National Standards Commission

Supplementary Certificate of Approval

No S278

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

Production Engineering Model 8850 Driveway Flowmeter Control System

submitted by Production Engineering (Aust.) Pty Ltd
Suite 403
270 Pacific Highway
Crows Nest NSW 2065.

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.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/6/96.
This approval expires in respect of new instruments on 1/6/97.

Instruments purporting to comply with this approval shall be marked NSC No S278 and only by persons authorised by the submittor.

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Instruments incorporating a component purporting to comply with this approval shall be marked NSC No S278 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 shall only be used for central unit price setting of driveway flowmeters which have been Commission-approved with that facility.

DESCRIPTIVE ADVICE

Pattern: approved 20/5/91

- A Production Engineering model 8850 driveway flowmeter control system for use with driveway flowmeters fitted with Production Engineering model Retron 80 indicators.

Variant: approved 11/6/91

1. For use with certain Email driveway flowmeter indicators.

Technical Schedule No S278 describes the pattern and variant 1.

Variant: approved 2/10/91

2. With up to three consoles connected in a network.

Technical Schedule No S278 Variation No 1 describes variant 2.

Variant: approved 23/1/92

3. For use with certain Gilbarco driveway flowmeter indicators.

Technical Schedule No S278 Variation No 2 describes variant 3.

Variant: approved 22/2/94

4. For use with Production Engineering model MHP driveway flowmeter indicators.

Variant: approved 29/3/94

5. For use with Production Engineering model FST card-operated terminals.

Technical Schedule No S278 Variation No 3 describes variants 4 and 5.

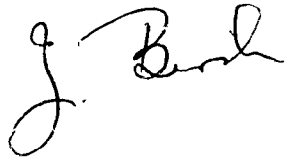
FILING ADVICE

Supplementary Certificate of Approval No S278 dated 4/3/92 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Supplementary Certificate of Approval No S278 dated 31/5/94
Technical Schedule No S278 dated 27/8/91 (incl. Test Procedure)
Technical Schedule No S278 Variation No 1 dated 4/12/91 (incl. Test Procedure)
Technical Schedule No S278 Variation No 2 dated 4/3/92
Technical Schedule No S278 Variation No 3 dated 31/5/94 (incl. Test Procedure and Notification of Change
Figures 1 and 2 dated 27/8/91
Figure 3 dated 4/12/91
Figures 4 to 7 dated 31/5/94

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

TECHNICAL SCHEDULE No S278

Pattern: Production Engineering Model 8850 Driveway Flowmeter Control System.

Submittor: Production Engineering (Aust) Pty Ltd
270 Pacific Highway
Crows Nest NSW 2065.

1. Description of Pattern

A Production Engineering model 8850 control system which may be used in a Commission-approved flowmetering system incorporating driveway flowmeters fitted with Production Engineering model Retron 80 indicators.

1.1 The System (Figure 1)

The model 8850 system may be used with up to 32 driveway flowmeters with a maximum of 16 displayed on any one visual display unit (VDU). The system comprises:

- a model PEC 8850 control console (Figure 2);
- one or more vendor's VDU indicators and a remote purchaser's indicator (Figure 2);
- a printer, for the purchaser's receipt; and
- various indicating and/or printing devices for management purposes.

1.2 Console

The console has various facilities including:

- a point of sale facility;
- a function for centrally setting the unit price of up to 20 grades of fuel;
- a postpay or prepay facility;
- a pump stop and all pumps emergency stop function; and
- a dual-memory facility.

1.3 Point of Sale Facility

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

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1.4 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.

1.5 Verification/Certification Provision

Provision is made for a verification/certification mark to be applied.

1.6 Markings

The console is marked with the following data, together in one location:

Manufacturer's name or mark	
Model number	
NSC approval number	NSC No S278
Serial number	
Operating (air) temperature range	5°C – 30°C

2. Description of Variant 1

For use with Commission-approved driveway flowmeters fitted with the following Email indicators:

Eclipse MVR79 series
MPP (multi-product) series

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, authorise the flowmeter at the console, and then 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; the details of the transaction shall be displayed on the vendor's indicator.

(ii) Check that the price and volume displayed are the same as the price and volume recorded from the driveway flowmeter.

(iii) At the same flowmeter, perform another delivery as per (i) above; check that the details of both transactions are displayed consecutively, in the CURRENT and MEMORY columns adjacent to the flowmeter number on the display.

(iv) Attempt to authorise a third delivery from the same flowmeter; this should not be possible.

(v) Complete the transactions. Check that both memories are now clear.

(vi) Repeat steps (i) to (v) for a number of driveway flowmeters.

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.

FST Terminal Test

To check the operation of the FST card-operated terminal a special 'weights and measures' card may be used. This card allows a delivery to be authorised and recorded through the FST without interfering with its financial aspects.

The 'weights and measures' test card operation is authorised by the FST's manager's card and allows one delivery to be authorised and recorded.

(a) Obtain the manager's assistance to authorise the 'weights and measures' test card.

(b) Swipe the test card through the FST card-reader.

(c) Answer the prompts to authorise a transaction from a driveway flowmeter. Select YES when prompted for a receipt for the transaction.

(d) Make a delivery from the selected driveway flowmeter.

(e) Complete the transactions and compare the printed values on the receipt with those displayed on the indicators of the selected driveway flowmeter.

(f) Repeat steps (a) to (e) for a number of driveway flowmeters.

NOTE:

In the event of a power failure occurring while a delivery is in progress a receipt is printed automatically and there may be a discrepancy between the values printed on the receipt and the values displayed on the driveway flowmeter. In this case, the following is printed on the receipt:

POWER FAILURE

RECEIPT IS CORRECT
RECORD OF TRANSACTION

National Standards Commission

TECHNICAL SCHEDULE No S278

VARIATION No 1

Pattern: Production Engineering Model 8850 Driveway Flowmeter Control System.

Submittor: Production Engineering (Aust) Pty Ltd
270 Pacific Highway
Crows Nest NSW 2065.

1. Description of Variant 2

Up to three model 8850 consoles may be connected in a network (Figure 3) which includes up to 32 driveway flowmeters. The following operations may be processed by any console:

- flowmeter status and authorisation;
- sales transactions (Preset transactions can only be initiated from one of the consoles. Any console may then be used to monitor and to complete the transaction.);
- central unit price setting;
- pump stop and emergency stop; and
- management functions.

TEST PROCEDURE (for Variant 2)

Systems which include more than 1 model 8850 console (Variant 2) should be tested in accordance with any relevant tests specified in the Inspector's Handbook. Instruments should also be tested in accordance with TEST PROCEDURE No S278 dated 27/8/91 for the pattern, and as amended below:

1. **Postpay Test** (Variant 2)

(a) Conduct test 1. Postpay Mode. At steps (iii), check the details of the transactions on all consoles.

(b) In step (v), check that the transactions have been cleared from all consoles.

2. **Prepay Test** (Variant 2)

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

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TECHNICAL SCHEDULE No S278

VARIATION No 2

Pattern: Production Engineering Model 8850 Driveway Flowmeter Control System.

Submittor: Production Engineering (Aust) Pty Ltd
270 Pacific Highway
Crows Nest NSW 2065.

1. Description of Variant 3

For use in a Commission-approved driveway flowmetering system using any driveway flowmeter fitted with a Gilbarco multi-product-type driveway flowmeter indicator or Electroline-type driveway flowmeter indicator.

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TECHNICAL SCHEDULE No S278

VARIATION No 3

Pattern: Production Engineering Model 8850 Driveway Flowmeter Control System.

Submittor: Production Engineering (Aust) Pty Ltd
270 Pacific Highway
Crows Nest NSW 2065.

1. Description of Variants

1.1 Variant 4

For use in a Commission-approved driveway flowmetering system using any driveway flowmeter fitted with a Production Engineering model MHP driveway flowmeter indicator.

1.2 Variant 5

With a Production Engineering model FST (Forecourt Service Terminal) card-operated terminal which allows account transactions to be made either locally or remotely using electronic fund transfer (EFT) facilities.

The authorised cards may either be controlled distribution cards issued to selected users or financial institution cards available to the public.

The model FST unit may be in any of the following configurations:

- Installed as a single free-standing or wall mounted unit (Figure 4) for controlling up to 32 driveway flowmeters; or
- Fitted to one or both sides of a driveway flowmeter (Figure 5), in which case it may be known as a model FST CRIP. It has control only over that side to which it is fitted; or
- A combination of the above.

Systems in which the model FST terminals are used must include a model 8850 site controller (Figures 6 and 7, and as described for the pattern), and may also include up to three model 8850 consoles.

The flowmeters may be authorised either by the FST terminal or by a console.

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The FST has the following features:

- An alphanumeric display used to generate prompts to guide the user through data entry functions;
- A keypad with 10 numeric/alpha keys, account selection and specific function keys;
- A swipe card-reader through which the authorised card is read; and
- A receipt printer.

NOTE:

(i) All transaction data is recorded on the purchaser's receipt and the driveway flowmeter will remain 'locked' (unable to be authorised) for a period of time so that the receipt details can be checked against the indicator.

(ii) The order of the operating procedure may vary with the financial institution requirements.

(iii) The authorised card(s) may contain restrictions and special conditions, e.g. limits on type and/or amount of fuel that a user may obtain, which may vary with the type of card and account transaction utilised.

NOTIFICATION OF CHANGE

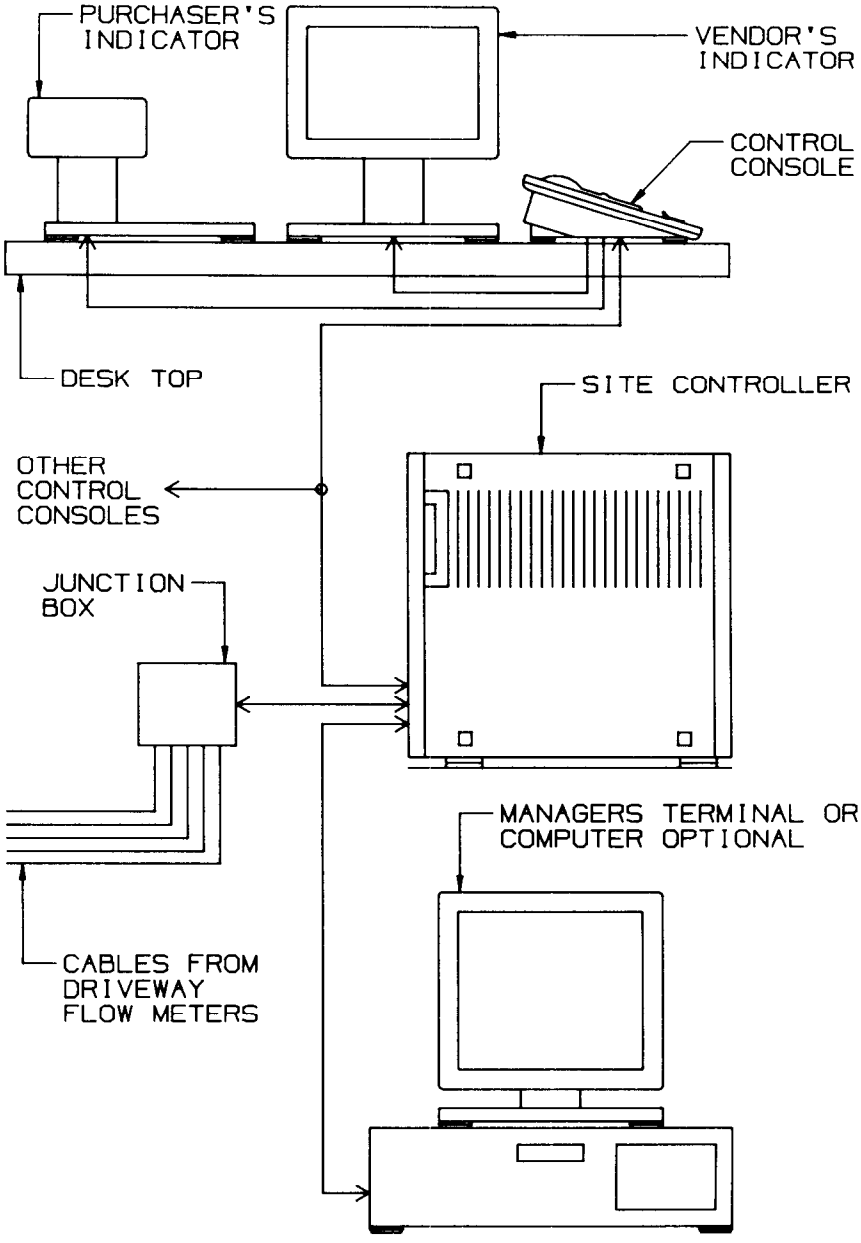
The following changes are made to Technical Schedule No S278 dated 27/8/91:

A. In clause **1.1 The System**, add the following as the first item listed;

- a model 8850 site controller (Figures 1 and 7);

B. Clause **1.2 Console** is renamed **1.2 Site Controller**, and the first sentence is reworded by replacing "console" with "site controller".

FIGURE S278 - 1

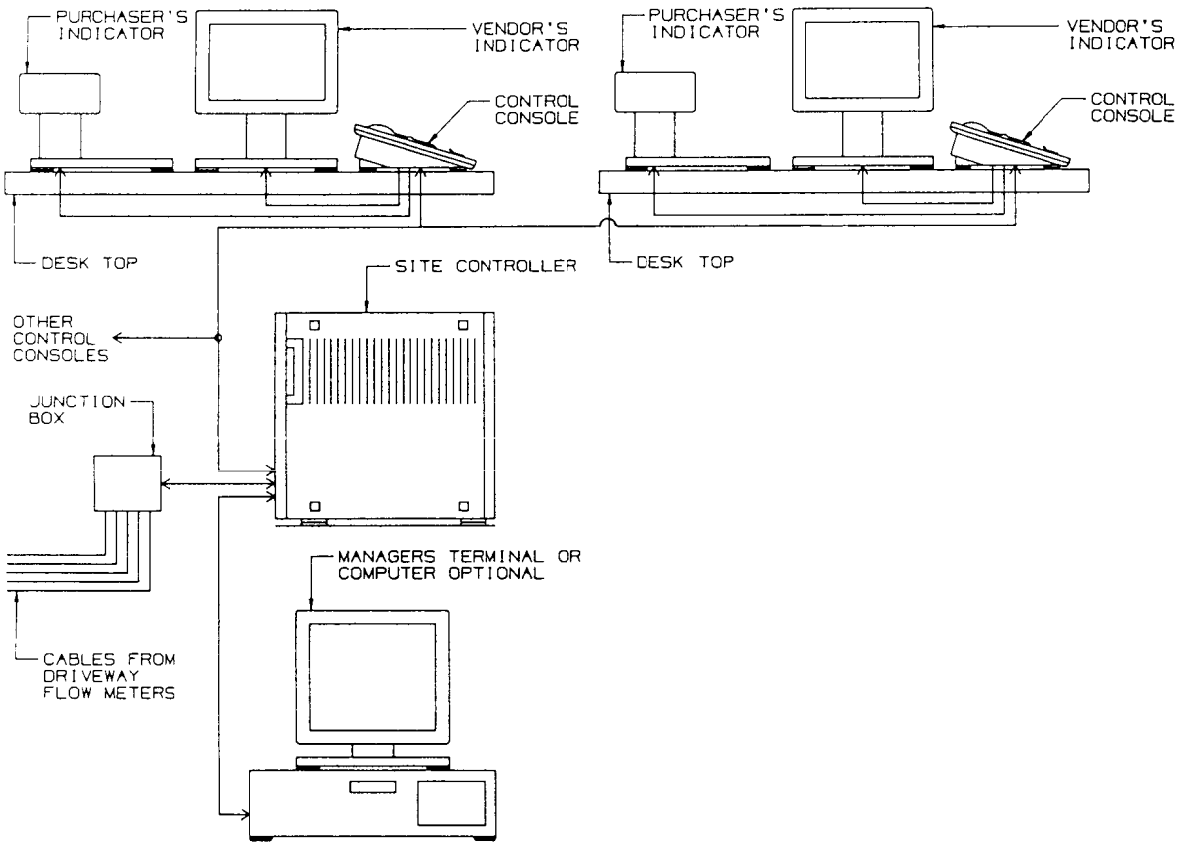


Typical Production Engineering Model 8850 Control System

FIGURE S278 - 2

Model 8850 Control Console and Indicators

FIGURE S278 - 3



Typical Two-console Network

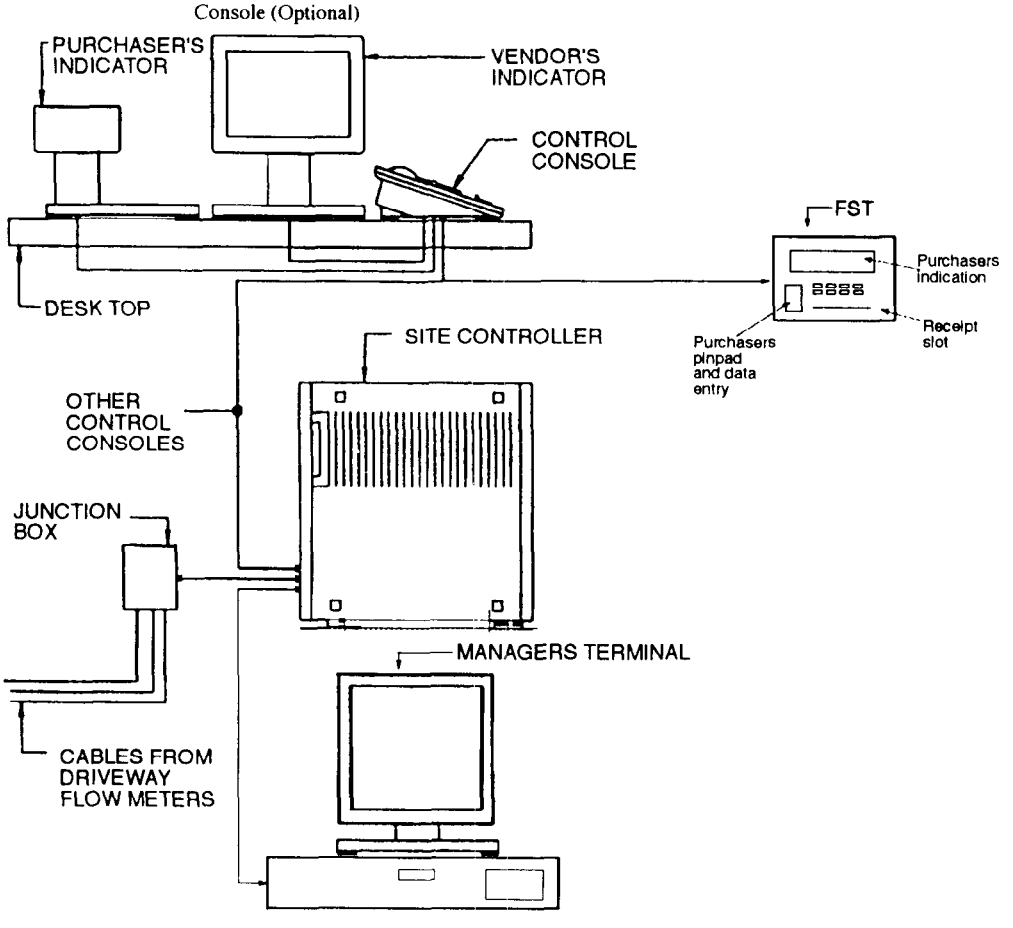
FIGURE S278 - 4

Production Engineering Model FST Terminal

FIGURE S278 - 5

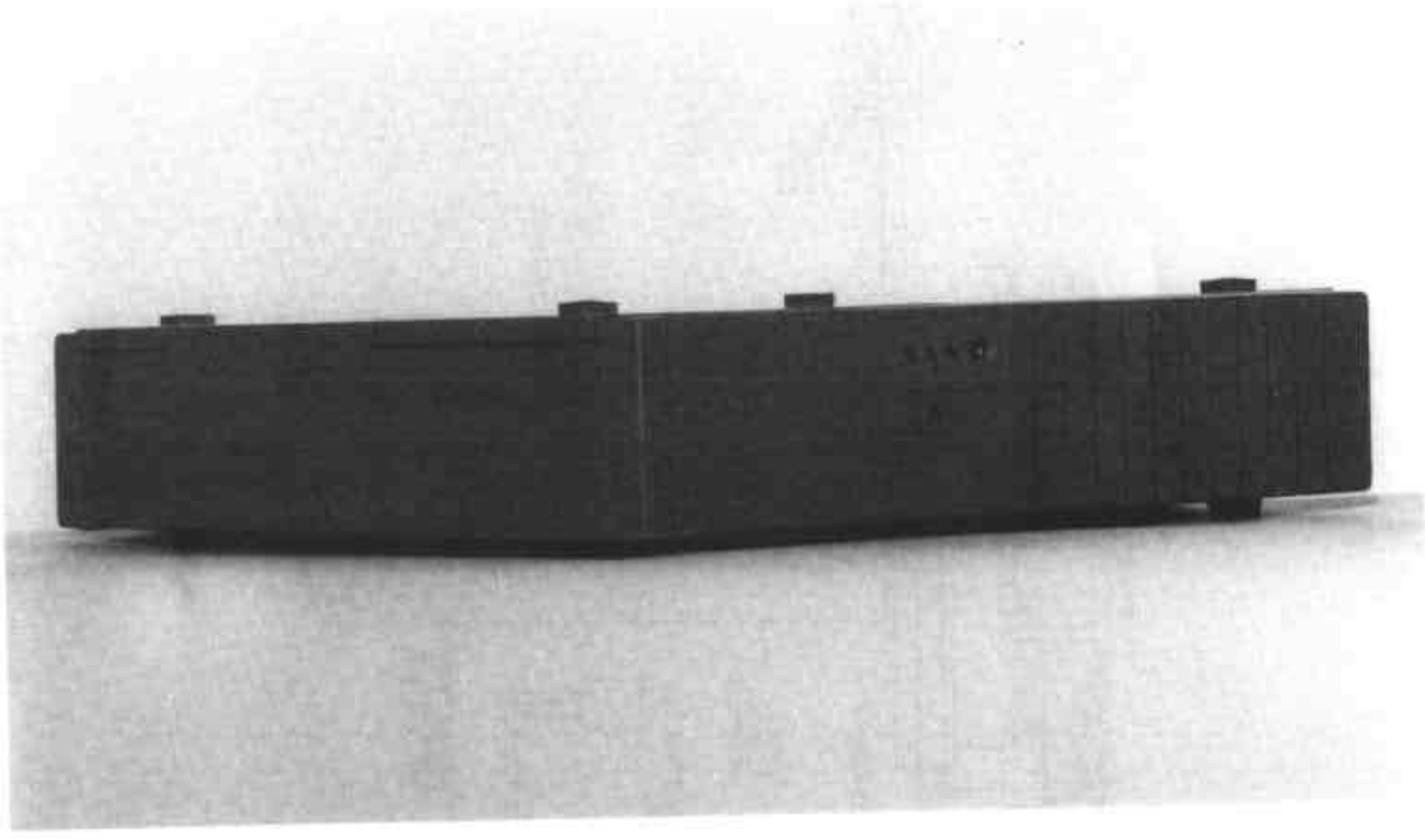
Production Engineering Model FST CRIP Terminal

FIGURE S278 - 6



Typical System Incorporating an FST Terminal

FIGURE S278 - 7



Production Engineering Model 8850 Site Controller