6/4C/76A
23 August 2010

Australian Government

National Measurement Institute

Bradfield Road, West Lindfield NSW 2070

Cancellation

Certificate of Approval No 6/4C/76A

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

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

A & D Model FS-6KA Weighing Instrument

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

has been cancelled in respect of new instruments as from 1 October 2010.

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

National Standards Commission

Certificate of Approval

No 6/4C/76A

Issued under Regulation 63
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 FS-6KA Weighing Instrument

submitted by A & D Mercury 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.

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CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 January 2004, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked NSC No 6/4C/76A 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 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.

The Commission 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 11 December 1998

- An A & D model FS-6KA multi-interval weighing instrument of 6 kg maximum capacity.

Variant: approved 11 December 1998

1. Certain other models and configurations.

Technical Schedule No 6/4C/76A describes the pattern and variant 1.

Variant: approved 30 March 2000

2. Model FS-30KA basework of this approval with a compatible Commission-approved indicator.

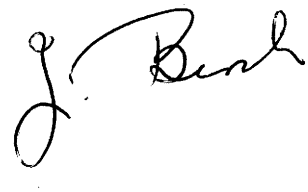
Technical Schedule No 6/4C/76A Variation No 1 describes variant 2.

FILING ADVICE

Certificate of Approval No 6/4C/76A dated 16 April 1999 is superseded by this Certificate, and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 6/4C/76A dated 27 April 2000
Technical Schedule No 6/4C/76A dated 16 April 1999 (incl. Test Procedure)
Technical Schedule No 6/4C/76A Variation No 1 dated 27 April 2000
Figure 1 dated 16 April 1999

Signed and sealed by a person authorised under Regulation 63 of the National Measurement Regulations 1999 to exercise the powers and functions of the Commission under this Regulation.



TECHNICAL SCHEDULE No 6/4C/76A

Pattern: A & D Model FS-6KA Weighing Instrument.

Submittor: A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Pattern

An A & D model FS-6KA multi-interval weighing instrument (Figure 1) with a verification scale interval (e_1) of 0.001 kg up to 3 kg and with a verification scale interval (e_2) of 0.002 kg from 3 kg up to the maximum capacity of 6 kg.

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

1.1 Zero

Zero is automatically corrected to within $\pm 0.25e_1$ whenever power is applied and whenever the instrument comes to rest within $0.5e_1$ of zero.

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 subtractive tare device of up to maximum capacity may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Levelling

Instruments are provided with adjustable feet and a level indicator. Adjacent to the level indicator is a notice stating ‘instrument must be level when in use’, or similar wording.

1.5 Verification/Certification Provision

Provision is made for the application of a verification/certification mark.

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1.6 Sealing Provision

Provision is made for access to the calibration adjustments to be sealed by means of the calibration screw lock on the rear of the indicator.

1.7 Management Functions

Instruments may be fitted with a number of management functions which are not approved for trade use, including ‘Limit Weighing’, ‘Target Weighing’ and ‘Comparator’.

1.8 Markings and Notices

(a) Instruments carry the following markings, in the form shown at right:

Manufacturer’s mark, or name written in full	A & D Company Ltd
Indication of accuracy class	(III)
Maximum capacity	*Max* ...../..... kg *
Minimum capacity	*Min* ..... kg *
Verification scale interval	*e =* ...../..... kg *
Serial number of the instrument	.....
Pattern approval mark for the instrument	NSC No 6/4C/76A

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

(b) In addition, instruments are marked ‘NOT FOR TRADING DIRECT WITH THE PUBLIC’ or similar wording.

2. Description of Variant 1

Other models and configurations as listed below:

(i) Model FS-15KA with a verification scale interval (e_1) of 0.002 kg up to 6 kg and with a verification scale interval (e_2) of 0.005 kg from 6 kg up to the maximum capacity of 15 kg.

(ii) Model FS-30KA with a verification scale interval (e_1) of 0.005 kg up to 15 kg and with a verification scale interval (e_2) of 0.01 kg from 15 kg up to the maximum capacity of 30 kg.

(iii) With battery-powered operation.

(iv) With backlighting for the display, in which case the model number has a ‘B’ rather than an ‘A’ suffix.

TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the Inspector's Handbook.

Maximum Permissible Errors at Verification/Certification

The maximum permissible errors for increasing and decreasing loads on initial verification/certification for loads, *m*, expressed in verification scale intervals, e, are:

$\pm 0.5\ e$ for loads $0 \leq m \leq 500$;
$\pm 1.0\ e$ for loads $500 < m \leq 2\ 000$; and
$\pm 1.5\ e$ for loads $2\ 000 < m \leq 10\ 000$.

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

TECHNICAL SCHEDULE No 6/4C/76A

VARIATION No 1

Pattern: A & D Model FS-6KA Weighing Instrument.

Submittor: A & D Mercury Pty Ltd
32 Dew Street
Thebarton SA 5031

1. Description of Variant 2

Model FS-30KA basework of this approval (Table 1) used with a compatible Commission-approved (by Supplementary Certificate) indicator provided the conditions set out below are met.

The limiting characteristics of the model FS-30KA basework are given in Table 1.

The conditions to be met are:

- The excitation voltage used is within the range approved for the baseworks.
- The maximum load applied to the basework (live load plus any dead load) does not exceed the load cell maximum capacity.
- The verification scale interval (e_1 for multi-interval) is not less than the minimum value specified (for single or multi-interval operation as applicable).
- The number of verification scale intervals is less than or equal to the n_{max} value specified.
- The signal voltage per verification scale interval is no less than the minimum sensitivity value per verification scale interval for the indicator (as specified in the approval documentation for the indicator), i.e.

  Indicator Sensitivity $\leq$ 1000 x Ex x LC_Sens x e / Emax

  where Ex = Excitation from indicator (V)

  LC_Sens = Load cell sensitivity (mV/V)

  Emax = Load cell maximum capacity (nominal) (kg)

  e = verification scale interval of the instrument (kg). For multi-interval instruments use e_1.

  Indicator Sensitivity = Minimum sensitivity value per verification scale interval for the indicator (μV)

1.1 Markings

(a) The indicator is marked and carries notices in accordance with its NSC approval documentation. The indicator is also marked with the pattern approval mark (NSC No 6/4C/76A) for the basework.

(b) If the indicator used is not the indicator of the pattern, then the basework is marked with the following,

Manufacturer's mark, or name written in full	A & D Mercury Pty Ltd
Maximum capacity	*Max* ..... kg
Pattern approval mark for the instrument	NSC No 6/4C/76A

TABLE 1

Basework	FS-30KA
Basework Maximum Capacity	30 kg
Maximum Platform Sizes	305 x 305 mm
Load Cell Used	Type 30K
Load Cell Maximum Capacity Emax	35 kg
n_{max}	3000
Minimum Verification Scale Interval Value for single or multi-interval use	0.005 kg
Output Rating at Emax	1.167 mV/V
Input Impedance	1000 ohms
Maximum Excitation Voltage	5 V
Cable Lengths (±0.1m)	2.85 m (#)
Number of Leads (plus shield)	4

(#) The cable length supplied with the basework shall not be shortened.

Limiting Characteristics of the Model FS-30KA Basework

6/4C/76A
28 July 2004

Australian Government

National Measurement Institute

12 Lyonpark Road, North Ryde NSW 2113

Notification of Change
Certificate of Approval No 6/4C/76A
Change No 1

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

The following change is made to the approval documentation for the

A & D Model FS-6KA Weighing Instrument

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

In Certificate of Approval No 6/4C/76A dated 27 April 2000, the Condition of Approval referring to the review of the approval should be amended to read:

> "This approval becomes subject to review on 1 January 2009, and then every 5 years thereafter."

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

FIGURE 6/4C/76A - 1

A & D Mercury Model FS-6KA Weighing Instrument