

NXS/NXP ADVANCED LEVEL CONTROL

This application software is part of the Water Solutions application package, ASFIG100

Overview

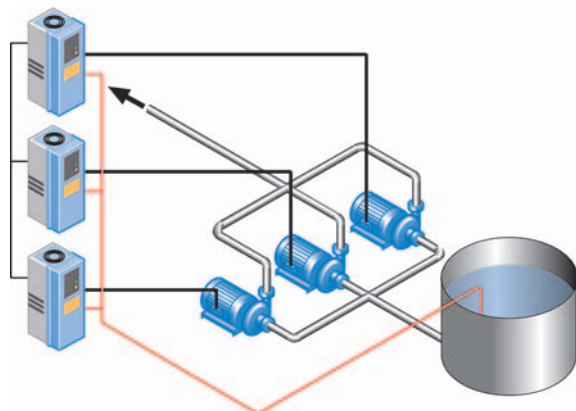
With the Advanced Level Control application you can build a system where up to three drives control the pumping from a storage tank. One AC drive controls the leading pump and handles the main regulation. The other two drives are started if the liquid level in the tank is close to reaching the edge of the tank. This system guarantees that the flow from the tank remains as steady as possible. If there is excessive amount of water in the tank for the leading pump to handle, and the buffering capacity of the tank is not enough, the auxiliary pumps will start before the tank flows over.

The leading drive runs either as a PID regulator or linearly between the defined upper and lower limits. In case of great amount of incoming water, the leading drive will run at full speed and the tank will use its buffer capacity. If the level in the tank continues to rise, the auxiliary pumps will start when the defined level is reached.

The auxiliary pumps can either run at nominal production speed between the upper and lower limits or run linearly between the limits (default). It is also selectable if the auxiliary drives start from the lower or higher (default) limit when in linear mode. If the auxiliary drives run in nominal production mode they will always start at the higher level.

The application also includes a function that regularly cleans the impellers of the pump. Each time the system changes the leading pump, it will speed up to maximum speed and stay there for the time defined with a parameter.

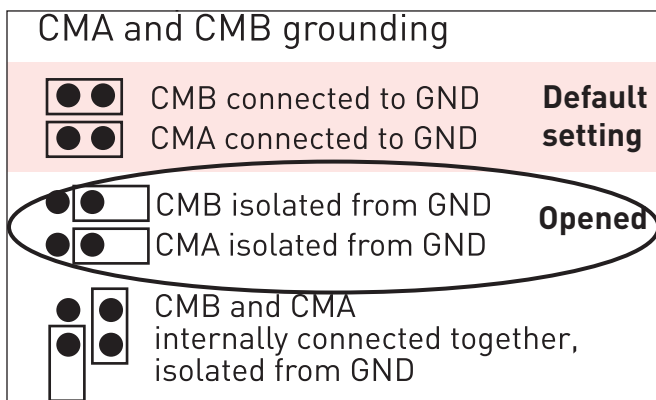
- Control level in a tank
- Leading pump as either PID- or linear-controlled
- Auxiliary pumps running at either full speed or linear controlled
- For 2-3 pumps connected together as one system
- Impeller cleaning function
- Change of regulating drive on fly
- Auto change on fly
- Self supervision
- Easy to connect and commission
- Spare unit always available
- Always soft starts
- Sleep function
- Possibility to use different sizes of motors
- IP54



1.1 I/O terminals on internal control board

Terminal	Signal	Description
1	+10V _{ref}	Reference output Voltage for potentiometer, etc.
2	AI1+	Analogue input, voltage range 0–10VDC (programmable)
3	AI1-	I/O ground Ground for reference and controls
4	AI2+	Analogue input, current range 4–20mA (programmable) Actual value 1
5	AI2-	
6	+24V	Control voltage output Voltage for switches etc. max. 0.1 A
7	GND	I/O ground Ground for reference and controls
8	DIN1	Start/Stop Contact closed = Regulating
9	DIN2	Flushing (programmable) Contact closed = start + nominal speed
10	DIN3	PID reference 2 enable (programmable) Contact closed = PID ref 2
11	CMA	Common for DIN 1–DIN 3 Open i.e. isolated from ground
12	+24V	Control voltage output Voltage for switches (see # 6)
13	GND	I/O ground Ground for reference and controls
14	DIN4	Fault reset (programmable) Contact closed = Reset
15	DIN5	Run Disable (programmable) Contact closed = Disable
16	DIN6	Communication input Signals from communication line from all drives in installation are read on this input
17	CMB	Common DIN4–DIN6 Open i.e. isolated from ground
18	AO1+	PID actual value 1 Analogue output Range 0–20 mA/R _L , max. 500Ω
19	AO1-	
20	DO1	Digital output Communication output
21	R01	Relay output 1 RUN
22	R01	
23	R01	
24	R02	Relay output 2 FAULT
25	R02	
26	R02	

Jumper block X3



NOTE!

CMA and CMB (Jumper X3) to be opened, i.e. isolated from ground.