



TECH DATA

DS series

Air cooled
Variable Speed Drive Oil free screw compressor
75kW / 100HP

Effective Date: 3/23/2023
TDS-000444

Engineering Data

MODEL (PRESSURE RATING):	DS7507VAC	DS7509VAC	DS7510VAC
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COMPRESSOR DATA

Pressure [psig(barg)]	Capacity FAD [cfm(m ³ /min)]	Specific Power @ Stated Pressure [kW/100cfm (kW/(m ³ /min))] ⁽⁷⁾	Capacity FAD [cfm(m ³ /min)]	Specific Power @ Stated Pressure [kW/100cfm (kW/(m ³ /min))] ⁽⁷⁾	Capacity FAD [cfm(m ³ /min)]	Specific Power @ Stated Pressure [kW/100cfm (kW/(m ³ /min))] ⁽⁷⁾
150 (10.3)	N/A	N/A	N/A	N/A	364.0 (10.31)	26.2 (9.26)
125 (8.6)	N/A	N/A	396.0 (11.21)	24.2 (8.54)	396.0 (11.21)	24.1 (8.51)
100 (7.0)	445.0 (12.60)	21.0 (7.42)	429.0 (12.15)	22.3 (7.89)	429.0 (12.15)	22.2 (7.85)
88 (6.0)	468.0 (13.25)	20.0 (7.06)	450.0 (12.74)	21.3 (7.52)	450.0 (12.74)	21.2 (7.49)
58 (4.0)	468.0 (13.25)	17.6 (6.21)	450.0 (12.74)	18.7 (6.62)	450.0 (12.74)	18.7 (6.59)

SPEED DATA

Pressure [psig(barg)]	Maximum Motor Speed [rpm]	Minimum Motor Speed ⁽¹⁰⁾ [rpm]	Maximum Motor Speed [rpm]	Minimum Motor Speed ⁽¹⁰⁾ [rpm]	Maximum Motor Speed [rpm]	Minimum Motor Speed ⁽¹⁰⁾ [rpm]
150 (10.3)	N/A	N/A	N/A	N/A	2590	1540
125 (8.6)	N/A	N/A	2640	1440	2900	1540
100 (7.0)	2710	1440	2860	1440	3060	1540
88 (6.0)	2850	1440	3000	1440	3200	1540
58 (4.0)	2850	1440	3000	1440	3200	1540

EFFICIENCY AND SPEED DATA

Air Consumption (%)	Specific Package Power Input @ Stated Pressure [kW/100cfm (kW/(m ³ /min))] ⁽¹⁾⁽²⁾⁽⁴⁾	Specific Package Power Input @ Stated Pressure [kW/100cfm (kW/(m ³ /min))] ⁽¹⁾⁽²⁾⁽⁴⁾	Specific Package Power Input @ Stated Pressure [kW/100cfm (kW/(m ³ /min))] ⁽¹⁾⁽²⁾⁽⁴⁾
100	21.01 (7.42)	24.19 (8.54)	26.21 (9.26)
95	20.85 (7.36)	24.22 (8.55)	26.30 (9.29)
90	20.68 (7.30)	24.25 (8.57)	26.40 (9.32)
85	20.62 (7.28)	24.41 (8.62)	26.61 (9.40)
80	20.56 (7.26)	24.60 (8.69)	26.85 (9.48)
75	20.64 (7.29)	24.96 (8.81)	27.25 (9.62)
70	20.73 (7.32)	25.37 (8.96)	27.69 (9.78)
65	21.01 (7.42)	26.02 (9.19)	N/A
60	21.34 (7.54)	N/A	N/A

PRESSURE DATA

Parameter	Unit	DS7507VAC	DS7509VAC	DS7510VAC
Full Load Operating Pressure	psig (barg)	100 (7.00)	125 (8.60)	150 (10.30)
Minimum Full Load Target Pressure	psig (barg)	88 (6.00)	88 (6.00)	88 (6.00)
Maximum Operating Pressure	psig (barg)	100 (7.00)	125 (8.60)	150 (10.30)
Minimum Operating Pressure	psig (barg)	58 (4.00)	58 (4.00)	58 (4.00)
Operating Interstage Pressure	psig (barg)	44 (3.00) or Lower	44 (3.00) or Lower	44 (3.00) or Lower

TEMPERATURE DATA

Parameter	Unit	DS7507VAC	DS7509VAC	DS7510VAC
Maximum Ambient Temperature	°F (°C)	115 (46)	115 (46)	115 (46)
Minimum Ambient Temperature	°F (°C)	32 (0)	32 (0)	32 (0)
Maximum Inlet Temperature	°F (°C)	115 (46)	115 (46)	115 (46)
Minimum Inlet Temperature	°F (°C)	32 (0)	32 (0)	32 (0)
1st Stage Airend Discharge Temperature	°F (°C)	381 (194)@68°F of ambient temp.	381 (194)@68°F of ambient temp.	381 (194)@68°F of ambient temp.
2nd Stage Airend Discharge Temperature	°F (°C)	390 (199)@68°F of ambient temp.	435 (224)@68°F of ambient temp.	480 (249)@68°F of ambient temp.



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PERFORMANCE DATA ⁽¹⁾				
Capacity FAD @ Rated Pressure ⁽²⁾	<i>cfm (m³/min)</i>	445 (12.60)	396 (11.21)	364 (10.31)
Compressor Shaft Power ⁽⁴⁾⁽⁷⁾	<i>kW (HP)</i>	83.4 (111.88)	85.6 (114.75)	85.2 (114.25)
Package Power Input ⁽⁴⁾⁽⁷⁾	<i>kW</i>	93.5	95.8	95.4
Specific Package Power Input @ Rated Pressure ⁽³⁾⁽⁷⁾	<i>kW/100cfm (kW/(m³/min))</i>	21.0 (7.42)	24.2 (8.54)	26.2 (9.26)
Power Input @ No Load ⁽⁵⁾	<i>kW</i>	0	0	0
% Turn Down	<i>%</i>	42	36	30
Maximum Altitude Operation	<i>ft(m)</i>	See note (9)	See note (9)	See note (9)

AIREND DATA				
# of Stages	<i>#</i>	2	2	2
Primary Rotor Maximum Speed - 1st Stage	<i>rpm</i>	18,970	17,601	16,128
Primary Rotor Minimum Speed - 1st Stage	<i>rpm</i>	10,920	11,334	11,333
Primary Rotor Minimum Purge Speed - 1st Stage	<i>rpm</i>	10,080	9,601	9,590
Primary Rotor Diameter - 1st Stage	<i>inches</i>	3.94	3.94	3.94
Primary Rotor Maximum Speed - 2nd Stage	<i>rpm</i>	21,084	20,539	18,674
Primary Rotor Minimum Speed - 2nd Stage	<i>rpm</i>	12,137	13,226	13,122
Primary Rotor Minimum Purge Speed - 2nd Stage	<i>rpm</i>	11,203	11,203	11,103
Primary Rotor Diameter - 2nd Stage	<i>inches</i>	2.76	2.76	2.76

AIRCOOLED COOLING DATA				
Intercooler Heat Removal	<i>1,000 Btu/Hr.</i>	111.4	99.2	91.2
Aftercooler Heat Removal ⁽⁶⁾	<i>1,000 Btu/Hr.</i>	145.5	165.4	171.5
Oil Cooler Heat Removal	<i>1,000 Btu/Hr.</i>	48.1	48.1	48.1
Others Heat Removal	<i>1,000 Btu/Hr.</i>	15.3	15.3	15.3
Total Package Heat Removal	<i>1,000 Btu/Hr.</i>	320.3	327.9	326.0
Aircooled Aftercooler CTD	<i>° F</i>	27	27	27
Cooling Air Flow	<i>cfm</i>	8,829	8,829	8,829
Maximum Added Static Pressure	<i>in. H₂O</i>	N/A	N/A	N/A
Cooling Air Differential Temperature (approx.)	<i>° F</i>	36	40	40

OIL DATA				
Oil Type	<i>Type</i>	AWF	AWF	AWF
Oil Pump	<i>Type</i>	Trochoid	Trochoid	Trochoid
Normal Operating Oil Pressure	<i>psig</i>	12 - 26	12 - 26	12 - 26
Normal Operating Oil Temperature	<i>° F</i>	154 or Lower	154 or Lower	154 or Lower
Oil Capacity	<i>Gallons</i>	8	8	8

SOUND LEVEL ⁽⁶⁾				
Low Sound Enclosure	<i>dB(A)</i>	75	75	75

MAIN MOTOR ELECTRICAL DATA				
Main Motor	<i>Type</i>	TEFC	TEFC	TEFC
Main Motor Frame Size	<i>Size</i>	YTFO-MR	YTFO-MR	YTFO-MR
Number of Poles	<i>#</i>	6	6	6
Voltage	<i>V</i>	460	460	460
Main Motor Nominal Shaft Power	<i>kW (Hp)</i>	75 (100)	75 (100)	75 (100)
Main Motor Service Factor	<i>S.F.</i>	1.15	1.15	1.15
Main Motor Shaft Power @ Full Load	<i>kW (Hp)</i>	83.4 (111.9)	85.6 (114.8)	85.2 (114.3)
Main Motor Amperage @ Full Load	<i>A</i>	129	132	132
Main Motor Rated Speed	<i>rpm</i>	2500	2500	2500
Main Motor Efficiency @ Rated Speed	<i>%</i>	95.5	95.5	95.5
Main Motor Minimum Speed	<i>rpm</i>	1560	1700	1700
Main Motor Efficiency at Minimum Speed	<i>%</i>	86.4	86.4	86.4

FAN MOTOR ELECTRICAL DATA				
Fan Motor	<i>Type</i>	Totally enclosed	Totally enclosed	Totally enclosed
Fan Motor Frame Size	<i>Size</i>	-	-	-
Number of Poles	<i>#</i>	4	4	4
Voltage	<i>V</i>	460	460	460
Fan Motor Nominal Shaft Power	<i>kW (HP)</i>	3.9 (5.2)	3.9 (5.2)	3.9 (5.2)
Fan Motor Nominal Amperage	<i>A</i>	6.7	6.7	6.7
Fan Motor Rated Speed	<i>rpm</i>	1,700	1,700	1,700
Fan Motor Efficiency @ Rated Speed	<i>%</i>	86.5	86.5	86.5



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INVERTER ELECTRICAL DATA

Type	Type	Hitachi- VNEX	Hitachi- VNEX	Hitachi- VNEX
Inverter Power Factor	<i>P.F.</i>	1	1	1
Inverter Efficiency	<i>%</i>	97.5	97.5	97.5

TOTAL PACKAGE ELECTRICAL DATA

	<i>V</i>			
Voltage		460	460	460
Total Package Power Input	<i>kW</i>	93.5	95.8	95.4
Total Package Amperage at Full Load	<i>A</i>	138	141	141

CONSTRUCTION DATA

	<i>inches</i>			
Shipping Dimensions (L x W x H)		86.6 X 55.1 X 71.9	86.6 X 55.1 X 71.9	86.6 X 55.1 X 71.9
Shipping weight	<i>lbs.</i>	3,858	3,858	3,858
Air Discharge Connection	<i>NPT (inches)</i>	NPT 2	NPT 2	NPT 2
Intercooler Condensate Drain Connection	<i>NPT (inches)</i>	NPT 1/2	NPT 1/2	NPT 1/2
Aftercooler Condensate Drain Connection	<i>NPT (inches)</i>	NPT 1/2	NPT 1/2	NPT 1/2
Power Cable Inlet Diameter	<i>inches</i>	3	3	3

NOTES

- (1) - Performance of the compressor package is measured according to ISO 1217, Annex C.
- (2) - Corresponds to "Volume Flow Rate" (ISO 1217).
- (3) - Guaranteed with a tolerance of $\pm 5\%$.
- (4) - Data may differ $\pm 2\%$ at other voltages.
- (5) - Guaranteed with a tolerance of $\pm 20\%$.
- (6) - Average sound pressure level is measured at a 3.28 ft. distance from the front, back and both side surfaces based on free field conditions. Tolerance is ± 3 dB.
- (7) - Including Auxiliary Motors.
- (8) - Including Hi-Precooler
- (9) - Refer to the correct DSPAltitude/Ambient Rerate Chart for applications of high altitudes. For applications above 9,840 feet, contact Sullair.
- (10) - Minimum motor speed is the calculated motor @ purge.