

# Air to Water Heat Pump



## Solax Thermal R290 Series



### High Performance

- Integrated with PV and ESS to maximize green energy self-consumption
- SCOP level: A+++
- Maximum leaving water temperature of 80°C



### Eco-Friendly

- R290 natural refrigerant, low GWP and a low-carbon lifestyle
- Extremely quiet operation with low noise level



### Flexibility

- Available in 5 capacity sizes (8 to 16 kW), suitable for renovations and large new buildings
- Highly interoperable, SG ready, Modbus TCP/RTU supported
- Heating + Cooling + Domestic Hot Water (DHW)



### Intelligent Control

- Smart App control supports remote monitoring, operation, and OTA updates
- Brushless DC motor enables stepless speed regulation

| Power supply                                                   |                   | 220 ~ 240 V / 1N~ / 50 Hz  |          |          |          |          | 380 ~ 415 V / 3N~ / 50 Hz |          |          |          |          |
|----------------------------------------------------------------|-------------------|----------------------------|----------|----------|----------|----------|---------------------------|----------|----------|----------|----------|
| Heating<br>(A: 7/6°C W: 30/35°C)                               | Capacity          | 8.5 kW                     | 10 kW    | 12.5 kW  | 14 kW    | 15.5 kW  | 8.5 kW                    | 10 kW    | 12.5 kW  | 14kW     | 15.5 kW  |
|                                                                | Rated input power | 1.65 kW                    | 2.02 kW  | 2.55 kW  | 2.95 kW  | 3.41 kW  | 1.65 kW                   | 2.02 kW  | 2.55 kW  | 2.95 kW  | 3.41 kW  |
|                                                                | COP               | 5.15                       | 4.95     | 4.90     | 4.75     | 4.55     | 5.15                      | 4.95     | 4.90     | 4.75     | 4.55     |
| Heating<br>(A: 7/6°C W: 47/55°C)                               | Capacity          | 8kW                        | 10 kW    | 12 kW    | 14 kW    | 16 kW    | 8 kW                      | 10 kW    | 12 kW    | 14 kW    | 16 kW    |
|                                                                | Rated input power | 2.32 kW                    | 3.08 kW  | 3.69 kW  | 4.44 kW  | 5.16 kW  | 2.32 kW                   | 3.08 kW  | 3.69 kW  | 4.44 kW  | 5.16 kW  |
|                                                                | COP               | 3.45                       | 3.25     | 3.25     | 3.15     | 3.1      | 3.45                      | 3.25     | 3.25     | 3.15     | 3.1      |
| Cooling<br>(A: 35°C W: 23/18°C)                                | Capacity          | 8.5 kW                     | 10 kW    | 12 kW    | 14 kW    | 15.5 kW  | 8.5 kW                    | 10 kW    | 12 kW    | 14 kW    | 15.5 kW  |
|                                                                | Rated input power | 1.63                       | 2.13 kW  | 2.55 kW  | 3.11 kW  | 3.56 kW  | 1.63 kW                   | 2.13 kW  | 2.55 kW  | 3.11 kW  | 3.56 kW  |
|                                                                | EER               | 5.20                       | 4.70     | 4.70     | 4.50     | 4.35     | 5.20                      | 4.70     | 4.70     | 4.50     | 4.35     |
| Cooling<br>(A: 35°C W: 12/7°C)                                 | Capacity          | 8 kW                       | 9kW      | 12 kW    | 13 kW    | 14 kW    | 8 kW                      | 9 kW     | 12 kW    | 13 kW    | 14 kW    |
|                                                                | Rated input power | 2.35 kW                    | 2.81 kW  | 3.87 kW  | 4.26 kW  | 5.09 kW  | 2.35 kW                   | 2.81 kW  | 3.87 kW  | 4.26 kW  | 5.09 kW  |
|                                                                | EER               | 3.40                       | 3.20     | 3.10     | 3.05     | 2.75     | 3.40                      | 3.20     | 3.10     | 3.05     | 2.75     |
| Seasonal space heating<br>energy efficiency class <sup>①</sup> | LWT at 35°C       | A+++                       | A+++     | A+++     | A+++     | A+++     | A+++                      | A+++     | A+++     | A+++     | A+++     |
|                                                                | LWT at 55°C       | A+++                       | A+++     | A+++     | A+++     | A+++     | A+++                      | A+++     | A+++     | A+++     | A+++     |
| SCOP <sup>②</sup>                                              | LWT at 35°C       | 5.44                       | 5.30     | 5.07     | 4.95     | 4.90     | 5.44                      | 5.30     | 5.07     | 4.95     | 4.90     |
|                                                                | LWT at 55°C       | 4.12                       | 4.07     | 3.89     | 3.84     | 3.83     | 4.12                      | 4.07     | 3.89     | 3.84     | 3.83     |
| Compressor                                                     | Type              | Rotary DC inverter         |          |          |          |          |                           |          |          |          |          |
| Outdoor fan                                                    | Motor type        | Brushless DC motor         |          |          |          |          |                           |          |          |          |          |
|                                                                | Number of fans    | 1                          |          |          |          |          |                           |          |          |          |          |
| Throttle type                                                  |                   | Electronic expansion valve |          |          |          |          |                           |          |          |          |          |
| Air side heat exchanger                                        | Type              | Finned tube                |          |          |          |          |                           |          |          |          |          |
| Water side heat exchanger                                      | Type              | Plate type                 |          |          |          |          |                           |          |          |          |          |
| Refrigerant                                                    | Type/GWP          | R290/3                     |          |          |          |          |                           |          |          |          |          |
|                                                                | Charged volume    | 1.2 kg                     | 1.2 kg   | 1.5 kg   | 1.5 kg   | 1.5 kg   | 1.2 kg                    | 1.2 kg   | 1.5 kg   | 1.5 kg   | 1.5 kg   |
| CO2 Equivalent                                                 |                   | 0.0036 t                   | 0.0036 t | 0.0045 t | 0.0045 t | 0.0045 t | 0.0036 t                  | 0.0036 t | 0.0045 t | 0.0045 t | 0.0045 t |
| Sound power level <sup>③</sup>                                 |                   | 49 dB(A)                   | 49 dB(A) | 51 dB(A) | 52 dB(A) | 52 dB(A) | 49 dB(A)                  | 49 dB(A) | 51 dB(A) | 52 dB(A) | 52 dB(A) |
| Sound pressure level at 1m <sup>④</sup>                        |                   | 35 dB(A)                   | 35 dB(A) | 37 dB(A) | 38 dB(A) | 38 dB(A) | 35 dB(A)                  | 35 dB(A) | 37 dB(A) | 38 dB(A) | 38 dB(A) |
| Sound pressure level at 3m <sup>⑤</sup>                        |                   | 32 dB(A)                   | 32 dB(A) | 34 dB(A) | 35 dB(A) | 35 dB(A) | 32 dB(A)                  | 32 dB(A) | 34 dB(A) | 35 dB(A) | 35 dB(A) |
| Dimensions(W x H x D)                                          |                   | 1310 × 1050 × 465 mm       |          |          |          |          |                           |          |          |          |          |
| Weight                                                         |                   | 140kg                      | 140kg    | 154kg    | 154kg    | 154kg    | 151kg                     | 151kg    | 165kg    | 165kg    | 165kg    |
| Piping connection                                              |                   | G 1-1/4"                   |          |          |          |          |                           |          |          |          |          |
| Operation range                                                | Heating           | -25 ~ 35 °C                |          |          |          |          |                           |          |          |          |          |
|                                                                | Cooling           | 5 ~ 48 °C                  |          |          |          |          |                           |          |          |          |          |
|                                                                | DHW               | -25 ~ 46 °C                |          |          |          |          |                           |          |          |          |          |
| Water outlet                                                   | Heating           | 25~80 °C                   |          |          |          |          |                           |          |          |          |          |
|                                                                | Cooling           | 5~25 °C                    |          |          |          |          |                           |          |          |          |          |
|                                                                | DHW               | 25~70 °C                   |          |          |          |          |                           |          |          |          |          |

① Relevant EU standards and legislation: EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02

② Seasonal space heating energy efficiency class tests in average climate conditions

③ Sound power level test condition: EN12102-1

④ Sound pressure level at 1m is the maximum value tested under the condition of A7W55

⑤ Sound pressure level at 3m is the maximum value tested under the condition of A7W55

# Indoor Unit



STN1-C01



STN1/3-C02



STN1/3-C03

| Component                           | Control Unit                                                                                             | Hydraulic Unit                                                                   | Hydraulic Integrated Unit                                                                          |
|-------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Indoor unit control board           | ●                                                                                                        | ●                                                                                | ●                                                                                                  |
| 4 inch touch panel                  | ●                                                                                                        | ●                                                                                | ●                                                                                                  |
| Back up heater                      |                                                                                                          | ●                                                                                | ●                                                                                                  |
| Expansion tank (8L)                 |                                                                                                          | ●                                                                                | ●                                                                                                  |
| Solenoid three way valve            |                                                                                                          | ●                                                                                | ●                                                                                                  |
| 190L hot water tank                 |                                                                                                          |                                                                                  | ●                                                                                                  |
| Hot water tank expansion tank (18L) |                                                                                                          |                                                                                  | ●                                                                                                  |
| Hot water tank circulation pump     |                                                                                                          |                                                                                  | ●                                                                                                  |
| Check valve                         |                                                                                                          |                                                                                  | ●                                                                                                  |
| Application Scenario                | Suitable for households with existing or self-installed hydraulic circuits and domestic hot water tanks. | Suitable for households with existing or self installed domestic hot water tanks | Ideal for new installations or households requiring an upgrade in domestic hot water tank capacity |

## Control Unit

### STN1-C01

|                                   |                                    |
|-----------------------------------|------------------------------------|
| Power Supply                      | 220 ~ 240 V / 1N~ / 50 Hz          |
| Rated Current                     | 0.1 A                              |
| User Interface                    | 4 inch high-resolution touch panel |
| Communication                     | WiFi/Ethernet/RS485                |
| Installation                      | Wall mounting                      |
| Sound power level <sup>①</sup>    | 30 dB(A)                           |
| Sound pressure level <sup>②</sup> | 16 dB(A)                           |
| Dimensions(W x H x D)             | 340 x 400 x 80 mm                  |
| Weight                            | 6.5 kg                             |

## Hydraulic Unit

### STN1-C02

### STN3-C02

|                                         |                                    |                           |
|-----------------------------------------|------------------------------------|---------------------------|
| Power Supply                            | 220~240 V / 1N~ / 50 Hz            | 380 ~ 415 V / 3N~ / 50 Hz |
| Rated Current                           | 39.5 A                             | 13.5 A                    |
| User Interface                          | 4 inch high-resolution touch panel |                           |
| Communication                           | WiFi / Ethernet / RS485            |                           |
| Back up heater                          | Capacity combination               | 3.0 kW + 6.0 kW           |
|                                         | Power supply                       | 220~240 V / 1N~ / 50 Hz   |
|                                         | Rated running current              | 39.5 A                    |
| Expansion tank size <sup>③</sup>        | 8L                                 |                           |
| Piping connections (water) <sup>④</sup> | (G1") / (G1-1/4")                  |                           |
| Recommend circuit breaker               | 60 A                               | 20 A                      |
| Installation                            | Wall mounting                      |                           |
| Sound power level <sup>①</sup>          | 33 dB(A)                           |                           |
| Sound pressure level <sup>②</sup>       | 19 dB(A)                           |                           |
| Dimensions(WxHxD)                       | 420 x 700 x 265 mm                 |                           |
| Weight(Empty)                           | 33 kg                              |                           |

① Sound power level test condition: EN12102-1

② Sound pressure level is tested under the condition of A7W55

③ The 18L expansion tank is for the DHW, while the 8L one is for the floor heating side

④ G1 connects to indoor water pipe, G1-1/4 connects to outdoor unit water outlet&inlet

## Hydraulic Integrated Unit

STN1-C03

STN3-C03

|                                         |                       |                                    |                           |
|-----------------------------------------|-----------------------|------------------------------------|---------------------------|
| Power Supply                            |                       | 220 ~ 240 V / 1N~ / 50 Hz          | 380 ~ 415 V / 3N~ / 50 Hz |
| Rated Current                           |                       | 52.3 A                             | 17.5 A                    |
| User Interface                          |                       | 4 inch high-resolution touch panel |                           |
| Communication                           |                       | WiFi / Ethernet / RS485            |                           |
| Back up heater                          | Capacity combination  | 3.0 kW + 6.0 kW                    |                           |
|                                         | Power supply          | 220~240 V / 1N~ / 50 Hz            | 380 ~ 415 V / 3N~ / 50 Hz |
|                                         | Rated running current | 39.5 A                             | 13.1 A                    |
| Expansion tank size <sup>④</sup>        |                       | 18 L+8 L                           |                           |
| DHW tank size                           |                       | 190 L                              |                           |
| Piping connections (water) <sup>③</sup> |                       | (G1") / (G1-1/4")                  |                           |
| Recommend circuit breaker               |                       | 80 A                               | 25 A                      |
| Installation                            |                       | Floor stand                        |                           |
| Sound power level <sup>①</sup>          |                       | 33 dB(A)                           |                           |
| Sound pressure level <sup>②</sup>       |                       | 19 dB(A)                           |                           |
| Dimensions(W x H x D)                   |                       | 595 x 1875 x 700 mm                |                           |
| Weight(empty)                           |                       | 186 kg                             |                           |

① Sound power level test condition: EN12102-1

② Sound pressure level is tested under the condition of A7W55

③ The 18L expansion tank is for the DHW, while the 8L one is for the floor heating side

④ G1 connects to indoor water pipe, G1-1/4 connects to outdoor unit water outlet&inlet

## Solution Diagram

