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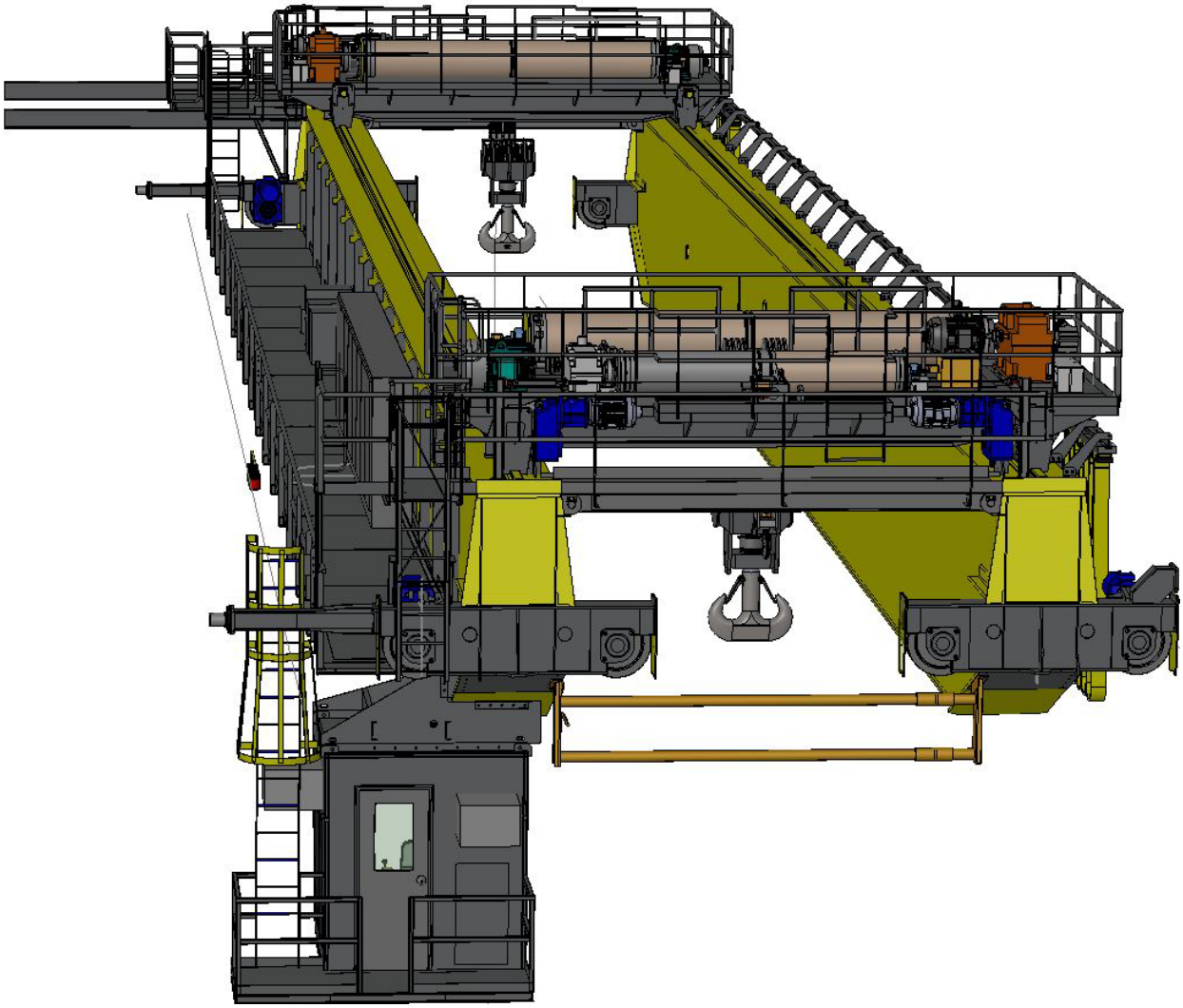
CRANElink Interface

Reference Manual

Doc. CRANElink Manual_Rev0

June 9, 2015



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Local, Remote and Web Machine Interface Systems

- System Options -

CRANElink Local systems:

- Crane mounted HMI touch screen
- Centralized parameter adjustment of all crane mounted variable frequency drives without opening your control enclosures or removing power from your overhead crane
- Real time monitoring of individual drives. Observation of internal temperature, heat sink temperature, inputs and outputs, drive status (ready, running forward, running reverse and drive alarm condition), as well as DC bus voltage and major crane related fault counts
- Drive fault log
    - Records and stores all drive faults with date and time stamp of each occurrence of every alarm
    - Records and stores each drive fault reset with date and time stamp
    - Records and stores acknowledgement of all drive faults with date and time stamp
    - Allows for drive fault reset from the fault log screen while monitoring the fault log
- Review drive fault status
    - This provides a detailed view of exactly what was happening with each drive at the time of the last fault. This includes the status of all digital inputs and digital outputs, operating status (running forward, running reverse, accelerating and decelerating), frequency, torque, current and many other items to assist in trouble shooting
- Easy access to crane and hoist related special feature parameters
    - Set up and monitor all special features from one screen. This provides the ability to enable, disable and modify features like Turbo Lift and Turbo Lower, Micro-Speed, Load Float, Load Catch® and Brake Answer Back from a single screen without scrolling through countless parameters
- Onboard PDF format documentation accessible at any time includes
    - System electrical drawings when ordered with new controls
    - Complete drive parameter list with descriptions
    - Operation log – Tracks all modifications made through the HMI
    - Instructions for modifying crane specific parameters

CRANElink Remote systems:

- Crane mounted HMI touch screen with built in wireless access point and remote mount antenna
- All of the features and components included in **CRANElink Local**
- VNC access
    - In plant access to the HMI and crane drives via smart phone, tablet, laptop or PC. As long as your devices share the same network you can easily access your equipment using any commercially available VNC viewer

CRANElink Web systems:

- Crane mounted HMI touch screen
- All of the features included in **CRANElink Local** and **CRANElink Remote**
- Safe and secure remote access and support from anywhere in the world using a dedicated Fuji Electric cloud server and Fuji Electric's licensed V-Connect software

*For illustration purposes, this manual includes descriptions of the screens and functions associated with a “Main Hoist”. All hoist motions will include these screens. Screens used for traverse motions are simplified and do not include information for hoisting applications. All screens, data and functions not related specifically to hoist drives are included in the traverse sections.

Crane Access Screens

>>> Home

Status indication

Quickly monitor the status of all attached drives on the home screen.

- Green – Drive Ready (Top Row)
- Red – Drive in Fault Mode (Second Row)
- Red Flashing – Load Catch® Active (Third Row – Hoists only)

>>> Home Screen - Navigation

Navigation

From the home screen, navigate to screens specific to any attached drive by using the rectangular gold buttons. Each drive has three main selections; Status, Parameters and Alarms.

Pressing the “Main Hoist Status” button will open the Status Screen related to the main hoist. On this screen you will be able to monitor the current conditions of the main hoist drive in real time.

>>> Main Hoist Status

This is a “monitor only” screen. No changes to drive parameters are allowed from this screen. Use this screen to view the current conditions of the related drive. Indications and monitored items include:

- Drive ready or Drive Fault indication
- Hoisting or Lowering indication
- Load Catch® status (flashing alert when active)
- All digital inputs and digital outputs
- Drive heat sink and air temperature
- Output current
- Brake slip, Load Catch® and Brake Answer Back activation counts

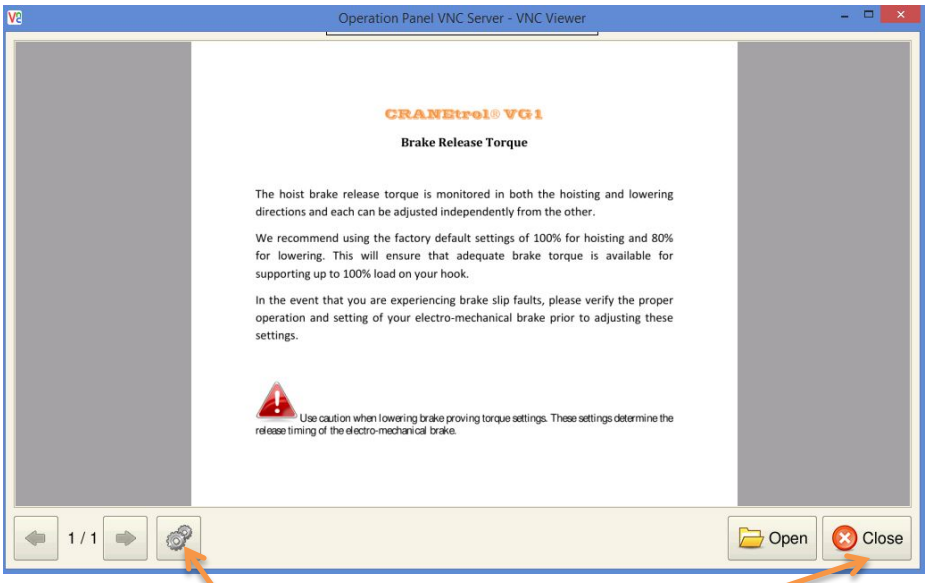
Navigation from this screen is limited to screens associated with the main hoist; “Parameters” and “Alarms”. You may also return to the Home Screen or use the “Back Button” to navigate to the page you were on previously.

>>> Main Hoist Parameters

Use this screen to view and adjust the most used parameters associated with your hoist drive. If additional adjustments are required, use either the Full Parameter List or Optional Function buttons to access more extensive parameter lists.

Each section has a “View Documents” button that can be used to call up PDF documents associated with parameters in that group. For instance, under the “Operation” category there are two parameters associated with brake proving torque adjustments. Pressing the “View Documents” buttons will open the PDF viewer as illustrated below.

>>> Main Hoist Parameters (cont.)

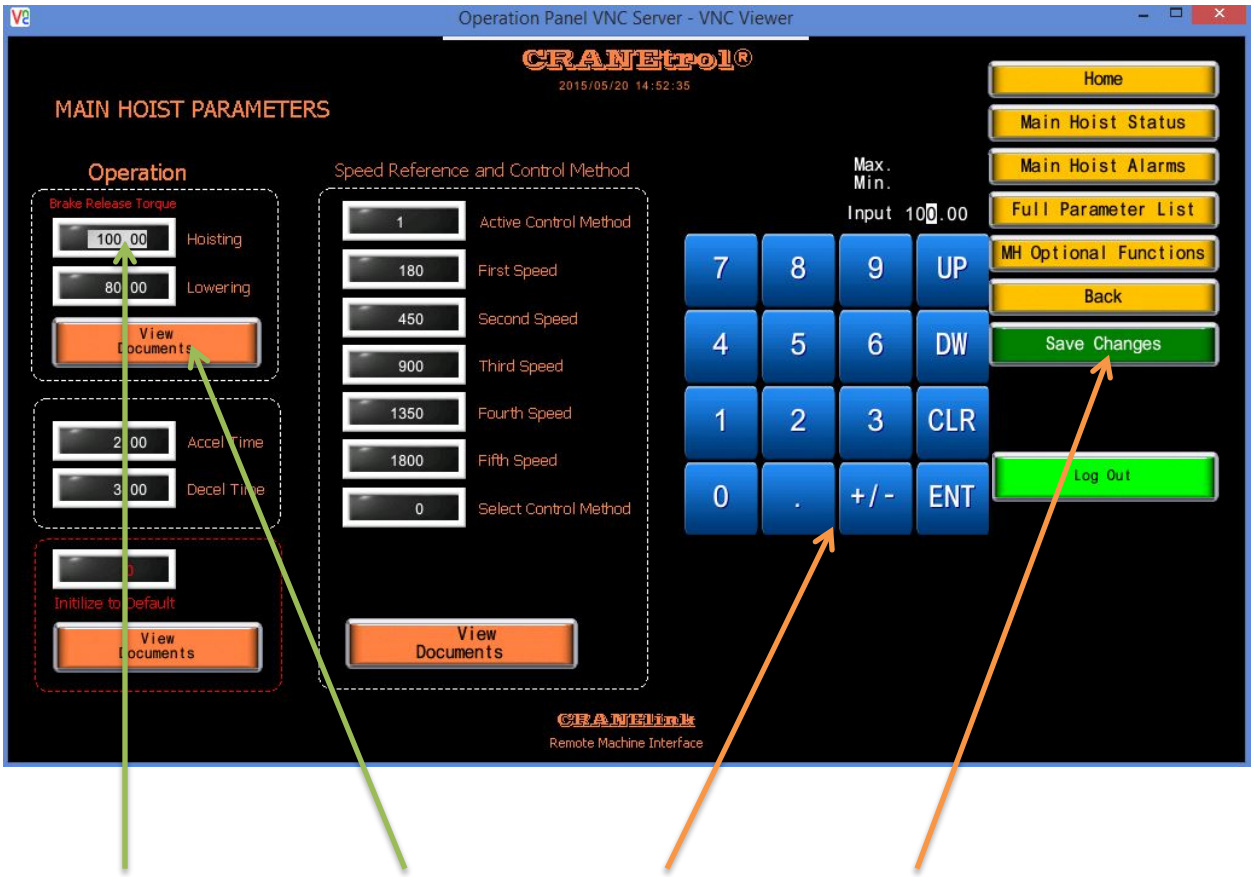


Use the controls button to zoom in or out.
Or use the Close button to exit.

The PDF viewer includes controls for zooming in and out, fit document to screen and search for words or phrases.

After reviewing the programming documents and reading the precautionary statements, parameters may be adjusted by touching the area over the data you wish to modify. When activated, a number pad will appear on screen. Use this pad to enter new values. See example below.

>>> Main Hoist Parameters (cont.)



Data Entry Area **Open PDF document** **Data Entry Keypad** **Save changes**

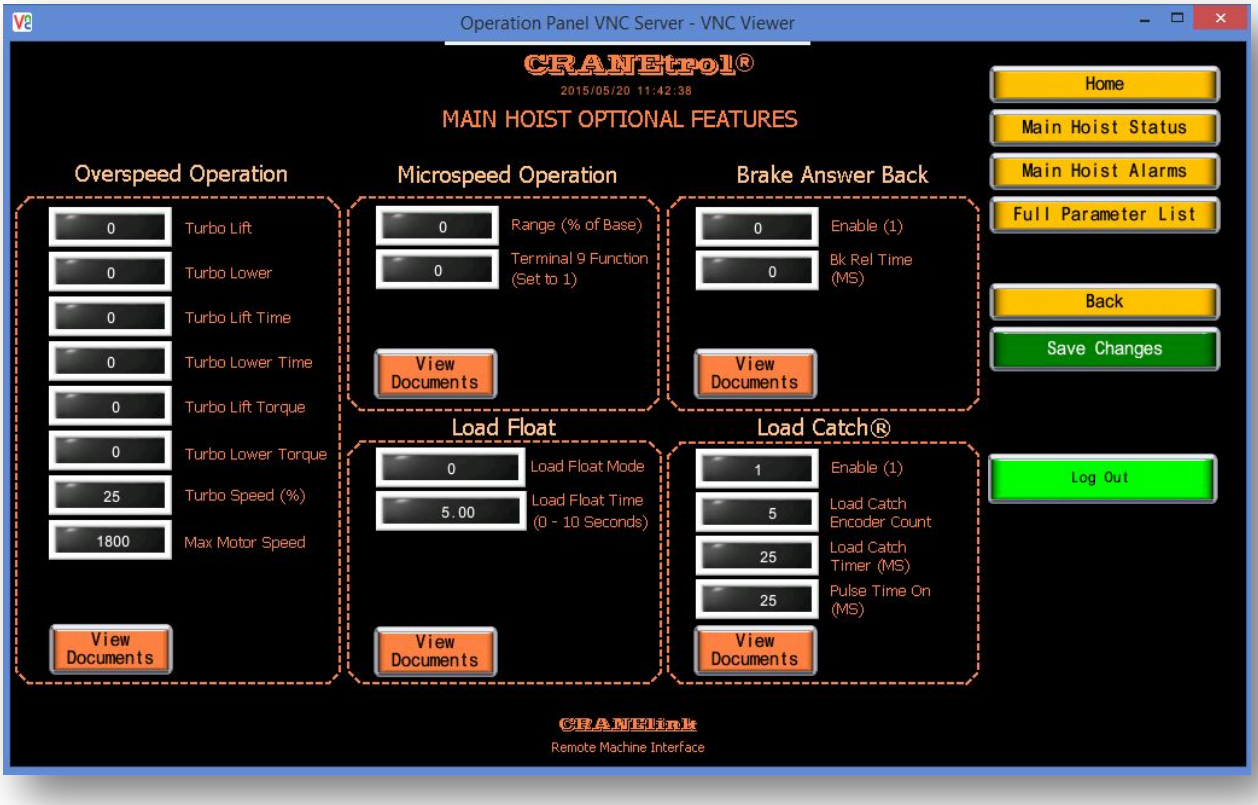
The "ENT" key stores the parameter changes. When all programming changes have been accomplished, press the green "Save Changes" button to permanently store your changes in the drive parameter set.

>>> Main Hoist Parameters (cont.)

Pressing the “Optional Functions” button will navigate to a screen dedicated to enabling and adjusting several hoist specific functions. These functions include:

- Turbo Lift and Turbo Lower
- Microspeed Operation
- Load Float mode and time
- Brake answer back limit switches
- Load Catch®

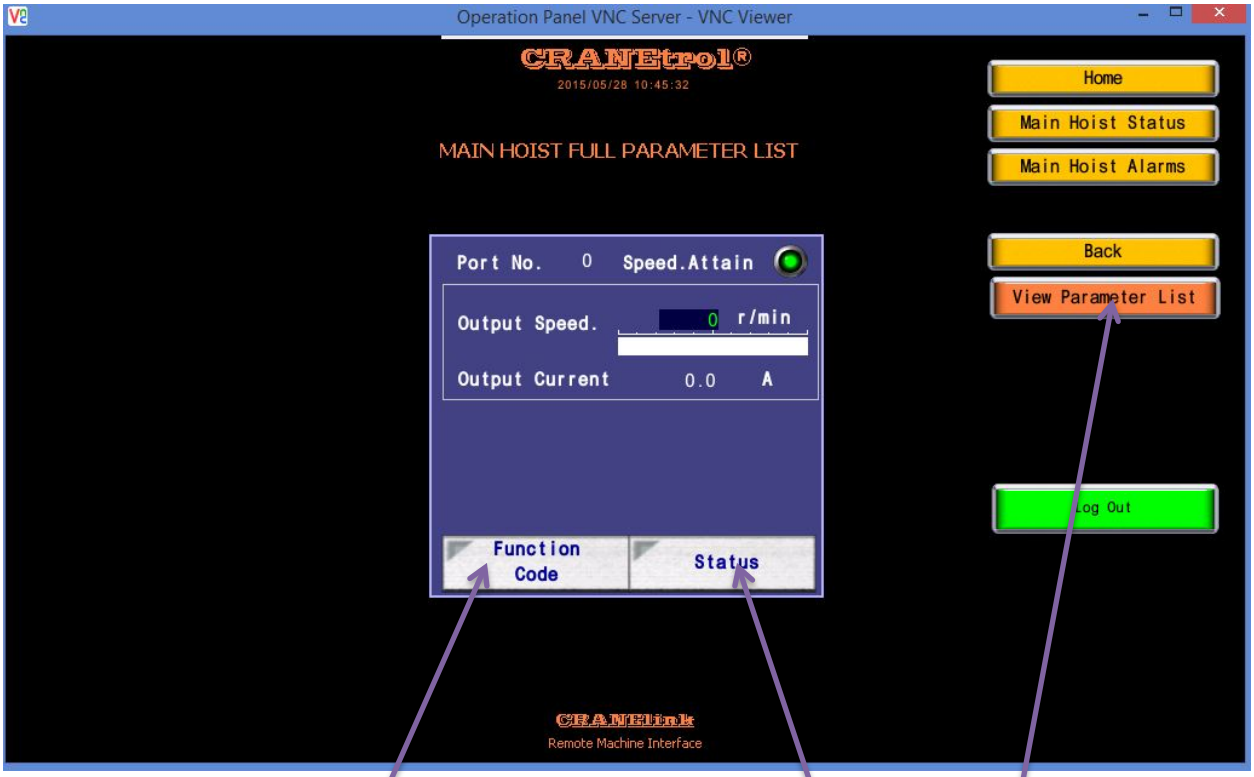
Please read and understand the documentation prior to making any adjustments.



>>> Main Hoist Parameters (cont.)

>> Full Parameter List

Navigate to this screen by pressing the “Full Parameter List” button on the Parameters screen. This screen provides access to all of the drive parameters as well as an abbreviate drive status view. Illustrations below explain the use of the features included on this screen.



Parameter list viewer

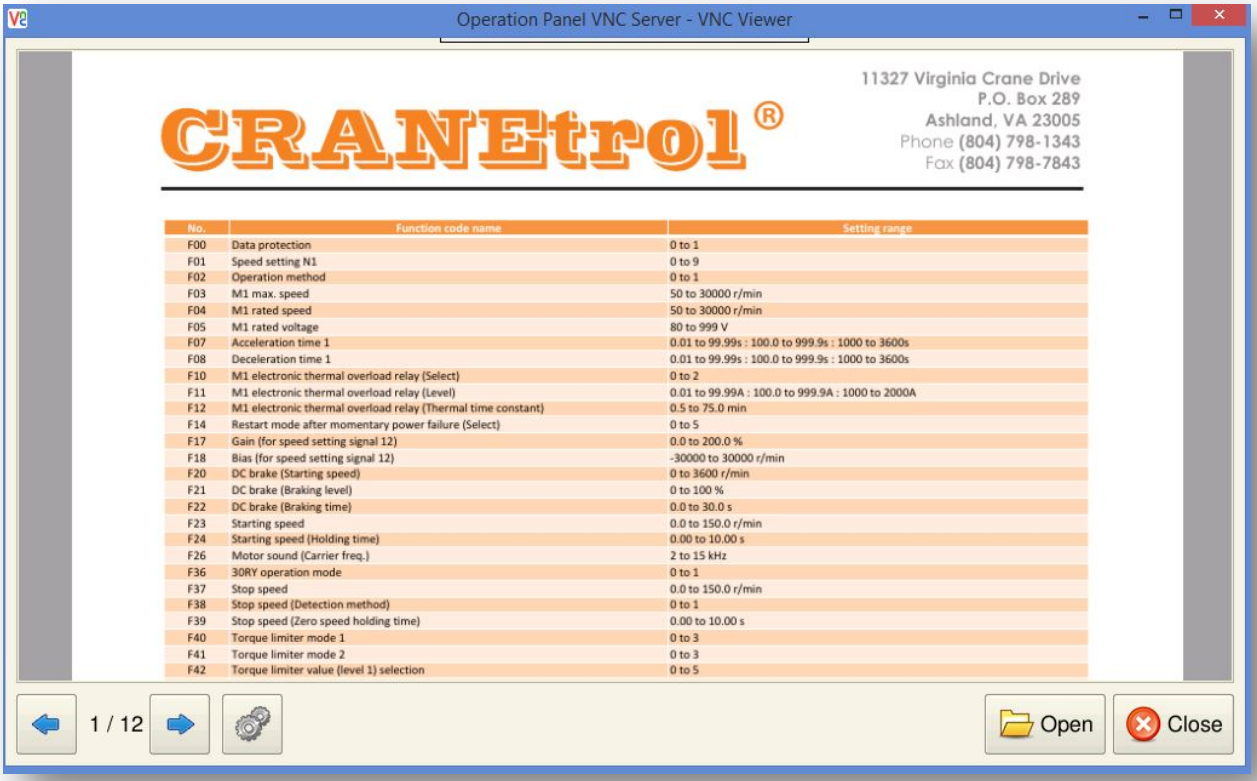
Function Code – Opens complete parameter edit function

Status – Abbreviated status

>>> Main Hoist Parameters (cont.)

>> Parameter List Viewer

When activated, the “View Parameter List” button will open the PDF viewer function and the entire parameter list with a short description will be displayed. Use the PDF Viewer tools to zoom, search and scroll through the document.

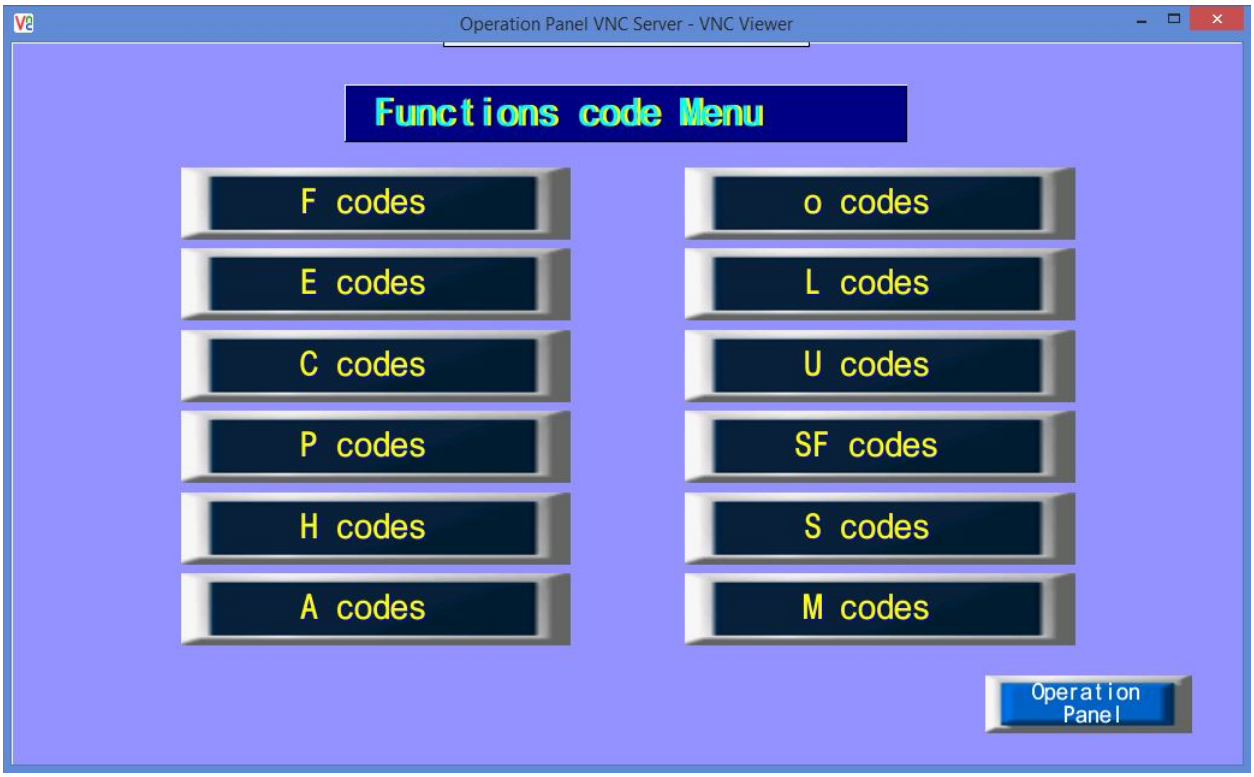


No.	Function code name	Setting range
F00	Data protection	0 to 1
F01	Speed setting N1	0 to 9
F02	Operation method	0 to 1
F03	M1 max. speed	50 to 30000 r/min
F04	M1 rated speed	50 to 30000 r/min
F05	M1 rated voltage	80 to 999 V
F07	Acceleration time 1	0.01 to 99.99s : 100.0 to 999.9s : 1000 to 3600s
F08	Deceleration time 1	0.01 to 99.99s : 100.0 to 999.9s : 1000 to 3600s
F10	M1 electronic thermal overload relay (Select)	0 to 2
F11	M1 electronic thermal overload relay (Level)	0.01 to 99.99A : 100.0 to 999.9A : 1000 to 2000A
F12	M1 electronic thermal overload relay (Thermal time constant)	0.5 to 75.0 min
F14	Restart mode after momentary power failure (Select)	0 to 5
F17	Gain (for speed setting signal 12)	0.0 to 200.0 %
F18	Bias (for speed setting signal 12)	-30000 to 30000 r/min
F20	DC brake (Starting speed)	0 to 3600 r/min
F21	DC brake (Braking level)	0 to 100 %
F22	DC brake (Braking time)	0.0 to 30.0 s
F23	Starting speed	0.0 to 150.0 r/min
F24	Starting speed (Holding time)	0.00 to 10.00 s
F26	Motor sound (Carrier freq.)	2 to 15 kHz
F36	30RY operation mode	0 to 1
F37	Stop speed	0.0 to 150.0 r/min
F38	Stop speed (Detection method)	0 to 1
F39	Stop speed (Zero speed holding time)	0.00 to 10.00 s
F40	Torque limiter mode 1	0 to 3
F41	Torque limiter mode 2	0 to 3
F42	Torque limiter value (level 1) selection	0 to 5

>>> Main Hoist Parameters (cont.)

>> Full Parameter List

FUNCTION CODE VIEW (1st screen of 3)

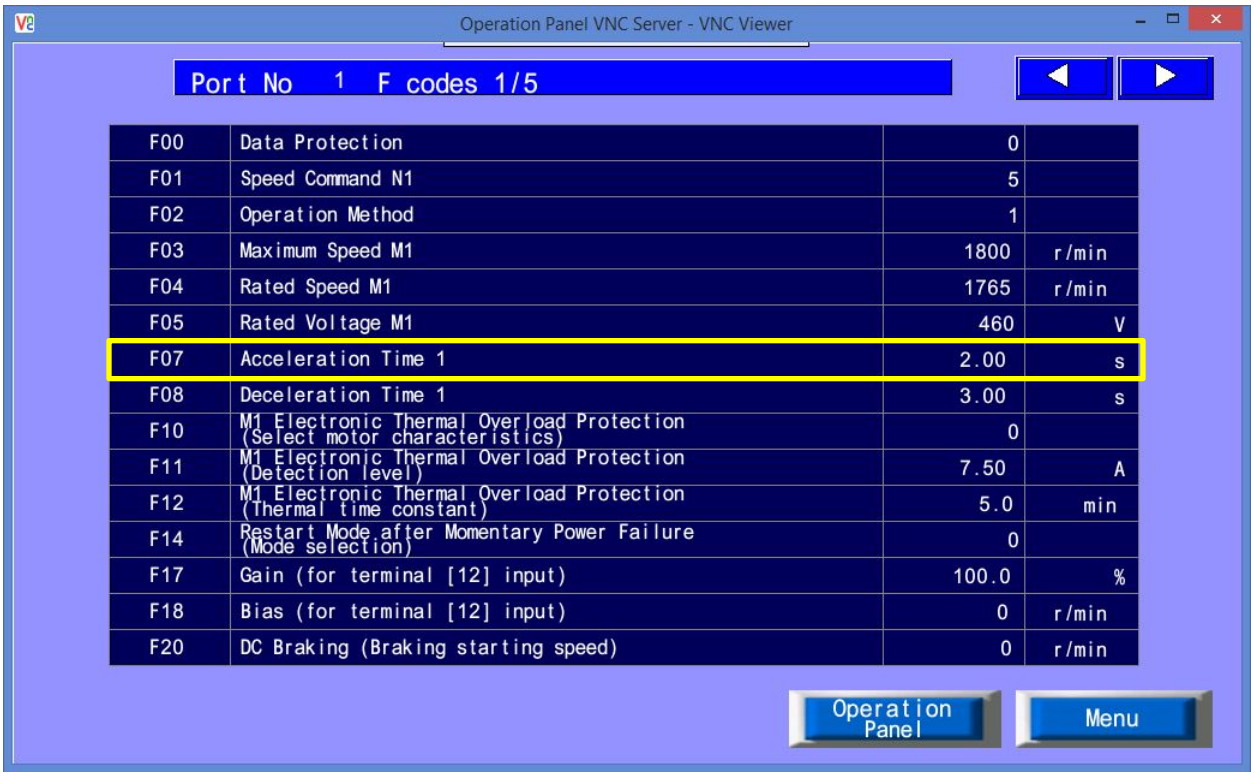


The VG1 parameters are separated by group letter designation. Use the function code list to easily identify parameters by group letter designation. To open a group of parameters, press the button with the desired group letter designation. In this example, we pressed the button labeled “F codes”.

>>> Main Hoist Parameters (cont.)

>> Full Parameter List (cont.)

FUNCTION CODE VIEW (2nd screen of 3)

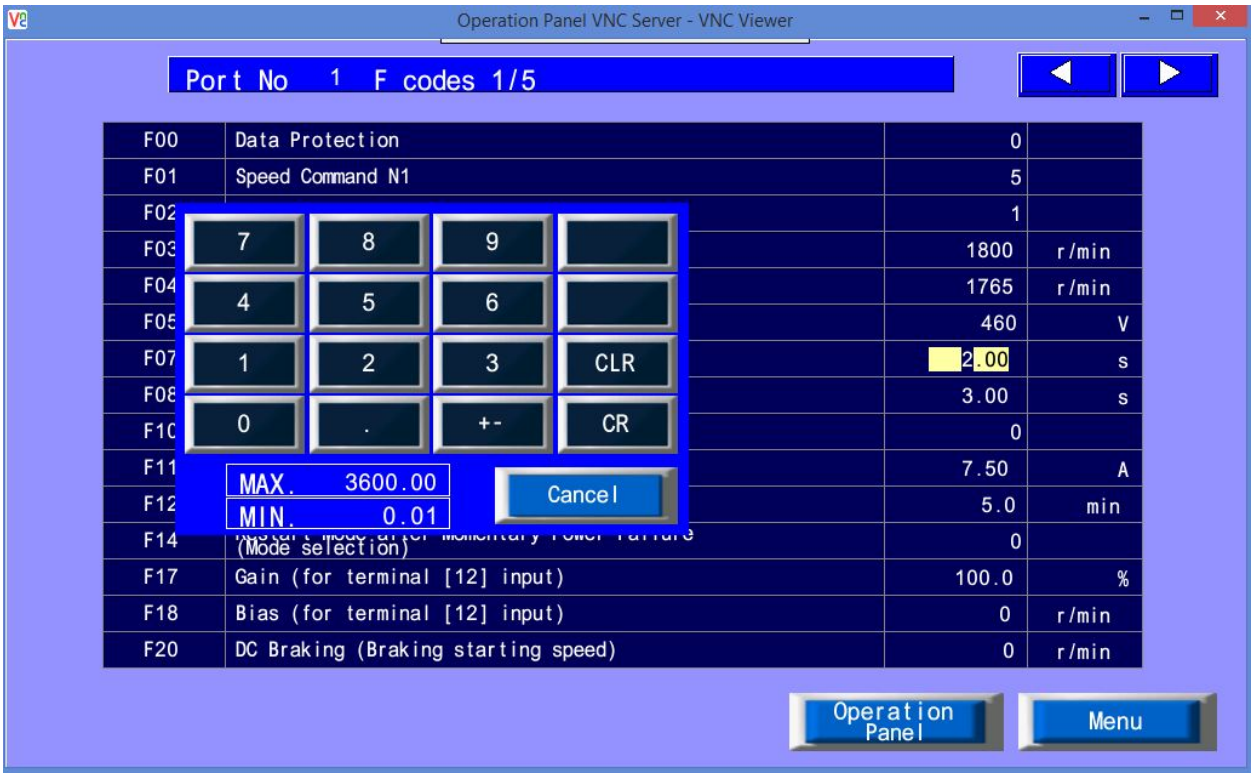


To edit a parameter, touch the area of the screen containing the information you wish to edit. Use the controls on the numerical keypad to edit the data.

>>> Main Hoist Parameters (cont.)

>> Full Parameter List (cont.)

FUNCTION CODE VIEW (3rd screen of 3)

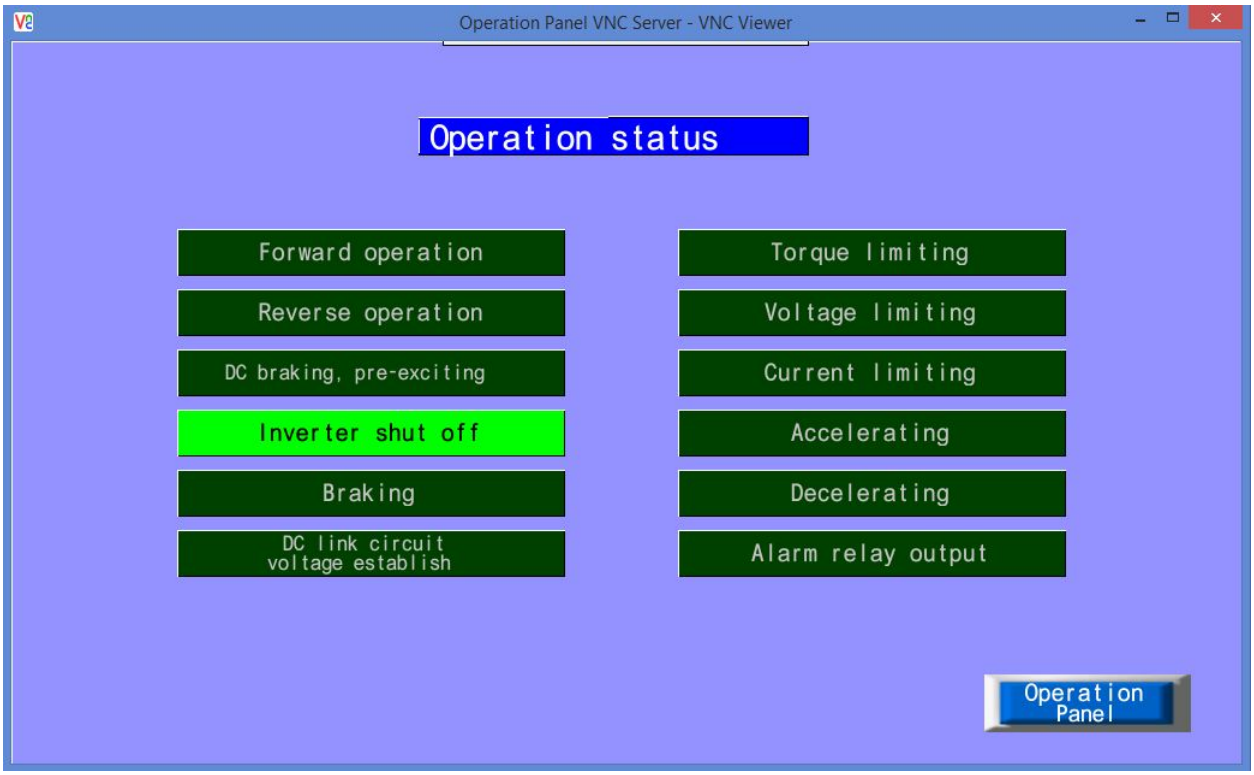


CLR – Clear the current entry to zero
CR – Carriage return or Enter
Menu – Return to the parameter group list
Operation Panel – Return to the Full Parameter List main screen

>>> Main Hoist Parameters (cont.)

>> Full Parameter List (cont.)

STATUS VIEW



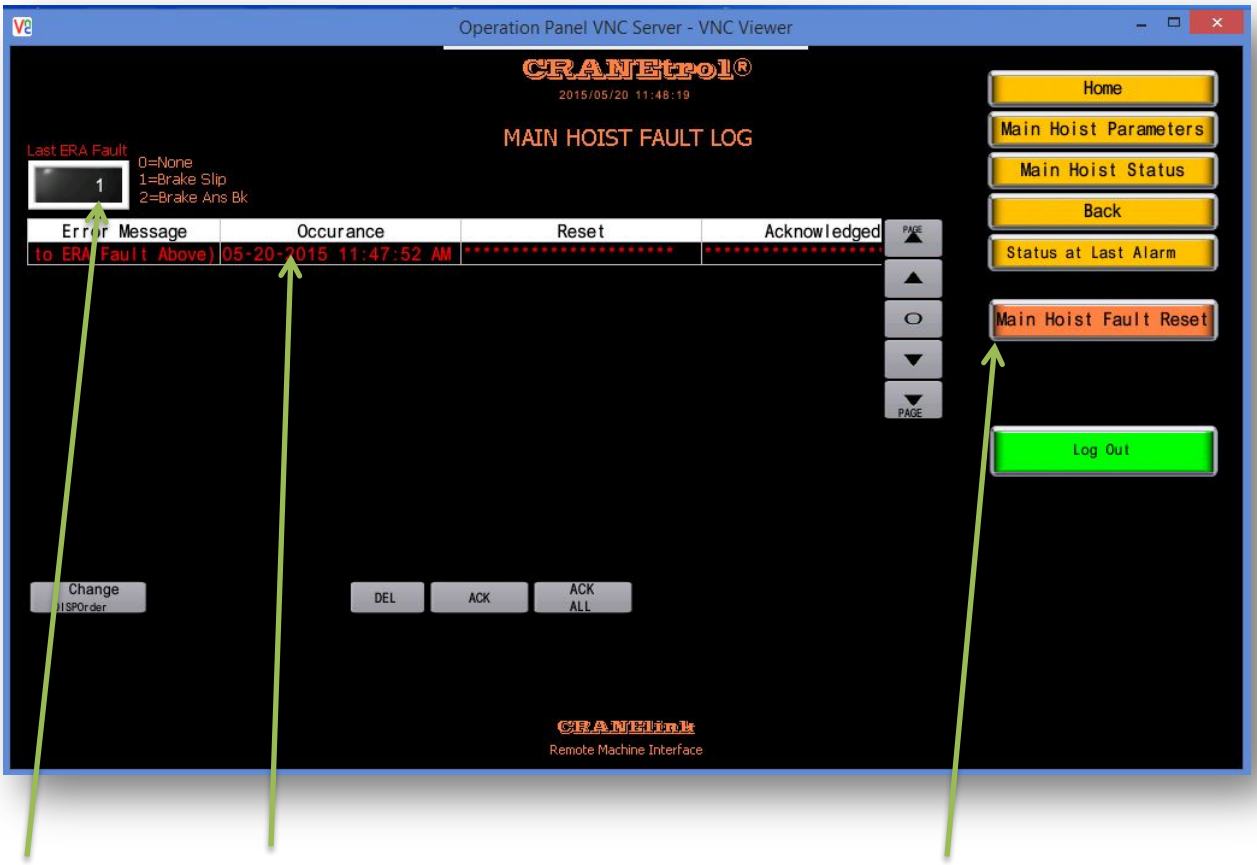
This screen is intended to provide an abbreviated view of the current drive status without navigating back to the main drive status screen. Access this screen by pressing the “Status” button on the “Full Parameter List” screen.

Parameter adjustments are not allowed from this screen. Press the “Operation Panel” button to return to the “Full Parameter List” screen.

>>> Main Hoist Alarms

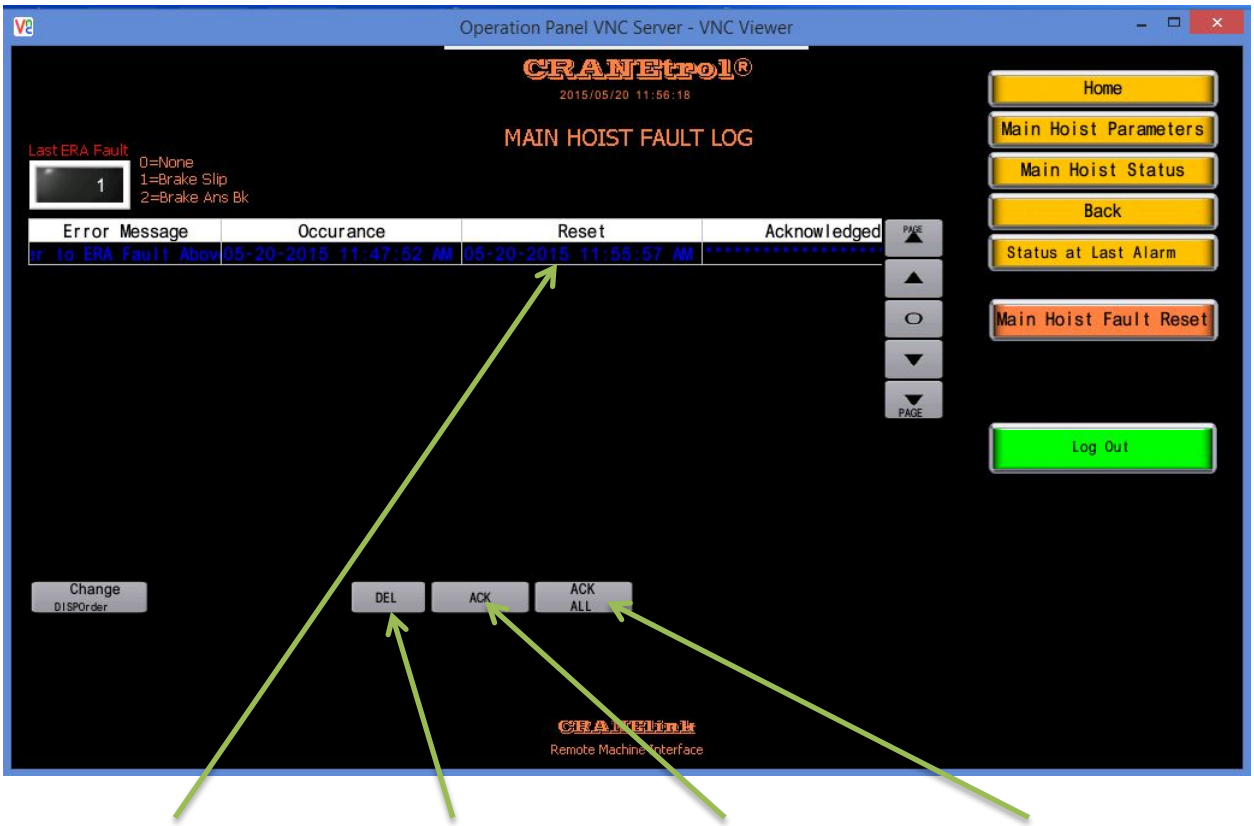
The “Alarms” screen provides access to the onboard log of all drive faults with fault code, date and time stamping of occurrence, reset time and acknowledgement time, as well as a dedicated area to provide an explanation of the fault cause of the last “ERA” fault.

From this screen you can also navigate to the “Status at Last Alarm” screen and reset drive faults. The illustrations following explain the functions and features of the fault log screen.



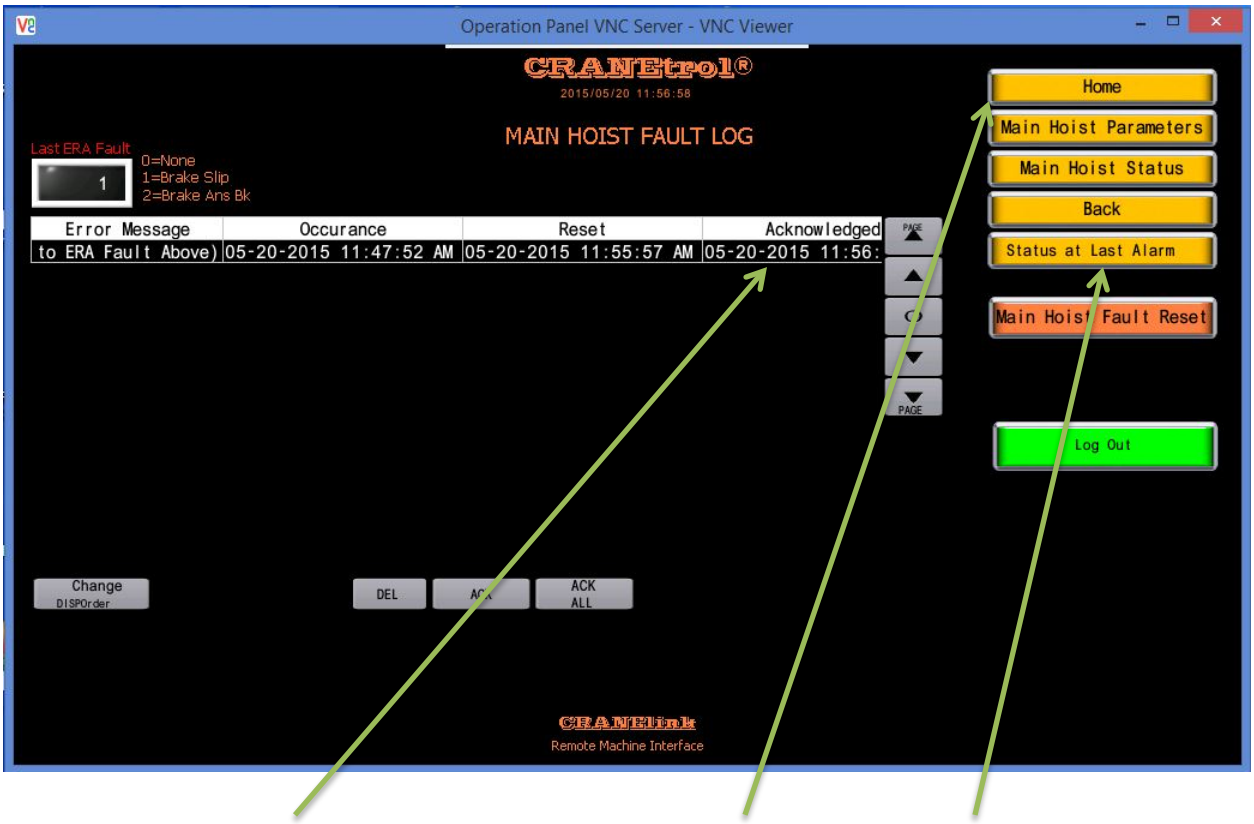
Latest “ERA” fault **Drive fault entry. Active if red.** **Fault reset button**

>>> Main Hoist Alarms (cont.)



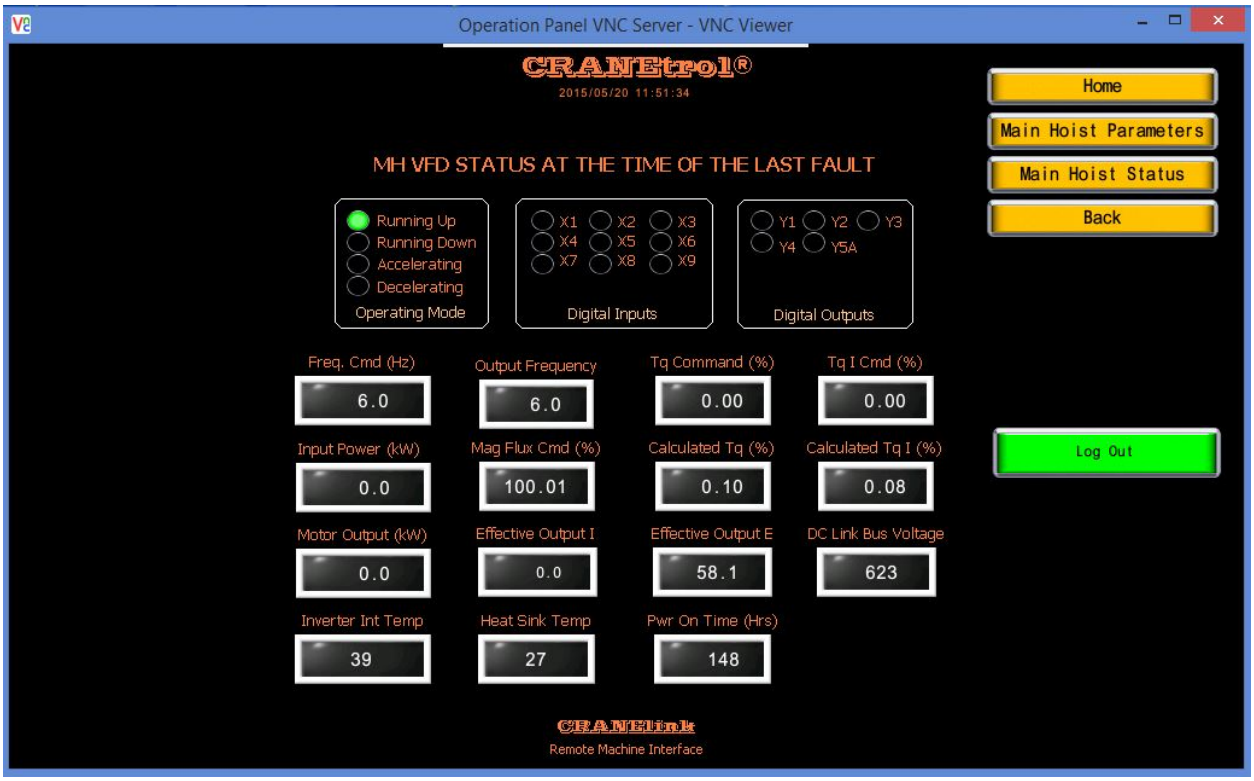
Drive fault. Blue if reset. **Delete selected entry** **Acknowledge selected** **Acknowledge all**

>>> Main Hoist Alarms (cont.)



Drive fault entry. White when acknowledged. **Navigation** **Status at last alarm**

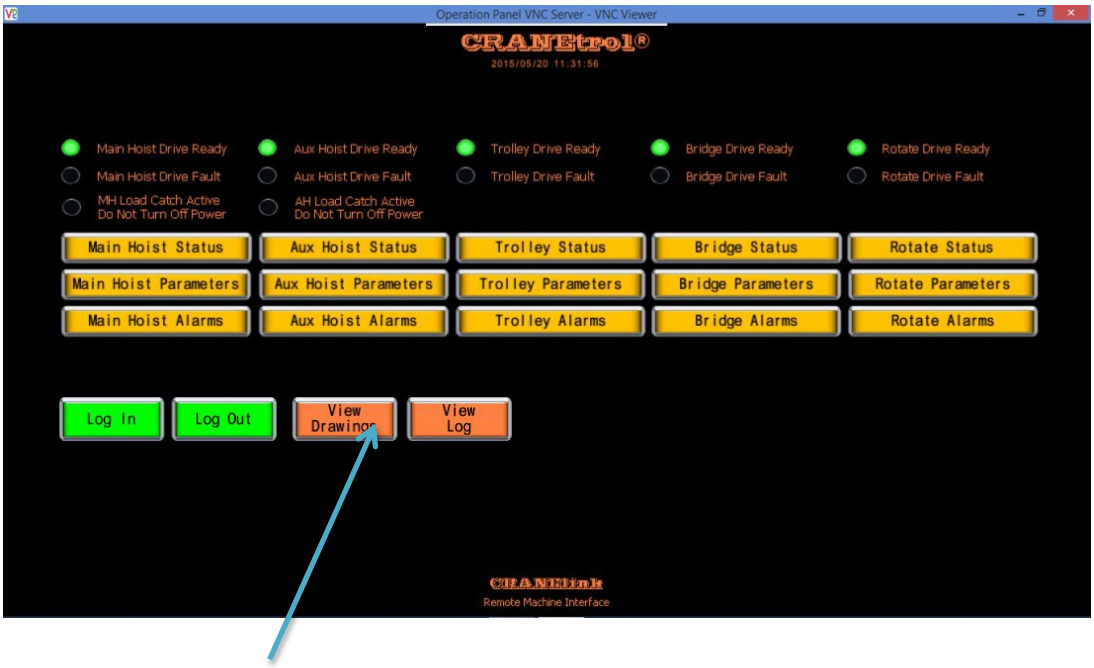
>>> Status at Last Alarm



This screen provides a detailed view of the operation status and condition of the drive at the time of the latest fault.

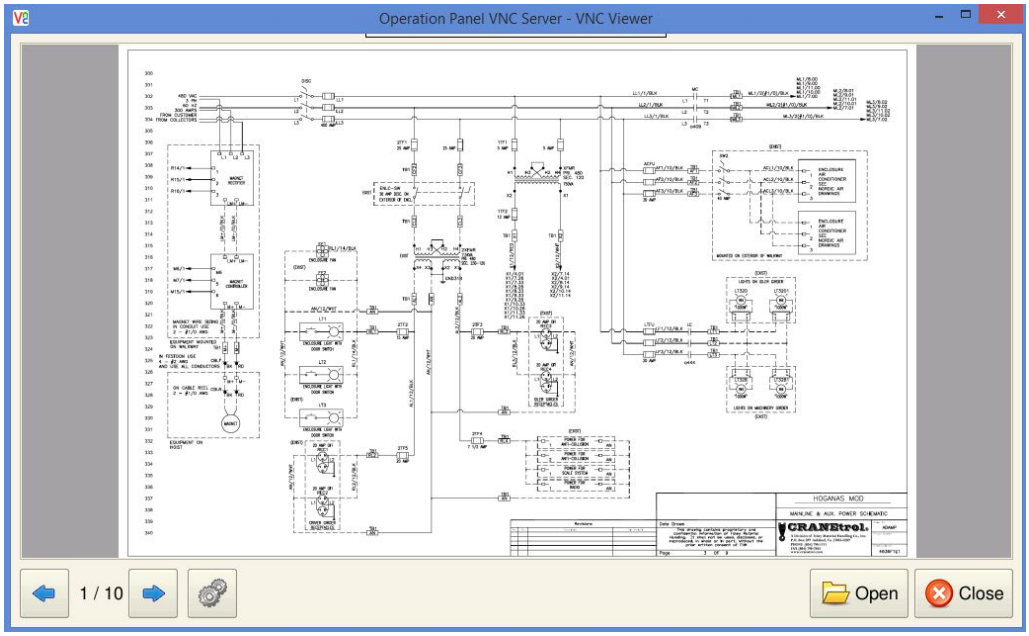
- Operating mode – Running up, running down, accelerating and decelerating. Green if active, blank if inactive.
- Digital inputs and digital outputs – Green if active, blank if inactive.
- Operation commands and drive outputs – Numerical displays
- Internal temperature and heat sink temperatures – Numerical displays
- Cumulative power on time – Numerical display

>>> Home Screen – Additional Features



View Drawings

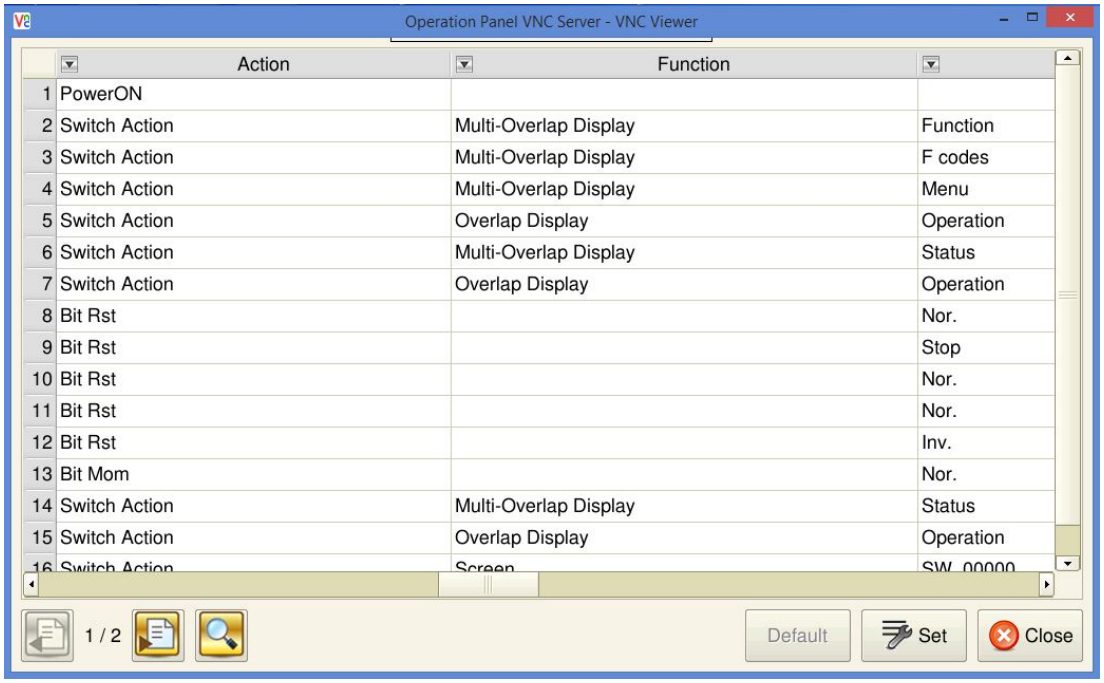
This option is available when purchasing new controls with your monitoring system, or if the existing drawing package can be made available at the time of order. Zoom, scroll, fit screen and search functions are included in the viewer.



>>> Home Screen – Additional Features (cont.)

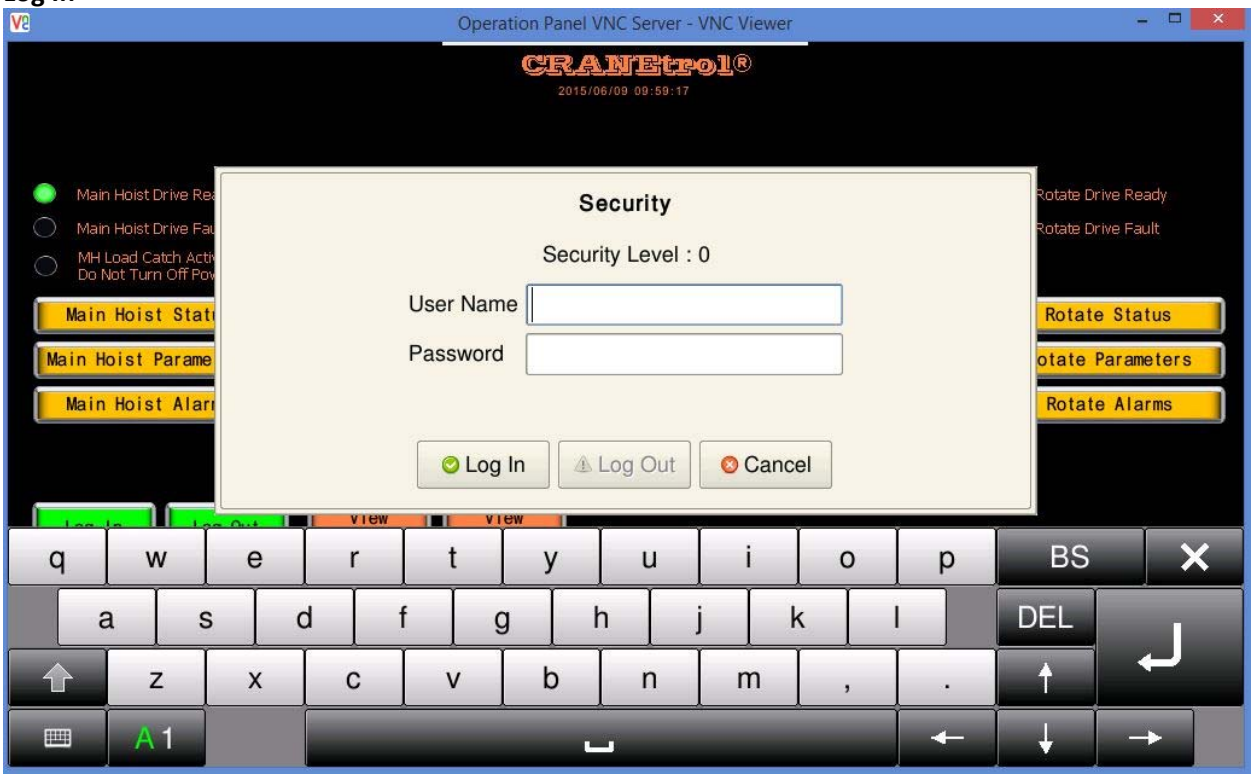
View Log

This features tracks and logs changes that are made to your equipment through this tool. Use this function to monitor when changes are made as well as the data that was modified. This feature includes date and time stamping as well as login information.



>>> System Security

Log In



>>> System Security (cont.)

The CRANElink system provides for 15 different levels of access based on user name and password. Each screen is assigned an access level and users must have an access level equal to or greater than the level assigned to the screen to access it. As a default, the system user names and passwords are stored in the hardware and are only accessible by the system administrator. The system administrator is responsible for maintaining user names, passwords and screen level access. If an administrator is not assigned at the time of order, the default administrator name and password will be used and you will need to contact us in order to make changes to user names, passwords and access levels.

User names, passwords and screen access levels can be assigned prior to shipment if they are provided to CRANEtrol® with your order. Review the hardware documentation for instructions on gaining access to this area of the system.

By using the log in button on the home screen, users are granted access to all screens that have an access level equal to or lower than that assigned to the user until that user logs out. If the screen requires a higher access level, the login screen will be displayed again. Users can navigate from screen to screen with a single login provided their access level is allowed for all screens they attempt to view.

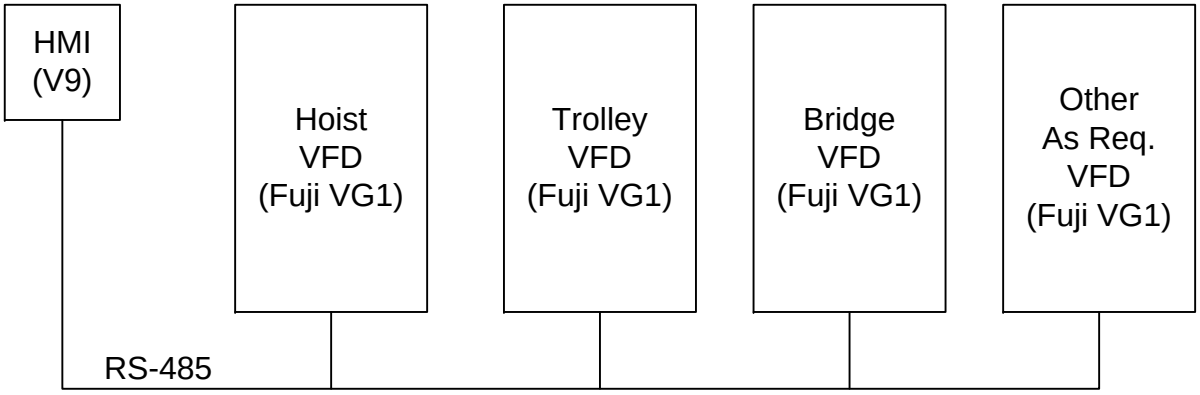
Use the Log Out button, provided on each screen, at the end of each session. Pressing the Log Out button will reset the security access level to zero and automatically navigate to the home screen. The home screen is the only screen in the system with a security level of zero.

Failure to properly log out of the system will allow all users following you to access screens that may be above their assigned security level.

PLEASE LOG OUT AFTER EACH SESSION.

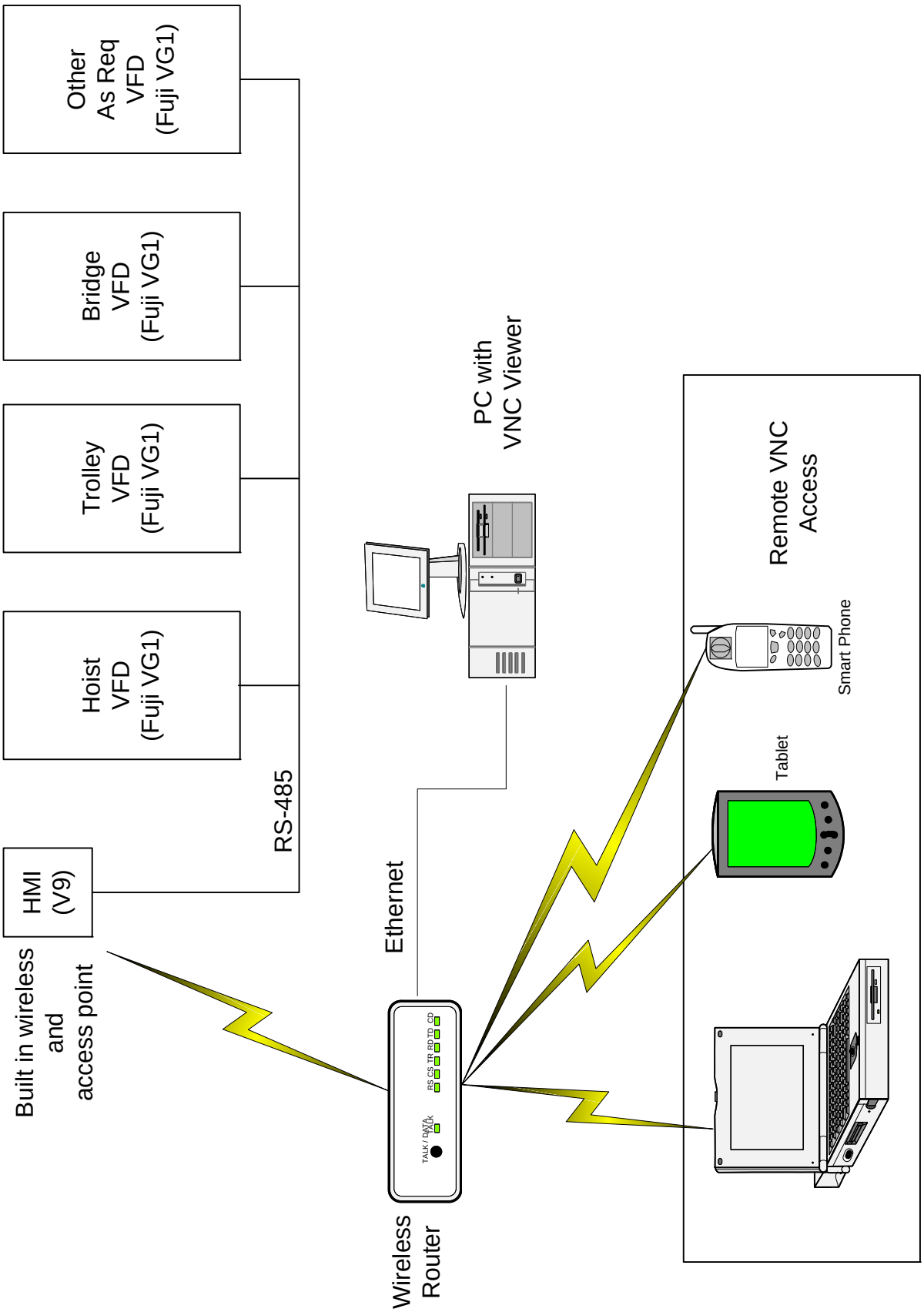
CRANElink Local

Local Access Only



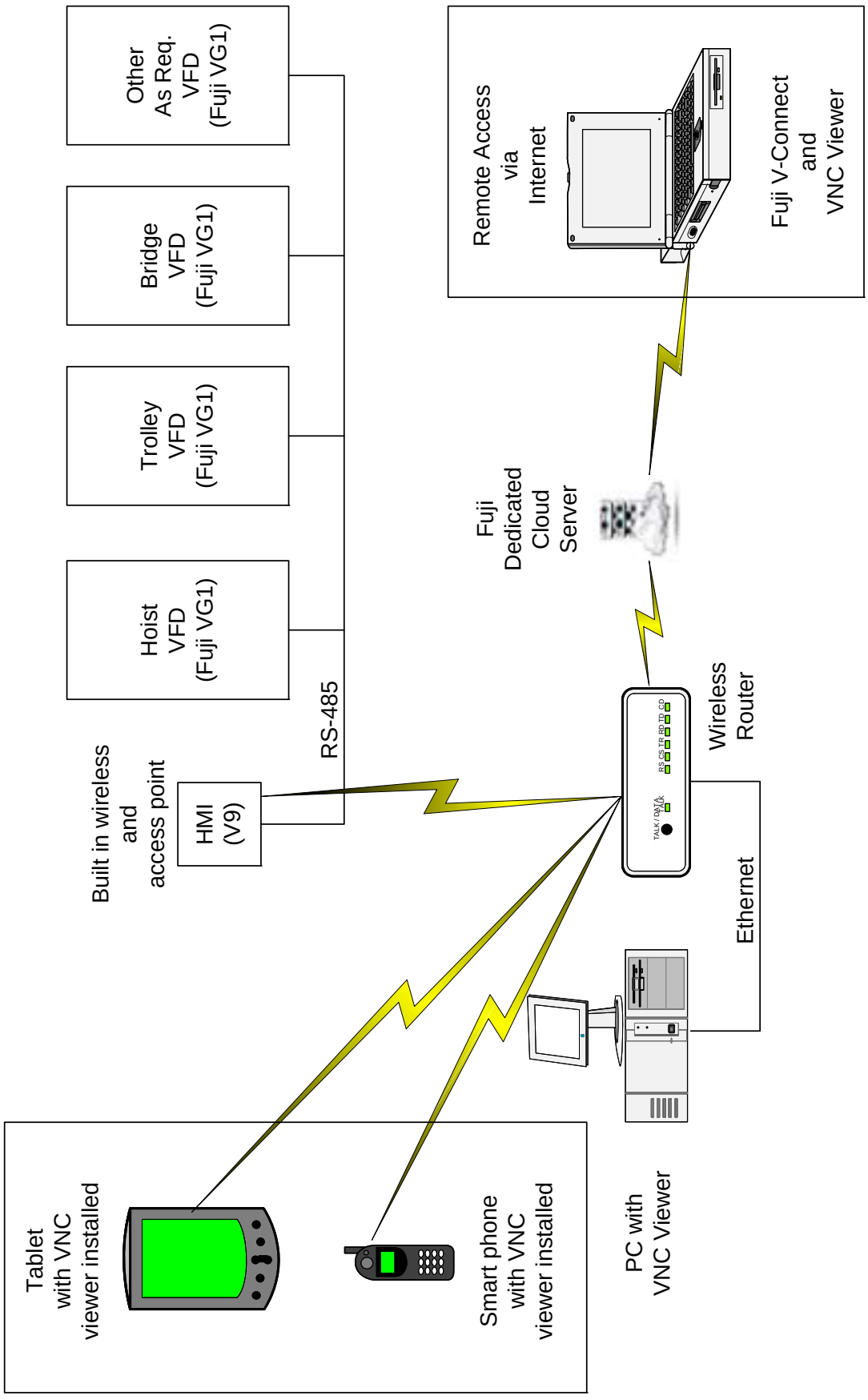
CRANElink Remote

Local and Remote Access



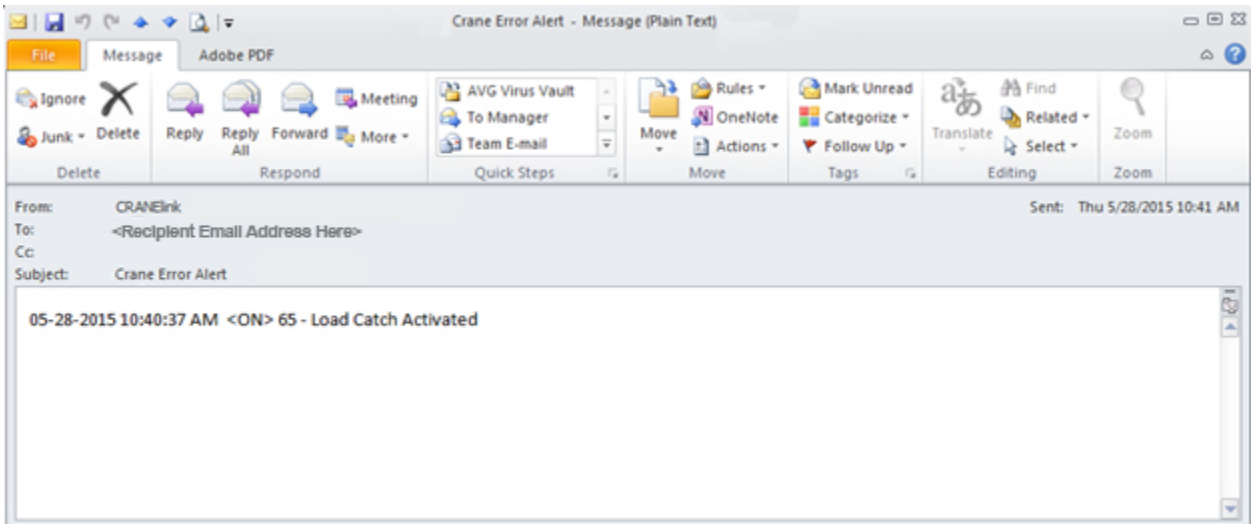
CRANElink Web

Local and Remote Access



>>> CRANElink Web

>> Email Notifications



The CRANElink Web system also provides you with the ability to receive an automated email alert that can be configured to inform you of the date and time of critical errors and monitored events. The selection of these errors and events can be modified to suit your application.

NOTES: