


Technical specifications
C80
For automatic swimming pool covers

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Change history	
Revision	Description of the change
00	Creation of document
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								Name: E. Miralles	B. Maygron	
								Signature:		
Rev.	Date	Rev.	Date	Rev.	Date	Rev.	Date	File: BE13007	Technical specifications	
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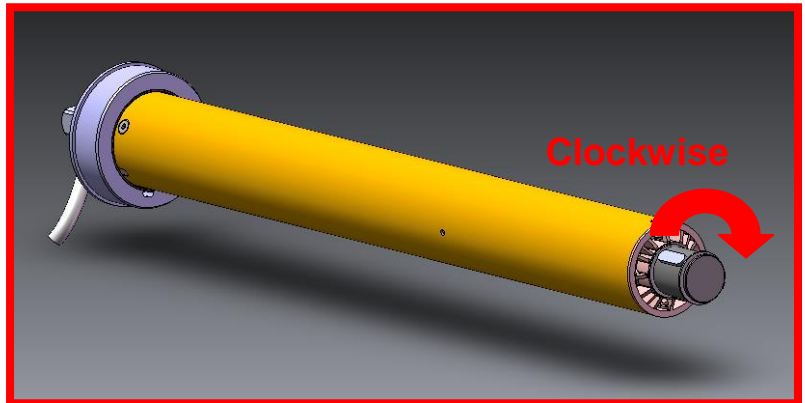
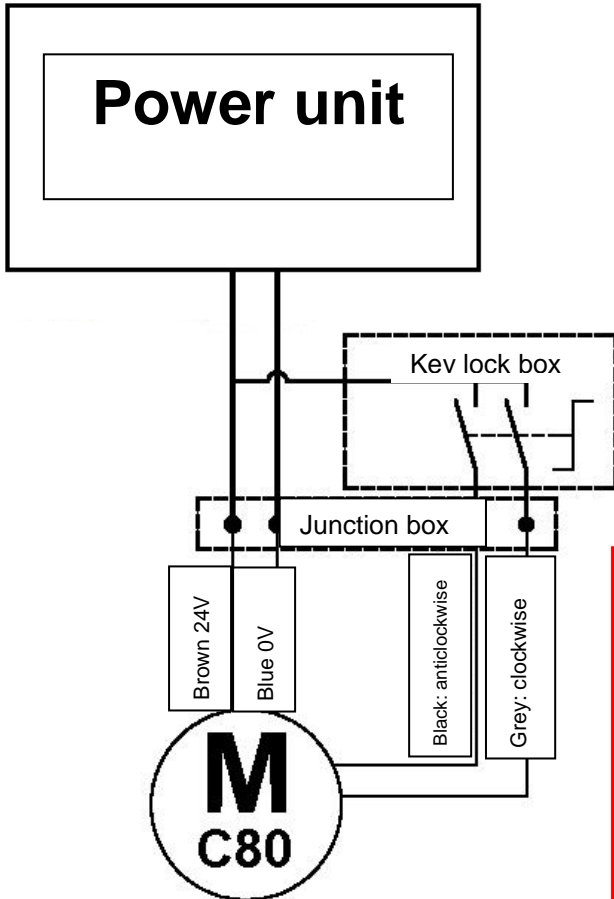
1. General.

This motor is intended to drive the safety covers of swimming pools with above-ground drive shafts. It is installed in the winding shaft and provides the following functions:

- Rotation of the shaft
- Holding the shaft in the stop position
- It acts as a bearing of the drive shaft.

In its undeployed position the unit exerts a force on the motor of approximately 1600 Newtons for a pool measuring 4x8 m. The total mass of the apron will not exceed 275 kg.

1.1. Generic description of an installation



CONVENTION: clockwise (CW) or anticlockwise (ACW): the rotational direction of the reducing output shaft, with the output shaft pointing forwards

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2. Description of the product.

2.1. Mechanical.

2.1.1. Dimensional drawing

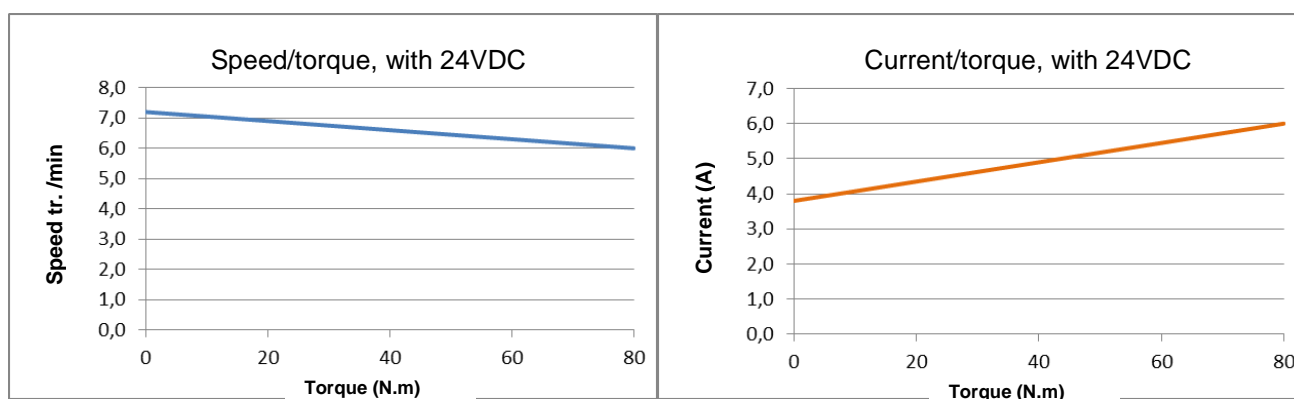
Plan N° 106023 gives the product's dimensional characteristics.

2.1.2. Functional parameters:

- Reducing ratio:1/344
- Max. torque:80 Nm
- Mechanical power at Cmax:50 watts +/- 10 %
- Min. breaking torque (static force):100 Nm
- Rotational speed at MAX. torque:6.0 revolutions/minute (+/- 10 %)
- Unloaded rotational speed (with zero load):7.2 revolutions/minute (+/- 10 %)
- WatertightnessIPX5
- ServiceS3 (5% of 60 min.)
- Mass (excluding bearings)4.8 kg
- Max. travel (max. limit switch setting):20 shaft revolutions

These characteristics are given for normal use (cf. limits of use) for a pool measuring 4m x 8m, over 3500 cycles minimum.

2.1.3. Graphs (with power stabilised at 24Vdc)




This supplied data is based on work undertaken in the laboratory with equipment for small-scale testing, under standard conditions (24V stabilised power sources, cable distance 1m, etc.), and is not necessarily suitable for field use. The most recent knowledge and experience can lead to changes and modifications in a very short period, without prior notification.

2.1.4. Materials.

- Plastic parts: PA6.6 30%GF, rigid PVC, POM, NBR.
- Tube: painted steel.
- Screws and bolts: Galvanised steel.
- Shaft: phosphate-coated steel.
- Cables: H05VV-F PVC sheath

2.1.5. Electrical.

- Supply voltage: 24 VDC (-6 VDC/+ 6VDC), filtered full-wave rectified voltage. This voltage must be provided at the terminals of the motor. The section of the cable between the power supply case and the motor must be high enough for the voltage drop to be less than 1.5 V at full load.
- Electrical current at max. torque: 6.0 amperes +/- 0.6 amperes
- Motor unloaded current: 3.8 amperes +/- 0.4 amperes

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2.1.6. Characteristic of the cables

Colour	Section	Usage
Brown	1.5 mm ²	Power supply + 24 Vdc
Blue	1.5 mm ²	Power supply - 0Vdc
Black	1.5 mm ²	ACW rotation command
Grey	1.5 mm ²	CW rotation command

This cable is white, of the H05VV-F type, $\varnothing 9.4 \text{ mm} \pm 0.2 \text{ mm}$.
 Free length: $1,5 \text{ m} \pm 0.10 \text{ m}$
 Preparation: unsheathed over 85 to 90, crimping of wires over 9 mm.

2.1.7. Connection to the client shaft.

2.1.7.1. Bearings (sliding and drive)

The bearings will be attached to the client shaft using recommendations determined by joint agreement with the client (number of screws, diameter of screws, positions, etc.).

The sliding bearing will be made of PVC

The drive bearing will be made of PVC, with a Zamac hub (for transmission of the torque, via reducing output shaft)

2.1.7.2. Attachment square

Very careful attention must be paid to the attachment plate which will receive the 16x16 square of the motor.

The attachment square of the motor measures $16 -0.11/+0$. The plate receiving this square must be made of steel, min. thickness 5 mm.


2.2. Protection against water splashes.

The C80 motor is certified IPx5, installed in the client tube (using the adaptation bearings), in accordance with standards NFC15100, EN 60335-1: 2012 and EN 60335-2-97: 2013

The vent hole must always be installed in a low position (corresponds to the installation of the square coinciding with the cable in low position and the limit switch settings in high position). This vent hole enables the water condensation to be limited, and the water to be drained off (if condensates are present).

2.3. Limits of use

- Maximum weight of the apron: 275 kg
- Maximum drive torque: 80 N.m
- The maximum length of the shaft is: 4 m
- The maximum length of the apron is: 8 m + stair
- N.B.: this maximum admissible length and width data is average market data corresponding to 80 N.m. Depending on the density of the blades and the height of the shaft relative to the water level, this data may change. Consult Sirem for all special configurations.
- Normal operating temperature: $>0^{\circ}\text{C}$ and $< +40^{\circ}\text{C}$
- Storage temperature: $-10^{\circ}\text{C}/+50^{\circ}\text{C}$.
- Controlling the motor requires that the user follows these instructions:
 - No obstacles, objects or persons in the swimming pool preventing winding or unwinding of the cover (ice, swimmer, robot, pipe, toy).
 - Unlocking of the cover's fastening system.
- The average usage conditions are :
 - 4 opening/closing cycles per day
 - 4 months per year
 - Under max. load the product will not operate for more than 3 min. per hour (S3 service)

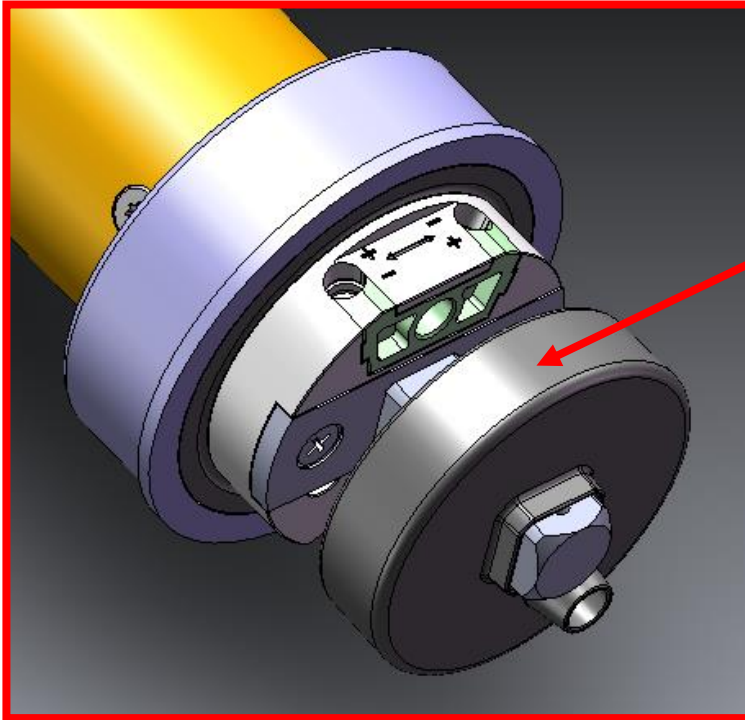
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3. Operating principle

3.1. *Adjusting the limit switches*

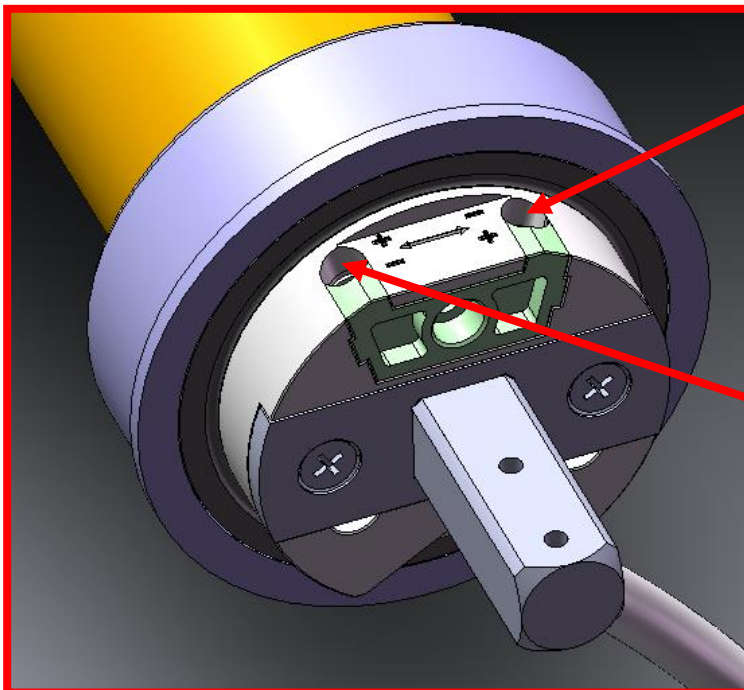
The purpose of this step is to set the "open swimming pool" and "closed swimming pool" positions. Setting is accomplished by the 2 adjustment knobs for this purpose, which are concealed by the flexible stopper.

1. Release the flexible stopper by sliding it along the square shaft.




With the flexible stopper released, showing the 2 adjusting knobs

2. Do the "closed pool position" setting (respectively "open pool")
3. Do the "open pool position" (respectively "closed pool")



Clockwise (CW) limit switch adjustment knob

Anticlockwise (ACW) limit switch adjustment knob

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The knobs are adjusted with a BTR hex key n°4.

Whether to adjust the corresponding Clockwise limit switch of the motor or the Anticlockwise one:

- Rotating the knob towards the plus sign (anticlockwise) increases the travel and therefore opens the cover further (respectively closes it further),
- Rotating the knob towards the minus sign (clockwise) reduces the travel and therefore opens the cover less (respectively closes it less),

4. Put the stopper back in position.

N.B.: Motor Clockwise corresponds either to Closure of the cover, or to Opening of the cover, depending on whether the motor is installed on the right or left of the pool.

3.2. Day-to-day operation:

Powering the motor via a key lock box, as stipulated in section 1.1, causes unwinding (respectively winding) of the cover as far as the "closed pool" adjusted position) (respectively "open pool"). When in this position it is only possible to operate in the other direction.

3.3. Security requirements

- The power unit must be compliant with the EN 60335-1 standards in force and
- The power unit-motor connection must comply with the NFC 15100 standards in force.

4. Compliance





The Sirem Above-Ground Motor controlled by the 230VAC/24VDCV SIREM power unit meets the following standards:

- Standard EN 60335-1 electrical security
- CEM transmission standards: EN 55014-1, A1, A2, EN 61000-3-2 (2000) EN 61000-3-3 (95), NF EN 61000 6-3

These standards are part of the standards references adopted by the product standard in question: NFP 90-308.


5. Marking

The product includes the following name plate, bonded on the motor tube:

C80		SIREM Chemin du Pilon 01700 Saint Maurice de Beynost FRANCE Tel : (+33) 4.78.55.83.00 www.sirem.fr
 1238039216799624930	Manufacturing date : 28/02/2015 Date de Fabrication : 28/02/2015	
Voltage / Tension : 24 Vdc Current / Intensité max : 6 A Torque / Couple max : 80 N.m Speed / Vitesse at/à 0 N.m : 7,2 rpm / tr.min-1 Speed / Vitesse at/à 80 N.m : 6,0 rpm / tr.min-1 Duty / Service : S3 - 5% of/de 60 min N = 1/344 IPx5		  ISOL.CL.B

6. Guarantee; After-Sales Service

The guarantee period commences from the manufacturing date shown on the name plate.

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