

























GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------|--|------------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Wi-Fi Modem | A control device that enables wireless communication with internet router. Including USB cable 0.6m and extension cable 0.5m | PWFMDD200 |
| Dry Contact | A control switch that enables turning THERMA V On/Off after receiving the signal from external control system. | PDRYCB000 PDRYCB320 |
| Drain Pan | A device to collect condensation during cooling operation. Including several insulators. | PHDPC |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. Controlled by THERMA V with 230V power. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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. |
| 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 sends the information to another controller. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |
| 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 Therma V, Valve, Pump, and FCU where applicable. |
| 2 Way Valve for Thermostat | A isolation valve paired with thermostat to allow whether water flows into the water circuit. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMDD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

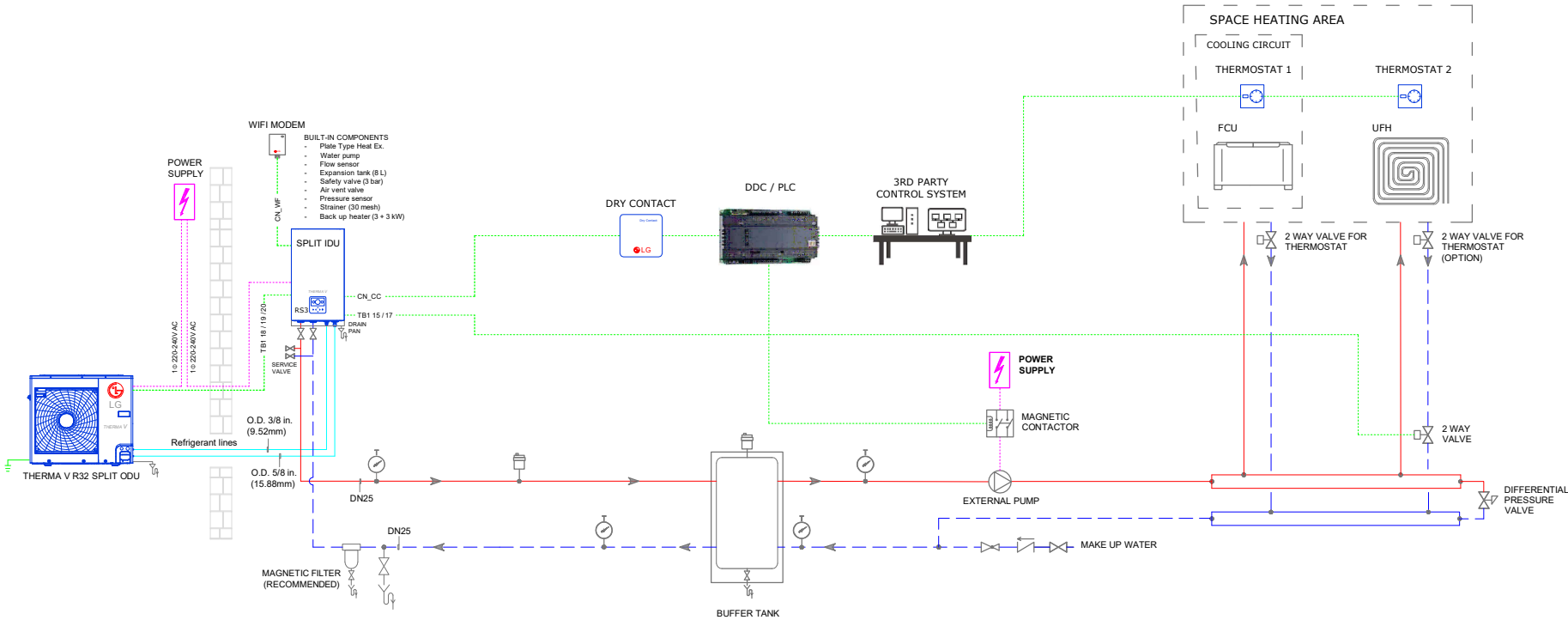
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating & Cooling with Dry Contact |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH(H) + FCU(H&C) |
| 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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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.

LG ACCESSORIES

RS3 Controller (Default)

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

Wi-Fi Modem (PWFMD200)

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

Dry Contact (PDRYCB000, PDRYCB320)

A control switch that enables turning THERMA V On/Off after receiving the signal from external control system.

Drain Pan (PHDPC)

A device to collect condensation during cooling operation. Including several insulators.

3RD PARTY ACCESSORIES

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.

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.

Buffer Tank

A 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.

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.

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 sends 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.

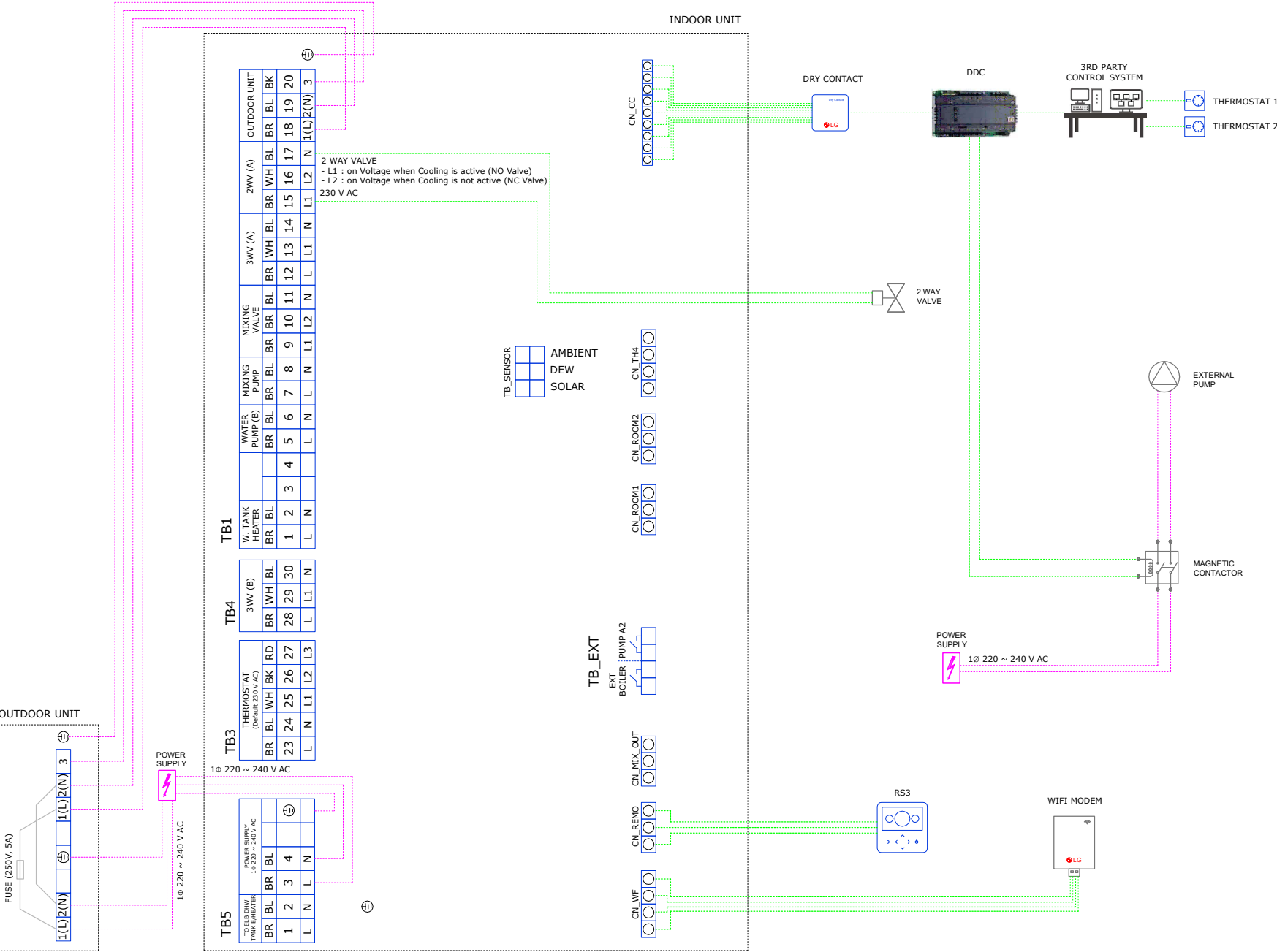
2 Way Valve for Thermostat

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

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



| | | X : OFF / O : ON | | | | | | | |
|------------------------------------|---|------------------|---|---|---|---|---|---|---|
| MODBUS | | DIP SW 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Communication Type | Master (Link to LC controller) | X | | | | | | | |
| | Slave (Link to 3rd party controller) | O | | | | | | | |
| MODBUS Function | | | | | | | | | |
| | REGINE | X | | | | | | | |
| | Unified Open Protocol | O | | | | | | | |
| Antifreeze Mode | | | | | | | | | |
| | Antifreeze is not applied | | | | | | | | X |
| | Antifreeze is applied (Adjustable anti-freeze temp.) | | | | | | | | O |
| default setting | | X | X | X | X | X | X | X | X |
| | | X : OFF / O : ON | | | | | | | |
| Indoor Unit Type | | DIP SW 2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Setting for Group Control | As Master | X | | | | | | | |
| | As Slave | O | | | | | | | |
| Accessory Installation Information | | | | | | | | | |
| | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | |
| | Heat pump + DHW tank are installed | | X | O | | | | | |
| | Heat pump + DHW tank + Solar thermal system are installed | | 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 is installed | | | | O | | | | |
| Selecting Backup Heater Capacity | | | | | | | | | |
| | Backup heater is not used | | | | X | X | | | |
| | Half capacity is used | | | | O | X | | | |
| | Full capacity is used | | | | O | O | | | |
| Thermostat Installation | | | | | | | | | |
| | Thermostat is not installed | | | | | | | X | |
| | Thermostat is installed | | | | | | | O | |
| default setting | | X | X | X | X | X | X | O | X |

OUTDOOR UNIT MAIN PCB

SW1



























| | | X : OFF / O : ON | | |
|-----------------|--|------------------|---|---|
| Low Noise Mode | | DIP SW 1 | 1 | 2 |
| | 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 | 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.

GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------|--|-----------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Drain Pan | A device to collect condensation during cooling operation. Including several insulators. | PHDPC |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |
| 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 Therma V, Valve, Pump, and FCU where applicable. |
| 2 Way Valve for Thermostat | A isolation valve paired with thermostat to allow whether water flows into the water circuit. |

























ACCESSORY LIST

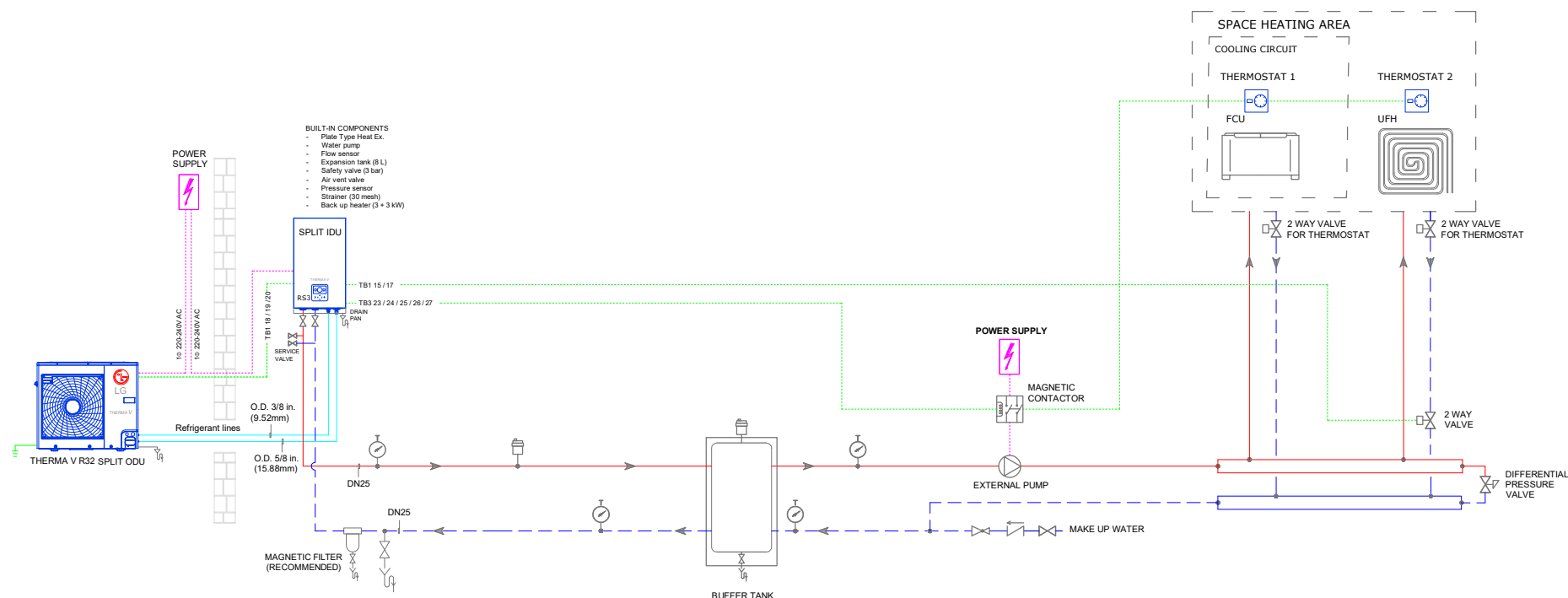
| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating & Cooling with Thermostat |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH(H) + FCU(H&C) |
| Main Controller | Thermostat |
| Control Setting of LG RS3 Controller | Based on Water Temp. |
| External Pump | Controlled by Thermostat |

SYMBOL & LEGENDS

| | | | | | | | |
|---|---------------------|---|-----------------------------|---|--------------------------------|---|------------------------|
|  | Circular 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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Module |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |



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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.

LG ACCESSORIES

RS3 Controller (Default)

Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWRC1)

Drain Pan (PHDPC)

Drain Pan (PDDPC)
A device to collect condensation during cooling operation. Including several insulators.

3RD PARTY ACCESSORIES

External Pump

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.

Magnetic Filter (Recommended)

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.

Buffer Tank

Buffer Tank
A 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.

2 Way Valve

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

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 each 2 Way Valve and FCU where applicable.

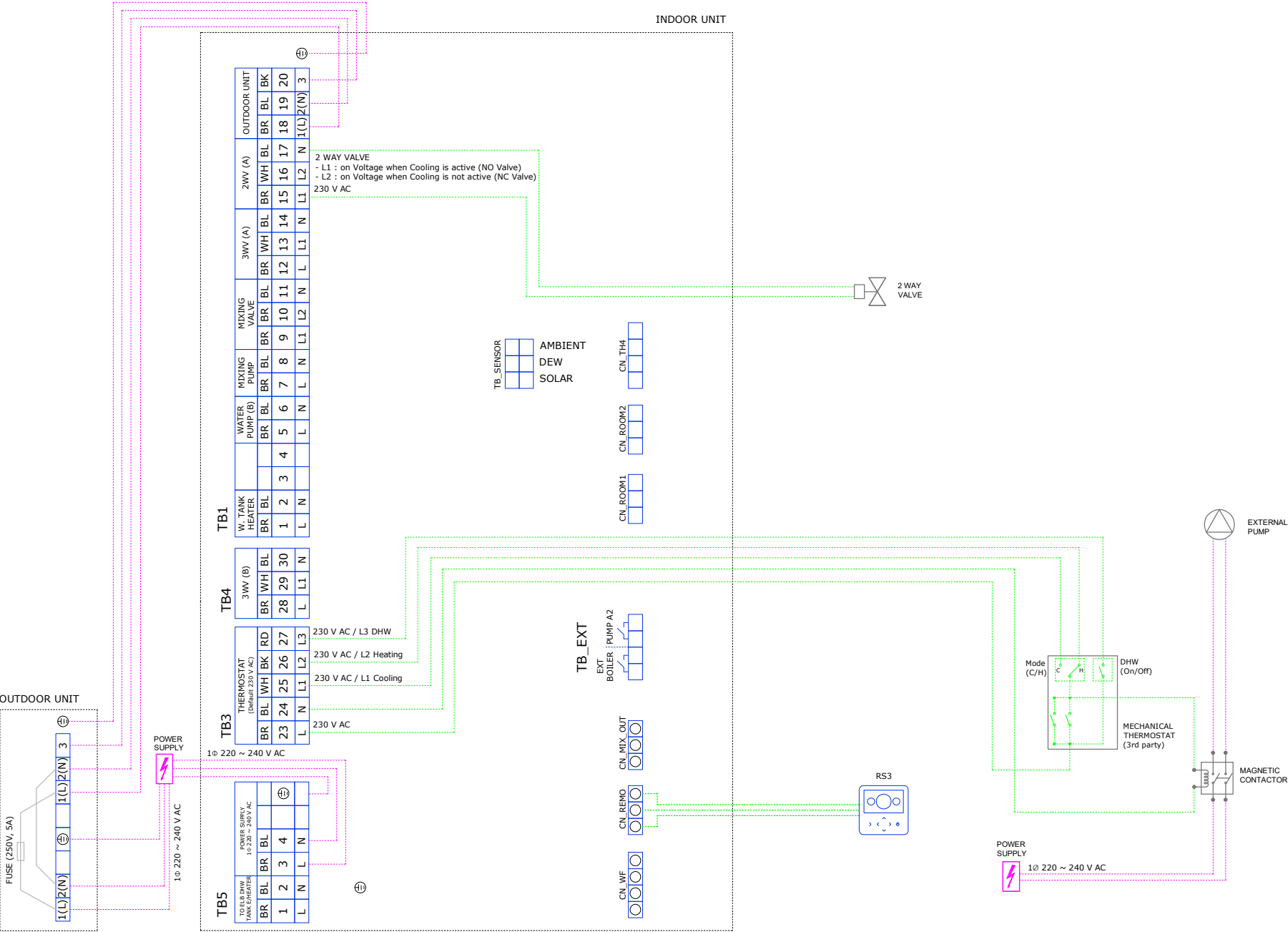
2 Way Valve for Thermostat

2 Way Valve for Thermostat
A isolation valve paired with thermostat to allow whether water flows into the water circuit.

Differential Pressure Valve

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 SW 1 | | | | | | | | X: OFF / O: ON | |
|--|---|----------|---|---|---|---|---|---|---|----------------|--|
| MODEBUS Communication Type | Master (Link to LC controller) | X | | | | | | | | | |
| MODEBUS Function | Slave (Link to 3rd party controller) | O | | | | | | | | | |
| MODEBUS Function | RESERVE | | 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 SW 2 | | | | | | | | 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 | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank are installed | | X | O | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank + Solar thermal system are installed | | 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 | Backup heater is not used | | | | X | X | | | | | |
| Selecting Backup Heater Capacity | Half capacity is used | | | | O | X | | | | | |
| Thermostat Installation | Full capacity is used | | | | O | O | | | | | |
| Thermostat Installation | Thermostat is not installed | | | | | | | | | X | |
| Thermostat Installation | Thermostat is installed | | | | | | | | | O | |
| default setting | | X | X | X | X | X | O | O | X | | |

OUTDOOR UNIT MAIN PCB

SW1



























| | | DIP SW 1 | | | 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

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.

GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------|--|-----------------------|
| Full Name | Description | Part No. |
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| Drain Pan | A device to collect condensation during cooling operation. Including several insulators. | PHDPC |

























| 3rd party accessories | |
|-----------------------------|---|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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 Therma V, Valve, Pump, and FCU where applicable. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

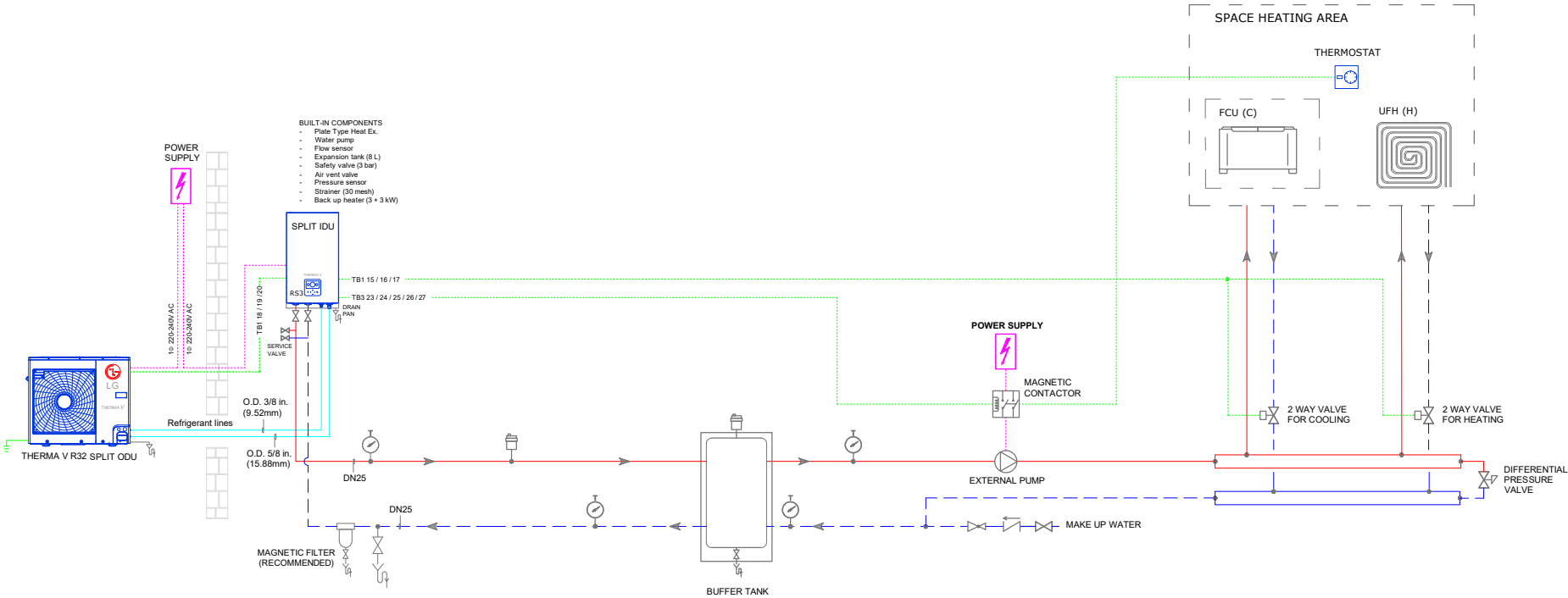
ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

HYDRONIC DIAGRAM

| | |
|--------------------------------------|--|
| Application | Space Heating & Cooling with Thermostat |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH(H) + FCU(C) |
| Main Controller | Thermostat |
| Control Setting of LG RS3 Controller | Based on Water Temp. |
| External Pump | Controlled by Thermostat |

| | | | | | | | |
|---|---------------------|---|-----------------------------|---|--------------------------------|---|------------------------|
|  | 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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |



- NOTE**
1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
 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.

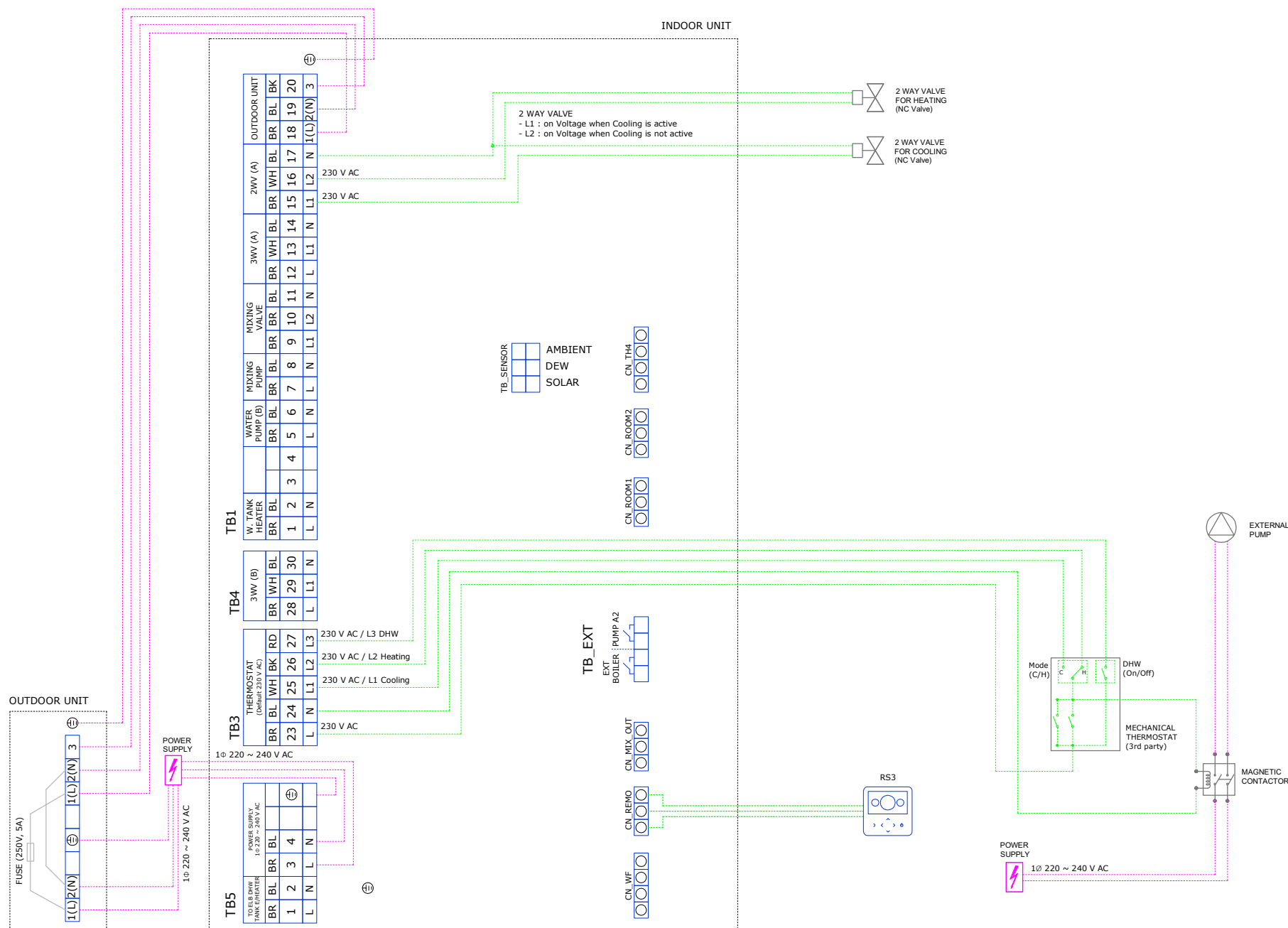
LG ACCESSORIES

- RS3 Controller (Default)**
A wired remote controller with built-in temperature sensor.
Hydro Box & IWV : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWR1)
- Drain Pan (PHDPC)**
A device to collect condensation during cooling operation. Including several insulators.

3RD PARTY ACCESSORIES

- 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.
- 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.
- Buffer Tank**
A 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.
- 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. In this application, Thermostat must be connected with Thermo V and interlocking operation with FCU is required.
- Differential Pressure Valve**
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

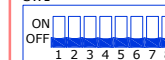
WIRING DIAGRAM



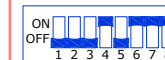
DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



| | | X: OFF / O: ON | | | | | | | | | |
|--|---|----------------|---|---|---|---|---|---|---|---|----|
| | | DIP SW 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| MODEBUS Communication Type | Master (Link to LC controller) | X | | | | | | | | | |
| | Slave (Link to 3rd party controller) | | X | | | | | | | | |
| MODEBUS Function | RS-485 | X | | | | | | | | | |
| Antifreeze Mode | Unified Open Protocol | X | | | | | | | | | |
| | Antifreeze is not applied | | X | | | | | | | | X |
| | Antifreeze is applied (Adjustable anti-freeze time) | | | X | | | | | | | X |
| default setting | | X | X | | | | | | | | X |
| DIP SW 2 | | | | | | | | | | | |
| Indoor Unit Type Setting for Group Control | As Master | X | | | | | | | | | |
| | As Slave | | X | | | | | | | | |
| Accessory Installation Information | Heat pump installation (heating or cooling circuit only) | | X | X | | | | | | | |
| | Heat pump + DHW tank are installed | X | | | | | | | | | |
| | Heat pump + DHW tank + Solar thermal system are installed | O | X | | | | | | | | |
| | Heating only | X | | | | | | | | | |
| Heat Pump Cycle | Heating and cooling | | X | | | | | | | | |
| Remote Room Air Sensor (Accessory) | Remote room air sensor is not installed | | | X | | | | | | | |
| | Remote room air sensor is installed | | | | X | | | | | | |
| Selecting Backup Heater Capacity | Electric heater is not used | O | X | | | | | | | | X |
| | Full capacity is used | O | | X | | | | | | | X |
| Thermostat Installation | Thermostat is not installed | | | X | | | | | | | |
| | Thermostat is installed | | | | X | | | | | | |
| default setting | | X | X | X | X | X | X | O | O | | |

OUTDOOR UNIT MAIN PCB

SW1



























| | | X : OFF / O : ON | | |
|----------------|--|------------------|---|---|
| | | DIP SW 1 | 2 | 3 |
| 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 | | |
| | | | Y | Y |

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.

GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------|---|-----------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Drain Pan | A device to collect condensation during cooling operation. Including several insulators. | PHDPC |

| 3rd party accessories | |
|-----------------------------|---|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 3 Way Valve | A motorized 3-way diverting valve determining flow direction to underfloor coil or FCU. Controlled by THERMA V with 230V power. Operating time 3s. |
| 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 Therma V, Valve, Pump, and FCU where applicable. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

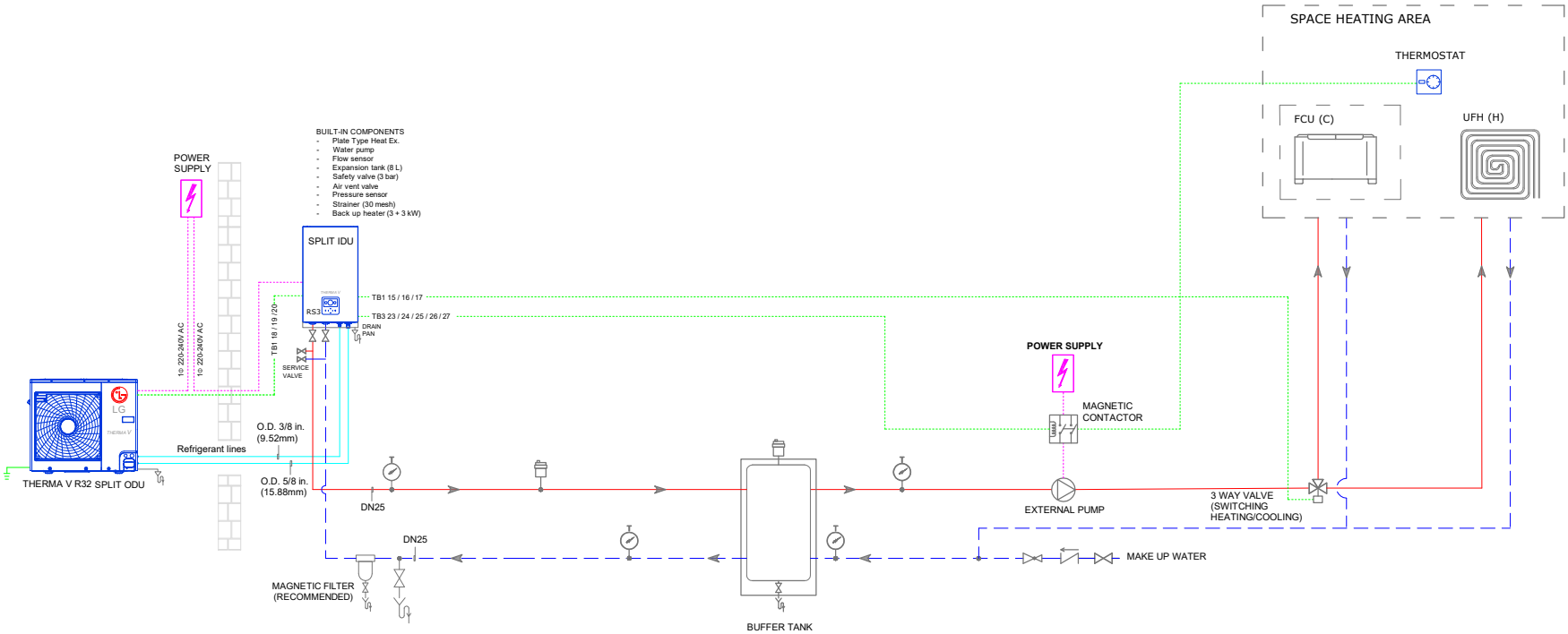
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating & Cooling with Thermostat |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH(H) + FCU(C) |
| Main Controller | Thermostat |
| Control Setting of LG RS3 Controller | Based on Water Temp. |
| External Pump | Controlled by Thermostat |

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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.

LG ACCESSORIES

RS3 Controller (Default)

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

Drain Pan (PHDPC)

A device to collect condensation during cooling operation. Including several insulators.

3RD PARTY ACCESSORIES

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.

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.

Buffer Tank

A 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.

3 Way Valve

A motorized 3-way diverting valve determining flow direction to underfloor coil or FCU. Controlled by THERMA V with 230V power. Operating time 3s.

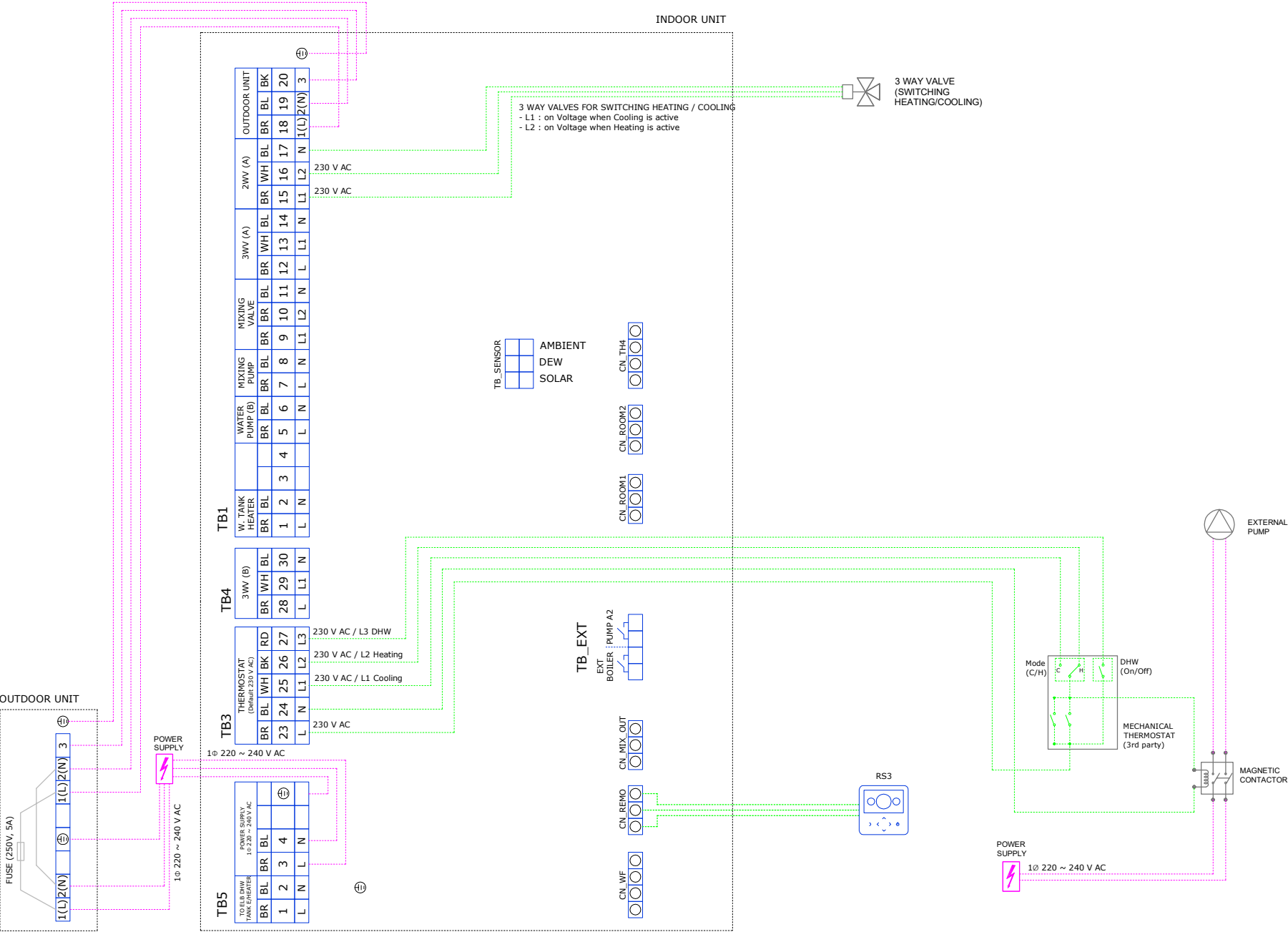
Thermostat

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. In this application, Thermostat must be connected with Thermo V and interlocking operation with FCU is required.

Differential Pressure Valve

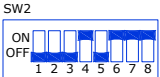
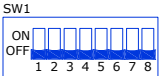
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB



| | | DIP SW1 | | | | | | | | X: OFF / O: ON |
|---------------------------|--|-----------------|---|--|--|--|--|--|--|----------------|
| MODBUS Communication Type | Master (Link to LC controller) | X | | | | | | | | |
| MODBUS Function | Slave (Link to 3rd party controller) | O | | | | | | | | |
| Antifreeze Mode | RESINE | | 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 |

| | | 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 | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank are installed | | X | O | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank + Solar thermal system are installed | | 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 | Backup heater is not used | | | | | | X | X | | |
| Selecting Backup Heater Capacity | Half capacity is used | | | | | | O | X | | |
| Thermostat Installation | Full capacity is used | | | | | | | O | O | |
| Thermostat Installation | Thermostat is not installed | | | | | | | | | X |
| Thermostat Installation | Thermostat is installed | | | | | | | | | O |
| | | default setting | | | | | | | | 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 |

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.



Life's Good

REFERENCED APPLICATION #3 SPACE HEATING WITH 2ND CIRCUIT

DWG NO. :

REV. 00

13/08/2021

GENERAL

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|------------------------------------|--|-----------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Extension Wire for RS3 Controller | Cable length 10m | PZCWRC1 |
| Cover Plate | A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors. | PDC-HK10 |
| Wi-Fi Modem | A control device that enables wireless communication with internet router. Including USB cable 0.6m and extension cable 0.5m | PWFMD200 |
| Remote Room Air Temperature Sensor | Temperature sensor for the room. Cable length 15m. | PQRSTA0 |
| Mixing Zone Temperature Sensor | A temperature sensor for the mixed circuit. Cable length 10m. | PRSTAT5K10 |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

























| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

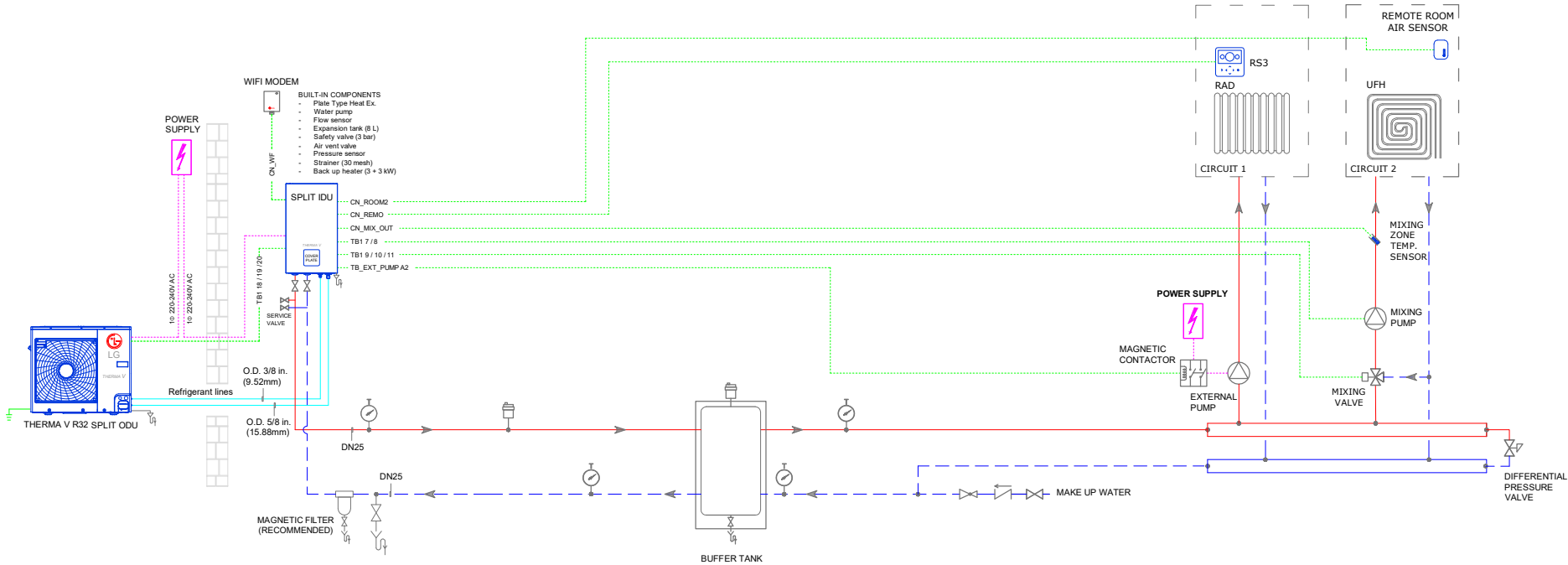
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating with 2nd Circuit |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH + RAD |
| Main Controller | LG RS3 Controller |
| Control Setting of LG RS3 Controller | Based on Air Temp. or 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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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.

LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWV : 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.

Mixing Zone Temperature Sensor (PRSTAT5K10)

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

3RD PARTY ACCESSORIES

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.

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.

Buffer Tank

A 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.

Mixing Pump

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

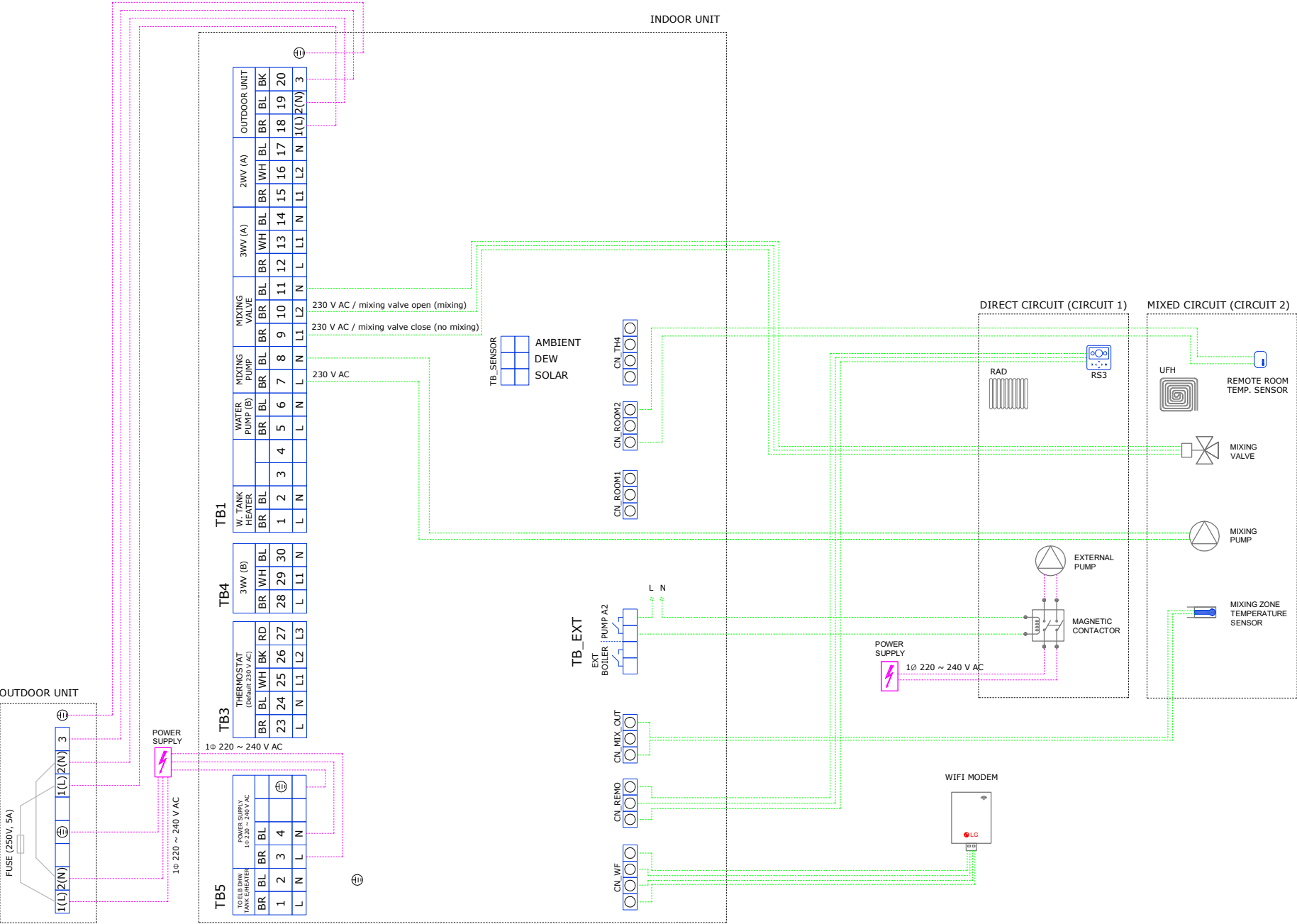
Mixing Valve

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.

Differential Pressure Valve

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

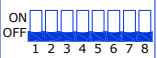
WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



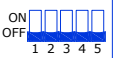
SW2



| | | DIP SW1 | | | | | | | | X: OFF / O: ON | |
|--|--|---------|---|---|---|---|---|---|---|----------------|--|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| MODEBUS Communication Type | Master (Link to LC controller) | X | | | | | | | | | |
| | Slave (Link to 3rd party controller) | | O | | | | | | | | |
| MODEBUS Function | REGINE | | X | | | | | | | | |
| | Unified Open Protocol | | O | | | | | | | | |
| Antifreeze Mode | Antifreeze is not applied | | | | | | | | X | | |
| | Antifreeze is applied (Adjustable anti-freeze temp.) | | | | | | | | O | | |
| default setting | | X | X | | | | | | X | | |
| | | DIP SW2 | | | | | | | | X: OFF / O: ON | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| Indoor Unit Type Setting for Group Control | As Master | X | | | | | | | | | |
| | As Slave | | O | | | | | | | | |
| Accessory Installation Information | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | | | |
| | Heat pump + DHW tank are installed | X | O | | | | | | | | |
| 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 is installed | | | O | | | | | | | |
| Selecting Backup Heater Capacity | Backup heater is not used | | | | | | X | X | | | |
| | Half capacity is used | | | | | | O | X | | | |
| Thermostat Installation | Full capacity is used | | | | | | | | O | | |
| | Thermostat is not installed | | | | | | | | X | | |
| default setting | | X | X | X | X | X | O | O | X | | |

OUTDOOR UNIT MAIN PCB

SW1



| | | DIP SW1 | | | X: OFF / O: ON | |
|-----------------|---|---------|---|---|----------------|--|
| | | 1 | 2 | 3 | | |
| 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.



Life's Good

REFERENCED APPLICATION #4 SPACE HEATING AND COOLING WITH 2 REMOTE CONTROLLERS

DWG NO. :

REV. 00

13/08/2021

GENERAL

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|--------------------------------------|--|---------------------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller (MASTER) | 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) | Supplied as a default |
| Wi-Fi Modem | A control device that enables wireless communication with internet router. Including USB cable 0.6m and extension cable 0.5m | PWFMDD200 |
| RS3 wired remote controller (SLAVE) | An additional wired remote controller with built-in temperature sensor that enables controlling THERMA V using two remote controller. Including extension wire(PZCWRC1) and 2 remo cable(PZCWRC2) | PREMTW101 |
| Extension Wire for RS3 Controller | Cable length 10m | PZCWRC1, Included in PREMTW101. |
| 2 Remo Cable | A cable that enables connecting two remote controller on the one indoor unit. | PZCWRC2, Included in PREMTW101. |
| Drain Pan | A device to collect condensation during cooling operation. Including several insulators. | PHDPC |

| 3rd party accessories | |
|-----------------------------|---|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMDD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

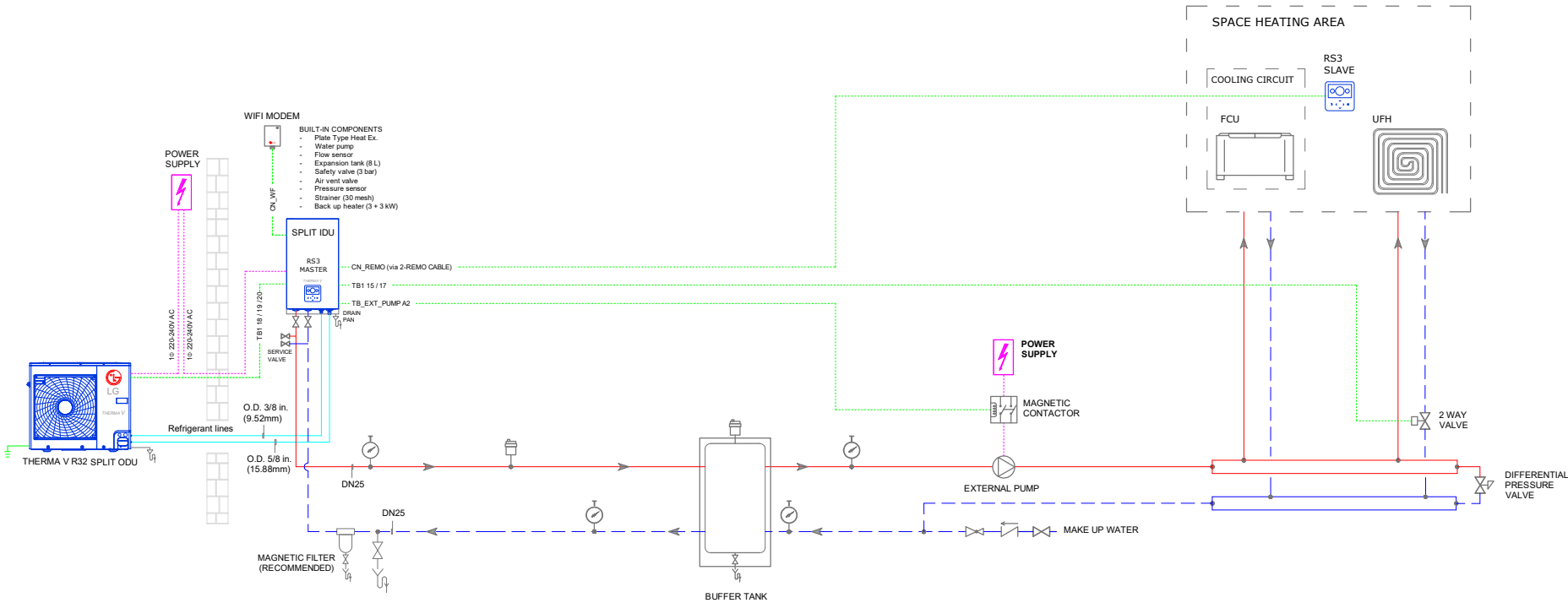
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|---|
| Application | Space Heating & Cooling with 2 Remote Controllers |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH(H) + FCU(H&C) |
| Main Controller | LG RS3 Controllers |
| Control Setting of LG RS3 Controller | Based on Air Temp. or Water Temp. |
| External Pump | Controlled by THERMA V |
| 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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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.

LG ACCESSORIES

RS3 MASTER Controller (Default)

A wired remote controller with built-in temperature sensor.
Hydro Box & IWV : 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 2remo 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.

Drain Pan (PHDPC)

A device to collect condensation during cooling operation. Including several insulators.

3RD PARTY ACCESSORIES

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.

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.

Buffer Tank

A 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.

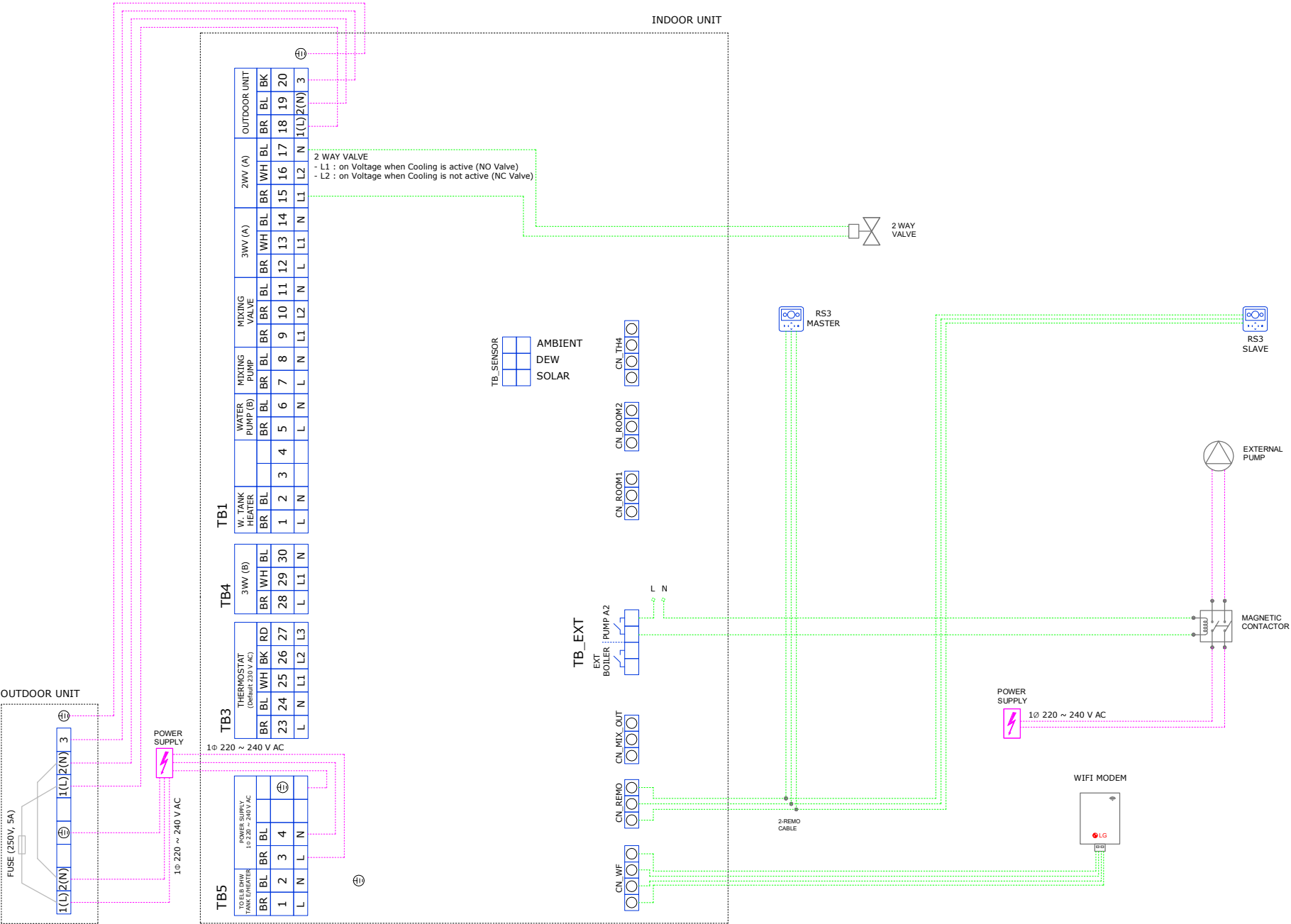
2 Way Valve

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.

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



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

OUTDOOR UNIT MAIN PCB

SW1



























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

GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------------|--|-----------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Extension Wire for RS3 Controller | Cable length 10m | PZCWRC1 |
| Cover Plate | A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors. | PDC-HK10 |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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 sends the information to another controller. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

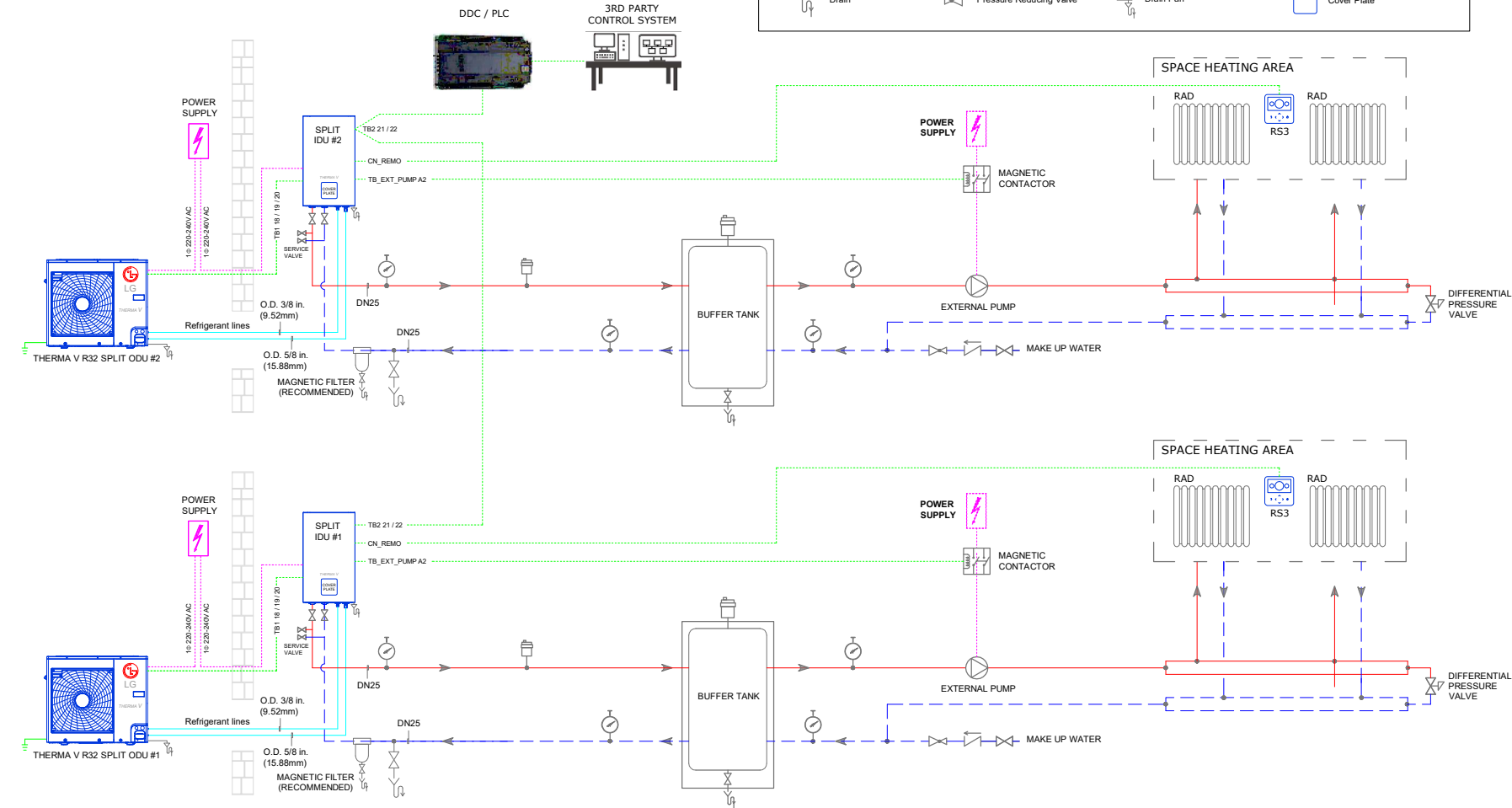
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating with 3rd Party Controller (MODBUS) |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | RAD |
| Main Controller | LG RS3 Controller & 3rd Party Controller |
| Control Setting of LG RS3 Controller | Based on Air Temp. or Water Temp. |
| External Pump | Controlled by Therna V |

SYMBOL & LEGENDS

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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.

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.

3RD PARTY ACCESSORIES

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.

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.

Buffer Tank

A 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.

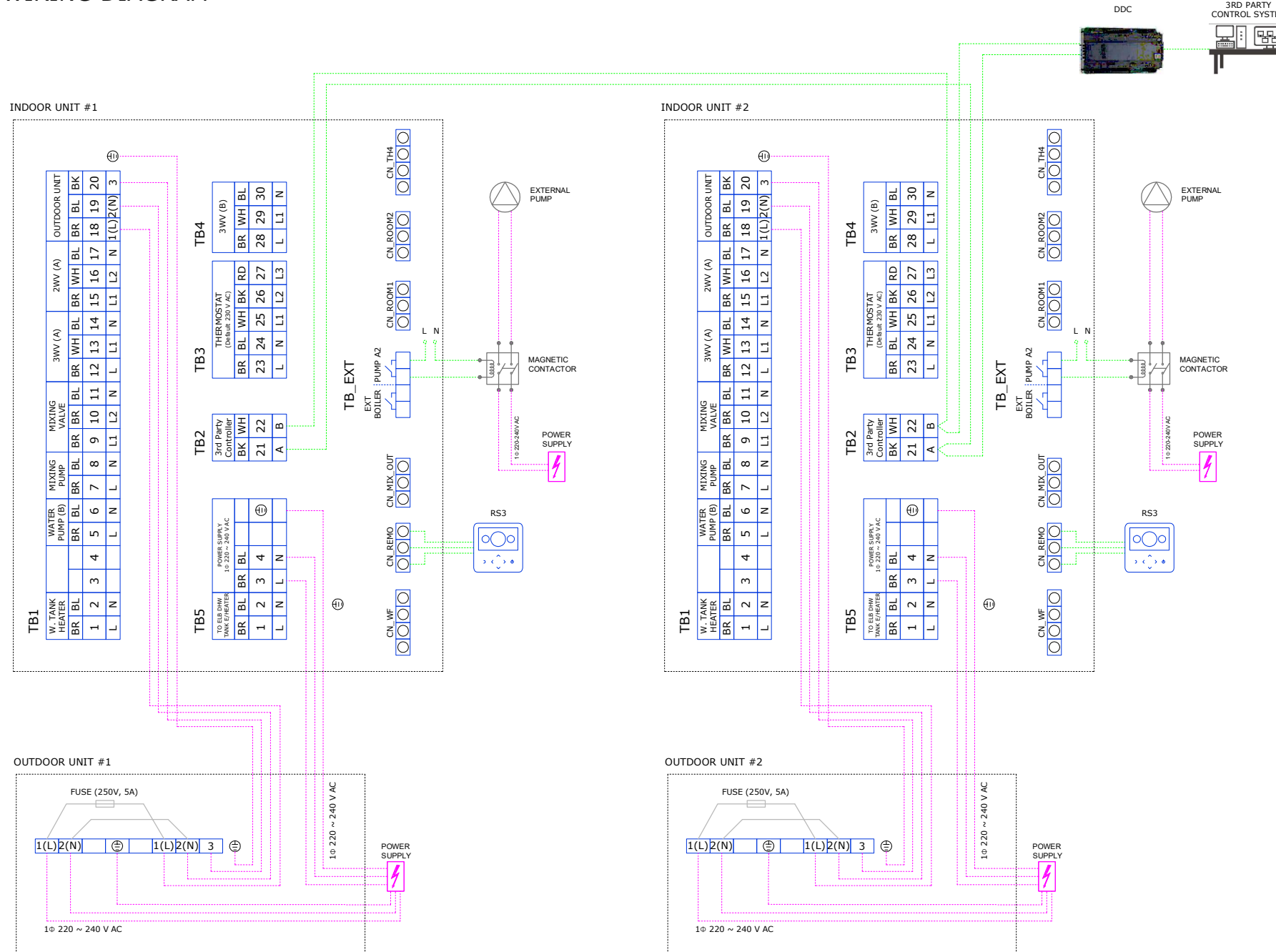
DDC (Direct Digital Controller)

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 sends the information to another controller.

Differential Pressure Valve

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

WIRING DIAGRAM



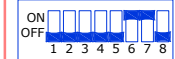
DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



| | | DIP SW1 | | | | | | | | X: OFF / O: ON | | | | | | | |
|--|--|-----------------|---|---|---|---|---|---|---|----------------|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | |
| MODBUS Communication Type | Master (Link to LC controller) | X | | | | | | | | | | | | | | | |
| | Slave (Link to 3rd party controller) | | | | | | | | | | | | | | | | |
| MODBUS Function | REGINE | | X | | | | | | | | | | | | | | |
| | Unified Open Protocol | | | | | | | | | | | | | | | | |
| Antifreeze Mode | Antifreeze is not applied | | | | | | | | | | | | | | | | |
| | Antifreeze is applied (Adjustable anti-freeze temp.) | | | | | | | | | | | | | | | | |
| | | default setting | | | | | | | | X | X | X | X | X | X | X | X |
| | | DIP SW2 | | | | | | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | |
| Indoor Unit Type Setting for Group Control | As Master | X | | | | | | | | | | | | | | | |
| | As Slave | | | | | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | | | | | | | | | |
| | Heat pump + DHW tank are installed | | X | O | | | | | | | | | | | | | |
| 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 is installed | | | | O | | | | | | | | | | | | |
| Selecting Backup Heater Capacity | Full capacity is used | | | | | | | X | X | | | | | | | | |
| | Half capacity is used | | | | | | | O | X | | | | | | | | |
| Thermostat Installation | Thermostat is not installed | | | | | | | | | | | | | | | | |
| | Thermostat is installed | | | | | | | | | | | | | | | | |
| | | default setting | | | | | | | | X | X | X | X | X | O | X | X |

OUTDOOR UNIT MAIN PCB

SW1



























| | | DIP SW1 | | | X: OFF / O: ON | | |
|----------------|---|-----------------|---|---|----------------|---|---|
| | | 1 | 2 | 3 | | | |
| 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 | 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.

GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------|--|-----------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| AC EZ TOUCH | A central controller that controls THERMA V using LG AP protocol. Max 64 units, PC access supported | PACEZA000 |
| PI485 Gateway | A gateway device that communicates and controls through the central controller. (converting LG protocol to RS485 protocol) It should be installed onto the outdoor unit. | PMNFP14A1 |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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 Therma V, Valve, Pump, and FCU where applicable. |
| 2 Way Valve for Thermostat | A isolation valve paired with thermostat to allow whether water flows into the water circuit. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

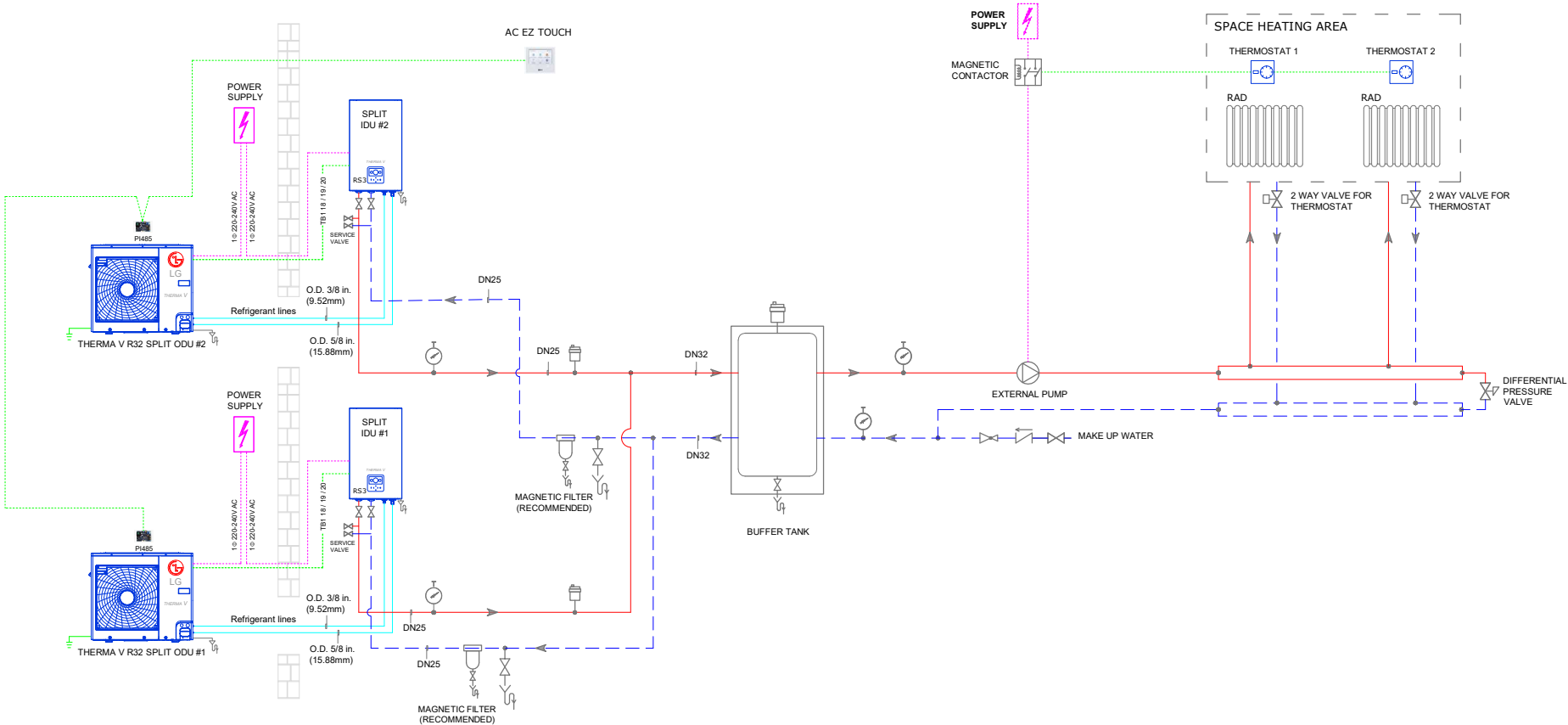
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|---|
| Application | Space Heating with Parallel Installation (LG BECON) |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | RAD |
| Main Controller | LG Central Controller & Thermostat |
| Control Setting of LG RS3 Controller | Based on Water Temp. |
| External Pump | Controlled by Thermostat |

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | 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.

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)

AC Ez Touch (PACEZA000)
A central controller that controls THERMA V using LG AP protocol.
Max 64 units, PC access supported

PI485 Gateway (PMNFP14A1)
A gateway device that communicates and controls through the central controller. (converting LG protocol to RS485 protocol)
It should be installed onto the outdoor unit.

3RD PARTY ACCESSORIES

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.

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.

Buffer Tank
A 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.

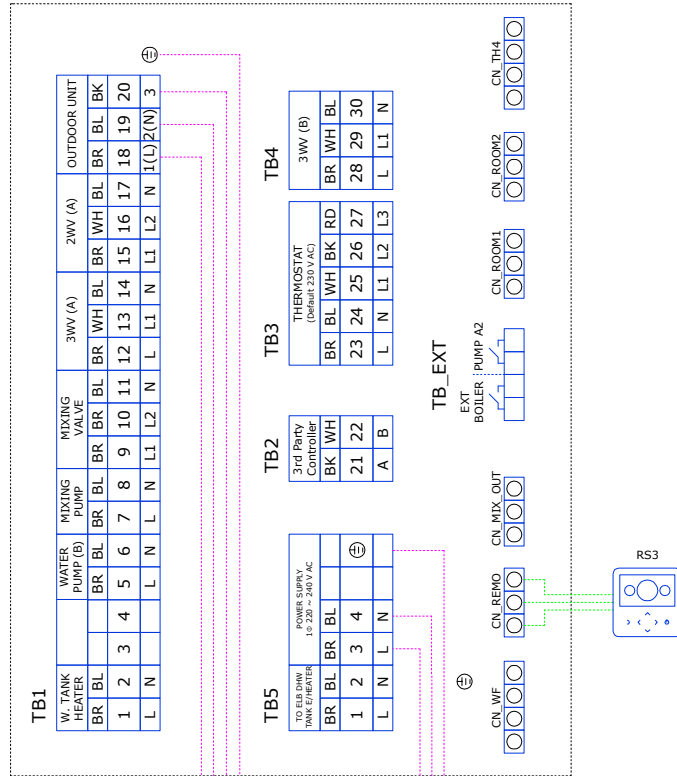
Thermostat
A control device that senses the temperature of a room and performs actions so that the room's temperature is maintained near a desired setpoint. Thermostat must be connected with Therma V, Valve, Pump, and FCU where applicable.

2 Way Valve for Thermostat
An isolation valve paired with thermostat to allow whether water flows into the water circuit.

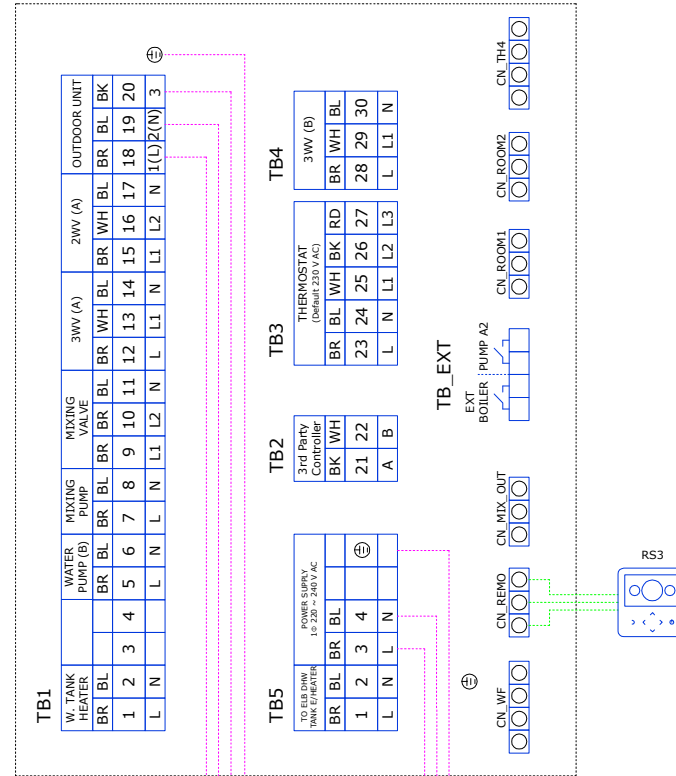
Differential Pressure Valve
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM

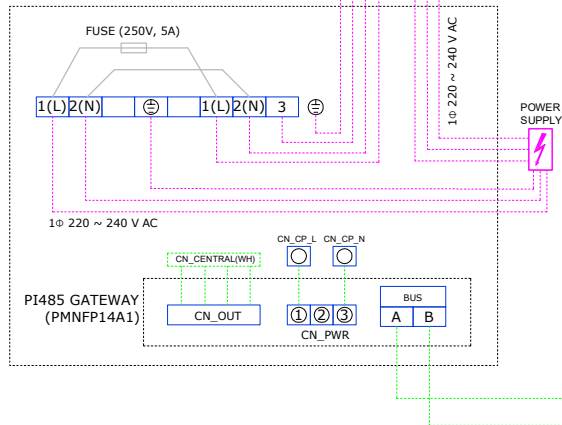
INDOOR UNIT #1



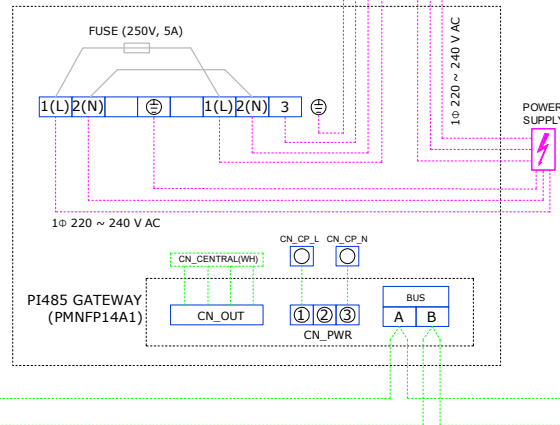
INDOOR UNIT #2



OUTDOOR UNIT #1



OUTDOOR UNIT #2



AC EZ TOUCH
(PACEZA000)

DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



| | | DIP SW1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | X: OFF / O: ON |
|--|--|---------|---|---|---|---|---|---|---|---|----------------|
| MODBUS Communication Type | Master (Link to LC controller) | | X | | | | | | | | |
| | Slave (Link to 3rd party controller) | | | X | | | | | | | |
| MODBUS Function | REGINE | | | X | | | | | | | |
| | Unified Open Protocol | | | | X | | | | | | |
| Antifreeze Mode | Antifreeze is not applied | | | | | | | | | X | |
| | Antifreeze is applied (Adjustable anti-freeze temp.) | | | | | | | | | | X |
| | default setting | | X | X | | | | | | | |
| Indoor Unit Type Setting for Group Control | As Master | | X | | | | | | | | |
| | As Slave | | | X | | | | | | | |
| Accessory Installation Information | Heat pump installation (Heating or cooling circuit only) | | | X | X | | | | | | |
| | Heat pump + DHW tank are installed | | | X | O | | | | | | |
| 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 is installed | | | | | O | | | | | |
| Selecting Backup Heater Capacity | Full capacity is used | | | | | | X | X | | | |
| | Half capacity is used | | | | | | O | X | | | |
| Thermostat Installation | Thermostat is not installed | | | | | | | | | X | |
| | Thermostat is installed | | | | | | | | | | X |
| | default setting | | X | X | X | X | X | X | O | X | |

OUTDOOR UNIT MAIN PCB

SW1



| | | DIP SW1 | 1 | 2 | 3 | X: OFF / O: ON |
|----------------|---|---------|---|---|---|----------------|
| 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

- 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.



LG
Life's Good

REFERENCED APPLICATION #7 SPACE HEATING AND DHW

DWG NO. :

REV. 00

13/08/2021

GENERAL

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------------|--|--------------------------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Extension Wire for RS3 Controller | Cable length 10m | PZCWRC1 |
| Cover Plate | A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors. | PDC-HK10 |
| Wi-Fi Modem | A control device that enables wireless communication with internet router. Including USB cable 0.6m and extension cable 0.5m | PWFMD200 |
| 3 Way Valve (A) | A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s. | OSHA-3V |
| Domestic Hot Water Tank | A insulated stainless steel hot water tank with 2.4kW electric heating (230V). Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L) Double coil : OSHW-300FD(300L) | Single coil : OSHW-200F/300F/500F |
| DHW Tank Sensor | A temperature sensor for DHW tank. Cable length 12m. | PHRSTA0 |
| Thermostatic Mixing Valve | A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding. | OSHA-MV (3/4") OSHA-MV1 (1") |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

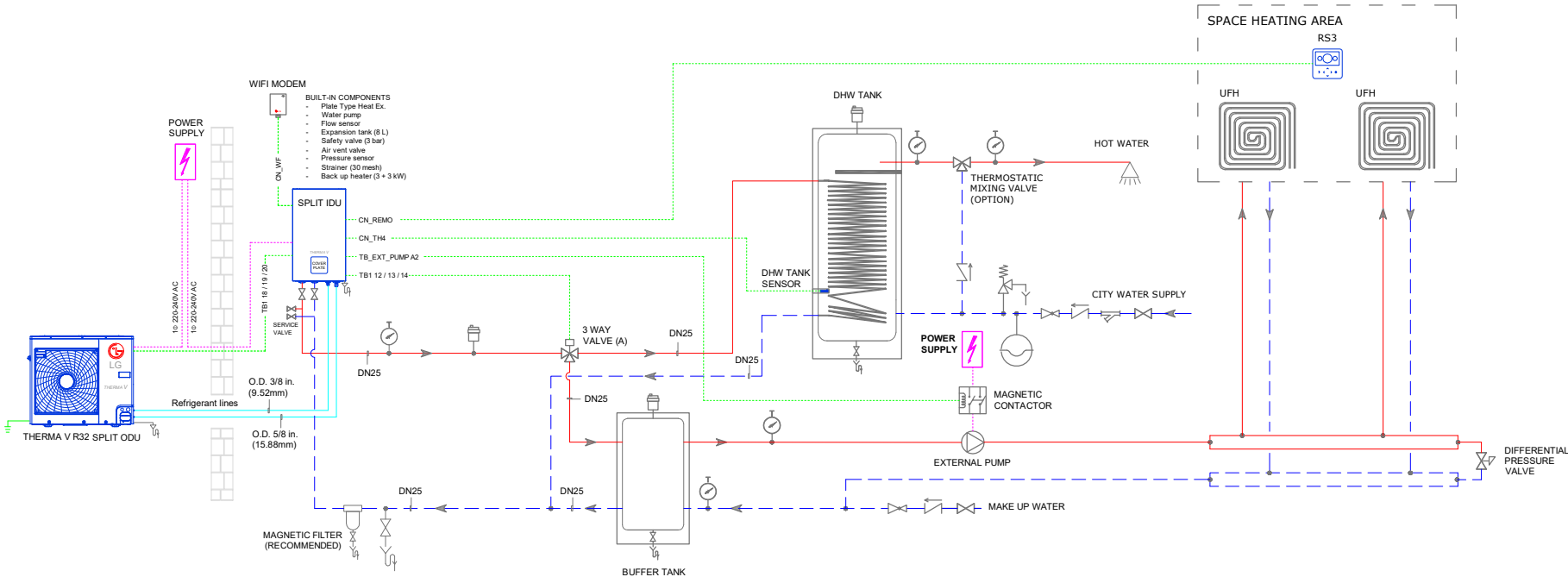
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating & DHW |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH |
| Main Controller | LG RS3 Controller |
| Control Setting of LG RS3 Controller | Based on Air Temp. or 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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | 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.

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

3 Way Valve (A) (OSHA-3V)

A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s.

Domestic Hot Water Tank

(OSHW-200F/300F/500F)
A insulated stainless steel hot water tank with 2.4kW electric heating (230V).
Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L)

DHW Tank Sensor (PHRSTA0)

A temperature sensor for DHW tank. Cable length 12m.

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

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.

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.

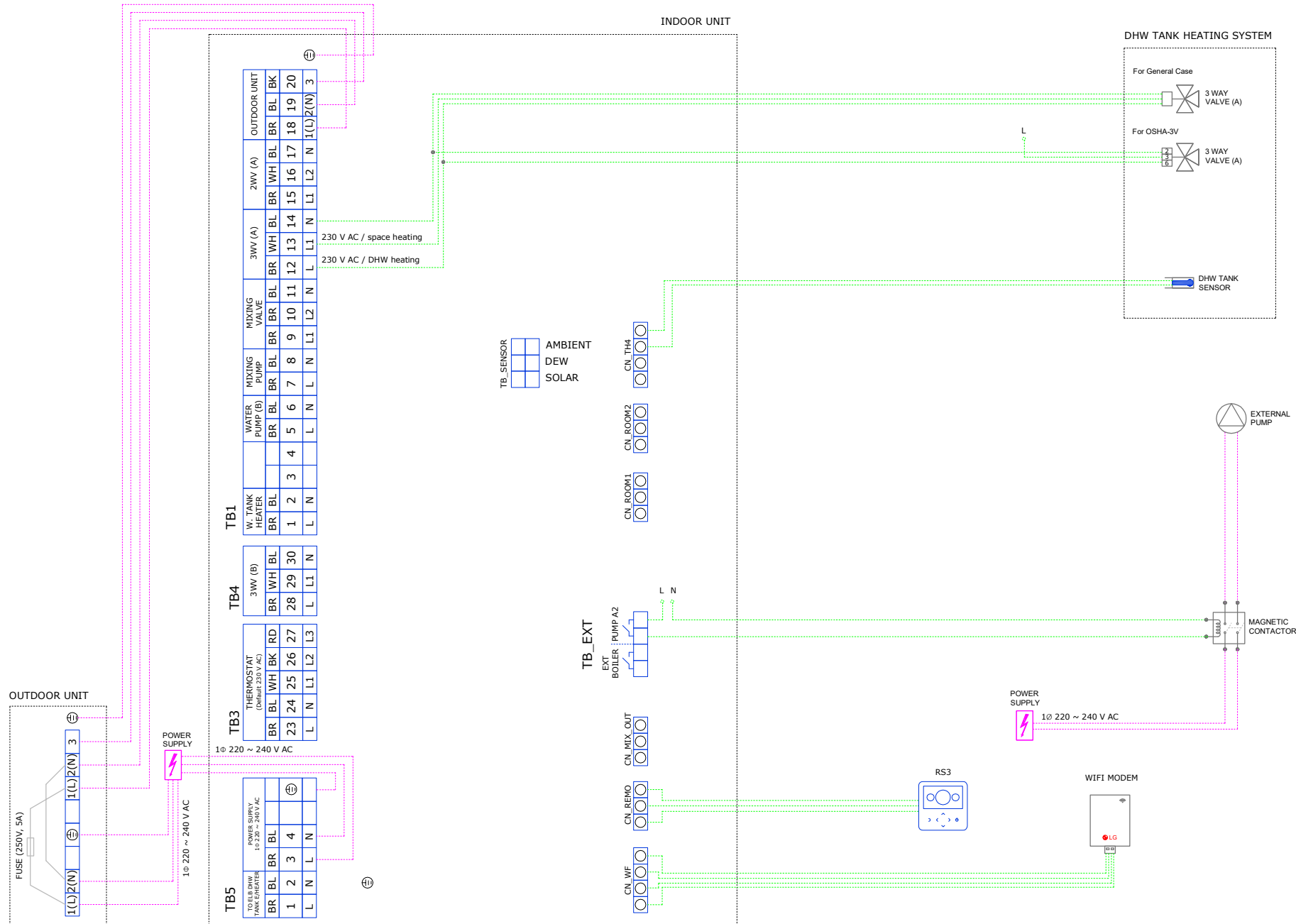
Buffer Tank

A 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.

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 | RESERVE | | X | | | | | | | | | | | | | | |
| Antifreeze Mode | Antifreeze is applied (Adjustable anti-freeze temp.) | | | | | | | | | | | | | | | | X |
| Antifreeze Mode | Antifreeze is not applied | | | | | | | | | | | | | | | | 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 | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank are installed | | X | O | | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank + Solar thermal system are installed | | 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 | Backup heater is not used | | | | | | X | X | | | | | | | | | |
| Selecting Backup Heater Capacity | Half capacity is used | | | | | | O | X | | | | | | | | | |
| Thermostat Installation | Thermostat is not installed | | | | | | | O | | | | | | | | | X |
| Thermostat Installation | Thermostat is installed | | | | | | | | O | | | | | | | | |
| default setting | | X | X | X | X | X | X | O | 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.

GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------------|--|---|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Extension Wire for RS3 Controller | Cable length 10m | PZCWRC1 |
| Cover Plate | A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors. | PDC-HK10 |
| Wi-Fi Modem | A control device that enables wireless communication with internet router. Including USB cable 0.6m and extension cable 0.5m | PWFMDD200 |
| 3 Way Valve (A) | A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s. | OSHA-3V |
| Domestic Hot Water Tank | A insulated stainless steel hot water tank with 2.4kW electric heating (230V). Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L) Double coil : OSHW-300FD(300L) | Single coil : OSHW-200F/300F/500F |
| DHW Booster Heater | An electric heater for DHW heating integrated with DHW tank (2.4kW, 230V) Controlled by THERMA V with 230V power. | Integrated with DHW Tank |
| DHW Tank Kit | A set of electrical devices for controlling of electric booster heater up to 32A Including Circuit Breaker, Magnetic Contactor and DHW Temp. sensor (PHRSTA0) | PHLTA (1Ø, Split) |
| DHW Tank Temperature Sensor | A temperature sensor for DHW tank. Cable length 12m. | PHRSTA0, Included in DHW Tank Kit (PHLTA) |
| Thermostatic Mixing Valve | A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding. | OSHA-MV (3/4") OSHA-MV1 (1") |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

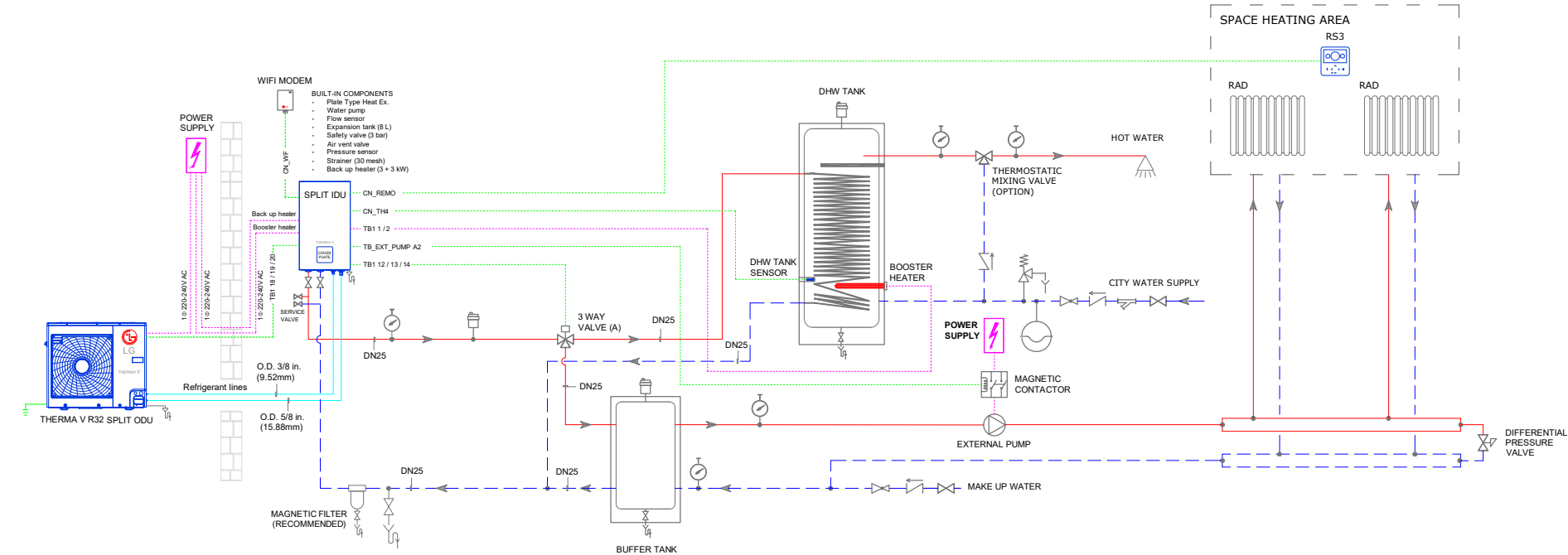
ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMDD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

HYDRONIC DIAGRAM

| | |
|--------------------------------------|--|
| SYSTEM SUMMARY | |
| Application | Space Heating & DHW with Booster Heater |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH |
| Main Controller | LG RS3 Controller |
| Control Setting of LG RS3 Controller | Based on Air Temp. or Water Temp. |
| External Pump | Controlled by THERMA V |

| | | | |
|------------------|-----------------------|--|--------------------------------|
| SYMBOL & LEGENDS | | | |
| | Circulation Pump | | Motorized 3 Way Valve |
| | Expansion Tank | | Motorized 2 Way Valve |
| | Air Vent | | Differential Pressure Valve |
| | Pressure Gauge | | Thermostatic Mixing Valve |
| | Flexible Connection | | Shut Off Valve |
| | Drain | | Pressure Reducing Valve |
| | Check Valve | | Safety Relief Valve with drain |
| | Y-type strainer | | Flow Sensor |
| | Magnetic Contactor | | Drain Pan |
| | RS3 Remote Controller | | Remote Room Air Sensor |
| | Dry Contact | | Wi-Fi Modem |
| | Thermostat | | Cover Plate |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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.

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

3 Way Valve (A) (OSHA-3V)

A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s.

Domestic Hot Water Tank

(OSHW-200F/300F/500F)

A insulated stainless steel hot water tank with 2.4kW electric heating (230V).
Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L)

DHW Booster Heater (Integrated with DHW Tank)

An electric heater for DHW heating integrated with DHW tank (2.4kW, 230V)
Controlled by THERMA V with 230V power.

DHW Tank Kit (PHLTA)

A set of electrical devices for controlling of electric booster heater up to 32A
Including Circuit Breaker, Magnetic Contactor and DHW Temp. sensor (PHRSTA0)

DHW Tank Sensor (PHRSTA0)

A temperature sensor for DHW tank. Cable length 12m. Included in DHW Tank Kit (PHLTA)

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

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.

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.

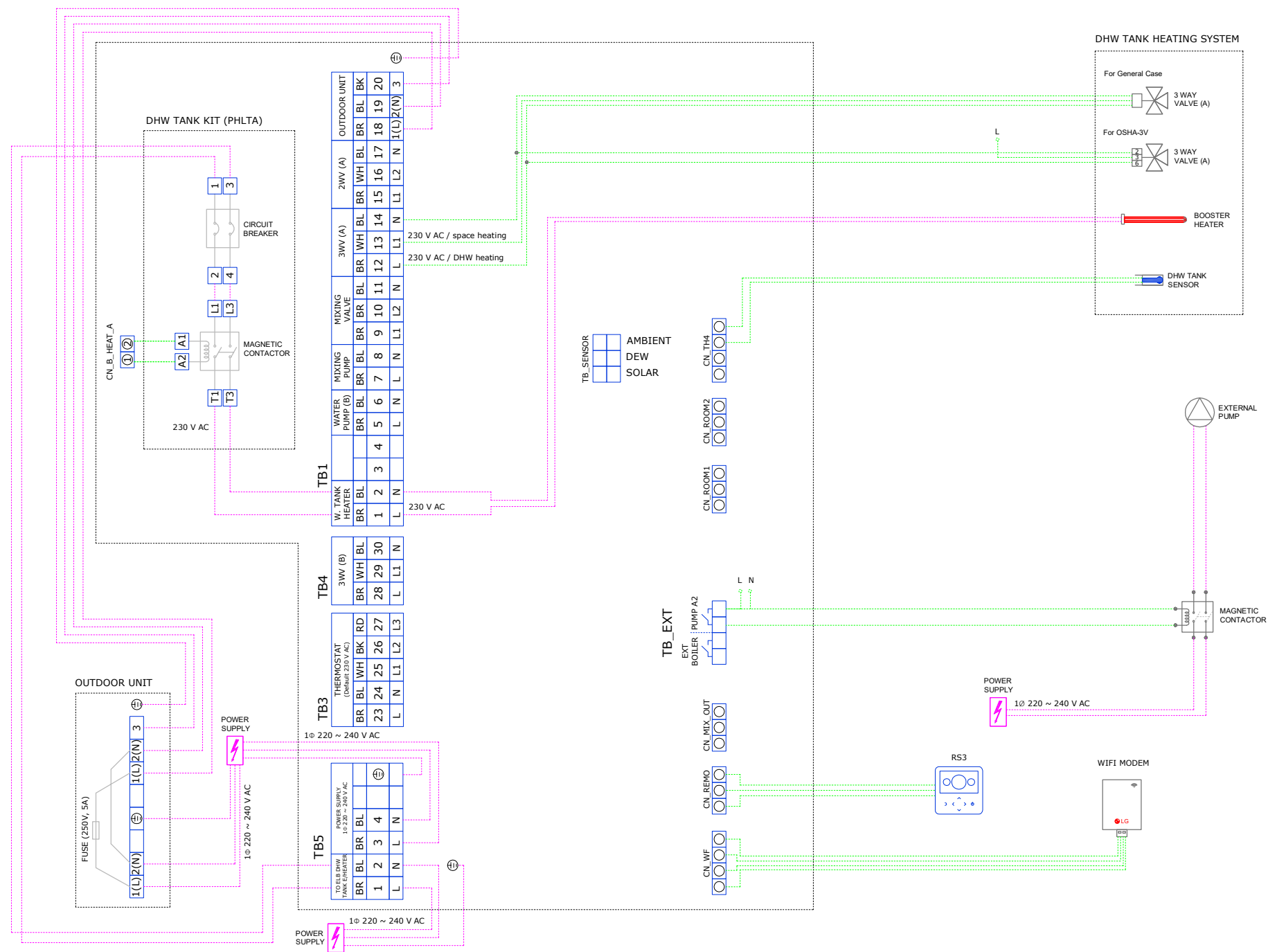
Buffer Tank

A 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.

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 | | | | | | | |
|------------------------------------|---|---------|---|---|---|---|---|---|---|----------------|--|--|--|--|--|--|--|
| MODBUS | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | |
| Communication | Master (Link to LG controller) | X | | | | | | | | | | | | | | | |
| Type | Slave (Link to 3rd party controller) | | X | | | | | | | | | | | | | | |
| MODBUS | Function | | | | | | | | | | | | | | | | |
| Function | Unified Open Protocol | | O | | | | | | | | | | | | | | |
| Anti-freeze Mode | Anti-freeze is not applied | | | | | | | | | | | | | | | | |
| Anti-freeze Mode | Anti-freeze is applied (Adjustable anti-freeze temp.) | | | | | | | | | | | | | | | | |
| default setting | | X | X | | | | | | | | | | | | | | |
| | | DIP SW2 | | | | | | | | | | | | | | | |
| Indoor Unit Type | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | | |
| Setting for Group Control | As Master | X | | | | | | | | | | | | | | | |
| | As Slave | | O | | | | | | | | | | | | | | |
| Accessory | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | | | | | | | | | |
| Installation | Heat pump + DHW tank are installed | | X | O | | | | | | | | | | | | | |
| Information | Heat pump + DHW tank + Solar thermal system are installed | | 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 is installed | | | | | O | | | | | | | | | | | |
| Selecting Backup Heater Capacity | Backup heater is not used | | | | X | X | | | | | | | | | | | |
| | Half capacity is used | | | | | O | X | | | | | | | | | | |
| Thermostat Installation | Full capacity is used | | | | | | O | O | | | | | | | | | |
| | Thermostat is not installed | | | | | | | | X | | | | | | | | |
| default setting | | X | X | X | X | X | O | O | X | | | | | | | | |

OUTDOOR UNIT MAIN PCB

SW1



| | | DIP SW1 | | | X: OFF / O: ON | | |
|-----------------|--|---|---|---|----------------|--|--|
| Low Noise Mode | | 1 | 2 | 3 | | | |
| | | 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

- 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.



LG
Life's Good

REFERENCED APPLICATION #9 SPACE HEATING, COOLING, AND DHW WITH THERMOSTAT

DWG NO. :

REV. 00

13/08/2021

GENERAL

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

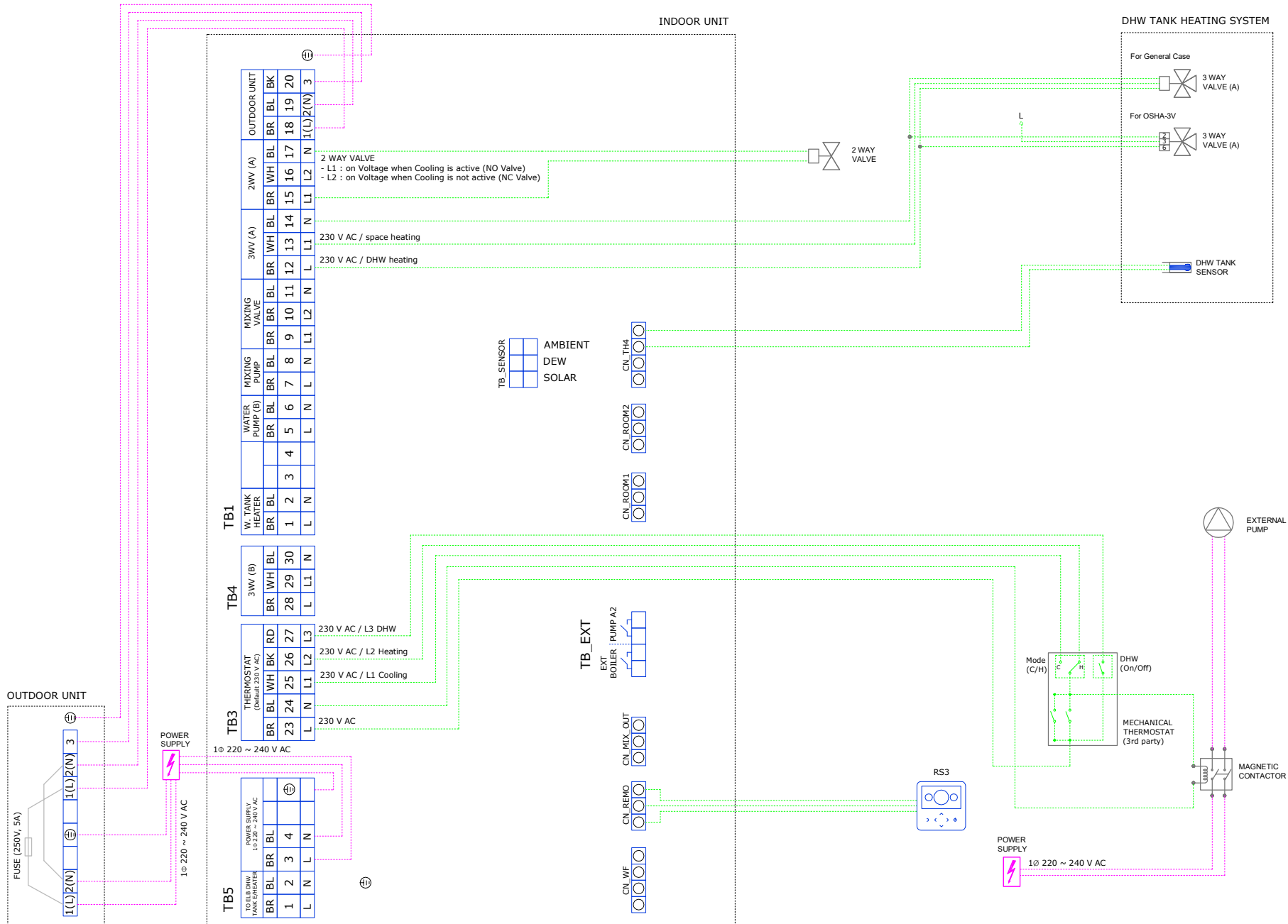
| LG supplied accessories | | |
|-----------------------------|--|--------------------------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | A wired remote controller with built-in temperature sensor. Hydro Box & IWT : attached with indoor unit as a default, detachable and extendable up to max. 50m using extension cable (PZCWRC1) | Supplied as a default |
| 3 Way Valve (A) | A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s. | OSHA-3V |
| Domestic Hot Water Tank | A insulated stainless steel hot water tank with 2.4kW electric heating (230V). Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L) Double coil : OSHW-300FD(300L) | Single coil : OSHW-200F/300F/500F |
| DHW Tank Temperature Sensor | A temperature sensor for DHW tank. Cable length 12m. | PHRSTA0 |
| Thermostatic Mixing Valve | A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding. | OSHA-MV (3/4") OSHA-MV1 (1") |
| Drain Pan | A device to collect condensation during cooling operation. Including several insulators. | PHDPC |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. Controlled by THERMA V with 230V power. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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 Therma V, Valve, Pump, and FCU where applicable. |
| 2 Way Valve for Thermostat | A isolation valve paired with thermostat to allow whether water flows into the water circuit. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

WIRING DIAGRAM



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



| | | DIP SW 1 | | | | | | | | X : OFF / O : ON | | | | | | | |
|------------------------------------|---|--------------------------------------|---|---|---|---|---|---|---|------------------|--|--|--|--|--|--|---|
| MODE/RS | Communication Type | Master (Link to LC controller) | X | | | | | | | | | | | | | | |
| MODE/RS | Function | Slave (Link to 3rd party controller) | O | | | | | | | | | | | | | | |
| MODE/RS | Function | RESINE | | X | | | | | | | | | | | | | |
| MODE/RS | Function | 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 SW 2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | |
| Indoor Unit Type | As Master | | X | | | | | | | | | | | | | | |
| Setting for Group Control | As Slave | | O | | | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump installation (Heating or cooling circuit only) | | | X | X | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank are installed | | | X | O | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank + Solar thermal system are installed | | | 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 | Backup heater is not used | | | | | | X | X | | | | | | | | | |
| Selecting Backup Heater Capacity | Half capacity is used | | | | | | O | X | | | | | | | | | |
| Thermostat Installation | Thermostat is not installed | | | | | | | | O | | | | | | | | X |
| Thermostat Installation | Thermostat is installed | | | | | | | | | O | | | | | | | |
| | | default setting | X | X | X | X | X | X | O | X | | | | | | | |

OUTDOOR UNIT MAIN PCB

SW1



























| | | DIP SW 1 | | | 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.

GENERAL

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 |  | Dry Contact |
|  | Pressure Gauge |  | Thermostatic Mixing Valve |  | Flow Sensor |  | Wi-Fi Modem |
|  | Flexible Connection |  | Shut Off Valve |  | Magnetic Contactor |  | Thermostat |
|  | Drain |  | Pressure Reducing Valve |  | Drain Pan |  | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------------|--|--------------------------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| Extension Wire for RS3 Controller | Cable length 10m | PZCWRC1 |
| Cover Plate | A device to fill the blank space of the Indoor Unit front panel when the remote controller is relocated indoors. | PDC-HK10 |
| Wi-Fi Modem | A control device that enables wireless communication with internet router. Including USB cable 0.6m and extension cable 0.5m | PWFMDD200 |
| 3 Way Valve (A) | A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s. | OSHA-3V |
| Domestic Hot Water Tank | A insulated stainless steel hot water tank with 2.4kW electric heating (230V). Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L) Double coil : OSHW-300FD(300L) | Single coil : OSHW-200F/300F/500F |
| DHW Tank Temperature Sensor | A temperature sensor for DHW tank. Cable length 12m. | PHRSTA0 |
| Thermostatic Mixing Valve | A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding. | OSHA-MV (3/4") OSHA-MV1 (1") |

| 3rd party accessories | |
|-----------------------------|---|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMDD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |

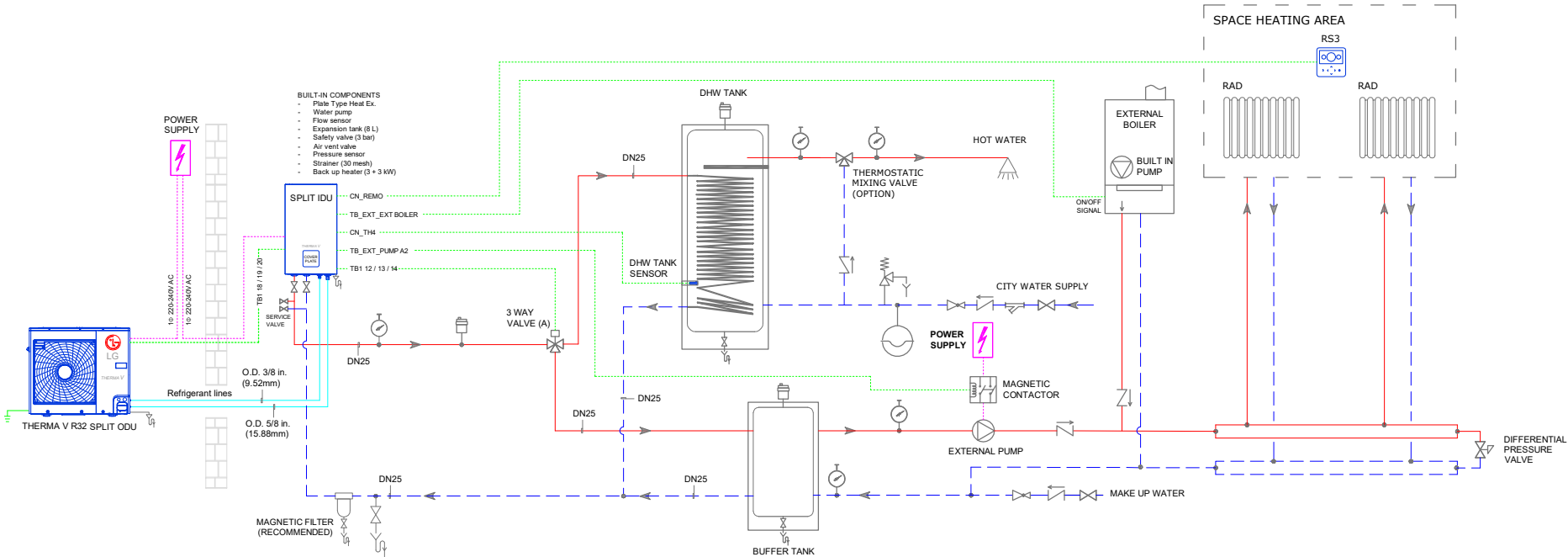
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating & DHW with External Boiler |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | RAD |
| Main Controller | LG RS3 Controller |
| Control Setting of LG RS3 Controller | Based on 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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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.

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

3 Way Valve (A) (OSHA-3V)

A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s.

Domestic Hot Water Tank

(OSHW-200F/300F/500F)
A insulated stainless steel hot water tank with 2.4kW electric heating (230V).
Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L)

DHW Tank Sensor (PHRSTA0)

A temperature sensor for DHW tank. Cable length 12m.

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

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.

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.

Buffer Tank

A 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.

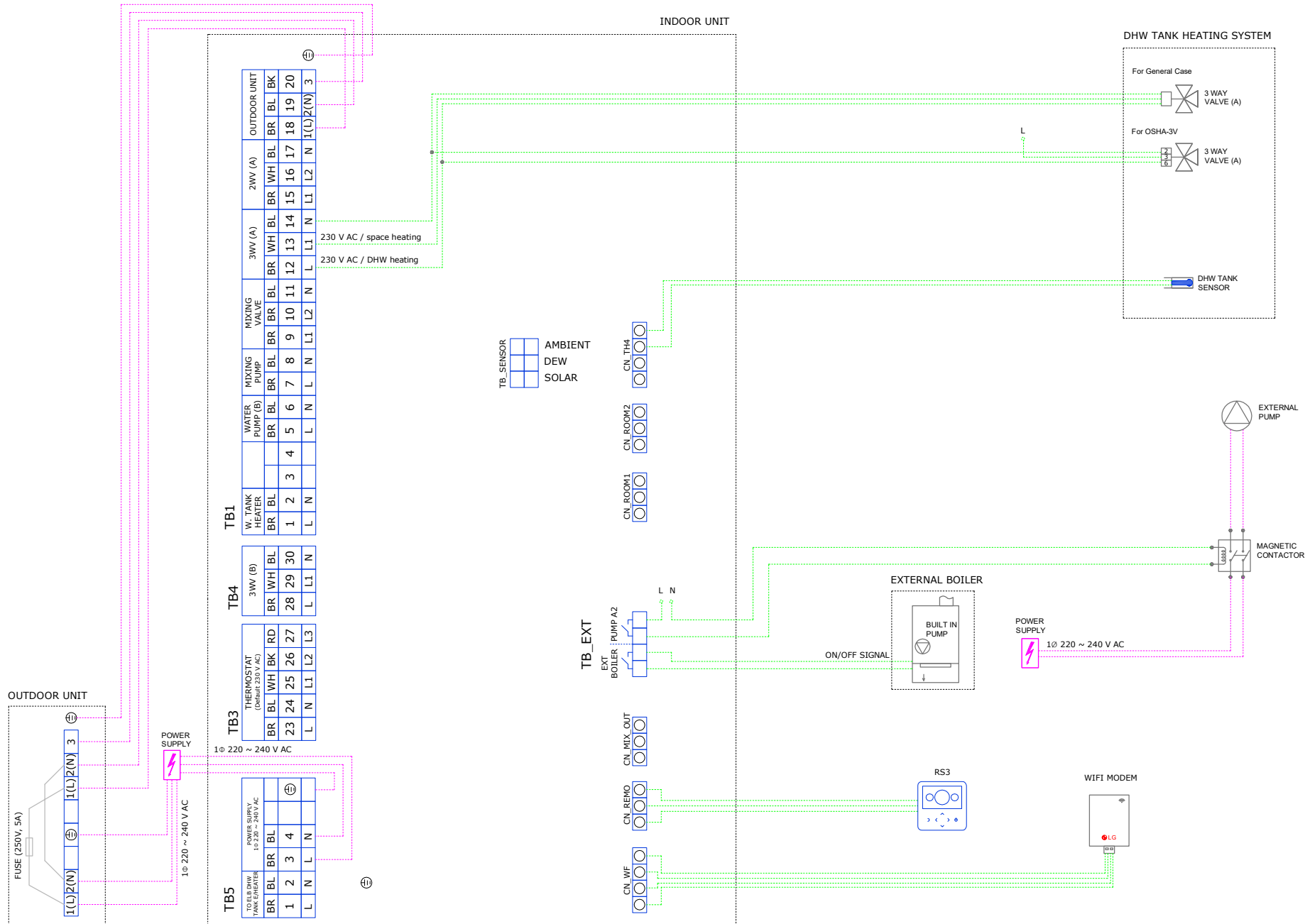
External Boiler

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.

Differential Pressure Valve

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

WIRING DIAGRAM





LG
Life's Good

REFERENCED APPLICATION #11 SPACE HEATING, COOLING, AND DHW WITH SOLAR PANEL AND THERMOSTAT

DWG NO. :

REV. 00

13/08/2021

GENERAL

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|-----------------------------|---|---------------------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | 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) | Supplied as a default |
| 3 Way Valve (A) | A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s. | OSHA-3V |
| Domestic Hot Water Tank | A insulated stainless steel hot water tank with 2.4kW electric heating (230V). Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L) Double coil : OSHW-300FD(300L) | Double coil : OSHW-300FD |
| DHW Tank Temperature Sensor | A temperature sensor for DHW tank. Cable length 12m. | PHRSTA0 |
| Thermostatic Mixing Valve | A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding. | OSHA-MV (3/4") OSHA-MV1 (1") |
| Drain Pan | A device to collect condensation during cooling operation. Including several insulators. | PHDPC |

| 3rd party accessories | |
|-----------------------------|---|
| Full Name | Description |
| 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. Controlled by THERMA V with 230V power. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| 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. |
| Solar Pump | An external water pump that circulates the water inside solar thermal system. Controlled by THERMA V with 230V power. |
| Solar Temperature Sensor | A temperature sensor for solar thermal system. |
| 3 Way Valve (B) | A motorized 3-way diverting valve determining flow direction to either DHW tank or bypass (recirculation). 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 Therma V, Valve, Pump, and FCU where applicable. |
| 2 Way Valve for Thermostat | A isolation valve paired with thermostat to allow whether water flows into the water circuit. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMD200 | O | |
| Water Temperature Sensor | - | | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| Cover Plate | PDC-HK10 | O | |
| Drain Pan | PHDPC | O | |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| PI485 Gateway | PMNFP14A1 | O | |



Life's Good

REFERENCED APPLICATION #11 SPACE HEATING, COOLING, AND DHW WITH SOLAR PANEL AND THERMOSTAT

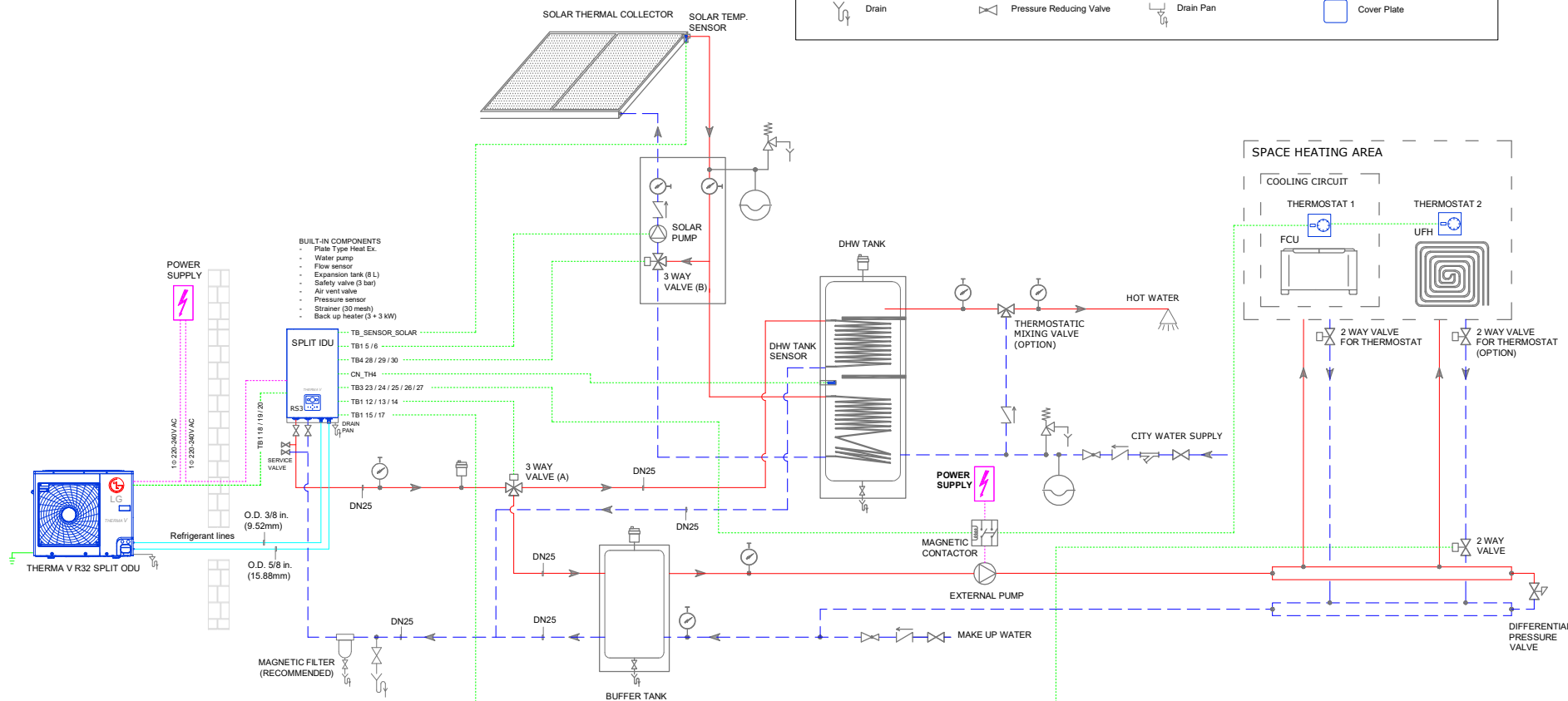
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|---|
| Application | Space Heating, Cooling, and DHW with Solar Panel and Thermostat |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | UFH(H) + FCU(H&C) |
| Main Controller | Thermostat |
| Control Setting of LG RS3 Controller | Based on Water Temp. |
| External Pump | Controlled by Thermostat |

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | 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.

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 (PZCWR1C1)

3 Way Valve (A) (OSHA-3V)

A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s.

Domestic Hot Water Tank (OSHW-300FD)

A insulated stainless steel hot water tank with 2.4kW electric heating (230V).
Double coil : OSHW-300FD(300L)

DHW Tank Sensor (PHRSTA0)

A temperature sensor for DHW tank. Cable length 12m.

Thermostatic Mixing Valve (OSHA-MV)

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

Drain Pan (PHDPC)

A device to collect condensation during cooling operation. Including several insulators.

3RD PARTY ACCESSORIES

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.

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.

Buffer Tank

A 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.

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.

Solar Pump

An external water pump that circulates the water inside solar thermal system. Controlled by THERMA V with 230V power.

Solar Temperature Sensor (PT-1000)

A temperature sensor for solar thermal system.

3 Way Valve (B)

A motorized 3-way diverting valve determining flow direction to either DHW tank or bypass (recirculation). 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.

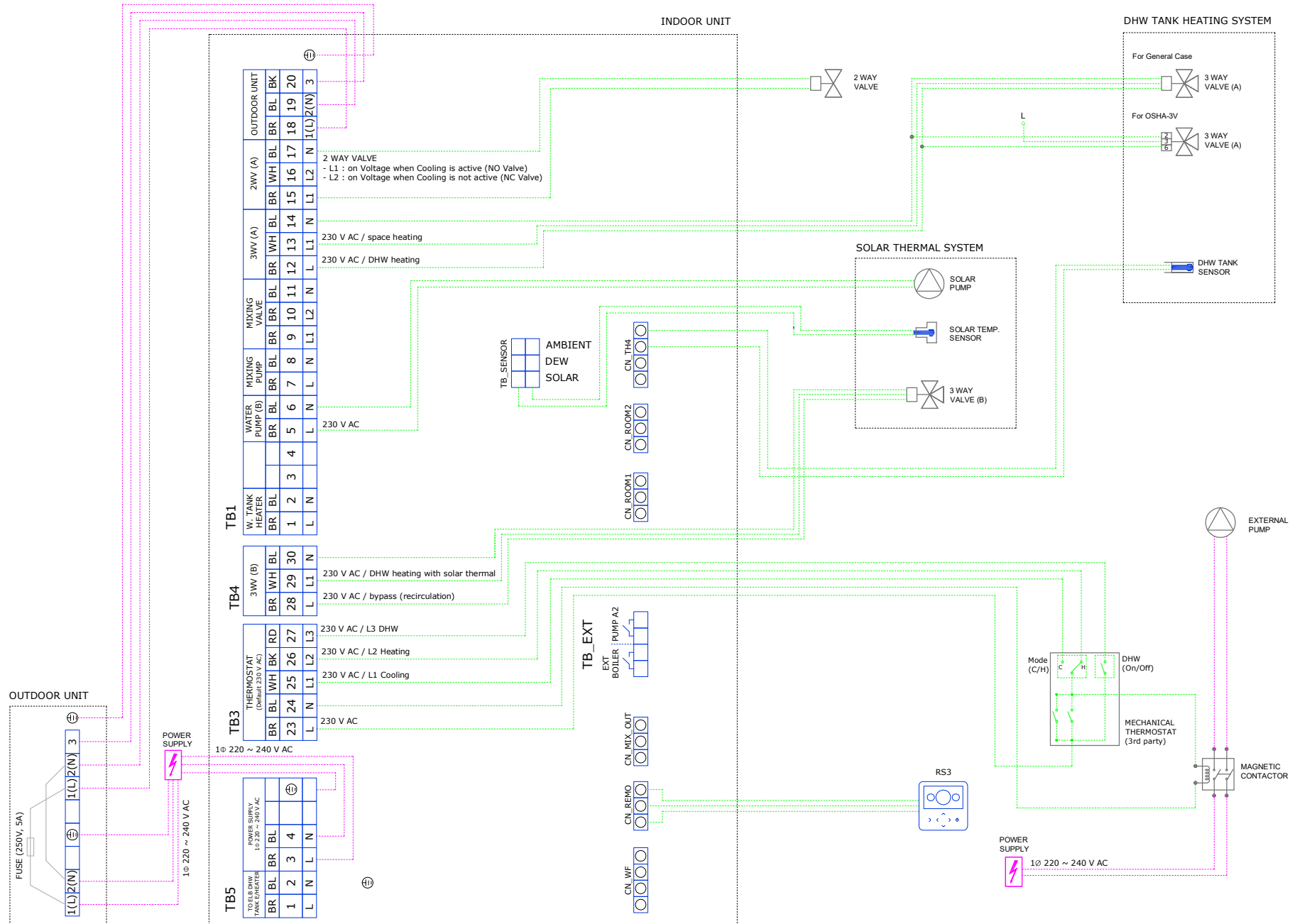
2 Way Valve for Thermostat

An isolation valve paired with thermostat to allow whether water flows into the water circuit.

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 SW 1 | | | | | | | | X: OFF / O: ON | | | | | | | |
|--|---|----------|---|---|---|---|---|---|---|----------------|--|--|--|--|--|--|---|
| MODBUS Communication Type | Master (Link to LC controller) | X | | | | | | | | | | | | | | | |
| MODBUS Function | Slave (Link to 3rd party controller) | O | | | | | | | | | | | | | | | |
| MODBUS Function | RESERVE | | X | | | | | | | | | | | | | | |
| Antifreeze Mode | Antifreeze is not applied | | | | | | | | | | | | | | | | X |
| Antifreeze Mode | Antifreeze is applied (Adjustable anti-freeze temp.) | | | | | | | | | | | | | | | | O |
| default setting | | X | X | | | | | | | | | | | | | | X |
| | | DIP SW 2 | | | | | | | | 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 | Heat pump installation (Heating or cooling circuit only) | | X | X | | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank are installed | | X | O | | | | | | | | | | | | | |
| Accessory Installation Information | Heat pump + DHW tank + Solar thermal system are installed | | 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 | Backup heater is not used | | | | | | X | X | | | | | | | | | |
| Selecting Backup Heater Capacity | Half capacity is used | | | | | | O | X | | | | | | | | | |
| Thermostat Installation | Thermostat is not installed | | | | | | | | O | | | | | | | | X |
| Thermostat Installation | Thermostat is installed | | | | | | | | | O | | | | | | | O |
| default setting | | X | X | X | X | X | X | O | X | | | | | | | | |

OUTDOOR UNIT MAIN PCB

SW1



| | | DIP SW 1 | | | 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.



LG
Life's Good

REFERENCED APPLICATION #11 SPACE HEATING WITH EXTERNAL BOILER

DWG NO. :

REV. 00

10/09/2021

GENERAL

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 | | Dry Contact |
| | Pressure Gauge | | Thermostatic Mixing Valve | | Flow Sensor | | Wi-Fi Modem |
| | Flexible Connection | | Shut Off Valve | | Magnetic Contactor | | Thermostat |
| | Drain | | Pressure Reducing Valve | | Drain Pan | | Cover Plate |

SCOPE OF SUPPLY FOR REQUIRED ACCESSORIES IN APPLICATION

| LG supplied accessories | | |
|---------------------------------|---|-----------------------------------|
| Full Name | Description | Part No. |
| RS3 wired remote controller | A wired remote controller with built-in temperature sensor. Monobloc : supplied with 10m length cable, extendable up to max. 50m using extension cable (PZCWRC1) | Supplied as a default |
| Wi-Fi Modem | A control device that enables wireless communication with internet router. Including USB cable 0.6m and extension cable 0.5m | PWFMDD200 |
| Extension Cable for Wi-Fi Modem | Cable Length 10m | PWYREW000 |
| 3 Way Valve (A) | A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s. | OSHA-3V |
| Domestic Hot Water Tank | A insulated stainless steel hot water tank with 2.4kW electric heating (230V). Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L) Double coil : OSHW-300FD(300L) | Single coil : OSHW-200F/300F/500F |
| DHW Tank Temperature Sensor | A temperature sensor for DHW tank. Cable length 12m. | PHRSTA0 |
| Thermostatic Mixing Valve | A mixing valve that blends hot water with cold water to ensure constant, safe shower and bath outlet temperatures, preventing scalding. | OSHA-MV (3/4") OSHA-MV1 (1") |

| 3rd party accessories | |
|-----------------------------|--|
| Full Name | Description |
| 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. |
| Magnetic Filter | 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. |
| Buffer Tank | A 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. |
| External Boiler | An external boiler supplied by a 3rd party that operates alternatively interlocking with THERMA V. The external boiler should have a intergrated or dedicated circulation pump. Controlled by THERMA V with voltage free contact switch. |
| Differential Pressure Valve | A self pressure regulating valve that provides constant differential pressure between supply and return headers. |

ACCESSORY LIST

| Full Name | LG Part No. | Scope of supply | |
|------------------------------------|---|-----------------|-----------|
| | | LG | 3rd party |
| 2 Remo Cable | PZCWRC2 | O | |
| 2way Valve | - | | O |
| 3way Valve | OSHA-3V | O | O |
| Air Vent Valve | - | | O |
| Buffer Tank | For IWT, OSHB-40KT | O | O |
| Back-up Heater Temperature Sensor | For 3rd party Back-up Heater, PRSTAT5K10 | O | |
| Back Up Heater | HA031M E1 (1Ø, 3kW, Monobloc) HA061M E1 (1Ø, 6kW, Monobloc) HA063M E1 (3Ø, 6kW, Monobloc) HA061C E1 (1Ø, 6kW, Hydrosplit) HA063C E1 (3Ø, 6kW, Hydrosplit) | O | O |
| Circuit Breaker | - | O | O |
| Check Valve | - | | O |
| Cover Plate | PDC-HK10 | O | |
| DHW Booster Heater | Integrated with DHW Tank | O | O |
| Dry Contact | PDRYCB000 PDRYCB320 | O | |
| Direct Digital Controller | - | | O |
| Differential Pressure Valve | - | | O |
| DHW Tank Kit | PHLTA (Hydrosplit, 1Ø Split) PHLTC (3Ø, Split) PHLTB (Monobloc) | O | |
| DHW Tank Temperature Sensor | PHRSTA0, included in DHW Tank Kit | O | |
| Drain Pan | PHDPC | O | |
| Drain Valve | - | | O |
| External Boiler | - | | O |
| Energy Meter | - | | O |
| Extension Cable for Wi-Fi Modem | PWYREW000 | O | O |
| Extension Wire for RS3 Controller | PZCWRC1 | O | |
| External Pump | - | | O |
| Expansion Tank | For IWT, OSHE-12KT (DHW Circuit) | O | O |
| Flexible Connection | - | | O |
| Fan Coil Unit | - | | O |
| Flow Sensor | - | | O |
| Heat Meter | - | | O |
| Domestic Hot Water Tank | OSHW-200F (Single Coil, 200L) OSHW-300F (Single Coil, 300L) OSHW-500F (Single Coil, 500L) OSHW-300FD (Double Coil, 300L) | O | O |
| Isolation Valve | - | | O |
| LG Central Controller | PACEZA000 (AC Ez Touch) PACSSA000 (AC Smart 5) PACP5A000 (ACP 5) | O | |
| Magnetic Contactor | - | O | O |
| Magnetic Filter | - | | O |
| Meter Interface | PENKTH000 | O | |
| Mixing Pump | - | | O |
| Mixing Zone Temperature Sensor | PRSTAT5K10 | O | |
| Mixing Valve | - | | O |
| PI485 Gateway | PMNFP14A1 | O | |
| Pressure Gauge | - | | O |
| Plate Heat Exchanger | - | | O |
| Radiator | - | | O |
| Recirculation Pump | - | | O |
| Remote Room Air Temperature Sensor | PQRSTA0 | O | |
| Standard III Remote Controller | Default, PREMTW101 for 2 Remo control | O | |
| Solar Pump | - | | O |
| Safety Relief Valve | - | | O |
| Strainer | - | | O |
| Solar Temperature Sensor (PT-1000) | - | | O |
| Service Valve | - | | O |
| Thermostat | - | | O |
| Thermostatic Mixing Valve | OSHA-MV OSHA-MV1 | O | O |
| Under Floor Heating Coil | - | | O |
| Wi-Fi Modem | PWFMDD200 | O | |
| Water Temperature Sensor | - | | O |

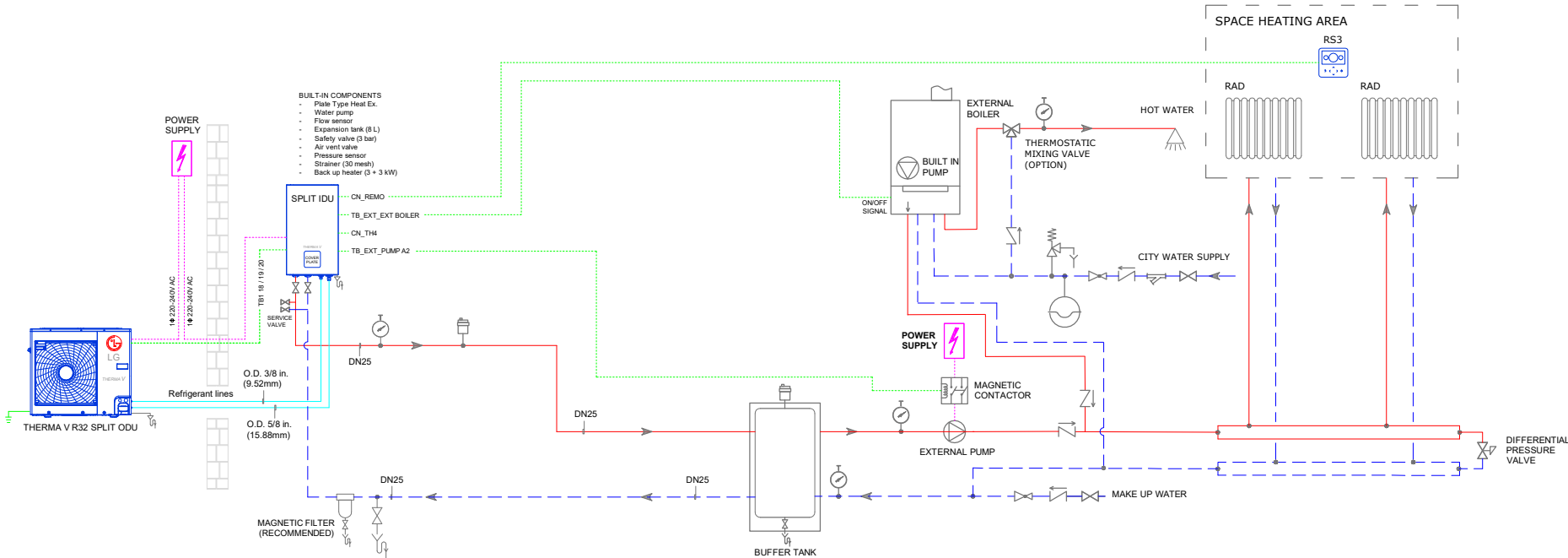
HYDRONIC DIAGRAM

SYSTEM SUMMARY

| | |
|--------------------------------------|--|
| Application | Space Heating & DHW with External Boiler |
| Product | R32 Split Hydro Box (New IDU, HN091MR NK5) |
| Terminal Device | RAD |
| Main Controller | LG RS3 Controller |
| Control Setting of LG RS3 Controller | Based on Air Temp. |
| External Pump | Controlled by THERMA V |

SYMBOL & LEGENDS

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |



NOTE

1. This diagram should be used only for reference purpose. It does not contain all the required equipment and safety components in accordance with actual site conditions. Furthermore, please make sure to take into account the applicable standards and laws for each country. LG Electronics disclaims any direct or indirect responsibility for any consequences arising out of any inaccuracies or consequential changes to this general scheme.
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. Please be aware of that an installer need to set the water outlet temperature from a gas boiler as required water temperature for own hydraulic system and also change the capacity of the gas boiler for own hydraulic system accordingly.
6. Beware that when the gas boiler is active it's only controlled by the outdoor temperature.

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

3 Way Valve (A) (OSHA-3V)

A motorized 3-way diverting valve determining flow direction to either space heating or DHW tank. Controlled by THERMA V with 230V power. Operating time 3s.

Domestic Hot Water Tank (OSHW-200F/300F/500F)

A insulated stainless steel hot water tank with 2.4kW electric heating (230V).
Single Coil : OSHW-200F(200L) / 300F(300L) / 500F(500L)

DHW Tank Sensor (PHRSTA0)

A temperature sensor for DHW tank. Cable length 12m.

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

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.

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.

Buffer Tank

A 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.

External Boiler

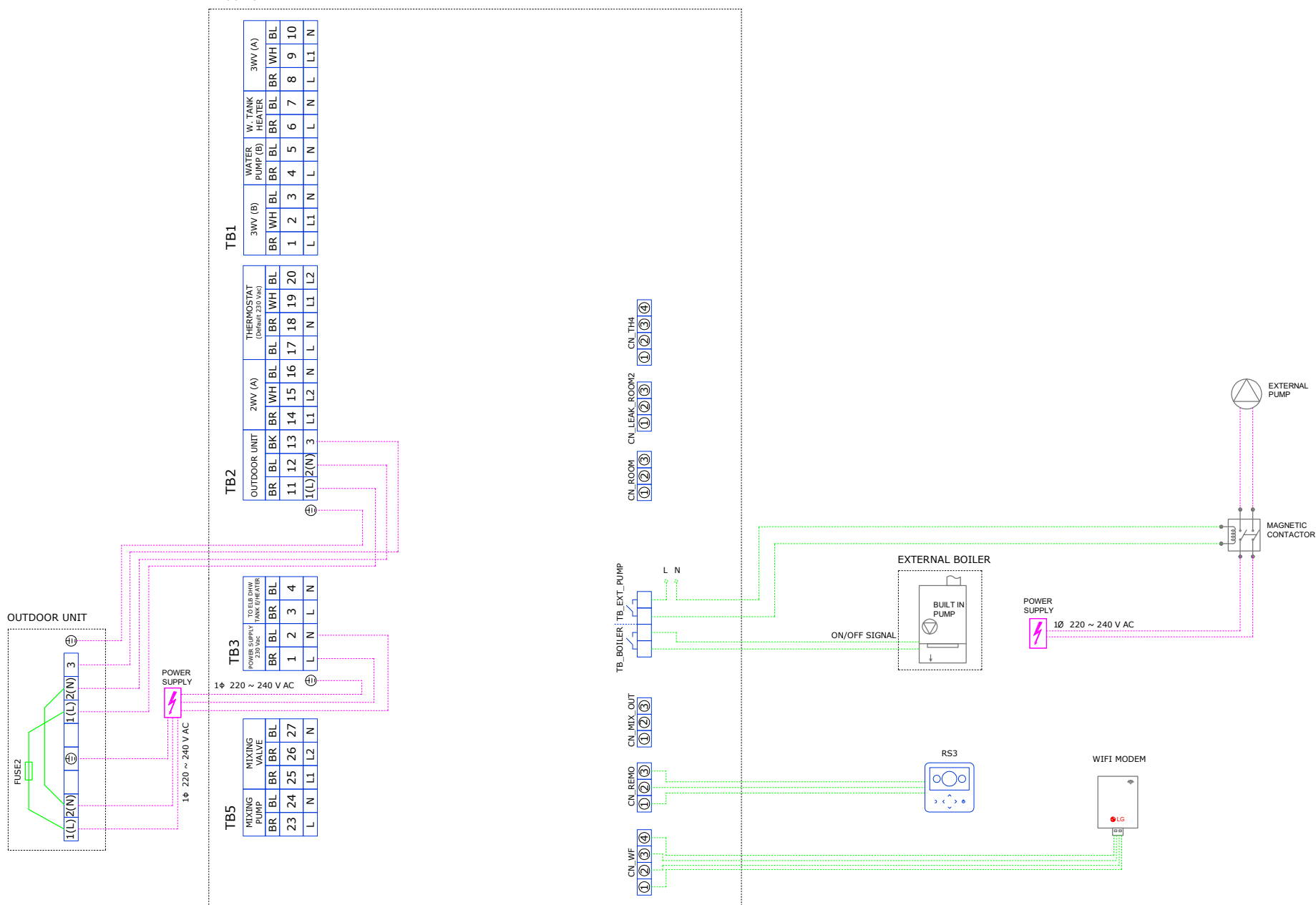
An external boiler supplied by a 3rd party that operates alternatively interlocking with THERMA V. The external boiler should have a intergrated or dedicated circulation pump.
Controlled by THERMA V with voltage free contact switch.

Differential Pressure Valve

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

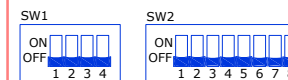
WIRING DIAGRAM

INDOOR UNIT



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB



| | | X OFF / O ON | | | | |
|--|---|-----------------|---|---|---|---|
| | | DIP SW 2 | 1 | 2 | 3 | 4 |
| Indoor Unit Type Setting for Group Control | As Master | | X | O | | |
| | As Slave | | | | X | O |
| Accessory installation information | Heat pump installation (Heating or cooling circuit only) | | X | X | X | X |
| | Heat pump + DHW tank are installed | | X | X | X | X |
| | Heat pump + DHW tank + Solar heating system are installed | | O | X | X | X |
| Heat pump cycle | Heating only | | | | X | O |
| | Heating and cooling | | | | | X |
| Flow switch detection | Always | | | | X | |
| | While pump is on | | | | O | |
| Selecting backup heater capacity | Backup heater is not used | | X | X | X | X |
| | Full capacity is used | | | | X | O |
| | Full capacity is used | | | | O | X |
| Thermostat installation | Thermostat is not installed | | | | | X |
| | Thermostat is installed | | | | | O |
| | | default setting | X | X | X | X |
| | | DIP SW 1 | 1 | | | |
| MODBUS communication type | Master (Link to LG controller) | | X | | | |
| | Slave (Link to 3rd party controller) | | | X | | |
| | default setting | | | | X | |
| | | DIP SW 3 | 1 | 2 | | |
| Remote room as sensor (accessory) | Remote room air sensor is not installed | | | | | |
| | Remote room air sensor is installed | | | | X | |
| Antifreeze mode | Antifreeze is not applied | | | | X | |
| | Antifreeze is applied (Adjustable anti-freeze temp.) | | | | | X |
| | | default setting | X | X | | |

OUTDOOR UNIT MAIN PCB



| | | DIP SW 1 | | | X : OFF / O : ON | |
|----------------|--|----------|---|-----------------|------------------|--|
| | | 2 | 3 | | | |
| 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 | Y | |