Technical guide

CDU-S R02A1D

230V 1ph

1. Main product specifications
2. Product diagram
3. Cooling capacities
4. Electric power input

July2021

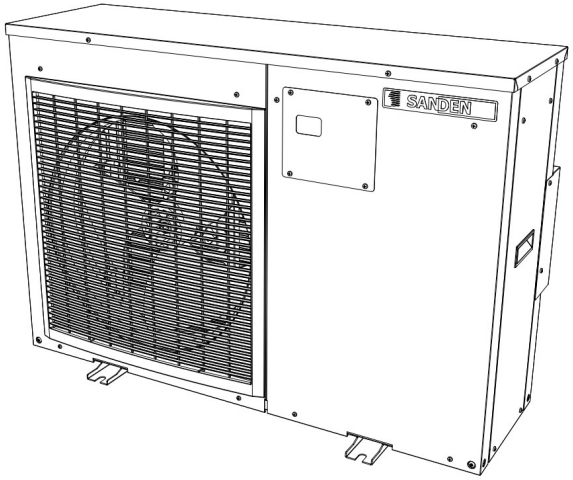
100% CO2 Condensing Units

ECO-FRIENDLY REVOLUTION

CDU-S R02A1D
1. Main product specifications

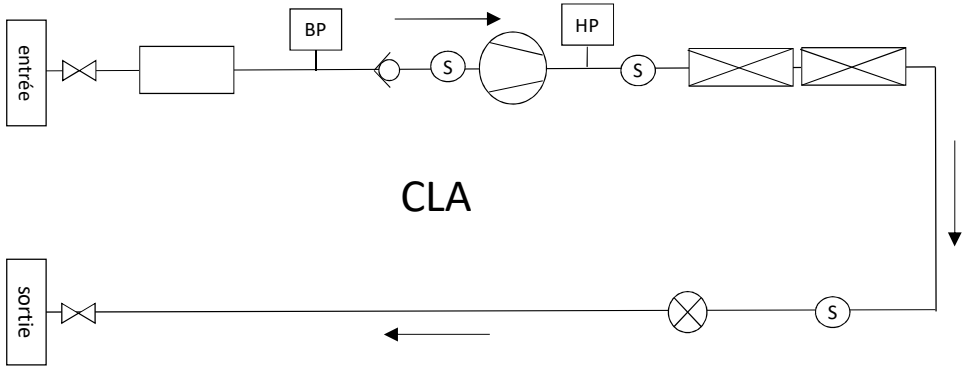
		CDU-S R02A1D
		T°C evap -10°C
32°C ambient/ Maximum cooling capacity	(kW)	3,07
32°C amb / Max electric power input	(kW)	2,01
32°C amb / Minimum cooling capacity	(kW)	1,09
38°C amb / Maximum cooling capacity	(kW)	2,37
43°C amb / Maximum cooling capacity	(kW)	1,55
Seasonal performance SEPR		n/a
Maximum volume with associated evaporator	(L)	15
Maximum piping diameter with associated evaporator	(mm)	9,52 (3/8") *
Maximum length to evaporator	(m)	30

Evaporating temperature range (Min/Max)	(°C)	-10 ~ +5
Ambient temperature range (Min/Max)	°(C)	-25 ~ +43
Dimensions Height/Width/Depth	(mm)	670 / 950 / 285 **
Weight	(kg)	58
Noise pressure level *(1)*	dB(A) @1m	50
Compressor (x1)		Inverter hermetic Scroll
Speed range	*(Hz)*	*30 - 80*
Gascooler	Type	Aluminium microchannel
Refrigerant	Type / GWP	R744 (CO2) / 1
Power supply		1ph+N / 230 VAC / 50/60 Hz
Communication	Standard	Modbus
PED	Category	1
Maximum working pressure	MWP	9MPa (LP) / 14 MPa (HP)
Valves dimensions	LP / HP	3/8" (9,52mm) / 1/4" (6,35mm)
Casing color /RAL		RAL 7032

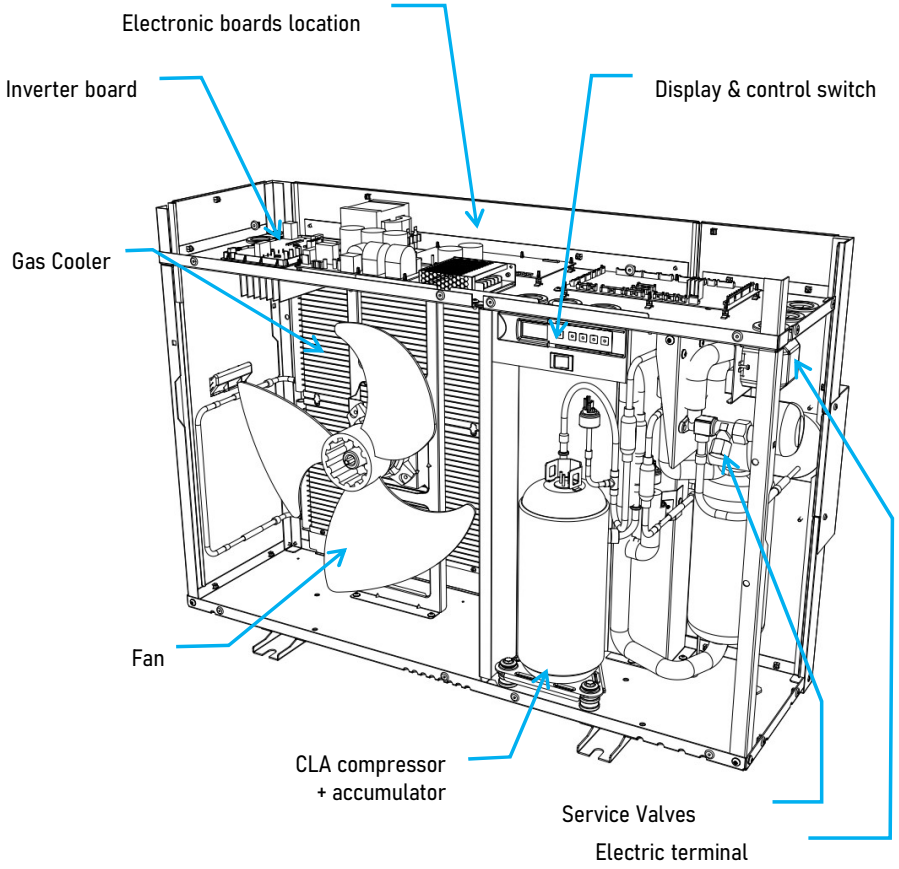


(1) Conditions: ambient T°+32°C, Compressor Speed : 70Hz
*Piping diameter inside evaporator, connection excluded
**without pipe cover

CDU-S
2. Product diagram



Service valve
Strainer
Check valve
Electronic Expansion Valve
Compressor (Scroll type)
Accumulator
Air Gascooler (micro channel type)



CDU-S R02A1D
3.1 Cooling capacities & installation sizing

1. Cooling capactities

	CDU-S R02A1D Cooling capacity(kW)			
Ambient Temperature (°C)	Evaporating temperature MT (°C)			
	-10	-5	0	5
32	3,07	3,60	3,94	4,24
35	2,72	3,35	3,64	4,00
38	2,37	3,10	3,35	3,76
40	1,98	2,89	3,04	3,36

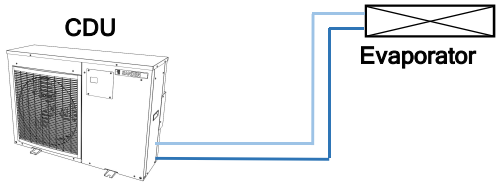
- The cooling capacity is linked to the evaporating temperature of the group of the condensing unit and the reference outside temperature of the project
- Notes: The cooling balance of refrigerated showcase is to correlate with the temperature around the furniture (the insulation of the building, or the air conditioning of the sales area can have an impact). In addition, remember to take into account in this balance that the production of cold is generated by an external unit (greater cooling demand compared to centralized cold production)
- SandenVendo Gmbh is not responsible for defining the installation's cooling requirement (cooling balance)
- We recommend to keep 10% margin between the cooling capacity and cooling needs required for the installation
- Consider performance loss depending on the distance between the evaporator and the condensing unit (see next page)

CDU-S R02A1D
3.2 Cooling capacities & installation sizing

2. Piping lenght and performance loss

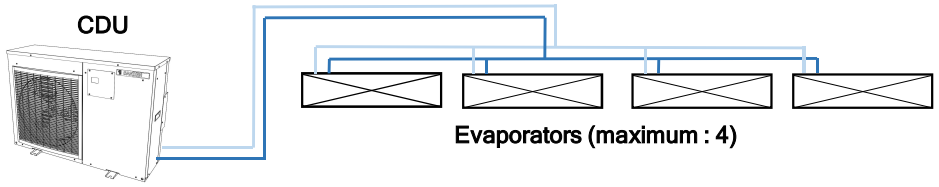
Single evaporator installation - positive temperature

Maximum distance 30m
(60m roundtrip, per loop)



Multi evaporators installation - Positive Temperature

Maximum piping length 60m roundtrip, per loop



Installation beyond these distances will result with poor performances and poor return of oil to the compressor

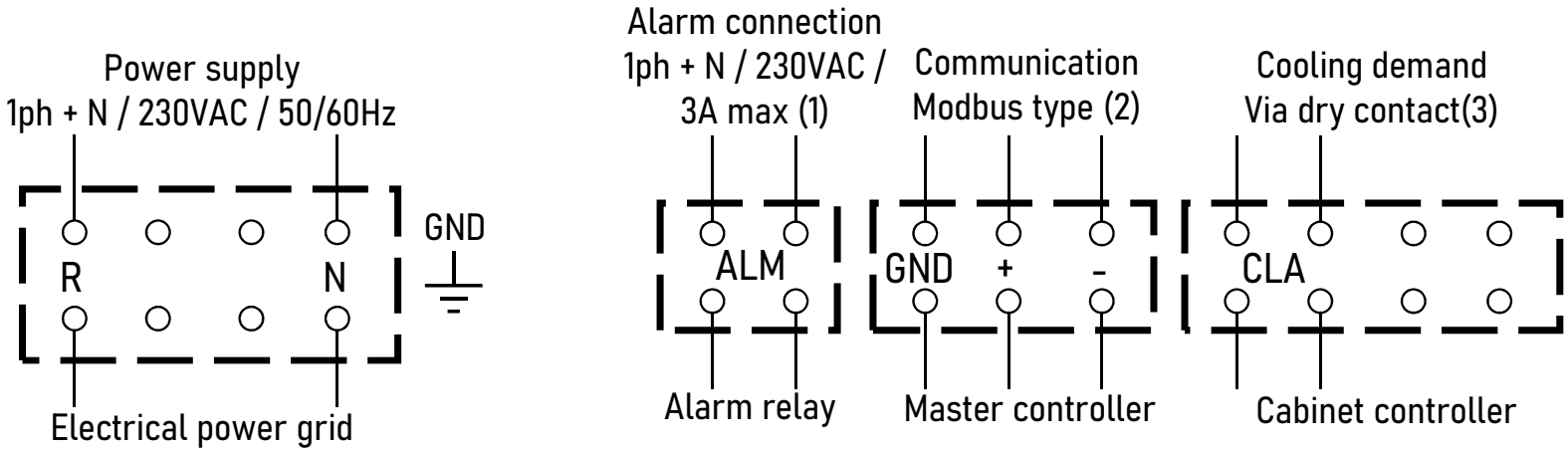
In addition, piping length has an impact on the cooling capacity. Opposite, the coefficients to be considered for a reduction in cooling capacity depending on the distance from the evaporator.

Length to the evaporator (m)	10	20	30
MT (positive @Te -5°C)	1,40%	2,80%	4,10%

3. Evaporator volume

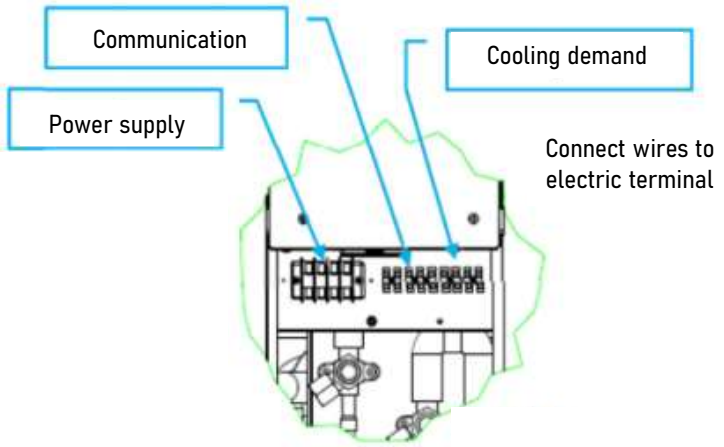
Medium Temperature: 15 liters maximum (bad oil return if > 15L)
Maximum piping diameter inside evaporator 9,52mm / 3/8" (connection excluded)

CDU-S R02A1D
4. Electric power input



(1) Alarm delivering 230V in case of error
(2) Use a shielded cable to connect the modbus
(3) Cooling demand on dry contact

Rated Power	2,3kW
Voltage	230Vac / 1 phase
Frequency	50/60Hz
Electrical consumption	2,3kW
Rated current	9,9A
Electrical power	2,3kVA
Circuit breaker	12A



Remove the panel on the right