

# **AWEL PERISTALTIC PUMP**

## **User Manual**

### **DOSYWEL Model**

Revision 2

## First Edition:

Pages	Version	Date	Written by:	Verifiedby:	Edited Chapters
16	1	13/11/2014	S.GERARD	NB - PLS	-

## Updates:

16	2	14/01/2015	S.GERARD	NB - PLS	2.5

# SUMMARY

1.	WARRANTY .....	4
2.	GENERALITIES.....	4
2.1.	Front view .....	4
2.2.	Rear panel .....	5
2.3.	Environment .....	5
2.4.	Technical Specification .....	6
2.5.	Packing List .....	6
2.6.	Safety Rules .....	6
2.7.	Proper use .....	7
2.7.1.	Forbidden distributions .....	7
3.	INSTALLATION AND COMMISSIONING.....	8
3.1.	Unpacking .....	8
3.2.	Installation .....	8
3.2.1.	Environment .....	8
3.2.2.	Connection .....	8
3.2.3.	Installation .....	9
4.	USE.....	9
4.1.	Switching On .....	9
4.2.	Fixing of the tubing set.....	9
5.	PROGRAMMING .....	10
5.1.	Programming in distribution mode.....	11
5.1.1.	Routine use: program recall.....	11
5.1.2.	Programming – creation or modification of a program .....	11
5.1.3.	Pump priming .....	13
5.1.4.	AWELight.....	13
5.2.	Mode PolyWel 3D (XYZ).....	13
6.	UPKEEP AND MAINTENANCE .....	13
6.1.	Daily upkeep and cleaning .....	13
6.2.	Annual maintenance.....	13
7.	DISPOSAL.....	14
8.	CERTIFICATE OF DECONTAMINATION / RETURN FORM.....	14

## Symbols displayed on the Dosywel



Direct current symbol

### Cautions



Caution: the equipment must be connected to an electrical installation that complies to the applicable standards in the country (NFC 15-100 for France). The installation must be equipped with protections against over-currents, over-voltages, earth faults.



Caution: do not install the equipment next to a source of heat or source of humidity



Caution: for your own safety, the equipment must be switched off and disconnected from mains before any technical intervention.



Use exclusively your unit mains adaptor. Should any other mains adaptor be used, the product would not be any longer under warranty as the unit could be damaged and the risk of fire and/or explosion would increase.



The unit is only designed to be used indoor and at an altitude below 2000 meters.

# AWEL PERISTALTIC PUMP

## User Manual – DOSYWEL Model

### 1. WARRANTY

AWEL peristaltic pumps are guaranteed two years by AWEL SAS Company.

This guarantee applies only if :

- the pump is used according to the instructions listed in the user manual,
- the electrical system is consistent with IEC requirements.

AWEL SAS Company accepts no responsibility or liability for damages attributable to improper use, and maintenance operations or modifications not authorized.

Proper use includes, the respect of instructions listed in the user manual and the application of inspection and maintenance works.



**READ THESE INSTRUCTIONS CAREFULLY BEFORE FIRST USE**

### 2. GENERALITIES

#### 2.1. Front View



## 2.2. Rear panel

All connections are located at the back of the unit:

Mains supply

Ancillary pumps / Polywel3D connectors

4 USB ports

RJ 45 socket

## 2.3. Environment

*Cf. § Erreur ! Source du renvoi introuvable. Erreur ! Source du renvoi introuvable.*

## 2.4. Technical Specification

	<b>DOSYWEL</b>
<b>Volume Range</b>	<b>1 ml to 9999 ml</b>
<b>Distribution Speed</b>	<b>Adjustable : 0 to 100 %</b>
<b>Precision</b>	<b>± 0.12 ml (tubing dia 3.2mm)</b>
<b>Set Parameters</b>	<b>Number of doses number, time delay between 2 doses</b>
<b>Interval between 2 doses</b>	<b>0.1 to 9.9 sec</b>
<b>Pump priming</b>	<b>Direct Access</b>
<b>Ergonomics</b>	<b>Ergonomic Handle Ambidextrous Programming</b>
<b>Turbo Mode</b>	<b>Built-in</b>
<b>Automatic Calibration</b>	<b>Optional Extra</b>
<b>Programs</b>	<b>19 programs</b>
<b>Optional extra pumps</b>	<b>Up to 3 extra pumps</b>
<b>Connection to Polywel 3D</b>	<b>3 outlets : X – Y – Z for 3D operation</b>
<b>Connections</b>	<b>For Foot Switch, Keyboard, Bar Code Reader, RFID, Printer and LIMS</b>
<b>Communication</b>	<b>Bidirectional</b>
<b>Dimensions</b>	<b>Width : 190 mm</b>
	<b>Depth : 250 mm</b>
	<b>Height : 210 mm</b>
<b>Weight (Uncrated)</b>	<b>3 kg</b>
<b>Electrical Supply</b>	<b>Voltage : 230 Vac</b>
	<b>Frequency : 50 Hz</b>
	<b>Current : 5 A Max</b>
<b>Power</b>	<b>90 W</b>
<b>Environment</b>	<b>Temperature: 5 to 45°C</b>
	<b>Hygrometry : 10 to 80 %</b>

## 2.5. Packing List

- Dosywel Pump
- Mains Supply
- Tubing Set with Distribution Nozzle (DOSY-T3.2)
- User Manual
- CE Certificate
- Control certificate

## 2.6. Safety Rules

The operator must comply with the following precautions:

- Only use a properly grounded outlet, matching the specifications of the manufacturer's plate.
- Only use the mains supply provided with the apparatus
- Install the dilutor in a ventilated area on a base that is horizontal and sturdy.
- Properly maintain the apparatus
- Maintain the bag holder clean and dry.
- Only AWEL is authorized to replace the mains supply.

## **2.7. Proper use**

Peristaltic pumps are designed to distribute liquid media.

They are designed to be operated indoor by staff trained to their use. Units are not to be used in a way that is not specified in this manual.

During operation, the peristaltic pump shall not be moved or bumped into.

### **2.7.1. Forbidden distributions**

It is forbidden to distribute the following materials:

- inflammable materials or explosives,
- materials which chemical reaction is strong enough to cause hazard.

The peristaltic pump is not designed to work in an explosive environment.



### 3. INSTALLATION AND COMMISSIONING

#### 3.1. Unpacking

Take the peristaltic pump out of its packaging by lifting it from its bottom.

Take out the other components: power supply, tubing set, user manual. Make sure there are no more elements remaining in the packaging before disposal. The packaging is made of recyclable cardboard and must be disposed of accordingly.

#### 3.2. Installation

##### 3.2.1. Environment

Avoid corrosive, moisture saturated, atmospheres. Avoid direct sun radiation that could heat the unit.



**ATTENTION : The pump is not designed to work in an explosive environment.**

Environmental conditions:

- Indoor utilization
- Temperature: 5°C (41°F) to 45°C (113°F)
- Max. relative moisture 80%, for temperatures up to 22°C (71°F).
- Max. altitude: 2000 m (6562 feet)

##### **Electrical environment:**

In compliance with EN61010-1 ED. 2011 regarding the safety rules for measuring, control and laboratory electrical equipment.

Installation category: II

Degree of contamination: 2

##### **Performance of Electromagnetic Compatibility (CEM):**

Consistent with EN61326-1 ED. 2013 regarding the emission and immunity of measuring, control and laboratory electrical equipment. Requirements about the CEM (emission and immunity)

##### 3.2.2. Connection

Make sure the electric supply matches the specifications of the manufacturer's plate.

Power supply of the unit must be assured by a grounded outlet, and a safety device must guaranty automatic power-off in case of faulty insulation.

A power supply equipped with a differential circuit breaker, powerful enough, would meet this requirement. To insure power switch off of the unit, the outlet must be immediately identifiable and within easy reach of the operator.

Protective device: protective devices against overloads, short-circuits and earth faults shall be compliant with NF C 15-100 standard and must be implemented in the building where the fan tray is installed. The circuit breaker must comply to a nominal current of 10 Amperes and its response curve must be of type C.

The electrical installation must be fitted with an emergency stop switch designed to switch off the mains in case of malfunction.

Insert the power connector at the back of the unit in the location marked 24V:




### 3.2.3. Installation

Install the pump on a base or on a flat, horizontally level and fixed bench.

## 4. USE

### 4.1. Switching On

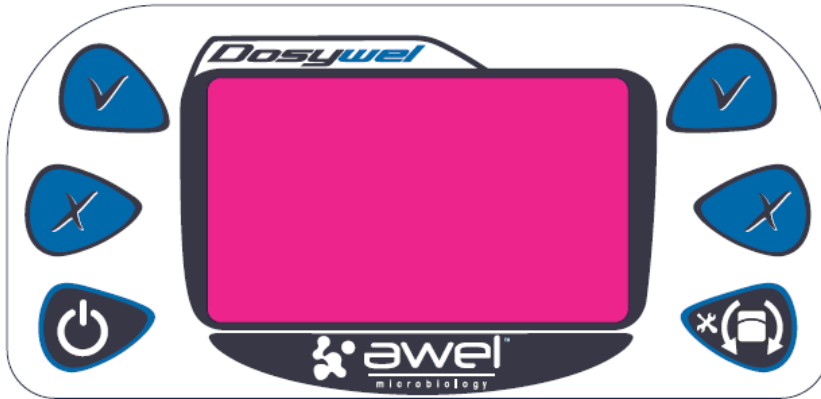
The power switch  is located on the control panel, left of the AWEL logo.

### 4.2. Fixing of the tubing set

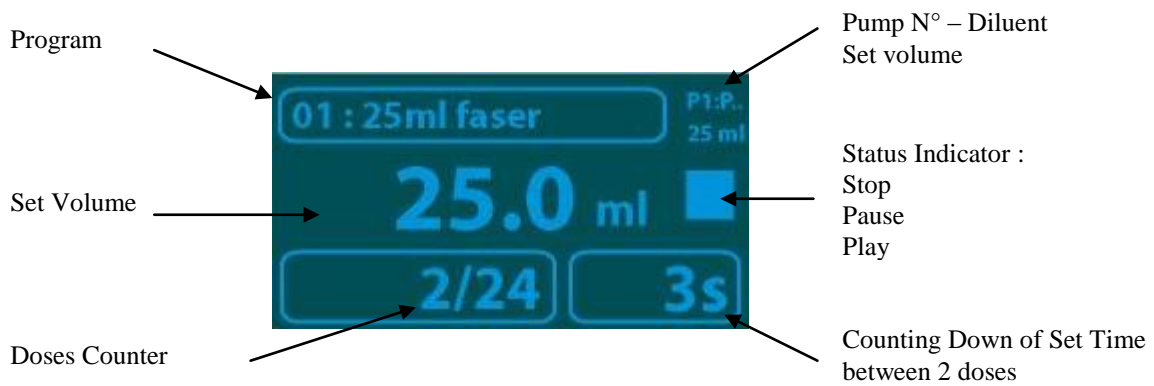
The tubing set with distribution nozzle must be sterilized before use.  
Insert the rotor section (between the 2 connectors) into the pump head rotor. While the pump head is open, make sure the notch on the side is in front of the right diameter mark (4.8mm for the tubing set delivered with the pump). Adjust with both small screws located at the bottom of the pump head if required.

## 5. PROGRAMMING

### Ambidextrous Control Panel



### Display



### Ambidextrous Adjustment Wheels


On both sides of the upper part of the pump  
Both wheels are functional, fitting to the preferences of the users.



## 5.1. Programming in distribution mode

### 5.1.1. Routine use: program recall

When switching on, the screen displays the last program used.


Scroll the different programs by pressing the pump key  on the control board.


The screen displays the set parameters of the selected program (cf 4.3) :


- volume
- program number
- Pump N° and diluent
- Number of doses to distribute
- Time delay between 2 doses

#### Manual calibration


If the manual calibration has been set:


Put the distribution nozzle above a measuring cylinder. Press the key , the pump delivers one dose.

Enter the measured volume. Confirm by pressing the validation key . Confirm again to resume the distribution.


Press the key  to start the program. The pump delivers the set number of doses with allowing the set time between 2 doses.

Continuous operation: if no dose number is set, the pump delivers one dose each time the start key is pressed.

To momentary stop the operation press the pause/cancel key .  
The status indicator displays II

To resume the work, press the validation key .

### 5.1.2. Programming – creation or modification of a program

Press the key 

Turn the wheel until right program number is displayed.

Press the wheel.


The program parameters values are displayed.


The parameter values can be modified.


**Program Creation** : after displaying the saved programs, the screen shows the first available program number (i.e. : 4 if 3 programs are already saved). Select this number to create a new program.

### Name of the program

Press the wheel to enter the name.


If required, erase the name with the cancel/escape key 


Rotate the wheel to enter the value of each digit. As soon as the wheel is at rest, the next digit is ready for setting. In case of mistake or to go back, press the escape key 

Confirm the name by pressing 

Rotate the wheel frontwards to go to the next parameter: dose or XYZ (connection to the Polywel3D distributor)

Select Dose mode

Enter the set volume with the wheel. Confirm by pressing  .

Enter the number of doses and confirm 



Enter the time between two doses and confirm 

### Pump


Select the pump number (in case of extra pumps). If no ancillary pump is connected, 1 is automatically displayed and cannot be modified.

Rotate the wheel to set the speed: 0 to 100%. Enter the value according to the tubing diameter.

Calibration :

Calibration can be checked: select « verification » function. Enter the volume. Put the nozzle above a measuring cylinder. Press the key  . The pump delivers one dose. Enter the measured volume and confirm  .

Confirm again  .

The screen displays the diluent name. Press the wheel, if required erase the name with the cancel/escape key  . Enter the name with the use of the wheel.

Confirm  then rotate the wheel to enter the batch number.

The enter the volume of diluent

Confirm  .


Automatic calibration :


Press the wheel to select the calibration mode.

YES: the pump will ask for a calibration at the beginning of each use.

NO: no calibration

Calibration frequency: number of cycles after which the pump asks for a calibration to be performed. This function is designed to prevent a drift of the delivered volume especially in case of high viscosity liquids.

Press  to confirm the value. Rotate the wheel until validation notch is highlighted.

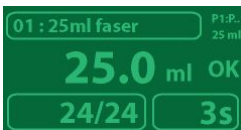
Confirm by pressing the key  or the wheel.

### 5.1.3. Pump priming

Put the distribution nozzle above a waste tank.  
Continuously press one of the wheels until air bubbles within the tubing are eliminated.

### 5.1.4. AWELight

At the end of the distribution, the screen becomes green and displays the note OKI.



### 5.2. Mode PolyWel 3D (XYZ)

Refer to POLYWEL 3D user manual

## 6. UPKEEP AND MAINTENANCE

### 6.1. Daily upkeep and cleaning

Outer body: Clean the smears on the paint of the outer body and keyboard using an absorbent paper slightly soaked with a hydro-alcoholic or quaternary ammonium solution.

### 6.2. Annual maintenance

It is recommended to perform a functional and safety check (continuity of the protection) at least once a year.

Make sure that the earthing of the equipment is still in a proper operating condition with the use of a power supply cord and the wall socket where it is connected.

The user is not authorized access to the inside of the apparatus. Maintenance is exclusively carried out par a recognized AWEL technician.

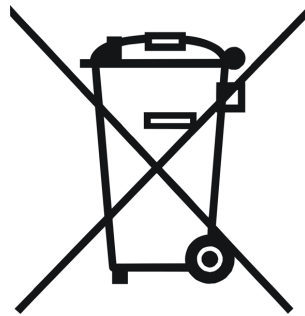
## 7. DISPOSAL

### **Information concerning the disposal of electrical and electronic equipment in the European Union.**

Electrical equipment is governed by national rules based on European Directive 2012/19/UE relating to electrical and electronic equipment waste (EEEW).

To conform to this directive, all equipment delivered after 13 August 2005 in the business-to-the business sector -- to which this centrifuge belongs (category 8, Medical Devices) -- must not be disposed of with domestic waste.

To facilitate their identification, the equipment concerned is provided with the following symbol:



The regulations related to the disposal of such waste vary from one country to another within the EU and we invite you to contact your local supplier.

## 8. CERTIFICATE OF DECONTAMINATION / RETURN FORM

Equipment will not be accepted without a returns form and the certificate of decontamination which must be fixed to the outside of the packaging.

In the absence of a certificate of decontamination the instrument will be decontaminated by an external organization and the operation will be invoiced to the sender.

## CERTIFICATE OF DECONTAMINATION

I, the undersigned,

First name: .....

Surname: .....

Title: .....

Company: .....

Address: .....

Post Code: .....

City: .....

Certify that the equipment described below:

Brand: .....

Model: .....

Serial Number: .....

Has been decontaminated according to the following protocol:

Decontaminating agent: .....

Method: .....

Contact time: .....

Carried out by: .....

Checked by: .....

Date: .....

Date:

Signature:



## RETURN FORM

Date: .....

Company: .....

Contact: .....

Address: .....

.....

.....

Telephone: .....

Fax: .....

E-mail: .....

Equipment returned: .....

Brand: .....

Model: .....

Serial N°: .....

Under Guarantee: YES  NO

Contract N°: .....

Reason for returning: .....

.....

.....

.....

.....