HRC 2 GREEN control

/// Data Sheet

The compact HRC 2 GREEN control cooling and heating circulation thermostat impresses with a working temperature range from -30°C to 100°C and a powerful, continuously adjustable pressure and suction pump.

The on-demand and speed-controlled compressor reduces noise and operating costs. The use of the natural refrigerant R290 achieves high energy efficiency and meets current environmental requirements for refrigerants.

The high-quality insulation of the 4-liter bath allows particularly fast heating and reduces heat input at low temperatures. Up to 2.5 liters of thermofluid are available for the external temperature control circuit without refilling.

The integrated hopper and drain valve enable safe and clean handling of the thermofluid. The easy-to-open front flap allows convenient cleaning of the stainless steel mesh air filter of the refrigeration unit. The bath has a drain valve on the

front. A hose can be connected to empty the bath, so the user does not get in direct contact with the thermofluid.

HRC 2 GREEN control is the perfect peripheral device for bioreactors, synthesis reactors and applications in which energy is to be transferred to or from heat exchangers and the temperature in the medium is to be precisely controlled via an external temperature sensor.

Features:
- Speed-controlled refrigeration system unit with 620 W cooling capacity
- Natural refrigerant R290
- Speed-controlled pump made of PEEK: (0.5 bar; 22 l/min)
- 1500 W heating capacity
- Digital level indicator
- Safety classification III (FL) according to DIN 12876
- Adjustable safety circuit

With the wireless controller (WiCo), the HRC 2 GREEN control can be operated safely and conveniently from anywhere. Process sequences can be simplified and automated thanks to 10 freely programmable temperature ramps, each with 10 steps.
Additional functions of the control device:
- Operating Mode D: Confirmation Mode
- Signal when the set temperature is reached
- Timer/Counter functions
- Outgassing function for Labreactors

Interfaces:
- Connection socket for external PT 100 temperature sensor (Accessories: PT100.30, Lemo connector)
- Connection of magnetic valves possible (multi IO)
- Alarm contact (multi IO)
- Connector for Standby contact input (multi IO)
- RS 232
- USB

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Technical Data

Appliance type	Circulation thermostat
Class designation acc. DIN 12876	III
Identification according to DIN 12876	FL
Cooling agent	R290
Cooling agent quantity [g]	79
Cooling agent pressure max. [bar]	21
Heat output [W]	1500
Cooling capacity (@20°C) [W]	620
Cooling capacity (@10°C) [W]	600
Cooling capacity (@0°C) [W]	480
Cooling capacity (@-10°C) [W]	350
Cooling capacity (@-20°C) [W]	200
Cooling capacity (@-30°C) [W]	80
Working temperature [°C]	-30 - 100
Operating temperature min. [°C]	-30
Temperature display	yes
Temperature stability DIN 12876 (@+70°C) [K]	±0.05
Temperature stability DIN 12876 (@-10°C) [K]	±0.1
Temperature control	PID
Working temperature sensor	PT 100
Safety temperature sensor	PT1000
Working temperature display	LED
Safety temperature display	LED
Connection for ext. temperature sensor	PT 100
Temperature measurement, absolute accuracy Internal (adjustable by calibration) [K]	±0.5
Temperature measurement, absolute accuracy External (adjustable by calibration) [K]	±0.5
PT 100 deviation;DIN EN 60751 Kl. A [K]	≤ ± (0.15 +0.002x|T|)
Display resolution [K]	0.01
Display for operation with ext. sensor	yes
Set temperature resolution [K]	0.1
Warning function optical	yes
Warning function acoustic	yes
Warning function excess temperature	yes
Warning function insufficient temperature	yes
Adjustable safety circuit [°C]	0 - 110
Sub-level protection	yes
Over-level protection	yes
Filling volume [l]	1.4 - 4.0
Pump type	Pressure- / suction pump
Pump capacity adjustable	yes
Pump Speed min. [rpm]	2000
Pump Speed max. [rpm]	4000
Pump pressure max. (0 liters discharge flow) [bar]	0.5
Pressure pump (suction side) (0 liter flow) [bar]	0.25
Flow rate max. (0 bar back pressure) [l/min]	21
Fluid maximum viscosity [mm²/s]	50
Pump connection	M16x1
Calibration option	yes

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Technical data complies with the standard	DIN 12876
Permissible ON time [%]	100
Multi-Interface	yes
Alarm output (potential-free contact) max. [V AC/DC]	30
Alarm output (potential-free contact) max. [A]	1
Solenoid valve output [VDC]	24
Solenoid valve output max. [A]	0.8
Standby input [VDC]	5
Noise level [dB(A)]	58
Dimensions (W x H x D) [mm]	220 x 480 x 525
Weight [kg]	26.5
Permissible ambient temperature [°C]	5 - 32
Permissible relative humidity [%]	80
Protection class according to DIN EN 60529	IP 21
RS 232 interface	yes
USB interface	Micro-USB
Analog output	yes
Voltage [V]	230
Frequency [Hz]	50/60
Power input [W]	1800