Form 4D 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

Keypad Overview

4-line, 20-character LCD Display

Press the FUNC key and UP or DOWN arrow simultaneously to increase or decrease contrast.

Accessing Function Codes

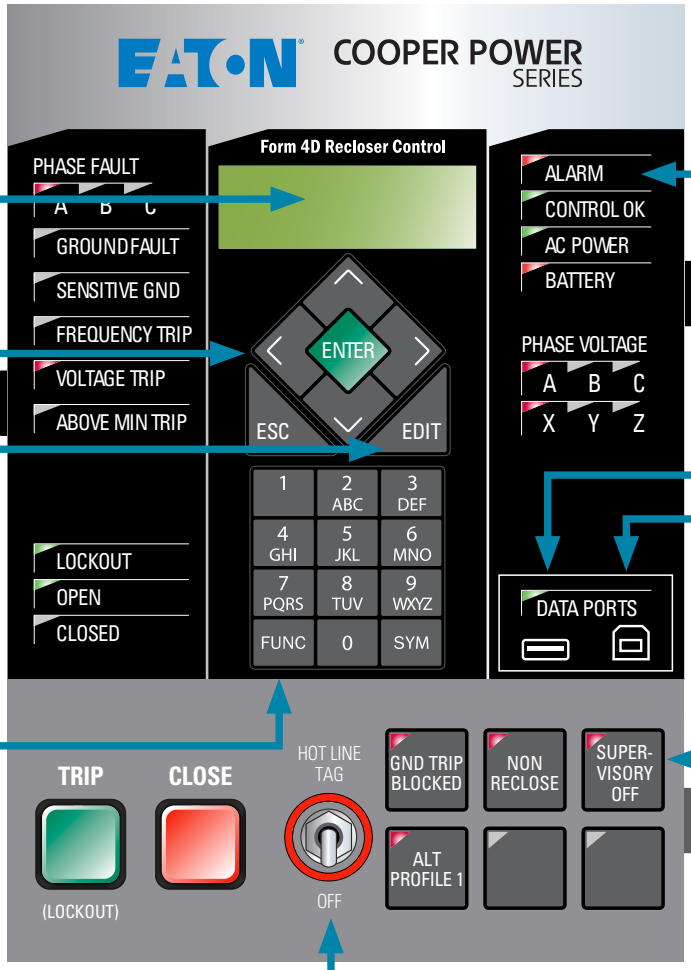
- Use SCROLL arrow keys to navigate through menus to function codes.
- Press the FUNC key, the function code number and the ENTER key.
- Use embedded shortcut keys.

Editing Parameters

1. Access the MODIFY security level (FC 99).
2. Access appropriate Function Code.
3. Press the EDIT key.
4. Key in numeric value or scroll through options.
5. Press the ENTER key.

Embedded Shortcut Keys within Numeric Keypad

1 - Settings
2 - Sequence of Events
3 - Metering
4 - Alarm Log & Status
5 - Counters
6 - Communications
7 - Clock
8 - Diagnostics
9 - Security Access
0 - USB Memory Drive



ALARM LED will flash for unacknowledged alarms, and will continuously illuminate for active acknowledged alarms.

USB Data Ports

USB Memory Drive (left port)

- FC 950 – Save All Data to a USB Memory Stick
- FC 951 – Load Config Data from a USB Memory Stick to Form 4D Control
- FC 952 – Upgrade Firmware
- FC 953 – Remove Device

PC Connection (right port)

USB client port provides a temporary connection using a PC running ProView NXG software for control programming and settings/ data retrieval.

Lower Panel Keys

One-touch function keys to enable/disable Ground Trip Blocked, Non-Reclose, Supervisory Off, and Alternate Profile 1.

Control setting is changed immediately upon pressing button.

Hot Line Tag

Provided for live-line work applications.

- Does not cause the recloser to trip open. It only prevents the recloser from closing.
- Prevents all closing attempts from the control and shifts protection to one trip-to-lockout on the composite curve of the Hot Line Tag definite time and the TCC1 curve (whichever is faster). Takes precedence over Cold Load Pickup, Non-Reclosing, and Fast Trips Disabled.
- Activated from either the operator front panel toggle switch, local or remote communications, or configurable logic.
- Can only be reset by the source which initiates it.

Security

1. Press the FUNC key.
2. Press 99.
3. Press the ENTER key.
4. Type appropriate password for the security level desired. (Press UP / DOWN keys to shift between upper- and lower-case letters. Press SYM key to use symbols.)
5. Press the ENTER key.

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ProView NXG Software Information: The Form 4D control software is available for download here: https://my.eaton.com

Refer to these manuals for comprehensive control information: MN280049EN; S280-104-2; MN280086EN

For assistance, contact the Switchgear Support Group
1-800-497-5953 | 24/7 emergency support also available.

Security Levels 0 - View 1 - Operate 2 - Modify 3 - Admin

Normal Profile Function Code†	Protection Function	Minimum Security Level Read	Write
Active profile			
01	Active Profile	0	2
Overcurrent settings			
03*	Phase Operation Parameters	0	2
04*	Phase TCC1 Settings	0	2
05*	Phase TCC2 Settings	0	2
06*	Phase TCC3 Settings	0	2
07*	Phase TCC4 Settings	0	2
08*	Phase HCL Settings	0	2
09*	Phase Low Set settings	0	2
10*	Ground Operation Parameters	0	2
11*	Ground TCC1 Settings	0	2
12*	Ground TCC2 Settings	0	2
13*	Ground TCC3 Settings	0	2
14*	Ground TCC4 Settings	0	2
15*	Ground HCL Settings	0	2
16*	Ground Low Set Settings	0	2
24*	FTD (Fast Trip Disabled) Oper. Parameters	0	2
25*	FTD Phase TCC Settings	0	2
26*	FTD Ground TCC Settings	0	2
Operations sequence			
28*	Phase Operation Settings	0	2
29*	Ground Operations Settings	0	2
31*	Sequence Coordination Settings	0	2
Reclose			
32*	Phase Reclose Intervals (sec)	0	2
33*	Ground Reclose Intervals (sec)	0	2
35*	Reclose Retry Settings	0	2
36*	Reset Time Settings	0	2
Cold load pickup			
37*	CLPU Timing & Control Settings	0	2
38	CLPU Phase Minimum Trip	0	2
39*	CLPU Phase TCC Settings	0	2
40*	CLPU Phase HCL Settings	0	2
41	CLPU Ground Minimum Trip	0	2
42*	CLPU Ground TCC Settings	0	2
43*	CLPU Ground HCL Settings	0	2

Function Code	Function	Minimum Security Level Read	Write
Metering			
66*	Instantaneous Voltages & Currents	0	NA
67	Reset Demand Peaks	0	1
68*	Demand Amps	0	NA
69*	Demand Totals (kW, kvar)	0	NA
70*	Demand Power (kW - out)	0	NA
71*	Demand Power (kW - in)	0	NA
72*	Demand Reactive Power (kvar - out)	0	NA
73*	Demand Reactive Power (kvar - in)	0	NA
873*	Demand Apparent Power (kVA)	0	NA
973*	Demand Intervals	0	2
74*	Instantaneous Power	0	NA
75	Reset Energy Meters	0	1
76*	Energy Meters	0	NA
77	Instantaneous Power Factor	0	NA
78	Frequency	0	NA
79*	Symmetrical Components	0	NA
Counters			
80*	Counters (including Reset Targets)	0	1
Battery			
81	Battery Voltage and Current	0	NA
82*	Test Battery & Battery Test Results	0	NA
83	Automatic Battery Test	0	2
Communications			
800*	Comm. Port #1 Assignment	0	2
801	Comm. Port #1 Protocol Assignment	0	2
802*	Comm. Port #1 Network Configuration	0	2
810-816*	Comm. Port #1 Protocol Settings	0	2
830	Comm. Port #2 Assignment	0	2
831	Comm. Port #2 Protocol Assignment	0	2
832*	Comm. Port #2 Network Configuration	0	2
840-846*	Comm. Port #2 Protocol Settings	0	2
Clock			
87*	Clock & Time Zone	0	2
Fault location			
940	Fault Location	0	NA
Menu system			
941	Language Selection	0	2
942	Date Format	0	2
943	Time Format	0	2

Security Levels 0 - View 1 - Operate 2 - Modify 3 - Admin

Normal Profile Function Code†	Protection Function	Minimum Security Level Read	Write
User tcc library			
44*	User TCC Definitions FC44 and FC144 change the same TCC	0	NA
Frequency			
47*	Frequency Stage 1 Settings	0	2
48*	Frequency Stage 2 Settings	0	2
49*	Frequency Stage 3 Settings	0	2
50*	Frequency Stage 4 Settings	0	2
51*	Frequency Stage 5 Settings	0	2
52*	Frequency Stage 6 Settings	0	2
53*	Frequency Load Supervision	0	2
54	Minimum Voltage for Frequency Tripping	0	2
55*	Frequency Loadshed Restore Settings	0	2
Voltage			
56	Undervoltage Trip Mode	0	2
57*	Undervoltage 1 Settings	0	2
58*	Undervoltage 2 Settings	0	2
59*	Undervoltage 3 Settings	0	2
60	Overvoltage Trip Mode	0	2
61*	Overvoltage 1 Settings	0	2
62*	Overvoltage 2 Settings	0	2
63*	Overvoltage 3 Settings	0	2
64*	Voltage Loadshed Restore Settings	0	2
Sensitive earth fault			
65*	SEF Settings	0	2

† Prefix these Function Codes with "1" for Alternate 1 Profile Protection Functions

Function Code	Function	Minimum Security Level Read	Write
Diagnostics, i/o control, i/o status			
88*	Diagnostics	0	NA
89*	Activate Contact Outputs	0	2
90*	Contact Inputs & Outputs Status	0	NA
Nameplate data			
920	Firmware Version	0	NA
921	Firmware Database Version	0	NA
922	FPGA Version	0	NA
928	Feeder Description	0	NA
System configuration			
930	Nominal Line Frequency	0	2
931	Voltage Sensor Configuration	0	2
932	Phantom Phase Reference	0	2
933	Bushing Rotation	0	2
934	Recloser Time Adjuster	0	2
935	CT Ratio	0	2
936*	Nominal Primary Voltage	0	2
937*	Primary PT Ratios	0	2
938*	Secondary PT Ratios	0	2
939	Power Factory Sign Convention	0	2
Security access			
92	Security Override	0	3
96	Password "Operate"	3	3
97	Password "Modify"	3	3
98	Password "Admin"	3	3
99	Enter Password	0	0
Usb memory drive			
950	USB Memory Drive Save All Data	0	0
951	USB Memory Drive Load Config Data	0	2
952	USB Memory Drive Upgrade Firmware	0	3
953	USB Memory Drive Remove Device	0	0

*Indicates multiple settings/options which can be viewed by using the UP or DOWN arrow keys to scroll. Reference Service Instructions S280-104-2 for function code descriptions.

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
eaton.com

Eaton's Power Systems Division
2300 Badger Drive
Waukesha, WI 53188
United States
Eaton.com/cooperpowerseries

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