

PRODUCT SPECIFICATION (INDOOR UNIT)

INDOOR UNIT (For R32 Hydrosplit IWT, HN1616Y NB1)

Technical Specification			Indoor Unit	HN1616Y NB1
Operation Range (Leaving Water Temp.)	Heating	Min. ~ Max.	°C	15 ~ 65
	Cooling	Min. ~ Max.	°C	5 ~ 27 (16 ~ 27) ¹⁾
	Domestic Hot Water	Min. ~ Max.	°C	15 ~ 80 ²⁾
Domestic Hot Water Tank	Volume		ℓ	200
	Internal Thermal Protect Limit		°C	85
Main Water Pump	Model		-	Grundfos UPML 25-105 130 PWM A
DHW Water Pump	Model		-	WILO ZRS 15/6-3 KU
Flow Sensor	Measuring Range	Min. ~ Max.	ℓ/min	5 ~ 80
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar (G)	0 ~ 20
Expansion Vessel (Heating Circuit)	Volume		ℓ	12
Safety Valve	Heating Circuit	Upper Limit	bar	3
	DHW Circuit	Upper Limit	bar	10
Piping Connections	Water Circuit	Inlet	inch	Female G 1" ⁴⁾
		Outlet	inch	Female G 1" ⁴⁾
		Inlet from Outdoor Unit	inch	Female G 1" ⁴⁾
		Outlet to Outdoor Unit	inch	Female G 1" ⁴⁾
	DHW Tank Water Circuit	Cold Inlet	inch	Female G 3/4" ⁴⁾
		Hot Outlet	inch	Female G 3/4" ⁴⁾
		Recirculation	inch	Female G 3/4" ⁴⁾
		Rated	dB(A)	43
Sound Power Level	Heating			
Dimensions	Unit	W × H × D	mm	601 × 1,812 × 685
Weight (without water)	Unit		kg	130
Exterior	Color / RAL Code		-	White / RAL 9002
Electrical Specification			Indoor Unit	HN1616Y NB1
Wiring Connections	Power and Communication Cable (Included Earth, H07RN-F)		mm ² x cores	0.75 x 4C
	Type		-	Sheath
Electric Heater (Case 1 / Case 2 / Case 3) ³⁾	No. of Heating Coil		EA	1 / 2 / 3
	Capacity combination		kW	2.0 / 2.0 + 2.0 / 2.0 + 2.0
	Heating Step		Step	1
	Power Supply	V, Ø, Hz		220-240, 1, 50 / 220-240, 1, 50 / 380-415, 3, 50
	Wiring Connections Power Supply Cable (Included Earth, H07RN-F)		mm ² x cores	4.0 x 3C / 4.0 x 3C / 2.5 x 5C
	Rated Current		A	8.7 / 17.4 / 8.7

1) When fan coil unit not used.

2) DHW 58 ~ 80°C operating is available only when the booster heater is operating.

3) The capacity of electric heater can be adjusted by wiring.

4) According to ISO 228-1 (parallel pipe threads)

INDOOR UNIT (For R32 Hydrosplit Hydro box, HN1600MC NK1)

Technical Specification			Indoor Unit	HN1600MC NK1
Operation Range (Leaving Water Temp.)	Heating	Min. ~ Max.	°C	15 ~ 65
	Cooling	Min. ~ Max.	°C	5 ~ 27 (16 ~ 27) ¹⁾
	Domestic Hot Water	Min. ~ Max.	°C	15 ~ 80 ²⁾
Water Pump	Model		-	GRUNDFOS UPML 20-105 CHBL
Flow Sensor	Measuring Range	Min. ~ Max.	ℓ/min	5 ~ 80
Water Pressure Sensor	Measuring Range	Min. ~ Max.	bar (G)	0 ~ 20
Expansion Vessel	Volume		ℓ	8
Safety Valve	Pressure Limit	Upper Limit	bar	3
Piping Connections	Water Circuit	Inlet to PHEX	inch	Male PT 1" ³⁾
		Inlet to Heat Load	inch	Male PT 1" ³⁾
		Outlet from PHEX	inch	Male PT 1" ³⁾
		Outlet from Heat Load	inch	Male PT 1" ³⁾
		Rated	dB(A)	44
Sound Power Level	Heating			
Dimensions	Unit	W × H × D	mm	490 × 850 × 315
Weight	Unit		kg	30.5
Exterior	Color / RAL Code		-	Nobel White / RAL 9016
Electrical Specification			Indoor Unit	HN1600MC NK1
Wiring Connections	Power and Communication Cable (Included Earth, H07RN-F)		mm ² x cores	0.75 x 4C

1) When fan coil unit not used.

2) DHW 58 ~ 80°C operating is available only when the booster heater is operating.

3) According to ISO 7-1 (tapered pipe threads)



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PRODUCT SPECIFICATION (OUTDOOR UNIT)

OUTDOOR UNIT (For R32 Hydrosplit series)

Technical Specification				Indoor Unit	HN1616Y NB1			
				Outdoor Unit	HN121MRB U30 (1Ø) HU123MRB U30 (3Ø)	HN141MRB U30 (1Ø) HU143MRB U30 (3Ø)	HN161MRB U30 (1Ø) HU163MRB U30 (3Ø)	
Nominal Capacity	Heating	7℃	35℃	kW	12.00	14.00	16.00	
		7℃	55℃	kW	11.00	11.50	12.00	
	Cooling	2℃	35℃	kW	11.00	12.00	13.80	
		35℃	18℃	kW	12.00	14.00	16.00	
Nominal Power Input	Heating	7℃	35℃	kW	12.00	14.00	16.00	
		7℃	55℃	kW	2.38	2.86	3.33	
	Cooling	2℃	35℃	kW	3.79	4.04	4.29	
		35℃	18℃	kW	3.01	3.31	3.83	
COP	Heating	35℃	7℃	kW	2.53	3.26	4.00	
		35℃	18℃	kW	4.44	5.38	6.40	
	Cooling	7℃	35℃	W/W	5.04	4.89	4.80	
		7℃	55℃	W/W	2.90	2.85	2.80	
EER	Cooling	2℃	35℃	W/W	3.65	3.63	3.60	
		35℃	18℃	W/W	4.75	4.30	4.00	
Operation Range (Outdoor Temp.)	Heating	35℃	7℃	W/W	2.70	2.60	2.50	
		35℃	18℃	W/W	2.70	2.60	2.50	
Compressor	Heating	Min. ~ Max.	℃ DB	-25 ~ -35				
	Cooling	Min. ~ Max.	℃ DB	5 ~ 48				
Refrigerant	Type			-	Hermetic Sealed Scroll			
	GWP (Global Warming Potential)			-	R32			
	Precharged Amount			-	675			
Piping Connections	Water Circuit	Inlet	Outlet	inch	2.100			
					1.418			
					Male PT 1" ⁽⁵⁾			
Rated Water Flow Rate (at LWT 35℃)	Heating	Rated	ℓ/min	inch	Male PT 1" ⁽⁵⁾			
					40.3			
					46.0			
Sound Power Level	Heating	Rated	dB(A)	61	62			
					63			
					55			
Sound Pressure Level (at 1m)	Heating	Rated	dB(A)	53	54			
					55			
					55			
Dimensions	Unit	W x H x D	mm	950	1 380 x 330			
					917			
					917			
Weight	Unit	kg	kg	950	1 380 x 330			
					917			
					917			
Exterior	Color / RAL Code		-	-	Warm Gray / RAL 7044			
					Warm Gray / RAL 7044			
					Warm Gray / RAL 7044			
Electrical Specification				Outdoor Unit	HN121MRB U30 (1Ø) HU123MRB U30 (3Ø)	HN141MRB U30 (1Ø) HU143MRB U30 (3Ø)	HN161MRB U30 (1Ø) HU163MRB U30 (3Ø)	
Power Supply	Voltage, Phase, Frequency			V, Ø, Hz	220-240, 1, 50 / 380-415, 3, 50			
	Rated Running Current	Heating		A	10: 10.6 / 30: 3.5			
		Cooling		A	10: 12.7 / 30: 4.2			
Wiring Connections	Recommended Circuit Breaker	Power Supply Cable (included earth, H07RN-F)	mm ² x cores	A	10: 14.8 / 30: 4.9			
					10: 11.2 / 30: 3.7			
					10: 14.4 / 30: 4.8			
Wiring Connections	Power Supply Cable (included earth, H07RN-F)	mm ² x cores	mm ² x cores	mm ² x cores	10: 17.7 / 30: 5.9			
					10: 4.0 / 30: 16.0			
					10: 6.0 x 3C / 30: 2.5 x 5C			

1. Due to our policy of innovation some specifications may be changed without notification.

2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power

and circuit breaker should be selected in accordance with that.

3. Sound power level is measured on the rated condition in accordance with ISO 9614 standard.

Therefore, these values can be increased owing to ambient conditions during operation.

4. Performances are accordance with EN14511 and reflect ErP testing conditions. Above gives the

declared values at rated conditions acc. ErP regulation.

5. This product contains fluorinated greenhouse gases.

6. According to ISO 7-1 (tapered pipe threads)

SEASONAL ENERGY EFFICIENCY

(For R32 Hydrosplit IWT, HN1616Y NB1)

Description		Indoor Unit	Outdoor Unit	HN121MRB U30 (1Ø)	HN141MRB U30 (1Ø)	HN161MRB U30 (1Ø)	HN163MRB U30 (3Ø)
Space Heating (According to EN14825)	Average Climate	-	-	4.60	4.57	4.55	4.55
	Seasonal Space Heating Efficiency (η _s)	%	-	181	180	179	179
	Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	-	A+++	A+++	A+++	A+++
	Average Climate	-	-	3.50	3.47	3.45	3.45
	Seasonal Space Heating Efficiency (η _s)	%	-	137	136	135	135
Domestic Hot Water Efficiency (According to EN 16147)	Average Climate	-	-	A++	A++	A++	A++
	Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	-	L	L	L	L
	Declared Load Profile	-	-	L	L	L	L
	Water Heating Efficiency (η _{wh})	%	-	120	120	120	120
	Water Heating Eff. Class (A+++ to G Scale)	-	-	A+	A+	A+	A+



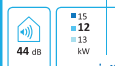
* EHPA label under development.

(For R32 Hydrosplit Hydro box, HN1600MC NK1)

Description		Indoor Unit	Outdoor Unit	HN121MRB U30 (1Ø)	HN141MRB U30 (1Ø)	HN161MRB U30 (1Ø)	HN163MRB U30 (3Ø)
Space Heating (According to EN 14825)	Average Climate	-	-	4.60	4.57	4.55	4.55
	Seasonal Space Heating Efficiency (η _s)	%	-	181	180	179	179
	Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	-	A+++	A+++	A+++	A+++
	Average Climate	-	-	3.50	3.47	3.45	3.45
	Seasonal Space Heating Efficiency (η _s)	%	-	137	136	135	135
Domestic Hot Water Efficiency (According to EN 16147)	Average Climate	-	-	A++	A++	A++	A++
	Seasonal Space Heating Eff. Class (A+++ to D Scale)	-	-	A++	A++	A++	A++
	Declared Load Profile	-	-	A++	A++	A++	A++
	Water Heating Efficiency (η _{wh})	%	-	120	120	120	120
	Water Heating Eff. Class (A+++ to G Scale)	-	-	A++	A++	A++	A++



* EHPA & MCS label under development.

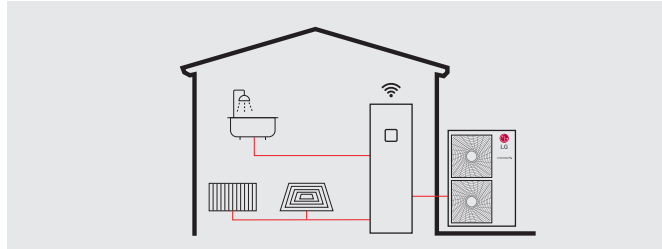


LG'S THERMA V™ HYDROSPLIT SERIES AT A GLANCE



The LG THERMA V Hydrosplit series separates the Indoor unit (IDU) and outdoor unit (ODU), connecting them via water pipes. The unit's heat exchanger is located within the ODU, reducing the risk of indoor refrigerant leakage. THERMA V R32 Hydrosplit IWT (Integrated Water Tank) is a domestic hot water supply, space heating and cooling solution that conveniently combines an indoor hot water tank with a separate outdoor unit. Hydrosplit Hydro box is a solution providing space heating and cooling with high installation flexibility thanks to the characteristic of being a wall mounted type.

LG'S THERMA V™ R32 Hydrosplit IWT



All-in-one integration

- Quick & easy installation
- DHW tank (200ℓ) & hydronic component integration
- Integrated max. 6kW electric heater
- Integrated expansion tank for heating (12ℓ)

Enhanced installation flexibility

- Water pipes connects IDU & ODU
- User-friendly installation settings interface
- Light weight & compact indoor unit: only 2 installers required
- Integrable 40ℓ buffer tank & 8ℓ expansion tank for DHW circuit (optional)

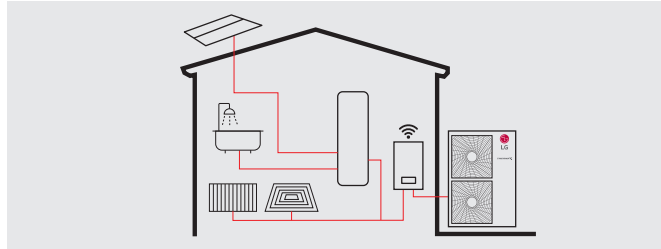
High efficiency & wide operational range

- R32 Refrigerant with low GWP
- SCOP up to 4.60 (average climate / low temp. application) : A+++
- DHW heating efficiency 120% (profile L): A+
- COP up to 5.04 (outdoor air 7°C / leaving water 35°C)
- Leaving water temperature up to 65°C

Innovative design & technology

- Built-in water flow & pressure sensors to monitor real-time water circuit
- Advanced water pump control (optimal flow rate, fixed capacity, fixed flow rate, fixed ΔT)
- Enhanced 2nd circuit control logic

LG'S THERMA V™ R32 Hydrosplit Hydro box



Enhanced installation flexibility

- Water pipes connects IDU & ODU
- Hydronic components built into IDU : water pump, expansion tank, air vent, etc
- User-friendly installation settings interface
- Integrable electric backup heater (6kW, optional)

High efficiency & wide operational range

- R32 Refrigerant with low GWP
- SCOP up to 4.60 (average climate / low temp. application) : A+++
- COP up to 5.04 (outdoor air 7°C / leaving water 35°C)
- COP up to 5.04 (outdoor air 7°C / leaving water 35°C)
- Leaving water temperature up to 65°C
- Expanded operative range of solar thermal system

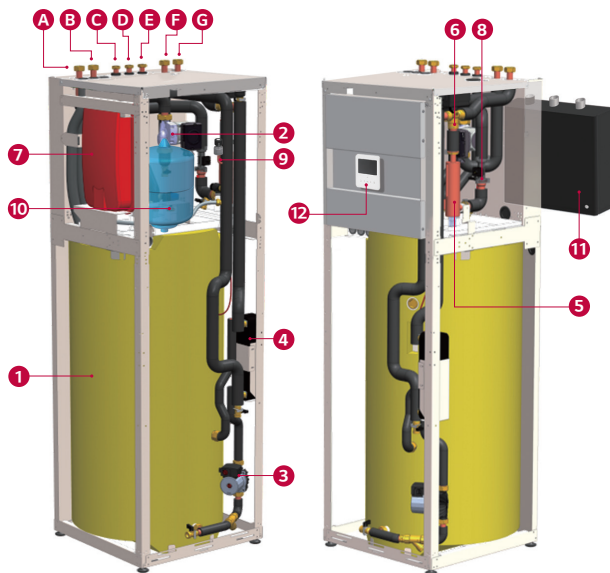
Innovative design & technology

- Built-in water flow & pressure sensors to monitor real-time water circuit
- Advanced water pump control (optimal flow rate, fixed capacity, fixed flow rate, fixed ΔT)
- Enhanced 2nd circuit control logic

Product	Phase	Capacity	Indoor Unit	Outdoor Unit
R32 Hydrosplit IWT	10	12	HN1616Y NB1	HU121MRB U30
		14		HU141MRB U30
		16		HU161MRB U30
	30	12		HU123MRB U30
		14		HU143MRB U30
		16		HU163MRB U30
R32 Hydrosplit Hydro box	10	12	HN1600MC NK1	HU121MRB U30
		14		HU141MRB U30
		16		HU161MRB U30
	30	12		HU123MRB U30
		14		HU143MRB U30
		16		HU163MRB U30

KEY COMPONENTS

HN1616Y NB1



- 1 DHW storage tank (200ℓ)
- 2 Main water pump
- 3 Water pump for DHW charging
- 4 Plate heat exchanger for DHW (water / DHW)
- 5 Electric heater (Max. 6kW)
- 6 3-way diverting valve
- 7 Expansion vessel for heating (12ℓ)
- 8 Flow sensor
- 9 Water pressure sensor
- 10 Expansion vessel for DHW (8ℓ, option)
- 11 Buffer tank (40ℓ, option)
- 12 RS3 Remote controller (attached on the front panel)

ACCESSORY PARTS (OPTIONAL ACCESSORY)

Buffer tank for space heating

Buffer tank for space heating	OSHB-40KT-AEU
Water Volume	40
Dimensions (W x H x D)	mm 518 x 560 x 175
Weight (w/o water)	kg 24

Expansion vessel for DHW

Expansion vessel for DHW	OSHE-12KT-AEU
Expansion Volume	ℓ 8
Connection	inch 3/4
Max. Pressure	bar 10
Pre-charge	bar 3
Dimensions (W x H x D)	mm 416 x 238 x 502
Weight (w/o water)	kg 2.5

- A Inlet pipe from outdoor unit (female G1")
- B Outlet pipe to outdoor unit (female G1")
- C Domestic hot water outlet pipe (female G3/4")
- D Domestic cold water outlet pipe (female G3/4")
- E DHW recirculation pipe (female G3/4")
- F Heating circuit inlet pipe (female G1")
- G Heating circuit outlet pipe (female G1")

(SEPARATELY PROVIDED)

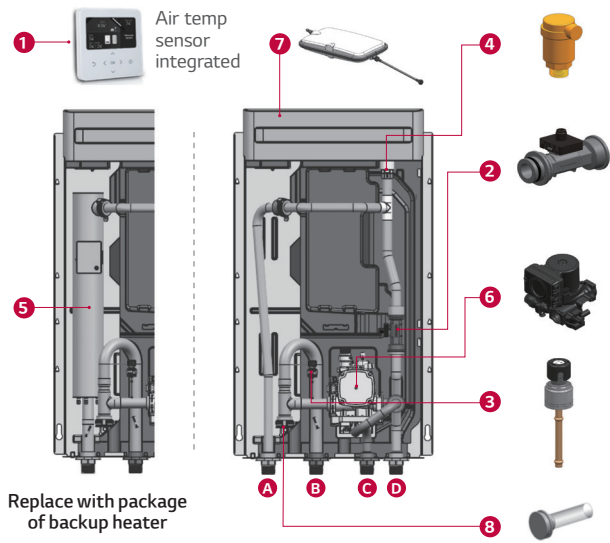
Shut-off valve (1EA)



Shut-off valve with strainer (1EA)



HN1600MC NK1



Replace with package of backup heater

- 1 RS3 Remote Controller (attached on the front panel)
- 2 Flow sensor (SIKA)
- 3 Water pressure sensor (SENSATA)
- 4 Air vent valve
- 5 Backup electric heater (6kW, accessory)
- 6 Water pump (GRUNDFOS)
- 7 Expansion vessel (BL)
- 8 Strainer

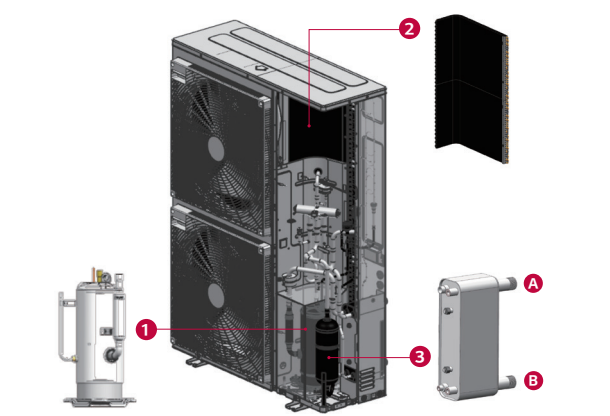
ACCESSORY PARTS (OPTIONAL ACCESSORY)

Back up heater

- A HA061C E1 (10)
- B HA063C E1 (30)
- C Heater element
- D Heater relay PCB
- E ELCB
- F Magnet switch

Electrical Specification		HA061C E1	HA063C E1
Backup Heater	Type	-	Sheath
	No. of Heating Coil	EA 2	3
	Capacity Combination	kW 3.0 + 3.0	2.0 + 2.0 + 2.0
	Heating Step	Step 1	1
	Power Supply	V, ∅, Hz 220-240, 1, 50	380-415, 3, 50
Circuit Breaker (ELCB)	Current (Rated)	A 24.0	8.7
	Circuit Breaker (ELCB)	A 40	20
	Wiring Connection	Power Cable (Included Earth, H07RN-F)	mm ² x cores 6.0 x 3C
Wiring Connection	Power Cable	mm ² x cores 6.0 x 3C	2.5 x 5C
	Included Earth	H07RN-F	

HU121MRB U30 / HU141MRB U30 / HU161MRB U30 HU123MRB U30 / HU143MRB U30 / HU163MRB U30



- 1 R1 compressor
- 2 Black Fin heat exchanger (ref/air)
- 3 Plate type heat exchanger (ref/water)
- 4 Outlet pipe to indoor unit (male PT 1")
- 5 Inlet pipe from indoor unit (male PT 1")

ACCESSORY PARTS (OPTIONAL ACCESSORY)

Strainer

Technical Specification		Details
Material	Body	Brass
	Mesh	Stainless steel (ST304)
Mesh No.	Mesh No.	30
	Max. Particle Size	0.6mm
Piping Connection		Female G 1" according to ISO 228-1

* The strainer should be installed on the water inlet pipe of outdoor unit.

EASY INSTALLATION



Hydrosplit



LG heating configurator*



Clip connection



R1 compressor



R32 refrigerant



Flash gas injection



Wide operation range



Black Fin heat exchanger



Solar thermal



Energy state



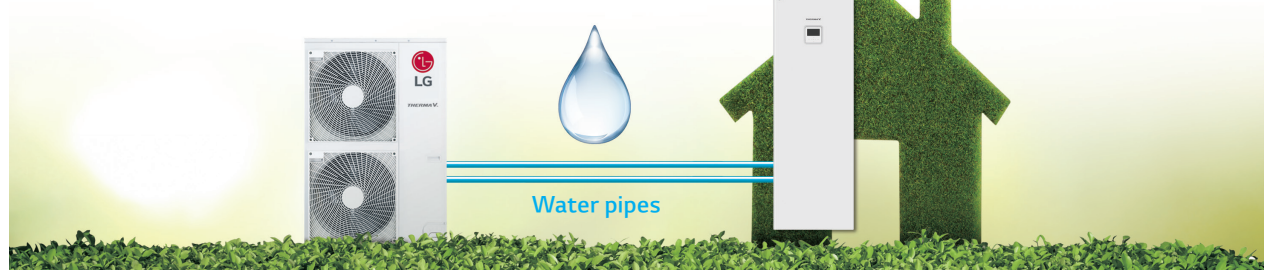
Modbus communication

* Will be supported within this year



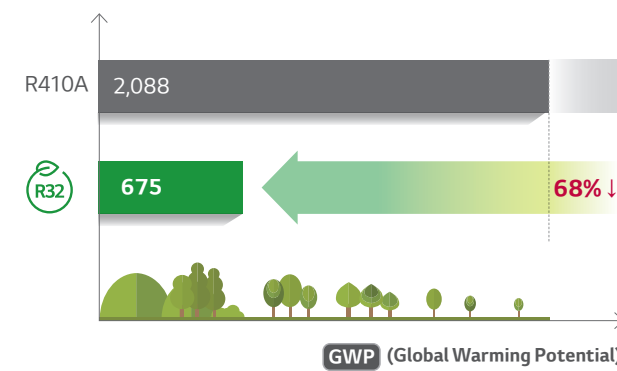
HYDROSPLIT CONCEPT

The THERMA V R32 Hydrosplit connects an IDU and ODU by water pipes due to the heat exchanger's location in the outdoor unit, thus reducing the risk of indoor refrigerant leakage.



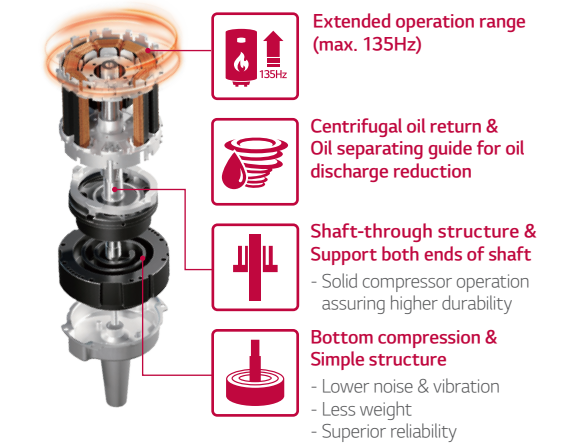
ECO-CONSCIOUS WITH R32 REFRIGERANT

Ensure regulation compliance with eco-conscious R32 refrigerant, which boasts enhanced efficiency and a 68% reduced Global Warming Potential (GWP) than the alternative.



RI Compressor™ LG'S REVOLUTIONARY TECHNOLOGY

RI Compressor™ technology offers advanced efficiency, reliability and operational range due in part to the enhanced tilting motion of the scroll.



ENERGY STATES INTERLOCK

The R32 Hydrosplit series provide energy state interlock function that enables customers to use as much as possible of their own renewable energy. It can shift set points depending on input signal from Energy Storage System (ESS) or any other third-party device using Modbus or Digital 230V inputs.

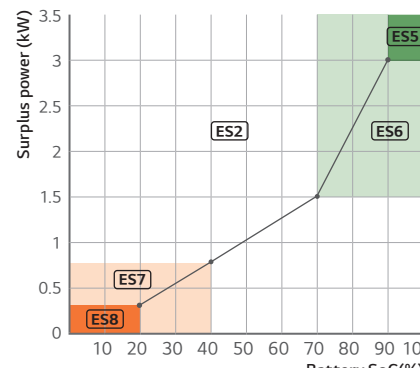
Energy States	Description				Operation
	Smart Grid (Contact)		ESS (Modbus)		
	Operation Mode	Power Supply Status	Operation Mode	Battery Charged Status	
ES1	Operation Off				Forced off to avoid peak load
ES2	Normal		Normal		Normal operation
ES3*	On Recommend				Changed target temperature higher (Heating : +2°C / DHW : +5°C)
ES4*	On Command				Changed target temperature higher (DHW : 80°C)
ES5**			On Command (Step2)		Changed target temperature higher (Heating : +5°C, Cooling : -5°C, DHW : +30°C)
ES6**			On Recommend (Step1)		Changed target temperature higher (Heating : +2°C, Cooling : -2°C, DHW : +10°C)
ES7**			Energy Saving		Changed target temperature lower (Heating : -2°C, Cooling : +2°C)
ES8**			Super Energy Saving		Changed target temperature lower (Heating : -5°C, Cooling : +5°C)

* Contact signal designated ES3 and ES4 can be changed to ESS - ES8.

** Offset values of heating, cooling and DHW are changeable.

*** Thermo V can connect not only ESS but also 3rd party controller through Modbus, in that case, ES1 to ES8 are used.

[Area of energy state for ESS]



- SoC : State of Charge
- Surplus Power (SP) = PV Power - Load power
- Area of energy state for ESS can be adjusted by ESS.

USER CONVENIENCE



Intuitive interface



LG ThinQ



Mixing circuit



Various control options



Flow sensor



Pressure sensor



3rd party boiler



Energy monitoring



Seasonal auto mode



Low noise mode

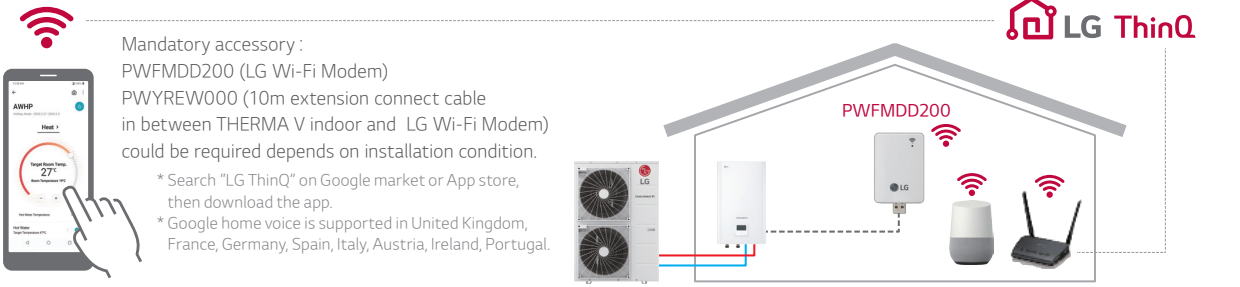


Advanced pump control



LG ThinQ SEAMLESS CONNECTIVITY

LG ThinQ allows users to monitor and control compatible LG products remotely, so they can set the temperature and regulate the use of their THERMA V anytime, anywhere. ThinQ technology also works with voice activation with Google Home.



INTUITIVE CONTROL

THERMA V is equipped with a new remote controller which supports various functions.

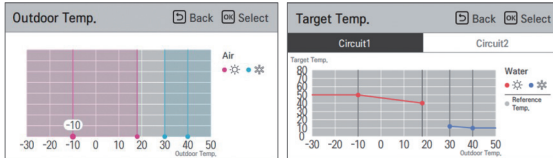
- Premium Design (4.3 inch color LCD)
- User-Friendly Interface (simple graphic, icon & text)
- Convenient Functions (easy schedule setting & installer setting)
- Enhanced Energy information with Simple Interface

* Meter interface (PENKTH000) is required to see the energy information.



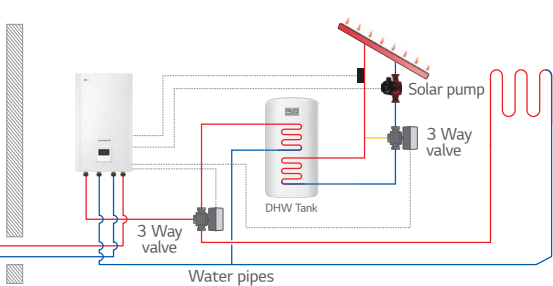
SEASONAL AUTO MODE

The operation mode and target temperature will be changed according to the outdoor temperature automatically. Moreover, this function can be conveniently set using visualized graphics.



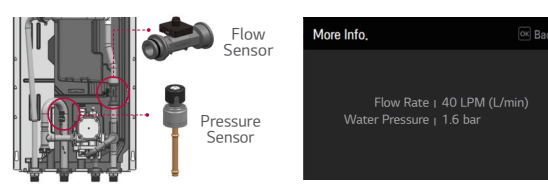
COMBINATION WITH SOLAR THERMAL SYSTEM

By combining the solar system with Thermo V, the efficiency of DHW heating operation can be maximized. (Hydro box type only)



WATER CIRCUIT MONITORING

It is possible to monitor via remote controller not only temperature of water circuit but also flow rate and pressure.



ADVANCED PUMP CONTROL OPTIONS

Various pump operation options contribute to energy savings by providing optimum water pump control and reliable product operation.

