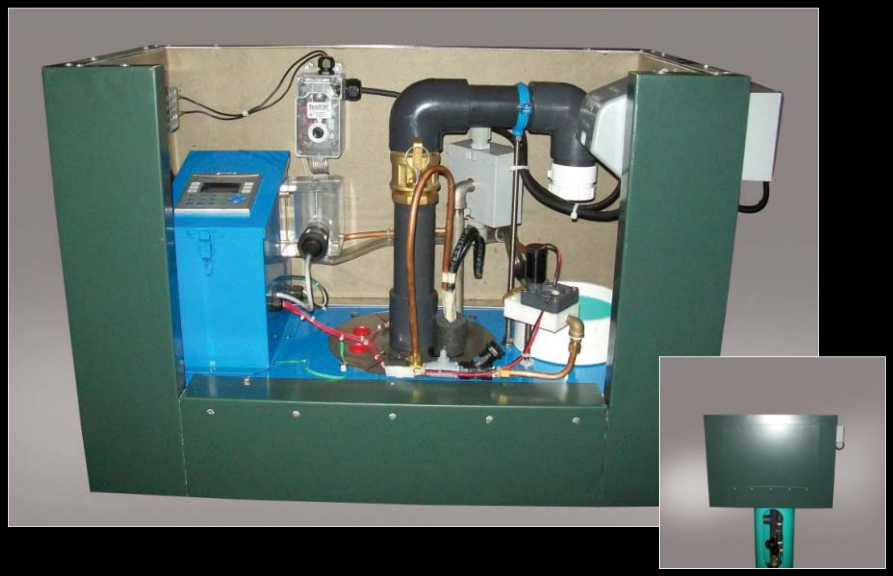
Eclipse i-Series #9800i

FOR ALL CLIMATES



Intelligent Automatic Flushing Device with Built-In Chlorine Analyzer and Programmable Logic Control (PLC)

The Intelligent Solution for Water Distribution Systems
ECLIPSE™ i series

Patented #5,921,270

THE KUPFERLE FOUNDRY COMPANY
Since 1857

#9800i

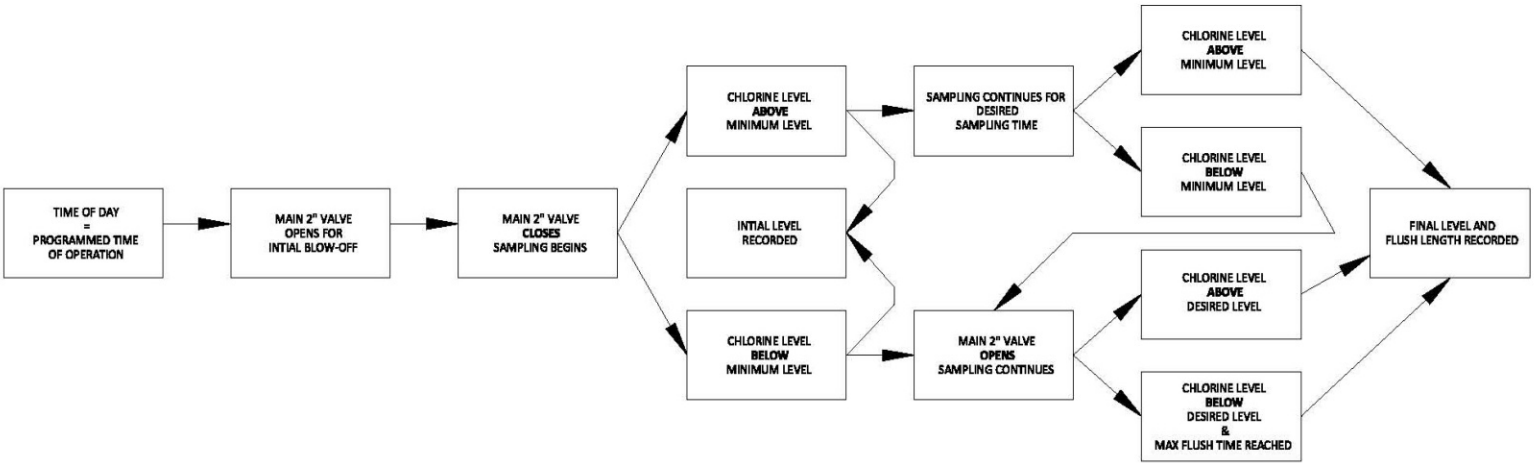
Features

- Intelligent Automatic Flushing Device with 2” diaphragm, automatic fail-safe solenoid operated valve
- Built-in Amperometric chlorine analyzer (no reagents required)
- Built-in Programmable Logic Controller w/ 2 micro SD and standard SD adapters and SCADA compatible
- Adjustable flow rates up to 200 gpm
- Locking aluminum thermal insulated enclosure (R-9 rated)
- Built-in 120VAC high performance heater with fan
- Self-regulating heat trace

What Does It Do?

- Automatically maintains safe residuals for drinking water
- Automatically flushes when residuals fall below programmed minimum levels
- Automatically shuts off when residuals reach programmed desired levels
- Flushes exact amount of water needed for ultimate water conservation
- Records and captures all data related to residual levels and flush times
- Analyzer is free or combined chlorine compatible
- Operates on 120 VAC power
- EPA approved for water conservation (*EPA Green Project Reserve Program*)

How Does It Work?



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The Eclipse 9800i automatically captures and records all residual and flushing activity. Data can be easily retrieved and imported into pre-formatted Excel worksheets.

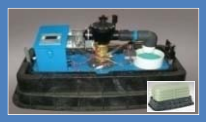
Analysis Table

- Displays all programmed information and activity regarding residuals and flushing operations and presents the imported data in an informative color coded format

Graphic Displays:

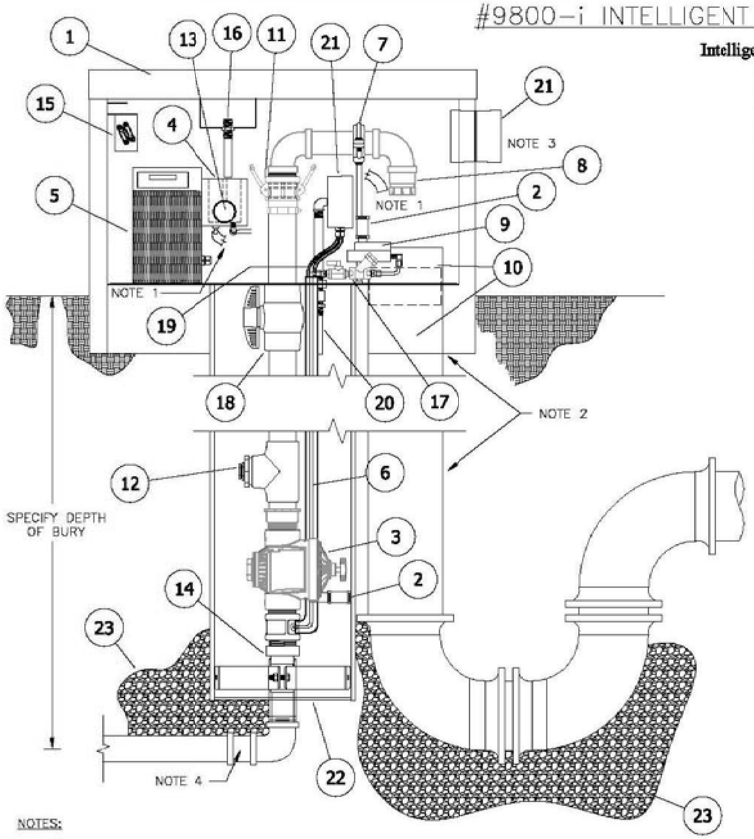
- Initial vs. Final residuals data
- Residual levels over time period
- Flushing duration data

ECLIPSE i Series



#9800i

#9800–i INTELLIGENT FLUSHING DEVICE



Intelligent flushing device shall be installed in the following locations: _____

ITEM	ITEM / DESCRIPTION
1	LOCKABLE LID
2	DC LATCHING SOLENOID
3	2" PGV VALVE
4	SAMPLING FLOWCELL
5	ELECTRICAL CONTROL ENCLOSURE
6	SAMPLING LINE
7	2" PIPE CLAMP
8	DIFFUSER / TRAP
9	SAMPLING VALVE
10	SEWER PIPE CONNECTION
11	2" STAINLESS STEEL QUICK DISCONNECT
12	AUTOMATIC DRAIN

ITEM	ITEM / DESCRIPTION
13	INSERTION POINT FOR CHLORINE SENSOR
14	O–RING CONNECTOR
15	ZONE 1 HEATER
16	ZONE 1 THERMOSWITCH
17	SHUTOFF VALVE AND FILTER
18	2" PVC BALL VALVE
19	ZONE 2 SELF–REGULATING HEAT TRACE
20	ZONE 2 THERMOSWITCH
21	WEATHERPROOF JUNCTION BOX
22	DEBRIS PLATE
23	1" CLEAN ROCK/GRAVEL

A 2" brass FIP inlet will lead vertically to the bottom of a 2" automatic flushing valve. The flushing valve shall control the flow of water through the hydrant and its diaphragm with the extension and retraction of a DC latching solenoid. The solenoid shall have no loose parts when removed from the valve. Removal of the 2" valve shall be possible via an o-ring connector located beneath the valve after the above ground disconnection of the sampling line, junction box, and the stainless steel access plate. Valve assembly shall be housed in a PVC enclosure and each unit shall be self-draining, non-freezing. The sampling line shall be looped with self-regulating heat trace running inside of foam pipe insulation vertically along the valve assembly body and the heat trace shall be controlled via a thermoswitch.

The *Intelligent Flushing Unit* (IFU) to be installed on the water lines mentioned above shall use a PLC to control the automatic blow-off of water to maintain chlorine residual levels while collecting data. The IFU shall have the capability to monitor either free or combined chlorine levels in a water distribution system. The unit shall also allow the user to manually flush water from the line with the simple push of a button, allow a minimum of 8 automatic sampling times, have a max flush length per sampling time, and allow the end user to program the desired and minimum chlorine levels. The IFU shall be enclosed in an insulated lockable housing with a heater that is also controlled by a thermoswitch creating zoned heating to conserve power usage.

The sensor shall be amperometric using a membrane sensor which measures chlorine directly without the use of reagents. Water shall simply flow past the sensor and directly to drain, with the flow rate and pressure across the sensor controlled by a constant head flow cell assembly. The sample used for chlorine measurement shall not be altered by adding any chemicals to the sample stream. A shutoff valve should be present as well as a filter to prevent debris from entering the flowcell and allow maintenance.

The IFU shall be designed to allow the end user to interface with a SCADA system via remote communication.

Unit model # shall be 9800-i as manufactered by Kupferle Foundry Company, St. Louis MO, or approved equal.

NOTES:

1.) DRAIN TUBE AND WIRES NOT COMPLETELY SHOWN ON SPEC SHEET.

2.) SEWER PIPE CONNECTION BY OTHERS.

3.) CONDUIT UP TO JUNCTION BOX TO GO DOWN TO A DEPTH OF 18" BELOW GRADE PER NEC ARTICLE 300.5 COLUMN 3 TO BE PROVIDED BY OTHERS.

4.) IF NEEDED, USE A 2" MIP x COMPRESSION ADAPTER.

DATE	STATUS / REVISION
DD/MM/YY	ISSUED FOR REFERANCE

SHEET 1 OF 1 | SCALE: 1"=1'–0" | 9800–i SPEC SHEET

DRAWN DCL | CHECKED DCL | APPROVED DCL | DATE 6/29/12

Since 1857
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