# ENGINEERING MANUAL

# SSR

## Small UP - Total Air System

**CCN:** 23753742
**Rev.:** H CN 1330784
**Ref.:** 9902
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**Date:** 5th Dec 2018
**Cancels:** 10th Nov 2017

**Point of Manufacture - Campbellsville, USA**

**60 HERTZ ENGINEERING DATA**

| **Model** | | **UP6-10TAS-125** | **UP6-10TAS-150** | **UP6-10TAS-210** |
|---|---|---|---|---|
| *** DENOTES NOT AVAILABLE IN NORTH AMERICA *** | | | | |
| **GENERAL COMPRESSOR DATA** | | | | |
| Capacity (Ref. Intake Condition.) FAD (1) | m³/min (cfm) | 1.02 (36.1) | 0.91 (32.3) | 0.64 (22.8) |
| Maximum & Rated Operating Pressure | barg (psig) | 8.6 (125) | 10.3 (150) | 14.5 (210) |
| Rated package discharge Pressure (13) | barg (psig) | 8.2 (119) | 9.96 (145) | 14.3 (207) |
| Minimum Operating Pressure | barg (psig) | 4.5 (65) | 4.5 (65) | 4.5 (65) |
| Maximum Operating Temperature | ºC ( ºF ) | 40 (105) | 40 (105) | 40 (105) |
| Minimum Operating Temperature | ºC ( ºF ) | 2 (36) | 2 (36) | 2 (36) |
| **SOUND LEVEL (2)** | | | | |
| Base mounted Enclosed | dB(A) | 68 | 68 | 68 |
| **COOLING DATA** | | | | |
| **Air-cooled (Ambient Temperature 40°C/104°F)** | | | | |
| Coolant Discharge temperature | °C(°F) | 85 (185) | 85 (185) | 90 (194) |
| A/E Injection Temperature | °C(°F) | 76 (169) | 76 (169) | 77 (171) |
| (3) Aftercooler - Inlet | °C(°F) | 77 (171) | 77 (171) | 77 (171) |
| Aftercooler - Outlet | °C(°F) | 51 (124) | 51 (124) | 51 (124) |
| Heat Removal Oil Cooler | kW (1000 Btu/hr) | 7 (23.9) | 7 (23.9) | 7 (23.9) |
| Heat Removal Oil and Aftercooler | kW (1000 Btu/hr) | 8.2 (28.0) | 8.2 (28.0) | 8.2 (28.0) |
| Heat Removal Dryer Condenser (Max) | kW (1000 Btu/hr) | 1.4 (4.8) | 1.4 (4.8) | 1.4 (4.8) |
| Coolant Flow | lpm (UK gpm) | 17.0 (3.7) | 21.0 (4.6) | 32.0 (7.0) |
| **Cooling Air** | | | | |
| Main Cooling Air Flow | m³/min (cfm) | 28.0 (1000) | 28.0 (1000) | 25.0 (880) |
| Dryer Cooling Airflow | m³/min (cfm) | Included | Included | |
| Cooling Air CTD | ºC (ºF) | 35 (63) | 35 (63) | 35 (63) |
| Aftercooler CTD ( 3 ) | ºC (ºF) | 11 (20) | 11 (20) | 11 (20) |
| **CONSTRUCTION FOUNDATION AND** | | | | |
| **PIPING CONNECTIONS** | | | | |
| Air Discharge Base Mount | Inches BSPT ( 9 ) | 0.75 | | |
| Air Discharge from ASME Receiver | Inches NPT | 0.75 | | |
| Package Automatic Condensate Drain | Inches NPT | 0.25 | | |
| Coolant Drain | Drain Plug | 9/16"-SAE | | |
| Power Inlet (Main) | Inch | 1" | | |
| Power Inlet (Dryer) | Inch | 1/2" | | |
| **COOLANT LUBRICATION DATA** | | | | |
| Coolant Sump Capacity | litres (US gal) | 3 (.8) | | |
| Total coolant fill capacity | litres (US gal) | 4.5 (1.2) | | |

| **DIMENSIONS** | | **Basemount** | **80 gal (20in tank)** | **80 gal (24in tank)** | **120 gal** |
|---|---|---|---|---|---|
| length, width, height | mm | 1040/728/936 | 1737/737/1513 | 1350/737/1616 | 1846/737/1616 |
| | Inches | 40.9/28.7/36.9 | 68.4/29.0/59.6 | 53.2/29.0/63.6 | 72.7/29.0/63.7 |
| GA Drawing Numbers | | 22431811 | 24470304 | 22431829 | 22469191 |

| **SHIPPING DATA - NET WEIGHTS** | | **Basemount** | **80 gal** | **80 gal** | **120 gal** |
|---|---|---|---|---|---|
| **T**otal **A**ir **S**ystem package | kg (lb.) | 331 (730) | 456 (1005) | 454 (1000) | 463 (1021) |

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**60 HERTZ ENGINEERING DATA**

| Model | | | UP6-10TAS-125 | UP6-10TAS-150 | UP6-10TAS-210 |
|---|---|---|---|---|---|
| **Compressor Module Data** | | | | | |
| Rotor Diameter ( male ) | mm | | 74.25 | 74.25 | 74.25 |
| Male Rotor Speed | rpm | | 4300 | 3950 | 3200 |
| Tip Speed | m/sec | | 16.72 | 15.36 | 12.44 |
| **Power Data** | | | | | |
| Applied main motor power (8) | HP | | 11.0 | 11.0 | 11.0 |
| Applied Power - Fan | HP | | Included | Included | Included |
| Applied Power - Dryer compressor | HP | | 0.6 | 0.6 | 0.6 |
| Applied Power - Dryer Fan | HP | | Included | Included | Included |
| Applied Power - Full Package (8) | HP | | 11.6 | 11.6 | 11.6 |

| ELECTRICAL DATA - ALL UNITS SSR UP6-10 | | 115-1-60 | 200v | 230v | 380v | 460v | 575v |
|---|---|---|---|---|---|---|---|
| *** NOTE BLUE SHADE DENOTES SINGLE PHASE *** | | | | | | | |
| Nominal Current - Main Drive Motor (8) ODP/TEFC | Amps | | 27.5 | 24.0 | 14.5 | 12.0 | 9.6 |
| Maximum Applied Power - TAS Package (10) ODP/TEFC | Amps | | 30.3 | 26.4 | 15.9 | 13.2 | 10.6 |
| Starting current -- Direct on Line | Amps | | 189.0 | 165.0 | 100.0 | 83.0 | 66.0 |
| Starting current -- Star Delta Start | Amps | | N/A | N/A | N/A | N/A | N/A |
| **Main Motor Data** | | | | | | | |
| Nominal Power - Main Driver | HP | | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 |
| Drive Motor enclosure Protection | | | ODP | ODP | ODP | ODP | ODP |
| Drive Motor RPM | | | 3540 | 3540 | 3540 | 3540 | 3540 |
| Drive Motor Frame | | | 213TZ/215TZ | 213TZ/215TZ | 213TZ/215TZ | 213TZ/215TZ | 213TZ/215TZ |
| Drive Motor Locked Rotor DOL/(S/D) (5) | Amps | | 190.0 | 163.0 | 100.0 | 81.5 | 68.2 |
| Drive Motor Efficiency (8) | | | 89.5 | 89.5 | 89.5 | 89.5 | 89.5 |
| Drive Motor Power Factor (8) | | | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Test Certificate Number (4) | | | FD-2016-163958 | FD-2016-171468 | FDC 086606.2017 | FD-2016-171468 | FD-2016-163825 |
| **Dryer Electrical Data** | | | | | | | |
| Full Load Current | Amps | 5 | | | | | |
| Starting Current | Amps | 30 | | | | | |
| **Electrical Installation -- Total Air System** | | | | | | | |
| Recommended wire size - Main motor - (6) | Awg | | 8 | 8 | 10 | 12 | 14 |
| Suggested Fuse Rating (7) | Amps | | 50 | 45 | 25 | 20 | 15 |
| Recommended wire size - Dryer - (6) | Awg | 18 | | | | | |

| Refrigerated Dryer Data | | ISO Class | |
|---|---|---|---|
| Pressure Dew Point ISO Class (11) | °C (°F) | 5 | lower than 7°C (44°F) |
| Refrigerant weight of R-134a | Grams / (Oz) | | 350/(12.7) |

| Filter Data | Particulate ISO Class | Particulate Filtration | Liquid ISO Class | Liquid Filtration |
|---|---|---|---|---|
| Primary filter detail - at 21°C ( 70°F ) | 3 | 1 micron | 3 | 0.6 mg/m³ (0.5 ppm) |
| Final filter detail - at 21°C ( 70°F ) | 2 | 0.01 micron | 1 | 0,01 mg/m³ (0.01 ppm) |

| Pressure Drop data by operating pressure | | barG | psig | barG | psig | barG | psig |
|---|---|---|---|---|---|---|---|
| | barG / (psig) | **8.6** | **125** | **10.3** | **150** | **14.5** | **210** |
| Dryer Pressure Drop | barG / (psig) | 0.17 | 2.5 | 0.17 | 2.5 | 0.10 | 1.5 |
| Primary filter wet pressure drop | barG / (psig) | 0.10 | 1.5 | 0.07 | 1 | 0.03 | 0.5 |
| Final filter wet pressure drop | barG / (psig) | 0.14 | 2 | 0.10 | 1.5 | 0.07 | 1 |
| Total Pressure Drop (10) For ISO Class 2.5.1 air | barG / (psig) | 0.41 | 6 | 0.34 | 5 | 0.21 | 3 |

**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 PNEUROP/CAGI test codes PN8NTC2.3, with +/- 3 dB(A) tolerance.
( 3 ) 40% Relative Humidity Inlet Air ( For alternate conditions refer to SSR toolbox or contact IR )
( 4 ) Motor test certificate
( 5 ) Inrush amps
( 6 ) 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.
( 7 ) Recommended Time delay Fuse. Refer to local code for proper fuse sizing
( 8 ) Measured at rated compressor duty
( 9 ) Installation kit will provide flexible connection to NPT or BSPT
(10 ) Total Air System package including compressor, integral dryer with pre and final compressed air filters
(11 ) 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) Discharge pressure when operating at compressor rated pressure, with clean wetted filters