MINISTRY OF CONSUMER AFFAIRS
MANATŪ KAIHOKOHOKO

MINISTRY OF CONSUMER AFFAIRS

Wellington, New Zealand

CERTIFICATE OF APPROVAL

Weights and Measures Regulations 1999
Part 1 Regulations 5 and 6

Current Date of Issue: 20 July 2011
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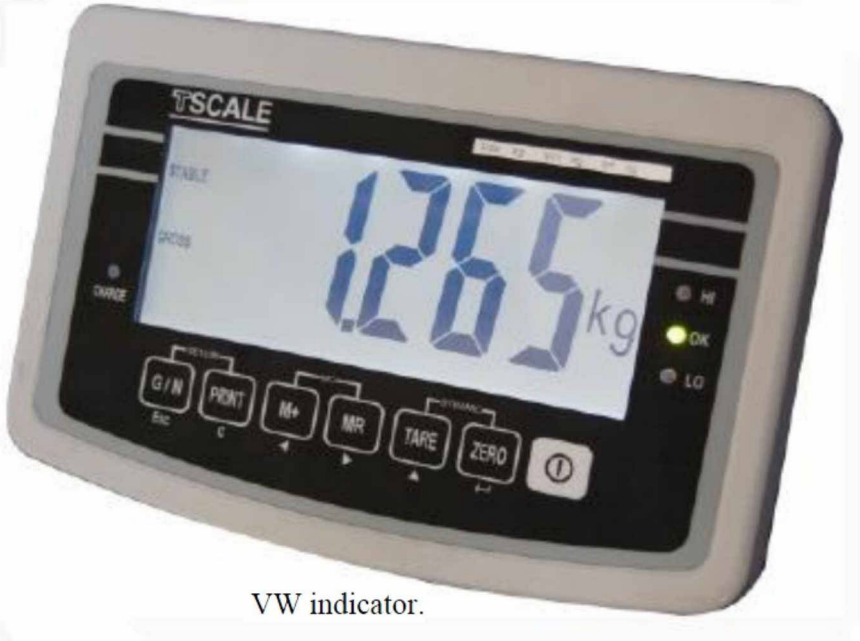
Certificate 2042

Overseas Certificate No: DK 0199.165

This certifies that the Taiwan Scale or T Scale VW / BW / BWS / CW / KW / EKW / ELW, Weighing Instrument described overleaf has been approved as suitable for trade use subject to any conditions stated in the schedule:

Figure 1 - Model VW Indicator



VW indicator.

S R Bobbala **J P Crane**

Under delegated authority from the Chief Executive of The Ministry of Economic Development

Note: This is not an approval to any person but only with respect to the type and pattern of weight, measure, or weighing or measuring instrument.

SCHEDULE

Pattern:	Weighing Instrument
Make:	Taiwan Scale or T Scale
Model:	VW / BW / BWS / CW / KW / EKW / ELW
Manufacturer:	Taiwan Scale Mfg. Co., Ltd. Taipai, Taiwan
Submitter:	Millennium Mechatronics Ltd, Auckland
Verification Scale Interval:	see description
Class:	III or IIII
Tare:	- Max
Conditions of Approval:	1. The approval does not include the use of the indicator as an automatic weighing instrument. 2. The acceptability of the indicator in a weighing instrument must meet the criteria detailed in this certificate 3. When configured as part of a weighing instrument with max capacity not greater than 100 kg, instrument shall carry a notice stating “NOT TO BE USED FOR TRADING DIRECT WITH PUBLIC” or similar wording 4. This Certificate only covers compliance with respects to the relevant sections of the Weights and Measures Act and Regulations and should not be construed as guarantee of compliance with any safety requirements. 5. 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 MAPSS and with the relevant Certificate of Approval and Technical Schedule. 6. MAPSS reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Description:

A Taiwan Scale (or T Scale) Model VW / BW / BWS / CW / KW / EKW / ELW is a digital weight indicator and may be configured to form part of a Class III or IIII non-automatic weighing Instruments with single interval, multi-range or multi-interval.

The number of verification scale intervals applicable to a weighing instrument which includes this indicator shall not exceed:
i) Single interval Weighing Instrument: 6000 verification scale intervals, (for class IIII n ≤ 1000) or
ii) Multi-range or Multi-interval Weighing Instrument: 3000 verification scale intervals per weighing range with up to two weighing ranges, (for class IIII n ≤ 1000).

The changeover between weighing ranges is automatic.

TABLE 1 – Specifications
Fractional factor (pi)0.5
Minimum sensitivity 1 μV/scale interval
Excitation voltage 5 V DC
Minimum load cell impedance 87 Ω
Maximum load cell impedance 1600 Ω
Operating temperature range -10°C to +40°C
Load cell connection 4-wire, or 6-wire shielded with a maximum length of 227 m/mm2

Construction:
The indicators are housed in an enclosure made of either:
i. ABS plastic – Model BW / VW / CW / KW / EKW / ELW
ii. Stainless steel – Model BWS

Display:
The pattern uses either a LCD or LED type display incorporated into the indicator housing.
LCD type display – Model BW / BWS / VW / CW
LED type display – Model KW

The front panel of the indicator is equipped with an integrated keypad containing,
4 keys – Model ELW, or
6 keys – Model BW / BWS / VW / CW / KW / EKW.

Display Check
A display check is initiated whenever power is applied.
Weighing unstable samples
The indicator has a function for weighing unstable samples. It is turned on/off by pressing the "ZERO" and "TARE" keys simultaneously.

Software version:
The software revision level is displayed during the power-up sequence of the instrument.
The approved software versions are:
Model BW, BWS, VW and CW indicators: 1.07 and 1.08
Model KW indicator: 1.02 and 1.03
Model EKW and ELW indicators: 1.00

Power Supply
The indicator operates on a 9 – 12 V DC from an external power adapter, with input from 230 VAC 50 Hz.
The indicators may also operate on internal rechargeable battery, if this option is installed.

Interfaces:
The instruments may be fitted with one or more of the following interfaces for the connection of auxiliary and/or peripheral devices:
- RS-232C
- Analogue output (0 – 10V / 4 – 20 mA)
- Digital output
- Blue tooth

Note: The Auxiliary devices shall meet the following conditions:
(i) have no function that would cause a variation in the display of the measured or computed quantities
(ii) is not capable of transmitting any data or instruction into the weighing instrument, other than to release a printout, checking for correct data transmission or validation
Or
As indicated from time to time by the Measurement and Product Safety Service (Type Approvals).

Additional Features
The indicator may have certain additional features such as totalisation, Hi/Low/Ok and counting which NOT APPROVED.

CRITERIA for checking compatibility:
To check if the indicator can be used with a certain basework, the conditions to be met are:
a)The excitation voltage used is within the range approved for the basework
b)The maximum load applied to the basework (live load plus any dead load does not exceed the load cell maximum capacity)
c)The verification scale interval is not less than the minimum value specified
d)The number of verification scale intervals is less than or equal to the n max specified
e)The signal voltage per verification scale interval is not less than the minimum sensitivity value per verification scale interval for the indicator (as specified in the approval document / technical specifications of the indicator).
i.e. Indicator Sensitivity ≤ (1000 x Ex x LC_Sens x e) / (N x Emax), where
Ex = Excitation from indicator (V)
LC_Sens = load cell sensitivity (mV/V)
e = verification scale interval of the instrument (kg)
N = number of load cells
Indicator Sensitivity = Minimum sensitivity value per verification scale interval for the indicator (μV)

ZERO SETTING DEVICES:
The Initial zero setting device of the pattern has a nominal range of not more than ±10% of the maximum capacity of the instrument.

The Indicator has a semi-automatic zero setting device with a nominal range of not more than ±2% of the maximum capacity of the instrument.

The Indicator has a automatic-zero tracking range of not more than ±2% of the maximum capacity of the instrument.

TARE:
The instrument has provision for subtractive semi-automatic and pre-set tare devices of up to maximum capacity.
When the tare function is active the “G/N” key will toggle the display between showing Net and Gross value.

METROLOGICAL MARKINGS:
Instruments carry the following markings:
Manufacturer’s mark, or name:
Accuracy class
Pattern approval number: **MCA 2042**
Maximum capacity Max (each range) ..... g or kg #
Minimum capacity Min (each range) ..... g or kg #
Verification scale interval e (each range) ..... g or kg #
Maximum subtractive tare T = - ……. g or kg
Serial number of the instrument …….
These markings are also shown near the display of the result.

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.

Sealing:	(i) The indicator is sealed by preventing access within the indicator housing (Figure 1.2). This may be achieved by applying destructible adhesive labels over the screw restricting from opening the enclosure covers. See sealing photos. Model VW: sealing is achieved by placing the destructible adhesive label over the calibration switch and over one of the screw in the enclosure. See sealing photos. and (ii) The load cell cable connecting to the indicator is using an approved type seal (destructible adhesive label or a lead wire seal)
Mark of Verification:	The destructible adhesive label seal or a lead plug type seal used for sealing the instrument shall carry a Mark of Verification. Removal of seal deems the instrument not verified.
Temperature:	-10˚ C to 40˚ C

Figure 2

BWS indicator.

KW indicator.

BW indicator.

CW indicator.

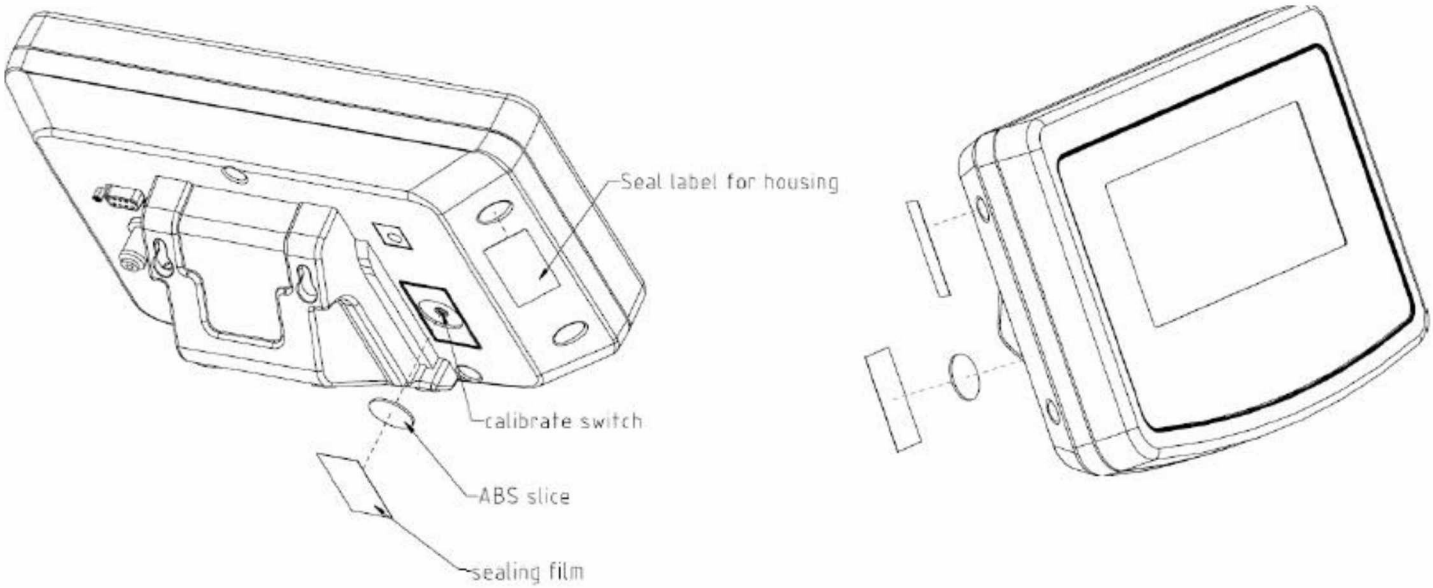
Figure 3

ELW indicator

EKW indicator.

Figure 4 - Sealing Photo

Figure 5 - Sealing Photo - Model VW



Sealing of VW.

After calibration, assemble the seal cover (ABS) on the hole, then fix the seal film (self destroyed type), if you want to enter the calibration mode, the calibration switch must be pressed, so the sealing must be destroyed.

Figure 6 - Sealing Photo