



**CAUTION: READ MANUAL BEFORE OPERATING COOLING UNIT**

- Input power must be rated 230 VAC at 50/60 Hz .
- Use Water or Water/Glycol as coolant .
- Run the cooling unit at the correct coolant level, otherwise the cooling capacity will be reduced.
- Use cooling hoses that can handle max pressure of the liquid circuit and is resistant to corrosion from coolant.
- Never operate the unit if it is damaged or leaking.
- Before starting any service work on the cooling unit, please disconnect from the main power source.

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### DESCRIPTION

The WL 500 cooling unit is intended to remove heat from a liquid circuit. The coolant can be either water or a mixture of water and water-glycol (antifreeze). Water circulates in a closed loop between the ambient cooling system and a cold plate at the heat source. Heat is removed from water by an air-cooled heat exchanger. The capacity of the cooling unit is dependent on the temperature differential, which is defined as the difference between the ambient temperature and the water outlet temperature. The cooling unit is designed to remove 500 W of heat at a temperature differential of 13°C. The water inlet and water outlet are marked as WATER IN and Water OUT.

The maximum forward pressure is limited by a bypass valve, which has been integrated into the pump. The coolant flow is controlled by a flow switch that opens when flow falls below a set rate. Cooling hoses supplied by user are connected to threaded nozzle that can accommodate an 8 mm hose ID.

The water flow is monitored by an adjustable flow switch. The signal of the flow switch is available at a potential free safety circuit. The permissible contact rating for the safety circuit is 125 VAC/1A/50 VA.

A bypass valve limits the water pressure.

**Note:** Flow switch and bypass valve are adjusted at factory and set according to specification.

**2 TECHNICAL DATA****2.1 PHYSICAL DIMENSIONS**

- Length: 370 mm
- Width: 307 mm
- Height: 151 mm
- Weight: 11 kg without filling
- Coolant capacity: 1.7 L

**2.2 PERFORMANCE DATA**

- Cooling capacity: 500 W
- Flow rate: 2.3 L/min at 1 bar
- Supply voltage: 230 V / 50/60 Hz
- Current consumption: 1,2 A
- Noise level:  $\leq 60$  dB(A) distance 1 m in any direction
- Contact rating of safety circuit (make): 250 Vac, 0.5 A, 50 VA

**2.3 MOUNTING**

- Mount on vertical wall with filling cap facing up  
Mechanical fasten with four M5 x 40 mm machine screws and washers

**2.4 ENVIRONMENTAL SPECIFICATIONS**

- Ambient temperature: + 5°C...+ 40°C
- Storage temperature: - 25°C...+ 70°C (storage without water)
- Air humidity: 20%...80%

**2.5 SETTINGS**

- Maximum forward pressure: 2.5 bar
- Flow switch open:  $\leq 0.9$  l/min

## WL 500

Liquid Cooling System

### USER MANUAL

### 3 OPERATIONAL SETTINGS

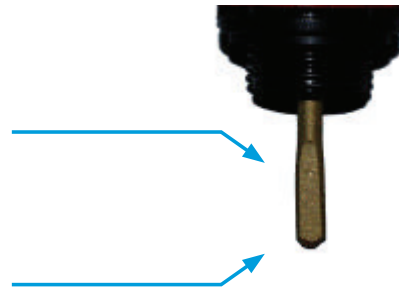
1. Position cooling unit vertically and keep filling cap upright.
2. Remove the filling cap.
3. Connect the external hoses supplied by the user.
4. Insert the cable and connect it to the terminals according to the terminal diagram; use a 3 mm screwdriver to connect the wires to terminal block.
5. Fill the cooling unit with approximately 1.7 L of coolant.



**The level has to be always between  
MAXIMUM and MINIMUM**

Filling level MAXIMUM

Filling level MINIMUM



**Note:** Cooling performance will be reduced and pump will degrade if filling level is less than Minimum.

6. Allow the cooling unit to run for 10 minutes and deaerate the liquid circuit.
7. Check the coolant level. If necessary, refill the coolant.
8. Replace the filling cap.

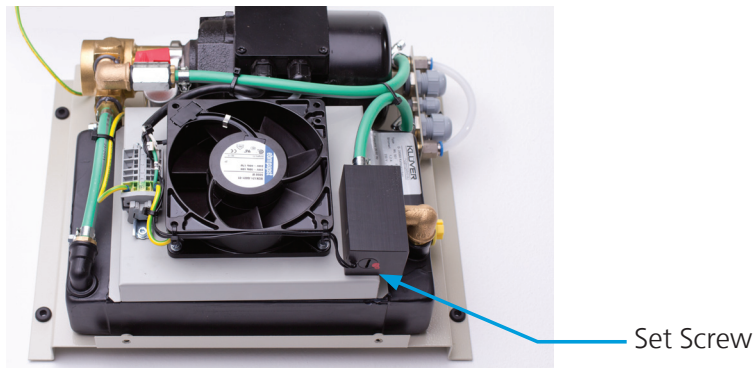
### 4 SETTINGS

**Note:** The flow switch is factory adjusted to 0.9 l/min. If it is necessary to change these setting, refer to the following

#### 4.1 FLOW SWITCH

The flow switch is set to open at 0.9 lpm. If it is necessary to adjust this setting then perform the following:

1. Disconnect the cooling unit from the main power source.
2. Remove the complete cover.
3. Adjust set screw to:
  - Increase the flow rate set point by adjusting the screw clockwise.
  - Decrease the flow rate set point by adjusting the set screw counter clockwise.



### 5 MAINTENANCE

Check the coolant level regularly and refill if necessary.

#### 5.1 HEAT EXCHANGER

In order to achieve maximum cooling capacity the heat exchanger of the cooling unit must be kept clean. Check heat exchanger every 3 months for cleanliness. If cleaning is required perform the following:

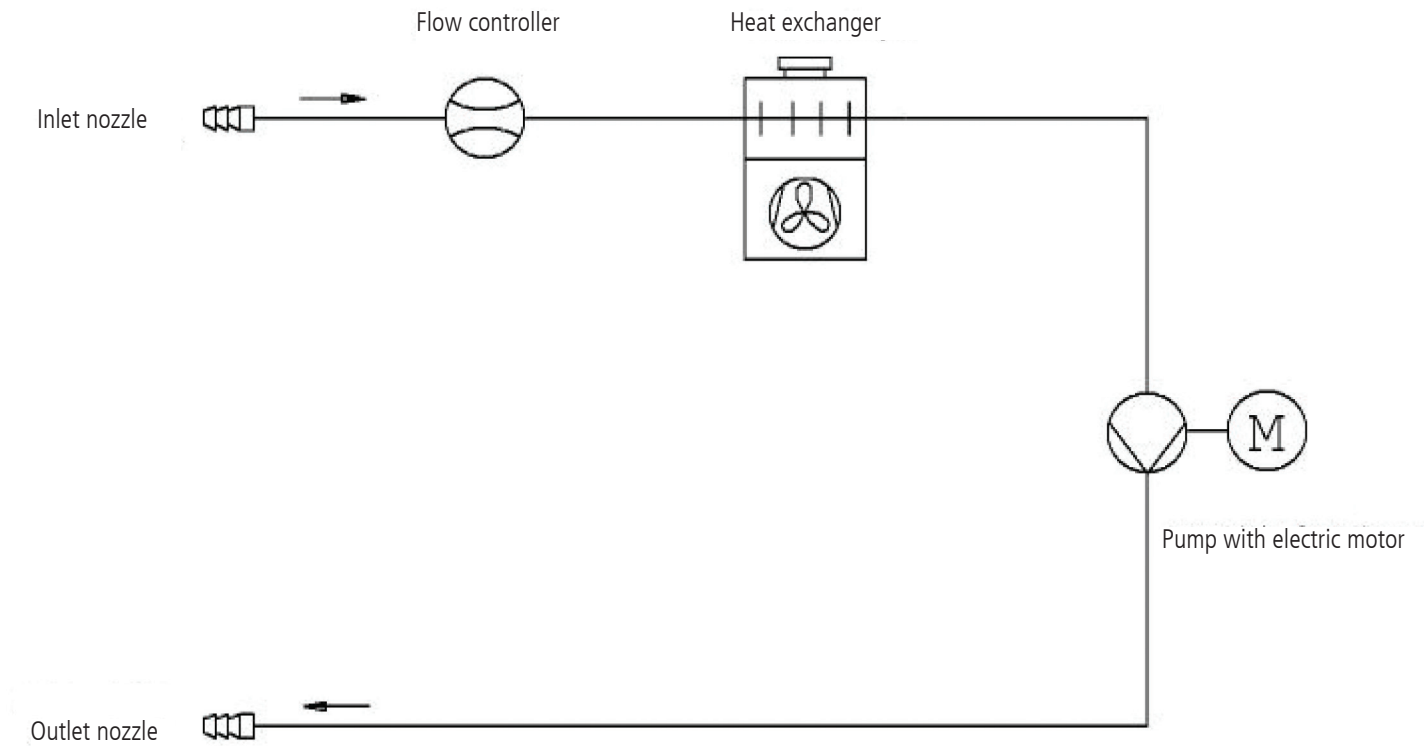
1. Disconnect the cooling unit from the the main power source.
2. Remove the side cover.
3. Clean the heat exchanger with compressed air, a damp cloth or a shop vacuum.
4. Mount the side cover.

# WL 500

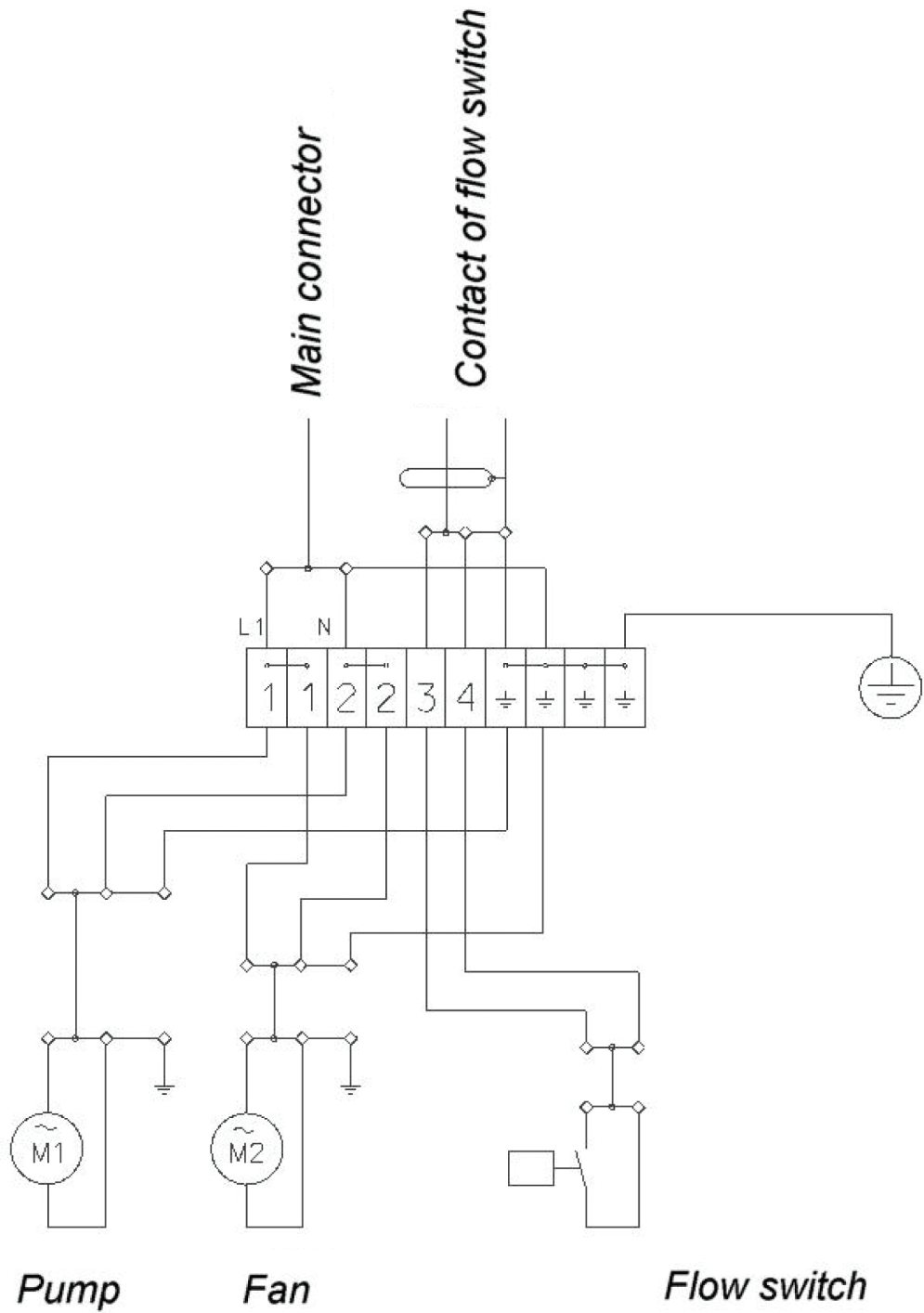
Liquid Cooling System

## USER MANUAL

### 6 LIQUID CIRCUIT DIAGRAM



**7 ELECTRONIC SCHEMATIC**



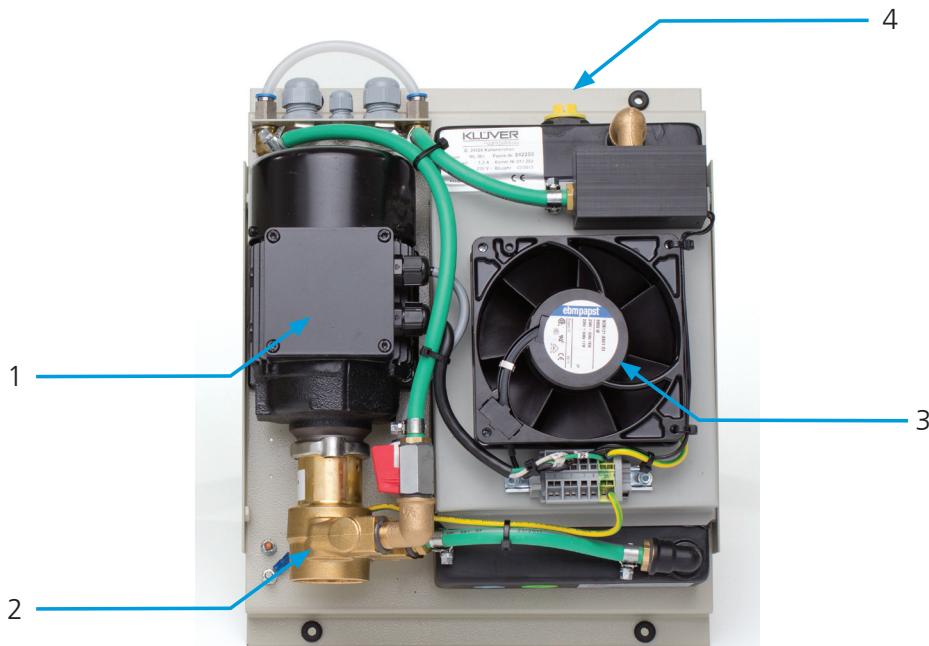
# WL 500

Liquid Cooling System

## USER MANUAL

### 8 SPARE PART LIST AND ILLUSTRATION

NO.	DESCRIPTION	CODE NUMBER
1	Motor, 0,075/0,09 kW, 230 V±10%	92110028
2	Pump CO 1505 PXDF	93500304
3	Fan, 230 V, 18 W	95250308
4	Filling cap	12428410



THR-UM-WL-500 0412

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