# GENERAL FEATURES OF THE M.A.T. SYSTEM

## COMMAND AND CONTROL BOARD dMotion

This electronic card is based on a 32-bit ARM controller and was developed exclusively for the nautical sector. It operates on the traction-unit and supervises all peripheral functions.

**Power supply**

AC/DC converter Vin: 170 ~ 264 Vac- Vout: 24 VDC

**Setup**

Automatic DC Motor
Manual push button to go DC Motor
Automatic AC Motor
Manual push button to go AC Motor

**Adjustments**

Opening speed
Closing speed
Slow speed
Braking point in closing
Braking point in opening
Thrust in closing
Opening time

**Functionality**

Anti-crush protection during closing
Anti-crush protection during opening
Fire alarm
Emergency stop
Electronic unlocking
Night entry
Anti-drift system of the doors
Electromagnetic locking lock
Electromagnetic brake of the motor

**Peripherals**

Emergency opening
Anti black-out system
Function selector
Inflatable seal
Remote monitoring

## DRIVERS FOR AC MOTORS



## SINGLE-PHASE INVERTER

- V = 220 Vac
- Sinusoidal PWM control
- Vector control sensorless
- V/F constant
- Variable torque
- Automatic torque boost

# Emergency opening (DC motor)

In the event of a power failure, this electronic board allows the doors to be opened. This is possible thanks to the interconnection of the electronic board with dMotion, the switching program and two sealed batteries. Once the doors have been opened, the system is disabled and restarts automatically when the power is restored.

- Type of battery: n ° 2 to Pb gel of hermetic type 12 Vdc
- Power supply: 30 Vac
- 24 Vdc output voltage
- Charging current: 700 mA
- Automatic stabilization of charge holding current
- Monitoring of the presence of mains power supply
- Automatic switching of emergency power supply

**AC MOTOR**

- Pure Sine Wave DC-AC Power Inverter
- Temperature controlled cooling fan
- AC output voltage and frequency selectable by DIP SW.
- Power ON-OFF remote control
- Protection:
    - Input: reverse polarity / DC low alarm / DC low shutdown / Over voltge
    - Output: short circuit / Overload / Over temp.

# Anti blackout system (DC & AC motor)

This system, connected with the dMotion card and the switch program, allows the regular functioning of the automatic door even in case of energy blackout. This peripheral is operated by a microprocessor and composed of 3 distinct units: the first unit recharges each battery, and once the energy charge threshold is reached, the energy level is lowered to an optimal value for its maintenance over time.

The second unit monitors the battery by testing the charging level as well as the accumulator's efficiency every 300 seconds.

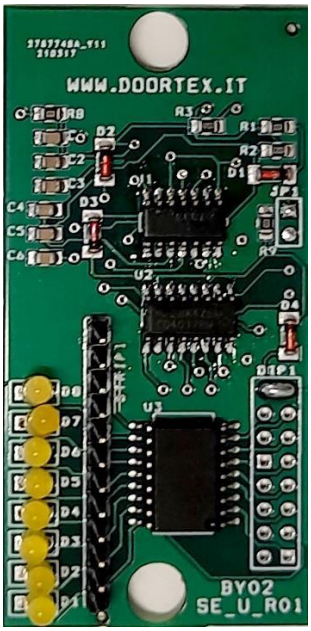
The third unit protects the entire system by interrupting the functioning of the door before a critical level of discharge is reached, preventing irreparable damage to the door. In this specific phase, a function called "last run" is provided, which enables to open or close the door before the functioning of the door permanently stops.

- Battery type: n ° 2 - 12 Vdc hermetic Pb gel
- Power supply: 18 Vac
- Output voltage: 24 Vdc
- Separate charging for each battery and automatic switching to the working voltage
- Charging current for single battery: 700 mA
- Automatic stabilization of charge maintenance current
- Mains power presence monitoring
- Monitoring of battery efficiency by testing under load every 300 sec.
- Last run management during battery operation
- Selection of opening / closing for last run
- Remote monitoring (dashboard) of system efficiency

- Pure Sine Wave DC-AC Power Inverter
- Temperature controlled cooling fan
- AC output voltage and frequency selectable by DIP SW.
- Power ON-OFF remote control
- Protection:
    - Input: reverse polarity / DC low alarm / DC low shutdown / Over voltge
    - Output: short circuit / Overload / Over temp.

# User Interface

Up to eight run templates can be selected with this device.
The selection is made by means of a button and the chosen run model is indicated by LEDs and pictographs.
The peripheral can be customized as desired, being able to choose the number and the models of run that can be set.




Operation options

- **Automatic operation**
  The door automatically carries out a complete opening / closing cycle controlled by radar
- **Manual operation**
  The door automatically carries out a complete opening / closing cycle with a push-button command
- **Reduced opening with radar command**
  The door automatically performs a 50% opening / closing run, controlled by radar
- **Reduced opening with push-button control**
  The door automatically performs a 50% opening / closing run, with a push-button command
- **Flip - flop operation**
  With a button control, the door can be opened at the desired distance and kept open
- **Clean operation**
  All the commands are disabled and it is possible to move the leaves manually
- **Open door**
  The door opens completely and remains open; all commands are disabled
- **Door closed and locked**
  The door closes; all commands are disabled, the electromechanical lock intervenes (if present)

# Inflatable gasket

The functioning of the inflatable gasket is controlled by an electronic card connected to the dMotion, the switch program, and the locking system. The integration of all units allows a safe, precise, and reliable functioning of the automatic door over time.


- Power supply: 24 Vdc
- Automatic restart of inflation in case of loss of the pneumatic system
- Automatic interlock in case of inflation command with open door
- Indication led
- Remote monitoring (dashboard) of the system status

## Pneumatic parts