



4.9 SCOP

3-Pipe ECOi EX MF3 Series

			8HP	10HP	12HP	14HP	16HP
Outdoor units			U-8MF3E8	U-10MF3E8	U-12MF3E8	U-14MF3E8	U-16MF3E8
Power supply	Voltage	V	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415
	Phase		Three Phase	Three Phase	Three Phase	Three Phase	Three Phase
	Frequency	Hz	50	50	50	50	50
Cooling capacity		kW	22.4	28.0	33.5	40.0	45.0
EER ¹⁾		W/W	5.11	4.72	3.91	3.70	3.49
SEER ²⁾			7.0	7.1	6.4	6.7	6.0
Running current cooling		A	7.16/6.80/6.55	9.90/9.41/9.07	3.19/13.20/12.70	18.20/17.30/16.70	21.30/20.20/19.50
Input power cooling		kW	4.38	5.93	8.57	10.80	12.90
Heating capacity		kW	25.0	31.5	37.5	45.0	50.0
COP ¹⁾		W/W	5.25	5.17	4.51	4.21	4.17
SCOP ²⁾			4.9	4.3	4.3	4.1	3.8
Running current heating		A	7.78/7.39/7.12	10.20/9.66/9.31	13.40/12.80/12.30	18.10/17.20/16.50	20.00/19.00/18.30
Input power heating		kW	4.76	6.09	8.32	10.70	12.00
Starting current		A	1.00	1.00	1.00	2.00	2.00
External static pressure (Max)		Pa	80	80	80	80	80
Air volume		m ³ /min	210	220	232	232	232
Sound pressure	Normal mode	dB(A)	54.00	57.00	60.00	61.00	62.00
	Silent mode 1 / 2	dB(A)	51.00/49.00	54.00/52.00	57.00/55.00	58.00/56.00	59.00/57.00
Sound power	Normal mode	dB	76.00	78.00	81.00	82.00	82.00
Dimension	H x W x D	mm	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000	1842 x 1180 x 1000
Net weight		kg	261	262	286	334	334
Piping connections ³⁾	Liquid pipe	Inch (mm)	3/8(9.52)/1/2(12.70)	3/8(9.52)/1/2(12.70)	1/2(12.70)/5/8(15.88)	1/2(12.70)/5/8(15.88)	1/2(12.70)/5/8(15.88)
	Discharge pipe	Inch (mm)	5/8(15.88)/3/4(19.05)	3/4(19.05)/7/8(22.22)	3/4(19.05)/7/8(22.22)	7/8(22.22)/1(25.40)	7/8(22.22)/1(25.40)
	Suction pipe	Inch (mm)	3/4(19.05)/7/8(22.22)	7/8(22.22)/1(25.40)	1(25.40)/1-1/8(28.58)	1(25.40)/1-1/8(28.58)	1-1/8(28.58)/1-1/4(31.75)
	Balance pipe	Inch (mm)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)
Refrigerant (R410A) / CO ₂ Eq.		kg / T	6.80/14.1984	6.80/14.1984	8.30/17.3304	8.30/17.3304	8.30/17.3304
Maximum allowable indoor / outdoor capacity ratio %			50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18
	Simultaneous op.	°C	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24
Price		£	6812	7519	9038	10452	12012

Solenoid valve kit			Price £
KIT-P56HR3	KIT-P56HR3	3-Pipe control Solenoid valve kit (up to 5.6kW)	432
	CZ-P56HR3	Solenoid valve kit (up to 5.6kW)	355
	CZ-CAPE2	3-Pipe control PCB	77
KIT-P160HR3	KIT-P160HR3	3-Pipe control Solenoid valve kit (from 5.60 to 16.0kW)	509
	CZ-P160HR3	Solenoid valve kit (from 5.6kW to 16.0kW)	432
	CZ-CAPE2	3-Pipe control PCB	77
CZ-CAPEK2 ⁴⁾			85

3-Pipe control box kit			Price £
CZ-P456HR3	4 ports 3 pipe box (up to 5.6kW per port)		2175
CZ-P656HR3	6 ports 3 pipe box (up to 5.6kW per port)		2985
CZ-P856HR3	8 ports 3 pipe box (up to 5.6kW per port)		4069
CZ-P4160HR3	4 ports 3 pipe box (up to 16.0kW per port)		2425

1) EER and COP calculation is based in accordance to EN14511. 2) SEER/SCOP is calculated based on the seasonal space cooling/heating efficiency "η₁" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η₁ + Correction) x PEF. 3) Pipe diameter under 90m for ultimate indoor unit / over 90m for ultimate indoor unit (if the longest piping equivalent length exceeds 90m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 4) Available for S-45/56/73/106MK2E5A.



Slim 3-Pipe Control Box Kit / Multiple connection type

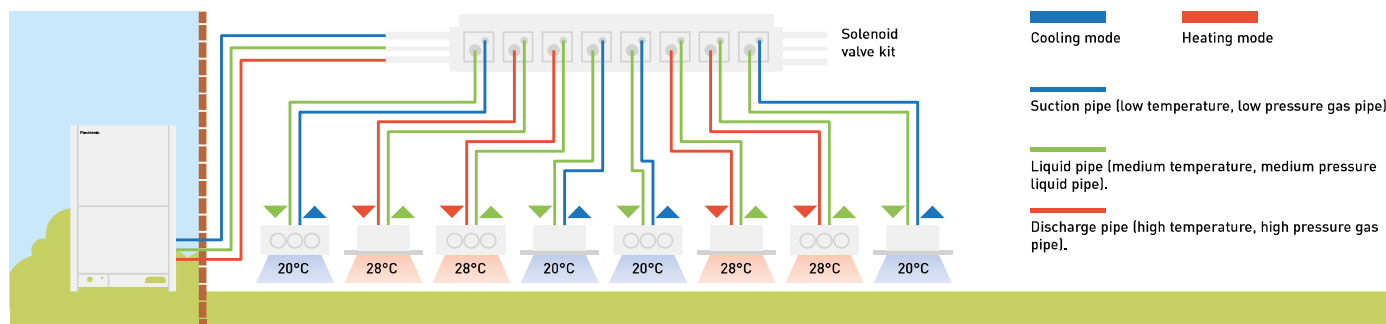
Heat Recovery Box to connect multiple indoor units with just one box, 4, 6 and up to 8 indoor units or groups.

The height is only 200mm. This is good advantage specially in hotel applications, where space for connecting several boxes is limited.

Individual control of multiple indoor units with solenoid valve kits.

- Any design and layout can be used in a single system.
- Cooling operation is possible up to an outdoor temperature of -10°C.

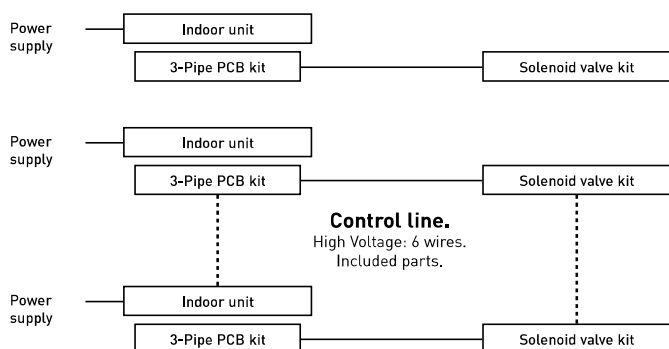
System structure.



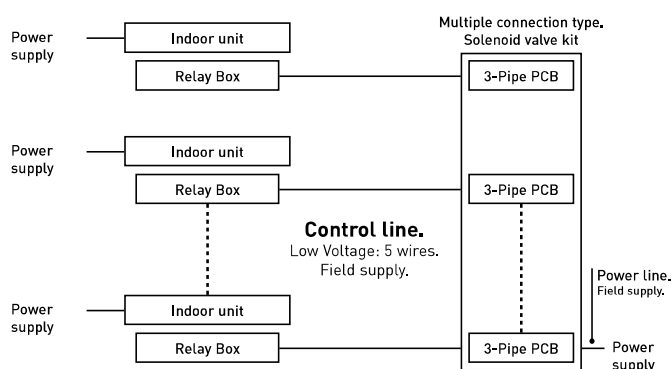
	1 port	4 port	6 port	8 port
56 type	CZ-P56HR3	CZ-P456HR3	CZ-P656HR3	CZ-P856HR3
160 type	CZ-P160HR3	CZ-P4160HR3	—	—

Solenoid valve kit / wiring work

Current model / single connection type.



New model / multiple connection type.



3-Pipe PCB kit.
Separately purchased.



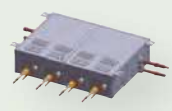
Parts included in HR3 kit.



Signal Relay Box.
Included accessory.



Parts included in HR3 kit.



3-Pipe ECOi EX MF3 Series Combination from 18 to 32HP

HP			18HP	20HP	22HP	24HP	26HP	28HP	30HP	32HP
Model name			U-8MF3E8 U-10MF3E8	U-8MF3E8 U-12MF3E8	U-10MF3E8 U-12MF3E8	U-12MF3E8 U-12MF3E8	U-10MF3E8 U-16MF3E8	U-12MF3E8 U-16MF3E8	U-14MF3E8 U-16MF3E8	U-16MF3E8 U-16MF3E8
Power supply	Voltage	V	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415
	Phase		Three Phase	Three Phase	Three Phase	Three Phase	Three Phase	Three Phase	Three Phase	Three Phase
	Frequency	Hz	50	50	50	50	50	50	50	50
Cooling capacity	kW		50.0	56.0	61.5	68.0	73.0	78.5	85.0	90.0
EER ¹⁾	W/W		4.90	4.31	4.24	3.89	3.88	3.65	3.59	3.49
Running current cooling	A		16.80/16.00/15.40	21.00/20.00/19.20	23.70/22.50/21.70	28.30/26.90/25.90	31.00/29.50/28.40	35.10/33.40/32.20	39.60/37.60/36.20	42.60/40.50/39.00
Input power cooling	kW		10.20	13.00	14.50	17.50	18.80	21.50	23.70	25.8
Heating capacity	kW		56.0	63.0	69.0	76.5	81.5	87.5	95.0	100.0
COP ¹⁾	W/W		5.23	4.77	4.79	4.47	4.50	4.31	4.19	4.17
Running current heating	A		17.70/16.80/16.20	21.30/20.30/19.50	23.50/22.30/21.50	27.60/26.30/25.30	30.20/28.70/27.70	33.50/31.80/30.70	37.90/36.00/34.70	40.10/38.10/36.70
Input power heating	kW		10.70	13.20	14.40	17.10	18.10	20.30	22.70	24.00
Starting current	A		2.00	2.00	2.00	2.00	3.00	3.00	4.00	4.00
External static pressure (Max)	Pa		80	80	80	80	80	80	80	80
Air volume	m ³ /min		430	442	452	464	452	464	464	464
Sound pressure	Normal mode	dB(A)	59.00	61.00	62.00	63.00	63.50	64.50	64.50	65.00
	Silent mode 1 / 2	dB(A)	56.00/54.00	58.00/56.00	59.00/57.00	60.00/58.00	60.50/58.50	61.50/59.50	61.50/59.50	62.00/60.00
Sound power	Normal mode	dB	81.50	84.00	84.50	86.00	84.50	86.00	86.00	86.00
Dimension	H x W x D	mm	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000	1842 x 2360 (+60) x 1000
Net weight	kg		523	547	548	574	596	620	668	668
Piping connections ²⁾	Liquid pipe	Inch (mm)	5/8(15.88)/ 3/4(19.05)	5/8(15.88)/ 3/4(19.05)	5/8(15.88)/ 3/4(19.05)	5/8(15.88)/ 3/4(19.05)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)
	Discharge pipe	Inch (mm)	7/8(22.22)/ 1(25.40)	7/8(22.22)/ 1(25.40)	1(25.40)/ 1-1/8(28.58)	1(25.40)/ 1-1/8(28.58)	1(25.40)/ 1-1/8(28.58)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/8(28.58)/ 1-1/4(31.75)
	Suction pipe	Inch (mm)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)
	Balance pipe	Inch (mm)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)
Refrigerant (R410A) / CO ₂ Eq.	kg / T		13.60/28.3968	15.10/31.5288	15.10/31.5288	16.60/34.6608	15.10/31.5288	16.60/34.6608	16.60/34.6608	16.60/34.6608
Maximum allowable indoor / outdoor capacity ratio %			50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18
	Simultaneous op.	°C	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24
Price	£		14331	15850	16557	18076	19531	21050	22464	24024

3-Pipe ECOi EX MF3 Series Combination from 34 to 48HP

HP			34HP	36HP	38HP	40HP	42HP	44HP	46HP	48HP
Model name			U-8MF3E8 U-10MF3E8 U-16MF3E8	U-8MF3E8 U-12MF3E8 U-16MF3E8	U-10MF3E8 U-12MF3E8 U-16MF3E8	U-8MF3E8 U-12MF3E8 U-16MF3E8	U-10MF3E8 U-16MF3E8 U-16MF3E8	U-12MF3E8 U-16MF3E8 U-16MF3E8	U-14MF3E8 U-16MF3E8 U-16MF3E8	U-16MF3E8 U-16MF3E8 U-16MF3E8
Power supply	Voltage	V	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415	380-400-415
	Phase		Three Phase	Three Phase	Three Phase	Three Phase	Three Phase	Three Phase	Three Phase	Three Phase
	Frequency	Hz	50	50	50	50	50	50	50	50
Cooling capacity	kW		96.0	101.0	107.0	113.0	118.0	124.0	130.0	135.0
EER ¹⁾	W/W		4.10	3.90	3.88	3.72	3.72	3.58	3.55	3.49
Running current cooling	A		38.60/36.70/35.40	42.30/40.20/38.70	45.60/43.30/41.70	50.20/47.70/46.00	52.40/49.70/47.90	56.50/53.70/51.80	61.10/58.10/56.00	63.90/60.70/58.50
Input power cooling	kW		23.40	25.90	27.60	30.40	31.70	34.60	36.60	38.70
Heating capacity	kW		108.0	113.0	119.0	127.0	132.0	138.0	145.0	150.0
COP ¹⁾	W/W		4.64	4.48	4.51	4.31	4.36	4.25	4.18	4.17
Running current heating	A		38.90/37.00/35.60	41.60/39.50/38.10	43.60/41.40/39.90	49.30/46.80/45.10	50.60/48.10/46.30	53.70/51.00/49.10	57.90/55.00/53.00	60.10/57.10/55.00
Input power heating	kW		23.30	25.20	26.40	29.50	30.30	32.50	34.70	36.00
Starting current	A		4.00	4.00	4.00	5.00	5.00	5.00	6.00	6.00
External static pressure (Max)	Pa		80	80	80	80	80	80	80	80
Air volume	m ³ /min		662	674	684	674	684	696	696	696
Sound pressure	Normal mode	dB(A)	64.00	64.50	65.00	65.50	66.00	66.50	66.50	67.00
	Silent mode 1 / 2	dB(A)	61.00/59.00	61.50/59.50	62.00/60.00	62.50/60.50	63.00/61.00	63.50/61.50	63.50/61.50	64.00/62.00
Sound power	Normal mode	dB	84.50	85.50	85.50	85.50	86.00	86.50	87.00	87.00
Dimension	H x W x D	mm	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000	1842 x 3540 (+120) x 1000
Net weight	kg		857	881	882	929	930	954	1002	1002
Piping connections ²⁾	Liquid pipe	Inch (mm)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)	3/4(19.05)/ 7/8(22.22)
	Discharge pipe	Inch (mm)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/8(28.58)/ 1-1/4(31.75)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/4(31.75)/ 1-1/2(38.10)
	Suction pipe	Inch (mm)	1-1/4(31.75)/ 1-1/2(38.10)	1-1/2(38.10)/ 1-5/8(41.28)	1-1/2(38.10)/ 1-5/8(41.28)	1-1/2(38.10)/ 1-5/8(41.28)	1-1/2(38.10)/ 1-5/8(41.28)	1-1/2(38.10)/ 1-5/8(41.28)	1-1/2(38.10)/ 1-5/8(41.28)	1-1/2(38.10)/ 1-5/8(41.28)
	Balance pipe	Inch (mm)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)	1/4(6.35)
Refrigerant (R410A) / CO ₂ Eq.	kg / T		21.90/45.72719	23.40/48.85919	23.40/48.85919	23.40/48.85919	23.40/48.85919	24.90/46.3536	24.90/51.9912	24.90/51.9912
Maximum allowable indoor / outdoor capacity ratio %			50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150	50 ~ 150
Operating range	Cool Min ~ Max	°C	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52	-10 ~ +52
	Heat Min ~ Max	°C	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18	-20 ~ +18
	Simultaneous op.	°C	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24	-10 ~ +24
Price	£		26343	27862	28569	30836	31543	33062	34476	36036

1) EER and COP calculation is based in accordance to EN14511. 2) Pipe diameter under 90m for ultimate indoor unit / over 90m for ultimate indoor unit (if the longest piping equivalent length exceeds 90m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes).