DART-300 Upgrade Technical Overview

Overview of changes and implementation for all DART-300 Upgrade packages.

Overview

The DART-300 upgrade is an update to the DART hardware and software. The hardware changes include new parts, obsoleted parts, and modified parts. The software upgrade is a functional and visual upgrade, but will not require re-training to operate.

Upgrade Packages

SW300-Upgrade

- See all sections excluding Hardware Setup

SVP300-Upgrade, QDA300-Upgrade, and HT300-Upgrade

- See all sections
- Hardware installation instructions provided in separate user manual

Requirements for Upgrade

- Upgrade to a DART 300 model is dependent on the controller; it must have either:
    - SVP-200 Controller (Serial # SVP20XXX)
        - OR
    - SVP-201 Controller (Serial # SVP21XXX)
- SVP-100 Controllers **are not compatible and not upgradeable**

Implementation

Controller Return

The controller must be returned to IonSense for firmware and software upgrade.   All other installation can be done by the customer.

Shipping Costs

- Customer covers return to IonSense
- IonSense covers return to customer (ground shipping)
    - Faster shipping will incur an additional charge

Packing

- Customers may package the controller themselves
    - Box must be double walled cardboard
    - Contain 3 inches of packaging material on all sides between controller and box wall
    - Box must be secured with packaging tape
- For a fee, customers can request IonSense provide a shipping container to them for return shipment

Obsolete Parts

Obsolete parts can be returned to IonSense if the customer has no need for them, however it is not necessary to return these.

Hardware Setup

The DART system hardware will stay largely the same, with the changes focusing on linear rail automation and mounting.   Full hardware installation can be executed by the user.

- Controller
    - Firmware and Software updated (by IonSense)
    - Hardware unchanged along with all cabling and connections
- Experiment Modules
    - All single rail experiment modules will transfer to DART-300
- Automation
    - Linear rails and module mounting bracket will be replaced
- Source
    - Baseplate and source mounting bracket will be replaced
    - User will transfer current source housing to new bracket and baseplate

Detailed instructions on replacement procedure, and pictures of all parts will be provided in a separate Upgrade Manual.

Software:

The DART software has been updated but will not require re-training to operate. Below is a list of the major updates, and an overview of new methods.

Updates

- Ability to run the new XE401 linear rails
- Visuals and layout modernized and re-organized for less clicking
- UI elements will dynamically re-size according to browser window
- Pulsing Technique Option
    - Significantly reduces gas consumption while in use
    - Available with the following methods:
        - Quickstrip, Tablet, 12 Dip-it, SPE-it, Pin Liquid Sampler, and HT Scanner
    - Scanning option still available for all methods
- Method Display
    - Simplifying method settings display for easier viewing and reduced clicking
- Method Naming
    - Add a unique identifier to method names during creation

New Methods

SPE-it Method

Dedicated method for the SPE-it module that runs 12 SPE-it tips.

Pin Liquid Sampler (12 or 24) Method:

Method developed to analyze the 24 Pin Tool and 12 Pin Tool module now available for the DART system.

OpenSpot Method:

Method that will allow the user to utilize the pulse technique with the OpenSpot cards and reduce gas consumption.

384 Sample Analysis (HT Scanner):

HT Scanner method will add a 384 sample array option, alongside the standard 96 sample array. Specialized 384 sample clamps required for this option, otherwise module hardware is the same between 96 and 384 arrays.

Revision History			
REV	DCR #	Description of Change	Effective Date
1	472	Initial Release	4/17/2020