Smart-Arm Control Package with Graphical User Interface
SA-GUI-2 links your DC Tool Controller to your PC Monitor and the ETA Smart-Arm.

Our Smart-Arm-Interface-Box and GUI Software combine all these devices into a synchronous assembly station, combining **Ergonomic Benefits** with **Zero Defect Manufacturing**!
SA-GUI-2 System

- PC Based Software – Simple Graphical User Interface
  - Simple System Setup
  - Quick and Easy Assembly Configuration Setup
  - Image of Your Actual Assembly with Real-time Fastener Location Graphics
  - Multiple Assembly Configuration Capability
  - Menu & Bar Code Options for Assembly Configuration Recall
  - Operator Log-in or Badge Swipe Capability
  - Data Storage & Reporting

- Smart-Arm Interface Box
  - EL-Series Smart-Arm Encoder Inputs
  - PC Connection – using Ethernet & USB Cables
  - DC Tool Communication over Ethernet
    - Open Protocol over Ethernet
    - Modbus TCP (for select types of tools)

*NOTE; The following components are NOT included in the SA-GUI-2 package; ETA Smart-Arm (purchased separately), Computer & Monitor, DC Tool with Controller & Cable, USB & Ethernet Cables as needed and USB Scanners (optional).*
SA-GUI-2
Simple-to-use GUI (Graphical User Interface)
SA-GUI-2 Display Details

Display area showing current operator login.

Display area for last torque rundown, including torque and angle measurements. Torque value is displayed in the format you designate on your DC Tool. (Nm, In-lbs, Ft-lbs, etc.)

Area for optional Serial Number or Operator Badge scans.

Current fastener rundown completion, including total number of rundowns completed vs. total of required rundowns.

Assembly Configuration Selection area, for changing configurations from the drop down menu.

A **BLUE** dot shows the next rundown location.

**GREEN** dots show successfully completed rundowns.

**Yellow** dots show locations to be completed in numbered order.
SA-GUI-2 Display Details

Display area for graphical representation of the rundown process to guide the operator and enforce all fastener rundowns to ensure zero-fault assembly.

This image is uploaded at Assembly Configuration setup and is unique to that Assembly file.

During initial setup, color coded dots are placed on the graphic image to represent the location of each fastener. At setup they will all be yellow. **During assembly dots will dynamically change, real-time to signify fastener status.** YELLOW – Not Completed Yet BLUE – Next Position to be completed GREEN – Completed Position

Each color coded dot is tied to a specific rundown location validated directly on your actual parts by the ETA Smart-Arm and SA-GUI-2 system. This allows for the enforcement rundown order by position as well as guaranteeing that the current rundown has completed successfully before the next rundown position is allowed to start. In addition, each rundown position is able to have a unique torque/angle, allowing for different rundown strategies within the same Assembly Configuration and controlled automatically by tool location.
A Graphical User Interface (GUI) is used to allow for quickly and easily adding a new Assembly Configuration to the system. You provide images of assemblies in JPEG (.jpg), GIFF (.gif) or PNG (.png). Torque and Angle parameters are programmed into your DC tool and then assigned and recalled at each fastener location by this ETA software.
Upon pressing the ‘Add New’ button, a series of prompts guides the user through setting up a new Assembly Configuration, including screens for the following:

- Entering the Assembly Configuration.
- Entering the total number of required rundown(s).
- Locating each rundown position on the assembly image by placing numbered dots in the fastener locations and then placing the ETA Smart-Arm on the corresponding physical location on the actual assembly.
SA-GUI-2

DC TOOL COMPATIBILITY

SA-GUI-2 control system is designed to work with EL-Series Smart Arms and Ethernet enabled DC tools that support the following protocols:

- DC Tools Open Protocol (over Ethernet)
- Modbus TCP (for select DC tool types)
The Smart Arm Controller is able to utilize most USB enabled barcode scanners and USB enabled RFID scanners. *(Scanners not provided by ETA).*

- **USB Barcode Scanners for:**
  - Assembly Configuration scanning
  - Serial Number scanning
  - Bar Coded Operator Badges

- **USB RFID Scanners for:**
  - Operator Badge scanning
REPORTING

After the completion of each Assembly Configuration a HTML based report is generated and optionally saved to disk.

As shown in the example report above, each report includes:

- The Badge ID of the user logged in (if enabled)
- The Assembly Configuration selected for this rundown
- The Serial Number of the part (if enabled)
- Rundown Torque and Angle data
- Time and date stamps of each rundown (from the PC time)
SA-GUI-2

RUNDOWN DATA SAVING AND EXPORTING

- CSV file exporting (comma separated value)
  - If enabled, at the completion of each cycle all the rundown data is automatically saved to a CSV file.

- Rundown data to SQL server. (Future functionality)
  - If enabled, at the completion of each cycle all rundown data is automatically saved to a MSSQL server.
SA-GUI-2

SYSTEM DIAGRAM

EL-Series Smart-Arm (purchased separately)

DC TOOL

ENCODER CABLES

Smart-Arm INTERFACE BOX

115 VAC to 24 VDC POWER SUPPLY (INCLUDED)

PC MONITOR CABLE

PC RUNNING Windows 7 or XP

DC TOOL CONTROLLER

MAIN TOOL CABLE

ETHERNET

USB

ETHERNET

BAR CODE & BADGE SCANNERS (USB TYPE)

ETA Smart-Arm SOFTWARE
SA-GUI-2
SMART-ARM INTERFACE BOX
SA-GUI-2
PC based Smart-Arm Control Package with Graphical User Interface

www.smart-arms.com

Ergonomic Tool Arms, LLC

855-TOOL ARM (855-866-5276)
Smart-arms.com toolarms.com taparms.com
e-mail: etainfo@toolarms.com

ETA Smart Arms and Controls are sold through authorized ETA distributors only.