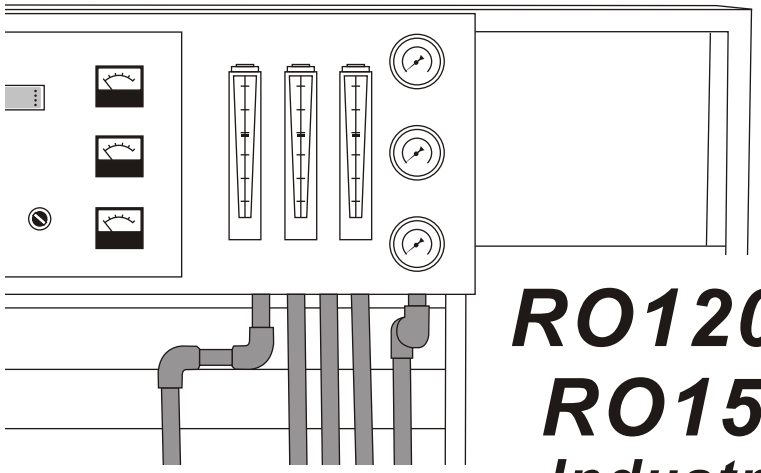
PUREPRO DRINKING WATER SYSTEM

REVERSE OSMOSIS SYSTEM



RO12000-RO15000
Industrial RO System

Thank you very much for selecting Pure-Pro Water Corp.
In order to bring the best use of your system, please read the user's manual carefully before installation and follow the regulations.

Feed Water Quality Requirement

Feed water pressure	1.5KG / cm^2 ~ 4KG / cm^2
Hardness	<50 PPM (AT CACO3)
Cl	< 0.1 PPM
Turbidity	< 1 NTU
Feed Water TDS	< 1500 PPM

PS: Other than water quality described above, Please contact a nearest technician for more info.

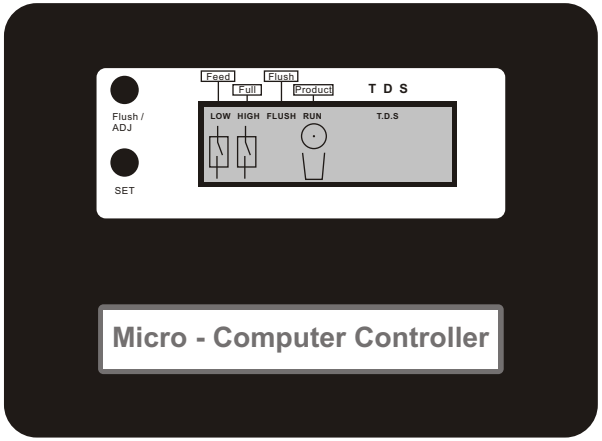
System specifications

Models	12000GPD/15000GPD	
Dimension	(L)2500 x (W)730 x (H)1600	
N.W	350 KGS	
Voltage	Available in 380V, 410V, 440V	
Hertz	Available in 50 Hz, 60Hz	
Current	11A	
Booster pump	4.2KW	
In/Out diameter	IN 11/4" ;OUT 1"	
Pre-filters	20"-PP x 7	
RO membrane	TFC-BW-4040 x 8	
Pump	CH 4-40 3ψ380V	CR 5-20 3ψ380V
Pressure gauges	Inlet / Operation	
Water quality indicator	T.D.S.	
Water flow indicator	Flow meter x 2	
Controller	Digital computer controller box	

Memo

Problems	Possible causes	Solution
RO system is not functioning	1. Wrong setting for computer controller.	1. Check the setting.
	2. The pressure of feed water isn't high enough. (should be higher than 1.5kg / cm^2)	2. Check water-in pressure and if pre-filter clogged.
	3. The location difference between RO system and feed water tank.	3. Change the control method of RO system and adjust low pressure switch.
	4. The power for RO system is abnormal.	4. Check power supply and also adjust voltage. Tolerance to be within the ± 5% is considered as normal.
RO system can't work after flushing	1. Control box in condition of high water level.	1. Check pure water tank and circuit of high water level.
	2. Control box in condition of low water level.	2. Check feed water and pre-filters and pump.
	3. Control box is malfunctioned.	3. Change computer box.
Insufficient water out-put of RO membrane	1. Flush solenoid valve is malfunctioned.	1. Change flush solenoid.
	2. Restrictive valve is not fully open.	2. Adjust the restrictive valve.
	3. Pressure needle valve is malfunctioned.	3. Adjust pressure needle valve and check if needle valve is normal.
	4. Insufficient inlet water pressure.	4. Pump head is worn out thus cause insufficient pressure.

■ Computer controller operation



Functions of Auto-Flush Computer Controller:

1. The machine will start functioning 10 seconds after the main power is switched on.
2. The machine begins to flush for 1 minute before it starts to work.
3. The machine will begin automatic flush for 30 seconds as soon as the water container is full.
4. The automatic flush begins for 15 seconds each time before re-producing water.
5. The machine automatically flushes itself for 1 minute after a 4-hour water production.

Options:

1. Water quality (TDS) settings.
2. Pump working time settings. (Not recommended)
3. Flush pressure settings (ON / OFF). (Not recommended)
4. Stand-by flush timer settings (ON / OFF).
5. Auto-flush timer settings.

Settings:

1. By pressing the SET button for 3 seconds, the screen display will change accordingly:
   - **Display 1: TDS (000PPM) settings**
     Water quality (TDS) can be set from 000PPM to 100PPM

- **Display 2: Pump working time settings H00 (ON / OFF) (not recommended)**
  The pump working time settings can be set from H01 to H99 (hour).
  H00=OFF
- **Display 3: Flush pressure settings P=0(ON / OFF) (not recommended)**
  P=1 indicates this function is ON. P=0 indicated this function is OFF.
- **Display 4: Stand-by flush time settings (ON / OFF)**
  F01~12: From the 1st hour to 12th hour of stand-by period, the machine will automatically flush itself for one minute every hour.

2. To make setting modifications, please do it in the proper screen display. After choosing the right screen display, press "FLUSH / ADJ" to confirm. The screen will jump to the initial display in 5 seconds after the modifications are done.

   A. For the reset, please follow the below steps.
   a. When the main power is off, please press "FLUSH / ADJ" and "SET" buttons at the same time until the screen starts flashing.
   b. Wait until the "beep", release the two buttons. After the 13th "beep" sound, the machines will start flushing itself automatically.
   c. After the flush, turn on the power and start using the machine.

   B. Manual flush can be done by pressing "FLUSH / ADJ" button for 3 seconds. The machine will flush for 1 Minute.

3. Error message code
   L-1 : Pressure loss for pump water making. < Stop buzzer gives 1 sound of reminding >
   L-2 : Overhigh pressure of pump flushing. < No stop buzzer warning >
   L-3 : Pressure loss for water tank air pressure. < No stop buzzer warning >
   L-4 : Water making time over the preset value. < Stop buzzer gives 1 sound of reminding >
   TDS : Over preset value flashing. < No stop buzzer warning >

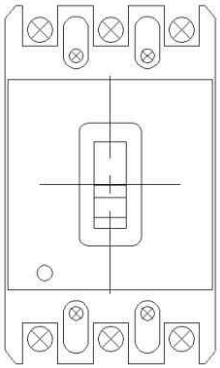
   ※ For emergence of above error messages, buzzer will give 10 sounds at an interval of 30 minutes.

Problems	Possible causes	Solution
Membrane clogged	1. There isn't sufficient softened water supplied to the RO system.	1. Check the water softening process and also calculate if softening quantity can supply the RO system to purify.
	2. Drain valve or tubing clogged.	2. Check drain valve and tubing.
	3. The rate of drain and pure water shows abnormal.	3. Adjust the rate to/or above 1:1.
	4. The TDS of feed water (or the recovery TDS) is too high.	4. Check feed water source and also decrease the recovering rate. The consistence of recovery must be less than TDS 1500 PPM
	5. Colloid suspension is too much.	5. Install UF or 0.45u minus filter on pre-filters.
	6. Feed water quality is too poor.	6. Improve the feed water quality or increase pre-filters.
	7. Contained too much Iron.	7. Expose to air or add medicament for re-filtration.

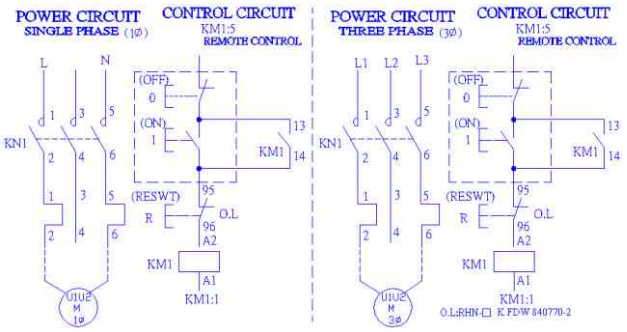
■ Trouble shooting

Problems	Possible causes	Solution
RO system pump is not functioning	1. Wrong power in.	1. Check power phases.
	2. Electrical solenoid switch is malfunctioned.	2. Check the coil and joint points (use a multimeter R x 1 to see if it's connected.)
	3. Electrical solenoid switch is overload, protective switch shuts down.	3. Measure the operation current with clamp meter, and also set the measurement to be 1.25% more. (Press the stick back)
	4. Control box is on the condition of lower water pressure.	4. Check the pressure difference between water-in and pre-filter, also if the joint point to low pressure switch is connected. (use a multimeter R x 1)
	5. Tank shut-off switch is malfunctioned / The joint point for post carbon and sand filter isn't connected.	5. Check the joint between with multi-meter R x 1, and test if AB point is correct.
	6. Control box is malfunctioned.	6. Check if there is electric current output to electrical solenoid switch from the brown wiring of computer box. Also check if the power supply is normal.
	7. Axle center of pump is clogged with rust	7. Check if noise appears when pump works. If so please change the pump.
	8. Pump head is stuck	8. Please remove pump head. Check if the manual pump head can work. If not please change the pump head.

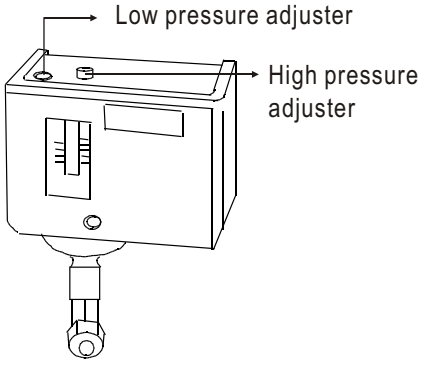
■ Electric protective switch



< Circuit diagram >



Low pressure switch



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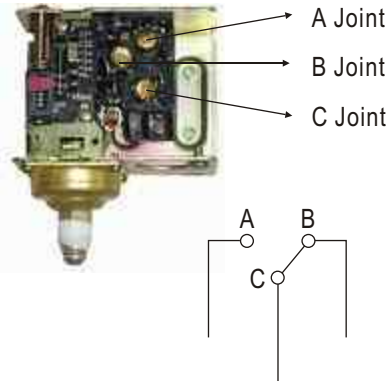

1. Low pressure adjuster:
   To lower pressure, turn anticlockwise And vice versa.
2. High pressure adjuster:
   To rise pressure, turn anticlockwise And vice versa.

Joint points:
1. No joint on A
2. B and C joints are connected with green wire to Control box

Installation

1. Connect PVE tubing to 11/4" water-in and ball valve pipe.
2. Connect 1" tubing to "drainage" as indicated.
3. Connect 1" tubing to "pure water" as indicated. (or to water storage tank, if)
4. Connect earth link wire (green) from the control box to the floating ball switch on the tank in order to control full water leverage.
5. Connect power supply. (Note: voltage)

NOTE:

1. Please confirm the power supply applied to the system.
2. Please confirm the connection of pure and drain water tubing to be correct.
3. Please confirm the inner diameter of main power wire no less than 3.5mm^2
4. Wire connected to full water switch and floating switch shall not be used for other purposes.
5. When with connection to water softener, please set up the reverse flush switch function to prevent the main RO system from sucking in the resin and salt water. (the main RO system should stop operating when reverse flush starts)
6. Please clean pre-filters every week to keep sufficient water-in supply.

Operation process & maintenance

Attention Before Operation:

A. Feed water pressure exceeds 1.5Kg/cm^2
B. Supply the same electrical current in accord with the voltage of the main system. Supplied electrical current is better within ± 5% in compare to the main system voltage.
C. Connection for pure / drainage is completed.

How to start the system:

(note: please complete above A. B. C. points before starting the system)

A. Switch on power supply.
B. Switch on feed water pump, and make sure feed water pressure exceeds 1.5Kg/cm^2
C. Switch on RO system pump.
D. There will be 10 seconds delay in starting the power. (a mechanism setting from low pressure switch in order to prevent the malfunction of the pump from non-stop operating.
E. Adjust the proportion and pressure of pure and drainage water
   a. First adjust the needle valve to make the proportion on pure and drainage water be 1:1. The worse the water quality is, the bigger proportion is.
   b. Adjust water controller valve to be same

Maintenance:

1. Pre-treatment Filter: According to the water quality, service life can last for 1~3 months.
2. Check the actual fluid of permeate for concentrate water. Make a record. Once the permeate water production is down to 10~15% of the normal production for, an acid washing for the RO membranes is required.
3. Check the pressures of inlet water and operation pressure. Make a record.
4. Press the compelling button (flush) on the control panel to test whether the operation is normal