



Australian Government
**Department of Industry, Science,
Energy and Resources**

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Certificate of Approval

NMI 6/4C/322

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.

CAS Model PDN-6RT Weighing Instrument

submitted by CAS Corporation
#262, Geurugogae-ro, Gwangjeok-myeon
Yangju-si, Gyeonggi-do, 11415
Republic of Korea

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 is subject to review at the decision of the Chief Metrologist in accordance with the conditions specified in the document NMI P 106.

DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern and variants 1 to 7 approved – certificate issued	27/04/21
1	Variant 8 approved & figures 1 to 7 updated – certificate issued	30/11/21

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI 6/4C/322' 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.

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 6/4C/322

1. Description of Pattern

approved on 27/04/21

A CAS model PDN-6RT class  self-indicating multi-interval non-automatic weighing instrument (Figure 1 and Table 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 6 kg. The minimum capacity of the instrument is 0.02 kg.

Instruments are fitted with a single integral LED display and with a double-sided remote LED customer display mounted on a column (Figure 2).

The instrument has the load receptor directly supported by a single load cell. The load receptor has maximum nominal dimensions of 380 x 280 mm.

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

Note: Surge testing has not been carried out as the manufacturer has indicated that typical installations risk of a significant influence of surges is not expected – i.e. intended installation is wholly indoors with signal lines of 30 m or less.

1.1 Zero

A zero-tracking device may be fitted.

The initial zero-setting device of the pattern has a nominal range of approximately 20% of the maximum capacity of the instrument.

The instrument maybe fitted with 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

The instrument is provided with adjustable feet and a level indicator. The level indicator (bubble) is located on basework underneath the weighing receptor. A notice indicating the location of the level indicator (e.g. "Level bubble provided under platform", or similar) shall be provided in a location clearly visible to the operator.

The instrument is to be used in a level condition as indicated by the level indicator.

1.5 Power Supply

Power for the PDN-6RT instrument may be supplied by:

- an AC/DC mains adaptor; or
- a 5 V DC supplied by a USB host.

Note: The AC/DC mains adaptor supplied for the instrument was a CAS model SAW06D-050-1000AB (output 5 V DC, 1 A) – the submittor should be consulted regarding the acceptability of alternative power supply units.

1.6 Interfaces

Instruments 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 Supplementary Certificate No S1/0B (in particular in regard to the data and its format).


Instruments may be fitted with RS232, USB and Bluetooth.

1.7 Verification Provision

Provision is made for the application of a verification mark.

1.8 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	CAS Corporation
Indication of accuracy class	
Pattern approval mark for the instrument	NMI 6/4C/322
Maximum capacity	<i>Max</i> g or kg #1
Minimum capacity	<i>Min</i> g or kg #1
Verification scale interval	<i>e</i> = g or kg #1
Maximum subtractive tare	<i>T</i> = - g or kg #2
Serial number of the instrument

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

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

Notes:

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	<i>Max</i>/..... g or kg
Verification scale interval	<i>e</i> =/..... g or kg

1.9 Sealing Provision

Provision is made for access to the calibration switch within the instrument to be sealed by means of a 'lead and wire' type seal with two drilled screws and a cover plate under the load receptor (Figure 8).

1.10 Software

The software is designed V 4xx or AU4xx, where xx reflecting non-legally relevant part of the software.

The software version and number can be seen in the switch-on display sequence (when the power is first applied to the instrument).

2. Description of Variant 1 **approved on 27/04/21**

The CAS model PDN-RT multi-interval instruments in certain other capacities as listed in Table 1 and as shown in Figure 1 (the pattern is shown in **bold**).

Table 1

Maximum Capacity (<i>Max₁/Max₂</i>)	Minimum Capacity (<i>Min</i>)	Verification Scale Interval (<i>e₁/e₂</i>)	Subtractive Tare Capacity (<i>T = -...</i>)
3/6 kg	0.020 kg	0.001/0.002 kg	2.999 kg
6/15 kg	0.040 kg	0.002/0.005 kg	5.998 kg
15/30 kg	0.100 kg	0.005/0.010 kg	14.995 kg

3. Description of Variant 2 **approved on 27/04/21**

The CAS model PDN-RT single interval instruments in certain capacities as listed in Table 2.

Table 2

Maximum Capacity (<i>Max</i>)	Minimum Capacity (<i>Min</i>)	Verification Scale Interval (<i>e</i>)	Subtractive Tare Capacity (<i>T = -...</i>)
6 kg	0.020 kg	0.001 kg	5.999 kg
12 kg	0.040 kg	0.002 kg	11.998 kg
30 kg	0.100 kg	0.005 kg	29.995 kg

4. Description of Variant 3 **approved on 27/04/21**

The CAS model PDN-RS weighing instruments which are similar to the pattern and variants 1 to 2 but with a single-sided remote column-mounted customer display as shown in Figure 3.

5. Description of Variant 4 **approved on 27/04/21**

The CAS model PDN-RD weighing instruments which are similar to the pattern and variants 1 to 2 but with two integral displays and a single-sided remote column-mounted customer display as shown in Figure 4.

6. Description of Variant 5 **approved on 27/04/21**

The CAS model PDN-BS weighing instruments which are similar to the pattern and variants 1 to 2 but with only a single integral display as shown in Figure 5.

Instruments are marked 'NOT FOR TRADING DIRECT WITH THE PUBLIC' (or similar wording) unless the instrument is used in a check out situation with the display clearly visible to both the customer and the vendor.

7. Description of Variant 6 **approved on 27/04/21**

The CAS model PDN-BD weighing instruments which are similar to the pattern and variants 1 to 2 but with two integral displays as shown in Figure 6.

8. Description of Variant 7

approved on 27/04/21

The CAS model PDN-US weighing instruments which are similar to the pattern and variants 1 to 2 but with a single integral display and a single-sided column-mounted customer display in Figure 7.

9. Description of Variant 8

approved on 30/11/21

The CAS model PDN-DB weighing instruments which are similar to the pattern and variants 1 to 2 but having two integral displays with keypads as shown in Figure 9.

TEST PROCEDURE No 6/4C/322

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 $e_1, e_2 \dots$, apply e_1 for zero adjustment, and maximum permissible errors apply $e_1, e_2 \dots$, as applicable for the load.

FIGURE 6/4C/322 – 1



CAS Model PDN-RT Weighing Instrument (Pattern)

FIGURE 6/4C/322 – 2



CAS PDN Remote Display

FIGURE 6/4C/322 – 3



CAS Model PDN-RS Weighing Instrument (Variant 3)

FIGURE 6/4C/322 – 4



CAS Model PDN-RD Weighing Instrument (Variant 4)

FIGURE 6/4C/322 – 5



CAS Model PDN-BS Weighing Instrument (Variant 5)

FIGURE 6/4C/322 – 6



CAS Model PDN-BD Weighing Instrument (Variant 6)

FIGURE 6/4C/322 – 7



CAS Model PDN-US Weighing Instrument (Variant 7)

FIGURE 6/4C/322 – 8



Sealing of PDN Series Instruments

Typical Sealing Method

FIGURE 6/4C/322 – 9



CAS Model PDN-DB Weighing Instrument (Variant 8)

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