



MCF 300

MONITOR FOR BALERS



**NR. 1304-EN
REV. 1**

USER'S MANUAL





This product complies with EMC requirements in accordance with Directives 2004/108/CE and subsequent amendments and reference to Applied Regulation EN ISO 14982

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Manual code : 1304-EN
Issued : October 2013
Edition : December 2013

MC elettronica S.r.l. is not obliged to give notice of any further modifications to the product.

The Information provided in this manual does not allow unauthorised personnel to tamper with the product in any way.

The guarantee on the equipment will no longer be valid if tampering should be detected.

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1. Rules and general warnings

1.1 Introduction

This manual gives all the specific information that you need for a proper use of the equipment.

After buying the Speed indicator, read the manual carefully and refer to it any time you have doubts on how to use the equipment or when you have to carry out maintenance operations.

Keep the manual on the machine. If this is not possible, keep it ready at hand.

ALL RIGHTS RESERVED. THIS MANUAL IS INTENDED FOR CUSTOMERS ONLY. ANY THE OTHER USE IS FORBIDDEN.
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1.2 Terms of guarantee

- SUBJECT OF THE GUARANTEE: the guarantee is applied to the product and to those parts which are marked with the serial number or any other identification number used by *MC elettronica*;
- HOW LONG THE GUARANTEE IS EFFECTIVE: *MC elettronica S.r.l.* guarantees the *MCF300 Monitor* for a period of **1 year** from the manufacturing date (printed on the identification label which is to be found on the rear side of the equipment) and also accessories.

The guarantee covers the product and any repair carried out within the agreed terms.

This guarantee does not apply in the event of:

- accidental damage;
- improper use;
- modifications which haven't been agreed upon, improper installation (or setting);
- damage caused when a non-*MC elettronica* equipment, which is mechanically and electrically connected to our instruments, breaks or does not function properly;
- acts of God (lightning, floods, fire or any other causes which do not depend on *MC elettronica*).

Repairs under guarantee, which must be carried out in the laboratories of our authorized centres, are entirely free of charge provided the equipment is directly transported to said laboratories or sent free port. Transport charges and risks are entirely borne by the Customer.

The above-mentioned guarantee is valid unless otherwise stated between *MC elettronica* and the Customer.



Warning

MC elettronica declines any liability for damage or direct or indirect charges, as a consequence of improper use or inability of the Customer to use the equipment separately and/or together with other instruments.

1.3 After-sales service

Service is available in all the countries where the computer is officially supplied by *MC elettronica* (during and after the warranty period).

Any kind of operation that is to be carried out on the *MCF 300 Monitor* must be carried out in accordance with the instructions stated in this manual or as agreed with *MC elettronica*.

If not, the relative terms of guarantee might become void.

2. General description

The MCF 300 Monitor is a microprocessor electronic system designed for agricultural baling machines.

It has been designed to monitor the execution of baling; by this we mean that the operations of loading the bale onto the turret, the starting and blocking of the turret and the subsequent unloading of the bale are manually carried out by the operator by means of the hydraulic distributors supplied with the baler. By means of the monitor, the operator views the number of partial and total bales and the number already baled on the display. The partial bales counter is easily reset by pressing the relative key placed under the digital display; similarly, it is possible to set how many bales to process from a minimum of 1 to a maximum of 255.

3. How to install the system

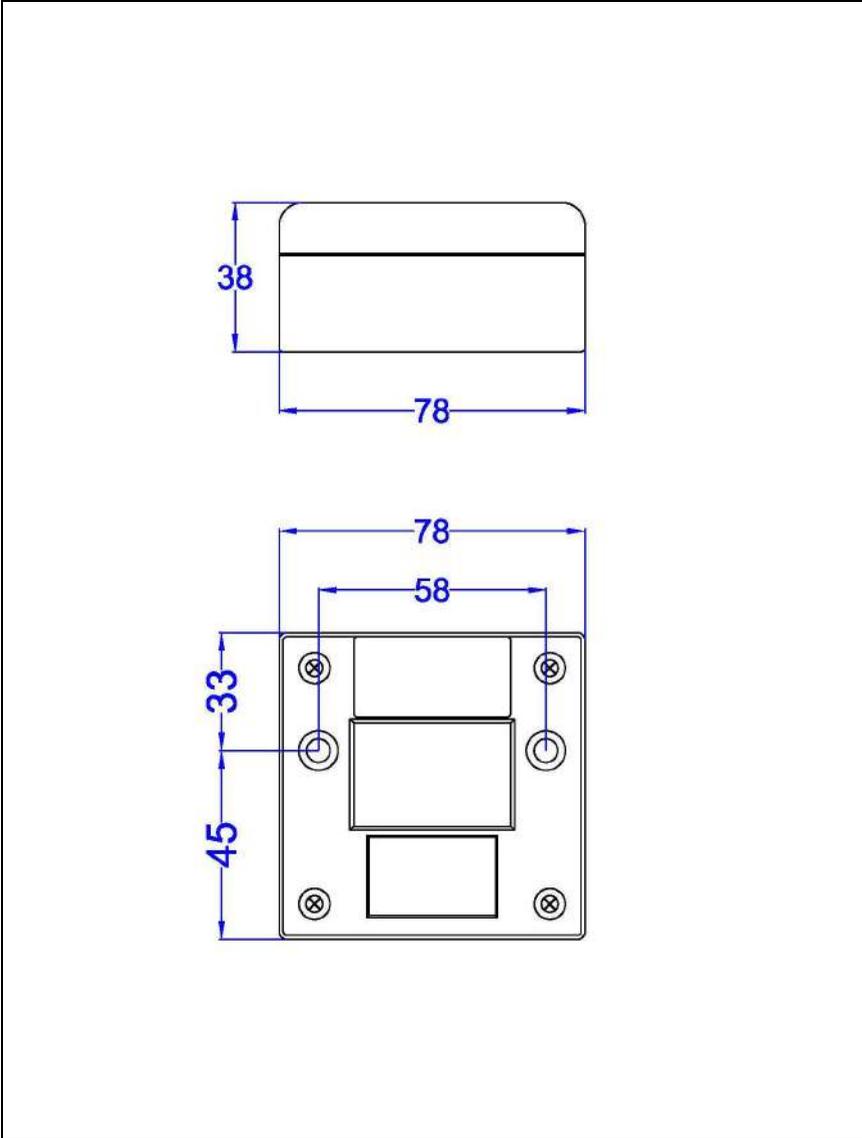


Figure 1. Overall dimensions

3.1 Mounting the monitor

To install the monitor, proceed as follows:

- Clean a flat and smooth surface inside the vehicle cab with a specific detergent and apply the adhesive velcro **(B)**.
- You can now attach the speed indicator by making it coincide with the Velcro on the back **(A)**.
- If you wish to apply the Monitor in a more stable or permanent way, use the provided brass inserts **(C)** placed at the back of the monitor; use M5 screws to fix to brackets or supports.

N.B.: In order to facilitate work phases, it is recommended to place it close to the hydraulic commands of the baler.

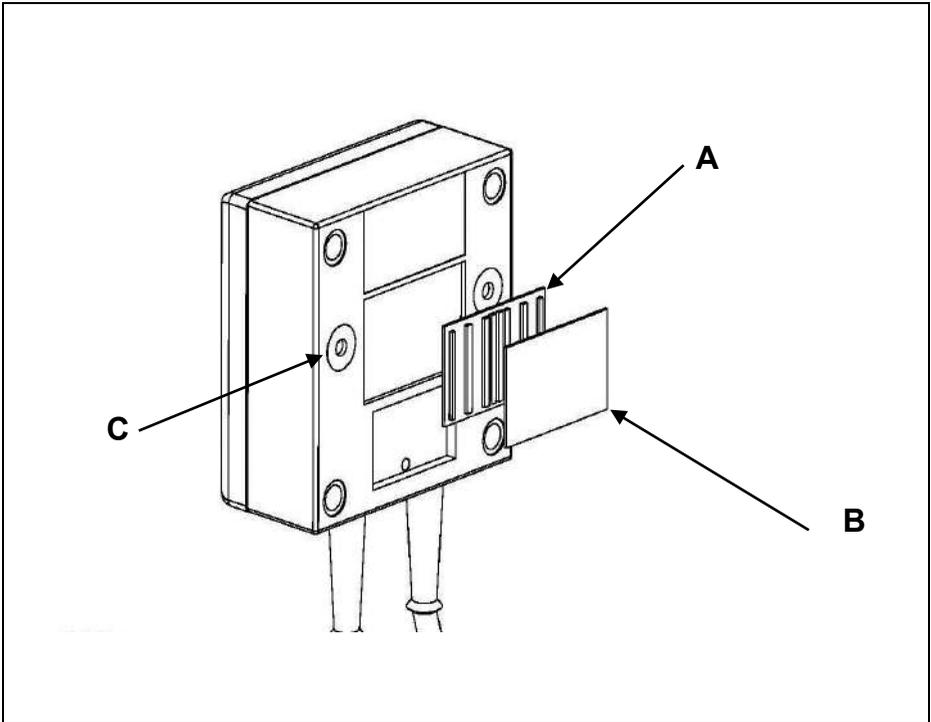


Figure 2. Mounting the Monitor.

3.1.1 Wiring diagram

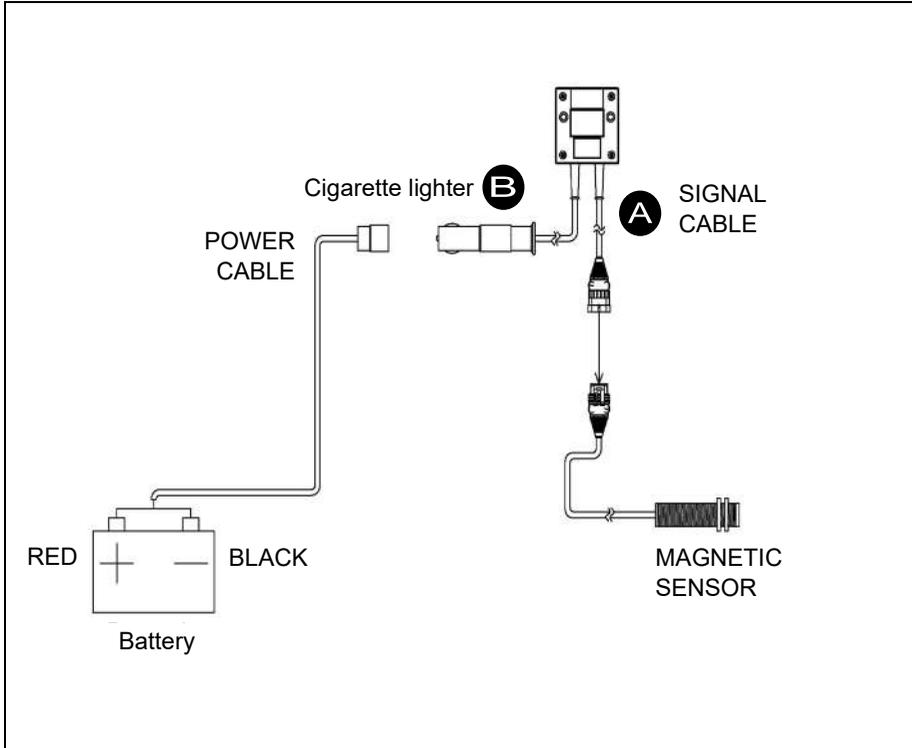


Figure 3. Wiring diagram

- insert the connectors of the sensors available into the respective connectors of the cables, until you hear a “click”: each cable features a label with a letter; in order to make the correct matches follow the table in Figure 3.
- To power the Monitor, simply insert the plug (B) into the corresponding cigarette lighter socket supplied with the vehicle.

3.2 How to install the sensors

The MCF 300 Monitor is equipped with one type of sensor:

- magnetic sensor D.12 (code 671): to detect the number of rotations that are needed to bind each bale.

3.2.1 Magnetic sensor installation D.12 code 671

Install the rotation sensor on a fixed part of the baler and the supplied magnet on the rotating part: each completed rotation on the bale must correspond with the magnet passing in front of the sensor.

Make sure that the distance between the magnet and the sensor is not more than 10 mm (approximately) in order to ensure proper operation (Figure 4).



Warning

We recommend protecting the sensor cable with a rubber sheath.

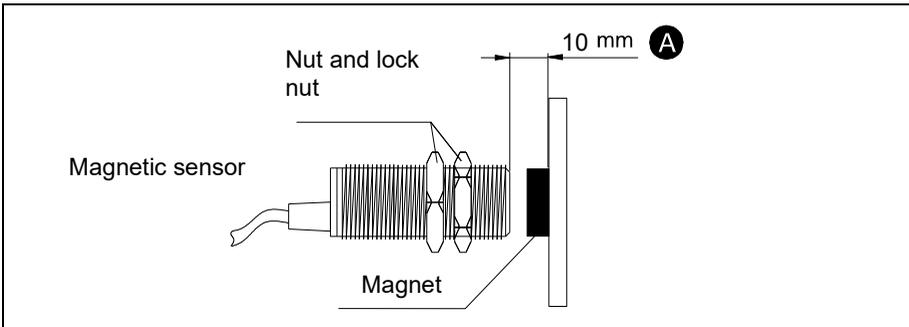


Figure 4. Typical position of the magnetic sensor D.12 code 671.

3.3 Front view

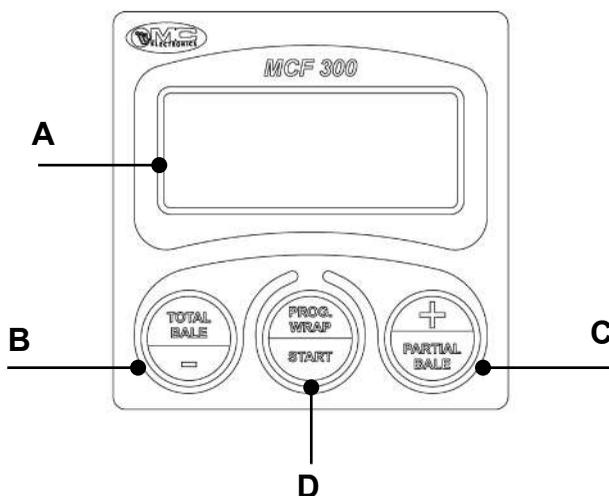


Figure 5. Front view.

The front panel allows the user to view all the data relating to the working cycle. The following elements can be seen on the panel:

REF.	DESCRIPTION
A.	LCD 4-digit display for displaying the parameters
B.	Multi-purpose key: displays the total number of bales, decreases the set number of rotations (during programming associated with key D)
C.	Dual-purpose key: displays the partial bales, resets the partial bales count (when pressed for 3 seconds), increases the set number of rotations (during programming associated with key D)
D.	Dual-purpose key: confirms the programme, programmes the number of rotations

3.4 Rear view

The following elements can be found on the back of the speed indicator

- A. Identifying label
- B. M5 inserts
- C. DUAL LOCK 3M attachment Velcro

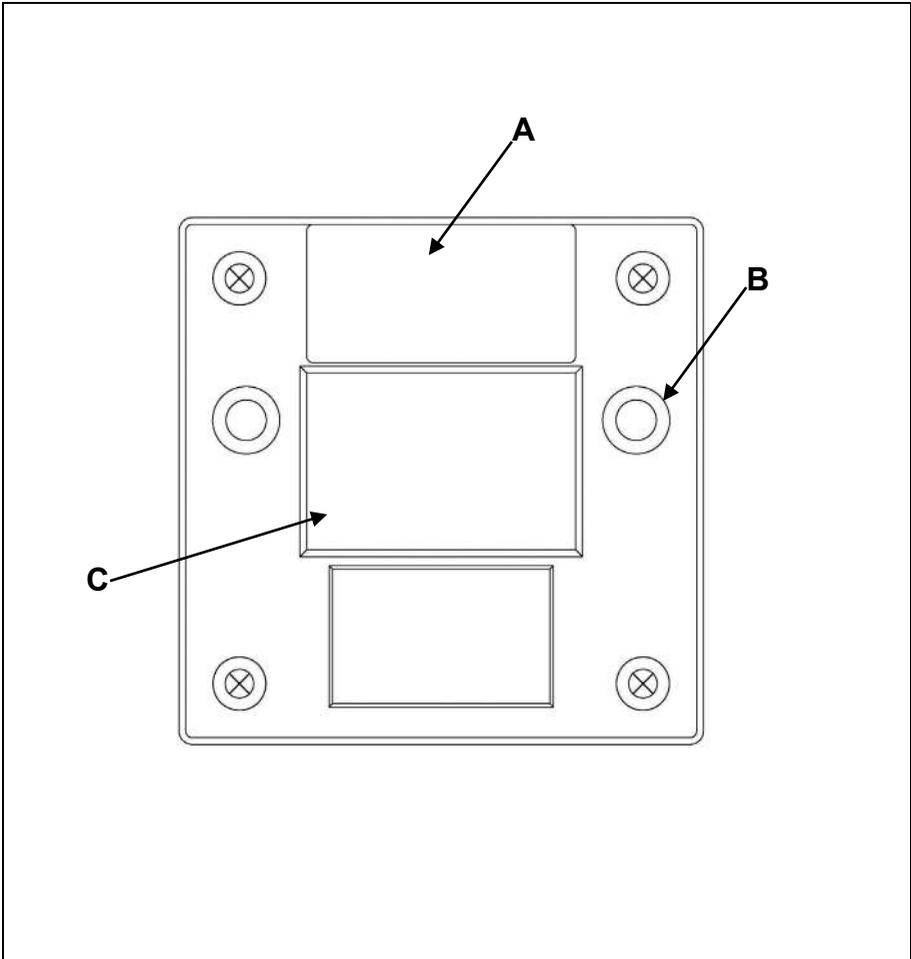


Figure 6. Rear view.

4. Accessories

Table 4-1. Accessories	
CODE	DESCRIPTION
671	Magnetic sensor D.12 CABLE L= 2000 MM

5. Programming

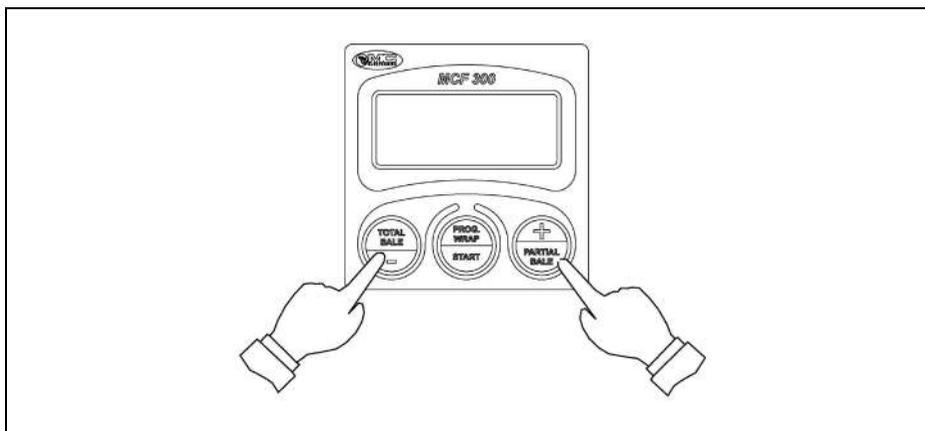


Figure 7. Programming.

After having connected the monitor to the power supply (cigarette lighter socket), it will turn on automatically without pressing any keys. The monitor will emit an acoustic signal and execute a test, lighting all segments of the display for two seconds. At the end of the test, the display will show the letter "F" and the number of rotations carried out next to it (which will obviously be "0"). Programme the number of rotations by keeping the D key pressed for approximately two seconds (PROG. WRAP) until the letter "P" flashes on the display together with the number of programmed rotations; to decrease or increase this value, press the B key (-) or C (+). The value to input must be between 1 and 255: to confirm, press the "START" (D) key until the letter "F" appears on the display once again with the number of rotations carried out next to it.

6. Operation

Having set the programme, start the machine through its hydraulic command.

The monitor will signal the operator, by means of a sequence of clear signals, when the binding cycle is about to terminate:

- one "beep" on completion of the third last programmed rotation;
- two close "beeps" on completion of the second last programmed rotation;
- five close "beeps" on completion of all programmed rotations.

Once the bale has been bound, the operator can unload it by using the hydraulic commands of the baler.

On completion of the cycle, the monitor will automatically prepare itself for a new one and the display will go back to showing "0" rotations carried out; if you wish to reset an incomplete cycle, press the D key (START).

7. Totaliser range

Totaliser of total bales	from 0 to 9999
Totaliser of partial bales (settable to zero)	from 0 to 9999
N° of set rotations	From 1 to 255

8. Technical Features

This chapter describes how to perform routine maintenance and extraordinary maintenance operations.

Ordinary maintenance refers to those operations which must be carried out periodically. As they do not require specific skills, they can be carried out by the users (operators, etc.).

Extraordinary maintenance refers to special operations made necessary by mechanical or electrical failures. They require specific technical skills and should be carried out only by qualified personnel (maintenance staff, etc.).

8.1 Ordinary maintenance

Routine maintenance consists in cleaning the Monitor.

Clean the Monitor using a damp cloth and a mild detergent to avoid erasing the serigraphs on the panel.



Warning

- *Do not use pressure water jets.*
- *Do not use abrasive products or solvents.*
- *Do not press on the keyboard with pointed or hard objects as it could damage the polyester film, compromising the impermeability of the keyboard.*

8.2 Extraordinary maintenance



Warning

Extraordinary maintenance operations must be carried out by authorized personnel only.

9. Troubleshooting

In the event of a Monitor malfunction, perform the simple checks below to check whether repairs are needed.

If the problem persists, consult your local dealer or contact *MC Elettronica* Customer Service.

PROBLEM	CAUSE	REMEDY
The Monitor does not turn on	The power cable is disconnected or damaged	Check the power cable (see paragraph 3.1.1 on page 9)
The display does not show the rotation speed of the PTO or of another rotating part	<ul style="list-style-type: none"> a. Sensor cable damaged or disconnected b. Calibration distance too long c. Sensor head damaged 	<ul style="list-style-type: none"> a. Restore the connection b. Adjust the calibration distance as shown in paragraph 3.2 on page 10. c. Replace the sensor

10. Technical data

10.1 Monitor technical data for balers MCF 300

Power supply voltage	: 10 ÷ 16 VDC
Maximum energy consumption	: 200 mA
Internal self-resetting fuse	: 300 mA
Functioning characteristics	
Protection degree	: IP 66
Mechanical vibrations resistance	: 2 G
Functioning conditions	
Room temperature	: -20°C ÷ +70°C
Weather conditions	: Relative humidity 90%
Transport and storage	
Temperature range	: -25°C ÷ +75°C

10.2 Accessory technical data

10.2.1 Magnetic sensor D.12 code 671

Power supply voltage	: 10 ÷ 30 VDC
Output signal	: Contact towards earth
Max. operating frequency	: 250 Hz
Working temperature	: - 20°C ÷ +60°C
Max. operation distance	: 10mm (with magnet D.20 code 50)



ATTENZIONE: QUESTO PRODOTTO CONTIENE STAGNO E PIOMBO, A FINE CICLO DI VITA DEVE ESSERE SMALTITO NELLE AREE ADIBITE AL RITIRO OPPURE CONSEGNATO DIRETTAMENTE PRESSO LA SEDE MC ELETTRONICA SRL (ITALY)



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