



Kirby Titan Outdoor Condensing Unit

With VSD & optional
EC fan motors



Titan Outdoor Condensing Units with VSD and optional EC fan motors

Product Overview



With the increased demand for higher efficiency and improved capacity control, Kirby now offer a range of Titan Outdoor 4 Cylinder Semi-Hermetic Condensing Units configured with a Variable Speed Compressor Drive kit.

Features

- 9 Models / 27 Applications = 9 x R134a Medium Temp.
+ 9 x R404A Low/Medium Temp. + 9 x R407F Low/Medium Temp.
- Widest capacity range from 6.3kW to 34kW
(@-5°C sst / 35°C ambient on R134a)
- High quality, with industry recognised VSD brand
- All standard wiring and controls are factory installed and tested
- Compressor speed envelope from 30 to 65Hz using standard compressors
- Fan speed control fitted as standard
(EC fans are available as an option)
- Trax Oil management system installed as part of VSD kit
- More accurate balanced load matching with improved efficiency;
- Auto tuning feature ensures optimum smooth constant suction pressure control that maintains a stable storage temperature with less starts and stops of the compressor
- Heatcraft expect Kirby Titan power consumption to reduce by up to 18%
- Factory pre-configured VSD minimises on-site programming and ensures ease of installation & commissioning
- Soft-start feature of VSD reduces compressor starting current by up to 40%
- Fail safe fixed speed 50Hz mechanical control backup changeover in the event of failed VSD and/or electrical power supply issue



Titan Outdoor Condensing Units - Nomenclature Data

Model Numbering - Standard Kirby Titan Condensing Units						
PP	S	152	MH	A1	-	4
PP = Polarpack						
Compressor Type S = Semi Hermetic Reciprocating						
Primary Refrigerant Capacity (kW) x 10 at -5°C SST R404A 30°C SCT 50Hz. MH/LM&LMH" Range eg. 100 = 10 (kW) x 10						
Operating Range for Primary Refrigerant MH = Medium / High, LM = Low / Medium LMH = Low / Medium / High						
				Condenser Type & Variant A = Air Cooled Number = Sequential for Different Available Condensers		
						Release Number & Power Supply to Compressor Odd Number = Single Phase Even Number = Three Phase

NOTE: Add respective kit model numbers to quote, selection and orders. (Refer to page 8)

Titan Outdoor Condensing Units with VSD and optional EC fan motors R134a Medium/High Temperature Application



Product Number	Amb. (°C)	MT Capacity (Watts) Evap Temp °C				HT Capacity (Watts) Evap Temp °C		
		-20	-15	-10	-5	0	5	10

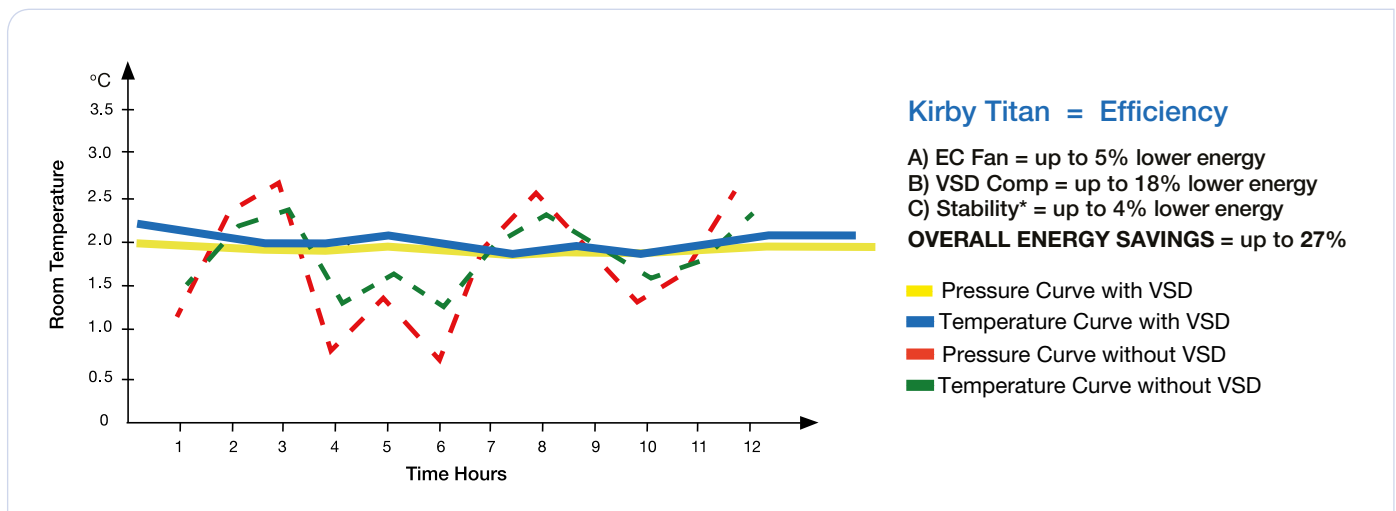
SELECTION DATA - R134a CAPACITY VSD OPERATION - INHERENT SUBCOOLING, 20°C RETURN GAS

PPS152LMHA1-4 Output 65Hz	35		7930	9930	12190	14730	17560	20680
	45		6840	8670	10750	13080	15660	18480
Output 50Hz	35		6210	7800	9600	11660	13960	16510
	45		5370	6810	8460	10340	12450	14760
Output 30Hz	35			4810	5950	7260	8760	10440
	45			4220	5260	6450	7810	9330
PPS178LMHA1-4 Output 65Hz	35		9440	11730	14310	17200	20400	23890
	45		8040	10080	12390	14950	17770	20820
Output 50Hz	35		7400	9220	11300	13640	16260	19150
	45		6310	7920	9760	11840	14160	16690
Output 30Hz	35			5700	7020	8530	10250	12170
	45			4910	6070	7400	8910	10600
PPS205LMHA1-4 Output 65Hz	35		11170	13900	16970	20400	24210	28360
	45		9600	12100	14920	18070	21510	25250
Output 50Hz	35		8770	10940	13420	16210	19330	22770
	45		7540	9510	11770	14320	17160	20260
Output 30Hz	35			6780	8360	10160	12210	14500
	45			5900	7320	8950	10810	12880
PPS242LMA1-4 Output 65Hz	35		13640	16990	20770	24990	29640	34660
	45		11740	14820	18320	22190	26430	
Output 50Hz	35		10720	13400	16450	19890	23710	27880
	45		9240	11670	14480	17640	21140	24930
Output 30Hz	35		6630	8320	10260	12490	15010	17810
	45			7280	9040	11070	13360	15900
PPS289LMHA1-4 Output 65Hz	35		13630	17070	20980	25370	30230	35550
	45		11710	14840	18410	22380	26740	31480
Output 50Hz	35		10680	13410	16540	20090	24070	28460
	45		9190	11650	14480	17710	21310	25230
Output 30Hz	35			8290	10260	12530	15120	18030
	45			7230	8990	11030	13360	15990
PPS328LMA1-4 Output 65Hz	35		17440	21650	26360	31590	37320	43550
	45		14950	18820	23080	27770	32900	38460
Output 50Hz	35		13710	17060	20870	25160	29900	35050
	45		11710	14750	18230	22130	26390	30970
Output 30Hz	35		8480	10600	13030	15810	18950	22430
	45			9200	11380	13880	16710	19840
PPS338LMHA1-4 Output 65Hz	35		17530	21870	26810	32380	38580	45390
	45		15180	19140	23660	28750	34380	40520
Output 50Hz	35		13710	17150	21090	25580	30640	36240
	45		11900	15010	18600	22700	27300	32360

Titan Outdoor Condensing Units with VSD and optional EC fan motors R134a Medium/High Temperature Application



Product Number	Amb. (°C)	MT Capacity (Watts) Evap Temp °C				HT Capacity (Watts) Evap Temp °C			
		-20	-15	-10	-5	0	5	10	
(CONT'D) SELECTION DATA - R134a CAPACITY VSD OPERATION - INHERENT SUBCOOLING, 20°C RETURN GAS									
Output 30Hz	35				10570	13050	15910	19170	22860
	45					11540	14120	17070	20400
PPS370LMA1-4 Output 65Hz	35		20040	24700	29900	35680	42010	48810	
	45		17300	21570	26280	31450	37110		
Output 50Hz	35		15760	19500	23750	28500	33720	39400	
	45		13550	16960	20840	25150	29840	34880	
Output 30Hz	35		9770	12140	14860	17970	21470	25330	
	45		8460	10580	13020	15830	18980	22470	
PPS411LMA1-4 Output 65Hz	35		22110	27420	33350	39940	47160	54970	
	45		18990	23870	29280	35240	41750	48720	
Output 50Hz	35		17390	21630	26450	31850	37820	44300	
	45		14900	18760	23160	28090	33480	39300	
Output 30Hz	35		10770	13450	16540	20060	24020	28410	
	45				11700	14470	17640	21230	25190



The above chart demonstrates how the VSD optimises both the suction and room temperature curves.
*Reduced energy, less starts = greater reliability, improved product / climate condition.

Titan Outdoor Condensing Units with VSD and optional EC fan motors R404A Low/Medium Temperature Application

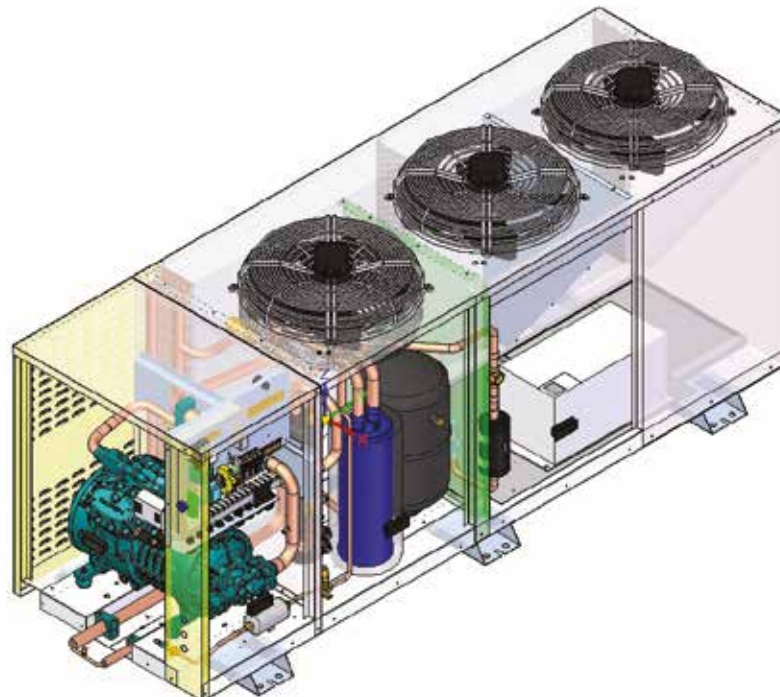


Product Number	Amb. (°C)	LT Capacity (Watts) Evap Temp °C				MT Capacity (Watts) Evap Temp °C		
		-35	-30	-25	-20	-15	-10	-5
SELECTION DATA - R404A CAPACITY VSD OPERATION - INHERENT SUBCOOLING, 20°C RETURN GAS								
PPS152LMHA1-4 Output 65Hz	35	4820	6280	7980	9950	12210	14750	17500
	45	3770	5000	6420	8090	10010	12160	14440
Output 50Hz	35		4950	6310	7900	9740	11830	14160
	45		3970	5100	6430	7990	9780	11740
Output 30Hz	35			3940	4970	6160	7540	9100
	45				4070	5070	6220	7540
PPS178LMHA1-4 Output 65Hz	35	5930	7650	9620	11890	14490	17370	20480
	45	4630	6080	7750	9690	11900	14320	16870
Output 50Hz	35	4620	6000	7580	9400	11480	13840	16450
	45		4670	5950	7430	9140	11070	13170
Output 30Hz	35			4730	5920	7280	8850	10620
	45				4720	5830	7110	8540
PPS205LMHA1-4 Output 65Hz	35	7120	9210	11590	14300	17360	20710	24310
	45	5590	7360	9370	11680	14270	17070	19980
Output 50Hz	35	5560	7230	9130	11310	13800	16570	19620
	45		5640	7190	8960	10990	13240	15670
Output 30Hz	35			5710	7140	8770	10640	12730
	45				5700	7020	8520	10210
PPS242LMA1-4 Output 65Hz	35	8350	10720	13460	16570	20050	23840	27880
	45	6360	8410	10810	13510	16460	19610	22870
Output 50Hz	35	6610	8490	10670	13190	16050	19230	22710
	45		6740	8560	10690	13140	15870	18790
Output 30Hz	35			6700	8330	10200	12320	14700
	45				6810	8380	10170	12190
PPS289LMHA1-4 Output 65Hz	35	8710	11310	14310	17750	21650	25990	30730
	45	6700	8920	11520	14470	17750	21320	25130
Output 50Hz	35	6860	8940	11330	14100	17280	20870	24840
	45		7140	9120	11440	14130	17160	20480
Output 30Hz	35			7090	8890	10970	13350	16040
	45			7230	7260	8980	10970	13230
PPS328LMA1-4 Output 65Hz	35	11290	14540	18270	22490	27170	32260	37640
	45	8600	11460	14730	18330	22230	26370	
Output 50Hz	35	8940	11530	14520	17940	21810	26090	30750
	45		9140	11630	14540	17840	21460	25310
Output 30Hz	35			9150	11380	13940	16820	20030
	45			7400	9270	11400	13830	16550
PPS338LMHA1-4 Output 65Hz	35	11520	14830	18620	22970	27940	33500	39590
	45	8890	11630	14850	18610	22910	27680	32810
Output 50Hz	35		11710	14760	18270	22300	26880	31980
	45		9260	11800	14760	18220	22180	26570

Titan Outdoor Condensing Units with VSD and optional EC fan motors R404A Low/Medium Temperature Application



Product Number	Amb. (°C)	LT Capacity (Watts) Evap Temp °C				MT Capacity (Watts) Evap Temp °C		
		-35	-30	-25	-20	-15	-10	-5
(CONT'D) SELECTION DATA - R404A CAPACITY VSD OPERATION - INHERENT SUBCOOLING, 20°C RETURN GAS								
Output 30Hz	35				11490	14130	17140	20560
	45				11490	14130	17140	20560
PPS370LMA1-4 Output 65Hz	35	12910	16630	20860	25590	30790	36380	42190
	45	9940	13260	16970	20980	25270	29780	
Output 50Hz	35	10240	13190	16590	20470	24830	29610	34740
	45	8040	10520	13400	16710	20420	24430	28610
Output 30Hz	35		8260	10470	13010	15910	19170	22780
	45			8520	10650	13090	15840	18910
PPS411LMA1-4 Output 65Hz	35	14240	18340	23020	28300	34140	40440	47050
	45	10930	14530	18620	23150	28050	33240	48720
Output 50Hz	35	11270	14540	18300	22590	27430	32780	38570
	45		11570	14730	18390	22530	27070	31870
Output 30Hz	35			11520	14330	17530	21140	25160
	45			9360	11710	14400	17440	20850



Titan Outdoor Condensing Units with VSD and optional EC fan motors R407F Low/Medium Temperature Application



Product Number	Amb. (°C)	LT/MT Capacity (Watts) Evap Temp °C						
		-25	-20	-15	-10	-5	0	5
SELECTION DATA - R407F CAPACITY VSD OPERATION - INHERENT SUBCOOLING, 20°C RETURN GAS								
PPS152LMHA1-4 Output 65Hz	35	7637	9724	12123	14851	17905	21267	24905
	45	6599	8370	10456	12924	15776	18949	
Output 50Hz	35	5976	7644	9559	11751	14238	17026	20098
	45	5164	6580	8245	10227	12545	15170	18019
Output 30Hz	35		4717	5938	7353	8975	10813	12862
	45		4060	5122	6399	7908	9634	11532
PPS178LMHA1-4 Output 65Hz	35	8829	11259	14054	17222	20748	24605	28754
	45	7592	9705	12171	15016	18239		
Output 50Hz	35	6921	8853	11071	13603	16460	19648	23159
	45	5989	7624	9546	11807	14399	17283	
Output 30Hz	35		5479	6899	8523	10368	12448	14778
	45		4773	6013	7423	9036	10877	12956
PPS205LMHA1-4 Output 65Hz	35	10145	12942	16151	19778	23806	28209	32951
	45	8729	11152	13975	17228	20908		
Output 50Hz	35	7950	10171	12722	15634	18913	22556	26557
	45	6888	8765	10966	13553	16517	19812	
Output 30Hz	35		6291	7922	9790	11912	14306	16985
	45		5477	6907	8529	10384	12495	14874
PPS242LMA1-4 Output 65Hz	35	11998	15306	19108	23390	28113		
	45	10312	13233	16646	20515			
Output 50Hz	35	9411	12041	15048	18474	22341		
	45	8127	10359	12999	16087	19598		
Output 30Hz	35		7472	9398	11599	14097		
	45		6508	8182	10095	12293		
PPS289LMHA1-4 Output 65Hz	35	14393	18414	22995	28136	33828	40068	46865
	45	12302	15934	20049	24644	29730		
Output 50Hz	35	11298	14454	18082	22218	26874	32050	37752
	45	9773	12446	15586	19266	23475	28158	
Output 30Hz	35		8946	11263	13916	16931	20333	24140
	45		7792	9815	12117	14754	17760	21149

Auxiliary Head Cooling Fan Kit Required (Refer to page 8)

Titan Outdoor Condensing Units with VSD and optional EC fan motors R407F Low/Medium Temperature Application



Product Number	Amb. (°C)	LT/MT Capacity (Watts) Evap Temp °C						
		-25	-20	-15	-10	-5	0	5
SELECTION DATA - R407F CAPACITY VSD OPERATION - INHERENT SUBCOOLING, 20°C RETURN GAS								
PPS328LMA1-4 Output 65Hz	35	16169	20497	25427	30961	37080		
	45	13926	17194	21083	25565			
Output 50Hz	35	9652	12653	16113	20051	24498	29485	
	45		10897	13516	16625	20229	24261	
Output 30Hz	35		9943	12456	15329	18586		
	45		8341	10328	12657	15293		
PPS338LMHA1-4 Output 65Hz	35	16290	20758	25896	31735	38247	45384	53119
	45	14140	17910	22304	27462	33343		
Output 50Hz	35	12747	16318	20421	25111	30414	36334	42868
	45	11064	14078	17588	21729	26514	31883	
Output 30Hz	35		10070	12685	15712	19171	23074	27433
	45		8688	10926	13597	16713	20247	24163
PPS370LMA1-4 Output 65Hz	35	18691	23843	29638	36051	43063		
	45	16122	20776	25962	31687			
Output 50Hz	35	14676	18764	23407	28648	34509		
	45	12634	16154	20292	25041	30326		
Output 30Hz	35	9081	11682	14669	18081	21944	21944	
	45		10168	12763	15744	19154		
PPS411LMA1-4 Output 65Hz	35	20976	26770	33307	40556	48485		
	45	18086	23328	29182	35650			
Output 50Hz	35	16472	21057	26280	32188	38805		
	45	14181	18127	22776	28129	34103		
Output 30Hz	35	10181	13086	16450	20291	24639		
	45		11317	14266	17670	21542		
Auxiliary Head Cooling Fan Kit Required								

Titan VSD Configuration Order Details

Product Number	ADD Respective VSD kit part number (Factory fitted to Titan)*				
	R134a MT/HT	R404A LT/MT	R407F LT/MT	EC Fan + Orbus Kit	Aux Head Cooling Fan Kit
PPS152LMHA1-4	KP541-23F	KP541-31F	KP541-31F	KP560-10F	KP541-43F
PPS178LMHA1-4	KP541-24F	KP541-32F	KP541-32F	KP560-10F	KP541-43F
PPS205LMHA1-4	KP541-24F	KP541-32F	KP541-32F	KP560-10F	KP541-43F
PPS242LMA1-4	KP541-24F	KP541-32F	KP541-32F	KP560-11F	KP541-43F
PPS289LMHA1-4	KP541-25F	KP541-33F	KP541-33F	KP560-11F	KP541-37F
PPS328LMA1-4	KP541-24F	KP541-33F	KP541-33F	KP560-11F	KP541-37F
PPS338LMHA1-4	KP541-28F	KP541-40F	KP541-40F	KP560-12F	KP541-37F
PPS370LMA1-4	KP541-25F	KP541-40F	KP541-40F	KP560-11F	KP541-37F
PPS411LMA1-4	KP541-28F	KP541-34F	KP541-34F	KP560-12F	KP541-37F

Titan Outdoor Condensing Units with VSD and optional EC fan motors Sound Data



Product Number	Unit- RLA & Watts for R134a, 50Hz				Unit- RLA & Watts for R404A, 50Hz			
	RLA	MCC	LRA	Input	RLA	MCC	LRA	Input
	(Amps/Ph)				(Watts)			
PPS 152 LMH A1-4	9.8	17.6	66.2	3,960	13.4	17.6	66.2	6,633
PPS 178 LMH A1-4	12.4	22.6	89.1	4,510	15.8	22.6	89.1	7,538
PPS 205 LMH A1-4	13.0	22.6	89.1	5,200	17.6	22.6	89.1	8,850
PPS 242 LM A1-4	15.7	24.2	90.7	6,550	20.1	24.2	90.7	10,990
PPS 289LMH A1-4	17.3	32.7	139.4	7,130	24.1	32.7	139.4	12,050
PPS 328 LM A1-4	17.4	28.7	113.4	8,250	26.2	28.7	113.4	14,070
PPS 338 LMH A1-4	22.1	37.6	174.1	9,360	28.3	37.6	174.1	14,810
PPS 370 LM A1-4	19.9	32.7	139.4	9,180	29.9	32.7	139.4	16,030
PPS 411 LM A1-4	23.8	37.6	174.1	11,000	33.7	37.6	174.1	18,815

* = Unit RLA and Input Watts data are taken at -5°C SST / +45°C SCT with refrigerant as noted. Compressor LRA and MCC data are supplied by compressor manufacturer.

Product Number	Compressor	Data @ 30Hz to Compressor				Data @ 50Hz to Compressor				Data @ 65Hz to Compressor			
		100% Fan Speed		60% Fan Speed		100% Fan Speed		60% Fan Speed		100% Fan Speed		60% Fan Speed	
		LwA	LpA 3m	LwA	LpA 3m	LwA	LpA 3m	LwA	LpA 3m	LwA	LpA 3m	LwA	LpA 3m
PPS 152 LMH A1-4	H551CC	77.0	57.0	70.5	50.5	81.0	61.0	74.5	54.5	84.0	64.0	77.5	57.5
PPS 178 LMH A1-4	H701CC	77.0	57.0	71.0	51.0	81.0	61.0	75.0	55.0	84.0	64.0	78.0	58.0
PPS 205 LMH A1-4	H751CC	77.5	57.5	72.5	52.5	81.5	61.5	76.5	56.5	84.5	64.5	79.5	59.5
PPS 242 LM A1-4	H751CS	79.0	59.0	73.0	53.0	83.0	63.0	77.0	57.0	86.0	66.0	80.0	60.0
PPS 289LMH A1-4	H1001CC	79.0	59.0	73.0	53.0	83.0	63.0	77.0	57.0	86.0	66.0	80.0	60.0
PPS 328 LM A1-4	H1001CS	78.5	58.5	74.0	54.0	83.5	63.5	79.0	59.0	86.5	66.5	82.0	62.0
PPS 338 LMH A1-4	H1501CC	82.0	62.0	74.0	54.0	87.0	67.0	79.0	59.0	90.0	70.0	82.0	62.0
PPS 370 LM A1-4	H1501CS	78.5	58.5	75.0	55.0	83.5	63.5	80.0	60.0	86.5	66.5	83.0	63.0
PPS 411 LM A1-4	H1601CS	82.5	62.5	76.5	56.5	87.5	67.5	81.5	61.5	90.5	70.5	84.5	64.5

Location	1	2	3	4
LwA - LpA (3m)	20	17.5	14.5	11.5

LwA: Sound power level, dB(A)
Lw: Linear Sound Power level, dB
LpA: Sound pressure level, dB(A)

Location 1: Unit located with no hard surfaces to reflect the sound, such as suspended in mid air.

Location 2: Unit located with 1 hard surface to reflect the sound, such as mounted on concrete.

Location 3: Unit located with 2 hard surfaces to reflect the sound, such as mounted on concrete & close to a wall.

Location 4: Unit located with 3 hard surfaces to reflect the sound, such as mounted on concrete & close to 2 walls.

Standard Fan Speed Control Overview

- The controller varies the supply voltage to the fan motor from 45% (1-Ph) or 35% (3-Ph) to at least 95% over the proportional condensing pressure band which is factory fixed at 4 Bar
- The full voltage set point (FVS) is adjustable from 8-28 Bar and is set by Heatcraft at 19 Bar for R404A medium temp. By turning the setting screw clockwise, the pressure setting increases. Turn anti-clockwise to decrease the pressure setting. The set point can be seen on the range setting pointer
- The cut-off point is defined at 45% (1-Ph) or 35% (3-Ph) supply voltage to the fan motor, at factory setting this is 15±1 Bar depending on actual load and / or power supply
- When the condensing pressure reduces to the minimum speed condition, the factory setting of "Min Speed" on the change-over switch ensures that the fans continue to run at this speed regardless of how low the pressure goes below the minimum
- Heatcraft factory set point for R404A is 19 Bar(g) for M/T & 14 Bar(g) for L/T units & 10 Bar(g) for R134a units

Titan Outdoor Condensing Units with VSD and optional EC fan motors

Electrical Data



Optional EC Fans + Orbus Control

EC (Electronically Commutated) fan motors combined with a proprietary fan speed controller called 'Orbus™' is offered as an option on the Heatcraft condensing unit ranges: Polar Pack, Titan and Centurion.

The Orbus controller supplies a 0-10 volt DC signal to any EC fan that can be speed controlled via a 0-10 volt signal. The Orbus supplies this control voltage in a reversed manner to that of conventional controllers, i.e. 0 volts DC is full speed and 10 volts DC is minimum speed or off. This is the fail safe feature of the Orbus in case of loss of the control signal. This means that the Orbus can only be used with EC fans that have been specifically programmed to operate on a reversed logic at the manufacturing stage or in the case of some of the larger EC fans that can be programmed at point of installation.

Product Number	Compressor	Displ. m3/Hr	Unit	Elect Data R404A			Elec Data R134a		
			LRA	MCC	RLA*	INPUT	MCC*	RLA	Input
			Amp/Ph	A/Ph	A/Ph	Watts	A/Ph	A/Ph	Watts
PPS 152 LMH A1-4	H551CC	23.13	66.2	17.6	13.4	6,635	13.3	6.7	3,260
PPS 178 LMH A1-4	H701CC	27.33	89.1	22.6	15.8	7,540	16.0	9.3	3,810
PPS 205 LMH A1-4	H751CC	33.47	89.1	22.6	17.6	8,850	17.9	9.9	4,500
PPS 242 LM A1-4	H751CS	38.06	90.7	24.2	21.8	10,990	19.5	15.7	6,550
PPS 289LMH A1-4	H1001CC	42.81	139.4	32.7	24.0	12,050	23.6	17.3	7,130
PPS 328 LM A1-4	H1001CS	48.82	113.4	28.7	26.2	14,070	22.3	17.4	8,250
PPS 338 LMH A1-4	H1501CC	48.82	174.1	37.6	28.3	14,810	28.3	22.1	9,360
PPS 370 LM A1-4	H1501CS	56.87	139.4	32.7	29.9	16,030	25.9	19.9	9,180
PPS 411 LM A1-4	H1601CS	62.92	174.1	37.6	33.7	18,815	29.6	23.8	11,000

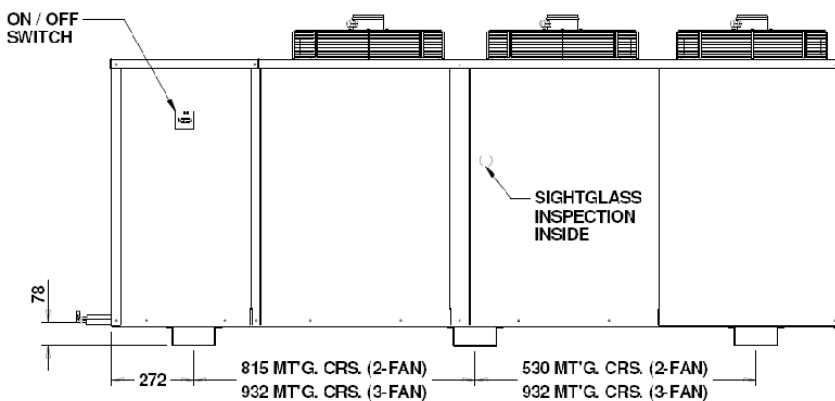
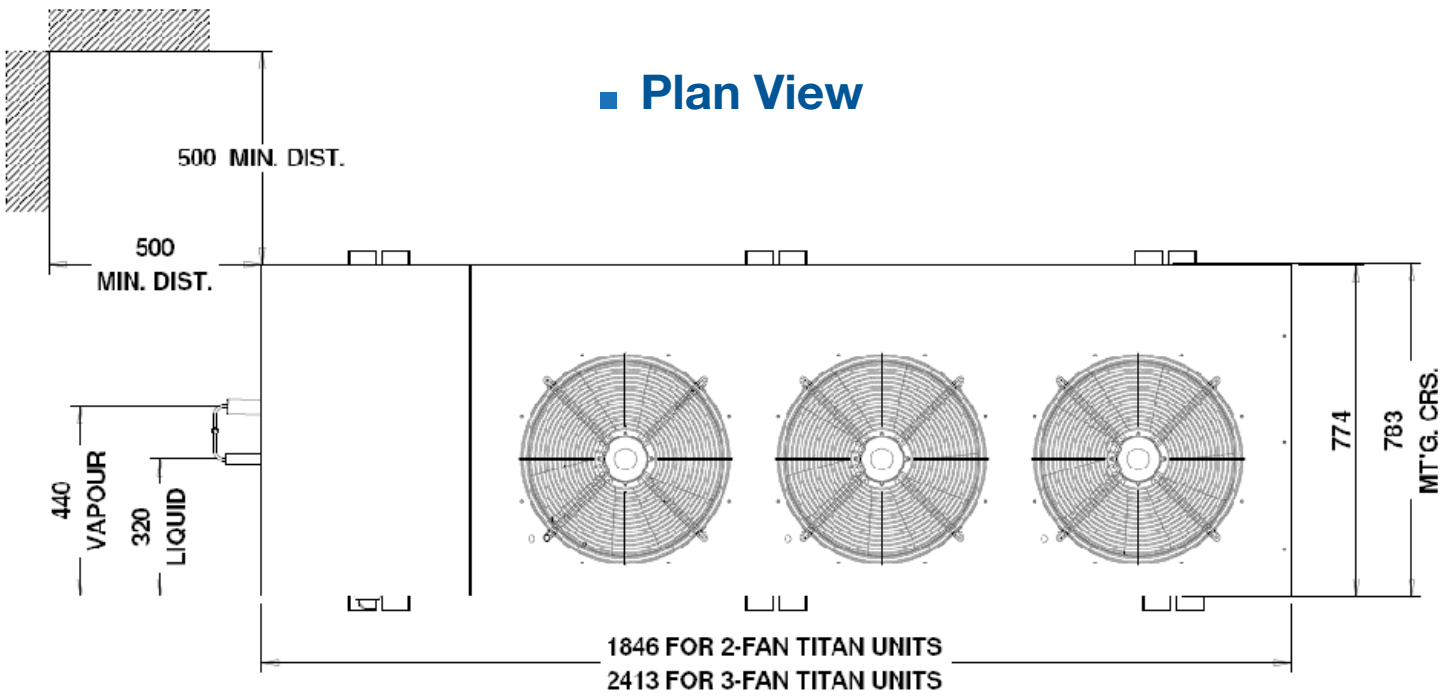
Product Number	Condenser		Connections		Rec'r Volume	Nominal Cond. KTD**		
	Fan Ø	Airflow	Suction	Liquid		R134a MT	R404A LT	R407F M/HT
	x Qty	l/s	mm	mm	LTRS	@ -5°C SST	@ -25°C SST	@ -5°C SST
PPS 152 LMH A1-4	450 x 2	2,630	28.6	15.9	14.5	7.1	5.3	10.1
PPS 178 LMH A1-4	450 x 2	2,490	34.9	15.9	14.5	7.0	5.3	9.9
PPS 205 LMH A1-4	450 x 2	2,240	34.9	15.9	14.5	7.0	5.4	9.7
PPS 242 LM A1-4	450 x 3	3,945	34.9	22.2	24.5	8.0	5.9	10.5
PPS 289LMH A1-4	450 x 3	3,525	34.9	22.2	24.5	7.0	5.4	9.9
PPS 328 LM A1-4	450 x 3	3,525	34.9	22.2	24.5	8.1	6.4	11.0
PPS 338 LMH A1-4	500 x 3	4,285	34.9	22.2	24.5	6.5	5.1	9.2
PPS 370 LM A1-4	450 x 3	3,360	34.9	22.2	24.5	8.7	6.7	11.8
PPS 411 LM A1-4	500 x 3	4,285	34.9	22.2	24.5	8.3	6.4	11.6

32°C Amb., Comp. @ 50Hz,
100% Fan Speed

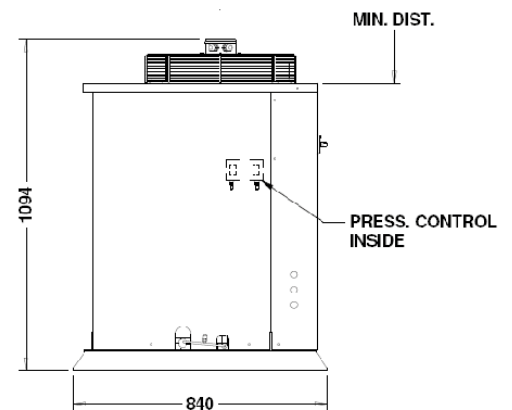
Titan Outdoor Condensing Units with VSD and optional EC fan motors Three Fan Physical Dimensions



■ Plan View



■ Side View



■ End View (right side of unit)



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