



ENGINEERING DATA SHEET

R75n Total Air System 60Hz

CCN: 23769763
Rev.: G
ECN: 83739
Sheet: 1 of 2
Date: 16-Jun-2015

Model Name	R75N-X-TAS									
GENERAL PERFORMANCE DATA										
Rated Discharge Pressure	barg (psig)	7 (100)	7.5 (110)	8 (115)	8.5 (125)	9.5 (135)				
Minimum Operation Pressure	barg (psig)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)				
Capacity FAD @ Max Speed (1)	m ³ /min (CFM)	12.94 (457)	12.66 (447)	12.15 (429)	11.84 (418)	11.50 (406)				
Capacity FAD @ Min Speed (1)	m ³ /min (CFM)	3.23 (114)	3.23 (114)	3.23 (114)	3.23 (114)	3.23 (114)				
Turndown Percentage	Percent	75%	74%	73%	73%	72%				
Maximum Target Operating Pressure (2)	barg (psig)				9.5 (138)					
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)	%				95.20%					
Pkg Input Power w/Fan and Dryer - Air Cooled (4)	kW	99.4	99.0	98.7	98.7	98.7				
Pkg Input Power w/Fan and Dryer - Water Cooled (4)	kW	97.9	97.5	97.2	97.2	97.2				
Specific Power - Air Cooled (4)(5)	kW/m ³ /min (kW/100cfm)	7.68 (21.75)	7.82 (22.15)	8.12 (23.01)	8.34 (23.61)	8.59 (24.31)				
Specific Power - Water Cooled (4)(5)	kW/m ³ /min (kW/100cfm)	7.57 (21.42)	7.70 (21.81)	8.00 (22.66)	8.21 (23.25)	8.45 (23.94)				
SOUND LEVEL (6)										
Standard Package - Air Cooled	dB(A)				69					
Standard Package - Water Cooled	dB(A)				69					
COOLING DATA (@ Maximum Ambient Temperature & Maximum Discharge Pressure)										
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 ₂ O)				60 (0.25) - 250 (1.0)					
Air-cooled										
Fan Air Flow	m ³ /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)				
Aftercooler CTD(7)	°C (°F)	8 (15)	8 (15)	8 (15)	8 (15)	8 (15)				
Water-cooled - Standard Duty										
Fan Air Flow	m ³ /min (cfm)				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)				
Cooling Water Flow										
@ 10°C (50°F)	l/min (gal/min)	80 (21)	79 (21)	79 (21)	79 (21)	80 (21)				
@ 20°C (68°F)	l/min (gal/min)	80 (21)	80 (21)	80 (21)	80 (21)	81 (21)				
@ 30°C (86°F)	l/min (gal/min)	82 (22)	82 (22)	82 (22)	82 (22)	83 (22)				
@ 40°C (104°F)	l/min (gal/min)	85 (22)	85 (22)	84 (22)	85 (22)	86 (23)				
@ 46°C (115°F)	l/min (gal/min)	87 (23)	87 (23)	87 (23)	87 (23)	88 (23)				
Cooling Water Temperature Rise @ 30°C	°C (°F)	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)				
Water-cooled - Harsh Duty										
Fan Air Flow	m ³ /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)				
Cooling Water Flow										
@ 10°C (50°F)	l/min (gal/min)	138 (36)	137 (36)	137 (36)	137 (36)	139 (37)				
@ 20°C (68°F)	l/min (gal/min)	140 (37)	139 (37)	139 (37)	139 (37)	141 (37)				
@ 30°C (86°F)	l/min (gal/min)	143 (38)	143 (38)	142 (38)	142 (38)	144 (38)				
@ 40°C (104°F)	l/min (gal/min)	148 (39)	148 (39)	148 (39)	148 (39)	150 (40)				
@ 46°C (115°F)	l/min (gal/min)	153 (40)	153 (40)	153 (40)	153 (40)	155 (41)				
Cooling Water Temperature Rise @ 30°C	°C (°F)	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 @ 30°C	°C (°F)	5 (9)	5 (9)	5 (9)	5 (9)	5 (9)				
Air End Data										
Male Rotor Speed	rpm	3260	3190	3065	2980	2900				
Tip Speed Rotor	m/sec	30.5	29.8	28.6	27.9	27.1				
Full Load Shaft Power	kW	86.0	85.7	85.4	85.4	85.4				

R75n

Total Air System

60Hz

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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	Inches	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.)	1570(3462)
Net Weight - Water Cooled	kg (lb.)	1517(3345)
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	176.4	145.9	116.8	152.3
Full Load Package Current - Water Cooled (10)	Amps	172.3	141.9	113.1	148.9
Package Power Factor		0.93	0.93	0.93	0.93

Electrical Installation

		380V. 3Φ	460V. 3Φ	575V. 3Φ	440V. 3Φ
Recommended Supply Cable Size (11)	mm ² /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

Refrigerated Dryer Data

		ISO Class
Pressure Dew Point ISO Class (14)	°C (°F)	4
Refrigerant Weight of R-404a	Grams(oz)	1800(63.5)

Filter Data

	Particulate		Liquid	
	ISO Class	Filtration	ISO Class	Filtration
Filter Detail - at 21°C (70°F)	2	0.01 micron	1	0.01 mg/m ³ (0.1 ppm)

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
- (14) TAS units deliver ISO Class 1-4-2 quality air measured at steady state conditions in accordance with ISO 8573-1:2010, with inlet air to package of 25°C (77°F) and RH of 60%.

Product Improvement is a continuing goal at Ingersoll Rand. Design and specifications are subject to change without notice or obligation.