MASTER
MOTION AHEAD

433,42 MHz

USER MANUAL mod. MIR DM

(radio receiver for DC motors with hold-to-run commands)

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01 INTRO

Dear Customer,
Thank you for purchasing a MASTER S.p.A. product. This guide contains all the information you will need concerning the use of this product. Read the instructions carefully and keep them for further consultation.
The MIR DM module is designed specifically to control a DC motor for the movement, with hold-to-run command, of small blinds and similar.
All other use beyond the field defined by MASTER S.p.A. is forbidden. This, as well as the breach of the instructions given in this guide, shall release MASTER S.p.A. from any liability and shall annul the product warranty.

02. TECHNICAL SPECIFICATIONS (at 20°C)

✓ Power supply:	from 12 Vdc to 24 Vdc
✓ Contact capacity:	2A
✓ Dimensions:	44 x 38 x 25 mm
✓ Working temperature:	from –20 to +55 °C
✓ IP protection:	IP20
✓ Command type:	hold-to-run
✓ Radio frequency:	433.42 MHz
✓ Storable transmitters:	40 (radio sensor included)
✓ Range (estimates):	100 m outdoor, 20 m indoor

03. NOTES ON RADIO SYSTEMS

Do not use radio systems in places with strong interference (for example, near police stations, airports, banks, hospitals). It is in any case advisable to carry out a technical inspection prior to installing any radio system in order to identify possible sources of interference.
Radio systems can be used where any disturbances or malfunction of the transmitter or receiver do not constitute a risk factor, or if such factor is eliminated using appropriate safety systems.
The presence of radio devices working at the same transmission frequency (433.42 MHz) may interfere with the radio receiver and reduce the range of the system, limiting functionality.

04. WARNINGS

04.1 WARNINGS FOR SAFETY

- ✓ Incorrect installation can cause serious injuries.
- ✓ Keep these instructions for future maintenance work and disposal of the product.
- ✓ All the product installation, connection, programming and maintenance operations must be carried out only by a qualified and skilled technician, who must comply with laws, provisions, local regulations and the instructions given in this manual.
- ✓ The wiring must comply with current IEC standards.
- ✓ Certain applications require hold-to-run operation and can exclude the use of radio controls or require particular safety devices.

04.2 WARNINGS FOR THE INSTALLATION

- ✓ Check that the package is intact and has not been damaged in transit.
- ✓ The product is designed to be inserted inside of junction boxes. The module does not provide any protection against water and only essential protection for contact with solids.
- ✓ Install the product carefully, using suitable tools.
- ✓ Do not modify or replace parts without the manufacturer's permission. Do not pierce or tamper the box.
- ✓ Do not connect more than one motor to the module.
- ✓ If there are several radio appliances in the same system, they must not be less than 1.5 m apart.
- ✓ Do not install the product near metal surfaces.Use momentary (hold-to-run) control buttons. Do NOT use stay-put switches.
- ✓ Position the buttons within sight of the roller shutter/awning but a long way from its moving parts. Position the buttons more than 1.5 m from the floor.
- ✓ The antenna cable carries line voltage. Do not cut the antenna cable as this would be dangerous. If the antenna cable is damaged, replace the product.
- ✓ For your own safety, is prohibited operate in the vicinity of the automation when motor is powered
- ✓ Before connect MIR DM module, adjust the mechanical limit switches of the motor connected to the module

04.3 WARNINGS FOR THE USE

- ✓ The product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they are supervised or given instructions on how to use the product by a person responsible for their safety.
- ✓ Before operating the roller shutter/awning, make sure there are no people or objects in the area involved in its movement. Check the automation during movement and keep people at a safe distance, until the movement ends.
- ✓ Do not allow children to play with the appliance or with the fixed control devices. Also, keep the portable control devices (remote controls) out of the reach of children.
- ✓ Do not operate the roller shutter/awning when maintenance operations are being carried out (e.g. window cleaning). If the control device is automatic, disconnect the motor from the power line.

05. ELECTRICAL CONNECTIONS

- ✓ Make the connections with the power switched off.
- ✓ Check that the power line does not come from electrical circuits intended for lighting.
- ✓ A circuit breaker or residual current device must be inserted in the power line. An isolating device with overvoltage category III, namely distance between contacts of at least 3.5 mm, must be inserted in the power line
- ✓ The product has no protection against overloads or short circuits. Install a protective device in the power line that is appropriate for the load, such as a fuse of max. 2 A.
- ✓ You can not connect more than one motor directly to the module.

05.1 POWER SUPPLY

The module can be powered by minimum voltage of 12 Vdc to the maximum voltage of 24 Vdc. The supply voltage must be applied to terminals 1 and 2. You must respect polarity, as shown in the connection diagram (see Fig. 1 in section 11). Failure to follow the polarity may result in irreversible damage to the module.

05.2 HOW TO CONNECT THE MOTOR

The motor windings must be connected to terminals 7 and 8 (see Fig. 1 in section 11). For each module must be connected only one DC motor. Verify that the motor nameplate data are compatible with the module (see section 2 "Specifications") and that the power source is likely to provide the levels of voltage and current compatible with the module and motor.

05.3 HOW TO CONNECT THE COMMAND BUTTONS (optional)

The control buttons must be connected to terminals 3 and 5, the common thread of the buttons must be connected to terminal 4 (see Fig. 1 in section 11). The control buttons must have "temporary positions" (hold-to-run), do not use switches with position maintained. More control buttons can be connected to the module via a parallel connection. To apply a command up or down hold the button for at least 0.5 seconds, to lock the manoeuvre release the button.

06. FIRST INSTALLATION

NOTE: Before connect MIR DM, adjust the mechanical limit switches of the motor connected to the module.

As soon as it is powered, the module checks to have in memory the code of at least one transmitter. If at least one transmitter is in the memory, the module starts its normal activity; if instead the memory is empty, the module commands 4 small movements of the motor and enters in the "programming mode", waiting for a valid code by a portable transmitter. To insert in memory the first transmitter:

- ✓ If the 4 movements were upward, press "UP" of the transmitter to be memorized.
- ✓ If the 4 movements were downward, press "DOWN" of the transmitter to be memorized.

NOTE: If the module, after 8 seconds from the end of the 4 small movements, has not yet received a valid radio command, the module exits the "programming mode" and the motor can be operated only by means of the command buttons.

07. COMMANDS VIA RADIO

The module is compatible with the transmitters ARCO, VISIO, FLUTE and equivalents.
The module is NOT compatible with wind radio sensors (BLAST / BLAST BT), sun / wind (VEGA / VEGA BT) and rain (X11 coupled to AT12).
The module can store up to 40 different radio codes.

To apply a command of ascent or descent, hold the relative button on the transmitter; to stop the manoeuvre release the button (the motor stops within 0.5 sec from the time when the pulsed transmitter has been released).

NOTE: situations that do not allow the module to properly receive the radio signal (eg radio interference) may cause a jerky motion of the motor.

07.1 HOW TO MEMORIZE A TRANSMITTER

1) Bring the motor in an intermediate position, in order to make visible the movements of signaling of the motor.
2) Press PROG to a portable transmitter already memorized for about 4 seconds until the motor performs 2 upward movements ("Programming mode").
3) Within 8 seconds, press STOP on the transmitter to be memorized (in the case of radio sensor press the button indicated in the instruction sheet of the sensor). The module stores the code and indicates the operation with an upward movement of the motor.

07.2 HOW TO DELETE A TRANSMITTER

1) Bring the motor in an intermediate position, in order to make visible the movements of signaling of the motor
2) Press PROG to a portable transmitter already memorized for about 4 seconds until the motor performs 2 upward movements ("Programming mode").
3) Within 8 seconds, press STOP on the transmitter to be deleted (in the case of radio sensor press the button indicated in the instruction sheet of the sensor).
The module deletes the code and indicates the operation with a downward movement of the motor.

NOTE: If the module has stored a single radio code, this can not be deleted.

08. RESET

1) Switch off power to the module.
2) Connect together terminals 3, 4 and 5 (see Fig. 2 in Section 11).
3) Power up the module. After about 30 sec the motor makes two short opposite movements to signal the recovery of the factory conditions.
4) Switch off power to the module.
5) Reconnect as in Fig. 1 section 11.
6) Power up the module. Follow the instructions in Section 6 ("First Installation").

09. DISPOSAL

At the end of the product life cycle, dispose of the device in compliance with local regulations. This product could contain substances that are harmful to human health and the environment: do not dispose of the product in domestic waste.

10. FAQ

The module has just been installed, but when I switch ON the motor don't makes the 4 movements.
- ✓ Check the electrical connections.
- ✓ Verify that device receives the correct voltage.
- ✓ Make sure the supply and the motor have electrical characteristics conforming to the requirements of the module.
- ✓ Make a reset using command button (see section 09.RESET).

I can't store the first transmitter in the module.
- ✓ Verify that the procedure described in step 6 was successful.
- ✓ Make a reset using command button (see section 08.RESET) and repeat the procedure.
- ✓ Check the battery status of the transmitter.
- ✓ Try to perform the procedure in step 6 with another transmitter.
- ✓ Make sure that the environment is not disturbed by other devices operating on the same frequency (radio headsets, alarms, etc.).

When you press UP of the transmitter, the motor moves downward.
- ✓ During the memorization of the first transmitter was pressed the incorrect button. Swap the motor wires to the terminals 7 and 8, or perform a system reset (step 8) and re-install the transmitter.

When I try to store a new transmitter, the motor makes 2 downward movements.
- ✓ Within 15 seconds after entering in "programming transmitters mode" be sure to briefly press STOP of transmitter to be memorized.
- ✓ Check the functionality of the new transmitter.

When I try to delete a transmitter, the motor makes 2 downward movements.
- ✓ If the module has only one hand-held transmitter in memory, you can't delete it from memory and the module signals the rejection with 2 downward movements.
- ✓ Within 15 seconds after entering in "programming transmitters mode" be sure to briefly press STOP of transmitter to be deleted.

When I try to store a transmitter, the motor makes one upward movement and 3 downward movements.
- ✓ The module signals that in memory has already the maximum number of transmitters (40).

11 ELECTRICAL CONNECTIONS

fig. 1

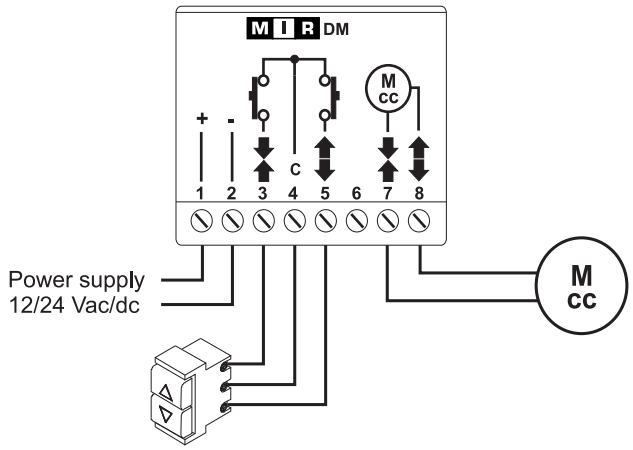

fig. 2 RESET