CTO DCS Conventional IO Cabinets

- Delivers “S-Series” Convention IO card design technology
- Choice of Conventional IO or High density IO cards
- Flexibility in selecting simplex or redundant system
- Pre-engineered marshaling templates

Introduction

The DeltaV DCS™ Configure-To-Order (CTO) Conventional IO Cabinets provide an off-the-shelf solution for faster project execution and reduced installation costs. CTO SCI Cabinets are factory tested and ready for installation in technical rooms.
Benefits

Delivers IO Cards selection flexibility. The CTO SCI Cabinets offer the full benefits of DeltaV Conventional IO system. The CTO SCI cabinets allow selection of 8, 16 and 32 channel IO cards as well as all the conventional cards for other I/O interfaces.

Selection of Redundant or Simplex System. Design provides option of selecting simplex or redundant configuration.

Significantly reduce cabinet design engineering. The CTO SCI cabinets are pre-engineered and factory tested. The I/O flexibility allows the same design to serve a wide variety of I/O signals. Sample marshalling templates can provide basic marshaling arrangement. User will get benefit of predefined templates and can save design time on marshalling arrangements.

Fully documented package. Each cabinet is supplied with full documentation and engineering drawings showing internal layout, bill of materials and internal wiring. The wiring sheets are not automated. User should modify these based on actual I/O configuration. CTO Cabinets are designed to meet local building code and industry best practices to deliver proven functionality with minimal costs.

Product Description

The CTO SCI Cabinets offering comprises a range of pre-engineered solutions based on industry standard, preinstalled with controller and 8 wide carriers. User should assign required cards allocation in GA drawing & CCT Configuration. Required card type needs to added in drawing separately.

The cabinets are typical, free standing enclosures intended for floor mounting in equipment room areas, where temperature and humidity are controlled within the requirements for computer/electronic equipment. They come ready to receive incoming plant AC power. All internal wiring to power distribution components and grounding conductors has been tested at the factory.

Before delivery, each cabinet undergoes a full in-house inspection, to assure that it is fully operational before shipping.

The CTO SCI Cabinets are configured by selecting a base enclosure model and required options to meet specific project needs.

Base enclosure models are available:

- For different cabinet sizes with Front and Rear access.
- Front side is reserved for system and rear side is reserved for marshalling.
- For different world area design standards and regulations: EU (Europe) and AP (Asia Pacific).

Each base model is further explained in the coming sections.

Configurable options examples: the type of IO card, side panels, cabinet light, nameplate engraving and injected power.

- All CTO SCI cabinets come with following equipment installed: Primary and secondary 24VDC power distribution for I/O Carriers and field instrumentation.
- Wire ducts
- Grounding bars.
- Wiring plan pocket.
- Emerson Name Plate Holder and blank name plate insert.
- DeltaV equipment based on your configuration (and priced separately): including 2 Wide carriers, 8 wide carriers, ViM cards, Network Switch, marshalling accessories as per selected marshalling template.

The Controller cards, IO cards & Vim cards are not included and are to be ordered separately.

The required number of I/O cards (Conventional or HD) depends on the actual number and types of I/O that will be wired into the cabinet.

The following sections provide a more detailed specification for the CTO SCI Cabinets and available options.
## Overview of CTO DCS Conventional IO Cabinets – Base Models

<table>
<thead>
<tr>
<th>Base Model Number</th>
<th>Description</th>
<th>Power Requirements (Prim and Sec)</th>
<th>Permitted Location / World Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-CAB-1200FR-AC-SCI-MAR</td>
<td>AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom</td>
<td>230 VAC</td>
<td>Safe Area EUR</td>
</tr>
<tr>
<td>EU-CAB-800FR-AC-SCI-MAR</td>
<td>AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom</td>
<td>230 VAC</td>
<td>Safe Area EUR</td>
</tr>
<tr>
<td>AP-CAB-1200FR-AC-SCI-MAR</td>
<td>AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom</td>
<td>230 VAC</td>
<td>Safe Area AP</td>
</tr>
</tbody>
</table>

### Overview of CIOC/Controller Cabinets.

The CTO base model reference for cabinets uses the following naming convention: “EU / AP-CAB-XXXXYY-AC-SCI-MAR”, where:

- **EU**: Europe Design Standards and Regulations / **AP**: Asia Pacific Design Standards and Regulations.
- **XXXX** = cabinet width (mm), e.g. “800”, “1200”.
- **YY** = “FR” for Front and Rear access (800 mm deep)
- **SCI** = Conventional IO Cabinet
- **MAR** = Marshalling
- **IP** = Incoming Power, **AC** = 230VAC.
### Overview of CTO Conventional IO Cabinets models and Options

<table>
<thead>
<tr>
<th>Enclosure Options</th>
<th>EU-CAB-1200FR-AC-SCI-MAR</th>
<th>EU-CAB-800FR-AC-SCI-MAR</th>
<th>AP-CAB-1200FR-AC-SCI-MAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Area</td>
<td>EU</td>
<td>EU</td>
<td>AP</td>
</tr>
<tr>
<td>Power Input (230VAC)</td>
<td>AC</td>
<td>AC</td>
<td>AC</td>
</tr>
<tr>
<td>Enclosure Access (FR: Front-Rear)</td>
<td>FR</td>
<td>FR</td>
<td>FR</td>
</tr>
</tbody>
</table>

#### Enclosure Options:

- **Side Panels - Installed**
  - A: 1 Left and Right • • •  
  - No ○ ○ ○

- **Baying Kit**
  - B: 1 No • • •  
  - Yes ○ ○ ○

- **Cable Clamp Rail**
  - C: 1 No • •  
  - Yes ○ ○

- **Door Hinges**
  - D: 1 Left Hinged NA •  
  - Right Hinged ○

- **Plinth**
  - E: 1 100mm • •  
  - 200mm ○ ○

- **Door Fans**
  - F: 1 Thermostat Controlled • •  
  - Continuous Run ○ ○

- **Cabinet Light**
  - G: 1 NO ○ ○ ○  
  - 2 LED Light with motion sensor • • •  
  - 3 Light with motion sensor and power socket ○ ○ NA

- **Utility Socket**
  - I: 1 No • • •  
  - Yes ○ ○ ○

- **Certification**
  - J: 1 No ○ ○ •  
  - CE • • ○

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**LEGEND:**
- Default Option Setting
- Configure to option setting. (Different from Default)
- NA Option setting not possible for Base Enclosure Model
- Intentionally kept blank for user to fill as per configuration choice

Following more detailed options can be specified upon order (if applicable):

- Type of utility socket: German-Russia / France-Poland / Switzerland / UK-Ireland / USA-Canada / Italy
- Wiring color scheme different from default: L- Brown, N- Blue
- Input Voltage different from default: AP (230VAC) / EUR (230VAC)
- IP= Incoming Power, AC=230VAC.
<table>
<thead>
<tr>
<th><strong>EU-CAB-800F-252-AC-CIOC</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
</tr>
<tr>
<td><strong>Access</strong></td>
</tr>
<tr>
<td><strong>Protection Category</strong></td>
</tr>
<tr>
<td><strong>Approximate Weight</strong></td>
</tr>
<tr>
<td><strong>Color</strong></td>
</tr>
<tr>
<td><strong>Door Fans</strong></td>
</tr>
<tr>
<td><strong>Temperature Monitoring</strong></td>
</tr>
<tr>
<td><strong>Other</strong></td>
</tr>
<tr>
<td><strong>Environmental Specifications</strong></td>
</tr>
<tr>
<td><strong>Certifications</strong></td>
</tr>
<tr>
<td><strong>Input Power</strong></td>
</tr>
<tr>
<td><strong>Power Supply Rating</strong></td>
</tr>
<tr>
<td><strong>Internal Power Distribution</strong></td>
</tr>
<tr>
<td><strong>Control Network</strong></td>
</tr>
</tbody>
</table>

Possible options on System side:
- Power Supply subassembly.
- System and field power distribution sub assembly
- Redundant controller sub assembly with or without VIM
- Simplex controller with Conventional IO / High density IO carrier
- Redundant controller with Conventional IO / High density IO carrier
- Only 8 wide Carrier with Conventional IO or HD IO Card selection
- 8 wide Carrier with additional system power

Various marshalling option templates are available for rear side installation.

*No material or labor cost included for the marshalling side. Actual marshalling cost needs to be quoted separately based on actual I/O information.*

*No DeltaV equipment is included in the base model. All DeltaV equipment is to be configured separately through the Emerson quoting tools.*
## EU-CAB-800FR-AC-SCI-MAR

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>800mm (W) x 800mm (D) x 2000mm (H) + 100mm/200mm Plinth</td>
</tr>
<tr>
<td>Access</td>
<td>Front &amp; Rear Access – Single door on both sides, Push Button and Lock Insert</td>
</tr>
<tr>
<td>Protection Category</td>
<td>IP54 – NEMA 12</td>
</tr>
<tr>
<td>Approximate Weight</td>
<td>~300 kg</td>
</tr>
<tr>
<td>Color</td>
<td>Cabinet RAL7035, Plinth RAL7022</td>
</tr>
<tr>
<td>Door Fans</td>
<td>Configurable: Continuous run or with thermostat control</td>
</tr>
<tr>
<td>Temperature Monitoring</td>
<td>Thermostat</td>
</tr>
<tr>
<td>Other</td>
<td>Louvered doors with filter, Fan on front door, mounting plate, grounding bars, wiring plan pocket, lifting eye bolts on top, bottom cable entry, removable gland plate</td>
</tr>
<tr>
<td>Environmental Specifications</td>
<td>Equipment/rack room installation (HVAC controlled), 30°C Max.</td>
</tr>
<tr>
<td>Certifications</td>
<td>Installation in Safe Area locations; Default Certification: CE (Europe); Optional: None</td>
</tr>
<tr>
<td>Input Power</td>
<td>Primary and Secondary 230 VAC</td>
</tr>
<tr>
<td>Power Supply Rating</td>
<td>Fixed 2 x 40A</td>
</tr>
<tr>
<td>Internal Power Distribution</td>
<td>AC Distribution subassembly (mounted in left side)</td>
</tr>
<tr>
<td></td>
<td>Fully redundant 24VDC distribution for bussed field power through fused terminals (mounted in right side).</td>
</tr>
<tr>
<td>Control Network</td>
<td>Redundant 100BASE-FX, RJ45 connectors to be connected to DeltaV controllers. If applicable, 3rd party connections connect to VIM switch. Various DeltaV network switches available for configuration.</td>
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CTO DCS Conventional IO Cabinets

AP-CAB-1200FR-AC-SCI-MAR

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<tr>
<td>Dimensions</td>
<td>1200mm (W) x 800mm (D) x 2000mm (H) + 100mm/200mm Plinth</td>
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<tr>
<td>Access</td>
<td>Front &amp; Rear Access – Double door on both sides, Push Button and Lock Insert</td>
</tr>
<tr>
<td>Protection Category</td>
<td>IP54 – NEMA 12</td>
</tr>
<tr>
<td>Approximate Weight</td>
<td>~400 kg</td>
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<tr>
<td>Color</td>
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How to order a CTO Cabinet?

Configure To Order SCI Cabinets are pre-engineered solutions developed by Emerson’s Project Management Office (PMO) and made available from Emerson Supply Chain. Basically, the following steps are followed to obtain a CTO Conventional IO Cabinet:

1. Specify the SCI Cabinet by selecting the base model and the options required for the project. I/O counts and marshalling requirements (terminals, relays, barriers) must be defined to be able to quote the marshalling side separately.

Specifying tools are available to aid in the selection of the right combination of options for CTOs.

2. Based on the specification, you will then receive:
   - A quotation for the fully assembled Cabinet.
   - The detailed specification (drawing package) matching your configuration, including the Bill of Materials.

3. Approve the drawing package for construction.

4. Order the SCI Cabinet as per provided quotation and approved drawings.

5. The SCI Cabinet is assembled, factory tested and delivered to site. The delivery includes the as-built drawing package (AutoCAD).

For questions related to specific project quotations or order processing, please contact your local Emerson Sales office or your regional Emerson assembly center:

For Europe Cluj iCenter:
Cabinets.Quotes@Emerson.com

For Asia Pacific Singapore iCenter:
iCenterSGPQuotes@Emerson.com

Project Customizations

“...What if a CTO Cabinet is 90% what I need, but I really need my Cabinet to have...”

Minor customizations as a variation or addition to the standard CTO offering can often be developed in such a way that the additional effort is incremental.

In case your project would require a customer witnessed Factory Acceptance Test, this can also be accommodated.

Please work with your local Emerson Sales office or regional Emerson assembly center to evaluate any impacts of requested customizations to cost, delivery time and certifications.

Certifications

The CTO SCI Cabinet designs are designed to meet CE personal safety and EMC requirements.

For Europe Design Standards and Regulations, the cabinet default comes with CE Certification. Optionally, no certification can be specified.

For AP Design Standards and Regulations, the cabinet default comes without any certification. CE declaration of conformity can be specified.

Refer to the DeltaV S-series Traditional I/O, S-series Horizontal carriers, DeltaV S-series High density I/O Product Data Sheet for certification information on the DeltaV system components.
Related Products

- DeltaV I/O cards must be ordered separately
- DeltaV Controllers must be ordered separately