



**ENGINEERING DATA SHEET**

**RS220**  
60Hz

CCN: 47584715001  
Rev.: E  
ECN: 1293681  
Sheet: 1 of 2  
Date: May-2018

Model	RS220ie-W110	RS220ie-W125	RS220ie-W145	RS220ie-W200
<b>GENERAL PERFORMANCE DATA</b>				
Maximum Target Operating Pressure	<sup>(2)</sup> barg (psig) 7.6 (110)	8.6 (125)	10.0 (145)	13.8 (200)
Rated Discharge Pressure	barg (psig) 6.9 (100)	7.9 (115)	9.3 (135)	13.1 (190)
Minimum Operating Pressure	barg (psig) 4.5 (65)	4.5 (65)	4.5 (65)	4.5 (65)
Maximum Operating Ambient Temperature	°C (°F) 46 (115)	46 (115)	46 (115)	46 (115)
Minimum Operating Ambient Temperature	°C (°F) 2 (36)	2 (36)	2 (36)	2 (36)
Maximum System Temperature Setting	°C (°F) 109 (228)	109 (228)	109 (228)	109 (228)
Nominal Power - Main Motor	kW (HP) 224 (300)	224 (300)	224 (300)	224 (300)
Main Motor Efficiency	% 96.2%	96.2%	96.2%	96.2%
Capacity FAD	<sup>(1)</sup> m <sup>3</sup> /min (CFM) 48.0 (1695)	44.8 (1582)	42.0 (1483)	36.1 (1275)
Package Input Power with Fan - Water Cooled	<sup>(4)</sup> kW 254.9	252.8	258.0	264.4
Specific Power - Water Cooled	<sup>(4)(5)</sup> kW/m <sup>3</sup> /min (kW/100CFM) 5.3 (15.0)	5.6 (16.0)	6.1 (17.4)	7.3 (20.7)
<b>SOUND LEVEL</b>				
Noise Level Standard Package - Water Cooled	<sup>(6)</sup> Sound Pressure - dB(A) 75	75	75	75
Noise Level Standard Package - Water Cooled	Sound Power - dB(A) 95	95	95	95
<b>COOLING DATA (@ Maximum Ambient Temperature &amp; Maximum Discharge Pressure)</b>				
Heat Removal (Oil Cooler)	kW (1000 Btu/hr) 208.3 (711)	208.7 (712)	215.8 (736)	226.2 (772)
Heat Removal (Oil and Aftercooler)	kW (1000 Btu/hr) 282.4 (963)	277.8 (948)	280.6 (957)	281.9 (962)
Permitted Additional Static Pressure	Pa (in H <sub>2</sub> O) 0 (.00)	0 (.00)	0 (.00)	0 (.00)
Fan Air Flow	m <sup>3</sup> /min (CFM) 142 (5015)	142 (5015)	142 (5015)	142 (5015)
Fan Motor Nominal Power	kW 1.1	1.1	1.1	1.1
Cooling Air Temperature Rise @ 30°C	°C (°F) 10 (18)	10 (18)	10 (18)	10 (18)
Cooling Water Temperature Rise @ 30°C	°C (°F) 20 (36)	20 (36)	20 (36)	20 (36)
Cooling Water Flow	<sup>(16)</sup> l/min (US gal/min)			
@ 10 °C (50 °F)	118.4 (31.3)	122.7 (32.4)	121.2 (32.0)	114.7 (30.3)
@ 20 °C (68 °F)	157.9 (41.7)	163.6 (43.2)	161.7 (42.7)	152.9 (40.4)
@ 30 °C (86 °F)	258.5 (68.3)	250.6 (66.2)	222.3 (58.7)	198.3 (52.4)
@ 40 °C (104 °F)	294.9 (77.9)	286.0 (75.6)	250.2 (66.1)	219.6 (58.0)
@ 46 °C (115 °F)	330.3 (87.3)	320.3 (84.6)	278.6 (73.6)	242.7 (64.1)
Cooling Water Max Pressure	bar (psi) 9 (135)	9 (135)	9 (135)	9 (135)
Cooling Water Min Pressure	bar (psi) 1 (15)	1 (15)	1 (15)	1 (15)
Cooling Water Pressure Drop	bar (psi) 0 (5)	0 (4)	0 (3)	0 (3)
Aftercooler CTD	<sup>(7)</sup> °C (°F) 8 (15)	8 (15)	8 (15)	8 (15)
<b>AIR END DATA</b>				
STG1 Male Rotor Speed	RPM 1338	1257	1179	1010
STG1 Rotor Tip Speed	m/sec 24.45	22.97	21.54	18.46
STG2 Male Rotor Speed	RPM 1544	1444	1350	1138
STG2 Rotor Tip Speed	m/sec 20.78	19.43	18.17	15.31
Full Load Shaft Power	kW 244.0	242.0	247.0	253.0
<b>COOLANT LUBRICATION DATA</b>				
Total Coolant Capacity - Water Cooled	<sup>(12)</sup> litres (US gal) 129 (34.1)	129 (34.1)	129 (34.1)	129 (34.1)
<b>PIPING CONNECTIONS</b>				
Air Discharge	Inches FLANGE 4.00 (8xM16; 7.5 IN B.C)	4.00 (8xM16; 7.5 IN B.C)	4.00 (8xM16; 7.5 IN B.C)	4.00 (8xM16; 7.5 IN B.C)
Package Automatic Condensate Drain	Inches NPT .38 (FEMALE)	.38 (FEMALE)	.38 (FEMALE)	.38 (FEMALE)
Coolant Drain - Hose Size	Inches 0.875	0.875	0.875	0.875
Diameter of Power Inlet	mm (Inches) 110 (4.3)	110 (4.3)	110 (4.3)	110 (4.3)
Water Inlet and Outlet Connections	Inches NPT 2.00 (FEMALE)	2.00 (FEMALE)	2.00 (FEMALE)	2.00 (FEMALE)
<b>DIMENSIONS AND WEIGHT</b>				
Length, Width, Height	mm (inches) 4320, 2150, 2504 (170.1, 84.6, 98.6)	4320, 2150, 2504 (170.1, 84.6, 98.6)	4320, 2150, 2504 (170.1, 84.6, 98.6)	4320, 2150, 2504 (170.1, 84.6, 98.6)
Net Weight - Water Cooled	kg (lb.) 7460 (16446)	7460 (16446)	7460 (16446)	7460 (16446)
GA Drawing Number - Water Cooled	47589259	47589259	47589259	47589259
<b>ELECTRICAL DATA</b>				
Motor Protection	<sup>(13)</sup> TEFC, IP55	TEFC, IP55	TEFC, IP55	TEFC, IP55
Full Load Package Current - Water Cooled	<sup>(9)</sup>			
	Amps @ 380V 496	492	502	514
	Amps @ 460V 410	407	415	425
	Amps @ 575V 328	325	332	340
Main Motor Locked Rotor Current	<sup>(14)</sup>			
	Amps @ 380V 4050	4050	4050	4050
	Amps @ 460V 3345	3345	3345	3345
	Amps @ 575V 2638	2638	2638	2638
Package Power Factor	0.86	0.86	0.86	0.86
<b>Electrical Installation</b>				
Recommended Supply Cable Size	<sup>(10)</sup>			
	mm <sup>2</sup> /Cu (Kcmil) @ 380V 800 (1500)	800 (1500)	800 (1500)	800 (1500)
	mm <sup>2</sup> /Cu (Kcmil) @ 460V 500 (900)	500 (900)	500 (900)	500 (900)
	mm <sup>2</sup> /Cu (Kcmil) @ 575V 400 (600)	400 (600)	400 (600)	400 (600)
Maximum Recommended Fuse Rating	<sup>(10)(11)</sup>			
	Amps @ 380V 800	800	800	800
	Amps @ 460V 700	700	700	700
	Amps @ 575V 600	600	600	600



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Model	RS220ie-W110	RS220ie-W125	RS220ie-W145	RS220ie-W200
<b>MEDIUM VOLTAGE MODEL - ELECTRICAL DATA</b>				
Motor Protection	IP55	IP55	IP55	IP55
Main Motor Current - Water Cooled				
Amps @ 2300V	86	86	86	86
Amps @ 4160V	50	50	50	50
Main Motor Locked Rotor Current				
Amps @ 2300V	518	518	518	518
Amps @ 4160V	275	275	275	275
Fan Motor Current - Water Cooled				
Amps @ 380V	3	3	3	3
Amps @ 460V	3	3	3	3
Amps @ 575V	2	2	2	2
<b>DIMENSIONS AND WEIGHT</b>				
Length, Width, Height	mm (inches)	5140, 2150, 2504 (202.4, 84.6, 98.6)	5140, 2150, 2504 (202.4, 84.6, 98.6)	5140, 2150, 2504 (202.4, 84.6, 98.6)
Net Weight - Water Cooled	kg (lb.)	9403 (20730)	9403 (20730)	9403 (20730)
GA Drawing Number - Water Cooled		47589261	47589261	47589261

- Notes:**
- FAD (Free Air Delivery) is full package performance including all losses. Tested per ISO 1217 : 2009 Annex C
  - Maximum pressure at package discharge, value at which compressor will stop when unit operating at maximum target pressure
  - IE3 efficiency motor
  - Measured at rated capacity and rated pressure
  - Specific power guaranteed in accordance with ISO 1217 : 2009 Annex C
  - Measured in free field conditions per ISO 2151 using Hemispherical Method; ducted inlet and outlet, with + 3 dB(A) tolerance
  - CTD based on 100°F/38°C inlet air at 40% Relative Humidity (For alternate conditions contact Ingersoll Rand)
  - BSPT or NPT, depending on regional standard
  - Maximum current includes 10% additional current due to fouled filters and elements
  - 90°C copper cables. Always apply local electrical codes for sizing cables and system protection
  - Time delay fuse recommended. Apply local electrical codes for fuse sizing
  - Coolant volumes listed are approximate. See operator manual for coolant fill procedure
  - 60Hz (±0.5%) motor voltage tolerance: (208)±10% ; (220)±10% ; (230)±10% ; (380)-6/+10% ; (440) ±10% ; (460) ±10% ; (575) -6/+10%
  - Star-Delta starting current inrush is about 33% of direct starting current
  - During the Star-Delta open-starting transition, the in-rush current value could instantaneously peak from 1.8 to 2.8 times the noted Locked-Rotor-Amperage (LRA) values

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