

CL-7 Multi-Phase Control reference



Read equipment manufacturer's manual and this material before using this product. Failure to do so can result in death, severe personal injury, and equipment damage. G164.0



Introduction

- This guide is to assist in the set-up of the CL-7 control for multi-phase operation. Refer to document MN225003EN for detailed control instructions and multi-phase setup.
- Changes to parameters require the entry of the Admin password at **Function Code (FC) 99** – Default password is **"Admin"**. The down arrow can be used to capitalize the letter A.

Multi-phase settings

1. Turn on the Multi-phase function by changing **Function Code 200** to **On**
2. Select **Multi-phase Mode** at **Function Code 201**
3. **Function Code 204 Tap Wait Timer** enables a tap delay for each connected regulator
4. Once the Multi-phase Mode has been selected, follow the table below for settings applying to the mode that has been selected

Function Code	Parameter*	Mode				
		Independent	Lead Phase Regulation	Voltage Averaging	Max Deviation	Advanced Independent
202	Multi-Phase VRs Configured	X	X	X	X	X
203	Multi-Phase Lead Regulator		X		X**	
205	Multi-Phase Retry Count		X	X		
206	Multi-Phase Retry Delay		X	X		
207	Multi-Phase Total Deviation				X	
208	Timer to Max Deviation Mode				X	
209	Timer to Alt Mode				X	
210	Max Deviation Alt Mode				X	
211	Sequencing Interval	X	X	X	X	X

* See Important definitions on the back page for further explanation.

** Required for Max Deviation mode only when the Max Deviation Alt Mode is set to Ganged Mode.

Control settings – set once for each control

- | | |
|--|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> FC 1 to FC 5 and FC 51 to FC 55: Forward and Reverse Direction Settings* <input type="checkbox"/> FC 40: Control Identification <input type="checkbox"/> FC 42: Control Operating Mode <input type="checkbox"/> FC 43: System Line Voltage <input type="checkbox"/> FC 46: Demand Time Interval <input type="checkbox"/> FC 148: Nominal Sec Load Voltage <input type="checkbox"/> FC 56: Reverse Sensing Mode* <input type="checkbox"/> FC 57: Reverse Current Sense Threshold* | <ul style="list-style-type: none"> <input type="checkbox"/> FC 58: Bias Co-Generation Alt Mode* <input type="checkbox"/> FC 80: Voltage Limiter and other associated Voltage Limiter function codes <input type="checkbox"/> FC 70: Voltage Reduction Mode and other associated Voltage Reduction function codes <input type="checkbox"/> FC 170: Tap To Neutral <input type="checkbox"/> FC 79: Soft ADD-AMP and other associated Soft ADD-AMP function codes |
|--|--|

* Setting becomes Regulator Setting when using the Advance Independent multi-phase mode (see back page).



Powering Business Worldwide

Refer to the CL-7 control installation instructions included with this control for additional information.

For assistance, contact the Voltage Regulator Support Group
1-866-975-7347 | 24/7 emergency support also available.

Regulator Settings – Set for each connected voltage regulator

- Display settings for each connected voltage regulator by scrolling through the individual voltage regulators using the forward arrow.
- As the arrow is pressed, the display will cycle through 1 to 2 to 3 and back to 1. The LED lit will indicate which voltage regulator is active for the setting displayed on the LCD.



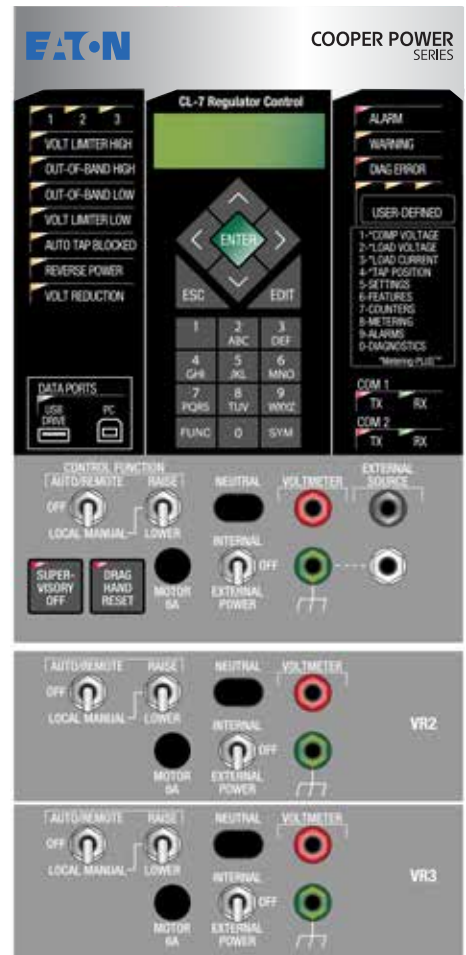
FC 140:	Regulator Type
FC 49:	Tap Changer Type
FC 41:	Regulator Configuration
FC 44:	Overall P.T. Ratio
FC 44:	Internal P.T. Ratio
FC 45:	C.T. Primary Rating
FC 45:	Rated Load Current
FC 45:	% C.T. Rating Level 4



FC 45:	% C.T. Rating Level 3
FC 45:	% C.T. Rating Level 2
FC 45:	% C.T. Rating Level 1
FC 144:	PI. ADD-AMP High Limit
FC 145:	PI. ADD-AMP Low Limit
FC 146:	Vin P.T. Configuration
FC 141:	Regulator Identification
FC 39:	Source Voltage Calculation

Important Definitions

- **Multi-Phase Retry:**
For some modes of operation, the control must keep the regulators on the same step and if it senses that not all controls are on the same step, it will retry the step commands.
- **Max Deviation:**
The number of tap positions allowable between all of the connected regulators.
- **Timer to Alt Mode:**
The amount of time that the connected regulators will remain at their respective Max Deviation positions before the control will revert to the Max Deviation Alternate mode of operation.
- **Timer to Max Deviation Mode:**
The amount of time that connected regulators will remain at the Max Deviation Alternate Mode before reverting to the Max Deviation operation.
- **Max Deviation Alt Mode:**
The fallback mode for a group of connected regulators after they have been at the Max Deviation limit for the specified period of time.



Eaton is a registered trademark.

Envirotemp™ and FR3™ are licensed trademarks of Cargill, Incorporated.

All other trademarks are property of their respective owners.

Follow us on social media to get the latest product and support information.

