

Application Example – VLT AQUA Drive

Parameter set-up for Tank Level Control



This application is to keep a constant level in a tank by controlling a pump pumping out of the tank. It will also use the check valve ramp. The check valve ramp time is used to control the check valve closure to prevent water hammer when stopping the pump.

Assume a transducer to maintain a constant level with the following specifications:

Input: 24 volt supply from drive.

Output: 4-20 mA

Range: 0-12 ft water column (wc)

Set point: 7 ft wc

The user will need to enter motor parameter data in addition to the parameters listed below. The motor is assumed to have a base speed of 3500 RPMs at 60 Hz. Parameter values listed below are suggested and may not match user requirements.

Parameter Settings:

Number	Parameter Name	Setting	Units
0-02	Motor Speed Unit	Hz	
1-00	Configuration Mode	Closed Loop	
1-03	Torque Characteristics	AEO VT	
3-02	Minimum Reference	0	ft WG
3-03	Maximum Reference	12	ft WG
3-15	Reference 1 Source	No function	
3-85	Check Valve Ramp Time	10	s
3-87	Check Valve Ramp End Speed [HZ]	20	Hz
4-12	Motor Speed Low Limit (Hz)	25	Hz
4-14	Motor Speed High Limit (Hz)	60	Hz
4-53	Warning Speed High	3600	RPM
5-10	Terminal 18 Digital Input	Start	
5-12	Terminal 27 Digital Input	Coast Inverse	
6-22	Terminal 54 Low Current	4	mA
6-23	Terminal 54 High Current	20	mA
6-24	Terminal 54 Low Ref./Feedb. Value	0	
6-25	Terminal 54 High Ref./Feedb. Value	12	
20-00	Feedback 1 Source	Analog input 54	
20-12	Reference/Feedback Unit		ft WG
20-20	Feedback Function	Maximum	
20-21	Setpoint 1	7	
20-81	PID Normal/ Inverse Control	Inverse	
20-83	PID Start Speed [Hz]	0	Hz
20-93	PID Proportional Gain	2	
20-94	PID Integral Time	8	s

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