DATA SHEET
RegulusBOX 12 CTC 3/3 Indoor Unit for CTC Heat Pumps

Main Features	
Application	RegulusBOX is wall-hung indoor unit designed for easy connecting CTC heat pumps to a house heating system. A thermal store for continuous DHW heating HSK 220, 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 inverter heat pumps, RegulusBOX can be connected directly to a heating system, with ON/OFF heat pump models or for more heating circuits it shall be installed with a (combination) thermal store and a pump station for each heating system circuit.
Description	**Basic Elements of RegulusBOX Unit** ■ IR RegulusBOX Controller with remote access from a computer or mobile app ■ 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 ■ electric boiler with an output of 12 kW switched in steps of 2 kW (maximum output can be limited) ■ Wilo Para 25/8 iPWM1 circulation pump ■ three-way motorized valve for switching the outputs of the heating system and DHW heating ■ pressure sensor for heating system pressure monitoring ■ automatic air vent valve ■ terminal block for connecting the heat pump and other accessories ■ circuit breaker for heat pump ■ circuit breaker for the controller **Enclosed Accessories** ■ mounting kit for easy installation on the wall rail ■ 1" Fu/F inlet ball valve with safety group to connect an expansion vessel with safety and drain valves ■ 1" Fu/F ball valve for output to the heating system ■ 1" Fu/M ball valve for outlet to the HW storage tank ■ control lever for ball valves ■ ball valve with filter and magnet for installation in the heat pump return pipe ■ outdoor temperature sensor ■ temperature sensor for hot water storage tank ■ mounting template ■ wall rail
Interface	**integrated web server** for remote management, accessible via LAN or over the Internet via Regulsroute service; website is optimized for mobile phones; **integrated control unit** 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 CTC EcoAir / CTC EcoPart heat pumps. If used with EcoPart 414, 417, 612 and 616, the circulation pump needs to be removed from the heat pump and replaced by a pipe extension (code 17391). Install RegulusBOX 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	**18054 – Czech menu / 18928 – English menu**

*) 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^2
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

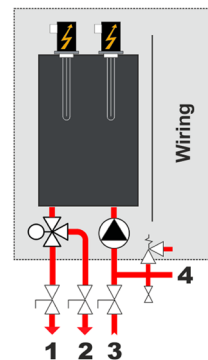|	
Power supply	3/N/PE ~ 400 / 230 V 50 Hz
Max. cross section of power cable	4 mm^2 (stranded) / 6 mm^2 (solid)
Nominal power input	12.2 kW (without heat pump connected)
Heating elements	2 x 6 kW (3 x 2 kW each – 230 V)
IP rating	IP20
Limitation of max. current to the connected heat pump	16 A (limited by controller)
Circuit breaker for heat pump	B16A 3f
Circuit breaker for controller, zone valve actuator, pump	B6A 1f

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 and Outputs for optional Accessories

2 x relay outputs*)	230 V/5A (K4, K5)
3 x PWM outputs	24 V DC (AO0, AO1, PWM3)
4 x analog outputs	0–10 V (AO2-AO5)
1 x output for three-way valve control	230 V AC (K2, L2 IR)
1 x input for Ripple control	230–400 V AC (HDO)
1 x input for iPWM return signal from circulation pumps	A/DI16
15 x inputs for Pt1000 temperature sensors**)	measuring range –90 to 400 °C (A/DI0-A/DI13 a A/DI20)

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

**) 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.
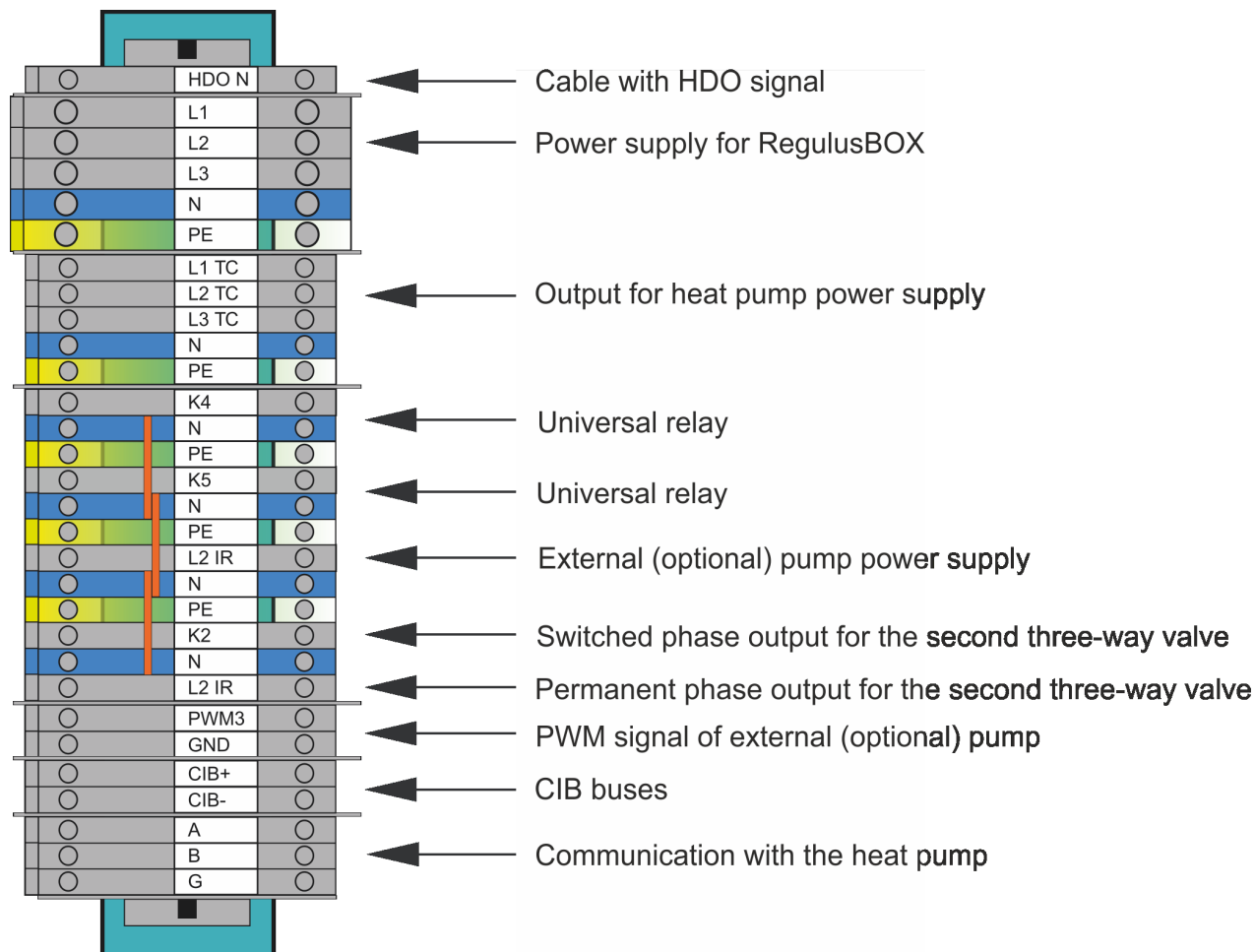
Included in Supply

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

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

Terminal	Description
HDO N	Cable with HDO signal
L1, L2, L3, N, PE	Power supply for RegulusBOX
L1 TC, L2 TC, L3 TC, N, PE	Output for heat pump power supply
K4, N, PE	Universal relay
K5, N, PE	Universal relay
L2 IR, N, PE	External (optional) pump power supply
K2, N	Switched phase output for the second three-way valve
L2 IR	Permanent phase output for the second three-way valve
PWM3, GND	PWM signal of external (optional) pump
CIB+, CIB-	CIB buses
A, B, G	Communication with the heat pump

Terminal strip: 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1
Labels: A/DI 5 | AGND | A/DI 4 | AGND | A/DI 3 | AGND | A/DI 2 | AGND | A/DI 1 | AGND | A/DI 0 | AGND

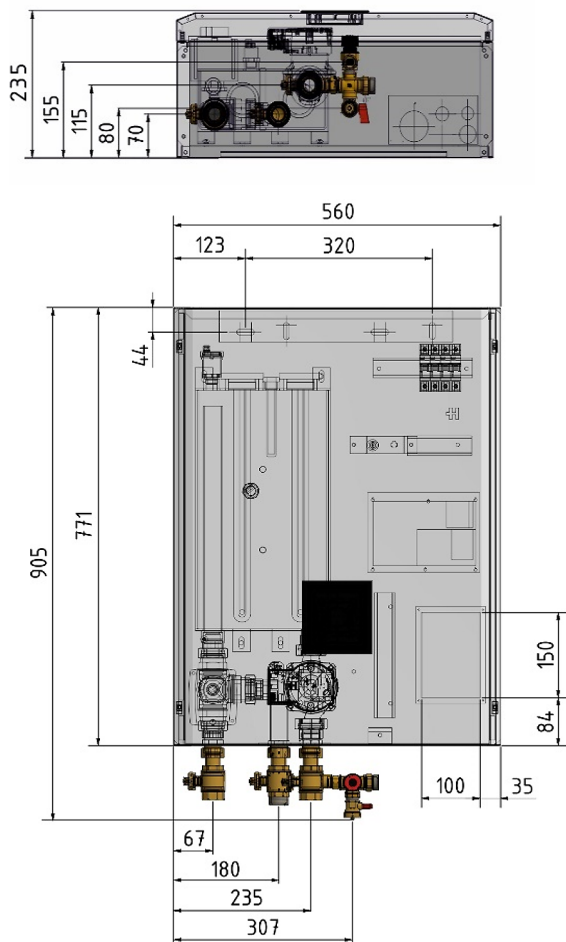A/DI 0 - outdoor temperature sensor connection
A/DI 1 - storage tank (optional)
A/DI 2 - DHW sensor connection
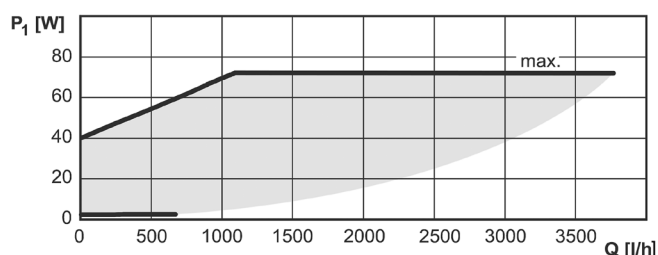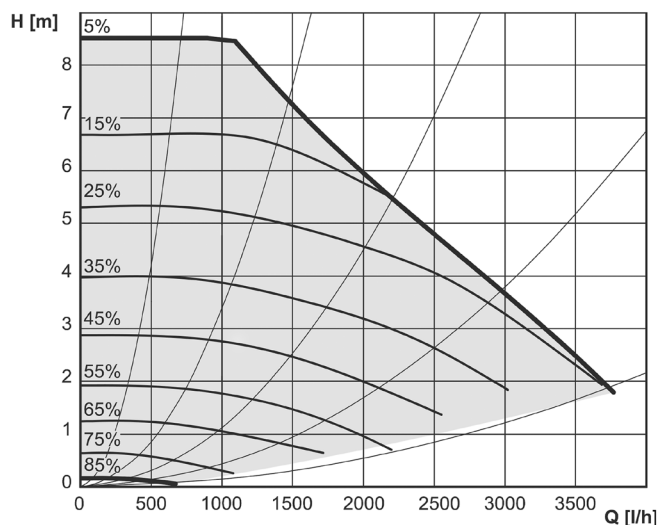A/DI 3 - Pt1000 room sensor (optional)

DATA SHEET
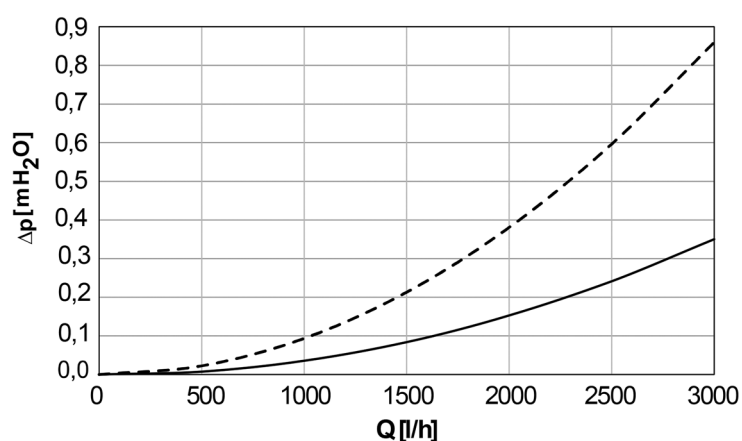## RegulusBOX 12 CTC 3/3 Indoor Unit for CTC Heat Pumps

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