

# JAGUAR - AQUA



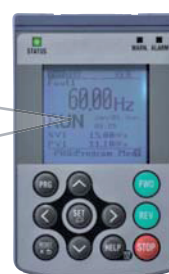
## Product Outline and Characteristics of Jaguar - VXA Series

- Wide capacity range from 0.75 to 710 kW
- Torque vector control
- IP21 & IP55 with same dimension
- DC Reactor and EMC filter built-in up 90 kW
- Automatic energy-saving operation
- Wet-bulb temperature estimation control
- Cascade control
- 4PID control
- Customisable logic
- Dry pump detection
- Anti Jam
- Linearisation function
- Real time clock
- Slow flow rate
- Standard comms BACnet MS/TP, Modbus RTU & Metasys N2



## User friendly, easy to see keypad

- |                            |                   |                       |
|----------------------------|-------------------|-----------------------|
| 1. Present value (PV)      | 5. Output current | 9. Power consumption  |
| 2. Setting value (SV)      | 6. Output voltage | 10. Cumulative energy |
| 3. Manipulating value (MV) | 7. Torque         |                       |
| 4. Frequency               | 8. Rotation speed |                       |



\* User defined process value display options

\*Multi-language function: 19 languages + user customised language supported

### DC Reactor + EMC Filter Built In

0.75 to 90kW (Protective structure IP21 or IP55 can be selected with the model between 0.75 and 90kW.)

| Inverter capacity | EMC filter | DC reactor | Protective structure |
|-------------------|------------|------------|----------------------|
| 0.75kW to 90kW    | Built-in   | Built-in   | IP21/IP55            |
| 110kW to 710kW    | Built-in   | External   | IP00                 |

## Optimum Control for Pump Applications

The first IMO Jaguar Drive developed specifically for the water industry and other pumping applications in a slim, easy to install package.

The Jaguar VXA achieves optimum energy saving on pump applications, contributing significantly to environmental protection while drastically reducing energy costs.

Inverter technology is proven to save energy consumption and an increasing number of users are benefiting from these savings. With its optimised control algorithm and dedicated application control functions the Jaguar VXA is leading the way in performance while continuing the user friendly reputation that Jaguar is renowned for.

**Application:** Water purification plants, clean water and sewage treatment plants.

Irrigation systems, seawater desalination.

Oil pumping, injection machines, hydraulic presses & extruders.

# Standard specifications



3-phase, 400V series (0.75 to 710kW)

| Item  |   |           | Specifications   |     |     |             |      |      |      |      |      |      |          |      |      |     |
|---|---|-----------|--|-----|-----|-------------|------|------|------|------|------|------|----------|------|------|-----|
| Model   | VXA#*-4E  |           | 2A5  | 4A1 | 5A5 | 9           | 13A5 | 18A5 | 24A5 | 32   | 39   | 45   | 60       | 75   | 91   | 112 |
| Applicable standard motor (rated output) [kW] <sup>*1</sup> |   |           | 0.75   | 1.5 | 2.2 | 4.0         | 5.5  | 7.5  | 11   | 15   | 18.5 | 22   | 30       | 37   | 45   | 55  |
| Output ratings  | Rated capacity [kVA] <sup>*2</sup>                                      |           | 1.9  | 3.1 | 4.1 | 6.8         | 10   | 14   | 18   | 24   | 29   | 34   | 45       | 57   | 69   | 85  |
|   | Voltage [V] <sup>*3</sup>   |           | 3-phase, 380 to 480V (with AVR function)   |     |     |             |      |      |      |      |      |      |          |      |      |     |
|   | Rated current [A]   |           | 2.5  | 4.1 | 5.5 | 9.0         | 13.5 | 18.5 | 24.5 | 32   | 39   | 45   | 60       | 75   | 91   | 112 |
|   | Overload current rating   |           | 110% -1min (Overload tolerated interval: compliant with IEC 61800-2)                                 |     |     |             |      |      |      |      |      |      |          |      |      |     |
|   | Rated frequency [Hz]  |           | 50, 60Hz   |     |     |             |      |      |      |      |      |      |          |      |      |     |
| Input Power Supply  | Main power supply (No. of phase, voltage, frequency)                    |           | 3-phase, 380 to 480V, 50/60Hz  |     |     |             |      |      |      |      |      |      |          |      |      |     |
|   | Control power supply auxiliary-input (No. of phase, voltage, frequency) |           | Single phase, 380 to 480V, 50/60Hz   |     |     |             |      |      |      |      |      |      |          |      |      |     |
|   | Voltage, frequency variations   |           | Voltage: +10 to -15% (Unbalance rate between phases is within 2%) <sup>*4</sup> Frequency: +5 to -5% |     |     |             |      |      |      |      |      |      |          |      |      |     |
|   | Rated input current [A]   |           | 1.6  | 3.0 | 4.3 | 7.4         | 10.3 | 13.9 | 20.7 | 27.9 | 34.5 | 41.1 | 55.7     | 69.4 | 83.1 | 102 |
|   | Required power supply capacity [kVA]                                    |           | 1.2  | 2.1 | 3.0 | 5.2         | 7.2  | 9.7  | 15   | 20   | 24   | 29   | 39       | 49   | 58   | 71  |
| Braking   | Braking torque [%] <sup>*5</sup>  |           | 20   |     |     |             |      |      |      |      |      |      | 10 to 15 |      |      |     |
|   | DC braking  |           | Braking starting frequency: 0.0 to 60.0Hz, Braking time: 0.0 to 30.0s, Braking level: 0 to 60%       |     |     |             |      |      |      |      |      |      |          |      |      |     |
| EMC filter  |   |           | Built-in [Compliant with EMC standard (IEC/EN61800-3:2004)]  |     |     |             |      |      |      |      |      |      |          |      |      |     |
| DC reactor (DCR)  |   |           | Built-in (IEC/EN61000-3-2, IEC/EN61000-3-12)   |     |     |             |      |      |      |      |      |      |          |      |      |     |
| Compliant with Electrical Safety Standards                  |   |           | UL508C, C22.2 No.14, IEC/EN61800-5-1:2007  |     |     |             |      |      |      |      |      |      |          |      |      |     |
| " # " Enclosure (IEC/EN60529)                               |   |           | IP21/IP55  |     |     |             |      |      |      |      |      |      |          |      |      |     |
| Cooling method  |   |           | Natural cooling  |     |     | Fan cooling |      |      |      |      |      |      |          |      |      |     |
| Weight/Mass [kg]  |   | IP21/IP55 | 10   | 10  | 10  | 10          | 10   | 10   | 18   | 18   | 18   | 18   | 23       | 23   | TBD  | TBD |

| Item  |   |           | Specifications  |     |  |     |     |     |     |     |     |     |     |     |      |      |
|---|---|-----------|---|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| Model   | VXA#**-4E   |           | 150   | 176 | 210  | 253 | 304 | 377 | 415 | 520 | 585 | 650 | 740 | 960 | 1170 | 1370 |
| Applicable standard motor (rated output) [kW] <sup>*1</sup> |   |           | 75  | 90  | 110  | 132 | 160 | 200 | 220 | 280 | 315 | 355 | 400 | 500 | 630  | 710  |
| Output ratings  | Rated capacity [kVA] <sup>*2</sup>                                      |           | 114   | 134 | 160  | 192 | 231 | 287 | 316 | 396 | 445 | 495 | 563 | 731 | 891  | 1044 |
|   | Voltage [V] <sup>*3</sup>   |           | 3-phase, 380 to 480V (with AVR function)  |     |  |     |     |     |     |     |     |     |     |     |      |      |
|   | Rated current [A]   |           | 150   | 176 | 210  | 253 | 304 | 377 | 415 | 520 | 585 | 650 | 740 | 960 | 1170 | 1370 |
|   | Overload current rating   |           | 110%-1min (Overload tolerated interval: compliant with IEC 61800-2)                                     |     |  |     |     |     |     |     |     |     |     |     |      |      |
|   | Rated frequency [Hz]  |           | 50, 60Hz  |     |  |     |     |     |     |     |     |     |     |     |      |      |
| Input Power Supply  | Main power supply (No. of phase, voltage, frequency)                    |           | 3-phase, 380 to 480V, 50/60Hz   |     |  |     |     |     |     |     |     |     |     |     |      |      |
|   | Control power supply auxiliary-input (No. of phase, voltage, frequency) |           | Single phase, 380 to 480V, 50/60Hz  |     |  |     |     |     |     |     |     |     |     |     |      |      |
|   | Voltage, frequency variations   |           | Voltage: +10 to -15% (Unbalance rate between phases is with in 2%) <sup>*4</sup> Frequen cy : +5 to -5% |     |  |     |     |     |     |     |     |     |     |     |      |      |
|   | Rated input current [A]   |           | 136   | 162 | 201  | 238 | 286 | 357 | 390 | 500 | 559 | 628 | 705 | 881 | 1115 | 1256 |
|   | Required power supply capacity [kVA]                                    |           | 95  | 113 | 140  | 165 | 199 | 248 | 271 | 347 | 388 | 436 | 489 | 611 | 773  | 871  |
| Braking   | Braking torque [%] <sup>*5</sup>  |           | 10 to 15  |     |  |     |     |     |     |     |     |     |     |     |      |      |
|   | DC braking  |           | Braking starting frequency: 0.0 to 60.0Hz, Braking time: 0.0 to 30.0s, Braking level: 0 to 60%          |     |  |     |     |     |     |     |     |     |     |     |      |      |
| EMC filter  |   |           | Built-in [Compliant with EMC standard (IEC/EN61800-3:2004)]   |     |  |     |     |     |     |     |     |     |     |     |      |      |
| DC reactor (DCR)  |   |           | Built-in  |     | Standard accessory (IEC/EN61000-3-2, IEC/EN61000-3-12) |     |     |     |     |     |     |     |     |     |      |      |
| Compliant with Electrical Safety Standards                  |   |           | UL508C, C22.2No.14, IEC/EN61800-5-1:2007  |     |  |     |     |     |     |     |     |     |     |     |      |      |
| " #" Enclosure(IEC/EN60529)                                 |   |           | IP21/IP55   |     | IP00   |     |     |     |     |     |     |     |     |     |      |      |
| Cooling method  |   |           | Fan cooling   |     |  |     |     |     |     |     |     |     |     |     |      |      |
| We ight/Mass [kg]   |   | IP21/IP55 | TBD   | TBD |  |     |     |     |     |     |     |     |     |     |      |      |
|   |   | IP00      |   |     | 62   | 64  | 94  | 98  | 129 | 140 | 245 | 245 | 245 | 330 | 530  | 530  |

Option - USB port equipped, three types of optional board can be mounted!!

- Relay output card (2 × 1c)/(7 × 1a)
- Analog input/output interface card
- Pt100 temperature sensor input card
- PROFIBUS-DP communication card
- CC-Link communication card
- LONWORKS communication card
- DeviceNet communication card
- CANopen communication card
- Ethernet communication card

\*1) Applicable standard motors are the case of IMO -pole standard motors.

\*2) The rated capacity indicates the case of 440V ratings.

\*3) Output voltage cannot exceed the power supply voltage.

\*4) Interphase voltage unbalance ratio [%] = (max. voltage [V] - min. voltage [V]) / 3-phase average voltage [V] × 67 (See IEC61800-3.) When unbalance ratio is between 2 and 3% please use optional AC reactor (ACR).

\*5) Average braking torque obtained by use of a motor. (Varies with the efficiency of the motor)