



Australian Government

**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

No 6/4C/269

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

A & D Model FZ-3000*i* Weighing Instrument

submitted by A & D Australasia Pty Ltd
 32 Dew Street
 Thebarton SA 5031.

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 July 2004.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 July 2016, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI 6/4C/269' and only by persons authorised by the submitter.

It is the submitter'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.

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

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

DESCRIPTIVE ADVICE

Pattern: approved 15 June 2011

- An A & D model FZ-3000*i* single interval self-indicating weighing instrument of high accuracy class **II** of 3200 g maximum capacity.

Variants: approved 15 June 2011

1. Certain other capacities of the FZ-*i* series.
2. Certain models of FZ-*i*...WP series.

Technical Schedule No 6/4C/269 describes the pattern and variants 1 & 2.

FILING ADVICE

The documentation for this approval comprises:

Certificate of Approval No 6/4C/269 dated 16 June 2011
Technical Schedule No 6/4C/269 dated 16 June 2011 (incl. Table 1 and
Test Procedure)
Figures 1 to 3 dated 16 June 2011

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



TECHNICAL SCHEDULE No 6/4C/269

Pattern: A & D Model FZ-3000*i* Weighing Instrument
Submitter: A & D Australasia Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Pattern

The A & D model FZ-3000*i* self-indicating single interval non-automatic weighing instrument of high accuracy class II of 3200 g maximum capacity with a verification scale interval of 0.1 g (Figure 1 and Table 1).

Instruments are a magnetic force compensation type and have a vacuum fluorescent display (VFD).

Instruments may have a circular or a 180 × 180 mm square platter (Figure 1).

Instruments have an auxiliary indicating device (a differentiated scale division (digit) which is shown in a double bracket (Figure 1b) in the display) with a value as shown in the 'scale interval (*d*)' column of Table 1.

Instruments may be provided with a 'breeze break' (windshield); two versions are shown in Figure 2.

Instruments are approved for use over a temperature range of +10°C to +30°C, and are so marked.

Instruments are not for trading direct with the public, and are so marked.

Instruments may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices.

Instruments are powered by any of the following power supplies:

- ELJINTEK Co Type TB-139A model MKD-150400SA linear mode (15 V DC, 0.4 A);
- ENG Electric Co Ltd Type TB-S139 model 3A-066WP15 switching mode (15 V DC, 0.4 A);
- ELJINTEK Co Type TB-301 model GPSU15SA-3 switching mode (12 V DC, 1.25 A); or
- ENG Electric Co Ltd Type TB-238S model 3A-051WS12 switching mode (12 V DC, 0.42 A).

The submitter should be consulted regarding the acceptability of alternative power supply units.

1.1 Zero and Tare

Instruments have an initial zero-setting device with a nominal range of not more than 20% of the maximum capacity of the instrument.

Instruments have a combined semi-automatic zero-setting and subtractive tare balancing device (operated by the 're-zero' key). Operation of this device zeroes the instrument to within $\pm 0.25e$ if the load is within the zero-setting range (4% of the maximum capacity of the instrument), otherwise the instrument is tared.

The subtractive taring device operates up to the maximum capacity of the instrument.

A zero-tracking device may also operate to automatically correct to within $\pm 0.25e$ whenever the instrument comes to rest with the display indicating zero (including net zero).

1.2 Alternative Units

Use of units other than grams (g) are not approved for trade use.

1.3 Management Functions

Instruments may be fitted with a number of additional functions including statistical calculation, percentage (%) and counting ('pcs'). These functions and displays are not approved for trade use.

1.4 Display Check

A display check is initiated when the instruments are switched on.

1.5 Levelling

Instruments are provided with adjustable feet and a level indicator, adjacent to which is a notice stating 'Instrument must be level when in use', or similar wording.

1.6 Internal Self-Calibration System

Instruments are fitted with an internal 'self-calibration' system. This comprises an internal calibration mass that may be applied to the instrument in an automatic adjustment cycle, or manually by pressing the CAL key, or according to predetermined criteria (time period and/or temperature variation).

The effect of any calibration adjustment due to this system is limited to a difference of $\pm 0.5e$ at maximum capacity from the previous calibration value.

1.7 Sealing Provision

Sealing of the calibration adjustment is provided by preventing access to the switch mounted on the main circuit board. Access to this switch is protected by using lead and wire type seals shown in Figure 3.

Instruments are provided with an integral 'self-calibration system'; Sealing of the instrument does not prevent operation of this system, however the system uses data regarding the value of internal mass, and alteration of that data is prevented.

1.8 Descriptive Markings and Notices

The instrument model number is shown on the instrument nameplate.

Instruments carry the following markings:

Manufacturer's mark, or name written in full	A & D Company Limited
Name or mark of manufacturer's agent	A & D Australasia Pty Ltd
Indication of accuracy class	Ⓜ
Pattern approval mark for the instrument	NMI 6/4C/269
Maximum capacity	<i>Max</i> g *
Minimum capacity	<i>Min</i> g *
Verification scale interval	<i>e</i> = g *
Actual scale interval	<i>d</i> = g *
Tare capacity (if less than <i>Max</i>)	<i>T</i> = - g
Serial number of the instrument
Special temperature limits	+10°C to +30°C

* These markings shall also be shown near the display of the result if they are not already located there.

Instruments are not for trading direct with the public, and are so marked.

2. Description of Variants

2.1 Variant 1

Certain other capacities of the FZ-*i* series instruments as listed in Table 1.

2.2 Variant 2

Any model of the FZ-*i* series instrument listed in Table 1 (for the pattern and variant 1) which are similar to the pattern but now have waterproof/dustproof capability, in which case the model number has a 'WP' suffix.

TEST PROCEDURE

Instruments should 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*.

Ensure that instruments are only being used within the special temperature limits stated elsewhere in this Technical Schedule.

TABLE 1

Note: The **bold** letters indicate the specifications of the pattern.

Model Number (#)	Maximum Capacity (Max)	Minimum Capacity (Min)	Verification Scale Interval (e)	Scale Interval (d)
FZ-120 <i>i</i>	122 g	0.2 g	0.01 g	0.001 g
FZ-200 <i>i</i>	220 g	0.2 g	0.01 g	0.001 g
FZ-300 <i>i</i>	320 g	0.2 g	0.01 g	0.001 g
FZ-1200 <i>i</i>	1220 g	0.5 g	0.1 g	0.01 g
FZ-2000 <i>i</i>	2200 g	0.5 g	0.1 g	0.01 g
FZ-3000<i>i</i>	3200 g	0.5 g	0.1 g	0.01 g

(#) The model number may have a 'WP' suffix if the instrument conforms to Variant 2.

Approved Models of The FZ-*i* Series

FIGURE 6/4C/269 – 1



(a) A & D Model FZ-3000*i* Weighing Instrument



(b) Model FZ-3000*i* With a Square Platter

FIGURE 6/4C/269 – 2



FZ-*i* Series Instruments Fitted With Alternative 'Breeze Breaks' (Windshields)

FIGURE 6/4C/269 – 3



Typical Sealing Method – FZ-*i* Series