



# TECHNICAL MANUAL

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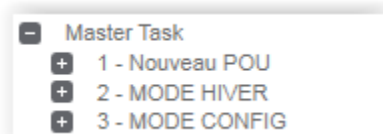
## 1. GENERAL INFORMATION

This is a program for the first generation of compactors. This is a basic program that contains the most common functions. The program must be modified if the client demands a particular option. It is possible that several versions of this program exists with different options. Therefore, this manual covers only the options in the standard basic program.

## 2. SoMachine BASIC SOFTWARE

### 2.1 Section of the program

The program has 3 subdivisions:



**1 Nouveau POU:** section that controls the automatic operation sequence. It is based on a grafcet model that uses the grafcet functions specific to the shneider PLC model.

**2 MODE HIVER:** section allows the activation/deactivation of the “hiver” mode.

**3 MODE CONFIG:** section that allows the adjustment of the number of round trips per cycle of this compactor. It also makes it possible to save program memory to avoid losing data when updating the program.

## 3 OPERATION MODE

### 3.1 Automatic

#### 3.1.1 Start of cycle

1. Make sure that the emergency stop button **is not** activated.
2. Close the safety barriers and press the "SYSTEM PRIMER" button (optional).
3. Press the "action" button.

#### 3.1.2 Preparation mode

4. If all the safety conditions are met and no alarm is present, the system starts its initialization:
  - 4.1 Return of the ram in starting position.

Note: The preparation mode is performed only after an abnormal sequence stop: alarm, power shortage, manual mode activation...

#### 3.1.3 Production mode

5. Following the initialization OR the activation of the "ACTION" button
6. The compaction cycle starts:
  - 6.1 Moving forward of the ram to clean the loading zone.
  - 6.2 Moving forward of the ram to compact the material in the compaction zone.
  - 6.3 Moving backwards of the ram to the starting position at the beginning of the loading area.
  - 6.4 Return to step #6.1 if the number of cycle is not completed.

#### 3.1.4 Hauling Mode

7. After three full signal receptions (1800psi) the system blocks the start of a new compaction cycle.
8. The "action" light stays on.
9. The hauler must empty the container.
10. The operator presses the emergency stop button to erase the 100% fully.
11. The system returns in starting cycle mode, step 1.

## 4 CONFIGURATION

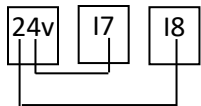
### 4.1 Winter Mode

When the winter mode is on, the system performs a round trip to break the ice formation and make the oil circulate. To modify the winter mode, the operator must press the emergency stop button and then press the "ACTION" button for 5 seconds. When the delay time has elapsed, the winter mode changes state, and the "OFF" light will flash to indicate the status of the current winter mode.

Winter mode active	Flashes 6 times
Winter mode inactive	Flashes 3 times

### 4.2 Number of round trips

The technician may adjust the number of round trips per compaction cycle without the use of a computer. By default, the system is adjusted at two (2) round trips per cycle. The configuration is activated by connecting the two installation jumpers between the 24Vv, I8 and I7 terminal blocks:



**Entry:**

I0.7) **AND** (I0.8)

1. Install the two (2) jumpers.
2. Press on the emergency stop button.
3. Press on the "action" button the number of times required

1 time	1 cycle
2 times	2 cycles
3 times	3 cycles
...	...

4. Disable the emergency stop button.
5. The "OFF" light will flash according to the number of round trips selected.

#### 4.2.1 Save

The memories of the PLC are automatically saved after opening the door at the end of a cycle. This allows the program to be updated without reconfiguring and without losing the system history data.

**IMPORTANT:** Following a program update via a memory card or a computer, it is essential to check if the configuration is still valid.

1. Disable main power OR control panel fuse.
2. Turn the power back on.
3. Wait for the PLC to start fully.
4. Check the configuration by activating an automatic cycle.

## 5 STATUS LIGHT

The system has four status lights that display the status of the system according to the current situation.

### 5.1 PRÊT/READY

It indicates that the system is powered and that the emergency stop button is not activated and that security system is not compromised.

### 5.2 ERREUR/VIOLATION

It indicates that the panel is powered but that the security system is in violation. Three (3) causes are possible:

1. Emergency stop activated.
2. Safety barrier opened.
3. Safety module not reset.

### 5.3 ACTION

Indicates the packing level of the container:

Packing level	State of the status light
Less than 75%	Off
More than 75%	Flashing
100%	Remains on

### 5.4 HORS FONCTION/OFF

It gives three (3) main messages, the state of the winter mode (see section 4.1), the number of compaction cycles (see section 4.2) and the alarm codes.

If an unusual situation is detected, the system falls into alarm and all actions are cancelled immediately. To reset an alarm, you must activate and deactivate the emergency stop button. If the alarm is still present, the "off" warning light will flash according to a flash code. A pause of 3 seconds indicates the end of the flash code.

Code	message	description
Always off	Ready-to-use system	Indicates that the system is in working order
3	Confirmation of operation of the pump contactor.	The contactor which activates the hydraulic pump does not return a confirmation signal.
4	High pressure, start of cycle.	Pressure too high * is present during step # 1 of the cycle.
5	Abnormal forward compaction cycle time.	The execution of step # 1 and # 2 of the cycle is too long.
6	Abnormal back compaction cycle time.	The execution of step # 3 of the cycle is too long.