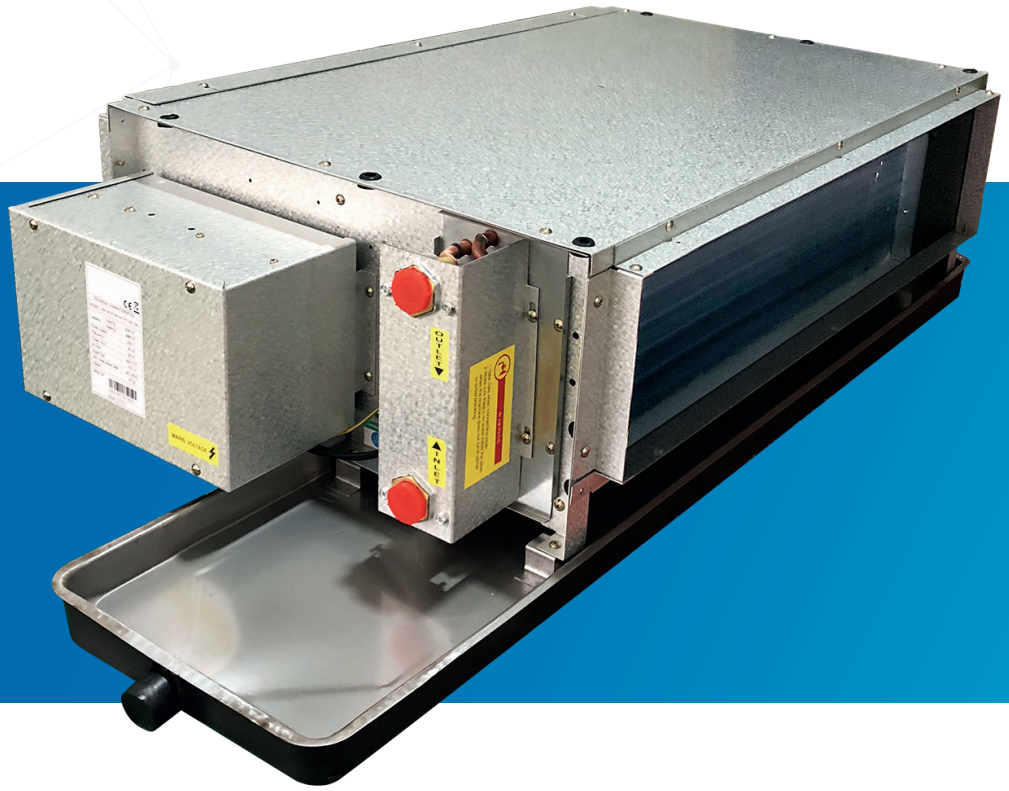
POLAR AIR

INSTALLATION, OPERATION & SERVICE MANUAL

LOW STATIC DUCTED PDWA



POLAR Global
HVAC SYSTEMS

YOUR SATISFACTION, OUR OBJECTIVE

INVESTING IN QUALITY, RELIABILITY & PERFORMANCE

ISO 9001 QUALITY

Every product is manufactured to meet the stringent requirements of the internationally recognized ISO 9001 standard for quality assurance in design, development and production.

World Leading Design and Technology

Equipped with the latest air-conditioning test rooms and manufacturing technology, we produce over 50,000 fan coil units each year, all conforming to the highest international standards of quality and safety.

CE SAFETY STANDARDS

All products conform to the Certificate Europe directives (Machinery Safety, Electromagnetic Compatibility and Low Voltage), as required throughout the European Community, to guarantee correct standards of safety.

The Highest Standards of Manufacturing

In order to guarantee the very highest standards and performance, we manage every stage in the manufacturing of our products. Throughout the production process we maintain strict control, starting with our extensive resources in research and development through to the design and manufacture of almost every individual component, from molded plastics to the assembly of units and controllers.

EUROVENT CERTIFICATION

Quality Controlled from Start to Finish

Our highly trained staff and strict quality control methods enable us to produce products with an exceptional reputation for reliability and efficiency, maintained over many years. As well as CE certification and ISO 9001, several products ranges have UL / ETL safety approval in the USA and Canada, Eurovent performance and sound certification as well as ROHS compliance for Europe, giving you the confidence of knowing our company is the right choice when selecting fan coil units.

WEEE MARK

All products conform to the "**WEEE**" directive to guarantee correct standards of environmental solutions.

ALWAYS MAKE SURE THIS MANUAL REMAINS WITH THE UNIT. READ THIS MANUAL BEFORE PERFORMING ANY OPERATION ON THE UNIT.

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Model Code Nomenclature

1	2	3	4	5	6	7
PDWA	-3R	-200	-V	-I	-AC	-LS

Notation		Description
1	**PDWA**	Low Static Hydronic Ducted Unit
2	**3R**	3R: 2-pipe 3 rows 4R: 2-pipe 4 rows 3+1R: 4-pipe with 3rows cooling and 1 row heating
3	**200**	Unit Size (See General Specification Section A for cooling and heating capacities.)
4	**V**	V – 2-pipe P – 4-pipe
5	**I**	Control type: I –Intelligent Control T – Terminal Strip only
6	**AC**	AC Motor
7	**LS**	Coil Connection : LS : Left Side RS : Right Side

A. Technical Data

A.1. General Description

The Duct Fan Coil is designed to meet and exceed the demanding requirements for efficiency and quiet operation.

Structure

The structure is made from heavy gauge galvanized steel panels with couplings for the connection of ducting and a gravity drain pan with insulation for condensation. Fire resistant insulation is optional for internal case to provide both thermal and acoustic insulation. Insulation is also fitted on the top of coil.

Condensate Pans

Positive sloped drain pans are steel and powder coated with self-extinguishing closed cell expanded polyethylene with thermal properties. The drain pan outlet is 3/4" (standard on the same side of coil connections).

Coils

Constructed with seamless copper tubes and headers. The tubes are mechanically expanded into corrugated aluminum fin material for a permanent primary to secondary surface bond. Coils are tested at 35 bar and recommended for maximum operation at 20 bar. Coils include manual air vent and water purge valve.

Fan Wheels

They are double inlet forward curved centrifugal type. Wheels are statically and dynamically balanced for smooth, quite operation. The housing is constructed from heavy gauge galvanized steel with die-formed inlet cones.

AC Motor

Standard motors are PSC, permanently lubricated type with internal thermal overload protection. The unit is using 3-speed AC motor.

Air filter

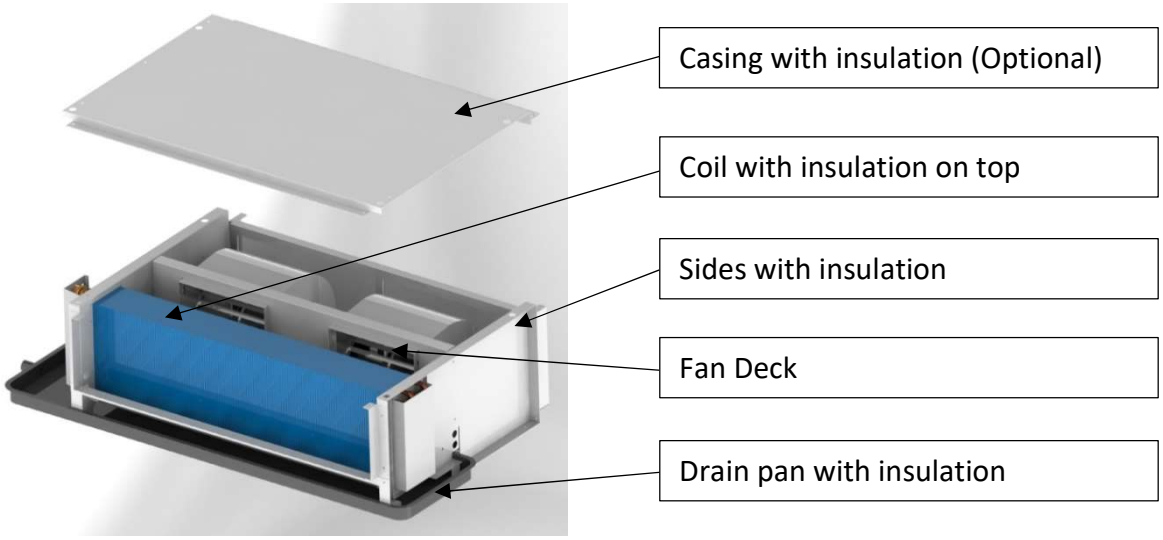
It is easily removable and washable and is made from self-extinguishing acrylic with an efficiency of class EU2 (G2) (Merv 2-4). G4 (Merv 8) efficiency is as optional.

CONTROL SYSTEMS

1. Intelligent control (I type)

Intelligent control board is controlled via Infra-red handset and/or Intelligent wired wall pad, is field programmable and easy to be configured through the wired wall pad or open Modbus protocol with VWV and VAV control logics, provides variable speed indoor fan control, integrates with Intelligent modulating valves to allow Auto Dynamic Balancing and Intelligent Constant Delta T management systems. It controls 2-pipe, 2-pipe with electric heater, 2-pipe with 6-way valve and 4-pipe systems.

2. Terminal Strip only (T type)



A.2. General Specifications

A.2.1. 2-pipe Systems

Product range: PDWA-3R Low Static Hydronic Ducted Fan Coil Unit

PDWA-3R-V~ Hydronic Ducted 2-pipe Unit with 3-row Coils and AC motor

PDWA-3R-[Size]-V~					200B	300	400	500	600	800	1000	1200	1400	1600B
Unit Configuration		Configuration			2-pipe									
		Number Of Fan Blowers			Single		Twin			Three	Four		Three	Four
		Power Supply (V/Ph/Hz)			220-240 / 1 / 50-60[e]									
Performance Data	Air	Air Flow[e]	H	m3/hr	463	574	784	913	1085	1363	1611	1915	2477	3198
			M		429	553	746	892	1051	1310	1554	1871	2374	3019
			L		401	524	656	749	953	1146	1413	1767	2247	2912
		ESP[e]	H	Pa	52	54	59	55	62	56	52	60	60	57
			M		50	50	50	50	50	50	50	50	50	50
			L		35	35	30	32	39	31	35	40	43	39
	Cooling	Cooling Capacity[e]	H	kW	2.82	3.39	4.34	5.13	5.84	8.39	8.74	10.21	13.25	15.54
			M		2.66	3.29	4.19	5.02	5.7	8.13	8.53	10.06	12.86	14.85
			L		2.52	3.17	3.79	4.43	5.3	7.35	7.95	9.67	12.27	14.4
		Sensible Cooling Capacity[e]	H		2.03	2.42	3.15	3.69	4.16	5.98	6.31	7.39	9.55	11.14
			M		1.91	2.34	3.03	3.6	4.05	5.78	6.15	7.27	9.25	10.62
			L		1.8	2.25	2.72	3.14	3.74	5.18	5.7	6.95	8.77	10.25
		Latent Cooling Capacity	H	kW	0.79	0.97	1.19	1.44	1.68	2.41	2.43	2.82	3.7	4.4
			M		0.75	0.95	1.16	1.42	1.65	2.35	2.38	2.79	3.61	4.23
			L		0.72	0.92	1.07	1.29	1.56	2.17	2.25	2.72	3.5	4.15
		FCEER[e]	Rating		31.0	40.8	33.5	39.1	33.2	38.7	37.5	31.8	35.2	32.3
			Class		D	C	D	D	D	D	D	D	D	D
	Heating	Heating Capacity[e]	H	kW	2.43	3.04	3.98	4.67	5.52	7.13	8.23	9.52	12.2	15.3
			M		2.32	2.95	3.82	4.6	5.38	6.94	8.02	9.36	11.9	14.6
			L		2.2	2.82	3.47	3.99	5.03	6.26	7.42	8.96	11.4	14.3
		Max. Electric Heater Capacity@220V			2	3	4	5	5	6	6	6	6	6
		FCCOP[e]	Rating		27.0	36.4	30.6	35.2	31.4	32.9	35.0	29.5	32.6	32.2
			Class		D	D	D	D	D	D	D	D	D	D
	Sound	Sound Pressure Level (Outlet)		dB(A)	48/47/43	50/49/46	52/50/44	52/51/46	54/52/49	53/52/47	56/54/50	58/55/52	58/54/50	59/57/55
		Sound Pressure Level (Inlet + Radiated)			50/49/45	52/51/48	54/52/46	54/53/48	56/54/51	55/54/49	58/56/52	60/57/54	60/56/52	61/59/57
		Sound Power Level (Outlet)[e]			57/56/52	59/58/55	61/59/53	61/60/55	63/61/58	62/61/56	65/63/59	67/64/61	67/63/59	68/66/64
		Sound Power Level (Inlet + Radiated)[e]			59/58/54	61/60/57	63/61/55	63/62/57	65/63/60	64/63/58	67/65/61	69/66/63	69/65/61	70/68/66
	Electrical	Fan Motor Power[e]	H	W	86	82	120	123	167	204	222	314	430	554
			M		85	80	120	122	166	203	220	310	365	494
			L		82	78	116	117	163	194	216	307	345	424
		Fan Motor Running Current @ H		A	0.29	0.36	0.52	0.53	0.73	0.89	0.97	1.37	1.87	2.41
		Fan Motor Starting Current @ H		A	0.87	1.07	1.57	1.60	2.18	2.66	2.90	4.10	5.61	7.23
	Hydraulic	Cooling Water Flow Rate	H	L/h	483	581	744	880	1002	1438	1498	1751	2272	2663
			M		456	564	718	861	976	1394	1463	1724	2205	2546
			L		433	543	649	760	908	1260	1363	1658	2104	2468
		Cooling Pressure Drop[e]	H	kPa	23.6	36.47	20.51	30.04	41.16	46.3	17.45	24.15	44.88	63.92
			M		21.42	34.68	19.29	28.9	39.41	43.94	16.75	23.52	42.65	59.2
			L		19.58	32.5	16.27	23.4	34.82	37	14.86	22	39.38	56.14
		Heating Water Flow Rate	H	L/h	417	522	682	801	947	1223	1412	1632	2099	2615
			M		397	505	655	788	922	1190	1374	1605	2033	2501
			L		377	484	596	685	862	1074	1272	1535	1947	2444
		Heating Pressure Drop[e]	H	kPa	15.4	25.5	14.8	21.6	31.6	29.8	13.3	18.1	33.4	52.9
			M		14.2	24.1	13.8	21	30.2	28.4	12.7	17.6	31.6	49.1
			L		12.9	22.4	11.7	16.5	27	23.8	11.1	16.3	29.4	47.2
		water content		L	0.72	0.87	1.02	1.17	1.32	1.92	2.07	2.22	2.59	2.87
Construction and Packing Data		Water Connections	Type		Socket (Threaded Female)									
			In	mm [in]	19.05 [3/4]									
			Out											
		Condensate Drainage Connection												
		Dimensions	L	mm	755	855	955	1055	1155	1555	1655	1795	1655	1915
			W		550								620	
			H		250								300	
		Net Weight		kg	17	23	24	28	31	36	43	45	51	60

"e": Above specifications are based on declared Eurovent test data for the year of publication of this document. To confirm the most updated specifications, please visit www.eurovent-certification.com.

Eurovent testing conditions:

a. Cooling mode:
- Return air temperature: 27C DB/ 19C WB.
- Inlet/ outlet water temperature: 7C/ 12C.

b. Heating mode:
- Return air temperature: 20C.
- Inlet/ Outlet water temperature: 45C/ 40C.

Note: For I-control models only, dimension "L" adds 100 mm.

Product range: PDWA-4R Low Static District Cooling Hydronic Ducted Fan Coil Unit
PDWA-4R-V~ Hydronic Ducted 2-pipe Unit with 4-row Coils and AC motor

		PDWA-4R-[Size]-V~				200	300	400	500	600	800	1000	1200	1400	1600
Unit Configuration		Configuration				2-pipe									
		Number Of Fan Blowers				Single		Twin			Three	Four		Three	Four
		Power Supply (V/Ph/Hz)				220-240 / 1 / 50-60									
Performance Data	Air	Air Flow	H	3	m3/hr	421	516	775	922	1146	1325	1607	2054	2345	3019
			M	2		351	473	678	849	1010	1207	1509	1854	2129	2731
			L	1		280	365	503	623	847	944	1227	1630	1942	2486
		Available pressure	H	3	Pa	50	50	50	50	50	50	50	50	50	50
			M	2		50	50	50	50	50	50	50	50	50	50
			L	1		50	50	50	50	50	50	50	50	50	50
	Cooling	Cooling Capacity	H	3	kW	2.72	3.23	4.67	5.89	6.89	8.23	10.42	12.92	14.57	16.95
			M	2		2.36	3.03	4.22	5.52	6.26	7.66	9.94	11.9	13.58	15.74
			L	1		1.99	2.47	3.37	4.35	5.47	6.36	8.5	10.87	12.66	14.64
		Sensible Cooling Capacity	H	3		1.9	2.24	3.26	4.97	4.84	5.73	7.25	9.02	10.26	11.92
			M	2		1.63	2.09	2.92	4.64	4.37	5.29	6.88	8.27	9.48	11.02
			L	1		1.37	1.68	2.3	3.59	3.78	4.36	5.82	7.48	8.79	10.17
	Sound	Sound Pressure Level (Outlet)			dB(A)	48/47/43	50/49/46	52/50/44	52/51/46	54/52/49	53/52/47	56/54/50	58/55/52	58/54/50	59/57/55
		Sound Pressure Level (Inlet + Radiated)				50/49/45	52/51/48	54/52/46	54/53/48	56/54/51	55/54/49	58/56/52	60/57/54	60/56/52	61/59/57
		Sound Power Level (Outlet)				57/56/52	59/58/55	61/59/53	61/60/55	63/61/58	62/61/56	65/63/59	67/64/61	67/63/59	68/66/64
		Sound Power Level (Inlet + Radiated)				59/58/54	61/60/57	63/61/55	63/62/57	65/63/60	64/63/58	67/65/61	69/66/63	69/65/61	70/68/66
	Electrical	Fan Motor Power	H	3	W	68	82	120	123	167	204	222	314	410	414
			M	2		66	81	120	122	166	203	220	310	368	372
			L	1		59	79	117	117	163	194	216	307	327	330
		Fan Motor Running Current @ H			A	0.29	0.36	0.52	0.53	0.73	0.89	0.97	1.37	1.87	2.41
		Fan Motor Starting Current @ H			A	0.87	1.07	1.57	1.60	2.18	2.66	2.90	4.10	5.61	7.23
	Hydraulic	Cooling Water Flow Rate	H		L/h	466	553	801	1010	1181	1411	1787	2214	2498	2905
			M			404	519	723	946	1074	1313	1704	2040	2328	2698
			L			342	423	577	746	938	1090	1456	1863	2170	2510
		Cooling Pressure Drop	H		kPa	40.7	61.2	129.9	70.4	100.4	82.0	130.4	202.1	96.8	136.5
			M			31.5	54.6	108.1	62.5	84.5	72.0	119.8	174.4	85.2	119.5
			L			23.3	37.7	72.0	40.8	66.3	51.5	90.2	148.1	75.1	104.9
		Water content			L	0.96	1.16	1.36	1.56	1.76	2.56	2.76	2.96	3.45	3.79
Construction and Packing Data		Water	Type			Socket (Threaded Female)									
		Connections	In		in	3/4									
			Out												
		Condensate Drainage Connection													
		Dimensions	L		mm	755	855	955	1055	1155	1555	1655	1795	1655	1915
			W			550								620	
			H			250								300	
		Net Weight			kg	17	23	24	28	31	36	43	45	51	60

a. Cooling mode:
- Return air temperature: 27C DB/ 19C WB.
- Inlet/ outlet water temperature: 7C/ 12C.

Note: For I-control models only, dimension "L" adds 100 mm.

Product range: PDWA-6R Low Static District Cooling Hydronic Ducted Fan Coil Unit
PDWA-6R-V~ Hydronic Ducted 2-pipe Unit with 6-row Coils and AC motor

PDWA-6R-[Size]-V~						200	300	400	500	600	800	1000	1200	1400	1600
Unit Configuration		Configuration				2-pipe									
		Number Of Fan Blowers				Single		Twin			Three		Four	Three	Four
		Power Supply (V/Ph/Hz)				220-240 / 1 / 50-60									
Performance Data	Air	Air Flow	H	3	m3/hr	372	458	696	829	1048	1186	1448	1871	2161	2736
			M	2		318	431	626	785	946	1113	1401	1729	2006	2543
			L	1		262	344	476	592	813	900	1172	1561	1854	2358
		Available pressure	H	3	Pa	50	50	50	50	50	50	50	50	50	50
			M	2		50	50	50	50	50	50	50	50	50	50
			L	1		50	50	50	50	50	50	50	50	50	50
	Cooling	Cooling Capacity	H	3	kW	8.91	2.74	3.49	4.98	5.98	7.37	10.7	13.46	15.61	19.09
			M	2		2.44	3.34	4.61	5.75	6.83	8.52	10.41	12.67	14.68	18.12
			L	1		2.09	2.78	3.73	4.66	6.09	7.18	9.1	11.74	13.87	17.13
		Sensible Cooling Capacity	H	3		6.02	1.88	2.36	3.42	4.09	5.08	7.25	9.19	10.6	13.12
			M	2		1.65	2.25	3.14	3.91	4.67	5.74	7.04	8.61	9.92	12.4
			L	1		1.41	1.86	2.51	3.14	4.13	4.81	6.12	7.94	9.34	11.68
	Sound	Sound Pressure Level (Outlet)			dB(A)	48/47/43	50/49/46	52/50/44	52/51/46	54/52/49	53/52/47	56/54/50	58/55/52	58/54/50	59/57/55
		Sound Pressure Level (Inlet + Radiated)				50/49/45	52/51/48	54/52/46	54/53/48	56/54/51	55/54/49	58/56/52	60/57/54	60/56/52	61/59/57
		Sound Power Level (Outlet)				57/56/52	59/58/55	61/59/53	61/60/55	63/61/58	62/61/56	65/63/59	67/64/61	67/63/59	68/66/64
		Sound Power Level (Inlet + Radiated)				59/58/54	61/60/57	63/61/55	63/62/57	65/63/60	64/63/58	67/65/61	69/66/63	69/65/61	70/68/66
	Electrical	Fan Motor Power	H	3	W	67	82	120	123	167	204	222	314	430	554
			M	2		66	80	120	122	166	203	220	310	365	494
			L	1		58	78	116	117	163	194	216	307	345	424
		Fan Motor Running Current @ H			A	0.29	0.36	0.52	0.53	0.73	0.89	0.97	1.37	1.78	1.8
		Fan Motor Starting Current @ H			A	0.87	1.07	1.57	1.6	2.18	2.66	2.9	4.1	5.44	5.4
	Hydraulic	Cooling Water Flow Rate	H		L/h	1527	471	599	854	1025	1264	1834	2307	2676	3272
			M			418	573	790	985	1171	1460	1784	2172	2517	3106
			L			358	476	640	798	1044	1231	1559	2013	2377	2936
		Cooling Pressure Drop	H		kPa	141.34	63.35	106.35	72.42	108.61	77.74	112.37	178.43	164.82	115.02
			M			51.1	98.24	62.99	101.16	67.69	130.28	106.96	160.07	147.61	104.7
			L			38.83	70.34	43.11	69.23	55.09	95.91	83.95	139.54	133.2	94.65
		Water content			L	0.96	1.16	1.36	1.56	1.76	2.56	2.76	2.96	3.45	3.79
Construction and Packing Data		Water Connections	Type		in	Socket (Threaded Female)									
			In			3/4”									
			Out												
		Condensate Drainage Connection													
		Dimensions	L		mm	755	855	955	1055	1155	1555	1655	1795	1655	1915
			W			590								660	
			H			250								300	
		Net Weight			kg	17	23	24	28	31	36	43	45	51	60

a. Cooling mode:

- Return air temperature: 27C DB/ 19C WB.

- Inlet/ outlet water temperature: 7C/ 12C.

Note: For I-control models only, dimension "L" adds 100 mm.

A.2.2. 4-pipe Systems

Product range: PDWA-3+1R Low Static Hydronic Ducted Fan Coil Unit

PDWA-3R+1-P~ Hydronic Ducted 4-pipe Unit with 3-row Coils and AC motor

Unit Configuration		**PDWA-3R+1-[Size]-P~**				**200**	**300**	**400**	**500**	**600**	**800**	**1000**	**1200**	**1400**	**1600**
		Configuration				4-pipe									
		Number Of Fan Blowers				Single		Twin			Three	Four		Three	Four
		Power Supply			(V/Ph/Hz)	220-240 / 1 / 50-60									
Performance Data	**Air**	Air Flow	H	3	m3/hr	421	516	775	922	1146	1325	1607	2054	2345	3019
			M	2		351	473	678	849	1010	1207	1509	1854	2129	2731
			L	1		280	365	503	623	847	944	1227	1630	1942	2486
		Available pressure	H	3	Pa	50	50	50	50	50	50	50	50	50	50
			M	2		50	50	50	50	50	50	50	50	50	50
			L	1		50	50	50	50	50	50	50	50	50	50
	Cooling	Cooling Capacity	H	3	kW	2.42	2.98	4.09	4.91	5.78	7.61	8.3	10.3	12.03	14.11
			M	2		2.11	2.79	3.71	4.62	5.27	7.05	7.9	9.48	11.18	13.13
			L	1		1.76	2.28	2.94	3.61	4.58	5.85	6.76	8.65	10.5	12.21
		Sensible Cooling Capacity	H	3		1.73	2.11	2.97	3.53	4.13	5.4	6	7.47	8.63	10.09
			M	2		1.49	1.97	2.68	3.31	3.74	4.97	5.68	6.84	7.96	9.31
			L	1		1.24	1.59	2.09	2.55	3.23	4.1	4.83	6.19	7.44	8.62
		Latent Cooling Capacity	H	3		0.69	0.87	1.12	1.38	1.65	2.21	2.3	2.83	3.4	4.02
			M	2		0.62	0.82	1.03	1.31	1.53	2.08	2.22	2.64	3.22	3.82
			L	1		0.52	0.69	0.85	1.06	1.35	1.75	1.93	2.46	3.06	3.59
	Heating	Heating Capacity	H	3	kW	1.85	2.26	3.21	3.78	4.51	5.6	6.6	8.04	9.02	11.21
			M	2		1.61	2.13	2.91	3.57	4.09	5.23	6.3	7.45	8.36	10.43
			L	1		1.36	1.73	2.3	2.8	3.58	4.33	5.35	6.75	7.86	9.7
		Max. Electric Heater Capacity				2	3	4	5	6					
	Sound	Sound Pressure Level (Outlet)			dB(A)	48/47/43	50/49/46	52/50/44	52/51/46	54/52/49	53/52/47	56/54/50	58/55/52	58/54/50	59/57/55
		Sound Pressure Level (Inlet + Radiated)				50/49/45	52/51/48	54/52/46	54/53/48	56/54/51	55/54/49	58/56/52	60/57/54	60/56/52	61/59/57
		Sound Power Level (Outlet)				57/56/52	59/58/55	61/59/53	61/60/55	63/61/58	62/61/56	65/63/59	67/64/61	67/63/59	68/66/64
		Sound Power Level (Inlet + Radiated)				59/58/54	61/60/57	63/61/55	63/62/57	65/63/60	64/63/58	67/65/61	69/66/63	69/65/61	70/68/66
	Electrical	Fan Motor Power	H	3	W	67	82	120	123	167	204	222	314	430	554
			M	2		66	80	120	122	166	203	220	310	365	494
			L	1		58	78	116	117	163	194	216	307	345	424
		Fan Motor Running Current @ H			A	0.29	0.36	0.52	0.53	0.73	0.89	0.97	1.37	1.87	2.41
		Fan Motor Starting Current @ H			A	0.87	1.07	1.57	1.60	2.18	2.66	2.90	4.10	5.61	7.23
	Hydraulic	Cooling Water Flow Rate		3	L/h	414	511	702	842	990	1304	1423	1765	2063	2419
				2		362	479	637	793	903	1208	1354	1625	1917	2250
				1		302	391	504	620	786	1004	1160	1482	1800	2094
		Cooling Pressure Drop		3	kPa	24.76	39.97	25.53	38.18	54.96	53.22	21.75	33.59	51.69	74
				2		19.42	35.47	21.42	34.21	46.57	46.39	19.89	28.96	45.31	64.99
				1		13.99	24.59	14.04	21.96	36.23	33.22	15.04	24.54	40.43	57.08
		Heating Water Flow Rate		3	L/h	159	194	275	324	386	480	566	689	773	961
				2		138	183	249	306	351	448	540	638	717	894
				1		116	148	197	240	307	371	459	578	673	832
		Heating Pressure Drop		3	kPa	7.4	11.94	24.86	36.65	7.9	15.54	22.2	33.61	3.77	6
				2		5.72	10.72	20.78	32.93	6.65	13.72	20.43	29.24	3.3	5.27
				1		4.23	7.35	13.64	21.25	5.22	9.77	15.22	24.5	2.95	4.63
		Cooling water content			L	0.72	0.87	1.02	1.17	1.32	1.92	2.07	2.22	2.59	2.84
		Heating water content				0.24	0.29	0.34	0.39	0.44	0.64	0.69	0.74	0.86	0.95
Construction and Packing Data		Water Connections	Type			Socket (Threaded Female)									
			In		mm [in]	3/4”									
			Out												
		Condensate Drainage Connection													
		Dimensions	L		mm	755	855	955	1055	1155	1555	1655	1795	1655	1915
			W			550								620	
			H			250								300	
		Net Weight			Kg	17	23	24	28	31	36	43	45	51	60

a. Cooling mode:
- Return air temperature: 27C DB/ 19C WB.
- Inlet/ outlet water temperature: 7C/ 12C.

b. Heating mode:
- Return air temperature: 20C.
- Inlet /outlet water temperature: 65C/55C.

Note: For I-control models only, dimension "L" adds 100 mm.

Product range: PDWA-3+2R Low Static Hydronic Ducted Fan Coil Unit

PDWA-3R+2-P~ Hydronic Ducted 4-pipe Unit with 3-row Coils and AC motor

PDWA-3R+2-[Size]-P~						200	300	400	500	600	800	1000	1200	1400	1600
Unit Configuration		Configuration				4-pipe									
		Number Of Fan Blowers				Single		Twin			Three		Four	Three	Four
		Power Supply			(V/Ph/Hz)	220-240 / 1 / 50-60									
Performance Data	Air	Air Flow	H	3	m3/hr	397	487	736	875	1097	1255	1528	1963	2253	2878
			M	2		335	452	652	817	978	1160	1455	1792	2067	2637
			L	1		271	354	490	608	830	922	1200	1595	1898	2422
		Available pressure	H	3	Pa	50	50	50	50	50	50	50	50	50	50
			M	2		50	50	50	50	50	50	50	50	50	50
			L	1		50	50	50	50	50	50	50	50	50	50
	Cooling	Cooling Capacity	H	3	kW	2.3	2.84	3.95	4.73	5.6	7.3	7.97	9.93	11.66	13.57
			M	2		2.03	2.69	3.6	4.48	5.13	6.86	7.69	9.26	10.99	12.67
			L	1		1.72	2.22	2.87	3.57	4.48	5.71	6.62	8.49	10.3	11.98
		Sensible Cooling Capacity	H	3		1.64	2	2.86	3.39	3.99	5.16	5.73	7.19	8.34	9.66
			M	2		1.43	1.89	2.58	3.19	3.63	4.82	5.52	6.66	7.81	8.96
			L	1		1.2	1.55	2.04	2.52	3.16	4	4.72	6.07	7.29	8.45
		Latent Cooling Capacity	H	3		0.66	0.84	1.09	1.34	1.61	2.14	2.24	2.74	3.32	3.91
			M	2		0.6	0.8	1.02	1.29	1.5	2.04	2.17	2.6	3.18	3.71
			L	1		0.52	0.67	0.83	1.05	1.32	1.71	1.9	2.42	3.01	3.53
	Heating	Heating Capacity	H	3	kW	2.87	3.56	5.1	5.98	7.33	8.96	10.58	13.08	14.95	18.48
			M	2		2.54	3.37	4.63	5.65	6.71	8.38	10.19	12.17	14.02	17.34
			L	1		2.14	2.78	3.7	4.51	5.93	6.99	8.74	11.1	13.05	16.16
		Max. Electric Heater Capacity				2	3	4	5	6					
	Sound	Sound Pressure Level (Outlet)			dB(A)	48/47/43	50/49/46	52/50/44	52/51/46	54/52/49	53/52/47	56/54/50	58/55/52	58/54/50	59/57/55
		Sound Pressure Level (Inlet + Radiated)				50/49/45	52/51/48	54/52/46	54/53/48	56/54/51	55/54/49	58/56/52	60/57/54	60/56/52	61/59/57
		Sound Power Level (Outlet)				57/56/52	59/58/55	61/59/53	61/60/55	63/61/58	62/61/56	65/63/59	67/64/61	67/63/59	68/66/64
		Sound Power Level (Inlet + Radiated)				59/58/54	61/60/57	63/61/55	63/62/57	65/63/60	64/63/58	67/65/61	69/66/63	69/65/61	70/68/66
	Electrical	Fan Motor Power	H	3	W	67	82	120	123	167	204	222	314	430	554
			M	2		66	80	120	122	166	203	220	310	365	494
			L	1		58	78	116	117	163	194	216	307	345	424
		Fan Motor Running Current @ H			A	0.29	0.36	0.52	0.53	0.73	0.89	0.97	1.37	1.78	1.8
		Fan Motor Starting Current @ H			A	0.87	1.07	1.57	1.6	2.18	2.66	2.9	4.1	5.35	5.4
	Hydraulic	Cooling Water Flow Rate		3	L/h	395	487	677	811	959	1252	1366	1702	1999	2326
				2		348	462	617	768	879	1176	1319	1587	1884	2172
				1		294	381	492	612	768	980	1135	1456	1765	2054
		Cooling Pressure Drop		3	kPa	22.75	36.61	23.91	35.68	51.91	49.44	20.21	31.44	48.84	68.96
				2		18.12	33.24	20.22	32.3	44.33	44.16	18.96	27.75	43.89	60.98
				1		13.38	23.55	13.47	21.51	34.79	31.8	14.46	23.75	39.04	55.13
		Heating Water Flow Rate		3	L/h	246	305	437	513	628	768	907	1121	1281	1584
				2		218	289	397	484	575	718	873	1043	1202	1486
				1		184	238	317	387	508	600	749	951	1118	1385
		Heating Pressure Drop		3	kPa	4.83	7.95	16.8	7.91	12.37	23.49	15.1	23.4	11.34	17.94
				2		3.88	7.21	14.13	7.13	10.55	20.86	14.11	20.55	10.11	16
				1		2.85	5.08	9.44	4.76	8.45	15.06	10.7	17.42	8.88	14.09
		Cooling water content			L	0.72	0.87	1.02	1.17	1.32	1.92	2.07	2.22	2.59	2.84
		Heating water content				0.24	0.29	0.34	0.39	0.44	0.64	0.69	0.74	0.86	0.95
Construction and Packing Data		Water Connections	Type			Socket(Threaded Female)									
			In		mm [in]	3/4”									
			Out												
		Condensate Drainage Connection													
		Dimensions	L		mm	755	855	955	1055	1155	1555	1655	1795	1655	1915
			W			590								660	
			H			250								300	
		Net Weight			Kg	17	23	24	28	31	36	43	45	51	60

Note: For I-control models only, dimension "L" adds 100 mm.

a. Cooling mode:

- Return air temperature: 27C DB/ 19C WB.
- Inlet/ outlet water temperature: 7C/ 12C.

b. Heating mode:

- Return air temperature: 20C.
- Inlet/ outlet water temperature: 65C/55C.

Product range: PDWA-4R+1 Low Static Hydronic Ducted Fan Coil Unit

PDWA-4R+1-P~ Hydronic Ducted 4-pipe Unit with 4-row Coils and AC motor

PDWA-4R+1-[Size]-P~						200	300	400	500	600	800	1000	1200	1400	1600
Unit Configuration		Configuration				4-pipe									
		Number Of Fan Blowers				Single		Twin			Three		Four	Three	Four
		Power Supply			(V/Ph /Hz)	220-240 / 1 / 50-60									
Performance Data	Air	Air Flow	H	3	m3/hr	397	487	736	875	1097	1255	1528	1963	2253	2878
			M	2		335	452	652	817	978	1160	1455	1792	2067	2637
			L	1		271	354	490	608	830	922	1200	1595	1898	2422
		Available pressure	H	3	Pa	50	50	50	50	50	50	50	50	50	50
			M	2		50	50	50	50	50	50	50	50	50	50
			L	1		50	50	50	50	50	50	50	50	50	50
	Cooling	Cooling Capacity	H	3	kW	2.6	3.1	4.48	5.65	6.7	7.85	10.02	12.46	14.13	16.34
			M	2		2.27	2.92	4.09	5.4	6.12	7.39	9.7	11.63	13.24	15.25
			L	1		1.92	2.41	3.29	4.26	5.42	6.21	8.32	10.67	12.42	14.39
		Sensible Cooling Capacity	H	3		1.81	2.15	3.11	4.75	4.7	5.43	6.94	8.68	9.91	11.48
			M	2		1.57	2.01	2.82	4.52	4.26	5.09	6.69	8.05	9.22	10.64
			L	1		1.32	1.64	2.25	3.52	3.74	4.25	5.7	7.34	8.62	9.98
		Latent Cooling Capacity	H	3		0.79	0.95	1.37	0.9	2	2.42	3.08	3.78	4.22	4.86
			M	2		0.7	0.91	1.27	0.88	1.86	2.3	3.01	3.58	4.02	4.61
			L	1		0.6	0.77	1.04	0.74	1.68	1.96	2.62	3.33	3.8	4.41
	Heating	Heating Capacity	H	3	kW	1.78	2.17	3.09	3.63	4.37	5.37	6.36	7.78	8.77	10.86
			M	2		1.56	2.05	2.81	3.47	4.02	5.09	6.12	7.24	8.19	10.16
			L	1		1.32	1.69	2.25	2.73	3.54	4.23	5.22	6.61	7.69	9.52
		Max. Electric Heater Capacity				2	3	4	5	6					
	Sound	Sound Pressure Level (Outlet)			dB(A)	48/47/43	50/49/46	52/50/44	52/51/46	54/52/49	53/52/47	56/54/50	58/55/52	58/54/50	59/57/55
		Sound Pressure Level (Inlet + Radiated)				50/49/45	52/51/48	54/52/46	54/53/48	56/54/51	55/54/49	58/56/52	60/57/54	60/56/52	61/59/57
		Sound Power Level (Outlet)				57/56/52	59/58/55	61/59/53	61/60/55	63/61/58	62/61/56	65/63/59	67/64/61	67/63/59	68/66/64
		Sound Power Level (Inlet + Radiated)				59/58/54	61/60/57	63/61/55	63/62/57	65/63/60	64/63/58	67/65/61	69/66/63	69/65/61	70/68/66
	Electrical	Fan Motor Power	H	3	W	67	82	120	123	167	204	222	314	430	554
			M	2		66	80	120	122	166	203	220	310	365	494
			L	1		58	78	116	117	163	194	216	307	345	424
		Fan Motor Running Current @ H			A	0.29	0.36	0.52	0.53	0.73	0.89	0.97	1.37	1.78	1.8
		Fan Motor Starting Current @ H			A	0.87	1.07	1.57	1.6	2.18	2.66	2.9	4.1	5.35	5.4
	Hydraulic	Cooling Water Flow Rate		3	L/h	445	532	768	968	1148	1346	1718	2135	2423	2801
				2		390	501	701	925	1049	1267	1662	1993	2269	2615
				1		330	413	565	731	929	1065	1426	1830	2130	2466
		Cooling Pressure Drop		3	kPa	37.57	57.02	120.32	65.1	95.36	75.28	121.5	189.3	91.56	127.86
				2		29.55	51.24	102.16	60.02	81.07	67.53	114.5	167.2	81.4	112.94
				1		21.86	36.11	69.28	39.24	65.21	49.4	86.88	143.4	72.62	101.67
		Heating Water Flow Rate		3	L/h	153	186	265	311	375	460	545	667	752	931
				2		134	176	241	298	345	436	524	621	702	870
				1		114	145	192	234	304	362	448	566	659	816
		Heating Pressure Drop		3	kPa	6.87	11.07	23.25	34	7.48	14.4	20.78	31.68	3.59	5.67
				2		5.42	10.03	19.56	31.36	6.44	13.05	19.35	27.82	3.18	5.02
				1		4.04	7.03	13.06	20.3	5.12	9.35	14.55	23.58	2.83	4.47
		Cooling water content			L	0.72	0.87	1.02	1.17	1.32	1.92	2.07	2.22	2.59	2.84
		Heating water content				0.24	0.29	0.34	0.39	0.44	0.64	0.69	0.74	0.86	0.95
Construction and Packing Data		Water Connections	Type			Socket(Threaded Female)									
			In		mm [in]	3/4"									
			Out												
		Condensate Drainage Connection													
		Dimensions	L		mm	755	855	955	1055	1155	1555	1655	1795	1855	1915
			W			590								660	
			H			250								300	
		Net Weight			Kg	17	23	24	28	31	36	43	45	51	60

Note: For I-control models only, dimension "L" adds 100 mm.

a. Cooling mode:
- Return air temperature: 27C DB/ 19C WB.
- Inlet/ outlet water temperature: 7C/ 12C.

b. Heating mode:
- Return air temperature: 20C.
- Inlet/ outlet water temperature: 65C/55C.

Product range: PDWA-4R+2 Low Static Hydronic Ducted Fan Coil Unit

PDWA-4R+2-P~ Hydronic Ducted 4-pipe Unit with 4-row Coils and AC motor

PDWA-4R+2-[Size]-P~						200	300	400	500	600	800	1000	1200	1400	1600
Unit Configuration		Configuration				4-pipe									
		Number Of Fan Blowers				Single			Twin			Three		Four	
		Power Supply			(V/Ph /Hz)	220-240 / 1 / 50-60									
Performance Data	Air	Air Flow	H	3	m3/hr	372	458	696	829	1048	1186	1448	1871	2161	2736
			M	2		318	431	626	785	946	1113	1401	1729	2006	2543
			L	1		262	344	476	592	813	900	1172	1561	1854	2358
		Available pressure	H	3	Pa	50	50	50	50	50	50	50	50	50	50
			M	2		50	50	50	50	50	50	50	50	50	50
			L	1		50	50	50	50	50	50	50	50	50	50
	Cooling	Cooling Capacity	H	3	kW	2.46	2.95	4.32	5.44	6.46	7.53	9.61	11.99	13.69	15.74
			M	2		2.19	2.82	3.99	5.23	5.97	7.19	9.36	11.35	12.89	14.89
			L	1		1.88	2.35	3.22	4.22	5.32	6.07	8.14	10.48	12.19	14.01
		Sensible Cooling Capacity	H	3		1.7	2.03	3	4.56	4.52	5.19	6.63	8.34	9.57	11.02
			M	2		1.5	1.93	2.75	4.37	4.15	4.94	6.44	7.84	8.96	10.36
			L	1		1.28	1.6	2.2	3.48	3.66	4.15	5.58	7.2	8.45	9.7
		Latent Cooling Capacity	H	3		0.76	0.92	1.32	0.88	1.94	2.34	2.98	3.65	4.12	4.72
			M	2		0.69	0.89	1.24	0.86	1.82	2.25	2.92	3.51	3.93	4.53
			L	1		0.6	0.75	1.02	0.74	1.66	1.92	2.56	3.28	3.74	4.31
	Heating	Heating Capacity	H	3	kW	2.74	3.4	4.87	5.75	7.1	8.55	10.09	12.51	14.55	17.83
			M	2		2.43	3.24	4.51	5.5	6.53	8.13	9.88	11.81	13.74	16.84
			L	1		2.1	2.71	3.61	4.4	5.8	6.91	8.53	10.86	12.91	15.82
		Max. Electric Heater Capacity				2	3	4	5	6					
	Sound	Sound Pressure Level (Outlet)			dB(A)	48/47/43	50/49/46	52/50/44	52/51/46	54/52/49	53/52/47	56/54/50	58/55/52	58/54/50	59/57/55
		Sound Pressure Level (Inlet + Radiated)				50/49/45	52/51/48	54/52/46	54/53/48	56/54/51	55/54/49	58/56/52	60/57/54	60/56/52	61/59/57
		Sound Power Level (Outlet)				57/56/52	59/58/55	61/59/53	61/60/55	63/61/58	62/61/56	65/63/59	67/64/61	67/63/59	68/66/64
		Sound Power Level (Inlet + Radiated)				59/58/54	61/60/57	63/61/55	63/62/57	65/63/60	64/63/58	67/65/61	69/66/63	69/65/61	70/68/66
	Electrical	Fan Motor Power	H	3	W	67	82	120	123	167	204	222	314	430	554
			M	2		66	80	120	122	166	203	220	310	365	494
			L	1		58	78	116	117	163	194	216	307	345	424
		Fan Motor Running Current @ H			A	0.29	0.36	0.52	0.53	0.73	0.89	0.97	1.37	1.78	1.8
		Fan Motor Starting Current @ H			A	0.87	1.07	1.57	1.6	2.18	2.66	2.9	4.1	5.35	5.4
	Hydraulic	Cooling Water Flow Rate		3	L/h	422	506	740	932	1107	1290	1648	2056	2347	2698
				2		375	484	684	897	1024	1233	1605	1946	2210	2553
				1		322	403	552	723	912	1040	1396	1797	2089	2401
		Cooling Pressure Drop		3	kPa	34.04	52.07	112.59	60.85	89.28	69.74	112.7	176.9	86.48	119.47
				2		27.6	48	97.83	56.74	77.66	64.28	107.4	160.1	77.58	108.15
				1		20.93	34.57	66.53	38.48	62.98	47.32	83.58	138.7	70.14	96.86
		Heating Water Flow Rate		3	L/h	235	292	417	493	609	733	865	1072	1247	1528
				2		208	278	387	471	560	697	847	1013	1178	1443
				1		180	232	310	378	497	592	731	931	1106	1356
		Heating Pressure Drop		3	kPa	4.46	7.33	15.45	7.36	11.7	21.62	13.86	21.6	10.8	16.82
				2		3.59	6.73	13.47	6.8	10.06	19.73	13.36	19.49	9.75	15.18
				1		2.75	4.86	9.03	4.56	8.13	14.72	10.23	16.75	8.71	13.56
		Cooling water content			L	0.72	0.87	1.02	1.17	1.32	1.92	2.07	2.22	2.59	2.84
		Heating water content				0.24	0.29	0.34	0.39	0.44	0.64	0.69	0.74	0.86	0.95
Construction and Packing Data		Water Connections	Type			Socket(Threaded Female)									
			In		mm [in]	3/4”									
			Out												
		Condensate Drainage Connection													
		Dimensions	L		mm	755	855	955	1055	1155	1555	1655	1795	1855	1915
			W			590								660	
			H			250								300	
		Net Weight			Kg	17	23	24	28	31	36	43	45	51	60

Note: For I-control models only, dimension "L" adds 100 mm.

a. Cooling mode:
- Return air temperature: 27C DB/ 19C WB.
- Inlet/ outlet water temperature: 7C/ 12C.

b. Heating mode:
- Return air temperature: 20C.
- Inlet/ outlet water temperature: 65C/55C.

A.3. Coil Data

3-row Coils

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	Fin width (mm)	No. of Circuits	Tube Ø (mm)
PDWA(3R)-200	200	480	12.7	3	66	2	9.52
PDWA(3R)-300		580				2	
PDWA(3R)-400		680				3	
PDWA(3R)-500		780				3	
PDWA(3R)-600		880				3	
PDWA(3R)-800		1280				4	
PDWA(3R)-1000		1380				6	
PDWA(3R)-1200		1480				6	
PDWA(3R)-1400	250	1380				6	
PDWA(3R)-1600		1480				6	

4-row Coils

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	Fin width (mm)	No. of Circuits	Tube Ø (mm)
PDWA(4R)-200	200	480	12.7	4	88	2	9.52
PDWA(4R)-300		580				2	
PDWA(4R)-400		680				2	
PDWA(4R)-500		780				3	
PDWA(4R)-600		880				3	
PDWA(4R)-800		1280				4	
PDWA(4R)-1000		1380				4	
PDWA(4R)-1200		1480				4	
PDWA(4R)-1400	250	1380				6	
PDWA(4R)-1600		1480				6	

6-row Coils

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	Fin width (mm)	No. of Circuits	Tube Ø (mm)
PDWA(6R)-200	200	480	12.7	6	110	2	9.52
PDWA(6R)-300		580				2	
PDWA(6R)-400		680				3	
PDWA(6R)-500		780				3	
PDWA(6R)-600		880				4	
PDWA(6R)-800		1280				4	
PDWA(6R)-1000		1380				5	
PDWA(6R)-1200		1480				5	
PDWA(6R)-1400	250	1380				6	
PDWA(6R)-1600		1480				6	

Heating Coil Data (4-pipe system 1-row heating coil)

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	Fin width (mm)	No. of Circuits	Tube Ø (mm)
PDWA(1R)-200	200	480	12.7	1	22	1	9.52
PDWA(1R)-300		580				1	
PDWA(1R)-400		680				1	
PDWA(1R)-500		780				1	
PDWA(1R)-600		880				2	
PDWA(1R)-800		1280				2	
PDWA(1R)-1000		1380				2	
PDWA(1R)-1200		1480				2	
PDWA(1R)-1400	250	1380				5	
PDWA(1R)-1600		1480				5	

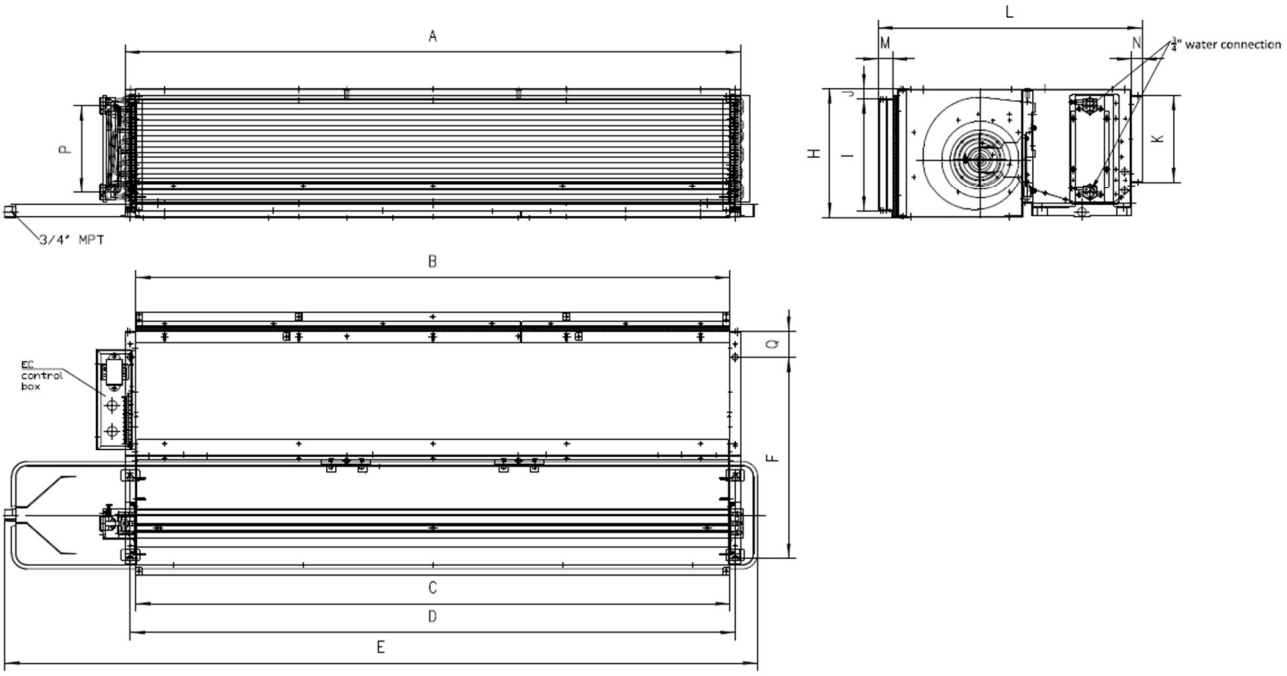
Heating Coil Data (4-pipe system with 2-row removable heating coil)

Model	Fin height (mm)	Fin Length (mm)	Fins per Inch	No. of Rows	Fin width (mm)	No. of Circuits	Tube Ø (mm)
PDWA(2R)-200	200	480	12.7	2	44	2	9.52
PDWA(2R)-300		580				2	
PDWA(2R)-400		680				2	
PDWA(2R)-500		780				2	
PDWA(2R)-600		880				2	
PDWA(2R)-800		1280				3	
PDWA(2R)-1000		1380				3	
PDWA(2R)-1200		1480				4	
PDWA(2R)-1400	250	1380				5	
PDWA(2R)-1600		1480				5	

A.4. Dimensional Drawings

2-pipe

A.4.1. Dimensional drawings for PDWA(3R)/ PDWA(4R)/ PDWA(6R)



A.4.2. Dimensions for PDWA(3R)/ PDWA(4R)

Model	A	B	C	D	E	F	G	H
PDWA-200	535	485	485	510	755	400	ϕ14	250
PDWA-300	635	585	585	610	855	400	ϕ14	250
PDWA-400	735	685	685	710	955	400	ϕ14	250
PDWA-500	835	785	785	810	1055	400	ϕ14	250
PDWA-600	935	885	885	910	1155	400	ϕ14	250
PDWA-800	1335	1285	1285	1310	1555	400	ϕ14	250
PDWA-1000	1435	1385	1385	1410	1655	400	ϕ14	250
PDWA-1200	1575	1525	1525	1550	1795	400	ϕ14	250
PDWA-1400	1435	1385	1385	1410	1655	470	ϕ14	300
PDWA-1600	1695	1645	1645	1670	1915	470	ϕ14	300

Model	I	J	K	L	M	N	P	Q
PDWA-200	213	25	153	546	35	25	152	60
PDWA-300	213	25	153	546	35	25	152	60
PDWA-400	213	25	153	546	35	25	152	60
PDWA-500	213	25	153	546	35	25	152	60
PDWA-600	213	25	153	546	35	25	152	60
PDWA-800	213	25	153	546	35	25	152	60
PDWA-1000	213	25	153	546	35	25	152	60
PDWA-1200	213	25	153	546	35	25	152	60
PDWA-1400	263	25	203	616	35	25	202	60
PDWA-1600	263	25	203	616	35	25	202	60

A.4.3. Dimensions for PDWA(6R)

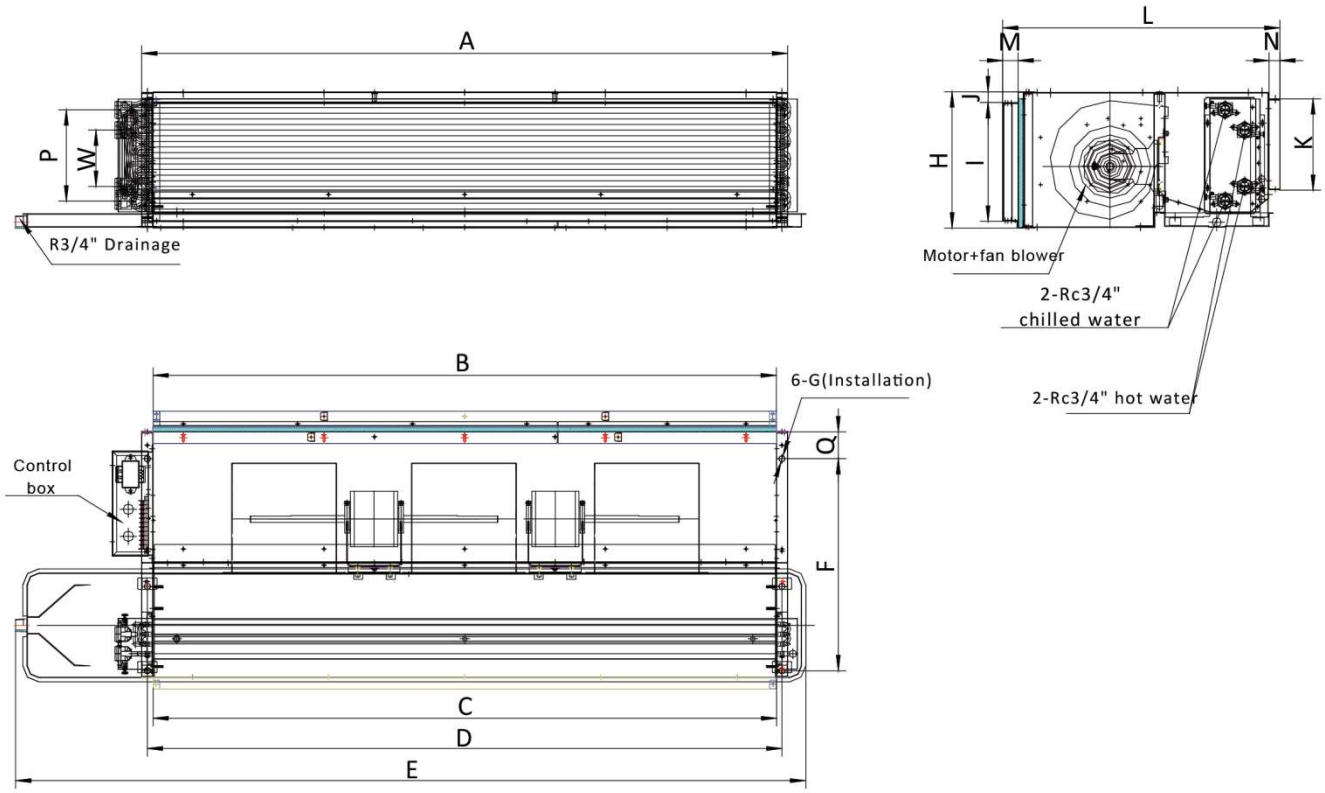
Model	A	B	C	D	E	F	G	H
PDWA-200	535	485	485	510	755	444	ϕ14	250
PDWA-300	635	585	585	610	855	444	ϕ14	250
PDWA-400	735	685	685	710	955	444	ϕ14	250
PDWA-500	835	785	785	810	1055	444	ϕ14	250
PDWA-600	935	885	885	910	1155	444	ϕ14	250
PDWA-800	1335	1285	1285	1310	1555	444	ϕ14	250
PDWA-1000	1435	1385	1385	1410	1655	444	ϕ14	250
PDWA-1200	1575	1525	1525	1550	1795	444	ϕ14	250
PDWA-1400	1435	1385	1385	1410	1655	514	ϕ14	300
PDWA-1600	1695	1645	1645	1670	1915	514	ϕ14	300

Model	I	J	K	L	M	N	P	Q
PDWA-200	213	25	153	590	35	25	152	60
PDWA-300	213	25	153	590	35	25	152	60
PDWA-400	213	25	153	590	35	25	152	60
PDWA-500	213	25	153	590	35	25	152	60
PDWA-600	213	25	153	590	35	25	152	60
PDWA-800	213	25	153	590	35	25	152	60
PDWA-1000	213	25	153	590	35	25	152	60
PDWA-1200	213	25	153	590	35	25	152	60
PDWA-1400	263	25	203	660	35	25	202	60
PDWA-1600	263	25	203	660	35	25	202	60

(All dimensions shown in mm)

4-pipe

A.4.4. Dimensional Drawings For PDWA(3R+1)/ PDWA(3R+2)/ PDWA(4R+2)



A.4.5. Dimensions for PDWA(3R+1)

Model	A	B	C	D	E	F	G	H
PDWA-200	535	485	485	510	755	400	ϕ14	250
PDWA-300	635	585	585	610	855	400	ϕ14	250
PDWA-400	735	685	685	710	955	400	ϕ14	250
PDWA-500	835	785	785	810	1055	400	ϕ14	250
PDWA-600	935	885	885	910	1155	400	ϕ14	250
PDWA-800	1335	1285	1285	1310	1555	400	ϕ14	250
PDWA-1000	1435	1385	1385	1410	1655	400	ϕ14	250
PDWA-1200	1575	1525	1525	1550	1795	400	ϕ14	250
PDWA-1400	1435	1385	1385	1410	1655	470	ϕ14	300
PDWA-1600	1695	1645	1645	1670	1915	470	ϕ14	300

Model	I	J	K	L	M	N	P	Q	W
PDWA-200	213	25	153	546	35	25	152	60	75
PDWA-300	213	25	153	546	35	25	152	60	75
PDWA-400	213	25	153	546	35	25	152	60	75
PDWA-500	213	25	153	546	35	25	152	60	75
PDWA-600	213	25	153	546	35	25	152	60	75
PDWA-800	213	25	153	546	35	25	152	60	75
PDWA-1000	213	25	153	546	35	25	152	60	75
PDWA-1200	213	25	153	546	35	25	152	60	75
PDWA-1400	263	25	203	616	35	25	202	60	125
PDWA-1600	263	25	203	616	35	25	202	60	125

A.4.6. Dimensions for PDWA(3R+2)/PDWA(4R+2)

Model	A	B	C	D	E	F	G	H
PDWA-200	535	485	485	510	755	444	ϕ14	250
PDWA-300	635	585	585	610	855	444	ϕ14	250
PDWA-400	735	685	685	710	955	444	ϕ14	250
PDWA-500	835	785	785	810	1055	444	ϕ14	250
PDWA-600	935	885	885	910	1155	444	ϕ14	250
PDWA-800	1335	1285	1285	1310	1555	444	ϕ14	250
PDWA-1000	1435	1385	1385	1410	1655	444	ϕ14	250
PDWA-1200	1575	1525	1525	1550	1795	444	ϕ14	250
PDWA-1400	1435	1385	1385	1410	1655	514	ϕ14	300
PDWA-1600	1695	1645	1645	1670	1915	514	ϕ14	300

Model	I	J	K	L	M	N	P	Q	W
PDWA-200	213	25	153	590	35	25	152	60	75
PDWA-300	213	25	153	590	35	25	152	60	75
PDWA-400	213	25	153	590	35	25	152	60	75
PDWA-500	213	25	153	590	35	25	152	60	75
PDWA-600	213	25	153	590	35	25	152	60	75
PDWA-800	213	25	153	590	35	25	152	60	75
PDWA-1000	213	25	153	590	35	25	152	60	75
PDWA-1200	213	25	153	590	35	25	152	60	75
PDWA-1400	263	25	203	660	35	25	202	60	125
PDWA-1600	263	25	203	660	35	25	202	60	125

(All dimensions shown in mm)

A.5. Sound Data

Sound Power (Inlet + Radiated)

Model		PDWA-200			PDWA-300			PDWA-400			PDWA-500			PDWA-600		
speed		**H**	**M**	**L**	**H**	**M**	**L**	**H**	**M**	**L**	**H**	**M**	**L**	**H**	**M**	**L**
Sound Power dB(A)		**59.5**	**58.2**	**54**	**60.8**	**60.5**	**56.7**	**63**	**61**	**55.3**	**62.6**	**61.6**	**56.8**	**65.4**	**63.7**	**60.5**
Sound Power in 1/3 Octave-bands under rated ESP (dB)	20Hz	17.3	17.9	18	14.6	17.7	20.4	23.8	21.8	23.2	18.8	20.6	25.5	22.7	24.8	13.9
	25Hz	20	16.1	12.7	15.7	17.8	19.7	27.9	22.7	23.4	22.4	22.1	18.1	20.2	19.4	18.9
	31.5Hz	17.7	17.9	11.7	20	20.2	16.4	22.4	19.7	15.9	19.9	16.8	14.4	19.7	17.4	16.2
	40Hz	18.8	16.6	11.7	15.9	14.7	15.8	17.8	14.6	13.4	16.6	18.9	14.9	17.8	20.2	16.7
	50Hz	18.8	18.2	15.5	18.5	19.7	17.4	20.2	19.7	18.9	22	20.5	19.8	21.2	21.4	21.2
	63Hz	20.6	22	19.3	25.6	22.9	19.1	21.2	17.5	19.5	26.3	23.1	24.9	23.2	22.7	22.4
	80Hz	25.4	22.7	21.1	25.9	26.3	24.6	27.4	28	21.8	29.6	28.3	23.8	29.9	28.6	27
	100Hz	30.1	26.1	22.7	30	27.6	28.2	29.7	28	22	32	29.2	26.5	33.3	32.4	32.8
	125Hz	34.7	35.2	29.1	36.6	37.9	32	36.4	37.1	29.5	40	39.5	32.5	43.2	41.6	35.8
	160Hz	42.7	41.6	35.8	46.3	45.5	39.7	45.1	43	36.2	46.2	44.8	40.8	47.6	48.7	42
	200Hz	42.1	42.2	37.5	47	47.7	42.1	46.5	44	38.6	48.2	45.2	39.7	50.8	46.6	43.3
	250Hz	43	42.8	36.9	46.2	46.7	42.2	45	44.6	36.6	46.6	45.6	40.8	49.9	47.8	44
	315Hz	44.5	43.8	39.9	45.6	44.9	41.6	48.7	48	42.2	48.4	47.3	43.7	53.4	50.2	47.4
	400Hz	49.9	47.7	43.7	49.6	49.3	45.5	51.3	49.5	45.1	52.3	50.8	45.8	54.3	52.8	50.8
	500Hz	53.1	52.4	47.2	54.2	53.8	50.9	55.1	54.9	49.3	54.1	54.7	50.2	57.5	55.9	53.5
	630Hz	53.1	51.1	47	52.6	53.2	49.1	56.3	54.2	47.5	56.2	55	50	59	56.5	54.7
	800Hz	48.7	46.2	43.7	51.9	50.4	47	53.3	51.1	45.2	51.6	50.8	46.1	55.2	53.1	49.4
	1000Hz	50.3	48.7	43.8	50.2	48.8	45.1	54.7	52.6	46.3	52.8	51.8	46.9	54.8	54.4	50.5
	1250Hz	45.8	44.4	40.6	48.1	46.9	42.6	50.1	47.8	41.3	49.5	48.2	43.7	52.7	50.9	47.5
	1600Hz	48	46.2	41.1	48.2	47.7	44	51.1	49.5	42.3	51.2	50.2	44.6	54	51.7	47.9
	2000Hz	44.9	43.4	39	47	46.3	42.3	49.2	46.9	39.9	49.3	47.7	42.3	52.8	49.8	46.1
	2500Hz	43.8	41.1	35.1	45.3	44.4	39.4	47.2	45.3	37.4	47.1	45.7	39.7	50.4	48.1	44.1
	3150Hz	41.7	39.2	32.1	42.5	41.6	36.5	45.3	42.9	35.1	45.3	44	37.3	49.5	46.9	42.1
	4000Hz	38	37.2	28.4	39.4	39	33.5	42.6	39.6	31.8	41.4	39.5	32.6	46.1	43.1	38.1
	5000Hz	34.3	35.8	24.6	36.1	35.5	30	38.5	35.4	27.7	37.8	36.6	29.1	43.2	40	35.4
	6300Hz	29.6	34	21.4	32.5	31.3	25.5	36	32.9	24.6	34.2	32.3	25.3	38.3	35.5	30
	8000Hz	27.1	32.3	20.4	27.8	27.1	21.8	33.7	30.1	21.8	30.8	28.8	22.5	35.1	32.2	26.4
	10000Hz	22.6	28.7	17.1	23.2	22.2	18.6	29.6	25.6	19.1	25.7	23.7	19	30.5	27.2	22.1
	12500Hz	17	24.7	13.1	18.2	16.6	14.1	23.5	19.7	15.1	19.8	17.9	14.9	23.4	20.6	16.4
	16000Hz	11.9	24.1	9.7	19.2	11.1	13.5	15.9	13.3	11.6	13.3	12.3	11.3	15.8	13.8	11.7

Model		PDWA-800			PDWA-1000			PDWA-1200			PDWA-1400			PDWA-1600		
speed		**H**	**M**	**L**	**H**	**M**	**L**	**H**	**M**	**L**	**H**	**M**	**L**	**H**	**M**	**L**
Sound Power dB(A)		**63.9**	**62.5**	**58.1**	**66.3**	**65.4**	**61.5**	**68.6**	**66.5**	**63.4**	**69.1**	**65.9**	**61.1**	**70.1**	**68.4**	**66.7**
Sound Power in 1/3 Octave-bands under rated ESP (dB)	20Hz	23	24.3	18.3	22.2	21.5	21.8	20	25.6	20.7	26.5	17.3	19.7	21.8	18.4	18.2
	25Hz	19.8	22.2	13.8	21.5	17.8	19.2	18.3	19.6	17.2	20.9	14.5	22	19.3	20.6	22.6
	31.5Hz	20.2	20.8	14.9	23	19.7	19.7	27.1	26.1	21.4	17.1	19	19.1	18.4	19.4	17.2
	40Hz	22.2	21.8	16.5	26	22.7	17.8	26.4	24.6	23.6	20.4	18.4	20.1	24.7	24.6	23.2
	50Hz	21.7	20.2	18.9	26.6	24.4	19.2	23.6	21.2	21.8	24.1	21.2	17.1	33.3	25.1	21.6
	63Hz	27.6	26.2	24.4	27.8	30.3	25.5	28.5	29.6	27.7	29.2	27.6	24.8	36.5	33.1	27.6
	80Hz	33.1	32.8	28	32.6	33.4	27.6	35.1	33.4	31.8	32.9	29.3	25.1	37.1	34.9	35.7
	100Hz	35.9	37.9	37.4	37.5	34.9	32.1	38	36.3	35	36.7	35.7	32.1	43.6	46.5	49
	125Hz	45.3	43.6	44.3	41.1	41.3	38.5	46	44.3	39.5	46.5	38.5	40.7	48.4	44.5	44.8
	160Hz	49.7	46.6	42.2	46	45.9	43.6	50.8	48.1	44.1	52.6	47.9	43.1	52.3	50	49.7
	200Hz	50.1	46	43.4	48.9	48.7	45.1	51.5	50	47.6	53.2	50.2	45	53.2	52.3	51
	250Hz	49.3	48.3	43.6	50.1	49.6	43.8	54.2	51.3	47.7	55.5	50	45.6	55.7	52.6	52.6
	315Hz	50	48.8	44.5	51	52.3	47.2	55.7	54.9	50.4	55	50.3	46.8	57.9	56.4	56.2
	400Hz	53.2	53.4	48.3	54.5	53.9	49.9	57.3	56	52.2	58.7	55.5	51.9	59.7	59.4	57.6
	500Hz	56.4	55	52.1	57.9	56.5	53.3	59.4	58.6	55.8	59.8	56.2	52.1	60.9	58.9	57.5
	630Hz	56.5	55.8	50.8	57.9	58.2	54.9	58.4	57.5	54.3	60.1	58.1	53	58.9	57.6	55.4
	800Hz	54.6	52.3	46.6	57.3	58.2	53	59.8	56.7	52.7	60.9	57.1	51.9	61.2	60.3	57.8
	1000Hz	52.5	51	47	55.5	54.6	50.9	60.2	57.6	54.7	58.4	54.2	49.6	59.8	57.5	55.2
	1250Hz	51.1	49.9	44.4	55.1	54.6	50.8	56	54.2	50.6	59.3	56.2	50.1	59.3	57.9	55.7
	1600Hz	51.9	50.1	45.2	55.5	54.4	49.9	56.9	54.6	51.4	57.9	54.5	49	58.7	56.6	54.4
	2000Hz	49.5	48.7	43.3	55.4	54.3	49	56.6	53.8	50.4	55.9	52.5	47.2	55.6	53.6	51.2
	2500Hz	48.4	46.9	41	52.4	50.9	45.5	54.9	52.4	48.4	55.6	52.3	46.3	55.2	53.4	50.8
	3150Hz	46.4	44.9	38.7	50.5	49.1	44	53.2	50.7	46.1	54.4	50.2	44.2	54.6	52.9	49.7
	4000Hz	44	42.4	36	47.2	45.7	40.1	50.9	48.4	43.9	52.3	48.1	42.1	52.3	50.3	47
	5000Hz	39.5	38	30.9	43.8	42.6	36.1	47.3	44.8	40	49.6	45	38.9	50.3	48	44.6
	6300Hz	36.4	34.3	27.4	39.1	38.1	31.5	43.4	40.4	34.7	45.4	41.1	34.7	47.8	45.4	42.1
	8000Hz	32.9	31.3	24.3	35.5	34.3	27.9	39.9	36.4	30.8	43.6	39	31.9	46.5	43.8	40.2
	10000Hz	28.6	27.1	20.8	30.7	29.6	23.2	34.8	31.3	25.6	38.7	33.6	26.7	42.8	39.9	36
	12500Hz	22.5	20.6	16.3	23.7	22.5	17.3	28.8	25.4	20	32.1	26.6	22	36.2	33.3	29.3
	16000Hz	25.5	14.1	12.3	15.8	15	12	23.7	17.2	13.1	22.8	17.6	16.2	28	24.9	20.7

B. Installation

B.1. Safety Precautions

- When installing, performing maintenance or servicing Polar Air fan coil units observe the precautions stated in this manual as well as those stated on the labels attached to the unit.
- Ensure all local and national safety codes, laws, regulations, as well as general electrical and mechanical safety guidelines are followed for installation, maintenance and service.
- The appliance is for indoor use only.
- Ensure the correct power supply is provided.
- If the power supply cord is damaged, it must be replaced by qualified personnel.
- Installing and servicing fan coil unit should be performed by qualified service personnel only.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or persons lacking in experience and knowledge of the appliance, unless they have been given supervision or instruction concerning it.
- User of this appliance is responsible for his/her own safety.
- Warranty shall be voided if installation instructions and safety precaution stated in this manual are not observed.
- Never cut off the mains supply when unit is under operation. The unit should only be switched off by using the ON-OFF button on the control interface.
- During connections, select pipe pliers according to pipe diameter to avoid damaging units over forced.
- Untreated frozen water and cooling water may cause dirt accumulation and corrosion. Suggest using treated water. Suggested working water pressure is below 1.6 Mpa.
- When units are in cooling mode, suggested freezing water degree is ≥ 7℃; When units are in heating mode, suggested hot water degree is ≤ 60 ℃.
- Condensate water pipe, water connection pipe, water connectors and solenoid valve body must remain heat to avoid condensation.

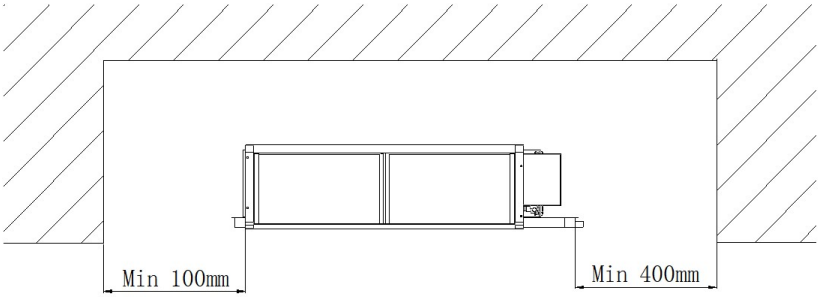
CAUTIONS

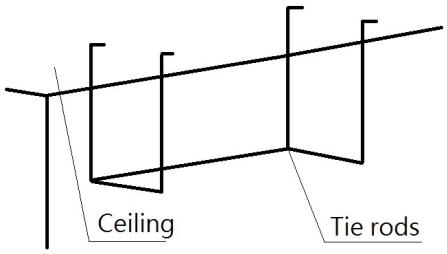
Before any service or maintenance operations turn off the mains electrical supply.

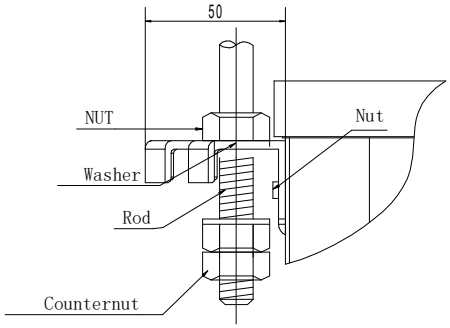
DO NOT turn OFF the main power supply when the unit is operating. Turn off the unit BEFORE turning off the main power

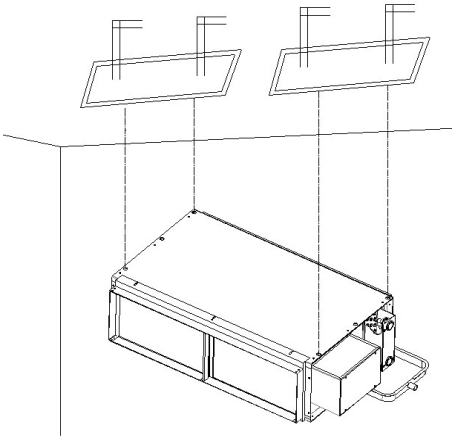
B.2. Location

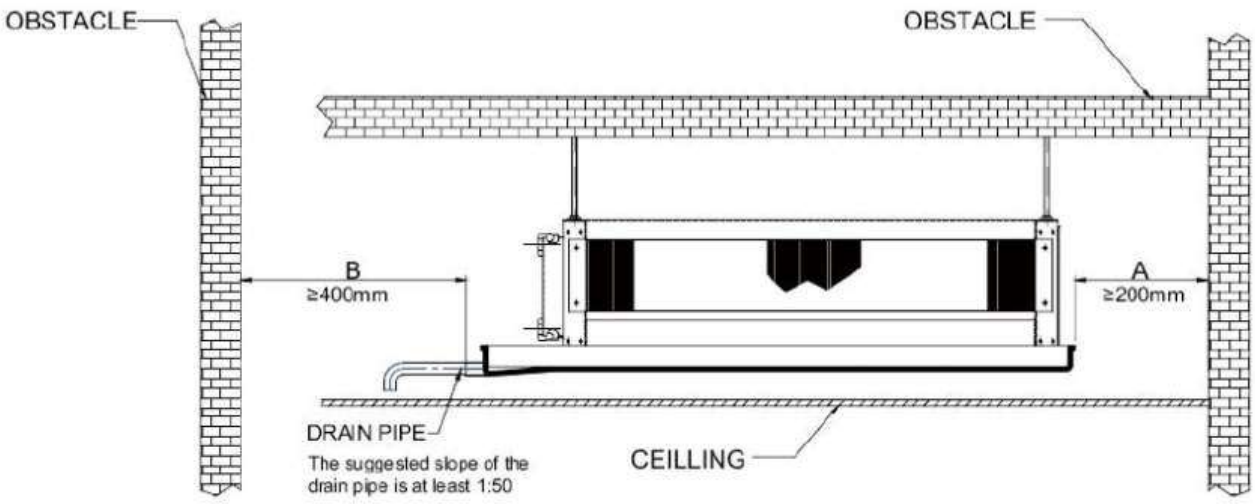
- Confirm there is enough space for unit installation and maintenance. Please refer to below figure for the unit's outlines and dimensions and for the minimum distance between the unit and the obstacle/ any obstructions/ its surroundings.
- Ensure there is enough space for piping connections and electrical wiring.
- Check whether the hanging rods can support the weight of the unit (see specification table for weight of the unit).
- Confirm the unit is installed horizontally to ensure proper operation and condensate draining.
- Confirm that the unit has been switched OFF before installing or servicing the unit.
- Confirm the filter is in place and clean. Replace filter if required.
- Confirm the installation procedures below were followed.





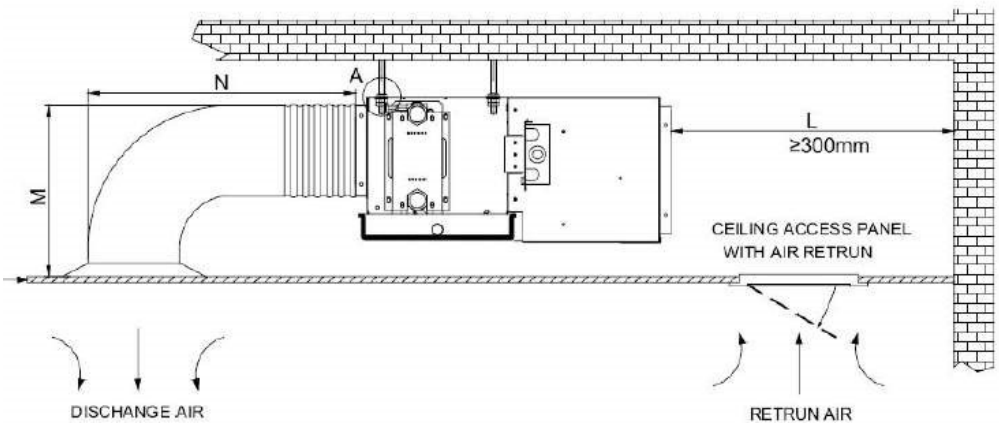






CAUTION

Make sure the top of the unit is level after installation. The drain pan is designed with a slight gradient to facilitate drainage.



CAUTIONS
Dimension M and N are determined by air duct design.
Air duct should be fire-proof. Please refer to concerned country national and local regulation.
Circulatory air pressure drop should be approximately equal to the External Static Pressure.

B.3. Insulation

- Confirm the Chilled water pipes and all parts on the pipes are insulated.
- Confirm insulation is installed on the supply air duct.

B.4. Service Connection

- Confirm duct connections are sealed.
- Confirm water piping INLET is at the BOTTOM, water OUTLET is at the TOP.
- Confirm no water leakage is observed at the piping and condensate drain connections.
- Confirm drain pipe slope is minimum 1:50.

Caution
When connecting pipe to fan coil unit, do not bend or reposition the coil header for alignment purposes. This could cause a tubing fracture resulting in a water leak when water pressure is applied to the system.

B.5. Unit Operation

- Confirm air has been properly bled from and there is waterflow through the coil.
- Confirm fan wheel is rotating and air is discharged at unit supply opening
- Confirm power voltage between Terminals L1 and N.
- Confirm thermostat voltage (if equipped).
- Verify desired fan speed is receiving power from the thermostat.
- Check functionality of motor with a call for heating or cooling.
- Confirm system ESP is per schedule.
- Confirm control valve(s) functionality.

B.6. Electrical Connection

- Confirm wiring connection is done according to the wiring diagram on the unit.
- Confirm the unit is GROUNDED properly.
- Confirm an appropriate strain relief device is used to attach the power wires to the terminal box.
- Confirm a main disconnect switch is incorporated in the fixed wiring in accordance with the relevant local and national legislation.
- Confirm the speed Setting: LOW, MED, HIGH.
- Confirm the controller wiring is adjusted to the correct terminals LOW: G0, MED: G1, HIGH: G2.

C. Maintenance

C.1. General Maintenance

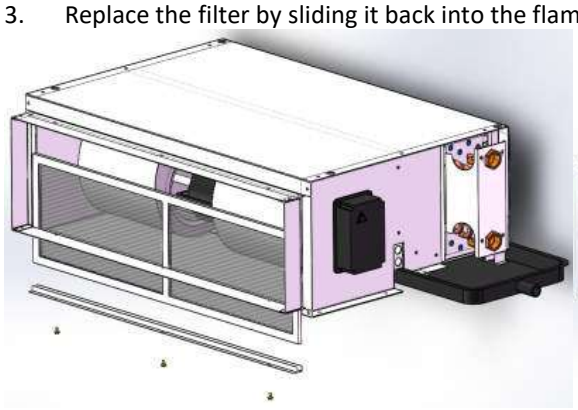
1. Installation and maintenance should be performed by qualified personnel who are familiar with local codes and regulations, and are also experienced with this type of appliance.
2. Confirm that the unit has been switched OFF before installing or servicing the unit.
3. A good general maintenance plan will prevent damage to and unexpected shutting down of the equipment.
4. Dirty filters reduce air flow as well as unit performance. Therefore, changing or cleaning the filters is very important. Check the cleanliness of the filter and replace or clean as required monthly.
5. Coils should be cleaned with compressed air or water to remove dust, dirt or lint. They can be brushed with a soft brush or vacuumed with a vacuum cleaner.
6. If the water coil is not being used during the winter season it should be drained, or an anti-freezing solution should be added to the water circuit to avoid freezing.

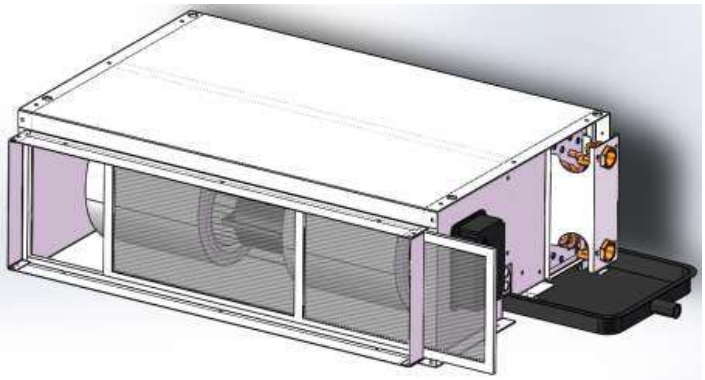
C.2. Regular Maintenance

1. Inspect and clean the condensate drain pan to avoid any clogging of the drain by dirt, dust, etc. Inspect drainage piping to ensure the proper condensate flow.
2. Check and clean the coil. Clean the coils with low-pressure water jets or low-pressure air.
3. Clean and tighten all the wiring connections.
4. Drain out the water system and check for buildup of mineral deposits.

C.3. Filter Cleaning

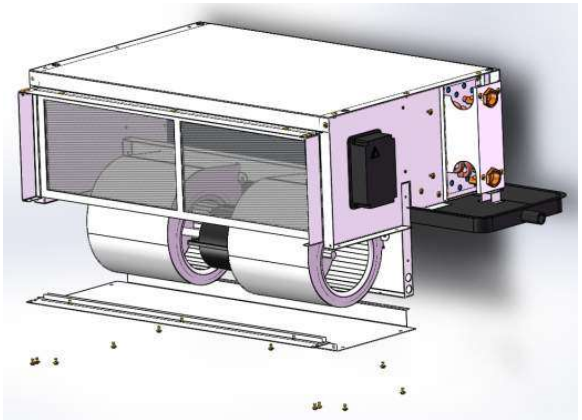
1. Remove the filter from bottom or side.
2. Clean the filter with a brush, or with water.
3. Replace the filter by sliding it back into the flame.





C.4. Fan Motor Assembly Maintenance

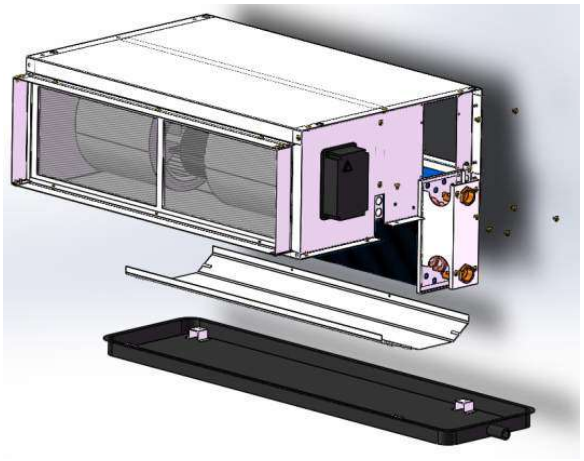
1. Remove the screws from the bottom panel.
2. Remove 4 screws from the both sides of the unit.
3. The complete fan-motor assembly can then be taken out easily.



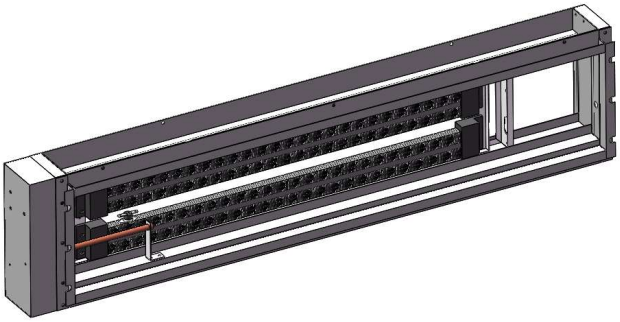
C.5. Coil Direction Interchange

1. Remove 4 screws for to remove the drain pan.
2. Remove 6 screws on the both sides to remove drain guide.
3. Remove 4 screws on the both side of coil mounting brackets.
4. The complete coil assembly can be taken out easily.
5. If the coil direction is exchanged on site, water inlet and water outlet need to be exchanged. After interchanged, the upper is water inlet and the bottom is water outlet.

Note: Coil direction interchange may change coil performance.

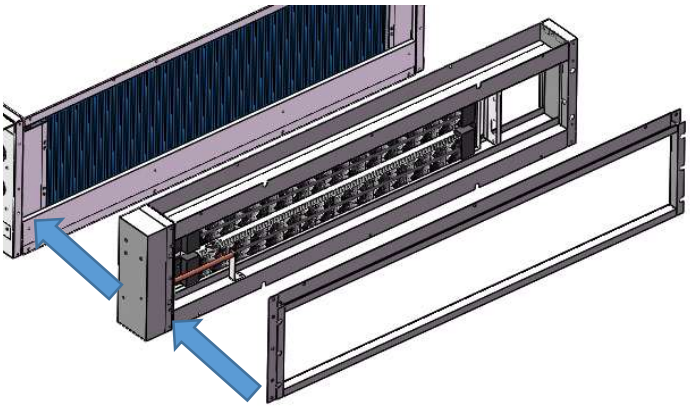


C.6. Electric Heater Replacement

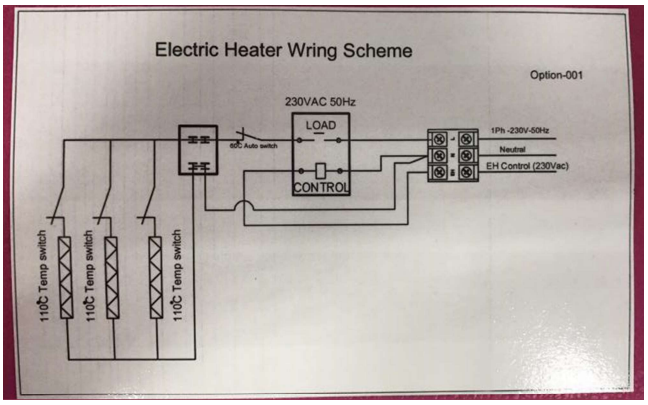


1. Unscrew the old PDWA-EH module from the unit. Prepare a new PDWA-EH module.

2. Remove PDWA discharge flange and install it on the EH module. (Skip this step if no removable flange.)



3. Screw PDWA discharge flange onto EH module and then install the EH module to the unit.



4. Connect “L” & “N” ports to PDWA terminal “L” & “N” connected to 230V/1Ph power supply. Connect “EH” port to related terminal on PDWA which is control signal from thermostat or S-type control board.

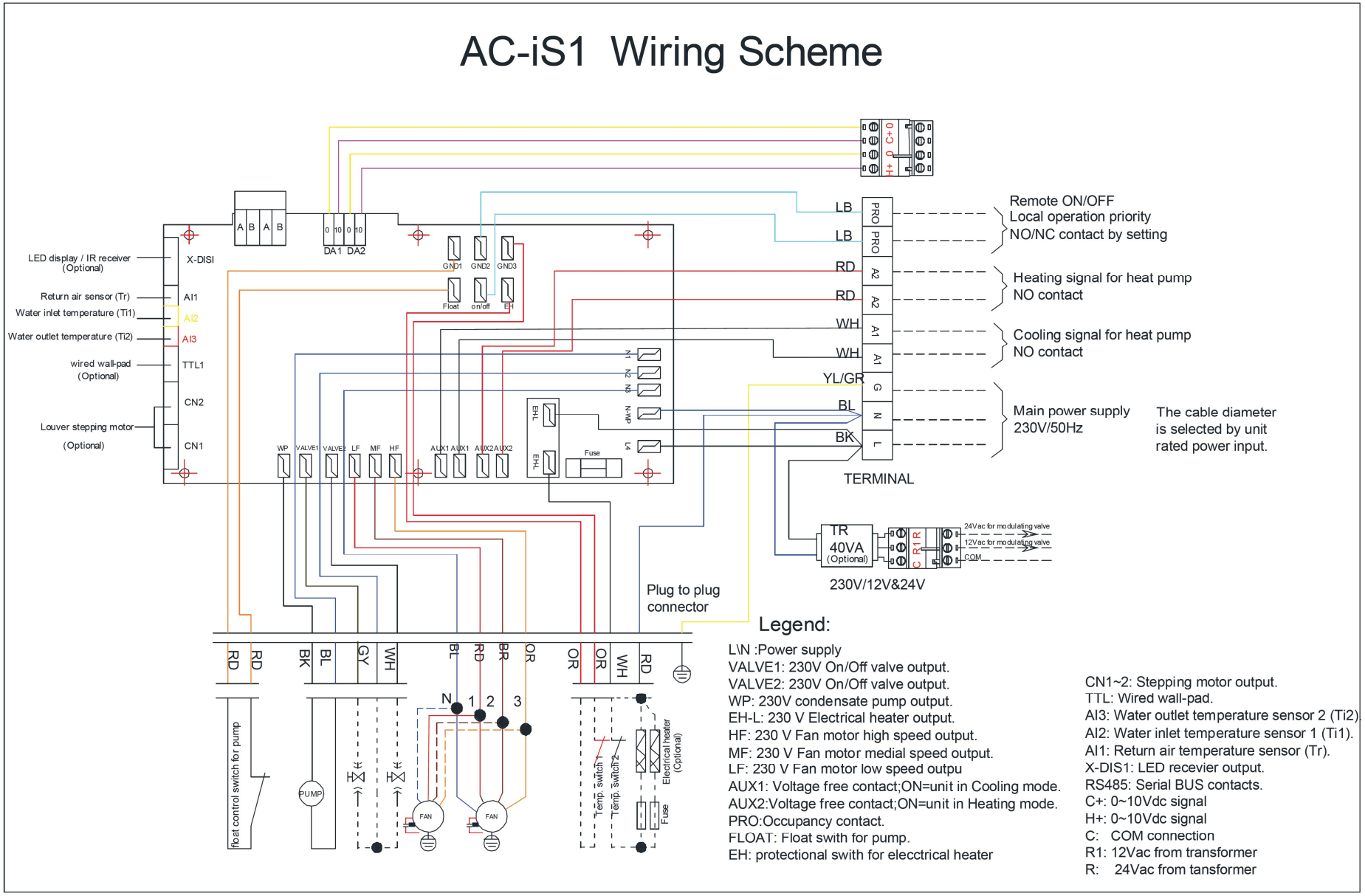
D. Control Specifications: Intelligent Control (I Type)

D.1. I/O Port Definitions

I/O		Code	2-Pipe
Analogue Input	Return air Sensor	AI1	Return air temperature (Tr)
	Chilled water Sensor	AI2	Water inlet temperature sensor (Ti1)
	Hot water Sensor	AI3	Water outlet temperature sensor (Ti2)
Input	IR receiver	X-DIS 1	Digital communication port to LED display/IR receiver board.
	Wired wall pad	TTL1	Digital communication port to wired wall-pad board.
Digital input	Occupancy contact	ON/OFF	NO/NC contact by setting
	Float switch	Float	Voltage-free (NC). The contact is connected with float switch (NC).
	Electrical heater safety switch	EH	Voltage-free (NC). The contact is connected with E-heater safeties.
Power input	Phase	L	Power supply to the PCB.
	Neutral	N	Power supply to the PCB.
	Earth	G	Power supply to the PCB.
Voltage output	High fan speed	HF	Voltage output (L)
	Medium fan speed	MF	Voltage output (L)
	Low fan speed	LF	Voltage output (L)
	Valve1	MTV1	On/off valve
	Valve2	MTV2	On/off valve
	Water pump	WP	Voltage output (L), Power supply to condensate pump.
	Voltage of electrical heater (Live)	L-EH	Voltage output (L), maximum 30A.
Output	Stepping motor	CN1, CN2	Power supply to louver stepping motors.
	Cooling signal contact.	AUX1	Voltage free contact. Maximum load 5A.
	Heating signal contact.	AUX2	Voltage free contact. Maximum load 5A.
	Modulating valve control	DA1	0~10 VDC
	Modulating valve control	DA1	0~10 VDC
	In Modbus signal	AB	Terminals for local network serial connection
	Out Modbus signal	AB	

D.2. Wiring Diagrams

D.2.1. Standard AC-S1 Control PCB



D.2.2. Fan Coil Unit ON/OFF

There are 4 ways to turn the system on or off:

a) By the ON/OFF button on the remote handset or wired wall pad;
b) By the programmable timer on the handset or wired wall pad.
c) By the manual control button on fan coil unit.
d) By Modbus setting.

D.2.3. Auto Restart

The system uses a non-volatile memory to save the present operation parameters when the system is turned off or in case of system failure or cessation of power supply.
The restored parameter data-set depends on the type of user interface.

a) Handset only user interface:

When the power ON signal is received by the fan coil unit and no wired wall-pad is installed, the Mode, Fan Speed, Set temperature will be the same as the handset setting before the last power OFF.

b) Wall-pad only OR wall-pad and handset user interface:

When the power ON signal is received by the fan coil unit and a wired wall-pad is installed, the Mode, Fan Speed, Set temperature and Timer ON/OFF weekly program will be the same as the wall pad setting before the last power OFF.

D.3. Control Logics for 2-Pipe System

COOL MODE

When unit is turned on in cooling mode.

If Tr ≥ Ts + 1ºC (Modbus 300033 setting), MTV1 is turned on. AUX1 is closed. Fan is turned on at setting speed. DA1 is turned on at 10 VDC for 2 minutes, then check Ti1:

- When Ti1<=8ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting PID calculation. The output is minimum output (Modbus300015 setting)~10 VDC.
- When 8<Ti1<=10ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting minus 1 PID calculation. The output is minimum output (Modbus300015 setting)~10 VDC.
- When 10<Ti1<=12ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting minus 2 PID calculation. The output is minimum output (Modbus300015 setting)~10 VDC.
- When 12<Ti1<=15ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting minus 3 PID calculation. The output is minimum output (Modbus300015 setting)~10 VDC.
- When 15<Ti1<=28ºC (Modbus 300017 setting), DA1 output is kept at 10 VDC.
- When Ti1>28ºC(Modbus 300017 setting), DA1 output is at minimum (Modbus300016 setting) and report pre-heat alarm.
- If Tr < Ts-1ºC (Modbus 300033 setting), then cool operation is terminated and MTV1 and AUX1 are turned off. Indoor fan runs at set speed. DA1 output is 0 VDC.
- When unit is turned off, MTV1 and AUX1 are off. DA1 is 0 VDC. Fan is turned off delaying 30s.
- The range of Ts is 16 - 30ºC
- Indoor fan speed can be adjusted to low, medium, high and auto.

LOW TEMPERATURE PROTECTION OF INDOOR COIL IN COOLING MODE

If Ti1 ≦ 2 ºC for 2 minutes

- MTV1 is turned OFF.
- DA1 is set to 0%.
- Indoor fan is turned on to Medium speed if fan runs at low speed.

If Ti1 ≧ 5ºC for 2 minutes

- MTV1 is turned ON.
- DA1 is set to original status.
- Indoor fan is changed to setting speed.

FAN MODE

Indoor fan speed can be adjusted for low, medium and high. If fan speed is set auto by Modbus, fan is running at low speed.

HEAT MODE

Without Electrical Heater (Modbus300047=0)

When unit is turned on in heating mode.

When Tr ≤ Ts - 1 ºC(Modbus 300033 setting) , MTV1 and AUX2 is turned on. DA1 is at 10 VDC for 2 minutes, then check Ti1:

- If Ti1 < 28ºC (Modbus 300017 setting), fan is turned on at low speed. DA1 is at 10 VDC.
- If 28ºC<Ti1< 28(Modbus 300017 setting)+4ºC, fan is on at original state. DA1 is at original state.
- If Ti1 ≥ 28(Modbus 300017 setting)+4ºC , fan is on at setting speed. DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300028 setting PID calculation. The output is minimum output (Modbus300015 setting)~10 VDC.
- If Ti1 sensor is damaged, fan runs at setting speed.
- When Tr > Ts+1 ºC(Modbus 300033 setting) , MTV1 and AUX2 is turned off. DA1 is at 0 VDC. fan is turned on at lowest speed.
- When unit is turned off, MTV1 and AUX2 is turned off. DA1 is at 0 VDC. Fan is turned off delaying 2 minutes.

With Electrical Heater as booster (Modbus300047=1)

When unit is turned on in heating mode.

When Tr ≤ Ts - 1 ºC(Modbus 300033 setting) , MTV1 and AUX2 is turned on. Fan is turned on at setting speed. DA1 is at 10 VDC for 2 minutes, then check Ti1:

- If Ti1 < 28ºC (Modbus 300017 setting), EH is turned on. DA1 is at 10 VDC
- If 28ºC<Ti1< 28(Modbus 300017 setting)+4ºC, EH is kept at original state. DA1 is at original state.

- If Ti1 ≥ 28(Modbus 300017 setting)+4ºC , EH is turned off. DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300028 setting PID calculation. The output is minimum output (Modbus300015 setting)~10 VDC.
- If Ti1 sensor is damaged, fan runs at setting speed.
- When Tr > Ts+1 ºC(Modbus 300033 setting) , MTV1 and AUX2 is turned off. EH is turned off. DA1 is at 0 VDC. Fan is turned on at low speed.
- When unit is turned off, MTV1 and AUX2 is turned off. DA1 is at 0 VDC. Fan is turned off delaying 2 minutes.

With Electrical Heater as primary (Modbus300047=2)

When unit is turned on in heating mode.

- When Ti2 ≤ 35ºC (or Ti2 is broken) and Tr ≤ Ts - 1 ºC(Modbus 300033 setting) , Fan is turned on at setting speed, EH is turned on.
- When Tr > Ts+1 ºC(Modbus 300033 setting) , EH is turned off. Fan is turned on at low speed.
- When unit is turned off, EH is turned off. Fan is turned off delaying 2 minutes.

OVER-HEAT PROTECTION OF INDOOR COIL

- If Ti1 ≥ 75ºC, then MTV1, AUX2, DA1 and EH are turned off. Indoor fan remains on and runs at high speed.
- If Ti1 < 70ºC, then unit keep original state.
- If the indoor coil temperature sensor is damaged or not connected, then the protection mode will be overridden and the unit will work according to the pre-heat and post-heat program.

DEHUMIDIFICATION MODE

When unit is turned on in dehumidification mode:

- AUX1 is turned on. Ts is 24 ºC.
- If Tr ≥ 25ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 4 minutes. DA1 is on at 3 times of (Modbus 300016 setting). Fan is turned on at low speed.
- If 16ºC ≤ Tr < 25ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 6 minutes. DA1 is on at double of (Modbus 300016 setting). Fan is turned on at low speed.
- If Tr < 16ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 10 minutes. DA1 is on at (Modbus 300016 setting). Fan is turned on at low speed.
- At the end of the above dehumidification cycle, the system will decide the next dehumidification control option.

AUTO MODE

- When unit is turned on in Auto mode, fan is turned on at setting speed for 30S, then check Tr and Ts.
- If Ts>=Tr+3 ºC, the unit runs in heating mode.
- If Tr-3 ºC<Ts<Tr+3 ºC,the unit runs in fan mode.
- If Ts<Tr-3 ºC, the unit runs in cooling mode.
- If unit working mode is confirmed, the unit will not change the working mode. After the unit is turned off and restart it in 2 hours, working mode will be confirmed again.

PRO INPUT FUNCTION

When 100004=0.

The unit is on:

- PRO input is closed for 60S, the unit is turned off.
- PRO input is open for 60S, the unit is turned on.

When 100004=1.

- The unit is on or standby, PRO input is open or closed, the unit is kept original state.
- The unit is off,
- PRO input is closed for 30S, MTV1 is turned on, DA1 is open at double of minimum setting (Modbus 300027 setting), fan is turn on at low speed.
- PRO input is opened for 30S, MTV1 is off, DA1 is 0Vdv, Fan is turn off.
- In period of PRO closed time, if unit receives instruction from remote handset, wired wall pad or Modbus, the unit will work according to the instruction at once.

D.4. Control Logics for 4-Pipe System

Note: 4-pipe system must always be equipped with 2 valves.

COOL MODE

When unit is turned on in cooling mode.
If Tr ≥ Ts + 1ºC (Modbus 300033 setting), MTV1 is turned on. AUX1 is closed. Fan is turned on at setting speed. DA1 is turned on at 10 VDC for 2 minutes, then check Tr and Ts.

- DA1 output is from minimum (Modbus 300015 setting) ~10 VDC based on Tr and Ts PID calculation.
- If Tr < Ts-1ºC (Modbus 300033 setting), then cool operation is terminated and MTV1 and AUX1 are turned off. Indoor fan runs at set speed. DA1 output is 0 VDC.
- When unit is turned off, MTV1 and AUX1 are off. DA1 is 0 VDC. Fan is turned off delaying 30s.
- The range of Ts is 16 - 30ºC
- Indoor fan speed can be adjusted to low, medium, high and auto.

LOW TEMPERATURE PROTECTION OF INDOOR COIL IN COOLING MODE

If Ti1 ≦ 2 ºC for 2 minutes
- MTV1 is turned OFF,
- DA1 is set to 0%,
- Indoor fan is turned on to Medium speed if fan runs at low speed.

If Ti1 ≧ 5ºC for 2 minutes
- MTV1 is turned ON,
- DA1 is set to original status,
- Indoor fan is changed to setting speed

FAN MODE

Indoor fan speed can be adjusted for low, medium and high. If fan speed is set auto by Modbus, fan is running at low speed.

HEAT MODE

Without Electrical Heater (Modbus300047=0)

When unit is turned on in heating mode.

When Tr ≤ Ts - 1 ºC(Modbus 300033 setting) , MTV2 and AUX2 is turned on. DA2 is at 10 VDC for 2 minutes, then check Ti2:

- If Ti2 < 28ºC (Modbus 300017 setting), fan is turned on at low speed. DA2 is at 10 VDC.
- If 28ºC<Ti2< 28(Modbus 300017 setting)+4ºC, fan is on at original state. DA2 is at original state.
- If Ti2 ≥ 28(Modbus 300017 setting)+4ºC , fan is on at setting speed. DA2 output is from minimum (Modbus 300016 setting) ~10 VDC based on Tr and Ts PID calculation.
- If Ti2 sensor is damaged, fan runs at setting speed.
- When Tr > Ts+1ºC (Modbus 300033 setting), MTV2 and AUX2 is turned off. DA2 is at 0 VDC. Fan is turned on at lowest speed.
- When unit is turned off, MTV2 and AUX2 is turned off. DA2 is at 0 VDC. Fan is turned off delaying 2 minutes.

With Electrical Heater as booster (Modbus300047=1)

When unit is turned on in heating mode.

When Tr ≤ Ts - 1 ºC(Modbus 300033 setting) , MTV2 and AUX2 is turned on. Fan is turned on at setting speed. DA2 is at 10 VDC for 2 minutes, then check Ti2:

- If Ti2 < 28ºC (Modbus 300017 setting), EH is turned on. DA2 is at 10 VDC.
- If 28ºC<Ti2< 28(Modbus 300017 setting)+4ºC, EH is kept at original state. DA2 is at original state.
- If Ti2 ≥ 28(Modbus 300017 setting)+4ºC , EH is turned off. DA2 output is from minimum (Modbus 300016 setting) ~10 VDC based on Tr and Ts PID calculation.
- If Ti2 sensor is damaged, fan runs at setting speed.
- When Tr > Ts+1 ºC(Modbus 300033 setting) ºC , MTV2 and AUX2 is turned off. EH is turned off. DA2is at 0 VDC. Fan is turned on at low speed.

- When unit is turned off, MTV2 and AUX2 is turned off. DA2 is at 0 VDC. Fan is turned off delaying 2 minutes.

OVER-HEAT PROTECTION OF INDOOR COIL

- If Ti2 ≥ 75ºC, then MTV2, AUX2, DA1 and EH are turned off. Indoor fan remains on and runs at high speed.
- If Ti2< 70ºC, then unit keep original state.
- If the indoor coil temperature sensor is damaged or not connected, then the protection mode will be overridden and the unit will work according to the pre-heat and post-heat program.

DEHUMIDIFICATION MODE

When unit is turned on in dehumidification mode:

- AUX1 is turned on. Ts is 24 ºC.
- If Tr ≥ 25ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 4 minutes. DA1 is on at 3 times of (Modbus 300016 setting). Fan is turned on at low speed.
- If 16ºC ≤ Tr < 25ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 6 minutes. DA1 is on at double of (Modbus 300016 setting). Fan is turned on at low speed.
- If Tr < 16ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 10 minutes. DA1 is on at (Modbus 300016 setting). Fan is turned on at low speed.
- At the end of the above dehumidification cycle, the system will decide the next dehumidification control option.

AUTO MODE

- When unit is turned on in Auto mode, fan is turned on at setting speed for 30S, then check Tr and Ts.
- If Ts>=Tr+3 ºC, the unit runs in heating mode.
- If Tr-3 ºC<Ts<Tr+3 ºC,the unit runs in fan mode.
- If Ts<Tr-3 ºC, the unit runs in cooling mode.
- If unit works in heating or fan mode, when Tr-Ts>3.0ºC, MTV2, MTV1 and DA1 is off for more than 10minutes. EH is off for more than 10 minutes, the unit will work in cooling mode.
- If unit works in cooling or fan mode, when Ts-Tr>3.0ºC, MTV2, MTV1 and DA1 is off for more than 10minutes. The unit will work in heating mode.

PRO INPUT FUNCTION

The unit is on:

- PRO input is closed for 60S, the unit is turned off.
- PRO input is open for 60S, the unit is turned on.

D.5. 2-pipe Control Logic -With 6-way modulating Valve Configuration

COOL MODE

1. When unit is turned on in cooling mode.

If Tr ≥ Ts + 1ºC (Modbus 300033 setting), MTV1 is turned on. AUX1 is closed. Fan is turned on at setting speed. DA1 is turned on at 0 VDC for 2 minutes, then check Ti1,

- When Ti1<=8ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting PID calculation. The output is 4~0 VDC.
- When 8<Ti1<=10ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting minus 1 PID calculation. The output is 4~0 VDC.
- When 10<Ti1<=12ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting minus 2 PID calculation. The output is 4~0 VDC.
- When 12<Ti1<=15ºC, DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300027 setting minus 3 PID calculation. The output is 4~0 VDC.
- When 15<Ti1<=28ºC (Modbus 300017 setting), DA1 output is kept at 0 VDC.
- When Ti1>28ºC(Modbus 300017 setting), DA1 output is 4 VDC, and report pre-heat alarm.
- If Tr < Ts-1ºC (Modbus 300033 setting), then cool operation is terminated and MTV1 and AUX1 are turned off. Indoor fan runs at set speed. DA1 output is 5 VDC.
- When unit is turned off, MTV1 and AUX1 are off. DA1 is 5 VDC. Fan is turned off delaying 30s.
- The range of Ts is 16 - 30ºC
- Indoor fan speed can be adjusted to low, medium, high and auto.

LOW TEMPERATURE PROTECTION OF INDOOR COIL IN COOLING MODE

If Ti1 ≦ 2 ºC for 2 minutes

- MTV1 is turned OFF,
- DA1 is set to 5Vdv,
- Indoor fan is turned on to Medium speed if fan runs at low speed.

If Ti1 ≧ 5ºC for 2 minutes

- MTV1 is turned ON,
- DA1 is set to original status,
- Indoor fan is changed to setting speed

FAN MODE

Indoor fan speed can be adjusted for low, medium and high. If fan speed is set auto by Modbus, fan is running at low speed.

HEAT MODE

Without Electrical Heater (Modbus300047=0)

When unit is turned on in heating mode.

When Tr ≤ Ts - 1 ºC(Modbus 300033 setting) , MTV2 and AUX2 is turned on. DA1 is at 10 VDC for 2 minutes, then check Ti1:

- If Ti1 < 28ºC (Modbus 300017 setting), fan is turned on at low speed. DA1 is at 10 VDC.
- If 28ºC<Ti1< 28(Modbus 300017 setting)+4ºC, fan is on at original state. DA1 is at original state.
- If Ti1 ≥ 28(Modbus 300017 setting)+4ºC , fan is on at setting speed. DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300028 setting PID calculation. The output is 6~10 VDC.
- If Ti1 sensor is damaged, fan runs at setting speed.
- When Tr > Ts+1ºC (Modbus 300033 setting), MTV1 and AUX2 is turned off. DA2 is at 5 VDC. Fan is turned on at lowest speed.
- When unit is turned off, MTV1 and AUX2 is turned off. DA1 is at 5 VDC. Fan is turned off delaying 2 minutes.

With Electrical Heater as booster (Modbus300047=1)

When unit is turned on in heating mode.

When Tr ≤ Ts - 1 ºC(Modbus 300033 setting) , MTV2 and AUX2 is turned on. Fan is turned on at setting speed. DA1 is at 10 VDC for 2 minutes, then check Ti1:

- If Ti1 < 28ºC (Modbus 300017 setting), EH is turned on. DA1 is at 10 VDC.
- If 28ºC<Ti1< 28(Modbus 300017 setting)+4ºC, EH is kept at original state. DA1 is at original state.
- If Ti1 ≥ 28(Modbus 300017 setting)+4ºC , EH is turned off. DA1 output is based on water temperature difference (Ti1/Ti2) and Modbus parameter 300028 setting PID calculation. The output is 6~10 VDC.
- If Ti1 sensor is damaged, fan runs at setting speed.
- When Tr > Ts +1ºC (Modbus 300033 setting), MTV2 and AUX2 is turned off. EH is turned off. DA1 is at 5 VDC. Fan is turned on at low speed.
- When unit is turned off, MTV2 and AUX2 is turned off. DA1 is at 5 VDC. Fan is turned off delaying 2 minutes.

OVER-HEAT PROTECTION OF INDOOR COIL

- If Ti1 ≥ 75ºC, then MTV1, AUX2, DA1 and EH are turned off. Indoor fan remains on and runs at high speed.
- If Ti1 < 70ºC, then unit keep original state.
- If the indoor coil temperature sensor is damaged or not connected, then the protection mode will be overridden and the unit will work according to the pre-heat and post-heat program.

DEHUMIDIFICATION MODE

When unit is turned on in dehumidification mode:

- AUX1 is turned on. Ts is 24 ºC.
- If Tr ≥ 25ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 4 minutes. DA1 is 2 VDC. Fan is turned on at low speed.
- If 16ºC ≤ Tr < 25ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 6 minutes. DA1 is 2.5 VDC. Fan is turned on at low speed.
- If Tr < 16ºC for 30S, then MTV1 will be ON for 3 minutes, and then OFF for 10 minutes. DA1 is 3.5 VDC.
- At the end of the above dehumidification cycle, the system will decide the next dehumidification control option.

AUTO MODE

- When unit is turned on in Auto mode, fan is turned on at setting speed for 30S, then check Tr and Ts.
- If Ts>=Tr+3 ºC, the unit runs in heating mode.
- If Tr-3 ºC<Ts<Tr+3 ºC,the unit runs in fan mode.
- If Ts<Tr-3 ºC, the unit runs in cooling mode.
- If unit works in heating or fan mode, when Tr-Ts>3.0ºC, MTV2, MTV1 and DA1 is off for more than 10minutes. EH is off for more than 10 minutes, the unit will work in cooling mode.
- If unit works in cooling or fan mode, when Ts-Tr>3.0ºC, MTV2, MTV1 and DA1 is off for more than 10minutes. The unit will work in heating mode.

PRO INPUT FUNCTION

The unit is on:

- PRO input is closed for 60S, the unit is turned off.
- PRO input is open for 60S, the unit is turned on.

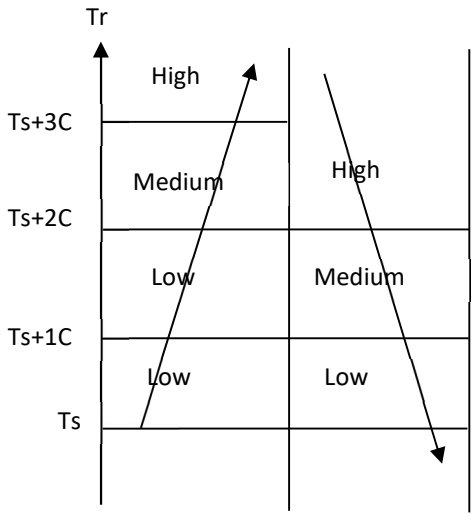
D.6. Sleep Mode

SLEEP mode can only be set when the unit is in COOL or HEAT mode.

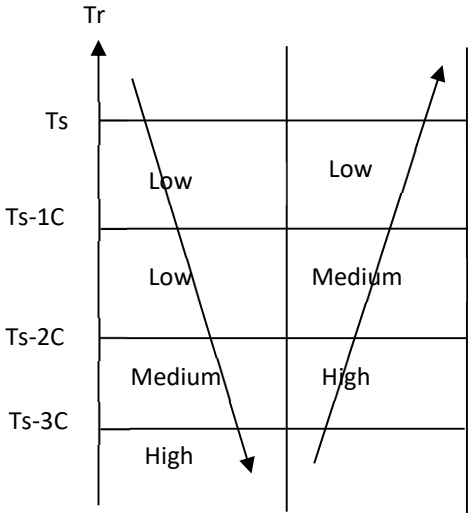
- In COOL mode, after SLEEP mode is set, the indoor fan will run at auto speed and Ts will increase by 0.5ºC each 30 minutes. Maximum setting temperature increased is 3ºC.
- In HEAT mode, after SLEEP mode is set, the indoor fan will run at auto speed and Ts will decrease by 0.5 ºC each 30 minutes.
- Sleep mode is turned off, Setting temperature go back and Fan is changed to setting speed.

D.7. Auto Fan Speed

COOL MODE
Fan speed cannot change until it has run for more than 30 seconds.
Fan speed is regulated according to the profile below.



HEAT MODE
Fan speed cannot change until it has run for more than 30 seconds.
Fan speed is regulated according to the profile below.



D.8. Buzzer

The unit will beep once when it receives a signal.

D.9. Auto Restart

The system uses non-volatile memory to save the present operation parameters when system is turned off or in case of system failure or cessation of power supply. Operation parameters are mode, set temperature and the fan speed. When power supply resumes or the system is switched on again, the same operations as previously set will function.

D.10. On/Off Switch on LED Display Panel

- This is a tact switch to select Cool→Heat→Off operation mode.
- In COOL mode, the set temperature of the system is 24ºC with auto fan speed. There are no timer and sleep modes.
- In HEAT mode, the set temperature of the system is 24ºC with auto fan speed. There are no timer and sleep modes.
- Master unit that does not use a wall pad will globally broadcast.

NOTE

When button pressing is effective, the master unit buzzer will beep twice and the slave unit will beep once.

D.11. Electric Heater Safety Switch

- Before the electrical heater is turned on, the EH safety switch must be closed and the fan must be working.
- If this contact is opened for ≥ 1 second or the fan is not working, the heater will be turned off immediately and report an error and fan speed will change to high speed.
- Once the contact is returned to the closed position ≥ 60 seconds, reset the error and the heater will start again.
- When the EH safety switch is opened ≥ 3 times within 60 minutes the heater is not allowed to start anymore.
- Turn off the unit to reset the fault, provided that the switch has returned to the closed position.

D.12. Low Temperature Protection of Indoor Coil in Winter

This is frost protection when the unit is off to prevent water from freezing in the coil.

If 2pipe unit is in Standby Mode

If Tr ≦ 2 ºC for 2 minutes

- MTV1 is turned on.
- AUX2 is closed.
- DA1 is 5 VDC.
- If Ti1 <5 ºC for 2 minutes EH (if present) is switched on.
- Indoor fan is turned on at low speed.

If Tr ≧ 5ºC for 2 minutes

- MTV2 is off.
- AUX2 is open.
- DA1 is set to 0 VDC.
- Electric Heater is turned off.
- Indoor fan is switched off.

If 4-pipe unit is in Standby Mode

If Tr ≦ 2 ºC for 2 minutes

- MTV2is turned on.
- AUX2 is closed.
- DA2 is 5 VDC. If unit with 6-way valve, DA1 is 8 VDC.
- If Ti1 < 5 ºC for 2 minutes EH (if present) is switched on.
- Indoor fan is turned on at low speed.

If Tr ≧ 5ºC for 2 minutes

- MTV2 is off.
- AUX2 is open.
- DA2 is set to 0. If unit with 6-way valve, DA1 is 5 VDC.
- Electric Heater is turned off.
- Indoor fan is switched off.

D.13. Open Modbus Protocol

Transfer Mode: RTU BAUD Rate: 9600 bps, 8 data bit, 1 stop bit, none parity bit
The communications require a delay between reading an answer and sending the next command of 80 ms. All temperature is equal to reading data*10 accuracy: 0.1 degree C.

Supported Functions

Function Code	Function description
01(01H)	Read Coils
02(02H)	Read Discrete Inputs
03(03H)	Read Holding Registers
04(04H)	Read Input Registers
05(05H)	Write Single Coil
06(06H)	Write Single Register
15(0FH)	Write Multiple Coils
16(10H)	Write Multiple Registers
255(FFH)	Extended Commands which is used to test.

Valid Error code table:

Error code	description	definition
01 (01H)	Invalid commands	Received commands beyond valid commands
02 (02H)	Invalid data address	Data addresses beyond valid data address
03 (03H)	Invalid data	Data beyond definition range
04 (04H)	Write data not succeed	Write data not succeed

Coils table:

Description	Address	Type*	Remark
ON/OFF	100000	R/W	0=Off, 1=On.
Sleeping mode	100001	R/W	0=Off, 1=On.
Louver swings	100002	R/W	0=Off, 1=On.
Energy Saving Mode	100003	R/W	0=Off, 1=On.
PRO control logic	100004	R/W	0=On/off function. 1=RCS function. Default: 0

Discrete table:

Description	Address	Type*	Remark
MTV1	200000	R	
MTV2	200001	R	
AUX1	200002	R	
AUX2	200003	R	
Condensate pump	200004	R	
Electrical heater	200005	R	
Wired wall pad	200006	R	
PR-O1	200007	R	
Float switch	200008	R	
Reserved	200009	R	
EH safety switch	200010	R	
Internal test	200011	R	Testing purpose only.

* R = read only, W = write only, R/W = read and write.

Holding Register table:

Description	Address	Type*	Remark
Mode setting	300000	R/W	Cooling mode = 01(H) Humidify mode = 02(H) Fan mode = 04(H) Heating mode = 08(H) Auto mode = 10(H)
Fan speed setting	300001	R/W	Low speed = 04(H) Medium speed = 02(H) High speed = 01(H) Auto fan speed = 07(H)
Louver swing setting	300002	R/W	Position 1=01(H) Position2=02(H) Position3=03(H) Position4=04(H) Auto=0F(H) Stop=00(H)
Setting temperature	300003	R/W	16~30 (actual*10 format)
Address setting	300004	R/W	1~255
Reset	300005	W	=0x33 reset error
Week	300006	W	
Hour	300007	W	
Minute	300008	W	
Second	300009	W	
Hours in Timer on	300010	R/W	Timer ON
Minute in Timer on	300011	R/W	Timer ON
Hours in Timer off	300012	R/W	Timer OFF
Minute in Timer off	300013	R/W	Timer OFF
Icon of Timer ON or OFF	300014	R/W	BIT0 = Icon of Timer ON BIT1 = Icon of Timer OFF 1 = enable 0 = disable
Minimum output DA1	300015	R/W	Default 25% (2.5 VDC)
Minimum output DA1	300016	R/W	Default 25% (2.5 VDC)
Pre-heat temperature setting	300017	R/W	25~35, default: 30
Reserved-	300018	R/W	Default: 40% (4 VDC) or (10.4mA)
Super low speed rpm	300019	R/W	0~10V , default:2 VDC
Low speed rpm	300020	R/W	1~10 VDC, default: 3 VDC
Medium speed rpm	300021	R/W	1~10 VDC, default: 6 VDC
High speed rpm	300022	R/W	1~10 VDC, default: 8.5 VDC
Signal output setting	300023	R/W	1~10 VDC (used to test,0 = disable)
Temperature sampling time	300024	R/W	2~100,default: 5S
Factor of auto fan speed	300025	R/W	2~150,default:20
Factor of modulating valve	300026	R/W	2~250,default:150
Ti1 and Ti2 Cooling difference setting	300027	R/W	3~15,default:5
Ti1 and Ti2 Heating difference setting	300028	R/W	3~15 default:5
Controller Hardware type setting	300029	R/W	0=air cleaner (S5) **1=FCU (S1/S2/S3, SWC-S)** 2=AHU (S6) or (AHU+W5) 3=AHU+AQI (S5+S6) 4=Zone controller(S7) Setting**:1**
Degree unit setting	300030	R/W	0=degree C 1=degree F
Temperature display setting	300031	R/W	0=Room temperature display on LED 1=Setting temperature display on LED
Setting temperature range	300032	R/W	0=setting temperature range is from 16~30 1=Setting temperature range is fixed. Cooling=24oC Heating=21oC
Temperature band setting	300033	R/W	1~9, default:1

Reserved	300034	R/W	
Reserved	300035	R/W	
Reserved	300036	R/W	
Reserved	300037	R/W	
Reserved	300038	R/W	
Reserved	300039	R/W	
Reserved	300040	R/W	
Reserved	300041	R/W	
Reserved	300042	R/W	
Reserved	300043	W	
Reserved	300044	W	
Reserved	300045	W	
Software type	300046	R/W	0=2-pipe+MTV 1=2-pipe without valve 2=4-pipe+std valve 3=4-pipe+6-way valve
EH type	300047	R/W	0=without EH, 1=EH as booster. 2=EH as primary
DA1 control signal	300048	R/W	0=Tr/Ts 1=ESP
EC motor input ports	3000049	R/W	0=CN4 working. 1=CN5 working 2=CN4+CN5 working default: 0
PRO1 input type	300050	R/W	0=NO. 1=NC
Tr sensor setting	300051	R/W	0=sensor on the wired wall pad 1=sensor on the main PCB. default: 0
Reserved	300052	R/W	
Optimized swing angle	300053	R/W	200~999 default: 0
E-heater	300054	R/W	Unit: KW*10
Room temp. factor	300055	R/W	90~120, default:103
Water inlet temp. factor	300056	R/W	90~120, default:103
Delta T factor	300057	R/W	90~120, default:102
Product type	300058	R/W	00~99. default:00
Product model	300059	R/W	000~999. default:000
Ex-works data	300060	R/W	0000——9999
Software version	300061	R	10~99 default:10
Hardware version	300062	R	10~99 default:10
Reserved	300063	R/W	
Reserved	300064	R/W	
Reserved	300065	R/W	
Reserved	300066	R/W	
Reserved	300067	R/W	
In auto mode, temp. Band setting	300068	R/W	1~15,default:3
Reserved	300069	R/W	
Reserved	300070	R/W	
Unit power input at High speed	300071	R/W	W*10
Unit power input at Med. speed	300072	R/W	W*10
Unit power input at Low speed	300073	R/W	W*10
Unit heat capacity at High speed	300074	R/W	KW*10
Unit heat capacity at Med. speed	300075	R/W	KW*10
Unit heat capacity at Low speed	300076	R/W	KW*10
Unit cool capacity at High speed	300077	R/W	KW*10
Unit cool capacity at Med. speed	300078	R/W	KW*10
Unit cool capacity at Low speed	300079	R/W	KW*10

* R = read only, W = write only, R/W = read and write.

Input Register table:

Description	Address	Type*	Remark
Tr temperature sensor	400000	R	
Ti1 temperature sensor	400001	R	
Ti2 temperature sensor	400002	R	
Reserved	400003	R	
Reserved	400004	R	
Error code	400005	R	Bit0 = Room temperature sensor error Bit1 = Ti1 temperature sensor error Bit2 = Ti2 temperature sensor error Bit3 = Float switch error Bit4 = Indoor coil low temperature protection Bit5 = Indoor coil overheat protection Bit6 =Filter switch Bit7 = Electrical heater failure Bit8 = Motor1 Error Bit9 =Motor2 Error Bit10 = System parameters error Bit11 = Anti-frozen error Bit12 = Ti3 temperature sensor error Bit13 = Ti4 temperature sensor error Bit14 =PM2.5 sensor Bit15 =AQI Error
Fan speed status	400006	R	Low = 04(H) Medium = 02(H) High = 01(H)
Reserved	400007	R	
Reserved	400008	R	
EH	400009	R	0= disable, 1=booster, 2=primary
Unit type	400010	R	
DA1	400011	R	
DA1	400012	R	
Reserved	400013	R	
Reserved	**400014**	**R**	
Reserved	**400015**	**R**	
Reserved	**400016**	**R**	
Unit status	**400017**	**R**	Cooling mode = 01(H) Humidify mode = 02(H) Fan mode = 04(H) Heating mode = 08(H) Unit OFF=32(H)
Temperature in wall pad	**400018**	**R**	
Motor running time	**400019**	**R**	
Motor running terms	**400020**	**R**	0~100
Cooling capacity	**400021**	**R**	
Cooling capacity terms	**400022**	**R**	0~100
Heating capacity	**400023**	**R**	
Heat capacity terms	**400024**	**R**	0~100
Reserved	400025	R	
Reserved	400026	R	
Reserved	400027	R	
Reserved	400028	R	
Reserved	400029	R	
Reserved	400030	R	

D.14. Network Setup

1) Disconnect the communication plug from the control box

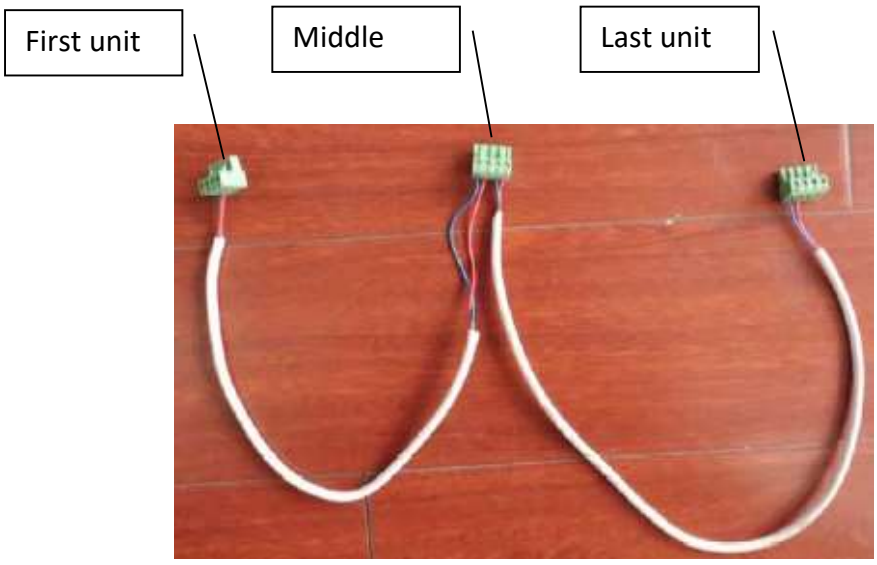
2) Communication plug

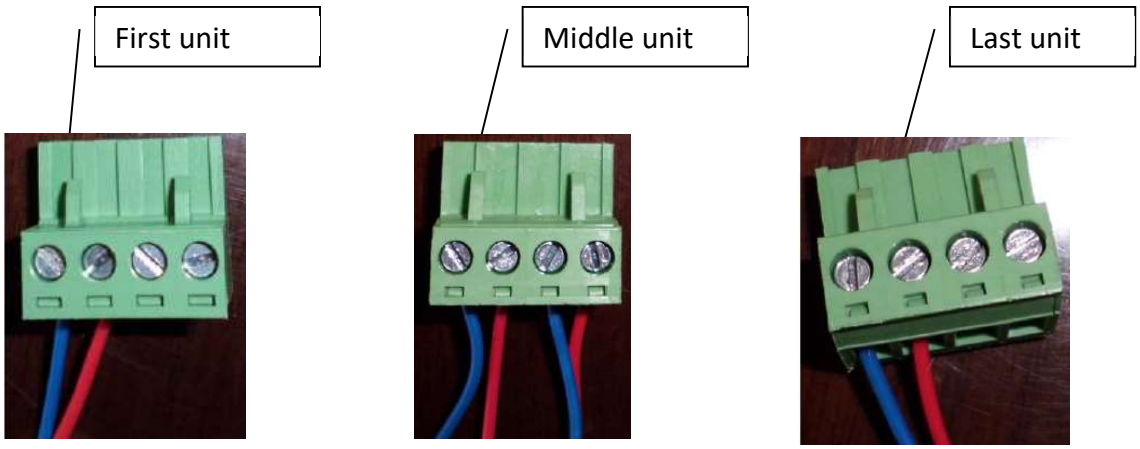
A, B, A, B is printed on the main PCB. When you connect the wires, please ensure connection of A to A and B to B.

3) Connection wire

3.1) If the total length of wire is more than 1000m, please use shielded wire in order to protect the signal transmission.

3.2) Complete wire connection

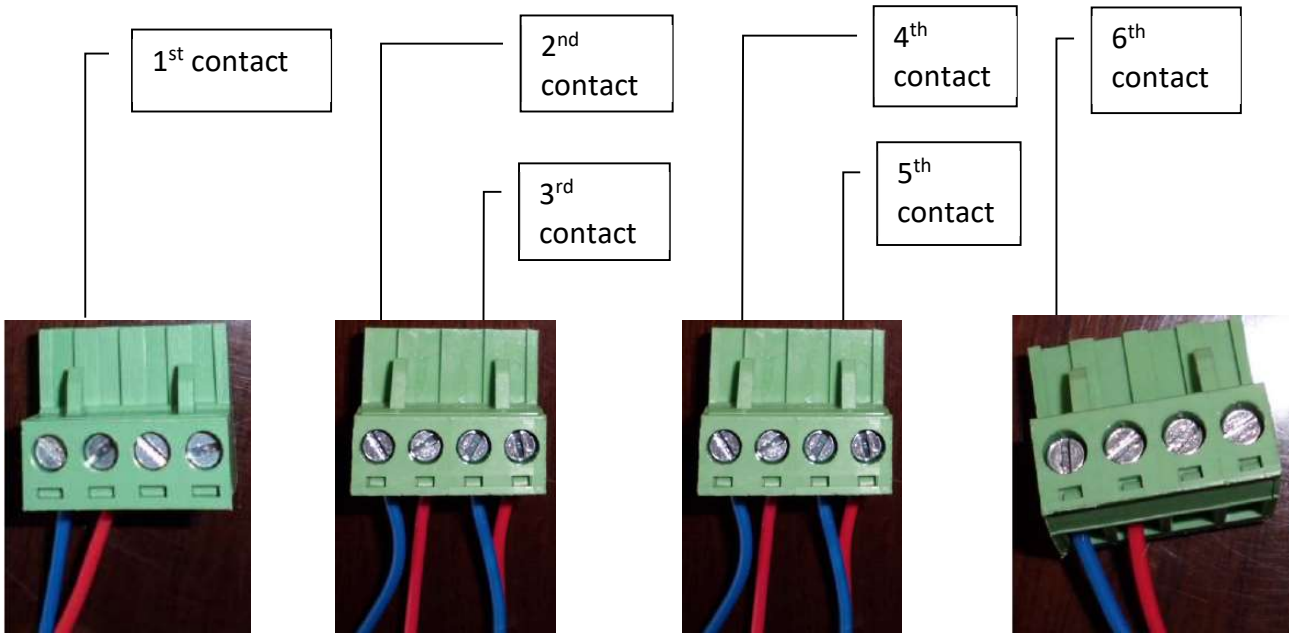




3.3) Wire connection check

3.3.1) After the wire connection is completed, please check that the wire colors correspond.

3.3.2) Check the wire contact by using a multimeter.



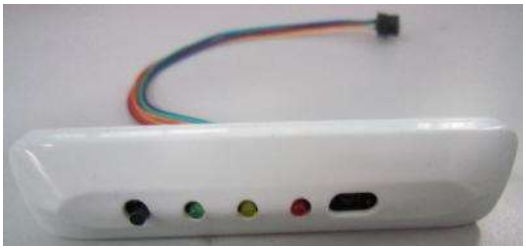
3.3.3) Check 1 and 2, 3 and 4, 5 and 6 to be sure connections are correct.

3.3.4) If the resistance between two wire contacts is too high, please check and reconnect the wire contacts.

4) Reconnect the communication plug to control box

5) Using wired wall pad or Modbus to set each unit address.

D.15. LED Display and Error Description

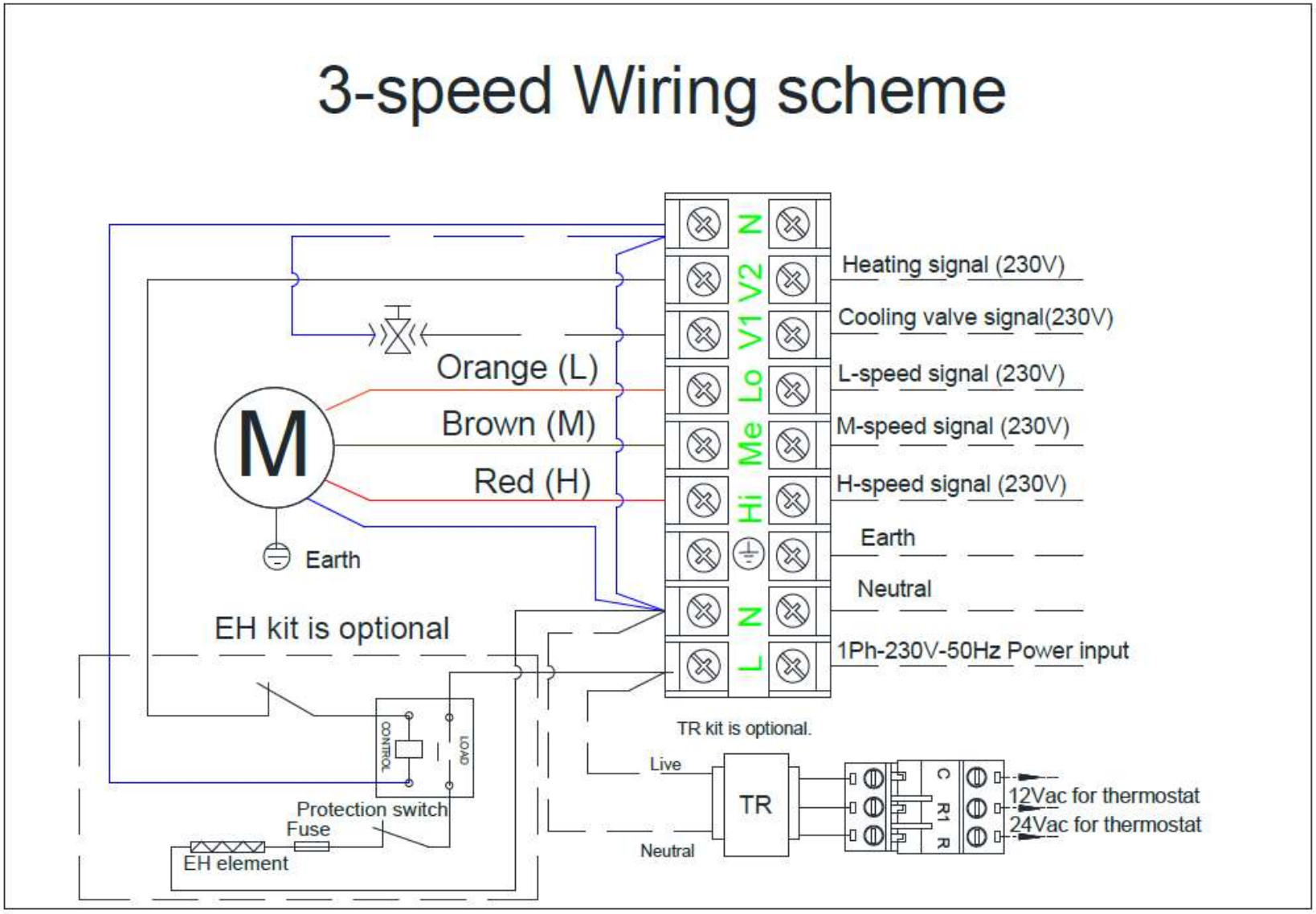


Complete Function PCB – I Control Type		
Fan speed setting	LED indication	Condition
High speed	Red LED On	Normal
Medium speed	Yellow LED On	Normal
Low speed	Green LED On	Normal

For all units - Green LED			
Error Description	Blink	Reason	Remedy
Return air sensor failure	Green LED blinks 1 times, stops for 3s	Room sensor unplugged or damaged.	1. Check if Tr plug is connected or not. 2. Check if sensor's resistance is correct or not.
Indoor coil sensor 1 failure	Green LED blinks 2 times, stops for 3s	Ti1 sensor unplugged or damaged.	1. Check if Ti1 plug is connected or not. 2. Check if sensor's resistance is correct or not.
Indoor coil sensor 2 failure	Green LED blinks 3 times, stops for 3s	Ti2 sensor unplugged or damaged.	1. Check if Ti2 plug is connected or not. 2. Check if sensor's resistance is correct or not.
Water pump failure	Green LED blinks 4 times, stops for 3s	Float switch is opened.	1. Check if the condensate water pipe is connected or not. 2. Check if the pump is functioning or not.
Indoor coil low temperature protection	Green LED blinks 5 times, stops for 3s	Water temperature is lower than 3 ºC.	Check the water temperature.
Indoor coil overheat protection	Green LED blinks 6 times, stops for 3s	Water temperature is higher than 70 ºC.	Check the water temperature.
Filter Switch (S6 PCB)	Green LED blinks 7 times, stops for 3s	Filter switch is opened.	1. Check if filter block or not. 2. Replace the new filter.
Electric Heater failure	Green LED blinks 8 times, stops for 3s	(Only for unit with EH.) EH safety switch is opened.	1. Change fan speed to high. 2. Replace the damaged EH safety switch.
EC motor failure(CN4)	Green LED blinks 9 times, stops 3s	No EC motor feedback	1. Check Modbus setting. 2. Check the EC motor.
EC motor failure(CN5)	Green LED blinks 10 times, stops 3s	No EC motor feedback	1. Check Modbus setting. 2. Check the EC motor.
Anti-frozen protection	Green LED blinks 12 times, stops for 3s	When unit is standby, Tr<2ºC	1. Turn on unit to keep Tr high than 5ºC.

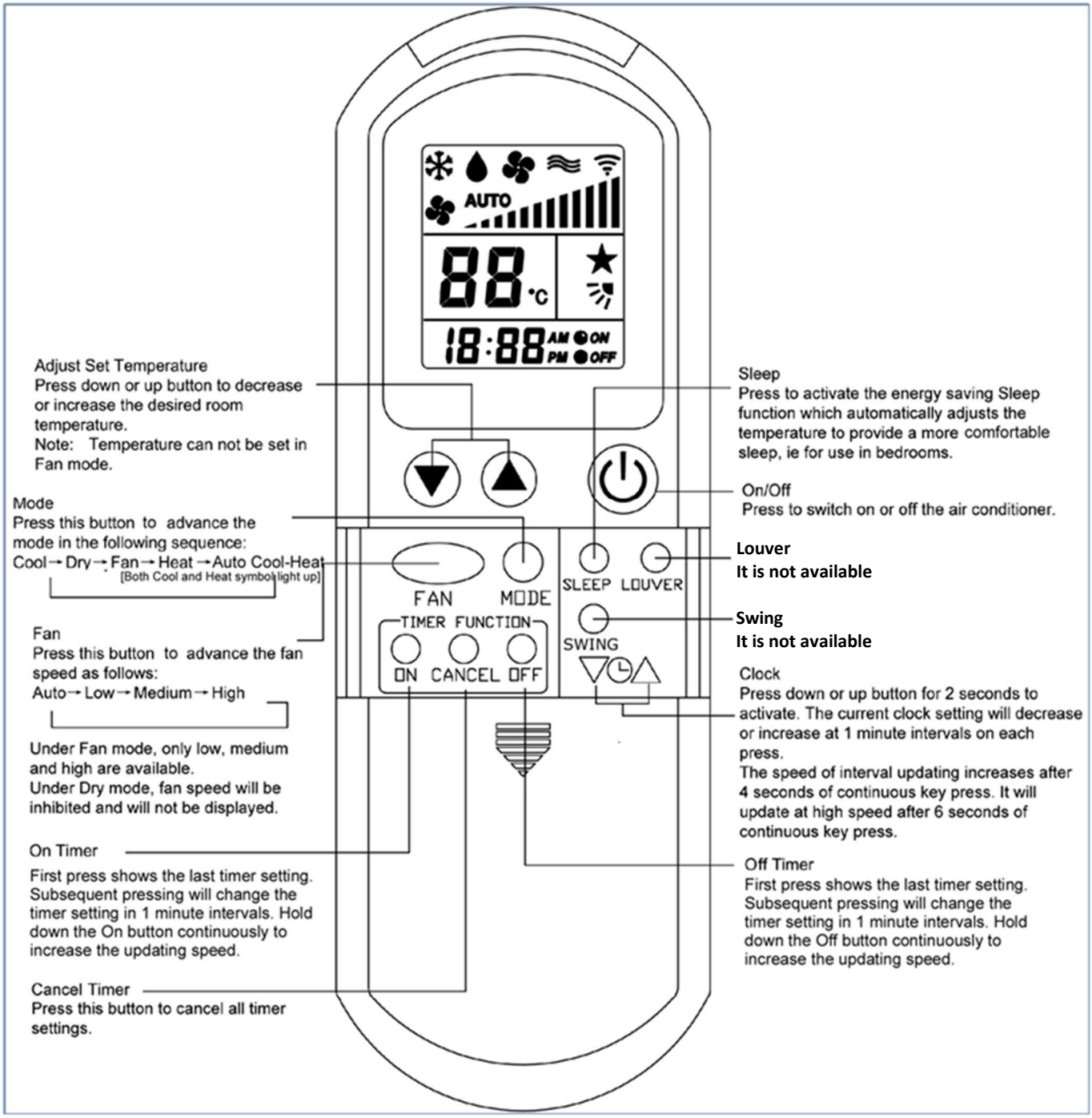
E. Control Specifications: Terminal Strip only (T type)

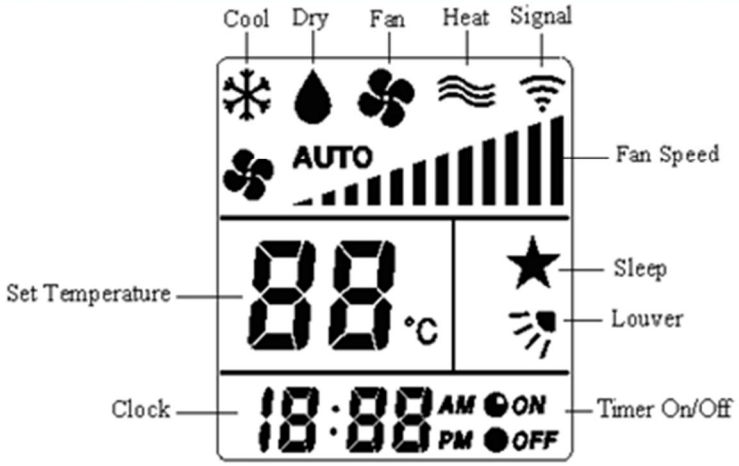
E.1. Wiring Diagram



F. User Interface

F.1. Remote Handset





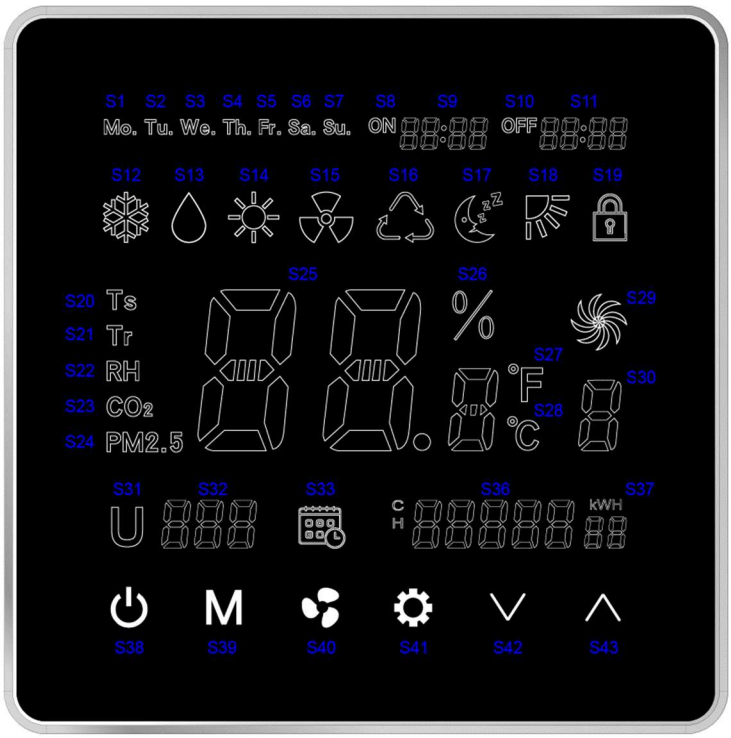
Attention

When unit with handset is the master unit, its settings are automatically sent to the slave units;
Auto Cool-Heat operation will be applicable in 4-pipe system only.

"Swing" and "Louver" functions are not applicable.
European version only uses degree C setting.

F.2. Wired Wall Pad Controller

F.2.1. LED display



Code	Legend	Code	Legend	Code	Legend
S1	Monday	S16	Auto Mode	S31	Unit address
S2	Tuesday	S17	Sleep mode	S32	Unit No. / Error code
S3	Wednesday	S18	Swing mode	S33	Weekly timer
S4	Thursday	S19	LED lock	S34	C-cooling
S5	Friday	S20	Setting Temperature	S35	H-heating
S6	Saturday	S21	Room Temperature	S36	Energy consumption
S7	Sunday	S22	RH (if need)	S37	Energy consumption cycle

S8	Timer-ON	S23	CO2 density (if need)	S38	On/Off Button
S9	Timer-ON time (When Timer-ON is off: Current time)	S24	PM2.5 density (if need)	S39	Mode setting
S10	Timer-OFF	S25	Data Display	S38	On/Off Button
S11	Timer-OFF time	S26	RH percentage	S39	Mode setting
S12	Cooling Mode	S27	Fahrenheit degree	S40	Fan speed setting
S13	Dehumidification	S28	Celsius degree	S41	Parameter setting
S14	Heating Mode	S29	Fan	S42	Up
S15	Ventilation Mode	S30	0-Auto. 1-Low. 2-Medium. 3-High	S43	Down

F.2.2. Operation guide

S38	On/OFF Button	Press  to turn on. Press it again to turn off.
S39	Mode button	With wall pad on, press  to select Cooling, Dehumidification, Heating, Ventilation or Auto sequentially.or Auto sequentially.
S40	Fan Speed Button	Press  S30 to change from 0 to3. 0=Auto speed, 1=Low speed, 2=Medium speed, 3=High speed.
S41	Parameter Setting Button	Long press  for 5 seconds to set today's day of week. Press  or  to change from Monday to Sunday.
		Long press  for 5 seconds then short press it once to set current time. Press  or  to change current time.
		Long press  for 5 seconds then short press it twice to set Timer ON. Press  to set day of week from Monday to Sunday. Press  or  to change Timer ON time. Press  to turn Timer ON on or off and S8 appears or disappears.
		Long press  for 5 seconds then short press it 3 times to set Timer OFF time. Press  to set day of week from Monday to Sunday. Press  or  to change Timer OFF time. Press  to turn Timer OFF on or off and S10 appears or disappears.
		Long press  for 5 seconds then short press it 4 times to set group control and U31 appears. The function is reserved.

	Long press  for 5 seconds then short press it 5 times to set unit address and U32 appears. Press ⌄ or ⌃ to change unit address.
***** For MODBUS user only**	Long press  for 5 seconds then short press it 6 times to set unit parameters. Press  to change the parameter type. Press ⌄ or ⌃ to change parameter setting value. S31/S32 displays “U001”, which is used to set unit type. 0=iAIR …… Mode: Ventilation T, RH, CO2, PM2.5 are displayed. 1=iFCU …… Mode: S12, S13, S14, S15, S16, S21 or S20 is displayed. 2=iAHU …… Mode: S12, S13, S14, S15, S16, S21 or S20 is displayed. 3=iAHU with air cleaner …… Mode: S12, S13, S14, S15, S16, T, RH, CO2, PM2.5 are displayed. S31/S32 displays “U002”, which is used to set unit of temperature degree. 0=Celsius degree. 1=Fahrenheit degree. S31/S32 displays “U003”, which is used to select display temperature on LCD. 1=Setting temperature. 0=Room temperature. S31/S32 displays “U004”, which is used to set setting temperature range. 0=Setting temperature is from 16~30°C. 1=Cooling setting temperature 24°C, Heating setting temperature 21°C. S31/S32 displays “U005”, which is used to set setting temperature band. 1~9°C. S31/S32 displays “U006-U009”, which are reserved to set parameters with optional accessory to measure PM2.5 and CO2 values. S31/S32 displays “U010~U011”, which are reserved. S31/S32 displays “U012”, which is used to set setting RH point. 30~70, default: 50 S31/S32 displays “U013”, which is used to set setting RH band. 10~30, default: 10 S31/S32 displays “U014”, which is used to set unit address. 1~255, default: 1 S31/S32 displays “U015”,which is used to set unit ESP. 0~100%, default: 40%， S31/S32 displays “U016”, which is reserved. S31/S32 displays“U017”, which is used to set software. (please refer to different PCB) 0=2-pipe with valve 1=2-pipe without valve 2=4-pipe with std valve 3=4-pipe with 6-way valve S31/S32 displays “U018”, which is reserved. S31/S32 displays “U019”, which is used to set DA1 function When U001=2,3 U019=0, fan control signal is based on Tr, Ts PID calculation U019=1, fan control signal is based on ESP PID calculation

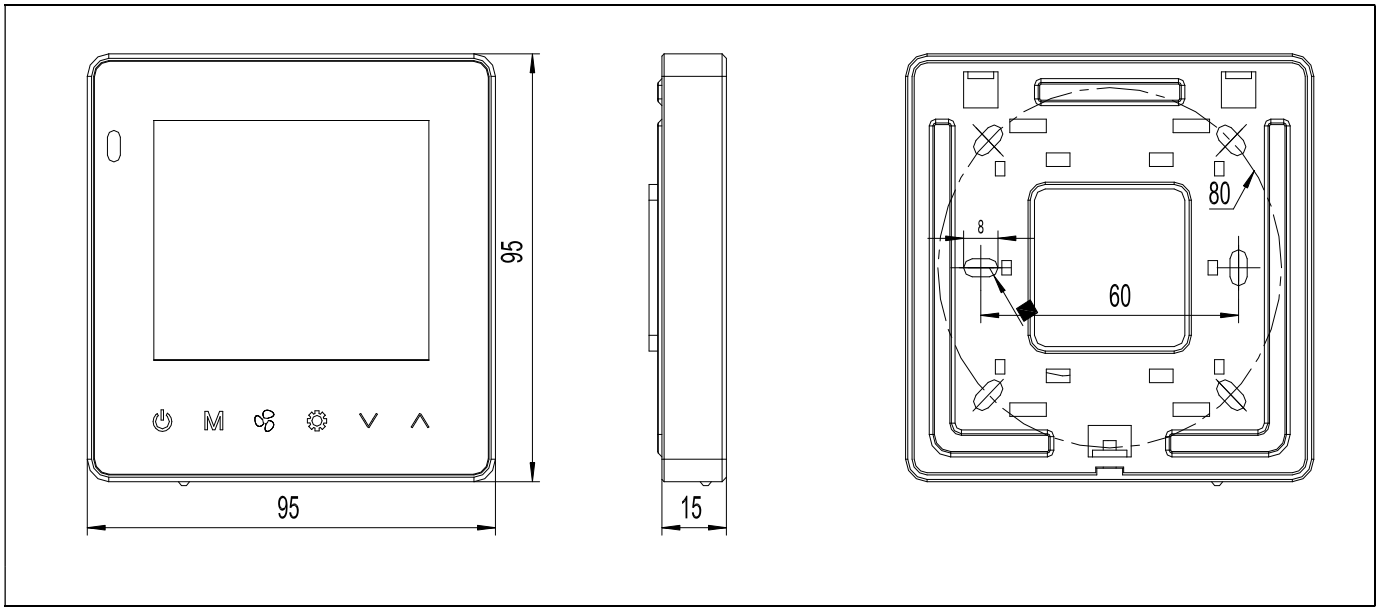
		S31/S32 displays “U020”, which is used to calibrate the sensor on the wired wall pad. -5~5, default: -3 S31/S32 displays “U021”, which is used to set EH function U021= 0, without EH. U021= 1, EH as booster. U021=2, EH as primary. S31/S32 displays “U022”, which is used to select Tr sensor. 0=the sensor in the WWP. 1=the sensor in the PCB. S31/S32 displays “U023”, which is used to display cooling and heating energy consumption. 0=S34/S35/S36/S37 disappears 1=S34/S35/S36/S37 appears In cooling and dehumidification mode, cooling energy consumption is shown. In heating mode, heating energy consumption is shown. 2=Motor running time is shown. S31/S32 displays “U024”, which is used to set low speed RPM or control signal. S31/S32 displays “U025”, which is used to set medium speed RPM or control signal. S31/S32 displays “U026”, which is used to set high speed RPM or control signal. S31/S32 displays “U027”, which is used to set Delta T OF Ti1/Ti2. S31/S32 displays “U028”, which is used to set Delta T OF Ti3/Ti4. S31/S32 displays “U029”, which is used to read unit type. S31/S32 displays “U030”, which is used to read unit model. S31/S32 displays “U031”, which is used to read unit manufacturing date.
S32	Error code	S32：E** blinks Bit0 = Room temperature sensor error Bit1 = Ti1 temperature sensor error Bit2 = Ti2 temperature sensor error Bit3 = Float switch error Bit4 = Indoor coil low temperature protection Bit5 = Indoor coil overheat protection Bit6 =Filter switch Bit7 = Electrical heater failure Bit8 = Motor1 Error Bit9 =Motor2 Error Bit10 = System parameters error Bit11 = Anti-frozen error Bit12 = Ti3 temperature sensor error Bit13 = Ti4 temperature sensor error Bit14 =PM2.5 sensor Bit15 =AQI Error

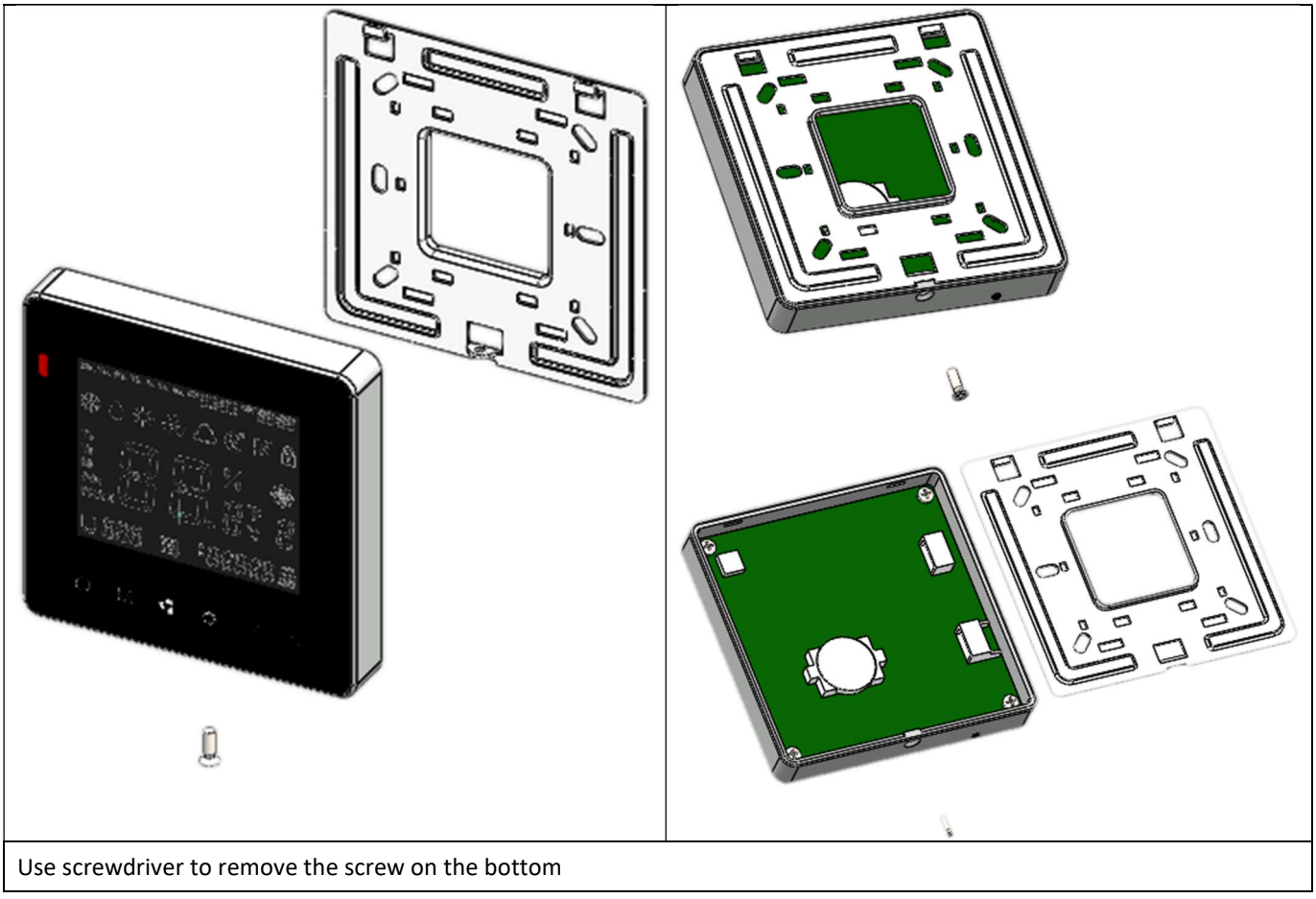
Combination Button Function	Screen Lock Function Long press ^ for 5 seconds, S19 appears and screen is locked. Long press ^ for 5 seconds again, S19 disappears and screen is unlocked.
	Swings Function Long press ⌄ for 5 seconds, S18 appears and swings is ON. Long press ⌄ for 5 seconds again, S18 disappears and swings is OFF.
	Sleep Mode Long press  for 5 seconds, S17 appears and sleep mode is ON. Long press  for 5 seconds again, S17 disappears and sleep mode is OFF.

F.2.3. Error Code List

Error Description	Code	Reason	Remedy
Room temperature sensor error	E1	Room sensor unplugged or damaged.	1. Check if Tr plug is connected or not.
			2. Check if sensor's resistance is correct or not.
Indoor coil sensor 1 failure	E2	Ti1 sensor unplugged or damaged.	1. Check if Ti1 plug is connected or not.
			2. Check if sensor's resistance is correct or not.
Indoor coil sensor 2 failure	E3	Ti2 sensor unplugged or damaged.	1. Check if Ti2 plug is connected or not.
			2. Check if sensor's resistance is correct or not.
Float switch error	E4	Float switch is opened.	1. Check if the condensate water pipe is connected or not.
			2. Check if the pump is functioning or not.
Indoor coil low temperature protection	E5	Water temperature is lower than 3 ºC.	Check the water temperature.
Indoor coil over heat protection	E6	Water temperature is higher than 70 ºC.	Check the water temperature
Filter switch protection	E7	Filter Switch is open.	Replace or clean filter.
Electric Heater failure	E8	Only for unit with EH.	1. Change fan speed to high.
		EH safety switch is opened.	2. Replace the damaged EH safety switch.
Motor qty setting error (S6 PCB)	E11	Motor Qty setting error	1: check Modbus setting
Anti-frozen protection	E12	When unit is standby, Tr<2ºC.	1. Turn on unit to keep Tr high than 5ºC
Indoor coil sensor 3 failure (S6 PCB)	E13	Ti3 sensor unplugged or damaged.	1. Check if Ti3 plug is connected or not.
			2. Check if sensor's resistance is correct or not.
Indoor coil sensor 4 failure (S6 PCB)	E14	Ti4 sensor unplugged or damaged.	1. Check if Ti4 plug is connected or not.
			2. Check if sensor's resistance is correct or not.
PM2.5 sensor failure (S6 PCB)	E15	PM2.5 sensor unplugged or damaged.	1. Check if PM2.5 plug is connected or not.
			2. Check if sensor's resistance is correct or not.
AQI sensor failure (S6 PCB)	E16	AQI sensor unplugged or damaged.	1. Check if AQI plug is connected or not.
			2. Check if sensor's resistance is correct or not.
Wired Wall Pad failure	E17	WWP unplugged or not well	1. Check plugs.

F.2.4. Dimensions and installation





Use screwdriver to remove the screw on the bottom

G. Sensor Resistance R-T Conversion Table

Resistance: R (25°C) = 10KΩ ± 1% Beta Constant: B (25/85) = 3950 ± 1%

Temp. (deg. C)	Rmax (k Ohms)	Rnor (k Ohms)	Rmin (k Ohms)	Temp. (deg. C)	Rmax (k Ohms)	Rnor (k Ohms)	Rmin (k Ohms)
-30	186.3613	179.2666	172.4247	5	25.9521	25.4562	24.9672
-29	174.9608	168.4053	162.0793	6	24.6872	24.2274	23.7738
-28	164.3317	158.2726	152.4218	7	23.4912	23.0650	22.6443
-27	154.4170	148.8151	143.4022	8	22.3599	21.9650	21.5750
-26	145.1643	139.9837	134.9746	9	21.2897	20.9239	20.5622
-25	136.5254	131.7332	127.0964	10	20.2768	19.9380	19.6028
-24	128.4558	124.0216	119.7285	11	19.3178	19.0041	18.6937
-23	120.9146	116.8107	112.8348	12	18.4096	18.1193	17.8318
-22	113.8640	110.0648	106.3818	13	17.5493	17.2807	17.0146
-21	107.2691	103.7512	100.3387	14	16.7340	16.4857	16.2394
-20	101.0977	97.8396	94.6771	15	15.9612	15.7317	15.5040
-19	95.3201	92.3020	89.3705	16	15.2284	15.0164	14.8059
-18	89.9088	87.1124	84.3946	17	14.5333	14.3376	14.1432
-17	84.8385	82.2471	79.7268	18	13.8738	13.6933	13.5139
-16	80.0856	77.6837	75.3463	19	13.2479	13.0816	12.9160
-15	75.6284	73.4018	71.2336	20	12.6537	12.5005	12.3479
-14	71.4468	69.3823	67.3708	21	12.0895	11.9485	11.8080
-13	67.5220	65.6077	63.7412	22	11.5535	11.4239	11.2946
-12	63.8370	62.0616	60.3295	23	11.0442	10.9252	10.8064
-11	60.3755	58.7288	57.1212	24	10.5602	10.4510	10.3419
-10	57.1228	55.5953	54.1032	25	10.1000	10.0000	9.9000
-9	54.0651	52.6480	51.2629	26	9.6709	9.5709	9.4710
-8	51.1895	49.8747	48.5889	27	9.2623	9.1626	9.0630
-7	48.4842	47.2643	46.0705	28	8.8732	8.7738	8.6747
-6	45.9381	44.8062	43.6978	29	8.5025	8.4037	8.3052
-5	43.5409	42.4906	41.4615	30	8.1494	8.0512	7.9534
-4	41.2831	40.3086	39.3531	31	7.8128	7.7154	7.6184
-3	39.1559	38.2516	37.3644	32	7.4919	7.3953	7.2993
-2	37.1508	36.3117	35.4880	33	7.1859	7.0903	6.9953
-1	35.2603	34.4817	33.7169	34	6.8940	6.7995	6.7056
0	33.4771	32.7547	32.0447	35	6.6156	6.5221	6.4294
1	31.7945	31.1243	30.4652	36	6.3498	6.2576	6.1660
2	30.2064	29.5847	28.9728	37	6.0962	6.0051	5.9148
3	28.7068	28.1301	27.5623	38	5.8540	5.7642	5.6752
4	27.2904	26.7556	26.2286	39	5.6227	5.5342	5.4465

Temp. (deg. C)	Rmax (k Ohms)	Rnor (k Ohms)	Rmin (k Ohms)	Temp. (deg. C)	Rmax (k Ohms)	Rnor (k Ohms)	Rmin (k Ohms)
40	5.4018	5.3146	5.2283	77	1.4137	1.3722	1.3317
41	5.1907	5.1049	5.0199	78	1.3681	1.3275	1.2880
42	4.9890	4.9045	4.8210	79	1.3243	1.2845	1.2458
43	4.7961	4.7130	4.6309	80	1.2820	1.2431	1.2053
44	4.6117	4.5300	4.4494	81	1.2413	1.2033	1.1663
45	4.4354	4.3551	4.2759	82	1.2021	1.1649	1.1287
46	4.2667	4.1878	4.1100	83	1.1644	1.1279	1.0926
47	4.1053	4.0278	3.9515	84	1.1279	1.0923	1.0577
48	3.9508	3.8748	3.7999	85	1.0928	1.0580	1.0241
49	3.8030	3.7283	3.6548	86	1.0590	1.0249	0.9918
50	3.6614	3.5882	3.5161	87	1.0264	0.9930	0.9606
51	3.5258	3.4540	3.3833	88	0.9949	0.9623	0.9306
52	3.3960	3.3255	3.2562	89	0.9646	0.9326	0.9016
53	3.2715	3.2025	3.1346	90	0.9353	0.9040	0.8737
54	3.1523	3.0846	3.0181	91	0.9070	0.8764	0.8468
55	3.0380	2.9717	2.9065	92	0.8797	0.8498	0.8208
56	2.9285	2.8635	2.7996	93	0.8534	0.8241	0.7958
57	2.8234	2.7597	2.6972	94	0.8280	0.7994	0.7716
58	2.7227	2.6603	2.5990	95	0.8035	0.7754	0.7483
59	2.6260	2.5649	2.5049	96	0.7798	0.7523	0.7258
60	2.5333	2.4734	2.4147	97	0.7569	0.7300	0.7041
61	2.4443	2.3856	2.3282	98	0.7348	0.7085	0.6831
62	2.3589	2.3014	2.2452	99	0.7134	0.6877	0.6628
63	2.2768	2.2206	2.1656	100	0.6928	0.6676	0.6433
64	2.1981	2.1431	2.0892	101	0.6728	0.6482	0.6244
65	2.1224	2.0686	2.0159	102	0.6536	0.6295	0.6062
66	2.0498	1.9970	1.9455	103	0.6349	0.6113	0.5885
67	1.9800	1.9283	1.8779	104	0.6169	0.5938	0.5715
68	1.9129	1.8623	1.8130	105	0.5995	0.5769	0.5550
69	1.8484	1.7989	1.7507	106	0.5826	0.5605	0.5391
70	1.7864	1.7380	1.6908	107	0.5663	0.5447	0.5237
71	1.7267	1.6794	1.6332	108	0.5506	0.5293	0.5089
72	1.6694	1.6231	1.5779	109	0.5353	0.5145	0.4945
73	1.6142	1.5689	1.5247	110	0.5206	0.5002	0.4806
74	1.5612	1.5168	1.4736	111	0.5063	0.4863	0.4671
75	1.5101	1.4667	1.4245	112	0.4924	0.4729	0.4541
76	1.4610	1.4185	1.3772	113	0.4791	0.4599	0.4415

H. Troubleshooting

Symptoms	Cause	Remedy
The fan coil does not start up	No voltage	Check for presence of voltage Check fuse on board
	Mains switch in the “OFF position	Place in the “ON” position
	Faulty room control	Check the room control
	Faulty fan	Check fan motor
Insufficient output	Filter clogged	Clean the filter
	Air flow obstructed	Remove obstacles
	Room control regulation	Check the room air sensor
	Incorrect water temperature	Check the water source
	Air present	Check the air vent
Noise and vibrations	Contact between metal parts	Check for loosening parts
	Loose screws	Tighten screws

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Note: All the information or data in this manual may be changed without notice.

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