

XV8.0KX Variable Speed Drive Compressor R600a 100-127V 50/60Hz



General

Code number	108H7714
Electronic unit (detached) - XV-Frequency Input: Frequency signal (connector cable assembly req'd)	105N5150, 20 pcs: 105N5151
Electronic unit (attached) - XV-AEO/Freq. Inputs: Modbus, thermostat, frequency signal	105N5312, 50 pcs: 105N5313
Approvals	UL 60335-2-34
Compressors on pallet	175

Application

Application	LBP			
Frequency	Hz	50	60	
Evaporating temperature	°F	-31 to 32	-31 to 32	
Voltage range	V	90 - 135	90 - 135	
Max. condensing temperature continuous (short)	°F	140 (158)	140 (158)	
Max. winding temperature continuous (short)	°F	257 (275)	257 (275)	

Cooling requirements

Frequency	Hz	50			60		
Application		LBP	MBP	HBP	LBP	MBP	HBP
32°C		S	-	-	S	-	-
38°C		S	-	-	S	-	-
43°C		S	-	-	S	-	-

Remarks: HST capable (High starting torque, start against differential pressure)
All measured performance data include losses caused by electronic unit.

Features

Speed range	rpm	1000 - 4000
Protections		current / speed / temperature
External speed control		frequency signal 5V, 0-200Hz

Motor

Motor type		permanent magnet
LRA (rated after 4 sec. UL984)	A	electronic cut off
Maximum current	A	2.5
Resistance, all 3 windings (25°C)	Ω	10.0

Design

Displacement	cu.in	0.47
Oil quantity (type)	fl.oz.	3.9 (5 cSt mineral)
Maximum refrigerant charge	oz.	5.3
Free gas volume in compressor	fl.oz.	30.4
Weight	lbs.	10.8

Dimensions

Height	inch	A	4.17
		B	3.98
Suction connector	location/I.D. in. angle	C	0.252-0.259 11°
	material comment		Copper Rubber plug
Process connector	location/I.D. in. angle	D	0.252-0.259 15°
	material comment		Copper Rubber plug
Discharge connector	location/I.D. in. angle	E	0.191-0.198 0°
	material comment		Copper Rubber plug

Mounting accessories

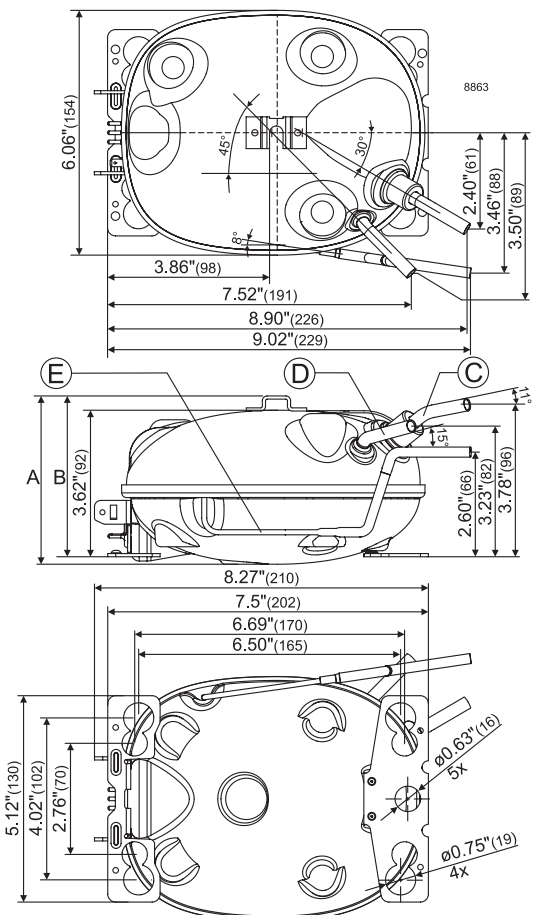
		Code number
Bolt joint for one compressor	Ø: 5/8 in	118-1917
Bolt joint in quantities	Ø: 5/8 in	118-1918
Snap-on in quantities	Ø: 5/8 in	118-1919



yellow warning label is placed separately



- S = Static cooling normally sufficient
- O = Oil cooling
- F₁ = Fan cooling 1.5 m/s (compressor compartment temperature equal to ambient temperature)
- F₂ = Fan cooling 3.0 m/s necessary
- SG = Suction gas cooling normally sufficient
- = not applicable in this area



1000 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			86.9	119	153	169	231	304	335	382	463	478			
Power cons. in W			15.3	17.9	20.0	20.9	23.9	26.9	27.9	29.4	31.4	31.7			
Current cons. in A			0.32	0.36	0.40	0.41	0.47	0.52	0.54	0.56	0.60	0.60			
EER in BTU/Wh			5.69	6.66	7.64	8.10	9.68	11.3	12.0	13.0	14.8	15.1			

1200 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			111	149	187	206	277	360	395	449	545	564			
Power cons. in W			19.3	22.3	24.6	25.6	28.9	32.2	33.4	35.1	37.5	37.9			
Current cons. in A			0.38	0.43	0.48	0.49	0.55	0.61	0.63	0.66	0.71	0.72			
EER in BTU/Wh			5.73	6.69	7.62	8.06	9.58	11.2	11.8	12.8	14.5	14.9			

1300 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			122	164	204	225	300	388	425	483	586	607			
Power cons. in W			21.3	24.4	26.8	27.9	31.4	34.8	36.1	37.9	40.6	41.0			
Current cons. in A			0.41	0.47	0.51	0.53	0.60	0.66	0.68	0.72	0.76	0.77			
EER in BTU/Wh			5.75	6.70	7.62	8.05	9.55	11.1	11.8	12.8	14.5	14.8			

1500 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			146	193	239	262	345	444	486	551	668	692			
Power cons. in W			25.3	28.8	31.4	32.6	36.4	40.1	41.5	43.6	46.7	47.2			
Current cons. in A			0.47	0.54	0.59	0.61	0.69	0.76	0.78	0.82	0.88	0.89			
EER in BTU/Wh			5.77	6.72	7.61	8.03	9.49	11.1	11.7	12.7	14.3	14.7			

1800 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			173	228	281	308	405	521	570	648	787	815			
Power cons. in W			30.7	34.8	38	39.4	43.9	48.5	50.2	52.6	56.4	57.1			
Current cons. in A			0.45	0.52	0.57	0.60	0.67	0.73	0.76	0.80	0.85	0.86			
EER in BTU/Wh			5.64	6.55	7.41	7.82	9.23	10.8	11.4	12.3	14.0	14.3			

2100 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			200	263	324	354	465	598	655	745	906	939			
Power cons. in W			36.2	40.9	44.5	46.1	51.5	56.8	58.8	61.7	66.1	66.9			
Current cons. in A			0.42	0.50	0.56	0.58	0.65	0.71	0.74	0.77	0.83	0.84			
EER in BTU/Wh			5.54	6.43	7.27	7.67	9.04	10.5	11.1	12.1	13.7	14.0			

2500 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			237	310	380	415	546	702	769	874					
Power cons. in W			43.5	49	53.3	55.2	61.5	67.9	70.3	73.8					
Current cons. in A			0.39	0.48	0.53	0.55	0.62	0.68	0.71	0.74					
EER in BTU/Wh			5.45	6.32	7.14	7.52	8.87	10.3	10.9	11.8					

3000 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			282	361	441	481	633	817	896	1021					
Power cons. in W			53.1	59.1	64	66.3	74	81.9	85	89.4					
Current cons. in A			0.48	0.58	0.64	0.67	0.75	0.83	0.86	0.90					
EER in BTU/Wh			5.31	6.10	6.88	7.25	8.55	9.97	10.5	11.4					

3500 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			327	412	501	546	720	932	1023	1169					
Power cons. in W			62.7	69.2	74.8	77.4	86.4	95.9	99.6	105					
Current cons. in A			0.56	0.68	0.75	0.78	0.88	0.97	1.01	1.05					
EER in BTU/Wh			5.22	5.95	6.70	7.06	8.33	9.71	10.3	11.1					

4000 rpm

115V, 60Hz, static cooling, pcond = 95°F, Tsuc = 90°F, Tliq = 95°F

Evap. temp. in °F	-49	-40	-30	-20	-13	-10	0	10	14	20	30	32	40	45	50
Capacity in BTU/h			372	463	561	612	807	1047	1151						
Power cons. in W			72.3	79.4	85.6	88.5	98.8	110	114						
Current cons. in A			0.65	0.78	0.86	0.90	1.01	1.12	1.16						
EER in BTU/Wh			5.15	5.84	6.56	6.91	8.16	9.52	10.1						

1000 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			24.8	32.7	44.7	49.6	60.2	78.2	98.1	112	119	140			
Power cons. in W			15.0	17.4	20.0	20.9	22.7	25.4	27.9	29.4	30.1	31.7			
Current cons. in A			0.31	0.35	0.40	0.41	0.44	0.49	0.54	0.56	0.57	0.60			
COP in W/W			1.65	1.88	2.24	2.37	2.65	3.08	3.51	3.81	3.96	4.43			

1200 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			31.5	41.0	54.8	60.4	72.4	93	116	132	140	165			
Power cons. in W			19.0	21.6	24.6	25.6	27.6	30.6	33.4	35.1	35.9	37.9			
Current cons. in A			0.37	0.42	0.48	0.49	0.53	0.58	0.63	0.66	0.68	0.72			
COP in W/W			1.66	1.89	2.23	2.36	2.63	3.04	3.47	3.76	3.91	4.36			

1300 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			34.9	45.1	59.9	65.9	78.6	100	125	142	151	178			
Power cons. in W			21.0	23.8	26.8	27.9	30.0	33.1	36.1	37.9	38.8	41.0			
Current cons. in A			0.40	0.46	0.51	0.53	0.57	0.63	0.68	0.72	0.73	0.77			
COP in W/W			1.67	1.90	2.23	2.36	2.62	3.03	3.45	3.74	3.89	4.34			

1500 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			41.6	53.4	70.0	76.7	90.8	115	142	162	172	203			
Power cons. in W			24.9	28.1	31.4	32.6	34.8	38.3	41.5	43.6	44.6	47.2			
Current cons. in A			0.46	0.53	0.59	0.61	0.66	0.72	0.78	0.82	0.84	0.89			
COP in W/W			1.67	1.90	2.23	2.35	2.61	3.01	3.43	3.71	3.85	4.30			

1800 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			49.4	63.1	82.5	90.2	107	135	167	190	202	239			
Power cons. in W			30.1	33.9	37.9	39.3	42.0	46.1	50.0	52.5	53.7	56.9			
Current cons. in A			0.56	0.63	0.71	0.73	0.78	0.86	0.93	0.97	0.99	1.05			
COP in W/W			1.64	1.86	2.17	2.29	2.54	2.93	3.34	3.62	3.76	4.20			

2100 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			57.3	72.8	94.9	104	123	155	192	218	232	275			
Power cons. in W			35.3	39.8	44.5	46.1	49.2	54.0	58.5	61.4	62.8	66.6			
Current cons. in A			0.65	0.74	0.82	0.85	0.91	1.00	1.08	1.13	1.15	1.22			
COP in W/W			1.62	1.83	2.13	2.25	2.49	2.88	3.28	3.56	3.70	4.13			

2500 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			67.7	85.8	111	122	144	182	225	256	273				
Power cons. in W			42.2	47.6	53.2	55.1	58.8	64.5	69.9	73.2	74.9				
Current cons. in A			0.78	0.87	0.98	1.01	1.08	1.18	1.27	1.33	1.36				
COP in W/W			1.6	1.8	2.1	2.21	2.44	2.82	3.22	3.5	3.64				

3000 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			80.9	100	129	141	167	211	263	299	319				
Power cons. in W			52.4	58.0	64.5	66.8	71.5	78.8	86.0	90.6	92.9				
Current cons. in A			0.94	1.04	1.15	1.19	1.27	1.40	1.52	1.60	1.64				
COP in W/W			1.54	1.73	2.00	2.11	2.33	2.68	3.05	3.30	3.43				

3500 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			94.1	115	147	160	189	241	300	343	365				
Power cons. in W			62.7	68.5	75.8	78.5	84.1	93.1	102	108	111				
Current cons. in A			1.10	1.20	1.33	1.37	1.47	1.62	1.77	1.86	1.91				
COP in W/W			1.50	1.67	1.94	2.04	2.25	2.59	2.94	3.17	3.30				

4000 rpm 115V, 60Hz, static cooling, pcond = 35°C, Tsuc = 32°C, Tliq = 35°C

Evap. temp. in °C	-45	-40	-35	-30	-25	-23.3	-20	-15	-10	-6.7	-5	0	5	7.2	10
Capacity in W			107	129	164	179	212	270	337						
Power cons. in W			72.9	78.9	87.1	90.2	96.8	107	118						
Current cons. in A			1.26	1.37	1.50	1.56	1.66	1.84	2.01						
COP in W/W			1.47	1.64	1.89	1.99	2.19	2.52	2.85						

CECOMAF LBP

115V, 60Hz, static cooling

p evap = -25°C = -13°F T suc = 32°C = 90°F
 p cond = 55°C = 131°F T liq = 55°C = 131°F

Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	31.9	35.9	43.7	51.6	60.4	69.2	81.0	94.5	108	122
Capacity [BTU/h]	109	122	149	176	206	236	276	322	368	415
Power consumption [W]	22.7	25.2	30.3	35.4	41.8	48.1	56.6	68.8	81.1	93.3
Current consumption [A]	0.44	0.49	0.58	0.67	0.78	0.89	1.04	1.23	1.41	1.60
COP [W/W]	1.41	1.42	1.44	1.46	1.45	1.44	1.43	1.37	1.33	1.30
EER [BTU/Wh]	4.80	4.85	4.92	4.98	4.94	4.91	4.88	4.68	4.55	4.45

ASHRAE LBP

115V, 60Hz, static cooling

p evap = -23.3°C = -10°F T suc = 32.2°C = 90°F
 p cond = 54.4°C = 130°F T liq = 32.2°C = 90°F

Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	43.6	48.9	59.4	69.9	82.0	94.1	110	129	147	165
Capacity [BTU/h]	149	167	203	238	280	321	376	438	501	563
Power consumption [W]	23.9	26.5	31.9	37.2	44.0	50.8	59.9	72.8	85.6	98.5
Current consumption [A]	0.47	0.51	0.61	0.70	0.82	0.94	1.10	1.30	1.49	1.69
COP [W/W]	1.83	1.84	1.86	1.88	1.86	1.85	1.84	1.77	1.71	1.68
EER [BTU/Wh]	6.23	6.28	6.36	6.41	6.36	6.32	6.28	6.03	5.85	5.72

Optimization point

115V, 60Hz, static cooling

p evap = -25°C = -13°F T suc = 32°C = 90°F
 p cond = 35°C = 95°F T liq = 35°C = 95°F

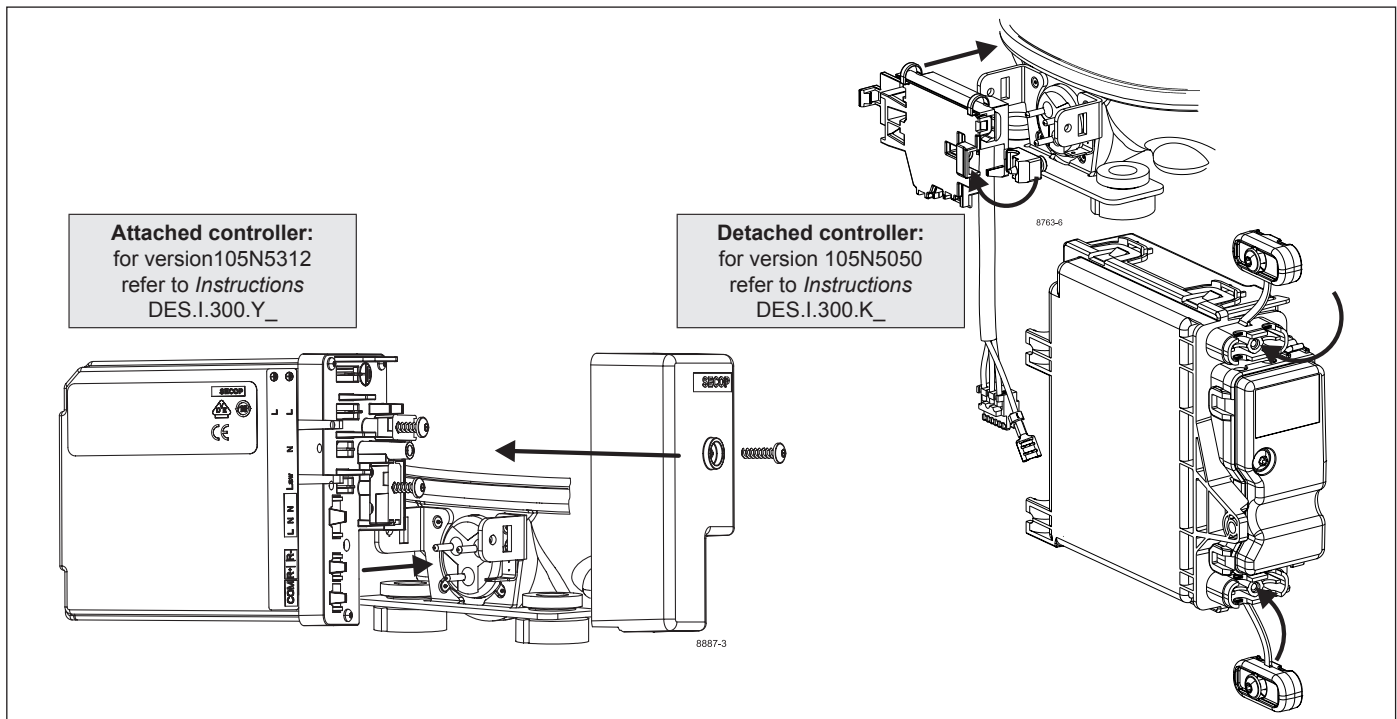
Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	44.7	49.8	59.9	70.0	82.5	94.9	111	129	147	165
Capacity [BTU/h]	153	170	204	239	281	324	380	441	501	561
Power consumption [W]	20.0	22.3	26.8	31.4	37.9	44.5	53.2	64.5	75.8	87.1
Current consumption [A]	0.40	0.44	0.51	0.59	0.71	0.82	0.98	1.15	1.33	1.50
COP [W/W]	2.24	2.24	2.23	2.23	2.17	2.13	2.10	2.00	1.94	1.89
EER [BTU/Wh]	7.64	7.63	7.62	7.61	7.42	7.28	7.15	6.83	6.61	6.45

Optimization point

115V, 60Hz, static cooling

p evap = -10°C = 14°F T suc = 32°C = 90°F
 p cond = 45°C = 113°F T liq = 45°C = 113°F

Speed [rpm]	1000	1100	1300	1500	1800	2100	2500	3000	3500	4000
Capacity [W]	83.3	91.8	109	126	149	173	204	239	275	310
Capacity [BTU/h]	284	313	371	428	508	588	695	816	937	1057
Power consumption [W]	30.3	33.5	39.9	46.3	55.9	65.5	78.3	96.1	114	132
Current consumption [A]	0.58	0.64	0.75	0.87	1.04	1.20	1.42	1.69	1.96	2.23
COP [W/W]	2.75	2.74	2.72	2.71	2.67	2.63	2.60	2.49	2.41	2.35
EER [BTU/Wh]	9.38	9.34	9.29	9.25	9.10	8.99	8.88	8.49	8.22	8.03



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