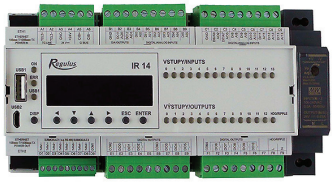
DATA SHEET

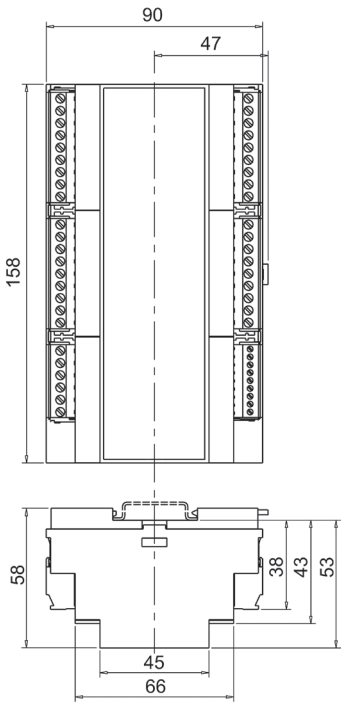
IR 14 CTC Smart Controller

Main Features	
Description	Smart controller for control of CTC heat pumps, DHW heating and recirculation, a hot-water boiler or fireplace, a solar thermal system, two auxiliary heat sources, a HRV unit and up to two heating circuits. It contains 1 outdoor temperature sensor and 2 temperature sensors for a sheath (4 m). An integrated web server for remote access from a PC or a smartphone. The supply also includes a 32 GB microSD card (to save operating data) and a 15 W power supply, 24 VDC.
Installation	on DIN rail (9 modules)
Code	**18431 – Menu in Czech / 18514 – Menu in English**

IR 14 Controller



Installation dimensions



Electric Data	
Voltage	24 V DC ± 5%
Power input	max. 10 W
Internal fuse	resettable fuse
IP rating	IP 20
Protection class	II

Energy Efficiency Data (as per EC Regulation No. 811/2013)	
Controller class	VIII
Contribution to seasonal space heating energy efficiency	5.00%

Digital and Analog Inputs and Outputs
11x input for Pt1000 temperature sensors (can be used as binary inputs too)
1x input for 4–20 mA pressure switch
3x binary input (2x iPWM feedback signal from circulation pump, 1x Ripple contr. input)
13x configurable output (11x mechanical relay, 2x PWM/0–10 V output)

Communication Interface
2x 10/100 Mb Ethernet interface
1x RS 485 communication interface for control of CTC 400, 500 and 600 series heat pumps
2x USB interface (USB1 – USB host – type A connector, USB2 – USB device – type micro B connector)
1x CIB (max. 100 mA)
1x TCL

Ambient Conditions	
Ambient temperature – operation	–20 to 55 °C
Ambient temperature – storing	–25 to 70 °C
Relative air humidity for storing	0 to 80 %, non condensing
Relative air humidity during operation	10 to 95 %, non condensing

Other Data	
Installation	into el. enclosure (on DIN rail)
Wiring	screw-in connectors
Max. conductor cross-section	2.5 mm² (1.5 mm² for D connector)
Overall dimensions	158 x 90 x 58 mm
Display	OLED 4 x 20 characters
Control	by 6 keys
LED	3x LED (operation, fault, USB)
Clock backup time	cca 500 hours

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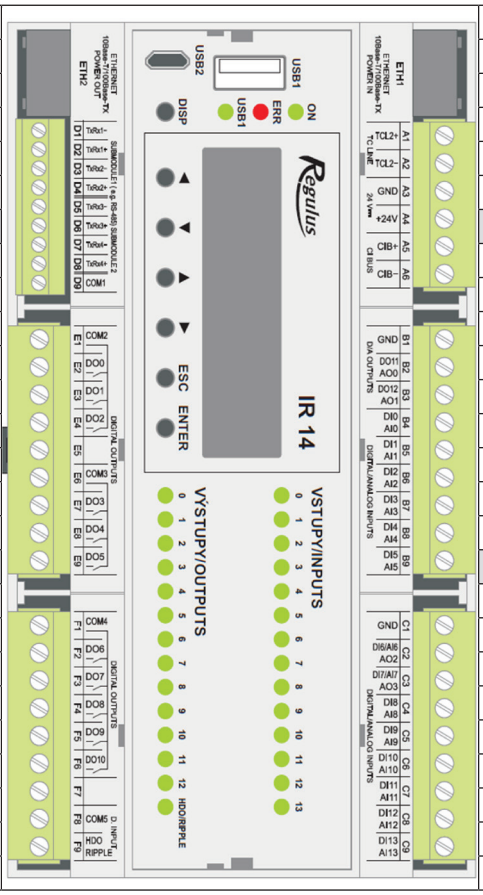
Terminal Block Connection Diagram

HP comm. 2	D1		A1	TCL2 +
HP comm. 1	D2		A2	TCL2 –
			A3	power –24 V
			A4	power +24 V
			A5	CIB + modules
HP comm. 3	D9		A6	CIB – modules
power L (230 V)	E1		B1	terminal block B common earth
zone 1 valve opening	E2		B2	PWM output B2 (PWM for circulation pump of heat pump)
zone 1 valve closing	E3		B3	PWM output B3 (PWM for solar pump)
zone 1 pump	E4		B4	pressure sensor
			B5	outdoor
power L (230 V)	E6		B6	heating water – zone 1
ON/OFF heat source	E7		B7	room temperature – zone 1
aux. source for DHW (DHW-E)	E8		B8	iPWM input B8 (circulation pump of heat pump)
HP valve to DHW (DHW-HP)	E9		B9	iPWM input B9 (solar pump)
power L (230 V)	F1		C1	terminal block C common earth
output F2 (ON/OFF source 2)	F2		C2	C2 input (ThSt-u)
output F3 (uni function 1)	F3		C3	C3 input (ThSt-low.)
output F4 (DHW recirculation)	F4		C4	C4 input (DHW-u)
output F5 (solid-fuel boiler pump)	F5		C5	input C5 (solar)
output F6 (zone 2 pump)	F6		C6	input C6 (SFB)
			C7	input C7 (heating water – zone 2)
Ripple c. N	F8		C8	input C8 (room temperature – zone 2)
Ripple c. L	F9		C9	input C9 (DHW-low.)

Note: inputs can be also configured via the web interface of the controller.

Max. load of inputs, outputs

Mechanical relays DO0-DO5, DO07-DO10	max. 3 A (5 A in short term), min. 5 V DC, max. 250 V AC (both resistive and inductive)
Mechanical relay DO6	max. 10 A (16 A in short term), min. 5 V DC, max. 250 V AC (both resistive and inductive)
Common terminals COM2-COM4	max. 10 A (permanent)
Analogue outputs AO0-AO1	optional 0–10 V (12 bit) / transistor 24 V DC (e.g. PWM outputs)
Analogue input AI0	pressure sensor (current input 4–20 mA)
Analogue inputs AI1-AI3, AI6-AI13	PT1000 temperature sensors (measurement range –90 to 400 °C)
Binary inputs DI4, DI5	iPWM feedback signal from circulation pumps
Binary input for Ripple contr.	Ripple control signal, max. voltage 250 V AC

Power supply (included in supply)

Input voltage	100–240 V AC, 50–60 Hz
Output voltage	24 V DC ± 1 %
Rated output	15.2 W
Installation	on DIN rail
Connection	screw-in connectors
Max. cable cross section	2.5 mm^2
Overall dimensions	17.5 x 90 x 54.5 mm
IP rating	IP 20

Temperature resistance table for Pt1000 sensors

°C	0	10	20	30	40	50	60	70	80	90	100
Ω	1000	1039	1077	1116	1155	1194	1232	1270	1308	1347	1385

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