DRAMM CORPORATION

Mist-Time

Manual

Version 1.06.00

February 14, 2022

Dramm Corporation
www.dramm.com
920/684.0227
Manitowoc, WI 54220

Dear Customer,

Thank you for your purchase of the ARGOS Mist-Time!
This manual contains all the information necessary for the installation and use of the ARGOS Mist-Time.
Please, read the manual carefully and consult the safety instructions before installing and using this device. Make sure to keep this manual in a safe and handy place because you may need it for future reference.

Microfan has taken great care to ensure that the information in this manual is accurate, complete and clear. Should any errors have crept into it in spite of this, Microfan will appreciate it if is informed of this.

For any questions and support, you can contact your Microfan dealer at all times.

Safety instructions and Warnings

After installation, always check all settings to ensure that they have been set correctly.

Preferably, maintain the voltage of the computer as much as possible. Preferably, do not switch off the computer when a house or room is empty in order to prevent condensation by cooling.

Do not use running water to clean your computer. The computer is splash proof, not waterproof.

Always use shielded cable for weak current wiring and connect the shielding as shown in the wiring diagrams.

Always keep the weak current wiring as far as possible away from the high current wiring.

A damaged computer is unsafe and must be checked by your installer.

It is of the utmost importance that the installation is equipped with a solid alarm system. Microfan advises to regularly test the alarm system for correct operation at least once a day.

Table of contents

User manual

Overview Mist-Time

The Argos Mist-Time controller is specially developed for climate conditioning in a section.

- Specification Argos Mist-Time:
- Controlling up to 10 misting valves. (24Vac 2VA per valve).
- Control 1 or 2 valves simultaneously.
- Controlling a water pump.
- Misting valves starting on time or temperature.
- Max 6 start-stop times each day per valve with their own cycle time.
- Automatically adjustment of the misting cycle by temperature.
- Alarm when temperature sensor is faulty.
- Alarm when power goes down.
- Temperature reading in Celsius or Fahrenheit.
- Possibility to give each valve a name.

As opposed to former versions, in this version (01.06.00) there will be no buffer overflow alarms. Instead of adding actions to a 20 slot buffer with a possible overflow (if too many actions are scheduled over time), only 10 slots are available, equal to the number of valves. A maximum of 10 actions can be buffered this way and every new action is checked whether or not it is already in the buffer. If so, the new action is skipped, since an action is already pending for that particular valve.

Also, in this version the number of valves operated simultaneously can be set to 1 or 2. Of course, water capacity should be sufficient to operate 2 valves at a time.

Operating the Argos Mist-Time

Enter and change settings

The user settings can be changed via the 

button. When pressing this button the users menu is display on the screen. Using the cursor keys 

and 

, you can scroll through the menu items. A menu can be selected by pressing the 

button. When pressing this button the corresponding measurements and setting of this menu are displayed. Using the cursor keys 

and 

, you can scroll through all functions of this menu. A function can be adjusted by pressing the 

button. The function in question will then be shown in a separate screen and a new value can be entered.

Then press 

again to store the new value in the memory. From now on, the ARGOS Mist-Time will control on the basis of this new value.

Remark 1: *Functions showing readings, such as actual temperature, cannot be selected and, consequently, cannot be adjusted.*

Remark 2: *Depending on the selected controls and/or functions in the installer program, some of the menus and/or functions may not be visible.*

Press CANCEL to return to the previous menu or press MENU to leave this menu and return to the main overview screen.

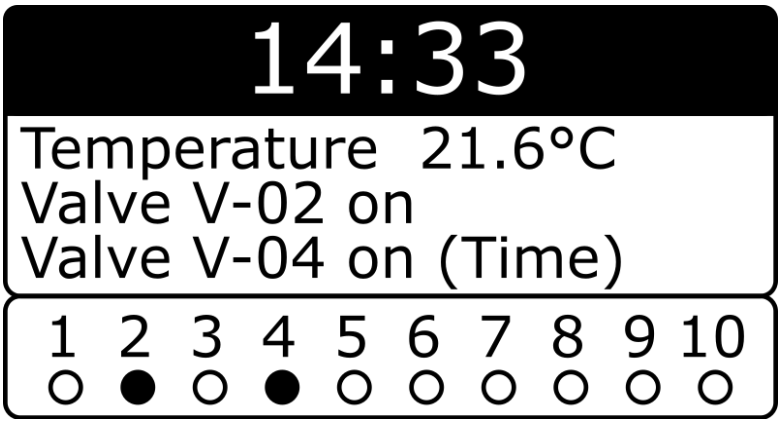
Main overview screen

The main overview screen of the ARGOS Mist-Time show the most important measurements in a clear and structured way. This way you will have a quick overview of the actual situation. Depending on the configuration made in the installer program, it may occur that one or more measurements are not shown.

Remark: *In the main overview screens settings cannot be changed.*

Remark: *If another screen than the main overview screen is visible, pressing several times the CANCEL key will always bring you back to the main overview screen.*

The main overview screen looks like this:



In the top line the actual time is displayed. As soon as an alarm is detected a flashing alarm sign is displayed in the top right corner of the screen.

The next line shows the actual temperature.

Remark: *This line is only visible when the temperature control is activated in the installer program.*

The next line shows the state of the ARGOS Mist-Time.

Waiting….	No valve is activated and the ARGOS Mist-Time is waiting.
Pump pre-run	The pump is activated before a valve is switched on.

Depending on the setting (1 or 2 valves active at a time), the messages below appear once or twice.

Valve xx on	Valve xx is activated in the manual mode.
Valve xx on (Time)	Valve xx is activated in the time mode.
Valve xx on (Temp)	Valve xx is activated in the temperature mode.
Valve xx on (Ti+Te)	Valve xx is activated in the time + temperature mode.

Remark: *instead of xx the name of the valve is shown (4 characters)*

On the lower line the actual position of the valves are displayed. Underneath every valve number an indicator is visible which is flashing when the concerning valve is active.

Remark: *up to 10 valves can be shown in this line. This depends on the number of connected valves set by the installer settings.*

Alarm view

Select this menu by pressing the MENU key when you are in the main overview screen. Then select the 'Alarm view' menu item and press the ENTER key. When there is no alarm, the screen shows 'No alarms'. When there are alarms, the screen shows what kind of alarm it is. You can select an alarm by pressing the 2 or 8 key. Then press the ENTER key and a screen is shown which asks you whether you want to suppress this alarm or not. When the alarm is suppressed the alarm relay(s) will be activated again. (= no alarm) If this alarm is still present after a few minutes the alarm is released again.

Remark: *you can also select the alarm view screen by pressing the period key when you are in the main overview screen.*

Possible alarms:

T-sensor defect This means the temperature sensor is faulty. (or the wiring of the sensor)

General menu

Select this menu by pressing the MENU key when you are in the main overview screen. Then select item 'General' and press the ENTER key. The next readings/settings are shown:

Valve activated. (0 till 10)
This reading shows the valve that is activated at this moment. 0 means no valve is activated.

Valve activated. (0 till 10)
If number of simultaneously operated valves is 2, the "Valve activated" line appears twice.

Temperature. (-70,0C till +130C)
This is the actual temperature measured by the temperature sensor.

Remark: *When no temperature control is activated in the installers program this reading is not visible. When in Temp Mode the Low and High temperature readings are recorded daily in the MIN.MAX Registry. You can select the Temperature min/max registry by pressing the 4 or 6 key. Each day it is recommend that this Min/Max be reset to the actual temperature for the next day. Please see function RESET TIME to make these changes.*

Pband. (1,0 till 10,0C)
This is the number of degrees between the maximum cycle time and the minimum cycle time of the temperature control.

***Remark**: this function is only visible when you have a temperature control activated in the MistTime.*

Example:

Mode valve	= Temp (on temperature base)
On-time valve	= 30 sec.
Maximum cycle time	= 10 minutes.
Minimum cycle time	= 2 minutes.
Set temperature	= 20,0°C (68,0°F)
P-band	= 10,0°C (18,0°F

When the actual temperature is below the set-temperature (< 20°C) the valve is always switched off. As soon as the actual temperature reaches the set-temperature (= 20°C) the valve is pulsed on and off. The on-time is 30 seconds and the total cycle time is 10 minutes. (= maximum cycle time). So the valve is switched on for 30 seconds every 10 minutes. When the temperature is rising, the cycle time decreases and the valve will be switched on more often. The maximum pulse frequency will be reached as soon as the actual temperature reaches 30°C (set-temperature + P-band). The valve then is switched on for 30 seconds every 2 minutes. See table below.

Actual temperature	On-time valve	Cycle time
Below 20°C (68,0°F)	Valve off	Valve off
20,0°C (68,0F)	30 sec	10 minutes
22,5°C (72,5°F)	30 sec	8 minutes
25,0°C (77,0°F)	30 sec	6 minutes
27,5°C (81,5°F)	30 sec	4 minutes
30,0°C (86,0°F)	30 sec	2 minutes
Higher than 30,0°C	30 sec	2 minutes

Example table

Time. (00:00 till 23:59 HM)
This is the actual time. The Argos Mist-Time is equipped with a real time clock and a backup system. After shutting down the power this real time clock still runs for 3 – 5 days.

Reset time. (00:00 till 23:59 HM)
Clearing the minimum and maximum reading can be done automatically by setting this reset time. When the clock of the Argos Mist-Time has reached this reset time the minimum and maximum readings are cleared.

***Remark**: when this function is set to 00:00 HM there will be no automatically clearing of the minimum and maximum reading.*

***Remark**: this function is only visible when you have a temperature control activated in the MistTime.*

Date. (01-01 till 31-12)
Here the actual date is shown. (day-month)

Year. (2000 till 3000)
This function shows the actual year.

You can leave this general menu by pressing the CANCEL to go back to the previous menu or press MENU to go back to the main overview screen.

Valve 1-10 menu

Select this menu by pressing the MENU key when you are in the main overview screen. Then select one of the valve menu items and press the ENTER key.

Remark: *you can also select the valve screen by pressing the minus key when you are in the main overview screen. Then select the desired valve number.*

The next readings/settings are shown:

Mode. (off, on, Time, Temp, Ti+Te, Cont.)
This function determines how this valve is working.

Off This valve is switched off.

On This valve is activated according the active time and the maximum cycle time of start time 1.

Time The valve is activated if the actual time is between a start and a stop time. There are 6 start and stop times. Each set of start and stop times has its own cycle time. The maximum cycle time is used for this.

Temp The valve is activated as soon as the actual temperature is rising above the set temperature. The cycle time is calculated between the maximum and minimum cycle time depending on the p-band. The maximum and minimum cycle time of start 1 is used for this.

Remark: *this function is only visible when you have a temperature control activated in the MistTime.*

Ti+Te The valve is activated on temperature base as described in the mode 'Temp' but only when the actual time is between a start an d stop time. There are 6 start-stop times possible.

Remark: *the installer can select how many start-stop times are used.*

Remark: *this function is only visible when you have a temperature control activated in the MistTime.*

Manual The valve is activated immediately for one cycle. After this one cycle the valve mode is put back to the previous mode.

Remark: *When there are other valves in the queue, these valves will be processed first.*

Set temp. (0,0 till 50,0C)
When the valve is in de 'Temp' or 'Ti+Te' mode and the actual temperature is rising above this set temperature, the valve is activated. The cycle time is calculated between the maximum and minimum cycle time and depending of the p-band. When the valve is in the 'Temp' mode, the maximum and minimum cycle setting of start 1 is used. In the 'Ti+Te' mode each start has its own maximum and minimum cycle setting.

Remark*: this function is only visible when you have a temperature control activated in the MistTime.*

Active time. (0:01 till 60:00 mm:ss)
This is the active time when a valve is switched on.

Start menu

Select this menu by pressing the MENU key when you are in the main overview screen. Then select one of the valve menu items and press the ENTER key.

Remark: *you can also select the valve screen by pressing the minus key when you are in the main overview screen.*

Now you are in the valve menu. By pressing the 4 or 6 key you can select one of the start menus of the concerning valve. Max 6 start menus are possible. This depends on the installer settings.

Remark: *the calculated cycle time is always inclusive the "active time", i.e. if the active time = 10 seconds and the valve operates in "on" mode where maximum cycle time = 1 minute, the total cycle time will be 1 minute, not 1 minute and 10 seconds.*

The next readings/settings are shown:

Start time. (00:00:00 till 23:59:59 hhmmss)
The valve is activated when the actual time is between the start and stop time. There are max 6 start-stop times possible. When you don't want to use a start-stop time, you have to set the start and stop both to 00:00.

Stop time. (00:00:00 till 23:59:59 hhmmss)
See previous function.

Max.cycle. (00:00:10 till 12:00:00 hhmmss)
This is the maximum cycle time belonging to this start. When the valve is not in a temperature mode, this cycle time is used. When the valve is in the on-mode, the maximum cycle time of start 1 is used.

Remark: *when the cycle time is changed by the user, this new cycle time will be carried out after the running cycle has been completed.*

Min.cycle. (00:00:10 till 12:00:00 hhmmss)
This is the minimum cycle time. Only when a valve is in a temperature mode, this setting is used. In a temperature mode the cycle time is calculated between the maximum and minimum cycle time depending on the actual temperature, set temperature and p-band.

Remark: *when the valve mode is not in the TEMP or TE+TI mode, this function is not visible.*

Remark: *when the cycle time is changed by the user, this new cycle time will be carried out after the running cycle has been completed.*

Installer manual

Starting up the installer program

The installer program is used to adapt the Argos Mist-Time to the user requirements. Various assignments can be made. For the user, this means that only the relevant readings and settings will be visible. Unused functions or controls are not displayed to the user.

Press the 2 key when the main overview screen is visible. You will be asked for a PIN.

Enter the right PIN code and press the ENTER key. The installer menu opens.

Factory setting PIN code: 2826

Using the cursor keys 2 and 8, you can select from the different menus. Select the required menu and press ENTER. The menu in question now opens.

Next, using the cursor keys 2 and 8, you can scroll through all functions of a particular menu.

Press ENTER to select and adapt the required function. See next figure for the installer screens.

Installer general settings

Select in the installer menu item 'General install.' and press the ENTER key. The general installer settings are shown. Select an item and press the ENTER key to change this setting.

Installer functions:

Language. (English, Dutch)
This function let you select between the different languages. At this moment you can select between Dutch and English. Other languages will follow.

Nbr.valves. (1 till 10)
This function determines how many valves are connected to the ARGOS Mist-Time. Unused valves are not visible for the user.

Valves parallel. (1 or 2)
Setting which determines if only one valve or 2 valves can be active at one time. If 2 valves are operated simultaneously, the water capacity should be sufficient.

Fahrenheit. (off – on)

Select the desired temperature scale. If this setting is set to ON, every temperature is shown in Fahrenheit. Otherwise all the temperature readings are in Celsius.

Pump. (off – on)
If a pump is connected to the ARGOS Mist-Time you'll have to set this function to ON.

Pre running. (0:00 till 2:00 min.sec)
Before a valve is activated the pump is started during this pre-run time.

Temp.cntrl. (off – on)
If the temperature control is used, set this function to ON. The ARGOS Mist-Time is now measuring the temperature. Also an alarm is generated when the sensor is faulty.

Nbr.starts. (1 till 6)
This function determines how many starts are used. Not used starts are not visible for the user.

Tsens.alarm. (off – on)
When a sensor alarm is generated a warning is shown in the display. When this function is set to ON also the alarm relay is switched off. This way an external alarm device can be activated. When this function is set to OFF only a warning is shown.

Name val.01 (name)
You can give every valve a unique name. This name will be shown in the user's program.

To change this name, just press the 

key. Now the name is shown in the display. With the 

and 

key you can select one of the 4 characters. With the 

and 

key you can change this character. To close this window just press the 

key.

***Remark**: with the next functions you can change the names of valve 2 till 10 in the same way as described above.*

Installer test program

The ARGOS Mist-Time is provided with a test program. With this program you can check all the in- and outputs of the ARGOS Mist-Time.

Select in the installer menu item 'Test program' and press the ENTER key. The test program settings/readings are shown. Select an item and press the ENTER key to change this setting.

Test functions:

Sensor 1. (-70,0C till +130,0C)
This is the actual reading of sensor input 1.

Remark: *the temperature sensor cannot be calibrated.*

Sensor 2. (-70,0C till +130,0C)
This is the actual reading of sensor input 2.

Remark: *This input is not used by the ARGOS Mist-Time.*

Dig.input 1. (off – on)
This is the position of the digital input 1. This input is not used by the ARGOS Mist-Time.
Off = input is open.
ON = input is connected to GND.

Dig.input 2. (off – on)
See previous function.

Dig.input 3. (off – on)
See previous function.

Dig.input 4. (off – on)
See previous function.

Valve. (0 – 10)
With this setting you can switch on a valve manually to check its functioning.
0 = No valve activated.
1-10 = valve xx is activated.

Alarm relay. (off – on)
This function let you check the alarm relay.
Off = alarm relay is switched off.

Remark: *there is a delay of 10-20 sec before the alarm relay is switched off (watchdog)*
On = alarm relay is switched on (= no alarm)

Pump relay. (off – on)
This function lets you check the pump relay.
Off = pump relay is switched off.
On = pump relay is switched on.

Pulse relay. (off – on)
With this function you can check the pulse relay. (this pulse relay is not used by the ARGOS Mist-Time)
Off = pulse relay switched off.
On = pulse relay is switched on.

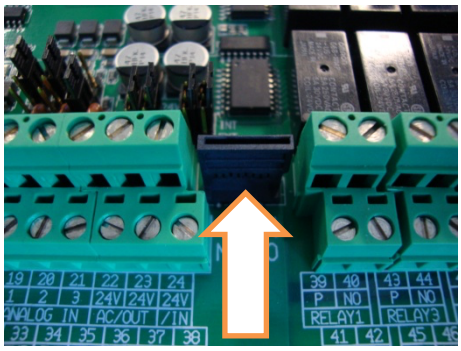
To quit the test program, just press the 

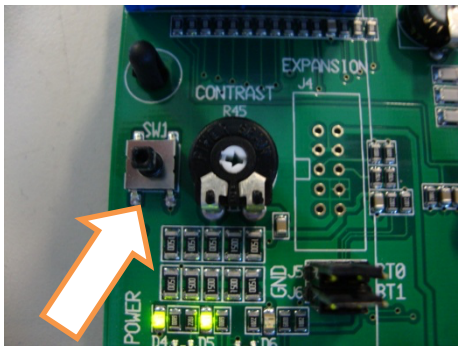
key. The main overview screen is now shown.

Updating the Argos Mist-Time software

For a software update, you need a micro SD-card. The micro SD-card must be FAT32 formatted. Capacity: 1GB – 32GB. The micro SD-card can also be used for logging purposes. Update the ARGOS Mist-Time goes as follows:

1. Insert the micro SD-card with the update file into the connector. The update file must be in the root of the SD-card. Not in a directory. The SD-card must **not** contain any backup files. (with .BCK or .USED extensions)
2. Press the SW1 key on the bottom board.
3. The ARGOS Mist-Time is now saving a backup of all the setting onto the SD-card. (flashing run-led)
4. After finishing the backup the bootloader of the ARGOS Mist-Time is started automatically.
5. The software update is being programming into the ARGOS Mist-Time. (flashing run + addr led)
6. The new user software is starting up after the update.
7. The settings, saved on the SD-card, are restored into the ARGOS Mist-Time. (flashing run-led + addr led continuously on)
8. The new software is now ready for use. (run-led flashing in 1 sec rhythm)

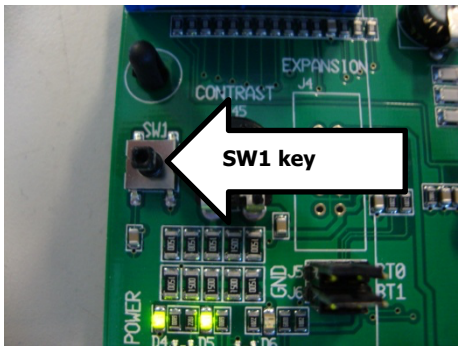




Restore default settings

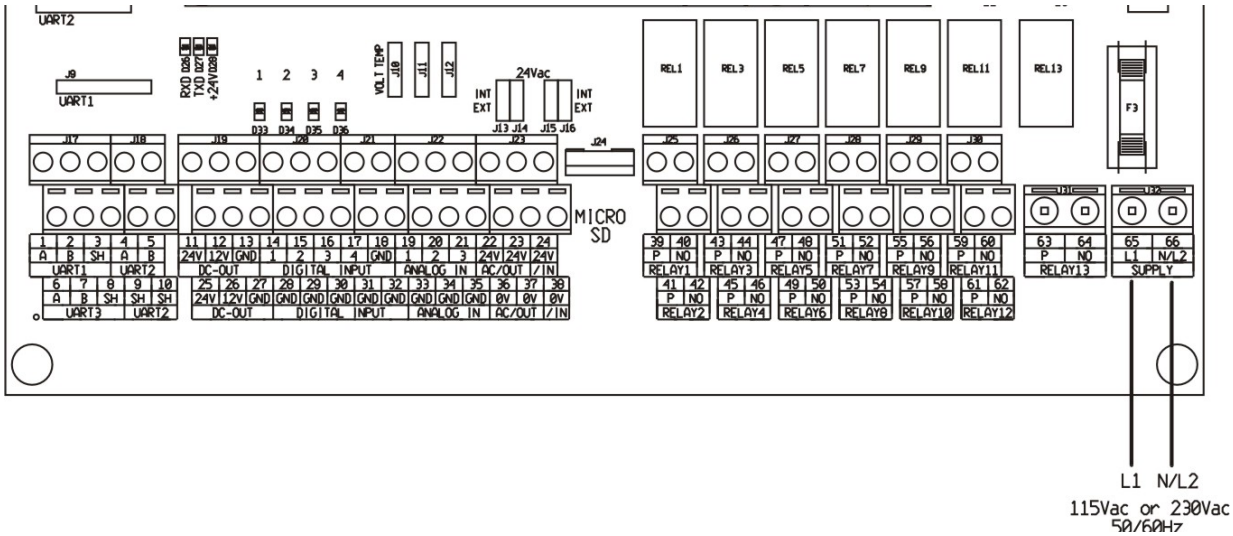
When needed you can restore the default settings of the ARGOS Mist-Time.

1. Switch off the power.
2. Press the SW1 key and keep it pressed while the power supply is switched on again.
3. Keep the SW1 key pressed (at least 30 seconds) until the run-led is flashing in a 1 second rhythm.
4. Now all settings are restored to the default values.



Wiring diagrams

Wiring diagram power supply



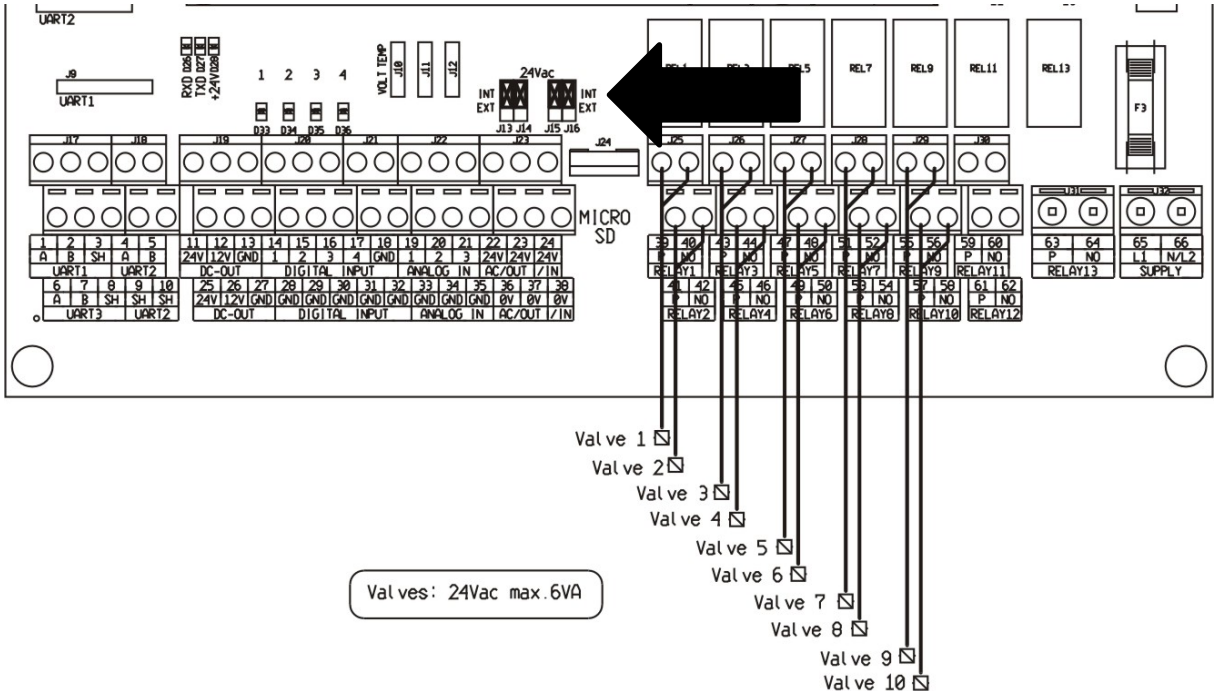
65 = Line power supply
66 = Neutral power supply

Remark: *it is possible to use a power supply of 115Vac or 230Vac. Put the power switch in the right position.*

Warning! If this switch is put in the wrong position the ARGOS Mist-Time can be damaged!

Remark: *connect the PE wire to the PE connection block.*

Wiring diagram valve with internal 24Vac supply.



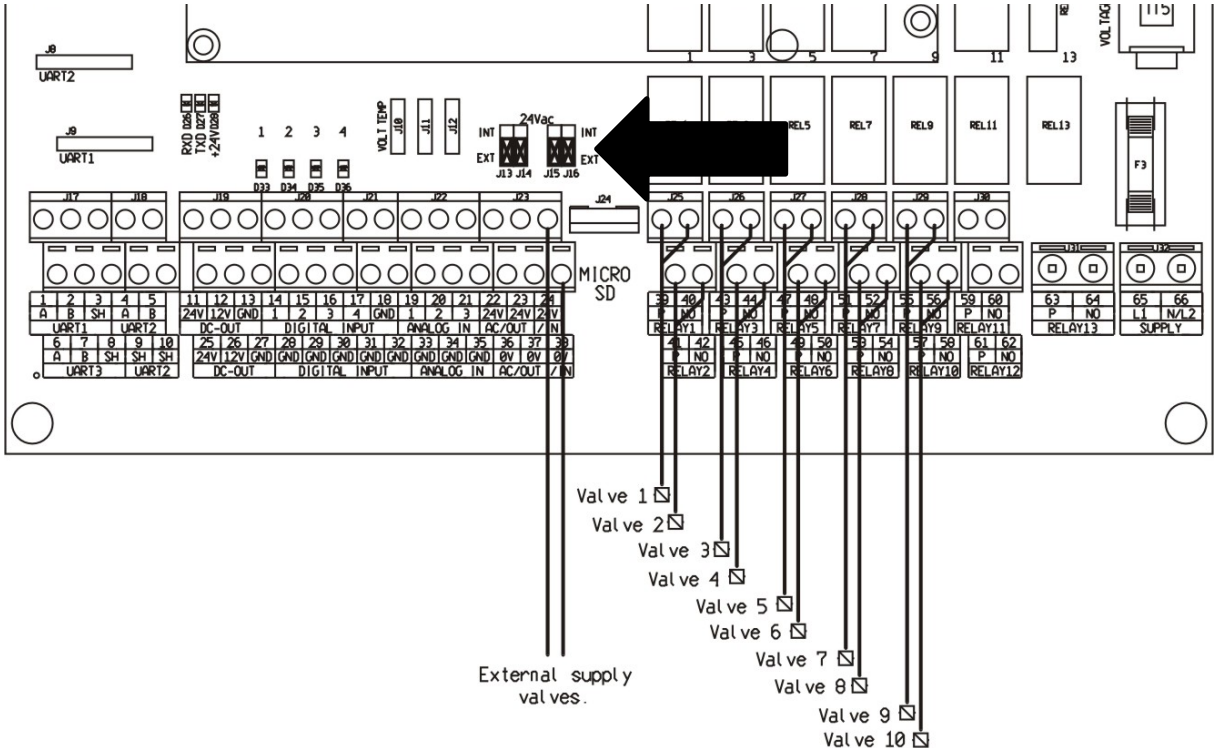
39 + 40 = valve 1.
41 + 42 = valve 2.
43 + 44 = valve 3.
45 + 46 = valve 4.
47 + 48 = valve 5.
49 + 50 = valve 6.
51 + 52 = valve 7.
53 + 54 = valve 8.
55 + 56 = valve 9.
57 + 58 = valve 10.

***Remark**: the valves must be 24Vac max. 6VA.*

Important: the jumpers (4x) with the text '24Vac' must be all in the position 'INT'. See arrow in wiring diagram.

***Remark**: the connections 40, 42, 44, 46, 48, 50, 52, 54, 56 and 58 are connected on the pcb. When a multicable is used only one of these connections is needed.*

Wiring diagram valves with external power supply



39 + 40 = valve 1.
41 + 42 = valve 2.
43 + 44 = valve 3.
45 + 46 = valve 4.
47 + 48 = valve 5.
49 + 50 = valve 6.
51 + 52 = valve 7.
53 + 54 = valve 8.
55 + 56 = valve 9.
57 + 58 = valve 10.
24 + 38 = input for external power supply. Max. 24Vac.

Important: The jumpers (4x) with the text '24Vac' must be all in the position 'Ext'.

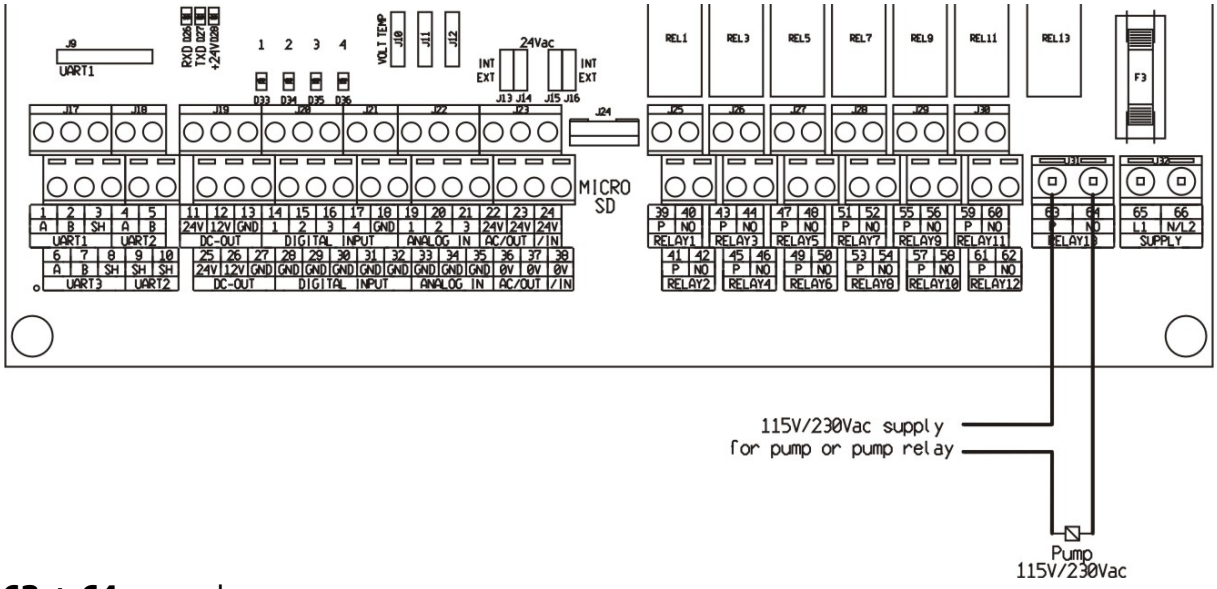
***Remark**: a reason for an external power supply can be the max current or a different voltage.*

***Remark**: the relay are max. 24Vac, max. 2Amp.*

***Remark**: the external power supply can be max. 24Vac.*

***Remark**: the connections 40, 42, 44, 46, 48, 50, 52, 54, 56 and 58 are connected on the pcb. When a multicable is used only one of these connections is needed.*

Wiring diagram pump 115V/230V

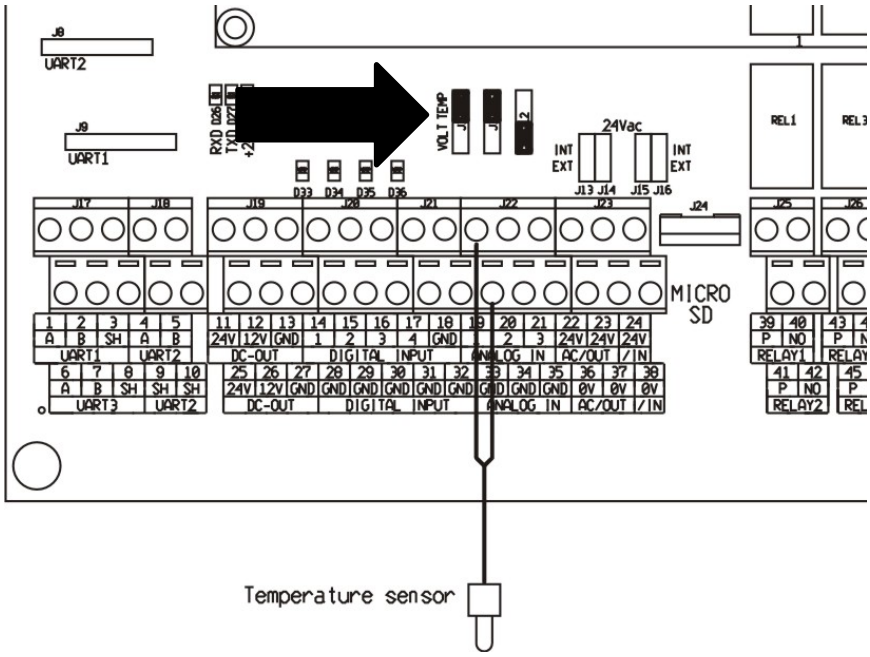


63 + 64 = relay pump.
Potential free max. 230Vac/2Amp.

***Remark**: the relay is potential free.*

***Remark**: The relay is max. 230V, max. 2 Amp.*

Wiring diagram temperature sensor



19 + 33 = Temperature sensor PT3000
33 = GND

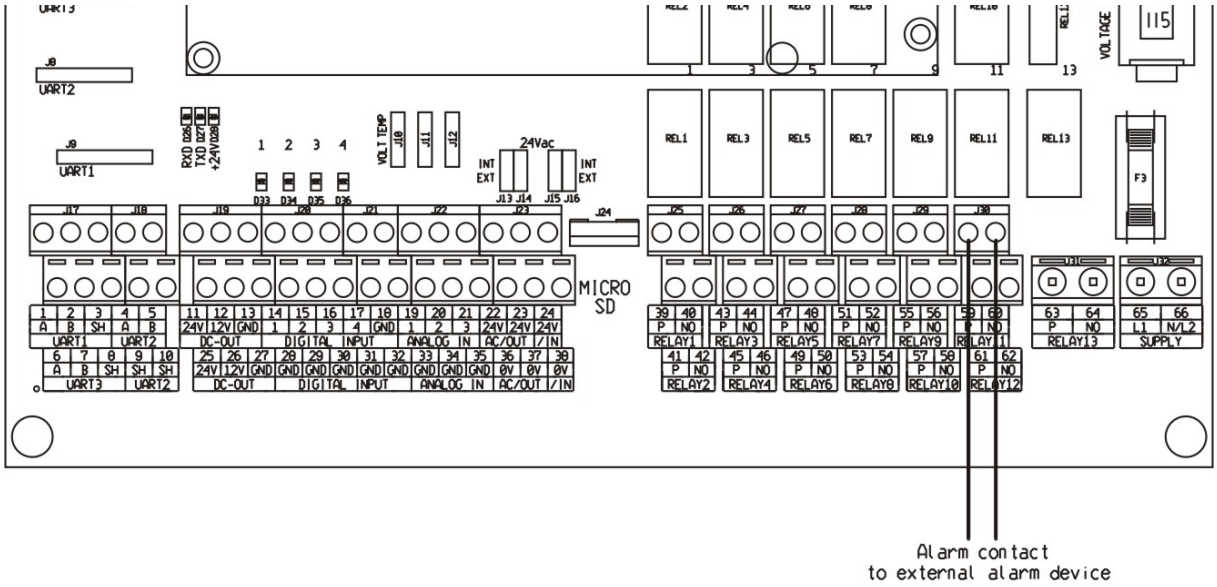
Important: the jumper associated jumper must be in the position 'Temp'. See diagram.

Remark: *the temperature sensor cannot be calibrated.*

Remark: *always use shielded cable with a minimal diameter of 0,8 mm² and connect the shielding to the GND connection.*

Remark: *always keep the weak current wiring as far as possible away from high current wiring!*

Wiring diagram alarm relay



59 + 60 = Alarm relay
59 = P-contact.
60 = NO-contact.
Potential free, max. 24Vac/dc 2Amp.

***Remark**: connection 59 & 60 are closed when there is no alarm. (relay on) 59 & 60 are disconnected when an alarm is activated. (relay off)*

***Remark**: the alarm relay is equipped with a watchdog function. This means the relay is also switched of when the unit is not working correctly. Also when the power supply is switched off an alarm is released.*

Technical specifications

Size (extern)	120x230x205mm (d x w x h)
housing	Plastic IP54
Connections	Via connectors
Ambient temperature	0 – 45˚C nor direct sunlight or heating.
Power supply	115 or 230Vac
Frequency	50/60Hz
Power	max. 30 VA
Fuse primary	For 115Vac line voltage T315mA For 230Vac line voltage T160mA
Temperature input	1
Temperature sensor type:	PT3000
Range temperature input	-70.0˚C tot 130.0˚C

Remark: *the temperature sensor cannot be calibrated.*

Alarm relay (with 'watchdog')	max. 24Vac/dc 2 Amp. potential free
Relay pump	max. 230Vac 2 Amp. potential free
Valves	24Vac max. 6VA (with internal supply) max. 24Vac 2 Amp. (with external supply)