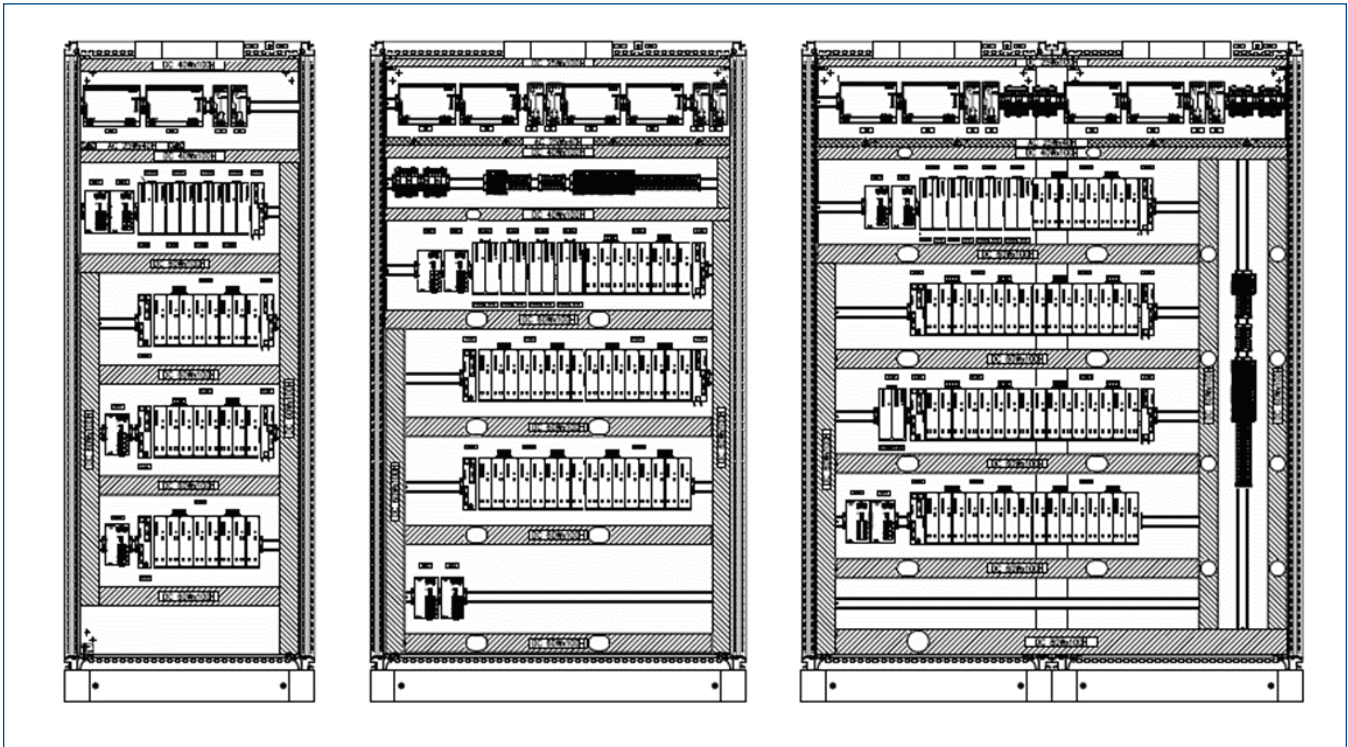


CTO DCS M-Series Conventional IO Cabinets



CTO SCI Cabinet.

- Delivers “M-Series” I/O card design technology
- Choice of regular I/O or High density I/O 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 MCI Cabinets are factory tested and ready for installation in technical rooms.

Benefits

Delivers IO Cards selection flexibility:

The CTO MCI Cabinets offer the full benefits of DeltaV Conventional I/O system. The CTO MCI cabinets allow selection of 8, 16 and 32 channel IO cards as well as all the other I/O 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 MCI 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 MCI 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 MCI 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.

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.

- For different world area design standards and regulations: EUR (Europe), NK (Asia Pacific and Middle East and Africa).
- All CTO MCI 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 MCI Cabinets and available options.

Overview of CTO DCS Conventional IO Cabinets – Base Models for Europe Region

Base Model Number	Description	Power Requirement (Pri and Sec)	Permitted Location/ World Area
EU-CAB-800FR-AC-MCI-MAR	AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom	230 VAC	Safe Area EUR
EU-CAB-1200FR-AC-MCI-MAR	AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom	230 VAC	Safe Area EUR

The CTO base model reference for cabinets uses the following naming convention: “NK-CAB-XXXXYY-AC-MCI-MAR”, where

- XXXX = cabinet width (mm). “800”, “1200”, “1600”
- YY = “FR” for Front and Rear access (800 mm deep)
- AC= AC incoming power
- MCI= Conventional IO Cabinet
- MAR= Marshalling

Overview of CTO DCS Conventional IO Cabinets – Base Models for MEA and AP Region

Base Model Number	Description	Power Requirement (Pri and Sec)	Permitted Location/ World Area
NK-CAB-800FR-AC-MCI-MAR	AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom	230 VAC	Safe Area MEA/AP
NK-CAB-1200FR-AC-MCI-MAR	AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom	230 VAC	Safe Area MEA/AP
NK-CAB-1600FR-AC-MCI-MAR	AC Powered PAS Cabinet for Conventional I/O; Front and Rear Access; Marshalling in Rear; Cable Entry - Bottom	230 VAC	Safe Area MEA/AP

The CTO base model reference for cabinets uses the following naming convention: “NK-CAB-XXXXYY-AC-MCI-MAR”, where

- XXXX = cabinet width (mm). “800”, “1200”, “1600”
- YY = “FR” for Front and Rear access (800 mm deep)
- AC= AC incoming power
- MCI= Conventional IO Cabinet
- MAR= Marshalling

Overview of CTO Conventional IO Cabinets models and Options for Europe Region

Base Model				EU-CAB-800FR-AC-MCI-MAR	EU-CAB-1200FR-AC-MCI-MAR	
World Area				EU	EU	
Power Input (230VAC)				AC	AC	
Enclosure Access (FR: Front-Rear)				F/R	F/R	
Enclosure Options						
Side Panels - Installed	A		0	Left and Right	●	●
			1	No	○	○
Baying Kit	B		0	No	●	●
			1	Yes	○	○
Cable Clamp Rail	C		0	No	●	●
			1	Yes	○	○
Door Hinges - Front	D		0	On Left	NA	
			1	On Right		
Door Hinges - Rear	E		0	On Left	NA	
			1	On Right		
Plinth	F		1	100 mm	●	●
			0	200 mm	○	○
Door Fans	G		0	Thermostat Controlled	○	○
			1	Continuous Run	●	●
Enclosure Light	H		0	Light with Motion Sensor	●	●
			1	No	○	○
Temperature Monitoring	I		1	Yes	●	●
Utility Socket	J		0	No	●	●
			1	Yes	○	○
Certification	K		0	CE	●	●
			1	None	○	○

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):

- Wiring color scheme different from default: L- Brown, N- Blue, PE- Green-Yellow
- Input Voltage different from default: EU (230VAC)

Overview of CTO Conventional IO Cabinets models and Options for MEA and AP Region

Base Model				NIK-CAB-800FR-AC-MCI-MAR	NIK-CAB-1200FR-AC-MCI-MAR	NIK-CAB-1600FR-AC-MCI-MAR
				World Area	MEA/ AP	MEA/ AP
Power Input (230VAC)				AC	AC	AC
Enclosure Access (FR: Front-Rear)				F/R	F/R	F/R
Enclosure Options						
Side Panels - Installed	A	0	Left and Right	●	●	●
		1	No	○	○	○
Baying Kit	B	0	No	●	●	●
		1	Yes	○	○	○
Cable Clamp Rail	C	0	No	●	●	●
		1	Yes	○	○	○
Plinth	D	0	100 mm	●	●	●
		1	200 mm	○	○	○
Door Fans	E	0	Continuous Run	●	●	●
		1	Thermostat controlled	○	○	○
Temperature Monitoring	F	1	Yes	●	●	●
Cabinet Light	G	0	No	○	○	○
		1	Yes	●	●	●
Utility Socket	H	0	No	●	●	●
		1	Yes	○	○	○
Utility Feeder	I	0	No	●	●	●
		1	Yes	○	○	○

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

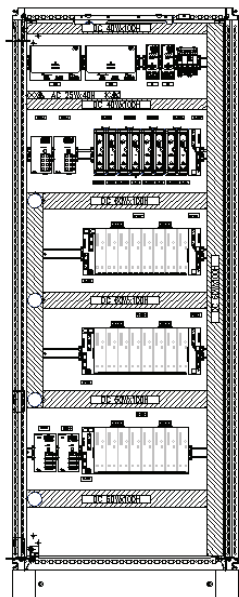
Following more detailed options can be specified upon order (if applicable):

- Wiring color scheme different from default: L- Brown, N- Blue. PE- Green-Yellow
- Input Voltage different from default: MEA and AP (230/110 VAC)

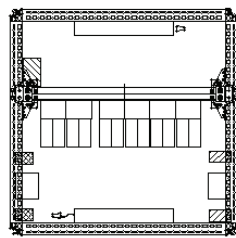
Cabinet Specifications

EU-CAB-800FR-AC-MCI-MAR	
Dimensions	800mm (W) x 800mm (D) x 2000mm (H) + 100mm/200mm Plinth
Access	Front & Rear Access – Single door on both sides, Push Button and Lock Insert
Protection Category	IP54 – NEMA 12
Approximate Weight	~300 kg
Color	Cabinet RAL7035, Plinth RAL7022
Door Fans	Control configurable
Temperature Monitoring	Thermostat
Other	Fan and louvered doors with 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.

Example Layout and Installed Equipment:



Front View



Top View

Possible options on System side:

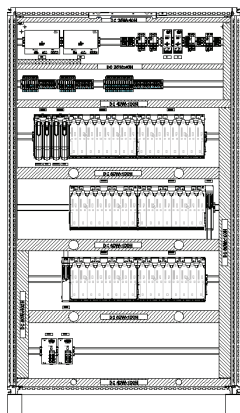
- Power Supply subassembly (Fixed)
- System and field power distribution sub assembly
- Redundant controller sub assembly with or without VIM
- Simplex controller with Conventional I/O carrier
- Redundant controller with Conventional I/O carrier
- Conventional I/O carrier only
- Redundant Network Switch sub assembly

This cabinet is designed to be used with separate marshaling cabinet. Rear side will be provided with Field Terminal Assembly (FTA) boards based on the type and number of cards used that will in turn connect to marshaling cabinet.

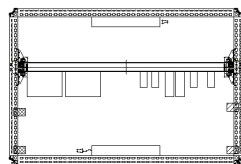
No DeltaV equipment is included in the base model. All DeltaV equipment is to be configured separately through the Emerson quoting tools.

EU-CAB-1200FR-AC-MCI-MAR	
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	Control configurable
Temperature Monitoring	Thermostat
Other	Fan and louvered doors with 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, Configurable additional 2 x 40A for field power.
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.

Example Layout and Installed Equipment:



Front View



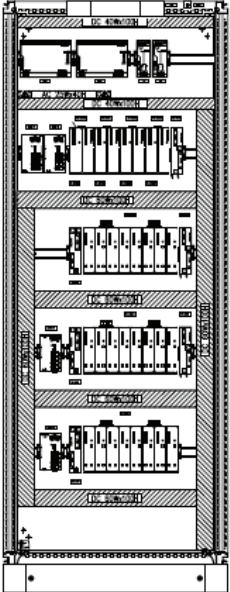
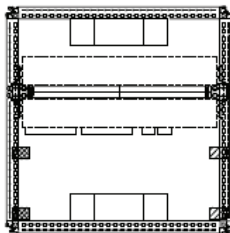
Top View

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 I/O carrier
- Redundant controller with Conventional I/O carrier
- Conventional I/O carrier only
- Redundant Network Switch sub assembly

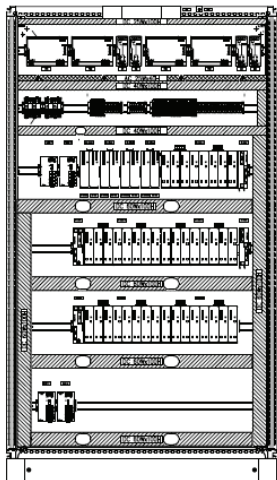
Various marshalling option templates are available for rear side installation.

No DeltaV equipment is included in the base model. All DeltaV equipment is to be configured separately through the Emerson quoting tools.

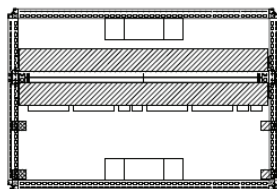
NK-CAB-800FR-AC-MCI-MAR	
Dimensions	800mm (W) x 800mm (D) x 2000mm (H) + 100mm/200mm Plinth
Access	Front & Rear Access – Single door on both sides, Push Button and Lock Insert
Protection Category	IP54 – NEMA 12
Approximate Weight	~300 kg
Color	Cabinet RAL7035, Plinth RAL7022
Door Fans	Control configurable
Temperature Monitoring	Thermostat
Other	Fan and louvered doors with 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	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.
<p>Example Layout and Installed Equipment:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Front View</p> </div> <div style="text-align: center;">  <p>Top View</p> </div> </div> <div style="margin-top: 20px;"> <p>Possible options on System side:</p> <ul style="list-style-type: none"> ■ Power Supply subassembly (Fixed) ■ System and field power distribution sub assembly ■ Redundant controller sub assembly with or without VIM ■ Simplex controller with Conventional I/O carrier ■ Redundant controller with Conventional I/O carrier ■ Conventional I/O carrier only ■ Redundant Network Switch sub assembly <p>This cabinet is designed to be used with separate marshaling cabinet. Rear side will be provided with Field Terminal Assembly (FTA) boards based on the type and number of cards used that will in turn connect to marshaling cabinet.</p> <p>No DeltaV equipment is included in the base model. All DeltaV equipment is to be configured separately through the Emerson quoting tools.</p> </div>	

NK-CAB-1200FR-AC-MCI-MAR	
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	Control configurable
Temperature Monitoring	Thermostat
Other	Fan and louvered doors with 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	None
Input Power	Primary and Secondary 230 VAC
Power Supply Rating	Fixed 2 x 40A, Configurable additional 2 x 40A for field power.
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.

Example Layout and Installed Equipment:



Front View



Top View

Possible options on System side:

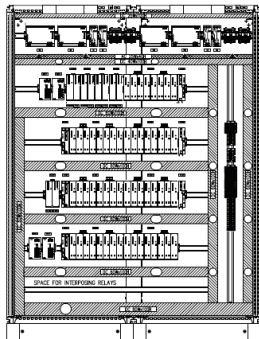
- Power Supply subassembly
- System and field power distribution sub assembly
- Redundant controller sub assembly with or without VIM
- Simplex controller with Conventional I/O carrier
- Redundant controller with Conventional I/O carrier
- Conventional I/O carrier only
- Redundant Network Switch sub assembly

Various marshalling option templates are available for rear side installation.

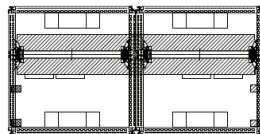
No DeltaV equipment is included in the base model. All DeltaV equipment is to be configured separately through the Emerson quoting tools.

NK-CAB-1600FR-AC-MCI-MAR	
Dimensions	1600mm (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	~500 kg
Color	Cabinet RAL7035, Plinth RAL7022
Door Fans	Control configurable
Temperature Monitoring	Thermostat
Other	Fan and louvered doors with 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	None
Input Power	Primary and Secondary 230 VAC
Power Supply Rating	Fixed 2 x 40A, Configurable additional 2 x 40A for field power.
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.

Example Layout and Installed Equipment:



Front View



Top View

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 I/O carrier
- Redundant controller with Conventional I/O carrier
- Conventional I/O carrier only
- 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.

How to order a CTO Cabinet?

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

1. Specify the MCI 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.

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 MCI Cabinet as per provided quotation and approved drawings.
5. The MCI 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 US/Canada St. Louis iCenter:
iCenterSTL.Quotes@Emerson.com

For European iCenter:
Cabinets.Quotes@Emerson.com

For Asia Pacific Singapore iCenter:
iCenterSGPQuotes@Emerson.com

For Middle East and Africa iCenter:
rfq.icenter.nsk@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 MCI Cabinet designs are designed to meet international personal safety and EMC requirements.

Refer to the **DeltaV M-series Traditional I/O, S-series Horizontal carriers, DeltaV M-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
- DeltaV System Power supplies must be ordered separately
- DeltaV Switches must be ordered separately
- DeltaV VIM cards must be ordered separately
- VIM Switches must be ordered separately

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🌐 www.emerson.com/deltav

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