

# Technical guide

## CDU-L R06A2C

### 400V 3ph

1. Main product specifications
2. Product diagram
3. Cooling capacities
4. Electric power input
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Nov 2021

100% CO<sub>2</sub> Condensing Units

# ECO-FRIENDLY REVOLUTION

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## 1. Main product specifications

		CDU-L R06A2C	
		T°C evap -35°C	T°C evap -10°C
32°C ambient/ Maximum cooling capacity	(kW)	3,95	9,67
	<i>Per loop (1) (kW)</i>	1,98	4,84
32°C amb / Max electric power input	(kW)	4,02	5,87
32°C amb / Minimum cooling capacity	(kW)	1,64	3,99
	<i>Per loop (1) (kW)</i>	0,82	2,00
38°C amb / Maximum cooling capacity	(kW)	3,66	7,99
	<i>Per loop (1) (kW)</i>	1,83	4,00
43°C amb / Maximum cooling capacity	(kW)	2,97	5,36
	<i>Per loop (1) (kW)</i>	1,49	2,68
Seasonal performance SEPR		1,48	2,89
Maximum volume with associated evaporator	(L)	5	15
Maximum piping diameter with associated evaporator	(mm)	9,52 (3/8") *	9,52 (3/8") *
Maximum length to evaporator	(m)	30	30
Evaporating temperature range (Min/Max)	(°C)	-35 ~ +5	
Ambient temperature range (Min/Max)	(°C)	-25 ~ +43	
Dimensions Height/Width/Depth	(mm)	1300 / 1105 / 285 **	
Weight	(kg)	141	
Noise pressure level (2)	dB(A) @1m	53	
Compressor (x3)		Inverter hermetic Scroll	
<i>Speed range</i>	<i>(Hz)</i>	30 - 80	
Gascooler	Type	Aluminium microchannel	
Refrigerant	Type / GWP	R744 (CO2) / 1	
Power supply		3ph+N / 400 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	
Drier		Mandatory suction line***	



- (1) Cooling capacity distributed on 2 independent loops  
 (2) Conditions: ambient T°+32°C, Compressor Speed : 70Hz

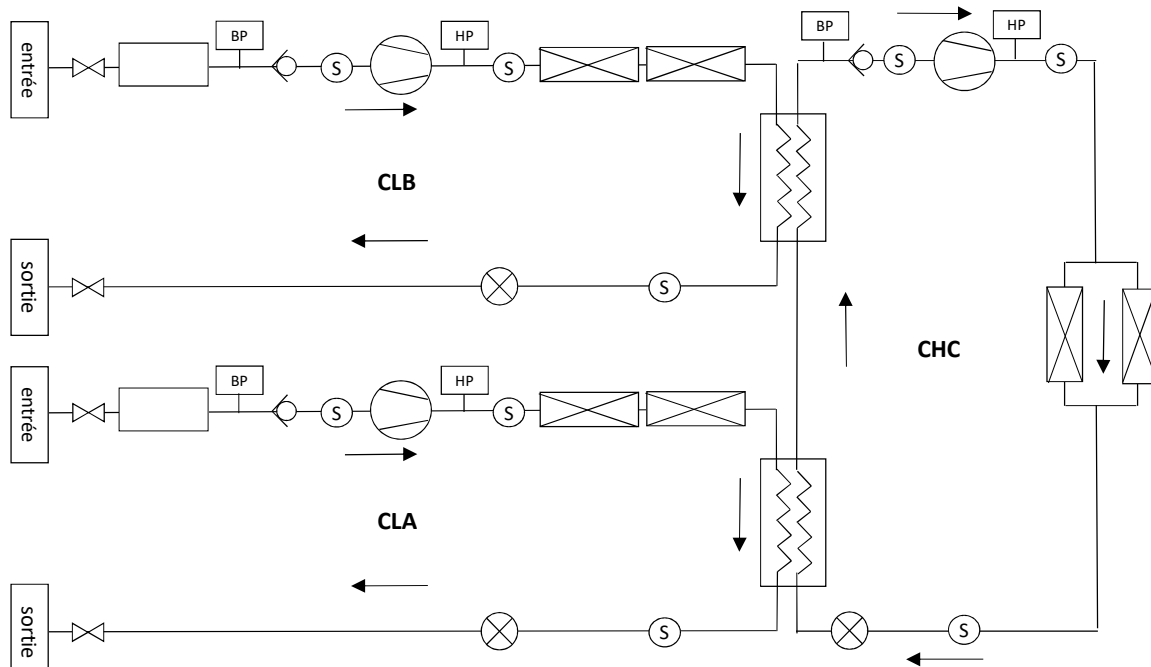
\*Piping diameter inside evaporator, connection excluded

\*\*without pipe cover

\*\*\*Drier qualified Danfoss DMT 083S, check installation conditions

# CDU-L R06A2C

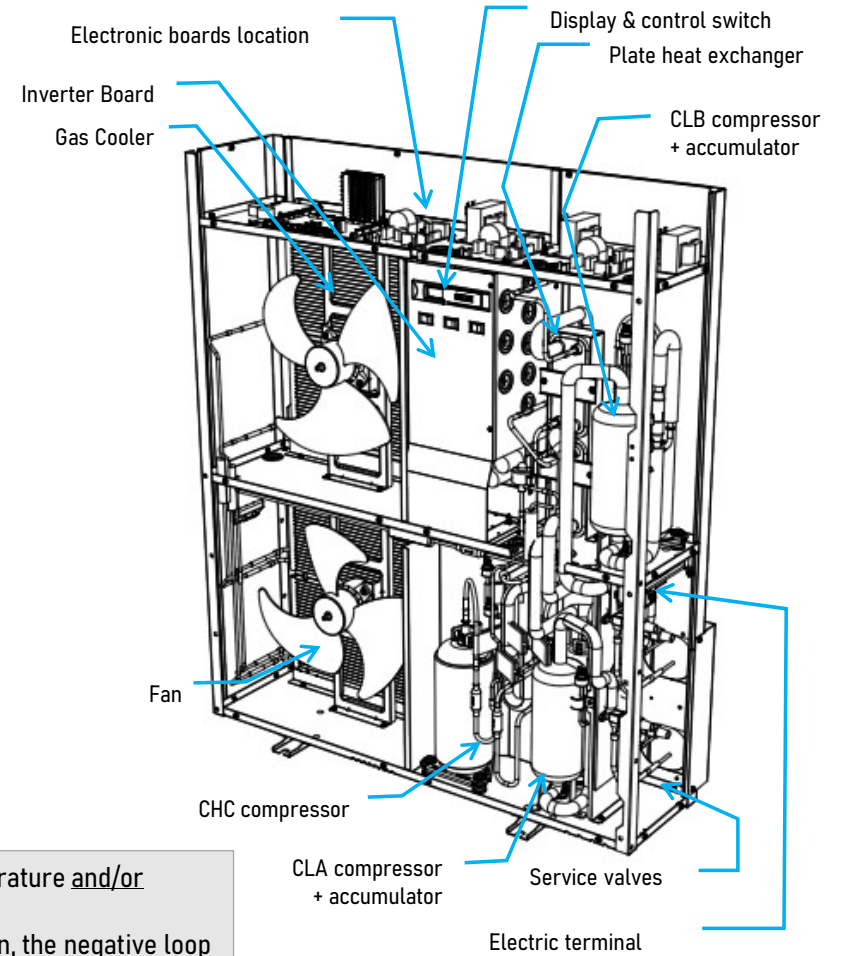
## 2. Product diagram



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



- CDU-L R06A2C can operate Low Temperature and/or Medium Temperature application.  
 - In case of simultaneous LT/MT operation, the negative loop (LT) is always loop A



## 3.1 Cooling capacities & installation sizing

### 1. Cooling capacity

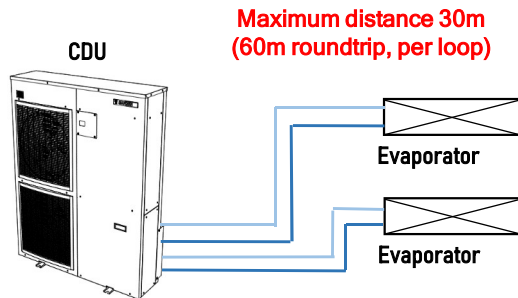
Ambient Temperature (°C)		CDU-L R06A2C Cooling capacity (kW)						
		Evaporating temperature LT (°C)			Evaporating temperature MT (°C)			
		-35	-30	-25	-10	-5	0	5
32	total	3,95	5,05	5,92	9,67	11,15	11,66	12,33
	<i>Per loop</i>	<i>1,98</i>	<i>2,53</i>	<i>2,96</i>	<i>4,84</i>	<i>5,58</i>	<i>5,83</i>	<i>6,16</i>
35	total	3,81	4,80	5,46	9,25	10,71	11,05	11,72
	<i>Per loop</i>	<i>1,90</i>	<i>2,40</i>	<i>2,73</i>	<i>4,62</i>	<i>5,35</i>	<i>5,53</i>	<i>5,86</i>
38	total	3,66	4,56	5,00	7,99	9,24	9,40	11,11
	<i>Per loop</i>	<i>1,83</i>	<i>2,28</i>	<i>2,50</i>	<i>3,99</i>	<i>4,62</i>	<i>4,70</i>	<i>5,55</i>
40	total	3,56	4,23	4,61	7,39	7,86	7,88	8,50
	<i>Per loop</i>	<i>1,78</i>	<i>2,12</i>	<i>2,31</i>	<i>3,70</i>	<i>3,93</i>	<i>3,94</i>	<i>4,25</i>

- 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)

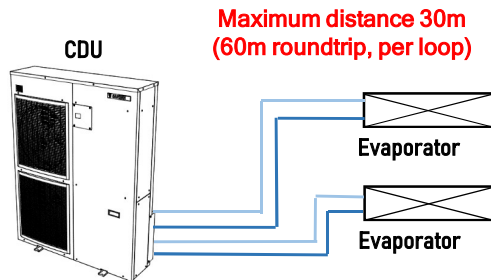
## 3.2 Cooling capacities & installation sizing

### 2. Piping length and performance loss

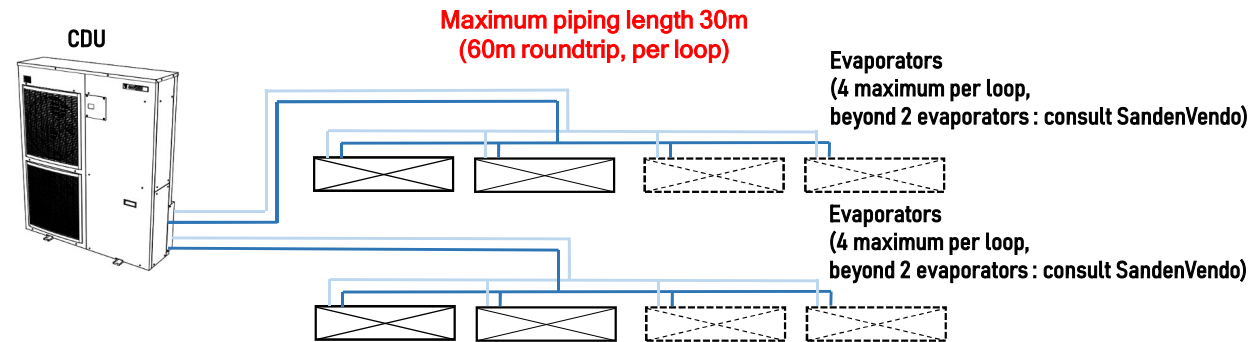
Single evaporator installation – positive temperature



Single evaporator installation – Low temperature



Multi evaporators installation – Positive Temperature



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. See below, 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%
LT (negative @Te -30°C)	2,80%	5,50%	8,10%

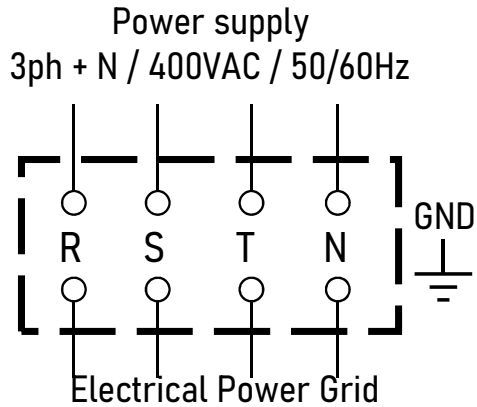
### 3. Evaporator volume

Medium Temperature: 15 liters maximum (bad oil return if > 15L)

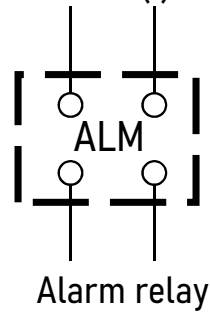
Low temperature: 5 liters maximum (bad oil return if > 5L)

Maximum piping diameter inside evaporator 9,52mm / 3/8" (connection excluded)

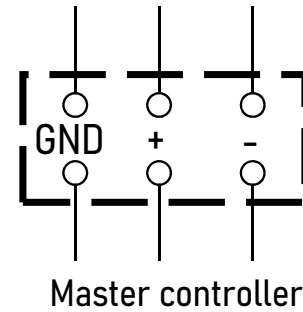
## 4. Electric power input



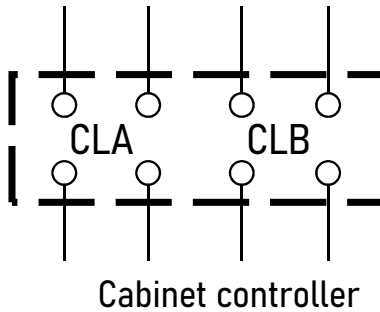
**Alarm output**  
1ph + N / 230VAC /  
3A max (1)



**Communication**  
Modbus type (2)

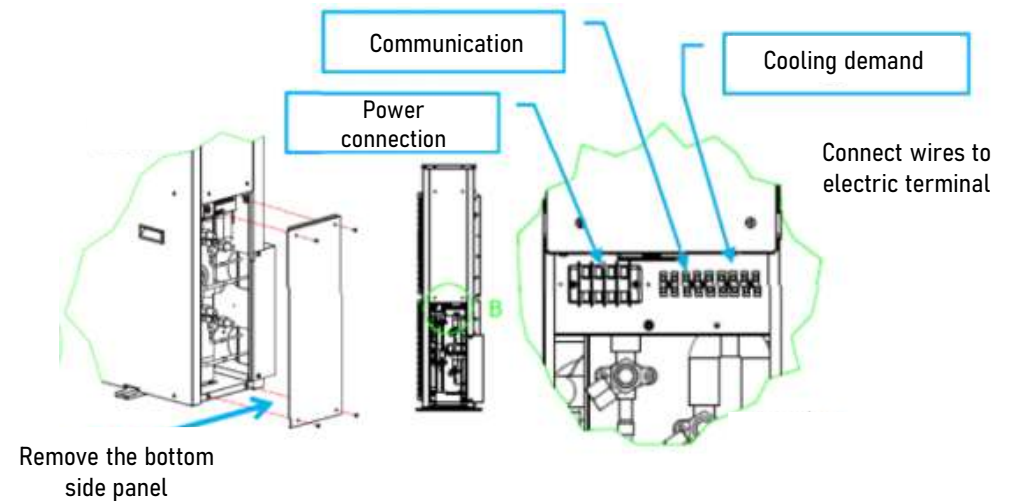


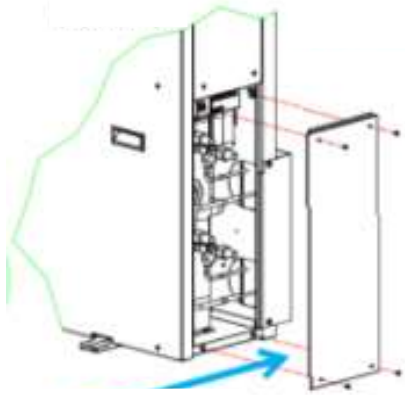
**Cooling demand**  
Via dry contact(3)



- (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	6,2kW
Voltage	400Vac / 3 phases
Frequency	50/60Hz
Electrical consumption	6,2kW
Rated current	10,1A
Electrical power	6,9kVA
Circuit breaker	12A





Remove lower right side panel



Reducer 416122 provided (x2)  
Inlet G 3/8" female  
Outlet 1/4" SAE

Terminal blocks  
Service valve Suction Loop B  
Service valve Supply Loop B  
Service valve Suction Loop A  
Service valve Supply Loop A

