**Data sheets**

# Installation and programming manual for the Coveo box for 120/300+ immersed motors

| DISTRIBUTION | |
|---|---|
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| Ludovic Faugier | Sales and marketing. |
| Emmanuel Miralles | Technical department. |

| Change history | |
|---|---|
| Revision | Description of the change |
| 00 | First issue |
| 01 | update |
| 02 | Current monitoring deleted, screens updated, potentiometer adjustment of closing speed |
| 03 | Addition of various details 3.1, 3.2, 3.3, 6. |
| 04 | Ch 3.1 : inversion auto/auto – manu/manu. |

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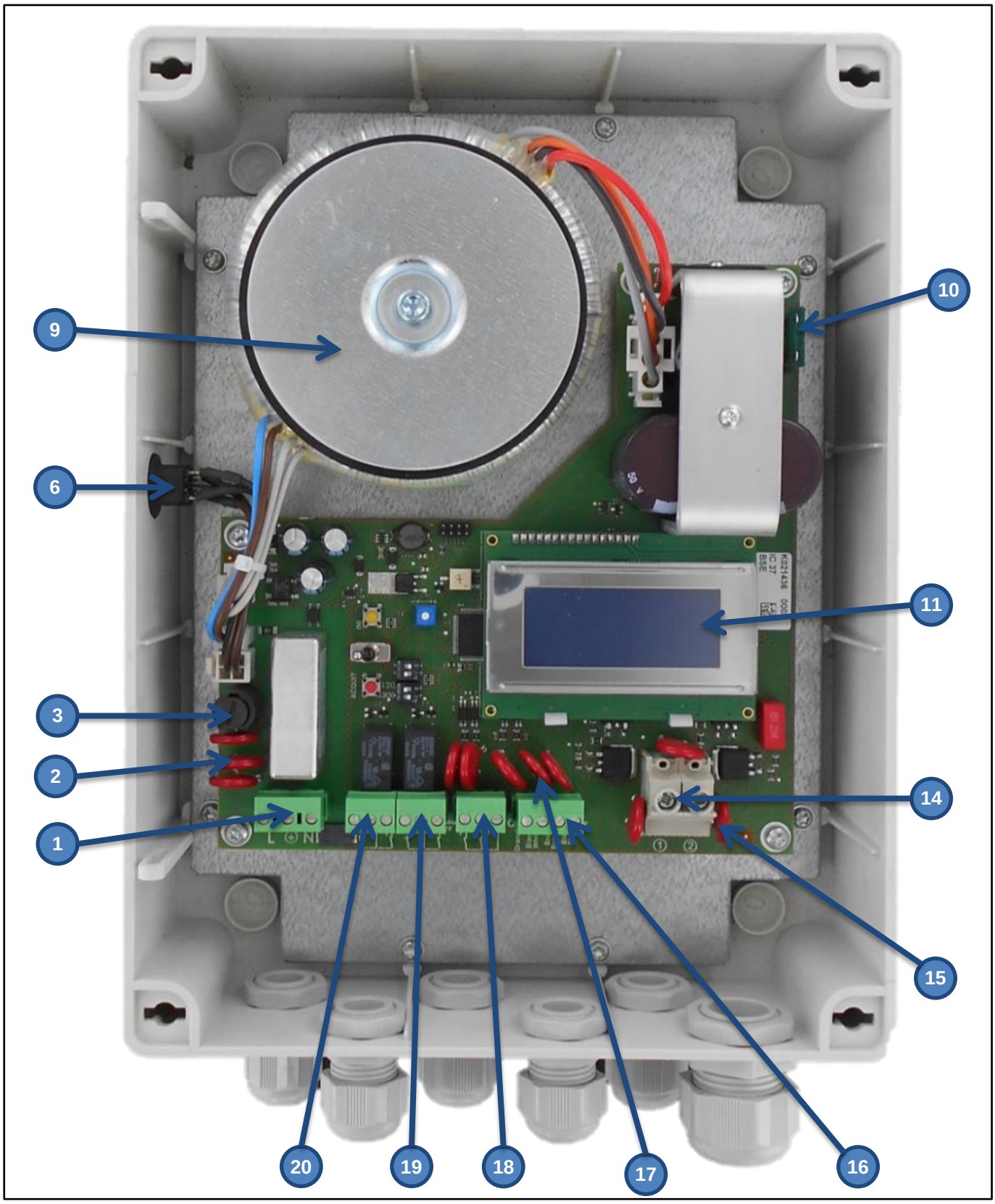
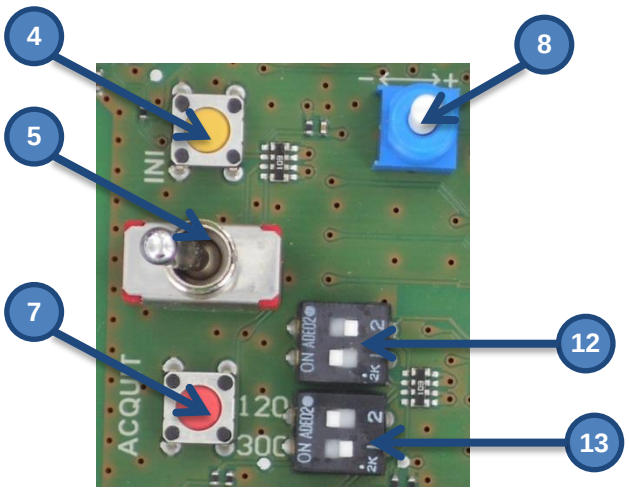
# 1. PRESENTATION

## *1.1. Description*



1. Mains terminal block.
2. Protection varistor against over-voltages from the mains.
3. 5 mm. dia. x 20 mm fuse, 4A
4. Yellow initialisation button
5. Auto/man (forcing) button
6. ON/OFF button
7. Red language change button
8. Brake adjustment potentiometer
9. Transformer
10. ATO fuse, 25A
11. Display
12. Auto/auto, auto/man (default), man/man configuration DIP switch
13. Motor configuration DIP switch (120Nm or 300+)
14. Motor terminal block
15. Protective varistors against over-voltages from the motor cable
16. Sensor terminal block
17. Protective varistors against over-voltages from sensor cables and key box.
18. Key box terminal block
19. Electrolyser control terminal block
20. Pump control terminal block




### *1.2. Function*

This box is designed to control Coveo 120Nm and 300+ pool cover motors.

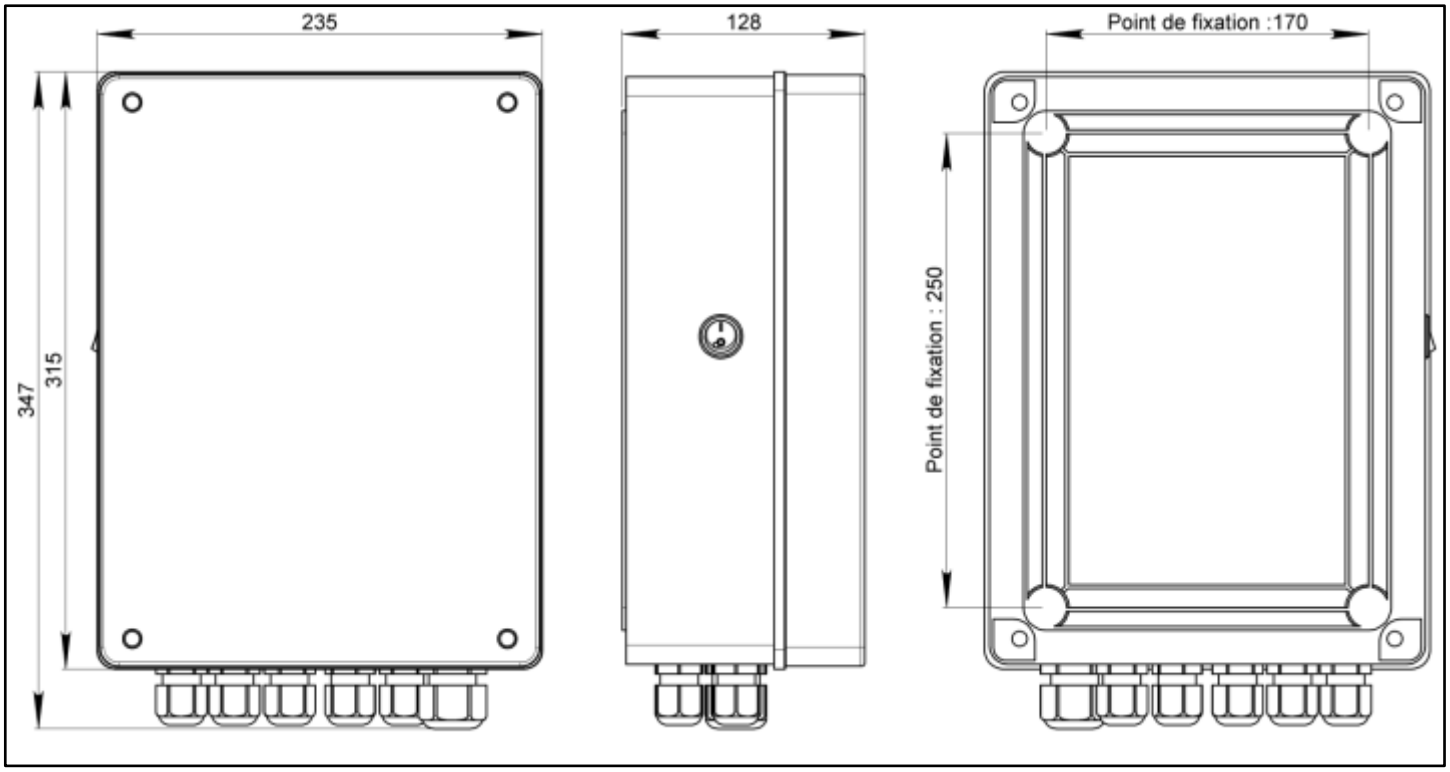
After the limit switch initialisation cycle, it is used to control movement of the cover between the open and closed positions.

The speed at the start of closing is controlled, so that the cover does not stop up against the grating
If the shaft is deeply immersed, the speed regulator will avoid excessive acceleration likely to cause the sections to be pulled down during closure of the pool.

During closing, the shaft's speed of rotation is controlled:

- the speed of the first revolution of the shaft is approximately 4 rpm.
- after that, the shaft speed is approximately 6 rpm (Coveo 120Nm), 7.5 rpm approx. (Coveo 300+).

### 1.3. Space requirements




## 2. INSTALLATION

Wiring must be done to current standards in the country of installation: EN60335-1 (January 2012), NF P90-308 (December 2013), NFC 15100 (December 2002), IEC60364-1 (2005), IEC60364-7 (2006)

### 2.1. Connection to the mains

The box will be connected to a 30mA residual current device as required by NF EN/IEC 60947-3.

### 2.2. Connection to earth

Over-voltage protection will only be fully effective if the connection to earth has a resistance of less than 20 Ohms. If the building's main earthing is a long way from the installation site, this may not be the case. Under these circumstances, it may be necessary to separate the main building earthing from this installation. A residual current device MUST then be installed specifically for the pool, in accordance with standard NF C15-100 or CEI 600364.

### 2.3. Fixing the box

The box is intended for installation in a location sheltered from the weather (not exposed to sunlight or rain). It should be secured to a vertical wall at a height of at least 1.5 m from the ground with the cables connected at the bottom.
Four screws and plugs are supplied for fixing the box.

### 2.4. Installing the cables.

Glands are supplied not fitted.
All cables connected to the box must pass through the glands:

- The motor cable is fitted via an M25 plastic gland. Its cross section will be between 12 and 18 mm.
- The other cables will be installed via M20 glands. Its cross section will be between 8 and 13 mm.

### 2.5. ***Connection to terminals.***

To simplify fitting, terminals are delivered separately in a bag.
The cable should be connected to the terminal blocks as per the instructions below.

| Ref. | Description | Type | Stripped length | Max. section |
|---|---|---|---|---|
| 1 | Mains connector | Unpluggable, 0.6 Nm max, Screwdriver, 3.5 x 0.5 | 7 mm | 2.5 mm² |
| 13 | Motor connector | 1.5 Nm, screwdriver 5 x125 | 10 mm | 16 mm² |
| 14, 16, 18, 19, 20 | Control connector | Unpluggable, 0.6 Nm max, Screwdriver, 3.5 x 0.5 | 7 mm | 2.5 mm² |

### 2.6. ***Electrolyser contact, ref. 14***

- This contact is used to tell the electrolyser the position of the cover over the pool void. It changes state when the pool is closed and when it opens. The diagram shows the position of the contacts when the pool is closed.
- 2 NC NO contacts available to control the electrolyser cut-off relay. Dry contacts, free of any potential.
- ⚠ Do not control the electrolyser directly from these contacts; you must use a relay.

### 2.7. ***Pump slave contact (ref. 15)***

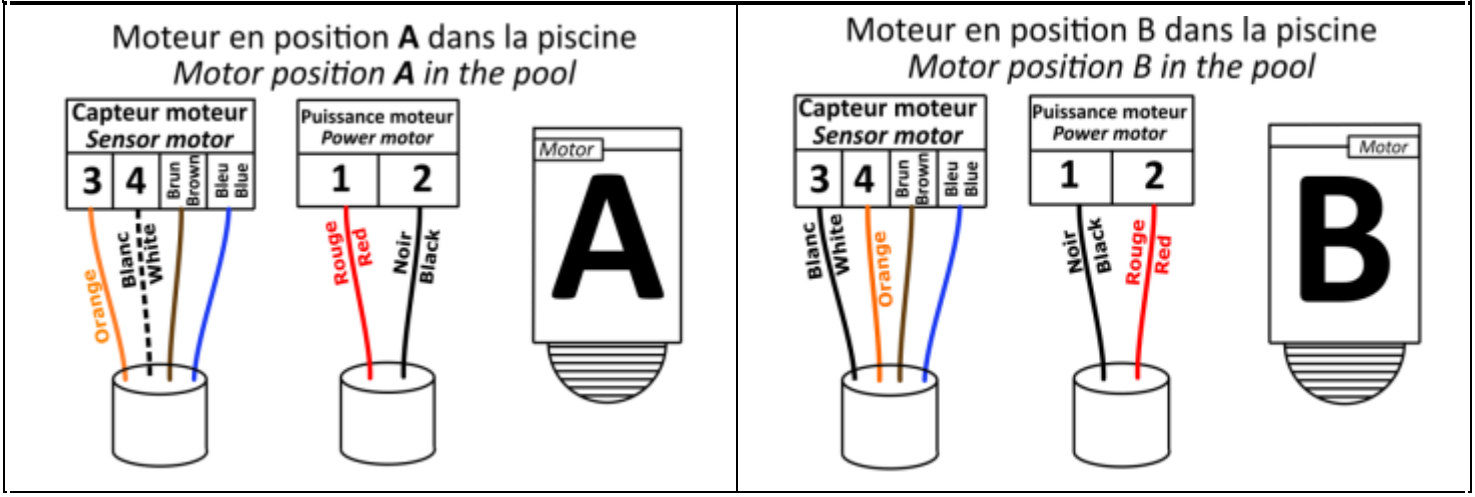
- This contact stops the pumps while the cover is in movement. The diagram shows the position of the contacts when the cover is stationary.
- 2 NC NO contacts available to control the pump cut-off relay. Dry contacts, free of any potential.
- ⚠ Do not control the pump directly from these contacts; you must use a relay.

### 2.8. ***Motor wiring.***

Usually the motor is connected to the box by two cables:

- ➔ The power cable: see the motor specification for the correct cable cross-section.
- ➔ The sensor cable: 4 conductors, minimum cross-section 1.5mm².

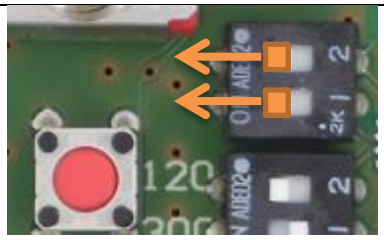
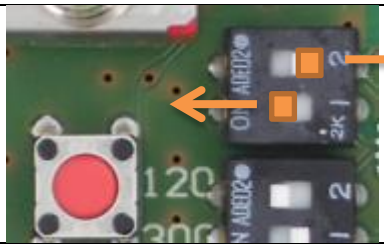
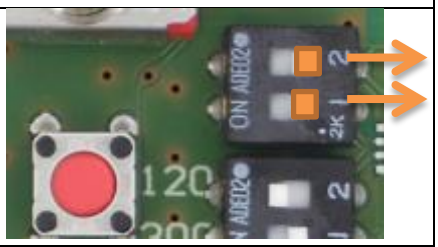
**Connect the wires to the terminals in order, according to the position of the motor in the pool void:**
Check that the connections are correct: see section **5.2**



# 3. Configuration

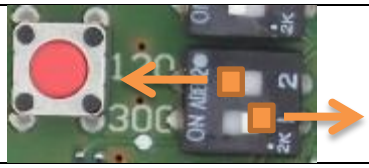
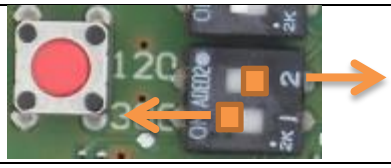
**The box must be powered off to set the configuration.**

### 3.1. *Setting the opening type: DIP switch no. 12*

| Manu/Manu : 1 ON/2 ON | Auto/Man : 1 ON/ 2 OFF (default) | Auto/Auto : 1 OFF/ 2 OFF |
|---|---|---|
|  |  |  |

Only manual/manual and auto/manual modes comply with French regulations (Chapter 10.1 of the NF P90-308 standard from December 2013)

### 3.2. *Motor type configuration: DIP switch no. 13*

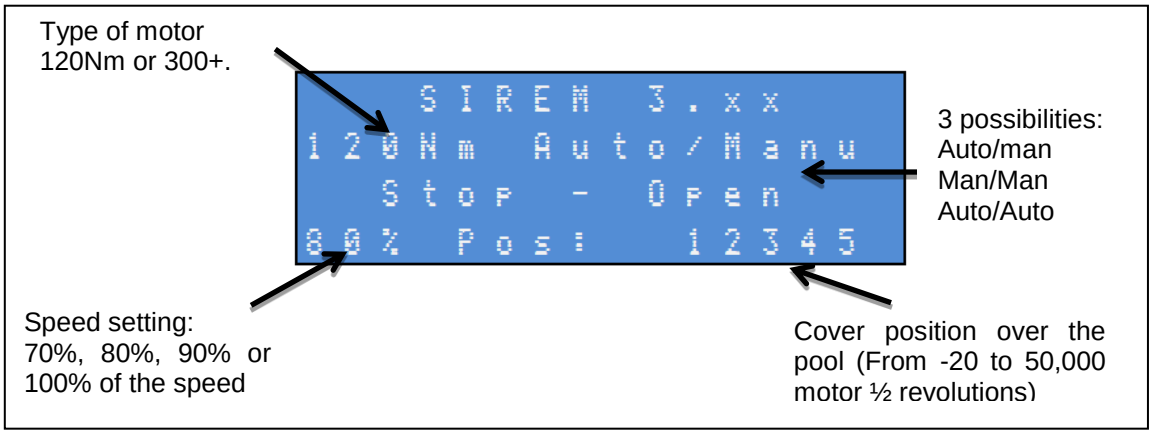
| Motor 120Nm 1 OFF/2 ON (default)<br>Can also drive the COVEO 200Nm and 300Nm | Motor 300+ 1 ON/ 2 OFF |
|---|---|
|  |  |

### 3.3. *Adjusting the closing speed*

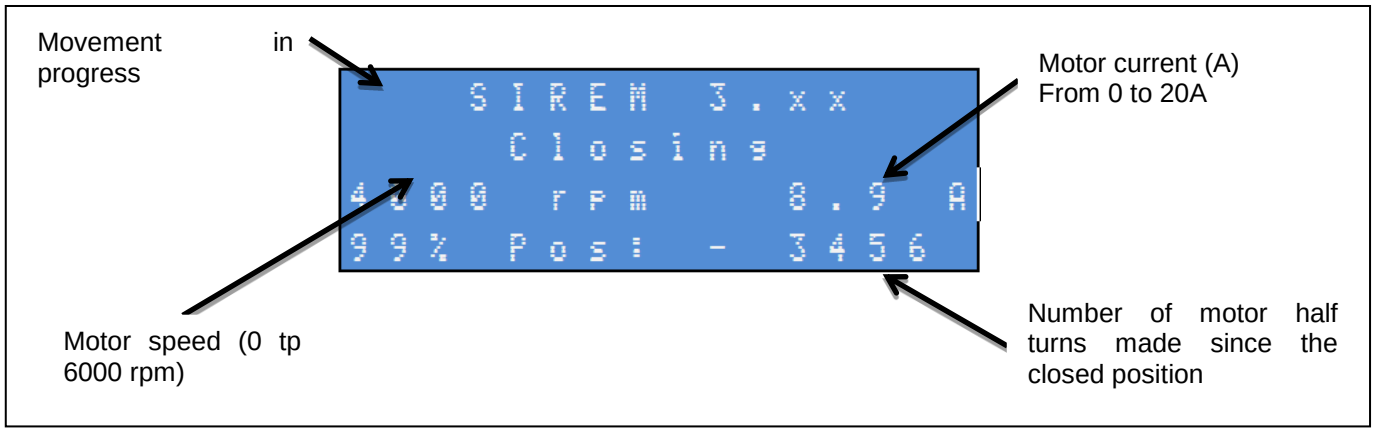
This potentiometer reduces the closing speed: Four possible levels: 70%, 80%, 90% or 100% of the max. speed. The starting speed (first shaft revolution when closing) is not affected. Default setting 100% (The display indicates 99%)

# 4. Display screens

#### 4.1.1. At standstill



#### 4.1.2.In operation




#### 4.1.3.In forced mode (manual)

| At a standstill | When O input (open) is active | When F input (close) is active |
|---|---|---|
| Manual mode<br>Stop<br>Pos: 52 | Manual mode<br>Openning<br>3456 rpm 14.5 A<br>Pos: 12345 | Manual mode<br>Closing<br>2000 rpm 1.1 A<br>Pos: 2222 |

Simulated screen, indicative values

### *4.2. Language configuration:*

Français – English – Deutsch – Español– Nederlands– Português – Italiano.

| |
|---|
| Long press on the red button |
| Give a short press on the red button to change the language. |
| Give another long press to confirm the choice of language. |

## 5. Initialisation.

### *5.1. Manual mode (forced mode)*

Switch with lever position to the right:

This mode control the motor without the use of limit switches or current control

It allows the cover to be brought to the closed position which is the starting position for the initialisation cycle.

It allows you to verify that the motor has been connected correctly:

Key in the open position: the cover opens.

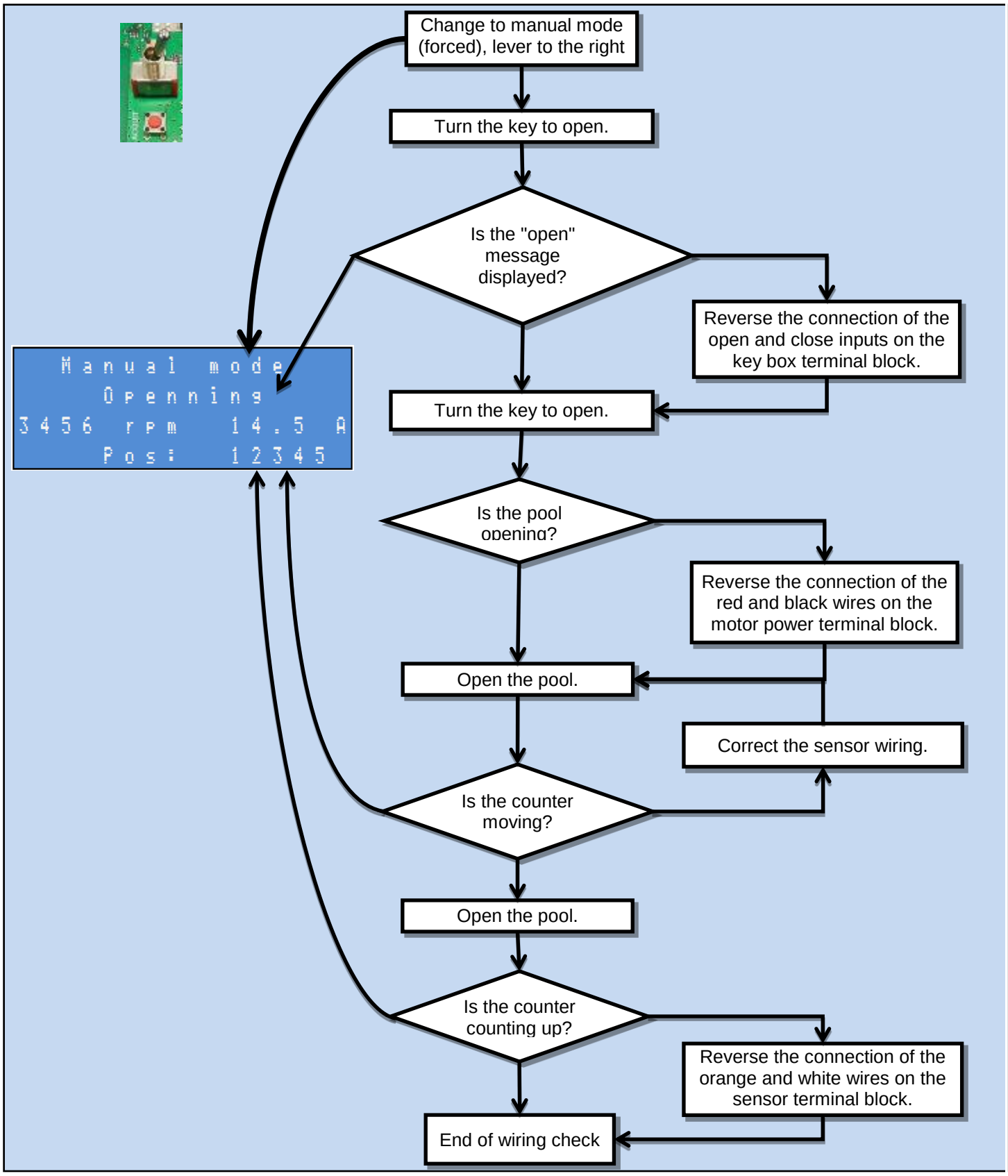
Key in the close position: the cover closes.

No safety device is active in this mode; it should therefore be used with care.

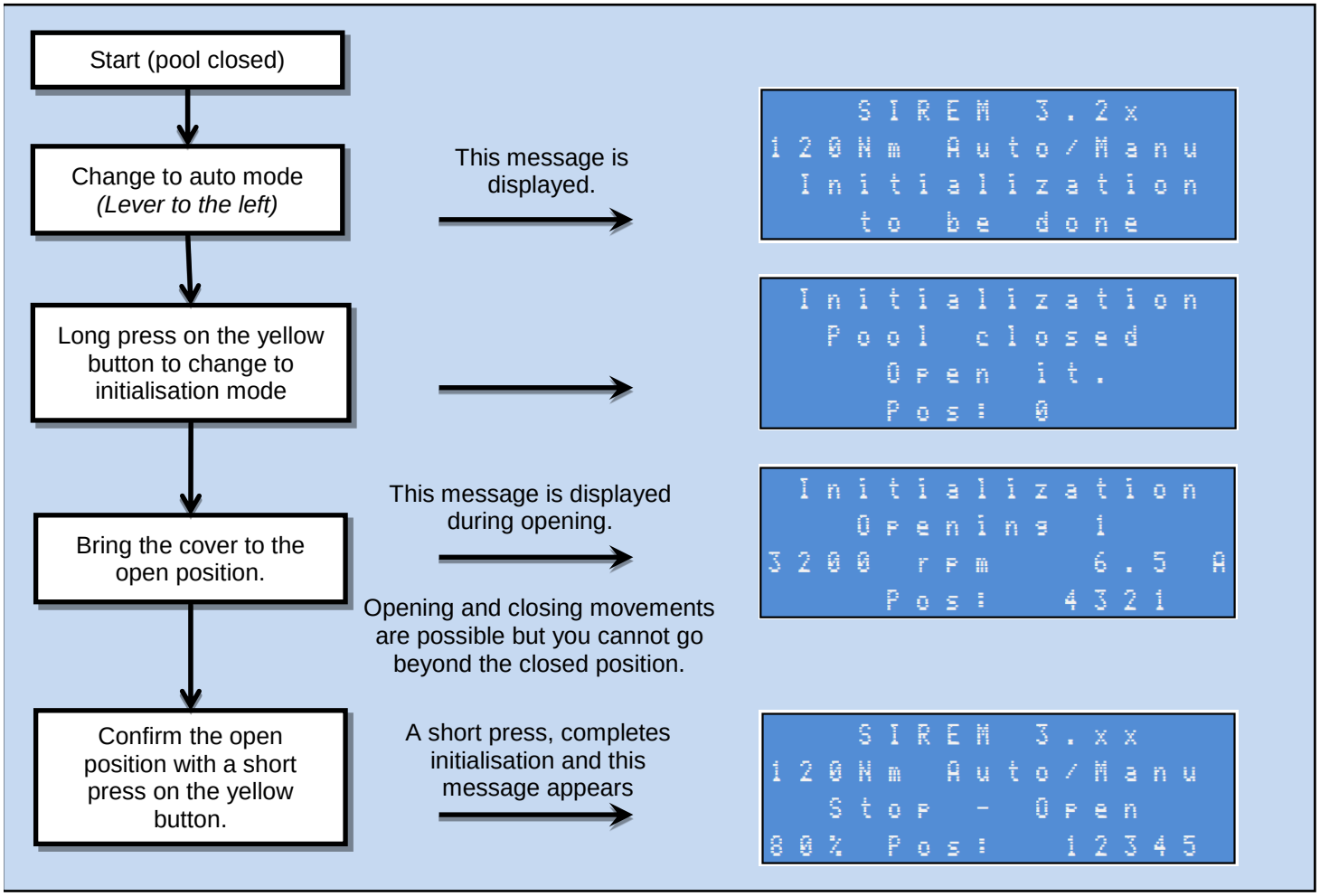
To limit any risks, the motor revolves at 80% of its maximum speed.

### *5.2. Verification of the wiring*

Before you start to programme the limit switches, ensure that the wiring is correct:



### *5.4. Initialisation.*




#### 5.4.1.Problems during initialisation.

| Display message | Solution |
|---|---|
| reverse the connexion of wires number 3 and 4 | Reverse the connection of the white and orange wires. |

## 6. Error message.

| | |
|---|---|
| SENSOR ERROR | No sensor signal. Check connections. |
| Invalide<br>Dipswitch<br>position | Adopt one of the positions defined in section 3. |
| No 24V<br>Verify<br>ATO fuse | Check the ATO 25A fuse and the transformer. |
| OVERCURRENT | Motor overload: check that there is nothing blocking the movement (strap, pool robot, etc.) |
| TEMPERATURE<br>FAULT | Over-heated board: wait for it to cool. |

To clear this fault, the box must be powered down. When the power is re-applied, the motor re-starts if the problem has been resolved; there is no need to re-initialise it. (Except when there is a sensor error)

If the power is cut for longer than 0.3s when the cover is moving, the cover will stop and the screen will prompt a reinitialisation.
If the power cut is between 0.1s and 0.3s, the cover will complete its movement before the screen requests reinitialisation.

# 7. Technical characteristics

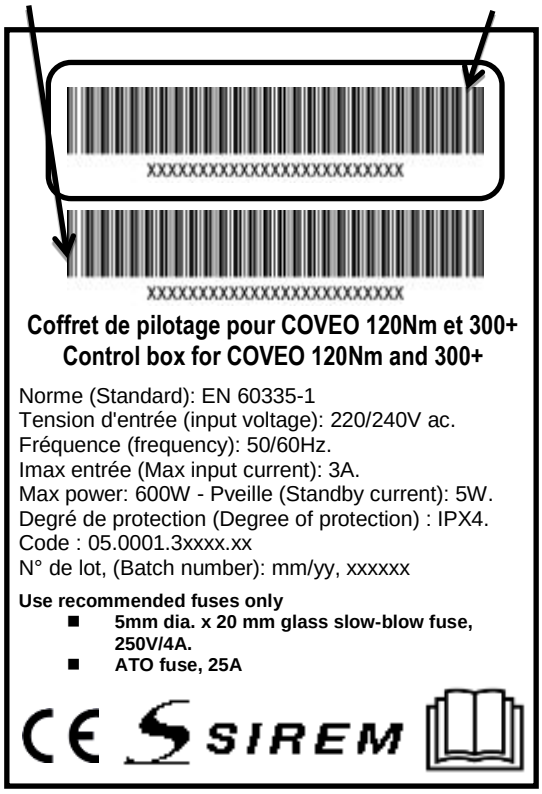
- Supply voltage: 220V ac-240V ac / 50-60Hz.
- Motor supply voltage: 30V dc max. Regulation via the board.
- Supply voltage to sensors and controls: 12V dc.
- Max. motor current: 16A.
- Power consumption
  - In standby: 5W.
  - Under maximum load 600W.
- Current requirement:
  - In standby: 30 mA.
  - Under maximum load: 3A
- Power factor: 0.8.
- Over-current protection:
  - Mains fuse: 5 mm x 20 mm 4A slow blow.
  - Resettable fuse to protect the control circuit
  - 25A ATO fuse to protect the motor power circuit.
- The diode bridge temperature is limited to 85°C.
- Protection against over-voltages: as per standards EN 61000-4-4 and EN 61000-4-5.
- Electrical safety: conformity to standard EN60335-1 (2010)
- Electromagnetic emissions: meets standard NF EN 61000-6-3 (residential environment) and NF EN 61000-6-4 (industrial environment).
- Box weather-proofing: IP54.
- Weight: 5 kg.

# 8. Product information

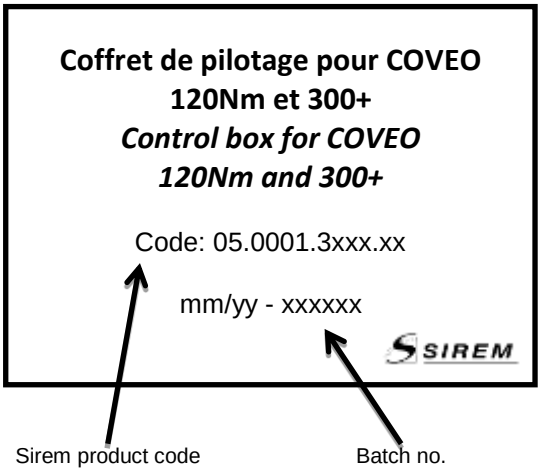
Manufacturer's plate situated below the on/off button.

Serial number EAN 128 bar code.

Serial number on the detachable self-adhesive part EAN 128 bar code.




Label on the short side of the carton



## 9. Declaration of conformity

SIREM

**DECLARATION OF "CE" CONFORMITY**

We declare our products, COVEO (swimming pool cover motorisation) and its electric panel control box to be manufactured according to the following manufacturing standards:

**IEC 60-335-1:** Household and similar electrical appliances - Safety - Part 1.
**NF EN 55014-1**: Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission.
**NF EN 61000-6-3**: Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments.

**IEC=CEI**

and to be conformed to the requirements of standards subject to being assembled in compliance with their intended :

**2006/95/CE** Low voltage directive
**2004/108/EC** Electromagnetic compatibility directive

**ADDITIONAL INFORMATION:**

These products' design allow them to be used as a component in an assembly covered by the application of the NF P90-308 standards: protections for non ground pools closed to private use individually or collectively (Safety covers and gripping).

**Marking:** CE on the nameplate.

Saint-Maurice-de-Beynost, 06/03/2014.

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