Test certificate

Nederlands Meetinstituut

Number **TC5353** revision 2
Project number 205196

Issued by	NMi Certin B.V. Hugo de Grootplein 1 3314 EG Dordrecht The Netherlands Notified Body Number 122
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	Hottinger Baldwin Messtechnik GmbH Im Tiefen See 45 D-64293 Darmstadt Germany
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 : HBM Type : WE2110
Characteristics	Electronic, self-indicating device, with single- or multi-interval and single- or multi-range indication. The maximum number of verification scale intervals will be: $n \leq 6000$ for class (III) instruments or $n_i \leq 3000$ for class (III) instruments for multi interval and multi range with a maximum of two ranges or $n \leq 1000$ for class (IIII) instruments. In the description TC5353 revision 2 further characteristics are described.
Description and Documentation	The instrument is described in the description number TC5353 revision 2 documented in the documentation folder TC5353-3, appertaining to this test certificate.
Remarks	Summary of the test involved: see Appendix number TC5353 revision 2. This revision replaces the earlier version including its documentation folder.

Delft, 24 April 2002
NMi Certin B.V.

P.P.M. van Enckevort
Manager Certification Delft

Nederlands Meetinstituut
Hugo de Grootplein 1
3314 EG Dordrecht
Telephone +31 78 6332332
Telefax +31 78 6332309

NMi B.V.
(Chamber of Commerce no.27.228.701)

Subsidiary companies:
NMi Van Swinden Laboratorium B.V. (27228703)
NMi Certin B.V. (27.233.418)
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
Main PCB	5000-000	1.3	
Main PCB	5000-310	1.3	Part list, 2 pages
Main PCB	5000-000	2.2	
Main PCB	5000-000-02	1.1	Part list, 3 pages
Main PCB	5000-020	1.3	
Main PCB	SA-50020A	1.0	Part list, 1 page
Main PCB	SA-50021A	1.2	Part list, 2 pages

EMC protective measurements:
- Load cell connector is filtered;
- All interface cables are shielded.

1.2 Essential characteristics

List of devices:
- determination stability of equilibrium;
- indication of stable equilibrium;
- calibration / set-up mode via (sealed) switch on front;
- linearity compensation with a maximum of 5 points;
- initial zero setting;
- semi-automatic zero-setting;
- zero-tracking;
- zero indicator;
- semi-automatic subtractive tare balancing;
- acting upon significant faults;
- display checking;
- additive tare.

Connections:
- power supply of 86 - 260 VAC 50/60 Hz or 12 – 24 VDC or 12 VDC direct;
- the minimum value allowed for the signal voltage per verification scale interval is 1 μV;
- the excitation power supply for the load cell is 8 V DC;
- the minimum input impedance of the load cell is 42 Ω
- "Remote-sensing" is used;
- the maximum cable length for the connection between the indicator and the junction box or load cells is 580 m/mm^2.

Software:
- the software has the identification number: P52x (x is a number between 0 and 9);
  P53x (x is a character between a and z);
  P54x (x is a character between a and z);
- the identification number will be displayed at start-up.

1.3 Essential shapes

The indicator is built according to drawing Assembly Diagram with number 5000-228.
The data plate is secured against removal by sealing or will be destroyed when removed and contains the following information:
- this test certificate number TC5353;
- 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 "Eichmarken und Versiegelung" with number 5000-232. 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

Description	Drawing number	Rev.	Remarks
Power PCB	5000-002	1.1	
Power PCB	5000-311	1.1	Part list
Power PCB	5000-002	1.2	
Power PCB	5000-002-02	1.1	Part list, 2 pages
Power PCB	5000-232	1.0	
Power PCB	SA-50013B	1.0	Part list

The indicator may be equipped with the following protective interfaces that have not to be secured:
- RS232;
- RS485.

1.5 Conditional characteristics.

Set points;
Indication of selected set point(s);

1.6 Non-essential parts

Display;
Keyboard.

Tests carried out for this test certificate on the HBM indicator, type WE2110:

Test	Type or version	Institute
Temperature effect on the sensitivity with minimum weighing range and input impedance of 42 Ω. (20, 40, -10, 5 and 20 °C)	WE2110	NMi Certin B.V.
Temperature effect on the no load indication with minimum weighing range and input impedance of 42 Ω. (20, 40, -10, 5 and 20 °C)	WE2110	NMi Certin B.V.
Damp heat, steady state	WE2110	NMi Certin B.V.
Repeatability	WE2110	NMi Certin B.V.
Span stability	WE2110	NMi Certin B.V.
Checklist	WE2110	NMi Certin B.V.
Cable length between the indicator and load cell	WE2110	NMi Certin B.V.
Stability of equilibrium	WE2110	NMi Certin B.V.
EMC tests are performed with a load cell impedance of 350 Ω		
Voltage variations	WE2110	NMi Certin B.V. & HBM GmbH
Short time power reductions	WE2110	NMi Certin B.V. & HBM GmbH
Electrical bursts	WE2110	NMi Certin B.V. & HBM GmbH
Electrostatic discharges	WE2110	NMi Certin B.V. & HBM GmbH
Immunity to radiated electromagnetic fields	WE2110	NMi Certin B.V. & HBM GmbH