Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

# Supplementary Certificate of Approval

# NMI S789

Issued by the Chief Metrologist under Regulation 60
of the
*National Measurement Regulations 1999*

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

Supply Weigh Model FRN-120 Digital Indicator

submitted by Associated Scale Services Pty Ltd
Unit 4, 47 Learoyd Road
Acacia Ridge
QLD 4110.

**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 approval has been granted with reference to document NMI R 76, *Non-automatic weighing instruments, Parts 1 and 2*, dated October 2015.

This approval becomes subject to review on 1/04/25, and then every 5 years thereafter.

DOCUMENT HISTORY

| Rev | Reason/Details | Date |
|---|---|---|
| 0 | Pattern & variants 1 to 3 approved – certificate issued | 13/03/20 |
| | | |

# CONDITIONS OF APPROVAL

## General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S789' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S789' in addition to the approval number of the instrument, and only by persons authorised by the submittor.

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 National Measurement Institute (NMI) 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 document NMI P 106.

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

The values of the performance criteria (maximum number of scale intervals etc.) applicable to an instrument incorporating the pattern approved herein shall be within the limits specified herein and in any approval documentation for the other components.

Signed by a person authorised by the Chief Metrologist to exercise their powers under Regulation 60 of the *National Measurement Regulations 1999*.

**Darryl Hines**
Manager
Policy and Regulatory
Services

TECHNICAL SCHEDULE No S789

## 1. Description of Pattern approved on 13/03/20

A Supply Weigh model FRN-120 digital mass indicator (Figure 1) which may be configured to form part of:

- A class (III) weighing instrument with a single weighing range of up to 6000 verification scale intervals; or
- A class (IIII) weighing instrument with a single weighing range of up to 1000 verification scale intervals.
- A class (III) multi-interval weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 3000 verification scale intervals per partial weighing range; or
- A class (IIII) multi-interval weighing instrument with up to two partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 1000 verification scale intervals per partial weighing range.
- A class (III) multiple range weighing instrument with up to two weighing ranges, in which case it is approved for use with up to 3000 verification scale intervals per weighing range.
- A class (IIII) multiple range weighing instrument with up to two weighing ranges, in which case it is approved for use with up to 1000 verification scale intervals per weighing range.

  The changeover between weighing ranges is automatic.

The instrument has a stainless steel enclosure with a LCD display for display of the weight value.

The pattern may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see **clause 1.7** below).

TABLE 1 – Specifications

| | |
|---|---|
| Maximum number of verification scale intervals | 6 000 (class (III))<br>1000 (class (IIII)) |
| Minimum sensitivity | 1 µV/scale interval |
| Excitation voltage | 5 V DC |
| Maximum excitation current | 57.47 mA |
| Fraction of maximum permissible error | $p_i = 0.5$ |
| Minimum input impedance | 87 Ω |
| Maximum input impedance | 1200 Ω |
| Measuring range minimum voltage | 0 mV |
| Measuring range maximum voltage | 15 mV |
| Maximum tare range | -100%Max |
| Operating temperature range | -10°C to +40°C |
| Load cell connection | 4 or 6 wire plus shield |
| Maximum value of load cell cable length per wire cross section (*) | 282 m/mm$^2$ (6-wire) |

(*) Additional connection cable between indicator and load cell or load cell junction box.

This approval does not include the use of the indicator as an automatic weighing instrument, unless specifically mentioned in a certificate of approval for such an instrument.

### 1.1 Zero

A zero-tracking device may be fitted.

The initial zero-setting device has a nominal range of not more than 20% of the maximum capacity of the instrument.

The instrument has a semi-automatic zero-setting device with a nominal range of not more than 4% of the maximum capacity of the instrument.

### 1.2 Tare

A semi-automatic tare device of up to the maximum capacity of the instrument may be fitted.

### 1.3 Linearisation Facility

Instruments are fitted with a linearisation correction facility having up to three correction points.

### 1.4 Display Check

A display check is initiated whenever power is applied.

### 1.5 Power Supply

Power for the Supply Weigh model FRN-120 instruments may be supplied by:

• an AC/DC mains adaptor; and/or

• 6 x 1.5 V AA size rechargeable batteries.

Note: The AC/DC mains adaptor supplied for the instrument was FLYPOWER model PS06H120K0500AD power supply (output 12 V DC, 500 mA) – the submittor should be consulted regarding the acceptability of alternative power supply units.

### 1.6 Additional Features

Instruments may be fitted with counting, check weighing (Hi OK Lo), animal weighing, and totalisation functions. The additional functions (other than the indications of measured mass, i.e. gross, tare, net, totals, displayed either on the indicator or on an auxiliary or peripheral device) are not approved for trade use.

Instruments may also be fitted with a ‘weighing unstable sample’ or ‘animal weighing’ function. This function shall not be used for trade use.

Note: In particular circumstances (e.g. in regard to weighbridge or public weighbridge operation), Trade Measurement legislation or other NMI Certificates of Approval may impose requirements in regard to specific features, methods of operation, or records to be provided (and in what form).

Certain features of this instrument are able to be configured by the installer or user. Whilst NMI believes that an acceptable configuration can be achieved for typical basic modes of operation, it may also be possible for the

instrument to be configured to produce unacceptable configurations, and use of some configurations may be inappropriate in different situations. It is the responsibility of the installer and user to ensure that the configuration is acceptable and meets relevant requirements for any particular situation.

### 1.7 Interfaces

The indicator may be fitted with interfaces for the connection of auxiliary and/or peripheral devices. Any interfaces shall comply with clause 5.3.6 of document NMI R76 (the basic intent of which is that it shall not be possible to alter weighing results via the interfaces).

Any measurement data output from the instrument or its interfaces shall only be used for trade in compliance with General Supplementary Certificate No NMI S1/0B (in particular in regard to the data and its format).

Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Instruments may be fitted with RS-232 serial data interface.

### 1.8 Verification Provision

Provision is made for the application of a verification mark.

### 1.9 Sealing Provision

Provision is made for the calibration adjustments to be sealed by means of 'lead and wire' type seal with drilled screws (Figure 2a), or destructible adhesive labels over the calibration switch access hole and one of the securing screws (Figure 2b).

### 1.10 Software Version

The software version is designated 1.23.

The software version number appears in the switch-on display sequence when the power is first applied to the instrument.

### 1.11 Descriptive Markings and Notices

Instruments carry the following markings:

| | |
|---|---|
| Manufacturer's mark, or name written in full | Associated Scale Services Pty Ltd |
| Model number | ..... |
| Indication of accuracy class |  or  |
| Maximum capacity | *Max* ..... kg #1 |
| Minimum capacity | *Min* ..... kg #1 |
| Verification scale interval | *e* = .... .. kg #1 |
| Maximum subtractive tare | *T* = - ..... kg #2 |
| Serial number of the instrument | ……. |
| Pattern approval mark for the indicator | NMI S789 |
| Pattern approval mark for other components | ..... #3 |

#1 These markings are shown near the display of the result.

#2 This marking is required if *T* is not equal to *Max*.

#3 May be located separately from the other markings.

In addition, instruments not greater than 100 kg capacity shall carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

Note:

For multi-interval instruments the markings shall be as above, with the exception that the 'Maximum capacity' and 'Verification scale interval' shall be marked for both interval ranges, e.g. as follows:

| | |
|---|---|
| Maximum capacity | Max …. / …. kg |
| Verification scale interval | *e* = ….. / ….. kg |

For multiple range instruments, the maximum capacity, minimum capacity and verification scale interval for each range shall be marked, with an indication of the range to which they apply, e.g.

| Range | R1 | R2 |
|---|---|---|
| *Max* | …. kg | …. kg |
| *Min* | …. kg | …. kg |
| *e* = | …. kg | …. kg |

## 2. Description of Variant 1 approved on 13/03/20

The Supply Weigh model FRN-100 (Figure 3) which is similar to the pattern but having an ABS enclosure.

Provision is made for the calibration adjustments to be sealed by means of 'lead and wire' type seal with drilled screws (Figure 4a), or destructible adhesive labels over the calibration switch access hole and one of the securing screws (Figure 4b).

## 3. Description of Variant 2 approved on 13/03/20

The Supply Weigh model FRN-050 (Figure 5) which is similar to the pattern but having an ABS enclosure.

### 3.1 Sealing Provision

Provision is made for the calibration to be sealed by setting the calibration pins on the main board within the instrument to an OPEN status (Figure 6a), and then preventing access within the instrument housing (Figure 6b).

It is possible to determine that the pin status is in the 'OPEN' position as follows:

- Hold the UNIT key and PRINT key until the instrument beeps. The F0 H-L is displayed.
- Press the TARE key until the proG appears, then press the ZERO key, the Pin is displayed.
- Press the G/N key, then the UNIT key, then the ZERO key.
- Press the TARE key until the  appears.
- Press the ZERO key.
- If the pin status is in the 'OPEN' position, the instrument will display  and preventing further access to the calibration. In this case the instrument may be verified.
- Otherwise the instrument will enter the calibration mode in which case the instrument should not be verified until the pin status has been correctly set to the 'OPEN' position.

Sealing to prevent access within the instrument housing may be achieved by using adhesive labels placed over the access holes to the securing screws (Figure 6b).

### 4. Description of Variant 3 approved on 13/03/20

The Supply Weigh model FRN-110 (Figure 7) which is similar to variant 2 but having an alternative enclosure.

Provision is made for the calibration adjustments to be sealed by means of destructible adhesive labels placed over the opposite sides of a join in the instrument housing (Figure 8).

### 5. Description of Variant 4 approved on 13/03/20

The pattern and variants 1 to 3 may also be known as Associated Scale Services or ANYSCALE of same model number, as shown in Table 2.

TABLE 2

| Supply Weigh | Associated Scale Services | ANYSCALE |
|---|---|---|
| FRN-120 | FRN-120 | FRN-120 |
| FRN-100 | FRN-100 | FRN-100 |
| FRN-050 | FRN-050 | FRN-050 |
| FRN-110 | FRN-110 | FRN-110 |

## TEST PROCEDURE

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

### Maximum Permissible Errors

The maximum permissible errors are specified in Schedule 1 of the *National Trade Measurement Regulations 2009*.

### Tests

For multi-interval and multiple range instruments with verification scale intervals of $e_1$, $e_2$ …, apply $e_1$ for zero adjustment, and maximum permissible errors apply $e_1$, $e_2$ …, as applicable for the load.

FIGURE S789 – 1


Supply Weigh Model FRN-120 Indicator (Pattern)

FIGURE S789 – 2

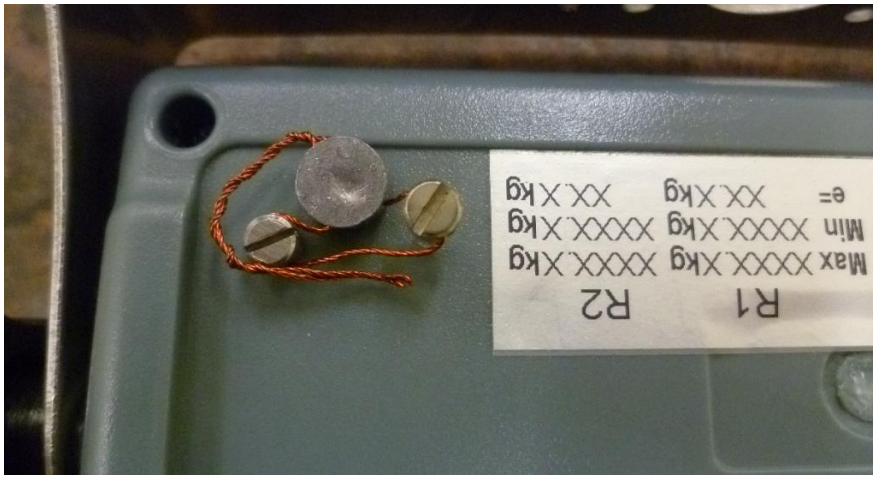

(a) Sealing of Lead and Wire Type with Drilled Screws (Pattern)


(b) Sealing with Destructible Adhesive Stickers (Pattern)

FIGURE S789 - 3


Supply Weigh Model FRN-100 Indicator (Variant 1)

FIGURE S789 - 4



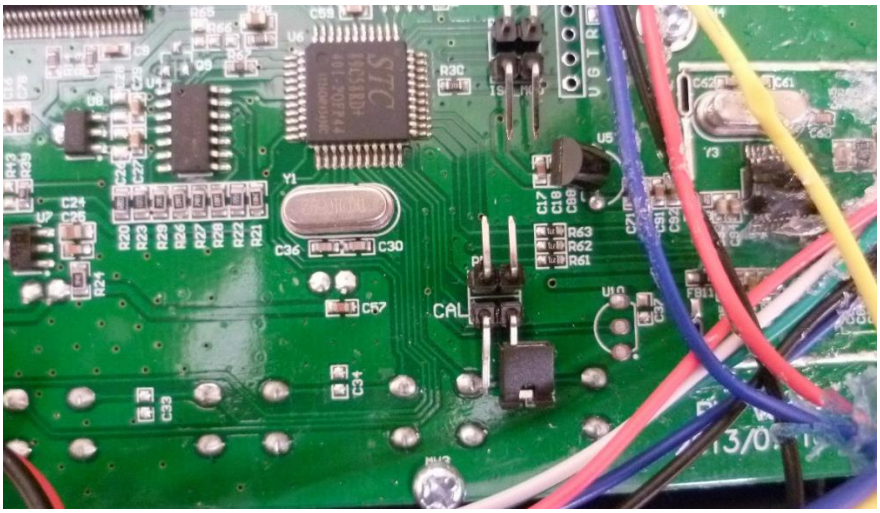

(a) Sealing of Lead and Wire Type with Drilled Screws (Variant 1)


(b) Sealing with Destructible Adhesive Stickers (Variant 1)

FIGURE S789 - 5


Supply Weigh Model FRN-050 Indicator (Variant 2)

FIGURE S789 - 6




(a) Open the calibration pins


(b) Sealing with Destructible Adhesive Stickers (Variant 2)

FIGURE S789 - 7


Supply Weigh Model FRN-110 Indicator (Variant 3)

FIGURE S789 - 8


Sealing of Instrument Housing with Destructible Adhesive Stickers (Variant 3)

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