



Australian Government
**National Measurement
Institute**

Bradfield Road, West Lindfield NSW 2070

Cancellation
Supplementary Certificate of Approval
No S489

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
CAS Model NT-505A Digital Indicator

submitted by CAS Corporation
 19 Kanap-Ri, Gwangjuk-Myoun
 Yangju-Si, Gyeonggi-Do
 Republic of Korea

has been cancelled in respect of new instruments as from 1 May 2012.

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

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke at the bottom.



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

CAS Model NT-505A Digital Indicator

submitted by CAS Corporation
19 Kanap-Ri, Gwangjuk-Myoun
Yangju-Si, Gyeonggi-Do
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 July 2004.

CONDITIONS OF APPROVAL

This approval becomes subject to review on 1 February 2012, and then every 5 years thereafter.

Instruments purporting to comply with this approval shall be marked with approval number 'NMI S489' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S489' in addition to the approval number of the instrument.

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.

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.

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.

DESCRIPTIVE ADVICE

Pattern: approved 30 January 2007

- A CAS model NT-505A single interval digital indicator.

Variants: approved 30 January 2007

1. Model NT-503A.
2. Models NT-501A and NT-502A.
3. Model NT-570A.

Technical Schedule No S489 describes the pattern and variants 1 to 3.

FILING ADVICE

The documentation for this approval comprises:

Supplementary Certificate of Approval No S489 dated 20 February 2007
Technical Schedule No S489 dated 20 February 2007 (incl. Table 1
and Test Procedure)
Figures 1 to 3 dated 20 February 2007

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 S489

Pattern: CAS Model NT-505A Digital Indicator

Submittor: CAS Corporation
19 Kanap-Ri, Gwangjuk-Myoun
Yangju-Si, Gyeonggi-Do
Republic of Korea

1. Description of Pattern

A CAS model NT-505A digital mass indicator (Table 1 and Figure 1) which may be configured to form part of a weighing instrument with a single weighing range of up to 5250 verification scale intervals as listed in Table 1.

Instruments may also be known as CAS model Newton NT-505A.



The instrument has a vacuum fluorescent display (VFD) including provision for display of the weight value, and an additional indicator for display of information relating to additional features (see **clause 1.4** below).

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

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.

The instrument operates from mains AC power (240 V AC, 50 Hz, nominal).

TABLE 1 – Specifications

Maximum number of verification scale intervals	up to 5250 (Class ) or up to 1000 (Class )
Minimum sensitivity	1.2 μ V/scale interval
Excitation voltage	9 V DC
Maximum excitation current	204.5 mA

1.1 Zero

Zero may be automatically corrected to within $\pm 0.25e$ whenever the instrument comes to rest within $0.5e$ of zero or whenever power is applied.

If the instrument comes to rest outside that range but within the zero setting range, zero may be set by pressing the zero button.

The instrument has a semi-automatic zero-setting device (to set the instrument to within $\pm 0.25e$ of zero) with a nominal range of not more than 4% of the maximum capacity of the instrument.

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

1.2 Tare

The instrument has provision for subtractive semi-automatic and pre-set tare devices of up to maximum capacity.

Pre-set tare values may be stored and recalled.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Additional Features

The indicator also has certain additional functions (e.g. hold function, high limit relay function, low limit relay function) which can be assigned to function keys of the indicator, and for which an additional display is provided. The additional functions (other than the indications of measured mass, i.e. gross, tare, net, displayed either on the indicator or on an auxiliary or peripheral device), are not approved for trade use.

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

Note particularly that 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.

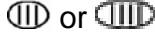
Indications other than the indications of measured mass (i.e. gross, tare, net, totals) displayed either on the indicator or on an auxiliary or peripheral device, are not for trade use.

Data derived from any analogue output or interface shall not be used for trade use.

Instruments may be fitted with RS232 and/or RS422/485 serial data interfaces.

1.6 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	CAS	
Name or mark of Australian distributor	
Indication of accuracy class		
Maximum capacity	<i>Max</i> kg	#1
Minimum capacity	<i>Min</i> kg	#1
Verification scale interval	<i>e</i> = kg	#1
Maximum subtractive tare	<i>T</i> = - kg	#2
Serial number of the instrument	
Pattern approval mark for the instrument	S489	
Pattern approval mark for other components	#3

#1 These markings are also shown near the display of the result if they are not already located there.

#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.

1.7 Sealing Provision

Provision is made for the calibration adjustments to be sealed by use of a lead and wire seal to prevent removal of the 'calibration switch bolt' on the back of the indicator (Figure 2), thereby preventing access to the calibration switch.

1.8 Verification/Certification Provision

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

2. Description of Variants

2.1 Variant 1

The model NT-503A which is similar to the pattern (NT-505A), except that the NT-503A has a different set of additional features (i.e. it has counting related additional features rather than the high and low limit features described in clause 1.4 **Additional Features** of the pattern).

2.2 Variant 2

The model NT-501A and model NT-502A which are similar to the pattern (NT-505A), except that they have a reduced set of features (e.g. the functions described in clause **1.4 Additional Features** are not available for the model NT502A, and the model NT-501A also has a reduced set of interface capabilities).

These models also do not have the additional indicator mentioned in relation to the additional features.

2.3 Variant 3

The model NT-570A (Figure 3) which is similar to the pattern (NT-505A), except that it has a different set of features (e.g. the functions described in clause **1.4 Additional Features** are not available for the model NT-570A, and the additional indicator mentioned in relation to the additional features is not provided).

However the model NT-570A has a capability for a higher analogue to digital conversion rate than the other models in this series.

The sealing provisions of the model NT-570A also differ from those of the other models in this series. For the NT-570A calibration adjustments may be sealed by use of a lead and wire seal to prevent removal of the cover at the front of the indicator which restricts access to the calibration switch (Figure 3).

TEST PROCEDURE

Instruments should be tested in accordance with any relevant tests specified in the Uniform Test Procedures.

Maximum Permissible Errors at Verification/Certification

For medium accuracy class III instruments, 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 $500 < m \leq 2000$; and
- $\pm 1.5 e$ for loads $2000 < m \leq 10\,000$.

For ordinary accuracy class IIII instruments, 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 $0 \leq m \leq 50$;
- $\pm 1.0 e$ for loads $50 < m \leq 200$; and
- $\pm 1.5 e$ for loads $200 < m \leq 1000$.

FIGURE S489 – 1



CAS Model NT-505A Digital Indicator

FIGURE S489 – 2



Sealing Arrangement – Pattern and Variants 1 and 2

FIGURE S489 – 3



CAS Model NT-570A Digital Indicator, Including Sealing