



ELECTRO-CHEMICAL DEVICES, INC.

MODEL AC10

Air Blast Spray Cleaner



ELECTRO-CHEMICAL DEVICES, INC.
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PREFACE

Purchasing products from Electro-Chemical Devices, Inc. provides you with the finest liquid analytical instrumentation available. If this is your first purchase from ECD, please read this manual before installing and commissioning your new equipment.

If there are any questions concerning this equipment, please contact your local ECD representative, or the factory directly at:

Electro-Chemical Devices, Inc.

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WARRANTY

Electro-Chemical Devices, Inc. (ECD) warrants all products it manufactures to be free from defect in materials and factory workmanship, and agrees to repair or replace any product that fails to perform, as specified, within one (1) year after date of shipment. This warranty shall not apply to any product that has been:

1. Subjected to misuse, negligence or accident;
2. Connected, installed, adjusted or otherwise used not in accordance with the instructions furnished by ECD;
3. Repaired, modified or altered by persons not authorized by ECD, resulting in injury to the performance, stability or reliability of the product.

This warranty is in lieu of any other warranty, expressed or implied. ECD reserves the right to make changes in the design or construction of its products at any time, without prior notification, and without incurring any obligation to make any changes in previously delivered products.

Seller's sole liabilities and the buyer's sole remedies under this agreement shall be limited to a refund in the purchase price, or at ECD's discretion, to the repair or replacement of any product that proves, upon ECD's examination, to be defective, when returned to the factory, transportation prepaid by the buyer, within one (1) year of the product's original shipment date. Seller shall not be liable for damages consequential or incidental to defects in any product, for failure of delivery in whole or in part, for injuries resulting from its use, or for any other cause.

This warranty and the writing attached constitute the full understanding of seller and the buyer, and no terms, conditions, understanding, or agreement purporting to modify or vary the terms hereof shall be binding unless hereafter made in writing and signed by an authorized official of Electro-Chemical Devices, Inc.

This warranty does not cover pH, ORP or Specific Ion measurement, reference or combination electrodes or electrode cartridges that have been commissioned in service.

Record Shipment Date, Serial Number and Model number for future reference.

REGISTRATION DATE.....

SERIAL NUMBER.....

MODEL NUMBER.....

IMPORTANT SERVICE INFORMATION

Use only factory authorized components for repair. Tampering or unauthorized substitution of components may adversely affect the operation of this product and may void the warranty.

If service or repair is required, please obtain the serial number(s) or sales order number of the product(s) in question and contact ECD's Service Department at:

+1-800-729-1333 (USA/Canada) or +1-949-336-6060
or email Service@ecdi.com

A Return Material Authorization (RMA) number must be obtained from the service department before returning any material to ECD. All material returned to ECD shall be shipped prepaid to the factory.

UNPACKING THE INSTRUMENT

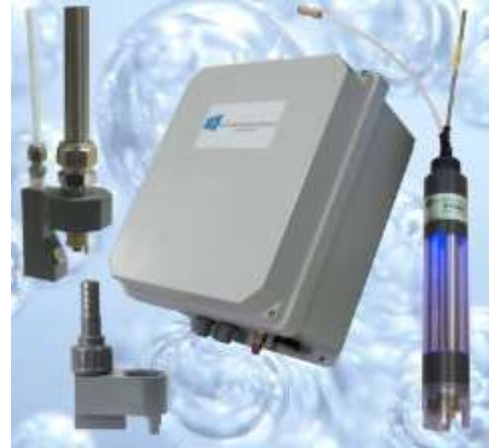
Your Electro-Chemical Devices instrument has been carefully packaged to protect it from damage during shipment and dry storage. Upon receipt please follow the procedure outlined below.

1. Before unpacking, inspect the condition of the shipping container to verify proper handling by the carrier. If damage is noted, save the shipping container as proof of mishandling for the carrier.
2. Check the contents of the shipping container with the items and quantities shown on the packing list. Immediately report any discrepancies to ECD.
3. Save the original packing material until you are satisfied with the contents. In the event the product(s) must be returned to ECD, the packing material will allow you to properly ship it to ECD.
4. Familiarize yourself with the instrument before installation, and follow proper installation and wiring procedures.

1.0 GENERAL DESCRIPTION

The AC10 is a self-contained, relay activated air compressor. The AC10 combined with a Sensor Spray Head and a C22 Analyzer/Controller or T80 Transmitter/Controller uses pressurized air to generate an area of high turbulence in the water surrounding the measurement end of the sensor. The turbulence is suitable for removing biofilms and other soft coatings.

The AC10 can be a Single Channel or Dual Channel System. It is designed to be used with HYDRA Ammonium and Nitrate sensors, Triton® DO8 dissolved oxygen sensors or S80 style sensors for measuring pH, ORP, ISEs, or Conductivity. Cleaning two sensors with the Dual Channel AC10 requires one C22 Analyzer/Controller be ordered with 4 Relays, it becomes the Master, controlling the cleaning cycles for both sensors.



The AC10 uses redundant intake air filters and fuses on both the relays and the compressor. A highly reliable high current contactor assures years of trouble free service. The 115 VAC 3A or 220 VAC 1.3A Air Compressor is housed in a rugged, corrosion resistant, hot compression molded, fiberglass reinforced, polyester enclosure with a stainless steel piano hinge to secure the cover to the base. The AC10 can be wall mounted or use the optional 2" handrail mounting system that uses stainless steel support rails with two 2" galvanized pipe clamps. The C22 or T80 Analyzer/Controller uses its internal Timers and Relays to control the Period and Duration of the cleaning cycles. The Period between cleaning cycles and the Duration of the cleaning are easily adjusted in the SET-UP menu of the C22 Controller. The 4-20 mA Outputs are placed in a "Last Value Hold" function during the cleaning cycle (Manual Mode-Bumpless setting).

Most cleaning operations can be accomplished with a 30 second cleaning every 15 - 30 minutes. When using the AC10 to clean stubborn coatings or two sensors, keep in mind the maximum duty cycle for the AC10 is 10 minutes per hour, exceeding this value may cause the compressor to overheat.

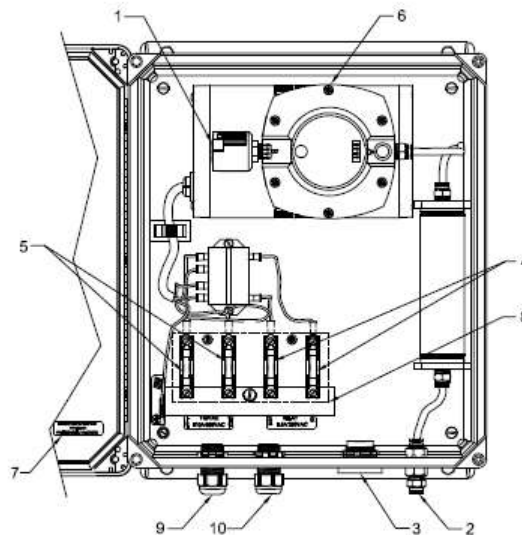
1.1 FEATURES

- Automatic Sensor Cleaning
- Removes Biofilms and other Soft Coatings
- Works with S10, S80, TRITON®, and HYDRA style sensors
- Easily configured with C22 Analyzer/Controller or T80 Transmitter
- Single or Dual Channel designs (AC10 cleans 1 or 2 sensors)
- NEMA 4X Self Contained Design
- Wall Mount or Optional 2" Handrail Mount

1.2 SPECIFICATIONS

1.2.1 Parts Diagram

1. Air Filter, Interior
2. ¼" Quick Connect Tube Fitting
3. Air Filter, Exterior
4. Relay Fuses, T. 0.5A 250V
5. Compressor Fuses, T. 10A 250V
6. Air Compressor
7. Product Label, Part#, Serial#
8. Folding Protective Cover
9. Cable Gland, AC Power
10. Cable Gland, Control Signal



1.2.2 Performance Specifications

Pressure: 40 psi, maximum (2.8 bar)

Flow rate: 1.24 CFM (35.1 LPM) 115 VAC
1.15 CFM (32.6 LPM) 220 VAC

Duty Cycle: Less than 10 minutes per hour

Temperature: minimum: -10°C (14°F)
maximum: 50 °C (122°F)

Power: 115 VAC 60 Hz 5.5 A
220 VAC 50 Hz 2.1 A

Fuses: 3AG T10A 250V
3AG T0.5A 250V

Enclosure: Fiberglass reinforced Polyester, NEMA 4X

Dimensions: 15.5" x 13.3" x 8.2" (39.4 x 33.7 x 20.7 cm)

Weight: Wall mount: 20 lbs (9.1 kg)
Handrail Mount: 25 lbs (11.3 kg)



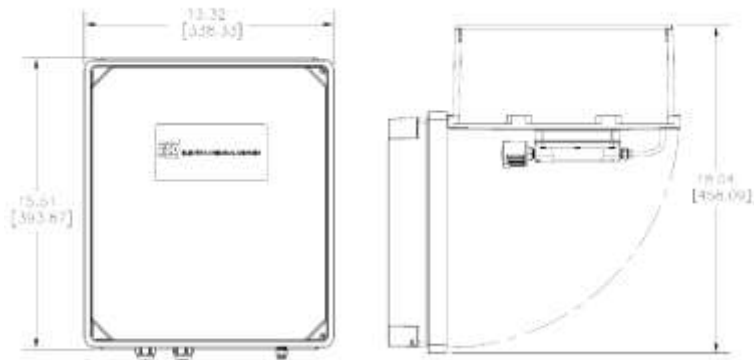
AC10 Single Channel



AC10 Dual Channel

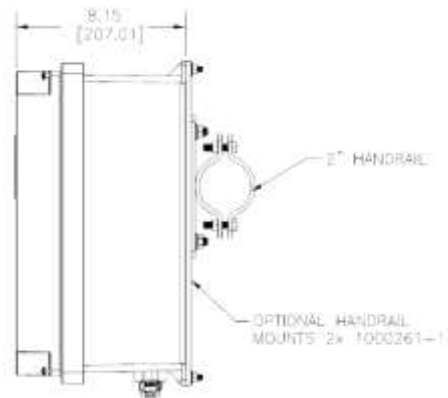
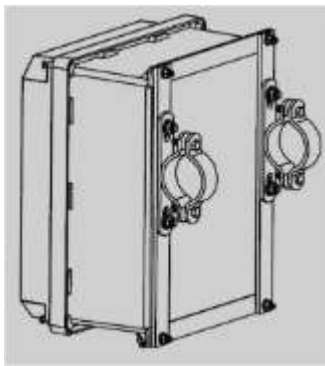
2.0 INSTALLATION

The AC10 is suitable for indoor or outdoor installation and it should be mounted out of direct sunlight to avoid overheating. Choose a location with access to electrical power within 30 ft of the sensor.



2.1 MOUNTING

The AC10 is designed for wall mounting. An optional 2" Handrail Mounting system is also available.



2.2 WIRING

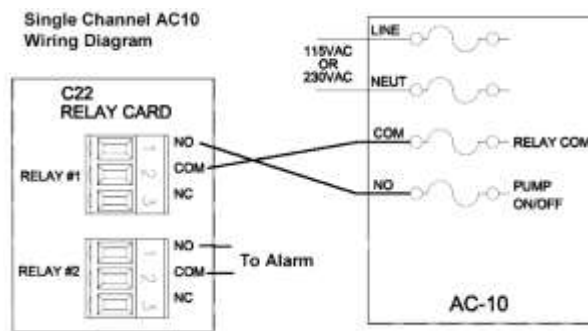
- WARNING:**
- The electrical connection must only be carried out by authorized technical personnel.
 - Technical personnel must have read and understood the instructions in this manual.
 - Ensure that there is no voltage at the power cable before beginning the connection work.

2.2.1 Wire Connections

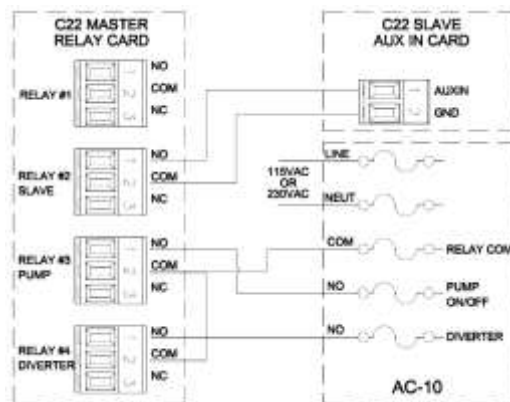
There are two configurations: Single and Dual Channel AC10. Both configurations require connections for the mains (Line, Neutral, and ground). See the figures below for the appropriate controller used.

2.2.1.1 C22 Wiring

The Single Channel AC10 controller connections can be wired with a standard two wire communications cable as shown below.

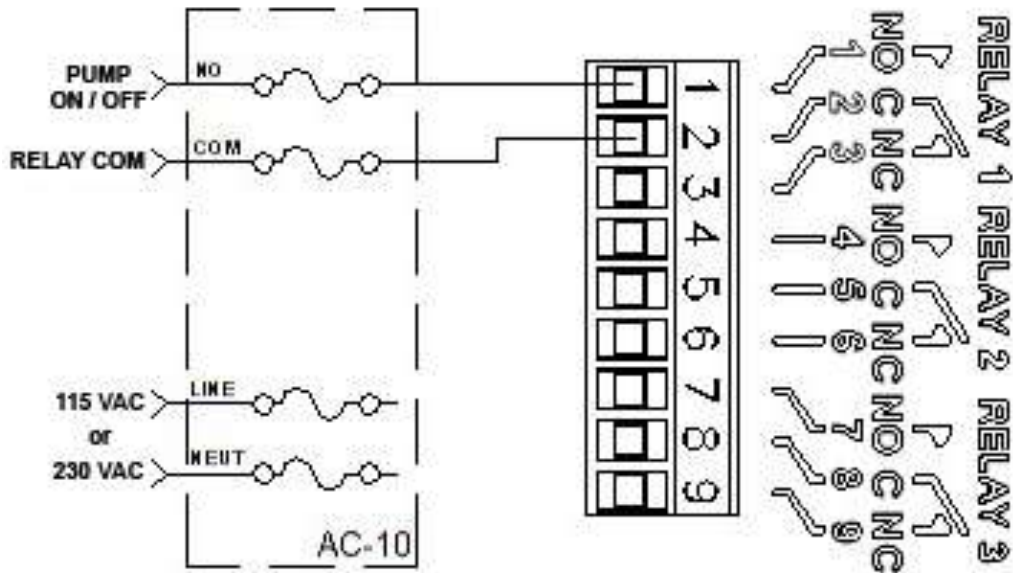


The Dual Channel AC10 is wired as shown below and standard communications cable can be used.

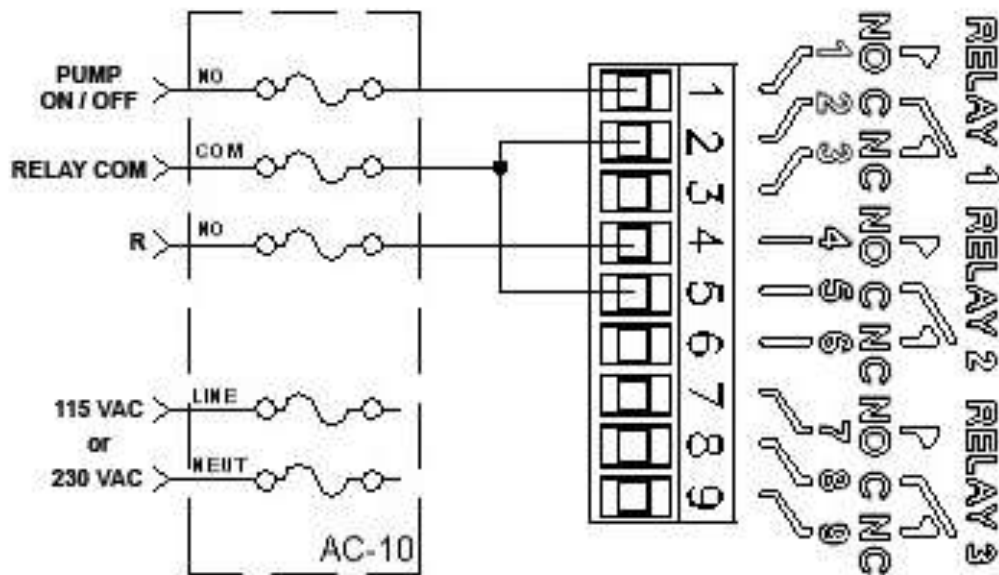


2.2.1.2 T80 Wiring

The Single Channel AC10 controller connections can be wired with a standard two wire communications cable as shown below.



The Dual Channel AC10 is wired as shown below and standard communications cable can be used.



3.0 CONFIGURING THE CONTROLLER

Each AC10 model has controller configurations dependent on either a Single or Dual Channel AC10. The recommended relay time settings are dependent on the model controller used and are described below.

3.1 C22 CONFIGURATION

3.1.1 Single Channel AC10

The recommended setting for timed relay controlling the AC10 is a period of 15 minutes, a spray duration of 1 minute 30 seconds, and the readings on hold for 30 seconds.

3.1.2 Dual Channel AC10

The Dual Channel AC10 is controlled by a Master Controller. The Automatic Hold function for the mA Output of the Slave Controller is triggered through the digital input labeled Aux In on the Slave Controller. This requires a connection between Relay 2 on the Master Controller and Aux In on Slave Controller.

3.2 T80 CONFIGURATION

The recommended settings for the timed relay controlling the AC10 is a period of 1 hours, a spray duration of 1 minute, and the readings on hold for the duration +30 seconds. Two C22's are required to control the Pump On/Off and Diverter for a Dual Channel AC10 whereas only one T80 is required.

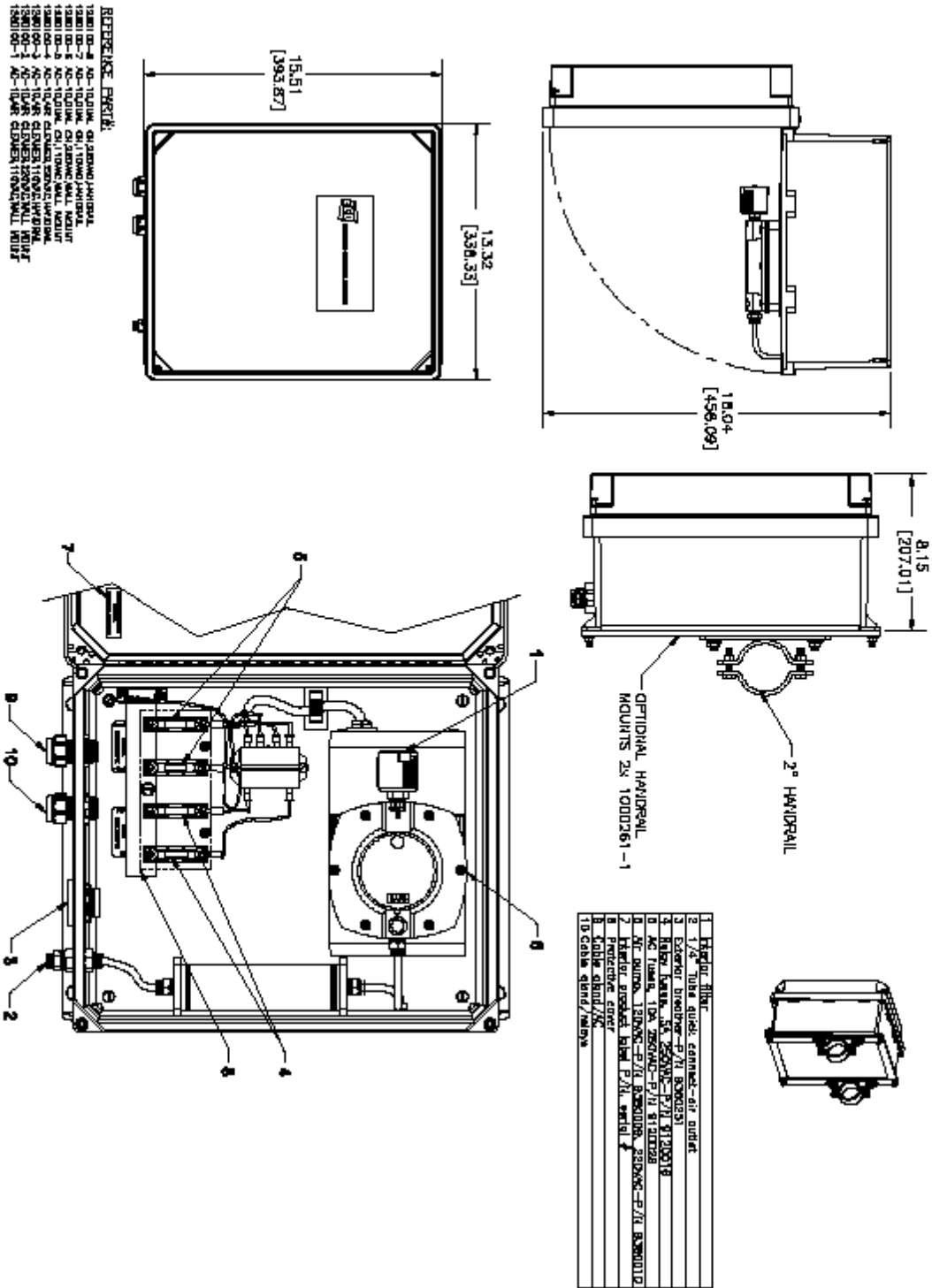
3.2.1 Single Channel AC10

Any of the three relays can be programmed as a timed relay with the corresponding outputs wired as shown above (i.e. If relay 1 is programmed as a timed relay, used the contacts for relay 1, the same for relay 2 and 3). Double click (press) any of the four lower membrane buttons to activate menuing. From "MENU HOME", press "CONFIG" then "XMTR", "OUTPUT", "RELAYS". At this point the "SELECT RELAY" screen should be showing. Any of the relays can be selected using "RLY 1" as an example. The "CONFIGURE RELAY 1" menu will be shown, press "TIMED" after which the "RELAY 1 TYPE TIMED" menu is shown with the current "PERIOD", "DURATION", and "HOLD" times. Set the period to "1 HR.", the duration to "1 MIN." and the hold to "DUR +30SEC." by selecting parameter (period, duration, or hold) from the list on the "SELECT TIMED PARM" screen using the up and down arrows to the desired parameter. Once all parameters have been set press "HOME" (from any screen), and "EXIT" on the next "MENU HOME" screen and answer "YES" to the save changes question. The relay programmed should immediately activate for the times values input.

3.2.2 Dual Channel AC10

The configuration for a Dual Channel AC10 uses the same procedure to program a timed relay that will be used to control the Pump On/Off; however, the "DURATION" will be set to "2 MIN." Program a second, different relay to control the Diverter using the procedure outlined above but set the period to "1 HR.", duration to "1 MIN." and hold to "OFF". Press "HOME" and "EXIT" answering "YES" to the save changes question. Cycle the power to the T80 to ensure the relay timers are synchronized which is important for the proper operation of the Dual Channel AC10. The relay controlling the Diverter will turn on for one minute; therefore, the spray blast will be directed to one channel for one minute, then the other channel for one channel for one minute until the Pump On/Off relay is turned off at the end of two minutes.

4.0 ENGINEERING DOCUMENTATION



4.1 SPECIFICATIONS

Description:	Self-Contained Relay Activated Air Compressor used for cleaning sensors configured with Air Blast Spray Cleaning Heads.
Enclosure:	Fiberglass reinforced Polyester, NEMA 4X
Pressure:	40 psi, maximum (2.8 bar)
Flowrate:	1.24 CFM (35.1 LPM) 115 VAC 1.15 CFM (32.6 LPM) 220 VAC
Air Connection:	¼" Tube fitting
Duty Cycle:	Less than 10 minutes per hour
Power:	115 VAC 60 hz 5.5 A 220 VAC 50 hz 2.1 A
Fuses:	3AG T10A 250VAC 3AG T0.5A 250VAC
Dimensions:	15.5" x 13.3" x 8.2" (39.4 x 33.7 x 20.7 cm)
Weight:	AC10 wall mount: 20 lbs (9.1 kg) AC10 Handrail Mount: 25 lbs (11.3 kg)

4.2 PART NUMBERS

Part#	Description
1280100-1 (-5 Dual Ch)	AC10 Air Blast Cleaner, 115 VAC, Wall Mount
1280100-2 (-6 Dual Ch)	AC10 Air Blast Cleaner, 220 VAC, Wall Mount
1280100-3 (-7 Dual Ch)	AC10 Air Blast Cleaner, 115 VAC, Handrail Mount
1280100-4 (-8 Dual Ch)	AC10 Air Blast Cleaner, 220 VAC, Handrail Mount



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