

DATA SHEET

RegulusHBOX 212 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) with hydraulic flow balancing in a HSK combination thermal store. The unit is intended for heating systems with one or multiple heating circuits fitted with own circulation pump(s). A solar thermal system or another heat source can be connected to the unit using optional accessories.
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. ■ 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. ■ 12 l expansion vessel for heating system. ■ 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).
Instalace	The unit is designed for installation with a RTC inverter heat pump (RTC 6i or RTC 13e). When installed with one heating circuit, the pump station installs directly on RegulusHBOX. For installations with multiple heating circuits, a manifold shall be used. RegulusHBOX is designed for indoor installation only.
Code	20029

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Accessories (not included in supply)	
CSE2 F MIX pump station for a mixed heating circuit	for codes see the Catalogue
CSE2 F pump station for an unmixed heating circuit	for codes see the Catalogue
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
Solar module for connection of a solar thermal system (kit with a plate heat exchanger, circulation pump, and connecting piping)	code 20031

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 a A/DI20)

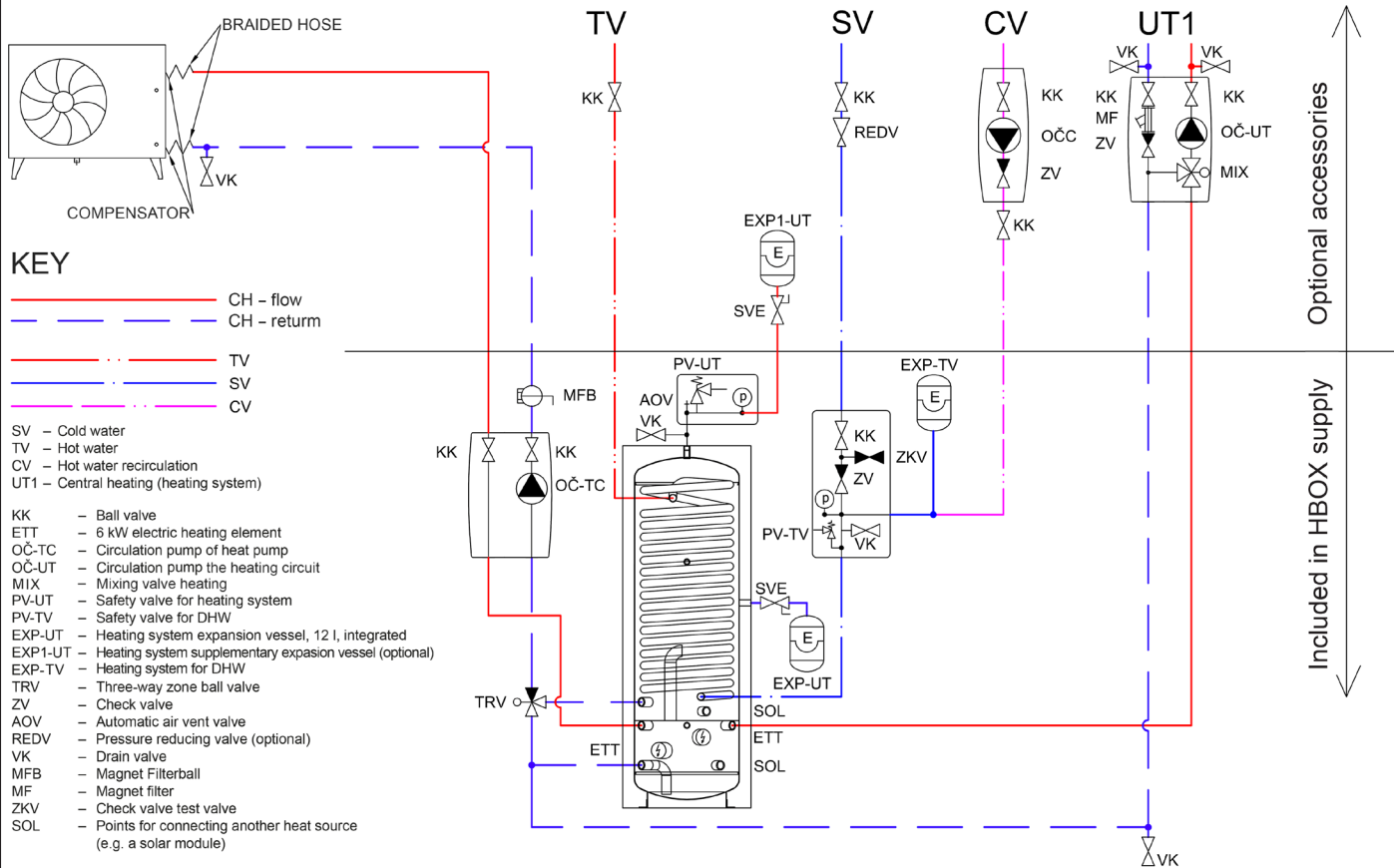
*) The inputs can be also used as binary potential-free inputs for connecting e.g. immediate recirculation switch or a HRV boost switch etc.

Volume of supplied DHW (heated from 10 °C to 40 °C)						
Heated volume	entire			entire		
Backup heating	10 kW			no backup heating		
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

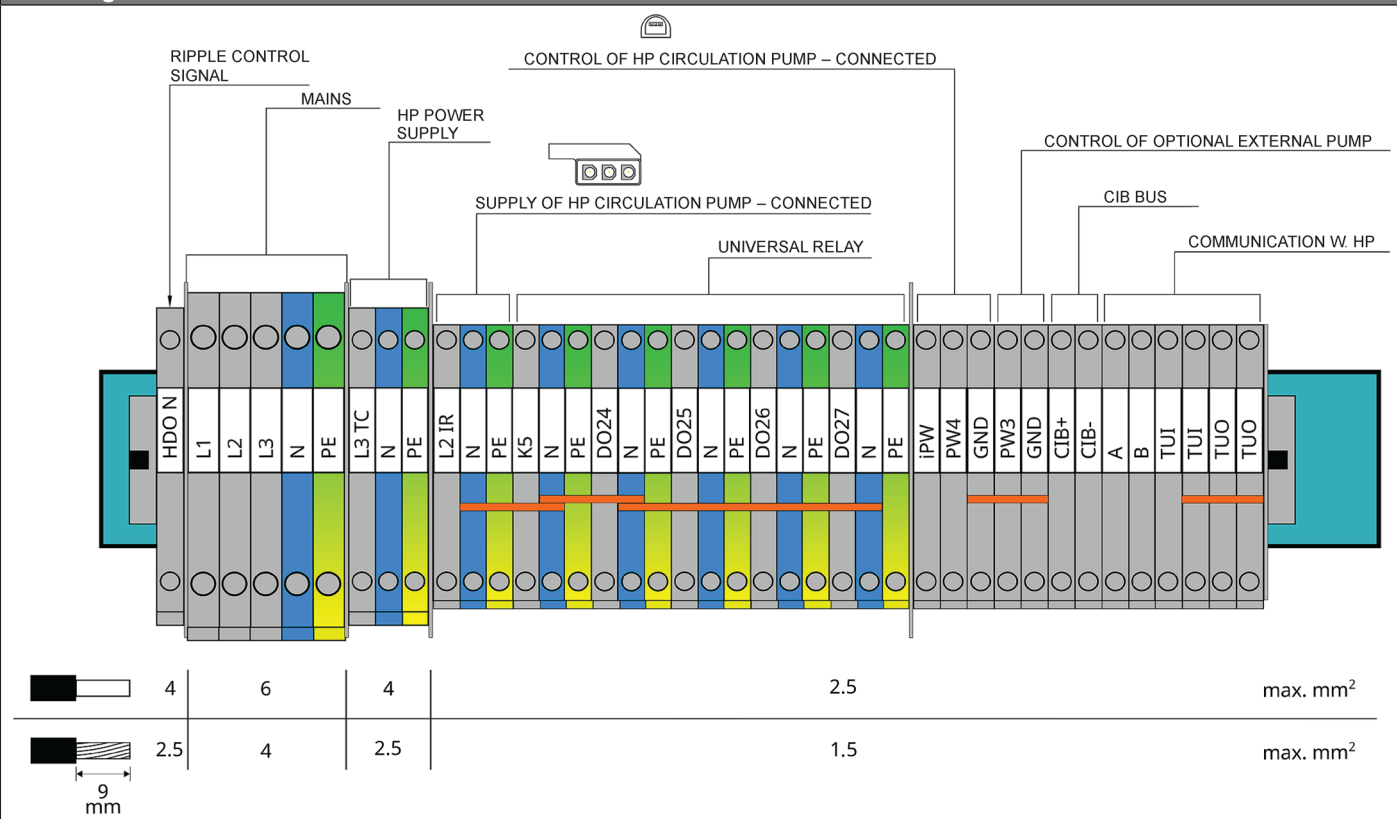
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RegulusHBOX 212 RTC 3/1S Indoor Unit with DHW Heating

Hydraulic Layout



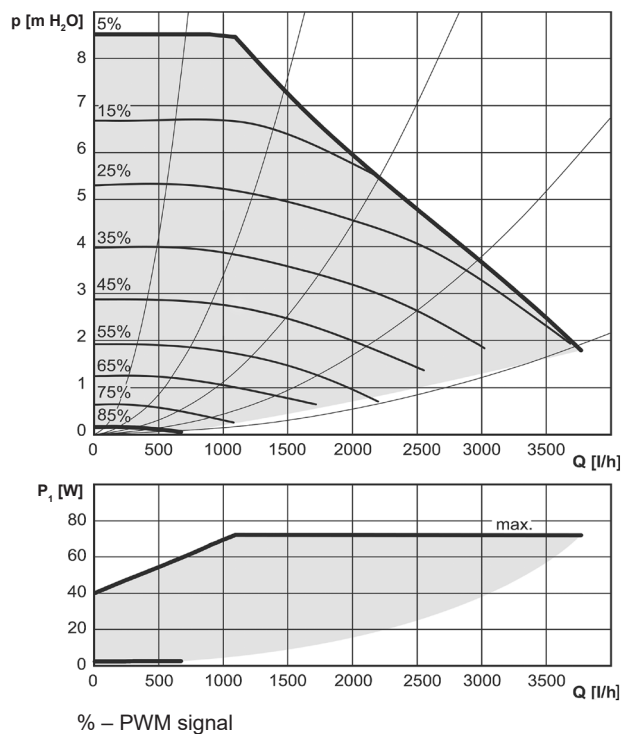
El. wiring



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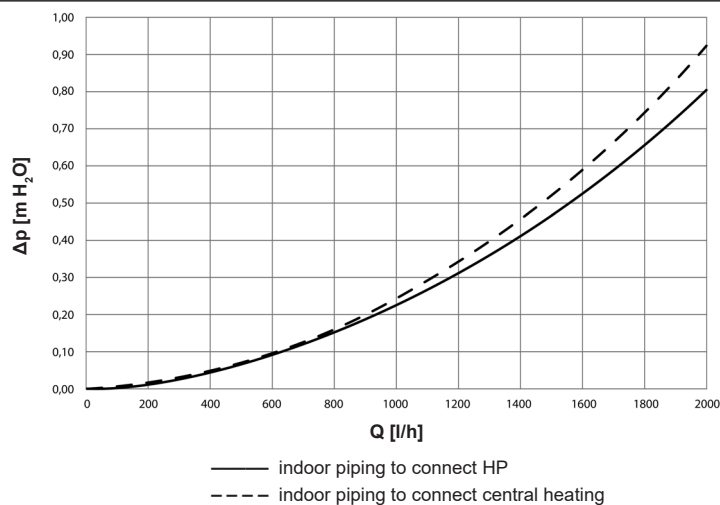
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Performance curves for Wilo Para 25/8 iPWM1 pump of the heat pump

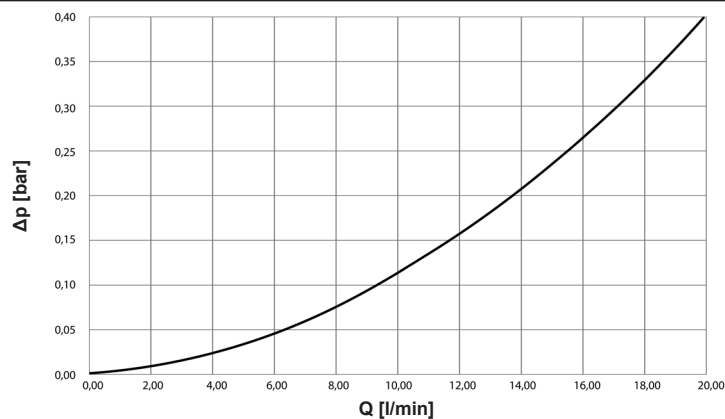


% – PWM signal

Pressure Drop Graph – heating



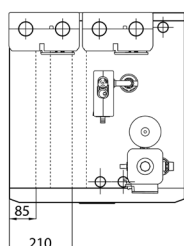
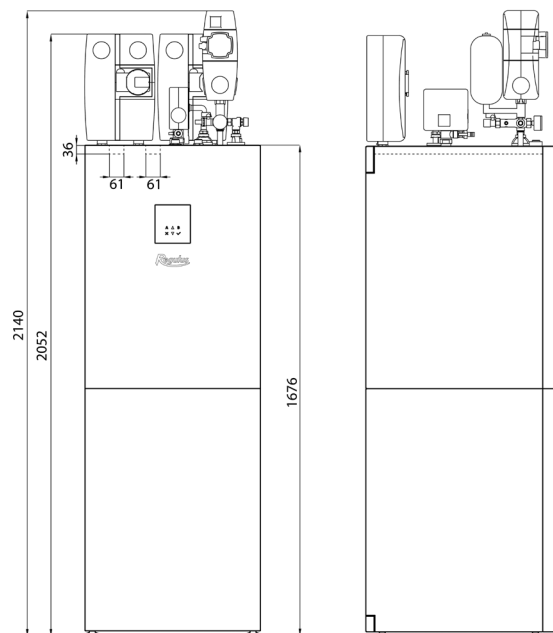
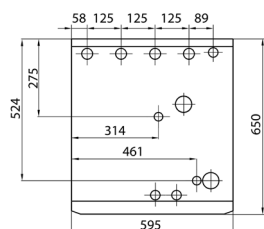
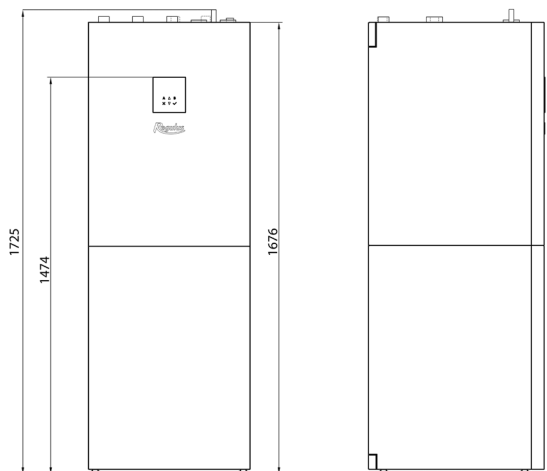
Pressure Drop Graph – DHW



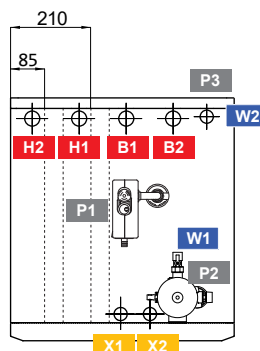
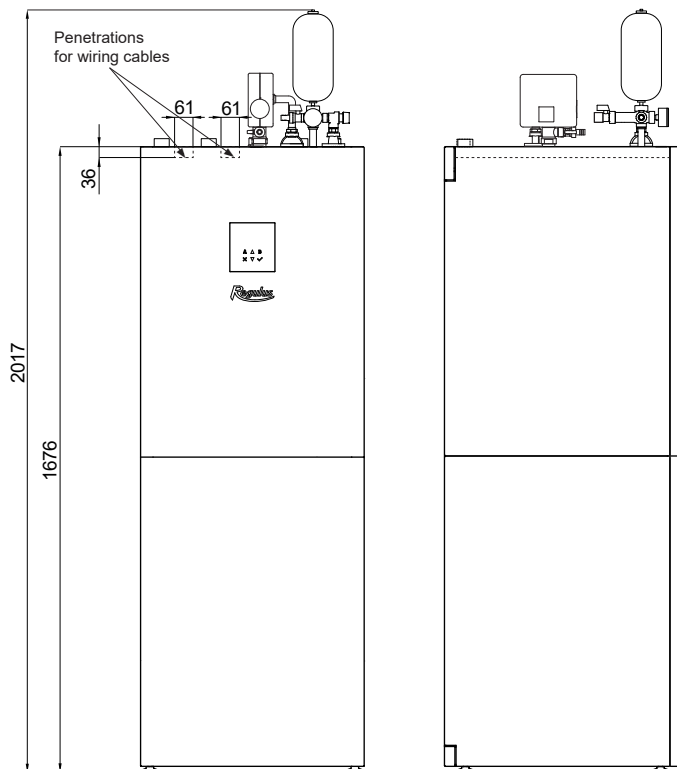
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Dimensions



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