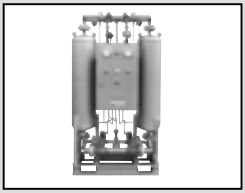


Discontinue

Desiccant type air dryer (large heatless dryer)

4112 to 4132 Series

Stably supplying ultra dry air with atmospheric dew point -60°C.

Treating air flow rate: 2.15 to 18.23m³/min (ANR) (0.7MPa, atmospheric dew point -60°C)

JIS symbol

Specifications

Descriptions	4112-100C	4112-150C	4112-200C	4116-300C	4124-400C	4124-600C	4132-800C
Inlet air pressure range MPa	0.4 to 1.0	0.4 to 0.97					
Inlet air temperature range °C	5 to 50						
Ambient temperature °C	0 to 40						
Regeneration method	Self regeneration heatless type						
Regenerative cycle	10 min. (5 min. switchover)						
Power supply	Single phase AC100V 50/60Hz						
Power consumption W	50						
Desiccant	Activated alumina						
Port size	R1 1/2	R1 1/2	R1 1/2	Flange 2B	Flange 3B	Flange 3B	Flange 4B
Product mass kg	245	310	430	560	700	1,040	1,250
Charging amount of desiccant (20 kg can)	3 boxes	4 boxes	6 boxes	8 boxes	11 boxes	17 boxes	22 boxes

Note 1. Flange is 10K flange.
Note 2: Standard paint color is quality cool white (Munsell No.5GY7.5/0.5) .

How to order

4112-100C - ○

Ⓐ Standard model No.

Symbol	Descriptions
Ⓐ Standard model No.	
4112-100C	
4112-150C	
4112-200C	
4116-300C	
4124-400C	
4124-600C	
4132-800C	

Ⓑ Option

Symbol	Descriptions
Ⓑ Option	
Blank	Standard
F	Optional color
G	Voltage assignment
H	English documentation
H1	Export packing
L	Foundation bolt
O	Outdoors specifications

When placing an order

- Heatless dryer is adjusted to the required atmospheric dew point / flow rate, etc. at shipment.
  Always indicate following descriptions when placing an order.
- Model no. ☐
- Required outlet flow rate ☐ m³/min(ANR)
- Required atmospheric dew point ☐ °C
- Inlet air pressure ☐ MPa
- Inlet air temperature ☐ °C

Note on model No. selection

Note 1: Install an oil mist filter to the inlet side of heatless dryer for lubrication type compressor, while install a filter with proper filtration rating matched to the purpose on OUT side.
Note 2: A dew point monitoring device (moisture indicator) is installed in the heatless dryer, so a dry state can be checked.
Note 3: Atmospheric dew point -70°C can be achieved by changing type of desiccant. Consult with CKD.

Selection guide

- How to read max. flow rate table

  Two kind of numbers are listed in each box in the max. flow rate table. The upper numbers show the required inlet air flow rate to dry in lower flow rate. The lower numbers show the max. outlet flow rate in dry air. Differential between upper and lower numbers are required purge flow rate to regenerate and re-dry.

Max. flow rate table

Following max. flow rate is the value where inlet air temperature 40 °C.

Unit: m³/min (ANR)

Inlet air pressure (MPa)	Model no.	Atmospheric dew point -30 °C							Atmospheric dew point -50 °C							Atmospheric dew point -60 °C						
		4112 -100C	4112 -150C	4112 -200C	4116 -300C	4124 -400C	4124 -600C	4132 -800C	4112 -100C	4112 -150C	4112 -200C	4116 -300C	4124 -400C	4124 -600C	4132 -800C	4112 -100C	4112 -150C	4112 -200C	4116 -300C	4124 -400C	4124 -600C	4132 -800C
0.97		4.68	7.21	9.89	14.41	19.81	29.70	39.63	3.97	6.11	8.39	12.21	16.78	25.17	33.58	2.94	4.51	6.22	9.04	12.41	18.63	24.85
		4.18	6.43	8.83	12.86	17.68	26.51	35.37	3.57	5.33	7.33	10.66	14.65	21.98	29.32	2.44	3.73	5.16	7.49	10.28	15.44	20.59
0.9		4.28	6.61	9.06	13.20	18.14	27.21	36.30	3.64	5.59	7.69	11.19	15.37	23.06	30.76	2.69	4.13	5.69	8.28	11.37	17.06	22.76
		3.78	5.83	8.00	11.65	16.01	24.02	32.04	3.14	4.81	6.63	9.64	13.24	19.87	26.50	2.19	3.35	4.63	6.73	9.24	13.87	18.50
0.8		3.87	5.97	8.19	11.93	16.40	24.59	32.81	3.29	5.06	6.95	10.11	13.89	20.84	27.80	2.43	3.74	5.15	7.49	10.28	15.42	20.57
		3.37	5.19	7.13	10.38	14.27	21.40	28.55	2.79	4.28	5.89	8.56	11.76	17.65	23.54	1.93	2.96	4.09	5.94	8.15	12.23	16.31
0.7		3.43	5.29	7.26	10.57	14.54	21.80	29.09	2.91	4.48	6.16	8.96	12.32	18.47	24.64	2.15	3.31	4.56	6.64	9.11	13.67	18.23
		2.93	4.51	6.20	9.02	12.41	18.61	24.83	2.41	3.70	5.10	7.41	10.19	15.28	20.38	1.65	2.53	3.50	5.09	6.98	10.48	13.97
0.6		3.02	4.66	6.39	9.30	12.79	19.18	25.59	2.56	3.94	5.42	7.89	10.83	16.25	21.68	1.90	2.91	4.01	5.84	8.01	12.03	16.04
		2.52	3.88	5.33	7.75	10.66	15.99	21.33	2.06	3.16	4.36	6.34	8.70	13.06	17.42	1.40	2.13	2.95	4.29	5.88	8.84	11.78
0.5		2.58	3.98	5.46	7.95	10.93	16.39	21.87	2.19	3.37	4.63	6.74	9.26	13.89	18.53	1.62	2.49	3.43	4.99	6.85	10.28	13.71
		2.08	3.20	4.40	6.40	8.80	13.20	17.61	1.69	2.59	3.57	5.19	7.13	10.70	14.27	1.12	1.71	2.37	3.44	4.72	7.09	9.45
0.4		2.14	3.30	4.53	6.60	9.07	13.60	18.15	1.82	2.80	3.84	5.59	7.69	11.53	15.38	1.34	2.07	2.85	4.14	5.69	8.53	11.38
		1.64	2.52	3.47	5.05	6.94	10.41	13.89	1.32	2.02	2.78	4.04	5.56	8.34	11.12	0.84	1.29	1.79	2.59	3.56	5.34	7.12

Note: When selecting large heatless air dryer, if outlet flow rate is satisfactory, but purge volume is too much, consult with CKD.

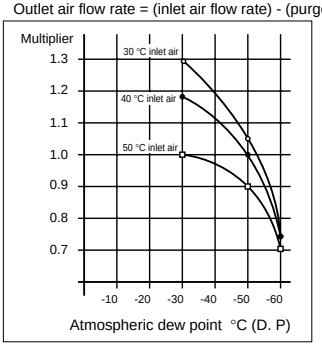
- Selection method

  The flow rate table above applies where inlet air temperature 40°C, and atmospheric dew point -30°C, -50°C and-60°C. If conditions differ, use the following multiplier table.

  Inlet air flow rate = (inlet air flow rate at atmospheric dew point -50°C in max. flow rate table) X multiplier

  Purge flow rate = (inlet air flow rate at atmospheric dew point -50°C in max. flow rate table) - (outlet air flow rate at atmospheric dew point -50°C in max. flow rate table)

  Outlet air flow rate = (inlet air flow rate) - (purge flow rate)



(E.g.) When pressure 0.6MPa, atmospheric dew point -40°C, and inlet air temperature 50°C, inlet air flow rate, purge flow rate and outlet air flow rate of 4116-300C are

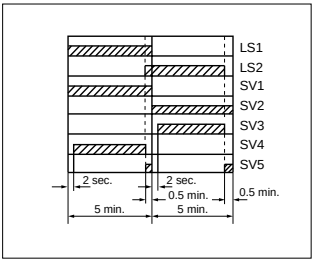
Inlet air flow rate = 7.89 X 0.97= 7.65m³/min

Purge flow rate = 7.89-6.34= 1.55m³/min

Outlet air flow rate = 7.65-1.55= 6.1m³/min

(E.g.) When selecting a large heatless dryer, if outlet flow rate is satisfactory, but purge rate is too much, please consult with CKD.

Time chart



*time applies at 60Hz.
Multiply time by 1.2 for 50Hz.
SVI to 5 show solenoid valves to drive valves (PV1 to 5) on the following page " functional explanation ".

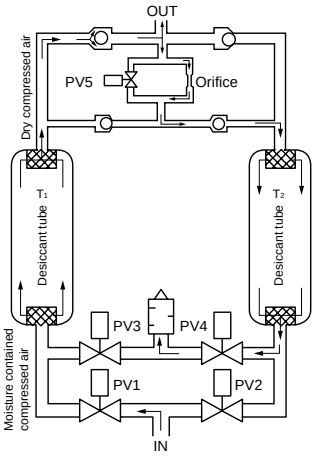
When heatless dryer is installed.

- Class 2 pressure vessel withstanding pressure certification is attached to model no. 4112-150C to 4132-800C.
  Please keep these documentations during using this machine (Report to labor standard administration office is not required in Japan.)
- With 10 to 20% of usage flow rate, perform a trial run for following time at the first trial-run after this machine is installed.

Atmospheric dew point °C	-30	-50	-60
Hour h	6	12	24

Discontinue

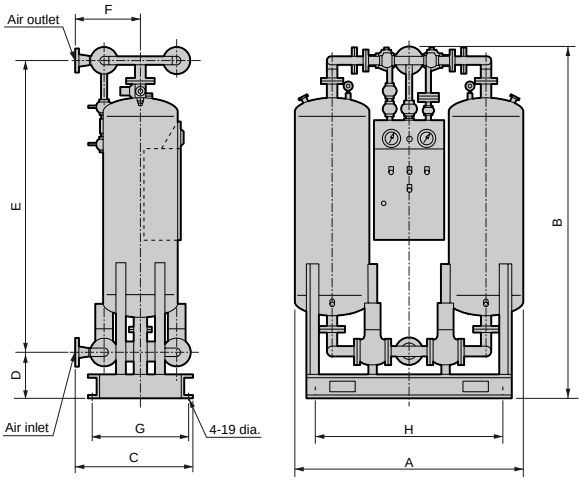
Functional explanation



Humid compressed air from IN passes through the cylinder valve, and enters into desiccant tube T_1. Humid compressed air flows equally through inside of desiccant tube, and viper in humid compressed air is absorbed with desiccant (activated alumina), and finally ultra dry air goes out from OUT through check valve.
Some ultra dry air depressurized passing through the orifice, enters into desiccant tube T_2, and used to regenerate desiccant in desiccant tube T_2, and released to the atmosphere. This drying and regeneration process is switched every 5min. by the timing motor in control box. This allows to continue to supply constant ultra dry air to the OUT side.

Dimensions

• 4112 to 4132



Model no.	Port size	A	B	C	D	E	F	G	H
4112-100C	R1 1/2	932	1,613	445	220	1,330	245	360	760
4112-150C	R1 1/2	1,129	1,733	538	220	1,450	278	480	930
4112-200C	R1 1/2	1,129	1,783	575	245	1,470	315	470	930
4116-300C	flange 2B	1,262	1,903	655	245	1,580	365	520	1,040
4124-400C	flange 3B	1,462	2,008	720	255	1,660	410	570	1,200
4124-600C	flange 3B	1,820	2,310	900	275	1,900	500	750	1,480
4132-800C	flange 4B	1,912	2,435	1,030	310	1,970	580	840	1,600