

Issued by NMI Certin B.V.

In accordance with WELMEC 8.8 2017, WELMEC 2.1 Issue 4, EN 45501:2015, OIML R 76-1 (2006).

Producer
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Measuring instrument An **Indicator** or **terminal** tested as a part of a weighing instrument.

Type : IND360

Further properties are described in the annexes:

- Description TC11949 revision 0;
- Documentation folder TC11949-1.

An overview of performed tests is given in the annex:

- Description TC11949 revision 0.

Issuing Authority

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Description

Number **TC11949** revision 0

Project number 2493052

Page 1 of 6

1 General information about the indicator or terminal

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

This certificate is the positive result of the applied voluntary, modular approach, for a component of a measuring instrument, as described in WELMEC 8.8. The complete measuring system must be covered by an EC type-approval certificate, an EC-type examination certificate or an EU-type examination certificate.

1.1 Essential parts

Number	Pages	Description	Remarks
11949/0-01	3	Mainboard Analog	Layout and parts list
11949/0-02	3	Mainboard POWERCELL	Layout and parts list (CANbus interface)
11949/0-03	3	Mainboard Precision	Layout and parts list (SICSPRO interface)

EMI protection measures:

- The A/D board is shielded with a metal cover (for Analog);
- Ferrite on the load cell cable near the indicator (for Analog and POWERCELL in DIN or Panel enclosure);
- Ferrite on the load cell cable inside the metal enclosure (for Analog and POWERCELL in Harsh enclosure);
- The instrument is built in a metal enclosure (for Harsh);
- The enclosure ground connector of the instrument must be connected to true earth ground.

1.2 Essential characteristics

	Analog load cells	Digital load cells or Weighing modules	
		CANbus interface	SICSPro interface
Accuracy class OIML R 76	III or IIII	III or IIII	I, II, III or IIII
Weighing range(s)	Single interval	Single interval Multi-interval Multiple range	Single interval Multi-interval Multiple range
Maximum number of scale intervals (one weighing range)	$n \leq 10000$ divisions	$n \leq 1000000$ divisions	$n \leq 1000000$ divisions
Maximum number of scale intervals (multi-interval or multiple range)	-	$n \leq 100000$ divisions (per (partial) weighing range)	$n \leq 100000$ divisions (per (partial) weighing range)
Maximum number of weighing ranges	1	3	3
Load cell excitation voltage	5 V DC	-	-
Minimum signal input voltage	$U_{\min} = 0$ mV	-	-
Load cell power supply	-	12 V DC	-
Minimum input voltage per verification scale interval	0,3 μ V	-	-
Minimum load cell resistance	43 Ω	-	-
Maximum load cell resistance	1245 Ω	-	-
Fraction of the maximum permissible error	0,5	0	0
Load cell connection	6-wire (remote sensing)	-	-
Maximum value of the cable length per cross wire section between the indicator and the junction box or load cells	1571 m/mm ²	-	-
Temperature range	-10 °C / +40 °C		
Power supply voltage	100 – 240 V AC 50 - 60 Hz (for Harsh version), 20 - 28 V DC (not suitable for a road vehicle power supply)		

Software identification:


Description	Version	Remarks
Analog mainboard	1.xx.yyyy	-
POWERCELL mainboard	1.xx.yyyy	-
Precision mainboard	1.xx.yyyy	-

(xx is a number between 00 and 99 representing major updates of the non legally relevant part of the software and yyyy is a number between 0000 and 9999 and represents minor updates of the non legally relevant part of the software)

The instrument has embedded software;

The software identification of the **indicator / terminal** is displayed after pressing the key sequence with the navigation keys:

For DIN version:

- From main screen press RIGHT to show the magnifying glass icon  and press RIGHT again, then press DOWN to until 'Main SW' is shown.

For Panel and Harsh versions:

- From main screen go with the navigation keys to the magnifying glass icon  and press ENTER key. In the menu the Software version is shown.

In case a **digital load cell** is connected, the software version of this part is displayed after pressing the following key sequence with the navigation keys:

For DIN version:

- POWERCELL Load Cell Software Version
 1. Enter Setup mode from main screen by long press "**ENTER**" button
 2. Enter "**Maintenance**" menu
 3. Enter "**Run**" menu
 4. Enter "**POWERCELL**" menu,
 5. Enter "**SW version**": show software version according to the connected load cell



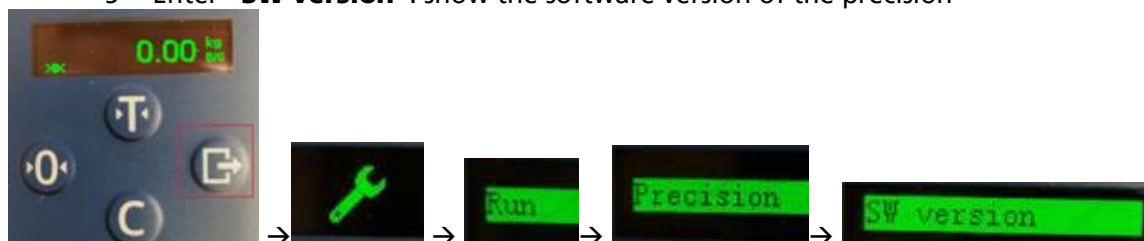
For Panel and Harsh version:

- From main screen go with the navigation keys to the weight icon and press ENTER key to enter the setup mode. ENTER "Maintenance" menu, ENTER "Run" menu and ENTER "Load cell n" menu (with 'n' a number of 1 or higher representing the amount of connected load cells) where the load cell serial number and software version is shown.

In case a **weighing module** is connected, the software version of this part is displayed after pressing the following key sequence with the navigation keys:

For DIN version:

- Precision Software Version
 - 1 Enter Setup mode from main screen by long press "**ENTER**" button
 - 2 Enter "**Maintenance**" menu
 - 3 Enter "**Run**" menu
 - 4 Enter "**Precision**" menu
 - 5 Enter "**SW version**": show the software version of the precision



For Panel and Harsh version:

- From main screen go with the navigation keys to the weight icon and press ENTER key to enter the setup mode. ENTER "Maintenance" menu, ENTER "Run" menu and ENTER "Precision" menu where the software version is shown.

List of legally relevant functions:

- Determination stability of equilibrium;
- Zero indicating;
- Semi-automatic zero-setting;
- Initial zero-setting;
- Zero-tracking;
- Semi-automatic subtractive tare weighing;
- Preset tare;
- Gravity compensation;
- Adjustment / set-up mode via a switch on the main board;
- Acting upon significant faults;
- Checking the display;
- Check weighing mode;
- Set points;
- Indication of selected set point(s);
- Weight unit selection (t, kg, g);
- Linearity compensation: the linearity can be compensated to a maximum of 5 points.
- Extended indicating, resolution 1/10 e for a period not exceeding 5 seconds after a manual command;
- Data Storage Device that complies with OIML R 76 (2006) clause 5.5.3 and EN 45501:2015 clause 5.5.3.

1.3 Essential shapes

Number	Pages	Description	Remarks
11949/0-04	2	Exploded view and general shape DIN	-
11949/0-05	2	Exploded view and general shape Panel	-
11949/0-06	2	Exploded view and general shape Harsh	-

The descriptive markings plate is secured against removal by sealing or will be destroyed when removed and contains at least the following information:

- This certificate number TC11949;
- Producers name or mark.

The, in accordance with directive 2014/31/EU Annex III Clause 1.1 and 1.4 required markings Max, Min, e, are exclusively shown scrolling on the weighing display. There are always visible together with the measured weighing result when the weighing instrument is in operation. The requirement for indelibility is satisfied by the fact that it is not possible to intervene in the display or the relevant software because the access to the software is secured by sealing.

Alternatively the inscriptions Max, Min, e are shown on the markings plate which is placed close to the display showing the primary indications.

On the side of cabinet (DIN and Panel version) or inside the cabinet (Harsh version) is an adjustment lock, located on the main board.

1.4 Conditional parts

The indicator may be equipped with one or more of the following protective interfaces that have not to be secured:

- Ethernet;
- Industrial Ethernet;
- Analog Output;
- Digital Input and Output;
- RS485;
- Modbus;
- Profibus;
- CANbus;
- SICSPro.

Power supply:

- Any CE-approved AC/DC power supply may be used.

1.5 Non-essential parts

Display;
Keyboard;
Printer.

2 Seals

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 drawings:

Number	Pages	Description	Remarks
11949/0-07	1	Sealing drawing DIN	-
11949/0-08	1	Sealing drawing Panel	-
11949/0-09	1	Sealing drawing Harsh	-

When using analog load cells the connecting cable of the load cell or the junction box is provided with possibility to seal.

When connected to weighing modules using the SICSpro protocol, the instrument stores the ID number and the number of the event counter of the connected load cell. Access to these parameters is protected by the security switch SW1-1 inside the instrument enclosure.

The connection cable does not have to be sealed. If the pairing is broken, the instrument will report "Approval is invalid".

When connected to weighing modules using the CANbus protocol, the load cell sealing is done at the instrument where the load cell serial numbers are stored. The connection cables do not have to be sealed. If the load cell serial number is not the same as detected in the approved mode, the indicator will report "Approval is invalid".

3 Conditions for conformity assessment

The compatibility of load cells and indicator / terminal is established by the manufacturer by means of the compatibility of modules form, contained in EN 45501:2015 clause F.4 or clause F.5, at the time of putting into use.

Other parties may use this Evaluation Certificate only with the written permission of the producer.

4 Reports

An overview of performed tests is given in the reports:

- No. NMI-2493052-01 revision 1 dated 1 March 2021 that includes 56 pages;
- No. NMI-2493052-02 revision 1 dated 1 March 2021 that includes 15 pages;
- No. NMI-2493052-03 revision 1 dated 1 March 2021 that includes 21 pages;
- No. NMI-2493052-04 revision 1 dated 1 March 2021 that includes 20 pages.

A report can be a test report, an evaluation report, a type evaluation report and/or a pattern evaluation report.