

MULTIMASTER PFC FOR REDUNDANT PUMP CONTROL

Multimaster PFC, Vacon's new-generation PFC application, has been developed for simultaneous control of up to 3 pumps, fans or compressors. In conventional pump installations, the pumps are controlled by a single frequency converter, and a separate contactor unit is required to connect additional pumps to the system. Vacon's Multimaster PFC application makes separate contactors obsolete as each motor is individually connected to a Vacon frequency converter, and they communicate with each other via an internal bus. In this way, the control system is fully redundant.

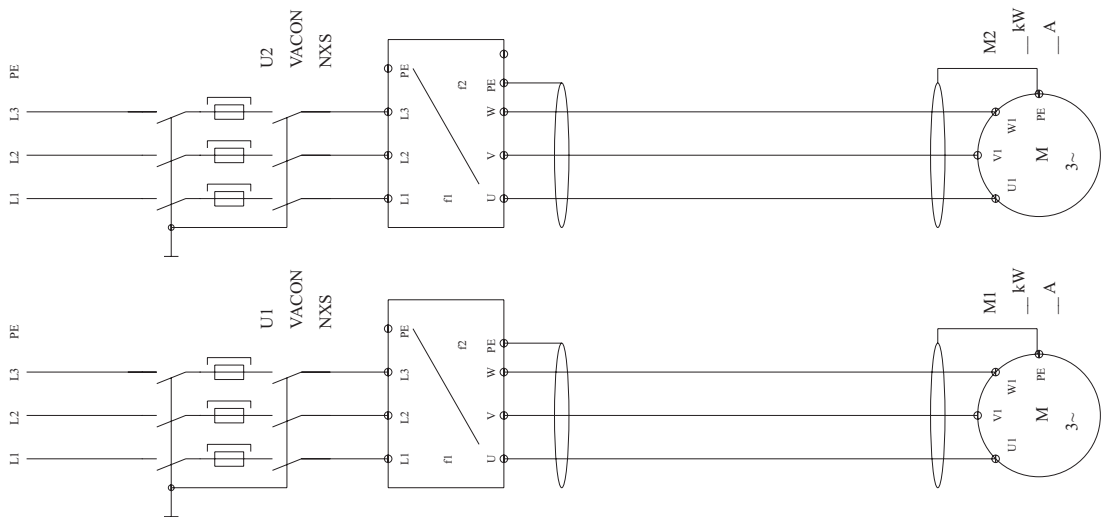
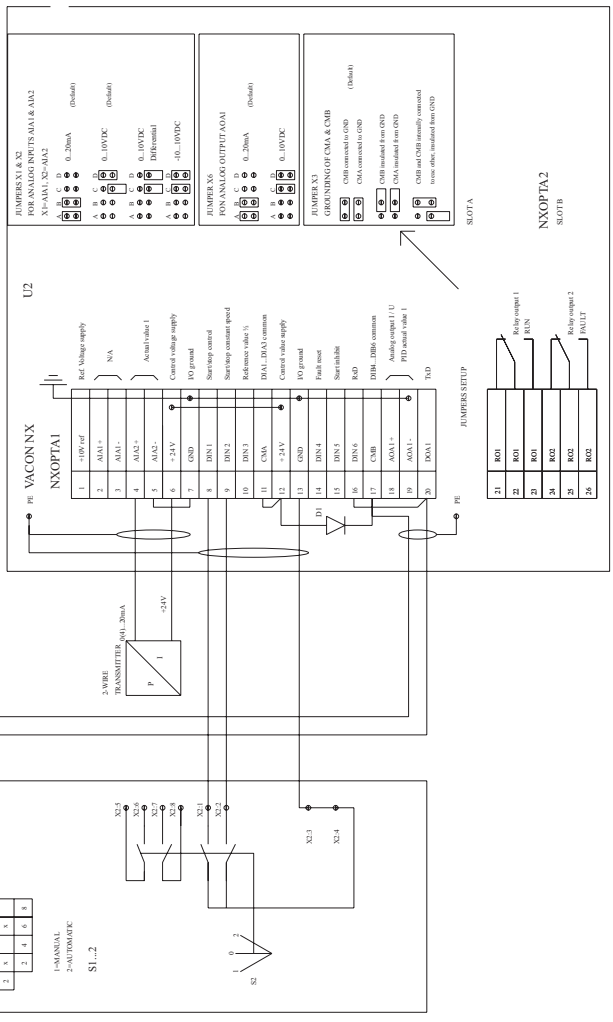
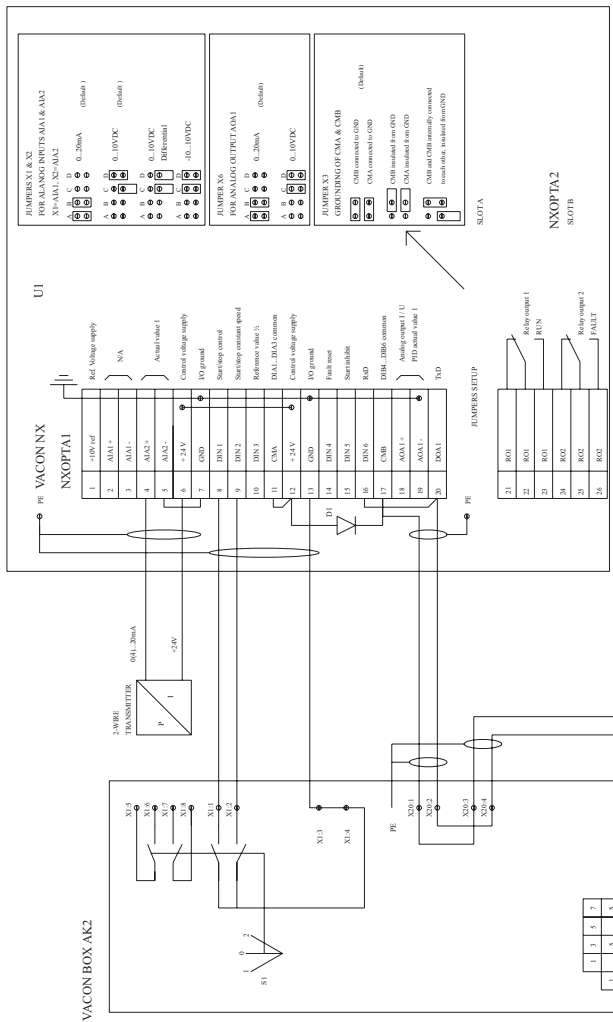
As the consumption grows, drive No 1 runs as a master drive and controls the motor speed according to the current need. When the maximum flow rate has been reached but more capacity is needed, drive No 1 locks itself to the maximum flow rate and the master functions are transferred to drive No 2. Drive No 2 and, subsequently, drive No 3 starts controlling from their zero flow rate in the same manner as drive No 1.

As the consumption decreases, drives No 1 and 2 run at the maximum flow and drive No 3 controls the flow. When the consumption has decreased to the level where drive No 3 reaches its zero flow, it stops and transfers the master functions to drive No 2. The same procedure recurs when drive No 2 has

reached its zero flow. When the last frequency converter has reached its zero flow, it stops automatically and transfers into sleep mode, continuing to supervise the actual value for automatic restart if necessary.

Benefits

- Smooth starts, protecting the grid and the mechanics
- Loss of pressure in the system can be compensated
- Fully redundant system enables control over the process even though one of the drives is damaged
- Auto-change function is possible in any phase of control, no pressure shocks in the network
- PID control which can also be bypassed (level control)
- Easy installation and commissioning
- Auto-change function is possible for pumps with different nominal flows
- Sleep function and (auto-change) timers
- Internal output pressure control
- Possibility to control compressors (for sufficient lubrication)
- IP54 enclosure class enables installation, for example in pumping stations without extra protection
- belongs to the Water Solutions Application Package (ASFIG100)



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