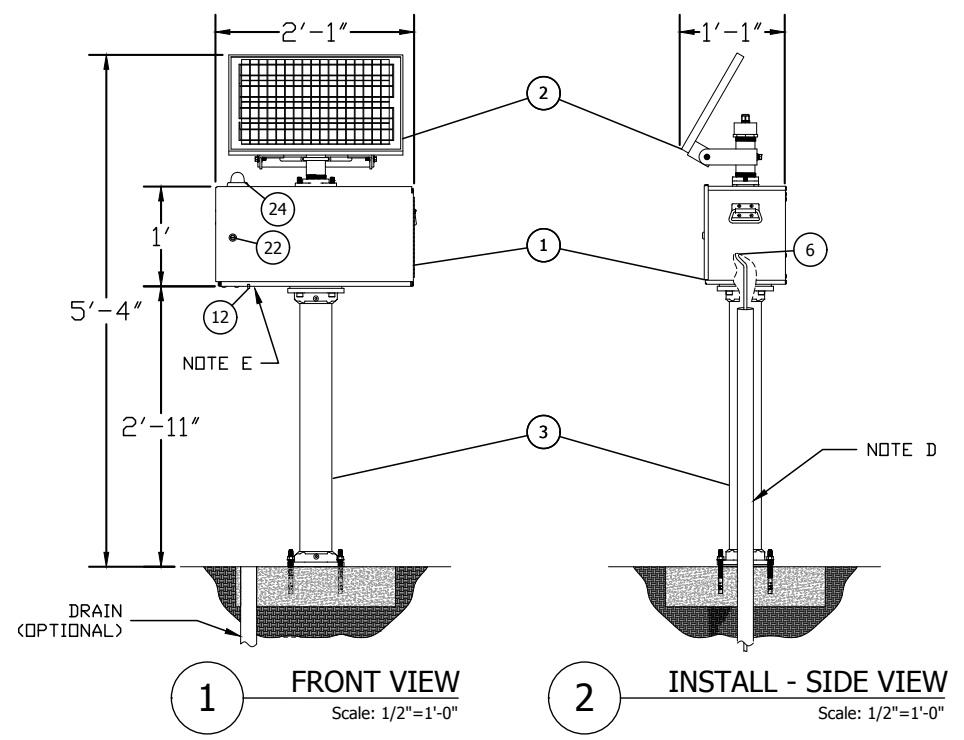
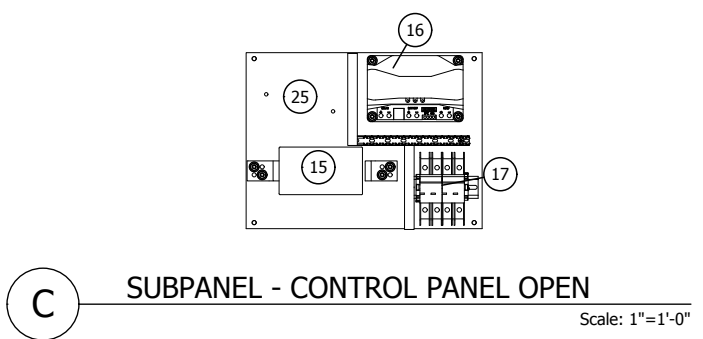
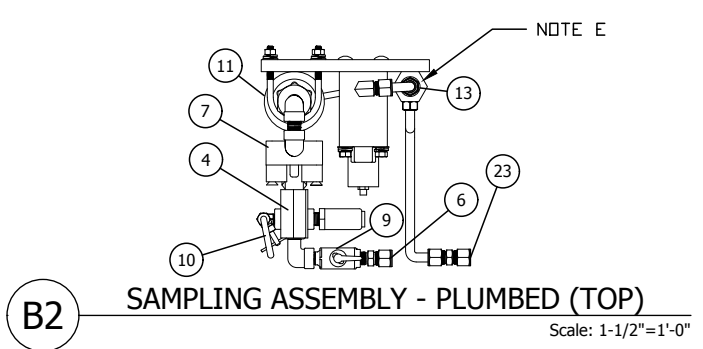
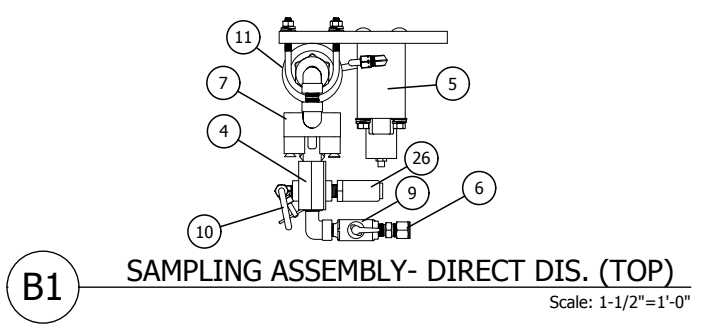
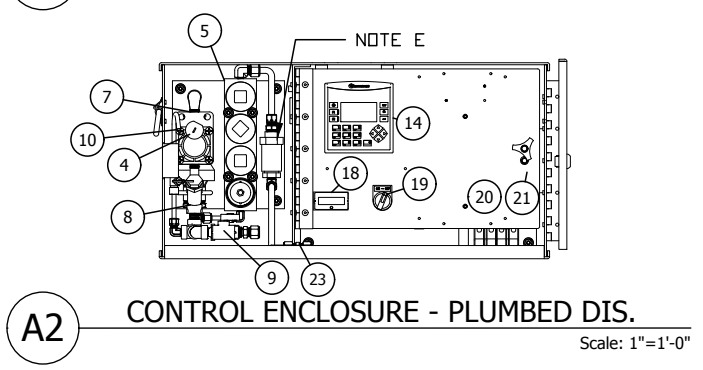
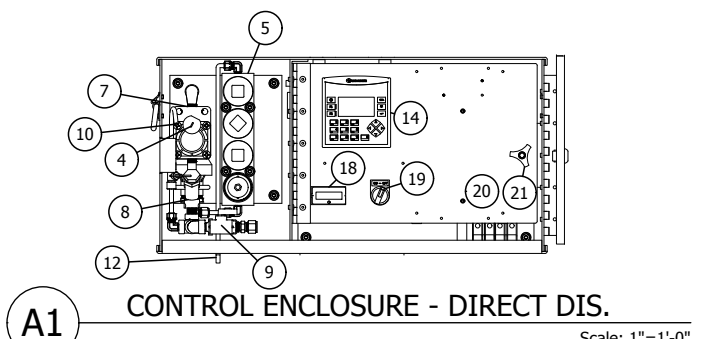


# #9300i-WC : PERMANENT INTELLIGENT WATER QUALITY STATION



I-SERIES PRODUCT ORDERING GUIDE											
MODEL#	9300i	-	WC	-	24LIS	-	0	-	*	*	*
SUBSECTION	1	2	3	4	5	6	7	8	9	10	11
MODEL SHOWN IN VIEW 1: 9300i-WC-24LIS-0-A-X-A-AD											
SUBSECTION DESCRIPTION	MODEL #	OPTIONS		DESCRIPTIONS							
MODEL	1	9300i		PERMANENT I-SERIES MONITORING STATION							
CLIMATE	2	WC		WARM CLIMATES							
POWER	3	24LIS		24 VDC, 10 AMP HOUR LITHIUM ION BATTERY WITH SOLAR RECHARGING							
DEPTH OF BURY	4	0		N/A							
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		1/4" DUAL CHECK VALVE							
		X		NONE							
PRESSURE SENSOR	7	A		ANALOG 0-2000 PSI SENSOR							
		X		NONE							
CHOOSE UP TO 4 SENSORS FOR SUBSECTIONS 8-11. LEAVE UNUSED SUBSECTIONS BLANK.											
SENSORS	8-11	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 - DRP		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:	24 VDC
BATTERY SIZE:	10 AMP HOURS
CIRCUIT BREAKERS:	(2) 2 POLE, 10 AMP MCB
SOLAR PANEL:	20 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:	100 PSI
SAMPLE FLOW RATE:	1 FLOWCELL UP TO ~10 GALLONS PER HOUR
FLUSH FLOW RATE:	N/A
WEIGHT:	~75 LBS
MINIMUM TEMPERATURE DESIGN:	5°C OR 41°F
CERTIFICATIONS:	NSF/ANSI 372

OTHER SPECIFICATIONS AVAILABLE UPON REQUEST

ITEM	DESCRIPTION
1	ELECTRICAL CONTROL ENCLOSURE
2	SOLAR PANEL ASSEMBLY
3	4" PEDESTAL WITH FLANGES
4	DC LATCHING SOLENOID
5	NODE BASED FLOWCELL
6	3/8" COMPRESSION INLET
7	SAMPLING VALVE
8	Y-STRAINER
9	SAMPLING BALL VALVE
10	DEDICATED SAMPLE POINT
11	PRESSURE REDUCING VALVE (PRV)
12	1/4" COPPER DRAIN (DIRECT DISCHARGE)
13	DUAL CHECK VALVE (PLUMBED)
14	PROGRAMMABLE LOGIC CONTROLLER (PLC)
15	24 VDC LITHIUM ION BATTERY
16	CHARGE CONTROLLER
17	CIRCUIT BREAKERS
18	BATTERY CAPACITY GAUGE
19	DN/DFF SWITCH
20	HINGED CONTROL PANEL
21	CONTROL PANEL WING KNOB
22	CAM LOCK
23	3/8" COMP. OUTLET (PLUMBED DISCHARGE)
24	ANTENNA (UPGRADE)
25	RV50 WIRELESS GATEWAY (UPGRADE)
26	ANALOG PRESSURE SENSOR (UPGRADE)

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

The customer shall provide a 3/8" copper tube brought up through the bottom of the pedestal to connect to a 3/8" brass compression inlet located on the sampling assembly. The inlet 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 1/4" sampling point with valve shall be provided to provide a dedicated sampling point. 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) will be directly connected serially to a hub and then connect 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" copper tubing out of the bottom of the enclosure and be at the customers discretion as to how they want the water to 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 a 3/8" compression outlet next to the 3/8" compression inlet. For the direct plumbed version, the customer shall provide an additional 3/8" copper tube brought up alongside the inlet tubing in the pedestal. 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 control enclosure and pedestal shall be powder coated and include security mounting and the control enclosure shall feature a front opening door with a cam lock. The front panel of the control enclosure with the PLC shall swing open to allow for maintenance, data retrieval, and/or manual battery charging if required. The solar panel shall mount on top of the control enclosure and shall be rotatable (directed southwest when installed) and be positioned to provide for maximum solar hours. The pedestal of the unit can be buried or mounted on a concrete pad. Mounting hardware will not be included less the concrete gasket. Battery shall be 24 V Lithium Ion with 10 Amp Hours of available power and shall utilize a battery capacity gauge for easy indication of the battery charge. Photovoltaic solar panel shall provide 20 Watts of charging power to the battery through a charge controller. Two - 2 pole 10 Amp circuit breakers shall be used to allow disconnection of the photovoltaic solar panel and the battery. The solar package is sized for the 9300WC-i hydrant only. If the hydrant is upgraded to include communications for SCADA, other than the RV50 option, additional power may be needed.

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

Unit model # shall be 9300i-WC-24LIS-0-\*-\*-\*-\* with \*'s specified in accordance with the product ordering guide as manufactured by Kupferle Foundry Company, St. Louis MO, or approved equal.

NOTES	
A	NOT ALL WIRES AND PIPING SHOWN FOR CLARITY PURPOSES.
B	UNIT SHALL BE DRAINED OF WATER AND SENSORS TAKEN INDOORS IN POTENTIAL FREEZING CONDITIONS.
C	SOLAR PANEL SHALL BE PROPERLY MAINTAINED TO ALLOW FOR MAXIMUM SOLAR CHARGING HOURS.
D	PVC SLEEVE TO BE INSTALLED AROUND PIPING.
E	DIRECT PLUMBED DISCHARGE OPTION AVAILABLE INCLUDING A DUAL CHECK ON THE DISCHARGE LINE.
F	CUSTOMER SHALL PROVIDE PROPER GROUNDING AND/OR LIGHTNING PROTECTION IN ACCORDANCE WITH ALL NATIONAL AND ELECTRICAL CODES.

	INITIALS	DATE
DRAWN	JRG	10/31/18
APPROVED	XXX	XXX
MODIFIED		

2511 NORTH 9TH STREET  
ST. LOUIS, MO 63102  
1-800-231-3990  
FAX 314-231-2820  
www.hydrants.com

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

#9300i-WC SOLAR SPEC

SHEET SIZE	SCALE
B (11x17)	VARIABLES