



ENGINEERING DATA SHEET

R90i (IE3) 50 Hz

CCN: 23555873
Rev.: K
ECN: 83745
Sheet: 1 of 2
Date: 17-Jun-2015

Model Name		R90I-X7.5	R90I-X8.5	R90I-X10	R90I-X14
GENERAL PERFORMANCE DATA					
Maximum Operating Pressure ⁽²⁾	barg (psig)	7.5 (110)	8.5 (125)	10 (145)	14 (200)
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⁾	m ³ /min (cfm)	16.71 (590)	15.72 (555)	14.02 (495)	10.25 (362)
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)	90 (125)			
Main Motor Efficiency ⁽³⁾	Percent	95.2%			
Package Input Power - Air Cooled ⁽⁴⁾	kW	103.3	108.2	110.3	110.8
Package Input Power - Water Cooled ⁽⁴⁾	kW	99.3	104.3	106.3	106.8
Specific Power - Air Cooled ⁽⁴⁾⁽⁵⁾	kW/m ³ /min (kW/100cfm)	6.18 (17.50)	6.89 (19.50)	7.87 (22.28)	10.81 (30.61)
Specific Power - Water Cooled ⁽⁴⁾⁽⁵⁾	kW/m ³ /min (kW/100cfm)	5.94 (16.83)	6.63 (18.79)	7.59 (21.48)	10.42 (29.51)
SOUND LEVEL ⁽⁶⁾					
Standard Package - Air Cooled	dB(A)	71			
Standard Package - Water Cooled	dB(A)	71			
COOLING DATA (@ Maximum Ambient Temperature & Maximum Discharge Pressure)					
Heat Removal Oil Cooler	kW (1000 Btu/hr)	s (263)	83 (282)	86 (294)	90 (307)
Heat Removal Oil and Aftercooler	kW (1000 Btu/hr)	104 (353)	108 (368)	109 (373)	108 (368)
Additional Static Pressure (16)	Pa (in H ₂ O)	60 (0.25) - 250 (1.0)			
Air-cooled					
Fan Air Flow	m ³ /min (cfm)	248 (8758)	Maximum: 294 (10371)		
Fan Motor Nominal Power	kW	4.0			
Cooling Air Temperature Rise	°C (°F)	26 (47)	27 (49)	28 (50)	27 (49)
Aftercooler CTD, 50 Hz ⁽⁷⁾	°C (°F)	2 (4)	2 (4)	2 (4)	2 (4)
Water-cooled - Standard Duty					
Fan Air Flow	m ³ /min (cfm)	115 (4,000)			
Fan Motor Nominal Power	kW	0.6			
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)	125 (33)	132 (35)	136 (36)	138 (37)
@ 20°C (68°F)	l/min (gal/min)	129 (34)	136 (36)	139 (37)	141 (37)
@ 30°C (86°F)	l/min (gal/min)	132 (35)	139 (37)	142 (38)	143 (38)
@ 40°C (104°F)	l/min (gal/min)	136 (36)	143 (38)	146 (39)	146 (39)
@ 46°C (115°F)	l/min (gal/min)	140 (37)	147 (39)	150 (40)	150 (40)
Cooling Water Temperature Rise @ 30°C	°C (°F)	11 (19)	11 (19)	10 (19)	10 (19)
Cooling Water Pressure Drop	bar (psi)	Less Than 0.88 bar (13 psi)			
Cooling Air Temperature Rise @ 30°C	°C (°F)	5 (10)	6 (10)	6 (10)	6 (11)
Water-cooled - Harsh Duty					
Fan Air Flow	m ³ /min (cfm)	115 (4,000)			
Fan Motor Nominal Power	kW	0.6			
Aftercooler CTD ⁽⁸⁾	°C (°F)	8 (15)	8 (15)	8 (15)	8 (15)
Cooling Water Flow					
@ 10°C (50°F)	l/min (gal/min)	103 (27)	103 (27)	103 (27)	103 (27)
@ 20°C (68°F)	l/min (gal/min)	106 (28)	106 (28)	106 (28)	106 (28)
@ 30°C (86°F)	l/min (gal/min)	110 (29)	110 (29)	110 (29)	110 (29)
@ 40°C (104°F)	l/min (gal/min)	113 (30)	113 (30)	113 (30)	113 (30)
@ 46°C (115°F)	l/min (gal/min)	119 (32)	119 (32)	119 (32)	119 (32)
Cooling Water Temperature Rise @ 30°C	°C (°F)	95 (25)	94 (25)	93 (25)	91 (24)
Cooling Water Pressure Drop	bar (psi)	Less Than 0.88 bar (13 psi)			
Cooling Air Temperature Rise	°C (°F)	8 (15)	8 (15)	8 (15)	8 (15)



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CONSTRUCTION, FOUNDATION, AND MOUNTING DATA

PIPING CONNECTIONS

Air Discharge	Inches BSPT/NPT ⁽⁹⁾	2.50
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 ⁽¹³⁾	litres (US gal)	83 (22)
Total Coolant Capacity - Water Cooled - Std ⁽¹³⁾	litres (US gal)	71 (19)
Total Coolant Capacity - Water Cooled - Harsh ⁽¹³⁾	litres (US gal)	TBD

DIMENSIONS & WEIGHT

		Base Mounted
Length, Width, Height	mm (inches)	2703 / 1466 / 2032 (106.4 / 57.7 / 80)
Net Weight - Air Cooled	kg (lb.)	2420 (5335)
Net Weight - Water Cooled	kg (lb.)	2200 (4850)
GA Drawing Number - Air Cooled Std.		23539836
GA Drawing Number - Water Cooled Std.		23539844

ELECTRICAL DATA ⁽¹⁴⁾

		380V, 3Φ	400V, 3Φ	415V, 3Φ
Motor Enclosure Protection		IP55 (TEFC)		
Full Load Package Current - Air Cooled ⁽¹⁰⁾	Amps	212	201	194
Full Load Package Current - Water Cooled ⁽¹⁰⁾	Amps	205	194	187
Package Locked Rotor Current	Amps	1541	1464	1411
Package Power Factor		0.88	0.88	0.88

Electrical Installation

Recommended Supply Cable Size ⁽¹¹⁾⁽¹⁵⁾	mm ² /Cu (AWG or kcmil)	185(300)	185(300)	185(300)
Maximum Recommended Fuse Rating ⁽¹¹⁾⁽¹²⁾	Amps	300	300	300

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 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) 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 procedure.
- (14) Voltage Tolerance: ± 6%
- (15) Cable size based on 90°C copper cables
- (16) See detailed scope document 23883374

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