CTO DCS S Series Conventional IO Cabinets

- Delivers “S-Series” Conventional 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 Conventional IO system. Allows selection of conventional IO system or High density IO cards.

Selection of Redundant or Simplex System. : Design provides option of selecting simplex or redundant node 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 predefined arrangements. User will get benefit of predefined templates and can save some 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. These wiring sheets are not automated. User has to modify them as per Dealt hardware selection. They are designed to meet local building code and industry best practices in order to deliver proven functionality with minimal costs.

Product Description

The CTO SCI Cabinets offering comprises a range of pre-engineered solutions based on industry standards, preinstalled with controller and 8 wide carriers. User has to 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 directly to site.

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 available for EU installation 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.

- Wire ducts
- Grounding bars
- Wiring plan pocket
- Emerson Name Plate Holder and blank name plate insert

- DeltaV equipments 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>

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></th>
<th></th>
<th></th>
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</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>

<table>
<thead>
<tr>
<th>Enclosure Options</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side Panels - Installed</td>
<td>1 Left and Right</td>
<td>2 No</td>
<td>•</td>
</tr>
<tr>
<td>Baying Kit</td>
<td>1 No</td>
<td>2 Yes</td>
<td>O</td>
</tr>
<tr>
<td>Cable Clamp Rail</td>
<td>0 No</td>
<td>1 Yes</td>
<td>•</td>
</tr>
<tr>
<td>Door Hinges</td>
<td>1 Left Hinged</td>
<td>2 Right Hinged</td>
<td>O</td>
</tr>
<tr>
<td>Plinth</td>
<td>1 100mm</td>
<td>2 200mm</td>
<td>O</td>
</tr>
<tr>
<td>Door Fans</td>
<td>0 Thermostat Controlled</td>
<td>1 Continuous Run</td>
<td>O</td>
</tr>
<tr>
<td>Cabinet Light</td>
<td>1 NO</td>
<td>1 LED Light with motion sensor (Stego)</td>
<td>•</td>
</tr>
<tr>
<td>Temperature Monitoring</td>
<td>1 Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Utility Socket</td>
<td>0 No</td>
<td>1 Yes</td>
<td>•</td>
</tr>
<tr>
<td>Certification</td>
<td>0 No</td>
<td>1 CE</td>
<td>•</td>
</tr>
</tbody>
</table>

* •: Default option setting
  o: Configure To Order option setting, different from Default
  blank: option setting not possible for the base enclosure
  : Intentionally left blank to fill in your configuration choices

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.
CTO DCS Conventional IO Cabinets

**EU-CAB-800F-252-AC-CIOC**

**Dimensions**
1200mm (W) x 800mm (D) x 2000mm (H) + 100mm/200mm Plinth

**Access**
Front & Rear Access – Double door on both sides, Push Button and Lock Insert

**Protection Category**
IP54 – NEMA 12

**Approximate Weight**
~400 kg

**Color**
Cabinet RAL7035, Plinth RAL7022

**Door Fans**
Configurable: Continuous run or with thermostat control

**Temperature Monitoring**
Thermostat

**Other**
Louvered doors with fan & filter, mounting plate, grounding bars, wiring plan pocket, lifting eye bolts on top, bottom cable entry, removable gland plate.

**Environmental Specifications**
Equipment/rack room installation (HVAC controlled), 30°C Max.

**Certifications**
Installation in Safe Area locations; Default Certification: CE (Europe); Optional: None

**Input Power**
Primary and Secondary 230 VAC

**Power Supply Rating**
Fixed 2 x 40A

**Internal Power Distribution**
AC Distribution subassembly (mounted in left side)
Fully redundant 24VDC distribution for bussed field power through fused terminals (mounted in right side).

**Control Network**
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.

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><strong>Dimensions</strong></th>
<th>800mm (W) x 800mm (D) x 2000mm (H) + 100mm/200mm Plinth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access</strong></td>
<td>Front &amp; Rear Access – Single door on both sides, Push Button and Lock Insert</td>
</tr>
<tr>
<td><strong>Protection Category</strong></td>
<td>IP54 – NEMA 12</td>
</tr>
<tr>
<td><strong>Approximate Weight</strong></td>
<td>~200 kg</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Cabinet RAL7035, Plinth RAL7022</td>
</tr>
<tr>
<td><strong>Door Fans</strong></td>
<td>Configurable: Continuous run or with thermostat control</td>
</tr>
<tr>
<td><strong>Temperature Monitoring</strong></td>
<td>Thermostat</td>
</tr>
<tr>
<td><strong>Other</strong></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><strong>Environmental Specifications</strong></td>
<td>Equipment/rack room installation (HVAC controlled), 30°C Max.</td>
</tr>
<tr>
<td><strong>Certifications</strong></td>
<td>Installation in Safe Area locations; Default Certification: CE (Europe); Optional: None</td>
</tr>
<tr>
<td><strong>Input Power</strong></td>
<td>Primary and Secondary 230 VAC</td>
</tr>
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<td><strong>Power Supply Rating</strong></td>
<td>Fixed 2 x 40A</td>
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<tr>
<td><strong>Internal Power Distribution</strong></td>
<td>AC Distribution subassembly (mounted in left side) Fully redundant 24VDC distribution for bussed field power through fused terminals (mounted in right side).</td>
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<td><strong>Control Network</strong></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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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
- Redundant Network Switch sub assembly

Various marshalling option templates are available for rear side installation.

*No DeltaV equipment is included in the base model. All DeltaV equipment is to be configured separately through the Emerson quoting tools.*
<table>
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<tr>
<th><strong>AP-CAB-1200FR-AC-SCI-MAR</strong></th>
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<td><strong>Dimensions</strong></td>
<td>1200mm (W) x 800mm (D) x 2000mm (H) + 100mm/200mm Plinth</td>
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<td><strong>Access</strong></td>
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<td><strong>Power Supply Rating</strong></td>
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</tr>
<tr>
<td><strong>Control Network</strong></td>
<td>Redundant 100BASE-FX, RJ45 connectors, to be connected to each CSLS carrier. Primary and Secondary Local Safety Network to 3 CSLS carriers is included.</td>
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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 DeltaV equipment is included in the base model. All DeltaV equipment is to be configured separately through the Emerson quoting tools.
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.
2. Specifying tools are available to aid in the selection of the right combination of optioned CTOs.
3. 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.

System Compatibility

CTO Cabinets are compatible with DeltaV version 11.3.1 and above.

Certifications

The CTO SCI Cabinet designs are designed to meet CE and CSA personal safety and EMC requirements. The designs have been submitted for the following certifications:

- Conformity to the relevant European directives, including EMC (CE Marking)
- CE declaration for AP

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 with CE declaration. The CE Certification is optional.

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

- CSLS cards must be ordered separately
- LS CHARMS must be ordered separately
- LS CHARMS requiring other terminal blocks than the standard terminal block should be ordered with the non-standard terminal block