



**Ministry of Business,
Innovation & Employment**

Wellington, New Zealand

CERTIFICATE OF APPROVAL

Weights and Measures Regulations 1999 Part 1 Regulations 5 and 6

Current Date of Issue: 07 May 2015
Original Date of Issue: 20 June 2012

Certificate 2076

Overseas Certificate No: NMI 5/6A/223

This certifies that the Compac MA30S / MMA30S / LA30S / LLA30S, Liquid Measuring Instrument described overleaf has been approved as suitable for trade use subject to any conditions stated in the schedule:

Figure 1 - Compac Model MA30S AdBlue Dispenser



S R Bobbala

J P Crane

Under delegated authority from the Chief Executive of The Ministry of Business, Innovation & Employment

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:	MA30S / MMA30S / LA30S / LLA30S
Submitter:	Compac Industries Ltd, Auckland, New Zealand
Display capacity:	up to 9999.99 L
Class:	0.5
Minimum Delivery:	2 L
Maximum flowrate:	30 L/min or 40 L/min (see Description)
Minimum flowrate:	3 L/min or 4 L/min
Conditions of Approval:	<ol style="list-style-type: none">1. The flowmeter must be adjusted to be correct for AdBlue fluid AUS32 (aqueous urea solution 32.5%) for which it is to be verified.2. MAPSS reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.3. The verification and subsequent certifications of the instrument must be carried out by Accredited Persons who are accredited under the Weights and Measures Act 1987 Section 30A or an Inspector of Weights and Measures.4. The pattern marked with this approval number must be constructed as per the manufactures specifications.5. This Certificate only covers compliance with respects to the relevant sections of the Weights and Measures Act and Regulations and should not be construed as guarantee of compliance with any safety requirements.

Description:

A Compac Model MA30S / MMA30S / LA30S / LLA30S is a liquid measuring instrument approved to dispense AdBlue (urea solution) in attendant operated mode or unattended self service operation mode. Note: the product is suitable for certain motor vehicles having heavy duty diesel engines fitted with a Selective Catalytic Reduction (SCR) unit.

- Models MA30S and LA30S are single hose dispensers dispensing AdBlue fluid AUS32 at a maximum flow rate of up to 30 L/min.
- Models MMA30S and LLA30S are dual hose dispensers dispensing AdBlue fluid AUS32 at a maximum flow rate of up to 40 L/min.
- Model MA30S / MMA30S are housed in a different chassis compared to the Model LA30S / LLA30S.

The field of operation of the model MA30S (Figure 1 & 2) measuring system is determined by the following characteristics:

- Minimum measured quantity, V_{min} 2 L
- Maximum flow rate, Q_{max} 30 L/min
- Minimum flow rate, Q_{min} 3 L/min
- Maximum pressure of the liquid, P_{max} 320 kPa
- Minimum pressure of the liquid, P_{min} 50 kPa
- Dynamic viscosity (at 25°C), 1.4 mPa.s (#)
- Maximum temperature of the liquid, T_{max} 30°C
- Minimum temperature of the liquid, T_{min} 0°C
- Ambient temperature range -25°C to 55°C
- Accuracy class 0.5

(#)The flowmeter is adjusted to be correct for AdBlue fluid AUS32 (aqueous urea solution 32.5%) for which it is to be verified.

COMPONENTS OF THE METERING SYSTEM:

(i) The measuring system incorporates an external or vane type pump installed in flooded suction and with the supply tank installed above ground. A low level device is fitted in the supply tank to prevent any measurements below a specific level.

- (ii) A measurement transducer comprising a Compac model KG-40 mass flowmeter, figure 4 (works on coriolis principle) provides electoral pulse output proportional to liquid throughput.
- (iii) Fuel is supplied through a Elaflex Adblue 16 mm hose to a Elaflex ZVA 16 mm nozzle. The hose is of 6 metres maximum length. The manufacturer must be consulted regarding acceptability of any alternative nozzles.
- (iv) A Parker model 7221 direct lift stainless steel solenoid valve controls the flow of the nozzle.

Note: To allow mobile delivery, the models may also use a remote nozzle holder and a remote display. The dispenser may be contained in a separate housing with the display and the nozzle located outside the housing (the display on the dispenser itself may be retained or removed). This kind of setup may be used with a high mast or a hose reel. See figure 5.

INDICATOR/CALCULATOR:

A Compac model C4000 calculator/indicator (figure 6) is used as a display unit.

The unit has 3 displays for indicating:

- Price: up to 9999.99 \$
- Volume: up to 9999.99 L
- Unit price: up to 999.9 ¢/L

The models may have a pre-set facility (keypad and display) fitted.

The software version number for the calculator/indicator is HIA29253 which can be viewed by pressing the parameter switch once. The version number is also written on the chip.

The indicator/calculator top may be fitted with a Compac model DCA (Driveway Card Acceptor) card operated control system known as ComFutra option (figure 7). This facility is available in unattended self-service operation for registered users only. The 'Litres Total' electronic display is an individual user's total and is displays volume up to 999999.99 L. The software version 29255 is displayed upon pushing the parameter switch.

CHECKING FACILITIES:

An automatic segment test is performed at the start of each delivery when the nozzle is removed from its normal hang-up position.

The calculator monitors the presence and correct transmission of signal from the measurement transducer, and in the event of detecting a fault the instrument indicates an error code and has provision for controlling the electrically-operated solenoid valve to stop the delivery.

METROLOGICAL MARKINGS:

Each measuring system shall bear the following information, placed together on a data plate:

Pattern approval No:

Manufacturer's identification mark or trade mark

Manufacturer's designation (model number)

Serial number

Year of manufacture

Maximum flow rate (Qmax) L/min

Minimum flow rate (Qmin) L/min

Minimum measured quantity (Vmin) L (#1)

Maximum operating pressure (Pmax) kPa

Minimum operating pressure (Pmin) kPa

Nature of liquids to be measured (#2)

Maximum temperature of the liquid, Tmax

Minimum temperature of the liquid, Tmin

Environmental class class C

(#1) In addition, the minimum measured quantity (Vmin) shall be clearly visible on any indicating device visible to the user during measurement, in the form 'Minimum delivery 2 L'.

(#2) AdBlue fluid AUS32 (aqueous urea solution 32.5%).

Components:

- Compac model KG-40 coriolis principle mass flowmeter.
- Parker model 7221 solenoid valve.
- Compac model C4000 calculator/indicator.

Sealing:

Access to the electronic meter calibration is sealed using a wire terminating into a lead plug (figure 8). Removal of the seal deems the instrument not verified

Mark of Verification:

The lead plug used for sealing must carry a Mark of Verification. Removal of seal deems the instrument not verified.

Temperature:

Ambient temperature range: - 25° C to 55° C

Figure 2 - Model MA30S Dispenser without covers

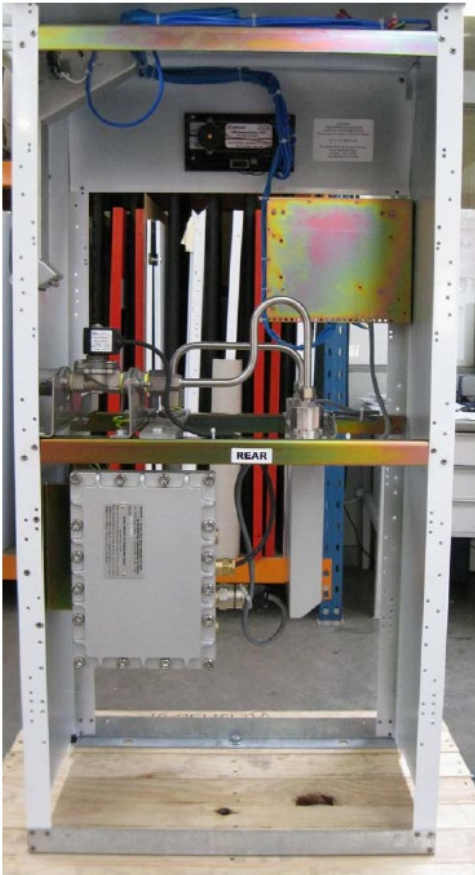


Figure 3 - Model MA30S Typical Installation

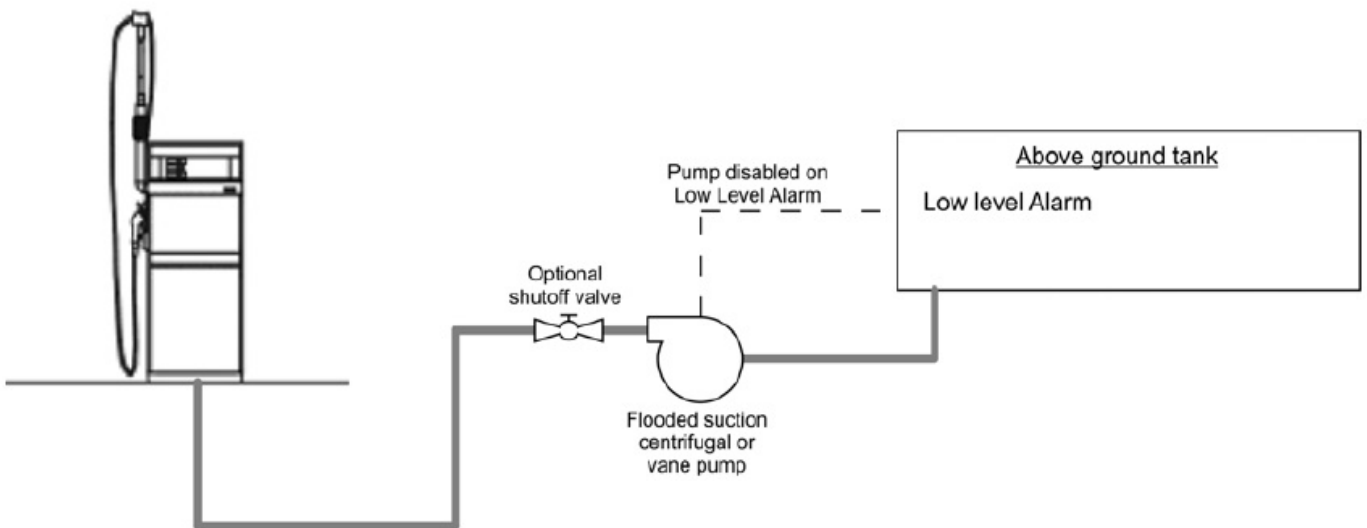


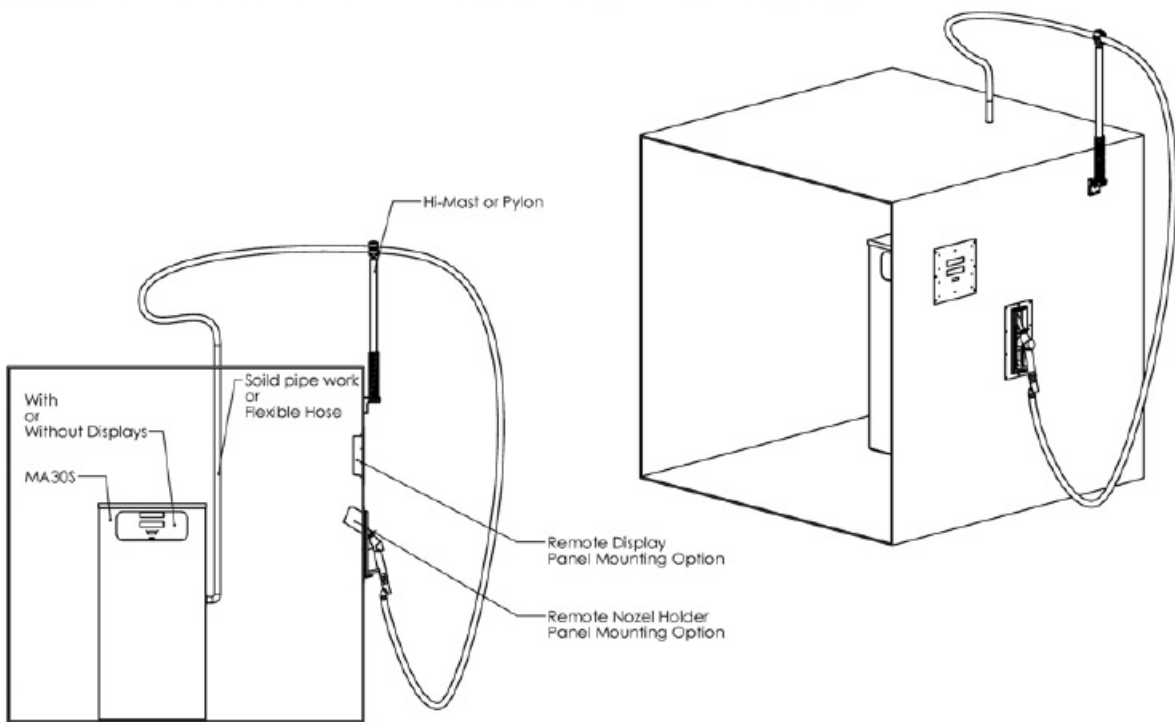
Figure 4 - Compac Model KG-40 Mass Flowmeter



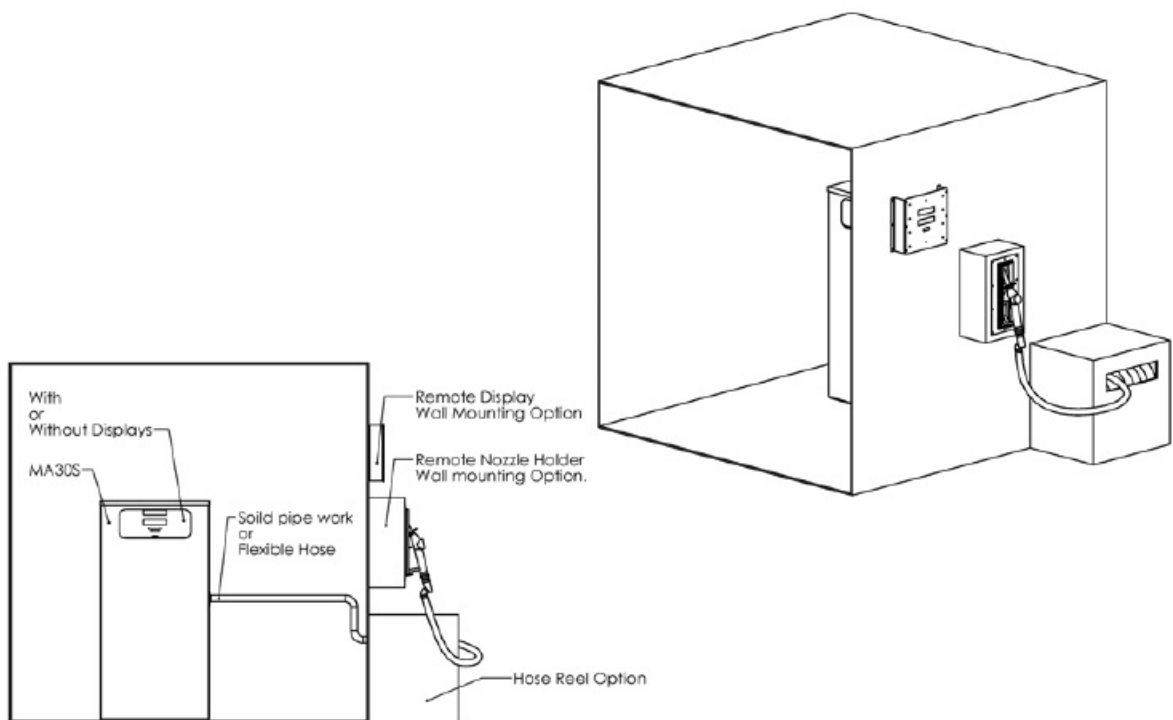
Figure 6 - Compac Model C4000 Calculator Indicator



Figure 5 - Mobile Delivery System Setup



(a) Remote Nozzle Holder and Display with High Mast Option

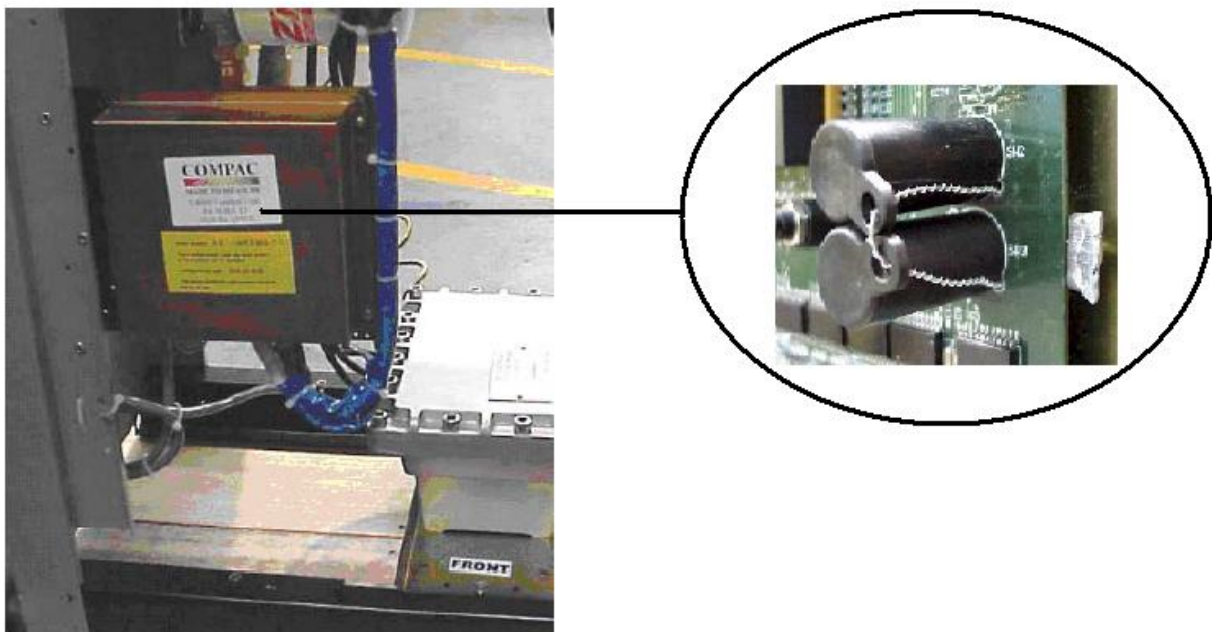


(b) Remote Nozzle Holder and Display with Hose Reel Option

Figure 7 - ComFutra option



Figure 8 - Sealing Photo



Location of K-factor switch and sealing provision

SCHEDULE

Variant: 2076.1

Current Date of Issue: 07 May 2015

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Submitter:	Compac Industries Ltd, Auckland, New Zealand
Display capacity:	up to 9999.99 L
Class:	0.5
Minimum Delivery:	2 L
Conditions of Approval:	As detailed in Certificate 2076.

Description:

VARIANT 1

The variant approves the following:

Certain Compac models used for dispensing Adblue are now approved to have one or two Compac model V 50 mass flowmeters (Coriolis principle) as an alternative to the KG40 meter (figure 9).

The software version for the dispensers using the V50 flowmeters is versions 29600 and 29601.

The V50 flowmeters are provided with a Modbus RS485 output to the calculator/indicator. A CRC checksum safeguards the data.

The V50 flowmeters can detect air and stops the transaction with a flashing 'Air' on the display. This capability allows the dispensing system to use with an above tank suction pumps without the need for a separate air eliminator.

Components:	Compac model V50 mass flowmeter
Sealing:	As detailed in certificate 2076.
Mark of Verification:	A lead seal used for sealing must take a mark of verification. Removal of this seal deems the instrument unstamped.

Figure 9 Compac Model V50 coriosis principle mass flowmeter

