NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S191

This is to certify that an approval for use for trade has been granted in respect of the pattern and variants of the

Email Omega 2000 Series Model BLC 80 Flowmetering System Controller

submitted by Email Electronics
(formerly L & L Australia Pty Ltd)
Cnr Canterbury & Liverpool Roads
Kilsyth VIC 3137.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/4/90.
This approval expires in respect of new instruments on 1/4/91.

Instruments purporting to comply with this approval shall be marked NSC No S191.

This approval may be withdrawn if instruments are constructed other than as described in the drawings and specifications lodged with the Commission.

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

Signed

J. Birch

Executive Director

Descriptive Advice

Pattern: approved 28/3/85

- Email Omega 2000 series model BLC 80 controller for use with up to four Commission-approved bulk flowmeter systems. The instrument is also known as an L & L Omega 2000 series.

Technical Schedule No S191 describes the pattern.

Variants: approved 8/11/88

1. With a multi-point linearisation facility.
2. Model BLC 88T for use with up to eight flowmeter systems.
3. Model BLC 88 for use with up to four of any eight flowmeter systems.

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Variant: approved 6/4/89

4. With increased maximum flowrate.

Technical Schedule No S191 Variation No 1 describes variants 1 to 4.

Filing Advice

Supplementary Certificate of Approval No S191 dated 1/11/85 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No S191 dated
Technical Schedule No S191 dated 1/11/85
Technical Schedule No S191 Variation No 1 dated
Test Procedure No S191 dated 1/11/85
Figures 1 and 2 dated 1/11/85
Figures 3 and 4 dated 8/8/89

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S191

Pattern: L & L Omega 2000 Series Model BLC 80 Flowmetering System Controller

Submittor: L & L Australia Pty Ltd
Cnr Canterbury & Liverpool Roads
Kilsyth Vic 3137

1. Description of Pattern

The L & L Omega 2000 series model BLC-80 bulk flowmetering system controller (Figure 1) is interfaced with:

(a) up to four Commission-approved bulk flowmeters with compatible Commission-approved pulse generators,

(b) a 100 ohm platinum resistance temperature probe, and

(c) a digital flow control valve.

The instrument indicates temperature compensated volume to 15°C of petroleum products of density 0.72 kg/L to 0.84 kg/L at temperatures between 0°C and 45°C. The compensated indication of the delivered volume may be viewed using an authorised magnetic card.

The maximum flow rate (L/min) of the flowmeter shall be no greater than the equivalent of 21000 pulses per minute produced by the pulse generator divided by the number of pulses per unit volume.

1.1 Controls and Indications (Figure 2)

(a) Identification, preset and compartment data-entry keypad with a display.

(b) Loading-arm select keypad with a display.

(c) Alphanumeric display unit for driver and manager prompts, system status display and error messages.

(d) Display or markings for each loading-arm showing product, preset volume in litres, compartment number that the selected arm is connected to, and ambient delivered volume in litres.

(e) Manual (wipe-through type) magnetic card reader.

1.2 Operating Procedure

(a) Connect SCULLY overfill protection system.

(b) Position the loading-arm(s).

(c) Wipe TRAILER card through card reader.

(d) Wipe DRIVER card through card reader.

(e) Enter load specification number on data-entry keypad, if required.

(f) Select the required loading-arm.

(g) Enter a compartment number.

(h) Enter RETURNS volume and type for selected compartments.

(i) Enter a preset volume if required.

(j) Start selected loading-arm.

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The controller will now proceed to fill the selected compartment. Other compartments may be filled at any time by repeating steps (f) to (j). When all interlocks are disconnected, the transaction is considered complete.

In addition to the normal operating procedure, special cards may be used at the controller to allow access to management data or for testing purposes.

1.3 Verification Provision

Provision is made for a verification mark to be applied.

1.4 Markings

The following information shall be clearly and permanently marked on one or more permanently attached nameplates:

Manufacturer's name or mark	
Model/type	Omega 2000/BLC 80
Year of manufacture	
Serial number	
NSC approval number	NSC No S191
Liquid temperature compensation range	0°C to 45°C
Liquid density range	0.72 kg/L to 0.84 kg/L

TEST PROCEDURE No S191

The following tests should be conducted in conjunction with any tests specified in the approval documentation for the flowmeter(s) to which this pattern is connected.

For uncompensated readings the maximum permissible errors are:

(a) ± 0.15% at any constant flow rate (calculated from at least 5 test runs).

(b) ± 0.30% over the flow rate range of the flowmeter.

For compensated readings the maximum permissible errors specified in (a) and (b) above are increased by 0.2% + 0.02% per °C difference from 15°C.

1. Special magnetic cards are available from the manager which allow authorisation of deliveries and details of the transaction to be obtained.

   (i) Using the operating procedure described in the Technical Schedule, initiate a delivery by presetting the volume to be delivered.

   (ii) For the delivery, measure the average temperature of the product.

   (iii) Calculate the compensated volume using the volume correction factor obtained from the appropriate density tables.

   (iv) Compare the displayed volumes (both compensated and uncompensated) against the actual volume delivered.

2. During another delivery operate the STOP and START function and finally terminate the delivery using the STOP function of the loading-arm being used and compare as above.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S191

VARIATION No 1

Pattern: Email Omega 2000 Series Model BLC 80 Flowmetering System Controller.

Submittor: Email Electronics
Cnr Canterbury & Liverpool Roads
Kilsyth VIC 3137.

1. Description of Variants

1.1 Variant 1

Incorporating a multi-point meter curve linearisation facility in the form of seven meter factors, each of which is assigned to one of the following flow rates: 150, 300, 750, 1500, 2000 and 3000 L/min. At 3000 L/min the value of the meter factor is set to unity.

1.2 Variant 2

With dual electronics in a single enclosure for controlling up to eight Commission-approved bulk flowmeters with compatible Commission-approved pulse generators. The instrument is known as a model BLC 88T and includes eight volume displays, two alphanumeric displays, four or six keypads and two card readers (Figure 3).

1.3 Variant 3

With modified electronics for controlling up to four of any eight Commission-approved bulk flowmeters with Commission-approved pulse generators. The instrument is known as a model BLC 88 and includes eight volume displays, one alphanumeric display, three keypads and one card reader (Figure 4).

One of the eight systems may be allocated for an 'own use fuelling' function where the BLC 88 does not control but simply totals the usage of fuel for that vehicle. The BLC 88 can then control up to four of the remaining seven systems.

1.4 Variant 4

With the maximum flow rate (L/min) of the flowmeter increased to be no greater than the equivalent of 48 000 pulses per minute produced by the pulse generator divided by the number of pulses per unit volume.

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S191

CHANGE No 1

The following changes are made to the approval documentation for the

Email Omega 2000 Model BLC 80 Flowmeter System Controller

submitted by Email Electronics
Cnr Canterbury & Liverpool Roads
Kilsyth VIC 3137.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

In Technical Schedule No S191 dated 1/11/85, and in Supplementary Certificate of Approval No S191 and its Technical Schedule Variation No 1 both dated 8/8/89, all references to "Omega 2000 series" should be changed to read "Omega 2000 or 3000 series".

National Standards Commission

NOTIFICATION OF CHANGE

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S191

CHANGE No 2

The following change is made to the approval documentation for the

Email Omega 2000/3000 Series Model BLC 80 Flowmetering System Controller

submitted by Email Electronics
Cnr Canterbury & Liverpool Roads
Kilsyth VIC 3137.

In Supplementary Certificate of Approval No S191 dated 8/8/89, the Condition of Approval referring to the expiry of the approval should be amended to now read:

"This approval expires in respect of new instruments on 1/6/94."

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

National Standards Commission

Notification of Change

Supplementary Certificate of Approval No S191

Change No 3

The following change is made to the approval documentation for the

Email Omega 2000/3000 Series Model BLC80 Flowmetering System Controller

submitted by Email Electronics
Cnr Canterbury & Liverpool Roads
Kilsyth VIC 3137.

In Supplementary Certificate of Approval No S191 and its Technical Schedule Variation No 1, both dated 8 August 1989, and in Technical Schedule No S191 dated 1 November 1985, and in Notification of Change No 1 dated 18 March 1991 and in Notification of Change No 2 dated 16 February 1994, all references to the submittor should be amended to read;

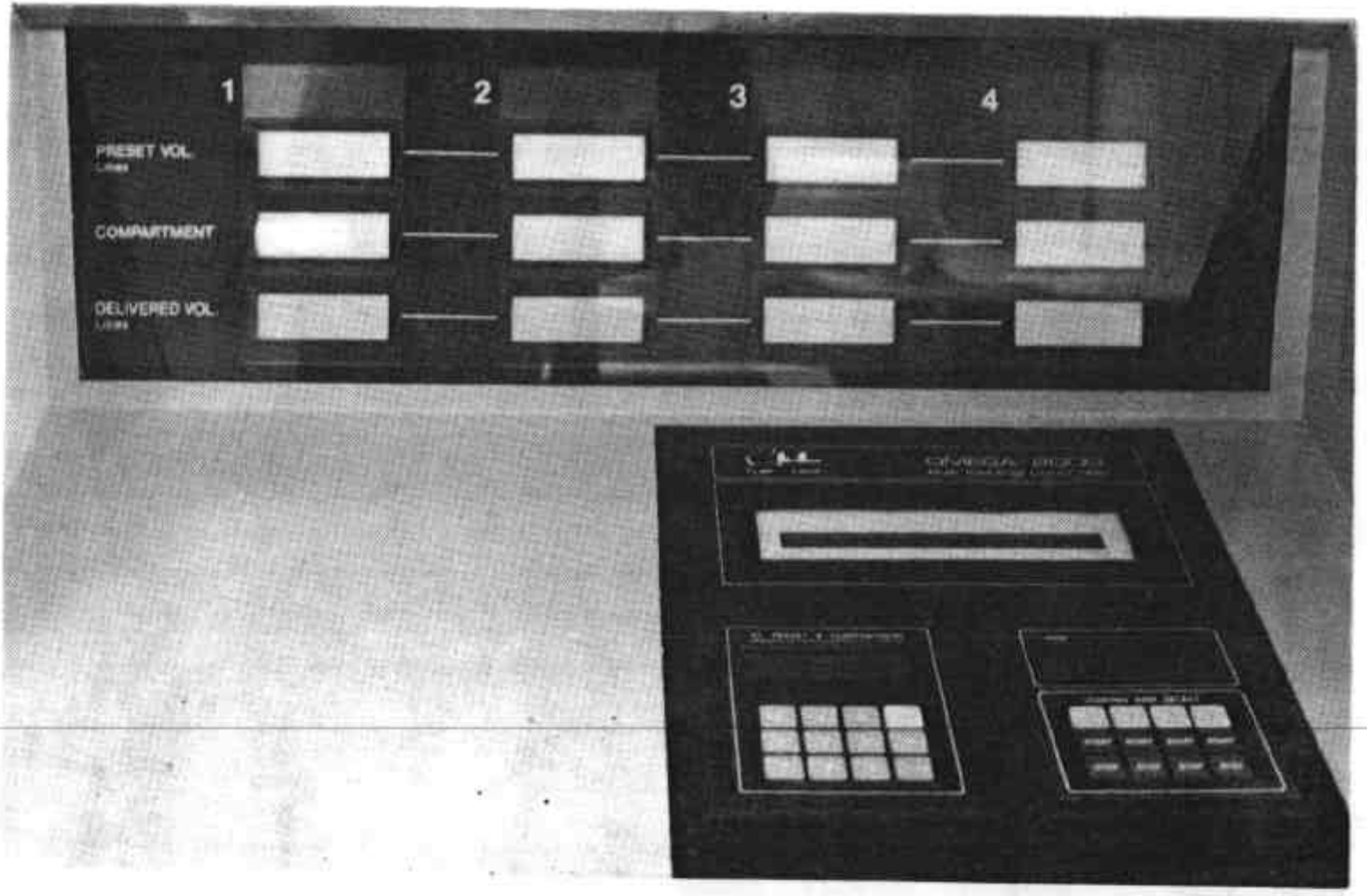
Diamond Key International Pty Limited
110 Henderson Road
Rowville VIC 3178.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Measuring Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

FIGURE S191 - 1

Omega 2000 BLC 80 Terminal

FIGURE S191 - 2



Showing Indicators and Keypads

Figure S191 - 3

Email Model BLC 887

Figure S191 . 4

Email Model BLC 88