

### INDOOR UNIT (For R32 Hydrosplit IWT, HN1616Y NB1)

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)

| Technical Specification                  |                                                         |                       | Indoor Unit | HN1600MC NK1                   |                     |
|------------------------------------------|---------------------------------------------------------|-----------------------|-------------|--------------------------------|---------------------|
| Operation Range<br>(Leaving Water Temp.) | Heating                                                 | Min. – Max.           | °C          | 15 – 65                        |                     |
|                                          | Cooling                                                 | Min. – Max.           | °C          | 5 – 27 (16 – 27) <sup>1)</sup> |                     |
|                                          | Domestic Hot Water                                      | Min. – Max.           | °C          | 15 – 80 <sup>2)</sup>          |                     |
| 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" <sup>3)</sup> |
|                                          |                                                         | Inlet to Heat Load    | inch        | Male                           | PT 1" <sup>3)</sup> |
|                                          |                                                         | Outlet from PHEX      | inch        | Male                           | PT 1" <sup>3)</sup> |
|                                          |                                                         | Outlet from Heat Load | inch        | Male                           | PT 1" <sup>3)</sup> |
| Sound Power Level                        | Heating                                                 | Rated                 | dB(A)       | 44                             |                     |
| 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) |                       | mm² 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)



## OUTDOOR UNIT (For R32 Hydrosplit series)

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

2. Wiring cable must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

3. Sound power level is measured on the rated condition in according 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)

(For R32 Hydrosplit IWT, HN1616Y NB1)





 R1 Compressor™ **Black Fin**




     **RI Compressor™** **Black Fin** 



### Maximum Heating Capacity (Including Defrost Effect)

HU121MRB U30 / HU123MRB U30 + HN1600MC NK1 / HN1616Y NB1

HU141MRB U30 / HU143MRB U30 + HN1600MC NK1 / HN1616Y NB1

HU161MRB U30 / HU163MRB U30 + HN1600MC NK1 / HN1616Y NB1

[illegible]

## Maximum Cooling Capacity

HU121MRB U30 / HU123MRB U30 + HN1600MC NK1 / HN1616Y NB1

HU141MRB U30 / HU143MRB U30 + HN1600MC NK1 / HN1616Y NB1

HU161MRB U30 / HU163MRB U30 + HN1600MC NK1 / HN1616Y NB1

| Outdoor Temperature | LWT 7°C | LWT 10°C | LWT 13°C | LWT 15°C | LWT 18°C | LWT 20°C | LWT 22°C |
|---------------------|---------|----------|----------|----------|----------|----------|----------|
|                     | TC      | TC       | TC       | TC       | TC       | TC       | TC       |
| 10°C DB             | 16.00   | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    |
| 20°C DB             | 16.00   | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    |
| 30°C DB             | 16.00   | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    |
| 35°C DB             | 16.00   | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    |
| 40°C DB             | 15.75   | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    |
| 45°C DB             | 15.50   | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    | 16.00    |

- Note
1. DB : Dry Bulb Temperature (°C), LWT: Leaving Water Temperature (°C), LPM : Liters Per Minute (ℓ/min), TC : Total Capacity (kW)
  2. Direct interpolation is permissible. Do not extrapolate.
  3. Measuring procedure follows EN-14511.
    - Rated values are based on standard conditions and it can be found on specifications.
    - Above table values may not be matched according to installation condition. Except for rated value, the performance is not guaranteed
    - In accordance with the test standard (or nations), the rating will vary slightly.
  4. The shaded areas are not guaranteed continuous operation.



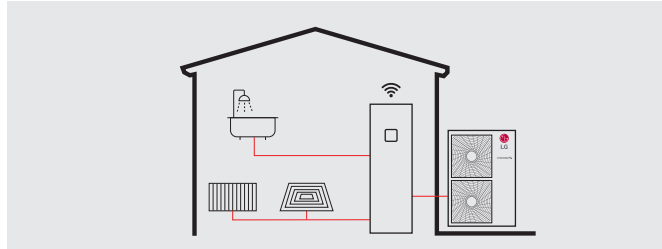


## LG'S THERMA V™ HYDROSPLIT SERIES AT A GLANCE



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)

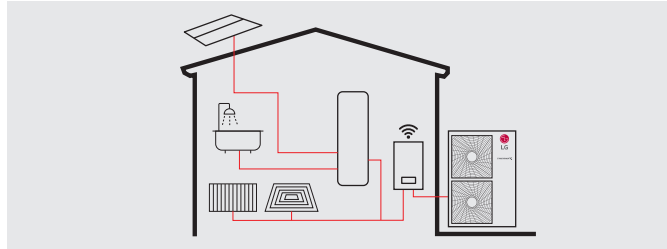
#### High efficiency & wide operational range

- 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 2<sup>nd</sup> 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

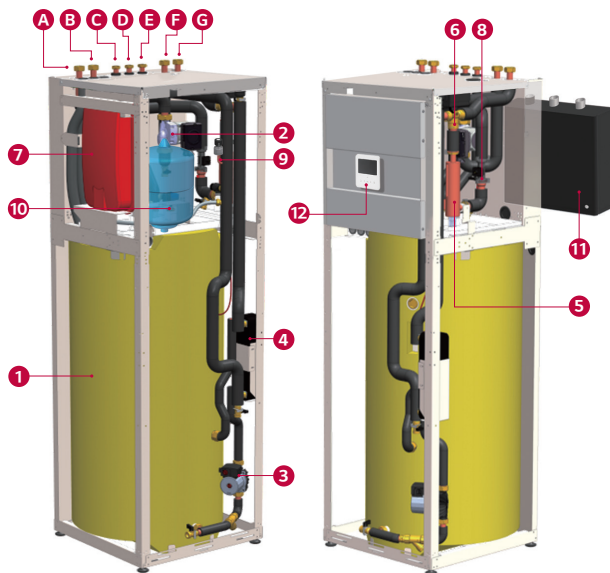
#### Innovative design & technology

- 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 2<sup>nd</sup> 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)

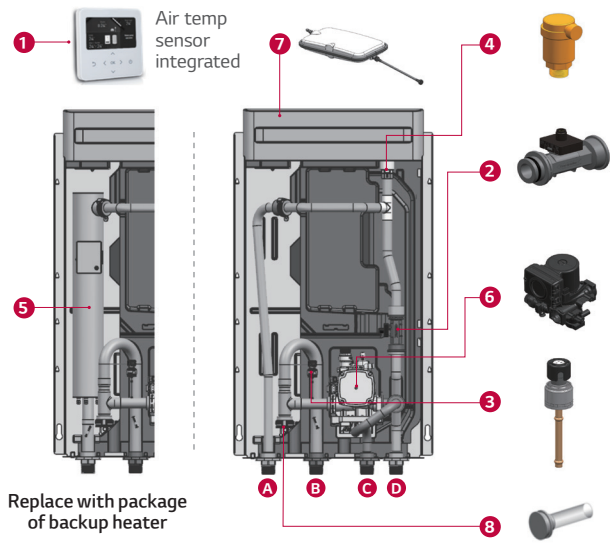
##### Shut-off valve (1EA)



##### 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

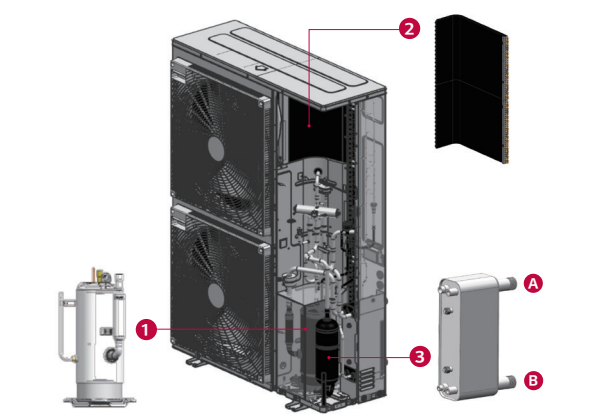
#### ACCESSORY PARTS (OPTIONAL ACCESSORY)

##### 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, Ø, 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 <sup>2</sup> x cores 6.0 x 3C 2.5 x 5C |

### 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                    | 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



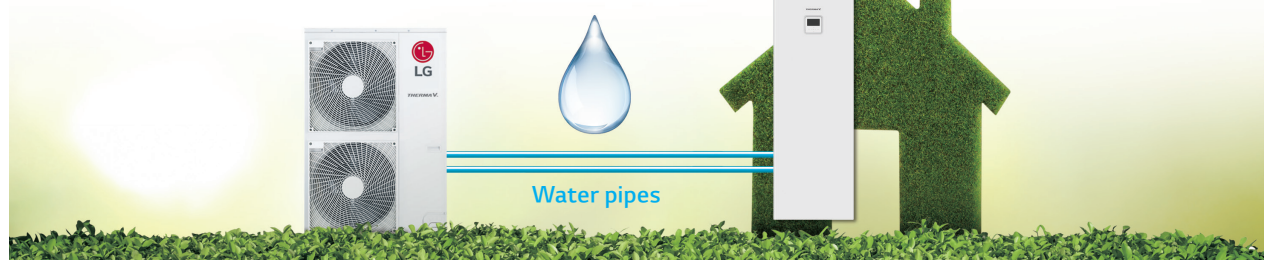
Modbus communication

\* Will be supported within this year



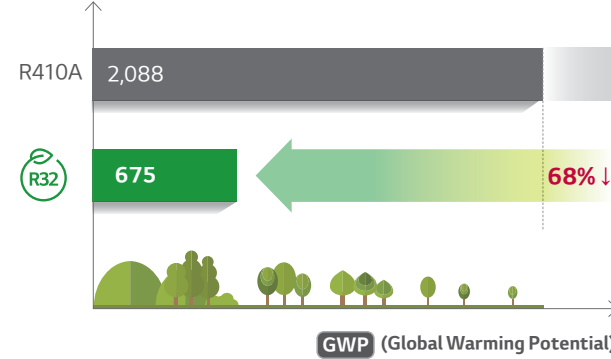
## HYDROSPLIT CONCEPT

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.



## 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.

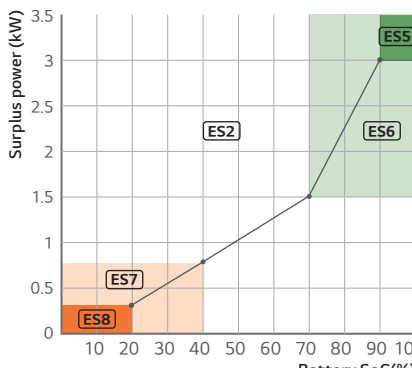
| Energy States | Description          |                                                                                       |                      |                                                                                       | Operation                                                                       |
|---------------|----------------------|---------------------------------------------------------------------------------------|----------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|               | 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 3<sup>rd</sup> 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



3<sup>rd</sup> party boiler



Energy monitoring



Seasonal auto mode



Low noise mode

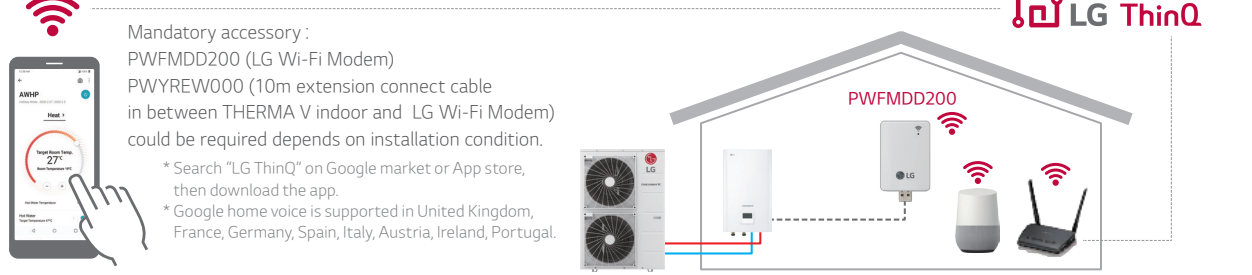


Advanced pump control



## 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.



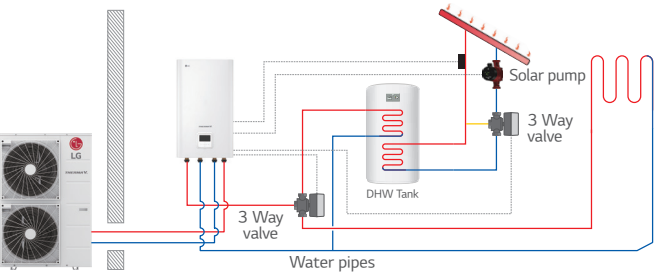
## SEASONAL AUTO MODE

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.



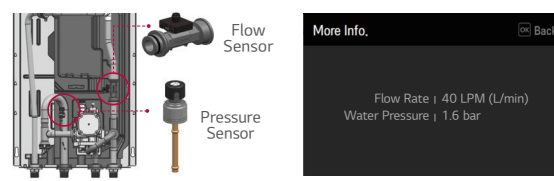
## COMBINATION WITH SOLAR THERMAL SYSTEM

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.

