Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

36 Bradfield Road, West Lindfield NSW 2070

Supplementary Certificate of Approval

NMI S815

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.

Keli Sensing Technology Model XK3118K5 Digital Indicator

submitted by Australian AgAdvisory & Management Pty Ltd
43 Norman Drive
Barmaryee QLD 4703

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 approved – certificate issued	28/05/21

CONDITIONS OF APPROVAL

General

Instruments purporting to comply with this approval shall be marked with pattern approval number 'NMI S815' and only by persons authorised by the submittor.

Instruments incorporating a component purporting to comply with this approval shall be marked 'NMI S815' 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 of Approval 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
Manager
Policy and Regulatory Services

TECHNICAL SCHEDULE No S815

1. Description of Pattern approved on 28/05/21

A Keli Sensing Technology model XK3118K5 digital mass indicator (Figure 1) which may be configured to form part of:

- A class (III) weighing instrument with a single weighing range of up to 3000 verification scale intervals; or
- A class (III) weighing instrument with a single weighing range of up to 1000 verification scale intervals.

The instrument has a stainless steel enclosure with an LCD display for display of the weight value.

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

TABLE 1 – Specifications

Maximum number of verification scale intervals	3000 (class (III)) 1000 (class (III))
Minimum sensitivity	1.5 µV / scale interval
Excitation voltage	5 V DC
Maximum excitation current	114.16 mA
Fraction of maximum permissible error	$p_i = 0.5$
Minimum load cell impedance	43.8 Ω
Maximum load cell impedance	1050 Ω
Measuring range minimum voltage	0 mV
Measuring range maximum voltage	+39 mV
Maximum tare range	-100% Max
Operating temperature range	-10 °C to +40 °C
Load cell connection	6 wire plus shield
Maximum value of load cell cable length per wire cross section (*)	1528 m/mm^2 (6-wire)

(*) 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.

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.

1.2 Tare

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

A preset tare device of up to the maximum capacity of the instrument may be fitted.

1.3 Display Check

A display check is initiated whenever power is applied.

1.4 Power Supply

The instrument operates from mains AC power (100 - 240 V AC, 50/60 Hz).

1.5 Additional Features

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.

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.

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 General Supplementary Certificate of Approval 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 RS-232 serial data interfaces.

1.7 Data Storage Memory

The indicator may contain memory for the storage of weighing results.

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

The use of this feature for trade use is subject to the agreement of the applicable trade measurement authority. In any case, data from the storage device shall only be used for trade if the format of the output complies with General Supplementary Certificate of Approval No S1/0B.

1.8 Verification Provision

Provision is made for the application of a verification mark.

1.9 Descriptive Markings and Notices

Instruments carry the following markings:

Manufacturer's mark, or name written in full	Keli Sensing Technology (Ningbo) Co., Ltd
Name or mark of manufacturer's agent	Australian AG Advisory & Management
Model number	XK3118K5
Indication of accuracy class	(III) or (IIII)
Maximum capacity	*Max* ..... kg #1
Minimum capacity	*Min* ..... kg #1
Verification scale interval	*e* = ... kg #1
Maximum subtractive tare	*T* = - ..... kg #2
Serial number of the instrument	…….
Pattern approval mark for the indicator	NMI S815
Pattern approval mark for other components	..... #3

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

#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.

1.10 Sealing Provision

The calibration parameters are stored within the STC 88G5-16RD+ EPROM. Provision is made for the calibration to be sealed by setting a jumper 'J10' on the XK3118K5-M-S main board within the instrument to 'OPEN' position as shown in Figure 2b, and then preventing access within the instrument housing.

It is possible to determine that the jumper status is in the 'OPEN' position without breaking the seals by pressing the 'FUNCTION' button.

- If the jumper is in the 'OPEN' position, the instrument displays "SUrE 0". In this case the instrument may be verified.
- Otherwise the instrument should not be verified until the jumper has been correctly set to the 'OPEN' position.

Sealing to prevent access within the instrument housing may be achieved by means of lead and wire type seal with drilled screws or destructive adhesive labels placed over the opposite sides of a join in the instrument housing (Figures 2a).

1.11 Software

The software version is designated V01.

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 No S815

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

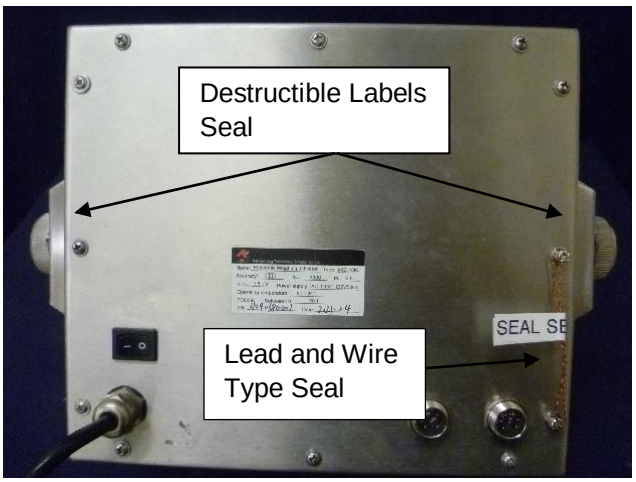
Maximum Permissible Errors

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

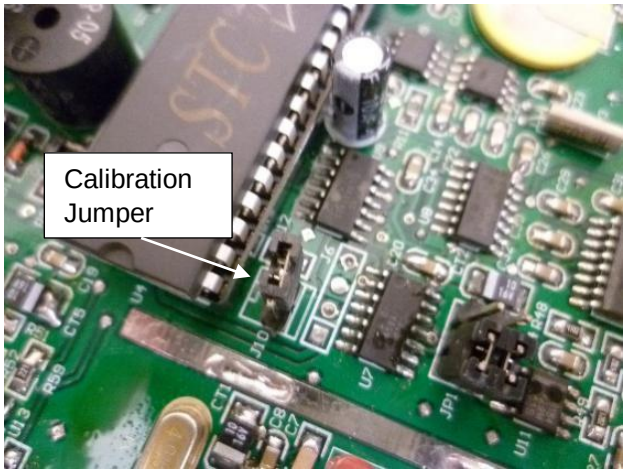
FIGURE S815 – 1

Keli Sensing Technology Model XK3118K5 Indicator

FIGURE S815 – 2



(a) Sealing Arrangement



(b) J10 Jumper in OPEN Position

Typical Sealing Method

~ End of Document ~