



Australian Government
Department of Industry,
Innovation and Science

National Measurement Institute

Certificate of Approval NMI 6/14B/19

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.

Wide Bay Scales Model WBSDTH-200 Discontinuous Totalising Automatic Weighing Instrument

submitted by Karenmary Pty Ltd
Trading as Wide Bay Scales & Registers
4 Angela Court
Welcome Creek QLD 4670

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 107, *Discontinuous Totalising Automatic Weighing Instruments (Totalising Hopper Weighers)*, dated July 2004.

This approval becomes subject to review on **1/05/22**, and then every 5 years thereafter.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variant 1 provisionally approved – interim certificate issued	11/03/11
1	Pattern and variants 1 approved – certificate issued	14/04/11
2	Pattern and variants 1 amended (test procedure), reviewed & updated – certificate issued	8/05/17

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/14B/19' and only by persons authorised by the submittor.

Instruments purporting to comply with this approval and currently marked 'NMI P6/14B/19' may be re-marked 'NMI 6/14B/19' but 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 Certificates No S1/0/A or No S1/0B.

The values of the performance criteria (maximum number of scale intervals etc.) applicable to the instrument shall be within the limits specified herein and in any approval documentation for the components where they are approved separately.

This approval shall NOT be used in conjunction with General Certificate No 6B/0.

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



Dr A Rawlinson

TECHNICAL SCHEDULE No 6/14B/19

1. Description of Pattern **provisionally approved on 11/03/11**
approved on 14/04/11

A Wide Bay Scales model WBSDTH-200 Class 0.5 discontinuous totalising automatic weighing (DTAW) instrument (Figure 1) having a weigh hopper of 100 kg maximum capacity.

The instrument is for measuring a quantity of bulk product provided to it, not (as is the case for some DTAW instruments) for providing a delivery close to some requested *target totalised load*.

Note: This approval has been granted with reference to document NMI R 107, *Discontinuous Totalising Automatic Weighing Instruments (Totalising Hopper Weighers)* dated July 2004. The following description is intended to introduce terms used in this Certificate and Technical Schedule which may be additional to those in that document but which are consistent with the terminology in the document.

The system aims to use a particular *delivery sequence* to measure a quantity of bulk product provided to it and hence provide a *bulk load delivery*. The term 'delivery' may also be taken to refer to 'receipt'.

The *delivery sequence* involves the totalisation of the results of a number of *discrete load deliveries* or *weighing cycles*, each of which involves the division of the bulk product into *discrete loads*, according to a *target discrete load* the mass of which is then determined by weighing to give the *discrete load delivered*, following which the product is discharged to the bulk output. Note that the *target discrete load* may be achieved by stopping or slowing the bulk product delivery prior to the *target discrete load* value being reached according to *discrete load target shutoff adjustments* (such as inflight adjustments or slow flow pre-sets).

Each *discrete load delivered* is totalised (at any time this may be termed the *cumulative totalisation*).

The *target discrete load* is a pre-selected value that is the same for all of the *discrete load deliveries* (this may be termed the *pre-selected target discrete load*).

The *totalised bulk load delivered* is the cumulative totalisation (sum of all discrete loads delivered), in the complete *bulk load delivery*. The transaction is based on the *totalised bulk load delivered*.

1.1 Details

The instrument is a Class 0.5 discontinuous totalising automatic weighing instrument having a weigh hopper with a minimum capacity (for the *target discrete load*) of 60 kg, and a maximum capacity (for the *target discrete load*) of 100 kg.

The instrument is approved for use with a minimum totalised load (Σ_{\min}) of not less than 60 kg and a totalisation scale interval of 0.1 kg.

The WBSDTH-200 instrument prints the net value of each discrete load delivered (as well as the *target discrete load*).

Note: The discrete load values are NOT approved for trade use (unless they exceed the value of the minimum totalised load). The totalised bulk load

delivered (a total of the discrete load delivered values) is the value approved for trade use.

1.2 Weighing System

The pattern (Figures 1 and 2) comprises:

- (a) An in-feed arrangement with gates enabling the starting and stopping of product feed;
- (b) A weigh bin/hopper (Figure 1) incorporated on the platform of an A & D Mercury model HW-300KB4 weighing instrument which uses a single A & D model LC4204-K300 load cell of 300 kg maximum capacity (the weighing instrument and load cell are also described in the documentation of approval NMI 6/9C/250A);
- (c) A Rinstrum model 5100 digital indicator for the weigh bin (the digital indicator is also described in the documentation of approval NMI S418);
- (d) An electronics cabinet (Figure 2) which houses a Ranger model R5120 controller in addition to the Rinstrum 5100 digital indicator.

The electronics cabinet also contains logic relays and a power supply.

- (e) Actuators and associated position sensors to control the in-feed gates and the out-feed gate of the weigh bin. The weigh bin out-feed gate actuator is arranged such that it is not in contact with the weigh bin during the weighing periods of the instrument operation;
- (f) A printer to print transaction data (see Figure 4).
- (g) An uninterruptible power supply unit (UPS) with power monitoring relay which, in the event of a power failure, maintains power to the system and whilst the delivery process is stopped, records the delivery to that time and prompts the user to shut down the system.

1.3 Indicator/Electronics Cabinet

The Rinstrum model 5100 indicator, together with the Ranger model R5120 controller, controls the measurement functions, capturing empty and full load readings for each discrete load and totalising the discrete load values. It also controls the process, including starting and stopping in-feed and out-feed gates.

1.4 Operation

The sequence of operations of the system is shown in Figure 3.

The system is considered to be a discontinuous totalising automatic weighing instrument as it follows a predetermined program of automatic processes characteristic of the instrument, and weighs the bulk product by dividing it into discrete loads, which are each weighed, and delivers them to bulk.

However the operation of the system does require operator intervention as indicated in the following operation sequence (see also Figure 3):

- (a) Initially the operator ensures that power is applied to the system, suitable air pressure is available (to operate gate actuators), and that the system is zeroed (without load applied). The operator also ensures that the required *target discrete load* is set, and that the bulk product to be weighed is provided to the in-feed hopper of the system.

- (b) The operator presses the 'Clear Total' button to clear the previous *totalised bulk load delivered* value.

Note: If the totalised load is not cleared, values in the subsequent automatic sequence will continue to be totalised.

- (c) The operator presses a 'Start' button to initiate the weighing process.
- (d) Proximity sensors on the out-feed and in-feed gates provide interlock signals such that the automatic sequence will not continue if either the out-feed or in-feed gate is not closed.
- (e) The system then waits for a 'no-motion' (stable weight) status indication from the indicator, and then performs a tare operation of the Rinstrum 5100 indicator. The in-feed gate is then opened.
- (f) The weigh-bin is filled, and the Rinstrum 5100 indicator provides a signal to close the in-feed gate once (or slightly before) the *target discrete load* is reached. Hence the product feed is stopped.
- (g) The system then waits for a 'no-motion' (stable weight) status indication from the indicator, and then takes a reading of the net weight value for the particular discrete delivery.
- (h) The net weight value of the particular discrete delivery is printed by the system (interlocks are provided to ensure that the delivery sequence is stopped if the value is not printed).
- (i) The system then opens the weigh bin out-feed gates, allowing the product to be discharged
- (j) The weigh-bin empties, and the Rinstrum 5100 indicator provides a signal to close the out-feed gate once the indicator is at or close to zero (within a 'zero band' set within the Rinstrum 5100 indicator).
- (k) The automatic sequence continues at item (d) above.

During the automatic sequence the operator may determine that sufficient product has been delivered, or that no further product is available. The operator will then press the PAUSE/ABORT button for approximately 2 seconds.

This causes the automatic sequence to interrupt at the point shown in Figure 3, close the in-feed gate and carry out steps (g) and (h) above. The operator can then request the total value, which will be printed (Figure 4) and the total cleared.

1.5 Verification Provision

Provision is made for the application of a verification mark.

1.6 Sealing Provision

- 2 Provision is made for the calibration adjustments in the Rinstrum model 5100 indicator to be sealed by means of a destructible label over the calibration access on the indicator facia (as described in the documentation of approval NMI S418).

1.7 Descriptive Markings and Notices

- (a) Instruments carry the following markings, grouped together in a clearly visible place on the instrument, either on a descriptive plate fixed near the indicating device or on the indicating device itself:

Manufacturer's mark, or name written in full	Wide Bay Scales
Indication of accuracy class, e.g.	0.5
Pattern approval mark for the instrument	NMI 6/14B/19
Model number	WBSDTH-200
Serial number
Maximum capacity	<i>Max</i> = kg (*)
Minimum capacity	<i>Min</i> = kg (*)
Minimum totalised load	Σ_{\min} = kg (*)
Totalisation scale interval	<i>d_t</i> = kg (*)
Serial number of the instrument
Material to be measured

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

- (b) Instruments carry a notice visible to the operator stating TARGET LOAD SHALL BE NO LESS THAN 60 kg, or similar wording. (This refers to the *target discrete load*.)

2. Description of Variant 1 **provisionally approved on 11/03/11**
approved on 14/04/11

The pattern configured as a model WBSDTH-200 discontinuous totalising automatic weighing (DTAW) instrument of class 0.5, 1 or 2 with alternative maximum capacities from 60 kg to 200 kg, and minimum capacity (for the *target discrete load*) values from 60 kg to the maximum capacity. The instruments have minimum totalised load values (Σ_{\min}) of not less than minimum capacity, and a totalisation scale interval of 0.1 kg.

The instruments may also be known as model WBSDTH-xxx, where xxx corresponds to the maximum capacity of the instrument.

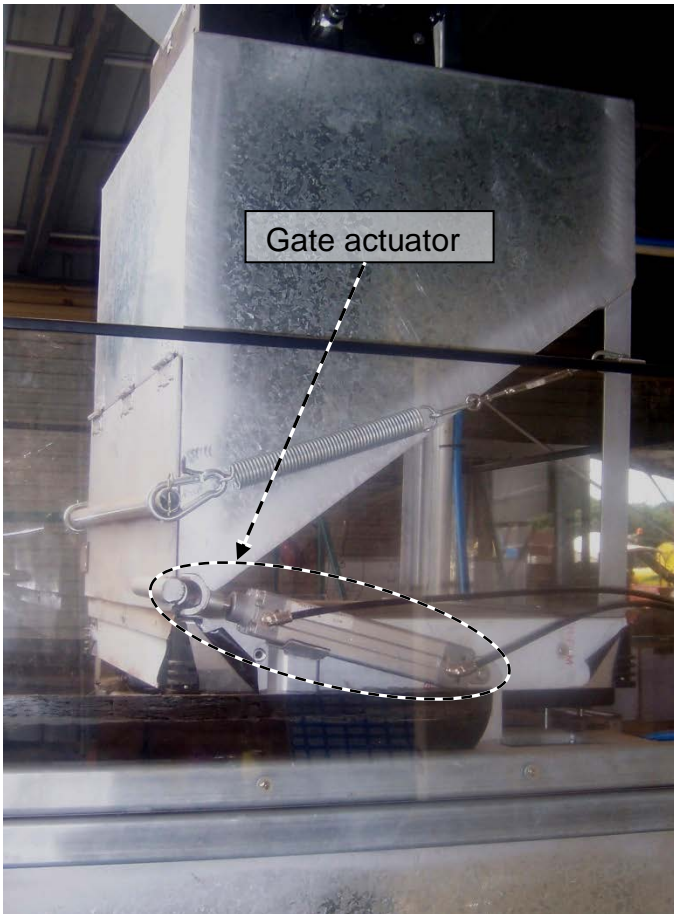
TEST PROCEDURE No 6/14B/19

Instruments shall be tested in accordance with any relevant tests for this category of instrument.

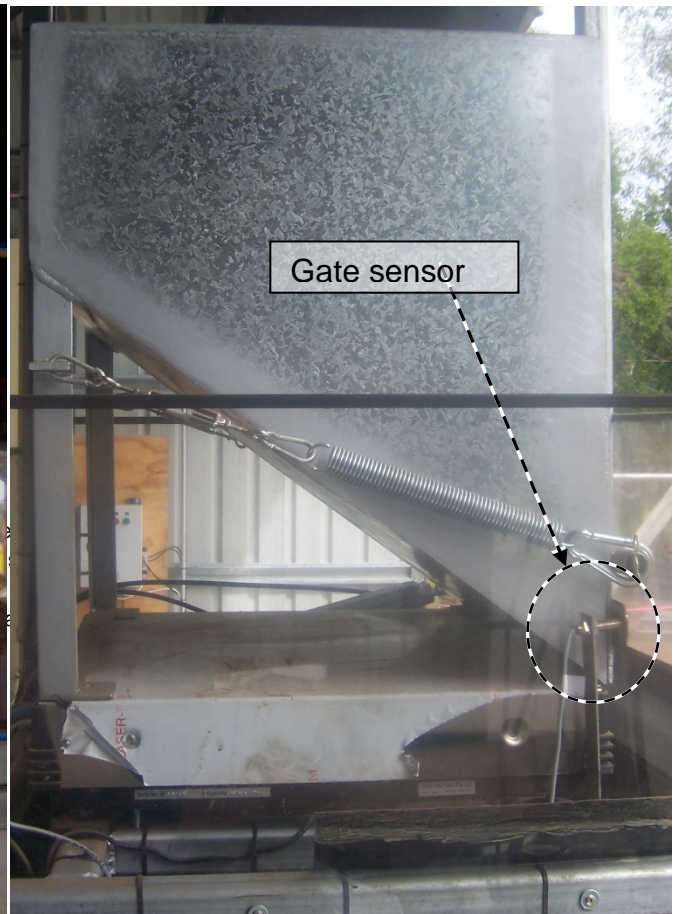
Maximum Permissible Errors

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

FIGURE 6/14B/19 – 1



Gate actuator side



Gate sensor side

Wide Bay Scales Model WBSDTH-200 Weighing Instrument (Weigh-bin)

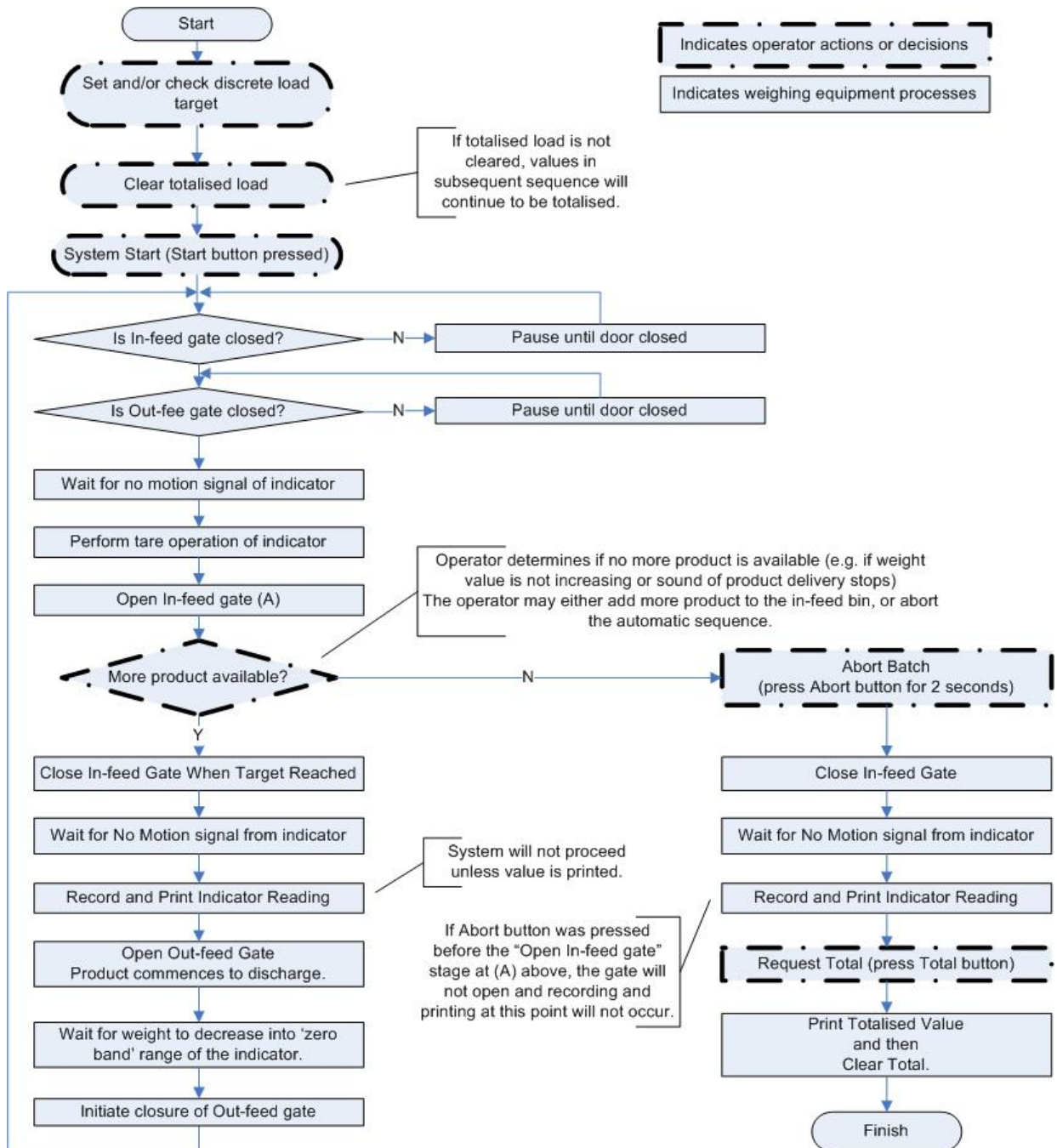
FIGURE 6/14B/19 – 2



1. Rinstrum 5100 Indicator
2. Pause/Abort Button
3. Start Button
4. Ranger 5120 Power Button
5. Output Manual Enable Section
6. In-feed Manual and In-feed Command On Indication
7. Out-feed Manual and Door Open Command Indication

Model WBSDTH-200 Operator Display and Control Panel

FIGURE 6/14B/19 – 3



Model WBSDTH-200 Operation Sequence/Flowchart

FIGURE 6/14B/19 – 4

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COMPANY
NAME
02/03/2011 Recipe 1: REC 01 Units: kg
  BATCH   TIME      MAT      TARGET  WEIGHT
000008 15:37:04   NUTS     50.0    50.6
000009 15:37:30   NUTS     50.0    51.6
000010 15:37:50   NUTS     50.0    51.4
000011 15:38:11   NUTS     50.0    50.8
000012 15:38:29   NUTS     50.0    23.2
```

(a)

Recipe 1: REC 01 Aborted.

```
MAT   ITEMS   TOTAL
NUTS 000005   227.6 kg
```

(b)

(a) Discrete load delivered values
- see note to clause **1.1 Details**

(b) Totalised bulk load delivered

Typical Model WBSDTH-200 Printout

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