Test certificate

Nederlands Meetinstituut

Number **TC5915** revision 0
Project number 10117854

Issued by	NMi Certin B.V. Hugo de Grootplein 1 3314 EG Dordrecht The Netherlands Notified Body Number 0122
In accordance with	Paragraph 8.1 of the European Standard on Metrological aspects of non-automatic weighing instruments EN 45501:1992/AC:1993. The applied error fraction p_i, meant in the paragraph 3.5.4. of this standard is 0.5.
Applicant	CAS Corporation # 19 Kanap-ri, Kwangjeon-myon, Yangju-kun Kyunggi-do KOREA
In respect of	The model of an **indicator,** tested as a part of a weighing instrument (for non-automatic weighing instruments class (III) and (IIII)). Manufacturer : CAS Type : BI-Series
Characteristics	Electronic, self-indicating device, with single-interval indication. The maximum number of verification scale intervals will be: $n \leq 5000$ for class (III) instruments or $n \leq 1000$ for class (IIII) instruments. In the description TC5915 revision 0 further characteristics are described.
Description and Documentation	The instrument is described in the description number TC5915 revision 0 documented in the documentation folder TC5915-1, appertaining to this test certificate.
Remarks	Summary of the test involved: see Appendix number TC5915 revision 0.

Delft, 13 July 2001
NMi Certin B.V.

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Verispect B.V. (27.228.700)

1 General information about the indicator

All properties of the indicator, whether mentioned or not, may not be in conflict with the standard mentioned in the test certificate.

1.1 Essential parts

Description	Drawing number	Rev.	Remarks
Wiring Diagram	6100-PBI-0005	0	Service Manual page 22
Main P.C.B.	6100-PBI-0002	0	Service Manual page 17
BI-series parts list	Main P.C.B.	2000.1.19	3 pages

EMC protection measures:
- The A/D board is shielded in a metal case;
- The electronic boards are shielded with a metal cover;
- The case is covered with a conductive painting;
- Ferritebeads around all incoming cables;
- No ground connection between the cable swivels and the case;
- The shield of the signal cable is connected to ground (=case).

1.2 Essential characteristics

List of devices:
- determination stability of equilibrium;
- indication of stable equilibrium;
- calibration / set-up mode via a switch on the main board;
- initial zero setting;
- semi-automatic zero-setting;
- zero-tracking;
- zero indicator;
- semi-automatic subtractive tare balancing;
- Changing from Net to Gross;
- Comparator mode;
- Counting mode;
- Weighing unstable samples (also called Hold function);
- acting upon significant faults;
- display checking;
- Digital indications other than primary indications.

Connections:
- power supply of 12 V DC by adapter or 7.2 / 9 V DC by battery;
- the minimum value allowed for the signal voltage per verification scale interval is 2 μV;
- the excitation power supply for the load cell is 5 V DC;
- the minimum input impedance of the load cell is 87 Ω;
- the maximum input impedance of the load cell is 1000 Ω;

- No "Remote-sensing" is used;
- the maximum cable length for the connection between the indicator and the junction box or load cells is 0.7 m/mm^2;
- The load cell is soldered to the mainboard.

Software:
- the software has the identification number: V 001
- the identification number will be displayed at start-up.

1.3 Essential shapes

The indicator is built according to drawing: Explode view, Service Manual page 23.
The data plate is secured against removal by sealing or will be destroyed when removed and contains the following information:
- this test certificate number TC5915;
- manufacturers name or mark.

To secure components that may not be dismantled or adjusted by the user, the indicator has to be secured in a suitable manner on the locations indicated in the drawing: Sealing, Service Manual page 15. The securing component has to bear either:
- a mark of the manufacturer laid down in a notified body approved quality system (Annex II of the Directive 90/384/EEC), or;
- an official mark of a Member State of the EEC, or an other party to the EEA agreement.

1.4 Conditional parts

The interface section is located on the main board. The indicator may be equipped with the following protective interfaces that have not to be secured:
- RS232.

1.5 Non-essential parts

Display;
Keyboard.

Tests carried out for this test certificate on the CAS indicator, type BI:

Test	Type or version	Institute
Temperature effect on the sensitivity with minimum weighing range and input impedance of 87 Ω. (20, 40, -10, 5 and 20 °C)	BI-100RB	NMi Certin B.V.
Temperature effect on the no load indication with minimum weighing range and input impedance of 87 Ω. (20, 40, -10, 5 and 20 °C)	BI-100RB	NMi Certin B.V.
Damp heat, steady state	BI-100RB	NMi Certin B.V.
Repeatability	BI-100RB	NMi Certin B.V.
Warm-up time	BI-100RB	NMi Certin B.V.
Span stability	BI-100RB	NMi Certin B.V.
Checklist	BI-100RB	NMi Certin B.V.
Cable length between the indicator and load cell	BI-100RB	NMi Certin B.V.
Stability of equilibrium	BI-100RB	NMi Certin B.V.
EMC tests are performed with a load cell impedance of 350 Ω		
Voltage variations	BI-100RB	NMi Certin B.V.
Short time power reductions	BI-100RB	NMi Certin B.V.
Electrical bursts	BI-100RB	NMi Certin B.V.
Electrostatic discharges	BI-100RB	NMi Certin B.V.
Immunity to radiated electromagnetic fields	BI-100RB	NMi Certin B.V.