

## DATA SHEET

### RegulusBOX 12 RTC 3/1 Indoor Unit for Single-Phase RTC Heat Pumps



#### Main Features

Application	RegulusBOX is wall-hung indoor unit designed for easy connecting single-phase RTC heat pumps to a house heating system. A thermal store for continuous DHW heating HSK 220 DHW, a hot water storage tank RGC 170 or a stainless-steel hot water storage tank NBC 170 HP can be easily installed below RegulusBOX. With RTC single-phase inverter heat pumps, RegulusBOX can be connected directly to a heating system.
Description	<p><b>Basic Elements of RegulusBOX Unit</b></p> <ul style="list-style-type: none"> <li>■ IR RegulusBOX Controller with remote access from a computer or mobile app</li> <li>■ control unit with display (equipped with temperature and humidity sensors) that can be removed and used as a room unit with two-wire connection; in that case, a display blind plug (code 18248) shall be bought as well</li> <li>■ electric boiler with an output of 12 kW switched in steps of 2 kW (maximum output can be limited)</li> <li>■ Wilo Para 25/8 iPWM1 circulation pump</li> <li>■ three-way motorized valve for switching the outputs of the heating system and DHW heating</li> <li>■ pressure sensor for heating system pressure monitoring</li> <li>■ automatic air vent valve</li> <li>■ terminal block for connecting the heat pump and other accessories</li> <li>■ circuit breaker for heat pump</li> <li>■ circuit breaker for the controller</li> </ul> <p><b>Enclosed Accessories</b></p> <ul style="list-style-type: none"> <li>■ mounting kit for easy installation on the wall rail</li> <li>■ 1" Fu/F inlet ball valve with safety group to connect an expansion vessel with safety and drain valves</li> <li>■ 1" Fu/F ball valve for output to the heating system</li> <li>■ 1" Fu/M ball valve for outlet to the HW storage tank</li> <li>■ control lever for ball valves</li> <li>■ ball valve with filter and magnet for installation in the heat pump return pipe</li> <li>■ outdoor temperature sensor</li> <li>■ temperature sensor for hot water storage tank</li> <li>■ mounting template</li> <li>■ heat pump communication cable, 15 m</li> <li>■ wall rail</li> </ul>
Interface	<b>Integrated web server</b> for remote management, accessible via LAN or over the Internet via Regulusroute service; website is optimized for mobile phones; <b>integrated control unit</b> with OLED display and 6 capacitive buttons, with temperature and humidity sensor; the unit can be moved indoors and used as a room control unit.
Working fluid	Water, antifreeze heat-transfer fluid for heating systems.
Installation	RegulusBOX is designed for installation with RTC series single-phase heat pumps. Install indoors only.
Connection Dimensions*)	to heat pump – G 1" F to heating system – G 1" F to heat exchanger in HW tank TV – G 1" M to expansion vessel – G 3/4" M
Code	<b>18574 – Czech menu / 18930 – English menu</b>

\*) With ball valves from accessory installed.

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Technical Data	
Fluid working temperature	18–90 °C
Max. working pressure	3 bar
Min. working pressure	0.5 bar
Ambient temperature	5–40 °C
Max. relative humidity	80 %, non condensing
Safety valve set pressure	3 bar
Safety valve seat cross section	132 mm <sup>2</sup>
Safety valve discharge coefficient	0.3
3-way valve actuator run time	15 s
Fluid volume	10 l
Total weight without heating water	34 kg
Total weight with heating water	44 kg
Overall dimensions (W x H x D)	560 x 905 x 235 mm


Electric Data	
Power supply	3/N/PE ~ 400 / 230 V 50 Hz
Max. cross section of power cable	4 mm <sup>2</sup> (stranded) / 6 mm <sup>2</sup> (solid)
Nominal power input	12.2 kW (without heat pump connected)
Heating elements	2 x 6 kW (3 x 2 kW each – 230 V)
IP rating	IP20
Limitation of max. current to the connected heat pump	20 A (limited by controller)
Circuit breaker for heat pump	B20A 1p
Circuit breaker for controller, zone valve actuator, pump	B6A 1p

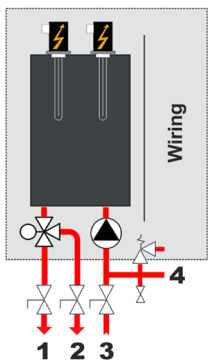
Connectivity, Memory Card	
Ethernet 100 Mbit/s	2x
USB for connecting an optional WiFi USB adapter	1x
RS485 for connecting a heat pump	1x
CIB	1x
TCL2	1x
Micro SD memory card	1x

Inputs and Outputs for optional Accessories	
1x relay output <sup>*)</sup>	230 V/5A (K5)
3x PWM outputs	24 V DC (AO0, AO1, PWM3)
4x analog outputs	0–10 V (AO2-AO5)
1x output for three-way valve control	230 V AC (K2, L2 IR)
1x input for Ripple control	230–400 V AC (HDO)
1x input for iPWM return signal from circulation pumps	A/DI16
15x inputs for Pt1000 temperature sensors <sup>**)</sup>	measuring range –90 to 400 °C (A/DI0-A/DI13 a A/DI20)

<sup>\*)</sup> Can be optionally extended with 4x relay output by using the 4x RO module kit (code 19401).

<sup>\*\*) Inputs can also be used as binary potential-free inputs to connect e.g. an instantaneous circulation switch or a boost switch of the HRV unit etc.</sup>

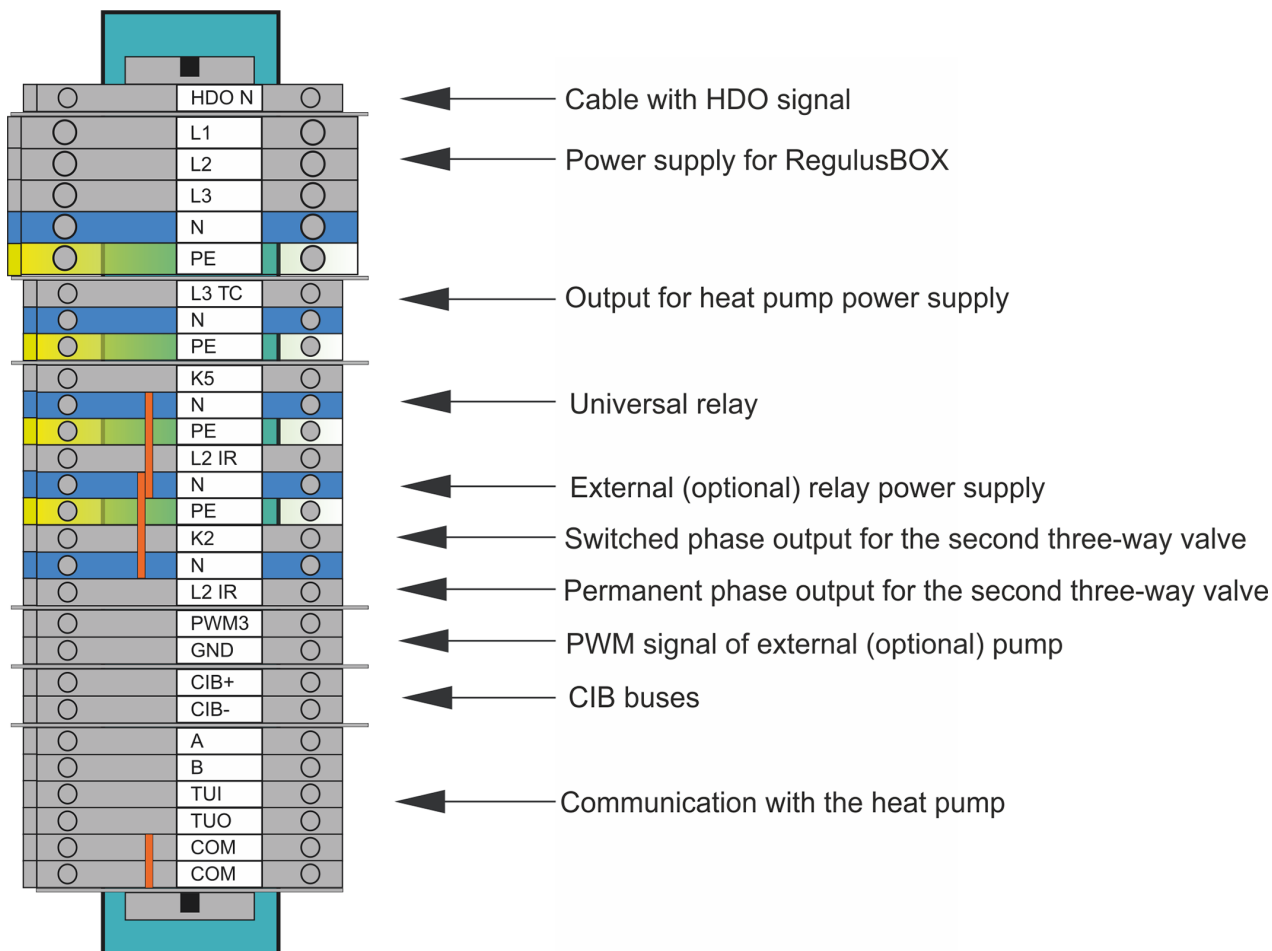
Included in Supply	
	
1	1" Fu/F ball valve with safety group
2	1" Fu/F ball valve
3	control lever for ball valves
4	1" Fu/M ball valve
5	mounting wall rail
6	mounting kit
7	ball valve with filter and magnet
8	Pt 1000 temperature sensor for hot water tank
9	Pt 1000 outdoor temperature sensor
10	heat pump communication cable, 15 m

Internal Hydraulic Connection	
	
1	outlet to heating system
2	outlet to hot water tank
3	heat pump connection
4	expansion vessel connection

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#### Electrical connection



12	11	10	9	8	7	6	5	4	3	2	1
A/DI 5	AGND	A/DI 4	AGND	A/DI 3	AGND	A/DI 2	AGND	A/DI 1	AGND	A/DI 0	AGND

A/DI 0 - outdoor temperature sensor connection

A/DI 1 - storage tank (optional)

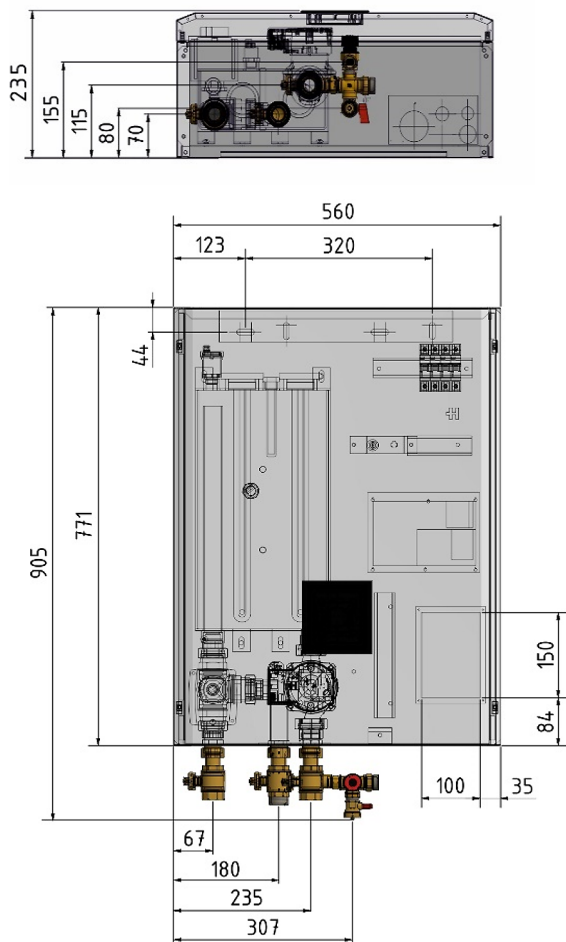
A/DI 2 - DHW sensor connection

A/DI 3 - Pt1000 room sensor (optional)

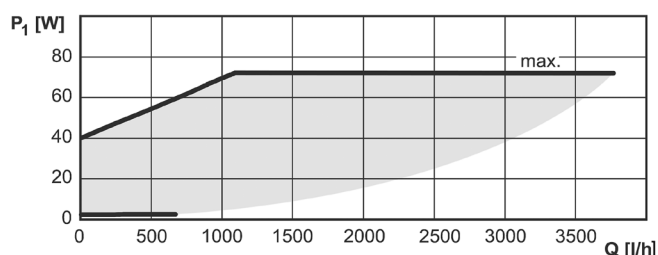
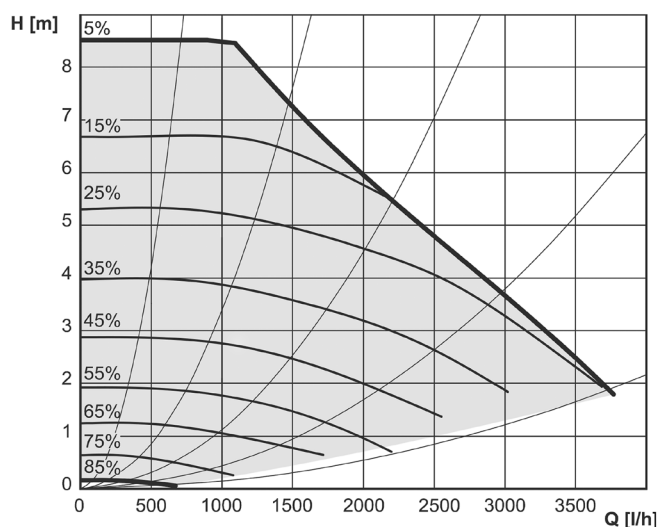
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### Dimensions

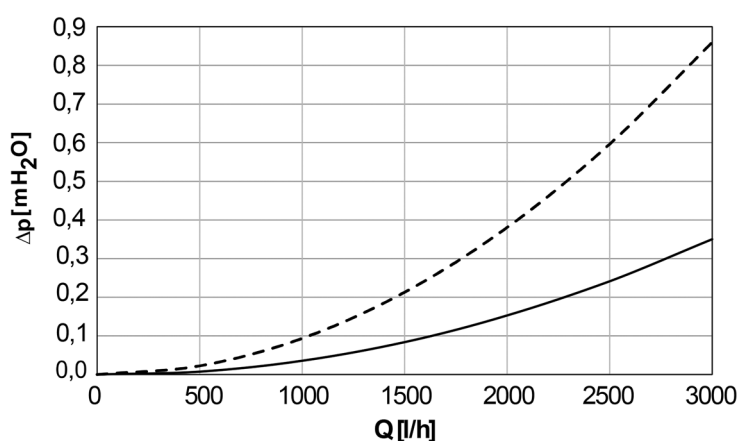


### Performance Curves for Wilo Para 25/8 iPWM1 Pump



% – PWM signal

### Pressure Drop Graph



— 3-way valve in the Heating position  
- - - 3-way valve in the Hot water position