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Ingersoll Rand
Industrial Technologies

ENGINEERING DATA SHEET

R75i

Total Air System (TAS)

50Hz

CCN: 23769607
Rev.: H
ECN: 83739
Sheet: 1 of 2
Date: 16-Jun-2015

Model Name		R75I-X7.0	R75I-X8.0	R75I-X9.5	R75I-X13.5
GENERAL PERFORMANCE DATA					
Maximum Operating Pressure (2)	barg (psig)	7 (103)	8 (118)	9.5 (138)	13.5 (193)
Rated Discharge Pressure	barg (psig)	7 (100)	8 (115)	9.5 (135)	13.5 (190)
Minimum Operating Pressure	barg (psig)	4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)
Capacity FAD (1)	m³/min (CFM)	13.34 (471)	12.77 (451)	11.61 (410)	8.83 (312)
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 (100)			
Main Motor Efficiency (3)	Percent	95.0%			
Pkg Input Power w/Fan and Dryer- Air Cooled (4)	kW	93.5	94.7	94.4	95.1
Pkg Input Power w/Fan and Dryer - Water Cooled (4)	kW	91.1	92.3	92.0	92.7
Specific Power - Air Cooled (4)(5)	kW/m3/min (kW/100cfm)	7.01 (19.85)	7.42 (21.00)	8.13 (23.02)	10.76 (30.48)
Specific Power - Water Cooled (4)(5)	kW/m3/min (kW/100cfm)	6.83 (19.33)	7.22 (20.45)	7.92 (22.43)	10.49 (29.7)

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	(233)	70	(238)	70	(241)	73	(249)
Heat Removal Oil and Aftercooler	kW (1000 Btu/hr)	87	(298)	89	(303)	89	(303)	7	(24)
Additional Static Pressure (15)	Pa (in H2O)	60 (.25) - 250 (1.0)							
Air-cooled									
Fan Air Flow	m³/min (CFM)	176 (6200)							
Fan Motor Nominal Power	kW	2.2							
Cooling Air Temperature Rise	°C (°F)	34	(61)	35	(62)	35	(62)	34	(62)
Aftercooler CTD(7)	°C (°F)	8	(15)	8	(15)	8	(15)	134	(241)
Water-cooled - Standard Duty									
Fan Air Flow	m³/min (CFM)	76 (2700)							
Fan Motor Nominal Power	kW	0.3							
Aftercooler CTD (7)(8)	°C (°F)	8	(15)	8	(15)	8	(15)	8	(15)
Cooling Water Flow									
@ 10°C (50°F)	l/min (gal/min)	74	(20)	75	(20)	75	(20)	76	(20)
@ 20°C (68°F)	l/min (gal/min)	75	(20)	76	(20)	76	(20)	77	(20)
@ 30°C (86°F)	l/min (gal/min)	77	(20)	78	(21)	78	(21)	78	(21)
@ 40°C (104°F)	l/min (gal/min)	80	(21)	81	(22)	81	(22)	81	(22)
@ 46°C (115°F)	l/min (gal/min)	82	(22)	61	(16)	83	(22)	83	(22)
Cooling Water Temperature Rise @ 30°C	°C (°F)	15	(28)	15	(28)	15	(28)	15	(28)
Cooling Water Pressure Drop	bar (psi)	Less than .88 bar (13psi)							
Cooling Air Temperature Rise @ 30°C	°C (°F)	4	(8)	5	(8)	5	(8)	5	(8)
Water-cooled - Harsh Duty									
Fan Air Flow	m³/min (CFM)	76 (2700)							
Fan Motor Nominal Power	kW	0.3							
Aftercooler CTD (8)	°C (°F)	8	(15)	8	(15)	8	(15)	8	(15)
Cooling Water Flow									
@ 10°C (50°F)	l/min (gal/min)	128	(34)	130	(35)	131	(35)	132	(35)
@ 20°C (68°F)	l/min (gal/min)	130	(35)	133	(35)	133	(35)	134	(36)
@ 30°C (86°F)	l/min (gal/min)	134	(36)	136	(36)	136	(36)	137	(36)
@ 40°C (104°F)	l/min (gal/min)	139	(37)	142	(38)	142	(38)	141	(38)
@ 46°C (115°F)	l/min (gal/min)	144	(38)	147	(39)	147	(39)	146	(39)
Cooling Water Temperature Rise @ 30°C	°C (°F)	10	(18)	10	(19)	10	(19)	10	(19)
Cooling Water Pressure Drop	bar (psi)	Less than .88 bar (13psi)							
Cooling Air Temperature Rise	°C (°F)	5	(8)	5	(9)	5	(9)	5	(9)

Air End Data					
Male Rotor Speed	rpm	3296	3155	2897	2354
Tip Speed Rotor	m/sec	30.80	29.49	27.08	22.98
Full Load Shaft Power	kW	86.2	87.4	87.1	87.7

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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	Upto 4"(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.)	1868 (4118)
Net Weight - Water Cooled	kg (lb.)	1761 (3883)
GA Drawing Number - Air Cooled		23701352
GA Drawing Number - Water Cooled		23701345

ELECTRICAL DATA (14)		**380V. 3Φ**	**400V. 3Φ**	**415V. 3Φ**
Motor Enclosure Protection			IP 55	
Full Load Package Current - Air Cooled (10)	Amps	187	178	171
Full Load Package Current - Water Cooled (10)	Amps	182	173	167
Package Locked Rotor Current	Amps	1490	1416	1365
Package Power Factor		0.83	0.83	0.83
Electrical Installation				
Recommended Supply Cable Size (11)	mm²/Cu (AWG or k	95(4/0)	95(4/0)	95(4/0)
Maximum Recommended Fuse Rating (11)(12)	Amps	250	250	250

Refrigerated Dryer Data		ISO Class
Pressure Dew Point ISO Class(16)	°C (°F)	4
Refrigerant Weight of R-404a	Grams(oz)	1800(63.5)

		Particulate		Liquid	
Filter Data		ISO Class	Filtration	ISO Class	Filtration
Filter Detail - at 21°C (70°F)		2	0.01 micron	1	0.01 mg/m³ (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) IE3 efficiency motor
(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; ducted inlet and outlet, with + 3 dB(A) tolerance.
(7) 40% Relative Humidity Inlet Air and maximum speed (For alternate conditions contact Ingersoll Rand)
(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) Time delay fuse recommended. Apply local electrical codes for fuse sizing
(13) Coolant volumes listed are approximate. See operator manual for coolant fill proceedure.
(14) Voltage tolerance: 357V - 440V
(15) See detailed scope document 23883374
(16) 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%.