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EC Type Examination Certificate

DK0199.216

M-Check RF8

AUTOMATIC CATCHWEIGHING INSTRUMENT

Issued by DELTA Danish Electronics, Light & Acoustics
EU - Notified Body No. 0199

In accordance with the requirements for the automatic weighing instrument of Directive 2004/22/EC of the European Parliament and Council on Measuring Instruments (MID).

Issued to Marel Food Systems A/S
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DENMARK

In respect of Automatic checkweigher / automatic catchweigher designated M-Check RF8 with variants of modules of load receptors, load cells and peripheral equipment.
Accuracy class XIII(1) and Y(a)
Maximum capacity, MAX 3 kg or 6 kg.
Verification scale interval: $e \geq 1$ g.
Maximum number of verification scale intervals: $n = 3000$ (however dependent on environment and the composition of the modules).
Variants of modules and conditions for the composition of the modules are set out in the annex.

The conformity with the essential requirements in Annex 1 and the specific requirements in Annex MI-006, chapter I & II of the Directive 2004/22/EC is met by the application of OIML R51-1:2006, OIML D11:2004 section 12 & 13 with severity level 3, WELMEC Guide 7.2:2009, and WELMEC Guide 8.16-1:2006.

The principal characteristics and approval conditions are set out in the descriptive annex to this certificate.

The annex comprises 9 pages.

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Descriptive annex

Contents		Page
1.	Name and type of instrument and modules	2
2.	Description of the construction and function	2
2.1	Construction	2
2.2	Function	3
3.	Technical data	3
3.1	M-Check RF8 Automatic checkweigher / automatic catchweigher	3
3.2	Load receptor	4
3.3	Load cell	4
4.	Interfaces and peripheral equipment	4
4.1	Interfaces	4
5.	Approval conditions	5
5.1	Connection of cables	5
6.	Special conditions for verification	5
7.	Securing and location of seals and verification marks	5
7.1	Securing and sealing	5
7.2	Verification marks	5
8.	Location of CE mark of conformity and inscriptions	6
8.1	Identification plate	6
9.	Pictures	7

1. Name and type of instrument and modules

The automatic checkweigher / automatic catchweigher is designated M-Check RF8 and is intended for dynamically weighing. It is manufactured by Marel Food Systems A/S.

2. Description of the construction and function

2.1 Construction

The M-Check RF8 is a traditionally built checkweigher, where an infeed/acceleration conveyor leads the products onto a weighing conveyor for product mass registration. The weighing conveyor is supported by a Roberval type parallelogram in which a bending beam load cell is mounted. The checkweigher may also be fitted with reject conveyor for product separation and metal detection. The infeed/acceleration conveyor is optionally equipped with guides to ensure a uniform feed of items to be weighed.

As the automatic catchweighing instrument is intended for applications, where the weighing can be repeated, it is not equipped with an alibi storage device.

The Instrument is software wise of Type P and Risk Class B without extension according to WEL-MEC Guide 7.2:2009.

2.1.1 Indication

The front panel has a LCD display and a keyboard with 26 keys. The functions of the keys are shown by icon on the display unless it is the function shown on the key itself.

2.1.2 Electronics

The electronics that control the weighing consist of a single board PC - type Libra-a mk II - with a piggy-back board containing the analogue electronics and the A/D converter. This electronics is protected against eventual radiated electromagnetic fields within the cabinet by a metallic lattice. The single board PC runs WinCE operating system, but the users of the weighing system have no access to the operating system.

The checkweigher is power supplied from one phase 200 to 240 VAC, 50 or 60 Hz.

2.1.3 Load cell

Set out in Section 3.3.

2.1.4 Load receptor

Set out in Section 3.2.

2.1.5 Interfaces and peripheral equipment

Set out in Section 4.

2.2 Function

The display is used to display other information than weight during setup and adjustment. During the display of other information, the weighing mode is inoperative, except for a test monitor, which is intended for verification and has $d = 1/10 e$ – see figure 3.

Access to the functions is controlled through passwords in several levels

The functions provided are detailed below.

2.2.1 Functions and devices

The automatic weighing instrument has the following permitted functions and devices that are subject to the Measuring Instrument Directive:

- Power up test
- Initial zero setting device (max. 20 % of Max)
- Semiautomatic zero setting device (max 4 % of Max)
- Zero tracking device (max 4 % of Max)
- Automatic zero setting device (max 4 % of Max)
- Preset tare device
- Storing preset tare
- Extended indicating device (service mode only)
- Detection of significant fault

2.2.2 Software identification

The application software number is designated either A.xx.yy.R.zz or A.xx.yy.RC.zz (A can be any letter and xx, yy and zz are replaced with numbers). The installed version numbers are displayed in the “main” menu under “info” as weighing system and top number respectively.

The legally relevant part of the software has the following approved versions V.01.yy.R.zz and V.01.yy.RC.zz.

The tested software version was V.01.06.R.zz.

3. Technical data

The automatic weighing instruments and its modules are set out as follows:

3.1 M-Check RF8 Automatic checkweigher / automatic catchweigher

Type:	M-Check RF8
Accuracy class:	XIII(1) or Y(a)
Maximum capacity (Max):	3 kg or 6 kg
Minimum capacity (Min):	40g, however not less than $20 \times e$
Verification scale interval (e):	$e \geq 1 \text{ g}$
Weighing range:	Single-interval
Number of Verification Scale Intervals (n):	3000
Maximum tare effect:	$\leq 100 \%$ of Max
Belt speed:	20 m/min to 80 m/min (variable)

Belt width:	230 mm or 350 mm
Weighing conveyor length:	325 mm to 600 mm
Temperature range:	0° to 35° C
Weighing mode:	Dynamically
Maximum time between automatic zero setting:	30 minutes
Electromagnetic class:	E2
Humidity:	Non-condensing
Power requirements:	200 to 240 VAC, 50 or 60 Hz
Peripheral interface:	Set out in Section 4

3.2 Load receptor

The weighing conveyor is a belt conveyor placed on a Robervall type parallelogram based load receptor equipped with one bending beam load cell.

The maximum length of items to be weighed is - in relation to the belt speed and the length of the weighing conveyor:

	325 mm	400 mm	500 mm	600 mm
20 m/min	265 mm	340 mm	440 mm	540 mm
40 m/min	210 mm	285 mm	385 mm	485 mm
60 m/min	155 mm	230 mm	330 mm	430 mm
80 m/min	100 mm	175 mm	275 mm	375 mm

3.3 Load cell

M-Check RF8 uses default a SHBxR C3 20 kg load cell from Vishay Revere. In addition to this, other types of 20kg C3 load cells with respective test certificate or an OIML certificate of the conformity (R60 E2000) issued for the load cell by a Notified Body responsible for type approval examination under Directive 2009/23/EC, may be used on condition that their specifications are the same as those of SHBxR C3 (or better).

4. Interfaces and peripheral equipment

4.1 Interfaces

4.1.1 Ethernet

The M-Check RF8 may be equipped with the following interfaces,

- Interface for control of external printer
- RS485 and/or CAN bus interface for motor control
- 24V and/or CAN bus interface for the photo cell(s), reject arm control, signal lamps, etc.
- PS2 connector for connection to a standard PC keyboard
- RS232, RS485 and/or Ethernet connection to external PC

The interface is characterised "Protective interfaces" according to Annex I, paragraph 8.1 in Directive 2004/22/EC.

5. Approval conditions

5.1 Connection of cables

All cables shall be shielded, and the shield shall be properly EMC wise connected to the housing / connector in both ends.

M-Check RF8 is approved for installation in fixed indoor locations.

6. Special conditions for verification

None.

7. Securing and location of seals and verification marks

7.1 Securing and sealing

Seals shall bear the verification mark of a notified body according to ANNEX F of the Directive 2004/22/EC or alternative mark of the manufacturer according to ANNEX D of the Directive 2004/22/EC.

7.1.1 Mechanical sealing

The identification plate shall be secured against removal with a brittle plastic sticker.

The single board PC shall be secured against removal with a brittle plastic sticker covering of the mounting screws, and likewise shall the piggyback with A/D conversion be secured against removal with a brittle plastic sticker covering of its mounting screws

7.1.2 Securing

The M-Check has a unique 10-digit check number calculated for the program, the device specific and the type specific parameters. When a change in one of these is saved a new check number is automatic calculated. The actual value of the check number is displayed under the 'Marking setup'.

A further protection is provided by a password for restricting access to the calibration and configuration.

To indicate the sealed status of the check number, it shall be written on the inscription plate – or on a label, which shall be placed on the inscription plate and the label is then sealed by partially covering it with an official sealing label.

The load cell is secured by writing its serial number on the inscription plate.

Legal authorities can use their own means of affixing and inscribing the sealed check number, or documenting it for later confirmation of the sealing status.

7.2 Verification marks

A sticker with verification marks is to be placed on or near the identification plate of the instrument.

8. Location of CE mark of conformity and inscriptions

8.1 Identification plate

All inscriptions for the instrument shall be placed on the identification plate, which is located on a visible place on the measuring instrument.

8.1.1 CE mark

A sticker with the CE mark of conformity and the supplementary metrology marking consisting of the capital letter 'M' and the last two digits of the year of its affixing, surrounded by a rectangle, shall be located on the identification plate.

8.1.2 Inscriptions

The identification plate shall bear the following inscriptions:

- Manufacturer's trademark and / or name
- Type designation
- Serial number
- Accuracy class
- Max, Min and e (these shall additional be duplicated near or on the display)
- Temperature range: 0 °C / +35 °C
- Electromagnetic class: E2
- Humidity: Non-condensing
- Checksum ¹
- Serial number of load cell
- Type examination certificate number

¹ For securing of software program, type specific and device specific parameters.

9. Pictures

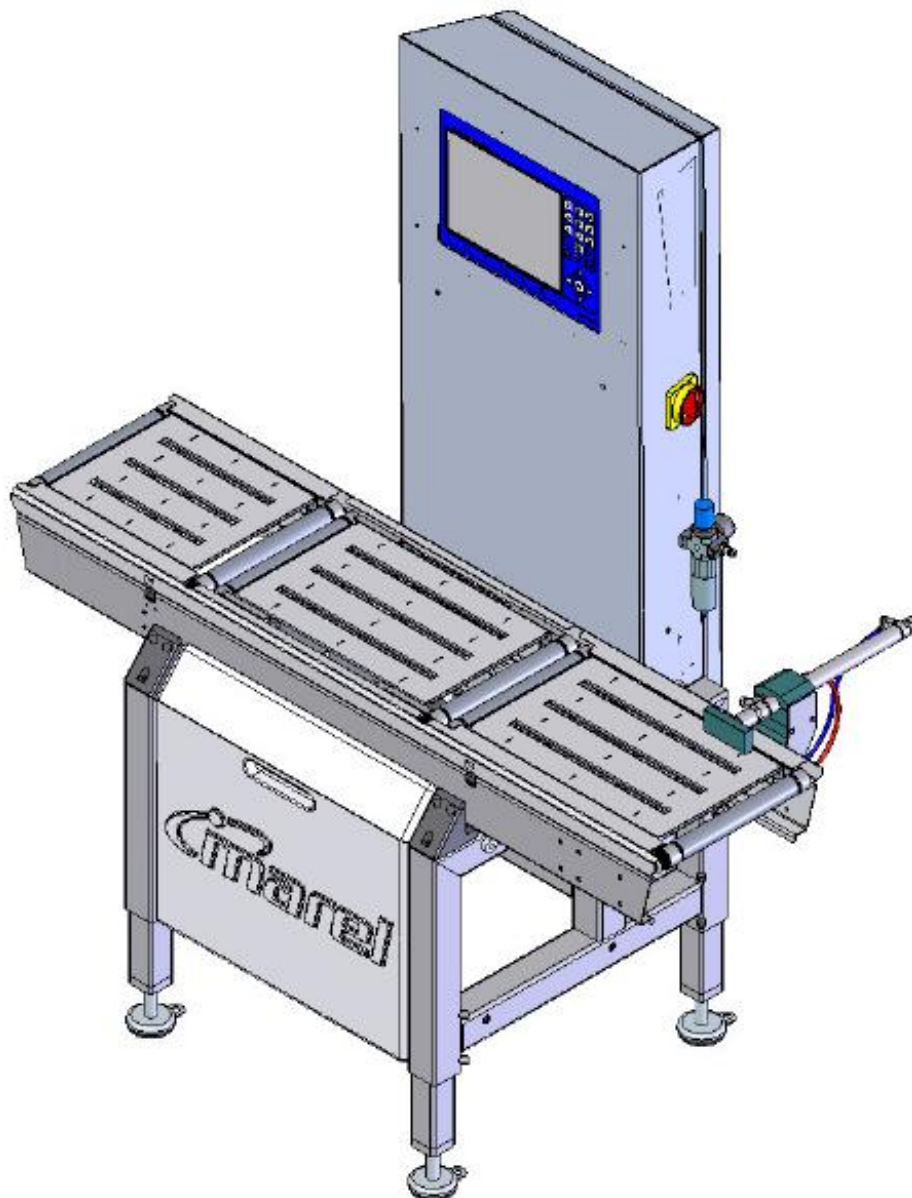
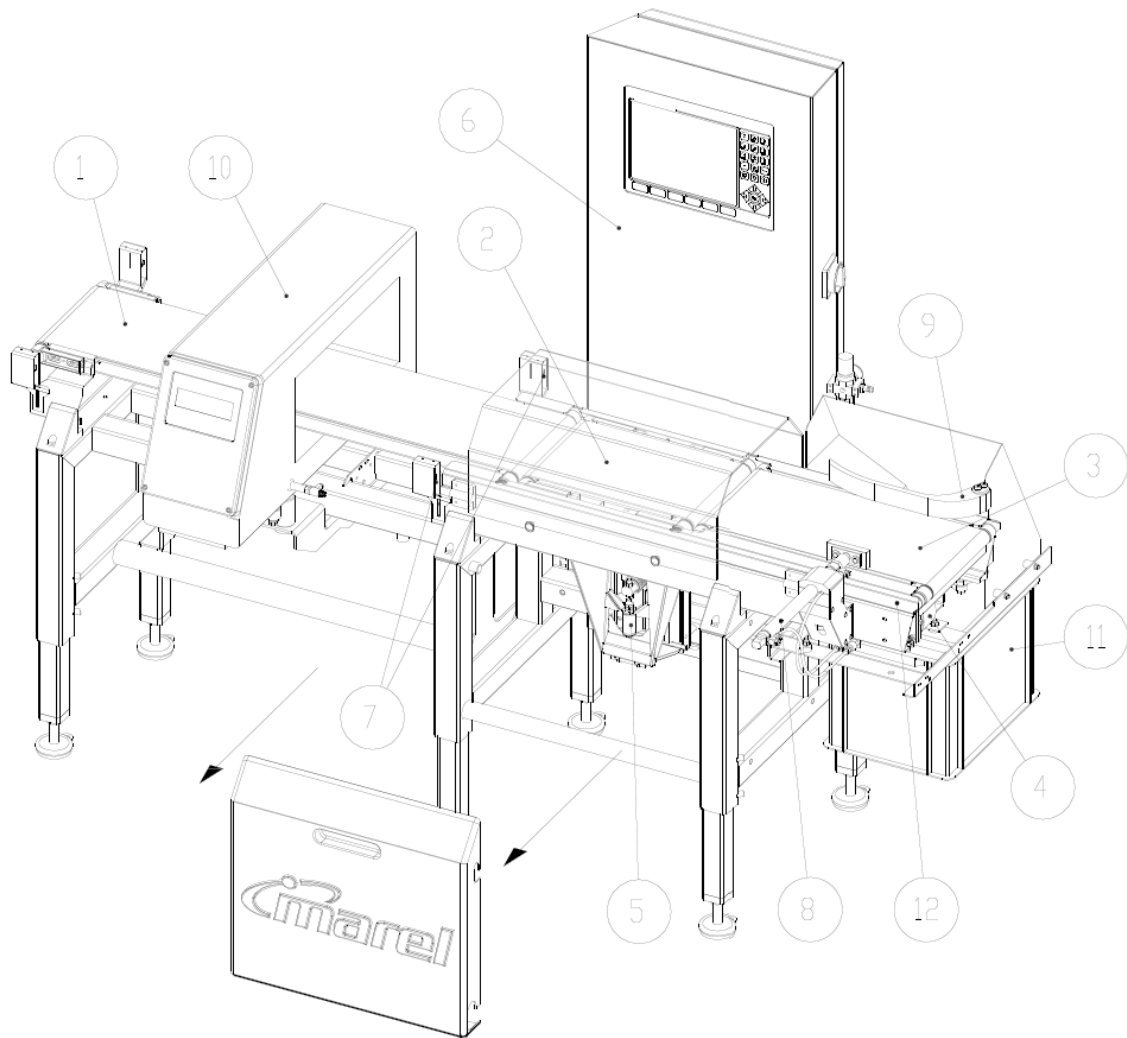


Figure 1 M-Check RF8



- | | | |
|--------------------------|------------------------|-------------------------------|
| 1. Acceleration conveyor | 5. Weighing unit | 9. Catch arm (optional) |
| 2. Weighing conveyor | 6. Electrical carbinet | 10. Metal detector (optional) |
| 3. Reject conveyor | 7. Photo cell | 11. Bin and box (optional) |
| 4. Motor unit | 8. T-pusher (optional) | 12. Side covers |

Figure 2 M-Check RF8, main parts

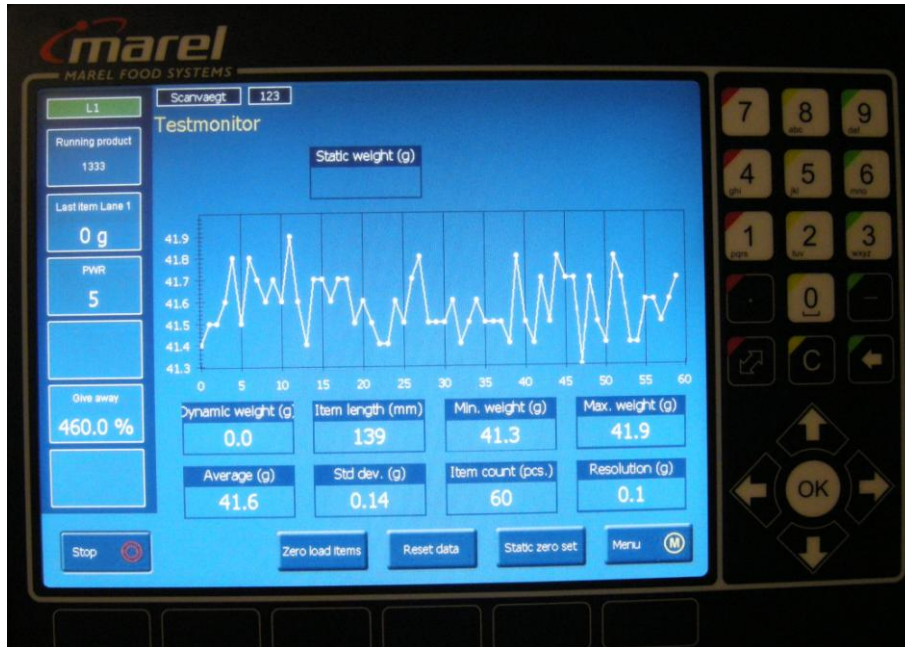


Figure 3 Test monitor function