

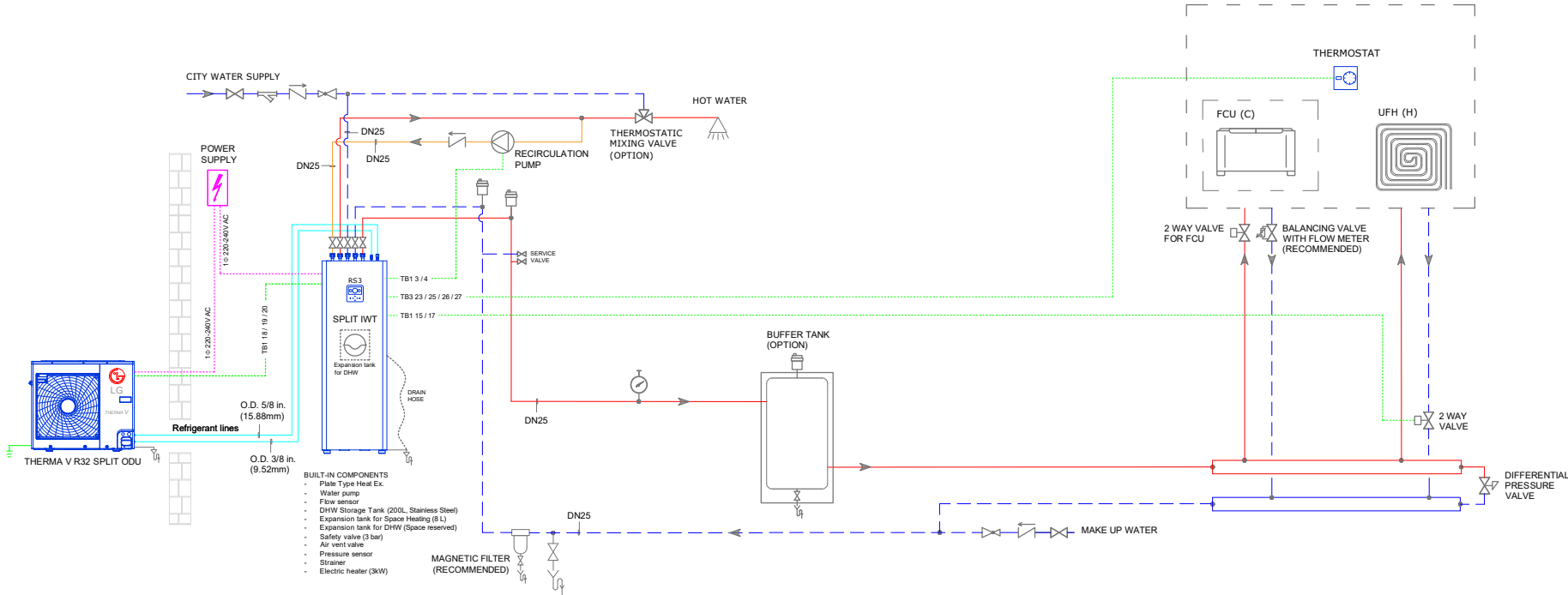
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating, Cooling, DHW with Thermostat
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	UFH(H) + FCU(C)
Main Controller	Thermostat
Control Setting of LG RS3 Controller	Based on Water Temp.
External Pump	No installed

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWRC1)

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

3RD PARTY ACCESSORIES

Buffer Tank (Option)

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevents frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

2 Way Valve

A motorized isolation valve that blocks the water flow into underfloor coil in order to prevent water condensation during cooling mode. Controlled by THERMA V with 230V power. Required operating time : less than 90s.

Thermostat

A control device that senses the temperature of a room and performs actions so that the room's temperature is maintained near a desired setpoint. Thermostat must be connected with Thermo V, Valve, Pump, and FCU where applicable.

2 Way Valve for FCU

A isolation valve paired with FCU to allow whether water flows into the water circuit.

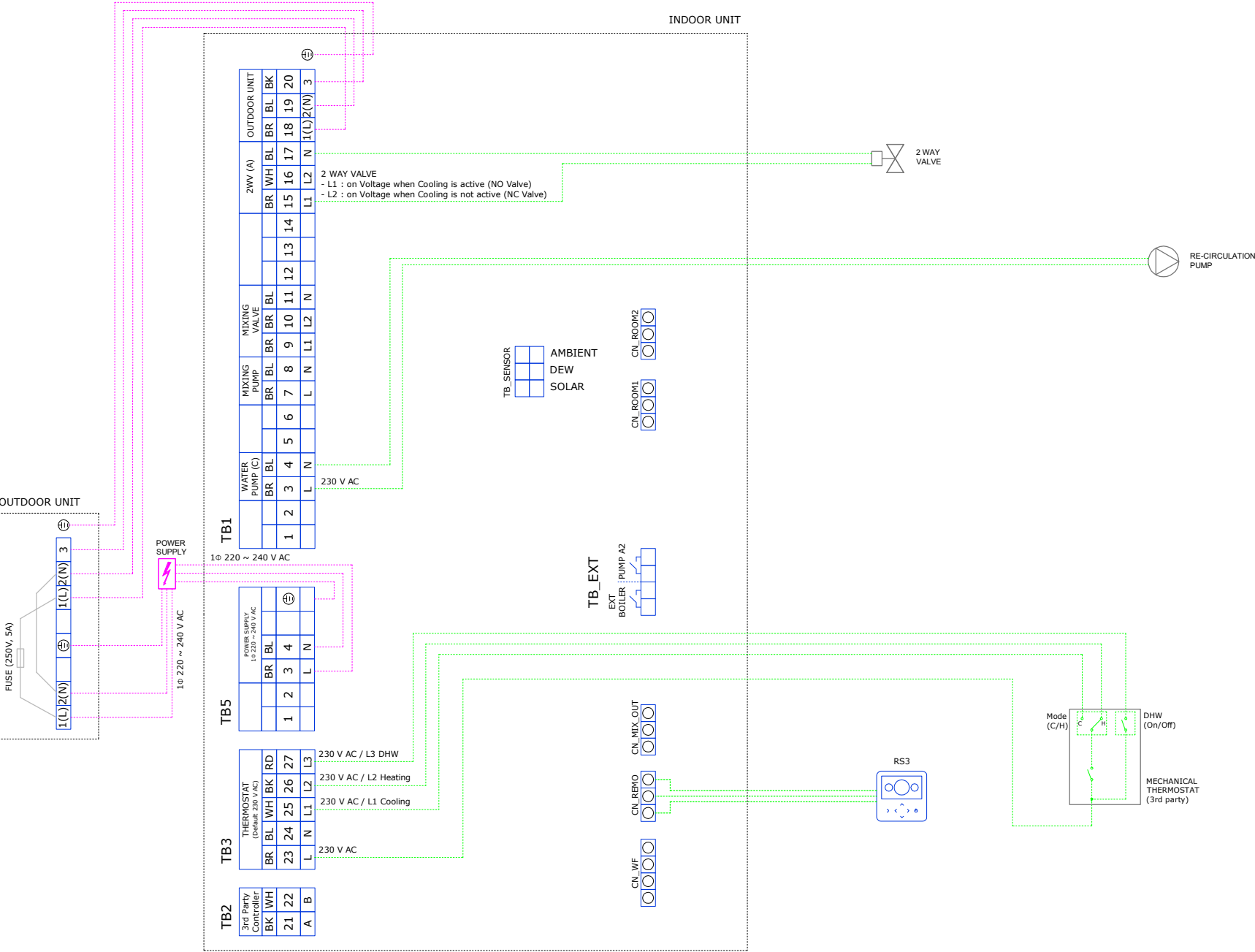
Balancing Valve with flow meter (Recommended)

The balancing valve is a hydraulic device that accurately regulates the flow rate of heating medium supplied to FCU's. A correct balancing of hydraulic systems is essential to guarantee the system operation according to its design specifications, high thermal comfort and low energy consumption. The valves are equipped with a flow meter for a direct reading of the regulated flow rate.

Differential Pressure Valve

A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		DIP SW1								X: OFF / O: ON	
MODEBUS Communication Type	Master (Link to LG controller)	X									
MODEBUS Function	Slave (Link to 3rd party controller)	O									
Antifreeze Mode	REGIN		X								
	Unfired Open Pilot			X							
	Antifreeze is not applied										
	Antifreeze is applied (Adjustable anti-freeze temp.)									O	
	default setting	X	X								X
		DIP SW2								X: OFF / O: ON	
Indoor Unit Type Setting for Group Control	As Master	X									
	As Slave										
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed			X	X						
	Unused			O	X						
Heat Pump Cycle	Heating only					X					
	Heating and cooling					O					
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed						X				
Remote Room Air Sensor (Accessory)	Remote room air sensor is installed						O				
Selecting Backup Heater Capacity	Electric heater is not used							X	X		
	Full capacity is used							O	X		
	Electric heater is not used							X	O		
	Electric heater is not used							O	O		
Thermostat Installation	Thermostat is not installed									X	
	Thermostat is installed										X
	default setting	X	X	X	X	X	X	X	X		X

OUTDOOR UNIT MAIN PCB

SW1



		DIP SW1			X: OFF / O: ON	
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	1	2	3		
Low Noise Mode	Partial mode: Escape low noise mode for target temperature		O			
Peak Control	Max mode		X			
Peak Control	Peak control: To limit maximum current (Power saving)		O			
default setting		X	X			

NOTE

- The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
- Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

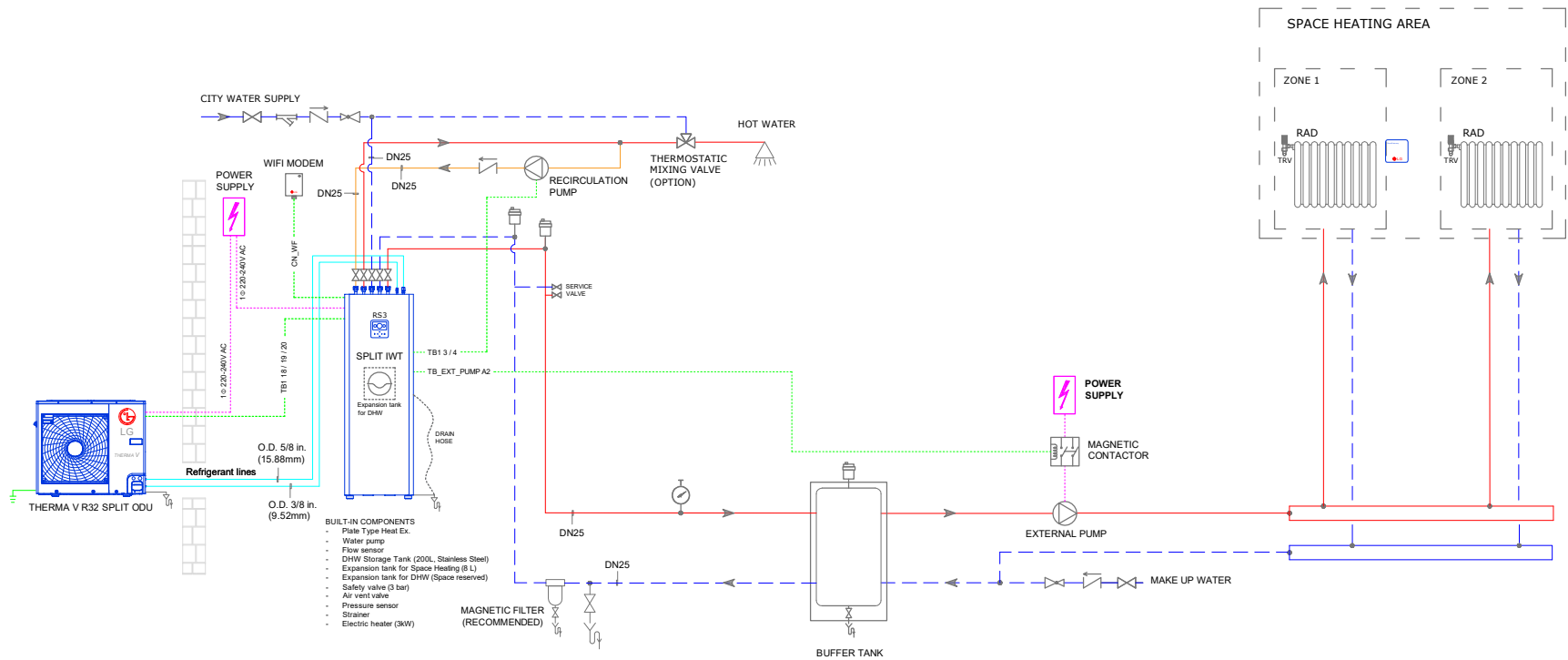
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with Multi Zone Control
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	RAD(H)
Main Controller	LG RS3 Controller
Control Setting of LG RS3 Controller	Based on Water Temp.
External Pump	Controlled by THERMA V

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWR1)

Wi-Fi Modem (PWFMD200)

A control device that enables wireless communication with internet router.
Including USB cable 0.6m and extension cable 0.5m

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

3RD PARTY ACCESSORIES

Buffer Tank

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevents frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

External Pump

An external water pump that circulates the water inside piping when water circuit is segregated or pump discharge head is insufficient to overcome total system friction loss.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

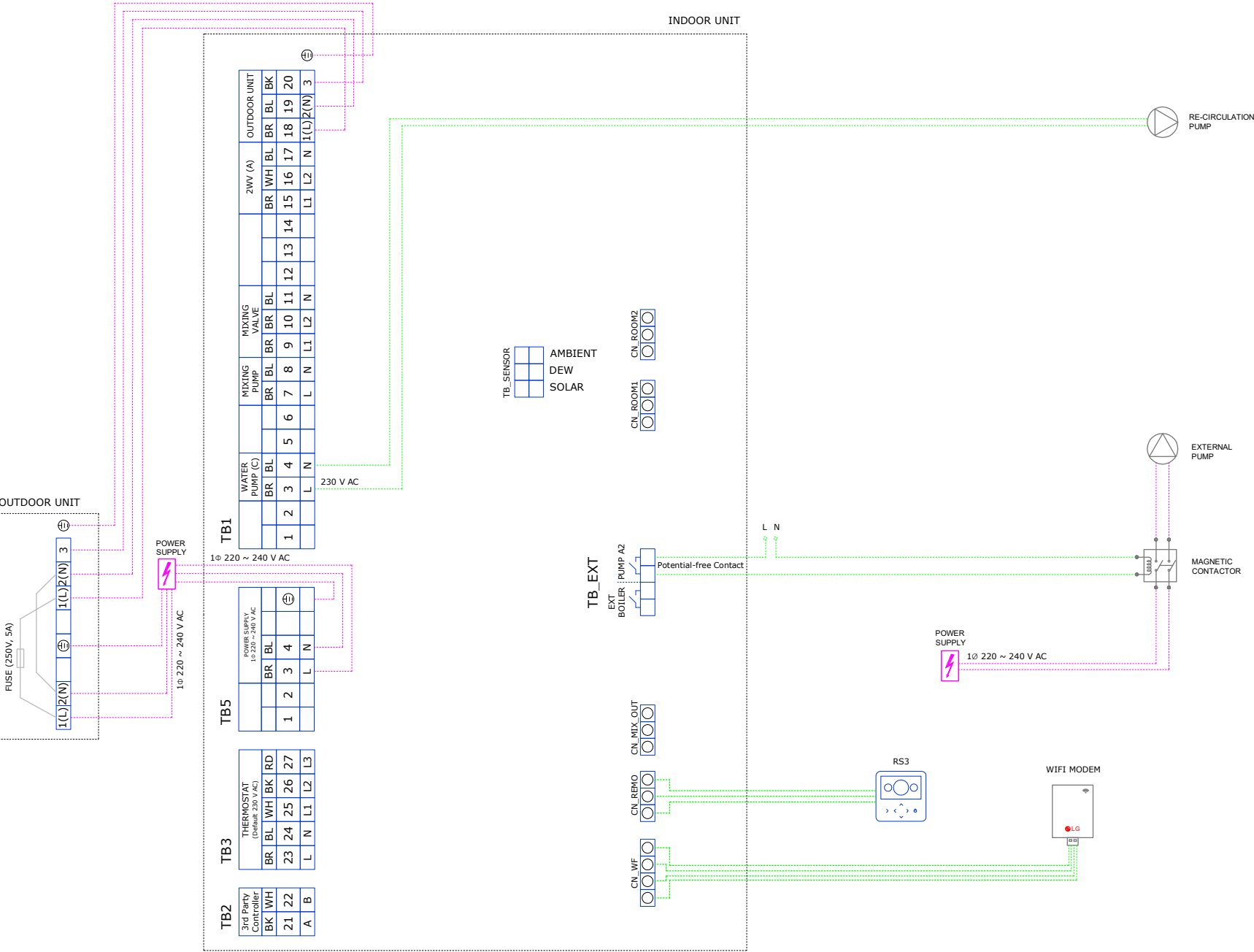
Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

TRV (Thermostatic Radiator Valve)

A self-regulating valve fitted to radiator, to control the temperature of a room by changing the flow of hot water to the radiator.

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2

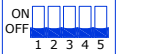


		DIP SW1								X: OFF / O: ON	
MODEBUS Communication Type	Master (Link to LC controller)	X									
MODEBUS Function	Slave (Link to 3rd party controller)	O									
MODEBUS Function	RESIN		X								
Antifreeze Mode	Antifreeze is not applied									X	
Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)									O	
default setting		X	X								X

		DIP SW2								X: OFF / O: ON	
Indoor Unit Type Setting for Group Control	As Master	X									
Indoor Unit Type Setting for Group Control	As Slave	O									
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		X	X							
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		X	O							
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		O	X							
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		O	O							
Heat Pump Cycle	Heating only			X							
Heat Pump Cycle	Heating and cooling			O							
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed				X						
Remote Room Air Sensor (Accessory)	Remote room air sensor is installed				O						
Selecting Backup Heater Capacity	Electric heater is not used					X	X				
Selecting Backup Heater Capacity	Full capacity is used					O	X				
Selecting Backup Heater Capacity	Electric heater is not used					X	O				
Selecting Backup Heater Capacity	Electric heater is not used					O	O				
Thermostat Installation	Thermostat is not installed							X			
Thermostat Installation	Thermostat is installed							O			
default setting		X	X	X	X	X	O	X	X		

OUTDOOR UNIT MAIN PCB

SW1



		DIP SW1			X: OFF / O: ON	
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X				
Low Noise Mode	Partial mode: Escape low noise mode for target temperature	O				
Peak Control	Max mode		X			
Peak Control	Peak control: To limit maximum current (Power saving)		O			
default setting		X	X			

NOTE

- The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
- Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

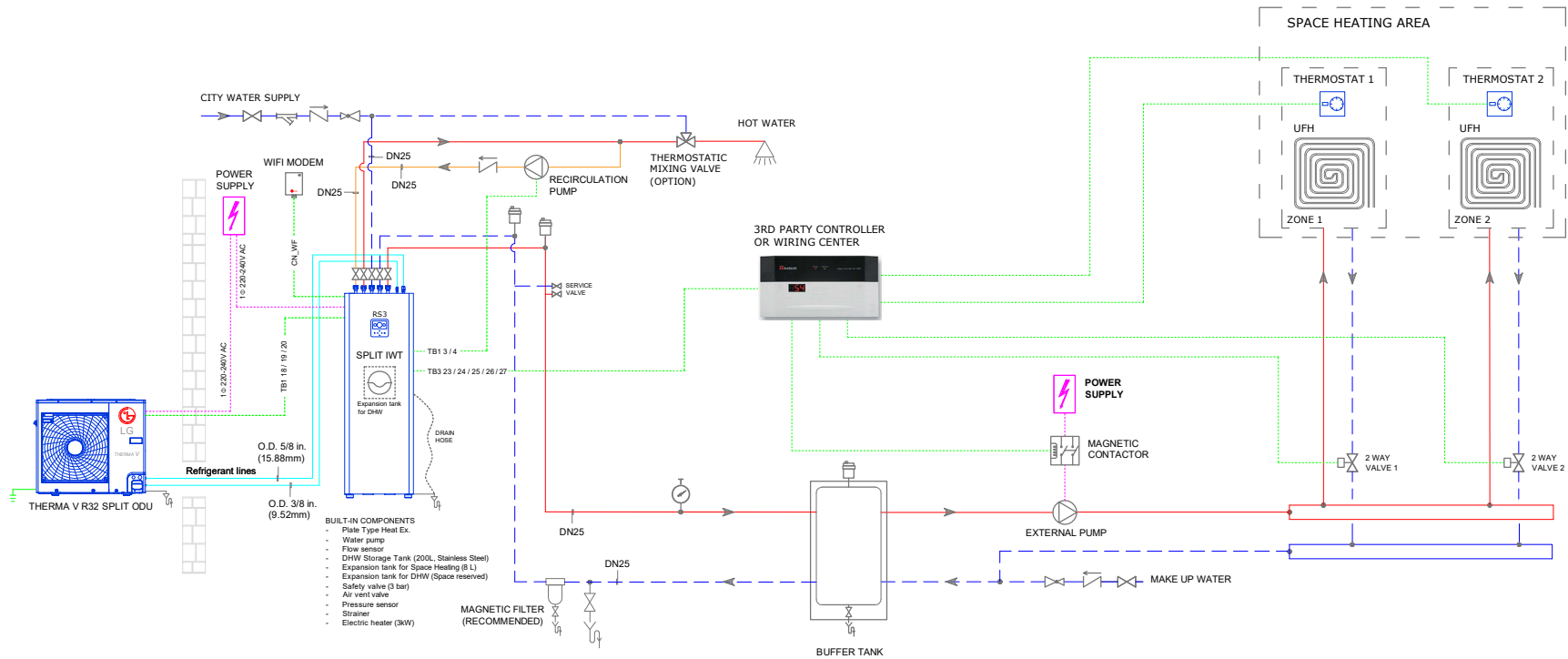
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with Multi Zone Control
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	UFH(H)
Main Controller	3rd Party Controller
Control Setting of LG RS3 Controller	Based on Water Temp.
External Pump	Controlled by 3rd Party Controller

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWR1)

Wi-Fi Modem (PWFMD200)

A control device that enables wireless communication with internet router.
Including USB cable 0.6m and extension cable 0.5m

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

3RD PARTY ACCESSORIES

Buffer Tank

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevent frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

External Pump

An external water pump that circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

2 Way Valves (Thermo-electric valves)

A motorized isolation valve that blocks the water flow into terminal unit.
Controlled by 3rd party controller.

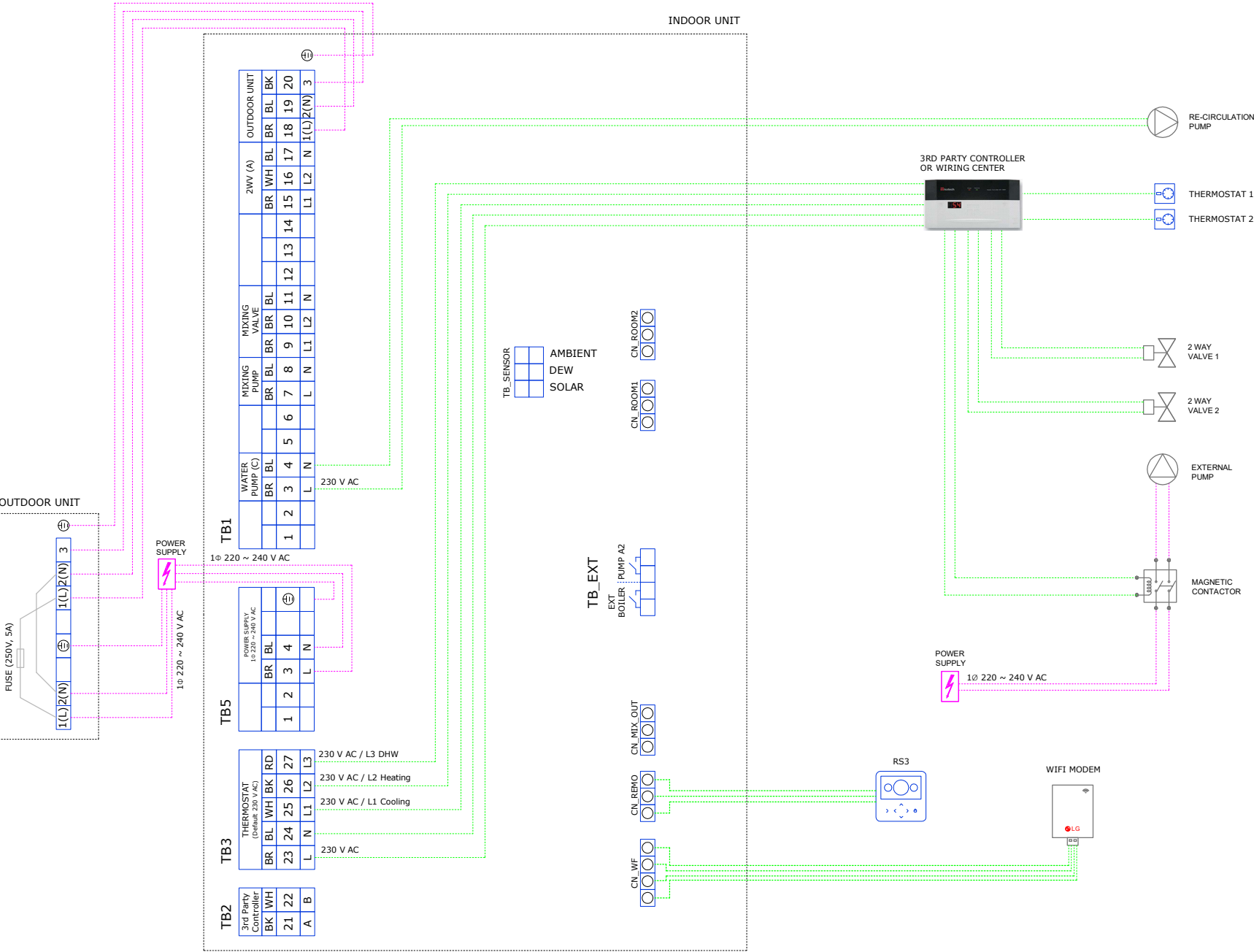
3rd Party Controller or Wiring Center

A control device that uses the analogue or digital signals from various devices and then process and control the system based on the program written inside the controllers and has the capability to send the information to another controller.

Thermostat

A control device that senses the temperature of a room and performs actions so that the room's temperature is maintained near a desired setpoint. Thermostat must be connected with Thermo V, Valve, Pump, and FCU where applicable.

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		DIP SW1								X: OFF / O: ON
MODEM Communication Type	Master (Link to LC controller)	X								
MODEM Function	Slave (Link to 3rd party controller)		X							
Antifreeze Mode	Antifreeze is not applied									X
Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)									O
		default setting	X	X	X	X	X	X	X	X

		DIP SW2								X: OFF / O: ON
Indoor Unit Type Setting for Group Control	As Master	X								
Indoor Unit Type Setting for Group Control	As Slave		X							
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		X	X						
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is not installed		X	O						
Heat Pump Cycle	Heating only				X					
Heat Pump Cycle	Heating and cooling				O					
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed					X				
Remote Room Air Sensor (Accessory)	Remote room air sensor is installed					O				
Selecting Backup Heater Capacity	Electric heater is not used						X	X		
Selecting Backup Heater Capacity	Full capacity is used						O	X		
Selecting Backup Heater Capacity	Electric heater is not used						X	O		
Selecting Backup Heater Capacity	Electric heater is not used						O	O		
Thermostat Installation	Thermostat is installed								X	
Thermostat Installation	Thermostat is not installed								O	
		default setting	X	X	X	X	X	O	X	X

OUTDOOR UNIT MAIN PCB

SW1



		DIP SW1			X: OFF / O: ON
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X			
Low Noise Mode	Partial mode: Escape low noise mode for target temperature		O		
Peak Control	Max mode		X		
Peak Control	Peak control: To limit maximum current (Power saving)		O		
		default setting	X	X	

NOTE

- The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
- Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

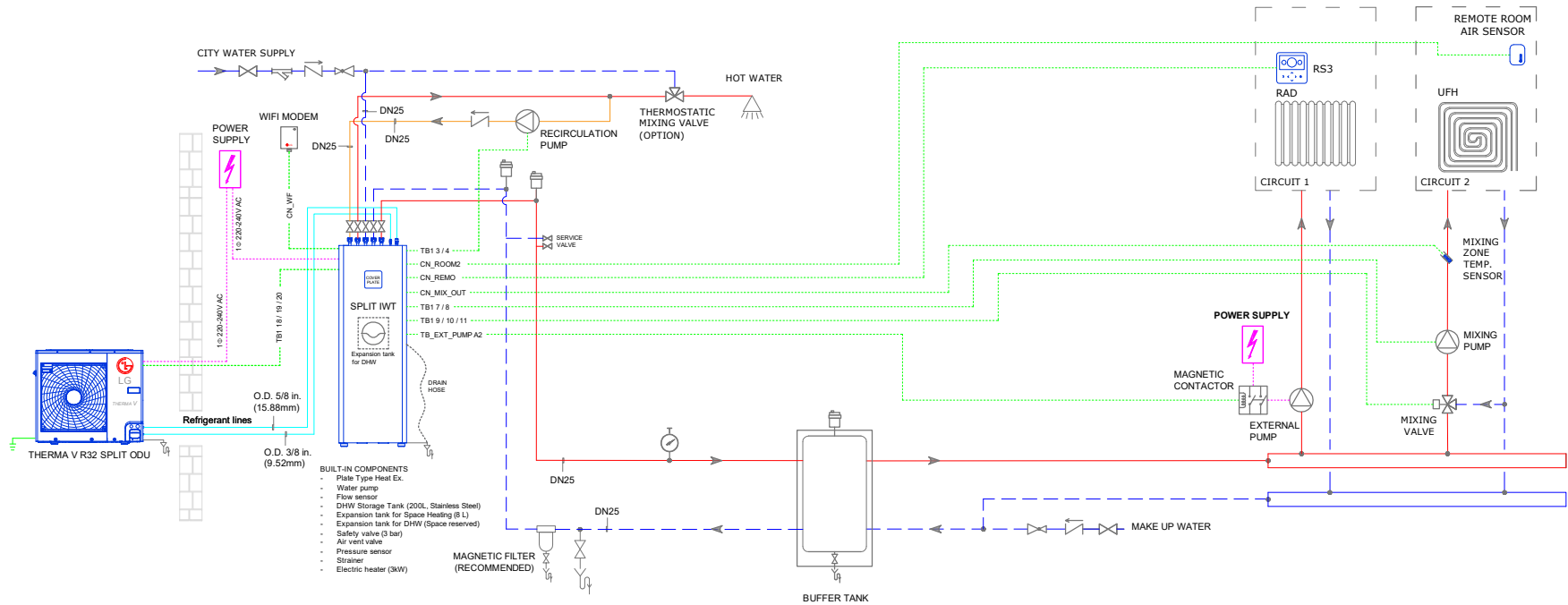
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with 2nd Circuit
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	UFH(H) + RAD(H)
Main Controller	LG RS3 Controller
Control Setting of LG RS3 Controller	Based on Water Temp. or Air Temp.
External Pump	Controlled by THERMA V

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWRC1)

Extension Wire for RS3 Controller (PZCWRC1)

Cable length 10m

Cover Plate (PDC-HK10)

A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors.

Wi-Fi Modem (PWFMD200)

A control device that enables wireless communication with internet router.
Including USB cable 0.6m and extension cable 0.5m

Remote Room Air Temperature Sensor (PQRSTA0)

Temperature sensor for the room. Cable length 15m. Required when controlling the 2nd circuit based on the room air temperature.

Mixing Zone Temperature Sensor (PRSTAT5K10)

A temperature sensor for the mixed circuit. Cable length 10m.

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

3RD PARTY ACCESSORIES

Buffer Tank

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevent frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

External Pump

An external water pump that circulates the water inside piping when water circuit is segregated or pump discharge head is insufficient to overcome total system friction loss.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

Mixing Pump

An external water pump that circulates the water inside mixed circuit (zone 1).
Controlled by THERMA V with 230V power.

Mixing Valve

A motorized 3-way mixing valve throttling mixing ratio of heated water and return water.
Controlled by THERMA V with 230V power supply.
Operating times: 60-900 sec.

The diagram illustrates the electrical connections for the indoor unit, which is divided into two main sections: the left side for power and outdoor unit connections, and the right side for indoor unit components and controls.

Left Side (Power and Outdoor Unit Connections):

- Outdoor Unit:** A fuse (250V, 5A) is connected to the outdoor unit's terminal block (TB1). The outdoor unit has terminals for 1(L), 2(N), and 3.
- Power Supply:** A power supply (100-240V AC) is connected to the indoor unit's terminal block (TB5). The power supply has terminals for 1(L), 2(N), and 3.
- Indoor Unit Terminal Blocks (TB1, TB2, TB3, TB5):**
 - TB1:** 10 220 ~ 240 V AC. Terminals: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
 - TB2:** 3rd Party Control. Terminals: BK, WH, L, N, PE.
 - TB3:** Thermostat (0-10V AC). Terminals: BR, BL, WH, BK, RD, L, N, L1, L2, L3.
 - TB5:** Power Supply (100-240V AC). Terminals: BR, BL, L, N, PE.

Right Side (Indoor Unit Components and Controls):

- Re-circulation Pump:** Connected to the outdoor unit's terminal block (TB1).
- Direct Circuit (Circuit 1):** Includes a RAD (Radiator) and RS3 (Remote Sensing) connected to the indoor unit's terminal block (TB1).
- Mixed Circuit (Circuit 2):** Includes a UFH (Under Floor Heating) and a REMOTE ROOM TEMP. SENSOR connected to the indoor unit's terminal block (TB1).
- MIXING VALVE:** Connected to the indoor unit's terminal block (TB1).
- MIXING PUMP:** Connected to the indoor unit's terminal block (TB1).
- MIXING ZONE TEMPERATURE SENSOR:** Connected to the indoor unit's terminal block (TB1).
- EXTERNAL PUMP:** Connected to the indoor unit's terminal block (TB1).
- MAGNETIC CONTACTOR:** Connected to the indoor unit's terminal block (TB1).
- WIFI MODEM:** Connected to the indoor unit's terminal block (TB1).
- Power Supply:** A power supply (100-240V AC) is connected to the indoor unit's terminal block (TB5).
- Terminal Blocks (TB_EXT, CN_ROOM1, CN_ROOM2, CN_MIX OUT, CN_REMO, CN_WF):**
 - TB_EXT:** EXT, BOILER, PUMP A2, Potential-free Contact.
 - CN_ROOM1:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
 - CN_ROOM2:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
 - CN_MIX OUT:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
 - CN_REMO:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
 - CN_WF:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

1. The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
2. Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

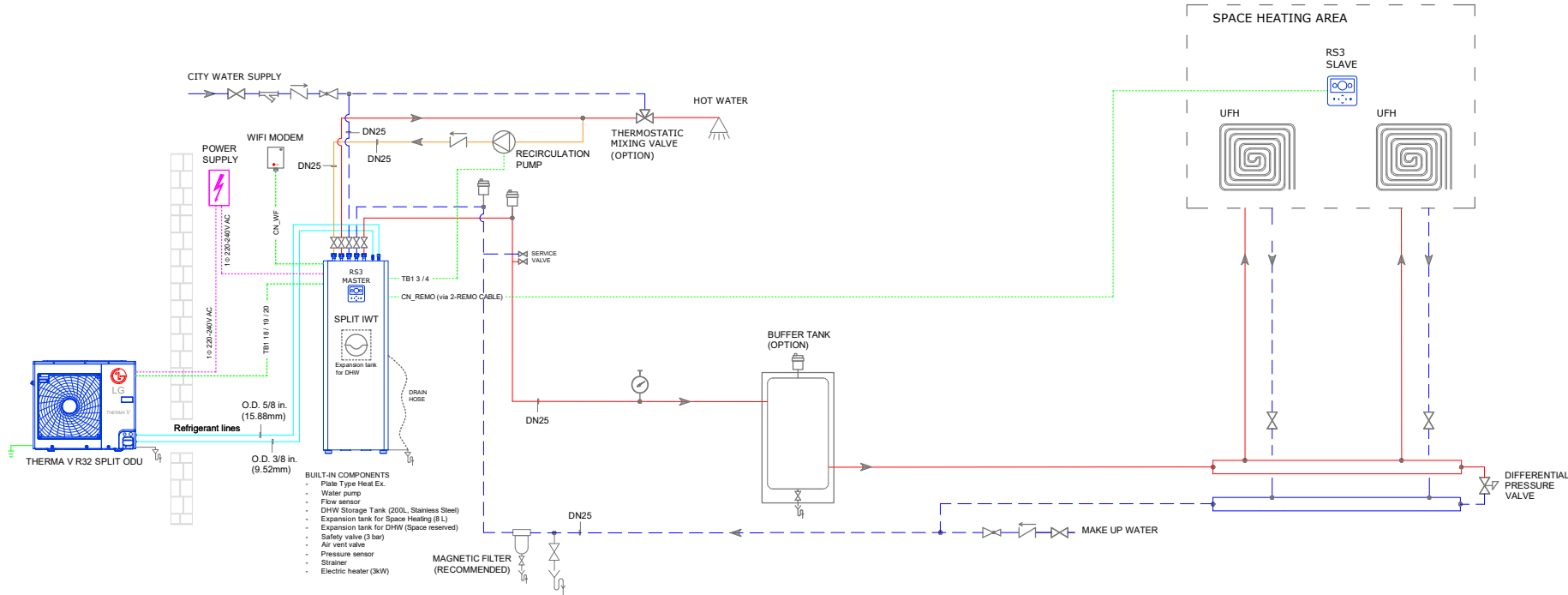
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with 2 Remote Controllers
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	UFH(H)
Main Controller	LG RS3 Controllers
Control Setting of LG RS3 Controller	Based on Water Temp. or Air Temp.
External Pump	No Installed
Remark	In 2-remo control, RS3 MASTER shows a temperature measured by built-in sensor in RS3 SLAVE. (Temperature value measured by RS3 MASTER is overridden.)

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWR1)

Wi-Fi Modem (PWFMD200)

A control device that enables wireless communication with internet router.
Including USB cable 0.6m and extension cable 0.5m

RS3 SLAVE Controller (PREMTW101)

An additional wired remote controller with built-in temperature sensor that enables controlling THERMA V using two remote controller.
Including extension wire(PZCWR1) and 2 remo cable(PZCWR2)

Extension Wire for RS3 Controller (PZCWR1)

Cable length 10m. Included in PREMTW101.

2 Remo Cable (PZCWR2)

A cable that enables connecting two remote controller on the one indoor unit.
Included in PREMTW101.

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

3RD PARTY ACCESSORIES

Buffer Tank (Option)

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevent frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

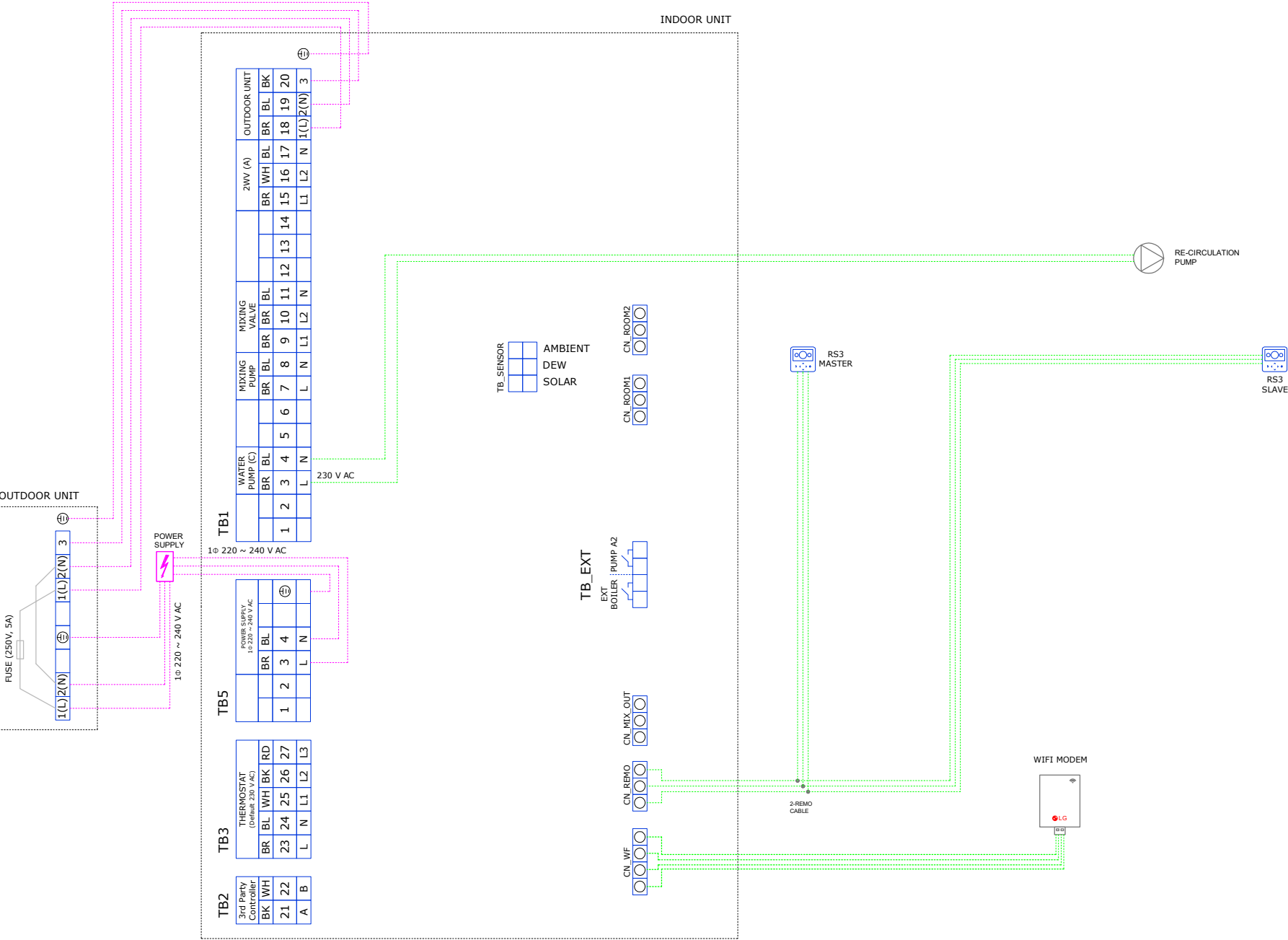
Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

Differential Pressure Valve

A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		DIP SW1								X: OFF / O: ON	
MODEBUS Communication Type	Master (Link to LC controller)	X									
MODEBUS Function	Slave (Link to 3rd party controller)	O									
MODEBUS Function	RESIN		X								
Antifreeze Mode	Unified Open Protocol		O								
Antifreeze Mode	Antifreeze is not applied									X	
Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)										O
default setting		X	X								X
		DIP SW2								X: OFF / O: ON	
Indoor Unit Type Setting for Group Control	As Master	X									
Indoor Unit Type Setting for Group Control	As Slave	O									
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		X	X							
Accessory Installation Information	Unused		O	X							
Heat Pump Cycle	Heating only			X							
Heat Pump Cycle	Heating and cooling		O								
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed				X						
Remote Room Air Sensor (Accessory)	Remote room air sensor is installed			O							
Selecting Backup Heater Capacity	Electric heater is not used					X	X				
Selecting Backup Heater Capacity	Full capacity is used					O	X				
Selecting Backup Heater Capacity	Electric heater is not used					X	O				
Selecting Backup Heater Capacity	Electric heater is not used					O	O				
Thermostat Installation	Thermostat is installed							X			
Thermostat Installation	Thermostat is not installed							O			
default setting		X	X	X	X	X	O	X	X		

OUTDOOR UNIT MAIN PCB

SW1



		DIP SW1			X: OFF / O: ON	
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X				
Low Noise Mode	Partial mode: Escape low noise mode for target temperature	O				
Peak Control	Max mode		X			
Peak Control	Peak control: To limit maximum current (Power saving)		O			
default setting		X	X			

NOTE

- The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
- Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

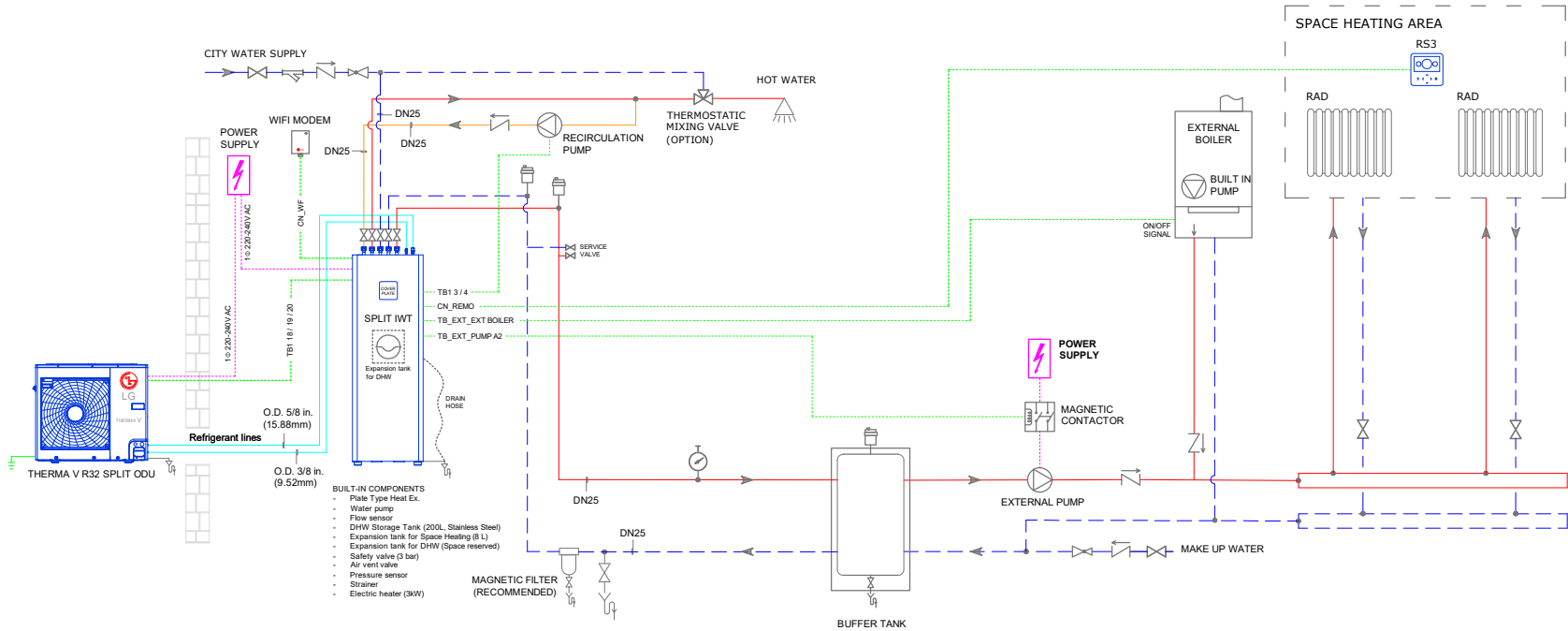
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with External Boiler
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	RAD(H)
Main Controller	LG RS3 Controller
Control Setting of LG RS3 Controller	Based on Water Temp. or Air Temp.
External Pump	Controlled by THERMA V

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

ACCESSORIES LG

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWRC1)

Extension Wire for RS3 Controller (PZCWRC1)

Cable length 10m

Cover Plate (PDC-HK10)

A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors.

Wi-Fi Modem (PWFMD200)

A control device that enables wireless communication with internet router.
Including USB cable 0.6m and extension cable 0.5m

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

3RD PARTY ACCESSORIES

Buffer Tank

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevent frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

External Pump

An external water pump that circulates the water inside piping when water circuit is segregated or pump discharge head is insufficient to overcome total system friction loss.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

External Boiler

An external boiler supplied by a 3rd party that operates alternatively interlocking with THERMA V. The external boiler should have a integrated or dedicated circulation pump.
Controlled by THERMA V with voltage free contact switch.

1. The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
2. Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

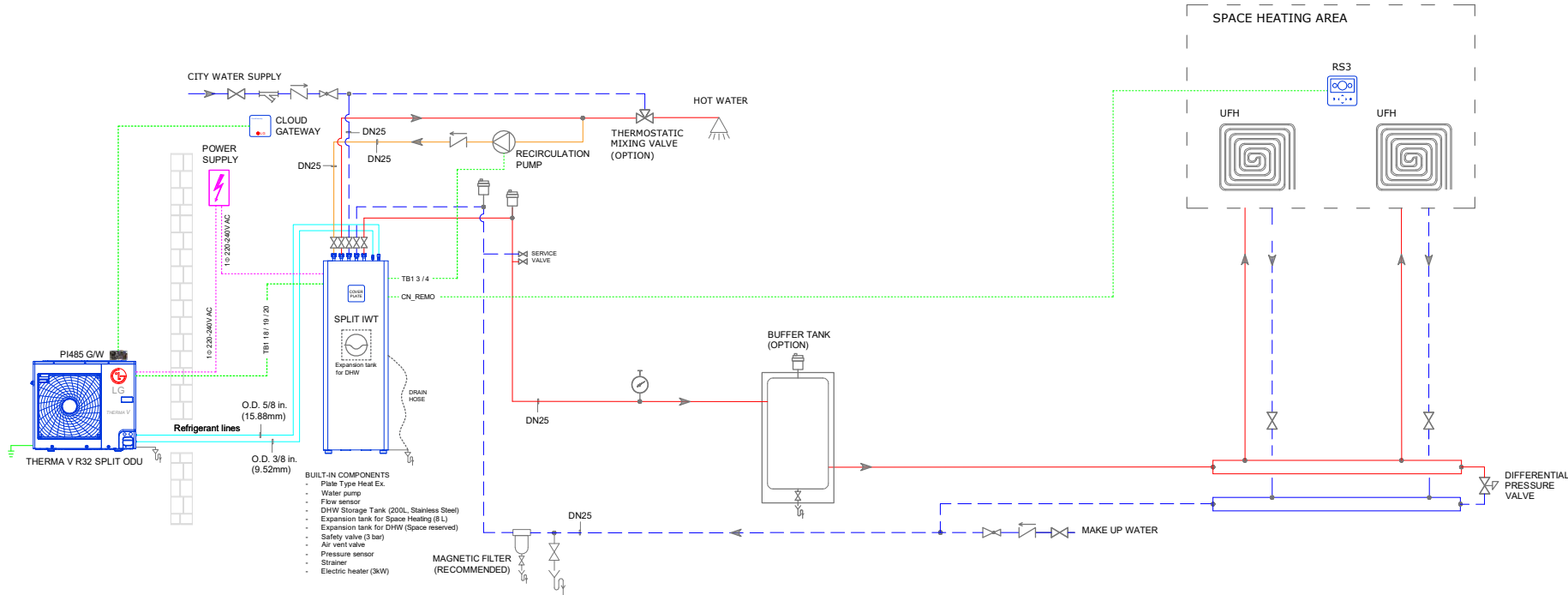
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with LG BECON Cloud
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	UFH(H)
Main Controller	LG RS3 Controllers
Control Setting of LG RS3 Controller	Based on Water Temp. or Air Temp.
External Pump	No Installed

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWR1)

Wi-Fi Modem (PWFMD200)

A control device that enables wireless communication with internet router.
Including USB cable 0.6m and extension cable 0.5m

RS3 SLAVE Controller (PREMTW101)

An additional wired remote controller with built-in temperature sensor that enables controlling THERMA V using two remote controller.
Including extension wire(PZCWR1) and 2 remo cable(PZCWR2)

Extension Wire for RS3 Controller (PZCWR1)

Cable length 10m. Included in PREMTW101.

2 Remo Cable (PZCWR2)

A cable that enables connecting two remote controller on the one indoor unit.
Included in PREMTW101.

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

PI485 Gateway (PP485A00T)

A gateway device that communicates and controls for connection to the central controller. (converting LG protocol to RS485 protocol)
It should be installed onto the outdoor unit.

Cloud Gateway (PWFMD200)

A gateway for LG BECON Cloud service.
External power supply DC 12V.

3RD PARTY ACCESSORIES

Buffer Tank (Option)

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevent frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

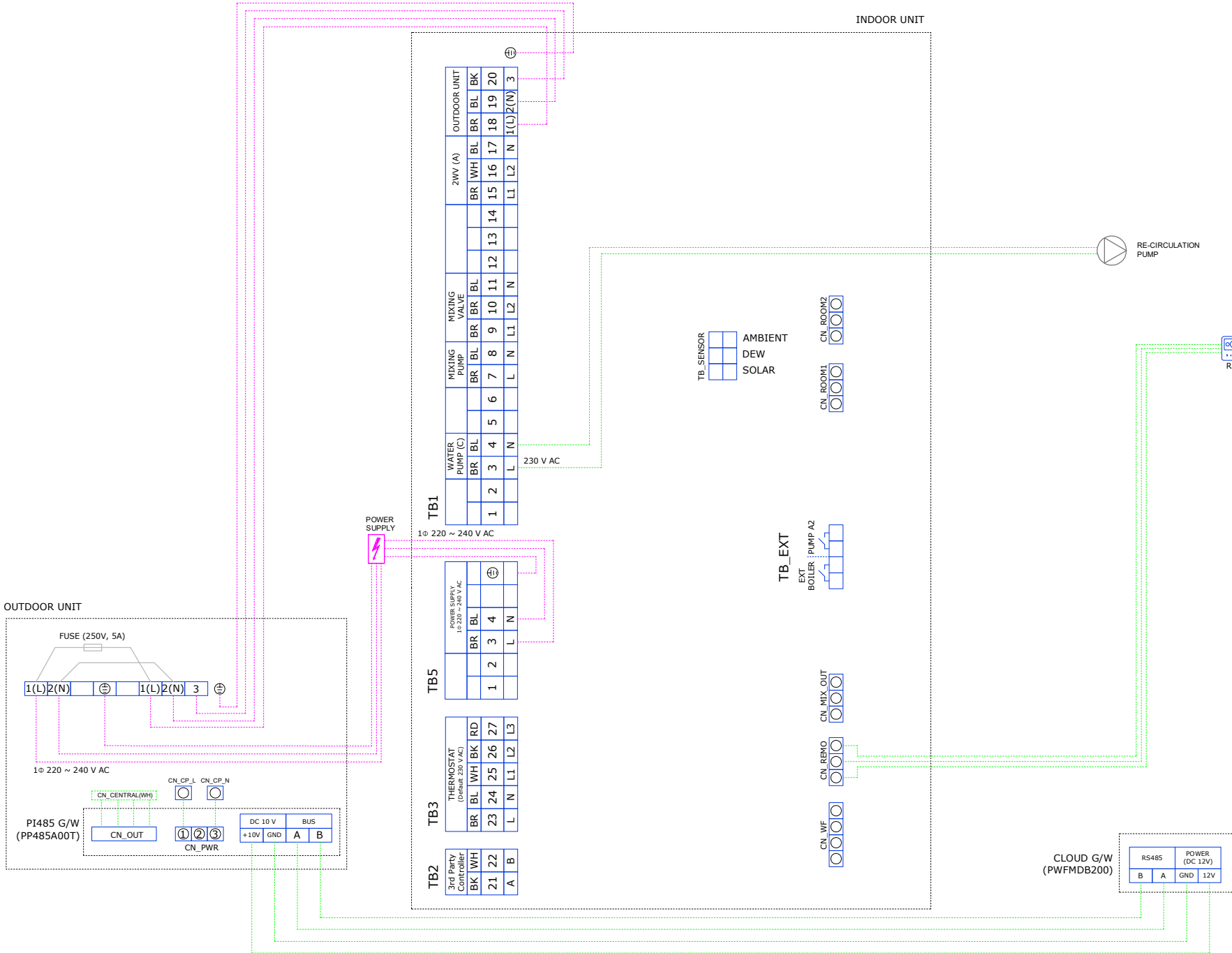
Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

Differential Pressure Valve

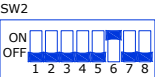
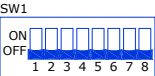
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB



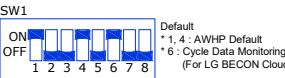
		DIP SW1								X: OFF / O: ON
MODBUS Communication Type	Master (Link to LG controller)	X								
MODBUS Function	Slave (Link to 3rd party controller)	O								
Antifreeze Mode	Antifreeze is not applied									X
Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)									X
default setting		X	X							X
		DIP SW2								X: OFF / O: ON
Indoor Unit Type Setting for Group Control	As Master	X								
Indoor Unit Type Setting for Group Control	As Slave	O								
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		X	X						
Accessory Installation Information	Unused		O	X						
Heat Pump Cycle	Heating only			X						
Heat Pump Cycle	Heating and cooling			O						
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed				X					
Remote Room Air Sensor (Accessory)	Remote room air sensor is installed				O					
Selecting Backup Heater Capacity	Electric heater is not used					X	X			
Selecting Backup Heater Capacity	Full capacity is used					O	X			
Selecting Backup Heater Capacity	Electric heater is not used					X	O			
Selecting Backup Heater Capacity	Electric heater is not used					O	O			
Thermostat Installation	Thermostat is not installed							X		
Thermostat Installation	Thermostat is installed							O		
default setting		X	X	X	X	X	X	X	X	X

OUTDOOR UNIT MAIN PCB



		DIP SW1			X: OFF / O: ON
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X			
Low Noise Mode	Partial mode: Escape low noise mode for target temperature	O			
Peak Control	Max mode		X		
Peak Control	Peak control: To limit maximum current (Power saving)		O		
default setting		X	X		

PI485 GATEWAY



NOTE

- The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
- Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

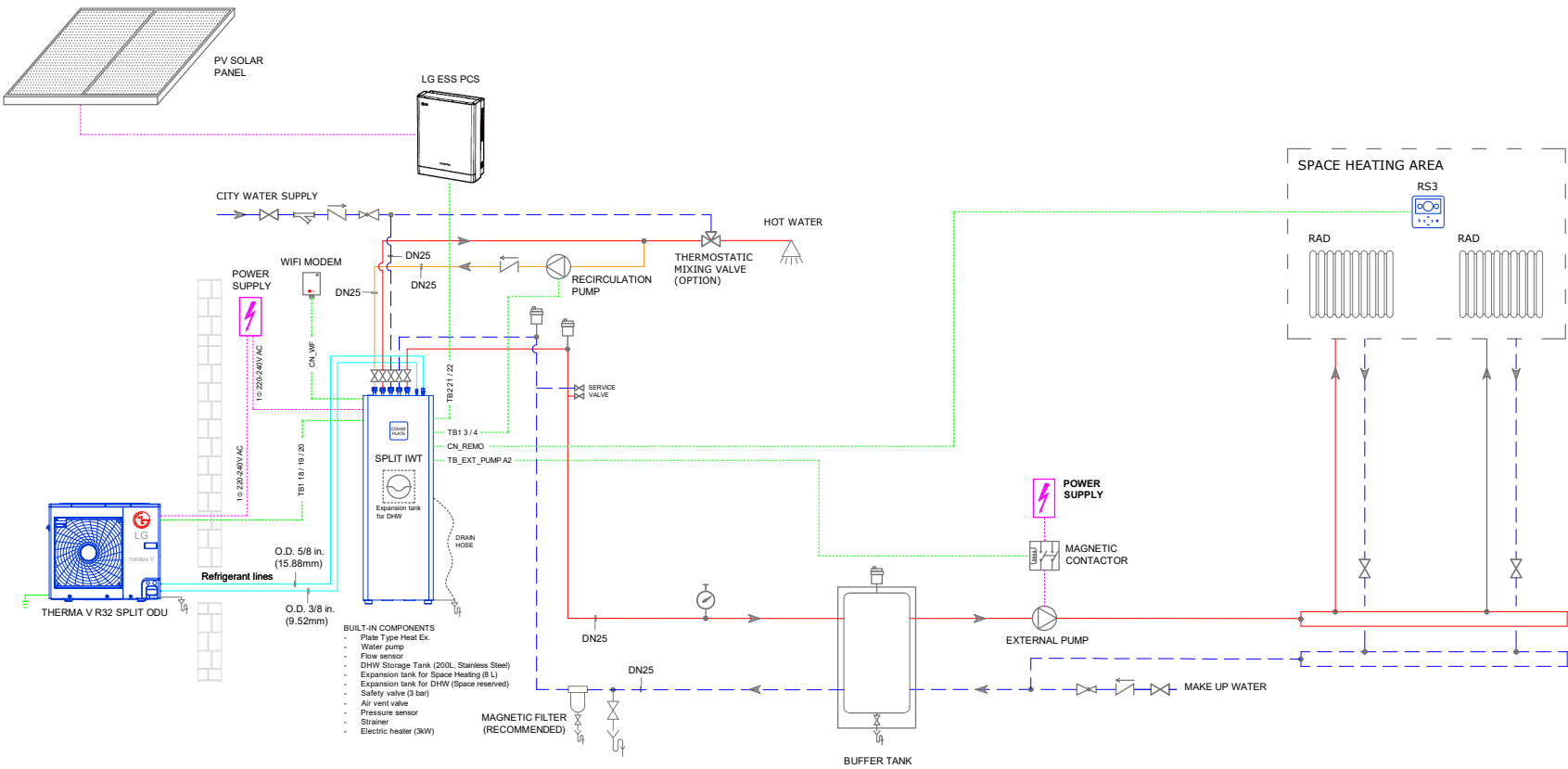
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with LG Energy Storage System
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	RAD(H)
Main Controller	LG RS3 Controller
Control Setting of LG RS3 Controller	Based on Water Temp. or Air Temp.
External Pump	Controlled by THERMA V

SYMBOL & LEGENDS

	Circulation Pump		Motorized 3 Way Valve		Check Valve		RS3 Remote Controller
	Expansion Tank		Motorized 2 Way Valve		Safety Relief Valve with drain		Remote Room Air Sensor
	Air Vent		Differential Pressure Valve		Y-type strainer		Cloud Gateway
	Pressure Gauge		Thermostatic Mixing Valve		Thermostatic Radiator Valve		Wi-Fi Modem
	Flexible Connection		Shut Off Valve		Magnetic Contactor		Thermostat
	Drain		Pressure Reducing Valve		Balancing Valve with flow meter		Cover Plate



NOTE

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.

ACCESSORIES LG

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWR1)

Extension Wire for RS3 Controller (PZCWR1)

Cable length 10m

Cover Plate (PDC-HK10)

A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors.

Wi-Fi Modem (PWFMD200)

A control device that enables wireless communication with internet router.
Including USB cable 0.6m and extension cable 0.5m

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

LG Energy Storage System (ESS)

A device/system that stores electricity from power systems(solar panels) in a battery and discharges it when needed

3RD PARTY ACCESSORIES

Buffer Tank

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevent frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

External Pump

An external water pump that circulates the water inside piping when water circuit is segregated or pump discharge head is insufficient to overcome total system friction loss.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

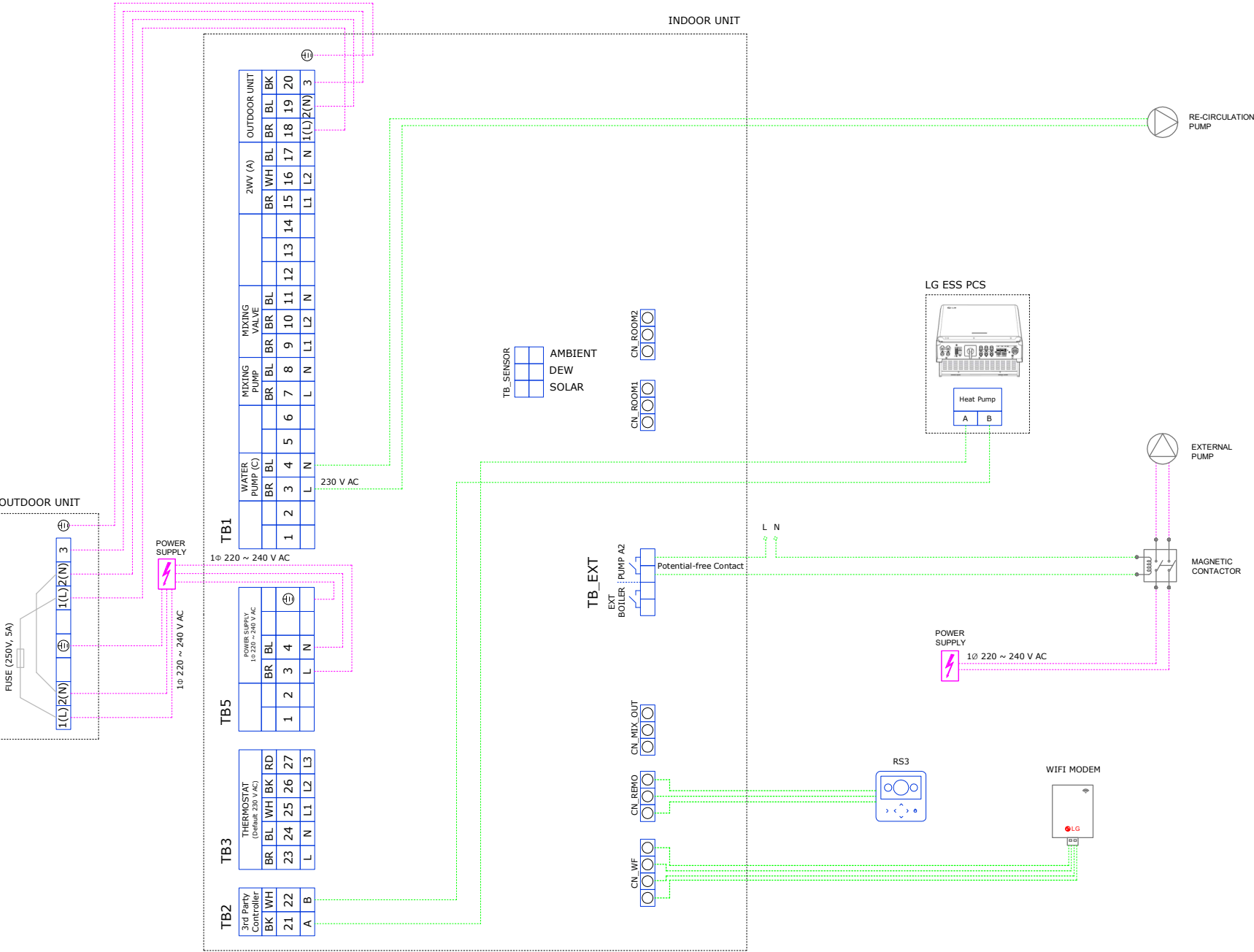
Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

PV Solar Panel

Solar Panel is an assembly of photovoltaic cells mounted in a framework for generating energy. Solar panels use sunlight as a source of energy to generate direct current electricity.

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



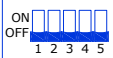
SW2



		DIP SW1								X: OFF / O: ON	
MODEBUS Communication Type	Master (Link to LG controller)	X									
MODEBUS Function	Slave (Link to 3rd party controller)	O									
MODEBUS Function	RESIN		X								
Antifreeze Mode	Antifreeze is not applied									X	
Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)										O
default setting		X	X								X
		DIP SW2								X: OFF / O: ON	
Indoor Unit Type Setting for Group Control	As Master	X									
Indoor Unit Type Setting for Group Control	As Slave	O									
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		X	X							
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed		X	O							
Accessory Installation Information	Unused		O	O							
Heat Pump Cycle	Heating only			X							
Heat Pump Cycle	Heating and cooling			O							
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed				X						
Remote Room Air Sensor (Accessory)	Remote room air sensor is installed				O						
Selecting Backup Heater Capacity	Electric heater is not used					X	X				
Selecting Backup Heater Capacity	Full capacity is used					O	X				
Selecting Backup Heater Capacity	Electric heater is not used					X	O				
Selecting Backup Heater Capacity	Electric heater is not used					O	O				
Thermostat Installation	Thermostat is not installed							X			
Thermostat Installation	Thermostat is installed								X		
default setting		X	X	X	X	X	O	X	X		

OUTDOOR UNIT MAIN PCB

SW1



		DIP SW1			X: OFF / O: ON	
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X				
Low Noise Mode	Partial mode: Escape low noise mode for target temperature	O				
Peak Control	Max mode		X			
Peak Control	Peak control: To limit maximum current (Power saving)		O			
default setting		X	X			

NOTE

- The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
- Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating and DHW with 3rd Party Controller (MODBUS)
Product	New R32 Split IWT (Integrated Water Tank, HN0913T NK0)
Terminal Device	UFH(H)
Main Controller	LG RS3 Controller & 3rd Party Controller
Control Setting of LG RS3 Controller	Based on Water Temp. or Air Temp.
External Pump	No Installed

SYMBOL & LEGENDS

ACCESSORIES LG

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWR1)

Extension Wire for RS3 Controller (PZCWR1)

Cable length 10m

Cover Plate (PDC-HK10)

A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors.

Thermostatic Mixing Valve (OSHA-MV, OSHA-MV1)

A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding.

3RD PARTY ACCESSORIES

Buffer Tank (Option)

The water tank containing certain amount of water that secures the required minimum water volume for the system or stores heat energy which is needed for defrosting and reducing start up load. Also it can prevent frequent On/Off operation of heat pump, especially when multi-zone control is used and all valves for each zone are closed.

Expansion Tank for DHW

The insertable water tank to absorb the volume changes by temperature of water for DHW circuit.

Recirculation Pump

An water pump that re-circulates the water inside DHW supply piping to ensure that hot water is always available as close to the consumption point as possible, in order to reduce water waste and to increase comfort. It's strongly recommended to use the available schedule timer for re-circulation.

Magnetic Filter (Recommended)

A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system. In particular, in the case of a replacement, it is mandatory to install.

DDC (Direct Digital Controller)

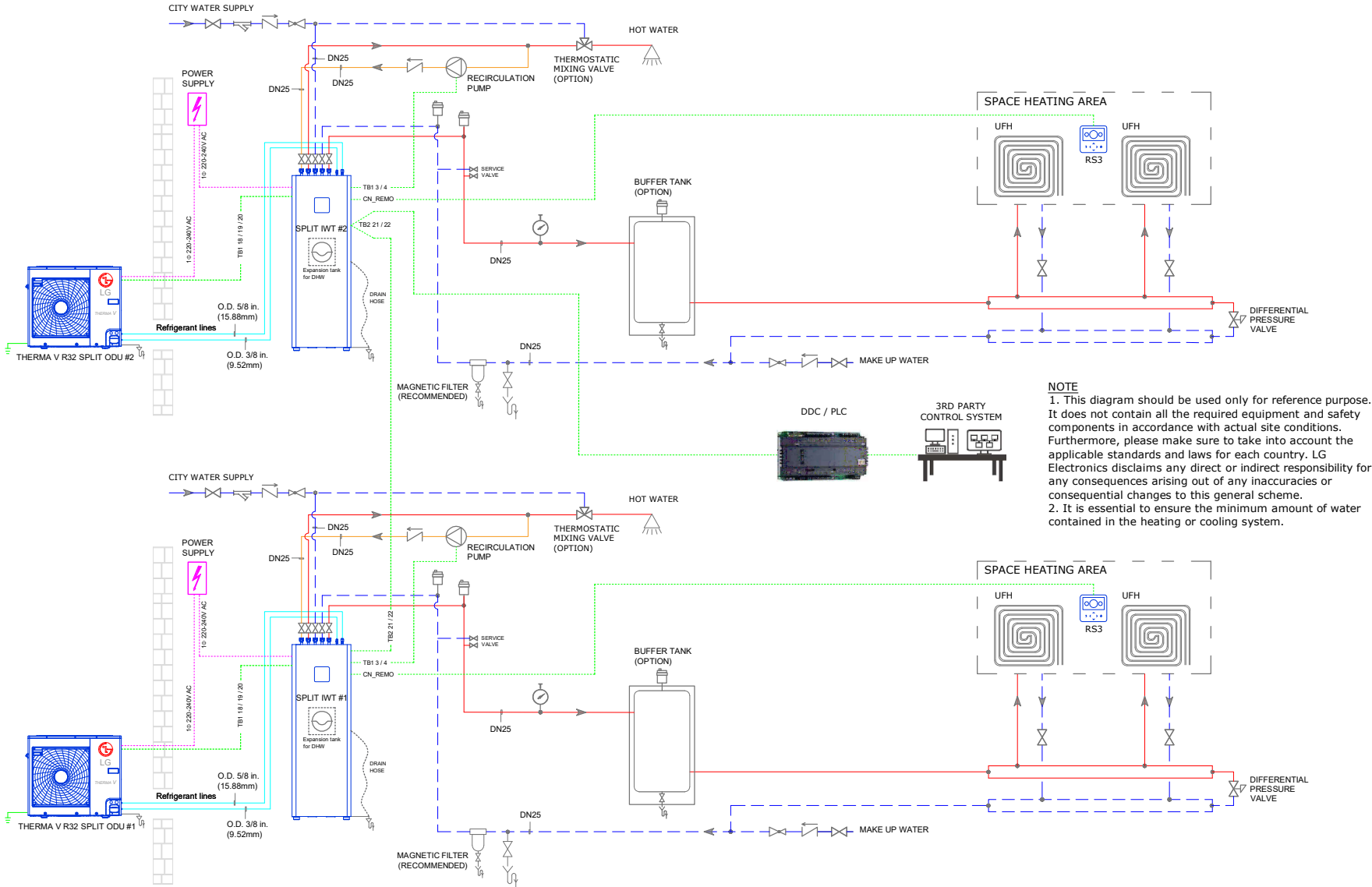
A control device that uses the analogue or digital signals from various devices and then process and control the system based on the program written inside the controllers and has the capability to send the information to another controller.

Differential Pressure Valve

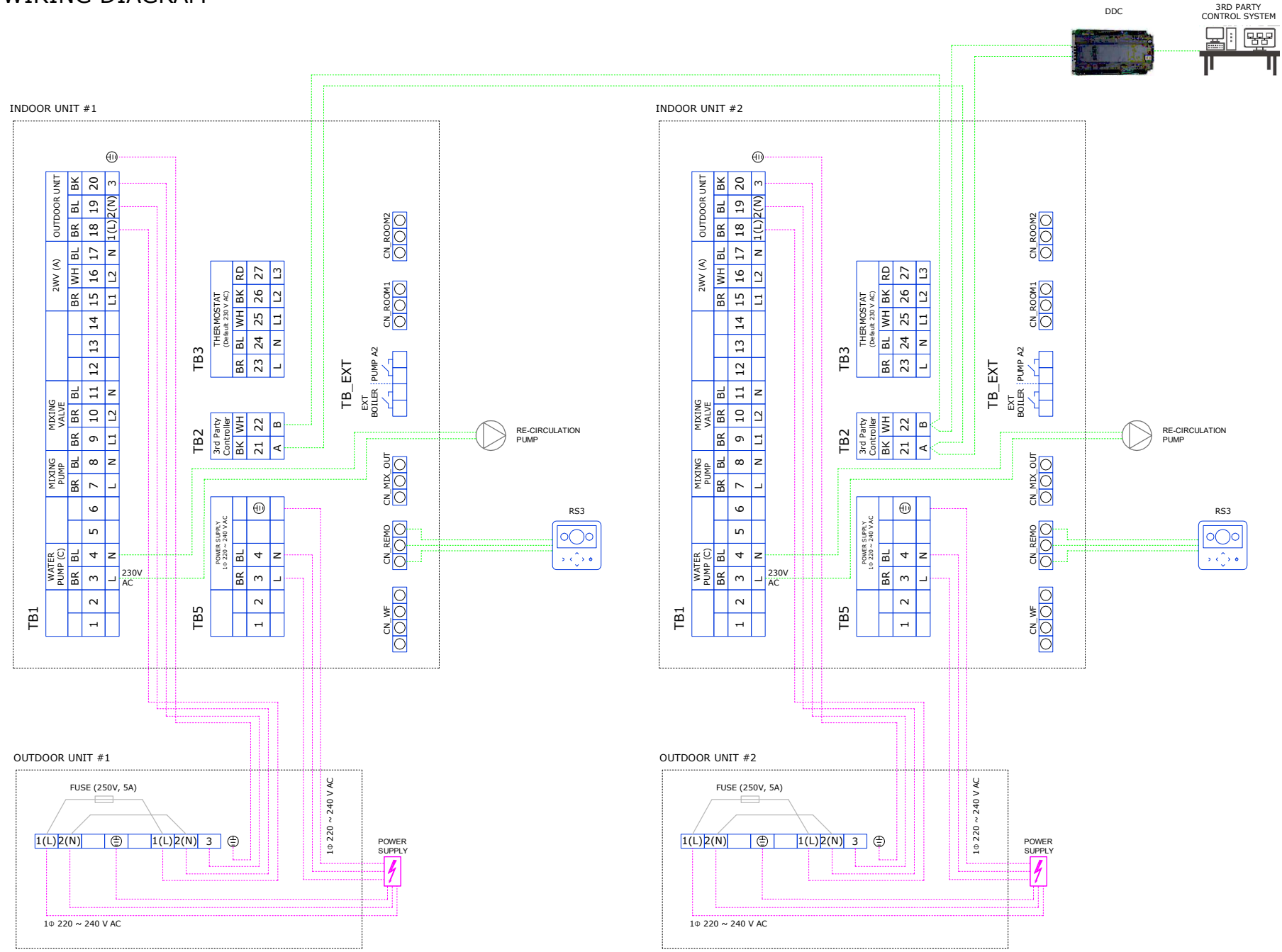
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

NOTE (CONTINUED)

3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. There is the case where the internal water pump in the unit operates while all zone valves are closed, so one of the hydronic separator, buffer tank, bypass valve, and towel radiator must be installed.
6. If hydronic separator or 4 ports buffer tank is installed, external water pump in the secondary circuit must be installed. In this case, self-controlled water pump must be used to prevent operation when all zone valves are closed.



WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		X: OFF / O: ON							
		DIP SW1	1	2	3	4	5	6	7
MODBUS Communication Type	Master (Link to LC controller)	X							
MODBUS Function	Slave (Link to 3rd party controller)		X						
Antifreeze Mode	RESIN		O						
Antifreeze is applied (Adjustable anti-freeze temp.)	Unified Open Protocol			O					
		default setting							
			X	X	X	X	X	X	X
		DIP SW2	1	2	3	4	5	6	7
Indoor Unit Type Setting for Group Control	As Master	X							
	As Slave		O						
Accessory Installation Information	Unit + Outdoor Unit + DHW Tank is installed			X	X				
	Unused			O	X				
Heat Pump Cycle	Heating only			O	X				
	Heating and cooling				O				
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed					X			
	Remote room air sensor is installed						O		
Selecting Backup Heater Capacity	Full capacity is used						X	X	
	Electric heater is not used						O	X	
	Electric heater is not used							O	O
Thermostat Installation	Thermostat is not installed								X
	Thermostat is installed								
		default setting							
			X	X	X	X	X	X	X

OUTDOOR UNIT MAIN PCB

SW1



		X: OFF / O: ON		
		DIP SW1	1	2
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X		
	Partial mode: Escape low noise mode for target temperature		O	
Peak Control	Max mode		X	
	Peak control: To limit maximum current (Power saving)		O	
		default setting		
			X	X

NOTE

1. The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
2. Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.