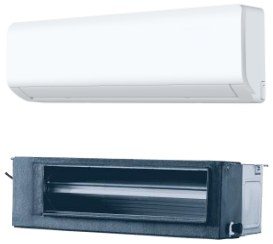

GCHV
4-pipe
HR Mini VRF
- Combined with ATA & ATW application

Concept of HR Mini VRF

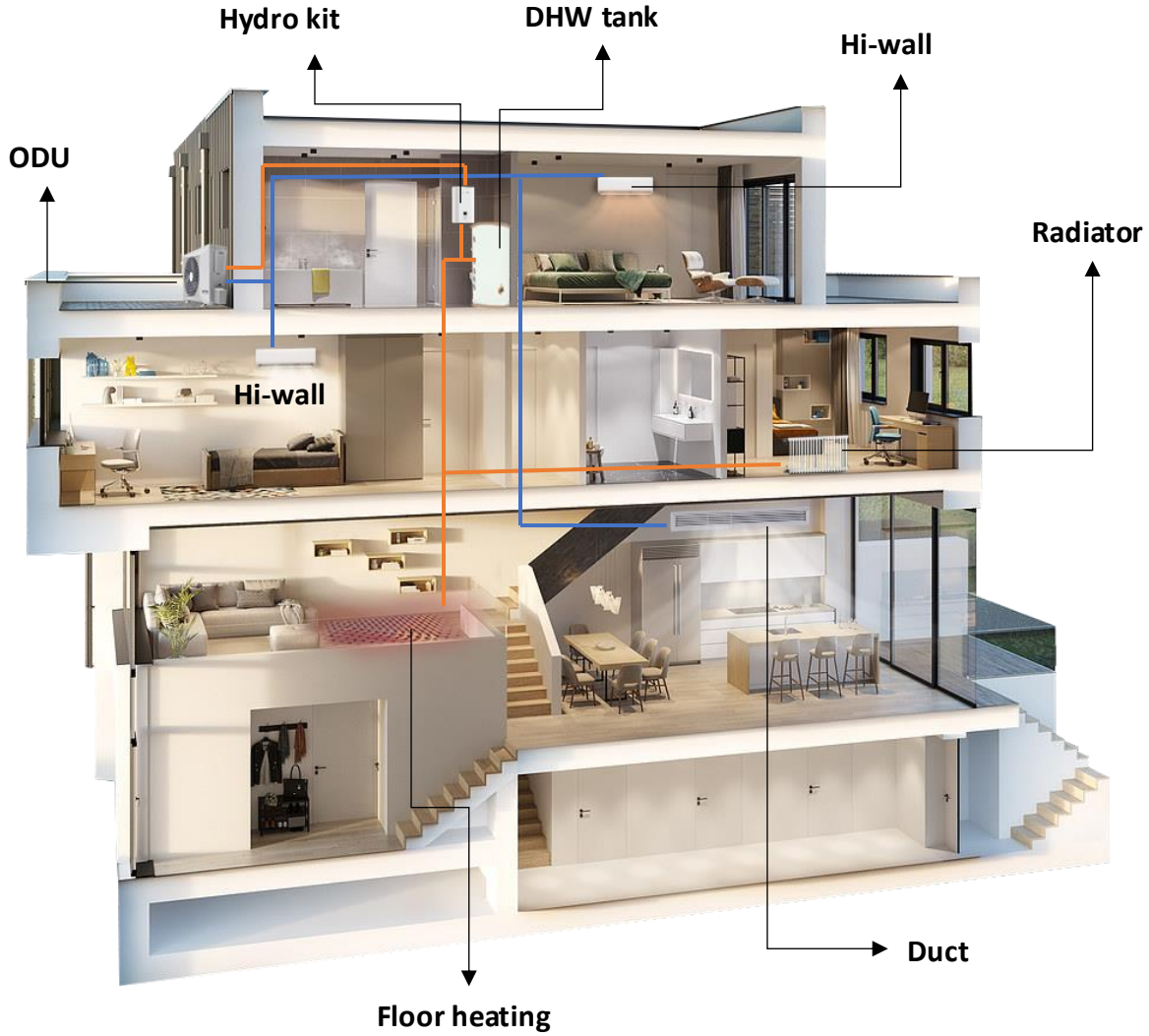
HR Mini VRF ODU

Hydro kit

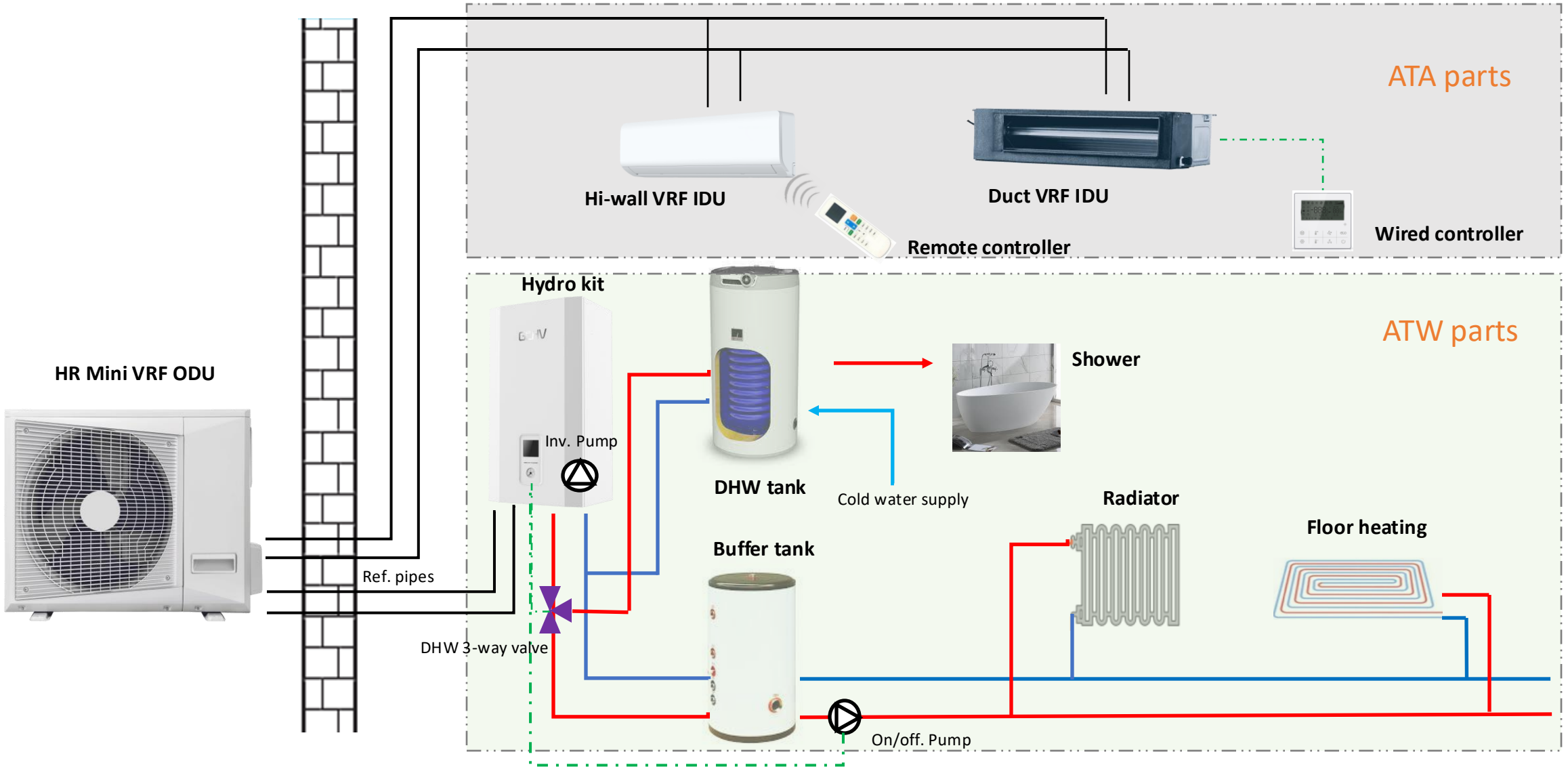


VRF IDU

- **Heat Recovery** Mini VRF system, combined with ATA & ATW applications to obtain the solution for a home.
- It can connect to regular VRF IDU to cool down the air, as well as the hydro kit to produce the hot water for floor heating/Radiator, etc., or DHW for shower.
- Heat recovery function to decrease the energy consumption.



Concept of HR Mini VRF System



ATW parts Line-up

Outdoor unit

Picture						
Model			GCHV-VH080R1-(BR)D-F01	GCHV-VH100R1-(BR)D-F01	GCHV-VH125R1-(BR)D-F01	GCHV-VH140R1-(BR)D-F01
Capacity	Cooling	kw	8	10	12.5	14
	Heating	kw	8	10	12.5	14
ATA	EER	W/W	3.07	2.78	3.08	3.02
	COP	W/W	4.08	3.47	3.09	3.04
	SEER		A++	A++	A++	A++
			6.74	6.36	6.17	6.14
ATW	SCOP 35℃		A+	A+	A+	A+
	ηs		136%	141%	139%	131%
	SCOP 55℃		A+	A+	A+	A+
	ηs		106%	106%	111%	111%
Dimension	D*W*H	mm	1100*485*870			

Hydro kit

Picture				
Model			CE-SLMK-100N-DS	CE-SLMK-160N-DS
Cap.	Heating	kw	10	16
Electrical heater		kw	3	3
Ref. pipe	Gas	mm	19.05	19.05
	Liquid	mm	9.52	9.52
Water pipe	Inlet	mm	DN32	DN32
	Outlet	mm	DN32	DN32
Drainage pipe		mm	16.4	16.4
Pump	Lift	m	9	9
Dimension	D*W*H	mm	490*342*910	

ATA IDU Line-up

Cap.(KW)	1-way cassette	2-way cassette	4-way cassette	Round-flow cassette	Wall-mounted	Floor Ceiling	Floor standing	Short ducted	Medium ESP ducted	High ESP ducted	Fresh air processor
											
2.2	■		■		■			■			
2.8	■		■		■			■			
3.6	■		■		■	■		■			
4.5	■	■	■		■	■		■			
5.6	■	■		■	■	■		■			
7.1	■	■		■	■	■		■	■	■	
8.0		■		■		■	■		■	■	
9.0				■		■			■	■	
10.0				■			■		■	■	
11.2				■		■					
12.0									■	■	
12.5				■							
14.0				■		■	■				■
15.0									■	■	
16.0				■		■	■				

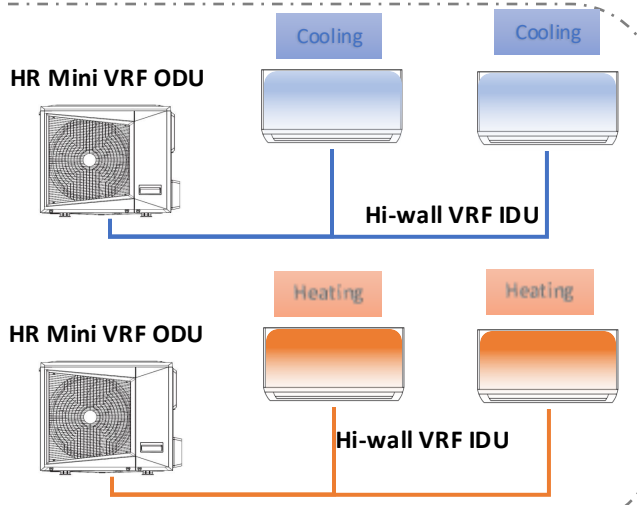
The indoor units are universal with normal VRF units.

Typical Applications

ATA Cooling/Heating

- Space cooling only **Or**;
- Space heating only;

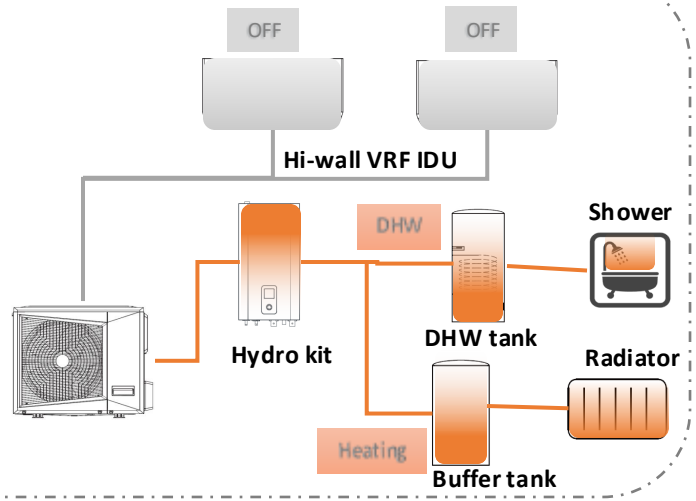
Can only connect regular VRF IDU



ATW DHW/Heating

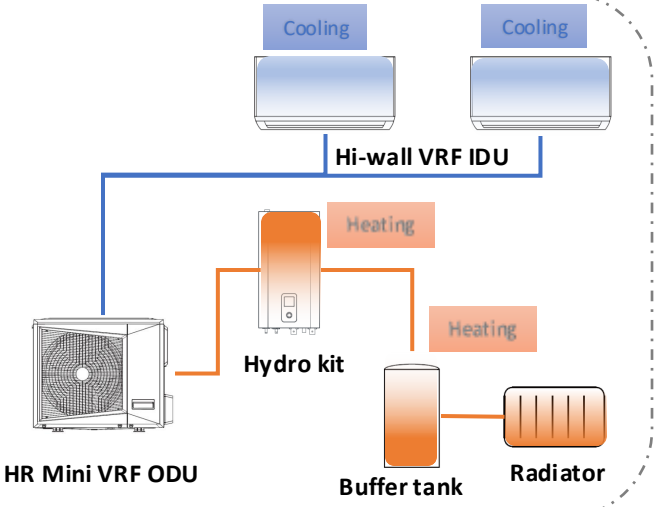
- Space heating **Or**;
- Domestic hot water

Can't only connect hydro kit



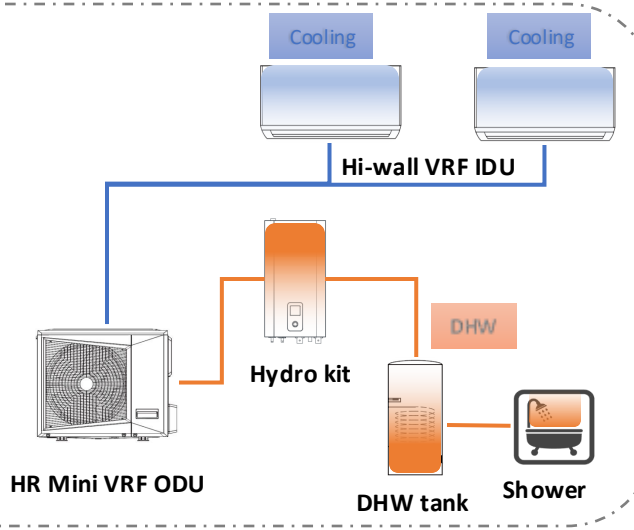
Space heating Recovery

- Space cooling via air conditioner **&**
- Space heating via hydro kit

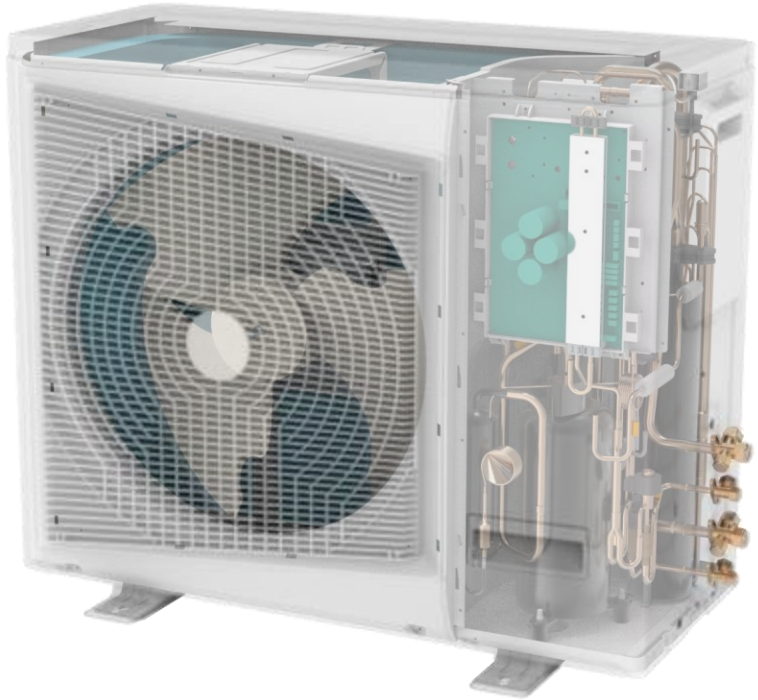


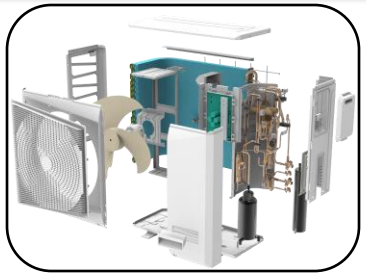
DHW Recovery

- Space cooling via air conditioner **&**
- Domestic how water via hydro kit



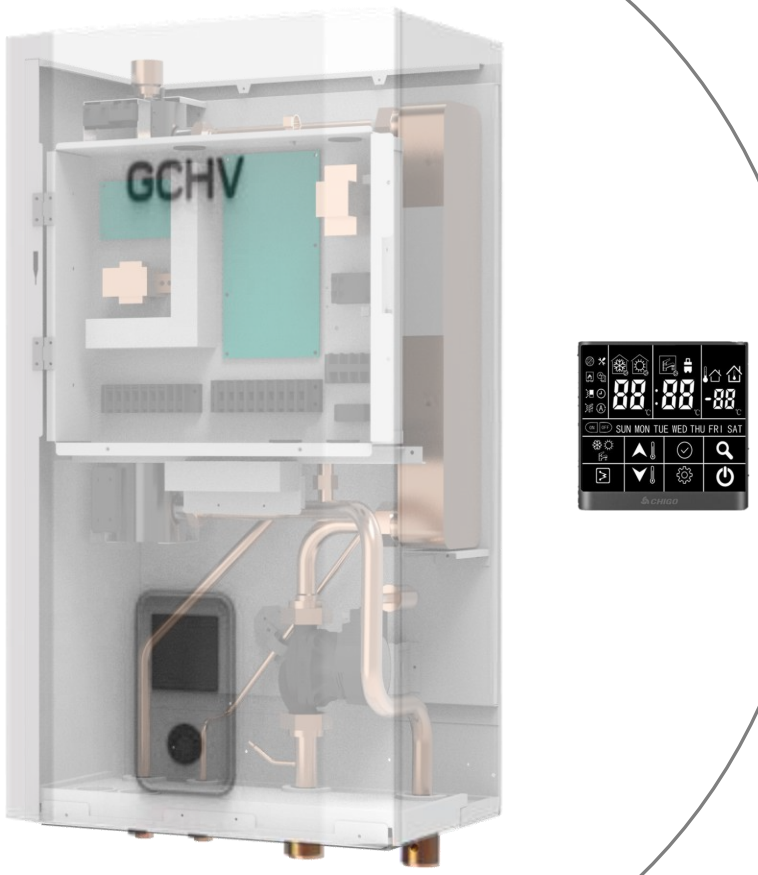
Main part of ODU

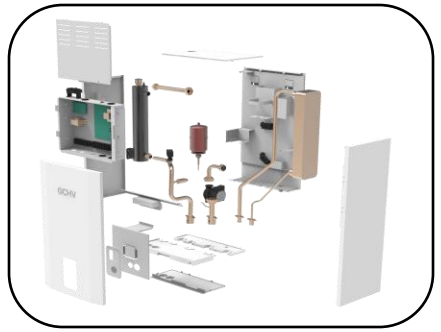




- **Mitsubishi** Twin-rotary compressor with stepless control to help the system operate more precisely and smoothly in a constant & free frequency.
  - Adapted high-efficiency **DC motor** and optimized the fan speed to suit the different condition to achieve better performance.
  - **Two 4-way valves & EXVs** with 4 pipes, one set for air conditioning system and the other for water system, adapted heat recovery technology and achieved high efficiency.
  - Bigger fan blade and low air resistance grille to obtain higher air flow to improve the system performance.
- **Refrigerant cooling tech. for PCB**, intelligent refrigerant control technology to protect PCB, quick action speed to make the main PCB working at suitable temperature range

Main part of Hydro Kit

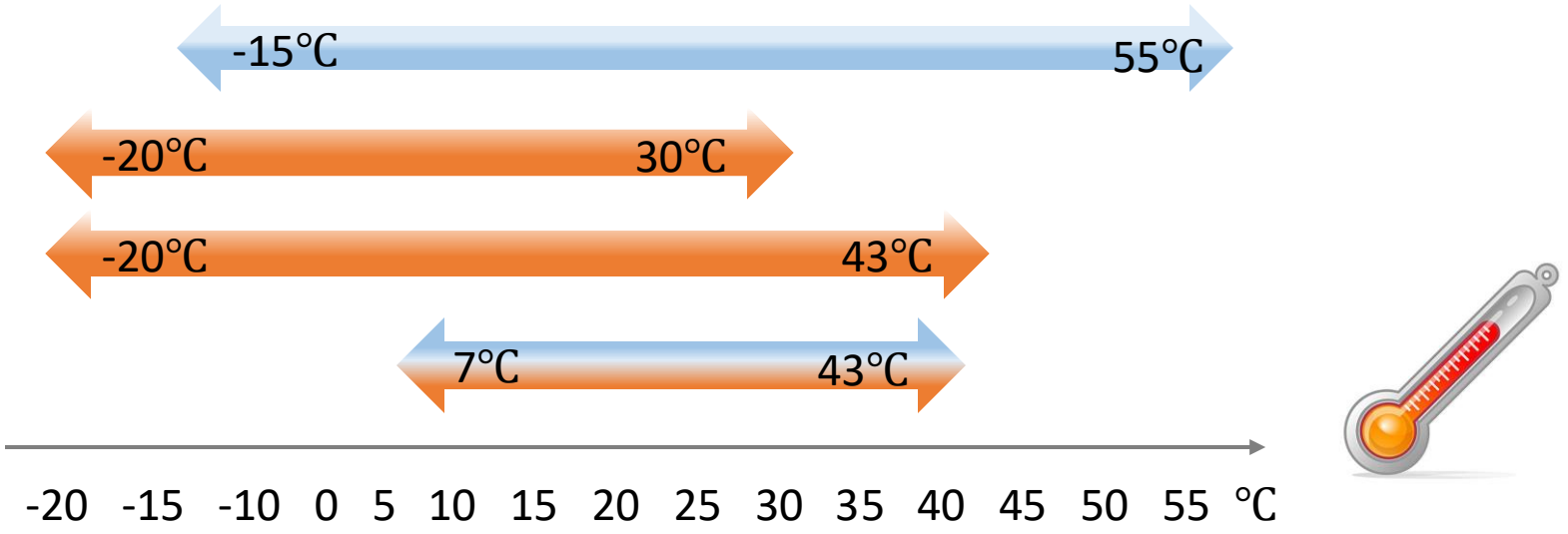


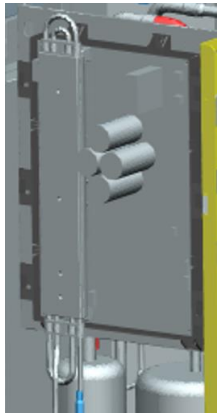


- Touch wired controller, easy and friendly to operate
  - **Inverter** water pump, multi-speed to adjust the water flow rate according to capacity demand
    - Water flow switch to protect the system to avoid the BPHE freezing
    - Plate heat exchanger, with smaller space and higher efficiency
  - 3kW electrical heater, provide additional heat in case of low ambient temp. to provide the heating capacity
- Water pressure gauge & safety valve to obtain the easy commissioning and service

Widely operation range

- ATA Cooling: -15~55℃
- ATA Heating: -20~30℃
- DHW/Space heating: -20~43℃
- Heat Recovery: 7~43℃ (ATA cooling + ATW heating)



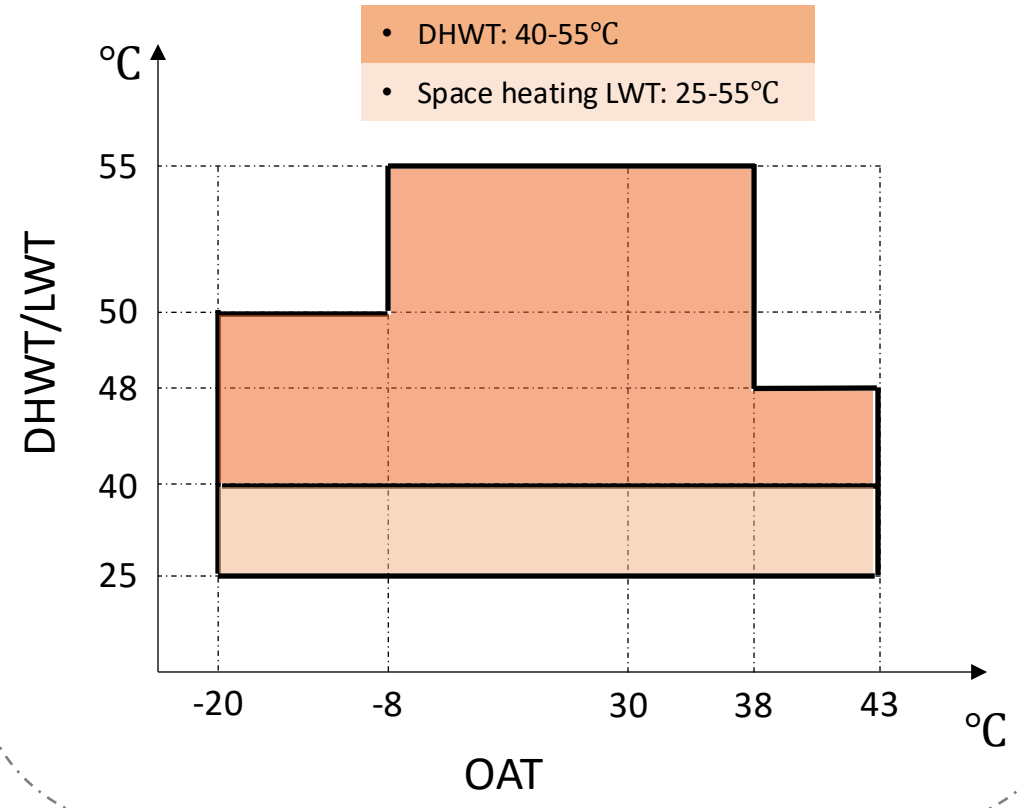


Refrigerant cooling tech.

Water Temp. Range

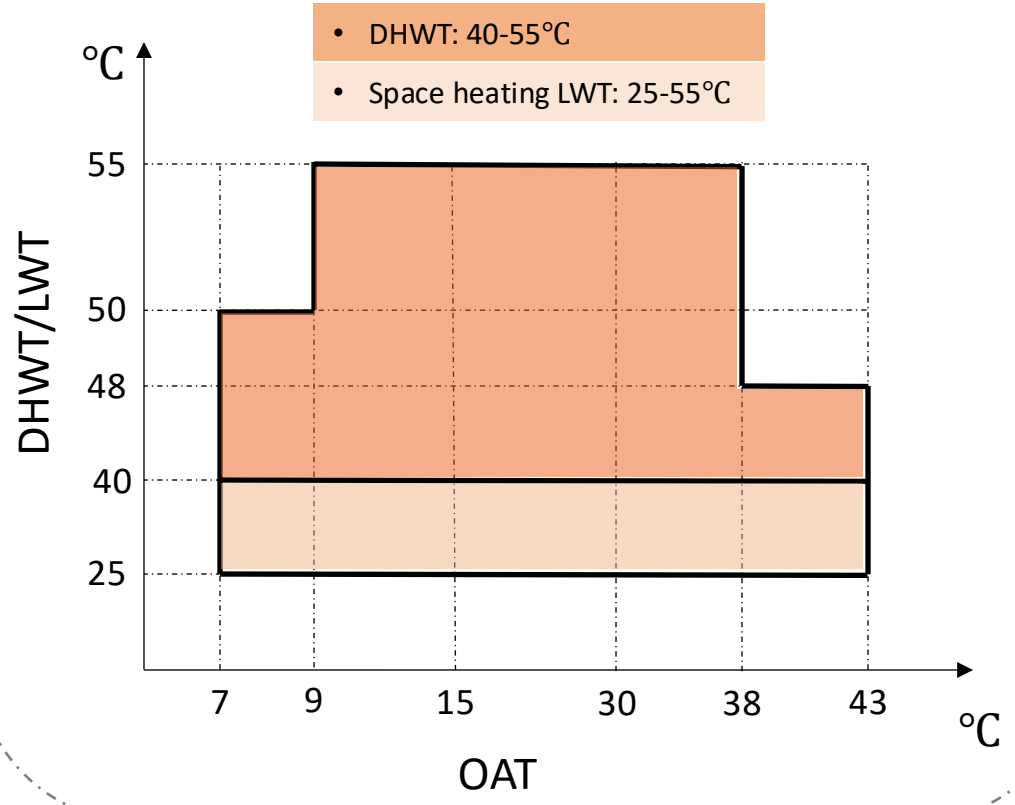
DHW/Space heating mode

- DHW tank temp. range
- Leaving water temp. range



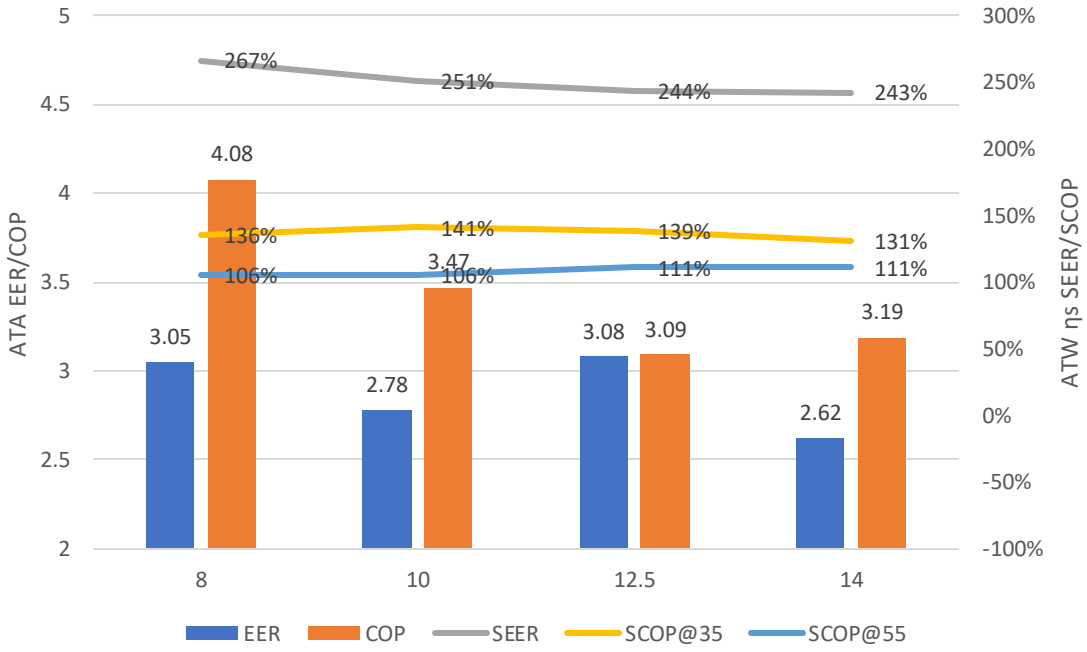
Heat recovery mode

- DHW tank temp. range
- Leaving water temp. range



Good Performance

- Adapted the full DC inverter technology to achieve high efficiency.
- When running heat recovery mode, the capacity is 28kW and energy efficiency is up to 6.24.



- Twin-rotary inverter compressor, constant & stepless output;
- Brand: Mitsubishi;

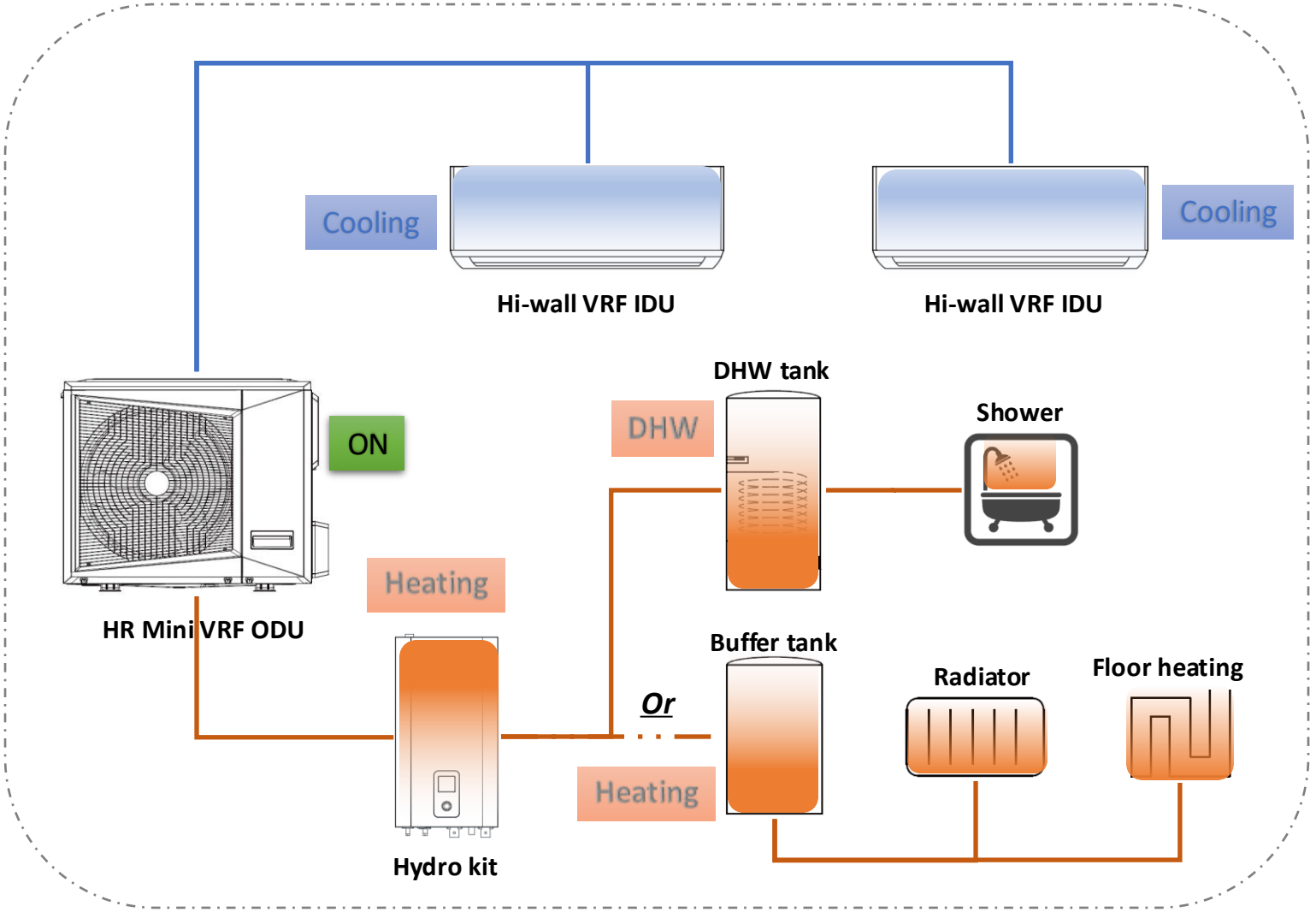
- Brushless DC Motor to obtain the best air flow to make sure the heat exchange performance

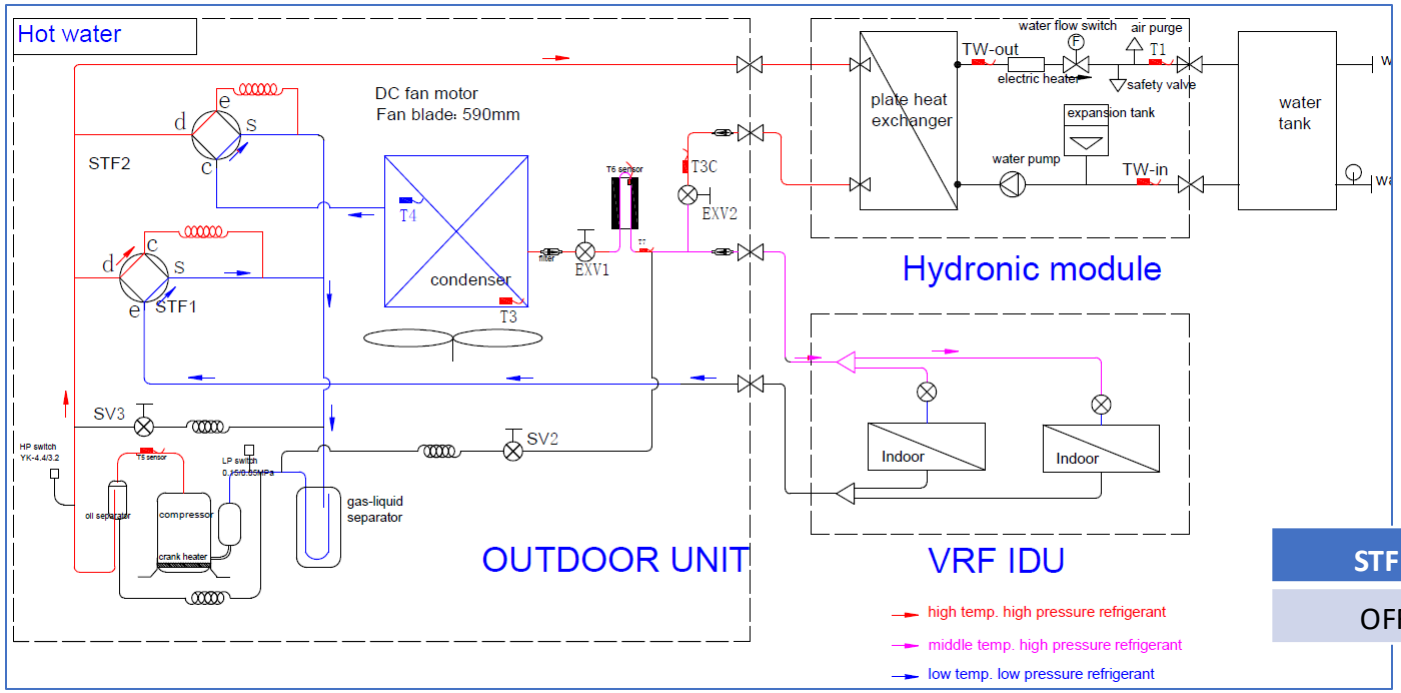
- Brushless DC pump for hydro kit;
- Approve to have precise water temp. control

Heat Recovery Tech.

Heat Recovery Technology

- Mini VRF system + Hydro kit + Domestic hot water/Space heating + Heat recovery Technology
- Provide the cooling in Summer with ATA & free DHW water supply
- Provide space heating in Winter via ATA/ATW & DHW water supply
- In Spring or Autumn, it can match to ATA cool & ATW heat at the same time to suit different room application

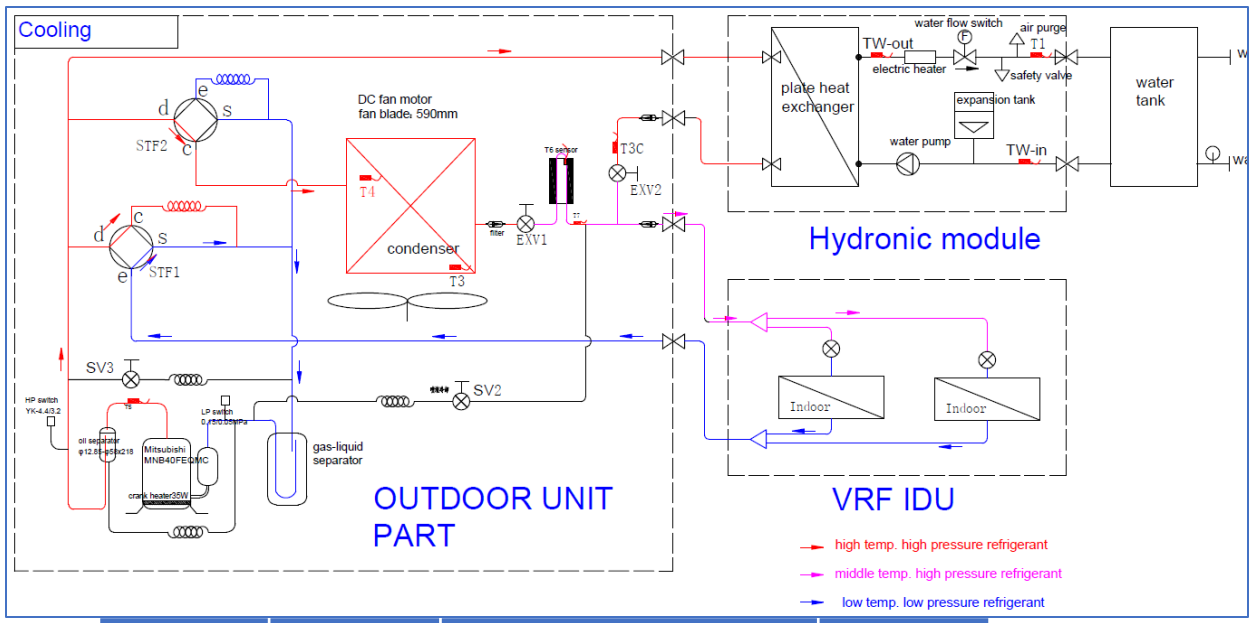




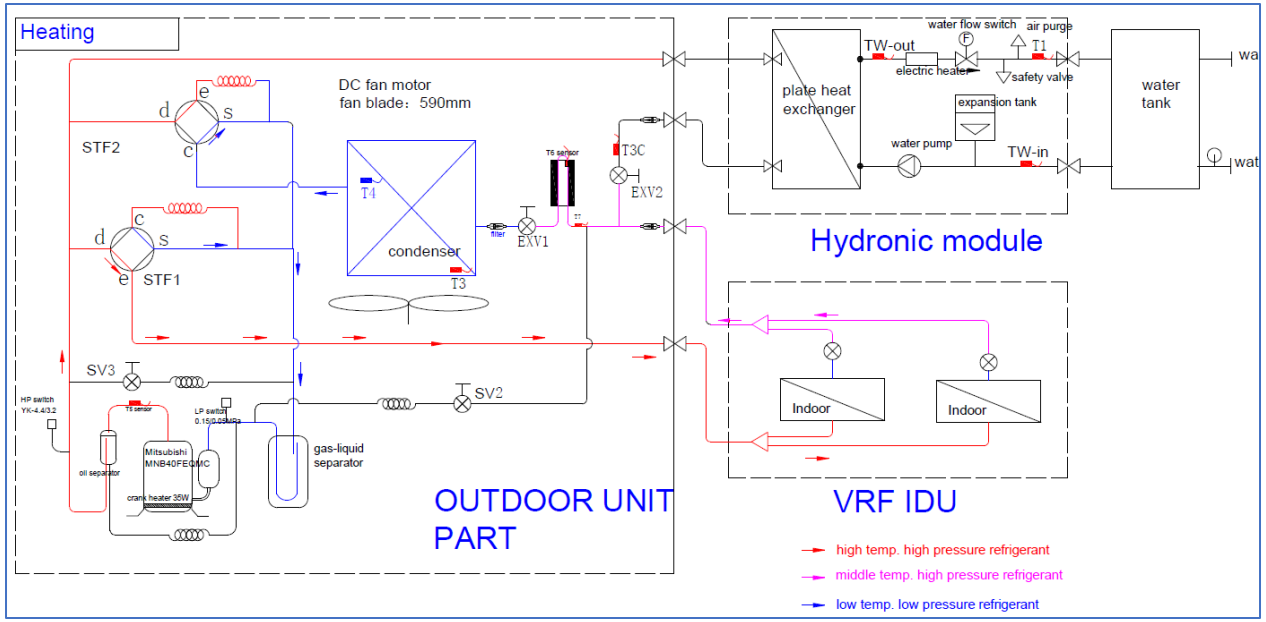
It has 5 running modes for outdoor unit:

- Cooling only mode
- Heating only mode
- Hot water mode
- Main cooling + hot water mode
- Cooling + main hot water mode

STF1	STF2	EXV1	EXV2
OFF	ON	Controlled by TP	480P



STF1	STF2	EXV1	EXV2
OFF	OFF	Controlled by TP	96P

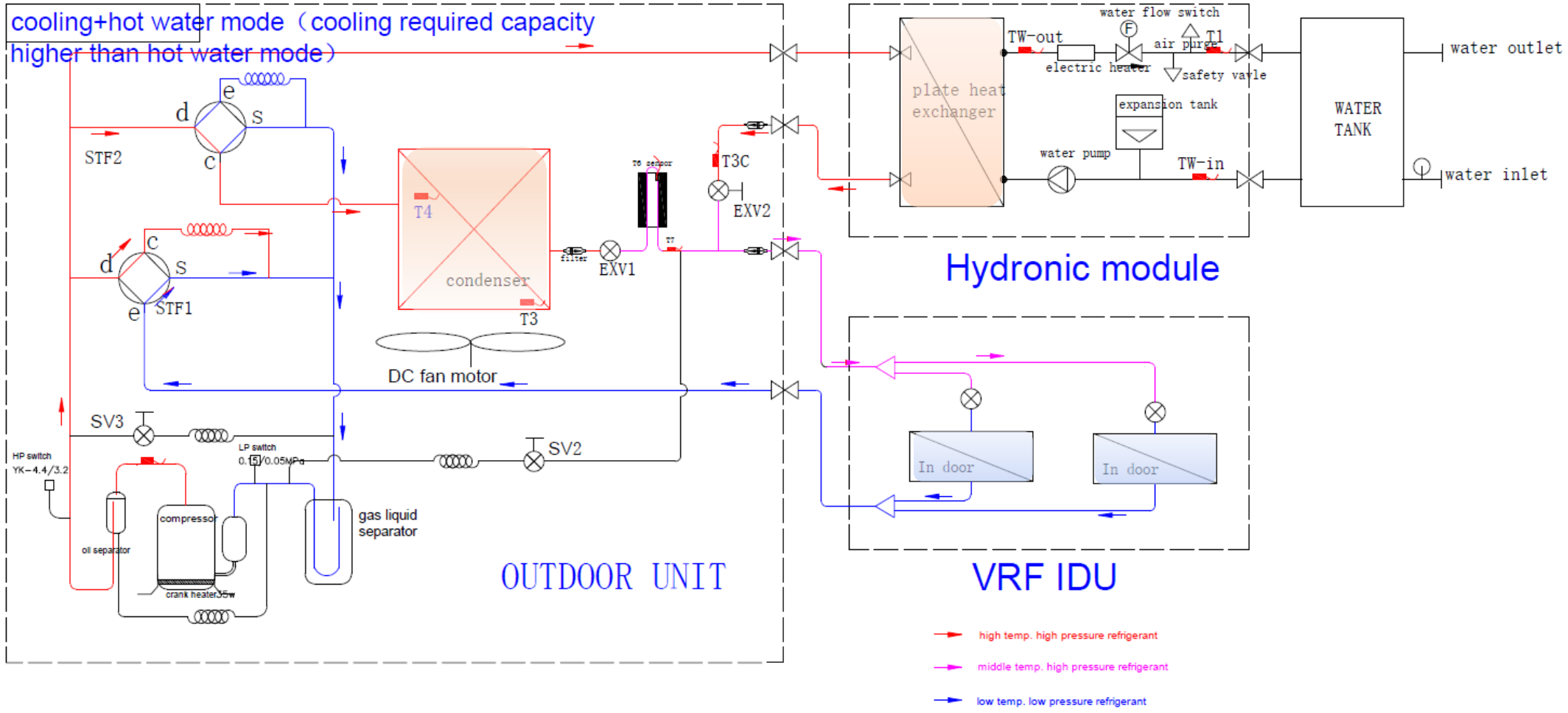


STF1	STF2	EXV1	EXV2
ON	ON	Controlled by TP	96P

Heat Recovery Tech.

- When the cool demand ＞ hot water demand, the BPHE and ODU condenser work for condensing;

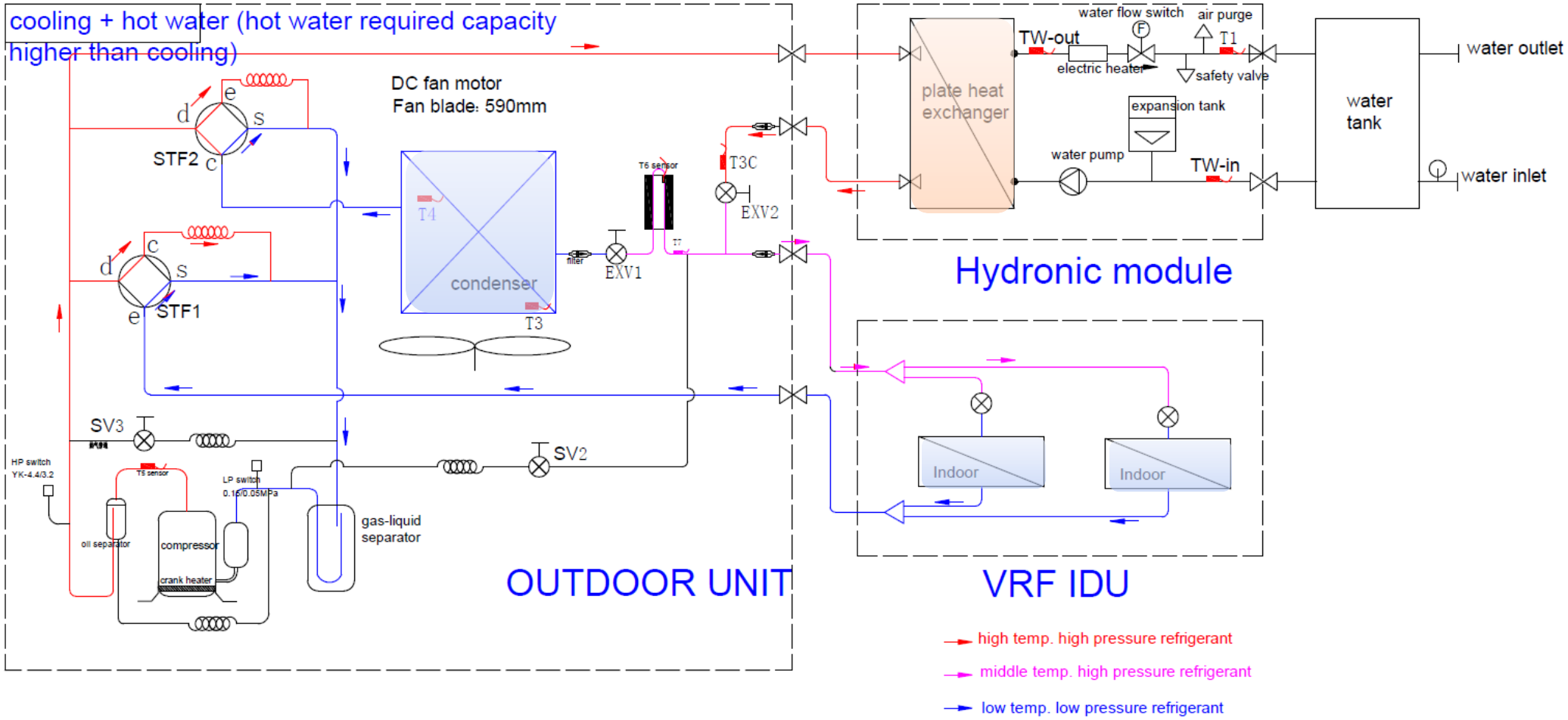
STF1	STF2	EXV1	EXV2
OFF	OFF	Controlled by TP	Controlled by water tank temp.



Heat Recovery Tech.

- When the cool demand < hot water demand, the IDU coil and ODU condenser work for evaporating;

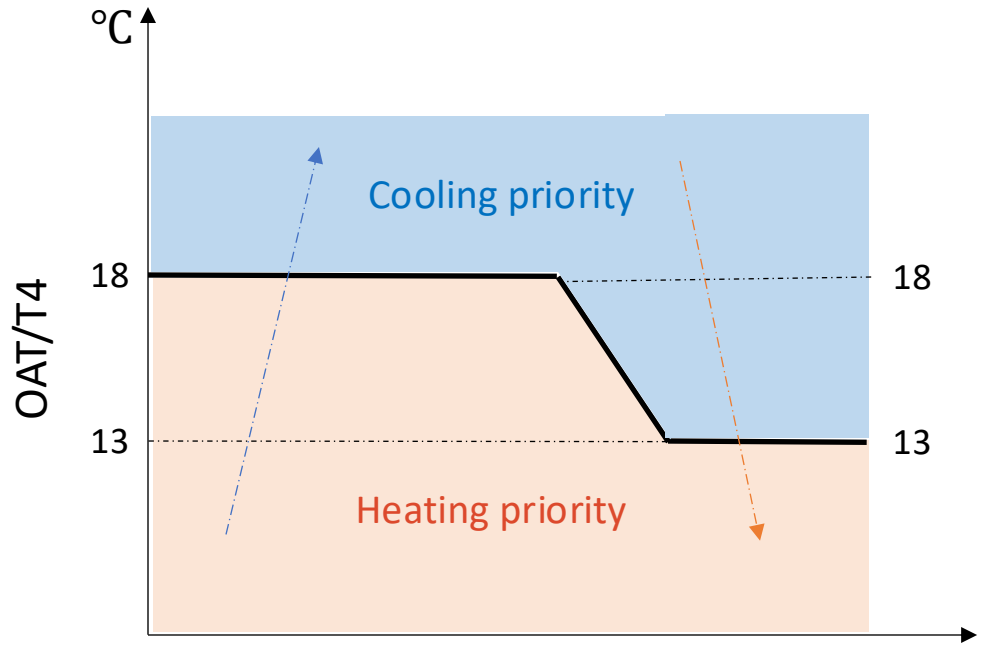
STF1	STF2	EXV1	EXV2
OFF	ON	Controlled by T2B	Controlled by TP



Auto priority control

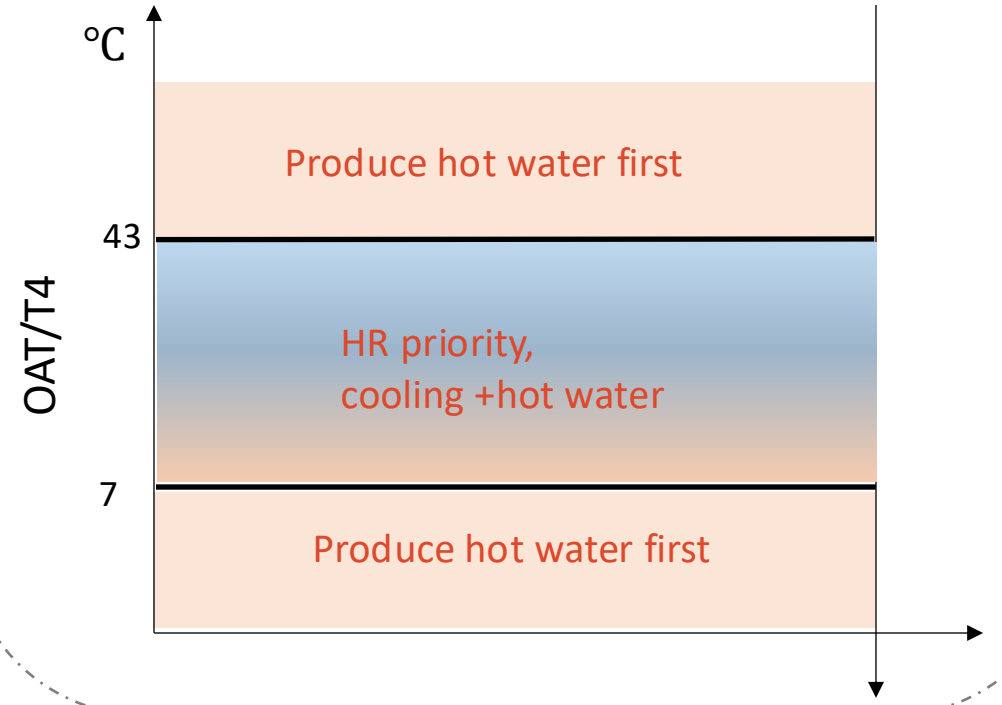
ATA auto priority control (without hot water request)

- At full ATA mode, the system would have the auto priority control to run the system according to the outdoor ambient temperature if the IDUs happen with mode conflict to make sure the human body feeling well.



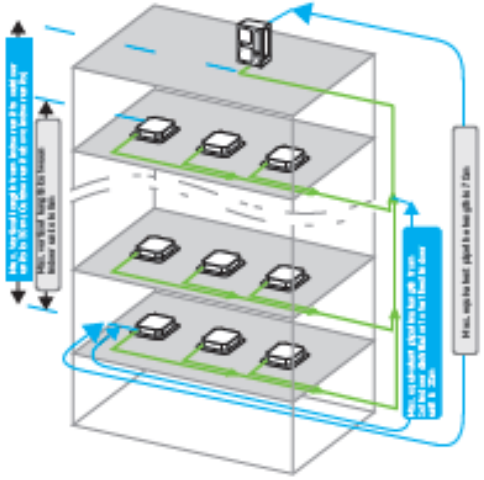
HR auto priority control (with hot water request)

- When unit is running ATA cooling or ATA heating mode, if it receives only ATW heating or DHW request, heating IDU will stop, cooling IDU will runs when ambient temp. is 7~43℃. If ambient temp. exceeds this range, all IDUs will stop.



Easy Installation

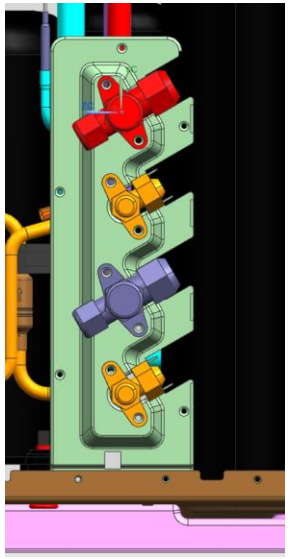
Long-pipe info.

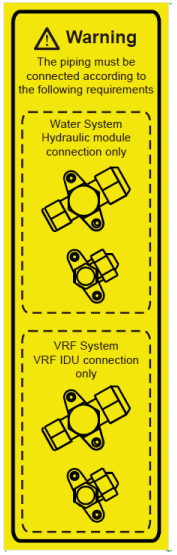


- Total length: 100m
- Max. length: 70/60m
- Max. length to 1st branch: 20m
- Height level:
  ODU above: 30m
  ODU below: 20m
- IDU height level: 8m

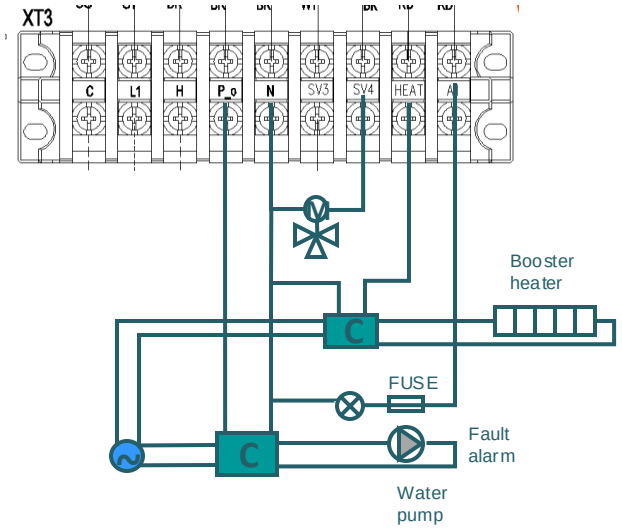
4 pipes connection

- Separate the 4 pipes into two groups with clear sticker
- Connect the hydro kit to outdoor unit directly





Hydro kit connection



- Connect 3-way valve, to change the water flow direction
- Connect to booster heater to control the heater in DHW tank
- Connect to additional circulation water pump
- Alarm output

Easy Commissioning

Auto addressing

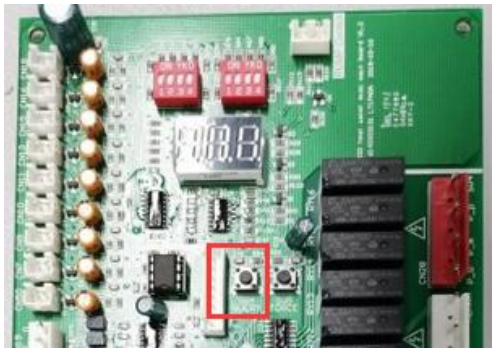
- The address of indoor unit is allocated automatically by the system, no need to edit by dialing, which spares the hassle of manual setting one by one.
- Hydro kit address is fixed to 63.

Service window

- Service window on the right side to connect the cable and digital display to check the running data.
- One button to start the system to do the running test.

Hydro kit check

- Do spot check in hydro kit PCB or wired controller, to read hydro kit running parameters.
- Error code will display in wired controller screen and hydro kit display tube in PCB.



Controller

Controllers for VRF IDU

- Normal setting
- Timer
- Indoor unit address setting
- IFEEL function
- Child lock
- WiFi function
- Control max. 4pcs IDUs together (wired controller)

With IFEEL function

With IFEEL&WiFi function

Controller for hydro kit

- Set heating or DHW mode
- Weekly timer
- Electric heater
- Sterilization
- WiFi function (optional)

Centralized controller

- Can control max. 64 indoor units
- Individual control, or group control, max four groups
- Weekly timer
- Mode lock & remote controller lock
- WIFI function

THANK YOU!