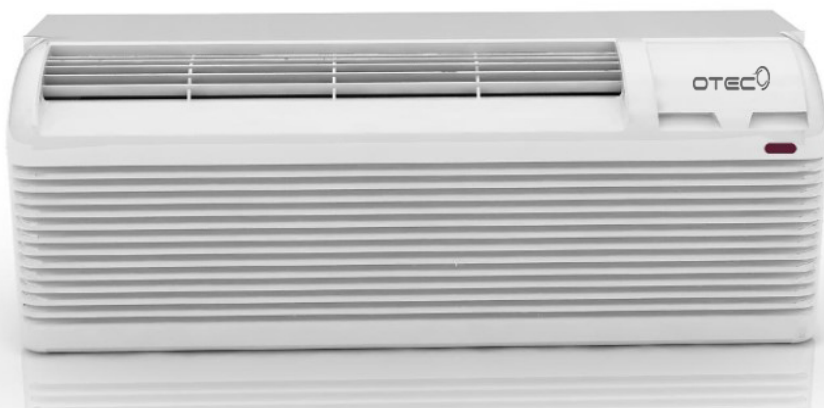


PTSA Series

ON/OFF Packaged Terminal Air Conditioner/Heat Pump Service Manual

208~230V/1/60Hz



I. Summary and Features

Summary:

The unit is the packaged one, including the indoor part and the outdoor part. The unit is installed in the hole pre-embedded in the wall, which is different from traditional installation and prettifies the room, without occupying the space.

Features:

- a. Easy installation: Install the drainage pipe at first, and then push the unit into the installed cabinet assy. At last, turn the safety clamp for 90 degrees to finish.
- b. Easy cleaning and maintenances: Pull the unit out and unscrew the 6 screws used for fixing the cover plate to remove it. In this case, condenser can be cleaned with water. At last, lift the unit slightly to drain the water.
- c. High energy efficiencies: the unit meet for the latest DOE requirement and the AHRI standard.
- d. Silent design: optimized air discharge channel design, specialized blower wheel, the lower rotational speed, contributing better noise control.

II Specification and Technical Parameter

Cooling with Auxiliary Electrical Heater unit (208-230V)

Model			PTSA-007E2A-G3D026	PTSA-009E2A-G3D028	PTSA-012E2A-G3D035	PTSA-015E2A-G5D042	
Code			821020300061	821020500115	821020800096	821021100074	
Power supply			230/208V /60Hz	230/208V /60Hz	230/208V /60Hz	230/208V /60Hz	
Power supply type			Single-phase power supply	Single-phase power supply	Single-phase power supply	Single-phase power supply	
Cooling	Capacity	Btu/h	7400/7200	9500/9300	12200/12000	14700/14500	
	Input	W	620/605	835/815	1140/1120	1470/1450	
	EER	Btu/h.W	11.9/11.9	11.4/11.4	10.7/10.7	10.0/10.0	
Heating	Capacity	Btu/h	/	/	/	/	
	Input	W	/	/	/	/	
	COP	Btu/h.W	/	/	/	/	
Electric heating	Capacity	Btu/h	10200/8300	10200/8300	10200/8300	17000/13900	
	Power input	kW	3050/2500	3050/2500	3050/2500	5050/4135	
	Rated current	A	13.2/12	13.2/12.0	13.2/12.0	21.9/19.8	
Cooling power factor			0.992/0.994	0.987/0.990	0.956/0.963	0.985/0.991	
Heating power factor			/	/	/	/	
Max. input consumption			W	775	1080	1460	1760
MCA			A	16.5	16.5	16.5	26.4
MOP			A	20	20	20	30
Max. current			A	3.4	4.8	7.3	7.8
Starting current			A	/	/	/	/
Dehumidification	230V	kg/h	0.02	0.65	1.2	1.72	
		pint/hr	0.04	1.37	2.54	3.64	
	208V	kg/h	0.11	0.8	1.32	1.84	
		pint/hr	0.23	1.69	2.79	3.89	
Compressor	Model		ASN58N	ASN82N	ASM113N1UDZ	ASM135N	
	Type		Rotary	Rotary	Rotary	Rotary	
	Brand		GMCC	GMCC	GMCC	GMCC	
	Supplier		GMCC	GMCC	GMCC	GMCC	
	Capacity	Btu/h	6500/6550 ± 5 %	9550/9600 ± 5 %	11500/11450 ± 5%	13700/13850 ± 5%	
	Input	W	480/492 ± 5 %	675/690 ± 5 %	1090/1075 ± 5%	1275/1300 ± 5%	
	Rated current(RLA)	A	2.30/2.15	3.25/3.05	4.9/5.3 ± 5%	6.35/5.75	
	Locked rotor Amp(LRA)	A	17 ± 10%	20 ± 10%	28.5 ± 10%	34.5 ± 10%	
	Thermal protector	°C	135 ± 5 (Built-in)	135 ± 5 (Built-in)	135 ± 5 (Built-in)	135 ± 5 (Built-in)	
	Capacitor	uF	20	20	40	40	
Refrigerant oil	ml	270	280	320	300		
Indoor fan motor	Model		YDK-25-4P2	YDK-25-4P2	YDK-30-4P2	YDK-30-4P2	
	Type		Single-axis fan motor	Single-axis fan motor	Single-axis fan motor	Single-axis fan motor	
	Brand		KB/Chigo	KB/Chigo	KB/Chigo	KB/Chigo	
	Insulation class		A	A	A	A	
	Safe class		IP20	IP20	IP20	IP20	
	Input	W	55	55	64	64	
	Output	W	25	25	30	30	
	Rated current	A	0.25	0.25	0.29	0.29	
	Capacitor	uF	1.5	1.5	1.5	1.5	
	Speed(hi/lo)	r/min	900/650	900/650	1050/850	1050/950	
Indoor fan	material		Metal	Metal	Metal	Metal	
	Type		Cross-flow fan blade	Cross-flow fan blade	Cross-flow fan blade	Cross-flow fan blade	
	Diameter	mm	120	120	120	120	
Indoor coil	Height	mm	706	706	706	706	
	a.Number of rows		2	2	2	3	
	b.Tube pitch(a)x row pitch(b)	mm	21*13.37	21*13.37	21*13.37	21*13.37	
	c.Fin spacing	mm	1.4	1.4	1.4	1.6	
	d.Fin type (code)		Window type fins	Window type fins	Window type fins	Window type fins	
	e.Tube outside dia.and type	mm	φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe	
	f.Coil length x height	mm	704*252	704*252	704*252	704*252	
	g.Number of circuits		2	2	2	2	
Indoor air flow (Hi/Lo)			m3/h	720/620	700/620	800/700	800/700
CFM				424/365	412/365	471/412	471/412
Indoor external static pressure (Hi)			Pa	0	0	0	0
Indoor sound level (sound pressure level)			dB(A)	48/39	48/39	52/46	51/48
Outdoor fan motor	Model		YDK-55-4P2-4	YDK-55-4P2-4	YDK-AI-55-4P2	YDK-55-4P2-4	
	Type		Single-axis iron motor	Single-axis iron motor	Single-axis iron motor	Single-axis iron motor	
	Brand		GI	GI	GI	GI	
	Insulation class		A	A	A	A	
	Safe class		IPX4	IPX4	IPX4	IPX4	
	Input	W	104	104	104	104	
	Output	W	55	55	55	55	
	Rated current	A	0.46	0.46	0.46	0.46	
	Capacitor	uF	3	3	3	3	
	Speed	r/min	1600	1600	1600	1600	
Outdoor fan	material		ABS+G15	ABS+G15	ABS+G15	ABS+G15	
	Type		Axial flow	Axial flow	Axial flow	Axial flow	
	Diameter	mm	348	348	348	348	
	Height	mm	104	104	104	104	
Outdoor coil	Number of rows		2	2	2	3	
	Tube pitch(a)x row pitch(b)		mm	14.5*12.56	14.5*12.56	14.5*12.56	21*13.37
	Fin spacing		mm	1.3	1.3	1.3	1.5
	Fin type (code)			Hydrophilic window fins	Hydrophilic window fins	Hydrophilic window fins	Hydrophilic window fins
	Tube outside dia.and type		mm	φ5 φ4.9×0.2+0.15×C	φ5 φ4.9×0.2+0.15×C	φ5 φ4.9×0.2+0.15×C	φ7 φ7×0.2+0.18×C
	Coil length x height		mm	676x348	676x348	676x348	676x336
	Number of circuits			4	2	2	4

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Outdoor air flow	m3/h	1200	1200	1200	1200
Outdoor sound level(sound pressure level)	dB(A)	66	66	66	66
Unit	Dimension(W*H*D)	mm	1066*535*408	1066*535*408	1066*535*408
		inch	42*21*16	42*21*16	42*21*16
	Packing (W*H*D)	mm	1150*630*480	1150*630*480	1150*630*480
		inch	45*25*19	45*25*19	45*25*19
Net/Gross weight	Kg	43.5/48.5	43.5/48.5	46/51	48.5/53.5
Charged refrigerant type	g	560	550	750	970
	oz	19	19.4	26.5	34.2
Throttle type		Capillary	Capillary	Capillary	Capillary
Design pressure	MPa	3.1/1.6	3.1/1.6	3.3/1.6	3.6/1.6
Connection wiring	Power wiring	mm2	3.3081 (LCDI-20A)	3.3081 (LCDI-20A)	3.3081 (LCDI-20A)
	Signal wiring	mm2	0.3243	0.3243	0.3243
Controller		Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control
Operation temp	°C	16~32	16~32	16~32	16~32
Ambient temp	°C	≤46.1	≤46.1	≤46.1	≤46.1

II Specification and Technical Parameter

Cooling Only unit (208-230V)

Model		PTSA-007C2A-GND026	PTSA-009C2A-GND028	PTSA-012C2A-GND035	PTSA-015C2A-GND042
Code		821020300061	821020500115	821020800096	821021100074
Power supply		V-Ph-Hz	230/208V /60Hz	230/208V /60Hz	230/208V /60Hz
Power supply type		Single-phase power supply	Single-phase power supply	Single-phase power supply	Single-phase power supply
Cooling	Capacity	Btu/h	7400/7200	9500/9300	12200/12000
	Input	W	620/605	835/815	1140/1120
	EER	Btu/h.W	11.9/11.9	11.4/11.4	10.7/10.7
Heating	Capacity	Btu/h	/	/	/
	Input	W	/	/	/
	COP	Btu/h.W	/	/	/
Cooling power factor			0.992/0.994	0.987/0.990	0.956/0.963
Heating power factor			/	/	/
Max. input consumption		W	775	1080	1460
MCA		A	16.5	16.5	16.5
MOP		A	20	20	20
Max. current		A	3.4	4.8	7.3
Starting current		A	/	/	/
Dehumidification	230V	kg/h	0.02	0.65	1.2
		pint/hr	0.04	1.37	2.54
	208V	kg/h	0.11	0.8	1.32
		pint/hr	0.23	1.69	2.79
Compressor	Model		ASN58N	ASN82N	ASM113N1UDZ
	Type		Rotary	Rotary	Rotary
	Brand		GMCC	GMCC	GMCC
	Supplier		GMCC	GMCC	GMCC
	Capacity	Btu/h	6500/6550 ± 5 %	9550/9600± 5 %	11500/11450±5%
	Input	W	480/492 ± 5 %	675/690 ± 5 %	1090/1075 ±5%
	Rated current(RLA)	A	2.30/2.15	3.25/3.05	4.9/5.3 ±5%
	Locked rotor Amp(LRA)	A	17±10%	20±10%	28.5±10%
	Thermal protector	°C	135±5(Built-in)	135±5(Built-in)	135±5(Built-in)
	Capacitor	uF	20	20	40
Refrigerant oil	ml	270	280	320	
Indoor fan motor	Model		YDK-25-4P2	YDK-25-4P2	YDK-30-4P2
	Type		Single-axis fan motor	Single-axis fan motor	Single-axis fan motor
	Brand		KB/Chigo	KB/Chigo	KB/Chigo
	Insulation class		A	A	A
	Safe class		IP20	IP20	IP20
	Input	W	55	55	64
	Output	W	25	25	30
	Rated current	A	0.25	0.25	0.29
	Capacitor	uF	1.5	1.5	1.5
	Speed(hi/lo)	r/min	900/650	900/650	1050/850
Indoor fan	material		Metal	Metal	Metal
	Type		Cross-flow fan blade	Cross-flow fan blade	Cross-flow fan blade
	Diameter	mm	120	120	120
	Height	mm	706	706	706
Indoor coil	a.Number of rows		2	2	3
	b.Tube pitch(a)x row pitch(b)	mm	21*13.37	21*13.37	21*13.37
	c.Fin spacing	mm	1.4	1.4	1.6
	d.Fin type (code)		Window type fins	Window type fins	Window type fins
	e.Tube outside dia.and type	mm	φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe
	f.Coil length x height	mm	704*252	704*252	704*252
	g.Number of circuits		2	2	2
Indoor air flow (Hi/Lo)		m3/h	720/620	700/620	800/700
Indoor external static pressure (Hi)		Pa	0	0	0
Indoor sound level (sound pressure level)		dB(A)	48/39	48/39	52/46
Outdoor fan motor	Model		YDK-55-4P2-4	YDK-55-4P2-4	YDK-AI-55-4P2
	Type		Single-axis iron motor	Single-axis iron motor	Single-axis iron motor
	Brand		GI	GI	GI
	Insulation class		A	A	A
	Safe class		IPX4	IPX4	IPX4
	Input	W	104	104	104
	Output	W	55	55	55
	Rated current	A	0.46	0.46	0.46
	Capacitor	uF	3	3	3
	Speed	r/min	1600	1600	1600
Outdoor fan	material		ABS+G15	ABS+G15	ABS+G15
	Type		Axial flow	Axial flow	Axial flow
	Diameter	mm	348	348	348
	Height	mm	104	104	104
Outdoor coil	Number of rows		2	2	3
	Tube pitch(a)x row pitch(b)	mm	14.5*12.56	14.5*12.56	14.5*12.56
	Fin spacing	mm	1.3	1.3	1.5
	Fin type (code)		Hydrophilic window fins	Hydrophilic window fins	Hydrophilic window fins
	Tube outside dia.and type	mm	φ5 φ4.9×0.2+0.15×C	φ5 φ4.9×0.2+0.15×C	φ5 φ4.9×0.2+0.15×C
	Coil length x height	mm	676x348	676x348	676x348
Outdoor air flow		m3/h	1200	1200	1200
Outdoor sound level(sound pressure level)		dB(A)	66	66	66
Dimension(W*H*D)		mm	1066*535*408	1066*535*408	1066*535*408

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Unit	Dimension(W*H*D)	inch	42*21*16	42*21*16	42*21*16	42*21*16
	Packing (W*H*D)	mm	1150*630*480	1150*630*480	1150*630*480	1150*630*480
		inch	45*25*19	45*25*19	45*25*19	45*25*19
	Net/Gross weight	Kg	43.5/48.5	43.5/48.5	46/51	48.5/53.5
Charged refrigerant type		g	560	550	750	970
		oz	19	19.4	26.5	34.2
Throttle type			Capillary	Capillary	Capillary	Capillary
Design pressure		MPa	3.1/1.6	3.1/1.6	3.3/1.6	3.6/1.6
Connection wiring	Power wiring	mm2	3.3081 (LCDI-20A)	3.3081 (LCDI-20A)	3.3081 (LCDI-20A)	5.2615 (LCDI-30A)
	Signal wiring	mm2	0.3243	0.3243	0.3243	0.3243
Controller			Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control
Operation temp		°C	16~32	16~32	16-32	16-32
Ambient temp		°C	≤46.1	≤46.1	≤46.1	≤46.1

II Specification and Technical Parameter

Heat Pump with Auxiliary Electrical Heater unit (208-230V)

Model		PTSA-007K2A-G3D026	PTSA-009K2A-G3D028	PTSA-012K2A-G3D035	PTSA-015K2A-G5D042
Code		821020300060	821020500114	821020800095	821021100073
Power supply		V-Ph- Hz 230/208V /60Hz	230/208V /60Hz	230/208V /60Hz	230/208V /60Hz
Power supply type		Single-phase power supply	Single-phase power supply	Single-phase power supply	Single-phase power supply
Cooling	Capacity	Btu/h 7200/6800	9200/9000	12000/11800	14700/14500
	Input	W 605/570	805/790	1130/1110	1470/1450
	EER	Btu/h. W 11.9/11.9	11.4/11.4	10.6/10.6	10.0/10.0
Heating	Capacity	Btu/h 6000/5800	8300/8100	10800/10500	13600/13400
	Input	W 520/500	715/700	960/930	1245/1210
	COP	Btu/h. W 3.4/3.4	3.4/3.4	3.3/3.3	3.2/3.2
Electric heating	Capacity	Btu/h 10200/8300	10200/8300	10200/8300	17000/13900
	Power input	kW 3050/2500	3050/2500	3050/2500	5050/4135
	Rated current	A 13.2/12	13.2/12.0	13.2/12.0	21.9/19.8
Cooling power factor		0.992/0.994	0.987/0.990	0.956/0.963	0.985/0.991
Heating power factor		0.990/0.991	0.987/0.988	0.936/0.940	0.983/0.991
Max. input consumption		W 775	1080	1460	1760
MCA		A 16.5	16.5	16.5	26.4
MOP		A 20	20	20	30
Max. current		A 3.4	4.8	7.3	7.8
Starting current		A /	/	/	/
Dehumidification	230V	kg/h 0.02	0.65	1.2	1.72
		pint/hr 0.04	1.37	2.54	3.64
	208V	kg/h 0.11	0.8	1.32	1.84
		pint/hr 0.23	1.69	2.79	3.89
Compressor	Model	ASN58N	ASN82N	ASM113N1UDZ	ASM135N
	Type	Rotary	Rotary	Rotary	Rotary
	Brand	GMCC	GMCC	GMCC	GMCC
	Supplier	GMCC	GMCC	GMCC	GMCC
	Capacity	Btu/h 6500/6550 ± 5 %	9550/9600± 5 %	11500/11450±5%	13700/13850±5%
	Input	W 480/492 ± 5 %	675/690 ± 5 %	1090/1075 ±5%	1275/1300 ±5%
	Rated current(RLA)	A 2.30/2.15	3.25/3.05	4.9/5.3 ±5%	6.35/5.75
	Locked rotor Amp(LRA)	A 17±10%	20±10%	28.5±10%	34.5±10%
	Thermal protector	°C 135±5(Built-in)	135±5(Built-in)	135±5(Built-in)	135±5(Built-in)
	Capacitor	uF 20	20	40	40
Refrigerant oil	ml 270	280	320	300	
Indoor fan motor	Model	YDK-25-4P2	YDK-25-4P2	YDK-30-4P2	YDK-30-4P2
	Type	Single-axis fan motor	Single-axis fan motor	Single-axis fan motor	Single-axis fan motor
	Brand	KB/Chigo	KB/Chigo	KB/Chigo	KB/Chigo
	Insulation class	A	A	A	A
	Safe class	IP20	IP20	IP20	IP20
	Input	W 55	55	64	64
	Output	W 25	25	30	30
	Rated current	A 0.25	0.25	0.29	0.29
	Capacitor	uF 1.5	1.5	1.5	1.5
	Speed(hi/lo)	r/min 900/650	900/650	1050/850	1050/950
Indoor fan	material	Metal	Metal	Metal	Metal
	Type	Cross-flow fan blade	Cross-flow fan blade	Cross-flow fan blade	Cross-flow fan blade
	Diameter	mm 120	120	120	120
	Height	mm 706	706	706	706
Indoor coil	a.Number of rows	2	2	2	3
	b.Tube pitch(a)x row pitch(b)	mm 21*13.37	21*13.37	21*13.37	21*13.37
	c.Fin spacing	mm 1.4	1.4	1.4	1.6
	d.Fin type (code)	Window type fins	Window type fins	Window type fins	Window type fins
	e.Tube outside dia.and type	mm φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe	φ7×0.24+0.18×C Threaded pipe
	f.Coil length x height	mm 704*252	704*252	704*252	704*252
	g.Number of circuits	2	2	2	2
	Indoor air flow (Hi/Lo)	m3/h CFM 720/620 424/365	700/620 412/365	800/700 471/412	800/700 471/412
Indoor external static pressure (Hi)	Pa 0	0	0	0	
Indoor sound level (sound pressure level)	dB(A) 48/39	48/39	52/46	51/48	
Outdoor fan motor	Model	YDK-55-4P2-4	YDK-55-4P2-4	YDK-AI-55-4P2	YDK-55-4P2-4
	Type	Single-axis iron motor	Single-axis iron motor	Single-axis iron motor	Single-axis iron motor
	Brand	GI	GI	GI	GI
	Insulation class	A	A	A	A
	Safe class	IPX4	IPX4	IPX4	IPX4
	Input	W 104	104	104	104
	Output	W 55	55	55	55
	Rated current	A 0.46	0.46	0.46	0.46
	Capacitor	uF 3	3	3	3
	Speed	r/min 1600	1600	1600	1600
Outdoor fan	material	ABS+G15	ABS+G15	ABS+G15	ABS+G15
	Type	Axial flow	Axial flow	Axial flow	Axial flow
	Diameter	mm 348	348	348	348
	Height	mm 104	104	104	104
Outdoor coil	Number of rows	2	2	2	3
	Tube pitch(a)x row pitch(b)	mm 14.5*12.56	14.5*12.56	14.5*12.56	21*13.37
	Fin spacing	mm 1.3	1.3	1.3	1.5
	Fin type (code)	Hydrophilic window fins	Hydrophilic window fins	Hydrophilic window fins	Hydrophilic window fins

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		Tube outside dia.and type	mm	φ5	φ5	φ5	φ7
				φ4.9×0.2+0.15×C	φ4.9×0.2+0.15×C	φ4.9×0.2+0.15×C	φ7×0.24+0.18×C
		Coil length x height	mm	676x348	676x348	676x348	676x336
		Number of circuits		4	2	2	4
Outdoor air flow			m3/h	1200	1200	1200	1200
Outdoor sound level(sound pressure level)			dB(A)	66	66	66	66
Unit	Dimension(W*H*D)		mm	1066*535*408	1066*535*408	1066*535*408	1066*535*408
			inch	42*21*16	42*21*16	42*21*16	42*21*16
	Packing (W*H*D)		mm	1150*630*480	1150*630*480	1150*630*480	1150*630*480
			inch	45*25*19	45*25*19	45*25*19	45*25*19
Charged refrigerant type			Kg	44/49	44/49	46.5/51.5	49/54
			g	540	550	750	970
			oz	19	19.4	26.5	34.2
Throttle type				Capillary	Capillary	Capillary	Capillary
Design pressure			MPa	3.1/1.6	3.1/1.6	3.3/1.6	3.6/1.6
Connection wiring	Power wiring	mm2	3.3081 (LCDI-20A)	3.3081 (LCDI-20A)	3.3081 (LCDI-20A)	5.2615 (LCDI-30A)	
	Signal wiring	mm2	0.3243	0.3243	0.3243	0.3243	
Controller				Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control	Button control/ Remote control /24V wired control
Operation temp			°C	16~32	16~32	16~32	16~32
Ambient temp			°C	≤46.1	≤46.1	≤46.1	≤46.1

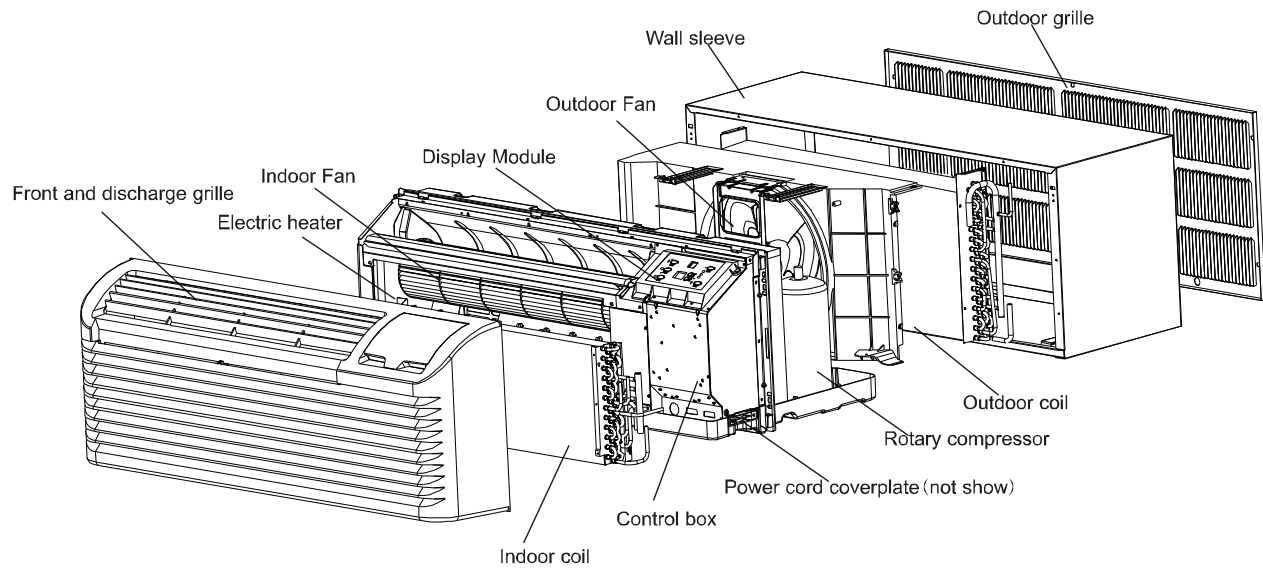
Cooling with electric heater unit (265V)

Model			PTSA-007EXA-G3D026	PTSA-009EXA-G3D028	PTSA-012EXA-G3D035	PTSA-015EXA-G3D042
Power supply			265V/1PH/60Hz			
Cooling	Capacity	Btu/h	7000	9200	12000	15000
	Power Input	W	595	805	1145	1485
	EER	Btu/w	11.9	11.4	10.5	10.1
Electric heater		Btu/h	10200	10200	10200	17000
		W	3000	3000	3000	5000
Indoor side performance	Air flow	CFM	388/265	388/265	400/312	400/312
	Noise level	dB(A)	49/44	52/44	52/47	53/47
Net dimension	W×H×D	mm	1066×535×408	1066×535×408	1066×535×408	1066×535×408
		inch	42*21*16	42*21*16	42*21*16	42*21*16
Packing dimension	W×H×D	mm	1150×630×480	1150×630×480	1150×630×480	1150×630×480
		inch	45.3*24.8*19.9	45.3*24.8*19.9	45.3*24.8*19.9	45.3*24.8*19.9
Net Weight		kg	42.5	46	46.5	52.5
		lbs	93.7	101.4	102.5	115.7
Gross Weight		kg	47.5	51	51.5	57.5
		lbs	104.7	112.4	113.5	126.8
Refrigerant	weight	ml	525	560	665	950
		ozs	17.75	18.94	22.49	32.13
Qty'per20'/40'/40HQ		Set	72/152/190	72/152/190	72/152/190	72/152/190

Heat pump with electric heater unit (265V)

Model			PTSA-007KXA-G3D026	PTSA-009KXA-G3D028	PTSA-012KXA-G3D035	PTSA-015KXA-G3D042
Power supply			265V/1PH/60Hz			
Cooling	Capacity	Btu/h	7000	9200	12000	15000
	Power Input	W	590	805	1140	1485
	EER	Btu/w	11.9	11.5	10.5	10.1
Electric heater		Btu/h	10200	10200	10200	17000
		W	3000	3000	3000	5000
Heating	Capacity	Btu/h	6100	8100	11000	14000
	Power Input	W	525	705	1005	1325
	COP	W/W	3.4	3.4	3.2	3.1
Indoor side	Air flow	CFM	388/265	388/265	400/312	400/312
performance	Noise level	dB(A)	49/44	52/44	52/47	53/47
Net dimension	W×H×D	mm	1066×535×408	1066×535×408	1066×535×408	1066×535×408
		inch	42*21*16	42*21*16	42*21*16	42*21*16
Packing dimension	W×H×D	mm	1150×630×480	1150×630×480	1150×630×480	1150×630×480
		inch	45.3*24.8*19.9	45.3*24.8*19.9	45.3*24.8*19.9	45.3*24.8*19.9
Net Weight		kg	43	45.5	47	52.5
		lbs	94.8	100.3	103.6	115.7
Gross Weight		kg	48	50.5	52	57.5
		lbs	105.8	111.3	114.6	126.8
Refrigerant	weight	g	525	50.5	665	950
		ozs	17.75	18.94	22.49	32.13
Qty'per20'/40'/40HQ		Set	72/152/190	72/152/190	72/152/190	72/152/190

III Parts' Name



Wall sleeve: all our sleeves have industry standard dimensions of 42" wide x 16" high. The 14" depth is the industry standard. Sleeves may be shipped separately to allow for installation during construction.

Outdoor grille: available in stamped aluminum louvered for application with wall sleeve.

Condensate drain kit: attaches to the wall sleeve base pan for controlled internal or external disposal of condensate.

IV Controller Function Manual and Operating Method

Controller Function Manual

This function manual is applicable to PTAC. The unit for temperature is centigrade. If there's Fahrenheit, their transition relations is $T_{\text{Fahrenheit}} = T_{\text{centigrade}} * 1.8 + 32$.

1. Temperature Parameter

- ◆ Indoor setting temperature (T_{preset})
- ◆ Indoor ambient temperature (T_{amb})

2. System Basic Function

In any circumstances, the compressor will delay 3 mins for protection once it's started up. Once the compressor is started up, the compressor won't stop with the change of the indoor temperature. While once the compressor is stopped, it can be started up only after 3mins delayed. (The compressor can be stopped immediately at the time of mode switchover, turning off the unit, adjusting setting temperature and turning to protection functions.)

1) Cooling Mode

Working conditions and process for cooling:

When $T_{\text{amb}} \geq T_{\text{preset}} + 2^{\circ}\text{F}$ (1°C), the unit is running in cooling mode. Meanwhile, the compressor is running and the fan is running at the setting fan speed;

When $T_{\text{amb}} \leq T_{\text{preset}} - 2^{\circ}\text{F}$ (1°C), the unit is turn to OFF status. Meanwhile, the compressor will stop, while the fan will run at the setting fan speed for 15s delay;

When $T_{\text{preset}} - 2^{\circ}\text{F}$ (1°C) $< T_{\text{amb}} < T_{\text{preset}} + 2^{\circ}\text{F}$ (1°C), the unit keeps previous running status.

◇ In this mode, the dual 8 nixie tube displays the setting temperature and the cooling LED is bright. The setting temperature range is $60 \sim 90^{\circ}\text{F}$ ($16 \sim 32^{\circ}\text{C}$).

2) Fan Mode

In this mode, the compressor won't run and the temperature can't be adjusted (UP and DOWN are invalid).

The fan can select high, medium and low fan speed to run. The dual 8 nixie tube displays ambient temperature ($32 \sim 99^{\circ}\text{F}$, when ambient temperature is higher than 99°F , it will display 99; when ambient temperature is lower than 32°F , it will display 32), and the fan LED is bright.

3) Auto Mode

Working conditions and process is auto adjusted by the indoor ambient temperature.

When $T_{\text{amb}} > 78^{\circ}\text{F}$ (26°C), the unit is running in cooling mode. Meanwhile, the compressor is running and the fan is running at the setting fan speed.

When $T_{\text{amb}} < 70^{\circ}\text{F}$ (21°C), the unit is running in heating mode; If 70°F (21°C) $\leq T_{\text{amb}} \leq 78^{\circ}\text{F}$ (26°C), the unit is running in fan mode.

If the unit is cooling only unit, it will run in fan mode when $T_{\text{amb}} \leq 78^{\circ}\text{F}$ (26°C).

4) Heating Mode

Working condition and process for heating:

When $T_{amb} \leq T_{preset} - 2^{\circ}\text{F}$ (1°C), the unit is running in heating mode. Meanwhile, the compressor is running and the fan is running at the setting fan speed;

When $T_{amb} \geq T_{preset} + 2^{\circ}\text{F}$ (1°C), the unit is turn to OFF status. Meanwhile, the compressor will stop, while the fan will run at the setting fan speed for 15s delay;

When $T_{preset} - 2^{\circ}\text{F}$ (1°C) $< T_{amb} < T_{preset} + 2^{\circ}\text{F}$ (1°C), the unit keeps previous running status.

Electric-heater can't work with compressor at the same time. When $T_{amb} < 44^{\circ}\text{F}$ (7°C), unit will run with Electric-heater, when $T_{amb} \geq 44^{\circ}\text{F}$ (7°C), unit will run with compressor.

5) Low Temperature Resistant Protection

This is valid in standby cooling and fan mode.

Entry condition: If dial-up chooses the low temperature resistant protection and it's detected that the indoor ambient temperature is lower than 50°F (10°C) for 3mins successively .

Quitting condition: When the indoor ambient temperature is raising more than 55°F (13°C), the low temperature resistant protection will be stopped

After entering into the low temperature resistant protection, it can't be quitted by pressing any buttons ;(except the heating mode) Others: In the low temperature resistant protection, the dual 8 displays "LO".

6) Open circuit and short circuit of temperature sensor

If the temperature sensor is open circuit or short circuit, it must send the error signal. The error signal is displayed by the displayer "dual 8" (it won't display when turning off the unit, while the malfunction LED will display it). If the malfunction of temperature sensor is detected in continuous 30s, unit will turn off.

3. Buttons and Display

1) Buttons

There are ON/OFF, UP, DOWN, HEAT,COOL, FAN and FAN SPEED seven buttons in all..

In ON status, all the buttons are in valid.

- ① ON/OFF: After pressing the ON/OFF button, the unit can be switched between ON and OFF.
- ② COOL, HEAT, FAN: In ON status, after pressing the any one of the three buttons, the unit can be running in the mode you have choice; In standby mode, after pressing the MODE button, the controller will run at the running status.
- ③ FAN SPEED: In ON status, after pressing the FAN SPEED button, you can select the high, low and auto fan speed.
- ④ UP,DOWN: Adjust the setting temperature ($60\text{-}90^{\circ}\text{F}$)($16\text{-}32^{\circ}\text{C}$) by pressing the UP and FAN SPEED buttons and you can also select other setting temperature range through configuration.

2) Dual 8 Display and LED Display

Two 8 segment nixie tube and 7 LEDs (ON/OFF, HIGH, LOW, AUTO, HEAT, COOL, FAN).

- ① Mode LED display: when the A/C is running in a certain kind of mode, the corresponding LED is bright.
- ② ON/OFF LED: In ON status, the controller is in green color.
- ③ Fan speed display: when the A/C is running at high, low and auto fan speed, the corresponding LED is bright.
- ④ Dual 8 display: In cooling and heating mode, it is default to the display the indoor ambient temperature.
- ⑤ Malfunction Display

After energization, STATUS LED is bright, while when there's malfunction or protection, STATUS LED will display in any circumstances. The details are as below: priority is decreasing from 1 to 8.

1	Indoor ambient temp sensor is open circuit and short circuit	Dual 8 displays "E2 "
2	Indoor tube temp sensor is open circuit and short circuit	Dual 8 displays "E3"
3	Outdoor tube temp sensor is open circuit and short circuit	Dual 8 displays "E5"
4	High pressure protection	Dual 8 displays "E9"
5	Frost protection(heat pump)	Dual 8 displays "E8"

4. Especial Functions

1) Configuration that is easy for hotel personnel to repair (8 DIP switch, the configuration is valid only after power failure)

- ① Heat with water

ON- heat with water; OFF- normal heating mode; default-OFF, this function is only applicable to unit with hot water coil.

- ② Heat pump

ON- Heat pump function is valid; OFF-other heat function

- ③ E-heater

ON-electric heater is valid; OFF- other heat function

- ④ Heat with gas

ON-gas heat is valid; OFF-other heat function

Remarks: IF A、 B、 C、 D above are all OFF, the unit is cooling only.

- ⑤ Low temperature resistant is prohibited

ON- valid; OFF- invalid; default—ON

- ⑥ Auto-restart

ON- it's valid. OFF- it's invalid. Default-ON

- ⑦ FAN CYCLE/CONTINUOUS FOR HEAT

ON-fan is constantly running; OFF-fan will be stopped according to the loads (HEAT. COMP); default-OFF.

- ⑧ FAN CYCLE/CONTINUOUS FOR COOL

ON- fan will be stopped according to the loads (HEAT. COMP); OFF- fan is constantly running; default-OFF.

2) Configuration mode

After the unit is turned on, we could change the modes blow by pressing different buttons:

Mode one: Fahrenheit / Centigrade display mode

Fahrenheit and Centigrade display mode can be switched by pressing Set point up or Set point down button for 3s.

Mode two: Display switchover between setting temperature and ambient temperature in heating and cooling mode

Press the Set point up button or Set point down button to display the set temperature, after finish setting, the dual 8 will flash for 5s, then display back to indoor ambient temperature.

Mode three: Display switch for different temperature set range.

Press up and Fan Speed button at the same time, dual 8 will circulatory display R1—R8, default is R8.

Mode four: exchange between 24V universal wire controller and control board.

Press the “HEAT” and “+” buttons for 5 seconds at the same time, the digital display tube will display “r” and buzzer will ring twice when it changes to 24V universal wire controller; it will display “p” and buzzer will ring once when it changes to control board.

3) Memory Function

Energizing after power failure, the controller is running according to the status before power failure.

4) Restore factory settings

Change the dipswitch 6 to OFF status, and then cut off the power supply, and then switch on the power supply, the unit will come back the default status except that temperature setting range.

5. Protection Functions

1) Indoor Coil Frost Protection in cooling mode

When compressor has run for 12 mins, and indoor coil temperature $\leq 33^{\circ}\text{F}$ (1°C), compressor and outdoor fan stop, and indoor fan keep running. When indoor coil temperature $\geq 59^{\circ}\text{F}$ (15°C) for 5 mins, or ambient temperature \leq set temperature or unit OFF or mode switch, it will quit protection mode.

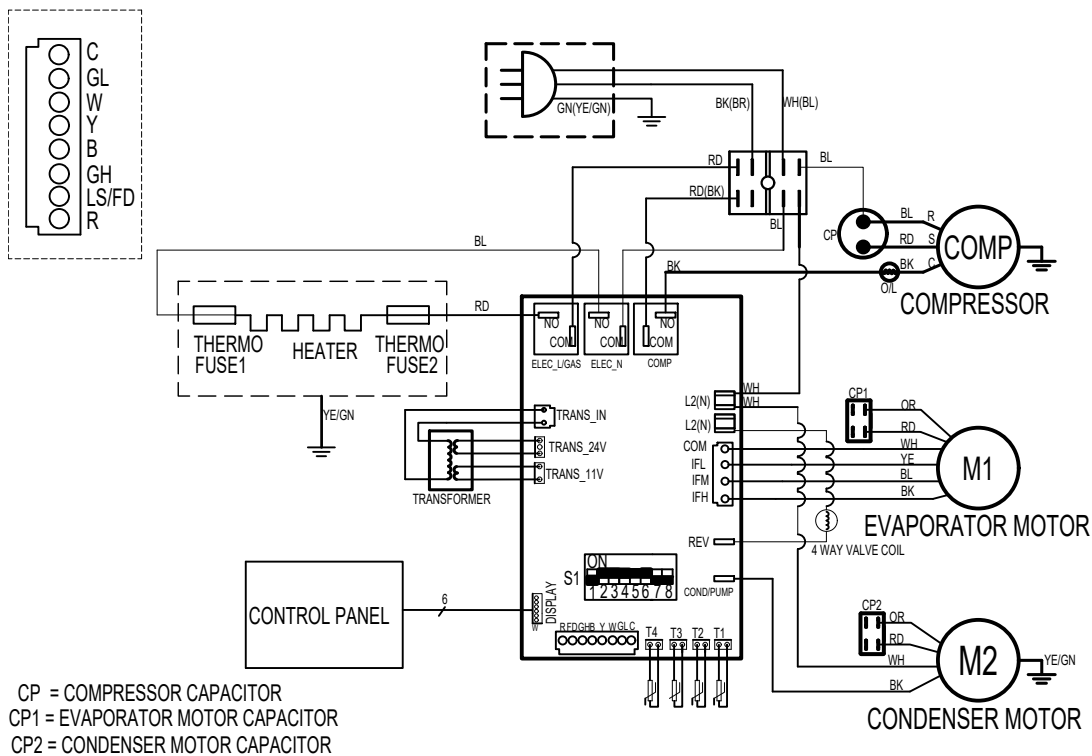
2) High pressure protection

When pressure is higher than normal condition, high pressure switch open for 3s, compressor、 outdoor fan、 4-way valve are in protection mode, if after 10 mins that compressor has stopped, the system comes back to normal pressure condition, units quit protection mode.

V Electric Circuit Diagram

If the above electric circuit diagram has changed, please refer to it on the body

Remarks: LS agreement: It's a switching signal that when terminal "R" and "LS" close-break-close or break-close-break; five seconds is a cycle, if the switching signal appears once in one cycle, the unit will start. If the switching signal appears twice in one cycle, the unit will stop. If LS and R closing has lasted for about five second, the unit will be forced to stop. And this function can't be stored.

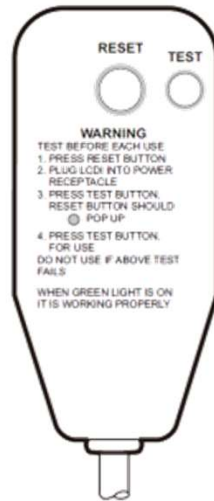


SELECTOR SWITCH (ON <input type="checkbox"/> OFF <input type="checkbox"/>)				WIRE COLOR CODE		
S1.1	Anti-cold air	<input type="checkbox"/> Enable <input type="checkbox"/> Disable	S1.5	Room Freeze Protection	<input type="checkbox"/> Enable <input type="checkbox"/> Disable	BL BLUE WH WHITE
S1.2	Heat Pump	<input type="checkbox"/> Enable <input type="checkbox"/> Disable	S1.6	Electric Memory	<input type="checkbox"/> Enable <input type="checkbox"/> Disable	BR BROWN RD RED
S1.3	Electric Heat	<input type="checkbox"/> Enable <input type="checkbox"/> Disable	S1.7	Fan CYC. For Cooling	<input type="checkbox"/> Enable <input type="checkbox"/> Disable	GN GREEN BK BLACK
S1.4	Heat Pump Prior	<input type="checkbox"/> Only panel	S1.8	Set temp. step for two degree	<input type="checkbox"/>	OR ORANGE YE YELLOW
	Electric Heat Prior	<input type="checkbox"/> Enable		Set temp. step for one degree	<input type="checkbox"/>	
CIRCUIT DIAGRAM						
				DATE	DWG. NO.	NO.
				2020-06-08		2

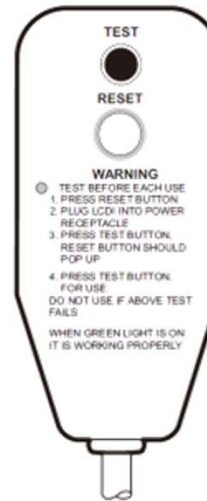
Capacity	7K/9K/12K	15K
Power cord	240V/20A	240V/30A

Power cord

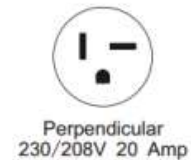
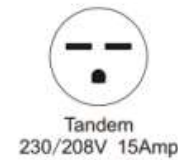
- The power cord used by PTAC is North American Standard LCDI power cord with UL certification
- The size of power cord is generally divided into three specifications : 15A / 20A / 30A



15/20A LCDI Device



30A LCDI Device



Plug and socket

- Power plug with reset function and test function (to prevent leakage)
- The plug and socket shall be used in combination .

Packaged Terminal Air conditioner Classic Series

Malfunction	Reasons	Solve
Start Failure	power line bad, units don't have power supply	Check the voltage on the output side, push the RESET button, if still don't have voltage, but power grid has output, you need to change the power line.
	Power line isn't fixed well	Check that whether power line is fixed well.
	PCB/power line fuse break	exchange the PCB fuse/power line
	Bad contact between PCB and control board	Check the contact, make sure that contact well
	Compressor delay start	It's normal, compressor will start after 3 mins
	Power cut	When power on, because of auto-restart, unit will start in 120~240s
	Power line protection trip	Check the wires that whether it comes cross plate or other metal, push the RESET button on the power line.
	Unit in protection mode	Please check the code in the manuals
	PCB or Control board is bad	Replace the PCB or control board
Control board/remote control not function	Connect wire controller, control board and remote controller, unit not function	If you need to use control board and remote controller, you need to unplug the wire controller
remote controller is not sensitive	Battery has been used for a long time; control board signal receiver is not assembled well; remote controller signal is blocked.	Replace new battery; check the signal receiver is well assembled, and no things block the remote controller.
Indoor fan/outdoor fan not function or run slowly	fan is locked by something or the connection wire is not fixed well、fan capacitor is not fixed well; fan capacitor is out of service life.	Check that whether fan can running normal, whether motor wire is fixed well; for the slowly running speed, you could change a new capacitor.
Not well cooling/heating	Something is blocked at the indoor air outlet.	Make sure that there are not anything at the indoor air outlet.
	Something is blocked at the outdoor air outlet.	Make sure that the grill is suitable for the unit, wrong grill will cause the compressor being protected; make sure that the grill has more than 70% turnover
	Set not suitable temperature	Set higher/lower temperature by the control board, remark: temperature setting restriction will restrict the setting temperature.
	Indoor air return filter is blocked.	Should clean the filter every month at least.
	Room is hot/cold	Let unit run a little longer that room temperature will be lower/higher
	Heat leakage between indoor and outdoor	Block the leakage place
	Indoor coil not cold/heat	Charge the refrigerant

Unit has noise	Fan blow to plate or something in the air flue	Make sure that all the fan assembly are fixed well, and nothing is in the air flue
Bad smell when heating	The dust on the E-heater is heating	The bad smell will disappear a little later
Outlet temperature is not always cooling/heating	Outlet temperature is not high enough when heating by compressor	It's normal phenomenon, it blows comfortable air when heating.
	Fan stops when cooling/heating.	It's normal phenomenon that fan stops when get to setting temperature(In new control board, could choice the different running status by the dipswitch)
Air outlet temperature is not high enough when heating.	Air outlet temperature is not high enough.	Change to E-heater mode.
Outdoor is dripping water.	Not install the drain pipe assembly.	Install the drain pipe assembly.
Indoor is dripping water.	Wall sleeve is installed incorrectly.	Install the wall sleeve according to the installation manual.
Indoor coil freeze.	Outdoor temperature is too low.	When outdoor temperature is low to 12.8°C (55 °F) or lower than this point, it will cause that indoor coil freeze, open the fresh air, and running at fan mode.
	Filter is blocked.	Clean the filter.
E2 Indoor temperature sensor failure	Indoor temperature sensor open circuit or short circuit	Check the sensor by multi-meter.
E3 Indoor coil temperature sensor failure.	Indoor coil temperature sensor open circuit or short circuit	Check the sensor by multi-meter.
E5 Outdoor coil temperature sensor failure.	Outdoor coil temperature sensor open circuit or short circuit	Check the sensor by multi-meter.
E8 Overheating protection/defrosting	Indoor fan failure/refrigerating system failure/indoor coil temperature sensor failure.	Check the indoor fan/refrigerating pipe/indoor coil sensor.
E9 High pressure protection.	Outdoor fan failure/refrigerating system failure/high pressure switch failure.	Check outdoor fan/refrigerating pipe system/high pressure switch.



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