



# ENGINEERING DATA SHEET

## R75n

60Hz

CCN: 23769748  
 Rev.: G  
 ECN: 83739  
 Sheet: 1 of 2  
 Date: 16-Jun-2015

Model Name		R75N-X100	R75N-X110	R75N-X115	R75N-X125	R75N-X135	R75N-X145
<b>GENERAL PERFORMANCE DATA</b>							
Rated Discharge Pressure	barg (psig)	7 (100)	7.5 (110)	8 (115)	8.5 (125)	9.5 (135)	10 (145)
Minimum Operation Pressure	barg (psig)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)
Capacity FAD @ Max Speed (1)	m <sup>3</sup> /min (CFM)	13.56 (479)	12.94 (457)	12.66 (447)	12.15 (429)	11.84 (418)	11.50 (406)
Capacity FAD @ Min Speed (1)	m <sup>3</sup> /min (CFM)	3.23 (114)	3.23 (114)	3.23 (114)	3.23 (114)	3.23 (114)	3.23 (114)
Turndown Percentage	Percent	76%	75%	74%	73%	73%	72%
Maximum Target Operating Pressure (2)	barg (psig)	10 (145)					
Maximum Operating Ambient Temperature	°C (°F)	46 (115)					
Minimum Operating Ambient Temperature	°C (°F)	2 (35)					
Maximum System Temperature Setting	°C (°F)	109 (228)					
Nominal Power - Main Motor	kW (HP)	75.00 (100)					
Main Drive Efficiency (3)	Percent	97.60%					
Main Motor Efficiency (3)	Percent	95.20%					
Package Input Power w/Fan - Air Cooled (4)	kW	93.0	92.7	92.5	92.6	93.0	94.3
Package Input Power w/Fan - Water Cooled (4)	kW	91.5	91.2	91.0	91.1	91.5	92.8
Specific Power - Air Cooled (4)(5)	kW/m <sup>3</sup> /min (kW/100cfm)	6.86 (19.42)	7.16 (20.28)	7.31 (20.69)	7.62 (21.59)	7.86 (22.25)	8.20 (23.23)
Specific Power - Water Cooled (4)(5)	kW/m <sup>3</sup> /min (kW/100cfm)	6.75 (19.10)	7.05 (19.96)	7.19 (20.36)	7.50 (21.24)	7.73 (21.89)	8.07 (22.86)
<b>SOUND LEVEL (6)</b>							
Standard Package - Air Cooled	dB(A)	69					
Standard Package - Water Cooled	dB(A)	69					
<b>COOLING DATA (@ Maximum Ambient Temperature &amp; Maximum Discharge Pressure)</b>							
Heat Removal Oil Cooler	kW (1000 Btu/hr)	68 (231)	68 (232)	68 (232)	68 (233)	70 (238)	71 (242)
Heat Removal Oil and Aftercooler	kW (1000 Btu/hr)	86 (294)	87 (295)	87 (295)	87 (296)	88 (301)	89 (305)
Additional Static Pressure (13)	Pa (in H <sub>2</sub> O)	60 (0.25) - 250 (1.0)					
<b>Air-cooled</b>							
Fan Air Flow	m <sup>3</sup> /min (cfm)	Nom: 137 (4836)		Max: 176 (6200)			
Fan Motor Nominal Power	kW	2.2					
Cooling Air Temperature Rise	°C (°F)	34 (61)	34 (61)	34 (61)	34 (61)	34 (62)	35 (63)
Aftercooler CTD, 60 Hz (7)	°C (°F)	8 (15)	8 (15)	8 (15)	8 (15)	8 (15)	8 (15)
<b>Water-cooled - Standard Duty</b>							
Fan Air Flow		76 (2700)					
Fan Motor Nominal Power	kW	0.4					
Aftercooler CTD (7)(8)	°C (°F)	8 (15)	8 (15)	8 (15)	8 (15)	8 (15)	8 (15)
<b>Cooling Water Flow</b>							
@ 10°C (50°F)	l/min (gal/min)	80 (21)	79 (21)	79 (21)	79 (21)	80 (21)	81 (21)
@ 20°C (68°F)	l/min (gal/min)	80 (21)	80 (21)	80 (21)	80 (21)	81 (21)	82 (22)
@ 30°C (86°F)	l/min (gal/min)	82 (22)	82 (22)	82 (22)	82 (22)	83 (22)	84 (22)
@ 40°C (104°F)	l/min (gal/min)	85 (22)	85 (22)	84 (22)	85 (22)	86 (23)	86 (23)
@ 46°C (115°F)	l/min (gal/min)	87 (23)	87 (23)	87 (23)	87 (23)	88 (23)	89 (23)
Cooling Water Temperature Rise @ 30°C	°C (°F)	11 (20)	11 (20)	11 (20)	11 (20)	11 (20)	11 (20)
Cooling Water Pressure Drop	bar (psi)	Less than .88 bar (13 psi)					
Cooling Air Temperature Rise @ 30°C	°C (°F)	5 (9)	5 (8)	5 (8)	5 (8)	5 (9)	5 (9)
<b>Water-cooled - Harsh Duty</b>							
Fan Air Flow	m <sup>3</sup> /min (cfm)	76 (2700)					
Fan Motor Nominal Power	kW	0.4					
Aftercooler CTD (8)	°C (°F)	8 (15)	8 (15)	8 (15)	8 (15)	8 (15)	8 (15)
<b>Cooling Water Flow</b>							
@ 10°C (50°F)	l/min (gal/min)	138 (36)	137 (36)	137 (36)	137 (36)	139 (37)	140 (37)
@ 20°C (68°F)	l/min (gal/min)	140 (37)	139 (37)	139 (37)	139 (37)	141 (37)	142 (38)
@ 30°C (86°F)	l/min (gal/min)	143 (38)	143 (38)	142 (38)	142 (38)	144 (38)	146 (39)
@ 40°C (104°F)	l/min (gal/min)	148 (39)	148 (39)	148 (39)	148 (39)	150 (40)	152 (40)
@ 46°C (115°F)	l/min (gal/min)	153 (40)	153 (40)	153 (40)	153 (40)	155 (41)	156 (41)
Cooling Water Temperature Rise @ 30°C	°C (°F)	10 (19)	10 (19)	10 (19)	10 (19)	10 (19)	10 (19)
Cooling Water Pressure Drop	bar (psi)	Less than .88 bar (13 psi)					
Cooling Air Temperature Rise	°C (°F)	5 (9)	5 (9)	5 (9)	5 (9)	5 (9)	5 (9)
<b>Air End Data</b>							
Male Rotor Speed	rpm	3412	3260	3190	3065	2980	2900
Tip Speed Rotor	m/sec	31.9	30.5	29.8	28.6	27.9	27.1
Full Load Shaft Power	kW	84.6	84.4	84.2	84.3	84.6	85.9



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**CONSTRUCTION, FOUNDATION, AND MOUNTING DATA**

**PIPING CONNECTIONS**

Air Discharge	Inches BSPT/NPT (9)	2.00
Package Automatic Condensate Drain	Inches BSPT/NPT (9)	0.38
Coolant Drain Plug	Inches BSPT/NPT (9)	0.75
Diameter of Power Inlet	mm / inch	Up to 4.0" (removable plate)
Water Inlet and Outlet Connections	Inches BSPT/NPT (9)	1.50

**COOLANT LUBRICATION DATA**

Total Coolant Capacity - Air Cooled	litres (US gal)	49 (13)
Total Coolant Capacity - Water Cooled - Std	litres (US gal)	31 (8)
Total Coolant Capacity - Water Cooled - Harsh	litres (US gal)	TBD

**DIMENSIONS & WEIGHT**

**Base Mounted**

Length, Width, Height	mm (inches)	2432(95.8)/1265(49.8)/ 2032(80)
Net Weight - Air Cooled	kg (lb.)	1420(3131)
Net Weight - Water Cooled	kg (lb.)	1367(3014)
GA Drawing Number - Air Cooled		23701352
GA Drawing Number - Water Cooled		23701345

**ELECTRICAL DATA**

**380V. 3Φ 460V. 3Φ 575V. 3Φ 440V. 3Φ**

Motor Protection		IP23 (ODP)			
Full Load Package Current - Air Cooled (10)	Amps	170.9	141.8	114.2	147.4
Full Load Package Current - Water Cooled (10)	Amps	166.8	137.9	110.4	144.0
Package Power Factor		0.92	0.91	0.91	0.92

**Electrical Installation**

Recommended Supply Cable Size (11)	mm <sup>2</sup> /Cu (AWG or kcmil)	95(4/0)	95(4/0)	95(4/0)	95(4/0)
Maximum Recommended Fuse Rating (11)(12)	Amps	250	250	250	250

**Notes :**

- (1) FAD (Free Air Delivery) is full package performance including all losses. Tested per ISO 1217 : 2009 Annex C
- (2) Maximum pressure at package discharge, value at which compressor will stop when unit operating at maximum target pressure
- (3) At maximum speed and flow for the given package discharge pressure
- (4) Measured at rated capacity and rated pressure
- (5) Specific power guaranteed in accordance with ISO 1217 : 2009 Annex C
- (6) Measured in free field conditions per ISO 2151 using Hemispherical Method, with + 3 dB(A) tolerance.
- (7) 40% Relative Humidity Inlet Air and maximum speed ( For alternate conditions contact IR )
- (8) Ambient temperature equivalent to cooling water inlet temperature
- (9) BSPT or NPT, depending on regional standard
- (10) Maximum current includes 10% additional current due to fouled filters and elements
- (11) 90° C copper cables. Always apply local electrical codes for sizing cables and fusing.
- (12) Fast Acting Class-J, T or Semiconductor type fuse required. Apply local electrical codes for fuse sizing
- (13) See detailed scope document 23883374

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