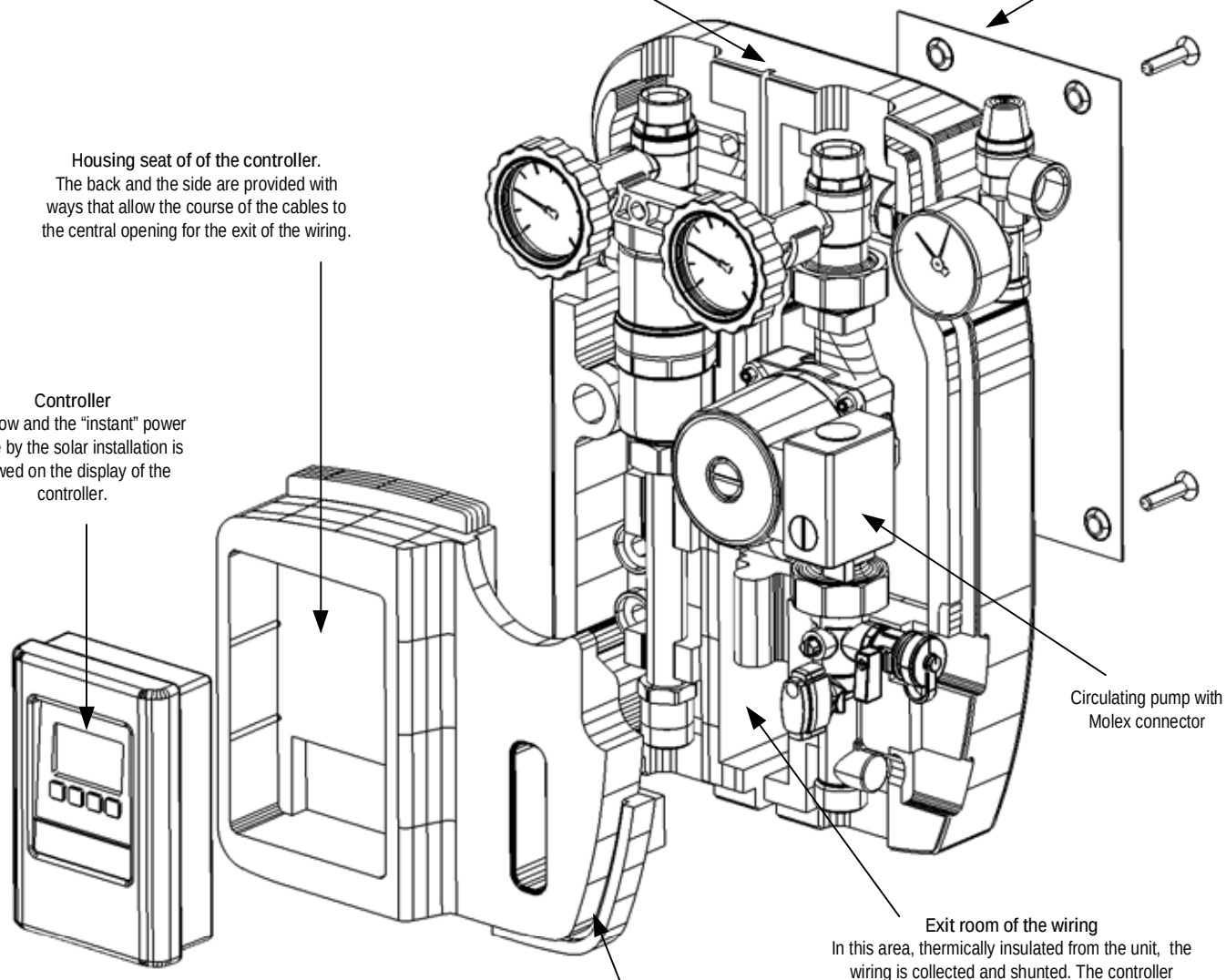
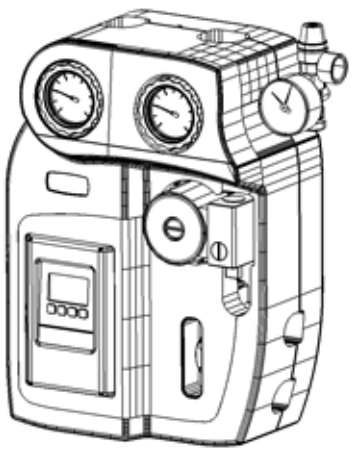
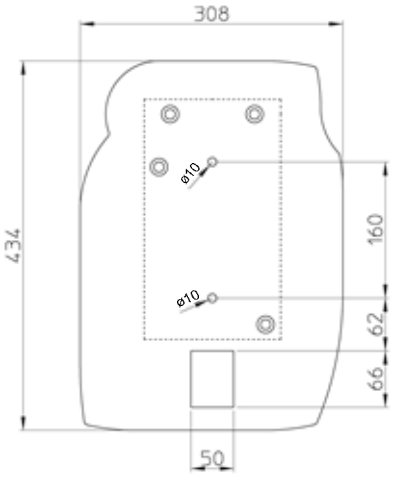
# Pumping station 2-way “Solar 30 SRS4”

*SAFETY: Please read the directions carefully before to set the unit going, in order to avoid accidents and damages in the plant caused by an incorrect use of the product. Keep this manual for future consultations.*






Epp insulation box
Measurements 308x434x169.
It includes a controller holder insert suitable for the course of the power supply cable and of the temperature sensor cables. Side opening on the back part of the insulation box for the security unit. Inside daps for the housing of the 22 mm pipe. Back plate to fasten the unit to the wall or to the cylinder.

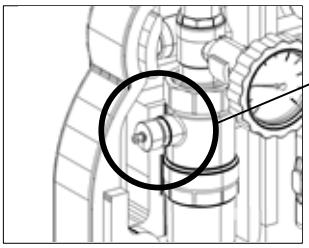
## ***Legend of the components***

Supply Return

*(A) Ball valve on the supply way (thermoter with red ring and scale 0-120°C) with "Solar" checkball.*

*(B) Ball valve on the return way (thermoter with blue ring and scale 0-120°C) with "Solar" checkball.*

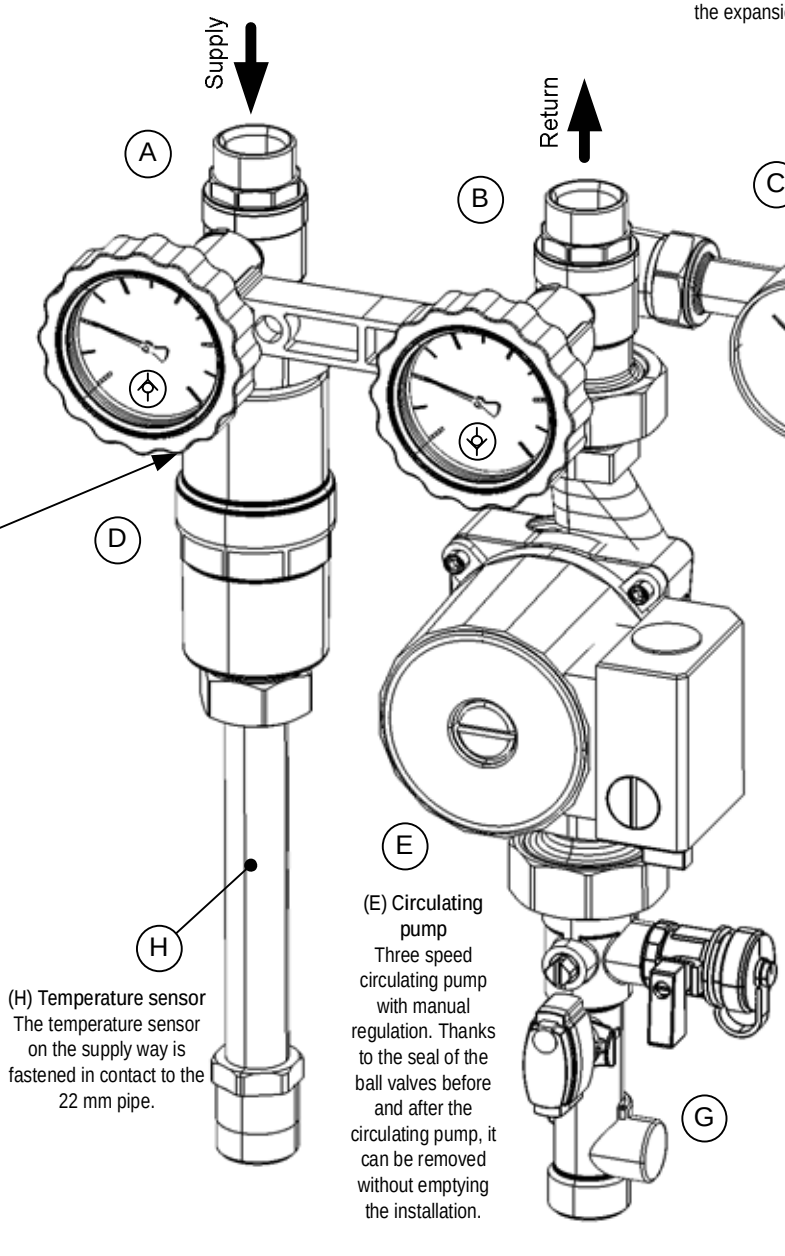
*Solar Checkball*
It is included into the ball valve both in the supply way and in the return way. It ensures the seal and low head losses. To exclude the checkball valve, for instance in case of emptying rotate the handle by 45° clockwise.



(D) Vent-air
The vent air is a device that devides continually the air that can be in circulation together with the fluid. The air goes to the upper part of the vent air and it can be eliminated through the special drain while the installation is working. Unscrew of 360° the knurled metal ring lock. This operation has to be done at intervals.

*DANGER OF BURNS*

*To avoid any leakage of the fluid, taking into cosideration the very high working temperature, we recommend to fasten a pipe to the end of the drain.*



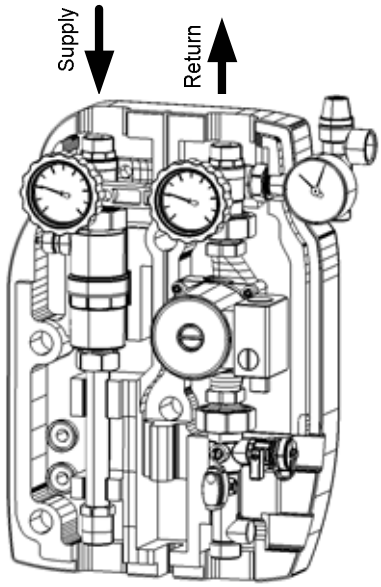

(C) Security unit
The security unit, CE and TUV approved, protects the installation from the overpressures. It is calibrated at 6 bar, over this pressure the security unit starts. It is also provided with a manometer and with a connection to the expansion vessel by a 3/4" flexible kit (optional), see here at the right.

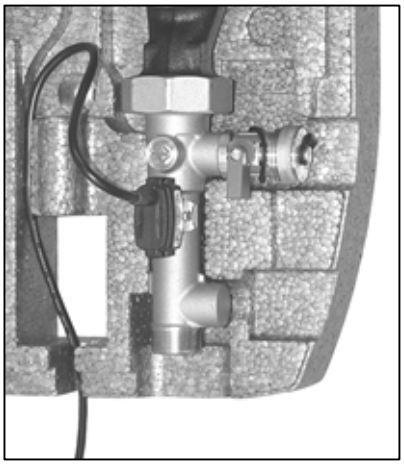
(H) Temperature sensor
The temperature sensor on the supply way is fastened in contact to the 22 mm pipe.

(E) Circulating pump
Three speed circulating pump with manual regulation. Thanks to the seal of the ball valves before and after the circulating pump, it can be removed without emptying the installation.

(G) Digitale VFS flowmeter
Thanks to this special device, adjustments and settings of the solar unit are no longer required. In fact the electronic controller adjusts the speed of the circulating pump to get the better performance of your solar installation. The flow is viewed on the LCD display. Range of measurement: 2-40 L/min.

(F) Connection to fill the installation
By this special "solar" connection it is possible to fill the installation easily. It is included in the supply, it must be connected between the flexible hose and the expansion vessel.

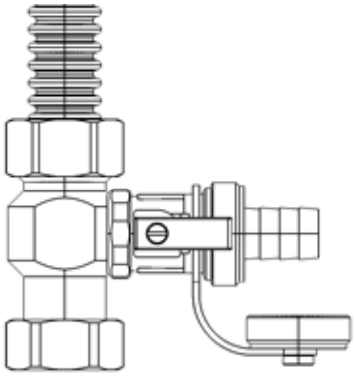


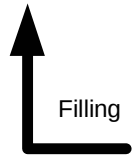



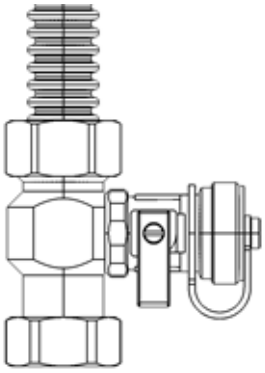
*SAFETY: The VFS sensor cable must not be placed in contact and/or winded on the pipes.*

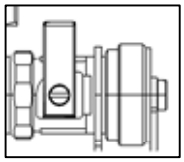
*This cable, made in PVC, is not suitable for temperatures higher than 80°C.*
*The right route of the cable is the one shown in the picture: in that way it is never in contact to high temperature components. The cable is also held in the right position thanks to the special way shown in the picture at left.*

## ***Filling and starting of the installation:***

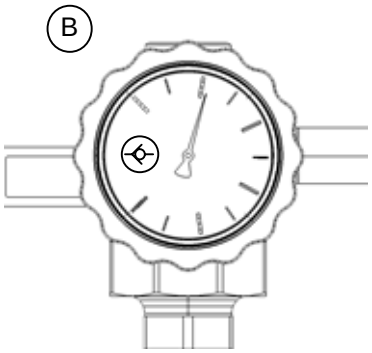




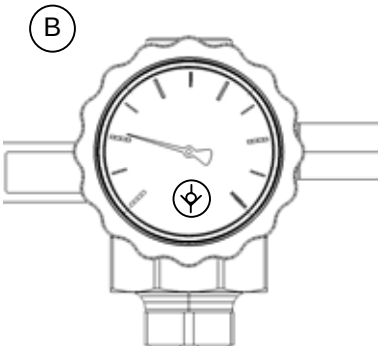


Blocking the filling/ drain levers:
Unscrew the fixing screw, take out the lever and place it again turning it of 180°.



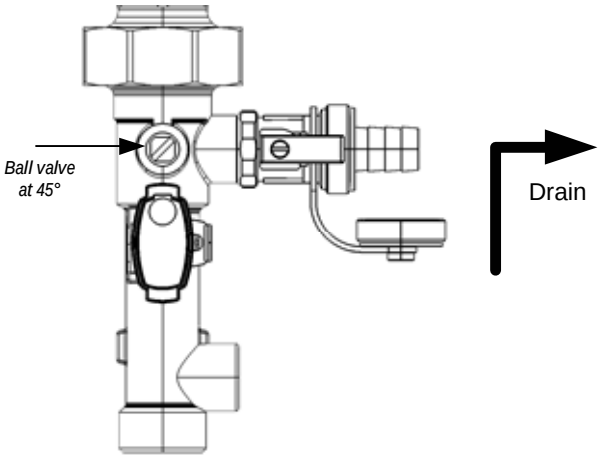

**Ball valve of the return way (blue thermometer)**

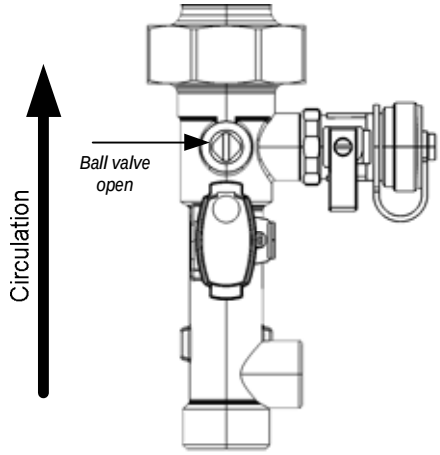
To close the ball valve rotate the handle of 90° clockwise.

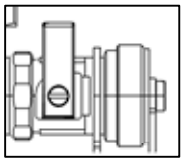



**Ball valve of the return way (blue thermometer)**

To open the ball valve rotate the handle of 90° anticlockwise.



Blocking the filling/ drain levers:
Unscrew the fixing screw, take out the lever and place it again turning it of 180°.

*(1) - Filling the installation:*
- Remove the plugs from the side valves and connect the hose unions.
- Close the ball valve (B) (blue-ring thermometer)
- Put the adjustment rod of the VFS at about 45°.
- Open the side filling valve and draining valve.
- Fill the installation at the pressure required.

***(2) -*** *Starting the installation working:*
- Close the filling and draining valves.
- Take off the hose unions and screw again the covers.
- *To avoid any casual opening of the side valves, it is better to stop the levers in the close position, as shown here aside.*
- Open again the ball valve (B) (blue-ring thermometer).
- Open again the ball valve of the VFS (adjustment rod).

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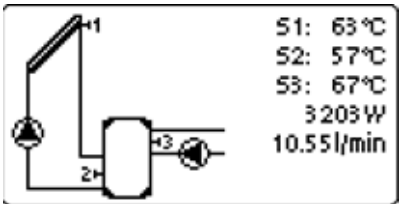
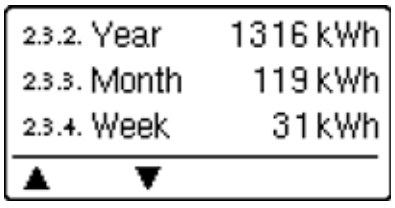
## ***Display of the thermic performance of the installation:***

The TDC4 controller, in addition to display the flow and the instant thermic performance (Draw. 1) in the main menu, is able to calculate the thermic energy supplied.
In fact in the menu "**2. Statistics**" is possible to display the total "Solar output" (menu 2.3), annual, monthly, weekly and daily (Draw. 2).
These data, indicated in kWh, are displayed even disguised as a graphic. (menu 2.4).




Draw. 1




Draw. 2

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*TAKE CARE: as regards the installation and the working of the controller, please look to the here enclosed manual.*

***VFS Troubles:***

*In the case of malfunctions or faults of the VFS flowmeter we ask you to follow the following directions:*

- Verify that the sensor VFS installed into the pumping station corresponds to the one selected into the menu **7.7.3. VFS Type**. If it does not correpond please change the selection.
- Earth your installation, from the electric point of view, to avoid that roaming currents or other electric devices may disturb the VFS and therefore compromise the precise reading of the tool.
- Verify that the maximum speed of the circulating pump (menu **7.9.5. Min. Speed** 50%) gives at least a minimum flow of 3,5 L/min. (at 60°C with a water and glycol mixture). If, at the minimum speed, the VFS does not read any value, please increase this parameter (f.i. 60%).
- Verify that the maximum speed of the circulating pump (Menu **7.9.4. Max. Speed** 100%) does not give a flow more than 40 L/min. In this case please decrease this value (f.i. 90%).
- Exactness of the VFS with 40% water and glycol mixture: ±5%.