing calculator/indicators.

Pre-set facility may be fitted.

Approved Models and Configurations

Pre-set facility may be fitted. Premier PR-LPG single hose fuel dispenser

Premier PR-LPG-D dual hose fuel dispenser

Laser L-LPG-D dual hose LPG fuel dispenser

Legend MD2LPG dual hose LPG dispenser

Legend MD6LPG six hose multi-product dispenser, one hose each side for LPG dispensing

Legend MP6LPG six hose multi-product dispenser, one hose each side for LPG dispensing.

Metrological Markings

The following information should be placed on a data plate affixed to the measuring instrument:-

Manufacturer's identification mark or trade mark designation.

Serial number.

Year of manufacture.

Minimum measured quantity (MMQ)

Maximum flowrate (Q_{max})

Minimum flowrate (Q_{min})

Maximum pressure

Minimum pressure

Liquids

Temperature range.

Components:

Compac COM 50 Flowmeter

C4000 Indicator

Compac VAPCOM Air Eliminator

Sealing:

The mechanical calibrator for the meter and the K-factor switch are both sealed with approved type seals. These seals shall carry the Mark of Verification

SCHEDULE

Variant: 1584.2

Current Date of Issue: 04 September 2003

Pattern:	Liquid Measuring Instrument
Make:	Compac
Model:	MR40P
Manufacturer:	Compac Industries Ltd, Auckland, New Zealand.
Submitter:	Compac Industries Ltd, Auckland, New Zealand
Display capacity:	999.99 L or 9999.99 L
Display interval:	0.010 L
Minimum Delivery:	2 L
Maximum flowrate:	80 L/min
Minimum flowrate:	4 L/min

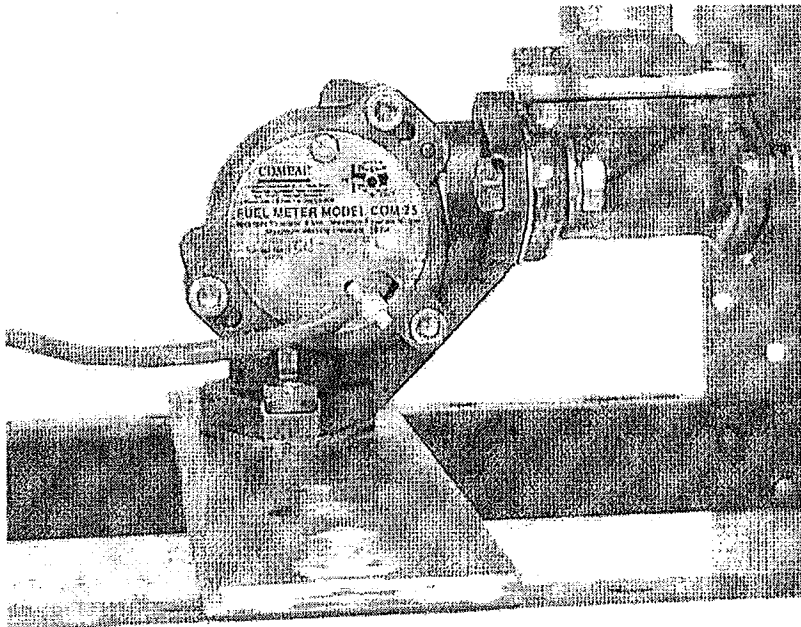
Description:

This variant approves the use of the Compac Industries model Com 25 flowmeter. The meter is a rotary vane type meter of similar design to the other Com series of meters. The meter has a flowrate range of 4 to 80 L/min.

The meter may be used with all models listed in this certificate, up to a maximum flowrate of 80 L/min

Components:	Com 25 Flowmeter
Sealing:	The mechanical calibrator for the meter and the K-factor switch are both sealed with approved type seals. These seals shall carry the Mark of Verification.

Compac Com25 Flowmeter



SCHEDULE

Variant: 1584.3

Current Date of Issue: 18 September 2007

Pattern:	Liquid Measuring Instrument
Make:	Compac
Model:	MR40P, MR400S
Manufacturer:	Compac Industries Ltd, Auckland, New Zealand
Submitter:	Compac Industries Ltd, Auckland, New Zealand
Display capacity:	9999.99L or \$9999.99
Display interval:	0.01
Class:	0.5

Description:

This variant allows the pattern and its variants to be used with an external centrifugal or vane pump in flooded suction and with the supply tank above ground. The supply tank is fitted with a low level device which prevents measurements of the fuel dispenser when the device is activated.

COMPAC Model MR400S Bulk Delivery System

(Refer table 1 in Certificate 1584 for various models and configurations)

This variant also allows the following options in respect of the COMPAC Model MR400S Bulk Delivery System

1. A SHIP hydropneumatic accumulator , or compatible device (*) may be connected downstream of the flowmeter to accommodate for the expansion and contraction of fuel , and to absorb any high liquid pressure peaks that may occur during deliveries.
2. A Parker model E321G4010 50mm solenoid control valve, or other compatible valve , is connected upstream of the hose for controlling the delivery.
3. A TODO-MATIC 50mm dry break coupling or other compatible (*) dry break coupling is fitted to the end of the hose and acts as a transfer device , which defines the start and finish of the measured volume , and is designed to maintain the hose full of liquid.
4. An optional electronic overfill protection cable and connector may be provided at the side of the dispenser which connects to the tank level sensing device and which stops the pump when the receiving tank is full.

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

METROLOGICAL MARKINGS

The following information should be placed on a data plate affixed to the measuring instrument:-

Manufacturer's identification mark or trade mark designation.

Pattern Approval No

Serial number.

Year of manufacture.

Minimum measured quantity (MMQ)

Maximum flowrate (Q_{max})

Minimum flowrate (Q_{min})

Maximum pressure

Minimum pressure

Liquids

Temperature range.

Sealing: The calculator/indicator has provision for sealing access to the calibration.

Mark of Verification:

1584.3

Original Date of Issue: 18 September 2007

An approved, adhesive destructible label placed in a prominent position may take a mark of verification.
-25 degree celcius to 55 degree celcius

Temperature: