

Australian Government

Department of Industry, Innovation and Science

National Measurement Institute

# Supplementary Certificate of Approval NMI S757

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.

Sartorius Model MAXXIS 5 PR5900/00 Process Controller

submitted by Kontrols And Industrial Weighing Unit 6A, 11 Bryants Road Dandenong Victoria 3175

**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 1/01/23, and then every 5 years thereafter.

#### DOCUMENT HISTORY

Rev	Reason/Details	Date
0	Pattern & variants 1 to 4 approved – certificate issued	7/12/17

## CONDITIONS OF APPROVAL

#### General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S757' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S757' in addition to the approval number of the instrument, 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.

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** 

#### TECHNICAL SCHEDULE No S757

#### 1. Description of Pattern

#### approved on 7/12/17

A Sartorius model Maxxis PR5900/00 process controller (Figure 1 and Table 1) which may be configured to form part of a class 3 weighing instrument as follows:

- A weighing instrument with a single weighing range of up to 6000 verification scale intervals;
- A multi-interval weighing instrument with up to 3 partial weighing ranges (each with its own verification scale interval) in which case it is approved for use with up to 6000 verification scale intervals per partial weighing range;
- A multiple range weighing instrument with up to 3 weighing ranges, in which case it is approved for use with up to 6000 verification scale intervals per weighing range. The changeover between weighing ranges is automatic.

As a class 4weighing instrument with a single range, or as a multi-interval instrument up to 3 partial weighing ranges, or as a multiple range instrument up to 3 weighing ranges, and with up to 1000 verification scale intervals.

The instrument has a stainless steel enclosure and may be fitted with output sockets (output interfacing capability) for the connection of auxiliary and/or peripheral devices (see clause 1.7 below).

The instrument has a 5.7 inch colour TFT display with a keypad.

The instrument has a type PR5900/10 A/D converter for connecting to analogue load cells.

The instrument may be connected up to two analogue load cells, weighing modules or networks of load cells.

Instruments may also be known as Minebea Intec process controllers of the same model.

#### **TABLE 1 – Specifications**

Maximum number of verification scale intervals	6000 (Class3) 1000 (Class 4)
Minimum sensitivity	$0.84 \mu V / scale interval$
Fraction of maximum permissible error	$\pm 6 \text{ V DC}$ p <sub>i</sub> = 0.5
Maximum excitation current	160 mA
Minimum load cell impedance	75 Ω
Maximum load cell impedance	1200 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	36 mV
Maximum tare range	-100% Max
Operating temperature range	-10°C to +40°C
Load cell connection (analogue load cell)	6 wire shielded conductor, with 666 m/mm <sup>2</sup> maximum value of cable length per wire cross section.

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.

## 1.1 Zero

A zero-tracking device may be fitted.

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 taring device of up to the maximum capacity of the instrument may be fitted.

## 1.3 Power Supply

The instrument has a 115-230 V AC mains power source.

## 1.4 Display Check

A display check is initiated whenever power is applied.

#### 1.5 Interfaces

The instrument 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).

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 the following interfaces.

- RS232.
- RS485.
- USB.
- Ethernet.
- Digital input/output.
- SD card.
- Analog input/output with 0/4-20 mA
- Fieldbus

#### 1.6 Linearisation

The instrument is fitted with a linearisation correction facility having 3 correction points.

#### 1.7 Additional Features

The additional functions (i.e. checkweighing function) other than the indications of measured mass (i.e. gross, tare, net displayed either on the indicator or an auxiliary or peripheral device) are not approved 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). Page 4 of 10 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.

## 1.8 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Minebea Intec GmbH #1	
Name or mark of manufacturer's agent	Kontrols And Industrial	
	Weighing	
Indication of accuracy class	3 or 4	
Maximum capacity (for each range)	<i>Max</i> kg or t #2	
Minimum capacity (for each range)	<i>Min</i> kg or t #2	
Verification scale interval (for each range)	e = kg or t #2	
Maximum subtractive tare	<i>T</i> = kg or t #3	
Serial number of the instrument		
Pattern approval number for the indicator	NMI S757	
Pattern approval number for other components	s #4	

- #1 Manufacturer may also be known as Sartorius.
- #2 These markings are also shown near the display of the result if they are not already located there.
- #3 This marking is required if *T* is not equal to *Max*.
- #4 May be located separately from the other markings.

In addition, instruments not greater than 100 kg capacity carry a notice stating NOT TO BE USED FOR TRADING DIRECT WITH THE PUBLIC, or similar wording.

Note:

For multi-interval and multiple range instruments the markings shall be as above, with the exception of the following (examples are for instruments with two partial ranges):

(i) For multi-interval instruments;

Maximum capacity	<i>Max</i> / kg or t*
Verification scale interval	e =/ kg or t*

(ii) 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	1	2	3
Max	kg or t	kg or t	kg or t
Min	kg or t	kg or t	kg or t
e =	kg or t	kg or t	kg or t

## 1.9 Verification Provision

Provision is made for the application of a verification mark.

## 1.10 Software

The software is designated as follows.

- \* Bios [r01]: Rel.02.22.05-E02.287792. 2017-01-24-9:56.
- \* Firmware [r01]: Rel. 02.22.05-E02.287792. 2017-01-24-9:56.
- \* Basic: Rel.01.00.09.128. 2016-06-24-09:11.

## 1.11 Sealing Provision

Provision is made for the calibration adjustments to be sealed by preventing access within the instrument case by placing a destructible label over access holes to prevent accessing the calibration switches within the enclosure (Figure 2).

The instrument can also be audited by checking the calibration check number as follows:

- Press the button under the "Log in", and then enter the user name and password.
- On "Operating" screen, select "System information", then press "OK" button.
- On "System information" screen, select "System calibration check number", then press "OK" button.
- On "Calibration check number" screen, record the calibration check number.
- Compare the calibration check number in the instrument with the calibration check number recorded on the seal label. If the numbers are the same then the metrological functions and parameters have not been changed.
- Otherwise the calibration check number in the instrument should be recorded on the seal label

The number of access should be recorded on the seal label.

#### 2. Description of Variant 1

## approved on 7/12/17

The Sartorius model Maxxis 5 PR5900/01 Process Controller (Figure 3) has similar parameters and specifications to the pattern, except it has a 24 V DC power supply.

#### 3. Description of Variant 2

#### approved on 7/12/17

This variant has similar parameters and specifications to the pattern and variant 1, except it replaces type PR5900/10 A/D converter with type WE1 A/D converter (Figure 4), and has different specifications as listed in table 2.

#### **TABLE 2 – Specifications**

10000 (Class3) 1000 (Class 4)
0.84 µV / scale interval
12 V / 7 V DC
pi = 0.5
160 mA / 93.333 mA
75 Ω
1200 Ω
0 mV
36 mV
-100% Max
-10°C to +40°C

6 wire shielded conductor, with 400 m/mm<sup>2</sup> maximum value of cable length per wire cross section.

## 4. Description of Variant 3

This variant has similar parameters and specifications to the pattern, variant 1 and 2, except it may connect to digital load cells. Up to 2 digital load cells, 2 weighing modules/network of maximum of 12 digital load cells may be connected.

#### 5. Description of Variant 4

#### approved on 7/12/17

approved on 7/12/17

The Sartorius model Maxxis 4 PR5500 (Figure 5) has similar parameters and specifications to the pattern and variant 1, and 3, except the followings.

- This variant supports only a single A/D converter to connect a single scale.
- The keyboard layout is different than the pattern, but the functionalities are the same.
- The power supply unit is different (with less power) than the pattern, but the same output voltage.
- This variant has a 4.3 inch TFT colour display.

The calibration and configuration of metrological relevant parameters are protected as shown in Figure 6. This CAL switch is sealed by a destructible label sticker.

## TEST PROCEDURE

Instruments shall be tested in accordance with any relevant tests specified in the National Instrument Test Procedures.

The instrument shall not be adjusted to anything other than as close as practical to zero error, even when these values are within the maximum permissible errors.

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

#### FIGURE S757 – 1



Maxxis 5 - PR5900/00 (pattern)

## FIGURE S757 – 2



Typical Mechanical Sealing (pattern)

FIGURE S757 – 3



This version is designed for 24 V direct current. The supply is established via two screw terminals (- 24 V +). The instrument is protected against incorrect polarity.

The instrument is protected in the + line via a on the back of the device (primary side).

#### Protective grounding conductor

The housing back must be connected to the protective grounding conductor (fixing using screw (1)).

Maxxis 5 - PR5900/01(variant 1)



FIGURE S757-4

The WE1 option is fitted into the WPA slot and marked with the sticker WE1, no WPB is possible when this option is installed

Maxxis 5 – PR5900/00 with WE1 A/D converter (variant 2)

FIGURE S757 - 5



Maxxis 4 - PR5500/00 (variant 4)

FIGURE S757 - 6



Typical Sealing Method Maxxis 4 - PR5500/00 (variant 4)

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