

CCI Link™

Remote Display

USER'S MANUAL



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WARNING: The Control Concepts, Inc. power controllers use power thyristors to switch voltage to the connected load. Line voltage must be assumed at the output terminals at all times, even when the control signal has been removed and the load voltage appears to be off. It has been mandated by the National Electrical Code and the Occupational Safety and Health Act of 1970 that a physical disconnect be opened ahead of all remotely actuated controls before performing any maintenance work on the controller or its connected load.

PROPRIETARY DATA

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OVERVIEW

A. DISPLAY SCREEN

A 2-Line Display that shows status information or data from a selected parameter.

B. NAVIGATION/SCROLL BUTTONS

The Up/Down Movement arrows are used to navigate between parameters. In addition, when a parameter is selected the Movement arrows move the 2-Line Display cursor left or right to assist in setting the parameter value.

C. SELECTION VALUE ADJUST BUTTONS

The Adjustment buttons increase or decrease the value of a parameter.

D. SELECT/ENTER BUTTON

The green Select button is used to accept a change made to a settable parameter value.

E. CCI LINK CABLE CONNECTIONS (2)

A proprietary deterministic digital bus that enables the CCI Link Remote Display to communicate with a connected controller.

F. RESET

Depress the reset button to force a hardware reset of the Remote Display.

G. GROUND

Wire connection for panel or earth ground.

H. LED's

Status and Termination LED's
(For additional information see Basic Operation -> LED's)



INSTALLATION

The Remote Display kit includes all necessary components (excluding knockout punch) to mount the display to the front of an electrical enclosure.

- 1x Front Panel Display
- 1x Display Gasket
- 1x Aluminum Rear Housing
- 4x 1/2" [12.7mm] and 4x 5/8" [15.875mm] Mounting Screws
- 1x Display CCI Link Cable (length of the supplied cable is determined by kit order number)

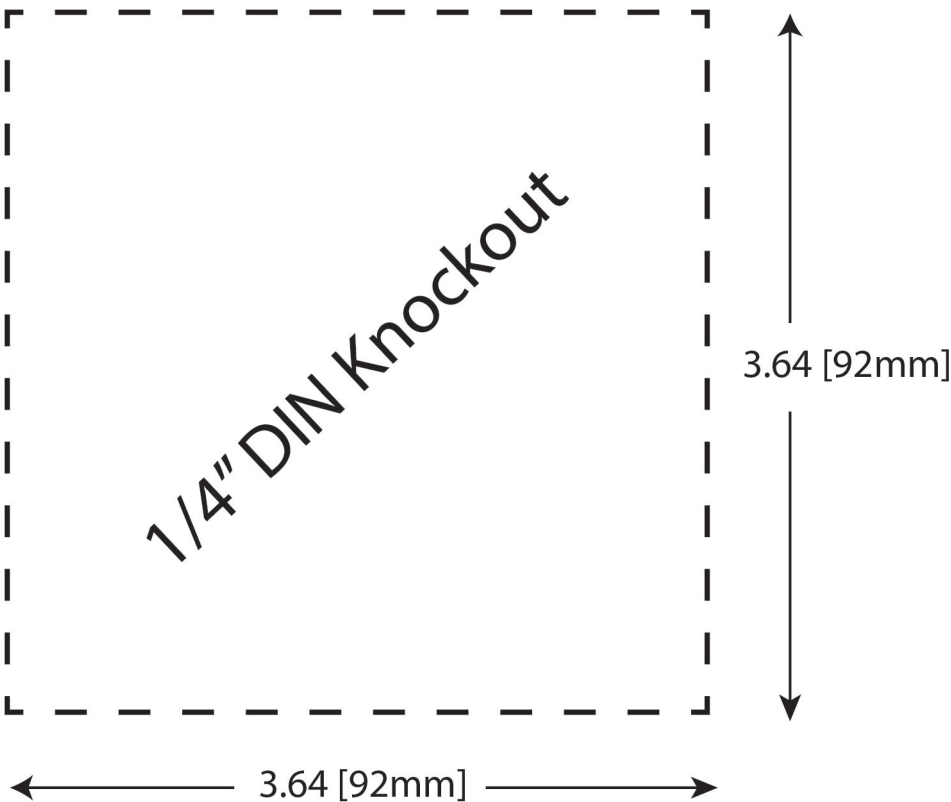
The Remote display can be wired in series with additional displays and other CCI Link devices. The maximum cable distance including wire runs between all nodes in the network must not exceed 100ft (30.48 meters).

MOUNTING

The display can be mounted with a standard 1/4 DIN cutout in a panel or cabinet with the following restrictions:

- Must be mounted on an enclosure with a smooth surface.
- 2 sizes of mounting screws are provided, select the proper screw length depending on panel thickness

Panel Thickness	Use screw size
< 0.125" [3.175mm]	1/2" [12.7mm]
0.125" [3.175mm] to 0.150" [3.81mm]	5/8" [15.875mm]



ASSEMBLY

Remove the adhesive tape covering on the gasket and install it along the back edge of the Display front panel. Make sure the gasket does not overhang the edges of the Display. Place the Remote Display inside of the 1/4 DIN cutout of the cabinet.

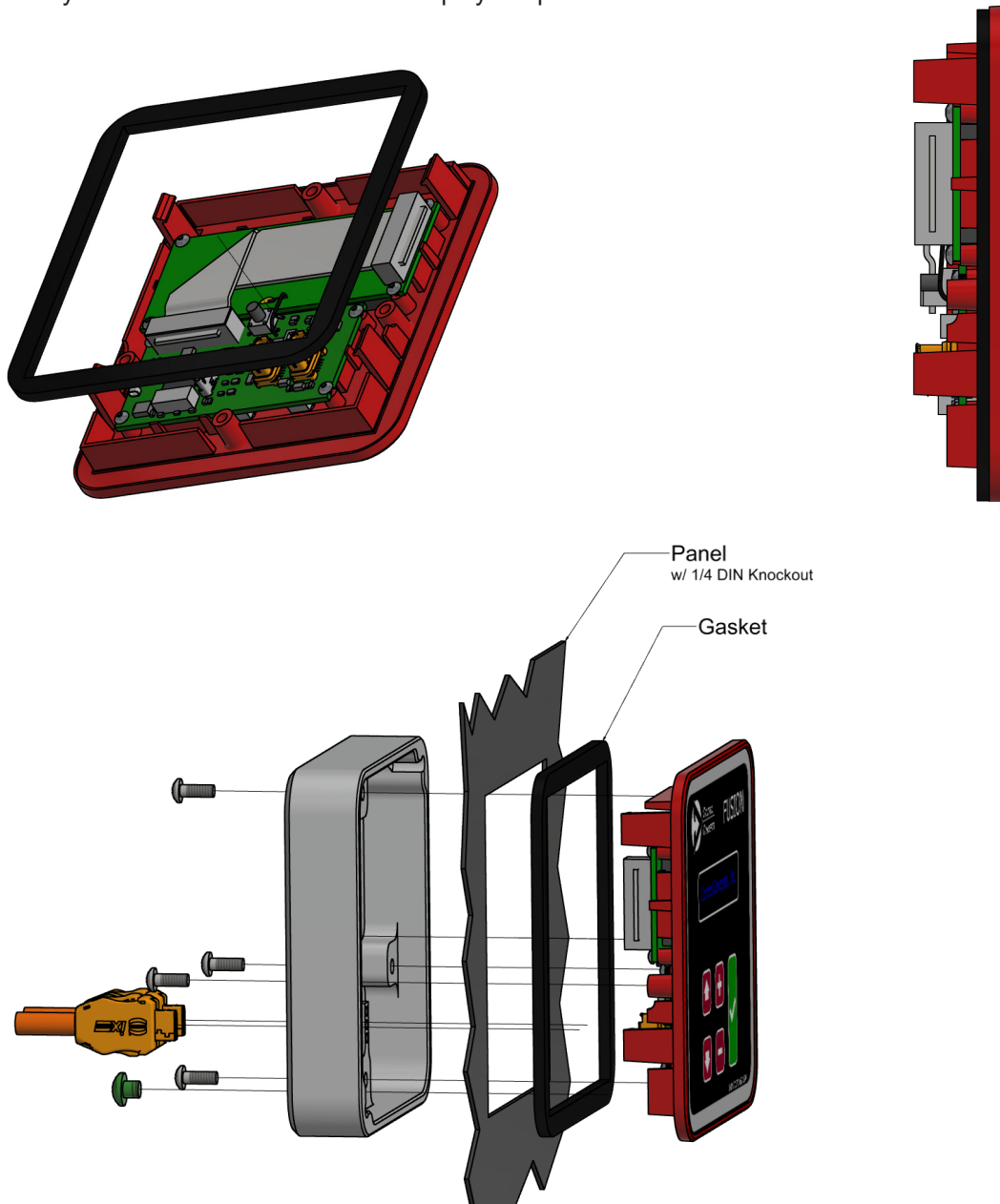
Attach the display rear housing on the opposite side of the panel with provided mounting screws. Evenly tighten the screws in an alternating order to secure the housing with display and correctly compress the gasket.

When properly installed the gasket should be compressed 50% on all sides.

If the gasket becomes damaged during installation contact Control Concepts, Inc., for a replacement.

Connect the housing ground screw connection to panel ground or earth.

Attach the CCI Link IX Networking cable(s) to the display and route to the desired power controller(s). The display can be daisy chained to additional remote displays or power controllers.



BASIC OPERATION

KEYPAD NAVIGATION & SCROLLING

Navigation of the CCI Link Remote Display is performed using the five button interface allowing a user to configure the display and view or change parameters of connected controllers. Connected devices are configured one at a time. MicroFUSION power controller display settings are configured using the Control Concepts Control Panel Software.

The parameters shown on the 2-Line Display are read from a 'Screen List' provided by the controller. Controller screen lists can be configured using the Control Panel software.

The Control Panel software and User's Manual can be downloaded for free at WWW.CCIPOWER.COM

Auto Scroll

When Auto Scroll is enabled the display will automatically start in Auto Scroll and cycle through the first 8 screens of the Screen List every few seconds.

Note: Auto Scroll can be enabled or disabled for each MicroFUSION device using the Control Panel software.

Manual Scroll

Press any of the movement arrow keys twice to force the 2-Line Display into Manual Scroll. To return to Auto Scroll, press and hold either Movement arrow for a minimum of two seconds.

Note: If Auto Scroll is enabled and the Remote Display idles for ten minutes while in Manual Scroll mode, it will automatically return to Auto Scroll.

Movement Arrow Keys

The up and down arrows are used to scroll through different screens and/ parameter lists.

Changing Values

Settable parameters will display a dot in front of the parameter name. To adjust the value, press the green Select button to select the parameter. The dot will change to an arrow. Only one number can be adjusted at a time. Use the Up/Down arrows to move the cursor left or right in order to select digit positions. Press the plus/minus adjustment buttons to increase or decrease the selected value. After a desired value is reached, press the green Select button to accept the changes.

To exit edit mode without committing a change, press and hold either arrow button for 3 seconds, when prompted release the button and the display will exit editing and revert to the last parameter value.

If the settable parameter has a star next to the displayed name, that indicates that the parameter has been locked. To unlock the parameter, enter the Parameter Lock password (set by the user), or connect the controller to the Control Panel software.

▪ Current Limit 140.0

↵ Current Limit 140.0

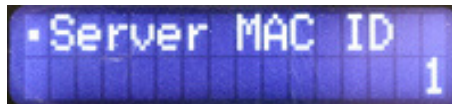
*Current Limit 140.0

Top - Parameter Unlocked
Middle - Parameter Selected
Bottom - Parameter Locked

Note: If the parameter entry is left unchanged or the Select button is not pressed within 20 seconds, the parameter will return to its original value.

INITIAL POWER-UP

When powered on the Remote Display scans for compatible connected CCI Link devices, if the configured Server MAC ID (default value of 63) is located on the network the Display will automatically switch to the current Screen List configured in that controller. If no device is located at that MAC ID, the Server MAC ID selection screen in the Client Display Configuration Menu is displayed.



SCREEN LISTS

The Default Screen List will show information such as line/load voltages, load currents and heatsink temperatures. If the controller is equipped with a communications card the Default Screen List will also show specific parameters pertaining to the communications settings. The Screen List can be customized by connecting the controller to the Control Panel Software. Within the Software any combination of screens can be programed (limit 50 screens). Refer to the Control Panel User's Manual for details on customizing the Screen List.

If the down arrow and minus are held for 5 seconds the display will switch to the full parameter list (all defined SP and MP's) available for the connected device. Holding the same keys a second time will revert the display back to the saved custom screen list.

Note: If the controller Custom Screen List is updated while the CCI Link Remote Display is connected, the Screen List on the remote display must be manually updated. Navigate to Client Display Configuration, select Update Data, then select Screen List. The display will then update to the current Screen List. The screen list is also reloaded if the Display or controller power is cycled or CCI Link connection is interrupted.

PARAMETER LOCK

Parameters on a controller screen list can be secured with a lock code to prevent modification. When a parameter is locked, a lock code must be entered on the display to allow the user to change values. Refer to the Control Panel User's Manual for details on locking parameters using a custom screen list on MicroFUSION controllers.

CLIENT AND SERVER CONFIGURATION

The display has two categories of screens: Server Node Monitor and Client Display Configuration. The Server Node monitor actively displays the connected device screen list while the Client Configuration is used to change and update settings for the Remote Display itself.

Server Node Monitor

The Server Node Monitor displays parameters from the currently loaded Screen List of the controller that has an established connection with the CCI Link Remote Display. Therefore, the available screens within the Server Node Monitor may change when a new server node is selected.

When Server Node Monitor is selected on the CCI Link Remote Display the display will cycle through the first 8 screens of the programed Screen List (When Auto Scroll is enabled, if using manual scroll, use the arrow keys to cycle through the available screens.)

Remember when screen lists are changed on a controller, the connected display must be updated using the Client Display update function, or reset to reflect the changes.

Client Display Configuration

When the display is powered on, it will display the Server Node Monitor Screen List. To transfer between the two

categories, navigate to the name of the desired category and select it by using the green check button. The CCI Link Remote Display will then display the selected category.

The client display configuration allows the user to view and configure the remote display parameters and status. Network status, number of nodes visible on the network, and display software version can be viewed. CCI Link MAC ID's of the display and connected controllers are configured using this menu.



The following table shows the Client Display Configuration menu selections:

Screen	Description	
Server MAC ID	The MAC ID of the device that the Remote Display will attempt to establish a connection to. When connected, the Server Node Monitor displays this devices screen list.	
Locate MAC ID	Used to identify a controller with a specific MAC ID, when executed the LED's on the controller assigned the selected MAC ID will flash to allow visual identification.	
Update Data	Allows updating the screen list and other settings from the controller at Server MAC ID. Selecting Update Data allows the following selection options:	
Scroll through selections using the + / - keys, press the green check key to accept selection.	Selection	Description
	OFF	Exit Update Data selection menu
	All	Updates all parameters and settings from the controller
	Screen List	Loads current screen list configuration from the controller
	Tag Name	Updates the displayed Tag Name of the controller
	Cust Text	Update the displayed Custom Text screen value
	ParamLk Mask	Loads the Parameter Lock Mask settings
	Ain MP Text	Updates the Analog Input MP Text
Display MAC ID	Set the CCI Link MAC ID of the Remote Display (default Display MAC ID = 60)	
Serial Number	Display the hardware serial number of the CCI Link Remote Display	
Network Status	Display the Network Status (series of bits 0-7) see MP-26 Network Status parameter	
Node Count	Show the total number of connected nodes (CCI Link Devices) discovered on the network. The value does not include Connect Module Gateways or the Remote Display itself.	
On-Line MAC ID	A scrolling list of compatible devices MAC ID's currently visible by the Remote Display. Compatible devices include MicroFUSION Controllers, and other remote displays. <i>Connect Module Gateways are not visible on the Display MAC ID list.</i>	
Timeout Count	Total number of network timeouts that have occurred since last display power cycle.	
Sftware ID/Ver	Show the Remote Displays firmware ID and installed firmware version.	

LED'S

3 LED's are visible through the rear housing and reflect the current communication state of the Remote Display.



LED	ON	OFF	FLASHING
Term (green)	Termination enabled	Termination off	-----
Status (green)	Online, connected	No Power to display	Online, not connected
Status (yellow)	Timed Out	Off-Line	Connected and communicating with node

TROUBLESHOOTING

FIRMWARE VERSIONS

Mixing firmware versions on devices sharing the CCI Link bus can have unexpected results. This is especially prevalent with older firmware that relied on tables for MAC ID's.

It is recommended to have either all controllers at the same firmware level or all using the latest firmware. Controller firmware can be updated with the Control Panel Software. Please contact Control Concepts support if you have questions regarding firmware revisions and availability.

CONNECT GATEWAY MODULES

Gateway modules do not identify themselves on the CCI Link network. This lack of announcement causes the Remote Display to not count the node in its list of devices visible on the network. A Gateway Module present on the same CCI Link network as the display also reduces the available nodes as it allocates MAC ID's 1-10, causing devices assigned within that range to be shifted to MAC ID's between 11 and 20.

COMMUNICATION ERRORS

Connection status with a configured controller can be checked using the Control Panel Software. Connect to the Controller using a USB cable from a compatible PC and open the Communication tab in the Control Panel.

A correctly configured controller connected to a Remote Display will report as online and an allocated and explicit connection is established as shown in the image to the right.

Communication Module Status also should show OK.

If network status errors are shown, check cables and connections at the controller, display, and all nodes in series in the CCI Link network.

CCI Link

Tag

microFUSION1

Mac ID

3

Transducer Card

Mac ID

13

Master Connection Status

 Slave Detection

Slave Connection Status

 Connection 1 Allocated/...

 Connection 1 Explicit

Network Status

 ON Line

 Explicit Connection Esta...

 FLASH LEDS

Communications Module Status

 OK

SPECIFICATIONS

Environmental	
Power Consumption	21 mA at 24 VDC - powered from CCI Link
Ambient Air Operating Temperature	32 °F [0 °C] to 122 °F [50 °C]
Humidity	20% to 90% RH Non-Condensing
Rated Operating Altitude	Up to 6000 ft [1829 m]
Contaminates	RoHS Compliant, CE Pollution Degree 2
Storage Temperature	-4 to 176 °F [-20 to 80 °C]
Ingress Protection Rating	IP 65 (UL Type 1 and Type 12 enclosures)
Mounting Options	Panel Mount (1/4 DIN knockout)

ACCESSORIES/ORDERING

Remote Display Kits

Description	CCI Part Number
1.5m [4.92ft] Cable	SMACCILINK-RDK5
5m [16.4ft] Cable	SMACCILINK-RDK15
7.5m [24.6ft] Cable	SMACCILINK-RDK25

Display to Device Cables

Description	CCI Part Number
1.5m [4.92ft] Cable	0058009-0050-1492
5m [16.4ft] Cable	0058009-0050-2164
7.5m [24.6ft] Cable	0058009-0050-2246

Display to Display Cables

Description	CCI Part Number
7.5m [24.6ft] Cable	0058008-0050-1328