IOM ULTRAF 6R31

Controller Pressure Reducing Ultrasonic Hydrometer
2”- 4” (10 bar)

RAPHAEL VALVES INDUSTRIES

Sep-24

DESCRIPTION

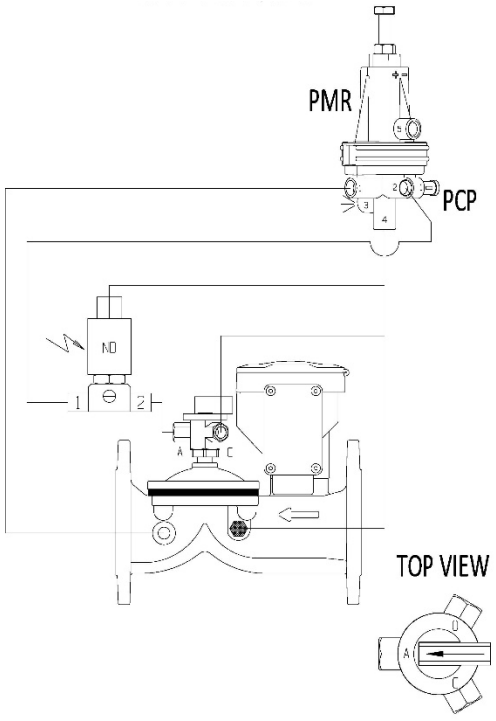
This programmable water meter and pressure reducing valve, ULTRAF 6R31, is a NC (Normally Closed) electric controlled valve designed to reduce a higher upstream pressure into a preset lower downstream pressure and to maintain this pressure constantly regardless of flowrate or upstream pressure fluctuations. “Normally” means the state of the Ultraf when the solenoid is under **“close”** command. Ultraf contains a volume-based irrigation controller that is programmed using the Raphael Application via mobile phone and Bluetooth® communication.

INSTALLATION

- Before installing the Ultraf, flush the pipeline to remove scale, dirt and other particles that might affect the valve’s performance.
- Install the valve as indicated by the arrow on the valve’s body showing flow direction.
- Make sure that the solenoid has the right specifications and connected to the Ultraf solenoid activation output (consult Ultraf “Installation and Operation Guide”).
- It is recommended to install isolation valves upstream and downstream the Ultraf.
- Turn the 3-way selector 5 to the “Close” position and turn on the water supply to the valve.
- Check for leaks; tighten bolts & fittings if necessary.

PARTS LIST

1. Body
2. Cover
3. Diaphragm
4. Self-flushing “Finger” filter
5. 3-Way selector
6. 3-Way pilot model PR
7. Pressure adjusting screw
8. 3-way Latching solenoid 12VDC
9. Solenoid’s manual override



OPERATING INSTRUCTIONS

1. Make sure that there is a downstream flow demand.
2. Turn adjusting screw 7 counterclockwise all the way.
3. Turn the 3-way selector 5 to the “Auto” position.
4. Energize solenoid 8 by initiating “manual volume” irrigation (consult Raphael “Irrigation Controller App User Guide”).
5. Turn adjusting screw 7 clockwise, until water will be discharged from the vent (3) of pilot 6 and the Ultraf will start to open.
6. To increase downstream pressure, continue to turn adjusting screw 7 clockwise one turn at a time, allowing some time between turns for the valve to respond. Check downstream pressure until required pressure is achieved.
7. To decrease downstream pressure, turn adjusting screw 7 counterclockwise one turn at a time, allowing some time between turns for the valve to respond. Check downstream pressure until required pressure is achieved.

To manually open the Ultraf completely, turn the 3-way selector 5 to the “Open” position. Please note that by so doing the pressure downstream will be as high as the pressure upstream.

To manually close the Ultraf, turn the 3-way selector 5 to the “Close” position.

To operate the Ultraf by an electric command, turn 3-way selector 5 to the “Auto” position. Turn override 9 counterclockwise then back to “Auto” (vertical) position. .

To irrigate - initiate solenoid valve 8 to “Open” using the App. or turn override 9 clockwise (open position).

To stop irrigation - initiate solenoid valve 8 to “Close” using the App. or turn override 9 counterclockwise (close position).

MAINTENANCE

- Check downstream pressure. Adjust if required.
- No maintenance is required. However, from time to time it is recommended to rotate the 3-way selector 360° to prevent sticking by sediments.
- It is recommended that the Ultraf will be easily accessible as well as clearly marked to prevent damage.
- In freezing climates, the Ultraf should be dismantled, and water drained during the winter months.

TROUBLSHOOTING ULTRAF 6R31

PROBLEM	CAUSE	CHECK	SOLUTION
The Ultraf does not open.	1. The 3-Way selector 5 is in the Close position.	1. Check state of the selector.	1. Turn selector to the "Open" or "Auto" position.
	2. The solenoid 8 does not get electrical command.	2. Check for loose batteries contacts or low voltage.	2. Make sure contact surface is good/replace batteries if low.
	3. The solenoid 8 gets electrical command (valve icon on display shows "on") but the Ultraf does not open.	3. Check electric coil by carefully listening to the shifting "click" sound when getting signal open/close.	3. Replace damaged coil with a new one. Reassemble and activate.
	4. Blocked or stuck solenoid 8.	4. No water coming out of the pilot's drain.	4. Turn off water supply to the valve. Dismantle and clean solenoid's drain. Reassemble and activate.
	5. Manual override 9 is in the close position (counterclockwise).	5. No water coming out of the pilot's drain.	5. Turn override 9 to "Auto" (vertical) position. .
	6. Blocked pilot 6.	6. No water coming out of the pilot's drain.	6. Turn off water supply to valve. Dismantle and clean drains in the pilot. Reassemble and activate.
	7. No watering program is "**on**".	7. Ultraf's valve icon on the display shows "**off".**	7. Initiate a watering program.
	8. The Ultraf App shows **"system off"** when communicating with Ultraf.	8. Check system mode when communicating with Ultraf.	8. Use app to turn **"system on"**.
The Ultraf does not close.	1. The 3-Way selector 5 is in the "Open" position.	1. Check state of selector.	1. Turn selector to the "Auto" or "Close" position.
	2. The solenoid 8 gets electrical command (valve display icon shows "Off") but the Ultraf does not close. Or- manual override 9 is in the open position (clockwise).	2. Check for loose batteries contacts or low voltage. And position of override 9.	2. Make sure contact surface is good/replace batteries if low. Or- Turn override 9 counterclockwise then back to "Auto" (vertical) position.
	3. Blocked or stuck solenoid 8.	3. Check manual closing option using selector 5.	3. Turn off water supply to the valve. Dismantle and clean drain connections of the solenoid. Reassemble and activate.
	4. Foreign object on seal seat 3.	4. Poor water flow in the valve downstream.	4. Turn off water supply to the valve. Remove cover and remove foreign object. Check that

			diaphragm, body and cover are not damaged. Reassemble and activate.
	5. Blocked self-flushing filter 4		5. Turn off water supply to the valve. Remove filter to clean or change it. Reassemble and activate.
	6. Watering program is still **"on".** .	6. Ultraf's valve icon on the display shows "**on".**	6. Terminate/clear the watering program.
Irregular flow.	1. Blocked or damaged pilot 6.	1. Irregular downstream pressure.	1. Turn off water supply to the valve. Dismantle and clean pilot's drains. Check state of the membrane. In case of internal parts wear, change pilot. Reassemble and activate.

RAPHAEL, founded in 1949, is the first Israeli manufacturer of water control valves. RAPHAEL´s research department constantly strives to introduce new and innovative products and solutions for water control systems including water works, fire-protection and irrigation systems.

RAPHAEL

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