CANCELLED 0/3 31-12-90

# NATIONAL STANDARDS COMMISSION

WEIGHTS & MEASURES (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

SUPPLEMENTARY CERTIFICATE OF APPROVAL No S145

This is to certify that an approval has been granted by the Commission that the pattern of the

Keytronic Model 700/500 Fuel Management System

submitted by Keytronic Industries Pty Ltd
Stoney Rise
Devonport, Tasmania, 7310

is suitable for use for trade when attached to a driveway flowmeter as described in the accompanying Technical Schedule.

The approval is subject to review on or after 1/3/88.

Instruments purporting to comply with this approval shall be marked NSC No S145 in addition to the approval number of the pattern to which they are connected.

Relevant drawings and specifications are lodged with the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 11/2/83

. Keytronic model 700/500 fuel management system.

Technical Schedule No S145 dated 28/3/83 describes the pattern.

Filing Advice

The documentation for this approval comprises:

Certificate of Approval No S145 dated 28/3/83
Technical Schedule No S145 dated 28/3/83
Test Procedure No S145 dated 28/3/83
Figures 1 to 4 dated 28/3/83.

28/3/83

# NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No S145

Pattern: Keytronic Model 700/500 Fuel Management System

Submittor: Keytronic Industries Pty Ltd
Stoney Rise
Devonport, Tasmania, 7310.

## 1. Description of Pattern

### 1.1

The pattern (Figure 1) is a fuel management system designed to control driveway flowmeters fitted with either Wayne Eclipse MVR computers (NSC No S110) or Production Engineering Retron 80 computers (NSC No S101) in attended, self-serve (post pay) or purchaser key-authorised unattended modes.

Only those driveway flowmeters approved for use with the Eclipse and Retron 80 computers, as detailed in their approval documents, may be used with this system.

Purchaser access in key-authorised mode is by a magnetically-encoded MIL key in conjunction with a personal identification code number.

The system consists of:

(a) Up to 16 driveway flowmeters fitted with Eclipse MVR computers or up to 15 driveway flowmeters fitted with Retron 80 computers. In key-authorised mode up to four of these flowmeters may be used.

(b) A Purchaser Access Console which includes a hard copy record of all system transactions and functions (Figure 2).

(c) A Vendor Control Console which includes a keyboard and VDU screen (Figure 3).

(d) A Central Processing Unit (Figure 1).

(e) A non-interruptable power supply and battery.

(f) A transaction data file which is maintained within the system for transfer to a computer-based accounting system if required.

### 1.2 Controls and Indicators on the Purchaser Access Console

#### 1.2.1 Flowmeter Selection Buttons (Figure 2)

These are used to select the desired driveway flowmeter, indicated by the select button illuminating.

#### 1.2.2 Entry Indicator (Figure 2)

This illuminates for up to 8 seconds after flowmeter selection. During this time the personal identification code number may be entered and the MIL key can be inserted, to authorise the flowmeter.

#### 1.2.3 Keyboard

The touch control keyboard (Figure 2) is used to enter the 4-digit or 5-digit personal identification code number which corresponds to a particular MIL key.

### 1.2.4 MIL Key Reader

A magnetically-encoded key (Figure 4) is introduced into the reader slot, and then removed. This key must correspond to the previously entered personal identification code number. Flowmeters cannot be authorised until the key is removed.

### 1.2.5 Purchaser Ticket (Key-authorised Mode)

Purchasers requiring a ticket can re-insert and remove their MIL key within 45 seconds of completion of fuel delivery. The ticket availability indicator illuminates during a ticket issuing operation when the ticket access door (Figure 2) is unlocked and a ticket is available. The light will go out and the ticket access door will relock after 5 seconds.

Any ticket left in the printer will be automatically dropped to a security bin prior to the next ticket issue.

### 1.2.6 Transaction Printer

Details of each transaction on each flowmeter regardless of operating mode are recorded on a metalised paper tape within the Purchaser Access Console.

### 1.2.7 Time Delays

A period of 8 seconds is available after the flowmeter select button is pressed in which the purchaser can authorise the flowmeter (refer para. 1.2.2). If authorisation does not occur within this period the system will return to standby.

A period of 45 seconds is available after flowmeter authorisation within which dispensing can commence. If fuel is not dispensed within this time, or dispensing is stopped for longer than 45 seconds, the system will terminate the transaction. Details will be recorded on the transaction printer.

All flowmeters will cease dispensing for 2 minutes if the EMERGENCY STOP button is pressed and tickets are available on key-authorised operations (if requested) within 45 seconds.

Normal attended or self-serve operation is suspended for a period of 2 minutes if an unsuccessful key-authorisation is attempted on a flowmeter that has been allocated to dual operation (i.e. self-serve and key-authorised).

### 1.2.8 Termination of Dispensing

Dispensing will be terminated by the system if:

(a) A preset maximum volume allocation per transaction of 500 litres is reached, or

(b) A purchasers' allocated fuel limit is reached (this is an optional feature and may not be present in all systems), or

(c) The EMERGENCY STOP button is pressed, or

(d) A mains power failure occurs.

In all the above situations tickets are available on all key-authorised operations.

### 1.3 Vendor Controls And Indications On The Control Console

All vendor functions are either performed or initiated via the Vendor Control Console (Figure 3). The right hand section of the keyboard is used to AUTHORISE and PAY OFF flowmeters operating in the self-serve mode.

#### 1.3.1 Visual Display Unit

This unit will display at various times the following information:

(a) Driveway flowmeter information including a continuously updated display of volume, price, unit price and flowmeter status.

(b) Visual and audible indication of authorisation request when the flowmeter is in self-serve mode.

(c) Visual and audible indication of termination (pay off) of a self-serve transaction.

(d) Time of day.

(e) Various messages to assist the vendor in the control of the system.

#### 1.3.2 Vendor Control Procedures

A codeword, which may be changed by the vendor at any time, must be entered on request to gain access to control functions.

### 1.4 Markings

The driveway flowmeter shall, in addition to the NSC approval number of the flowmeter, be marked with the approval number for the computer (either S101 or S110) and the approval number for the Keytronic 700/500 fuel management system (S145).

### 1.5 Sealing

The driveway flowmeters and the computer are sealed as detailed in the Technical Schedule corresponding to their approval number. The Keytronic 700/500 system requires no sealing.

Record the mode of operation of each driveway flowmeter so that the system may be returned to this mode after testing:

## 1. Flowmeter Performance

For each driveway flowmeter:

(a) (i) Select attendant-operated mode by typing MODE and then pressing the RETURN key.

(ii) The system will ask for the flowmeter number; enter the number via the right hand side of the keyboard and press the RETURN key.

(iii) The system will ask for the intended mode; press A (Attended) on the left hand side of the keyboard.

(iv) The system will ask whether key-operated (Keytronic) mode is required; type N (No).

(v) The system will ask if you are finished; type Y (Yes) if you have, or N if you wish to authorise further flowmeters.

(b) Carry out the following tests:

(i) Accuracy

The maximum permissible error at any flow rate between maximum and 15 L/min is ±0.3%.

(ii) Gas Separation

The progressive opening of the gas-separation test valve should allow the flow rate to be reduced to, say, 90%, 80%, 70%, etc., of full flow rate, until either the flow rate becomes less than the minimum of 15 L/min or the flow stops due to the pump losing prime. For all tests prior to reaching the opening of the gas-separation test valve at which the flow rate is less than 15 L/min, or the delivery stops due to the pump losing prime, the effect of the admitted air on the accuracy of measurement should not exceed 0.5% of the quantity delivered.

## 2. Keytronic 700/500 Control System

For one of the four driveway flowmeters identified at the Purchaser Access Console, select self-serve and key-operated mode at the Vendor Control Console in the following manner.

(a) (i) Type in MODE followed by pressing the RETURN key.

(ii) The system will ask for the flowmeter number; enter the number via the right hand side of the keyboard and press the RETURN key.

(iii) The system will ask for the intended mode; press S (Self-serve) on the left hand side of the keyboard.

(iv) The system will ask whether the key-operated (Keytronic) mode is required; type Y.

(v) The system will ask if you are finished; type Y.

(b) Self-serve Operation

(i) Lift the nozzle of the driveway flowmeter selected in (a); a tone will be heard and the screen of the Vendor Control Console will display a request for authorisation.

(ii) Authorise the driveway flowmeter by typing A (Authorise) on the right hand side of keyboard.

(iii) The system will ask for the driveway flowmeter number; type in the number on the right hand side of the keyboard followed by the RETURN key.

(iv) Deliver a quantity of fuel then hang-up the nozzle and check that the quantity indicated on the driveway flowmeter is repeated on the Vendor Control Console.

(v) Pay off the transaction by typing P (Paid) on the right hand side of keyboard.

(vi) The system will ask for the driveway flowmeter number to be paid off; type the number on the right hand side of keyboard and press the RETURN key.

(c) Key-operated Mode

(i) At the Purchaser Access Console press the button corresponding to the driveway flowmeter assigned in 2(a).

(ii) Enter the personal identification number corresponding to the MIL key (obtained from the station operator).

(iii) Insert and withdraw the MIL key; access has been successful when the driveway flowmeter select button illuminates. If access is not granted repeat c(i) to c(iii).

(iv) Deliver a quantity of fuel then hang-up the nozzle.

(v) Return to the Purchaser Access Console and insert and withdraw the key; a ticket will be produced.

(vi) Check that the quantity on the ticket corresponds to that on the driveway flowmeter.

Return the system to the mode of operation recorded before the commencement of tests.

# National Standards Commission

## NOTIFICATION OF CHANGE

## CERTIFICATE OF APPROVAL No S145

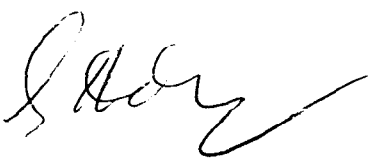
## CHANGE No 1

The following changes are made to the approval documentation for the

Keytronic Model 700/500 Fuel Management System

submitted by Fuel Management Systems Pty Ltd
(formerly Keytronics Industries Pty Ltd)
4 Stoney Rise Road
Devonport TAS 7310.

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.



Several changes have been made including having the Vendor Control Console now optional and using an alternative printer, and these changes are detailed overpage. Some minor operational changes have resulted.

..../2

(A) In Technical Schedule No S145 dated 28/3/83, make the following amendments:

1. Para. 1.1 (c) - Add "(optional)" after "Vendor Control Console".

2. Para. 1.2.1 Flowmeter Selection Buttons - Add "Alternatively, flowmeters may be selected using the main keyboard".

3. Para. 1.2.2 Entry Indicator - Add "A liquid crystal display may be fitted to indicate key and PIN code entry".

4. Para. 1.2.3 Keyboard - Remove "Touch control" and "MIL".

5. Para. 1.2.4 MIL Key Reader - Replace the present text with "The key must correspond with the entered PIN code".

6. Para. 1.2.5 Purchaser Ticket - Replace "within 45 seconds" with "at any time".

   An alternative ticket printer may be used in which case the "ticket access door" is replaced by a "ticket slot".

7. Para. 1.2.6 Transaction Printer - Delete "metalised".

8. Para. 1.3 Control Console - Add "The Vendor Control Console need not be present on systems permanently operating only in key-authorised mode. The system may be connected to a computer for the downloading of management data".

9. Para. 1.3.1 Visual Display Unit - Add "Present only on systems with a Vendor Control Console connected".

(B) In Test Procedure No S145 dated 28/3/83, make the following amendments:

1. Para. 2 Keytronic System - Add "Note: For systems permanently operating only in key-authorised mode and without a vendor control console, proceed to step (c) Key-operated Mode".

2. Para. 2 (c) (i) - Amend to read "Select any available flowmeter assigned to the system".

3. Para. 2 (c) (iii) - Amend to read, in part "Access has been successful when the LCD shows that access has been granted or the driveway flowmeter select button illuminates".

# National Standards Commission

## NOTIFICATION OF CHANGE

## SUPPLEMENTARY CERTIFICATE OF APPROVAL No S145

## CHANGE No 2

The following change is made to the approval documentation for the

Keytronic Model 700/500 Fuel Management System

submitted by Fuel Management Systems Pty Ltd
4 Stoney Rise Road
Devonport TAS 7310.

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.

In Technical Schedule No S145 dated 28/3/83, all references to 'MIL key' are amended by adding '**(or ISO card)**'.

FIGURE S145 - 1

Keytronics Model 700/500 System

FIGURE S145 - 2

Purchaser Access Console

28/3/83

FIGURE S145 - 3

Vendor Control Console

FIGURE S145 - 4

MIL Key

28/3/83