



11327 Virginia Crane Drive Ashland VA, 23005 Phone (804) 798-1343

# **CRANELink Interface** Reference Manual

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#### Index

System Options, 1 Crane Access Screens, 2 Home, 2 Home Screen - Navigation, 3 Main Hoist Status, 4 Main Hoist Parameters, 5 Full Parameter List, 9 Parameter List Viewer, 10 Function Code View, 11 Status View, 14 Main Hoist Alarms, 15 Status at Last Alarm, 18 Home Screen ... Additional Features, 19 System Security, 21 **CRANElink Local** Configuration Chart, 23 CRANElink Remote Configuration Chart, 24 CRANElink Web Configuration Chart, 25 Email Notifications, 26

# 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
  - o Records and stores each drive fault reset with date and time stamp
  - o Records and stores acknowledgement of all drive faults with date and time stamp
  - o 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<sup>®</sup> and Brake Answer Back from a single screen without scrolling through countless parameters
- Onboard PDF format documentation accessible at any time includes
  - o System electrical drawings when ordered with new controls
  - o Complete drive parameter list with descriptions
  - Operation log Tracks all modifications made through the HMI
  - o 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

		CRANETPOL® 2015/05/20 11:31:56		
<ul> <li>Main Hoist Drive Ready</li> <li>Main Hoist Drive Fault</li> </ul>	<ul> <li>Aux Hoist Drive Ready</li> <li>Aux Hoist Drive Fault</li> </ul>	<ul> <li>Trolley Drive Ready</li> <li>Trolley Drive Fault</li> </ul>	<ul> <li>Bridge Drive Ready</li> <li>Bridge Drive Fault</li> </ul>	Rotate Drive Ready     Rotate Drive Fault
MH Load Catch Active Do Not Turn Off Power Main Hoist Status Main Hoist Parameters	AH Load Catch Active Do Nat Turn Off Power Aux Hoist Status Aux Hoist Parameters	Trolley Status Trolley Parameters	Bridge Status Bridge Parameters	Rotate Status Rotate Parameters
Main Hoist Alarms	Aux Hoist Alarms	Trolley Alarms	Bridge Alarms	Rotate Alarms
Log In Log Out	Drawings L	og		
		CORP. A. BUSTININ IN		
		Remote Machine Interface		_

#### >>> 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<sup>®</sup> Active (Third Row Hoists only)

	Opera	tion Panel VNC Server - VN	C Viewer	- 0 ×
		2015/05/20 11:49:24	<u>L</u> ®	
Main Hoist Drive Ready	Aux Hoist Drive Ready	Trolley Drive Ready	Bridge Drive Ready	Rotate Drive Ready
Main Hoist Drive Fault			Bridge Drive Fault	Rotate Drive Fault
MH Load Catch Active Do Not Turn Off Power	AH Load Catch Active Do Not Turn Off Power			
Main Hoist Status	Aux Hoist Status	Trolley Status	Bridge Status	Rotate Status
Main Hoist Parameters	Aux Hoist Parameters	Trolley Parameters	Bridge Parameters	Rotate Parameters
Main Hoist Alarms	Aux Hoist Alarms	Trolley Alarms	Bridge Alarms	Rotate Alarms
Log In Log Ou	t View Vi Drawings Lo	ew		
Log In Log Ou	View Vi Drawings Lo	ew g		
Log In Log Ou	View View Vings Lo	ew ew		



## >>> 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<sup>®</sup> status (flashing alert when active)
- All digital inputs and digital outputs
- Drive heat sink and air temperature
- Output current
- Brake slip, Load Catch<sup>®</sup> 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.



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.



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.

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.



#### >> 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.

V2 Operation Panel VNC Server - VNC Viewer	- 🗆 🗙
CRANETPOL® 2015/05/28 10:45:32	Home
MAIN HOIST FULL PARAMETER LIST	Main Hoist Status
	Main Hoist Alarms
Port No. 0 Speed.Attain 🔘	Back
Output SpeedO r/min	View Parameter List
Output Current 0.0 A	
Function	Log Out
Code Status	
CIE A NIEI Mar Le Remote Machine Interface	
	Parameter list viewer
Function Code – Opens complete parameter edit function	Status – Abbreviated status

#### >> 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.

	6		11327 Virginia Crane Drive P.O. Box 289 Ashland, VA 23005 Phone (804) 798-1343	
			Fax (804) 798-7843	
	-			
	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 (rotating time)	3 to 15 kHz	
	F20	200V apostion mode	2 to 13 km2	
	F36	Stop road	0.0 to 150.0 r/min	
	F3/	Stop speed Stop speed (Detection method)	0.to 1	
	F30	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	
1/12				

#### >> 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".

>> Full Parameter List (cont.)

Ve		Operation Panel VNC Server - VNC Viewer		- 🗆 🗙
	Por	t No 1 F codes 1/5		
F	00	Data Protection	0	
F	01	Speed Command N1	5	
F	02	Operation Method	1	
F	03	Maximum Speed M1	1800	r/min
F	04	Rated Speed M1	1765	r/min
F	05	Rated Voltage M1	460	V
F	07	Acceleration Time 1	2.00	s
F	08	Deceleration Time 1	3.00	s
F	10	M1 Electronic Thermal Overload Protection (Select motor characteristics)	0	
F	11	M1 Electronic Thermal Overload Protection (Detection level)	7.50	A
F	12	M1 Electronic Thermal Overload Protection (Thermal time constant)	5.0	min
F	14	Restart Mode after Momentary Power Failure (Mode selection)	0	
F	17	Gain (for terminal [12] input)	100.0	%
F	18	Bias (for terminal [12] input)	0	r/min
F	20	DC Braking (Braking starting speed)	0	r/min
		Oper Pr	ation	Menu

### **FUNCTION CODE VIEW** (2<sup>nd</sup> 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.

>> Full Parameter List (cont.)

Va				Operation F	anel VNC Serve	r - VNC Viewer			- • ×
	Por	rt No	1 F coc	les 1/5					
	F00	Data Pro	otection				0		
	F01	Speed Co	ommand N1				5		
	F02						1		
	F03	7	8	9			1800	r/min	
	F04	4	5	6			1765	r/min	
	F05						460	۷	
	F07	1	2	3	CLR		2.00	s	
	F08						3.00	S	
	F1C	0	· · ·	+-	CR		0		
	F11	MAX	3600.00				7.50	A	
	F12	MIN.	0.01		Cancel		5.0	min	
	F14	(Mode se	ellection)	monorrear y		- <del>3</del>	0		
	F17	Gain (fo	or terminal	[12] input	:)		100.0	%	
	F18	Bias (fo	or terminal	[12] input	)		0	r/min	
	F20	DC Brak	ing (Braking	starting	speed)		0	r/min	
						Oper P	ation	Menu	

## FUNCTION CODE VIEW (3<sup>rd</sup> 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

>> 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.

V2	0	peration Panel VNC Server - VI	NC Viewer	- 🗆 🗙
		CRANETPO 2015/05/20 11:48:19	<u>l</u> ®	Home
		MAIN HOIST FAULT	_OG	Main Hoist Parameters
0=None 1 1=Brake Slip				Main Hoist Status
2=Brake Ans Bl Error Message	Occurance	Reset	Acknowledged	Back
to ERA Fault Above) 05	-20-2015 11:47:52 AM *	***************************************		Status at Last Alarm
				O Main Hoist Fault Reset
			P	AGE
				Log Out
Change	DEL	ACK ALL		
Tororder		ALL		
		<u>CRANELink</u>		
		Remote Machine Interface		
1				
est "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.)

	0	peration Panel VNC Server - VNC View	er	- 1
		CRANEtrol® 2015/05/20 11:31:56	)	
Main Hoist Drive Ready Main Hoist Drive Fault MH Load Catch Active Do Ndr Turn Off Power	Aux Hoist Drive Ready     Aux Hoist Drive Fault     Aux Hoist Drive Fault     AH Load Catch Active     Do Not Turn Off Prover	<ul> <li>Trolley Drive Ready</li> <li>Trolley Drive Fault</li> </ul>	<ul> <li>Bridge Drive Ready</li> <li>Bridge Drive Fault</li> </ul>	<ul> <li>Rotate Drive Ready</li> <li>Rotate Drive Fault</li> </ul>
Main Hoist Status	Aux Hoist Status	Trolley Status	Bridge Status	Rotate Status
Main Hoist Parameters	Aux Hoist Parameters	Trolley Parameters	Bridge Parameters	Rotate Parameters
Main Hoist Alarms	Aux Hoist Alarms	Trolley Alarms	Bridge Alarms	Rotate Alarms
Log In Log Ou	View Drawings	CILA NITETIN & Remote Machine Interface		

#### 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.

Va		Operation Panel VNC Se	erver - VNC Viewer	- D ×
	Action	T	Function	× •
1	PowerON			
2	Switch Action	Multi-Overlap	Display	Function
3	Switch Action	Multi-Overlap	Display	F codes
4	Switch Action	Multi-Overlap	Display	Menu
5	Switch Action	Overlap Displa	ay	Operation
6	Switch Action	Multi-Overlap	Display	Status
7	Switch Action	Overlap Displa	ay	Operation
8	Bit Rst			Nor.
9	Bit Rst			Stop
10	Bit Rst			Nor.
11	Bit Rst			Nor.
12	Bit Rst			Inv.
13	Bit Mom			Nor.
14	Switch Action	Multi-Overlap	Display	Status
15	Switch Action	Overlap Displa	ay	Operation
16	Switch Action	Screen		SW 00000 V
F	1/2 💽 💽		Default	The set Set Set

## >>> System Security

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#### >>> System Security (cont.)

The **CRANELINE** 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 screensthat may be above their assigned security level.

## PLEASE LOG OUT AFTER EACH SESSION.

## **CRANElink** Local

# Local Access Only



Other As Req VFD (Fuji VG1) Bridge VFD (Fuji VG1) PC with VNC Viewer Trolley VFD (Fuji VG1) Remote VNC Access ٠ Smart Phone Hoist VFD (Fuji VG1) © 0000 D 0000 0 0000  $\bigcirc$ Tablet **RS-485** Ethernet IMH (6V) Built in wireless access point and RS CS TR RD TD CD ₩QV • TALK Wireless Router

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**GRANELINK Remote** 

**Local and Remote Access** 

Bridge VFD (Fuji VG1) Trolley VFD (Fuji VG1) Local and Remote Access Hoist VFD (Fuji VG1) Built in wireless access point and IMH (6V)





Page 25 of 28

<u>CRANElink Web</u>

#### >>> CRANElink Web

#### >> Email Notifications

🔤   🖬 47 (° 🔺	🔹 🔯 🖙	Crane Error Alert - Mes	sage (Plain	Text)				
File Messag	Adobe PDF							۵ 🕜
🖏 Ignore 🗙 🍇 Junk - Delete	Reply Reply Forward Nore -	AVG Virus Vault	Move	Rules *	Mark Unread Categorize * Follow Up *	Translate	R Zoom	
Delete	Respond	Quick Steps	6	Move	Tags G	Editing	Zoom	
To: <rbc Cc Subject: Crane</rbc 	lpient Email Address Here⊶ : Error Alert							Ē
05-28-2015 10:4	0:37 AM <on> 65 - Load Catch Act</on>	ivated						(-) (-)

The **CRANELINE** 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:

