PATTON PAK INVERTER

SCMREF THAI

CIV Microchannel Series

Condensing Units

With BLDC Inverter Scroll

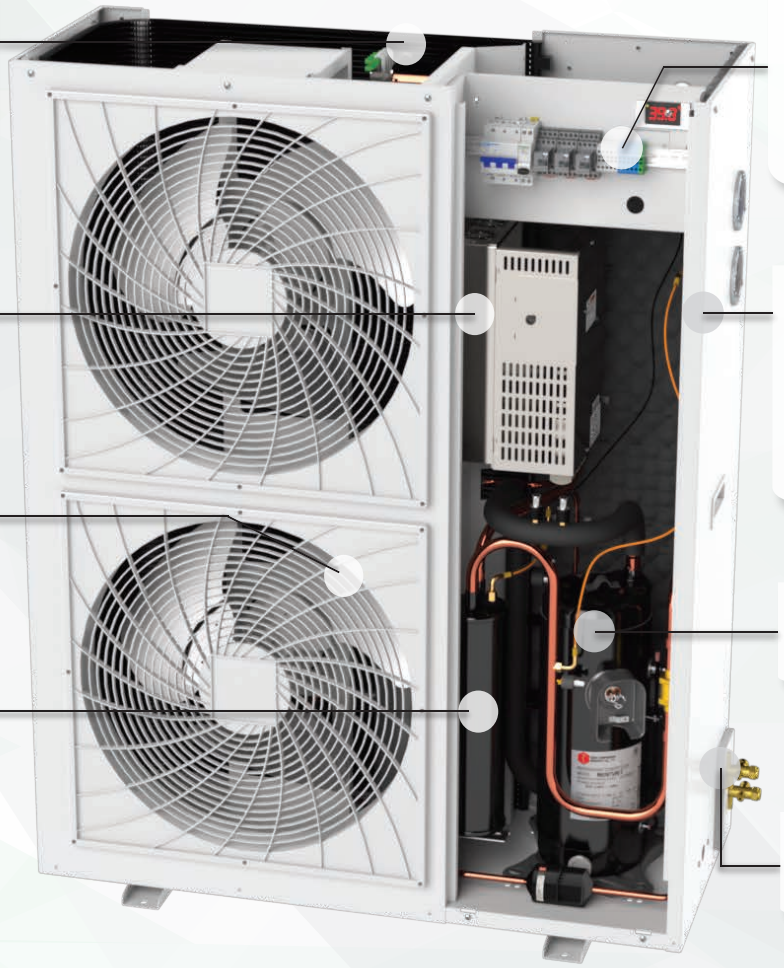
- Microchannel condenser
- Generous low noise level condensers
- Wed monitoring readiness
- Slim profile, suitable for limited space
- User friendly digital controller with LED display
- High efficiency BLDC scroll compressor
- Better energy efficiency
- Easy access to service
- Low noise
- Fully wired in a waterproof powder coated enclosure

PATTON PAK INVERTER

CIV Microchannel Series

Condensing Units

- Microchannel condenser heat exchanger
- EMI Filter * Corresponding to EMC Requirement
- Fan Speed Control *
- Additional oil pre-charged



- Phase protection
- Discharge gas overheat protection
- Hi/Low pressure protection
- Compressor minimum off time control
- Web monitoring readiness
- Galvanized steel casing with powder coating
  -High corrosion resistance
- Stainless steel casing SUS304 *
- BLDC Scroll Compressor 15-100 RPS
- Easy access liquid sight glass with moisture indicator

*Optional

Microchannel Benefits

- Improve heat transfer efficiency
- Low refrigerant charge
- No risk of galvanic corrosion
- Low weight
- Easy cleaning

Inverter Benefits

- Precision temperature control
- High efficiency
- Humidity control

PATTON PAK INVERTER

CIV Microchannel Series Condensing Units

With BLDC Inverter Scroll

R404A Medium Temp

4.0 10 HP

Capacity (Watts) @20Hz								Power Input (Watts) @20Hz					
Model	Ambient (°C)	Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	1.10	1.32	1.60	1.92	2.30	2.72	0.76	0.76	0.77	0.77	0.78	0.78
	38	0.96	1.18	1.44	1.76	2.12	2.53	0.84	0.84	0.84	0.84	0.84	0.85
	43	0.86	1.07	1.32	1.62	1.97	2.36	0.92	0.92	0.91	0.91	0.91	0.91
CIVM500	32	1.25	1.58	1.94	2.35	2.81	3.33	0.88	0.89	0.91	0.92	0.92	0.92
	38	1.11	1.43	1.78	2.16	2.60	3.09	0.96	0.97	0.99	1.00	1.01	1.02
	43	1.01	1.31	1.64	2.00	2.42	2.89	1.04	1.05	1.07	1.09	1.10	1.11
CIVM800	32	2.11	2.67	3.33	4.10	4.98	5.96	1.62	1.60	1.59	1.57	1.56	1.55
	38	1.94	2.45	3.07	3.79	4.62	5.54	1.76	1.74	1.72	1.71	1.69	1.69
	43	1.78	2.24	2.82	3.50	4.29	5.16	1.88	1.86	1.84	1.83	1.82	1.81
CIVM1000	32	2.57	3.25	4.06	4.99	6.05	7.21	1.72	1.70	1.69	1.69	1.68	1.68
	38	2.35	2.98	3.73	4.61	5.59	6.68	1.91	1.90	1.90	1.90	1.91	1.91
	43	2.15	2.74	3.44	4.26	5.18	6.21	2.13	2.12	2.12	2.13	2.13	2.14

Capacity (Watts) @60Hz								Power Input (Watts) @60Hz					
Model	Ambient (°C)	Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	3.15	3.80	4.61	5.58	6.70	7.96	1.86	1.91	1.96	2.00	2.03	2.05
	38	3.09	3.70	4.45	5.36	6.41	7.59	2.14	2.18	2.21	2.24	2.26	2.28
	43	2.96	3.52	4.23	5.08	6.06	7.17	2.40	2.42	2.45	2.47	2.48	2.50
CIVM500	32	3.89	4.93	6.06	7.30	8.67	10.23	2.31	2.39	2.46	2.53	2.60	2.66
	38	3.51	4.49	5.54	6.70	7.97	9.41	2.57	2.65	2.74	2.82	2.90	2.98
	43	3.18	4.10	5.08	6.16	7.36	8.71	2.83	2.92	3.00	3.09	3.19	3.28
CIVM800	32	6.80	8.32	10.14	12.23	14.57	17.18	4.07	4.07	4.08	4.10	4.14	4.19
	38	6.24	7.64	9.32	11.26	13.46	15.90	4.52	4.52	4.54	4.57	4.62	4.69
	43	5.73	7.02	8.59	10.42	12.50	14.81	4.94	4.94	4.97	5.01	5.07	5.15
CIVM1000	32	7.79	9.49	11.55	13.92	16.59	19.57	4.57	4.59	4.63	4.70	4.79	4.88
	38	7.09	8.66	10.58	12.80	15.31	18.08	5.13	5.16	5.21	5.28	5.39	5.51
	43	6.45	7.93	9.73	11.82	14.20	16.85	5.66	5.70	5.76	5.85	5.96	6.08

Capacity (Watts) @100Hz								Power Input (Watts) @100Hz					
Model	Ambient (°C)	Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	5.14	6.22	7.53	9.06	10.78	12.69	3.58	3.72	3.85	3.95	4.04	4.11
	38	4.67	5.67	6.89	8.31	9.90	11.67	4.14	4.26	4.36	4.44	4.52	4.60
	43	4.25	5.17	6.30	7.62	9.11	10.73	4.68	4.76	4.83	4.90	4.98	5.06
CIVM500	32	6.09	7.70	9.39	11.22	13.22	15.43	4.35	4.55	4.76	4.97	5.19	5.41
	38	5.44	6.92	8.50	10.17	12.02	14.05	4.91	5.11	5.32	5.55	5.79	6.04
	43	4.88	6.26	7.71	9.27	10.98	12.86	5.42	5.63	5.84	6.09	6.34	6.62
CIVM800	32	10.70	12.87	15.50	18.50	21.88	25.54	7.38	7.53	7.69	7.91	8.15	8.46
	38	9.68	11.67	14.09	16.88	20.00	23.45	8.16	8.32	8.51	8.75	9.03	9.35
	43	8.74	10.60	12.84	15.46	18.40	21.67	8.93	9.08	9.30	9.56	9.87	10.21
CIVM1000	32	12.29	14.72	17.65	21.01	24.76	28.85	8.58	8.80	9.05	9.36	9.73	10.16
	38	11.10	13.32	16.02	19.12	22.60	26.41	9.58	9.80	10.06	10.40	10.80	11.28
	43	10.03	12.09	14.58	17.48	20.76	24.34	10.46	10.69	10.98	11.34	11.78	12.29

Note: The rating condition is based on a suction superheat of 10K, Subcool with the limits of the condensing unit.

PATTON PAK INVERTER

CIV Microchannel Series Condensing Units

With BLDC Inverter Scroll

R407F (Dew Point) Medium Temp

4.0 ▶ 10 ▶ HP

Model	Ambient (°C)	Capacity (Watts) @20Hz						Power Input (Watts) @20Hz					
		Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	0.93	1.19	1.49	1.85	2.26	2.72	0.71	0.73	0.74	0.75	0.77	0.78
	38	0.78	1.04	1.35	1.71	2.12	2.59	0.77	0.80	0.82	0.83	0.84	0.85
	43	0.67	0.93	1.24	1.59	2.01	2.47	0.81	0.85	0.88	0.90	0.90	0.92
CIVM500	32	1.05	1.42	1.81	2.26	2.76	3.33	0.82	0.85	0.88	0.89	0.91	0.92
	38	0.91	1.27	1.67	2.10	2.60	3.17	0.88	0.92	0.96	0.99	1.01	1.02
	43	0.79	1.14	1.53	1.96	2.46	3.02	0.91	0.98	1.03	1.07	1.09	1.12
CIVM800	32	1.78	2.39	3.10	3.94	4.89	5.96	1.52	1.53	1.54	1.53	1.53	1.54
	38	1.58	2.17	2.87	3.69	4.62	5.67	1.61	1.65	1.67	1.68	1.69	1.69
	43	1.38	1.95	2.64	3.43	4.37	5.40	1.66	1.73	1.77	1.80	1.81	1.83
CIVM1000	32	2.17	2.91	3.78	4.80	5.94	7.21	1.61	1.63	1.64	1.65	1.66	1.68
	38	1.91	2.64	3.49	4.48	5.59	6.85	1.75	1.80	1.84	1.87	1.90	1.92
	43	1.67	2.38	3.21	4.17	5.28	6.49	1.88	1.97	2.04	2.09	2.12	2.15

Model	Ambient (°C)	Capacity (Watts) @60Hz						Power Input (Watts) @60Hz					
		Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	2.66	3.41	4.30	5.36	6.57	7.96	1.74	1.83	1.90	1.95	2.00	2.04
	38	2.52	3.27	4.17	5.21	6.41	7.78	1.96	2.07	2.15	2.21	2.25	2.29
	43	2.31	3.06	3.95	4.98	6.17	7.49	2.11	2.25	2.35	2.42	2.47	2.51
CIVM500	32	3.28	4.42	5.65	7.01	8.51	10.22	2.17	2.29	2.39	2.48	2.56	2.65
	38	2.86	3.98	5.19	6.51	7.98	9.64	2.35	2.52	2.66	2.78	2.89	3.00
	43	2.47	3.56	4.74	6.03	7.49	9.11	2.50	2.71	2.88	3.04	3.16	3.30
CIVM800	32	5.74	7.46	9.45	11.74	14.30	17.17	3.82	3.90	3.96	4.01	4.08	4.17
	38	5.08	6.76	8.72	10.95	13.48	16.29	4.14	4.29	4.41	4.50	4.60	4.71
	43	4.46	6.11	8.02	10.21	12.73	15.49	4.36	4.59	4.77	4.92	5.03	5.18
CIVM1000	32	6.57	8.51	10.77	13.37	16.29	19.56	4.28	4.39	4.49	4.59	4.71	4.87
	38	5.77	7.67	9.90	12.45	15.33	18.53	4.70	4.90	5.06	5.20	5.36	5.54
	43	5.01	6.89	9.08	11.58	14.46	17.62	4.99	5.29	5.53	5.74	5.92	6.12

Model	Ambient (°C)	Capacity (Watts) @100Hz						Power Input (Watts) @100Hz					
		Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	4.34	5.58	7.02	8.70	10.58	12.68	3.35	3.57	3.74	3.86	3.98	4.10
	38	3.80	5.02	6.44	8.08	9.92	11.96	3.79	4.04	4.23	4.37	4.50	4.62
	43	3.31	4.50	5.88	7.47	9.28	11.22	4.13	4.42	4.64	4.81	4.94	5.09
CIVM500	32	5.14	6.90	8.76	10.77	12.98	15.43	4.07	4.36	4.62	4.86	5.11	5.39
	38	4.42	6.13	7.95	9.90	12.04	14.40	4.50	4.85	5.17	5.46	5.76	6.07
	43	3.80	5.44	7.20	9.08	11.18	13.45	4.78	5.23	5.61	5.97	6.30	6.66
CIVM800	32	9.03	11.54	14.45	17.77	21.48	25.53	6.92	7.21	7.47	7.73	8.03	8.43
	38	7.88	10.33	13.19	16.41	20.02	24.02	7.47	7.91	8.26	8.62	8.99	9.40
	43	6.80	9.22	11.99	15.15	18.74	22.66	7.88	8.43	8.92	9.38	9.80	10.28
CIVM1000	32	10.37	13.20	16.46	20.18	24.31	28.84	8.05	8.43	8.79	9.15	9.58	10.13
	38	9.03	11.79	14.99	18.60	22.63	27.06	8.77	9.31	9.78	10.24	10.75	11.33
	43	7.80	10.51	13.61	17.13	21.14	25.45	9.23	9.92	10.54	11.13	11.69	12.37

Note: The rating condition is based on a suction superheat of 10K, Subcool with the limits of the condensing unit.

PATTON PAK INVERTER

CIV Microchannel Series Condensing Units

With BLDC Inverter Scroll

R448A (Dew Point) Medium Temp

4.0 ▶ 10 ▶ HP

Model	Ambient (°C)	Capacity (Watts) @20Hz						Power Input (Watts) @20Hz					
		Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	0.89	1.10	1.35	1.65	1.99	2.38	0.68	0.69	0.71	0.72	0.73	0.74
	38	0.83	1.02	1.26	1.54	1.87	2.24	0.75	0.76	0.77	0.79	0.80	0.81
	43	0.77	0.96	1.18	1.45	1.76	2.11	0.81	0.82	0.84	0.85	0.86	0.87
CIVM500	32	1.05	1.36	1.69	2.07	2.52	3.04	0.82	0.85	0.86	0.88	0.89	0.90
	38	0.96	1.25	1.57	1.92	2.34	2.83	0.90	0.92	0.94	0.96	0.98	0.99
	43	0.88	1.15	1.45	1.78	2.17	2.64	0.97	1.00	1.02	1.04	1.06	1.08
CIVM800	32	1.72	2.16	2.71	3.36	4.12	4.96	1.37	1.40	1.42	1.44	1.44	1.44
	38	1.59	2.01	2.53	3.15	3.87	4.67	1.49	1.53	1.55	1.57	1.57	1.57
	43	1.48	1.87	2.37	2.96	3.64	4.42	1.62	1.66	1.68	1.70	1.71	1.70
CIVM1000	32	2.19	2.79	3.52	4.36	5.32	6.36	1.45	1.49	1.52	1.55	1.57	1.58
	38	2.02	2.59	3.28	4.08	4.99	5.98	1.65	1.70	1.74	1.76	1.78	1.80
	43	1.87	2.41	3.06	3.83	4.69	5.64	1.85	1.90	1.94	1.97	1.99	2.00

Model	Ambient (°C)	Capacity (Watts) @60Hz						Power Input (Watts) @60Hz					
		Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	2.86	3.42	4.15	5.02	6.03	7.17	1.67	1.71	1.76	1.80	1.83	1.86
	38	2.71	3.24	3.93	4.75	5.72	6.80	1.89	1.94	1.98	2.02	2.06	2.09
	43	2.58	3.09	3.74	4.53	5.44	6.47	2.10	2.15	2.19	2.23	2.27	2.31
CIVM500	32	3.37	4.34	5.36	6.51	7.82	9.34	1.94	2.03	2.11	2.19	2.26	2.35
	38	3.06	3.96	4.91	5.97	7.19	8.61	2.16	2.26	2.35	2.44	2.53	2.63
	43	2.77	3.62	4.52	5.51	6.66	7.98	2.36	2.47	2.57	2.67	2.77	2.88
CIVM800	32	5.51	6.84	8.40	10.22	12.27	14.56	3.38	3.50	3.61	3.70	3.78	3.85
	38	5.15	6.39	7.87	9.58	11.53	13.70	3.77	3.91	4.03	4.14	4.23	4.32
	43	4.83	5.99	7.39	9.03	10.88	12.97	4.15	4.30	4.44	4.55	4.66	4.76
CIVM1000	32	6.67	8.22	10.13	12.37	14.89	17.67	3.81	3.97	4.13	4.28	4.44	4.57
	38	6.18	7.65	9.47	11.59	13.98	16.60	4.29	4.48	4.65	4.84	5.01	5.17
	43	5.75	7.17	8.90	10.92	13.18	15.69	4.74	4.94	5.15	5.35	5.56	5.74

Model	Ambient (°C)	Capacity (Watts) @100Hz						Power Input (Watts) @100Hz					
		Evaporating Temp (°C)						Evaporating Temp (°C)					
		-20	-15	-10	-5	0	5	-20	-15	-10	-5	0	5
CIVM400	32	4.45	5.41	6.62	8.04	9.64	11.39	3.16	3.29	3.42	3.53	3.65	3.75
	38	4.11	5.00	6.13	7.47	8.98	10.63	3.63	3.76	3.89	4.00	4.12	4.24
	43	3.81	4.65	5.71	6.97	8.41	9.97	4.08	4.20	4.33	4.45	4.57	4.70
CIVM500	32	5.21	6.65	8.18	9.84	11.71	13.87	3.40	3.60	3.79	3.99	4.20	4.43
	38	4.67	6.02	7.43	8.97	10.70	12.69	3.80	4.02	4.24	4.46	4.70	4.97
	43	4.20	5.48	6.80	8.24	9.86	11.74	4.18	4.41	4.65	4.89	5.16	5.45
CIVM800	32	8.75	10.71	13.03	15.68	18.70	22.06	6.14	6.46	6.78	7.11	7.43	7.75
	38	8.10	9.94	12.11	14.62	17.43	20.58	6.87	7.22	7.58	7.92	8.28	8.63
	43	7.53	9.29	11.33	13.69	16.37	19.34	7.58	7.95	8.34	8.71	9.07	9.44
CIVM1000	32	10.78	12.99	15.72	18.90	22.47	26.36	7.18	7.61	8.04	8.51	9.01	9.54
	38	9.89	11.99	14.55	17.54	20.89	24.54	8.01	8.48	8.98	9.51	10.07	10.67
	43	9.14	11.13	13.57	16.39	19.56	22.98	8.78	9.31	9.85	10.45	11.07	11.76

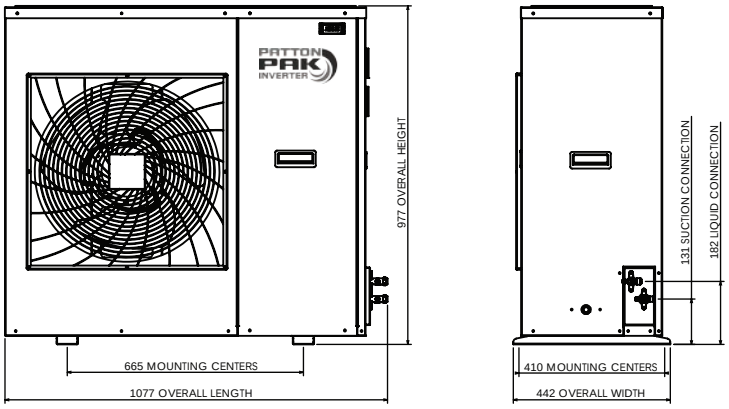
Note: The rating condition is based on a suction superheat of 10K, Subcool with the limits of the condensing unit.

Technical Data

Model Name	CIVM400	CIVM500	CIVM800	CIVM1000
COMPRESSOR				
Model	ADB33FCAMTS	ADB42FCAMTS	ADB66FDAMTS	ADB78FDAMTS
Voltage	3PH AC 380-460V 50/60 Hz			
RLA Amps	7.5	9.1	13.3	15.2
MCC Amps	13.08	13.08	21.5	23.75
Oil Type	PVE 68			
Oil Pre-charge	1.9 L			
CONDENSER				
Airflow (m3/hr)	5,200	5,200	8,700	8,700
No. Fan Motor	1 x 20"	1 x 20"	2 x 20"	2 x 20"
Total Watts	236	236	472	472
Receiver (litre)	7.9	7.9	7.9	7.9
Suction size	7/8"	7/8"	1-1/8"	1-1/8"
Liquid size	1/2"	1/2"	1/2"	5/8"
Weight (kg)	100	103	120	130

Dimension

CIVM400
CIVM500



CIVM800
CIVM1000