



# GDK90 FS

50Hz

CCN: 47782778001  
Rev: A  
ECN: 1467100  
Sheet: 1 of 8  
Date: Jul-2022

| Model  |          |                        | GDK90FS-7A      | GDK90FS-8A      | GDK90FS-10A     | GDK90FS-12.5A   |
|--|----------|------------------------|-----------------|-----------------|-----------------|-----------------|
| <b>GENERAL PERFORMANCE DATA</b>  |          |                        |                 |                 |                 |                 |
| Rated discharge Pressure   |          | barg                   | 7.0             | 8.0             | 10.0            | 12.5            |
| Maximum Operating Pressure   | (2)      | barg                   | 7.2             | 8.2             | 10.2            | 12.7            |
| Minimum Operating Pressure   |          | barg                   | 4.5             | 4.5             | 4.5             | 4.5             |
| Maximum Operating Ambient Temperature  |          | °C                     | 46              | 46              | 46              | 46              |
| Minimum Operating Ambient Temperature  |          | °C                     | 2               | 2               | 2               | 2               |
| Maximum System Temperature Setting   |          | °C                     | 109             | 109             | 109             | 109             |
| Nominal Power – Main Motor   | (3)      | kW                     | 90              | 90              | 90              | 90              |
| Main Motor Efficiency  | (1)      | %                      | 95.0%           | 95.0%           | 95.0%           | 95.0%           |
| Capacity FAD   | (4)      | m³/min                 | 17.0            | 16.5            | 15.0            | 13.0            |
| Package Input Power with Fan – Air Cooled  | (4)(5)   | kW                     | 103.7           | 105.6           | 106.5           | 105.3           |
| Specific Power – Air Cooled  |          | kW/m³/min              | 6.1             | 6.4             | 7.1             | 8.1             |
| <b>SOUND LEVEL</b>   |          |                        |                 |                 |                 |                 |
| Noise Level Standard Package – Air Cooled  | (6)      | Sound Pressure - dB(A) | 76              | 76              | 76              | 76              |
| Noise Level Standard Package – Air Cooled  |          | Sound Power - dB(A)    | 94              | 94              | 94              | 94              |
| <b>OIL CARRY OVER</b>  |          |                        |                 |                 |                 |                 |
|  |          | ml/m³                  | ≤3              | ≤3              | ≤3              | ≤3              |
| <b>COOLING DATA (Ø Maximum Ambient Temperature &amp; Maximum Discharge Pressure)</b> |          |                        |                 |                 |                 |                 |
| Heat Removal (Oil Cooler)  |          | kW                     | 103.0           | 103.0           | 103.0           | 103.0           |
| Heat Removal (Oil and Aftercooler)   |          | kW                     | 128.4           | 128.4           | 128.4           | 128.4           |
| Permitted Additional Static Pressure   |          | Pa                     | 30              | 30              | 30              | 30              |
| Fan Air Flow   |          | m³/min                 | 434.0           | 434.0           | 434.0           | 434.0           |
| Fan Motor Nominal Power  |          | kW                     | 2.3             | 2.3             | 2.3             | 2.3             |
| Cooling Air Temperature Rise@46°C  |          | °C                     | 27              | 27              | 27              | 27              |
| Aftercooler CTD  | (7)      | °C                     | 12              | 12              | 12              | 12              |
| <b>AIR END DATA</b>  |          |                        |                 |                 |                 |                 |
| Male Rotor Speed   |          | RPM                    | 2729            | 2640            | 2385            | 2079            |
| Tip Speed Rotor  |          | m/sec                  | 27.7            | 26.8            | 24.2            | 21.1            |
| Full Load Shaft Power  |          | kW                     | 96.3            | 98.1            | 97.2            | 94.5            |
| <b>COOLANT LUBRICATION DATA</b>  |          |                        |                 |                 |                 |                 |
| Total Coolant Capacity – Air Cooled  | (12)     | litres                 | 87.0            | 87.0            | 87.0            | 87.0            |
| <b>PIPING CONNECTIONS</b>  |          |                        |                 |                 |                 |                 |
| Air Discharge  | (8)      | Inches G               | 3 INCH (FEMALE) | 3 INCH (FEMALE) | 3 INCH (FEMALE) | 3 INCH (FEMALE) |
| Coolant Drain – Hose Size  |          | Inches NPT             | 0.5 (FEMALE)    | 0.5 (FEMALE)    | 0.5 (FEMALE)    | 0.5 (FEMALE)    |
| Diameter of Power Inlet  |          | mm (Inches)            | 120 (4.7)       | 120 (4.7)       | 120 (4.7)       | 120 (4.7)       |
| <b>DIMENSIONS AND WEIGHT</b>   |          |                        |                 |                 |                 |                 |
| Length, Width, Height  |          | mm                     | 2300*1500*1700  | 2300*1500*1700  | 2300*1500*1700  | 2300*1500*1700  |
| Net Weight – Air Cooled  |          | kg                     | 2220            | 2220            | 2220            | 2220            |
| GA Drawing Number – Air Cooled   |          |                        | 47783075001     | 47783075001     | 47783075001     | 47783075001     |
| <b>ELECTRICAL DATA</b>   |          |                        |                 |                 |                 |                 |
| Motor Protection   | (13)     |                        |                 | TEFC, IP55      |                 |                 |
| Motor Number of Poles  |          |                        |                 | 2               |                 |                 |
| Motor Insulation Class / Temperature Rise  |          |                        |                 | Class F, 155°C  |                 |                 |
| Full Load Package Current – Air Cooled   | (9)      |                        |                 |                 |                 |                 |
|  |          | Amps @ 380V            |                 | 178             |                 |                 |
|  |          | Amps @ 400V            |                 | 169             |                 |                 |
|  |          | Amps @ 415V            |                 | 163             |                 |                 |
| Main Motor Locked Rotor Current  | (14)     |                        |                 |                 |                 |                 |
|  |          | Amps @ 380V            |                 | 1922            |                 |                 |
|  |          | Amps @ 400V            |                 | 2029            |                 |                 |
|  |          | Amps @ 415V            |                 | 2103            |                 |                 |
| Package Power Factor   |          |                        |                 | 0.91            |                 |                 |
| <b>Electrical Installation</b>   |          |                        |                 |                 |                 |                 |
| Recommended Supply Cable Size  | (10)     |                        |                 |                 |                 |                 |
|  |          | mm²/Cu (Kcmil) @ 380V  |                 | 150             |                 |                 |
|  |          | mm²/Cu (Kcmil) @ 400V  |                 | 150             |                 |                 |
|  |          | mm²/Cu (Kcmil) @ 415V  |                 | 150             |                 |                 |
| Maximum Recommended Fuse Rating  | (10)(11) |                        |                 |                 |                 |                 |
|  |          | Amps @ 380V            |                 | 325             |                 |                 |
|  |          | Amps @ 400V            |                 | 325             |                 |                 |
|  |          | Amps @ 415V            |                 | 325             |                 |                 |

## 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 Parallelepiped 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 Gardner Denver)
- “G” Thread for domestic standard
- Maximum current includes 5% 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
- 50Hz (±2%) motor voltage tolerance: (400V)±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

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# GDK90 FS

50Hz

CCN: 47782778001  
 Rev: A  
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 Sheet: 2 of 8  
 Date: Jul-2022

| Model  |          | GDK90FS-7W             | GDK90FS-8W      | GDK90FS-10W     | GDK90FS-12.5W   |
|--|----------|------------------------|-----------------|-----------------|-----------------|
| <b>GENERAL PERFORMANCE DATA</b>  |          |                        |                 |                 |                 |
| Rated discharge Pressure   |          | 7.0                    | 8.0             | 10.0            | 12.5            |
| Maximum Operating Pressure   | (2)      | barg                   | 7.2             | 10.2            | 12.7            |
| Minimum Operating Pressure   |          | barg                   | 4.5             | 4.5             | 4.5             |
| Maximum Operating Ambient Temperature  |          | °C                     | 46              | 46              | 46              |
| Minimum Operating Ambient Temperature  |          | °C                     | 2               | 2               | 2               |
| Maximum System Temperature Setting   |          | °C                     | 109             | 109             | 109             |
| Nominal Power – Main Motor   |          | kW                     | 90              | 90              | 90              |
| Main Motor Efficiency  | (3)      | %                      | 95.0%           | 95.0%           | 95.0%           |
| Capacity FAD   | (1)      | m³/min                 | 17.0            | 16.5            | 13.0            |
| Package Input Power with Fan – Water Cooled  |          | kW                     | 102.0           | 104.0           | 102.7           |
| Specific Power – Air Cooled  | (4)(5)   | kW/m³/min              | 6.0             | 6.3             | 7.9             |
| <b>SOUND LEVEL</b>   |          |                        |                 |                 |                 |
| Noise Level Standard Package – Water Cooled  | (6)      | Sound Pressure - dB(A) | 73              | 73              | 73              |
| Noise Level Standard Package – Water Cooled  |          | Sound Power - dB(A)    | 91              | 91              | 91              |
| OIL CARRY OVER   |          | m³/m³                  | ≤3              | ≤3              | ≤3              |
| <b>COOLING DATA (• Maximum Ambient Temperature &amp; Maximum Discharge Pressure)</b> |          |                        |                 |                 |                 |
| Heat Removal (Oil Cooler)  |          | kW                     | 103.0           | 103.0           | 103.0           |
| Heat Removal (Oil and Aftercooler)   |          | kW                     | 128.4           | 128.4           | 128.4           |
| Permitted Additional Static Pressure   |          | Pa                     | 30              | 30              | 30              |
| Fan Air Flow   |          | m³/min                 | 80.0            | 80.0            | 80.0            |
| Fan Motor Nominal Power  |          | kW                     | 0.5             | 0.5             | 0.5             |
| Cooling Air Temperature Rise@46°C  |          | °C                     | 10              | 10              | 10              |
| Cooling Water Temperature Rise@38°C  |          | °C                     | 13              | 13              | 13              |
| Cooling Water Flow   |          | m³/h                   |                 |                 |                 |
| @ 10 °C  |          | 4                      | 4               | 4               | 4               |
| @ 20 °C  |          | 5                      | 5               | 5               | 5               |
| @ 30 °C  |          | 7                      | 7               | 7               | 7               |
| @ 38 °C  |          | 9                      | 9               | 9               | 9               |
| Cooling Water Max Pressure   |          | Bar                    | 4               | 4               | 4               |
| Cooling Water Min Pressure   |          | Bar                    | 2               | 2               | 2               |
| Cooling Water Pressure Drop  |          | Bar                    | 1               | 1               | 1               |
| Aftercooler CTD  | (7)      | °C                     | 12              | 12              | 12              |
| <b>AIR END DATA</b>  |          |                        |                 |                 |                 |
| Main Rotor Speed   |          | RPM                    | 2729            | 2640            | 2385            |
| Tip Speed Rotor  |          | m/sec                  | 27.7            | 26.8            | 24.2            |
| Full Load Shaft Power  |          | kW                     | 96.3            | 98.1            | 97.2            |
| <b>COOLANT LUBRICATION DATA</b>  |          |                        |                 |                 |                 |
| Total Coolant Capacity – Water Cooled  | (12)     | litres                 | 83.0            | 83.0            | 83.0            |
| <b>PIPING CONNECTIONS</b>  |          |                        |                 |                 |                 |
| Air Discharge  | (8)      | Inches G               | 3 INCH (FEMALE) | 3 INCH (FEMALE) | 3 INCH (FEMALE) |
| Coolant Drain – Hose Size  |          | Inches NPT             | 0.5 (FEMALE)    | 0.5 (FEMALE)    | 0.5 (FEMALE)    |
| Diameter of Power Inlet  |          | mm (Inches)            | 120 (4.7)       | 120 (4.7)       | 120 (4.7)       |
| <b>DIMENSIONS AND WEIGHT</b>   |          |                        |                 |                 |                 |
| Length, Width, Height  |          | mm                     | 2300*1500*1700  | 2300*1500*1700  | 2300*1500*1700  |
| Net Weight – Water Cooled  |          | kg                     | 2080            | 2080            | 2080            |
| GA Drawing Number – Water Cooled   |          |                        | 47783076001     | 47783076001     | 47783076001     |
| <b>ELECTRICAL DATA</b>   |          |                        |                 |                 |                 |
| Motor Protection   | (13)     |                        |                 | TEFC, IP55      |                 |
| Motor Number of Poles  |          |                        |                 | 2               |                 |
| Motor Insulation Class / Temperature Rise  |          |                        |                 | Class F, 155°C  |                 |
| Full Load Package Current – Water Cooled   | (9)      |                        |                 |                 |                 |
|  |          | Amps @ 380V            |                 | 173             |                 |
|  |          | Amps @ 400V            |                 | 164             |                 |
|  |          | Amps @ 415V            |                 | 158             |                 |
| Main Motor Locked Rotor Current  | (14)     |                        |                 |                 |                 |
|  |          | Amps @ 380V            |                 | 1868            |                 |
|  |          | Amps @ 400V            |                 | 1972            |                 |
|  |          | Amps @ 415V            |                 | 2044            |                 |
| Package Power Factor   |          |                        |                 | 0.91            |                 |
| <b>Electrical Installation</b>   |          |                        |                 |                 |                 |
| Recommended Supply Cable Size  | (10)     |                        |                 |                 |                 |
|  |          | mm²/Cu (Kcmil) @ 380V  |                 | 150             |                 |
|  |          | mm²/Cu (Kcmil) @ 400V  |                 | 150             |                 |
|  |          | mm²/Cu (Kcmil) @ 415V  |                 | 150             |                 |
| Maximum Recommended Fuse Rating  | (10)(11) |                        |                 |                 |                 |
|  |          | Amps @ 380V            |                 | 325             |                 |
|  |          | Amps @ 400V            |                 | 325             |                 |
|  |          | Amps @ 415V            |                 | 325             |                 |

## Notes:

- FAD (Free Air Delivery) is full package performance including all losses. Tested per ISO 1217 : 2009 Annex C
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