National Standards Commission

Supplementary Certificate of Approval

No S233A

Issued under Regulation 9
of the
National Measurement (Patterns of Measuring Instruments) Regulations

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

Gilbarco Model TMS-15 Driveway Flowmeter Control System

submitted by Gilbarco Aust. Ltd
12-38 Talavera Road
North Ryde NSW 2113.

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 Certificate is issued upon completion of a review of NSC approval No S233.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1 August 1999.
This approval expires in respect of new instruments on 1 August 2000.

Instruments purporting to comply with this approval shall be marked NSC No S233A and only by persons authorised by the submittor.

..../2

Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S233A in addition to the approval number of the instrument.

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 Commission 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 the Commission's Document 106.

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

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Special:

Instruments are only approved for installations incorporating the Commission-approved driveway flowmeters described in this approval, and may only be used for central unit price setting of driveway flowmeters which have been Commission-approved with that facility.

DESCRIPTIVE ADVICE

Pattern: approved 18 July 1994

- A Gilbarco model TMS-15 control system for use in a Commission-approved flowmetering system.

Variant: approved 18 July 1994

1. With up to four model TCR-15 operator's consoles connected in a network.

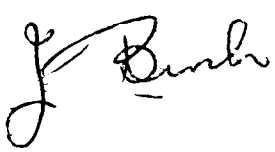
Technical Schedule No S233A describes the pattern and variant 1.

FILING ADVICE

The documentation for this approval comprises:

Supplementary Certificate of Approval No S233A dated 2 September 1994
Technical Schedule No S233A dated 2 September 1994 (incl. Test Procedure)
Figures 1 to 3 dated 2 September 1994

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

TECHNICAL SCHEDULE No S233A

Pattern: Gilbarco Model TMS-15 Driveway Flowmeter Control System.

Submittor: Gilbarco Aust. Ltd
12-38 Talavera Road
North Ryde NSW 2113.

1. Description of Pattern

The pattern is a Gilbarco model TMS-15 control system for use in a Commission-approved flowmetering system using Gilbarco driveway flowmeters.

1.1 The System

The system (Figure 1) may be used with up to 32 Commission-approved Gilbarco driveway flowmeters and comprises:

- A Gilbarco C2 series controller (Figure 2);
- A Gilbarco DDM data distribution module;
- A Gilbarco communication interconnection box;
- A Gilbarco model TCR-15 operator's console (Figure 3); and
- A Gilbarco remote purchaser's indicator.

The system facilities include:

- a point of sale (POS) facility including a cash drawer or register;
- an electronic funds transfer (EFT) facility;
- a facility for centrally setting the unit price (refer to the Conditions of Approval);
- a grade selection facility;
- a preset function which may be used for prepay transactions;
- a pump stop and all pumps emergency stop function; and
- a dual-memory facility.

1.2 Controller

The C2 series controller (Figure 2) controls the various functions of the system including the driveway flowmeters, printers, operator's console and purchaser's indicator. It may be located remotely from the console.

1.3 Data Distribution Module

A model DDM data distribution module allows the communication between the controller and each group of up to 16 flowmeters.

..../2

1.4 Communication Interconnection Box

The communication interconnection box allows the operator to electrically disconnect any of the driveway flowmeters from the controller.

1.5 Console

The TCR-15 operator's console (Figure 3) communicates with the controller and allows authorisation of the driveway flowmeters. The console has an integral visual display unit (VDU) and keyboard. The keyboard has either 16 or 32 flowmeter selection buttons. The console is fitted with an internal printer for both the vendor's journal record and purchaser's receipt. A cash drawer or register may also be connected.

The TCR-15 console may also be known as a TMS-15 or as a G-Site console.

1.5.1 Point of Sale Facility

The console incorporates point of sale (POS) terminal facilities and these shall not interact with the controller or the console in any way which would cause an incorrect indication of the measured volume or price.

1.5.2 Card Reader Facility

The console incorporates a card reader facility which allows account and EFT transactions. The authorised cards may either be controlled distribution cards issued to selected users or financial institution cards available to the public.

1.5.3 Dual-memory Facility

This facility allows two purchasers to operate simultaneously, i.e. a second transaction may be carried out while a previous transaction which has not yet been completed is retained in memory.

Only one transaction for each driveway flowmeter may be stored in memory at any time.

The first purchaser carries out a delivery of fuel and the transaction data is indicated on both the purchaser's and vendor's indicators. After a period of not less than 5 seconds, and once the first purchaser has hung-up the nozzle but before the first transaction has been completed, a second purchaser can be authorised for the same flowmeter. The details of the first transaction are stored in the memory, printed in the journal and can be shown on both the vendor's and purchaser's displays.

The details of the first delivery will be displayed whenever the flowmeter NUMBER button is pressed. Operation of the CURRENT/STORED button will allow the second transaction to be displayed on the purchaser's display. The status of the transaction is indicated on the vendor's display.

The transactions are completed by using the flowmeter NUMBER button and CURRENT/STORED button to display the sale appropriate to the purchaser on both the vendor's and purchaser's indicators and then completing the transaction.

1.6 Sealing and Verification/Certification Provision

No sealing is required.

Provision is made on the C2 controller and the TCR-15 operator's console for a verification/certification mark to be applied.

1.7 Markings

The C2 controller and the TCR-15 operator's console are each marked with the following data, together in one location:

Manufacturer's name or mark	
Model number	
Serial number	
NSC approval number	NSC No S233A
Operating (air) temperature range	0°C to 40°C

2. Description of Variant 1

With up to four TCR-15 operator's consoles connected in a network with one C2 series controller.

The network enables the following operations to be processed for all 32 driveway flowmeters by any one console at any particular time:

- flowmeter status and authorisation;
- sales transactions and voiding;
- pump stop and emergency stop;
- central unit price setting (refer to the Conditions of Approval); and
- common management functions (e.g. shift details, total sales).

TEST PROCEDURE

Instruments should be tested in accordance with any tests included in the approval documentation for the driveway flowmeter/s to which the pattern is connected, as appropriate, and in accordance with any relevant tests specified in the Inspector's Handbook.

The maximum permissible errors applicable are those applicable to the system to which the pattern is connected, as stated in the approval documentation for the system.

1. **Postpay Mode (including dual-memory test)**

(i) At any driveway flowmeter, remove a nozzle from its hang-up position.

(ii) At the console authorise the flowmeter by pressing the flowmeter NUMBER button and then the AUTHORISE button.

(iii) At the flowmeter deliver sufficient fuel to cause the price and quantity indicators to move significantly off zero.

Stop the flowmeter by returning the nozzle to its hang-up and record the details of the delivery.

Remove the nozzle from its hang-up position again and check that the flowmeter indicator does not reset to zero.

(iv) At the console, check that the price and volume displayed are the same as the price and volume recorded from the flowmeter.

(v) At the same flowmeter, perform another delivery as per (i) to (iii) above.

(vi) At the console check that both transactions are displayed as described in the operational details of the dual-memory facility given in the Technical Schedule.

(vii) Attempt to authorise a third delivery from the same flowmeter by using the flowmeter NUMBER button and then the AUTHORISE button; this should not be possible.

(viii) Observe that the indications for both transactions are displayed on the VDU.

(ix) By using the CURRENT/STORED button complete the 'CURRENT' transaction by pressing the FUEL button and a pay media (CASH, CREDIT or CHEQUE) button and then similarly complete the 'STORED' transaction. Check that as each transaction is completed the data for the transaction is displayed on the purchaser's indicator.

Check that both memories are now clear.

(x) Repeat steps (i) to (ix) for a number of driveway flowmeters.

2. Prepay Mode

The operation in prepay mode is similar to that described above.

(i) At the console, authorise a flowmeter by pressing the flowmeter NUMBER button and the AUTHORISE button.

(ii) While the delivery is in progress, attempt to authorised a prepaid transaction (by selecting the flowmeter, entering a cash value via the keyboard, pressing the FUEL button, and then a payment media button); this should not be possible.

(iii) Complete the delivery by returning the nozzle to its hang-up position.

(iv) Authorise a prepaid transaction for the flowmeter as in (ii) in the second memory using the CURRENT/STORED button. The console will accept the authorisation and issue a receipt indicating acceptance of the price, which flowmeter is to be used, and the time and date. Check that the preset value is displayed on the VDU and on the flowmeter preset display panel.

(v) Start the delivery and observe that the flowmeter stops on the preset value, and that when the nozzle is returned to its hang-up, no amount is due at the console for this transaction. Complete the transaction.

(vi) Repeat the above for another flowmeter.

(vii) Commence another delivery but hang-up the nozzle before the prepaid value is reached. Observe that the details of the incomplete transaction are displayed.

(viii) Complete the transaction and observe that details on the receipt issued and the console indications are the same.

Try to re-authorise the flowmeter; this should not be possible for at least 3 minutes from the time that the nozzle is hung-up.

..../6

(ix) If there is a flowmeter on site to which a preset panel and indicator are not fitted and/or there is no remote purchaser's indicator connected, attempt to authorise a prepay delivery at the console; this should not be possible.

3. Networked System

For a networked system (Variant 1) the following tests are additional to those above:

3.1 Postpay Mode

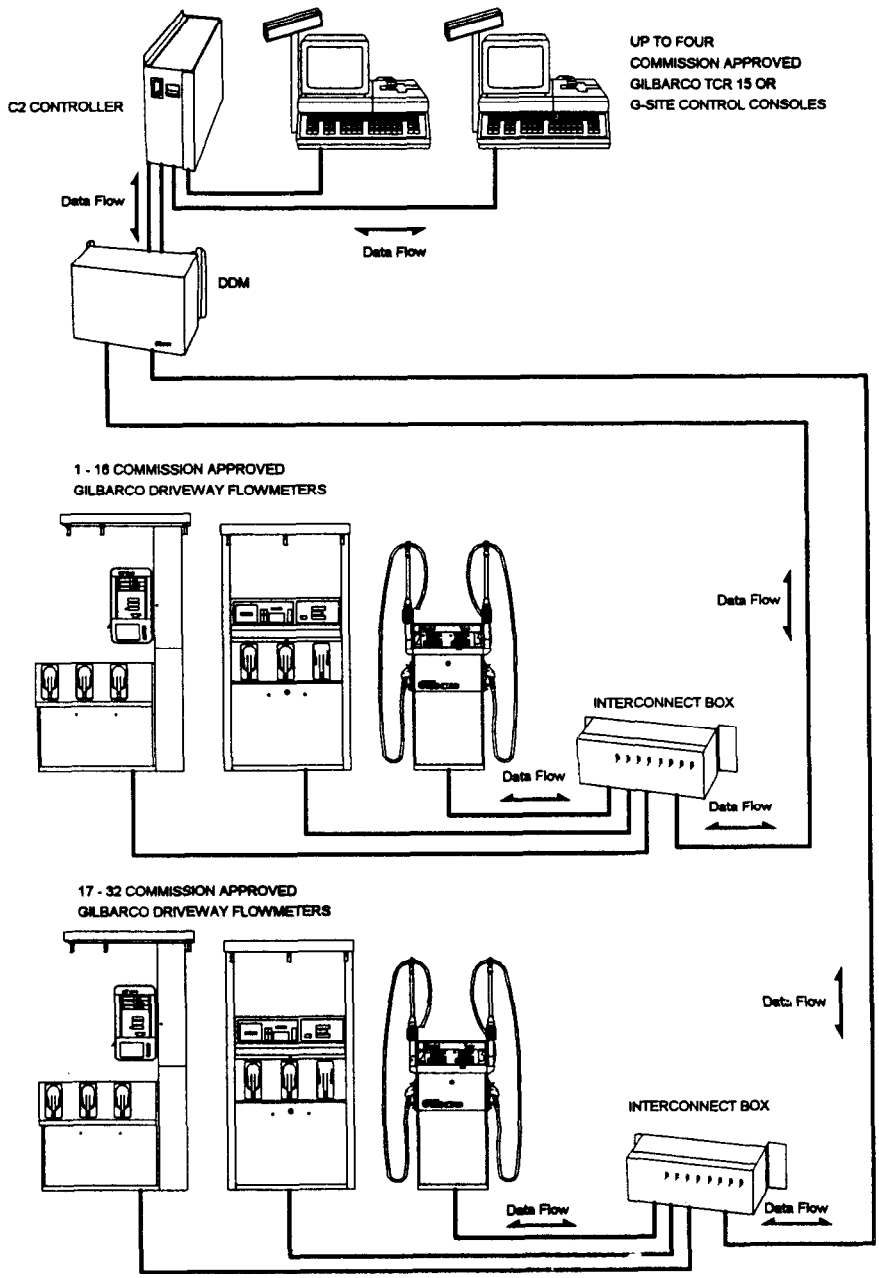
(a) Authorise a driveway flowmeter from one console and then attempt to authorise the same flowmeter from another console; this should not be possible.

(b) On completion of a delivery, pay off the transaction at any console. Attempt to pay off the same transaction at another console; this should not be possible.

3.2 Prepay Mode

For the same flowmeter, attempt to authorise a prepaid transaction at a second console; this should not be possible.

FIGURE S233A - 1



Schematic Diagram of a Typical Gilbarco Model TMS-15 System

FIGURE S233A - 2

Gilbarco Model C2 Series Controller

FIGURE S233A - 3

Gilbarco Model TCR-15 Operator's Console