



Air-to-Water Heat Pump Monobloc

Application Guide



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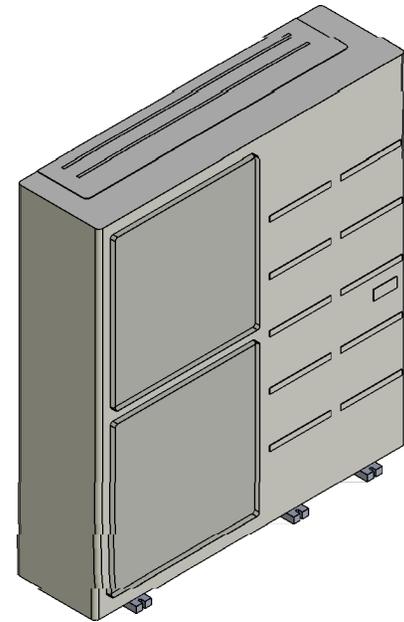
LG AWHP Multiple Radiant Heating - Dip Switch Setting & Installer Settings on RS3 19



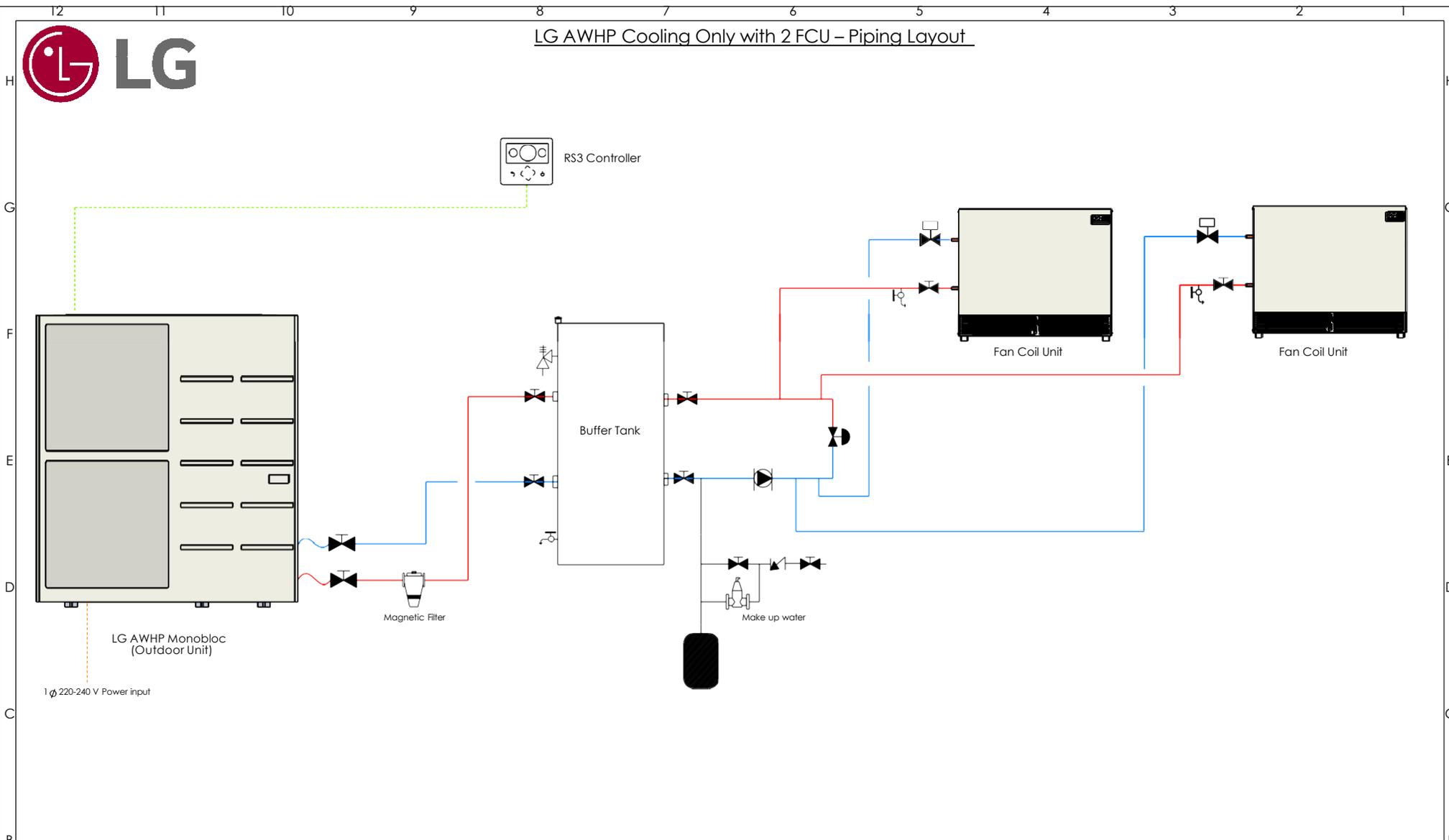
LG AWHP Monobloc Application Guide

This document includes piping, wiring, and dip switch configuration for below layouts:

1. LG AWHP Cooling Only with 2 Fan Call Unit
2. LG AWHP DHW and Fan Coil Unit for Space Heating and Cooling
3. LG AWHP Heating Only with Radiant and Fan Coil Unit
4. LG AWHP with Single Cooling Air Handler
5. LG AWHP Multiple Radiant Heating



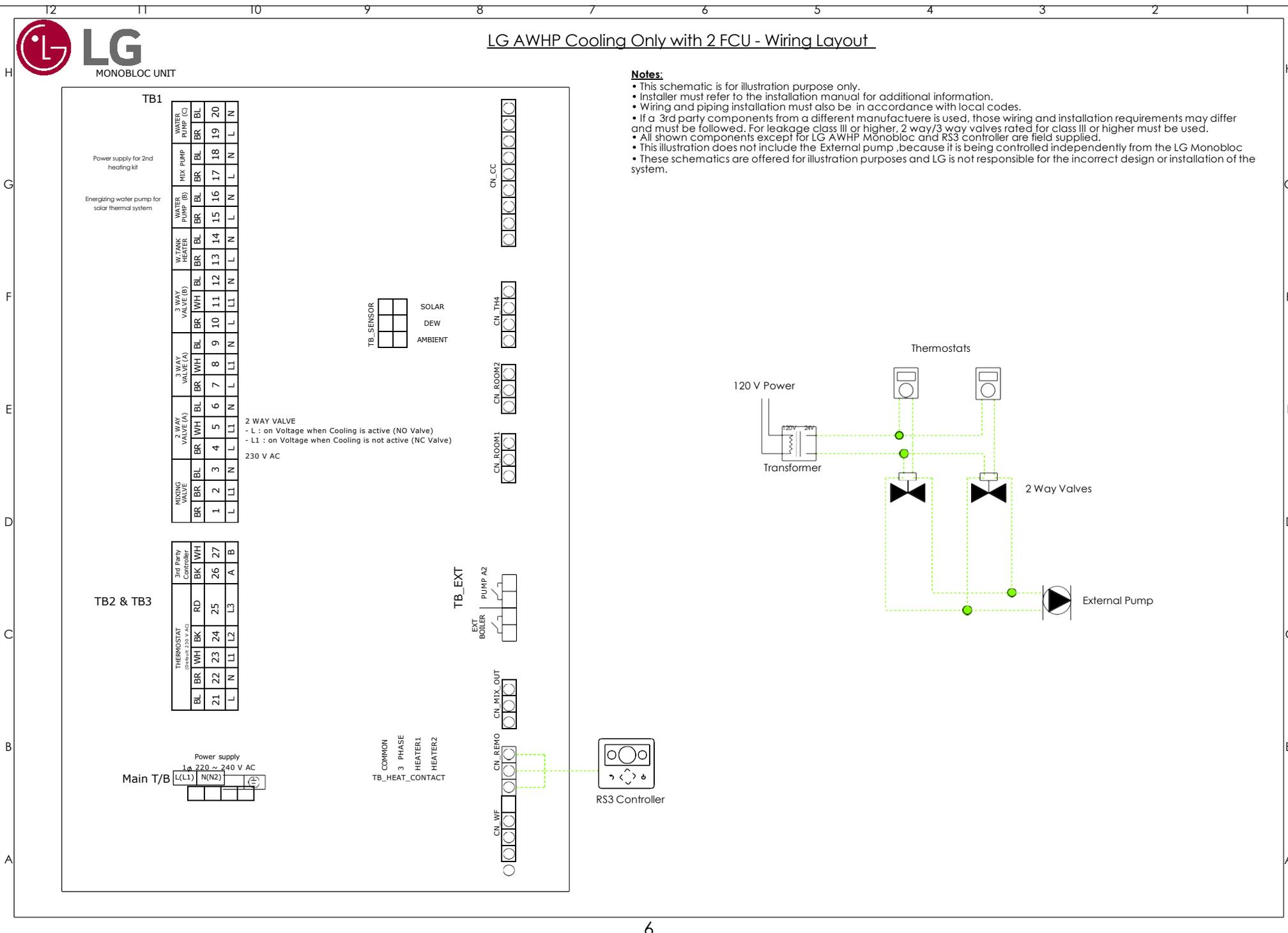
LG AWHP Cooling Only with 2 FCU – Piping Layout



Notes:

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- For multiple heating zone installations, a buffer tank is required. 32 gal, 35 gal, and 45 gal buffer tanks can be used for 12 kW, 14 kW, 16 KW Monobloc units, respectively OR installer can size a tank per the formula so long as a minimum of 10 min run time for the Monobloc is used
- Using flex pipe connection to the Monobloc is required when installing isolation valves.
- Using a Magnetic filter is recommended to help prevent iron debris entering into the Monobloc.
- When using multiple fan coils, it is recommended to run them in parallel using a manifold and a variable speed constant pressure pump.
- Insulation must be installed and fitted on the entire water piping line, including valves and connections. If necessary, an electrical heat tracing system can be installed or antifreeze can be added to water to help prevent any frost damage.
- In a cold climate region, water drainage from outdoor unit must protected to avoid freezing.
- All shown components except for LG AWHP Monobloc and RS3 controller are field supplied.
- These schematics are offered for illustration purposes and LG is not responsible for the incorrect design or installation of the system.

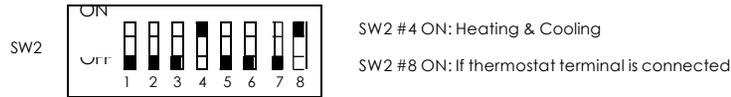
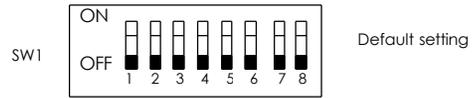
LG AWHP Cooling Only with 2 FCU - Wiring Layout





LG AWP Cooling only with 2 FCU - Dip Switch Setting and Installer Settings on RS3

Dip Switch Setting:

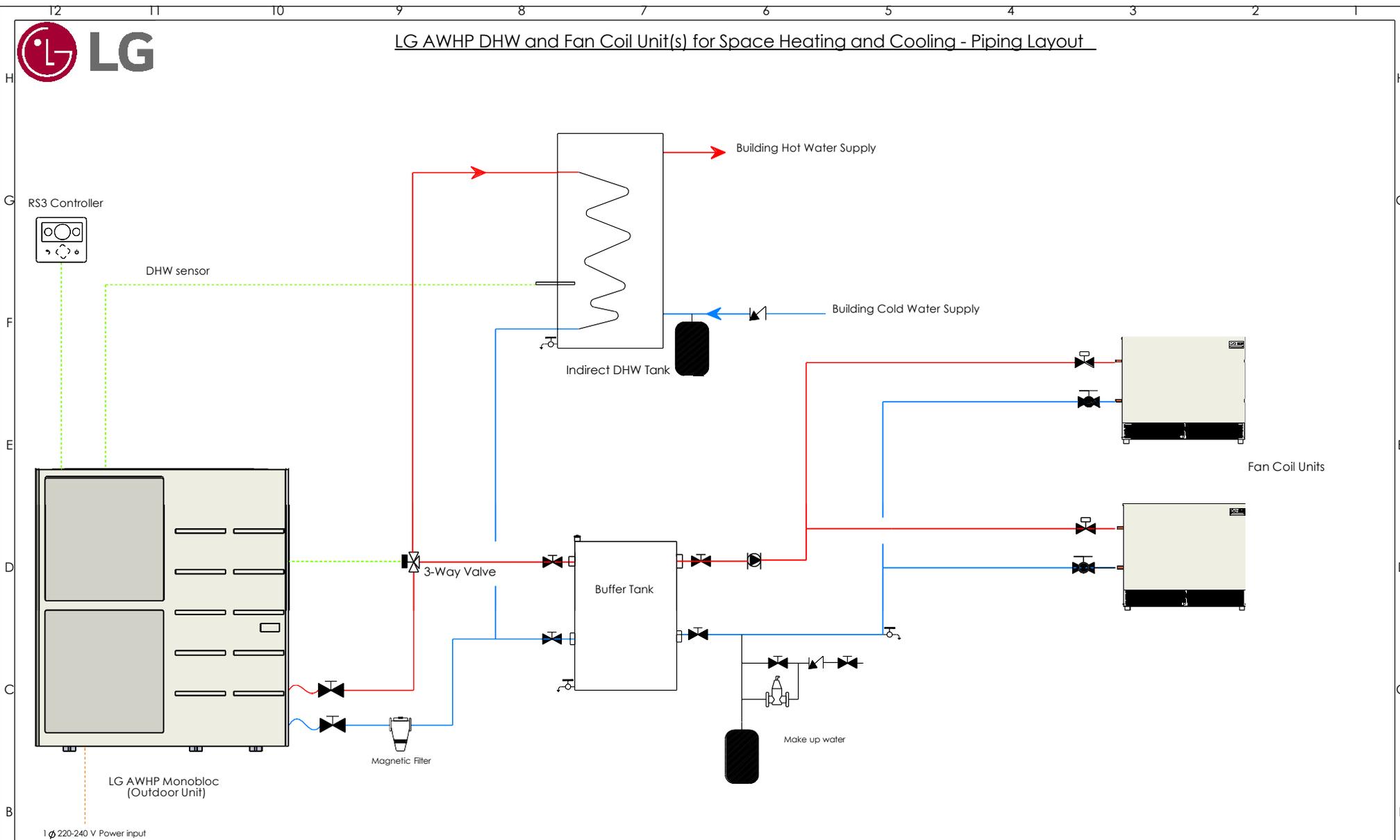


Detailed Installer Setting:

Detailed Installer Setting	Value	Remark
Configuration > Select Temperature Sensor > Control Standard	Water	
Configuration > Select Temperature Sensor > Sensor Location	-	
Configuration > Use Heating Tank Heater	Not Use	
Configuration > Mixing Circuit	Not Use	
Configuration > Use External Pump	Not Use	Assuming the external pump is controlled independently from AWP
Configuration > RMC master/slave	Master	
Domestic Hot Water > Recirculation time > DHW recirculation	Not Use	
Connectivity > Central control address > Address Code (Hex)	-	
Connectivity > Modbus address > Address Code (Hex)	-	
Connectivity > 3rd Party Boiler	Not Use	
Connectivity > Meter Interface > Modbus Address	Not Use	
Connectivity > Energy State > ESS use type	Not Use	
Connectivity > thermostat Control type	Heat & Cool	



LG AWHP DHW and Fan Coil Unit(s) for Space Heating and Cooling - Piping Layout



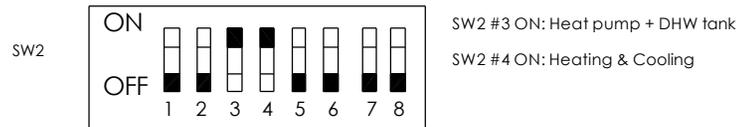
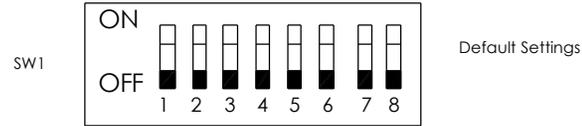
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- Using flex pipe connection to the Monobloc is required when installing isolation valves.
- Using a Magnetic filter is recommended to help prevent iron debris entering into the Monobloc.
- When using multiple fan coils, it is recommended to run them in parallel using a manifold and a variable speed constant pressure pump.
- Insulation must be installed and fitted on the entire water piping line, including valves and connections. If necessary, an electrical heat tracing system can be installed or antifreeze can be added to water to help prevent any frost damage.
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LG AWHP DHW and Fan Coil Unit(s) for Space Heating and Cooling - Dip Switch Setting and Installer Settings on RS3

Dip Switch Setting:

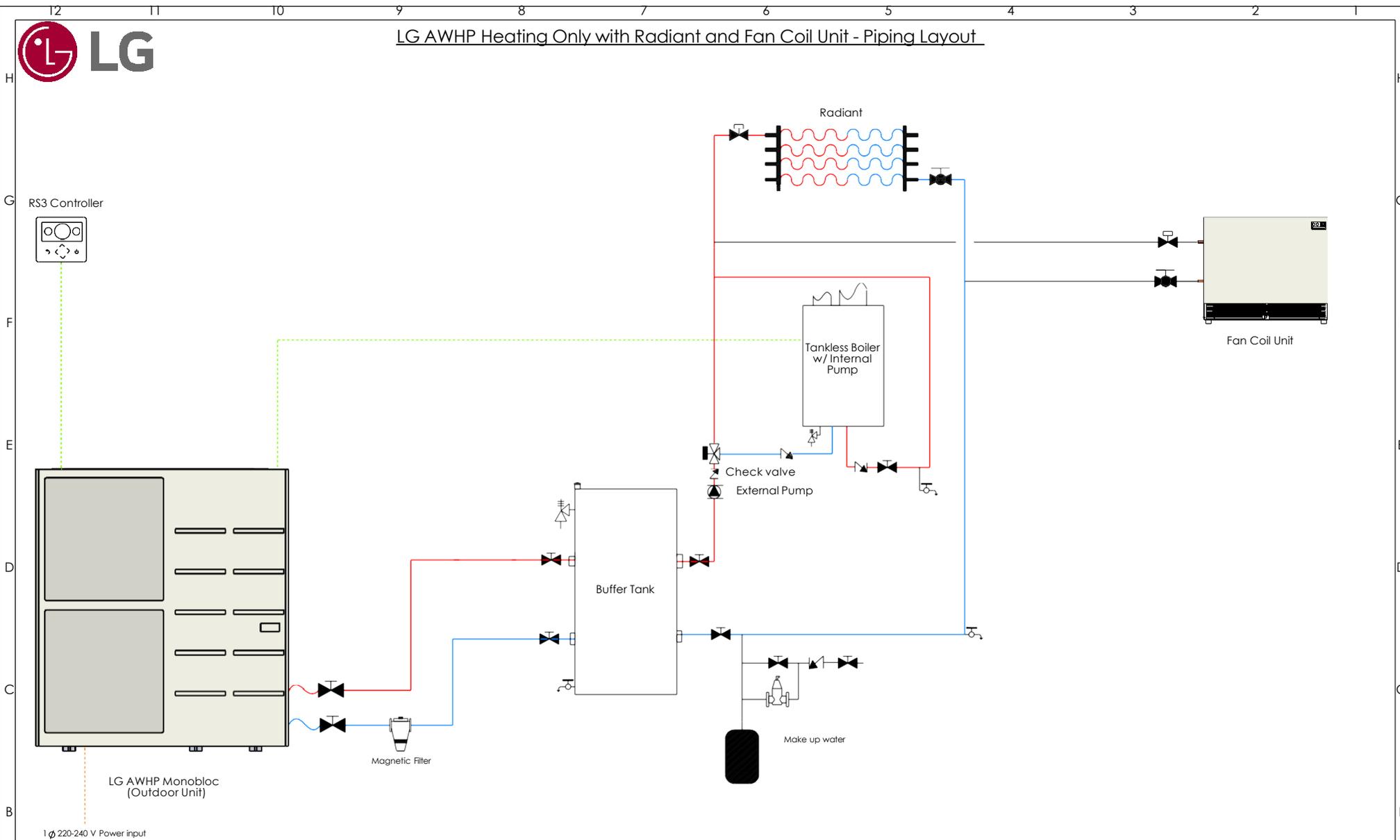


Detailed Installer Setting:

Detailed Installer Setting	Value	Remark
Configuration > Select Temperature Sensor > Control Standard	Water	
Configuration > Select Temperature Sensor > Sensor Location	-	
Configuration > Use Heating Tank Heater	Use	DHW tank sensor is LG supplied accessory
Configuration > Mixing Circuit	Not Use	
Configuration > Use External Pump	Not Use	Assuming the external water pump is controlled independently from monobloc
Configuration > RMC master/slave	Master	
Domestic Hot Water > Recirculation time > DHW recirculation	Not Use	
Connectivity > Central control address > Address Code (Hex)	-	
Connectivity > Modbus address > Address Code (Hex)	-	
Connectivity > 3rd Party Boiler	Not Use	
Connectivity > Meter Interface > Modbus Address	Not Use	
Connectivity > Energy State > ESS use type	Not Use	
Connectivity > Thermostat Control type	Heat & Cool	



LG AWHP Heating Only with Radiant and Fan Coil Unit - Piping Layout



Notes:

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LG AWHP Heating Only with Radiant and Fan Coil Unit - Wiring Layout

MONOBLOC UNIT

TB1

Power supply for 2nd heating kit
Energizing water pump for solar thermal system

MIXING VALVE		2 WAY VALVE (A)		3 WAY VALVE (A)		3 WAY VALVE (B)		W/TANK HEATER		WATER PUMP (B)		MIX. RUMP		WATER PUMP (C)	
BR	BL	BR	BL	BR	BL	BR	BL	BR	BL	BR	BL	BR	BL	BR	BL
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L	L1	N	L1	N	L1	N	L1	N	L1	N	L1	N	L1	N	L1

2 WAY VALVE
- L : on Voltage when Cooling is active (NO Valve)
- L1 : on Voltage when Cooling is not active (NC Valve)
230 V AC

TB_SENSOR		

SOLAR
DEW
AMBIENT

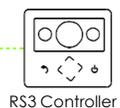
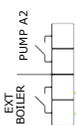
TB2 & TB3

THERMOSTAT (Default 230 V AC)		3rd Party Controller	
BL	BR	WH	BK
21	22	23	24
L	N	L1	L2
		L3	A
		B	

Power supply
1 φ 220 ~ 240 V AC
Main T/B (L1) (N) (N2)

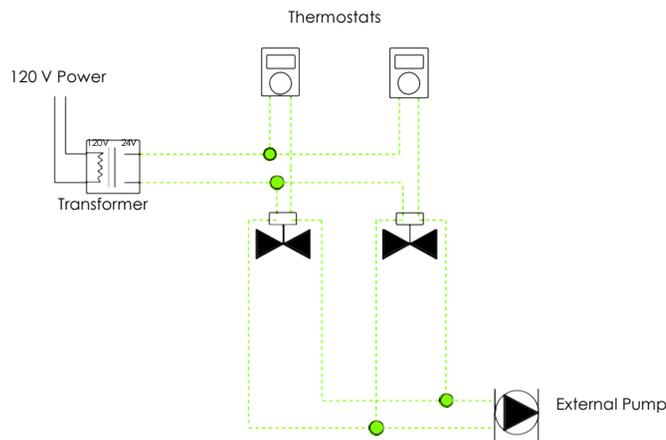
COMMON	3 PHASE	HEATER1	HEATER2
TB_HEAT_CONTACT			

TB_EXT



Notes:

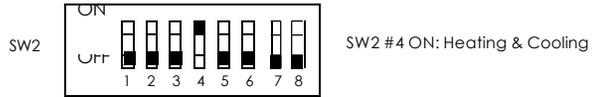
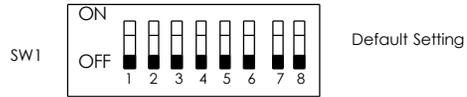
- This schematic is for illustration purpose only.
- Installer must refer to the installation manual for additional information.
- Wiring and piping installation must be in accordance with local codes.
- If a 3rd party components from a different manufacturer is used, those wiring and installation requirements may differ and must be followed. For leakage class III or higher, 2 way/3 way valves rated for class III or higher must be used.
- All shown components except for LG AWHP Monobloc and RS3 controller are field supplied.
- This illustration does not include the External pump, because it is being controlled independently from the LG Monobloc.
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LG AWP Heating Only with Radiant and Fan Coil Unit - Dip Switch Setting & Installer Settings on RS3

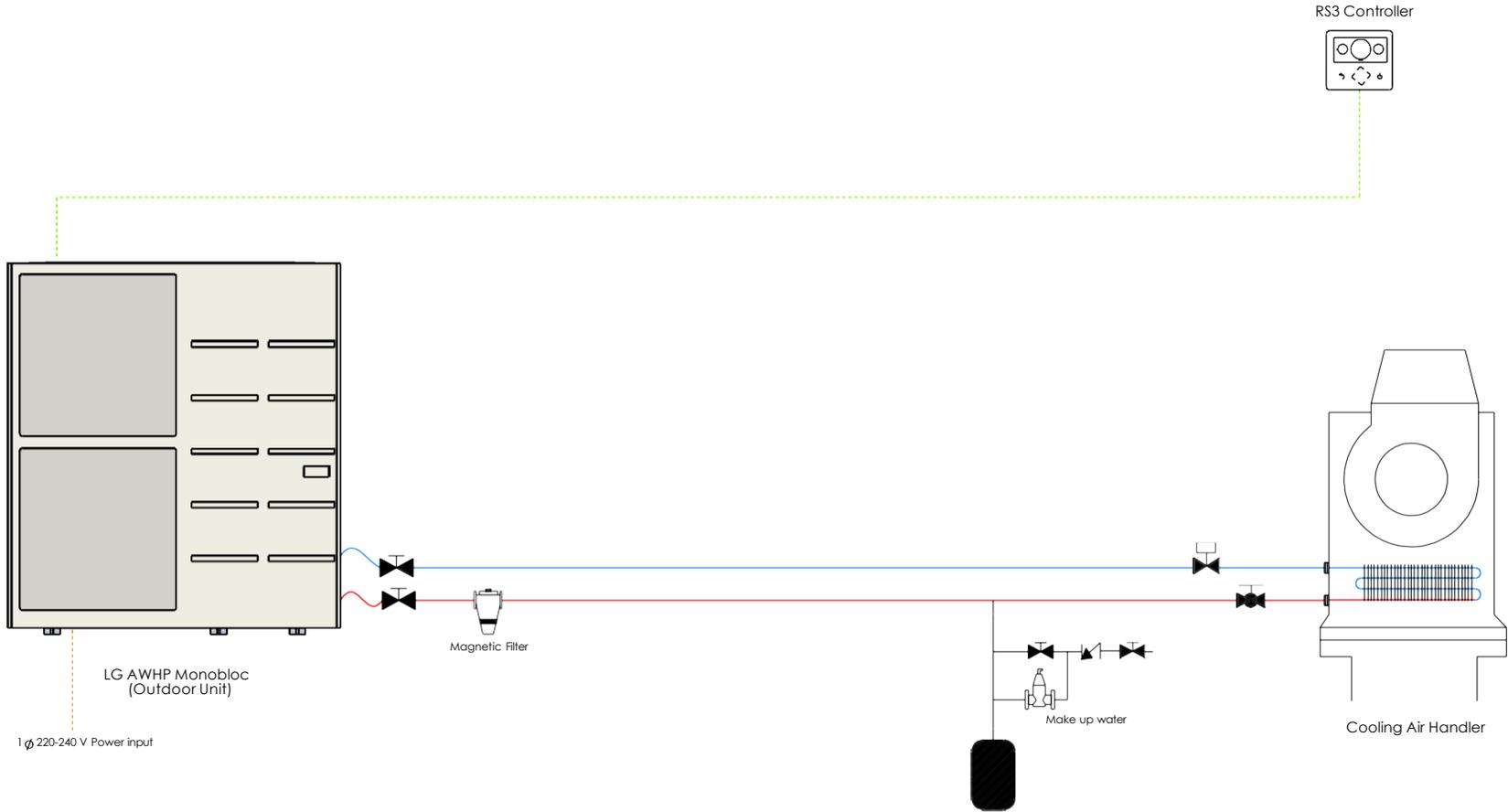
Dip Switch Setting:



Installer Setting on RS3:

Detailed Installer Setting	Value	Remark
Configuration > Select Temperature Sensor > Control Standard	Water	
Configuration > Select Temperature Sensor > Sensor Location	-	
Configuration > Use Heating Tank Heater	Not Use	
Configuration > Mixing Circuit	Not Use	
Configuration > Use External Pump	Not Use	Assuming the external pump is controlled independently
Configuration > RMC master/slave	Master	
Domestic Hot Water > Recirculation time > DHW recirculation	Not Use	
Connectivity > Central control address > Address Code (Hex)	-	
Connectivity > Modbus address > Address Code (Hex)	-	
Connectivity > 3rd Party Boiler	Use	
Connectivity > Meter Interface > Modbus Address	Not Use	
Connectivity > Energy State > ESS use type	Not Use	
Connectivity > Thermostat Control type	Heat & Cool	

LG AWHP with Single Cooling Air Handler - Piping Layout



Notes:

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- Using a Magnetic filter is recommended to help prevent iron debris entering into the Monobloc.
- When using multiple fan coils, it is recommended to run them in parallel using a manifold and a variable speed constant pressure pump.
- Insulation must be installed and fitted on the entire water piping line, including valves and connections. If necessary, an electrical heat tracing system can be installed or antifreeze can be added to water to help prevent any frost damage.
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LG AWP with Single Cooling Air Handler - Dip Switch Setting and Installer Settings on RS3

Dip Switch Setting:



Default Setting



SW2 #4 ON: Heating & Cooling

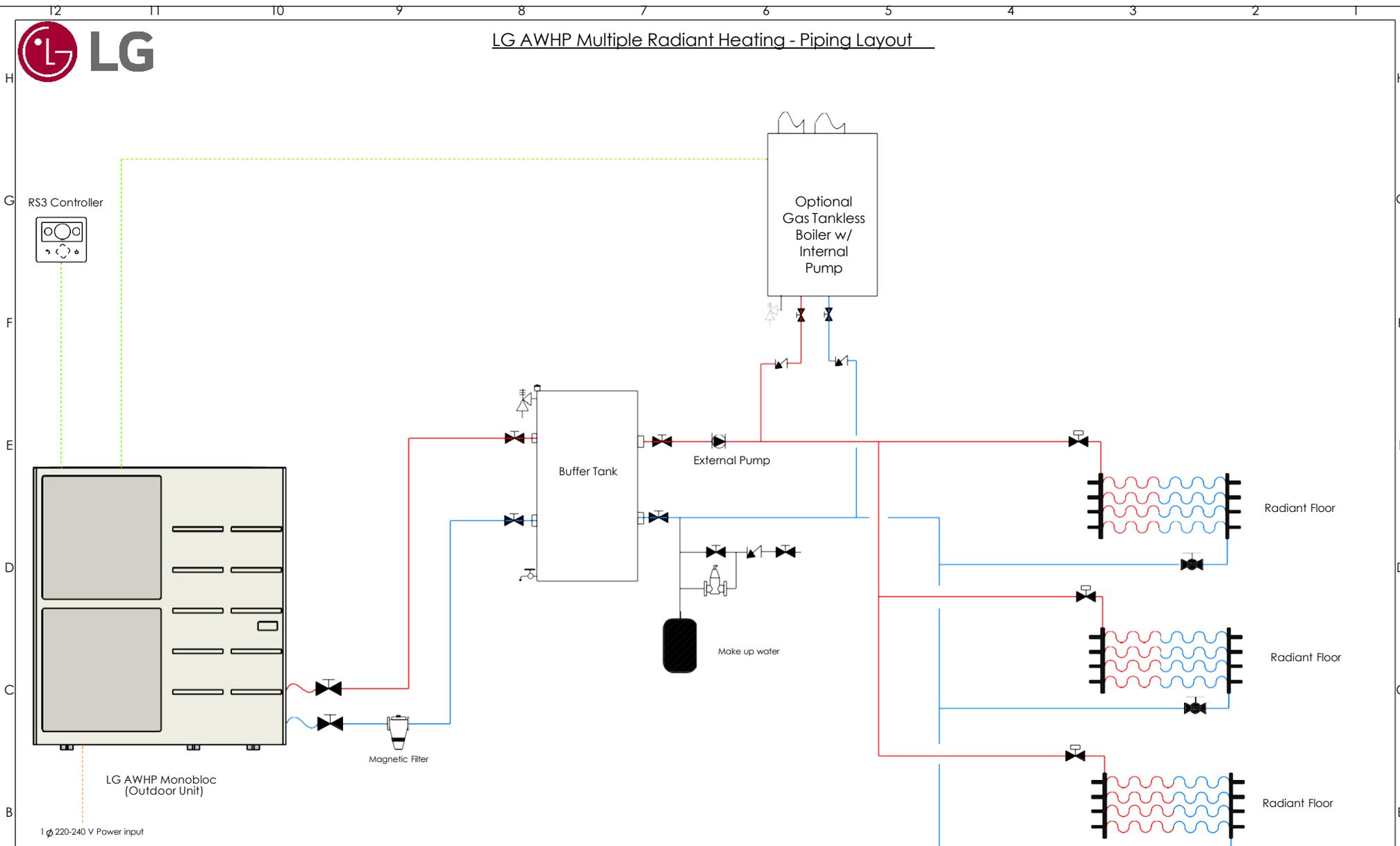
SW2 #8 ON: Thermostat terminal is used

Detailed Installer Setting:

Detailed Installer Setting	Value	Remark
Configuration > Select Temperature Sensor > Control Standard	Air	
Configuration > Select Temperature Sensor > Sensor Location	Remote Control	
Configuration > Use Heating Tank Heater	Not Use	
Configuration > Mixing Circuit	Not Use	
Configuration > Use External Pump	Not use	
Configuration > RMC master/slave	Master	
Domestic Hot Water > Recirculation time > DHW recirculation	Not Use	
Connectivity > Central control address > Address Code (Hex)	-	
Connectivity > Modbus address > Address Code (Hex)	-	
Connectivity > 3rd Party Boiler	Not Use	
Connectivity > Meter Interface > Modbus Address	Not Use	
Connectivity > Energy State > ESS use type	Not Use	
Connectivity > Thermostat Control type	Heat & Cool	



LG AWHP Multiple Radiant Heating - Piping Layout



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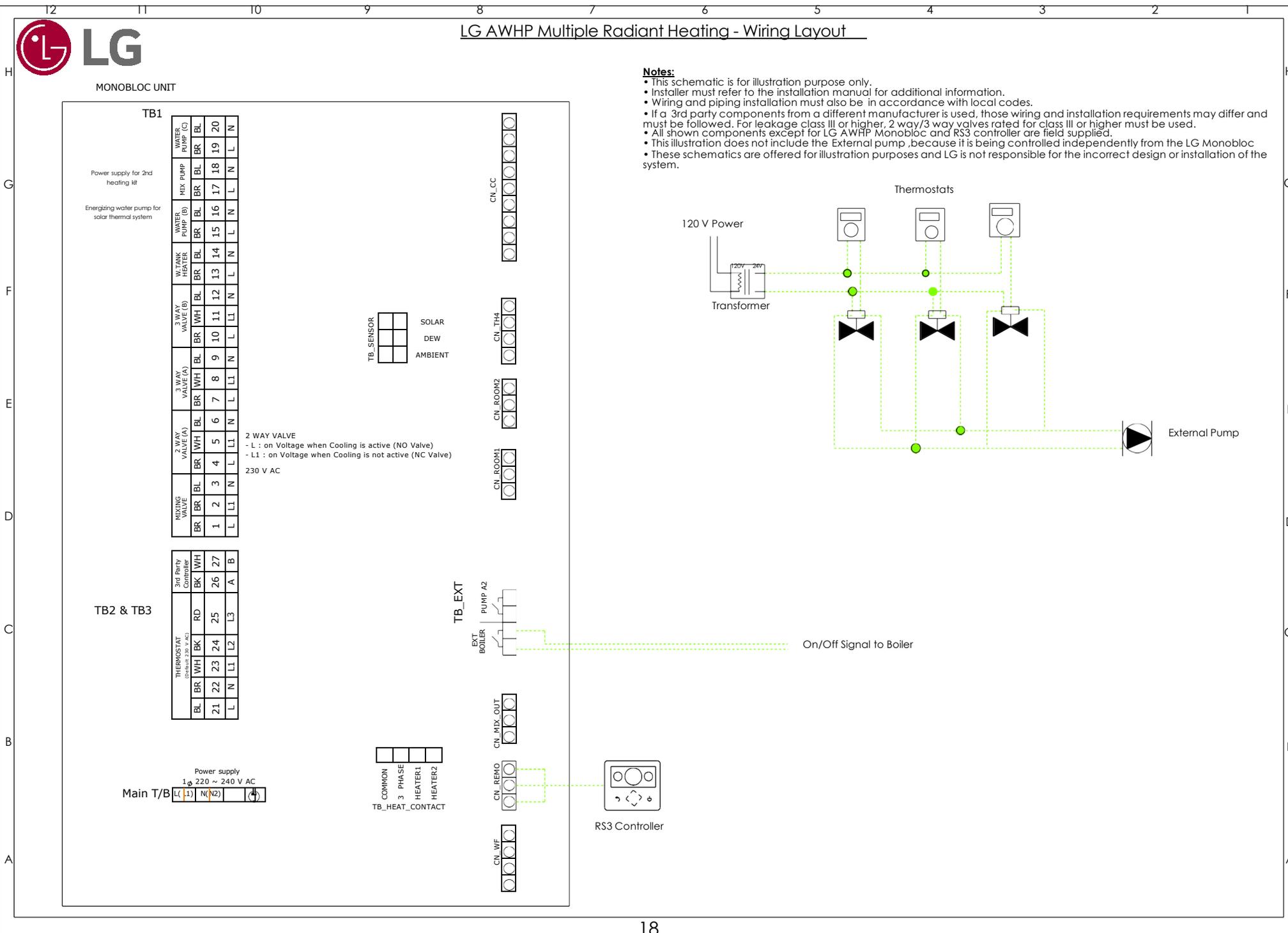
LG AWHP Multiple Radiant Heating - Wiring Layout



MONOBLOC UNIT

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TB1

WATER PUMP (C)	WATER PUMP (B)	WATER PUMP (A)	W.TANK HEATER	3 WAY VALVE (B)	3 WAY VALVE (A)	2 WAY VALVE (A)	MIXING VALVE
BR	BR	BR	BR	BR	BR	BR	BR
BL	BL	BL	BL	BL	BL	BL	BL
19	18	17	16	15	14	13	12
20	19	18	17	16	15	14	13
L	L	L	L	L	L	L	L
N	N	N	N	N	N	N	N

2 WAY VALVE
 - L : on Voltage when Cooling is active (NO Valve)
 - L1 : on Voltage when Cooling is not active (NC Valve)
 230 V AC

TB2 & TB3

THERMOSTAT (Default 230 V AC)		3rd Party Controller	
BL	BR	BK	WH
21	22	23	24
25	26	27	
L	L	L	L
N	N	N	N

Main T/B

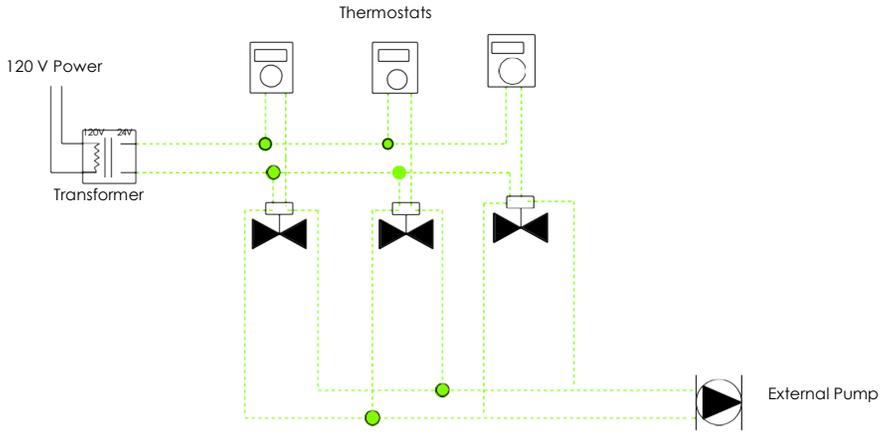
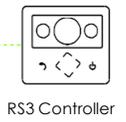
L1	N(N2)	
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TB_HEAT_CONTACT

COMMON	3 PHASE HEATER1	HEATER2
--------	-----------------	---------

Terminal Blocks:

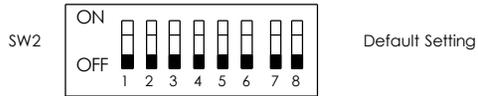
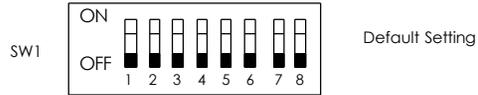
CN_CC	CN_TH	CN_ROOM2	CN_ROOM
CN_MIX_OUT	CN_REMO	CN_WF	





LG AWHP Multiple Radiant Heating - Dip Switch Setting & Installer Settings on RS3

Dip Switch Setting:



Installer Setting on RS3:

Detailed Installer Setting	Value	Remark
Configuration > Select Temperature Sensor > Control Standard	Water	
Configuration > Select Temperature Sensor > Sensor Location	-	
Configuration > Use Heating Tank Heater	Not Use	
Configuration > Mixing Circuit	Not Use	
Configuration > Use External Pump	Not Use	Assuming the external pump is controlled independently
Configuration > RMC master/slave	Master	
Domestic Hot Water > Recirculation time > DHW recirculation	Not Use	
Connectivity > Central control address > Address Code (Hex)	-	
Connectivity > Modbus address > Address Code (Hex)	-	
Connectivity > 3rd Party Boiler	Use	
Connectivity > Meter Interface > Modbus Address	Not Use	
Connectivity > Energy State > ESS use type	Not Use	
Connectivity > Thermostat Control type	Heat & Cool	