Wilo-Stratos GIGA
High-Efficiency In-Line Pumps

Engineering Specification

WILO_SPC_STRATOSGIGA_0318

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pump shall be a Wilo-Stratos GIGA, high-efficiency, single-stage in-line, close-coupled, mechanically sealed, dry rotor centrifugal pump as manufactured by Wilo SE.

B. Furnish and install a Wilo-Stratos GIGA, high-efficiency vertical, centrifugal pump, with a capacity as indicated in the plans.

1.02 RELATED SECTIONS

A. 23 21 23 - Hydronic Pumps

1.03 REFERENCES

A. UL – Underwriters Laboratories

B. HI – Hydraulic Institute

C. NEC – National Electrical Code

D. ANSI – American National Standards Institute

E. ISO – International Standards Organization

F. NEMA – National Electrical Manufacturers Association

1.04 SUBMITTALS

A. Submittal data sheet(s

B. Dimensional print(s)

C. Wiring diagram(s)

D. Installation, operation and maintenance manual (IOM)

1.05 QUALITY ASSURANCE

A. High-efficiency, single-stage, vertical design, mechanically sealed, dry rotor centrifugal pump with in-line connections.

B. The pump manufacturer shall be ISO 9001 and ISO 14001 certified.

C. Fluid temperature range shall be -4°F to +248°F (-20°C to +120°C) for water and -4°F to +194°F (-20°C to +90°C) for 50% glycol.

D. Ambient temperature shall be 32°F to +104°F (0°C to +40°C).

E. The pump shall have a maximum operating pressure rating of 232 PSI up to 248°F fluid temperature 190 PSI maximum operating pressure from 249°F to 284°F fluid temperatures.

1.06 WARRANTY

A. Provide manufacturer's standard warranty against defects in materials and workmanship:

   a. Warranty Period: The Wilo-Stratos GIGA shall be free of defects in materials and workmanship for a period of two (2) years from; the date of purchase or date of warranty registration of the product with Wilo USA LLC, within 6 months of original purchase date.

PART 2 PRODUCTS

1.01 MANUFACTURERS

A. Subject to compliance with these specifications, the following manufacturers shall be acceptable:

   a. Wilo-Stratos GIGA series pump(s) as manufactured by Wilo.

   b. Pre-approved equal.

1.02 COMPONENTS

A. Pump Housing:

   a. Shall be constructed of cast iron (EN-GJL-250) equal to ASTM A48 - Class 35.

   b. Shall be furnished with 125 lb ANSI flanges on the suction and discharge connections.

   c. Shall have four 12M bolt holes integral to the bottom of the pump housing.

   d. Shall be furnished with two 1/8" RP threaded taps for the differential pressure sensor.

   e. Shall have three ½"-13 UNC mounting holes integral to the bottom of the pump housing for foundation installation.

B. Pump Shaft

   a. Shall be constructed of martensitic stainless steel X39CrMo17-1 (1.4122).

C. Impeller

   a. Shall be constructed of PPS-GF40.

D. Pump Seal

   a. Pump seal shall be an EagleBurgmann Q7Q7X4GG seal.

E. Lantern

   a. Shall be constructed of cast iron (EN-GJL-250) equal to ASTM A48 - Class 35.

   b. Shall accommodate condensate drainage as a standard.

F. Motor

   a. Shall be a Wilo developed, electronically commutated, synchronous permanent magnet, super premium motor.

   b. Shall be rated for 380/480V~3, 50/60Hz, (±10%) power supply.

   c. Shall meet standard IEC 60034-31 Ed.1.

   d. Shall have a protection class of IP55.

   e. Shall be Insulation class F.

   f. Shall produce motor efficiencies greater than, or equal to, IE4 and NEMA MG1 TABLE 12-12 motor efficiency standards.

   g. Shall be capable of modulating from 500-5500 RPM.

   h. Data Logger: Non-volatile data logger, recording system changes, error codes and warnings.

   i. High-efficiency motor exceeding 93% efficiency.

   j. Motor Bearings: Permanently lubricated deep-groove ball bearings, sized for L50 >100,000 hours.

G. Control Interface

   a. Shall allow for quick access to the main parameters using LCD display and Wilo Green button.

   b. Shall have two configurations.

      i. Standard control

      ii. Expert control

   c. Shall offer four (internal, integral or inboard) control modes:

      i. Speed control

      ii. Constant differential pressure

      iii. Variable differential pressure

      iv. PID control

   d. Shall have the following external control functions:

      i. “Overriding Off” control input.

      ii. Analog input 0-10V, 0-20mA for manual control mode (DDC) and remote setpoint adjustment.

      iii. Analog input 2-10V, 4-20mA for manual control mode (DDC) and remote setpoint adjustment.

      iv. Analog input 0-10V for actual value signal from pressure sensor.

      v. Analog input 2-10V, 0-20mA, 4-20mA for actual value signal from pressure signal.

   e. Shall have dual-pump management (2x single pump):

      i. Main/Standby or Main/Peak operation

      ii. Programmable pump cycling

      iii. Parallel operation

      iv. Parallel operation (efficiency-optimized peak-load activation and deactivation)

   f. Shall have two configurable relays for run and fault signals.

   g. Shall allow for speed reduction turndown of up to 70%.

   h. Shall have two protection functions:

      i. Full motor protection with integrated trip electronics.

      ii. Access disable.

i. Configuration of all operating parameters.

j. Error acknowledgement.

k. Shall be UL 508 compliant and listed.

H. (COMMUNICATIONS)[1]

a. Shall allow for real time interfaces for BUS communication via plug-in Stratos InterFace (IF) Modules.

b. Stratos IF-Modules shall accommodate the following protocols:

i. BACnet

ii. Modbus

iii. LONworks

I. External Components

a. (Bypass Kit)[1]

b. Differential pressure sensor.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install equipment in accordance with manufacturer's instructions.

B. Power wiring and motor protection, as required, shall be the responsibility of the electrical contractor. All wiring shall be performed per manufacturer's instructions and applicable state, federal and local codes.

C. All factory wiring shall be numbered for easy identification and the numbers shall coincide with those shown on the wiring diagram.

D. All binary protocols shall be wired by an RS485-certified electrician.

E. Unit shall be a Wilo-Stratos GIGA as manufactured by Wilo.

END OF SECTION

[1]Components in parenthesis indicate an optional item.