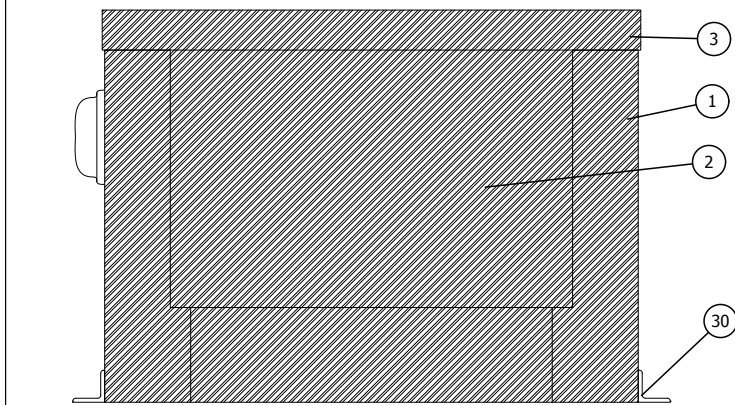
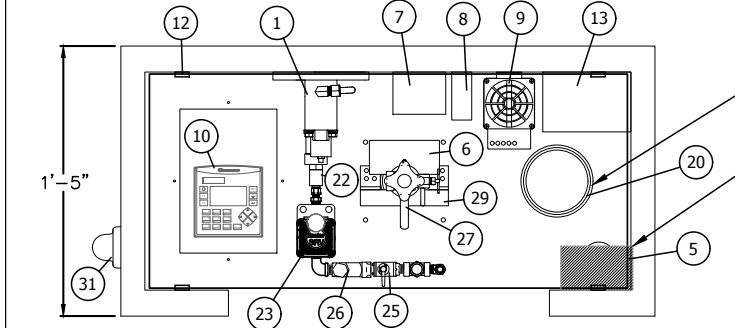


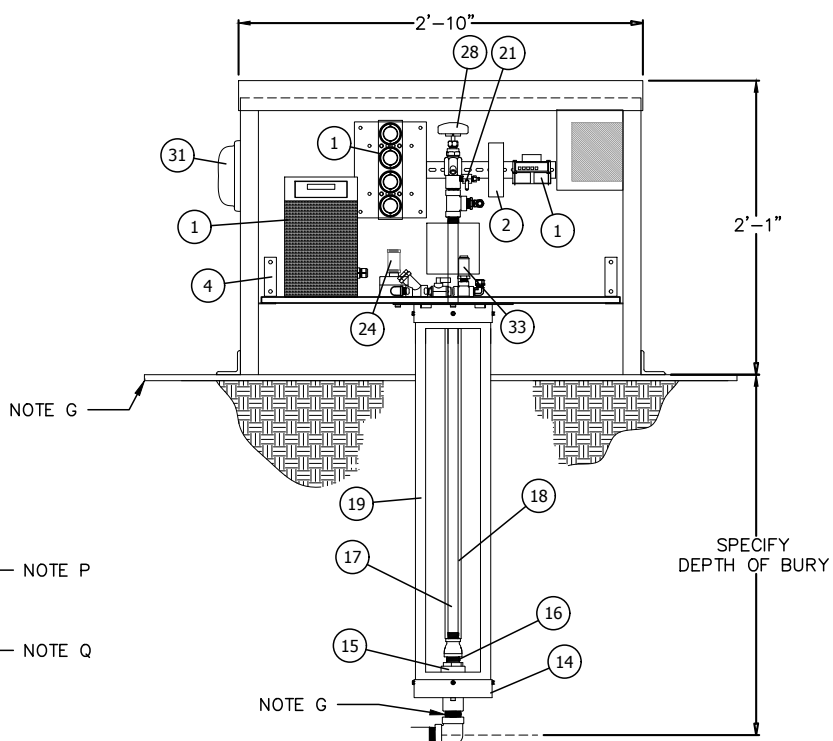
# #9300i-CC : PERMANENT INTELLIGENT WATER QUALITY STATION



**A ENCLOSURE - CLOSED (FRONT)**  
Scale: 1"=1'-0"



**B ENCLOSURE - LID REMOVED (TOP)**  
Scale: 1"=1'-0"



**1 FRONT VIEW - INSTALL**  
Scale: 3/4"=1'-0"

i-SERIES PRODUCT ORDERING GUIDE											
MODEL#	9300i	-	CC	-	120	-	*	*	*	*	*
SUBSECTION	1	2	3	4	5	6	7	8	9	10	11
MODEL SHOWN IN VIEW 1: 9300i-CC-120-3.0-A-X-A-AD											
SUBSECTION DESCRIPTION	MODEL #	OPTIONS	DESCRIPTIONS								
MODEL	1	9300i	PERMANENT i-SERIES MONITORING STATION								
CLIMATE	2	CC	COLD CLIMATES								
POWER	3	120	120 VAC								
DEPTH OF BURY	4	0.0	X.X = FEET OF DEPTH OF BURY. ENTER # IN FEET AND INCHES ROUNDED TO NEAREST 0.5 FOOT.								
COMMUNICATION	5	X	NONE								
		A	CELLULAR (RV50 GATEWAY)								
		B	ALARM INDICATION LIGHT								
		C	ETHERNET CARD ADDED								
		D	SECOND SERIAL CARD ADDED								
BACKFLOW PREVENTION	6	X	NONE								
		A	3/8" DUAL CHECK VALVE								
PRESSURE SENSOR	7	X	NONE								
		A	ANALOG 0-200.0 PSI SENSOR								
CHOOSE UP TO 4 SENSORS FOR SUBSECTIONS 8-11. LEAVE UNUSED SUBSECTIONS BLANK.											
SENSORS	8 - SENSOR #1	A - FREE CHLORINE	H - DISSOLVED OXYGEN								
	9 - SENSOR #2	B - COMBINED CHLORINE	I - FLUORIDE								
	10 - SENSOR #3	C - TOTAL CHLORINE	J - DISSOLVED OZONE								
	11 - SENSOR #4	D - pH	K - CHLORINE DIOXIDE								
	12 : 15 - ADDITIONAL SENSORS #5 : #8	E - TURBIDITY	L - PERACETIC ACID								
		F - ORP	M - HYDROGEN PEROXIDE								
		G - CONDUCTIVITY	X - CUSTOM (CALL)								
	PLEASE SEE CUT SHEET FOR UPGRADES AND AVAILABLE OPTIONS										

GENERAL SENSOR SPECIFICATIONS	
VOLTAGE:	BUS POWERED (5 VDC)
COMMUNICATIONS:	SERIAL 485
CONNECTIONS:	M8-5 IP67/68
CHLORINE SENSOR SPECIFICATIONS	
MEASURING RANGE:	0.00 to 5.00 PPM
WETTED MATERIALS:	PVC, TEFLON, VITON, EPDM, RYTON
RESOLUTION:	0.01 PPM
POWER:	40 mW
WATER TEMPERATURE SPECIFICATIONS	
MEASURING RANGE:	23 TO 131°F
TEMPERATURE INPUT:	PT100 RTD W/ AUTOMATIC COMPENSATION
ELECTRICAL SPECIFICATIONS	
VOLTAGE:	108-132 VAC, 50/60 Hz
MAX POWER CONSUMPTION:	240 WATTS @ 120 VAC
HEATER SIZE:	150 WATTS WITH FAN
HEAT TRACE SIZE:	3 WATTS PER FOOT (LOOPED)
CONTROL POWER SUPPLY SPECIFICATIONS	
SUPPLY VOLTAGE:	90-264 VAC
INPUT FREQUENCY:	47-63 Hz
HOLD-UP TIME:	Vi = 115 VAC - 12 ms Vi = 230 VAC - 60 ms
EFFICIENCY:	86%
OUTPUT VOLTAGE:	24 VDC
RATED CONTINUOUS LOADING:	2.5 A @ 24 VDC
MAX POWER:	60 WATTS
PLC SPECIFICATIONS	
OPERATING VOLTAGE:	20.4 - 28.8 VDC
POWER CONSUMPTION:	215 mA @ 24 VDC
INPUTS:	(10) 24 VDC
ANALOG INPUTS:	(2) : 10-BIT RESOLUTION, 4-20 mA
OUTPUTS:	(6) : INDIVIDUALLY ISOLATED RELAY
NON-VOLATILE MEMORY:	120K DYNAMIC DATA
REMOVABLE MEMORY:	STANDARD MICRO SD CARDS (UP TO 32 GB)
COMMUNICATIONS:	RS-232 OR RS 485 PORT AND OPTIONAL ETHERNET/IP
OTHER SPECIFICATIONS	
MAX PRESSURE:	85 PSI
SAMPLE FLOW RATE:	1 FLOWCELL: UP TO ~10 GALLONS PER HOUR
FLUSH FLOW RATE:	UP TO ~20 GALLONS PER MINUTE
WEIGHT:	~85 LBS
MINIMUM TEMPERATURE DESIGN:	-10°F OR -23°C
CERTIFICATIONS:	

OTHER SPECIFICATIONS AVAILABLE UPON REQUEST

Intelligent Water Quality Station (IWQS) shall be installed in the following locations: \_\_\_\_\_

IWQS shall consist of a 1" FIP inlet and a 7/16" unthreaded blow off and dedicated sampling bibb. The blow off shall have an operating valve that controls the flow of water through the 7/16" outlet with 6 rotations of the handle being fully open. A petcock shall be installed directly before the blow off to provide a dedicated sampling point. Removal of the inlet assembly shall be possible via an o-ring connector located beneath the 1/2" pipe after the above ground disconnection of the sampling line, heat trace junction box, and the 1" stainless steel access angle. Inlet assembly shall be housed in a PVC enclosure and each unit shall be non-freezing. The inlet assembly shall be looped with self-regulating heat trace running inside of foam pipe insulation.

A 3/8" sampling line shall be plumbed directly before the blow off to allow a dedicated supply to the sampling assembly without a blow off. The sampling line shall connect to a 1/4" ball valve controlling the flow of water through the sampling assembly. A Y-strainer shall be located immediately after the PVC ball valve for maintenance purposes. From the Y-strainer, a sampling valve shall be included to control the flow of water through the (IWQS) with the extension and retraction of a DC latching solenoid. The solenoid shall have no loose parts when removed from the valve. The sampling valve shall control the flow of water for the sample stream to a pressure regulating valve (PRV) continuing to a node based flowcell that can house up to 4 plug-and-play sensors. As an upgrade, a second flowcell, increasing the number of available sensor ports to 8, shall be added to the right of the primary flowcell and filling out the appropriate sensors in the Product Ordering Guide for subsections 12-15. The node based Modbus sensor(s) shall be serially (RS485) connected to the PLC. The specified chlorine sensor shall be amperometric using a membrane sensor which measures chlorine directly without the use of reagents. The standard drain shall directly discharge from the flowcell, the water will plumb away through 1/4" plastic tubing to a 4" drain. A direct plumbed discharge version is available and the discharged water shall flow from the flowcell through a 3/8" dual check valve to the drain. The customer shall provide any discharge lines. The sample used for water quality monitoring shall not be altered by adding any chemicals or reagents to the sample stream.

The IWQS to be installed on the water lines mentioned above shall use a Unitronics PLC to log water quality parameters into local data tables (viewable at the site) and/or a removable micro SD card in a .CSV file (removable and viewable in Excel). The IWQS shall have the capability to monitor either the free, combined, and/or total 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 maximum of 8 intelligent sampling times per day, have a max flush length per sampling time, and allow the end user to program the minimum and desired chlorine levels.

Unit shall be upgradeable to use a Sierra Wireless RV50 wireless gateway commissioned with an active 2FF SIM on an M2M profile through the customer's cellular carrier (Sprint, Verizon, AT&T, etc.) The RV50 shall forward the information from the PLC to the cellular network where it may be controlled and/or accessed by the customer on a device (smart phone, tablet, laptop, existing SCADA system, etc.) that can connect to the internet. Firewalls and security to be coordinated between Kupferle and the end user.

The IFS shall be enclosed in an insulated (R9 rating) and powder coated lockable housing with one access panel on the front of the unit. The enclosure shall be lockable by using a pair of stainless steel hasps on the short sides of the enclosure. The IFS shall include a 150 Watt high-efficiency fan heater and 4 separate thermostiches (1 located in each corner) to account for any possible drafts by the enclosure access panel. To power the device, a 120 VAC source will need to be provided by the customer. Final power input to be further coordinated between customer and manufacturer with the sensors, PLC, and the necessary controls for the solenoid, being powered from this connection. If the hydrant is upgraded to include communications for SCADA, other than the RV50 option, additional power may be needed. All plumbing shall be serviceable from above ground with no digging or replacement needed.

Unit shall have the capability to control an automatic Kupferle flusher that is within 100 feet of the installed 9300i-CC and flush based on the residuals from the 9300i-CC. Customer shall run the necessary conduit between the automatic flusher and 9300i-CC in accordance with all national and electrical codes. Connection wires not included.

Unit model # shall be 9300i-CC-120-\*.\*\*.\*.\*.\* with \*s specified in accordance with the product ordering guide as manufactured by Kupferle Foundry Company, St. Louis MO, or approved equal.

ITEM	DESCRIPTION
1	ALUMINUM ENCLOSURE W/ INSULATION
2	REMOVABLE DOOR
3	LOCKABLE LID
4	ELECTRICAL CONTROL ENCLOSURE
5	120 VAC DISCONNECT SWITCH
6	HEAT TRACE JUNCTION BOX
7	120 VAC GFI RECEPTACLE
8	FUSE BLOCK
9	150 WATT HIGH-EFFICIENCY FAN HEATER
10	PROGRAMMABLE LOGIC CONTROLLER (PLC)
11	NODE BASED FLOWCELL
12	THERMOSWITCH
13	ELECTRICAL DISTRIBUTION ENCLOSURE
14	DEBRIS PLATE
15	1" VALVE CYLINDER
16	1" VALVE PISTON
17	1/2" S.S. PIPE
18	SELF-REGULATING HEAT TRACE (LOOPED)
19	SAMPLING PROTECTOR
20	DRAIN
21	DEDICATED SAMPLE POINT
22	PRESSURE REGULATING VALVE (PRV)
23	SAMPLING VALVE
24	DC LATCHING SOLENOID
25	SAMPLING BALL VALVE
26	Y-STRAINER
27	7/16" MANUAL BLOW-OFF
28	S.S. OPERATING VALVE
29	ACCESS ANGLE BRACKET
30	MOUNTING BRACKETS (UPGRADE)
31	ANTENNA (UPGRADE)
32	RV50 WIRELESS GATEWAY (UPGRADE)
33	ANALOG PRESSURE SENSOR (UPGRADE)

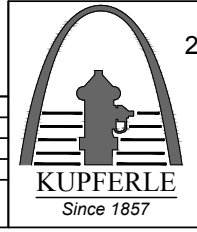
DD/MM/YY	ISSUED FOR ...	DATE	STATUS / REVISION

NOTES	
A	NOT ALL WIRES AND PIPING SHOWN FOR CLARITY PURPOSES.
E	DIRECT PLUMBED DISCHARGE OPTION AVAILABLE INCLUDING A DUAL CHECK ON THE DISCHARGE LINE.
G	ITEM TO BE PROVIDED BY OTHERS.
P	KUPFERLE RECOMMENDS THE INSTALLATION OF A 4" DWV P TRAP.
Q	CONDUIT UP TO ENCLOSURE TO GO DOWN TO A DEPTH OF 18" BELOW GRADE PER NEC ARTICLE 300.5.

#9300i-CC SPEC SHEET

DRAWN	INITIALS	DATE
JRG	JRG	2/11/19
APPROVED	XXX	XXX
MODIFIED		

SHEET SIZE	SCALE
B (11x17)	VARIABLE



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