

























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

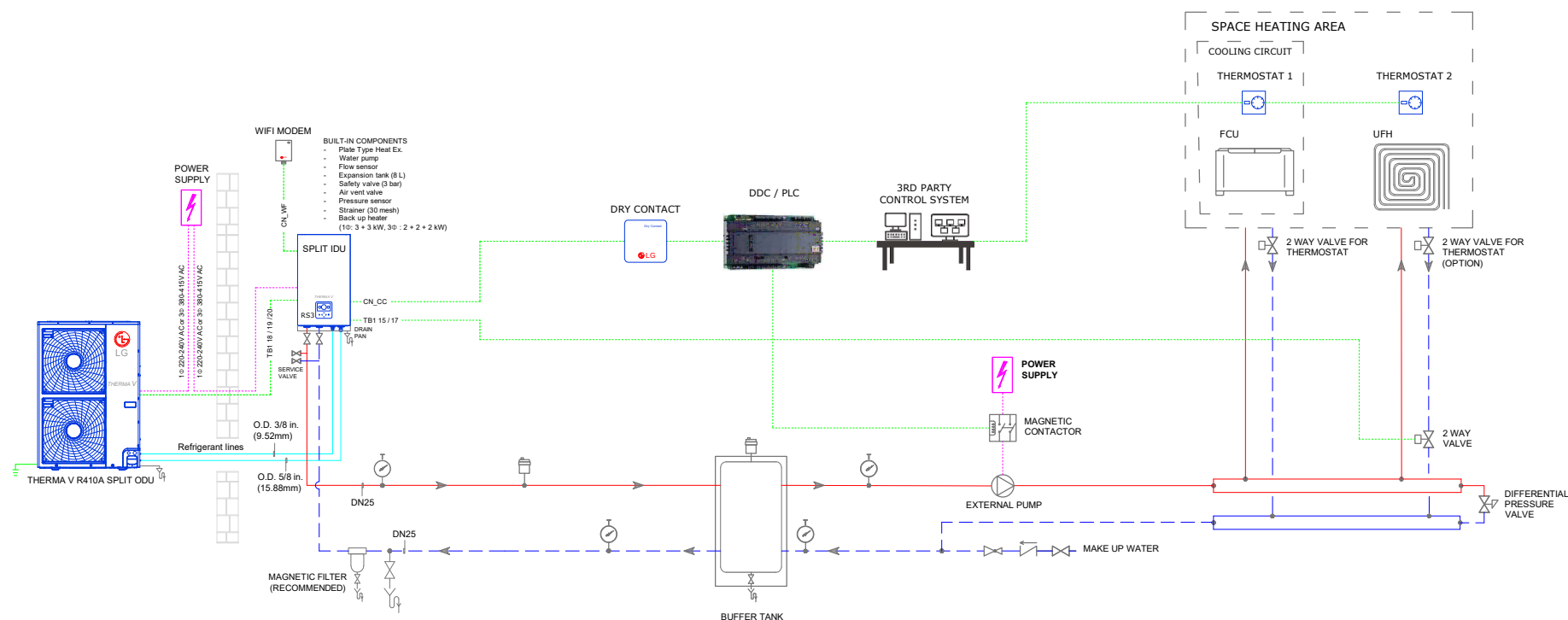
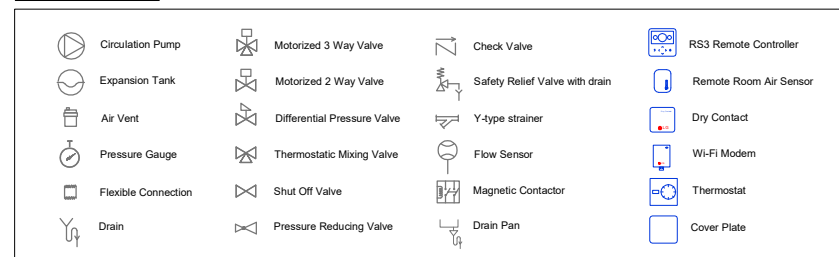
Full Name	LG Part No.	Scope of supply	
		LG	3rd party
2 Remo Cable	PZCWRC2	O	
2way Valve	-		O
3way Valve	OSHA-3V	O	O
Air Vent Valve	-		O
Buffer Tank	For IWT, OSHB-40KT	O	O
Back-up Heater Temperature Sensor	For 3rd party Back-up Heater, PRSTAT5K10	O	
Back Up Heater	HA031M E1 (1Ø, 3kW, Monobloc) HA061M 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	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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



LG ACCESSORIES

RS3 Controller (Default)

A wired remote controller with built-in temperature sensor.

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

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)

Brain Pan (FIBPS)
A device to collect condensation during cooling operation. Including several insulators.

3RD PARTY ACCESSORIES

External Pump

External water 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 particles caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system.

Buffer Tank

Water 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

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

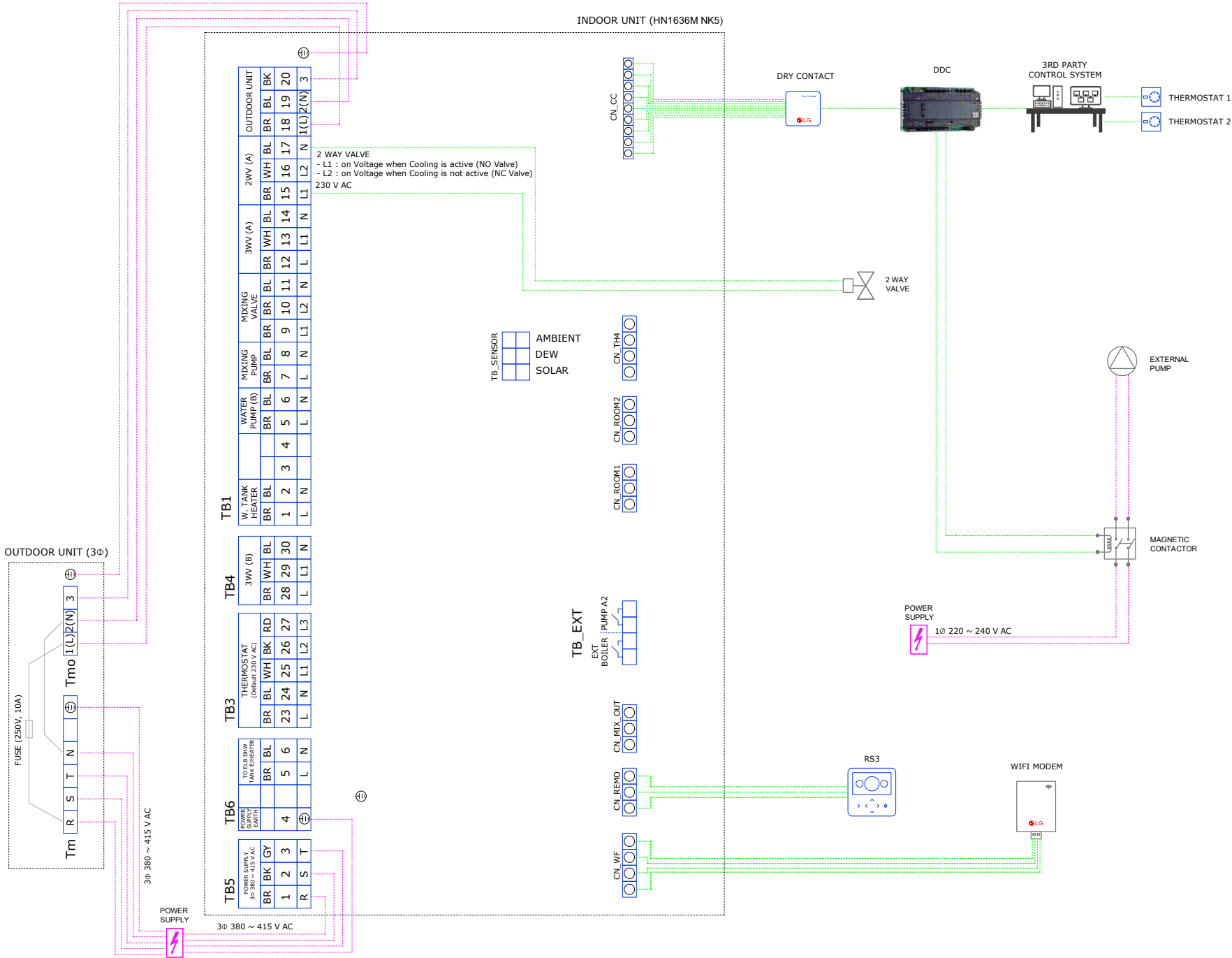
Differential Pressure Valve

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

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.

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		X : OFF / O : ON							
MODBUS Communication		DIP SW 1	1	2	3	4	5	6	7
Type	Master (Link to LC controller)	X							
Function	Slave (Link to 3rd party controller)	O							
MODBUS Function		REGINE	X						
Antifreeze Mode		Antifreeze is not applied							X
Antifreeze Mode		Antifreeze is applied (Adjustable anti-freeze temp.)							O
default setting			X	X					X
		X : OFF / O : ON							
Indoor Unit Type Setting for Group Control		DIP SW 2	1	2	3	4	5	6	7
As Master		X							
As Slave		O							
Accessory Installation Information		Heat pump installation (Heating or cooling circuit only)	X	X					
Heat Pump Cycle		Heat pump + DHW tank are installed	X	O					
Heating only				X					
Remote Room Air Sensor (Accessory)		Remote room air sensor is not installed			X				
Backup heater is not used					O				
Thermostat installation		Thermostat is not installed				X			
Thermostat installation		Thermostat is installed				O			
default setting			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		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
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

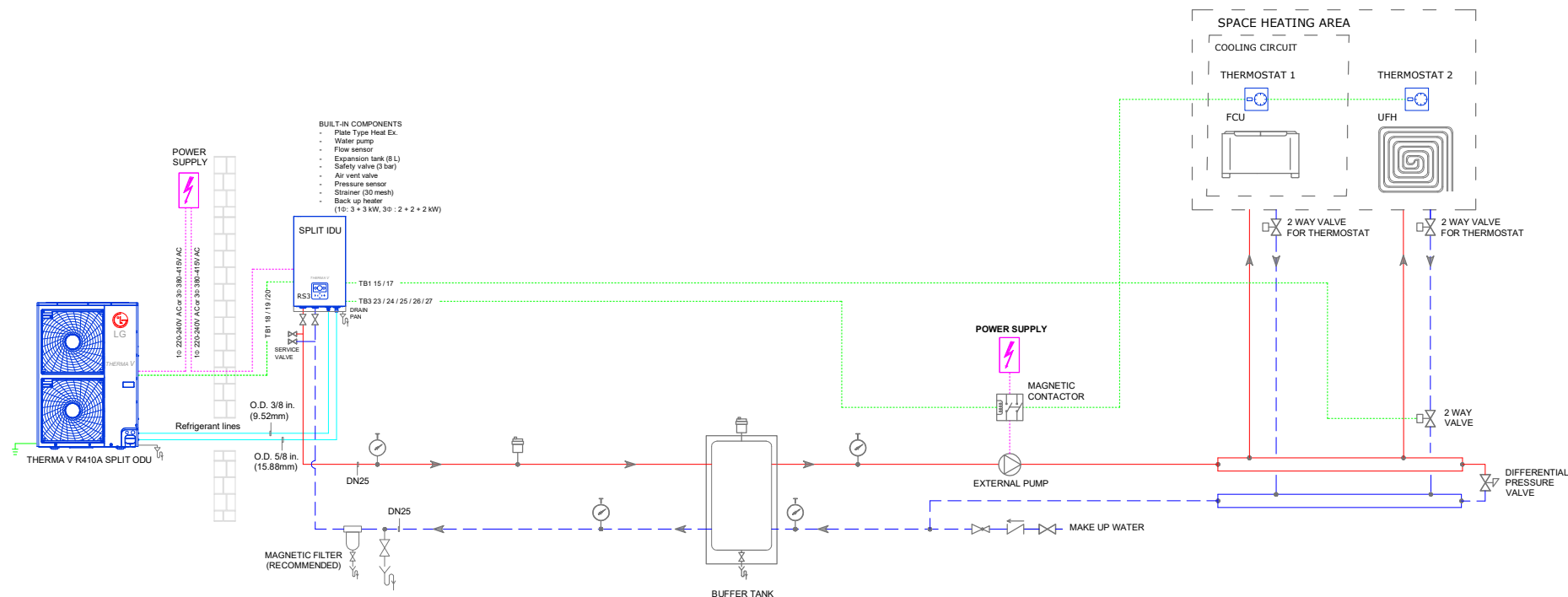
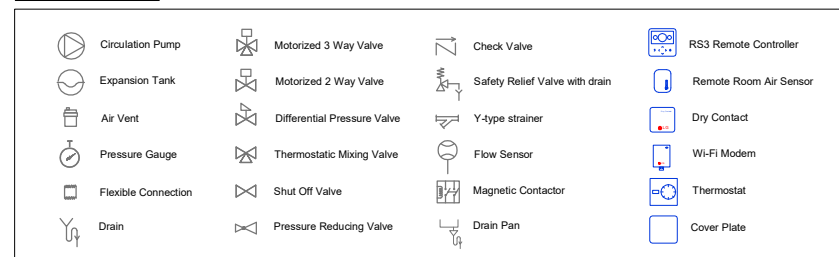
Full Name	LG Part No.	Scope of supply	
		LG	3rd party
2 Remo Cable	PZCWRC2	O	
2way Valve	-		O
3way Valve	OSHA-3V	O	O
Air Vent Valve	-		O
Buffer Tank	For IWT, OSHB-40KT	O	O
Back-up Heater Temperature Sensor	For 3rd party Back-up Heater, PRSTAT5K10	O	
Back Up Heater	HA031M E1 (1Ø, 3kW, Monobloc) HA061M 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	

HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & Cooling with Thermostat
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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



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.

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 (PZCWR1)

Drain Pan (PHDPC)

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

3RD PARTY ACCESSORIES

External Pump

External water 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

Water 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 each 2 Way Valve and FCU where applicable.

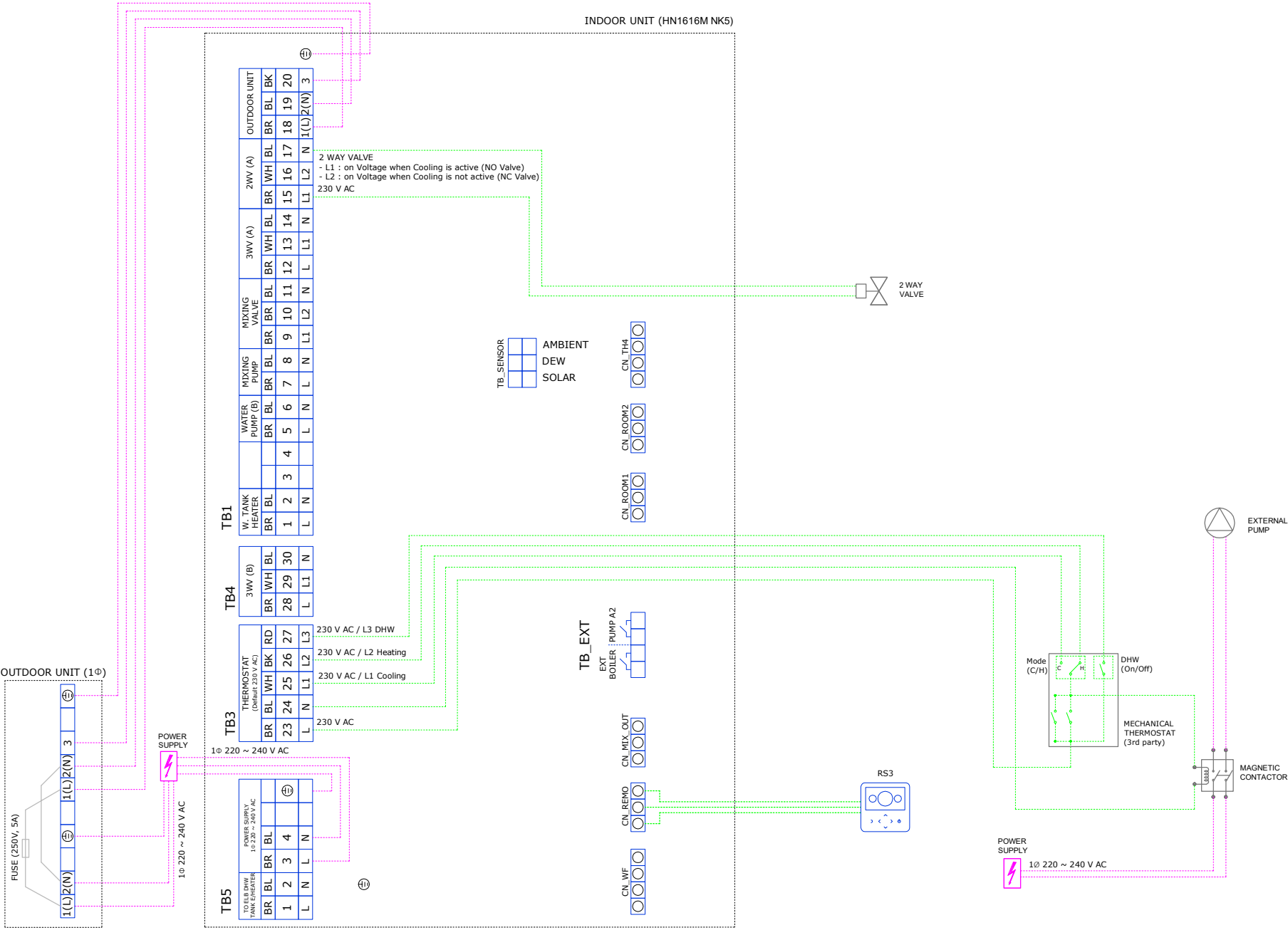
2 Way Valve for Thermostat

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 (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		DIP SW1								X: OFF / O: ON	
MODBUS Communication Type	Master (Link to LC controller)	1	2	3	4	5	6	7	8		
	Slave (Link to 3rd party controller)	X									
MODBUS Function	RESERVE		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									
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 + 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	Thermostat is not installed						O			X	
	Thermostat is installed						O			O	
default setting		X	X	X	X	X	O	O	X		

OUTDOOR UNIT MAIN PCB

SW1

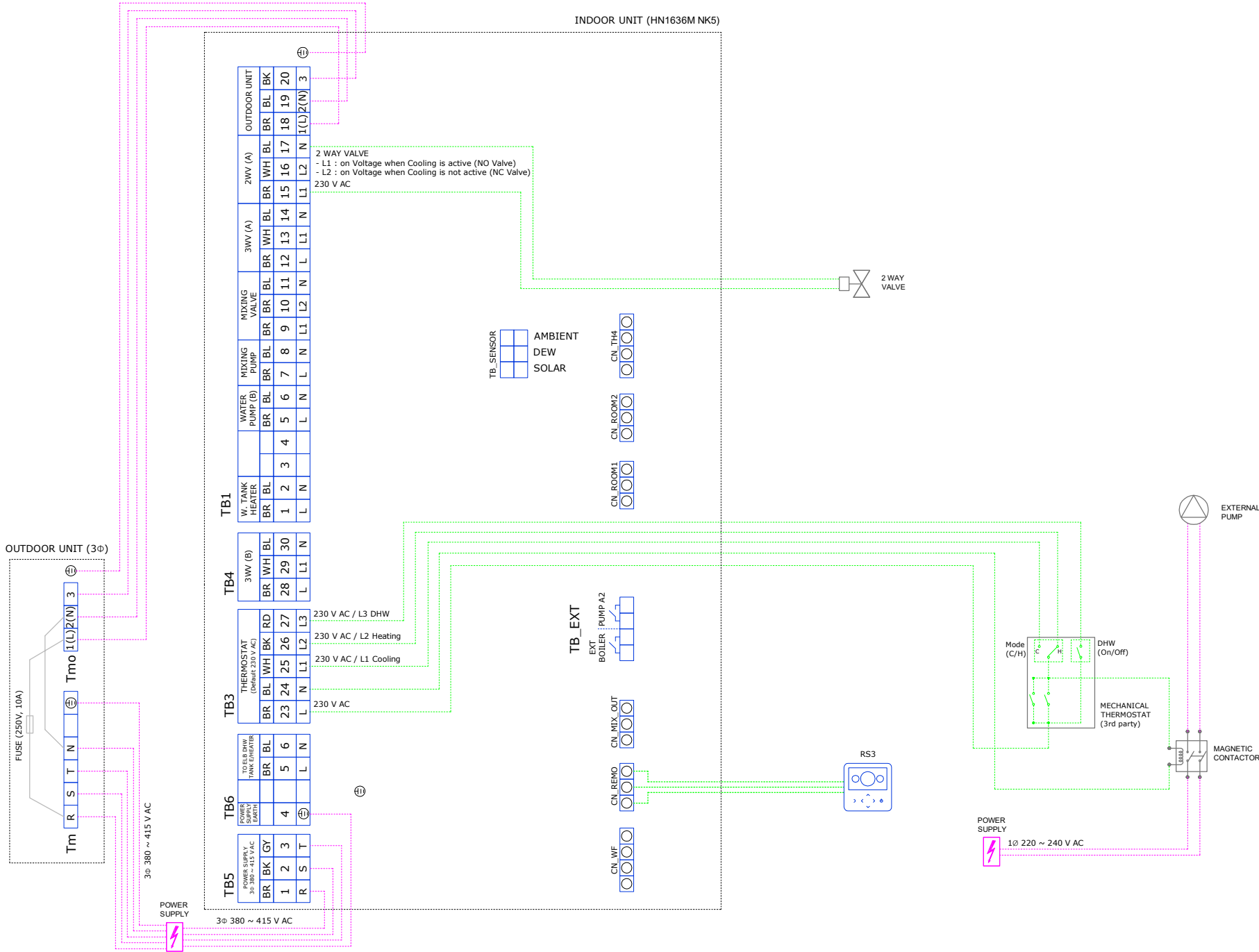


		DIP SW1			X: OFF / O: ON	
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X				
	Partial mode: Escape low noise mode for target temperature	O				
Peak Control	Max mode		X			
	Peak control: To limit maximum current (Power saving)		O			
default setting		X	X			

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.

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



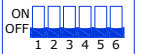
SW2



		DIP SW1								X: OFF / O: ON
MODBUS 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	
		DIP SW2								X: OFF / O: ON
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 + 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	Thermostat is not installed				O	O			X	
	Thermostat is installed					O			O	
default setting		X	X	X	X	X	O	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			
	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.

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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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	

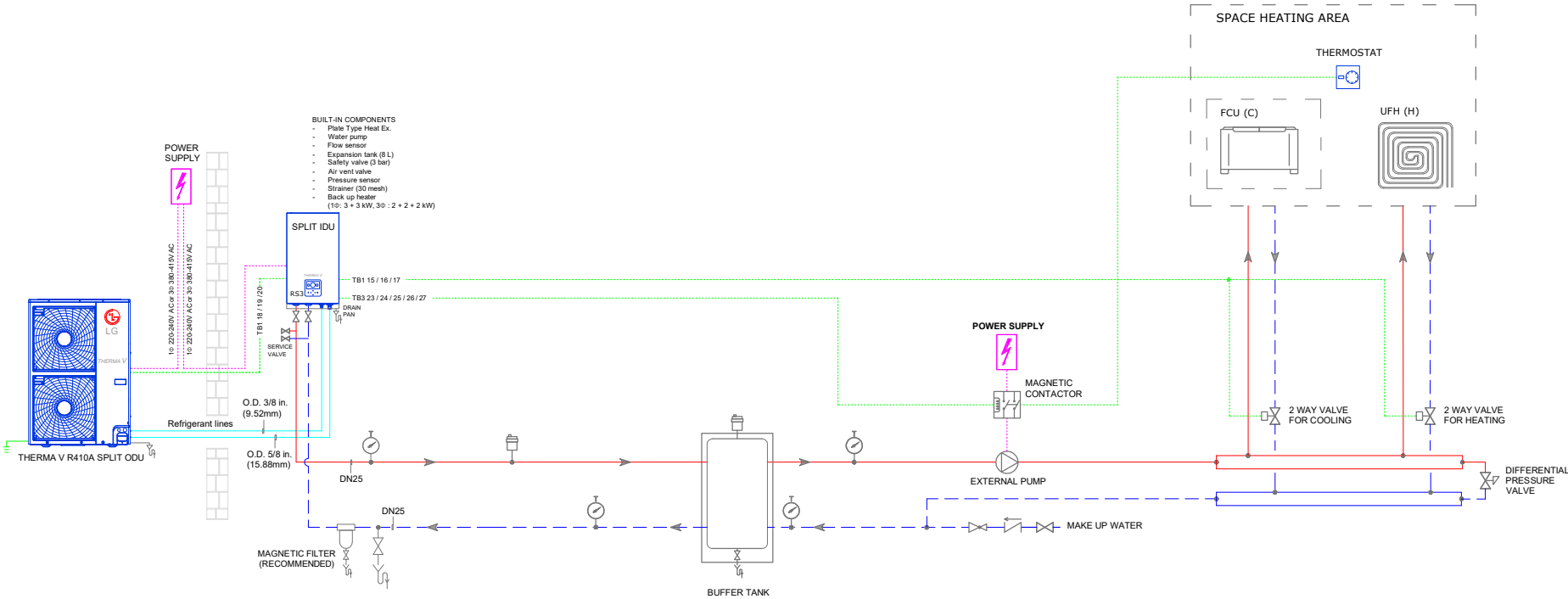
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & Cooling with Thermostat
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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.

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.

INDOOR UNIT (HN1616M NK5)

OUTDOOR UNIT (1Φ)

POWER SUPPLY
1Φ 220 ~ 240 V AC

2 WAY VALVE FOR HEATING (NC Valve)
- L1 : on Voltage when Cooling is active
- L2 : on Voltage when Cooling is not active

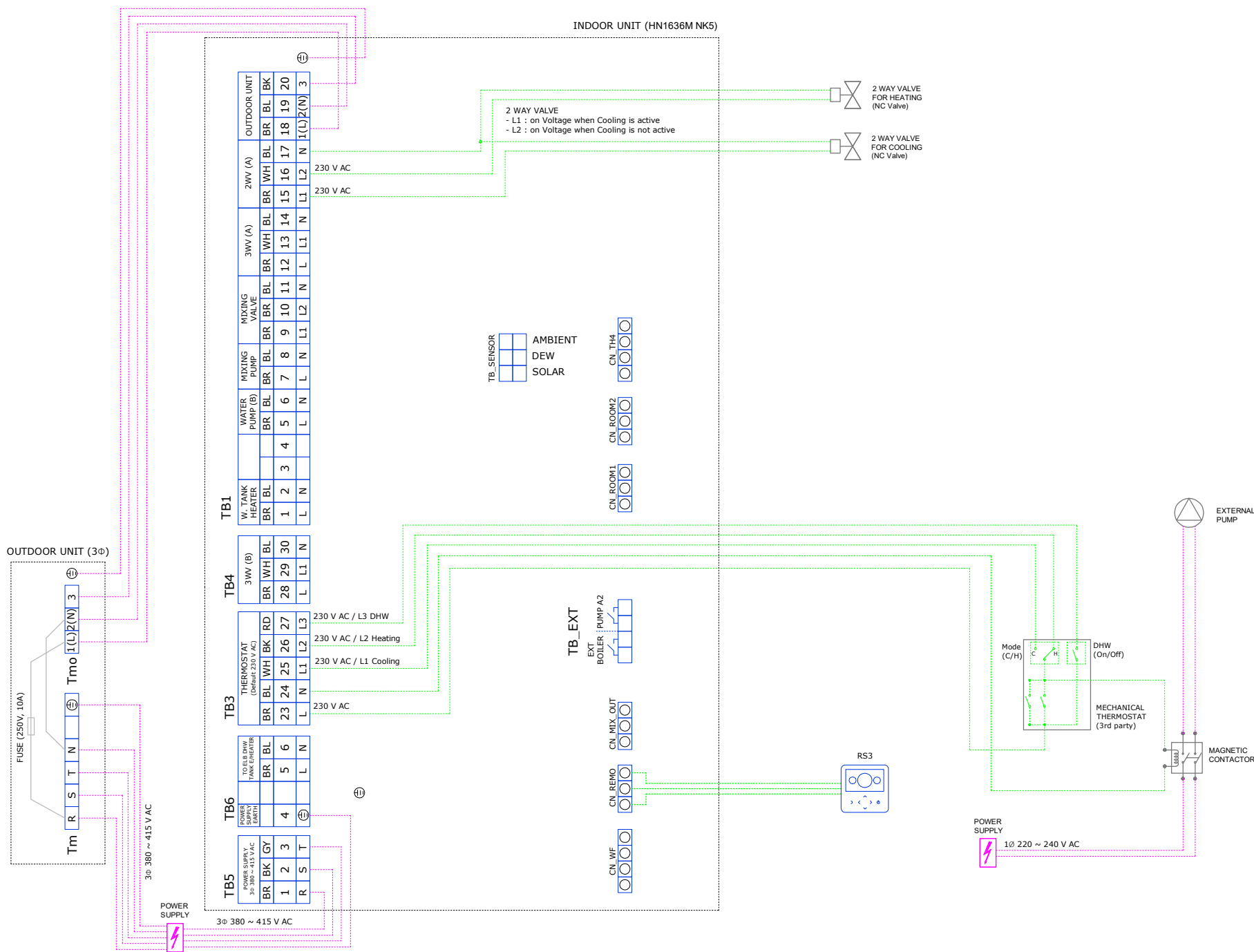
2 WAY VALVE FOR COOLING (NC Valve)

TB1

W. TANK HEATER		WATER PUMP (B)		MIXING PUMP		MIXING VALVE		3WV (A)		2WV (A)		OUTDOOR UNIT	
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL	BR	WH	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14
BR	BL	BR	BL	BR	BL	BR	BL	BR	WH	BL			

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.

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



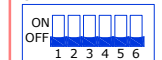
SW2



		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		2	3	4	5	6	7	8		
	As Slave										
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										
Selecting Backup Heater Capacity	Heating heater is not used				X	X					
	Full capacity is used						X	X			
Thermostat Installation	Thermostat is not installed										
	Thermostat is installed										
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	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	

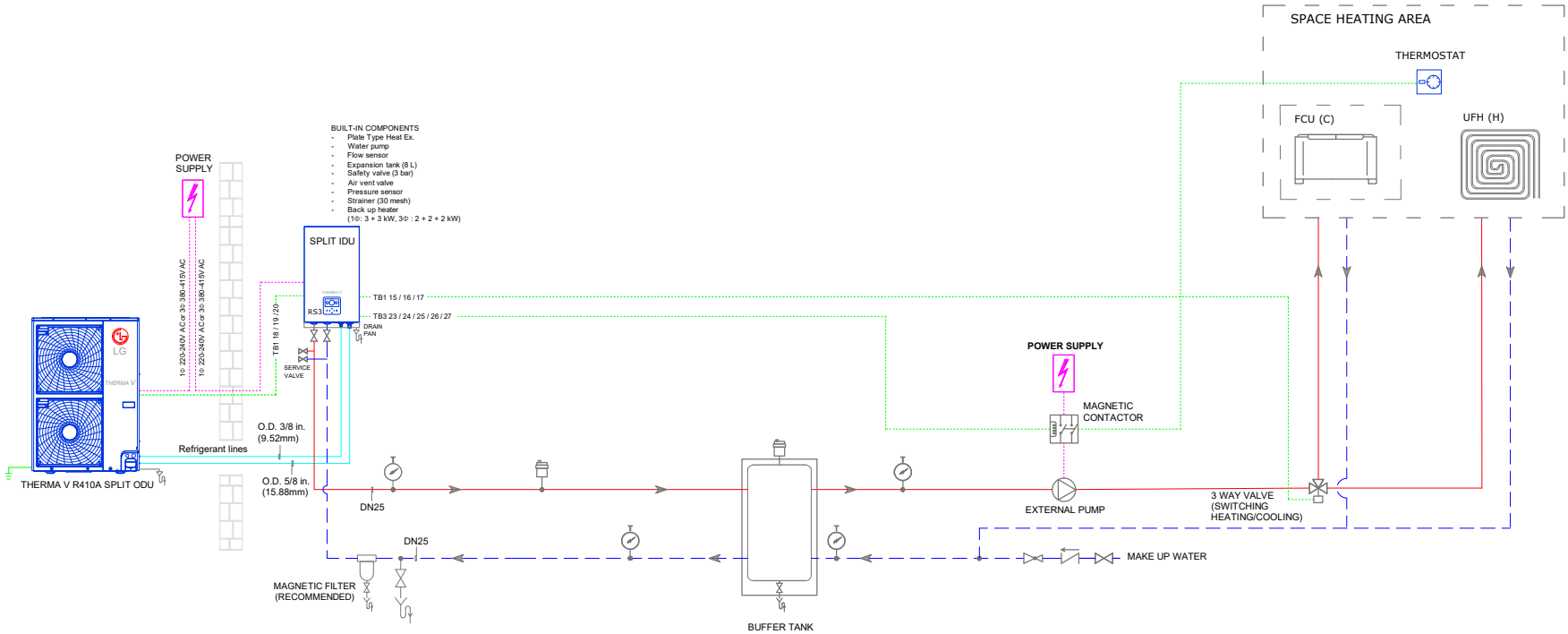
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & Cooling with Thermostat
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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

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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)

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.

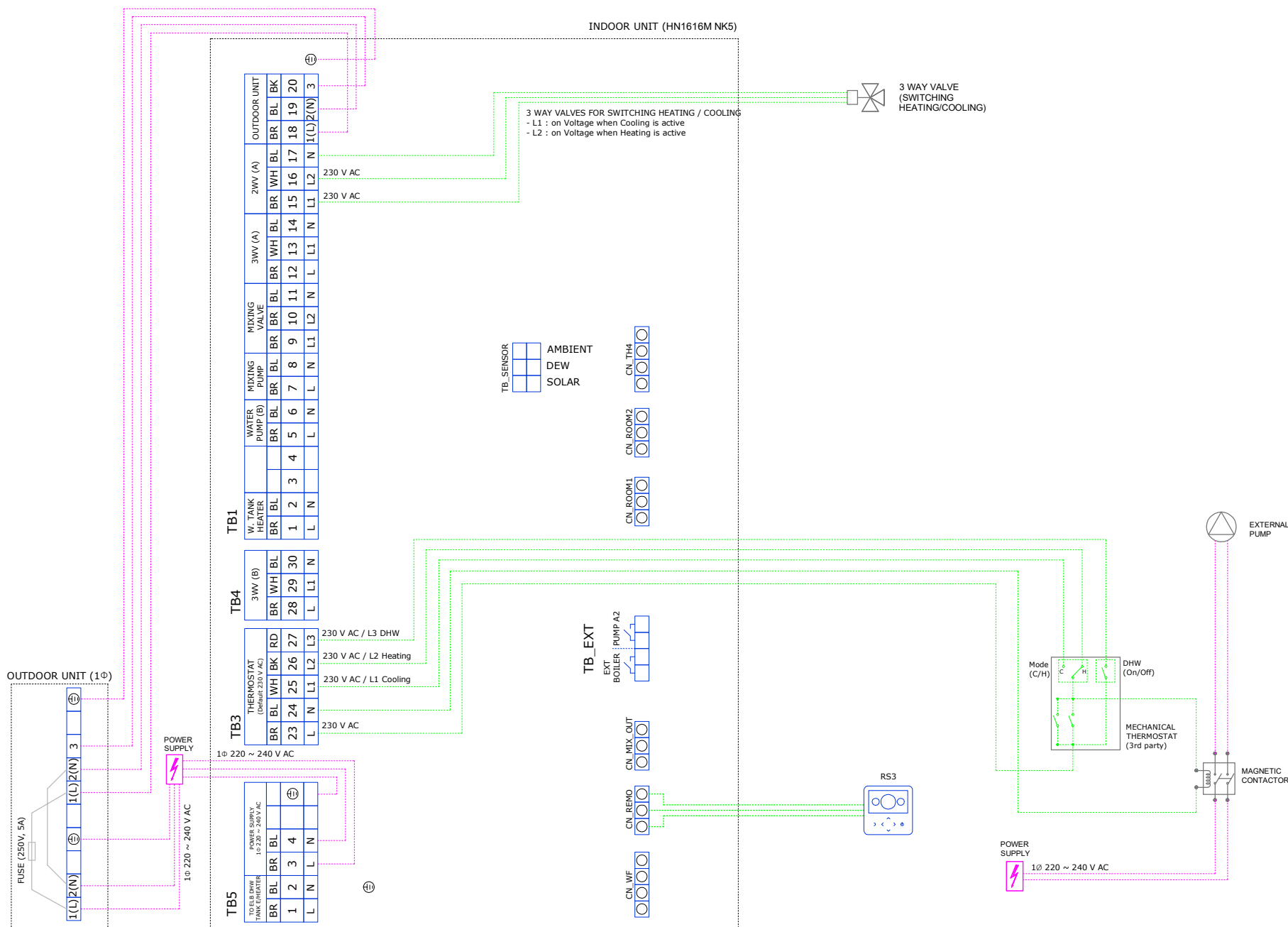
Thermostat

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 THERMA 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 (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1

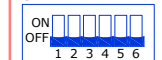


SW2

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OUTDOOR UNIT MAIN PCB

SW1

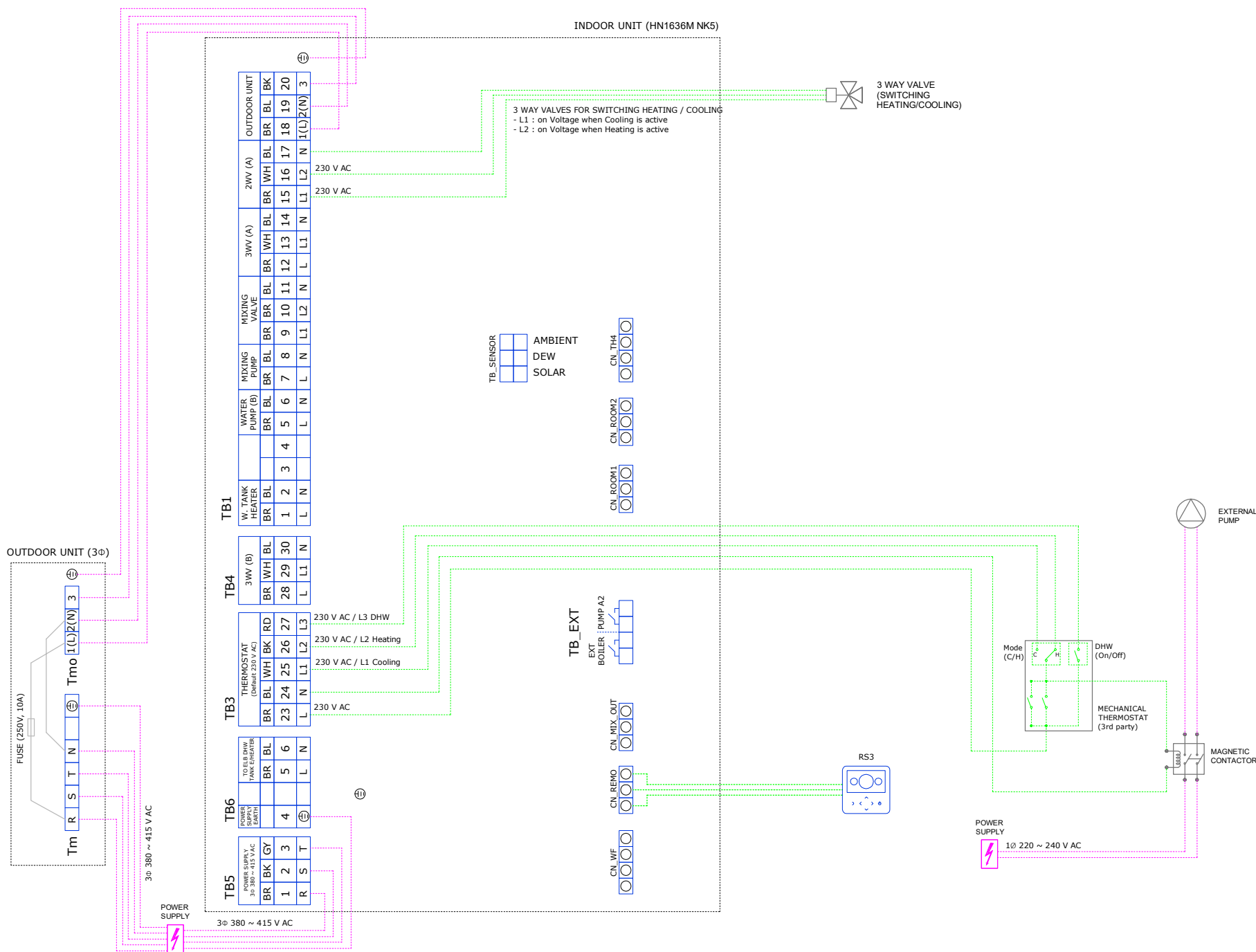


		X : OFF / O : ON		
		DIP SW 1	2	3
Low Noise Mode	Always mode : Maintain low noise mode for target temperature	X		
	Partial mode : Escape low noise mode for target temperature		O	
Peak Control	Max mode			X
	Peak control : To limit maximum current (Power saving)		O	
		default setting		
			Y	Y

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.

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



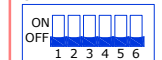
SW2



		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		2	3	4	5	6	7	8		
	As Slave										
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										
Selecting Backup Heater Capacity	Heating heater is not used							X	X		
	Full capacity is used									O	
Thermostat Installation	Full capacity is used									O	
	Thermostat is not installed										
Thermostat is installed											
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.



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	

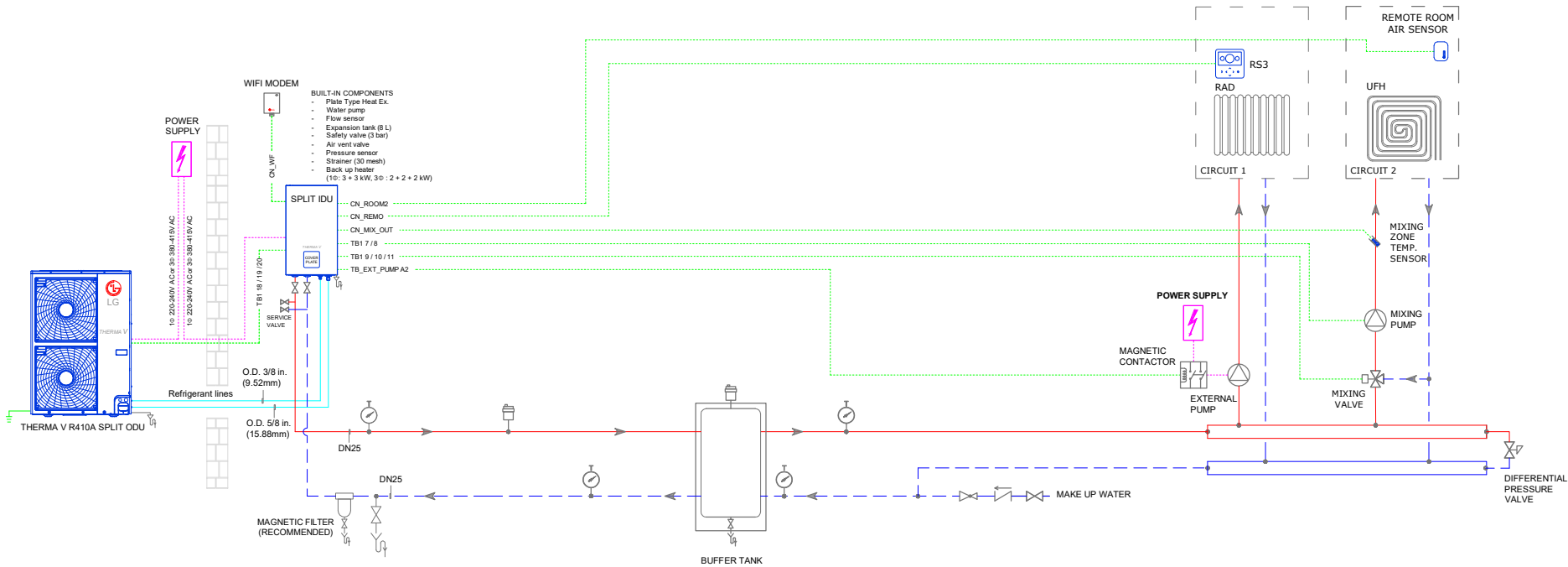
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating with 2nd Circuit
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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.

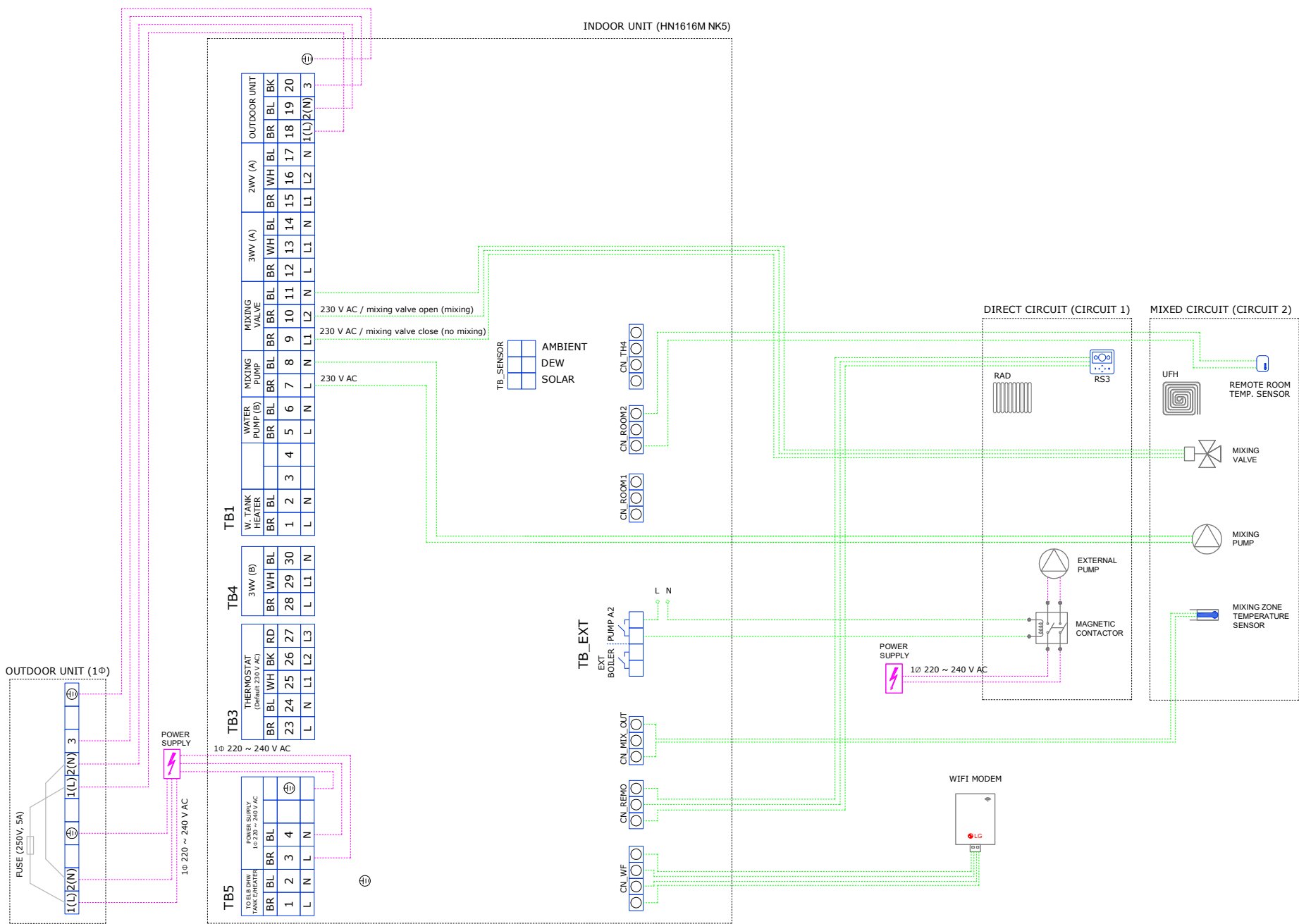
Mixing Valve

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

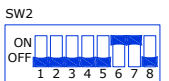
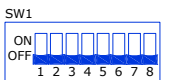
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM (1Φ)



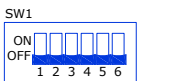
DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB



		X : OFF / O : ON							
		DIP SW 1							
MODEBUS Communication Type	Master (Link to LC controller)	X							
	Slave (Link to 3rd party controller)								
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 SW 2							
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	X
	Thermostat is not installed								O
		default setting							
		X	X	X	X	X	O	O	X

OUTDOOR UNIT MAIN PCB



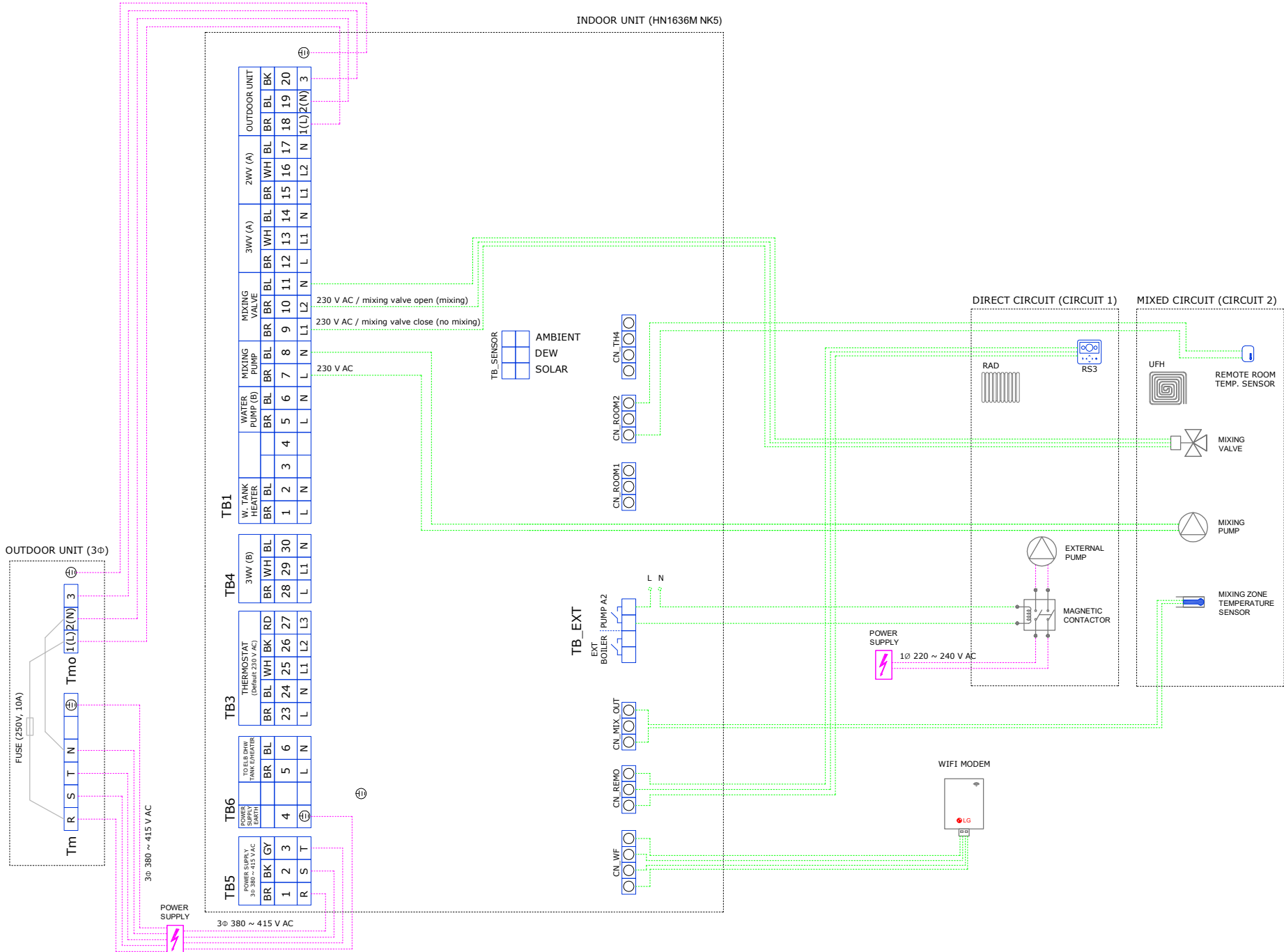
		X : OFF / O : ON		
		DIP SW 1		
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X		
	Partial mode: Escape low noise mode for target temperature		O	
Peak Control	Max mode		X	
	Peak control: To limit maximum current (Power saving)		O	
		default setting		
		X	X	

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.

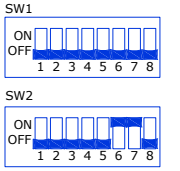
REFERENCED APPLICATION #3 SPACE HEATING WITH 2ND CIRCUIT

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB



		X : OFF / O : ON							
		DIP SW1	1	2	3	4	5	6	7 8
MODBUS 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
		DIP SW2	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	X
	Thermostat is not installed								O
default setting		X	X	X	X	X	O	O	X

OUTDOOR UNIT MAIN PCB



		X : OFF / O : ON		
		DIP SW1	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.



LG
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	

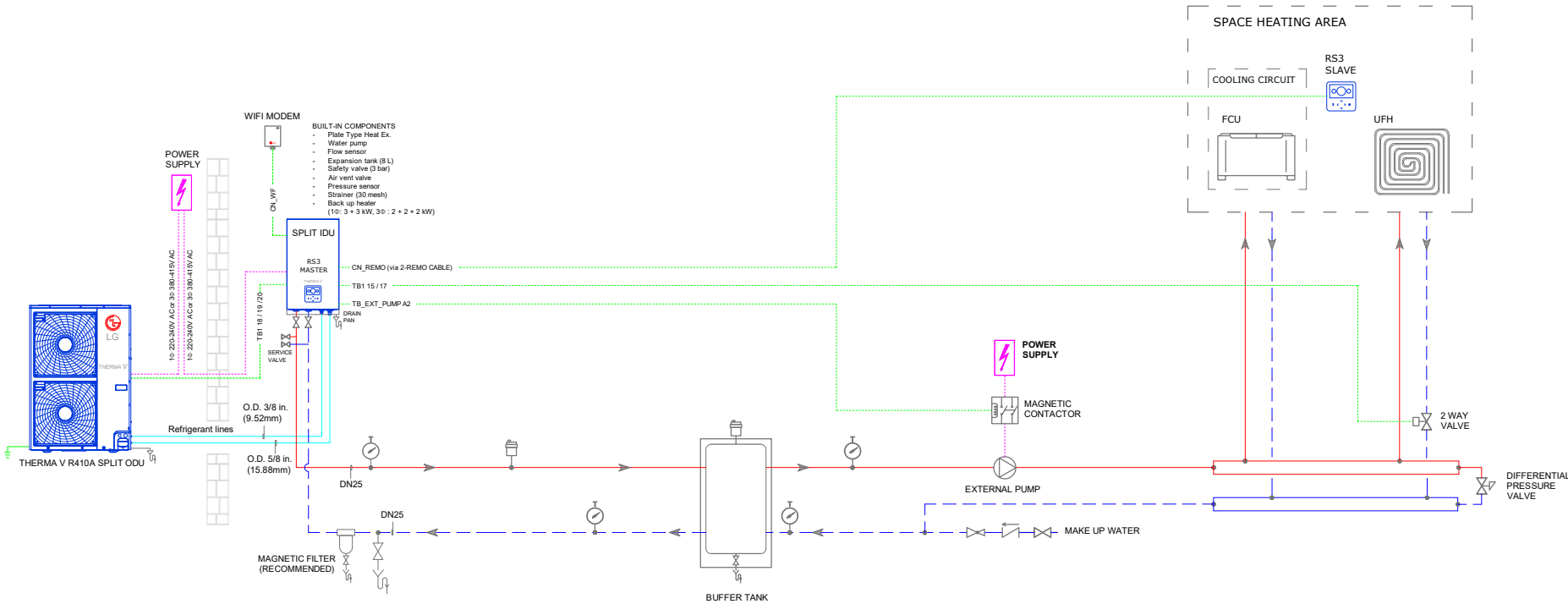
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & Cooling with 2 Remote Controllers
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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

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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 MASTER Controller (Default)

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

Wi-Fi Modem (PWFMD200)

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

RS3 SLAVE Controller (PREMTW101)

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

Extension Wire for RS3 Controller (PZCWR1)

Cable length 10m. Included in PREMTW101.

2 Remo Cable (PZCWR2)

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

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.

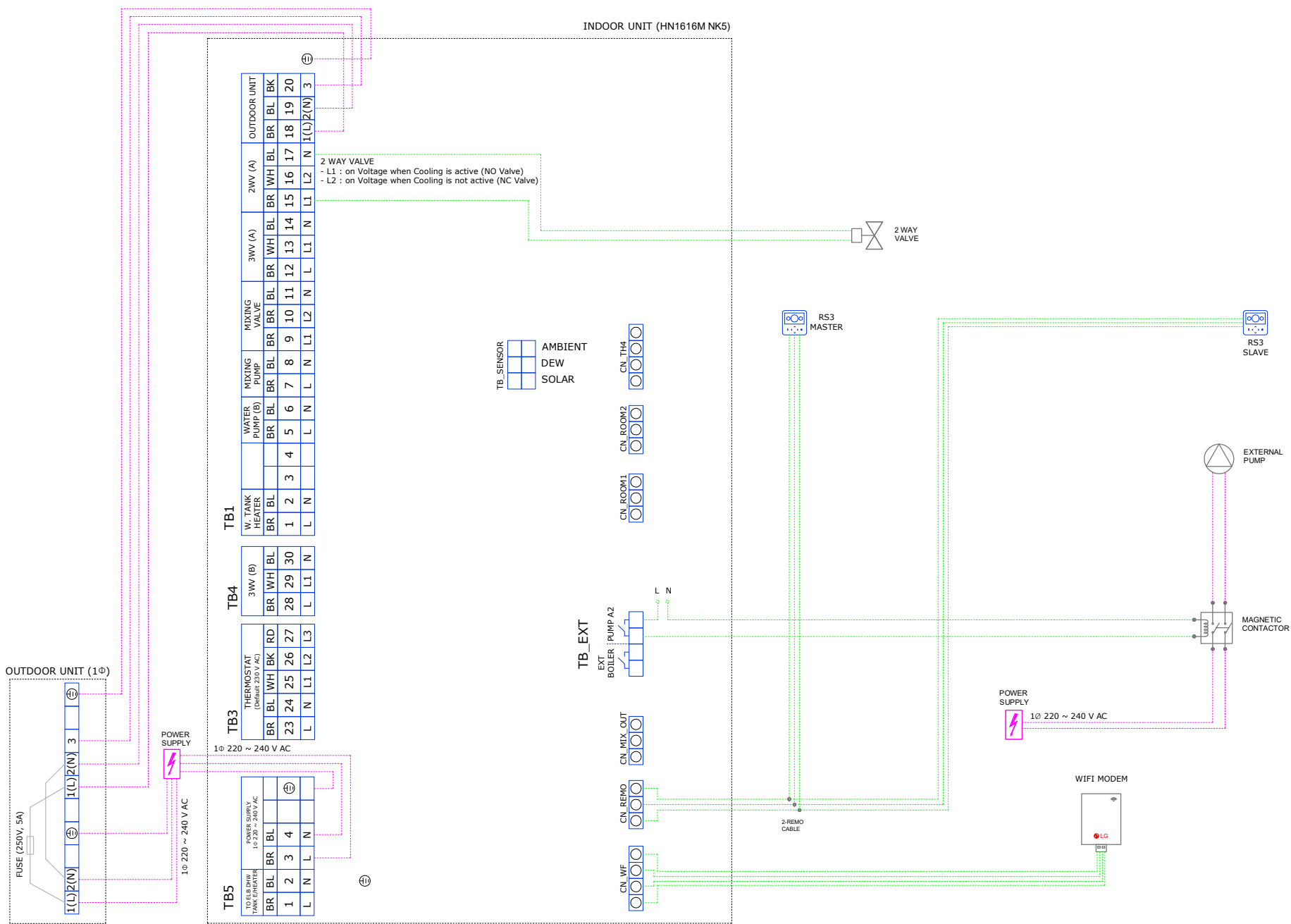
2 Way Valve

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 (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		X: OFF / O: ON							
		DIP SW1	1	2	3	4	5	6	7
MODBUS Communication Type	Master (Link to LC controller)		X						
	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	
		DIP SW2	1	2	3	4	5	6	7
Indoor Unit Type Setting for Group Control		As Master	X						
		As Slave	O						
Accessory Installation Information	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	O			
	Thermostat is not installed						X		
	Thermostat is installed						O	X	
default setting		X	X	X	X	X	O	O	X

OUTDOOR UNIT MAIN PCB

SW1

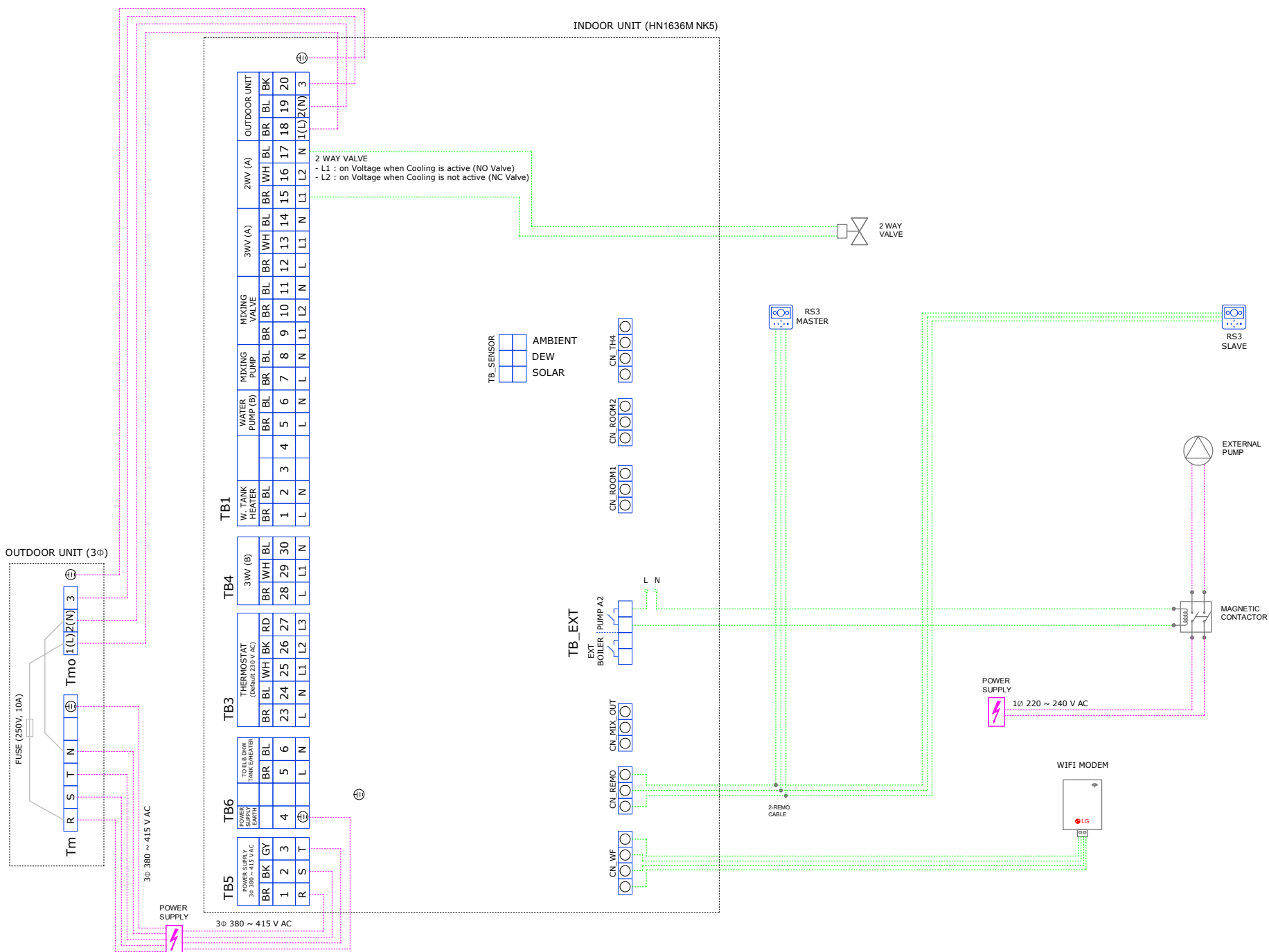


		X: OFF / O: ON		
		DIP SW1	1	2
Low Noise Mode	Always mode: Maintain low noise mode for target temperature		X	
	Partial mode: Escape low noise mode for target temperature		O	
Peak Control	Max mode		X	
	Peak control: To limit maximum current (Power saving)		O	
default setting		X	X	

NOTE

- 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.

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2

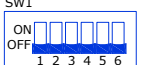


		DIP SW1								X: OFF / O: ON
MODEM Communication Type	Master (Link to LG controller)	X								
	Slave (Link to 3rd party controller)		X							
MODEM Function	REGINE		X							
	Unified Open Protocol		O							
Antifreeze Mode	Antifreeze is not applied									X
	Antifreeze is applied (Adjustable anti-freeze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

		DIP SW2								X: OFF / O: ON
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 + 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	O	X		O

OUTDOOR UNIT MAIN PCB

SW1



























		DIP SW1			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

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

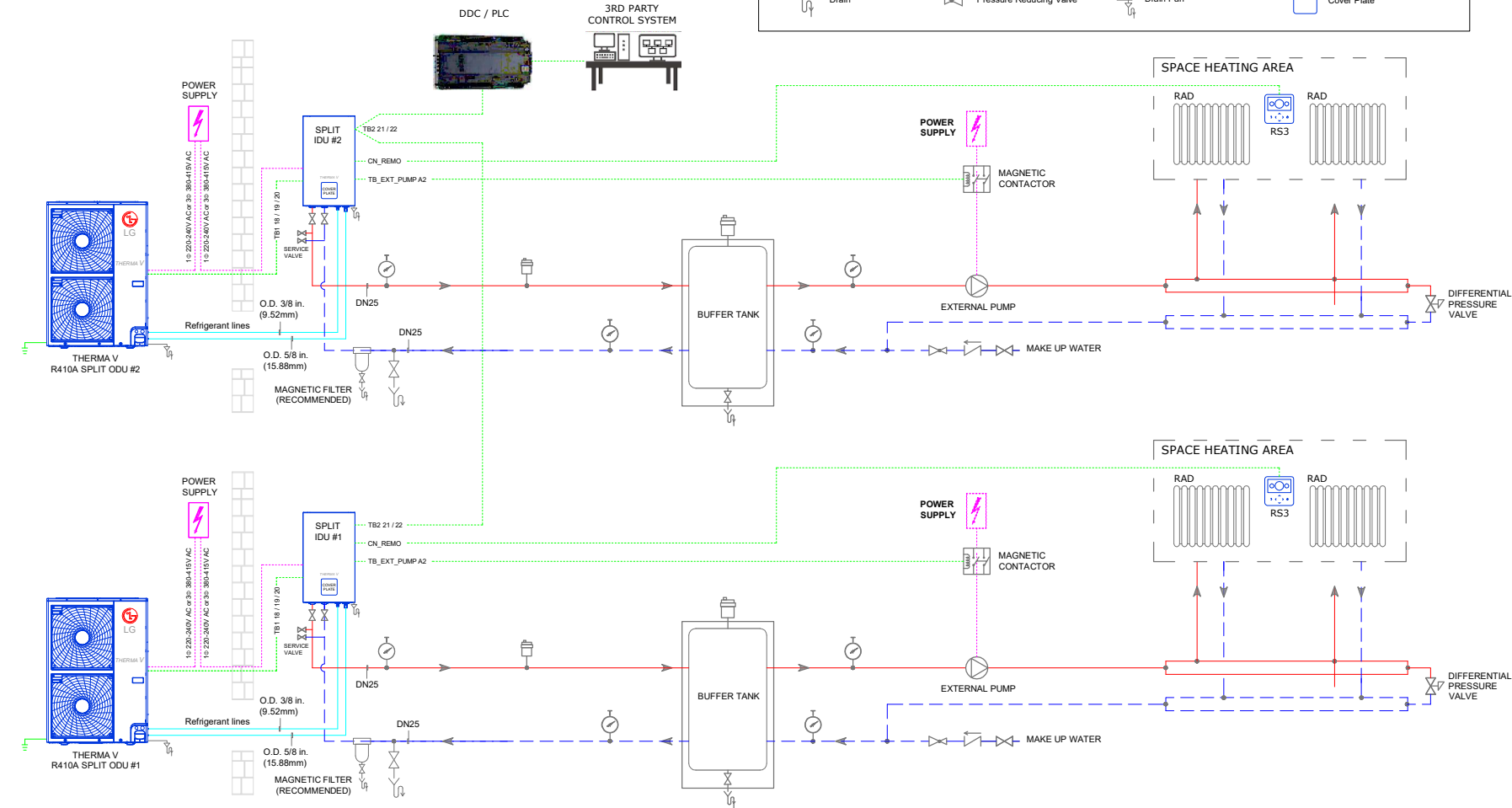
Full Name	LG Part No.	Scope of supply	
		LG	3rd party
2 Remo Cable	PZCWRC2	O	
2way Valve	-		O
3way Valve	OSHA-3V	O	O
Air Vent Valve	-		O
Buffer Tank	For IWT, OSHB-40KT	O	O
Back-up Heater Temperature Sensor	For 3rd party Back-up Heater, PRSTAT5K10	O	
Back Up Heater	HA031M E1 (1Ø, 3kW, Monobloc) HA061M 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	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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.

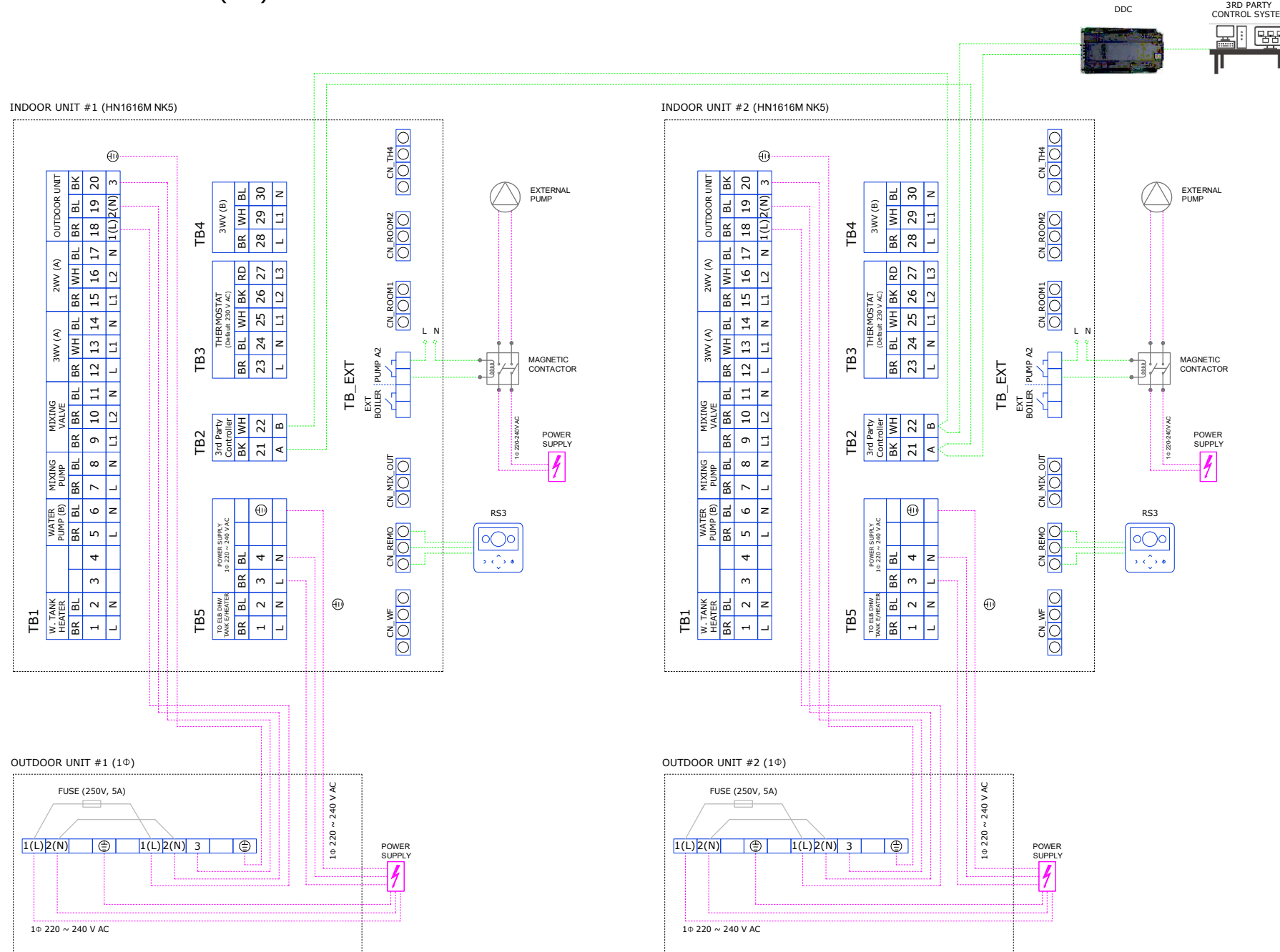
Magnetic Filter (Recommended)
A magnetic filter that collects metallic particle caused by corrosion or erosion. It is strongly recommended to install the magnetic filter to protect heat pump system.

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.

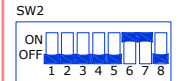
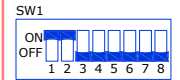
Differential Pressure Valve
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM (1Φ)



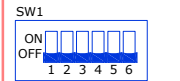
DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB



		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)		X								
MODBUS Function	REGINE		X								
	Unified Open Protocol		O								
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								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 + CHW 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								O		
default setting		X	X	X	X	X	O	O	X		

OUTDOOR UNIT MAIN PCB

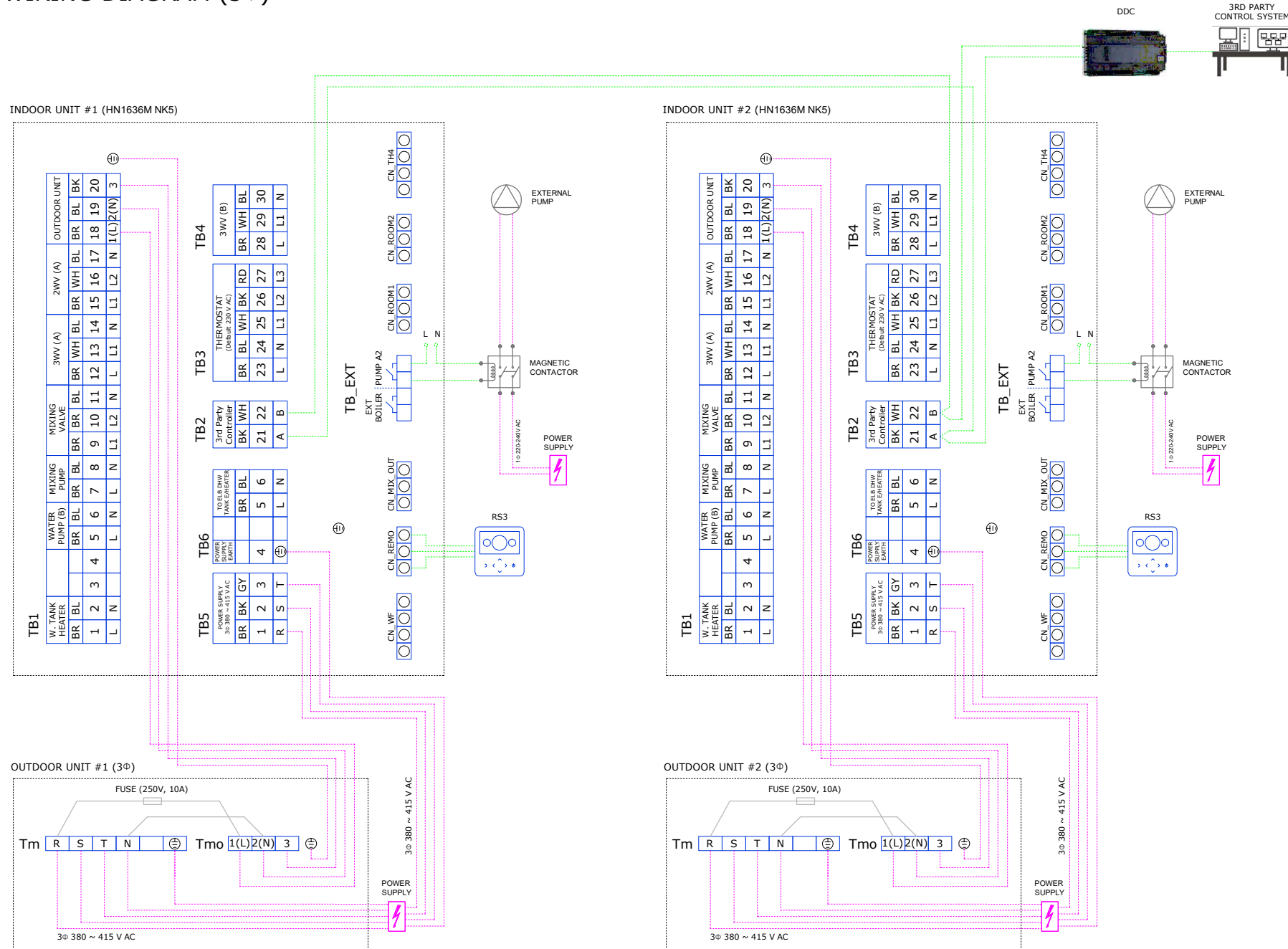


		DIP SW1			X: OFF / O: ON	
		1	2	3		
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X				
	Partial mode: Escape low noise mode for target temperature		O			
Peak Control	Max mode		X			
	Peak control: To limit maximum current (Power saving)		O			
default setting		X	X			

NOTE

- 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.

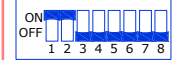
WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



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

		DIP SW2								X: OFF / O: ON
Indoor Unit Type Setting for Group Control	As Master	X								
Accessory Installation Information	As Slave									
Heat Pump Cycle	Heat pump installation (Heating or cooling circuit only)		X	X						
Heat Pump Cycle	Heat pump + DHW tank are installed		X	O						
Heat Pump Cycle	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			
Thermal Installation	Thermal is not installed							X	O	
Thermal Installation	Thermal is installed							O	X	
default setting		X	X	X	X	X	X	O	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
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	

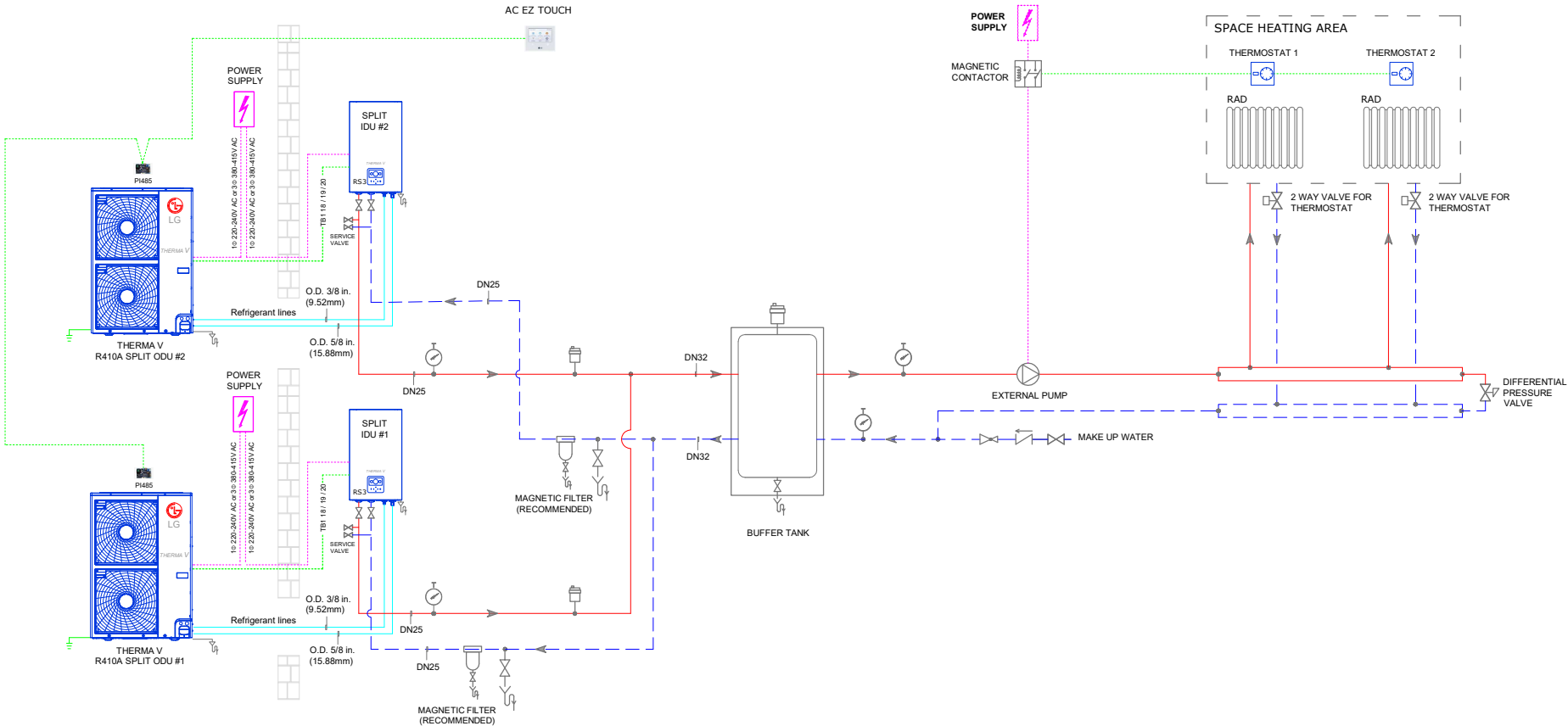
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating with Parallel Installation (LG BECON)
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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 (PZCWRC1)

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

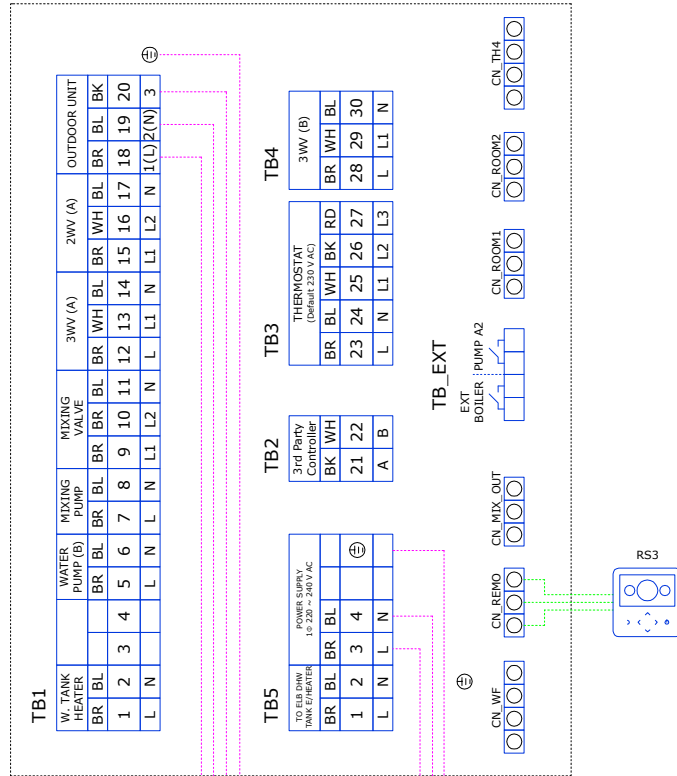
An isolation valve paired with thermostat to allow whether water flows into the water circuit.

Differential Pressure Valve

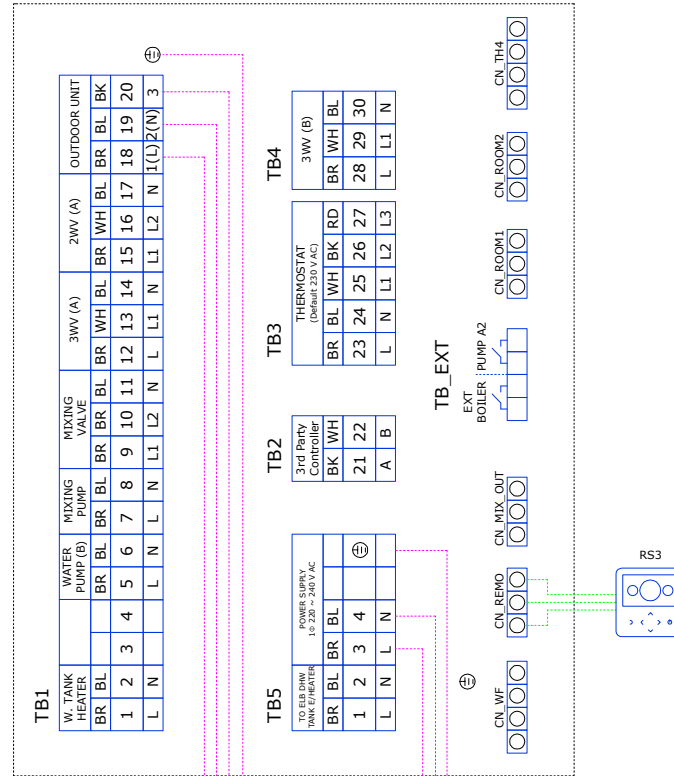
A self pressure regulating valve that provides constant differential pressure between supply and return headers.

WIRING DIAGRAM (1Φ)

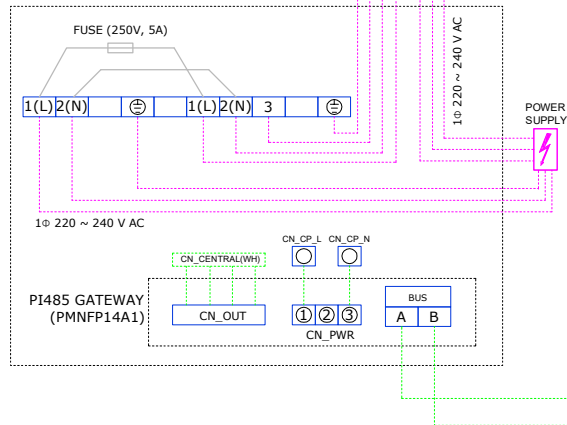
INDOOR UNIT #1 (HN1616M NK5)



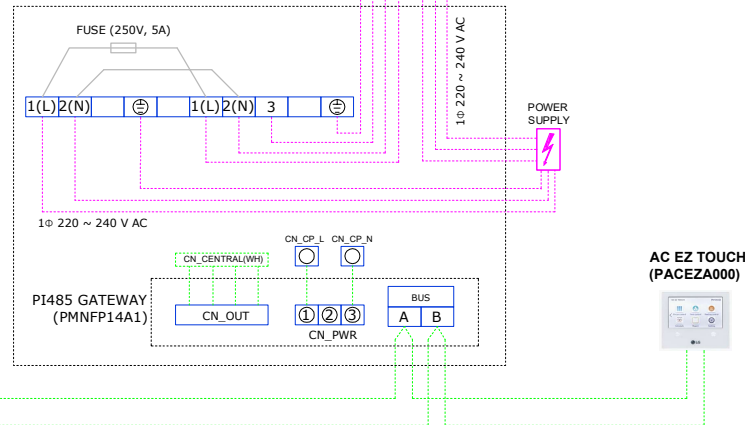
INDOOR UNIT #2 (HN1616M NK5)



OUTDOOR UNIT #1 (1Φ)



OUTDOOR UNIT #2 (1Φ)



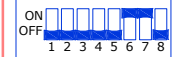
DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		DIP SW1								X: OFF / O: ON	
MODBUS Communication Type	Master (Link to LC controller)	X									
MODBUS Function	Slave (Link to 3rd party controller)		X								
Antifreeze Mode	Antifreeze is not applied									X	
	Antifreeze is applied (Adjustable anti-freeze temp.)										X
default setting		X	X	X	X	X	X	X	X		
		DIP SW2								X: OFF / O: ON	
Indoor Unit Type Setting for Group Control	As Master	X									
	As Slave		X								
Accessory Installation Information	Heat pump installation (Heating or cooling circuit only)		X	X							
	Heat pump + CHW tank are installed		X	O							
	Heat pump + CHW tank + Solar thermal system are installed		O	X							
Heat Pump Cycle	Heating and cooling			O	X						
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				O	X					
	Half capacity is used				O	O					
Thermostat Installation	Thermostat is not installed									X	
	Thermostat is installed										X
default setting		X	X	X	X	X	X	X	X	O	X

OUTDOOR UNIT MAIN PCB

SW1



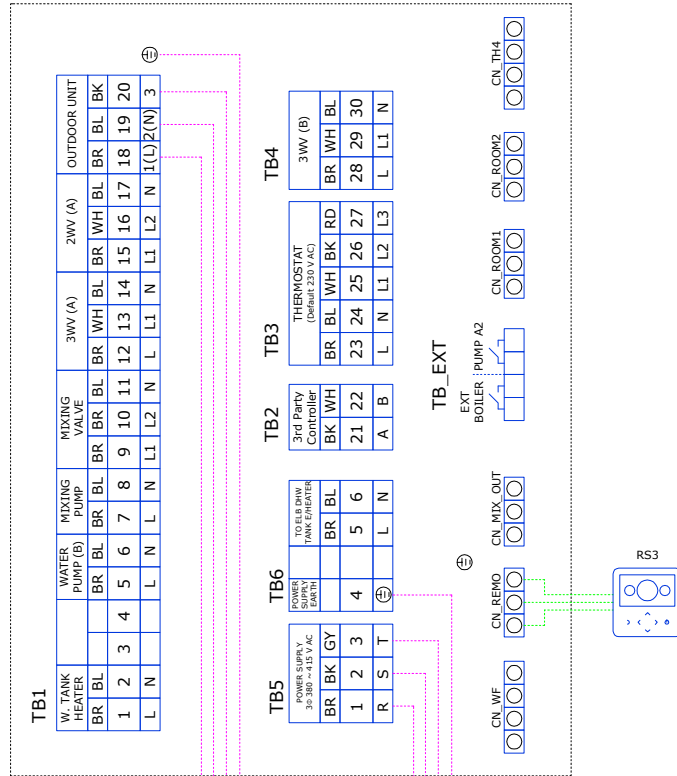
		DIP SW1			X: OFF / O: ON	
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X				
	Partial mode: Escape low noise mode for target temperature		O			
Peak Control	Max mode		X			
	Peak control: To limit maximum current (Power saving)		O			
default setting		X	X			

NOTE

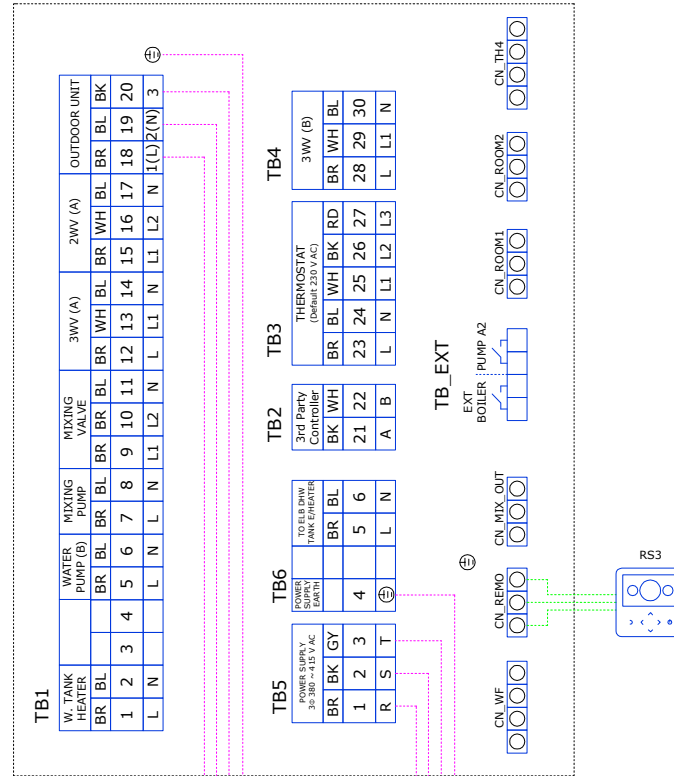
- The wiring cable size and Circuit breaker selection must comply with installation manual and applicable local regulations.
- Make sure that Earth Leakage Circuit Breaker (ELCB) should be installed for power supply line.

WIRING DIAGRAM (3Φ)

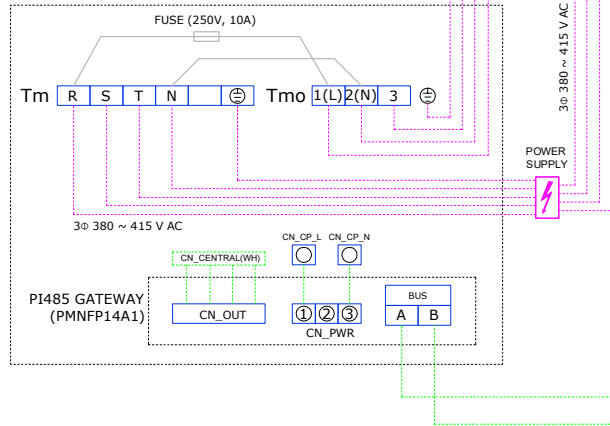
INDOOR UNIT #1 (HN1636M NK5)



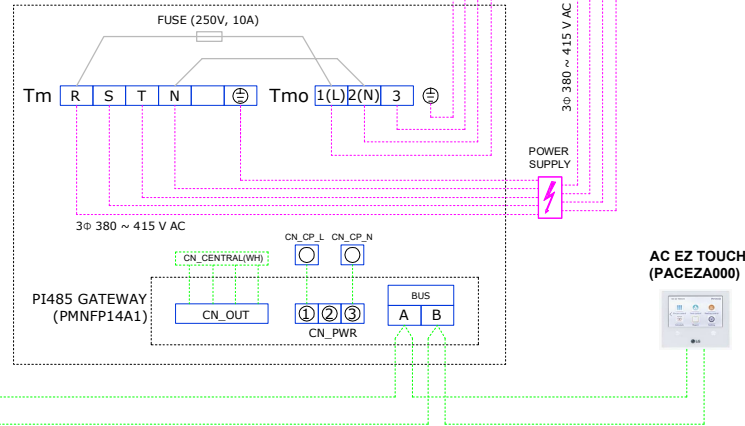
INDOOR UNIT #2 (HN1636M NK5)



OUTDOOR UNIT #1 (3Φ)



OUTDOOR UNIT #2 (3Φ)



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	X	X	X	X	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	X						
	Heat pump + DHW tank + Solar thermal system are installed			X	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	Full capacity is used						X	X			
	Half capacity is used						O	X			
Thermostat Installation	Thermostat is not installed								O	X	
	Thermostat is installed										X
	default setting		X	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	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	

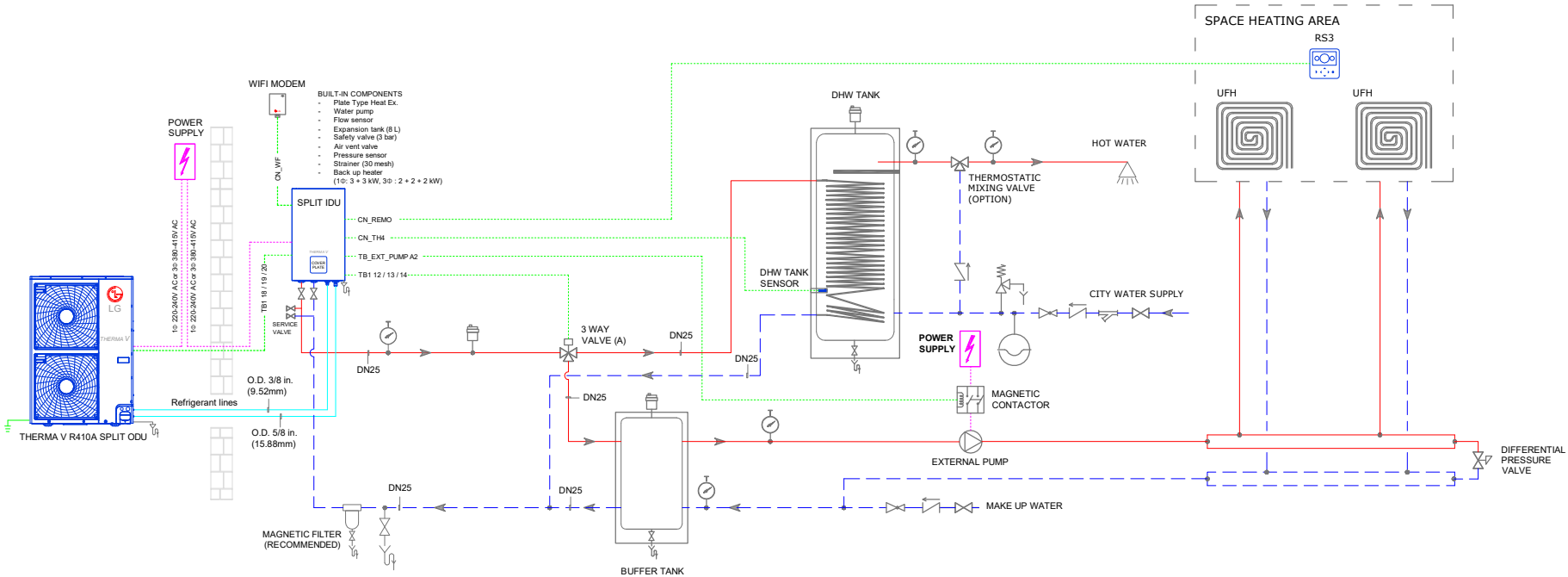
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & DHW
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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

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.

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.

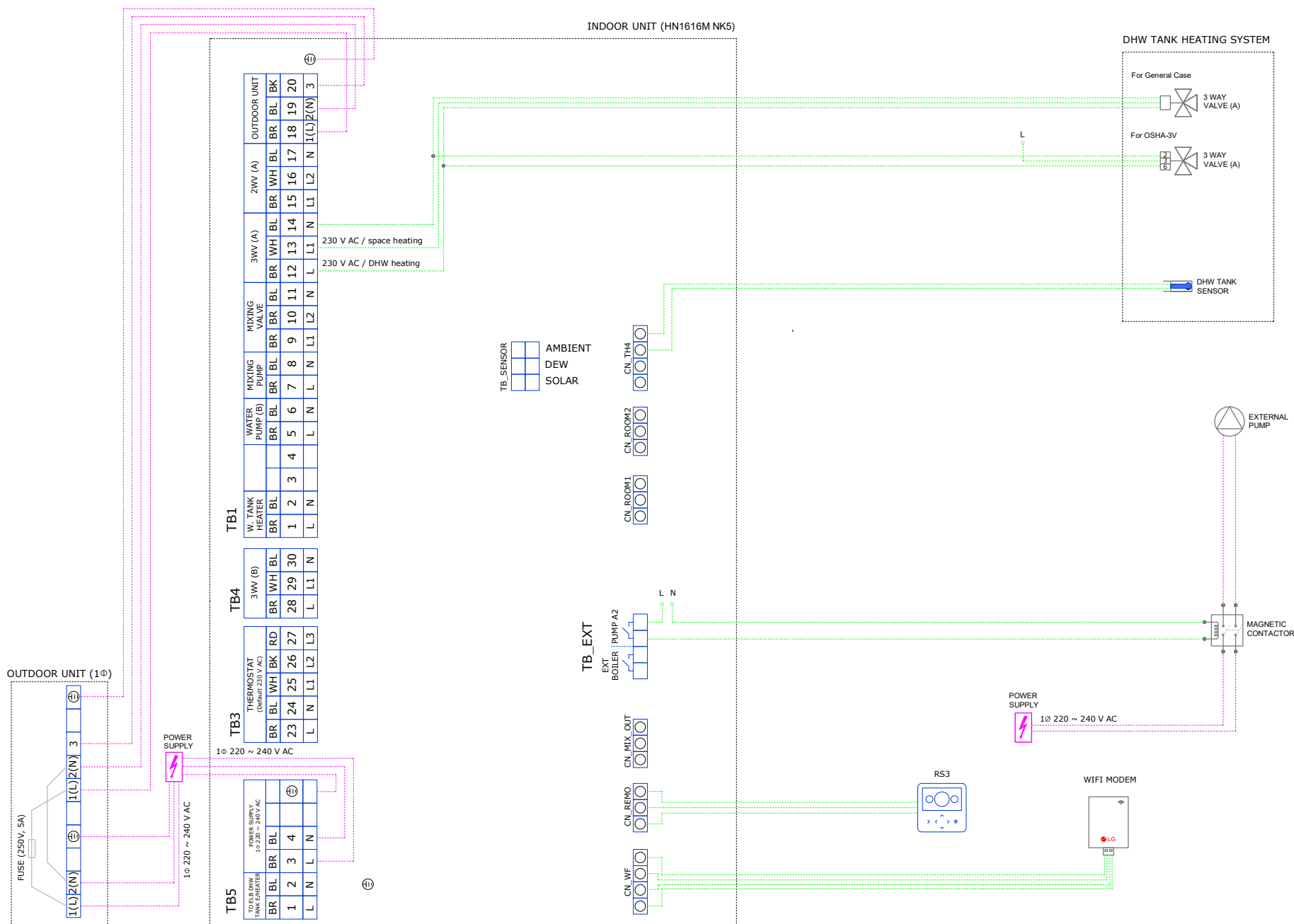
Buffer Tank

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 (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2

[illegible]

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	

























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.

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
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) PHLTC (3Ø, Split)
DHW Tank Temperature Sensor	A temperature sensor for DHW tank. Cable length 12m.	PHRSTA0, Included in DHW Tank Kit (PHLTA / PHLTC)
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	

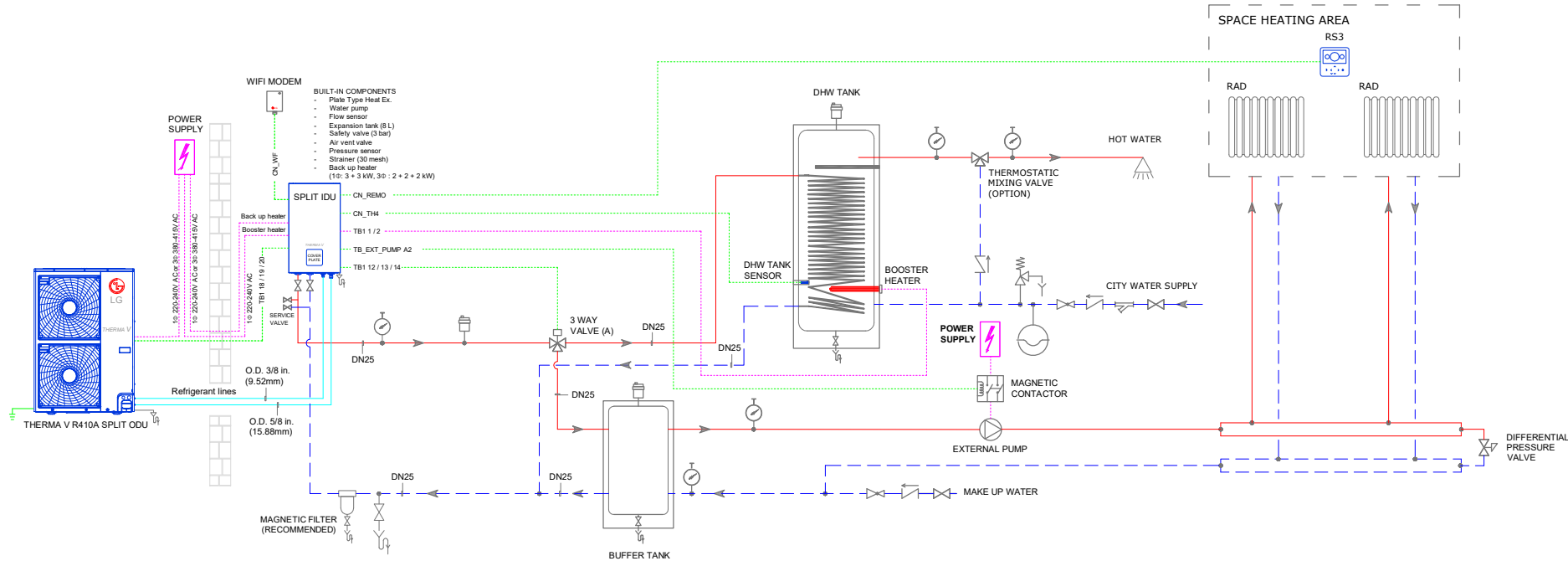
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & DHW with Booster Heater
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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 (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 / PHLTC)

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 / PHLTC)

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.

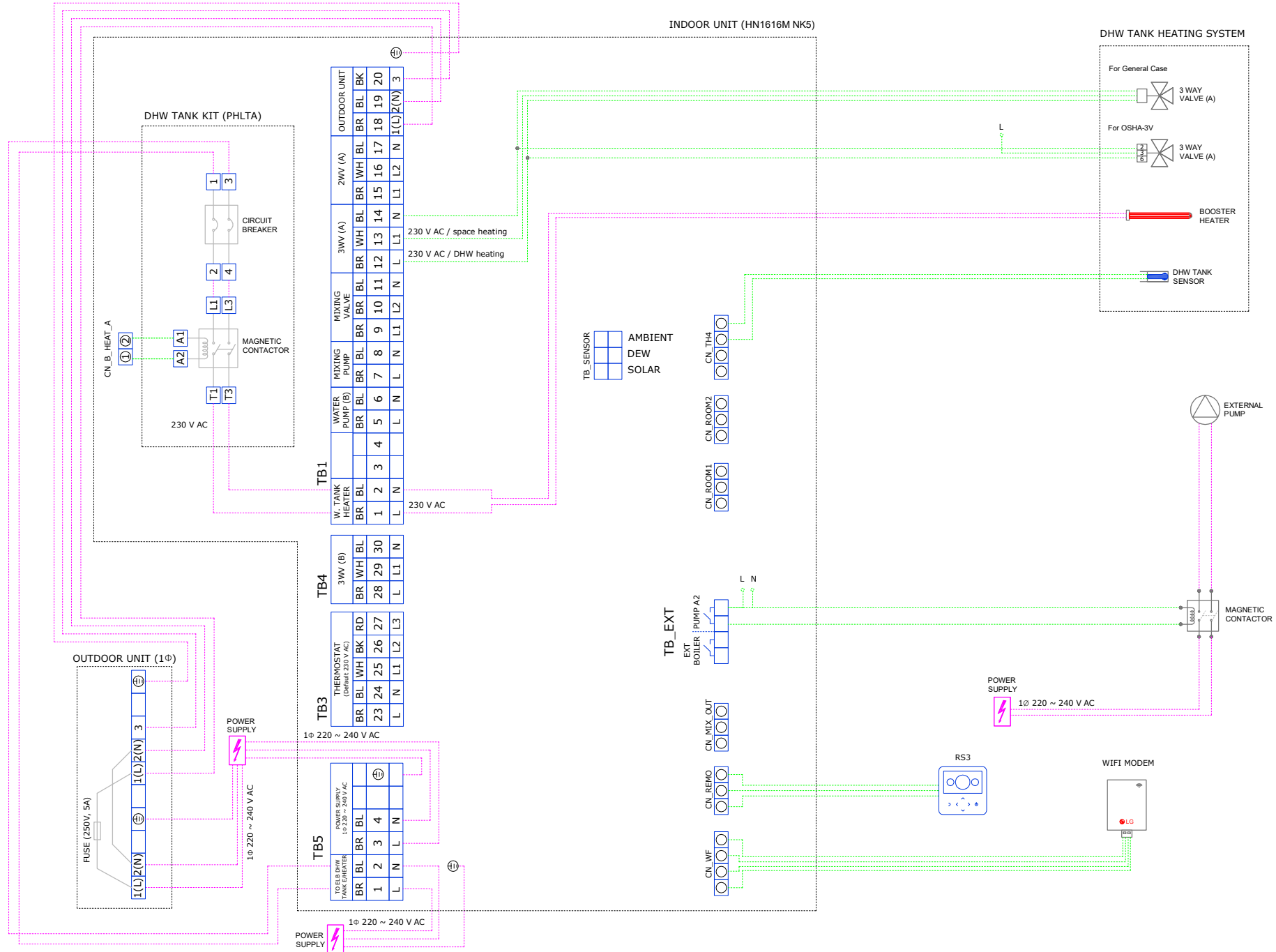
Buffer Tank

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 (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		DIP SW1								X: OFF / O: ON							
MOCBUS Communication Type	Master (Link to LG controller)	1	2	3	4	5	6	7	8								
MOCBUS Function	Slave (Link to 3rd party controller)																
MOCBUS Function	REGINE																
Antifreeze Mode	Antifreeze is not applied																
Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)																
default setting		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																
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								
Selecting Backup Heater Capacity	Full capacity is used								O								
Thermostat Installation	Thermostat is not installed														X		
Thermostat Installation	Thermostat is installed														O		
default setting		X	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.

The diagram illustrates the electrical connections for the indoor unit (HN1636M NK5) to various external components. The indoor unit features several terminal blocks: TB1 (W. TANK HEATER, MIXING VALVE, MIXING PUMP, WATER PUMP), TB3 (THERMOSTAT), TB4 (3W (B)), TB5 (POWER SUPPLY), TB6 (POWER SUPPLY), and TB_EXT (EXT. BOILER, CN. MIX. OUT, CN. REMO, CN. WF). The outdoor unit (3Φ) includes terminals Tm, R, S, T, N, and Tmo. The DHW tank kit (PHLTC) includes a circuit breaker, magnetic contactor, and 230 V AC supply. The DHW tank heating system includes a 3-way valve, booster heater, DHW tank sensor, external pump, magnetic contactor, power supply, RS3, and WIFI modem. The diagram shows the wiring for 230 V AC, 3Φ 380 ~ 415 V AC, and 1Φ 220 ~ 240 V AC, as well as the connection to the power supply and the RS3 module.

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.



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	

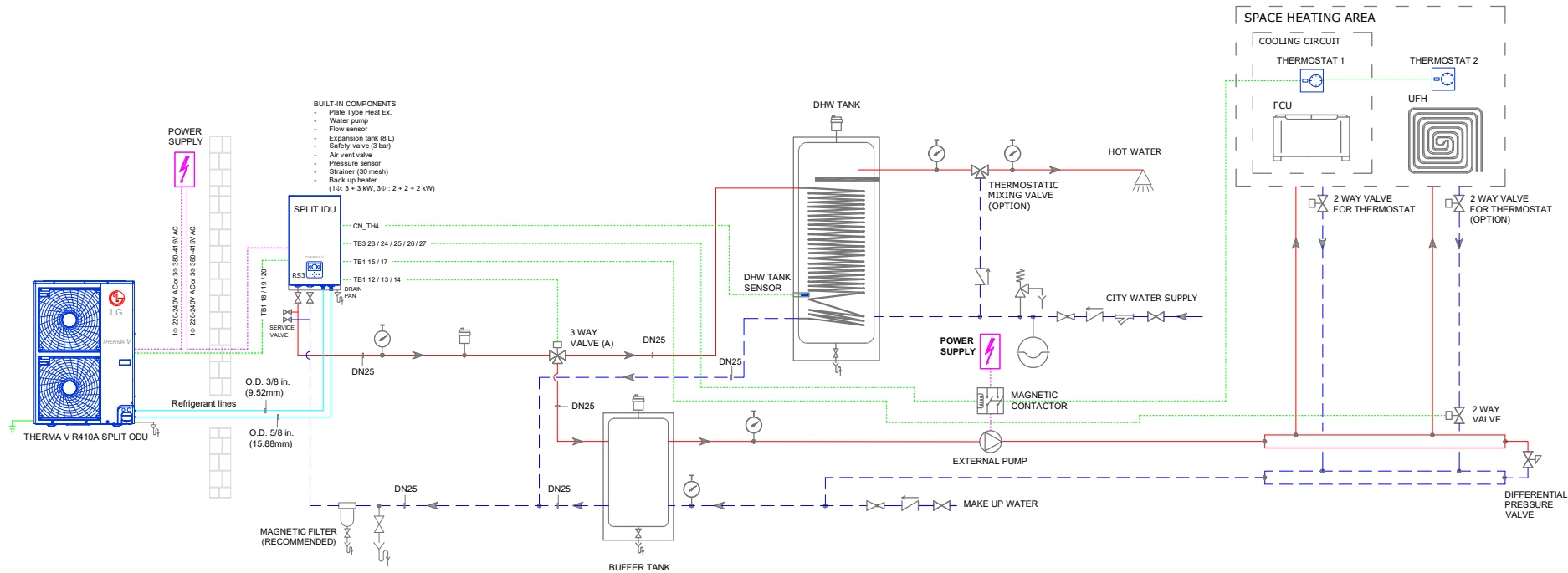
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating, Cooling, and DHW with Thermostat
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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

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 (PZCWR01)

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)
An 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.

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. Thermostat must be connected with Therma V, Valve, Pump, and FCU where applicable.

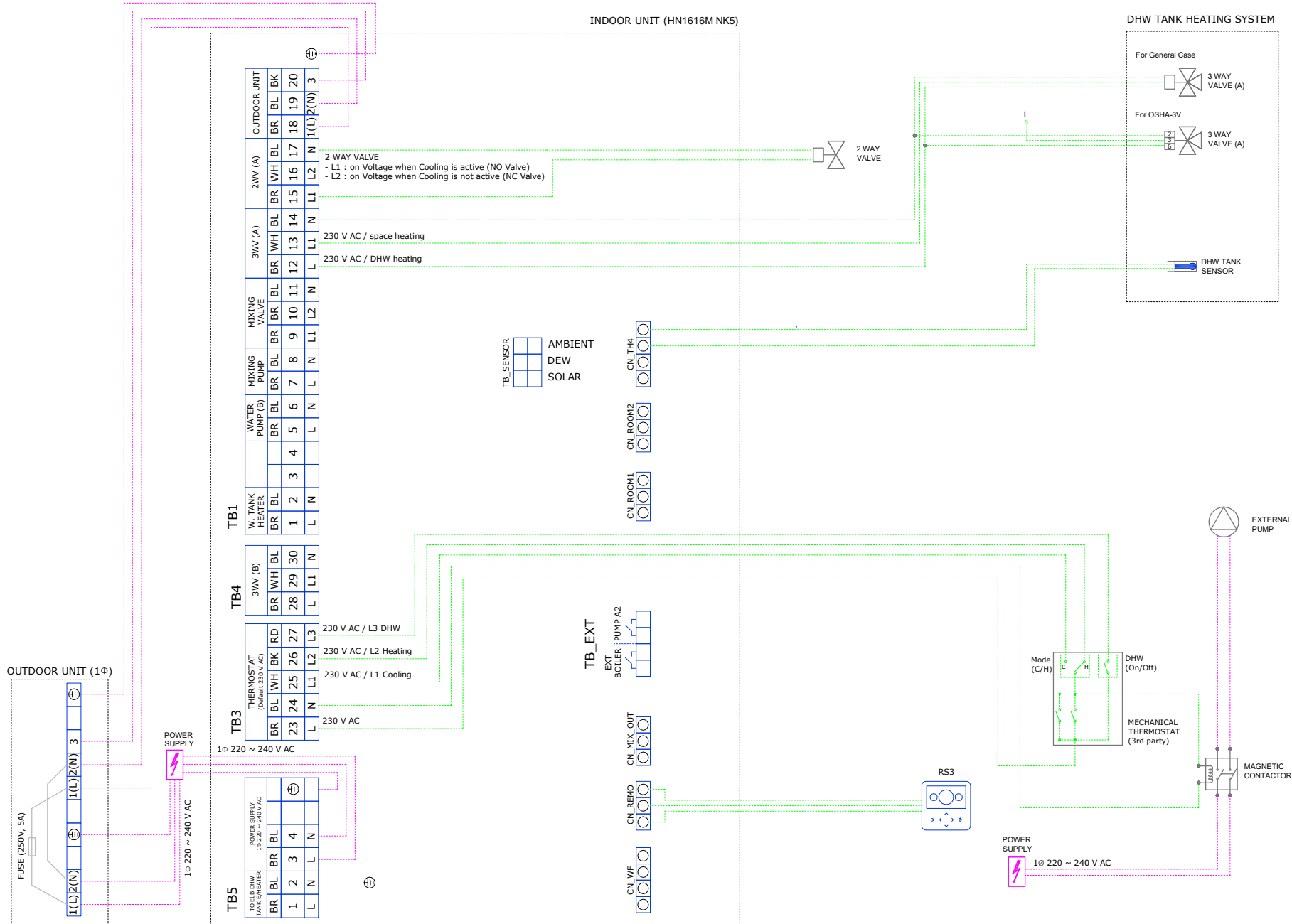
2 Way Valve for Thermostat

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 (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



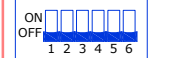
SW2



		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	Unified Open Protocol		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																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

- 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.

The diagram illustrates the electrical connections for the indoor unit (HN1636M NK5) to the outdoor unit and the DHW tank heating system.

























Indoor Unit (HN1636M NK5) Terminals:

- TB1:** W. TANK HEATER (BR, BL, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809,

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
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 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	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	

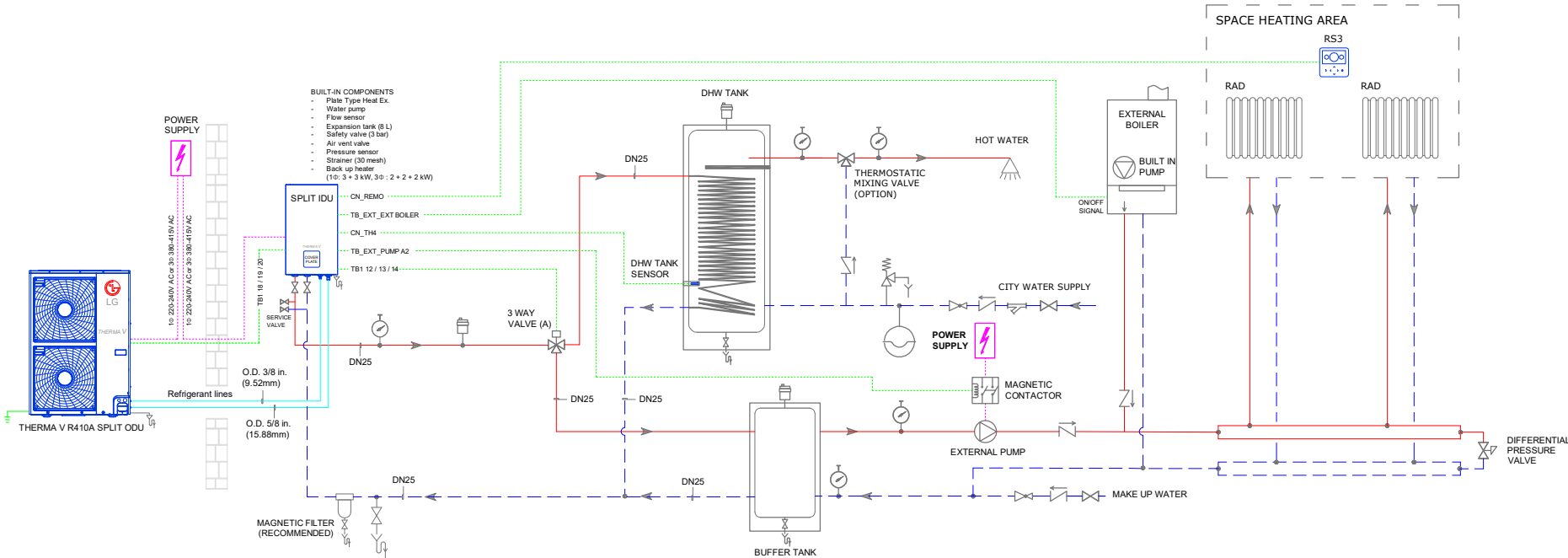
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & DHW with External Boiler
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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.

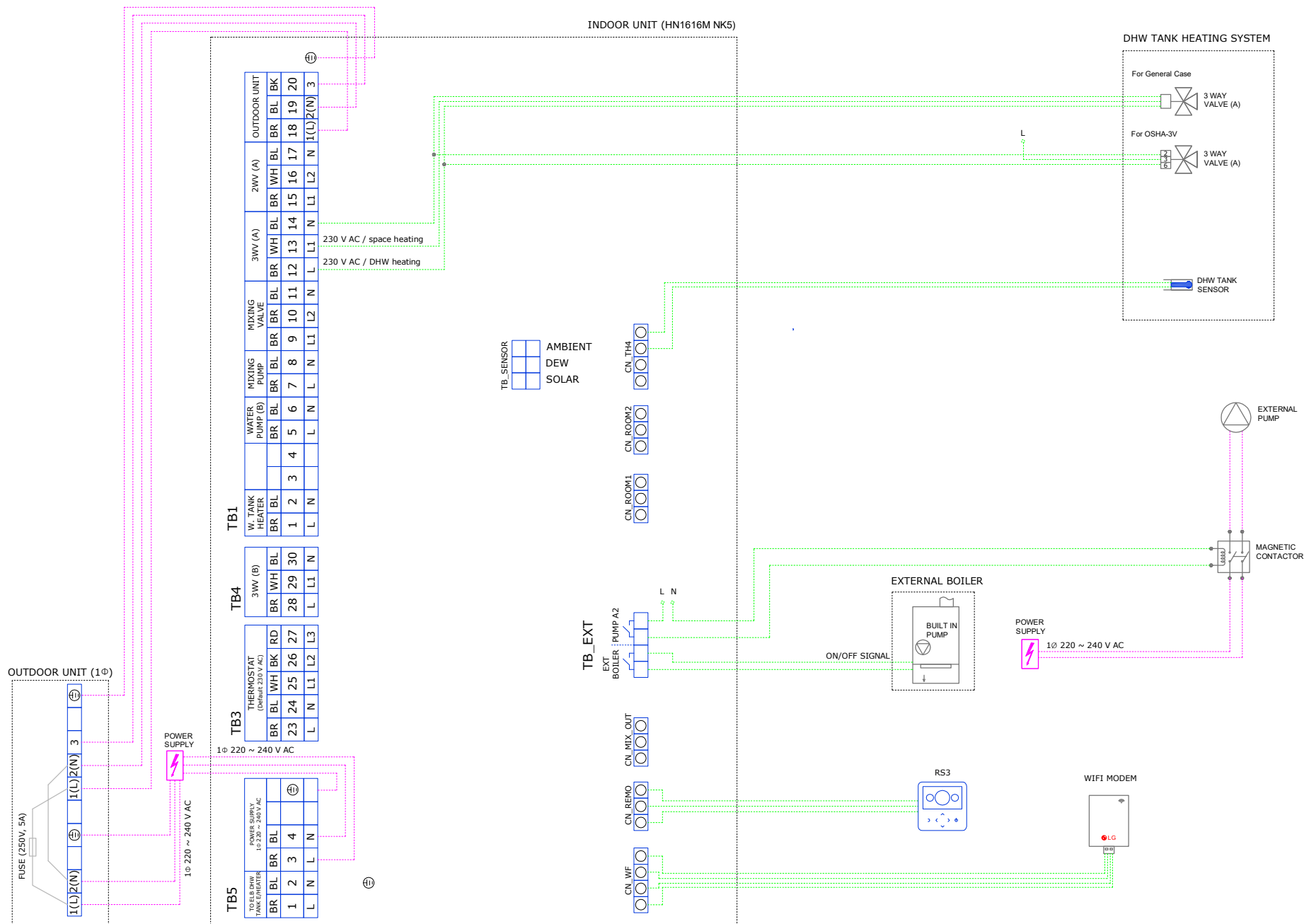
External Boiler

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.

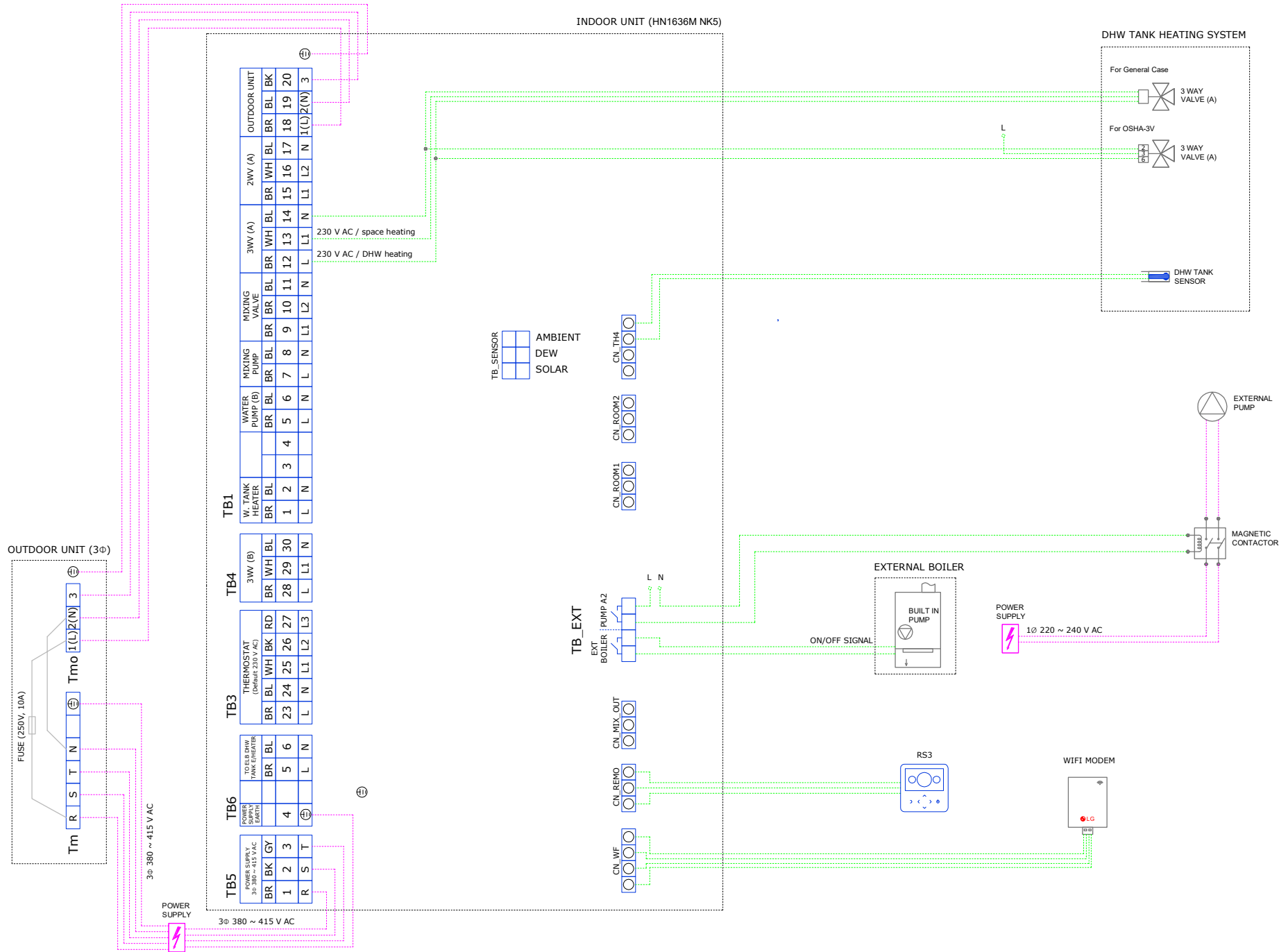
WIRING DIAGRAM (1Φ)



				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			X	X

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.

WIRING DIAGRAM (3Φ)





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

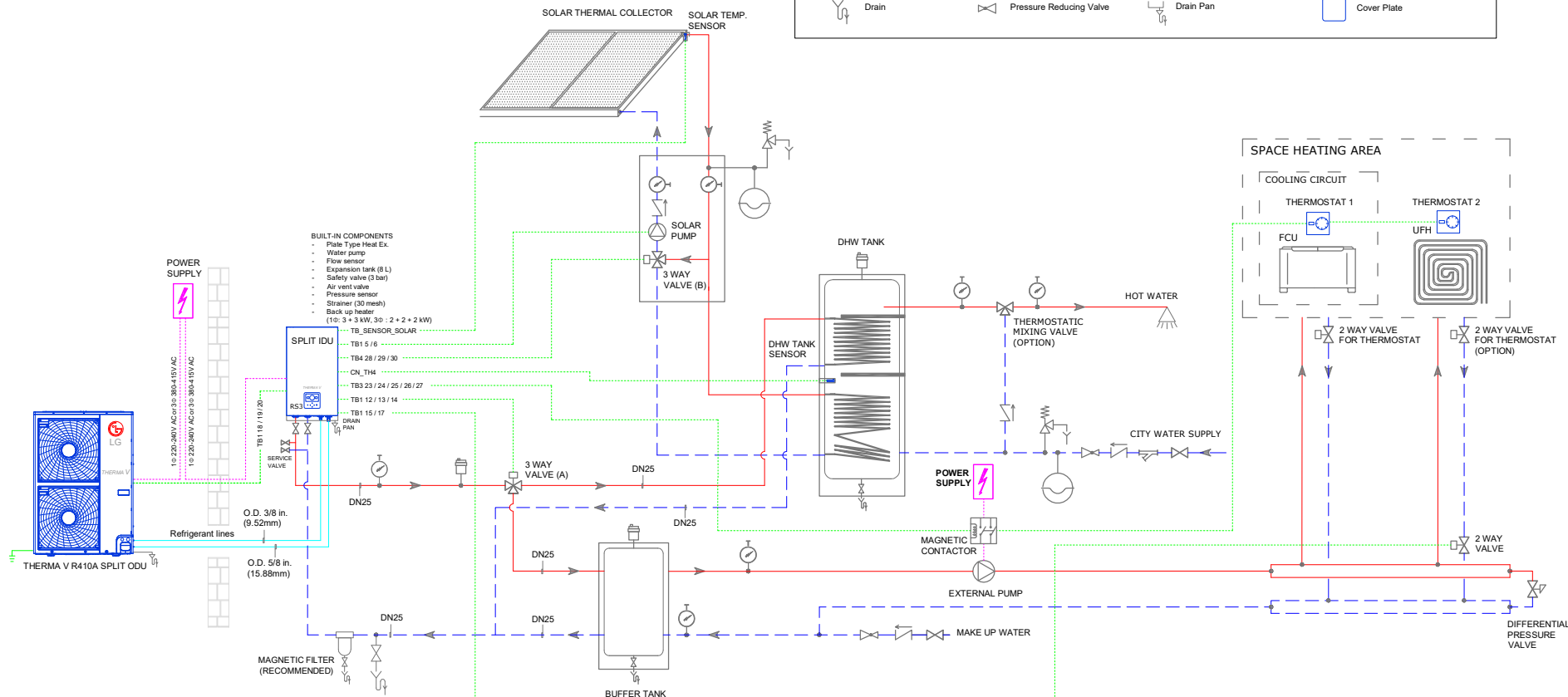
HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating, Cooling, and DHW with Solar Panel and Thermostat
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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

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)

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, OSHA-MV1)

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.

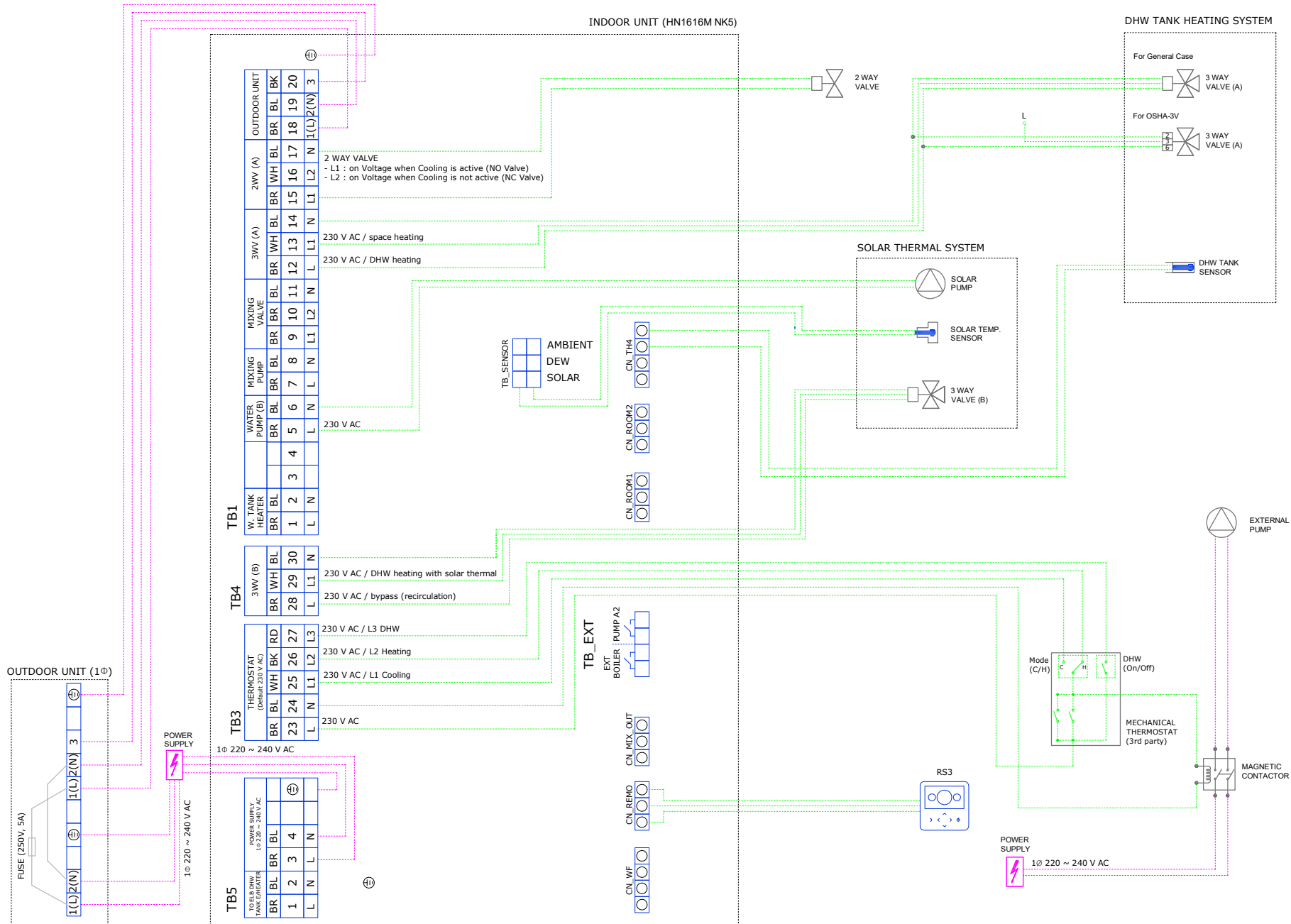
2 Way Valve for Thermostat

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 (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		DIP SW1								X: OFF / O: ON							
MODBUS Communication Type	Master (Link to LC controller)	X															
MODBUS Function	Slave (Link to 3rd party controller)	O															
MODBUS Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)																X
default setting		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		DIP SW2								X: OFF / O: ON							
Indoor Unit Type Setting for Group Control	As Master	X															
Indoor Unit Type Setting for Group Control	As Slave	O															
Accessory Installation Information	Heat pump installation (Heating or cooling circuit only)		X	X													
Heat Pump Cycle	Heat pump + DHW tank are installed		X	O													
Heat Pump Cycle	Heat pump + DHW tank + Solar thermal system are installed		O	X													
Remote Room Air Sensor (Accessory)	Remote room air sensor is not installed									X	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																X
Thermostat Installation	Thermostat is installed																O
default setting		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

OUTDOOR UNIT MAIN PCB

SW1

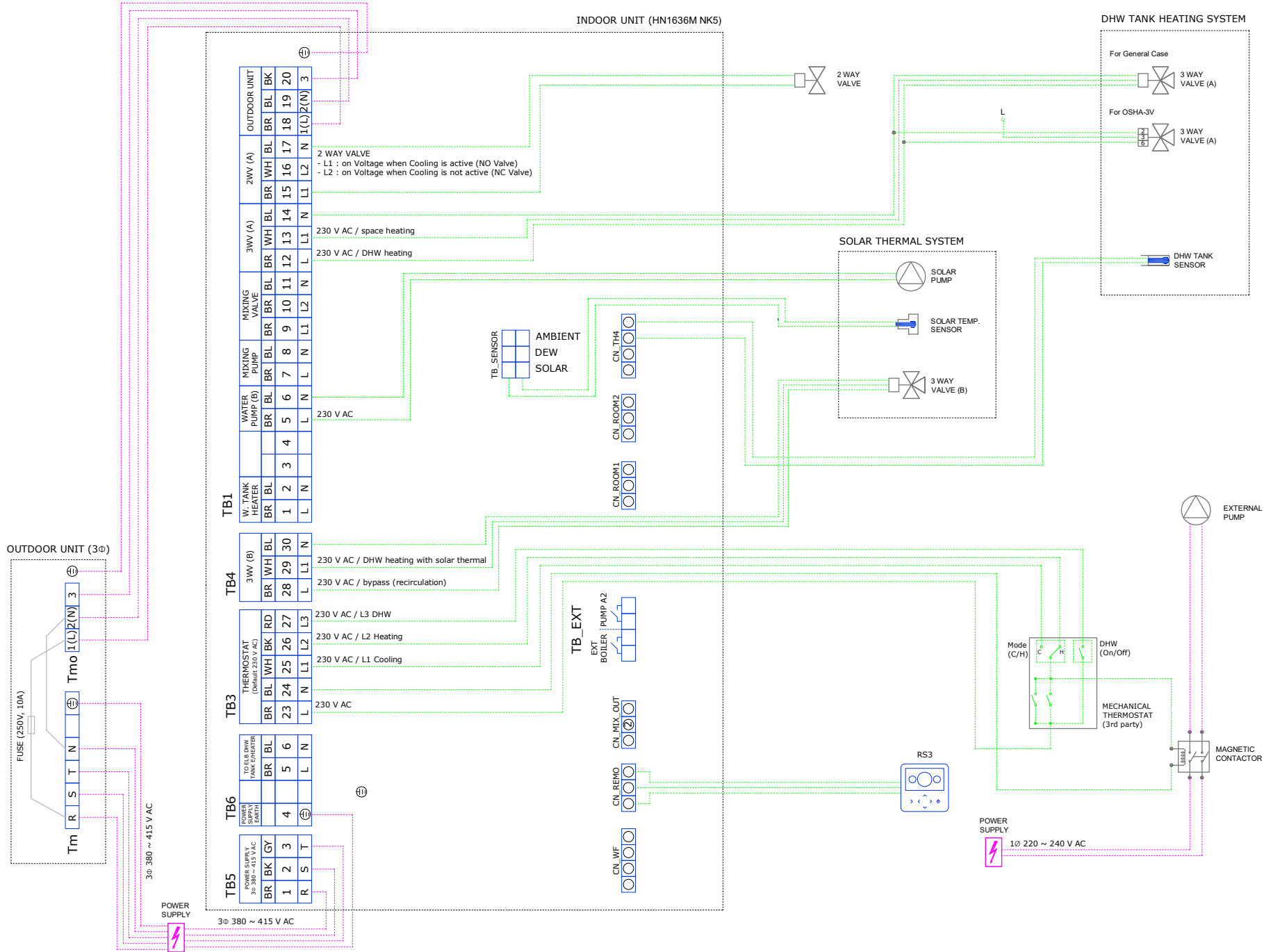


		DIP SW1			X: OFF / O: ON		
Low Noise Mode	Always mode: Maintain low noise mode for target temperature	X					
Low Noise Mode	Partial mode: Escape low noise mode for target temperature	O					
Peak Control	Max mode		X				
Peak Control	Peak control: To limit maximum current (Power saving)		O				
default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

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



		X: OFF / O: ON							
		DIP SW 1	1	2	3	4	5	6	7
MODBUS Communication Type	Master (Link to LC controller)	X							
	Slave (Link to 3rd party controller)	O							
MODBUS Function	Unified Open Protocol		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							
		DIP SW 2	1	2	3	4	5	6	7
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 + 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		
Thermostat Installation	Thermostat is not installed								X
	Thermostat is installed								O
default setting		X	X	X	X	X	O	O	X

OUTDOOR UNIT MAIN PCB

SW1



























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

NOTE

- 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 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

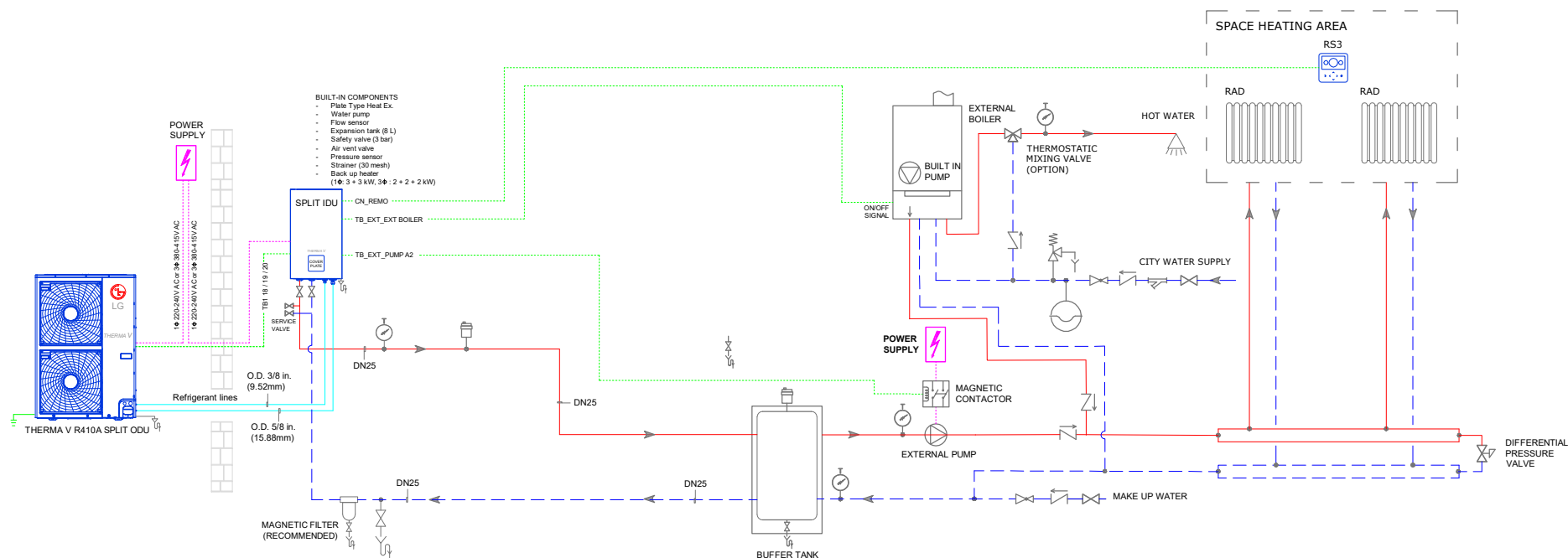
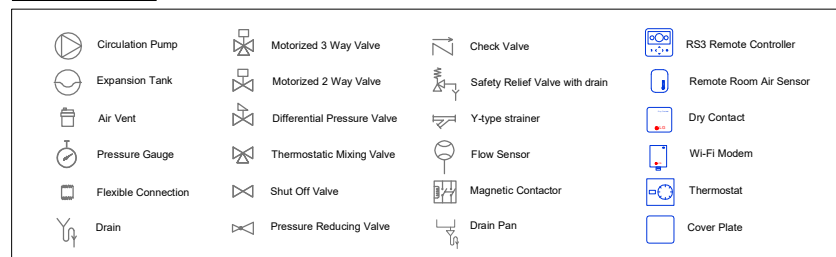
Full Name	LG Part No.	Scope of supply	
		LG	3rd party
2 Remo Cable	PZCWRC2	O	
2way Valve	-		O
3way Valve	OSHA-3V	O	O
Air Vent Valve	-		O
Buffer Tank	For IWT, OSHB-40KT	O	O
Back-up Heater Temperature Sensor	For 3rd party Back-up Heater, PRSTAT5K10	O	
Back Up Heater	HA031M E1 (10, 3kW, Monobloc) HA061M E1 (10, 6kW, Monobloc) HA063M E1 (30, 6kW, Monobloc) HA061C E1 (10, 6kW, Hydrosplit) HA063C E1 (30, 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, 10 Split) PHLTC (30, 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) PACS5A000 (AC Smart 5) PACP5A000 (ACP 5)	O	
PI485 Gateway	PMNFP14A1	O	

HYDRONIC DIAGRAM

SYSTEM SUMMARY

Application	Space Heating & DHW with External Boiler
Product	R410A Split Hydro Box (New IDU, HN1616M NK5 / HN1636M 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

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2. It is essential to ensure the minimum amount of water contained in the heating or cooling system.
3. Must fit the insulations on the entire water piping including valves and connections.
4. In a cold climate region, water drainage from outdoor unit must be frost-proof.
5. For heating with an external boiler above, the external boiler should have own thermostat.
6. 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.
7. Beware that when the gas boiler is active it's only controlled by the outdoor temperature.

ACCESSORIES LG

RS3 Controller (Default)

Wired Remote 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)

DHW tank sensor (1 mV/mV),
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

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.

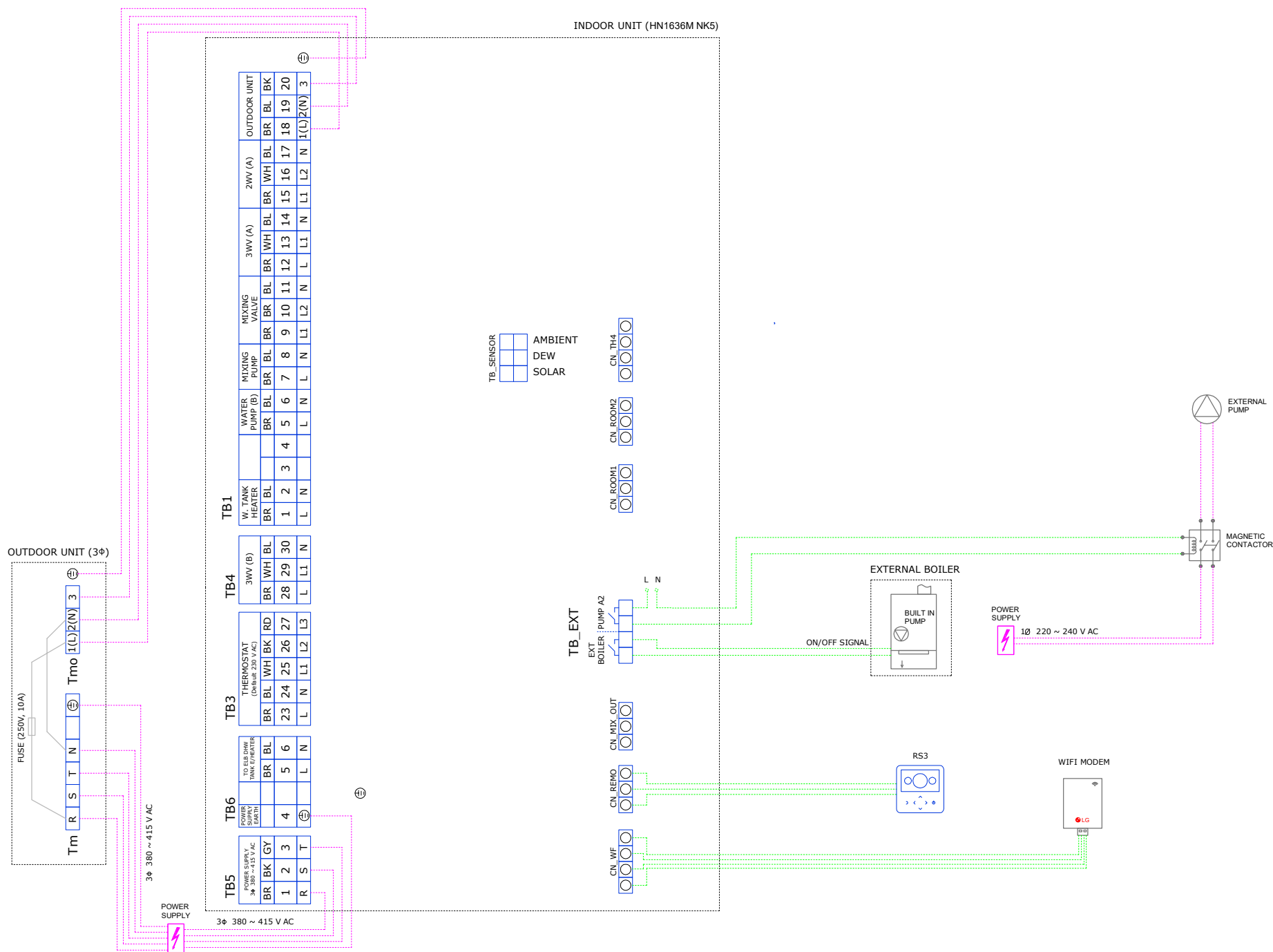
External Boiler

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

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

WIRING DIAGRAM (3Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



	DIP SW 1	2	3	4	5	6	7	X OFF / ON
MODEBUS Communication Type	Master (Link to LG controller)	X						
	Slave (Link to 3rd party controller)		X					
Remains Function	ECM mode		X					
Airfreeze Mode	Unlimited Open Product			X				
	Airfreeze mode is not applied				X			
	Antifreeze is applied (Adjustable air-freze time)					X		
	(default setting)	X	X					X
Indoor Unit Battery for Group Control								
	As Master		X					
	As Slave			X				
Accessory Installation Information	Heat pump installation (Heating or cooling without unit)			X	X			
	Heat pump + CHW tank are installed			X				
	Heat pump + DHW tank + Solar thermal system are installed		X	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 Heat Capacity	Backup capacity is not used						X	X
	Heat capacity is used							X
	Full capacity is used					O	O	
Thermostat Installation	Thermostat is not installed							X
	Thermostat is installed							
	(default setting)	X	X	X	X	X	X	X

OUTDOOR UNIT MAIN PCB

SW1

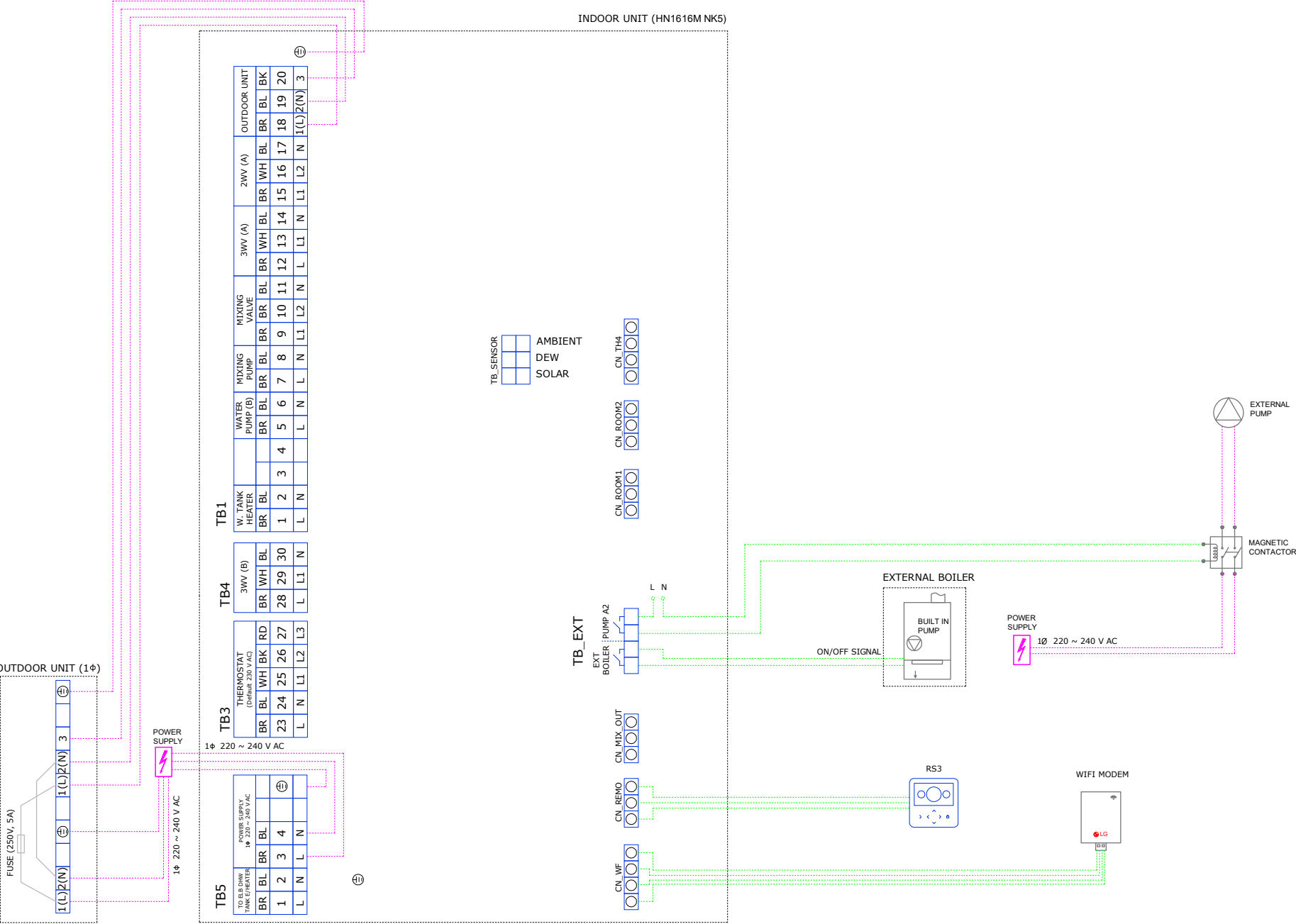


		DIP SW 1			2	3
Low Noise Mode	Always mode : Maintain low noise mode for target temperature					
	Partial mode : Escape low noise mode for target temperature				O	
	Max mode					X
Peak Control	Peak control : To limit maximum current (Power saving)					O
default setting					X	X

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.

WIRING DIAGRAM (1Φ)



DIP SWITCH SETTINGS

INDOOR UNIT MAIN PCB

SW1



SW2



	DIP SW 1	1	2	3	4	5	6	7	8	X : OFF / O : ON
MODBUS Communication Type	Master (Link to LG controller)	X								
MODBUS Function	Slave (Link to 3rd party controller)	O								
Antifreeze Mode	Antifreeze is not applied									X
Antifreeze Mode	Antifreeze is applied (Adjustable anti-freeze temp.)									O
default setting		X	X	X	X	X	X	X	X	X

	DIP SW 2	1	2	3	4	5	6	7	8	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	Half capacity is used					X	X			
Selecting Backup Heater Capacity	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	X	O	X	X

OUTDOOR UNIT MAIN PCB

SW1



	DIP SW 1	1	2	3	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	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.