Automatic pump control module for fluid level control in tanks

**Description:**
This unit can fill or empty a tank automatically at pre determined levels. It also monitors the operation of the pump. If the pump fails to fill or empty the tank within a preset time, it indicates that there is a problem with the pump and it cannot pump properly. In that situation, the controller turns the pump OFF and gives out a “pump fail” alarm, and protects the pump from dry running. With a single jumper setting the unit can work in tank filling or tank emptying mode. The inputs can receive signal from any type of float switches with normally open or normally closed contacts.

**Features:**
- Fill or Empty a tank - over fill and sump low alarms
- Single switch operation
- Pump dry run protection
- De-bounced inputs for error free operation when liquid is splashing
- Works even with only two floats
- Can be set-up within hours
- User friendly
- Hassle free wiring
- Saves time and money
- More reliable
- Fits in to small panels
- 24 V DC or 100-240V AC operation
- Automatic or manual operation possible
- Multi tone alarm for different faults
- Relay outputs
- Easy mounting
- Technical support & documents available.

**Applications:**
- Bilge level control
- Fresh water filling
- Sewage treatment/ lifting plants
- Fluid level control systems
- Overhead tank filling
- Waste oil treatment plant
- Agriculture
- Cargo unloading
- Beverage industries
- Diaries...Etc.

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**Operation: Manual (Hand)**
In Manual/hand operation, (Mode switch put to “Hand”), the input status of the float switches will be ignored. To start the pump, turn to “HAND” position. To stop the pump, turn to “OFF/reset” position.

**Operation: Automatic**
With Mode switch in the “Auto” mode (selector switch put to “Auto”), the pump operation will be automatic.

a) **Tank Fill operation:** (Jumper J1 open)
The pump starts automatically when the level goes below float 1 and stops automatically when the level reaches to float 2. Thus keeps the tank filled.

b) **Tank empty operation:** (Jumper J1 closed)
The pump starts automatically when the level goes above float 2 and stops automatically when the level reaches down to float 1. Thus keeps the tank emptied.

**Overload / over temperature trip:**
In the event of overload, the pump is stopped. If you are planning to use any external tripping commands or over temperature relays, connect their normally closed contacts in series to the “IC” input of the controller. When jumper J2 is open, the yellow light glows indicating overload/temp: trip and the buzzer sounds. If external tripping command is not used, connect the input “IC” directly to supply positive/live (J2 closed).

**Sump low / Over fill alarms:**
If the “sump low” or “over fill” floats are activated during any time of operation in “auto” mode, the corresponding alarm output will be activated, and the pump is turned OFF.

(Note: In the event of “sump low” and “over fill” alarms, the pump stops and only the corresponding alarm lights comes ON. There will not be any buzzer output. This is purposely designed so that you can use those “over fill-sump low” alarm outputs to activate other contactors or to start other pumps. If you want to get an audio alarm for the “sum low – over fill” alarms, connect separate buzzer in parallel to the lamps or modify the circuit with diodes or relay.)

**Pump fail alarm:**
This feature prevents dry running of the pump if the pump fails to pump the liquid and maintain the level in tank within a preset time. The operation is as follows: when the fluid level goes below float 1, the pump starts and tries to fill the tank. But for some reason, (like pump failure, leaks) if the pump is not able to bring the level just above float 1 within a preset time period, an alarm is generated. This stops the pump and yellow indicator flashes with long buzzer beeps (1 sec off-2 sec on). The same protection is available in tank empty mode also, but by sensing float 2 status. The pump fail alarm time is preset to 12 minutes by default. If you want a different time or if you do not want to use this feature, it can be set at the time of ordering. (Please see order code information below).

**Resetting of an alarm:**
In the event of any alarm, corresponding alarm output will be activated and the pump is stopped. To restart the pump, rectify the alarm condition and reset the alarm by turning the mode switch to “alarm reset / stop” position momentarily and then putting back to “Auto” position again.

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**Note**: Specifications and Drawings are subject to change without notice. Please see the product leaflet for updated drawings.

**Order Code:**

DNNNN020012

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**Specifications:**

<table>
<thead>
<tr>
<th>Dimension (W x D x H)mm</th>
<th>71.2 x 59.5 x 107.6 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>DIN Rail or Screw mounting</td>
</tr>
<tr>
<td>Terminal connections</td>
<td>Screw type wire connectors</td>
</tr>
<tr>
<td>Number of inputs</td>
<td>6 discrete inputs</td>
</tr>
<tr>
<td>Number of outputs</td>
<td>4 relays</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>24VDC or 100 to 240 V AC (Depending on type)</td>
</tr>
<tr>
<td>Output relay rating</td>
<td>4 no’s N/O, 8 Amps Max.</td>
</tr>
</tbody>
</table>

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