

PACKAGE UNIT



UNIT FEATURES

- Tru-Inverter™ Variable Speed Compressor and Drive Technology
- Pre-charged with R-410A Refrigerant
- Multiple Speed Outdoor Fans
- 40-100% Variable Refrigeration Capacity
- Low Ambient Cooling Operation to +5 deg
- Phase Protection
- Hydrophilic Blue Coat Coil Fin Protection - Indoor and Outdoor Coils
- Removable Louvred Outdoor Coil Guard
- Adaptive Demand Defrost
- EC Variable Speed Indoor Fan + Reduce Fan Airflow Feature
- Adjustable Indoor Airflow
- Foil Faced Polyethylene Insulation
- Active Power Factor Correction
- Bi-Flow Electronic Expansion Valves

UNIT OPTIONS

- Additional Full Coil Coat Protection

CONTROL OPTIONS AND FEATURES

ActronAir LC7-2 (BCA Compliant)

- Available in White or Grey
- 7-day Programmable Controller with 2 Events per Day
- 24-hour ON/OFF Timer
- Temperature Setback
- After Hours Time
- Auto / Cool / Heat / Fan Only / Night Modes Functions
- Auto / Continuous Indoor Fan Operation
- Optional 2nd and 3rd Controllers with Mimic Logic
- On-Board Temperature Sensor

ActronAir Neo

- 7" Colour Touch Screen Master Controller
- In-built Wi-Fi and Blue-Tooth
- Neo Connect App
- On-Board Temperature, Humidity and Proximity Sensor
- Optional wireless Zone Sensor
- Available in White or Black

ActronAir Group Control

ActronAir BMS ICUNO (Modbus 485)

THIRD PARTY CONTROL

- Manual Control Inputs (Heat, Cool and Fan Operation)
- Analogue Input (Fan and Cool Operation)

SPECIFICATION SUMMARY

UNIT MODEL		PKV160T	
		(1) TOTAL	(2) NETT
(3) COOLING CAPACITY (kW)	MINIMUM	5.70	5.60
	RATED	14.25	14.00
	TRUMAX (9)	16.37	16.00
(4) HEATING CAPACITY (kW)	MINIMUM	6.20	6.30
	RATED	14.75	15.00
	TRUMAX (9)	16.63	17.00
(3) SENSIBLE CAPACITY (kW)	RATED	11.59	11.34
(5) COOLING INPUT POWER (kW)	RATED	4.24	
(5) HEATING INPUT POWER (kW)	RATED	4.39	
EER	RATED	3.36	3.30
COP	RATED	3.36	3.42
(6) INDOOR AIRFLOW (l/s) - MIN. / NOMINAL / MAX.	600 / 750 / 900		
MINIMUM AIRFLOW WHEN IN MODULATION (l/s)	195		
OUTDOOR SOUND PRESS. LEVEL @ 3M dB(A) - LOW / HIGH	48.0 / 53.0		
OUTDOOR SOUND POWER LEVEL dB(A) - LOW / HIGH	68.0 / 72.1		
POWER SUPPLY	400V/3Ph+N/50Hz		
(2) RATED LOAD AMPS	8.2		
(7) FULL LOAD AMPS	14.4		
(8) CIRCUIT BREAKER AND CABLE AMPS	20		
APPROXIMATE STARTING AMPS	< 45		
POWER FACTOR	0.96		
WEIGHT (kg)	259		

(1) Based on unit rating excluding indoor fan kW.

(2) Measured and tested in accordance with AS/NZS 3823.1.2.

(3) At 27°C DB / 19°C WB entering air temperatures and 35°C ambient.

(4) At 20°C DB entering air temperature and 7°C DB / 6°C WB ambient.

(5) Total input power excludes indoor fan kW.

Nett input power includes indoor fan kW.

(6) Max. - Min. airflow application range irrespective of external static pressure.

(7) Full Load Amps are based on compressor and fan motors' maximum expected current.

(8) See Specifications sheet for cable size and circuit breaker size details.

(9) **TRUMAX** - Maximum Capacity.

Note: Use nett input power to estimate running cost.

3 Phase
1 Stage

14.25 kW

CAPACITY SELECTION DATA

PKV160T

COOLING PERFORMANCE

AIR ENTERING		TOTAL CAPACITY kW	TOTAL SENSIBLE CAPACITY - kW										
OUTDOOR DB - °C	INDOOR WB - °C		AT DB TEMPERATURE ONTO INDOOR COIL - °C										
			20	21	22	23	24	25	26	27	28	29	30
25	16	14.48	9.14	9.69	10.25	10.80	11.36	11.95					
	17	14.95	8.80	9.24	9.68	10.45	11.23	11.71	12.18	12.65			
	18	15.41	8.47	8.79	9.11	10.11	11.11	11.47	11.82	12.57	13.32		
	19	15.91	8.30	8.56	8.81	9.45	10.08	10.98	11.89	12.06	12.23	12.47	
	20	16.42	8.13	8.44	8.78	9.02	9.27	10.14	11.02	11.72	12.42	12.50	12.58
	21	16.80		8.33	8.77	8.97	9.18	9.80	10.42	11.10	11.69	12.12	12.55
	22	17.18			8.75	8.92	9.08	9.45	9.81	10.48	10.95	11.73	12.52
30	16	13.99	8.85	9.45	10.05	10.63	11.20	11.66					
	17	14.47	8.32	8.87	9.43	10.22	11.01	11.43	11.86	12.29			
	18	14.95	7.78	8.30	8.81	9.81	10.81	11.21	11.62	11.99	12.37		
	19	15.26	7.76	8.10	8.45	9.13	9.81	10.77	11.73	11.80	11.87	12.29	
	20	15.70	7.74	8.01	8.39	8.67	8.95	9.84	10.74	11.47	11.96	12.20	12.44
	21	15.99		7.91	8.37	8.66	8.94	9.55	10.16	10.76	11.32	11.85	12.38
	22	16.28			8.34	8.64	8.94	9.26	9.58	10.05	10.67	11.50	12.32
35	16	13.80	8.42	9.04	9.67	10.40	11.12	11.59					
	17	13.78	7.87	8.46	9.06	9.93	10.79	11.30	11.80	12.31			
	18	13.76	7.31	7.88	8.45	9.46	10.46	11.01	11.55	11.71	11.86		
	19	14.25	7.11	7.63	8.14	8.79	9.45	10.42	11.40	11.59	11.78	12.23	
	20	14.77	6.91	7.50	7.74	8.10	8.46	9.43	10.40	11.16	11.84	12.01	12.31
	21	15.14		7.37	7.54	7.97	8.40	9.04	9.68	10.42	11.10	11.63	12.23
	22	15.50			7.34	7.84	8.34	8.65	8.95	9.69	10.35	11.25	12.15
40	16	12.54	8.21	8.86	9.50	10.19	10.87	11.38					
	17	12.98	7.51	8.19	8.86	9.70	10.54	11.06	11.59	12.11			
	18	13.41	6.81	7.51	8.21	9.21	10.21	10.74	11.27	11.57	11.87		
	19	13.66	6.78	7.01	7.23	8.20	9.17	10.10	11.03	11.16	11.67	12.18	
	20	14.16	6.75	6.75	6.81	7.49	8.16	9.19	10.22	10.74	11.94	12.06	12.26
	21	14.56		6.50	6.60	7.26	7.91	8.63	9.35	10.02	11.02	11.55	12.12
	22	14.95			6.40	7.03	7.67	8.07	8.48	9.30	10.10	11.04	11.99
45	16	11.91	7.93	8.52	9.10	9.85	10.60	11.08					
	17	12.25	7.53	7.98	8.44	9.35	10.27	10.78	11.30	11.81			
	18	12.60	7.12	7.45	7.77	8.86	9.94	10.48	11.03	11.45	11.86		
	19	12.87	6.68	6.93	7.18	8.05	8.91	9.89	10.86	11.22	11.65	12.07	
	20	13.25	6.24	6.67	6.71	7.29	7.87	8.86	9.86	10.79	11.71	11.92	12.13
	21	13.58		6.42	6.47	7.08	7.69	8.31	8.93	9.82	10.75	11.35	11.94
	22	13.92			6.23	6.88	7.52	7.76	8.00	8.85	9.79	10.77	11.76
50	16	11.21	7.65	7.99	8.32	9.33	10.34	10.97					
	17	11.58	6.99	7.48	7.98	9.00	10.02	10.64	11.26	11.88			
	18	11.96	6.32	6.98	7.64	8.66	9.69	10.31	10.93	11.16	11.39		
	19	12.16	6.18	6.38	6.57	7.62	8.67	9.65	10.63	10.91	11.19	11.47	
	20	12.50	6.04	6.08	6.24	6.95	7.66	8.65	9.64	10.43	11.21	11.36	11.52
	21	12.88		5.77	6.07	6.76	7.45	8.06	8.67	9.29	10.40	10.94	11.49
	22	13.26			5.90	6.57	7.23	7.47	7.70	8.15	9.58	10.52	11.45

3 Phase
1 Stage

14.25 kW

HEATING PERFORMANCE

WB TEMP ON OD COIL - °C	TOTAL HEATING CAPACITY - kW									
	AT DB ENTERING INDOOR - °C									
	16		18		20		22		24	
	TH	IH	TH	IH	TH	IH	TH	IH	TH	IH
-10	9.36	8.98	9.32	8.95	9.28	8.91	9.23	8.86	9.19	8.82
-8	9.97	9.47	9.92	9.42	9.87	9.37	9.82	9.32	9.76	9.27
-6	10.60	9.96	10.54	9.90	10.48	9.85	10.46	9.83	10.40	9.78
-4	11.27	10.37	11.19	10.29	11.16	10.27	11.10	10.21	11.03	10.15
-2	12.00	10.68	11.92	10.61	11.84	10.54	11.77	10.47	11.70	10.41
0	12.71	11.18	12.62	11.10	12.56	11.06	12.47	10.98	12.39	10.91
2	13.41	12.21	13.31	12.11	13.21	12.02	13.11	11.93	13.02	11.85
4	14.19	14.19	14.04	14.04	13.96	13.96	13.87	13.87	13.77	13.77
6	15.00	15.00	14.87	14.87	14.75	14.75	14.63	14.63	14.54	14.54
8	15.84	15.84	15.69	15.69	15.56	15.56	15.44	15.44	15.33	15.33
10	16.70	16.70	16.56	16.56	16.41	16.41	16.28	16.28	16.15	16.15
12	17.60	17.60	17.45	17.45	17.29	17.29	17.13	17.13	16.99	16.99
14	18.53	18.53	18.36	18.36	18.19	18.19	18.02	18.02	17.87	17.87
16	19.50	19.50	19.30	19.30	19.12	19.12	18.94	18.94	18.76	18.76
18	20.50	20.50	20.29	20.29	20.08	20.08	19.87	19.87	19.67	19.67

TH - Total Heating Capacity (kW).
IH - Integrated Heating Capacity (kW)
Includes defrost losses.

AIRFLOW CORRECTION MULTIPLIER

% VARIATION	-20%	-15%	-10%	-5%	Nominal	+5%	+10%	+15%
INDOOR AIRFLOW (l/s)	600	637	675	713	750	788	825	863
TOTAL COOLING	0.965	0.982	0.989	0.997	1.000	1.004	1.009	1.015
SENSIBLE COOLING	0.884	0.916	0.945	0.974	1.000	1.024	1.046	1.072
HEATING FACTOR	0.969	0.976	0.983	0.991	1.000	1.011	1.022	1.033

NOTES:

- No allowance has been made for the effect of indoor fan motor.
- Selection tables are based on nominal airflows.
Correction factors must be applied for selection away from these conditions.



APPLICATION RANGE (COMPRESSOR ON)

AIRFLOW (l/s)	EXTERNAL STATIC PRESSURE (Pa)											
	50		100		150		200		250		300	
	% PWM	W	% PWM	W	% PWM	W	% PWM	W	% PWM	W	% PWM	W
600	40	139	47	196	54	257	60	317	69	380	92	450
650	45	164	52	223	59	290	65	351	76	421	99	492
700	51	196	58	261	64	322	71	393	86	465	MOTOR / BLOWER LIMIT	
750	57	231	63	291	70	362	78	443	95	509		
800	62	259	70	339	77	413	84	485				
850	69	304	77	387	83	459	94	539				
900	76	349	83	431	89	507						

REDUCED AIRFLOW *(COMPRESSOR OFF)

AIRFLOW (l/s)	EXTERNAL STATIC PRESSURE (Pa)											
	50		100		150		200		250		300	
	% PWM	W	% PWM	W	% PWM	W	% PWM	W	% PWM	W	% PWM	W
200	MOTOR / BLOWER LIMIT				22	87	27	123	31	150		
250			21	73	26	108	30	139	35	181	44	220
300			24	85	29	121	34	162	38	197	51	245
350	21	61	27	98	33	142	38	184	43	223	58	279
400	22	64	30	109	36	155	42	206	48	255	64	306
450	27	82	34	129	40	176	46	228	53	284	70	338
500	31	98	38	149	44	197	51	259	58	316	76	373
550	36	122	42	169	49	227	55	282	63	346	84	411

NOTES

* Reduced fan airflow is the airflow during compressor OFF operation (optional feature)

W = Indoor Fan Power, Watts

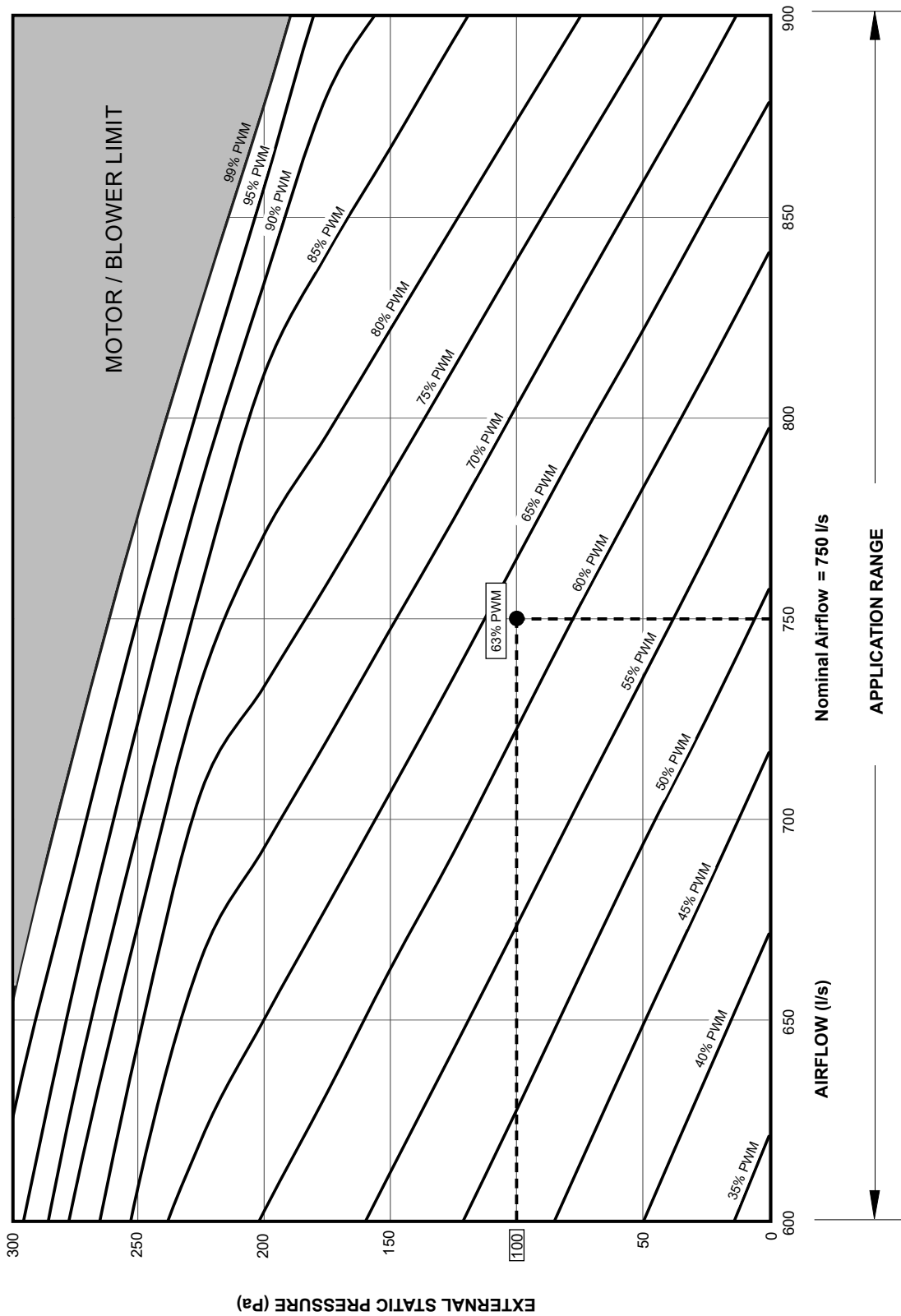
PWM = Pulse Width Modulation Setting, % PWM (Adjustable through the NEO / LC7-2 Control Interface or Outdoor Board)

Default Fan Speed Value at 100Pa	
Speed	Default PWM (adjustable)
High PWM (%)	83
Medium PWM (%)	63
Low PWM (%)	48

Indoor Fan PWM Limits	
PWM High Limit	99
PWM Low Limit	40

3 Phase
1 Stage

14.25 KW



Nominal Airflow = 750 l/s

APPLICATION RANGE

Notes:

1. Performance Fan Curve shown is at Dry Coil Condition.
2. Airflow should be reduced with respect to the moisture content in the air.
3. All data provided does not include filters. Please review filter manufacturer for application.
4. 2.5 m/s face velocity point will occur at 1025 l/s.

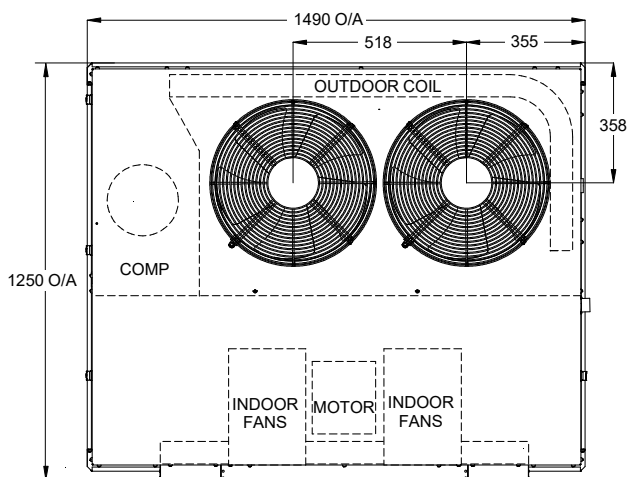
3 Phase	1 Stage
14.25 KW	



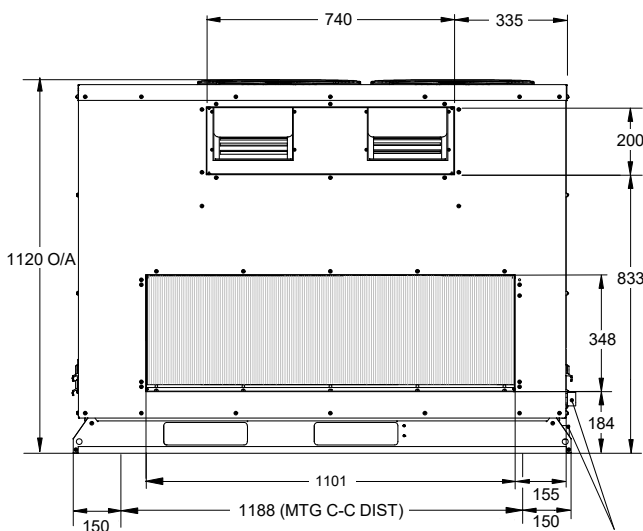
UNIT DIMENSIONS

PKV160T

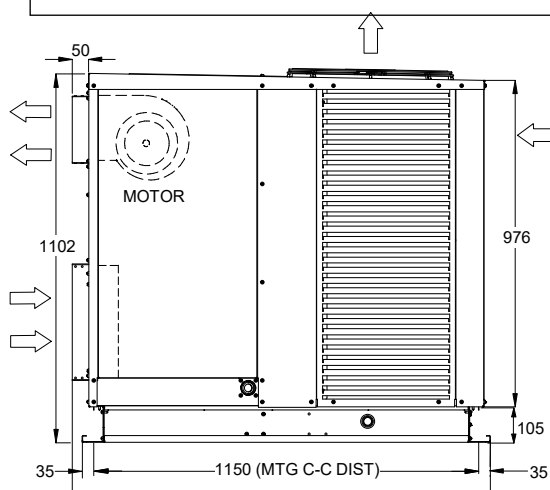
U PACKAGE UNIT - STANDARD MODEL



TOP VIEW



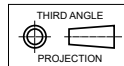
SIDE VIEW



FRONT VIEW

OVERALL NOMINAL DIMENSION (H x W x D)
= 1120 x 1490 x 1250
SUPPLY DUCT (H x W) = 200 x 740
RETURN DUCT (H x W) = 348 x 1101

NOTES:

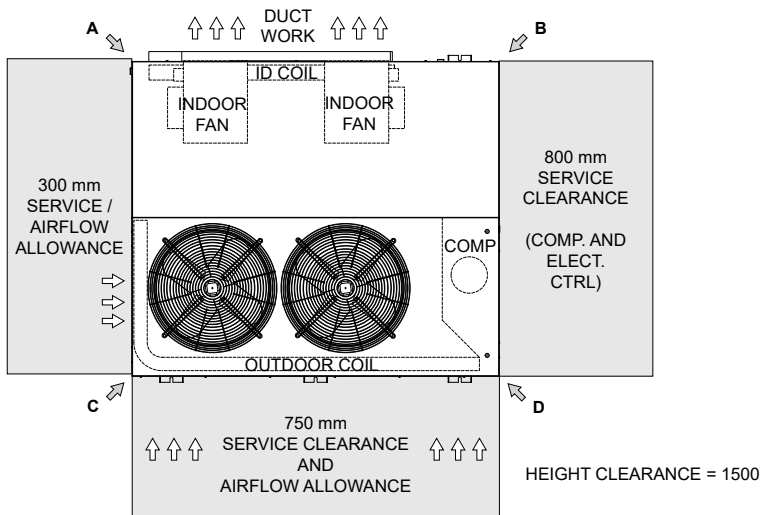


1. Do not scale drawing.
2. All dimensions are in mm unless specified. Refer to corresponding unit dimensional drawing for mounting hole details
3. Suggested Service Clearance and Airflow Allowances are based on conditions that the spaces are free from obstructions and walkway passage of 1m is available to allow coil replacement without lifting coil over the top of the unit.
4. Minimum service access areas and space for airflow clearances are responsibilities of the installer.
5. Under circumstances, condenser air must not recirculate back onto condenser coil. Keep all clearances free of any obstructions.
6. STACKING OF UNITS: Ensure that minimum airflow and service clearances are met.
7. MTG C-C DIST = Mounting Centre to Centre Distance.
8. Use M12 bolt for feet mounting.

UNIT MODEL NUMBER	UNIT WEIGHT (kg)	CORNER WEIGHTS (kg)			
		A	B	C	D
PKV160T	259	45	76	67	71

3 Phase
1 Stage
14.25 KW

MINIMUM SERVICE ACCESS CLEARANCES and AIRFLOW SPACE ALLOWANCES



Outdoor Radiated

Sound Power Level (SWL)

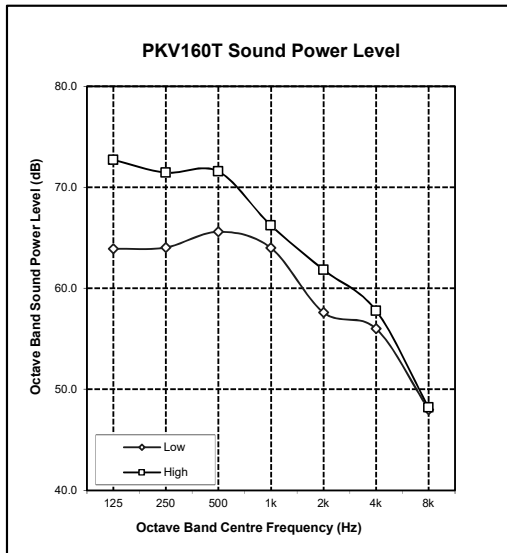
Fan Speed	Sound Power Level dB(A)	Octave Band Centre Frequency (Hz), dB						
		125	250	500	1k	2k	4k	8k
Low	68.0	63.9	64.0	65.6	64.0	57.6	56.0	48.0
High	72.1	72.7	71.5	71.6	66.2	61.8	57.8	48.2

Indoor Outlet

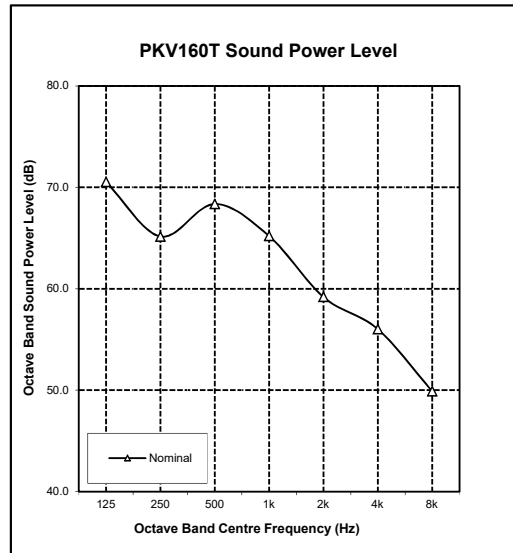
Sound Power Level (SWL)

Airflow Setting	Airflow l/s	Sound Power Level dB(A)	Octave Band Centre Frequency (Hz), dB						
			125	250	500	1k	2k	4k	8k
Nominal	750	69.6	70.5	65.2	68.4	65.2	59.2	56.0	49.9

OUTDOOR RADIATED



INDOOR OUTLET



NOTES:
Radiated sound power levels are based on ISO 3743-1.

14.25 kW
3 Phase
1 Stage

SPECIFICATIONS

PKV160T

CONSTRUCTION	
CABINET BASE	1.1 - 1.6 Galvanised Steel
CABINET TOP AND SIDES	0.9 - 1.1 mm Galvanised Steel
SURFACE FINISH	65 μ Baked Polyester Powder Coat

INSULATION	
TYPE	Foil Faced Polyethylene

ELECTRICAL	
POWER SUPPLY - 50 Hz	400 Volts x 3 Phase + N
VOLTAGE RANGE (min - max)	380 V - 440 V
FULL LOAD AMPS* - (L1 / L2 / L3)	11.9 / 14.4 / 10.5
RATED LOAD AMPS**	8.2
APPROXIMATE STARTING AMPS	< 45.0
IP RATING	IP44

IMPORTANT - The local electricity authority may require limits on starting current and voltage drop, please check prior to purchase.

* Full Load Amps are based on Compressor and Fan Motor's maximum expected current.
** Rated Load Amps are measured and tested in accordance with AS/NZS3823.1.2.

CABLE SIZE and CIRCUIT BREAKER SIZE	
Suggested minimum cable size should be used as a guide only, refer to the accordance with the latest edition of the AS/NZS 3000 "Australian/New Zealand Wiring Rules" for more details.	
CABLE SIZE (main line)	2.5 mm ² (SUGGESTED MINIMUM)
CIRCUIT BREAKER SIZE	20 Amps

OUTDOOR COIL	
TUBE TYPE	Copper - Rifle Bore
FIN TYPE	Aluminium - Wave
FIN SPACING (per m)	630
COIL COATING	Hydrophilic Blue Coat Coil Fin Protection

OUTDOOR FAN	
NUMBER OF FANS x TYPE	2 x Axial
NUMBER OF BLADES PER FAN	5
DIAMETER (mm)	450
OUTPUT kW (each)	0.145
MOTOR TYPE / DRIVE TYPE	6 Pole External Rotor / Direct
FAN SPEED CONTROL	3 Speed via Capacitor
The standard type outdoor fans fitted to this unit will only accept 5 Pa of external static resistance.	

INDOOR COIL	
TUBE TYPE	Copper - Rifle Bore
FIN TYPE	Aluminium - Louvre
FIN SPACING (per m)	472
COIL COATING	Hydrophilic Blue Coat Coil Fin Protection

INDOOR FAN	
NUMBER OF FANS x TYPE	1 x Twin Deck Centrifugal EC Fan
DIAMETER (mm)	204 x 204
INPUT kW	0.25
MOTOR TYPE / DRIVE TYPE	Variable Speed EC Motor / Direct
FAN SPEED CONTROL	Electronic Control

COMPRESSOR	
NUMBER PER UNIT x TYPE	Tru-Inverter Variable Speed Scroll / 1
FULL LOAD AMPS	10.5
LOCKED ROTOR AMPS	128.0
STARTING METHOD	In-built Soft Starting

REFRIGERATION SYSTEM	
REFRIGERANT TYPE	R-410A
EXPANSION CONTROL	Direct Expansion Orifice / EEV
FACTORY CHARGE (grams)	5600

PROTECTION DEVICES	
HIGH PRESSURE CUTOFF SWITCH	Nonadjustable (Automatic Reset)
LOW PRESSURE CUTOFF SWITCH	Nonadjustable (Automatic Reset)
COMPRESSOR MOTOR TEMP.	Internal Thermal Cut-Out
INDOOR FAN OVERLOAD	Internal Thermal Cut-Out
OUTDOOR FAN OVERLOAD	Internal Thermal Cut-Out
SUMP HEATER WATTS	37 W during compressor off cycle

ELECTRONIC CONTROLS	
DEFROST METHOD	Reverse Cycle
DEFROST TYPE	Adaptive Demand Defrost
CONTROL CIRCUIT BREAKER	10.0 Amps
LC7-2 FIELD CONTROL WIRING	Cat5e UTP (AWG24) Data Cable

OPERATING RANGE			
It is essential that the unit is correctly sized for the application and operates within its recommended range of operating conditions as shown below.			
MODE	RANGE	INDOOR AIR INTAKE TEMPERATURE	OUTDOOR AIR INTAKE TEMPERATURE
Cooling	Max.	30°C DB / 22°C WB	50°C DB
	Min.	20°C DB / 16°C WB	5°C DB
Heating	Max.	24°C DB	19.5°C DB / 18°C WB
	Min.	16°C DB	-15°C DB

AIR FILTERS	
All return air including fresh air must have adequate filters supplied and fitted by the installing contractor. Filters must be located in accessible location between the return air grille and the unit.	
ActronAir does not supply or make any provisions for return air filter.	

UNIT COMPLIANCE	
<ul style="list-style-type: none"> AS/NZS 3823.2 (MEPS) AS/NZS 4755.3.1 (DRM1, 2 and 3) AS/NZS CISPR 11, Group 1 Class A (EMC) 	

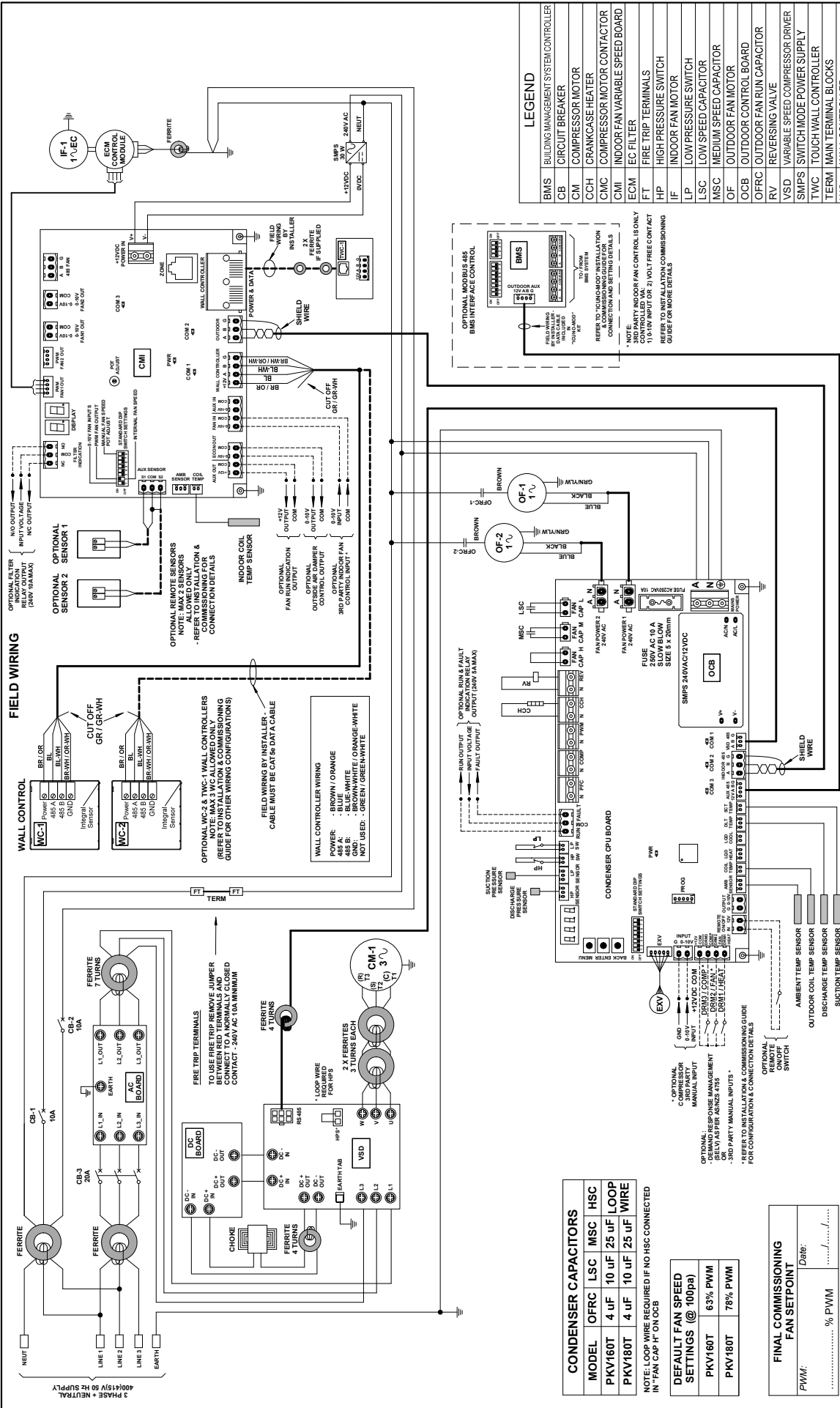
3 Phase
1 Stage

14.25 kW



WIRING DIAGRAM

PKV160T





ActronAir

Base Model No.: PKV160/180T

Variation Code: STANDARD

Description: UNO SERIES CONTROL SYSTEM WIRING DIAGRAM WITH LC SERIES WALL CONTROL, CMI VARIABLE SPEED INDOOR FAN CONTROL BOARD

Drawn: RL **Approved:** JL

Date: 18-03-2019 **Drawing No.:** WD2030

Revision: D **Size:** A3

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Rev.	Description	By	Date
D	ADDED FERRITE TO TWC-1	PCR	16-09-2022
C	ORIGINAL		

3 Phase 1 Stage

14.25 KW