Air Conditioners

Technical Data

Rooftops

EEDEN12-119

UATYP-AY1(B)

Air Conditioners

Technical Data

Rooftops

EEDEN12-119

UATYP-AY1(B)

TABLE OF CONTENTS

UATYP-AY1(B)

1 Features

- Easy to install 'plug and play' concept plus single installation configuration; no additional piping is required since indoor and outdoor sides are pre-connected
- Factory pre-charged refrigerant ensures clean and efficient operation
- Belt driven fan enables air volume and static pressure to be adjusted as required.
- High efficiency and reliable scroll compressor
- Flat top unit design allows maximum use of warehouse and container space

SLM or sequential controller

2 Specifications

2-1 Technical Specifications					UATYP850AY1B	UATYPC10AY1	UATYPC12AY1
Cooling capacity	Nom.			kW	78.6 (3)	101.110 (3)	109.609 (3)
				Btu/h	268,200 (3)	345,000 (3)	374,000 (3)
Heating capacity	Nom.			kW	87.78 (3)	102.290 (3)	126.314 (3)
				Btu/h	299,500 (3)	349,000 (3)	431,000 (3)
Power input	Cooling	Nom.		kW	36.10	43.170	48.200
	Heating	Nom.		kW	32.10	41.670	46.800
EER					2.18	2.34	2.27
COP					2.73	2.45	2.70
Evaporator	Control	Air discharge			Ducted		
		Operation			Wired	Sequential Controller	
	Air flow rate	Cooling		m³/min	263.33	312	354
	External static pressure			Pa	294		
	Specifications	Rows	Quantity		4	-	
		Face area		m²	0.91	-	
Evaporator piping connections	Condensation drain size	OD		mm	25.40		
Condenser	Dimensions	Unit	Height	mm	1,735	1,974	
			Width	mm	2,250	2,252	
			Depth	mm	2,800	3,180	
		Packing	Height	mm	1,900	2,150	
			Width	mm	2,250	2,300	
			Depth	mm	2,900	3,250	
	Weight	Unit		kg	1,350	1,510	1,600
	Casing	Colour			Light grey		
		Material			-	Electro-galvanised mild steel	
	Heat exchanger	Rows	Quantity		2	-	
		Face area		m²	2.98	3.5	
	Air flow rate	Cooling		m³/min	-	566	
				cfm	-	20,000	
	Compressor	Quantity			-	2	
		Motor	Type		Scroll		
	Operation range	Cooling	Min.	°CDB	20		
			Max.	°CDB	46		
		Heating	Min.	°CWB	-15		
			Max.	°CWB	20		
	Sound power level	Nom.		dBA	-		
	Refrigerant	Type			R-407C		
		Charge		kg	9.6	13.5 / 20.0	20.0
		Control			Thermal expansion valve		
		Circuits	Quantity		2		
	Safety devices	Item	01		-	High pressure switch / Phase sequencer / Discharge thermostat setting	High pressure switch / Phase sequencer / Discharge thermostat setting

2-2 Electrical Specifications				UATYP850AY1B	UATYPC10AY1	UATYPC12AY1
Power supply	Name			-	Y1	
	Phase			3N~	3~	
	Frequency		Hz	50		
	Voltage		V	380-415		
Current	Nominal running current (RLA)	Cooling	A	63.2	74.2	82.9
		Heating	A	57.8	72.0	81.1

Notes

(1) All specifications are subjected to change by the manufacturer without prior notice.

(2) All units are being tested and comply to ISO5151.

(3) Cooling: indoor temp. 27°CDB, 19°CWB; outdoor temp. 35°CDB, 24°CWB; Heating: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB

(4) Sound pressure levels are according to JIS B 8615 standard. Position of the measurement is 1m in front and 1m below the unit.

(5) Designation based on cooling cycle.

3 Features and advantages

3 - 1 Features and Advantages

UATYP-AY1(B)

		Classification												
	Model	SLM Controller	Seq. Controller	Capillary Tube	Thermal Expansion Valve (TXV)	Normal Fin	Anticorrosion treatment	Reciprocating compressor	Scroll Compressor	Air Filter	Down Flow	Side Flow	Convertible	Filter Drier
Heat pump	UATYP850AY1B		X		X		X		X	X		X		X
	UATYPC10AY1		X		X		X		X	X		X		X
	UATYPC12AY1		X		X		X		X	X		X		X

4 Safety device settings

4 - 1 Safety Device Settings

MODEL				UATYP700AY1	UATYP850AY1B
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC	
		OPEN	kPa / psi	3241 / 470	
		CLOSE	kPa / psi	2648 / 384	
	LOW PRESSURE SWITCH	TYPE		N / A	
		OPEN	kPa / psi	N / A	
		CLOSE	kPa / psi	N / A	
	PHASE SEQUENCER			N / A	
	DISCHARGE THERMOSTAT SETTING		°C / °F	125 / 257	

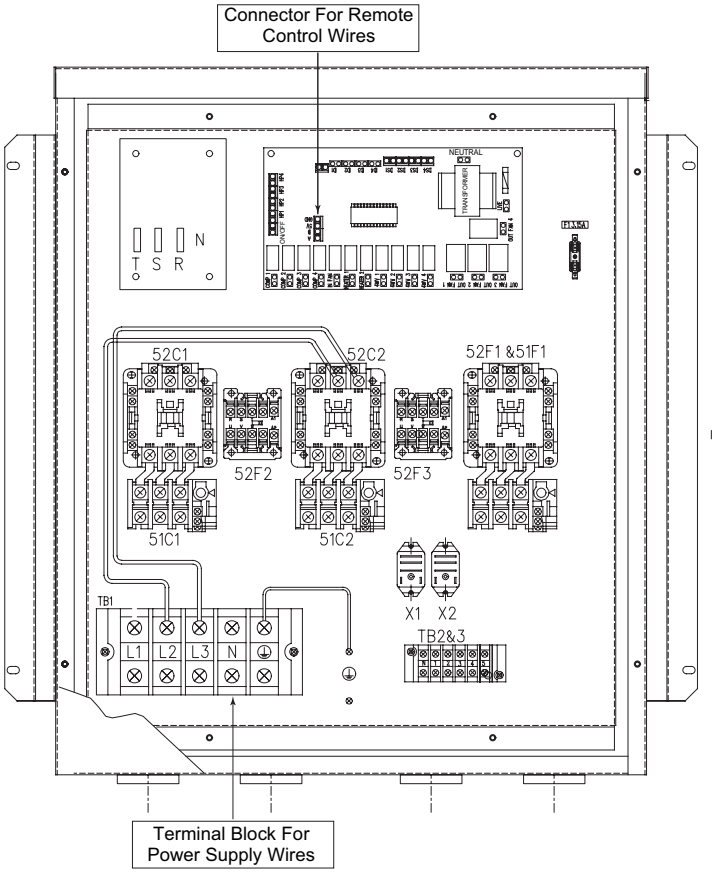
MODEL				UATYPC10AY1	UATYPC12AY1
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		NC	
		OPEN	kPa / psi	3241 / 470	
		CLOSE	kPa / psi	2648 / 384	
	LOW PRESSURE SWITCH	TYPE		N / A	
		OPEN	kPa / psi	N / A	
		CLOSE	kPa / psi	N / A	
	PHASE SEQUENCER			YES	
	DISCHARGE THERMOSTAT SETTING		°C / °F	125 / 257	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

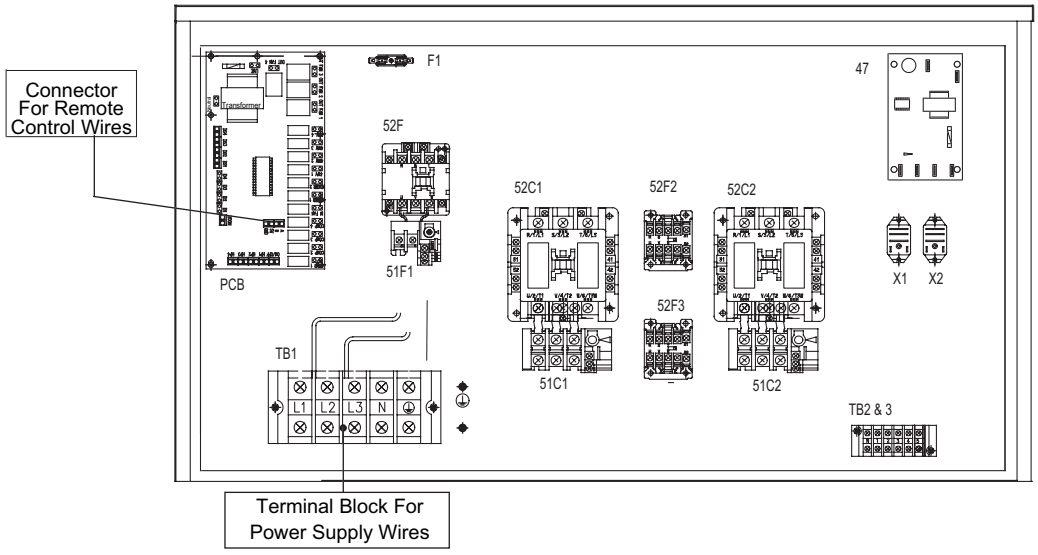
5 Control systems

5 - 1 Control Systems

Control Module Of Unit UATYP700/850AY1(B)



Control Module Of Unit UATYPC10/12AY1



6 Selection procedure

6 - 1 Selection Procedure

SELECTION PROCEDURE

PERFORMANCE DATA

Performance table

Interpolation and extrapolation method can be used to get the total capacity, Q and sensible capacity, SC at those temperatures which are not stated out in the table.

Example:

Model: UAT700AY1
Indoor Condition: 23°C DB, 15°C WB
Outdoor condition: 37°C DB

Solution:

Overall

Based on the Performance table of UAT700AY1,

1. Refer to the indoor DB Column,
   - **23°C** is located between 20°C and 24°C (Thus, Interpolation need to be applied)

2. Refer to the indoor WB Column,
   - **15°C** only available in the case of indoor DB = 20°C. (Thus, extrapolation between 16°C WB and 17°C WB during 24°C indoor DB is required)

3. Refer to the indoor DB Column,
   - **37°C** is located between 35°C and 40°C. (Thus, Interpolation need to be applied)

Please follow the steps below in order to get the required capacity.

1st STEP
Extrapolation of indoor WB

Find Q, SC for
(a) Indoor: 24°C DB, 15°C WB
Outdoor: 35°C DB

(b) Indoor: 24°C DB, 15°C WB
Outdoor: 40°C DB

⇨

2nd Step
Extrapolation of indoor WB

Find Q, SC for
(a) Indoor: 23°C DB,15°C WB
Outdoor: 35°C DB

(b) Indoor: 23°C DB, 15°C WB
Outdoor: 40°C DB

⇨

3rd STEP
Extrapolation of indoor WB

Find Q, SC for
(a) Indoor: 23°C DB, 15°C WB
Outdoor: 37°C DB

6 Selection procedure

6 - 1 Selection Procedure

Details:

1st Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 24°C DB, 15°C WB

Outdoor Condition: 35°C DB

Indoor DB °C	Indoor WB °C	Outdoor DB°C			
			35		
			TC(kW)	SC(kW)	
			!	!	
24	15	- — — — -	x_1	y_1	
	16		66.820	48.857	
	17		68.717	47.070	

Total capacity, Q

⇨ x_1 = 64.922 kW *(Same as total capacity at 20°C Indoor DB / 15°C Indoor WB & 35°C Outdoor WB)**

Sensible capacity, Q

Extrapolation method:

⇨ $\frac{17°C - 15°C}{17°C - 16°C} = \frac{47.070kW - y_1}{47.070kW - 48.857kW}$

⇨ y_1 = 50.644 kW

(b) Indoor Condition: 24°C DB, 15°C WB

Outdoor Condition: 40°C DB

Indoor DB °C	Indoor WB °C	Outdoor DB°C			
			40		
			TC(kW)	SC(kW)	
			!	!	
24	15	- — — — -	x_1	y_1	
	16		61.569	45.442	
	17		63.306	44.369	

Total capacity, Q

⇨ x_2 = 59.831 kW *(Same as total capacity at 20°C Indoor DB / 15°C Indoor WB & 40°C Outdoor WB)**

Sensible capacity, SC

Extrapolation method:

⇨ $\frac{17°C - 15°C}{17°C - 16°C} = \frac{47.369kW - y_1}{47.369kW - 45.422kW}$

⇨ y_2 = 46.515 kW

**This is due to 2 different conditions with same WB temperature, will have the same level of enthalpy.*
For more details, please refer to pschrometrics chart

6 Selection procedure

6 - 1 Selection Procedure

2nd Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 23°C DB, 15°C WB

Outdoor Condition: 35°C DB

Indoor DB °C	Indoor WB °C	Outdoor DB°C			
			35		
			TC(kW)	SC(kW)	
			!	!	
20	**15**		64.922	35.494	
23	**15**		x_3	y_3	
24	**15**		64.922	50.644	

Total capacity, Q

⇨ x_3 = 64.922 kW *(Same as total capacity at 20°C Indoor DB / 15°C Indoor WB & 35°C Outdoor WB)**

Sensible capacity, Q

Extrapolation method:

⇨ $\frac{24°C - 20°C}{24°C - 23°C} = \frac{50.644kW - 35.494kW}{50.644kW - y_3}$

⇨ y_3 = 46.857 kW

(b) Indoor Condition: 23°C DB, 15°C WB

Outdoor Condition: 40°C DB

Indoor DB °C	Indoor WB °C	Outdoor DB°C			
			40		
			TC(kW)	SC(kW)	
			!	!	
20	**15**		59.831	31.365	
23	**15**		x_4	y_4	
24	**15**		59.831	46.515	

Total capacity, Q

⇨ x_4 = 59.831 kW *(Same as total capacity at 20°C Indoor DB / 15°C Indoor WB & 40°C Outdoor WB)**

Sensible capacity, SC

Extrapolation method:

⇨ $\frac{24°C - 20°C}{24°C - 23°C} = \frac{46.515kW - 31.365kW}{46.515kW - y_4}$

⇨ y_4 = 42.728 kW

**This is due to 2 different conditions with same WB temperature, will have the same level of enthalpy.*
For more details, please refer to pschrometrics chart

6 Selection procedure

6 - 1 Selection Procedure

3rd Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 23°C DB, 15°C WB

Outdoor Condition: 37°C DB

Indoor DB °C	Indoor WB °C	Outdoor DB°C						
			35		37		40	
			TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
					!	!		
23	**15**	– — — –	64.922	46.857	x	y	59.831	**42.728**

Total capacity, Q

Interpolation method:

$$\frac{40°C - 35°C}{40°C - 37°C} = \frac{59.831kW - 64.922kW}{59.831kW - x}$$

⇨ y = 62.886 kW

Sensible capacity, SC

Interpolation method:

$$\frac{40°C - 35°C}{40°C - 37°C} = \frac{42.728kW - 46.857kW}{42.728kW - y}$$

⇨ y = 45.205 kW

7 Capacity tables

7 - 1 Cooling Capacity Tables

UATYP850AY1B

COOLING MODE

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	94.412	57.240	87.752	51.529	81.092	45.818	74.433	40.107	67.773	34.396	59.782	27.543
	16	97.877	54.492	90.707	49.133	83.537	43.775	76.367	38.416	69.197	33.057	60.593	26.627
24	16	97.877	72.604	90.707	67.245	83.537	61.887	76.367	56.528	69.197	51.169	60.593	44.739
	17	101.342	69.856	93.662	64.850	85.981	59.843	78.301	54.837	70.620	49.830	61.404	43.822
	18	104.807	67.109	96.616	62.454	88.426	57.800	80.235	53.145	72.044	48.491	62.215	42.906
	19	108.272	64.361	99.571	60.059	90.870	55.756	82.169	51.454	73.468	47.152	63.026	41.989
	20	111.779	61.592	102.909	57.470	94.040	53.347	85.170	49.224	76.301	45.101	65.658	40.154
28	18	104.807	85.221	96.616	80.566	88.426	75.912	80.235	71.258	72.044	66.603	62.215	61.018
	19	108.272	82.473	99.571	78.171	90.870	73.868	82.169	69.566	73.468	65.264	63.026	60.101
	20	111.779	79.704	102.909	75.582	94.040	71.459	85.170	67.336	76.301	63.214	65.658	58.266
	21	115.312	76.922	106.502	72.864	97.693	68.806	88.883	64.747	80.073	60.689	69.502	55.819
	22	118.846	74.140	110.096	70.146	101.346	66.152	92.596	62.158	83.846	58.164	73.346	53.371
	23	122.379	71.358	113.689	67.428	104.999	63.499	96.309	59.569	87.619	55.639	77.191	50.924
	24	125.913	68.575	117.282	64.710	108.652	60.845	100.022	56.980	91.391	53.115	81.035	48.477
30	20	111.779	88.761	102.909	84.638	94.040	80.515	85.170	76.392	76.301	72.270	67.322	67.322
	21	115.312	85.978	106.502	81.920	97.693	77.862	88.883	73.803	80.073	69.745	69.502	64.875
	22	118.846	83.196	110.096	79.202	101.346	75.208	92.596	71.214	83.846	67.220	73.346	62.428
	23	122.379	80.414	113.689	76.484	104.999	72.555	96.309	68.625	87.619	64.696	77.191	59.980
	24	125.913	77.631	117.282	73.766	108.652	69.901	100.022	66.036	91.391	62.171	81.035	57.533

UATYPC10AY1

COOLING MODE

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	118.414	79.696	110.250	71.540	102.086	63.385	93.922	55.230	85.758	47.075	75.962	37.288
	16	120.123	76.359	112.096	68.349	104.068	60.340	96.040	52.330	88.013	44.320	78.380	34.708
24	16	120.123	96.174	112.096	88.165	104.068	80.155	96.040	72.145	88.013	64.135	78.380	54.523
	17	121.833	92.838	113.942	84.974	106.050	77.109	98.159	69.245	90.267	61.380	80.797	51.943
	18	123.543	89.501	115.787	81.783	108.032	74.064	100.277	66.345	92.522	58.626	83.215	49.363
	19	125.252	86.165	117.633	78.591	110.014	71.018	102.395	63.445	94.776	55.871	85.633	46.783
	20	126.971	82.840	119.565	75.507	112.160	68.175	104.754	60.842	97.348	53.509	88.461	44.710
28	18	123.543	109.317	115.787	101.598	108.032	93.879	100.277	86.160	92.522	78.441	83.215	69.178
	19	125.252	105.980	117.633	98.407	110.014	90.833	102.395	83.260	94.776	75.686	85.633	66.598
	20	126.971	102.655	119.565	95.322	112.160	87.990	104.754	80.657	97.348	73.324	88.461	64.525
	21	128.696	99.338	121.555	92.309	114.414	85.281	107.273	78.253	100.132	71.224	91.563	62.790
	22	130.421	96.020	123.545	89.296	116.669	82.572	109.792	75.848	102.916	69.124	94.665	61.055
	23	132.146	92.703	125.535	86.283	118.923	79.864	112.312	73.444	105.700	67.024	97.766	59.321
	24	133.872	89.385	127.525	83.270	121.178	77.155	114.831	71.040	108.484	64.924	100.868	57.586
30	20	126.971	112.563	119.565	105.230	112.160	97.897	104.754	90.565	97.348	83.232	88.461	74.433
	21	128.696	109.245	121.555	102.217	114.414	95.189	107.273	88.160	100.132	81.132	91.563	72.698
	22	130.421	105.928	123.545	99.204	116.669	92.480	109.792	85.756	102.916	79.032	94.665	70.963
	23	132.146	102.610	125.535	96.191	118.923	89.771	112.312	83.351	105.700	76.932	97.766	69.228
	24	133.872	99.293	127.525	93.178	121.178	87.062	114.831	80.947	108.484	74.832	100.868	67.493

7 Capacity tables

7 - 1 Cooling Capacity Tables

UATYPC12AY1

COOLING MODE

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	136.431	89.966	125.782	79.600	115.134	69.234	104.485	58.869	93.837	48.503	81.059	36.064
	16	138.448	85.937	127.690	75.721	116.933	65.506	106.175	55.290	95.418	45.074	82.509	32.815
24	16	138.448	109.723	127.690	99.507	116.933	89.291	106.175	79.076	95.418	68.860	82.509	56.601
	17	140.465	105.694	129.599	95.628	118.732	85.563	107.865	75.497	96.998	65.431	83.958	53.352
	18	142.482	101.665	131.507	91.749	120.531	81.834	109.555	71.918	98.579	62.002	85.408	50.103
	19	144.499	97.636	133.415	87.870	122.330	78.105	111.245	68.339	100.160	58.573	86.858	46.854
	20	146.561	93.635	135.741	84.250	124.921	74.865	114.100	65.480	103.280	56.096	90.296	44.834
28	18	142.482	125.451	131.507	115.535	120.531	105.620	109.555	95.704	98.579	85.788	85.408	73.889
	19	144.499	121.422	133.415	111.656	122.330	101.891	111.245	92.125	100.160	82.359	86.858	70.640
	20	146.561	117.421	135.741	108.036	124.921	98.651	114.100	89.266	103.280	79.881	90.296	68.620
	21	148.653	113.438	138.346	104.588	128.040	95.738	117.733	86.888	107.426	78.038	95.058	67.418
	22	150.745	109.455	140.952	101.140	131.159	92.825	121.366	84.510	111.573	76.195	99.821	66.216
	23	152.837	105.473	143.557	97.692	134.278	89.912	124.999	82.132	115.719	74.351	104.584	65.015
	24	154.929	101.490	146.163	94.244	137.397	86.999	128.631	79.753	119.866	72.508	109.347	63.813
30	20	146.561	129.314	135.741	119.929	124.921	110.544	114.100	101.159	103.280	91.774	90.296	80.513
	21	148.653	125.331	138.346	116.481	128.040	107.631	117.733	98.781	107.426	89.931	95.058	79.311
	22	150.745	121.348	140.952	113.033	131.159	104.718	121.366	96.403	111.573	88.088	99.821	78.109
	23	152.837	117.366	143.557	109.585	134.278	101.805	124.999	94.025	115.719	86.244	104.584	76.908
	24	154.929	113.383	146.163	106.137	137.397	98.892	128.631	91.646	119.866	84.401	109.347	75.706

7 Capacity tables

7 - 2 Heating Capacity Tables

UATYP850AY1B

HEATING MODE

ID DB°C	Outdoor DB°C													
	-9		-6		-5		6		12		15		18	
	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
15	56.416	56.416	64.113	64.113	66.678	66.678	94.898	94.898	110.291	110.291	117.987	117.987	125.684	125.684
17	55.606	55.606	63.462	63.462	66.080	66.080	94.039	94.039	109.307	109.307	116.935	116.935	124.564	124.564
19	54.795	54.795	62.811	62.811	65.483	65.483	93.180	93.180	108.323	108.323	115.884	115.884	123.444	123.444
21	53.984	53.984	62.160	62.160	64.885	64.885	92.321	92.321	107.340	107.340	114.832	114.832	122.324	122.324
23	53.797	53.797	61.665	61.665	64.287	64.287	91.486	91.486	106.356	106.356	113.780	113.780	121.203	121.203
25	53.610	53.610	61.170	61.170	63.690	63.690	90.650	90.650	105.372	105.372	112.728	112.728	120.083	120.083
27	53.423	53.423	60.675	60.675	63.092	63.092	89.815	89.815	104.388	104.388	111.676	111.676	118.963	118.963
	FROST REGION													

UATYPC10AY1

HEATING MODE

ID DB°C	Outdoor DB°C													
	-9		-6		-5		6		12		15		18	
	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
15	47.692	47.692	60.026	60.026	64.137	64.137	109.360	109.360	134.026	134.026	146.360	146.360	158.693	158.693
17	46.413	46.413	58.783	58.783	62.906	62.906	105.378	105.378	130.369	130.369	142.275	142.275	154.180	154.180
19	45.134	45.134	57.540	57.540	61.675	61.675	101.397	101.397	126.712	126.712	138.189	138.189	149.666	149.666
21	43.856	43.856	56.297	56.297	60.444	60.444	97.415	97.415	123.055	123.055	134.104	134.104	145.153	145.153
23	43.846	43.846	55.371	55.371	59.212	59.212	95.857	95.857	119.398	119.398	130.018	130.018	140.639	140.639
25	43.837	43.837	54.445	54.445	57.981	57.981	94.299	94.299	115.740	115.740	125.933	125.933	136.126	136.126
27	43.828	43.828	53.520	53.520	56.750	56.750	92.740	92.740	112.083	112.083	121.848	121.848	131.612	131.612
	FROST REGION													

7 Capacity tables

7 - 2 Heating Capacity Tables

UATYPC12AY1

HEATING MODE

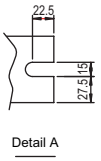
ID DB°C	Outdoor DB°C													
	-9		-6		-5		6		12		15		18	
	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
15	51.341	51.341	64.544	64.544	68.945	68.945	117.357	117.357	143.764	143.764	156.967	156.967	170.170	170.170
17	49.983	49.983	63.213	63.213	67.624	67.624	116.572	116.572	139.842	139.842	152.586	152.586	165.330	165.330
19	48.624	48.624	61.882	61.882	66.302	66.302	115.786	115.786	135.919	135.919	148.205	148.205	160.490	160.490
21	47.265	47.265	60.551	60.551	64.980	64.980	115.000	115.000	131.997	131.997	143.824	143.824	155.651	155.651
23	47.238	47.238	59.553	59.553	63.658	63.658	109.660	109.660	128.075	128.075	139.443	139.443	150.811	150.811
25	47.211	47.211	58.555	58.555	62.337	62.337	104.321	104.321	124.153	124.153	135.062	135.062	145.971	145.971
27	47.184	47.184	57.557	57.557	61.015	61.015	98.981	98.981	120.231	120.231	130.681	130.681	141.131	141.131
	FROST REGION													

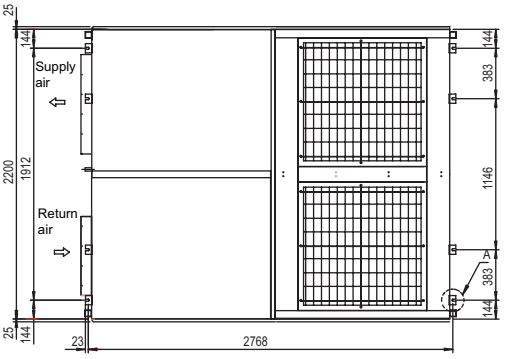
8 Dimensional drawings

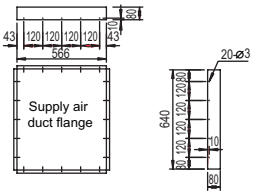
8 - 1 Dimensional Drawings

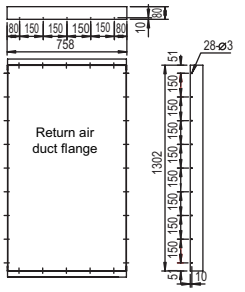
UATYP700/850AY1(B)

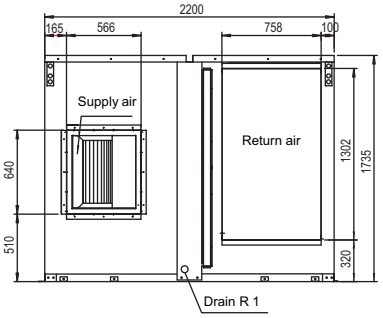
(unit: mm)
※Except: Drain size: (unit inch)

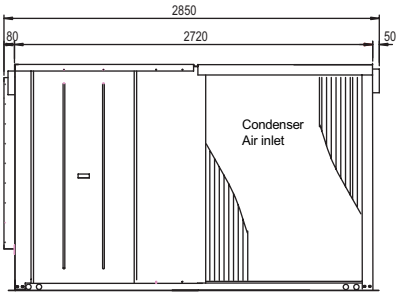


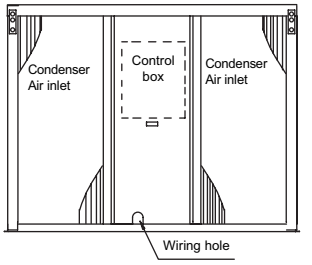






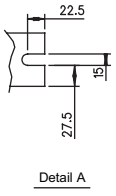


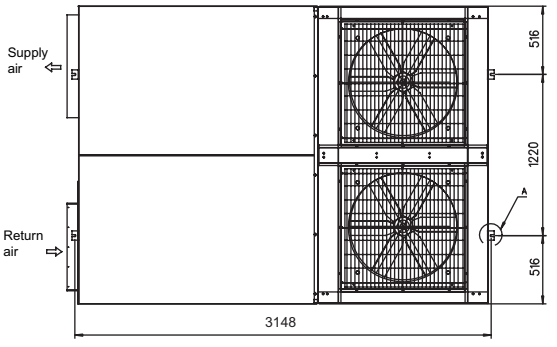


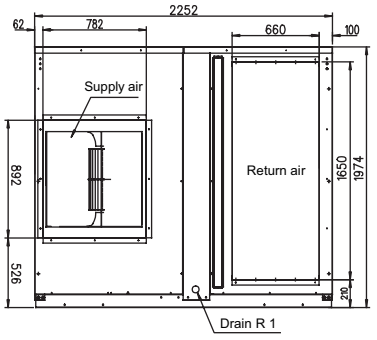


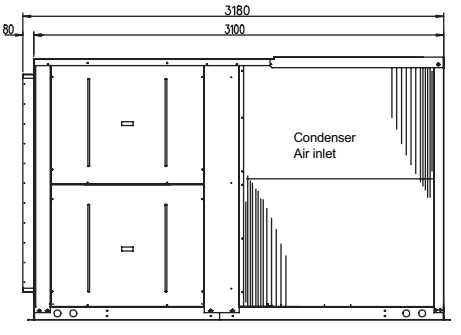
UATYPC10/C12AY1

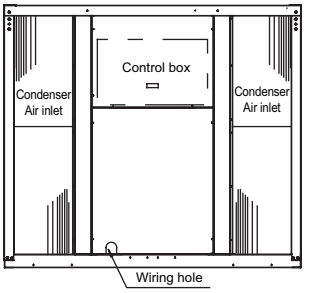
(unit: mm)
※Except: Drain size: (unit inch)







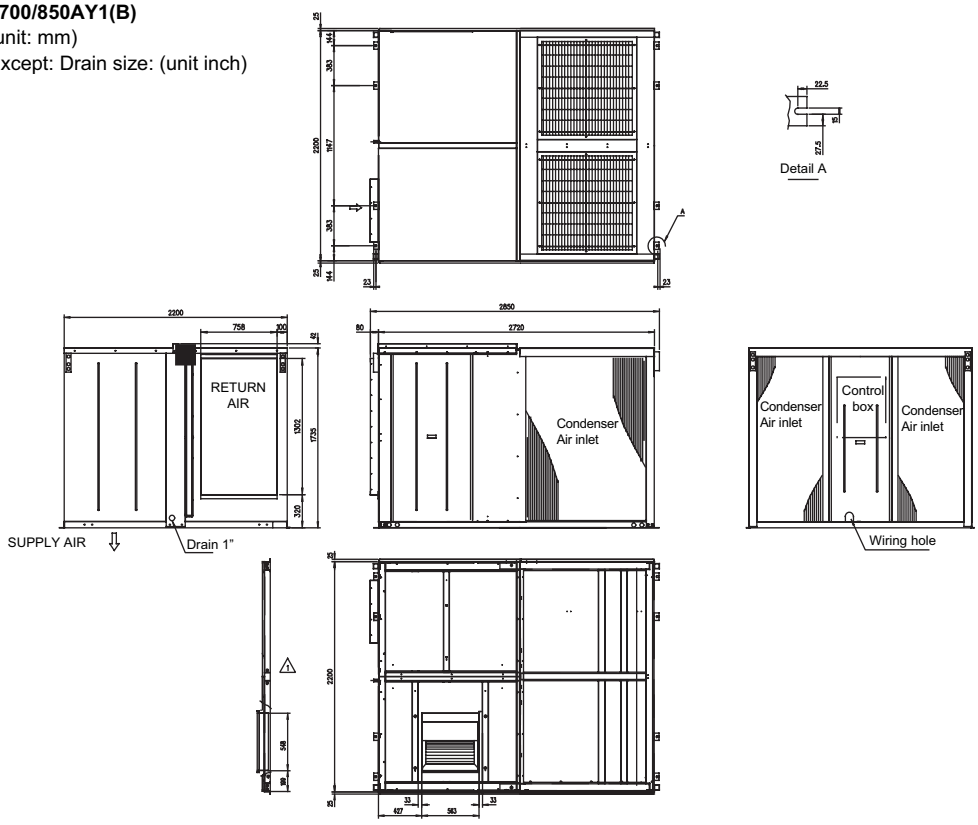




8 Dimensional drawings

8 - 2 Dimensional Drawings with Accessories

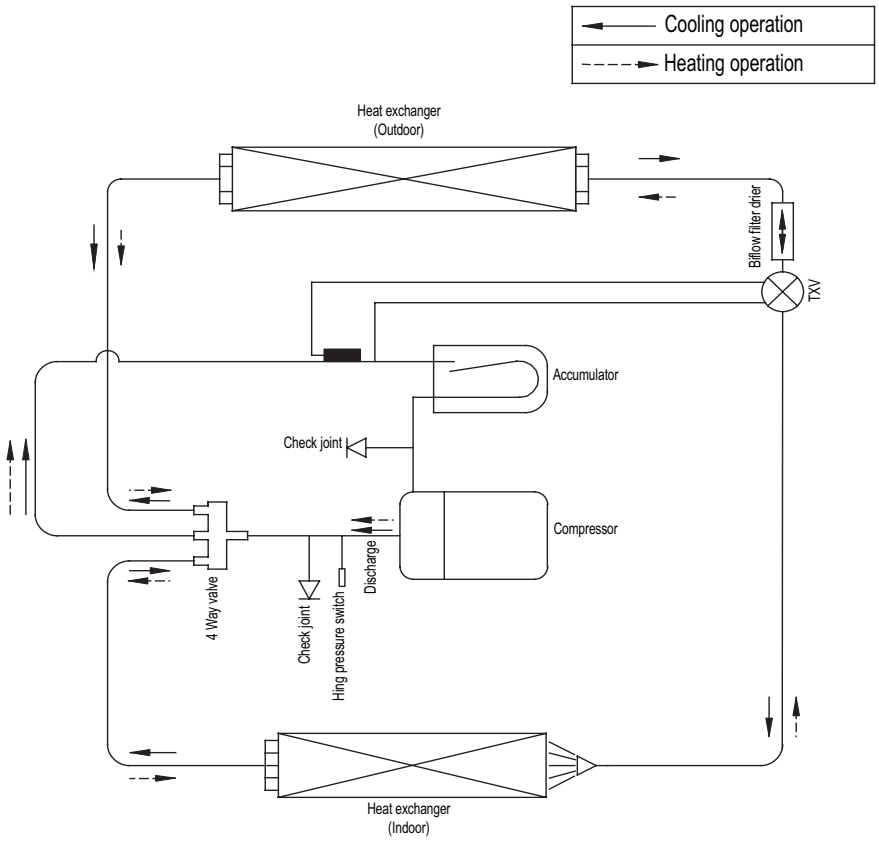
UATYP700/850AY1(B)
(unit: mm)
※Except: Drain size: (unit inch)



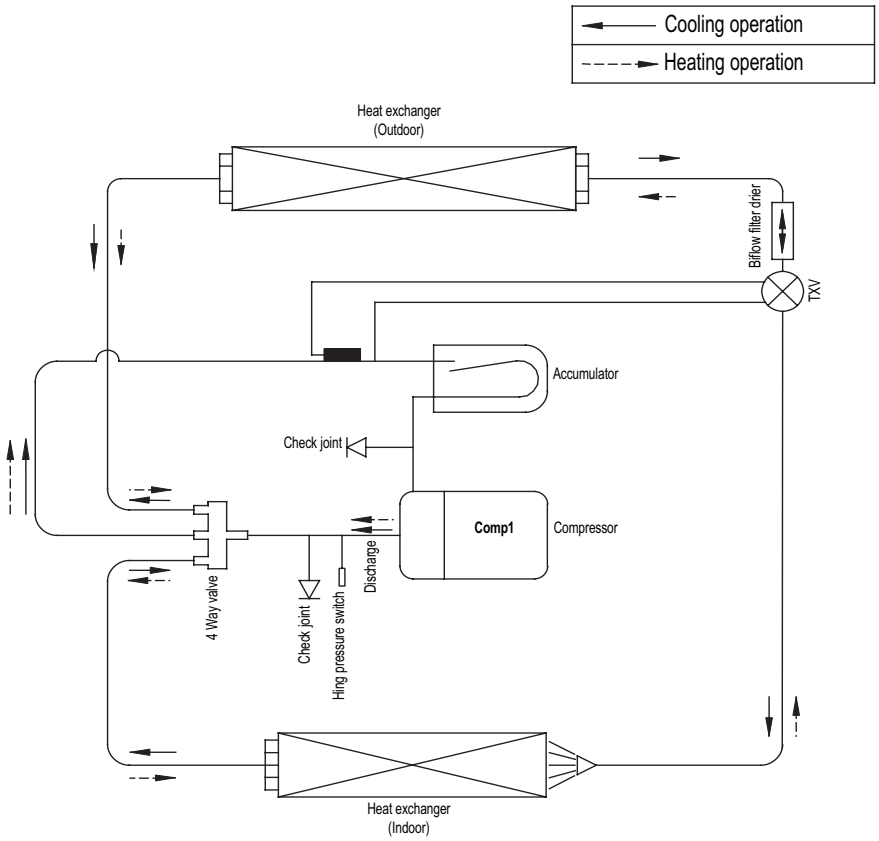
9 Piping diagrams

9 - 1 Piping Diagrams

UATYP850AY1B



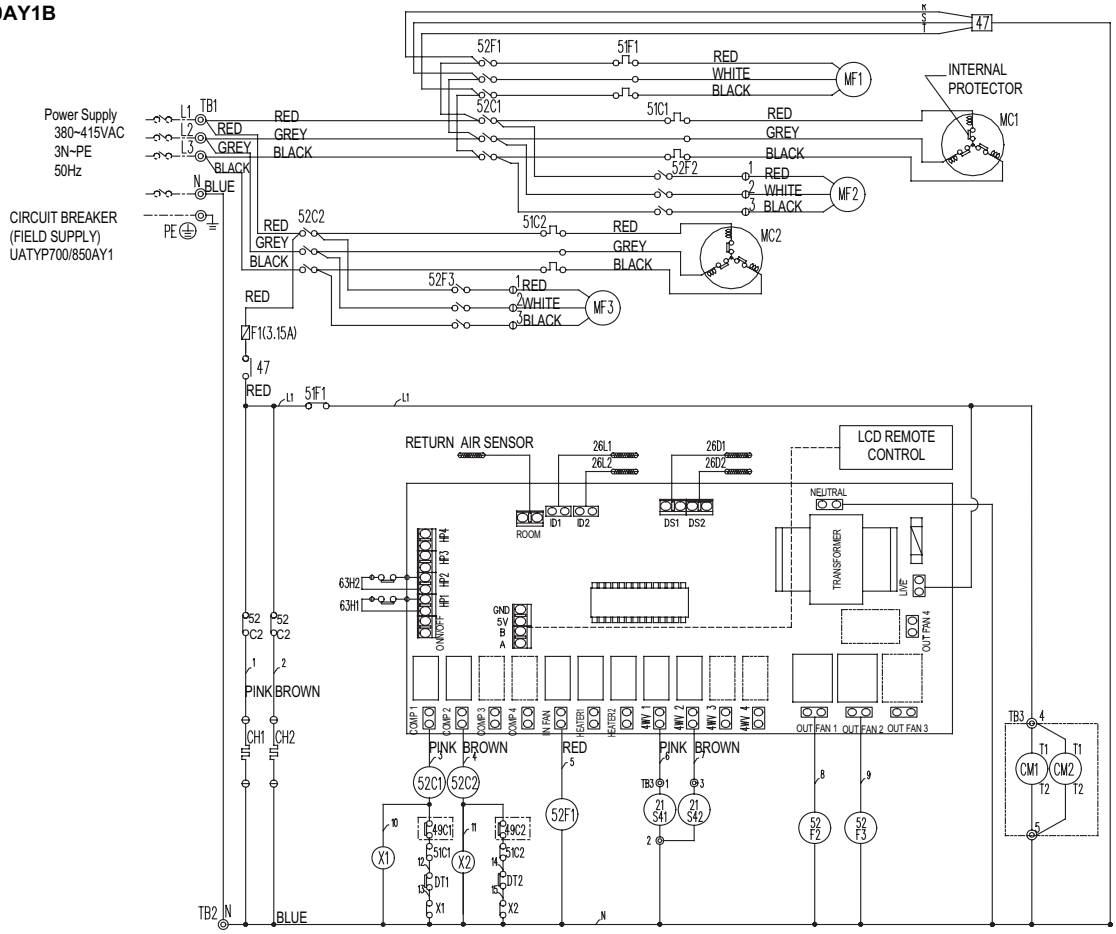
UATYPC10/12AY1



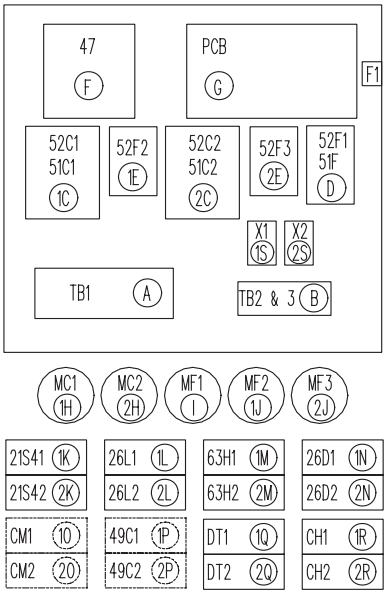
10 Wiring diagrams

10 - 1 Wiring Diagrams - Single Phase

UATYP850AY1B



Arrangement



SYMBOL	NAME
MC1,2	Compressor motor
MF1	Fan motor (indoor)
MF2,3	Fan motor (outdoor)
52C1,2	Contactor (compressor)
52F1	Contactor (fan I/D)
52F2,3	Contactor (fan O/D)
51C1,C2	Overload protector (compressor)
TB1,2,3	Terminal block
F1	Fuse (3.15A)
51F	Overload protector (fan I/D)
63H1,2	High-pressure switch
CH1,2	Crankcase heater
21S41,2	4-Way valve
26D1,2	Sensor (defrost)
26L1,2	Sensor (freeze protection)
PCB	Printed circuit board
47	Phase protector
DT1,2	Discharge thermostat
X1,2	Auxiliary relay (self hold)
49C1,C2	Compressor internal overload *UATYP850AY1 only
CM1,2	Compressor control module *UATYP850AY1 only

Caution,

1.To protect each Fan motor and compressor from abnormal current, Overload protectors are installed. Therefore, do not change factory set value of the overload protector.

NOTES

1 The dotted lines show field wiring. - - - - - -

2 Color of earth is yellow and green twisting.

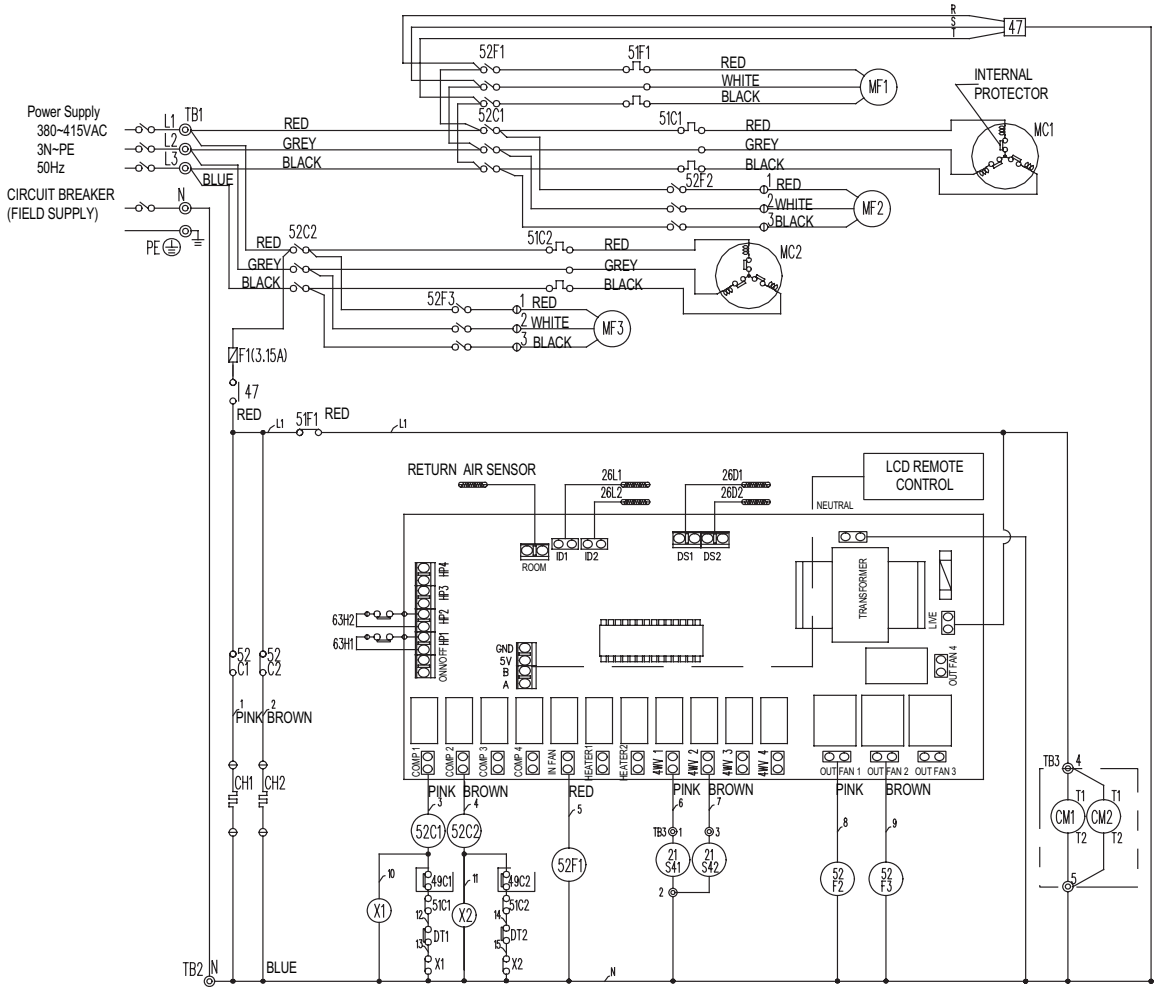
3 Each wire is adressed.

4 [· — ·] shows wiring for model UAT850AY1
In the case of UATP700AY1: no wire connection at TB3(4) and (5), &49C is replaced by single

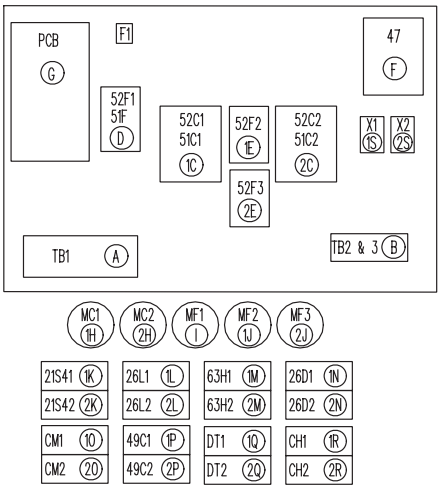
10 Wiring diagrams

10 - 1 Wiring Diagrams - Single Phase

UATYPC10/12AY1



Arrangement



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52F2,3	Contactor (fan O/D)
51C1,C2	Overload protector (compressor)
TB1,2,3	Terminal block
F1	Fuse (3.15A)
51F	Overload protector (fan I/D)
63H1,2	High-pressure switch
CH1,2	Crankcase heater
21S41,2	4-Way valve
26D1,2	Sensor (defrost)
26L1,2	Sensor (freeze protection)
PCB	Printed circuit board
47	Phase protector
DT1,2	Discharged thermostat
X1,2	Auxiliary relay (self hold)
49C1,C2	Compressor internal overload
CM1,2	Compressor control module

Caution,

1. To protect each Fan motor and compressor from abnormal current, Overload protectors are installed. Therefore, do not change factory set value of the overload protector.

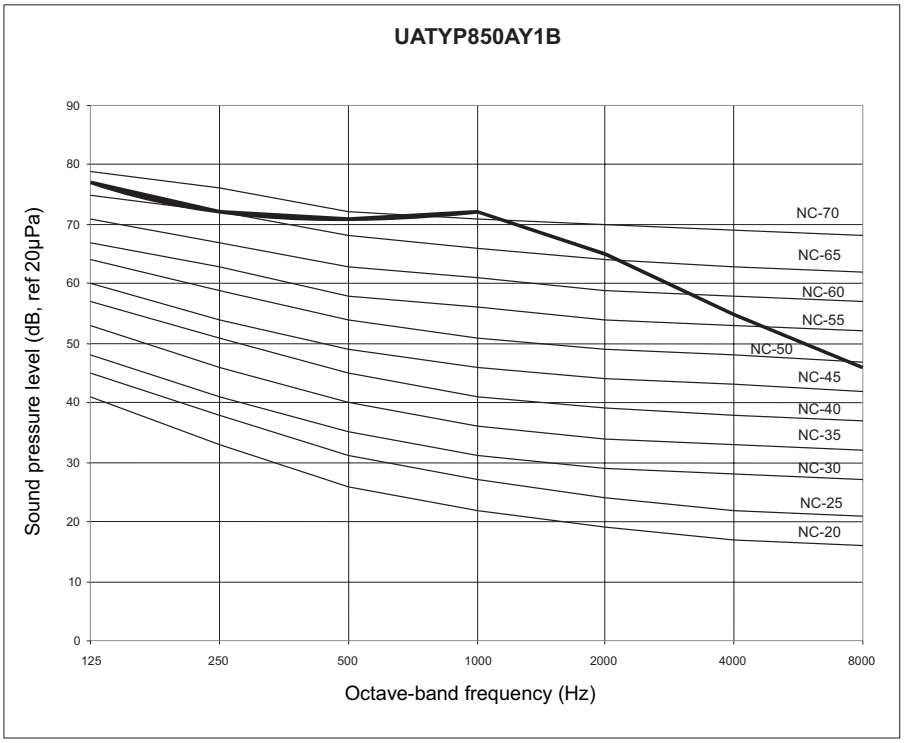
NOTES

1 The dotted lines show field wiring. - - - - - - - -
2 Color of earth wire is yellow and green twisting.
3 Specification subject to change without notice.
4 Each wire is adressed.

11 Sound data

11 - 1 Sound Pressure Spectrum

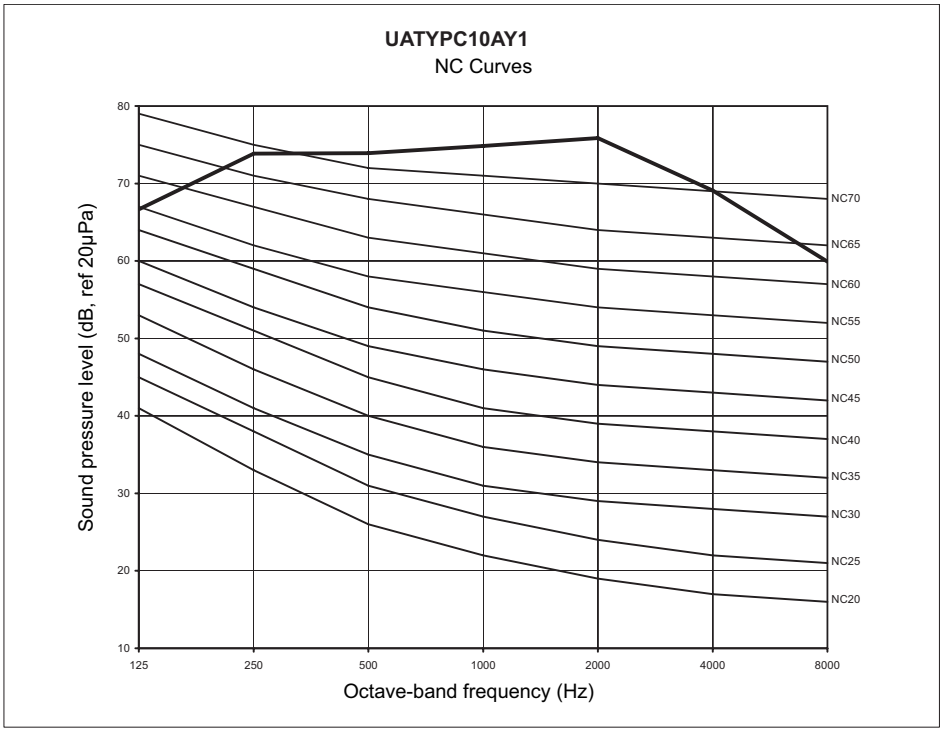
UATYP850AY1B



NOTE

1 Microphone position: 1 m from the service panel and 1 m height from the floor level.

UATYPC10AY1



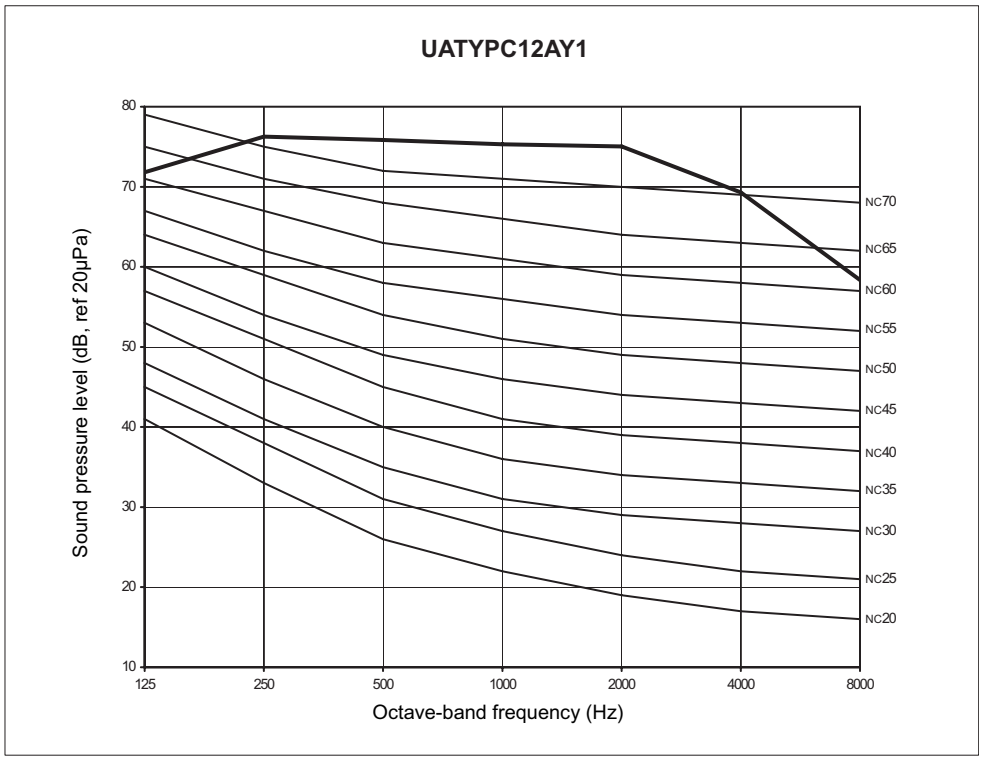
NOTE

1 Microphone position: 1 m from the service panel and 1 m height from the floor level.

11 Sound data

11 - 1 Sound Pressure Spectrum

UATYPC12AY1



NOTE

1 Microphone position: 1 m from the service panel and 1 m height from the floor level.

12 Fan characteristics

12 - 1 Fan Characteristics

Selection Process

Drive Package

The following are the design requirements for UAT280AY1 unit:				
	Model:	***UAT280AY1***		
	Supply Air Quantity	=	3800	CFM
	External Static Pressure	=	150	Pa
Step 1:	From the blower curve (at 8000 CFM), Standard operating system;			
	Internal Static pressure	=	**150**	Pa
Step 2:	Therefore at 3800 CFM and 150 Pa external static pressure,			
	Total Static Pressure	=	150 + 150	Pa
		=	**300**	Pa
Step 3:	From the blower curve, the design requirement calls for RPM about 1200 RPM.			
	From the table:			
	Motor pulley	=	114	mm
	Blower pulley	=	152	mm
	Motor RPM	=	1080	
	In order to obtain 1200 RPM, we calculate the new blower pulley as: (while maintaining the motor pulley)			
	Db	=	114 x (1080/1200)	
		=	102.6	mm
	Let us take close approximation of 100 mm diameter pulley size			
	Recheck, with Db = **100mm**			
	Blow pulley	=	1080 x (114/100)	
		=	**1231.2 RPM**	
	We thus need to change the blower bulley from 152 mm to 100 mm in order to obtain the higher operating static pressure.			
Step 4:	When the pulley is changed, the V-belt length must be rechecked. We have for horizontal air throw configuration:			
	V-belt length, L	=	2C + 1.57 (Db + Dm)	
		=	(2 x 184) + 1.57(114 + 100)	
		=	703.98	
	We thus can use a belt with a length of 704 mm.			
	where, C	=	distance between the centres of the two pulleys	
	Db	=	diameter of blower pulley	
	Dm	=	diameter of motor pulley	
Step 5:	From the blower curve, we can also notice that the motor power input has maintained within the current operating range of the standard unit's motor.			
	Summary:			
	i) Fan motor kW	=	**1.5**	kW
	ii) Blower pulley diameter	=	**100**	mm
	iii) V-belt size	=	**704**	mm

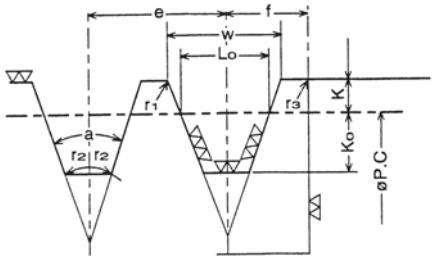
12 Fan characteristics

12 - 1 Fan Characteristics

PULLEY OUTSIDE DIMENSIONS ARE SHOWN BELOW: (UNIT : MM)

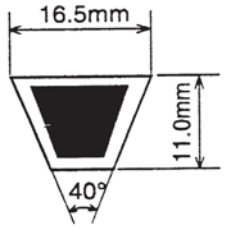
(1) Shape Of Belt Groove

1.1



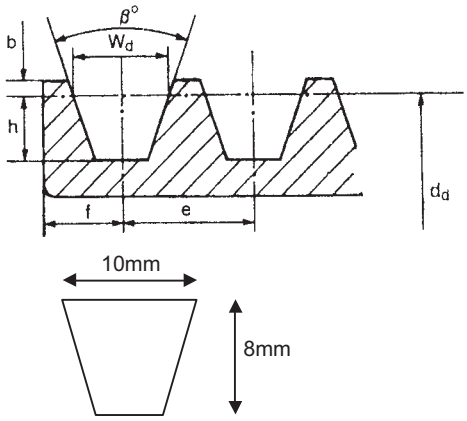
Shape of V-belt	Nominal Dia. ØP.C	a (°)	W	Lo	K	Ko	e	f	r_1	r_2	r_3	V-belt thickness (Reference)
B	Over 125 Under 160	34	15.86	12.5	5.5	9.5	19.0	12.5	0.2~0.5	0.5~1.0	1~2	11
	Over 160 Under 200	36	16.07									
	Over 200	38	16.29									

Sectional plan of V-belt



B-type

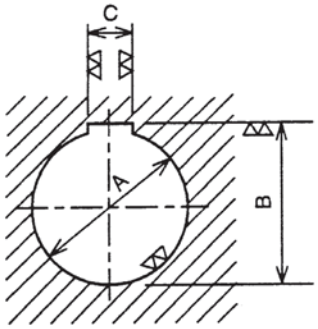
1.2 Taper lock type UATYP700/850AY1



Section	Sheave dia. d_d	Groove angle ß	W_d	b_{min}	h_{min}	e	f
SPZ	71 - 80 > 80	34° 38°	8.5	2.0	9.0	12 ± 0.3	8 ± 1

Sectioned plan of V-blet

(2) Shape Of Motor Pulley Boss (unit:mm)



MOTOR CAPACITY (kW)	A		B		C	
1.1, 1.5	Ø24	+0.028 +0.007	27	+0.128 +0.007	8	+0.018 -0.018
2.2, 3.7	Ø28	+0.028 +0.007	31	+0.128 +0.007	8	+0.028 -0.013
5.5, 7.5	Ø38	+0.028 +0.007	41	+0.128 +0.009	10	+0.028 -0.013

12 Fan characteristics

12 - 1 Fan Characteristics

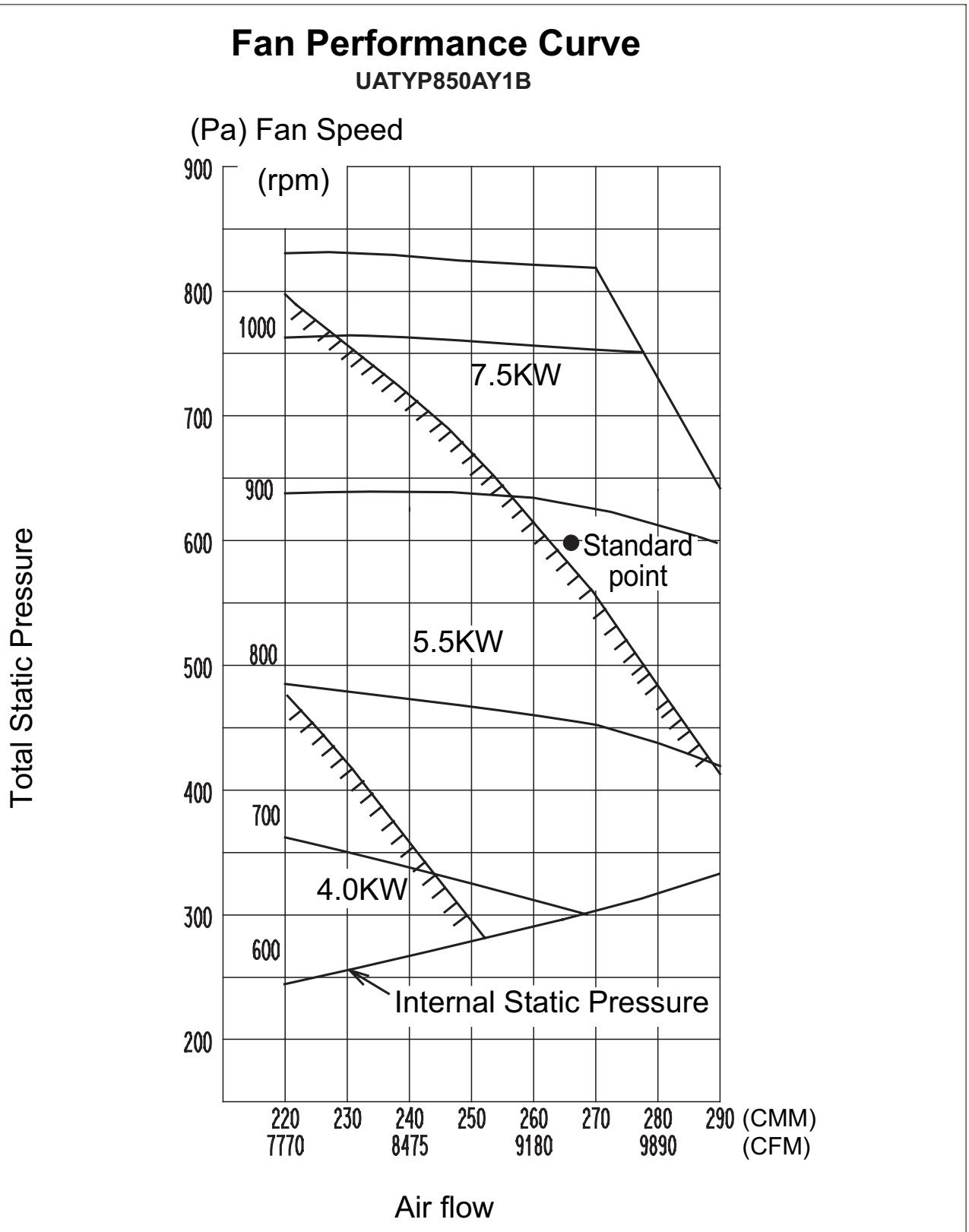
The following table summarizes the pulley data, motor size used for the UATP-series, as manufactured:

Model	Blower pulley, Db			Motor Pulley, Dm		
	Type	Diameter (mm)	Bore (mm)	Type	Diameter (mm)	Bore (mm)
UATYP850AY1B	SPZ 2	224	25	SPZ 2	140	38
UATYPC10AY1	SPA	280	40	SPA	124	38
UATYPC12AY1	SPA	250	40	SPA	118	38

Model	V-belt length, L (mm)	Pulley Centre Distance, C (mm)			Motor kW	Motor RPM
		Diameter (mm)	Minimum	Maximum		
UATYP850AY1B	1700	565			7.5	880
UATYPC10AY1	2132	748	730	763	7.5	1440
UATYPC12AY1	2060	739			7.5	1440

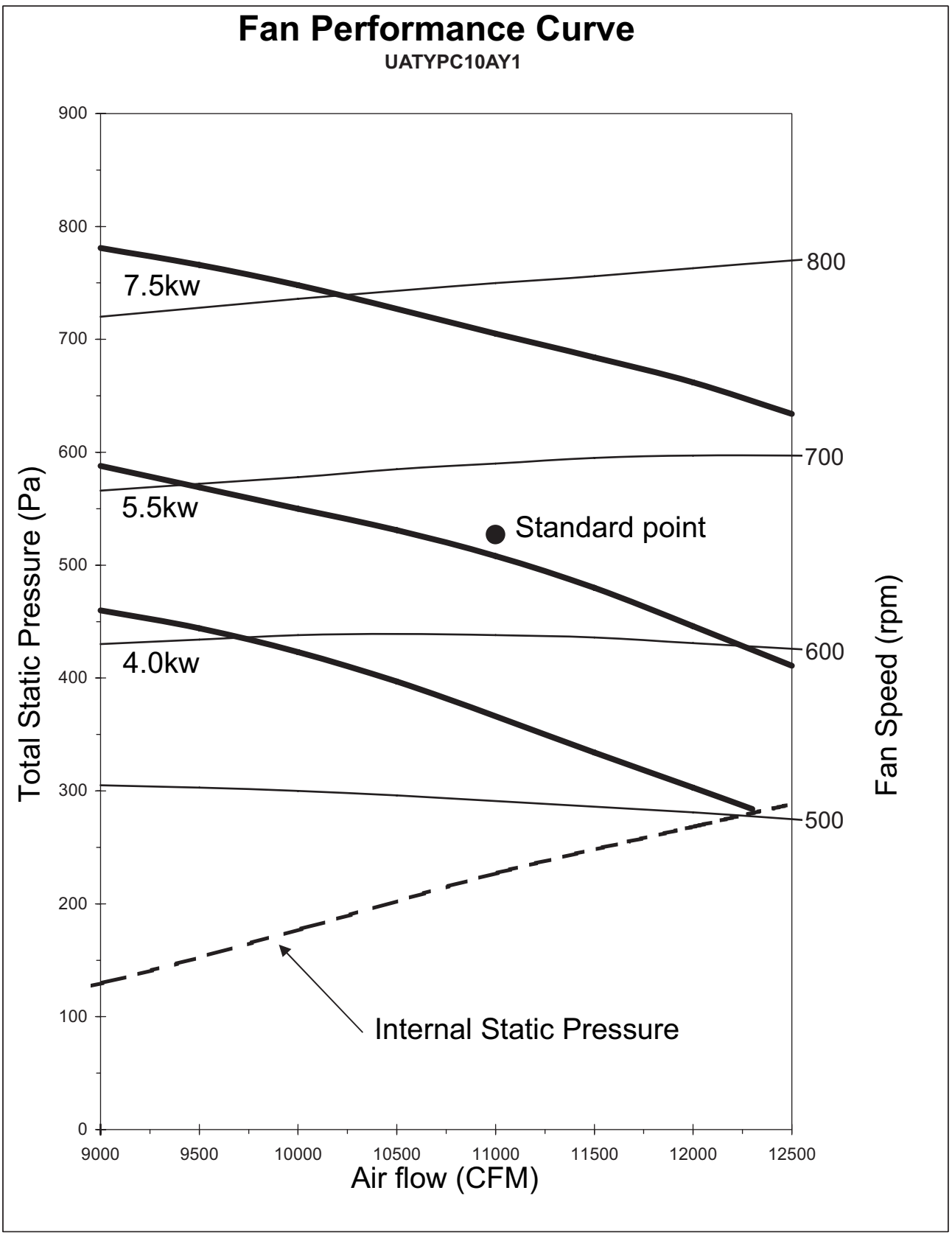
12 Fan characteristics

12 - 1 Fan Characteristics



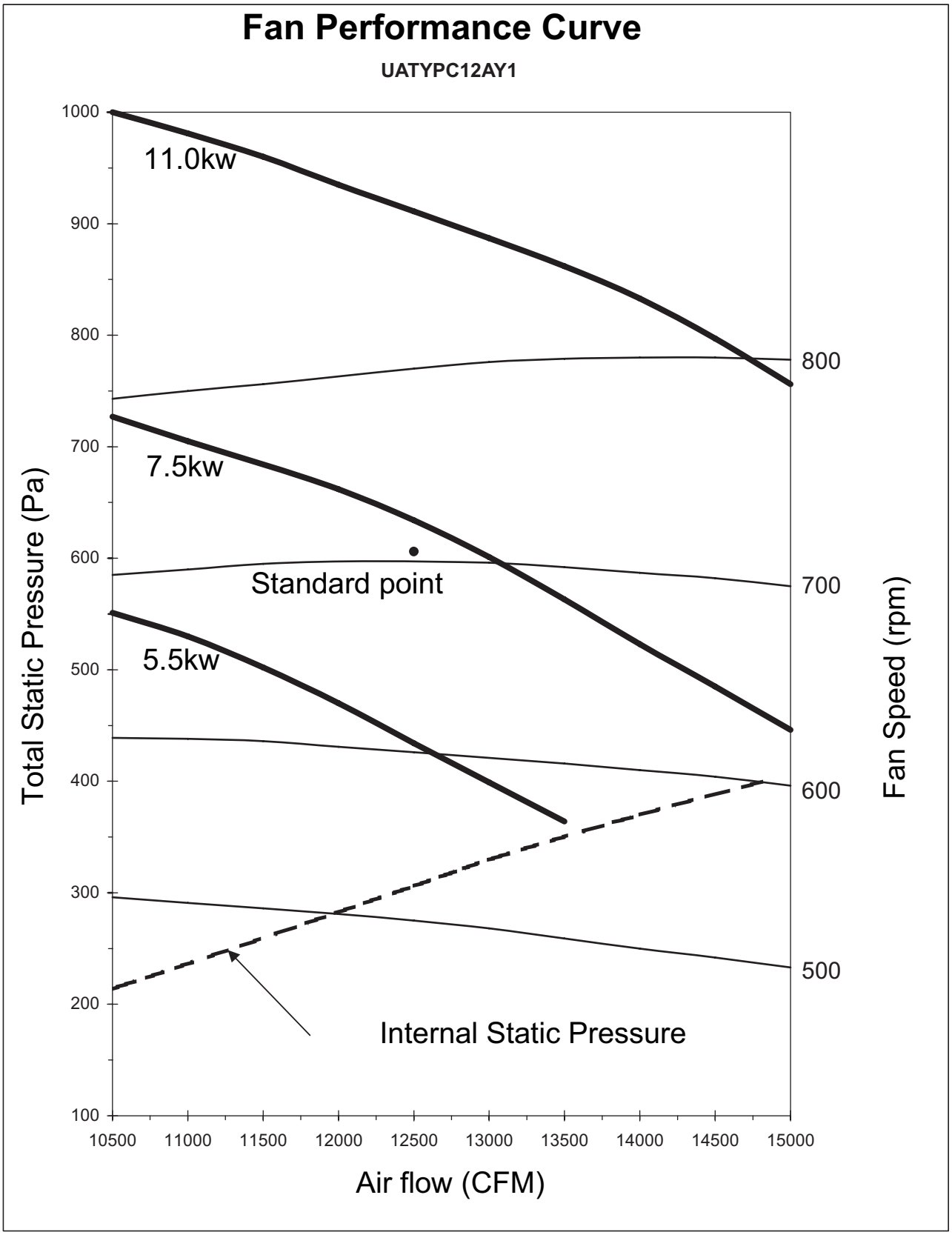
12 Fan characteristics

12 - 1 Fan Characteristics



12 Fan characteristics

12 - 1 Fan Characteristics



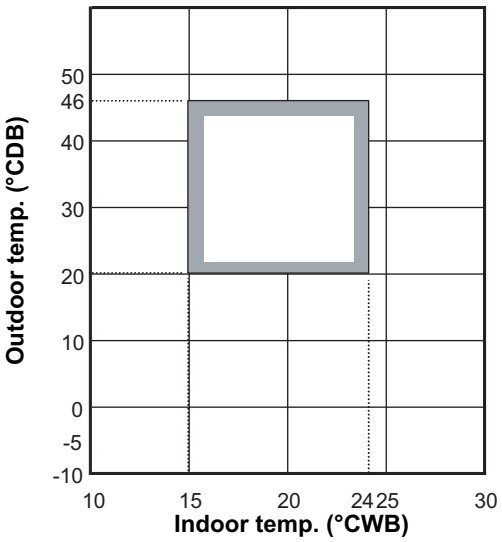
13 Operation range

13 - 1 Operation Range

UATYP-AY1(B)

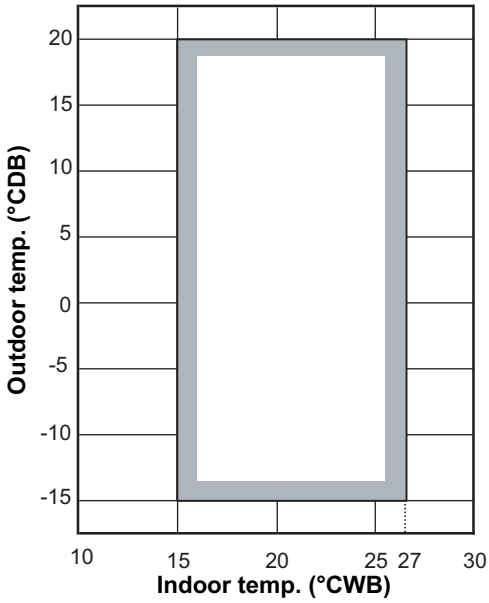
Cooling

Cooling Only Unit & Cooling Mode For Heat Pump Unit



Heating

Heat Pump Unit Only



NOTES

1 The use of your air conditioner outside the range of working temperature and humidity can result in serious failure.

In all of us,
a green heart

Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.

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