Test certificate

Issued by	NMi Certin B.V. Hugo de Grootplein 1 3314 EG Dordrecht The Netherlands
In accordance with	Paragraph 8.1 of the European Standard on Metrological aspects of non-automatic weighing instruments EN 45501:1992/AC:1993 and the Welmec guide for testing indicators (Welmec 2.1, August 2001).
Applicant	Shanghai Yaohua Weighing System co., Ltd. No. 4059, Shangnan Road Pudong District 200124 Peoples Republic of China
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 : Shanghai yaohua Type : XK3190-A12ss
Characteristics	Electronic, self-indicating device, with single-interval indication. The maximum number of verification scale intervals will be: $n \leq 3000$ for class (III) instruments or $n \leq 1000$ for class (IIII) instruments. Temperature range 0°C / 40°C In the description number TC7550 revision 0 further characteristics are described.
Description and Documentation	The instrument is described in the description number TC7550 revision 0 and documented in the documentation folder number TC7550-1, appertaining to this test certificate.
Remarks	Summary of the test involved: see Appendix number TC7550 revision 0.

The Notified Body no. 0122
NMi Certin, 31 March 2009

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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
XK3190-A12 Software diagram	TC7550-09/C	-	-
XK3190-A12 Main board lay-out XK3190-A12 Main board parts list	A12+_OC(1-3) TC7550-09/D	2008.09.09 -	- -

EMC protective measures:
- Exterior:
  - Ferrite on the power cable, near the housing of the indicator.
- Interior:
  - The A/D board is shielded by a metal cover;
  - All the PCB's and the housing are connected to earth;
  - Ferrites:
    - On the cable between the load cell connector and the main board (6 turns);
    - On the cable between the RS232 connector and the main board (11 turns);
    - On the cable between the power supply board and the main board (6 turns).

1.2 Essential characteristics

The applied error fraction p_i is 0.5.

List of devices:
- Determination stability of equilibrium;
- Zero indicator;
- Semi-automatic zero-setting;
- Initial zero-setting;
- Zero-tracking;
- Semi-automatic subtractive tare balancing;
- Indication of stable equilibrium;
- Calibration / set-up mode via a switch on the main board;
- Acting upon significant faults;
- Checking the display;
- Piece counting mode;.
- Memory storage;
- Totalization.

Connections:
- Power supply:
  - 110 - 230 V AC 50/60 Hz;
  - Internal lead acid battery of 6.7 V DC.
- 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 1215 Ω;
- With a 6-wire system, using remote sensing, no special cable length has to be provided for the connection between the indicator and the junction box or load cell(s).

Software:
- The software has the identification number: v1.01;
- The identification number will be displayed at start-up.

1.3 Essential shapes

The indicator is built according to drawing XK3190-A12 Exploded view", drawing number TC7550-09/A.

The data plate is secured against removal by sealing or will be destroyed when removed and contains the following information:
- This test certificate number TC7550;
- 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 "XK3190-A12 Sealing", drawing number TC7550-09/B.

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 another party to the EEA agreement.

Inside the cabinet is a calibration button, located on the main board.

1.4 Conditional parts

Description	Drawing number	Rev.	Remarks
XK3190-A12 Power supply board lay-out XK3190-A12 Power supply board parts list	A12+_OC(1-2) TC7550-09/E	2008.09.08 -	- -

The interface section is located on the main board. The indicator may be equipped with one or more of the following protective interfaces that have not to be secured:
- RS232C.

1.5 Non-essential parts

- Display;
- Keyboard.

Appendix

Tests carried out for this test certificate on the Shanghai Yaohua indicator, type XK3190-A12ss:

Test	Type or version	Institute
Temperature effect on the sensitivity with minimum weighing range and input impedance of 87 Ω. (20, 40, 0, 5 and 20 °C)	XK3190-A12ss	NMi Certin B.V.
Temperature effect on the no load indication with minimum weighing range and input impedance of 87 Ω. (20, 40, 0, 5 and 20 °C)	XK3190-A12ss	NMi Certin B.V.
Damp heat, steady state	XK3190-A12ss	NMi Certin B.V.
Repeatability	XK3190-A12ss	NMi Certin B.V.
Warm-up time	XK3190-A12ss	NMi Certin B.V.
Span stability	XK3190-A12ss	NMi Certin B.V.
Checklist R76/2006	XK3190-A12ss	NMi Certin B.V.
Cable length between the indicator and load cell	XK3190-A12ss	NMi Certin B.V.
Stability of equilibrium	XK3190-A12ss	NMi Certin B.V.
EMC tests are performed with a load cell impedance of 405 Ω.		
Power voltage variation	XK3190-A12ss	NMi Certin B.V.
Short time power reduction	XK3190-A12ss	NMi Certin B.V.
Electrical bursts	XK3190-A12ss	NMi Certin B.V.
Electrostatic discharges	XK3190-A12ss	NMi Certin B.V.
Electromagnetic susceptibility	XK3190-A12ss	NMi Certin B.V.