CREST ULTRASONICS CORPORATION
18 Graphics Drive ● PO Box 7266 ● Ewing, NJ 08628 ● (P) 609-883-4000 ● (F) 609-883-6452

DIGITAL MODULAR SERIES
System Summary:

Base Unit: Two Stations Digital Modular Series Ultrasonic Cleaning System.

	Components	Crest Part #	Qty.	
	Station #1: DMS-1218-R – Single Station Rinse Module	121821000	1	
	• 132kHz Generator Module(s)	121821010	1	
	• Spray Rinse	121821160	1	
	Station #2: DMS-1218-R – Single Station Rinse Module	121821000	1	
	• 132kHz Generator Module(s)	121821010	1	
	• Model PF-5 - Recirculation/Filtration System	PF0501000	1	
1	**DMS2-1218**	**-**	1	
2	**Sub-micron Filter Housing in Series for Station #2**	PF0501030	1	
3	**DMS-CTS-500 – Automation Transport Module**	050011000	1	
4	**Slow Pull Capability for the DMS-CTS-500**	-	1	

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System Summary:

Item #1: DMS2-1218 –Two Stations Digital Modular Series Ultrasonic Cleaning System

Overall Dimensions:	52" left to right by 40" front to back by 40" countertop high
Process:	1) Rinse - DMS-1218-R 2) Rinse - DMS-1218-R
Chemistry:	Station #1 and #2: Deionized Water **NOT MANUFACTURED FOR USE WITH ANY FLAMMABLE LIQUIDS.**
Automation:	NO
Facilities:	2-4 GPM (8-9 GPM on demand) DIW@ 1-2 Mohm, 30-35 psi and process temperature, unrestricted floor drain.
Power Requirements:	240 volts/60 Hz/3 phase.
Work Flow:	Left to Right.

System Detail:

Station #1 and #2: DMS-1218-R – Single Station Rinse Module

(PN# 121821000)

Tank Dimensions:	12" left to right by 18" front to back by 13" deep (10" liquid depth).
Overall Dimensions:	26" left to right by 40" front to back by 40" high.
Process:	Over Flow Rinse. Option Spray/Air-Knife Pass through
Chemistry:	Deionized Water, Inhibitor (if required)
Automation:	Compatible with DMS brand automation system(s)
Facilities:	2-4 GPM (8-9 GPM on demand) DIW@ 1-2 Mohm, 30-35 psi and process temperature, unrestricted floor drain.
Power Requirements:	240 volts/60 Hz/3 phase/20 amp max
TUV Certification:	• UL 61010-1:2012 R7.19 • CAN/CSA-C22.2 No. 61010-1-12
Maximum Temperature:	150 °F maximum process temperature. Approximate heat up time from 90 °F to 140 °F is 45-60 minutes. NOTE: Continuous overflow will require heated water feed.
Ultrasonic Frequency:	132 kHz
Ultrasonic Power:	1000 watts of ultrasonic power provided by: • Twenty Four (24) transducer modules direct-bonded to the bottom of the tank. • Requires Two (2) Model MW132-HMI-500 Generator modules **NOT INCLUDED**. These modules to be housed in TE42 case assemblies located within console cabinetry.
Heat:	3000 watts of strip heat.
Temperature control:	PLC controls process temperature with a RTD-type temperature probe.
Surface Sparger:	• Includes tank fitting with indented “V” recess housing at tank right side. • Opposite to weir. • Can be added as option. Fitting plugged as standard.
Bottom Sparger:	• Includes tank fitting within weir wall facing opposite side of tank. • Recessed within the weir area with indented area under weir and outside basket position area. • Can be added as option. Fitting plugged as standard.

Fill/Cascade:	Fittings are included for optional add on.
Spray Wand:	Fitting is included in fill line for optional add on. Plugged Standard.
Spray/Air Knife Header:	• Through holes included in fill line for optional add-on. Fittings are plugged as standard. • Can accommodate either spray rinse or air knife assemblies.
Additional Fittings:	Two additional ½" NPT ports in front side, near bottom of tank for the separator/filter returns. Additional fittings located front side and weir for added options PH and Resistivity monitoring within tank/weir area. Both fittings sized at ¾" NPT.
Standard Features:	• PLC controls cycle time. • A capacitive liquid level sensor for low liquid level safety. • A capillary bulb-type overtemperature safety thermostat. • A hanging style basket positioner with electropolished finished. • A stainless steel lift off cover • A left sided 3" wide overflow weir plumbed to the rear of unit with female threaded end stub-out. Open top area of weir for easy cleaning.
Plumbing:	• Stainless steel Sanitary type fittings from tank converted to welded 300 series stainless steel with: • Compression fittings (up to 1" OD). • Threaded NPT pipe fittings (1/2" NPT to 1 1/2" NPT) that are welded (for use with caustic aqueous and semi-aqueous solutions). • Exceptions. The following items will have threaded fittings with Teflon tape or Teflon pipe dope: ○ Pump heads (suction and discharge). • Instrumentation devices (i.e. flow-meters, pressure gauges, etc.)

System Notes: The general system specifications are as follows:

Tank Material:	Type 316L stainless steel with a bright annealed finish. Rounded corners in process area.
Tank Finishing:	Electropolished interior tank surfaces in process area.
Frame Material:	Type 304 stainless steel sheet metal frame with leveling legs.
Front Access Panels:	• Type 304, #4 finish, stainless steel lift out front panel with louvers located lower bottom area (4 rows) doors on the front. • Stainless steel lift-out recessed style handles
Rear Access Panels:	• Top area with type 304, #4 finish, stainless steel lift out front panel. Include lift-out recessed style handles. • Bottom area mounted with exiting pipes. • Panel to include spare exhaust collar hole for future use.
Side Access Panels:	• Type 304, #4 finish, stainless steel lift out side panel. • Stainless steel lift-out recessed style handles
Panel Future Add On:	• Panel to have additional holes pre-punched and plugged for future pipe or wire runs in/out of module (filtration adder).
Countertop:	A type 304 stainless steel, removable, marine style countertop.
Base Plate:	• A type 304 stainless steel base plate with inverted flange up for spills containment. Holds approximately 3.5 gallons. • Rear bottom utility panel just high enough in height for exiting piping.
Plumbing:	Complete hard plumbed process piping • Individual fill and drain connections (at the rear utility panel) will be provided. • Drain line exiting rear. • All appropriate flow control and isolation ball valves. • Piping exiting out rear of console to have threaded ends or female

threaded weld female adaptors.
- Overflow weir drain to exit out rear panel 1" higher than the main tank drains minimum.
- Safety Overflow coupling mounted rear of weir and plugged.
- Spill Sensor in floor pan to alert of any leaks within the cabinet.

Control: An Allen-Bradley Micro820 with 800 series HMI screen, with
- Four (4) recipes with password protected for dwell time and sonic power.
- A "cycle complete and alert buzzer" included.
- Includes additional analog input card for added options.
- Built in RTD module for process temperature control with low and high temperature alarm
- Pump and Heater can be turned on manually from the Touch screen
- Sonic On Pump Off option can be configured from the Touch screen
- Ultrasonic power readback and control
- Alarm buzzer
- Cycle Start push button will be maintained for easy operation
- Automation interface READY for future automation upgrade

Control Panel: Inverted front frame area for HMI easy viewing.

Electrical Box: Single-point electrical connection located in an upper lift-out panel.

132kHz Generator Module(s) for Station #1 (PN# 121821010)
- Two (2) Model MW132-HMI-500 Generator modules.

Spray Rinse for Station #1 (PN# 121821160)

Stationary spray rinse package, with:
- One (1) set of parallel-opposed spray rinse headers that are:
  - Fitted with removable nozzles.
  - Located near the top of the tank.
- A solenoid valve on the incoming water line.
  - The solenoid is controlled via the PLC.

132kHz Generator Module(s) for Station #2 (PN# 121821010)
- Two (2) Model MW132-HMI-500 Generator modules.

Model PF-5 - Recirculation/Filtration System for Station #2 (PN# PF0501000)

A 5 GPM recirculation/filtration system with:
- One (1) bucket strainer with 1/16” basket catch.
- One (1) centrifugal, mag-drive pump, with:
  - Ryton head.
  - Viton o-ring.
  - TEFC motor.
- One (1) 10", **5** micron cartridge filter housed in a stainless steel canister.
- Includes up to 5’ stainless steel interconnecting hoses to module.
- Includes one return port into front wall of tank towards bottom center. Return port includes manual flow/isolation valves.
- One (1) analog pressure gauge upstream of filter housing.
- Includes plugged ports for the addition of detergent injection, differential pressure and monitoring options to be added.
- 300 series stainless steel plumbing with compression and welded fittings. Plumbing include manual flow control and isolation valves.

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Item 2: **Sub-micron Filter Housing in Series for Station #2** (PN# PF0501030)

- One Single Open End (SOE) style housing located in series prior to tank return hose.
- Fitted with additional One (1) analog pressure gauge fitted upstream.
- Includes One (1) 0.2 micron filter cartridge.

Item 3: **DMS-CTS-500 – Automation Transport Module**

(PN# 050011000)

Overall Dimensions:	Universal length to 6 stations plus load and unload positions, track for 5 stations included.
Weight Load capacity:	50 lbs. including carrier.
Automation:	Single transport head with multiple recipe capabilities.
Power Requirements:	240 volts/60 Hz/3 phase/30 amp max
TUV Certification:	• UL 61010-1:2012 R7.19 • CAN/CSA-C22.2 No. 61010-1-12

- An Allen-Bradley MicroLogix 1400 PLC.
- A PROFACE System Model PFXGP4501TAD 10.4” TFT, 65K color touchscreen graphical display for programming/editing. Equip with serial, USB, Ethernet and SD Card slot interface.
- Ethernet switch within automation box enclosure.
- Password protection levels for specific screen lock-outs for operators vs. engineering.
- Horizontal: 100 FPM (Max).
- Vertical: 17 FPM (Max), 0.75 in/s (Min).
- Horizontal: +/- 0.36”.
- Horizontal drive with sealed linear bearing that rides on two guide shafts with rack and pinion assembly.
- Vertical: +/- 0.2”.
- Vertical Axis Drive via ball screw and AC motor.
- Vertical Overtravel protection via proximity switches and flags.
- Positioning via optical encoders.
- Sealed linear bearings that ride on the two (2) guide shafts.
- Drive via a rack and pinion assembly.
- Horizontal Overtravel protection via proximity switches and flags.
- Positioning via optical encoders.
- A maximum capacity including carrier of 50 lbs.

Stainless steel, cantilevered lift arm with four (4) point pick-up hook assembly.

- Includes auto-resetting multi-axis crash sensor.

Console-mounted stainless steel base frame with horizontal guides.

- One (1) non-fused lockable disconnect.
- Controls mounted on the DMS wall end within a NEMA 12 electrical enclosure.
- Able to run 8 individual cleaning process recipes.
- Transfer wire-way between console and electrical enclosure.

System Notes: The general system specifications are as follows:

Frame Material:	• Type 304 stainless steel tubing with leveling legs. • Includes Load and Unload position stations with location positioners and notification sensors (photo eyes). • Expandable transport tracks in 4’, 5’ and 6’ lengths for expansion.
Rear Access Panels:	• Top area with type 304, #4 finish, stainless steel lift out front panel. Include lift-out recessed style handles. • Bottom area mounted with exiting pipes.

	• Panel to include spare exhaust collar hole for future use.
Side Access Panels:	• Type 304, #4 finish, stainless steel lift out side panel. • Stainless steel lift-out recessed style handles
Control Panel:	Located in a swing-type box mounted nearest load position.
Electrical Box:	Single-point electrical connection located on unload end wall.

Automation Interface:	• Stainless steel load wing table, with:
	  ○ Optical sensors.
	  ○ Basket positioner.
	• Stainless steel unload wing table, with:
	  ○ Optical sensors.
	  ○ Basket positioner.

Tower Light:	Three colors tower light (Red, Amber and Green – top to bottom) with • Red indicates stoppage with an audible alarm to alert operator. • Amber indicates standby • Green indicates running