## 5.3 Application 3

### 5.3.1 Group control

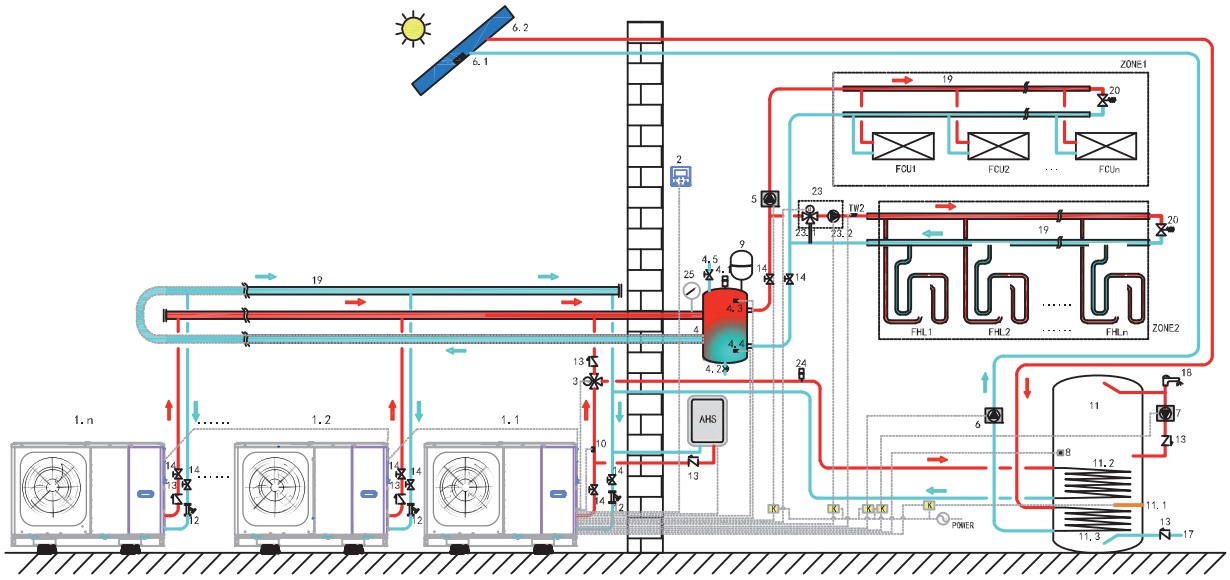


*Figure 1-5.5: Application 3- Parallel system control*

| Legend | | | |
|---|---|---|---|
| 1.1 | Master unit | 11.3 | Coil 2: heat exchanger for heat pump |
| 1.2…n | Slave unit | 12 | Filter(Accessory) |
| 2 | User interface | 13 | Check valve (Field supply) |
| 3 | SV1: 3-way valve(Field supply) | 14 | Shut-off valve(Field supply) |
| 4 | Balance tank(Field supply) | 17 | Tap water inlet pipe(Field supply) |
| 4.1 | Automatic bleed valve | 18 | Hot water tap(Field supply) |
| 4.2 | Drainage valve | 19 | Collector/Distributor(Field supply) |
| 4.3 | Tbt1: Balance tank upper temperature sensor(optional) | 20 | Bypass valve(Field supply) |
| 4.4 | Tbt2: Balance tank lower temperature sensor(optional) | 23 | Mixing station(Field supply) |
| 4.5 | Filling valve | 23.1 | SV3: Mixing valve(Field supply) |
| 5 | P_O: Outside circulation pump (Field supply) | 23.2 | P_C: Zone B circulation pump(Field supply) |
| 6 | P_S: Solar pump(Field supply) | 24 | Automatic bleed valve(Field supply) |
| 6.1 | Tsolar: Solar temperature sensor(Optional) | 25 | Water manometer(Field supply) |
| 6.2 | Solar panel (Field supply) | Tw2 | Zone B water flow temperature sensor(Optional) |
| 7 | P_D: DHW pipe pump(Field supply) | RAD 1…n | Radiator(Field supply) |
| 8 | T5: Domestic water tank temperature sensor(Accessory) | FHL 1…n | Floor heating loop(Field supply) |
| 9 | Expansion vessel(Field supply) | K | Contactor(Field supply) |
| 10 | T1: Total water flow temperature sensor(Optional) | ZONE 1 | The space operate cooling or heating mode |
| 11 | Domestic water tank(Field supply) | ZONE 2 | The space operate heating mode |
| 11.1 | TBH: Domestic water tank heater | AHS | Auxiliary heat source(Field supply) |
| 11.2 | Coil 1: heat exchanger for heat pump | | |

Notes:

1. The example is just for application illustration; please confirm the exact installation method according to the installation manual.

Modularity is perfect when an extension of capacity becomes required as the building cooling/heating demand evolves. 6 units can be controlled in group. The group control system can control and view the operation of the entire system only by connecting the master to the wire controller. If the DHW function is required, the water tank can only be connected to the master unit water circuit through a three-way valve, and controlled by the master unit. If AHS is needed, it can only be connected to the master waterway and controlled by the master unit. The Tbt1 temperature sensor must be installed in the parallel system (otherwise unit cannot be started). If the balance tank is too large, Tbt2 needs to be added in order to improve the control accuracy. Tbt2 is set in the lower part of the balance tank. The water inlet and outlet pipe joints of each unit of the parallel system should be connected with soft connections and one-way valves must be installed at the water outlet pipe.