



Australian Government  
Department of Industry,  
Innovation and Science

## National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

# Supplementary Certificate of Approval

## NMI S749

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.

Precia Molen Model P1405-B Digital Indicator

submitted by      Precia SA  
                            BP 106  
                            07001 Privas  
                            France.

**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 becomes subject to review on 1/01/24, and then every 5 years thereafter.

### DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern approved – certificate issued	14/12/18

## CONDITIONS OF APPROVAL

### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S749' and only by persons authorised by the submitter.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S749' in addition to the approval number of the instrument, 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.

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

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.

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









**Darryl Hines**  
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Pattern Approval, Policy and  
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TECHNICAL SCHEDULE No S749

**1. Description of Pattern** **approved on 14/12/18**

A Precia Molen model P1405-B digital mass indicator (Figures 1) which may be configured to form part of:



- A class  weighing instrument with a single weighing range of up to 6000 verification scale intervals; or
- A class  weighing instrument with a single weighing range of up to 1000 verification scale intervals; or
- A class  multi-interval weighing instrument with up to three partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 3000 verification scale intervals per partial weighing range; or
- A class  multi-interval weighing instrument with up to three partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 1000 verification scale intervals per partial weighing range.
- A class  multiple range weighing instrument with up to two weighing ranges, in which case it is approved for use with up to 6000 verification scale intervals per weighing range.
- A class  multiple range weighing instrument with up to two weighing ranges, in which case it is approved for use with up to 1000 verification scale intervals per weighing range.

The changeover between weighing ranges is automatic.

The instrument may also be known as model i25-Touch.

The instrument has a stainless steel enclosure with a touch screen LCD display/keyboard for display of the weight value and alphanumeric information and/or menu.

TABLE 1 – Specifications

Maximum number of verification scale intervals	6 000 (class  ) 1000 (class  )
Minimum sensitivity	0.5 $\mu$ V/scale interval
Excitation voltage	5 V DC
Maximum excitation current	114 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	43.75 $\Omega$
Maximum load cell impedance	1245 $\Omega$
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	16 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Load cell connection	4 or 6 wire plus shield

Maximum value of load cell cable length per wire cross section (*)	220 m/mm <sup>2</sup> (6-wire only)
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(\*) Additional connection cable between indicator and load cell or load cell junction box.

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 pattern may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.6 below).

### **1.1 Zero**

A zero-tracking device may be fitted.

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.

The automatic zero-setting device has a nominal range of not more than 2% of the maximum capacity of the instrument and operates only when the instrument has been stable below zero.

### **1.2 Tare**

A semi-automatic subtractive tare device of up to the maximum capacity of the instrument may be fitted.

A non-automatic keyboard-entered pre-set subtractive tare device of up to the maximum capacity of the instrument or up to the maximum of the lowest partial weighing range for a multi-interval instrument may be fitted.

### **1.3 Linearisation Facility**

Instruments are fitted with a linearisation correction facility having up to six points.

### **1.4 Display Check**

A display check is initiated whenever power is applied.

### **1.5 Power Supply**

The instrument operates from mains AC power (90-230 V AC, 50/60 Hz).

### **1.6 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 NMI S1/0B (in particular in regard to the data and its format).

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.

Instruments may be fitted with RS-232/RS485 serial data interfaces, CAN Bus, Ethernet, USB interface, Bluetooth, WiFi and digital inputs/outputs.

### **1.7 Additional Features**

Instruments may be fitted with counting, checking, formulation, totalisation and calculation functions. The additional functions (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 approved for trade use.

Instruments may also be fitted with a 'weighing unstable sample' or 'animal weighing' function. This function shall not be used for trade use.

Note: In particular circumstances (e.g. in regard to weighbridge or public weighbridge operation), Trade Measurement legislation or other NMI Certificates of Approval may impose requirements in regard to specific features, methods of operation, or records to be provided (and in what form).

Certain features of this instrument are able to be configured by the installer or user. Whilst NMI believes that an acceptable configuration can be achieved for typical basic modes of operation, it may also be possible for the instrument to be configured to produce unacceptable configurations, and use of some configurations may be inappropriate in different situations. It is the responsibility of the installer and user to ensure that the configuration is acceptable and meets relevant requirements for any particular situation.

In addition, the indicator may be provided with an integral data storage device (DSD).

For each weighing request, weighing results together with identification including date and time are stored into the storage device.

Data from the storage device shall only be used for trade if the format of the output complies with NMI General Supplementary Certificates No S1/0B.

### **1.8 Two Baseworks Facility**

When up to two baseworks are connected the following indications may be provided:

#### **(a) Individual weight display**

Selection of the platform to be displayed is pressing the platform icon identified by the '1' or '2' in the menu. Tare and zero operations may be applied to each individual basework/indication, as if they were separate instruments.

#### **(b) Combined weight display**

When two baseworks of the same configuration (maximum capacity and verification scale interval) are connected to a single P1405-B indicator it may also be possible to select a summation mode in which the combined weight on the platforms is displayed. The 'Σ' icon in the menu is used to select function-when selected 'Σ' is indicated rather than '1' or '2'. The 'Σ' indication represents the combined weight of platforms 1 and 2.

This has similarities to a summing indicator as described in General Supplementary Certificate of Approval No S1/0B however the feature has some significant differences. In particular, the combined weight function indication does not necessarily represent the mathematical sum of the values determined for each platform. This is because the combined weight function indication has its own maximum capacity (*Max*), minimum capacity (*Min*) and verification scale interval (*e*), and the indication is based on a separate determination of the weight value using these parameters.

Tare and zero operations may be applied to the combined basework/indication, as if it was a separate instrument.

Note however that applying a gross load above the maximum capacity ( $Max + 9e$ ) of any one basework will not result in the combined weight display indication blanking or showing an error.

### **Notes regarding applicability of General Certificate of Approval No 6B/0**

- The calculations of 6B/0 shall apply to each basework/indicator combination individually;
- In the case of individual basework/indicator combination, the maximum capacity of the load cells in any one basework shall exceed the maximum capacity of the combined weight function ( $Max_{combined}$ ). This shall apply to the calculations of clause 6.2 of General Certificate No 6B/0.
- In the case of the combined weight function, the calculations of clauses 6.3 to 6.6 of General Certificate No 6B/0 shall apply, with the number of load cells being the total number in the baseworks; and
- The verification scale interval for the combined weight function shall not be less than the smallest scale intervals for any one basework, and shall be an integer power of 10 multiple of 1, 2 or 5 (i.e. ..., 0.1, 0.2, 0.5, 1, 2, 5, ...).

Note: As an example, of one possible configuration:

Scale 1: Max = 50000 kg, e = 20 kg, Min = 400 kg

Scale 2: Max = 50000 kg, e = 20 kg, Min = 400 kg

Scale 3: Max = 100000 kg, e = 50 kg, Min = 1000 kg

### **1.9 Verification Provision**

Provision is made for the application of a verification mark.

### **1.10 Sealing Provision**

The indicator is sealed by recording the audit trail counter on verification.

Access to allow changing of set-up parameters including calibration parameters must be protected by a passcode.



The indicator automatically increments a configuration or calibration value (audit trail number) each time the indicator is re-configured or calibrated.

The value of event counter can be seen by pressing the platform icon on the LCD display and may be recorded on a destructible adhesive label attached to the instrument (as 'Events counter' followed by a number).

Any subsequent alteration to the calibration or configuration will be evident as the recorded values and the current counter values will differ.

### 1.11 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Precia Molen
Model number	P1405-B
Indication of accuracy class	 or 
Maximum capacity	<i>Max</i> ..... kg #1
Minimum capacity	<i>Min</i> ..... kg #1
Verification scale interval	<i>e</i> = .... .. kg #1
Serial number of the instrument	.....
Pattern approval mark for the indicator	NMI S749
Pattern approval mark for other components	..... #2

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

#2 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.

Note:

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

For multiple range instruments, the maximum capacity, minimum capacity and verification scale interval for each range shall be marked, with an indication of the range to which they apply, e.g.

Range	W1	W2
<i>Max</i>	.... kg	.... kg
<i>Min</i>	.... kg	.... kg
<i>e</i> =	.... kg	.... kg

### 1.12 Software Version

The software version is designated Version:1.x.y, where 'x.y' refers to the identification of non-legally relevant software.

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

## TEST PROCEDURE

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 S749 – 1



Precia Molen Model P1405-B Indicator

~ End of Document ~