

Data sheets

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


DISTRIBUTION

NAME	Department / Position
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.

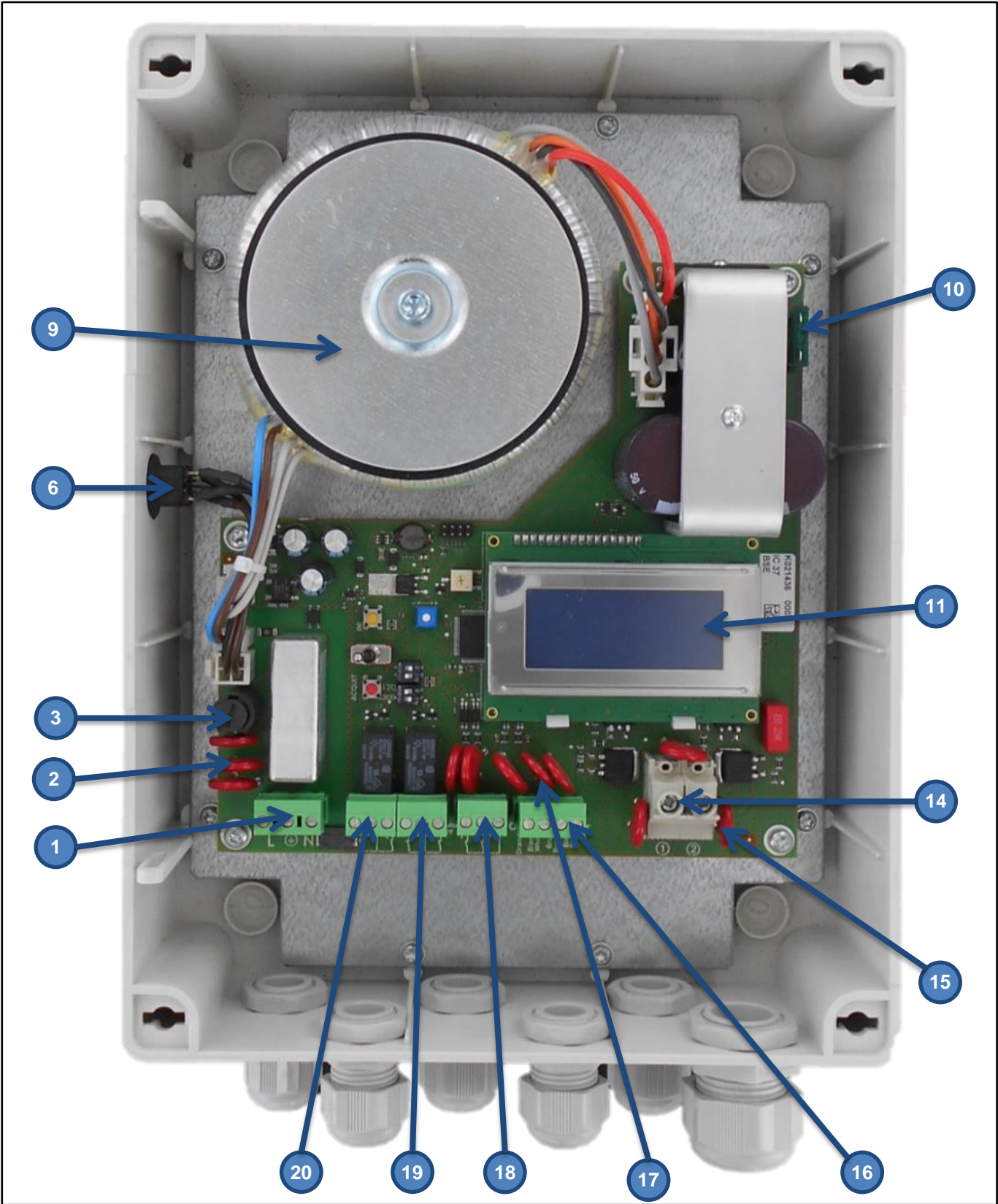
CONTENTS


1. PRESENTATION	2
1.1. Description	2
1.2. Function	3
1.3. Space requirements	4
2. INSTALLATION	4
2.1. Connection to the mains	4
2.2. Connection to earth	4
2.3. Fixing the box	4
2.4. Installing the cables	4
2.5. Connection to terminals	5
2.6. Electrolyser contact, ref. 14	5
2.7. Pump slave contact (ref. 15)	5
2.8. Motor wiring	5
3. Configuration	6
3.1. Setting the opening type: DIP switch no. 12	6
3.2. Motor type configuration: DIP switch no. 13	6
3.3. Adjusting the closing speed	6
4. Display screens	6
4.1.1. At standstill	6
4.1.2. In operation	7
4.1.3. In forced mode (manual)	7
4.2. Language configuration:	7
5. Initialisation	7
5.1. Manual mode (forced mode)	7
5.2. Verification of the wiring	8
5.3. Initialisation	9
5.3.1. Problems during initialisation	9
6. Error message	10
7. Technical characteristics	11
8. Product information	11
9. Declaration of conformity	12

			Installation and programming instructions for the Coveo						Written by	Checked by	Page		
								Name:	B. Maygron	E. Miralles	1/12		
								Signature:					
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
01	03/07/15	04	03/06/16	07		10		No. A4-NT-5094-2-04					
02	16/11/15	05		08		11							

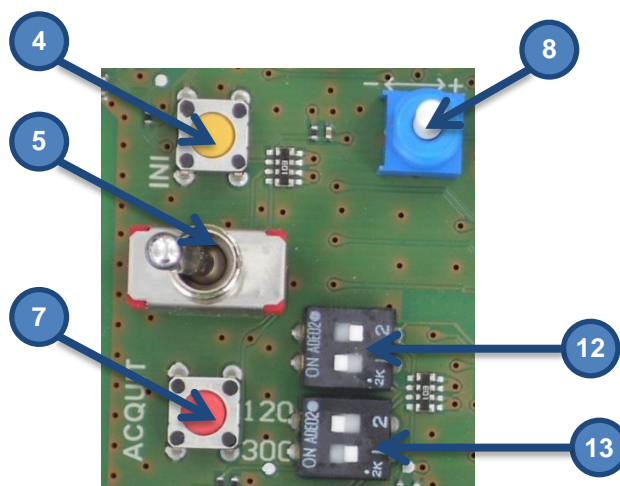
1. **PRESENTATION**

1.1. Description



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00	11/03/15	03	21/04/16	06		09		11080			
01	03/07/15	04	03/06/16	07		10		No. A4-NT-5094-2-04			
02	16/11/15	05		08		11					

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.

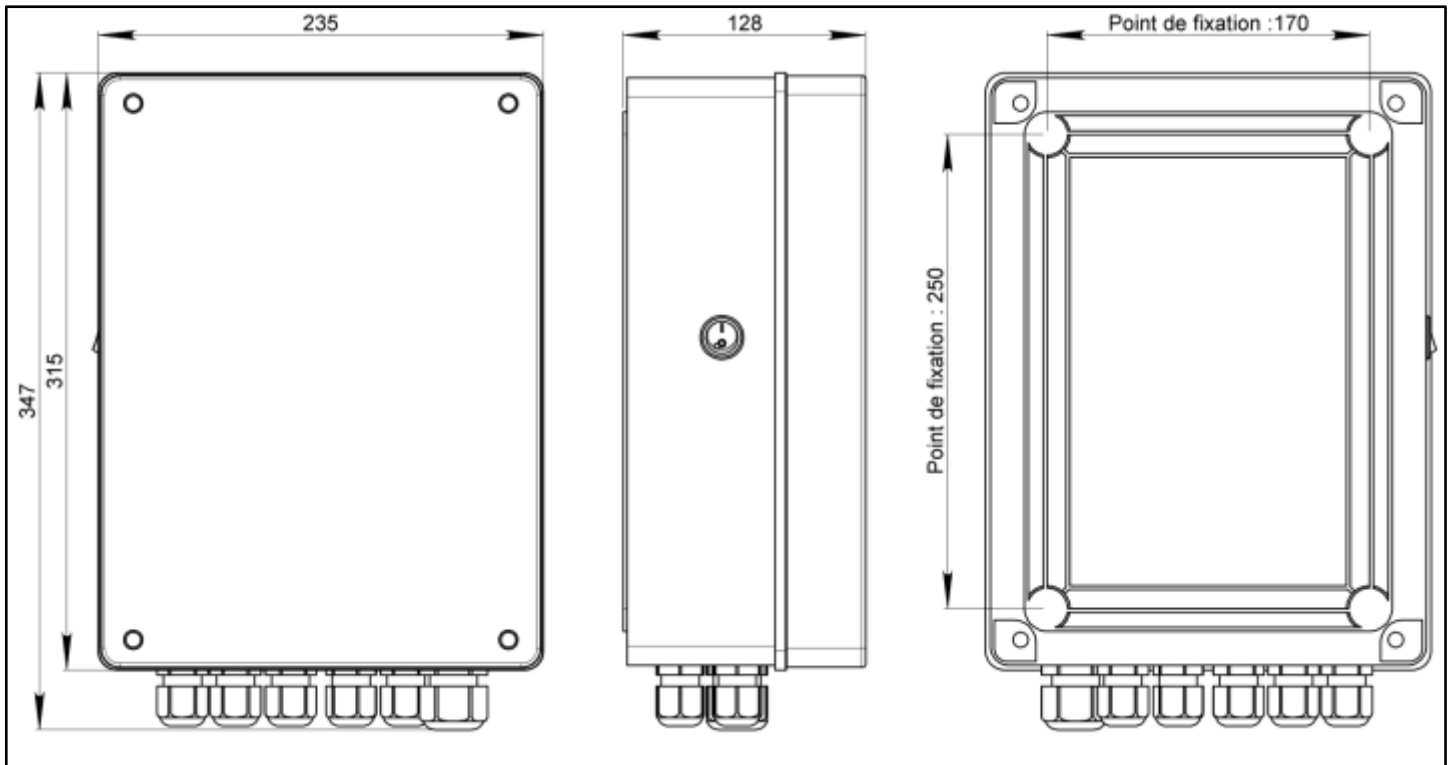
The speed at the start of closing is controlled, so that the cover does not stop up against the grating
If the shaft is deeply immersed, the speed regulator will avoid excessive acceleration likely to cause the sections to be pulled down during closure of the pool.

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+).

			Installation and programming instructions for the Coveo						Written by	Checked by	Page		
								Name:	B. Maygron	E. Miralles	3/12		
								Signature:					
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
01	03/07/15	04	03/06/16	07		10		No. A4-NT-5094-2-04					
02	16/11/15	05		08		11							

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.

			Installation and programming instructions for the Coveo						Written by	Checked by	Page
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								Signature:			
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions		
00	11/03/15	03	21/04/16	06		09		11080			
01	03/07/15	04	03/06/16	07		10					
02	16/11/15	05		08		11					
									No. A4-NT-5094-2-04		


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 mm ²
13	Motor connector	1.5 Nm, screwdriver 5 x125	10 mm	16 mm ²
14, 16, 18, 19, 20	Control connector	Unpluggable, 0.6 Nm max, Screwdriver, 3.5 x 0.5	7 mm	2.5 mm ²


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. 20)

- 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.

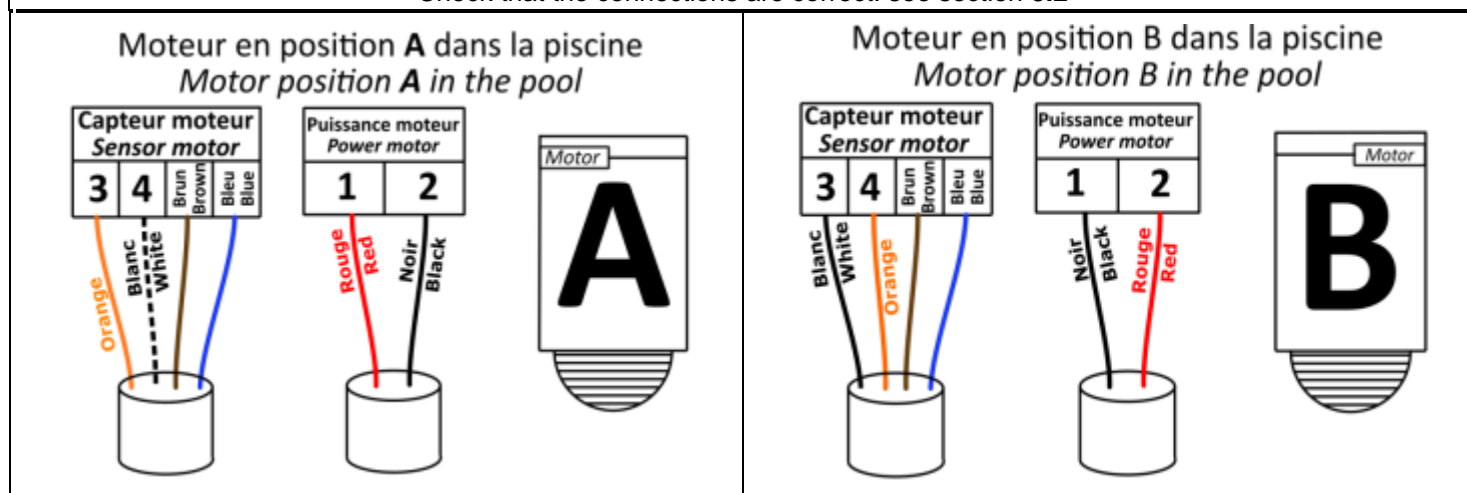
2.8. Motor wiring.


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

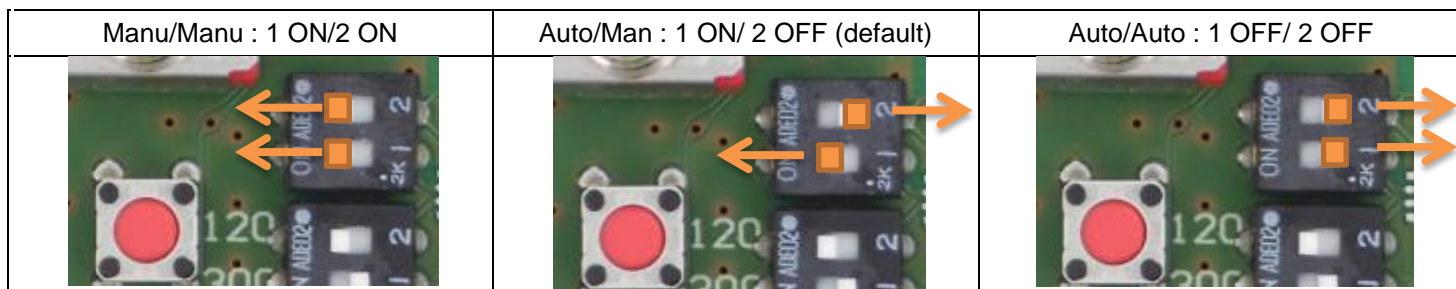


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								Signature:					
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
01	03/07/15	04	03/06/16	07		10		No. A4-NT-5094-2-04					
02	16/11/15	05		08		11							

3. Configuration

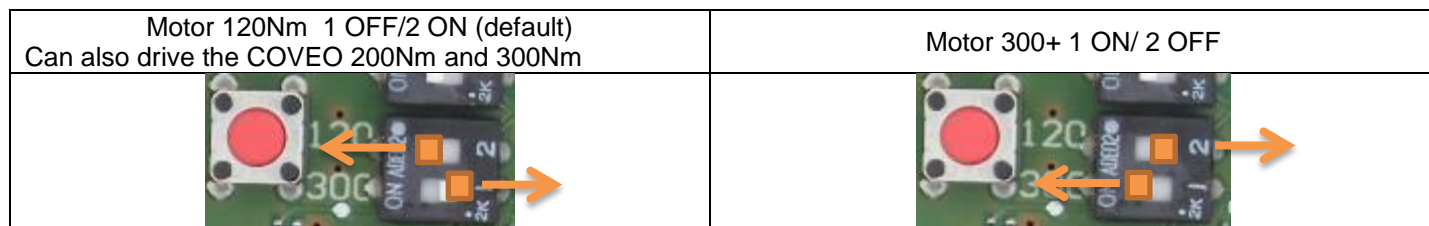
The box must be powered off to set the configuration.

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



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



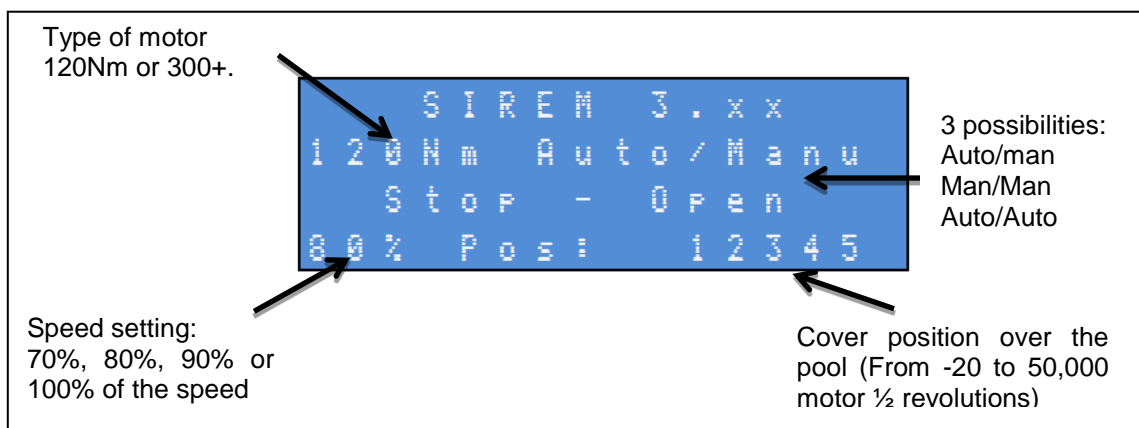
3.3. Adjusting the closing speed




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%)

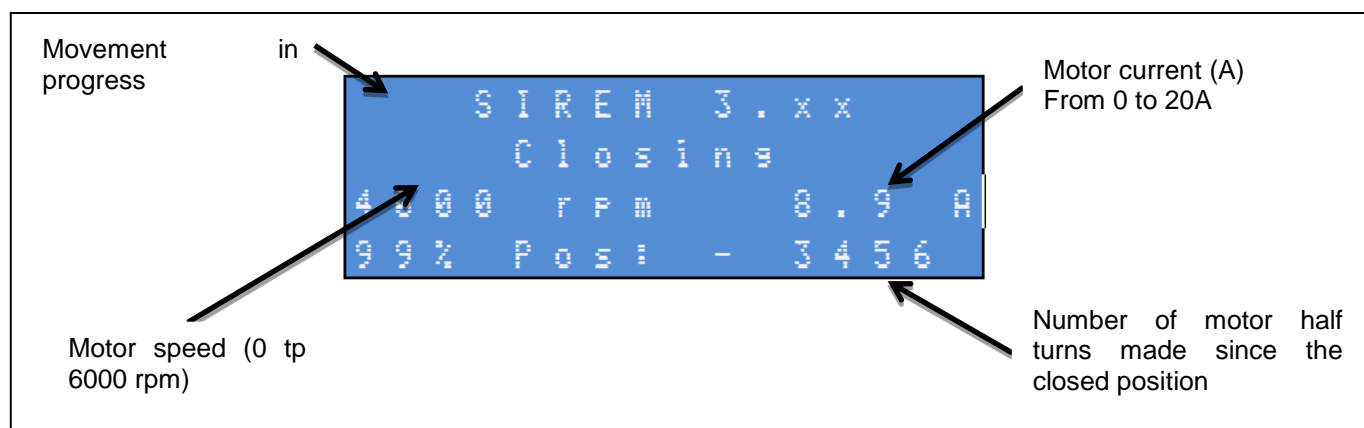
4. Display screens

4.1.1. At standstill



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								Signature:					
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
01	03/07/15	04	03/06/16	07		10		No. A4-NT-5094-2-04					
02	16/11/15	05		08		11							

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
<pre> Manual mode Stop Pos: 52 </pre>	<pre> Manual mode Opening 3456 rpm 14.5 A Pos: 12345 </pre>	<pre> Manual mode Closing 2000 rpm 1.1 A Pos: 2222 </pre>

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.

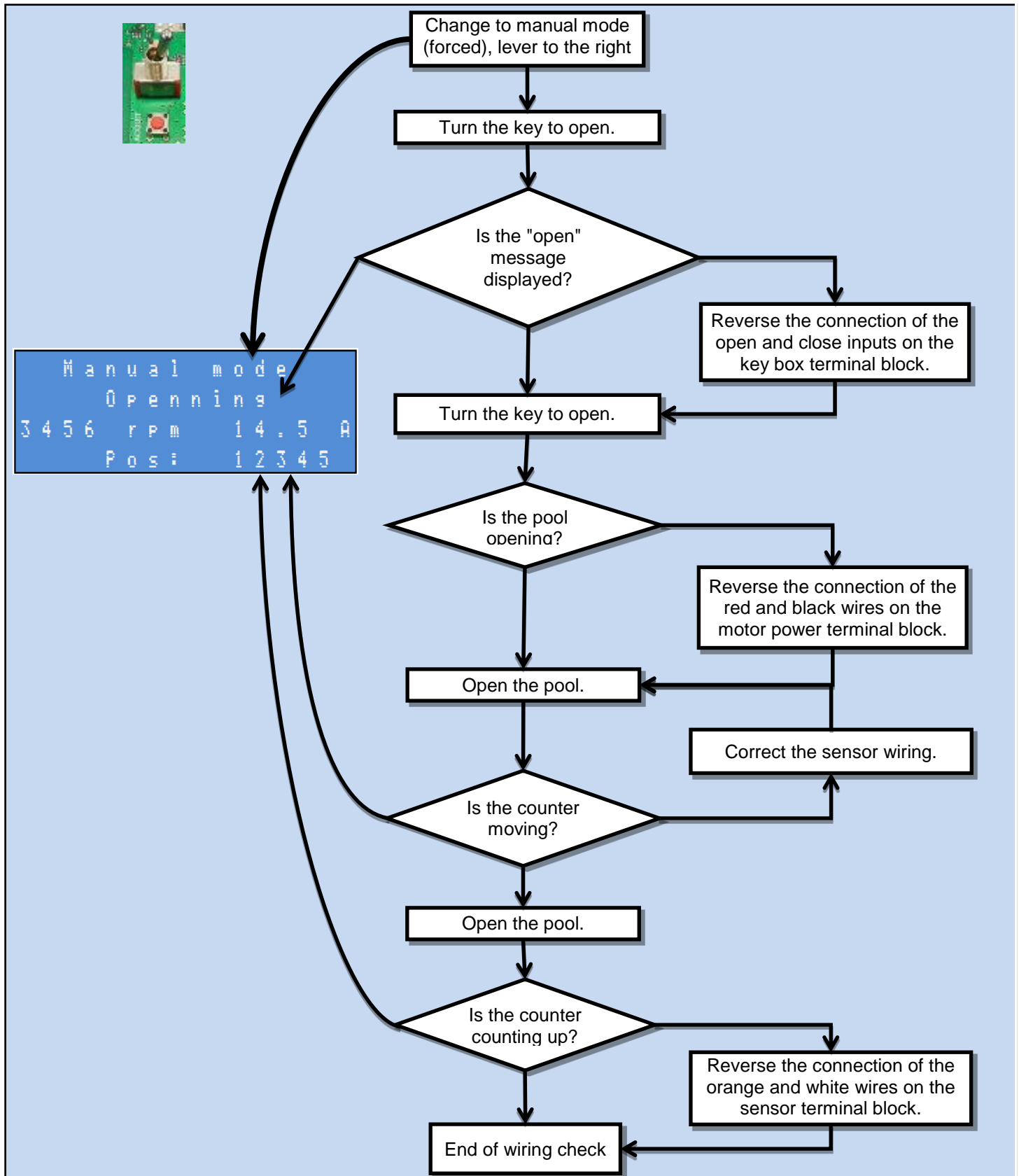
No safety device is active in this mode; it should therefore be used with care.


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

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Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
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02	16/11/15	05		08		11							

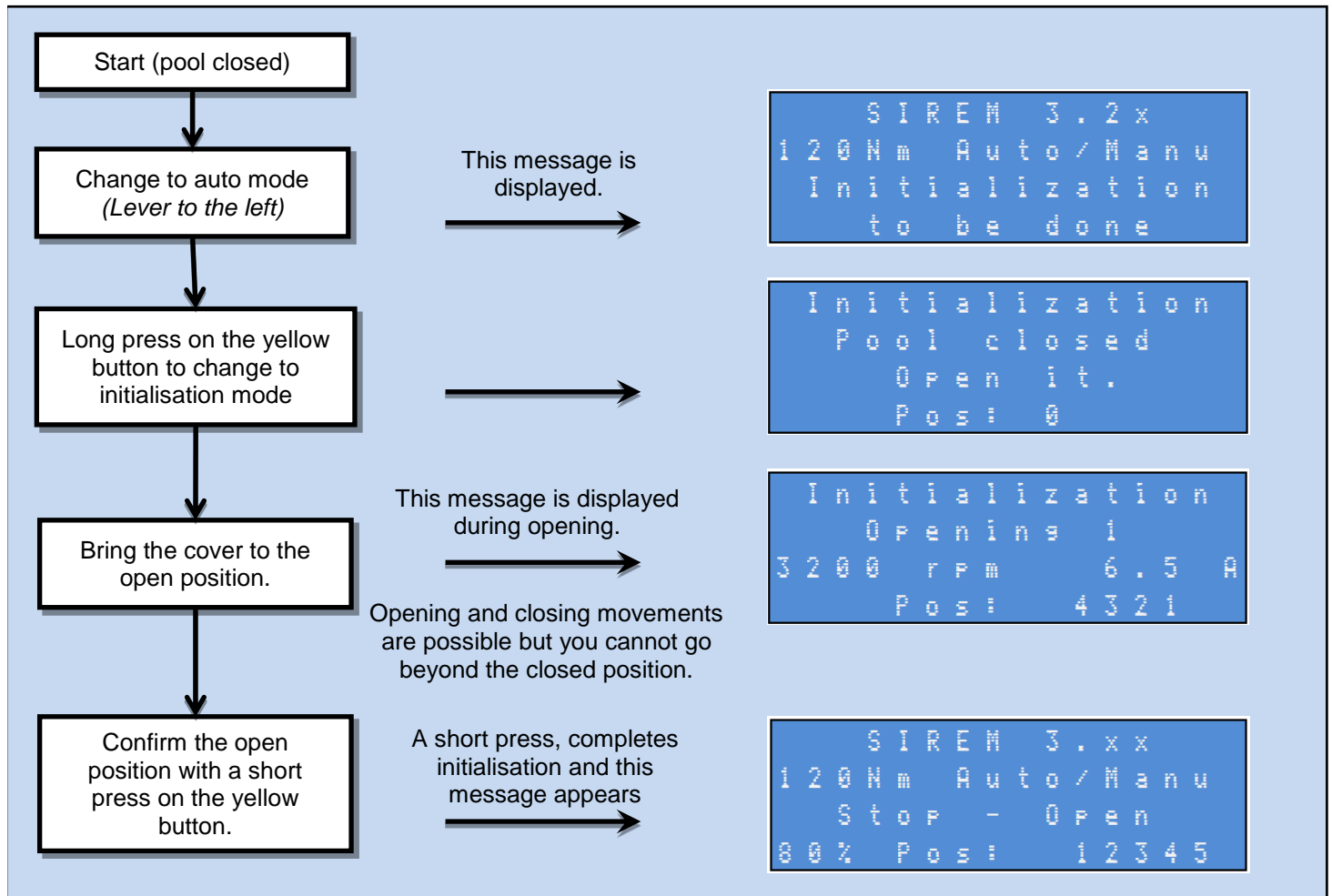
5.2. Verification of the wiring

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




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								Signature:			
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions		
00	11/03/15	03	21/04/16	06		09		11080			
01	03/07/15	04	03/06/16	07		10					
02	16/11/15	05		08		11					
									No. A4-NT-5094-2-04		

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.

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								Name:	B. Maygron	E. Miralles	9/12		
								Signature:					
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
01	03/07/15	04	03/06/16	07		10		No. A4-NT-5094-2-04					
02	16/11/15	05		08		11							


6. Error message.

<div> <div>SENSOR ERROR</div> </div>	No sensor signal. Check connections.
<div> <div>Invalide Dipswitch Position</div> </div>	Adopt one of the positions defined in section 3.
<div> <div>No 24V Verify ATO fuse</div> </div>	Check the ATO 25A fuse and the transformer.
<div> <div>OVERCURRENT</div> </div>	Motor overload: check that there is nothing blocking the movement (strap, pool robot, etc.)
<div> <div>TEMPERATURE FAULT</div> </div>	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.

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								Name:	B. Maygron	E. Miralles	10/12		
								Signature:					
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
01	03/07/15	04	03/06/16	07		10		No. A4-NT-5094-2-04					
02	16/11/15	05		08		11							

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.

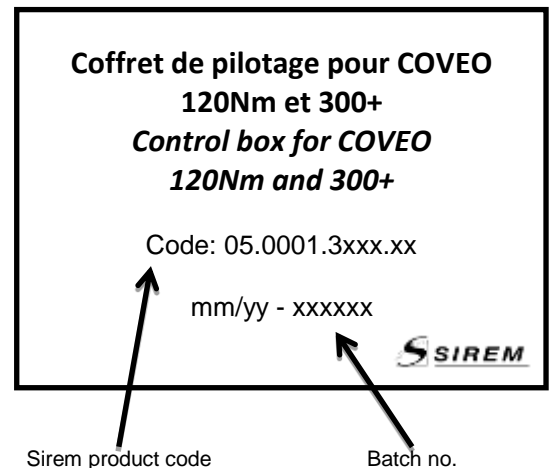
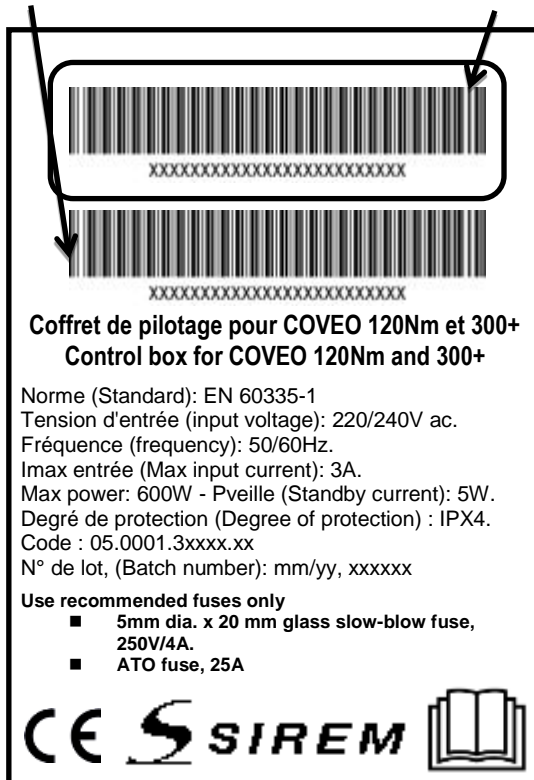
8. Product information


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

Label on the short side of the carton

Serial number EAN 128 bar code.

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



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								Signature:			
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions No. A4-NT-5094-2-04		
00	11/03/15	03	21/04/16	06		09		11080			
01	03/07/15	04	03/06/16	07		10					
02	16/11/15	05		08		11					

9. Declaration of conformity



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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								Signature:					
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File:	Instructions				
00	11/03/15	03	21/04/16	06		09		11080					
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02	16/11/15	05		08		11							