Hydrokos 25 Variable Speed Pump Controller

The Hydrokos 25 is a variable speed controller for one to six pumps, with a colour touch screen interface and a streamlined setup process. Level, pressure and temperature modes cover most duties, and time stamped alarms, logged data and trend graphs give the information needed for tuning and preventative maintenance. One drive is fitted per pump.





PANEL VARIATIONS

The standard panel suits most installations, and five factory variations cover the rest. Rain and mains changeover holds water supply when the pumping system is off or locked out. Generator variations allow manual or automatic changeover to standby power. Enclosures can be upgraded to IP56, 316 stainless steel or free standing. The variations are:

- /BMS: volt free outputs for power on, low pressure, pump run and fault
- /SMS: ME-Link module for alarm and status messaging
- /RMC: rain and mains changeover with pulse latching solenoid valve
- /GEN: generator input socket and manual changeover switch
- /ATS: automatic generator changeover

PANEL HARDWARE

Every panel is built around a pad-lockable mains isolator, with circuit breaker protection on the control circuitry, the inputs and each pump individually. Supply is single phase 230Vac or three phase 400Vac. An analog 4-20mA input takes the level, pressure or temperature transducer, and up to eight digital 24Vdc inputs cover backup floats, pressure switches, thermostats, a system enable and a low flow switch. A 16 bar pressure transducer and shielded VSD motor cables are supplied with the panel.

KEY FEATURES

- Colour Touch Screen HMI
- Variable Speed Drive per Pump
- Level, Pressure and Temperature Modes
- Control of One to Six Pumps
- IP44 Powder Coated Enclosure
- Modbus RS485 for SCADA

PRODUCT APPLICATIONS

- Water Transfer and Tank Fill
- Pressure Boosting
- Sewage and Stormwater Pump Out
- Hot Water Recirculation and Chiller Supply

PRODUCT SPECIFICATION

Variable Speed Drive Range

Model No.	No. of Pumps	Phase / Voltage	Variable Speed Drive Rating Options	Enclosure Size
ALC-63121	1	1 Phase / 230Vac	-A to -C	500 x 500 x 300mm +
ALC-63120	1	3 Phase / 400Vac	-A to -K	500 x 500 x 300mm +
ALC-63221	2	1 Phase / 230Vac	-A to -C	500 x 500 x 300mm +
ALC-63220	2	3 Phase / 400Vac	-A to -K	500 x 500 x 300mm +
ALC-63321	3	1 Phase / 230Vac	-A to -C	600 x 600 x 300mm +
ALC-63320	3	3 Phase / 400Vac	-A to -K	600 x 600 x 300mm +
ALC-63421	4	1 Phase / 230Vac	-A to -C	600 x 600 x 300mm +
ALC-63420	4	3 Phase / 400Vac	-A to -K	600 x 600 x 300mm +

Single phase panels take 1 Phase 230Vac in and 3 Phase 230Vac out.
Enclosure sizes increase for higher kW ratings, and additional panels for up to six pumps are available.

VARIABLE SPEED DRIVE RATING GUIDE

Each panel code carries a suffix that sets the drive rating fitted per pump. Eleven standard ratings are available, from 0.75 kW at -A, through 1.5, 2.2, 3, 4, 5.5, 7.5, 11, 15 and 18.5 kW, to 22 kW at -K. Additional ratings can be supplied on request.

Single phase panels take -A to -C, so 2.2 kW is the single phase ceiling. Three phase panels take the full range. Confirm the final panel dimensions against the selected rating, since the sizes in the range table are a starting point.

ENCLOSURE AND CONNECTIVITY OPTIONS

The standard IP44 enclosure is powder coated mild steel with a removable gland plate, integral ventilation and a thermostatically controlled fan. It can be upgraded to IP56 with an inner door and vent covers, to 316 stainless steel for corrosive environments, or to a free standing cabinet on a plinth. Separate compartments for power authority meters are available where the panel doubles as the point of supply.

Modbus RS485 for SCADA is standard, and a Modbus TCP gateway with an ethernet port suits sites running on IP networks. An output can also be provided for a normally closed tank top up valve.

CONTROL MODES

System type is selected at commissioning and sets how the controller behaves. Speed is controlled proportionally for level and temperature, and by PID for pressure, with adjustable responsiveness. Control direction covers filling or emptying a tank, boosting or dropping pressure, and heating or cooling. Each mode adds its own functions, as follows:

- Level: hydrostatic transducer, maintain minimum level, tank top up from mains
- Pressure: jacking pump control, pipe fill, sleep assist, mains bypass on RMC
- Temperature: sleep enabled at setpoint, or one pump always circulating

PUMP MANAGEMENT

The controller runs up to six pumps in any combination of duty, duty assist and standby. Duty is shared on an adjustable change period with bumpless transfer, and additional pumps are staged in to hold setpoint and dropped again when demand falls. Starts and stops are staggered to limit current draw and reduce surge and hammer. Pump limiting caps maximum flow or power, and manual mode reverts to auto after ten minutes.

FAULT PROTECTION

Protections cover high and low level, pressure or temperature according to the system type, with automatic restart attempts on low pressure. Maximum run activates after thirty minutes at full speed to protect against a burst pipe, and no flow protection after thirty seconds where a flow switch is fitted. Pump cycle protection catches repeated short cycling from a faulty non-return valve. Anti-seize runs pumps during low use, and a failed transducer shuts all pumps down.

