

Cooling Water Circulator

External closed circulation, Inverter control

CIW1100

Operating temp. range 0~80°C

Temp. control accuracy ±0.1°C

Refrigeration operation in all temperature ranges/cooling of heat-generating loads at high temperatures (up to +80°C)

- It is possible to cool the heat load at high temperatures, which was not possible with conventional products
- A compact water tank is used to reduce the amount of circulating liquid, making it economical.
- The pipes are all stainless steel and can be used with pure water (A1 level). Nybrine is recommended for use at temperatures below 10°C
- Various support functions such as auto stop, auto start and calibration offset functions features as standard.
The system also includes functions to monitor energy consumption and CO₂ emissions.
- Data can be sent and received by RS-485 with the external communication function.



Specifications

Product code	200000
Model	CIW1100
Circulation method	External closed circulation
Cooling method	Water-cooled
Operating temperature range	0 to 80°C (Refrigeration operation in all temperature ranges)
Operating ambient temp. range	5 to 35°C
Temperature control accuracy*1	±0.1°C (JTM K05)
Temperature fluctuation*1	0.6°C at 20°C (JIS)
Temperature display unit	0.1°C
Cooling capacity*1	Approx.3,200W (at Liquid temp. 20 °C, Room temp. 23°C, Water supply temp. 20°C)
External circulation flow rate*1	Approx. 19/22L/min
Pump max. lift*1	Approx. 14.5/20.5m (50/60Hz)
Refrigerator/Refrigerant	Swing type compressor (Inverter control) / R410A
Heater	3,200W
Temperature sensor	Pt100Ω (Temp. control), T thermocouple (Water temp., Evaporation temp.), K thermocouple (Overheat)
Circulation pump (50/60Hz)	180/216W
Circulation system material	Stainless steel joint, Ethylene propylene hose
Condenser	Plate type heat exchanger / SUS316
H bypass	Built-in, controlled with Rc3/8 ball valve
External circulation port	Connecting screw : Rc1/2 (Discharge/Return port)
Filter for circulation return port	20 mesh strainer (Attached, install on installation)
Water tank filter	20 mesh
External communication function	Data transmission method: RS-485 half-duplex start-stop synchronization method Communication protocol: Modbus (ASCII/RTU)
Other mechanisms	Refrigerator pressure monitor, Water control valve, Condensing heat exchanger, Overflow, Drain
Cooling water supply facility	10 to 33°C, 15L/min. or more, Supply water pressure: 3 to 7kg/cm ² (0.5 kg/cm ² or more while in operation), Connection port: coupler
Cooling water drain port	φ16 nipple, Hose connection
Water tank material	SUS304
Water tank dimension	W170×D370×H360mm
Water tank capacity	Approx. 17L (Until the overflow.)
Float switch action	Water level approx. 12 liters
Exterior material	Chrome-free electrogalvanized steel plate, Baking paint
External dimensions*2	W420×D650×H1021mm
Safety device	Safety device temp. sensor error, Liquid temp. upper/lower limits (90°C/-10°C), Overcurrent leakage breaker, Refrigerator high pressure abnormality, Refrigerator protection timer, Refrigerator overload, Low water level error (float switch), Supply water pressure error, Refrigerator overload reduction Circuit, Independent overheat prevention device
Power supply (50/60Hz)	AC220V Single phase with step-down transformer
Weight	Approx. 95kg
Accessories	Water tank cover (1 pc), Drain hose (0.5m×1 pc), Strainer (return port) (1 pc), Cooling water supply hose (water supply side: water tap connection, equipment side: coupler type*3) (2m×1 pc), Cooling water drain hose (blade)(2m×1 pc), Wire clamp (1 pc)

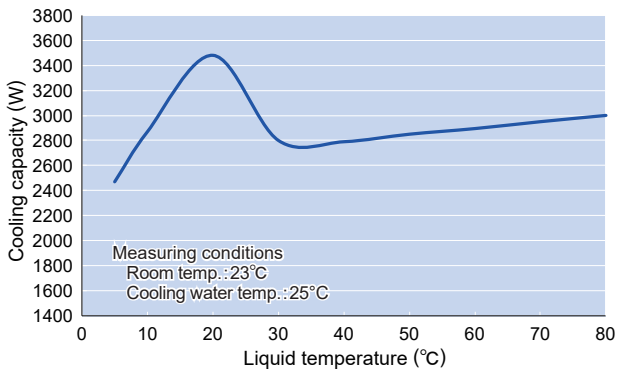
The length of the power cord is about 2 meters outside the unit.

*1 Performance data are for room temp. 23°C, water supply temp. 20°C, no load, and rated power supply voltage 50Hz.

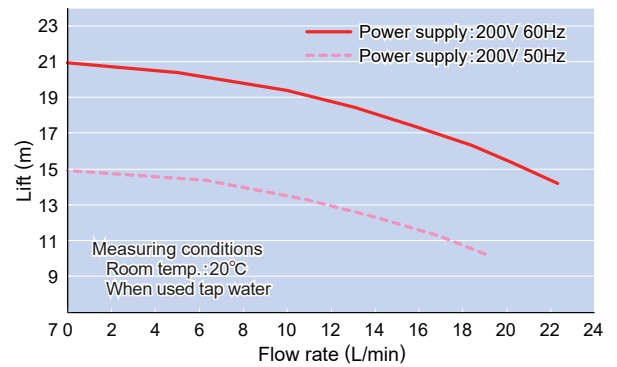
*2 Do not include protrusions.

*3 When changing the cooling water supply and drainage connections, use pipes corresponding to Rc1/4 on the water supply side and Rc3/8 on the drainage side.

Cooling capacity curve



Flow Rate / Lift Curve

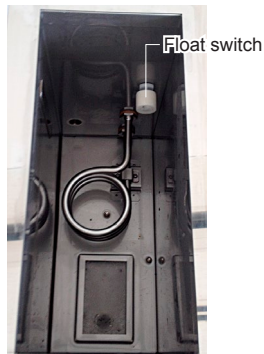


Control panel



Large controller with good visibility is used.
The measuring and setting temp. indication are equipped with the independent indicator by which setting change is possible

Water tank



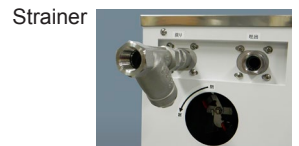
The float switch detects a drop in the water level.
Water tank filter
The tank discharge port is equipped with a 20-mesh filter

Communication terminal

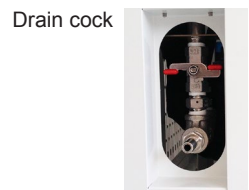


Up to two types of optional terminals can be used.

Connection port



Connection port (Rc1/2)
20-mesh filter that attaches to the circulation return port is included as standard.



Overflow / drain cock (shared)
(Connection port: ϕ 10.5)



①~⑤
Straight circulation nozzle



⑥
Street elbow



⑦
Flow adjusting valve



⑧
 ϕ 50 pressure gauge set



⑨
Filter set

Optional Items

No.	Description	Specifications	Product code
①	Straight circulation nozzle	Nipple diameter: ϕ 9mm, Connecting screw: Rc1/2	221650
②		Nipple diameter: ϕ 10.5mm, Connecting screw: Rc1/2	221651
③		Nipple diameter: ϕ 12.7mm, Connecting screw: Rc1/2	221652
④		Nipple diameter: ϕ 16mm, Connecting screw: Rc1/2	221653
⑤		Nipple diameter: ϕ 19mm, Connecting screw: Rc1/2	221654
⑥	Street elbow	Connecting screw: Rc1/2×R1/2	221655
⑦	*Flow adjusting valve	Connecting screw: Rc1/2×R1/2	221656
⑧	* ϕ 50 pressure gauge set	Range: 0 to 0.7 MPa, Connecting screw: R1/2×Rc1/2	221657
⑨	*Filter set	50 μ filter	221658
⑩	*Leak detection system* ¹	Tray, Water leak detector, Fall prevention metal fitting	221661
⑪	*Operation signal output terminal* ¹	Operation signal output a-contact output	221664
⑫	*External combination terminal* ¹	Operation by signal input a-contact input	221665
⑬	*External alarm output terminal* ¹	Error signal output, a-contact output	221666
⑭	*Temperature output terminal* ¹	Converts temperature to analog 4-20mA and output	221667
⑮	External communication adapter set* ²	USB to RS485 conversion	211884

* Please specify when ordering main unit.

*¹ Up to 2 types can be installed at the same time.

*² The set includes an RS485 to USB conversion adapter, USB cable 1m, RS485 connection cable 3m and utility software (CD). The operating environment is Windows 7.