xylem

Let's Solve Water

Aquavar IPC

VARIABLE SPEED CONTROLLER - FAQ

BUILT IN THE
USA
ENGINEERED,
ASSEMBLED & TESTED

What are the new features on the Aquavar IPC variable speed controller?

New Aquavar IPC controller can handle up to 4 pumps (multi-pump control) without the need of external controller or PLC. Every pump + motor will require its own Aquavar IPC drive and its own transducer. Wiring uses RS-485 (2 wires) on a daisy chain configuration.

- **Multi-Master MulCtl:** Drive one (1) will be the master controller. The master controller controls the staging and destaging as well as the speed of all connected lag-pumps. The last staged pump runs on variable speed to achieve the set point. In Multi-Master operation all controllers can work as the master controller. Upon failure of any working master, the next pump in sequence will take up as master keeping the system running.

- **Multi-Master Sync:** The master controller controls the staging and destaging as well as the speed of all connected lag-pumps. All staged pumps run at the same speed to achieve the set-point. In the event that Drive one (1) fails, Drive two (2) will take over and will be now the Master Drive.

- **Fixed Master MltCtl:** This control mode will have one fixed master drive and up to 3 lag-pumps to run at variable speed. In this operation mode, the master controller varies speed of the last staged pump to achieve the set-point and all other staged pumps runs at maximum speed.

- **Fixed Master Sync:** This control mode will have one fixed master drive and up to 3 lag-pumps to run at variable speed. In this operation mode, all the staged pumps run on the same speed to achieve the set-point.

- **Fixed Speed Follower:** In this control mode, the master controller can run the pump at a variable speed and alternate up to three fixed speed pumps through the separate run relays. The master controller speed is varied to maintain a set-point.

The Aquavar IPC controller can run a multi-pump system on a single sensor or transducer

- **The Fixed Master Control:** The Fixed Master Control allows a sensor (wired into the master) to control the entire system.

CentriPro

a xylem brand

Aquavar IPC - FAQ

The Aquavar IPC controller has new parameters in the Start-Up Genie to improve performance and protections:

- **Programming for Output Filters:** If an output filter is installed for long cable lengths, the Start-Up Genie asks what type (reactor, dv/dt or sine wave) and automatically adjust internal electrical parameters for better electrical performance.

- **Pipe Fill Function:** This feature allows pumps to ramp up from minimum frequency (30 Hz) step by step. It monitors your system pressure and protects piping and equipment from water hammer effects created by trapped air and/or operating on the far right of the pump curve. **Note:** The pipe fill function will work on every pump start if the psi is below the 19-90 setting. It is programmed in the Start-Up Genie with the parameters and default values explained below:

  - ~ **Triggered Pressure (19-90):** The pressure reached when pipe fill will end and enter normal operation.

  - ~ **Speed Step (19-91):** The percent speed incremental for the next step up once the pressure increment is detected.

  - ~ **Steady Time (19-92):** Elapsed time the Aquavar IPC controller runs at every incremental speed during ramp up.

  - ~ **Dead Band (19-94):** Pressure system bandwidth to maintain during "Steady Time" in order to speed up to next percent speed.

  - ~ **Pipe Fill Max Pump:** Maximum number of pumps that can be staged with Pipe Fill Mode

- **Priming Delay:** This protection allows the pump to run while pump is priming, avoiding any alarm to trip like under pressure or no water/loss of prime. (0-16 minutes).

- **Low Suction Fault:** The suction protection provides the choice to select action against the high suction/low suction condition at the suction area. A suction pressure transducer with analog input signal or a pressure switch which will use a DI signal can be used.

  If an analog pressure transducer is selected, the following parameter should be programed in the Start-Up Genie:

  - ~ **Suction Input (19-30):** choose AI 54; AI 53 is used by the discharge pressure transducer (in constant Pressure application)

  - ~ **Low Feedback Value (6-24):** Enter transducer MIN pressure

  - ~ **High Feedback Value (6-25):** Enter transducer MAX pressure

  - ~ **Low Suction Fault (19-31):** Choose: (*Alarm*) to enable trip, (*Warning*) just to show on display the condition, (*Man. Reset Alarm*) to trip and reset manually or (*Disable*) to disable.

  - ~ **Low Suction Cut-out (19-33):** Set low pressure (psi) to alarm

  - ~ **Low Suction Delay (19-34):** Set elapsed time to trip

  - ~ **Low Suction Restart Time (19-36):** Set elapsed time to restart

Aquavar IPC - FAQ

    ~ High Suction Cut-out (19-37): Set high pressure (psi) to alarm

    ~ High Suction Delay (19-38): Set elapsed time to trip

    ~ High Suction Restart Time (19-39): Set elapsed time to restart

If a pressure switch is selected with a digital input, the following parameters should be programed in the Start-Up Genie:

    ~ Setup Low Suction Protection through Digital Input 27? Choose: (*Alarm*) to enable trip, (*Warning*) just to show on display the condition, (*Man. Reset Alarm*) to trip and reset manually or (*Disable*) to disable

    ~ Low Suction Cut-out Delay: Set elapsed time to trip while low pressure

    ~ Setup High Suction Protection through Digital Input 29? Choose: (*Alarm*) to enable trip, (*Warning*) just to show on display the condition, (*Man. Reset Alarm*) to trip and reset manually or (*Disable*) to disable

    ~ High Suction Cut-out Delay: Set elapsed time to trip while high pressure

- **All Zones Failure Function:** This feature determines pump operation after all sensor signals are lost. Operation options include stopping, running at constant speed or stop and trip when all transducers are lost.

    ~ Stop: if all transducer communication is lost then pumps will stop and will resume at normal operation when all sensor communication is recovered.

    ~ Constant Speed: if transducer communication is lost then the system will keep running the number of pumps programed on par. (19-41) at the speed programed at par. (19-42)

    ~ Stop & Trip: if all transducer communication is lost, then all pumps will stop and a manual reset is required to resume operation.

Does the Aquavar IPC controller still have Start-Up Genie Assistance?

Yes, the new Aquavar IPC controller has the Start-Up Genie for easy start-up programing. A basic set-up can be programmed in less than 5 minutes. Access to the full parameters menu is also available for advance programing.

Is there another way to setup and configure this controller?

Yes, there is a Start-Up guide with easy to read instructions. Access to the guide at http://goulds.com/pump-controllers/aquavar/. Also, the Autoset feature can minimize programming by quickly setting default parameters that work with many applications.

Aquavar IPC - FAQ

What is different for multi-pump operation with the new Aquavar IPC controller?

The Aquavar IPC controller now communicates via RS-485 (two wires) and works with 2, 3 or 4 pumps without the need of an external PLC. The multi-color wiring harness is no longer required for duplex operation.

Does the Aquavar IPC controller have backward compatibility?

The new Aquavar IPC is backward compatible in Fixed Master mode only. A single transducer is wired into the new Aquavar IPC for control of the entire system. RS485 communication is wired from the new Aquavar IPC to the basic version per instructions for Fixed Master Control.

Does Pricing Change?

Yes, pricing has increased nominally. It is still less expensive than other multi-pump solutions.

Where do I go for product support?

Controls Hotline: (866) 673-0445

Ryan VanNederynen ryan.vannederynen@xyleminc.com

Matt Renn matt.renn@xyleminc.com

Felix Briceno felix.briceno@xyleminc.com

Alexander Pytlak alexander.pytlak@xyleminc.com