

DATA SHEET

RegulusHBOX 112 RTC 3/1S Indoor Unit with DHW Heating



Main Features

| | |
|---------------|--|
| Application | Space heating and continuous DHW heating by a RTC single-phase inverter heat pump (RTC 6i or RTC 13e) HSK combination thermal store. The unit is designed for heating systems with one unmixed heating circuit without own circulation pump. This heating circuit shall meet all conditions for the operation of the connected heat pump that are listed in its Data Sheet. |
| Description | <p>Basic elements of RegulusHBOX indoor unit</p> <ul style="list-style-type: none"> ■ IR RegulusHBOX Controller with remote access from a computer or a mobile app. ■ Control unit with graphical display, English menu, that can be used as a room unit (two-wire connection). ■ HSK combination thermal store of 210 l total volume, divided by a tight separating partition in the ratio 49 l (heating), 140 l (DHW heating), 21 l (stainless-steel heat exchanger). ■ DHW heating in a stainless-steel heat exchanger, 6 sqm. ■ 12 kW heating elements, switched in 2 kW steps (max. output can be limited in the controller menu). ■ Three-way zone ball valve for heat pump switching between space and DHW heating. ■ 12 l expansion vessel for heating system. ■ Waste pipe from safety valves incl. siphon. ■ Electric wiring incl. terminal block for easy connection of a heat pump and other accessories incl. basic element protection. ■ Heating water temperature and pressure sensor, DHW temperature sensor. <p>Enclosed accessories</p> <ul style="list-style-type: none"> ■ Heating system safety group incl. air vent valve, 3 bar safety valve, pressure gauge and T-piece for topping up heating water / connecting a supplementary expansion vessel for case when the integrated 12 l expansion vessel is not sufficient. ■ Safety kit for a cold water pipe incl. check valve, 8 bar safety valve, pressure gauge, T-piece for connecting an expansion vessel/recirculation and T-piece for topping up heating water. ■ Outdoor temperature sensor. ■ Pump station for heat pump circuit with Wilo Para 25/8 iPWM1 circulation pump. ■ Ball valve w. filter & magnet. ■ Heat pump communication cable – 15 m. ■ 2 l DHW expansion vessel. |
| Interface | <p>Integrated web server for remote management, accessible either via LAN, or remotely via Internet over Regulusroute service; website is optimized for mobile devices.</p> <p>Integrated control unit with display and 6 keys, with a temperature&humidity sensor; the unit can be moved to interior and used as a room control unit.</p> |
| Working fluid | Water, antifreeze fluid for heat pumps and heating systems (heat pump circuit), water (DHW heat exchanger). |
| Installation | The unit is designed for installation with a RTC inverter heat pump (RTC 6i or RTC 13e). The unit is designed for heating systems with one unmixed heating circuit without own circulation pump. This heating circuit shall meet all conditions for the operation of the connected heat pump that are listed in its Data Sheet. RegulusHBOX is designed for indoor installation only. |
| Code | 20051 |

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Accessories (not included in supply)

| | |
|---|-----------------------------|
| CSE TV pump station for DHW recirculation, with a connection kit for RegulusHBOX indoor unit | code 20276 |
| Expansion vessel for larger heating systems where the 12 l expansion vessel integrated in RegulusHBOX is not sufficient | for codes see the Catalogue |
| Blind plug and frame for RegulusHBOX, for installations where the control unit is used as a room unit | code 18248 |

Technical Data

| | |
|--|----------------------|
| Total tank volume | 210 l |
| Total fluid volume in tank | 189 l |
| Fluid volume above the separating metal sheet | 140 l |
| Fluid volume below the separating metal sheet | 49 l |
| Fluid volume in DHW heat exchanger | 21 l |
| DHW heat exchanger surface area | 6 m ² |
| Fluid working temperature | 5–90 °C |
| Max. working pressure – heating system | 3 bar |
| Min. working pressure – heating system | 0.5 bar |
| Max. working pressure – DHW | 8 bar |
| Ambient temperature | 5–40 °C |
| Max. relative humidity | 80 %, non condensing |
| Safety valve set pressure – heating system | 3 bar |
| Safety valve set pressure – DHW | 8 bar |
| Safety valves seat cross section | 132 mm ² |
| Safety valve discharge coefficient | 0.3 |
| 3-way valve actuator run time | 15 s |
| Heat loss | 160 W |
| Total weight without water | 148 kg |
| Total weight with water | 360 kg |
| Overall dimensions (W x H x D) | 595 x 1725 x 650 mm |
| Tipping height (without pump stations and safety groups connected) | 1790 mm |

Electric Data

| | |
|---|--|
| Power supply | 3/N/PE ~ 400 / 230 V 50 Hz |
| Max. cross section of power cable | 4 mm ² (stranded) / 6 mm ² (solid) |
| Nominal power input | 12.2 kW (without a heat pump connected) |
| Heating elements | 2 x 6 kW (3 x 2 kW – each 230 V) |
| IP rating | IP20 |
| Circuit breaker for heat pump | B20A 1p |
| Circuit breaker for measurement and control | B6A 1p |

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Connectivity, Memory Card

| | |
|---|-----|
| Ethernet 100 Mbit/s | 2 x |
| USB for connecting an optional WiFi USB adapter | 1 x |
| RS485 for connecting a heat pump | 1 x |
| CIB | 1 x |
| TCL2 | 1 x |
| Micro SD memory card | 1 x |

Inputs & Outputs for Optional Accessories

| | |
|---|---|
| 5x relay output | 230 V/5A (K5, DO24–DO27) |
| 3x PWM output | 24 V DC (AO0, AO1, PWM3) |
| 4x analog output | 0–10 V (AO2–AO5) |
| 1x input for Ripple control | 230–400 V AC (HDO) |
| 1x input for reverse iPWM signal from circulation pumps | A/DI16 |
| 13x input for Pt1000 temperature sensors*) | measurement range –90 to 400 °C (A/DI0–A/DI13 and A/DI20) |

*) The inputs can be also used as binary potential-free inputs for connecting e.g. immediate recirculation switch or a HRV boost switch etc.

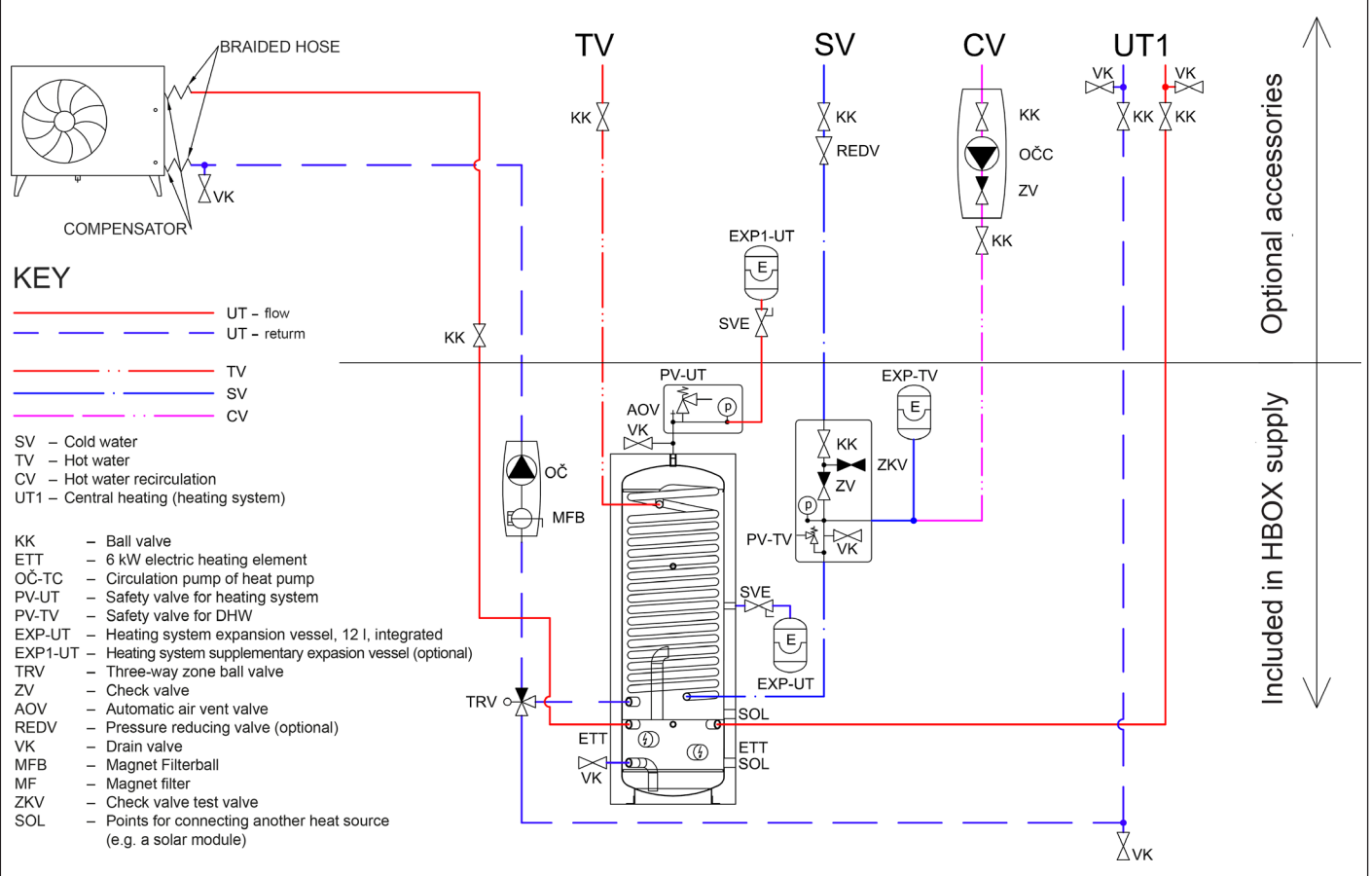
Volume of supplied DHW (heated from 10 °C to 40 °C)

| Heated volume | entire | | | entire | | |
|----------------------|-------------------|-----|-----|--------------|-----|-----|
| | no backup heating | | | | | |
| Backup heating | 10 kW | | | | | |
| Flow rate [l/min] | 8 | 12 | 20 | 8 | 12 | 20 |
| Temperature in tank | 60 °C | | | 60 °C | | |
| Hot water volume [l] | 362 | 250 | 185 | 170 | 163 | 110 |
| Temperature in tank | 50 °C | | | 50 °C | | |
| Hot water volume [l] | 156 | 128 | 87 | 114 | 82 | 64 |

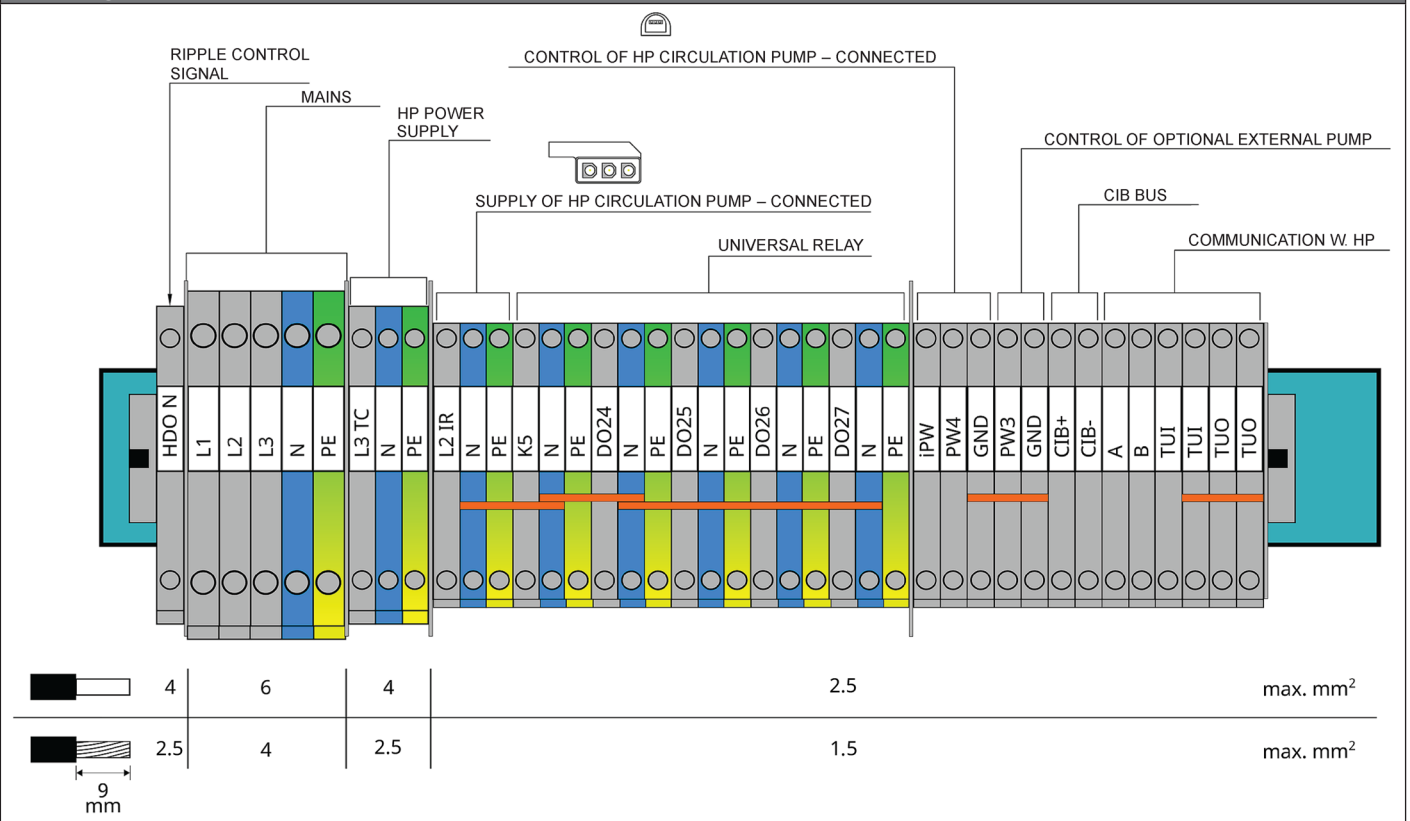
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Hydraulic Layout



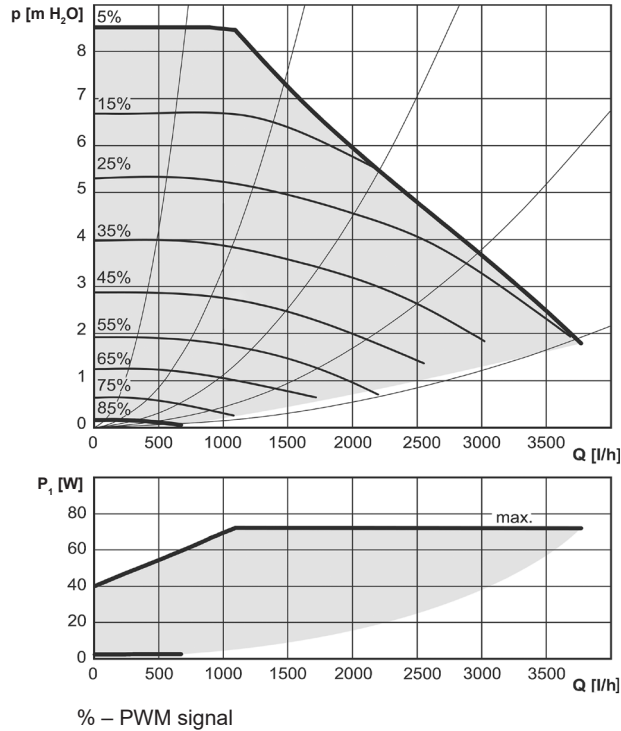
El. wiring



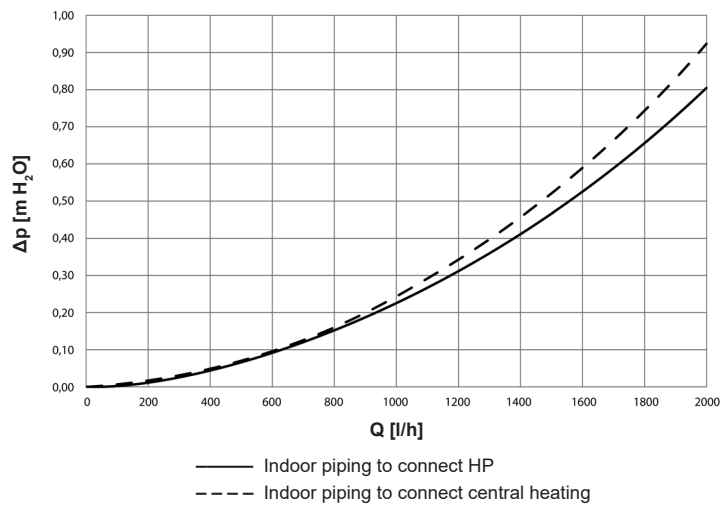
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RegulusHBOX 112 RTC 3/1S Indoor Unit with DHW Heating

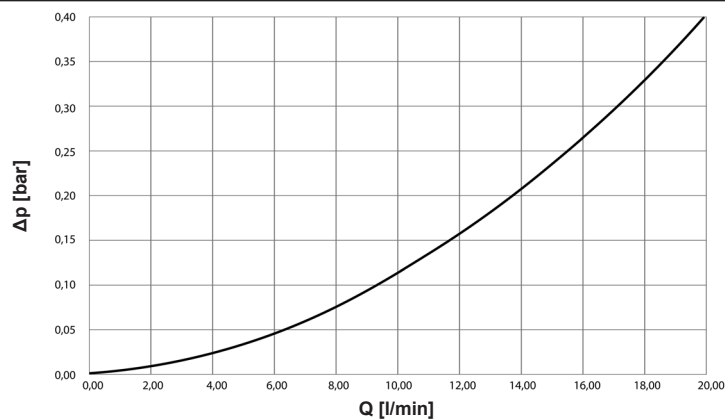
Performance curves for Wilo Para 25/8 iPWM1 pump of the heat pump



Pressure Drop Graph – heating



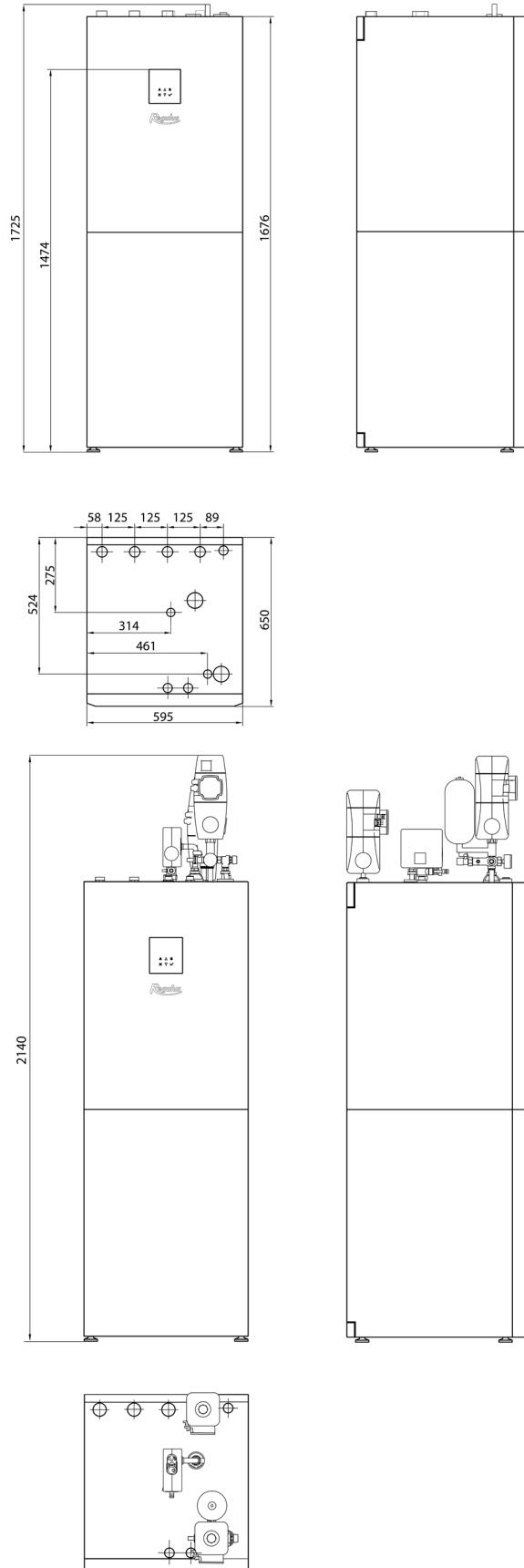
Pressure Drop Graph – DHW



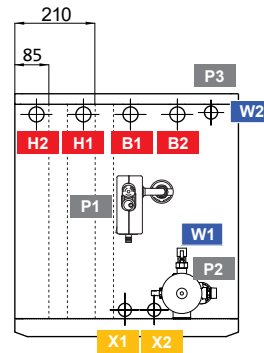
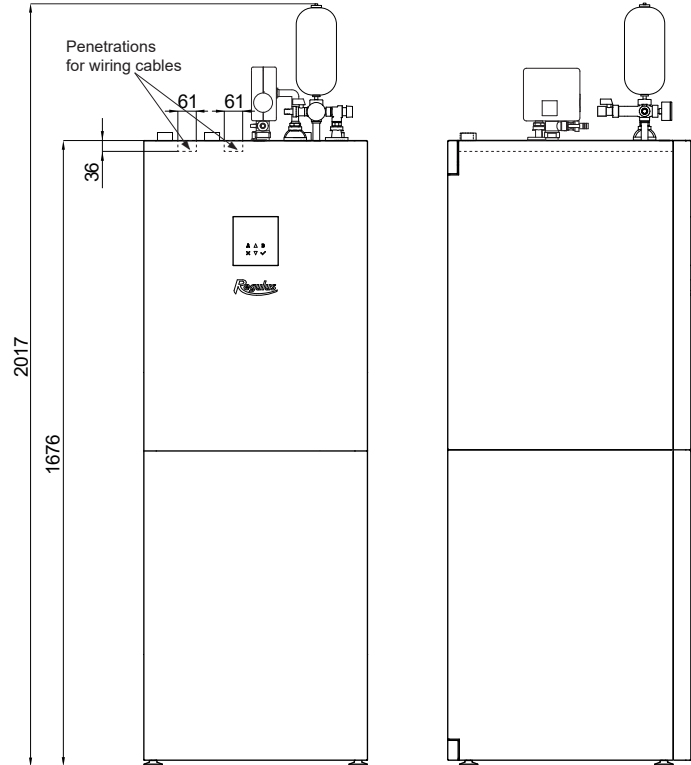
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Dimensions



Tipping height 1790 mm
(without pump stations groups connected)



| Pos. | Description | Connection | Height [mm] |
|------|---|------------|-------------|
| W1 | Cold water | G 3/4" F | 1755 |
| W2 | Hot water | G 3/4" M | 1700 |
| B1 | Incoming from heat pump | G 1" M | 1700 |
| B2 | Return to heat pump | G 1" M | 1700 |
| H1 | Flow to heating system | G 1" M | 1700 |
| H2 | Return from heating system | G 1" M | 1700 |
| P1 | Safety group – heating system | G 1" M | 1705 |
| P2 | Safety kit – DHW | G 3/4" Fu | 1725 |
| P3 | Waste pipe from safety valves | hose DN 20 | 1600 |
| P4 | DHW expansion vessel | G 3/4" M | 1780 |
| X1 | Incoming from solar thermal system (optional) | G 3/4" M | 1700 |
| X2 | Return to solar thermal system (optional) | G 3/4" M | 1700 |