

ENGINEERING MANUAL

SSR UP SERIES



CCN: 48775514
 Rev.: C ECO 1019110
 Ref.: 9904
 Page: 100
 Date: 16th December 2015
 Cancels: 29th June 2015

Point of Manufacture - Campbellsville, Kentucky USA
 SSR UP6S-20-125 , UP6S-20-145 , UP6S-20-200
 60 HERTZ ENGINEERING DATA

| Model | | 20-125 | 20-145 | 20-200 |
|--------------------------------------|---------------------------|-----------|------------|------------|
| GENERAL COMPRESSOR DATA | | | | |
| Capacity (Ref. Intake Cond.) FAD (1) | cfm (m ³ /min) | 77 (2.1) | 67 (1.9) | 58 (1.64) |
| Maximum Operating Pressure | psig (barg) | 125 (8.5) | 145 (10.0) | 200 (13.8) |
| Minimum Operating Pressure | psig (barg) | 65 (4.5) | 65 (4.5) | 65 (4.5) |
| Maximum Operating Temperature | °F (°C) | 105 (40) | 105 (40) | 105 (40) |
| Minimum Operating Temperature | °F (°C) | 36 (2) | 36 (2) | 36 (2) |

| SOUND LEVEL (2) | | | | |
|------------------------|-------|----|----|----|
| Base mounted Enclosed | dB(A) | 68 | 68 | 68 |

| COOLING DATA | | | | |
|--|---------------------------|-------------|-------------|-------------|
| Air-cooled (Ambient Temperature 40°C/105°F) | | | | |
| Rated Airend Discharge temperature | °F (°C) | 205 (96) | 202 (94) | 197 (92) |
| A/E Injection Temperature | °F (°C) | 180 (82) | 180 (82) | 180 (82) |
| Aftercooler - Inlet (3) | °F (°C) | 182 (83) | 179 (82) | 179 (82) |
| Aftercooler - Outlet | °F (°C) | 130 (53.3) | 126 (53.3) | 124 (53.3) |
| Heat Removal Oil Cooler | 1000 Btu/hr (kW) | 41.8 (12.3) | 49.6 (14.5) | 51.3 (15) |
| Heat Removal Oil and Aftercooler | 1000 Btu/hr (kW) | 56.0 (16.4) | 56.0 (16.4) | 56.0 (16.4) |
| Heat Removal Dryer Condenser (max) | 1000 Btu/hr (kW) | 6.3 (1.8) | 6.3 (1.8) | 6.3 (1.8) |
| Oil Flow | US gpm (lpm) | 7.0 (26.5) | 9.2 (34.7) | 12.2 (46.1) |
| Fan Air Flow | cfm (m ³ /min) | 1770 (50.1) | 1770 (50.1) | 1770 (50.1) |
| Dryer Fan Air Flow | cfm (m ³ /min) | 420 (11.9) | 420 (11.9) | 420 (11.9) |
| Cooling Air CTD | °F (°C) | 27 (15) | 27 (15) | 27 (15) |
| Aftercooler CTD (3) | °F (°C) | 26 (14) | 22 (12) | 20 (11) |

| CONSTRUCTION FOUNDATION AND MOUNTING DATA | | |
|---|--|----------|
| Base mounted - see installation drawing | | 48775159 |
| 120 Gal receiver mounted - see installation drawing | | 48775175 |
| 240 Gal receiver mounted - see installation drawing | | 48775183 |

| PIPING CONNECTIONS | | | | |
|-----------------------------|----------------------|-----|-----|-----|
| Air Discharge Base Mount | Inches NPT | 1.0 | 1.0 | 1.0 |
| Air Discharge from Receiver | Inches NPT | 1.0 | 1.0 | 1.0 |
| Coolant Drain | Ball Valve -Inch NPT | ¼ | ¼ | ¼ |
| Power Inlet | Inches | 1¼ | 1¼ | 1¼ |
| Package Condensate Drain | Inches | ¼ | ¼ | ¼ |

| COOLANT LUBRICATION DATA | | | | |
|---------------------------------|--------|---------------|---------------|---------------|
| Coolant Sump Capacity | US Gal | 1.82 (7.0) | 1.82 (7.0) | 1.82 (7.0) |
| Total coolant fill capacity | US Gal | 3.38 (13.0) | 3.38 (13.0) | 3.38 (13.0) |

| DIMENSIONS | | Base Mounted | 120 Gal Rec | 240 Gal Rec |
|-----------------------|--------|---------------------|--------------------|--------------------|
| length, width, height | Inches | 52 / 36 / 42.5 | 77.5 / 36 / 71 | 94 / 36 / 76.5 |
| | mm | 1321/ 914/ 1080 | 1962/ 914/ 1796 | 2390/ 914/ 1940 |
| With Optional Dryer | Inches | 67 / 36 / 42.5 | 77.5 / 36 / 72 | 95 / 36 / 76.5 |
| | mm | 1702/ 914/ 1080 | 1962/ 914/ 1797 | 2390/ 914/ 1941 |

| SHIPPING DATA - NET WEIGHTS | | Base Mounted | 120 Gal Rec | 240 Gal Rec |
|------------------------------------|----------|---------------------|--------------------|--------------------|
| | lb. (kg) | 1183 (538) | 1510 (685) | 1779 (807) |
| With Optional Dryer | lb. (kg) | 1408 (640) | 1735 (789) | 2004 (911) |

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60 HERTZ ENGINEERING DATA

| Model | | 20-125 | 20-145 | 20-200 |
|-------------------------|--------|--------|--------|--------|
| AIREND DATA | | | | |
| Rotor Diameter (male) | inches | 4.21 | 4.21 | 4.21 |
| Male Rotor Speed | rpm | 3114 | 2826 | 2337 |
| Tip Speed | ft/sec | 57.2 | 51.9 | 43 |

| ELECTRICAL DATA - ALL UNITS SSR UP6S-20 | | 208v | 230v | 380v | 460v | 575v |
|---|----------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Nominal Power - Driver | hp | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| Rated Power - Fan | hp | Main Motor Driven | Main Motor Driven | Main Motor Driven | Main Motor Driven | Main Motor Driven |
| Applied Power at maximum pressure - Full Package | hp | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| | | TEFC | TEFC | TEFC | TEFC | TEFC |
| Motor Enclosure | | | | | | |
| Nominal Current - Drive Motor (8) | Amps | 54.7 | 51.2 | 31.0 | 25.6 | 20.5 |
| Package Current - maximum pressure | Amps | 60.7 | 56.8 | 34.4 | 28.4 | 22.8 |
| Drive Motor RPM | | 1770-1775 | 1770-1775 | 1775 | 1770-1775 | 1775 |
| Drive Motor Frame | | 160 L | 160 L | 160 L | 160 L | 160 L |
| Drive Motor Full Voltage Locked Rotor Amps (star) (5) | | 140 | 128 | 85 | 70 | 56 |
| Drive Motor Efficiency (10) | | 0.917-0.92 | 0.917-0.92 | 0.92 | 0.917-0.92 | 0.92 |
| Drive Motor Power Factor (10) | | 0.83-0.80 | 0.83-0.80 | 0.80 | 0.83-0.80 | 0.80 |
| Test certificate number | | TBA | TBA | TBA | TBA | TBA |
| Dryer electrical data | | | | | | |
| Full Load Current | 115-1-60 | | | | | |
| Starting Current | 9.6 | | | | | |
| Starting Current | 45 | | | | | |
| Electrical Installation | | | | | | |
| Mains Supply Cable (8) | Gage | 4 | 4 | 6 | 10 | 10 |
| Suggested Fuse Rating | Amps | 90 | 80 | 50 | 40 | 35 |
| Recommended wire Size - Dryer (8) (13) | | 16 AWG | | | | |

| Refrigerated Dryer Data | | ISO Class | |
|-----------------------------------|--------------|-----------|------------|
| Pressure Dew Point ISO Class (12) | °C (°F) | 6 | 8°C (46°F) |
| Refrigerant weight of R-134a | Grams / (Oz) | | 320/(11.6) |

| Filter Data | Particulate | | Liquid | |
|--|-------------|------------|-----------|---------------------------------|
| | ISO Class | Filtration | ISO Class | Filtration |
| Primary filter detail - at 21°C (70°F) | 3 | 0.1 micron | 3 | 0.6 mg/m ³ (0.5 ppm) |

| Pressure Drop data by operating pressure | barG / (psig) | barG | | psig | | barG | | psig | |
|---|---------------|------|-----|------|-----|------|-----|------|--|
| | | 8.6 | 125 | 10.0 | 145 | 13.8 | 200 | | |
| Dryer Pressure Drop | barG / (psig) | 0.23 | 3.3 | 0.15 | 2.2 | 0.07 | 1.0 | | |
| Primary filter wet pressure drop | barG / (psig) | 0.11 | 1.5 | 0.10 | 1.4 | 0.09 | 1.2 | | |
| Total Pressure Drop ⁽¹¹⁾ For ISO Class 3.6.3 air | barG / (psig) | 0.34 | 4.8 | 0.25 | 3.6 | 0.16 | 2.2 | | |

Notes :

- (1) FAD (Free Air Delivery) is full package performance including all losses. Tested in accordance with ISO 1217 : 1996 Annex C.
- (2) Measured in free field conditions in accordance with ISO 2151; 2004 annex C, with + 3 dB(A) tolerance.
- (3) 40% Relative Humidity Inlet Air
- (4) Predicted CAT cell data at rated discharge pressure.
- (5) Star Delta Inrush excluding transient spike.
- (8) This is a minimum requirement based on 90°C wire - It may be necessary to use larger cables to comply with local regulations or if the voltage drop exceeds 5% of the nominal voltage.
- (10) Measured at nominal motor power
- (11) Total package including compressor, integral dryer with pre and final compressed air filters
- (12) Dew point measured in accordance with ISO 8573-1:2001. With inlet air to package of 25°C (77 °F) and RH at 60%
- (13) Always apply local electrical codes for sizing cables and fusing