

MODULAR VRF 2-PIPE OR 3-PIPE FSXNSE (STANDARD) & FSXNPE (HIGH EFFICIENCY)

Sigma VRF has been specially designed for easier installation, commissioning and maintenance. Its flexible modular system achieves higher power combinations from fewer units, requiring less space, fewer pipe connections and delivering an installer friendly experience. Improved energy efficiency is achieved with a new, revolutionary DC inverter scroll compressor, Sigma shaped heat exchanger and new fan design to improve air flow. All units are compatible with Hitachi's System Free indoor units, including Hydro Free water modules, for the most flexible VRF system on the market.



NEW

FEATURES AND BENEFITS

- Market leading SCOP up to 5.06 and SEER up to 8.33
- Wide product range with single modules available from 8 to 24HP (standard) and 5 to 18HP (high efficiency)
- Combine 4 base outdoor units to achieve up to 96HP with a single system
- Smooth Drive Control adjusts outdoor unit capacity in 0.1Hz increments, expanding the working range down to 5% of maximum capacity for enhanced seasonal efficiency at part loads
- User comfort ensured with variable refrigerant temperature and controllable off coil temperatures to eliminate cold draughts
- Extended height difference of up to 110m between indoor and outdoor units
- Improved static pressure (80Pa) for outdoor unit installation flexibility
- 'Smart Building' ready for future proof installations
- Low noise operation, down -14 db(A)
- Efficient defrost cycles ensure continuous heating to enhance user comfort
- Installation flexibility with indoor units up 150% capacity of outdoor
- Market leading low refrigerant charge
- Motion sensor for up to 14% energy savings with System Free cassettes, ceiling suspended and ducted indoor units.

SYSTEM
FREE

FLEXIBILITY BUILT IN

Hitachi's System Free indoor units can be combined with outdoor units from either our Utopia splits or Set Free VRF ranges for ultimate flexibility.

MODULAR VRF 2-PIPE OR 3-PIPE FSXNSE (STANDARD)

Data shown in the tables is for guidance only, please refer to Technical Manual for further information.
Specification may change without notice.
** Preliminary Data



				RAS-8FSXNSE	RAS-10FSXNSE	RAS-12FSXNSE	RAS-14FSXNSE	RAS-16FSXNSE	RAS-18FSXNSE	RAS-20FSXNSE	RAS-22FSXNSE	RAS-24FSXNSE	RAS 26FSXNSE	RAS 28FSXNSE	RAS 30FSXNSE	RAS 32FSXNSE	RAS 34FSXNSE	RAS 36FSXNSE	RAS 38FSXNSE	RAS 40FSXNSE	RAS 42FSXNSE	RAS 44FSXNSE	RAS 46FSXNSE	RAS 48FSXNSE	RAS 50FSXNSE	RAS 52FSXNSE	RAS 54FSXNSE												
Combination	Unit 1			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-												
	Unit 2			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-												
	Unit 3			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-												
Power Data	Nominal Cooling capacity	kW		22.4	28	33.5	40	45	50	56	61.5	67	73	77.5	85	90	95	100	106	112	118	122	128	136	140	145	150												
	Nominal Heating capacity	kW		25	31.5	37.5	45	50	56	63	69	77.5	82.5	90	95	100	106	112	118	125	132	140	145	150	155	160	165												
	Power capacity at -7°C	kW		19.92	25.1	26.46	33.08	35.57	39.73	44.7	48.95	51.7	59.54	63.7	67.25	72.09	76.41	79.46	81.66	88.68	90.38	99.32	99.62	100.06	111.1	113.51	117.06												
Performance	EER			4.15	3.85	3.77	3.3	3.25	3.35	3.01	3.01	2.99	3.12	3.45	3.51	3.04	3.3	3.35	2.89	3.15	3.13	3.01	3	2.99	3.15	3.32	3.35												
	COP			4.75	4.57	4.1	3.74	3.37	3.29	3.35	3.19	3.4	3.9	3.65	3.57	3.48	3.33	3.29	3.52	3.23	3.35	3.19	3.3	3.4	3.41	3.31	3.29												
	SEER			7.5	7.17	6.97	7.47	7.3	6.96	6.29	6.76	6.2	7.3	6.3	7.11	7.36	7.18	7.2	6.63	6.93	6.57	6.75	6.45	6.19	7.3	7.18	7.2												
	SCOP			4.17	4.11	4.29	4.48	4.42	4.18	4.14	4.43	4.43	4.39	4.35	4.22	4.3	4.28	4.18	4.45	4.3	4.31	4.43	4.43	4.43	4.26	4.25	4.18												
	Operating range	Heating Cooling	°C		-20 ~ +15 -10 ~ +52										-20 ~ +15 -10 ~ +52										-20 ~ +15 -10 ~ +52														
Fan data	Air flow rate	m³/min		165	170	190	239	256	256	329	329	348	429	446	446	495	512	512	587	585	604	658	677	696	756	768	768												
	External static pressure	Pa		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80												
	Fan number			1	1	1	2	2	2	2	2	2	3	3	3	4	4	4	4	4	4	4	4	4	6	6	6												
Sound data	Sound power level **	dB(A)		80	82	82	85	85	86	86	84	86	87	87	87	89	89	89	89	88	89	87	88	89	90	90	91												
	Sound pressure level **	dB(A)		58	60	59	63	63	65	65	64	66	64.5	64.5	66	67	67	68	68	67.5	68.5	67	68	69	69	69	70												
Measurement	Dimensions (H x W x D)	mm		1725 x 959 x 784				1725 x 1219 x 784				1725 x 1609 x 784				1725 x 2198 x 784				1725 x 2458 x 784				1725 x 2848 x 784				1725 x 3238 x 784				1725 x 3697 x 784							
	Weight **	kg		210	210	233	289	332	333	382	396	397	528	565	466	622	665	666	587	729	730	792	793	794	955	998	999												
Technical information	Compressor			1	1	1	1	2	2	2	2	2	2	3	3	3	4	4	4	4	4	4	4	5	6	6													
	Connectable indoor units			26	32	39	45	52	58	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64												
Connexion data	Refrigerant			R410A												R410A												R410A											
	Refrigerant charge	kg		5	5	7.2	8.9	9.9	10.7	11.3	11.3	11.6	16.1	17.1	17.9	19.6	20.6	21.4	20.5	22	22.3	22.6	22.9	23.2	30.3	31.3	32.1												
	Refrigerant pipe size **	Liquid	mm		9.52	9.52	12.7	12.7	12.7	15.88	15.88	15.88	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05												
		Gas Low pressure	mm		19.05	19.05	25.4	25.4	28.58	28.58	28.58	28.58	31.75	31.75	31.75	31.75	31.75	31.75	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1												
	Gas High pressure **	mm		15.88	19.05	22.2	22.2	22.2	22.2	25.4	25.4	25.4	28.58	28.58	28.58	28.58	28.58	28.58	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75													
Electrical Data	Power supply			3-phase, 400 V, 50Hz												3-phase, 400 V, 50Hz												3-phase, 400 V, 50Hz											
	Maximum operating current	A		15.5	21.5	24	29.5	33	37.5	44.5	45	53	53	56.5	61	66.5	70.5	75	82.5	82	90.5	89.5	98	106	104	108	112												

MODULAR VRF 2-PIPE OR 3-PIPE FSXNPE (HIGH EFFICIENCY)

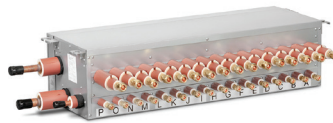


				RAS-5FSXNPE	RAS-6FSXNPE	RAS-8FSXNPE	RAS-10FSXNPE	RAS-12FSXNPE	RAS-14FSXNPE	RAS-16FSXNPE	RAS-18FSXNPE	RAS-20FSXNPE	RAS-22FSXNPE	RAS-24FSXNPE	RAS-26FSXNPE	RAS-28FSXNPE	RAS-30FSXNPE	RAS-32FSXNPE	RAS-34FSXNPE	RAS-36FSXNPE	RAS-38FSXNPE	RAS-40FSXNPE	RAS-42FSXNPE	RAS-44FSXNPE	RAS-46FSXNPE	RAS-48FSXNPE	RAS-50FSXNPE	RAS-52FSXNPE	RAS-54FSXNPE										
Combination	Unit 1			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											
	Unit 2			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											
	Unit 3			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											
Power Data	Nominal Cooling capacity	kW		14	16	22.4	28	33.5	40	45	50	56	61.5	67	73	77.5	85	90	95	100	106	112	118	122	128	136	140	145	150										
	Nominal Heating capacity	kW		25	25	25	31.5	37.5	45	50	56	63	69	77.5	82.5	90	95	100	106	112	118	125	132	140	145	150	155	160	165										
	Power capacity at -7°C	kW		13.38	15.04	20.92	25.10	27.78	34.93	40.06	41.46	50.20	52.88	57.41	65.96	69.76	70.35	75.64	81.52	82.92	88.98	95.73	102.47	105.30	110.57	114.09	116.36	121.47	122.17										
Performance	EER			4.82	4.75	4.44	4.53	3.97	3.47	3.91	3.91	4.53	4.21	3.97	4.13	3.94	3.93	3.7	3.91	3.91	3.77	3.6	3.47	3.77	3.63	3.92	3.77	3.91	3.91										
	COP			5.72	5.12	4.92	4.74	4.68	4.15	3.87	3.74	4.74	4.71	4.68	4.17	4.18	4.07	3.91	3.8	3.74	4.47	4.29	4.15	4.09	3.98	3.94	3.85	3.78	3.74										
	SEER			8.33	8	7.97	8.06	7.91	7.69	7.76	7.6	8.06	7.97	7.91	7.92	7.71	7.43	7.62	7.83	7.6	7.67	7.67	7.67	7.64	7.64	7.64	7.61	7.75	7.6										
	SCOP			5.06	4.58	4.55	4.73	4.81	4.63	4.84	4.81	4.74	4.71	3.68	4.17	4.18	4.07	3.8	3.74	4.64	4.74	4.68	4.63	4.68	4.63	4.68	4.64	4.7	4.6										
	Operating range	Heating Cooling	°C		-20 ~ +15 -10 ~ +52												-20 ~ +15 -10 ~ +52												-20 ~ +15 -10 ~ +52										
Fan data	Air flow rate	m³/min		150	170	185	219	219	243	326	326	438	438	438	545	545	581	605	688	724	681	705	729	824	848	943	967	1050	1086										
	External static pressure	Pa		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80										
	Fan number			1	1	1	2	2	2	2	2	4	4	4	4	4	4	4	4	6	6	6	6	6	6	6	6	6	6										
Sound data	Sound power level **	dB(A)		75	78	77	82	83	85	85	86	85	86	87	87	88	89	89	89	89	89	90	90	90	90	90	90	91											
	Sound pressure level **	dB(A)		54	56	55	59	60	62	65	65	62	62.5	63	66	66	66	67	68	68	65.5	66	67	67.5	68	68.5	69	70	70										
Measurement	Dimensions (H x W x D)	mm		1725 x 959 x 784				1725 x 1219 x 784				1725 x 2458 x 784				1725 x 2848 x 784				1725 x 3238 x 784				1725 x 3697 x 784				1725 x 4087 x 784				1725 x 4477 x 784				1725 x 4867 x 784			
	Weight **	kg		210	210	274	278	282	292	369	384	556	560	564	647	651	666	676	753	768	856	866	876	958	968	1050	1060	1137	1152										
Technical information	Compressor			1	1	1	1	1	2	2	2	2	2	3	4	4	4	4	4	3	3	3	4	4	4	5	5	6	6										
	Connectable indoor units			16	19	26	32	39	45	52	58	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64										
Connexion data	Refrigerant			R410A												R410A												R410A											
	Refrigerant charge	kg		4.7	5	8.5	8.5	9.3	9.3	10	10.6	17	17.8	18.6	18.5	19.3	19.9	19.9	20.6	21.2	27.9	27.9	27.9	29.2	30.5	30.5	30.5	31.2	31.8										
	Refrigerant pipe size **	Liquid	mm		9.52	9.52	9.52	9.52	12.7	12.7	12.7	15.88	15.88	15.88	12.7	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05	19.05										
		Gas Low pressure	mm		15.88	19.05	19.05	22.2	25.4	28.58	28.58	28.58	28.58	28.58	28.58	31.75	31.75	31.75	31.75	31.75	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1										
	Gas High pressure **	mm		15.88	15.88	15.88	19.05	22.2	22.2	22.2	22.2	22.2	25.4	25.4	25.4	25.4	28.58	28.58	28.58	28.58	28.58	31.75	31.75	31.75	31.75	31.75	31.75	31.75	31.75										
Electrical Data	Power supply			3-phase, 400 V, 50Hz												3-phase, 400 V, 50Hz												3-phase, 400 V, 50Hz											
	Maximum operating current	A		15.5	15.5	15.5	21.5	24	29.5	33	37.5	38.0	42.0	46.0	51.5	55.5	57.0																						

CHANGEOVER BOXES

Hitachi's range of single and multi port CH boxes can be installed or removed as building requirements change to switch from 2 to 3 pipe without changing the outdoor units. Both single and multi port boxes can be used on the same installation for maximum flexibility and adaptability.

- 13% fewer connections than competitor single port CH boxes
- Longer piping lengths
- No drain connections required
- Smallest footprint, lowest height and lightest of main competitor models



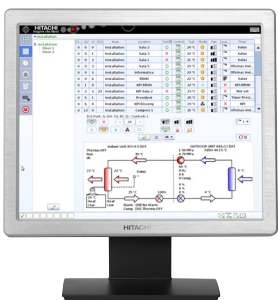
Type		Single Branch		Multiple Branch				
Model Name		CH-AP160SSX	CH-AP280SSX	CH-AP04MSSX	CH-AP08MSSX	CH-AP12MSSX	CH-AP16MSSX	
Electrical	Power Supply	1 ~ 230V 50Hz						
	Power Consumption	W	5	5	11.2	22.4	33.6	44.8
	Current	A	0.1	0.1	0.2	0.4	0.6	0.8
Maximum Total Capacity		kW	16	28	44.8	85	85	85
Number of Branches (for Indoor Unit)			1	1	4	8	12	16
Maximum Capacity per Branch		kW	-	-	16	16	16	16
Maximum Connectable Indoor Units per Branch			7	8	6	6	6	6
Dimensions (Height x Width x Depth)			191 x 301 x 214	191 x 301 x 214	260 x 303 x 352	260 x 543 x 352	260 x 783 x 352	260 x 1023 x 352

Set Free Sigma

VRF designed for specifiers, installers and end users



NEW



CS NET MANAGER

- Energy consumption monitoring room-by-room with CS Net central controls.