Bitronics

M570DX

Remote Display Manual

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ML0033 Document Revision D

NovaTech®
Bitronics ◆ D/3 ◆ Orion

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M570D FIRMWARE REVISIONS

Display	Description	Date
v1.07.0	Initial M570D Release	-
v1.08.0	Update – Power up sequence	10/07/05

Bootloader	Description	Date
v1.01.0	Update	7/25/02

M571 MANUAL SET

ML0032	M571 User Manual
ML0022	70 Series UCA® Manual
ML0025	70 Series Modbus Protocol
ML0026	70 Series DNP3 Protocol
ML0027	M870D Remote Display Manual
ML0033	M570Dx Display Manual
ML0034	70 Series IEC 61850 Protocol Manual

CERTIFICATION

Bitronics LLC certifies that the calibration of our products is based on measurements using equipment whose calibration is traceable to the United States National Institute of Standards Technology (NIST).

INSTALLATION AND MAINTENANCE

Bitronics LLC products are designed for ease of installation and maintenance. As with any product of this nature, installation and maintenance can present electrical hazards and should be performed only by properly trained and qualified personnel. If the equipment is used in a manner not specified by Bitronics LLC, the protection provided by the equipment may be impaired.

WARRANTY AND ASSISTANCE

This product is warranted against defects in materials and workmanship for a period of one hundred and twenty (120) months from the date of their original shipment from the factory. Products repaired at the factory are likewise warranted for eighteen (18) months from the date the repaired product is shipped, or for the remainder of the product's original warranty, whichever is greater. Obligation under this warranty is limited to repairing or replacing, at our designated facility, any part or parts that our examination shows to be defective. Warranties only apply to products subject to normal use and service. There are no warranties, obligations, liabilities for consequential damages, or other liabilities on the part of Bitronics LLC except this warranty covering the repair of defective materials. The warranties of merchantability and fitness for a particular purpose are expressly excluded.

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SAFETY SECTION

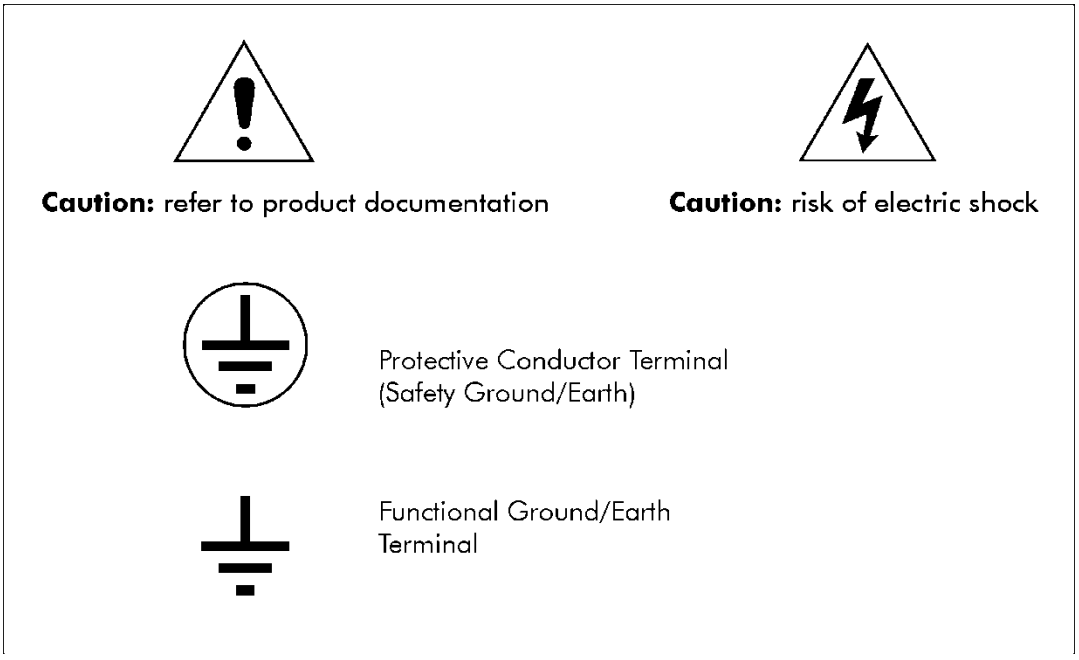
This Safety Section should be read before commencing any work on the equipment.

Health and safety

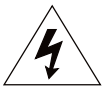
The information in the Safety Section of the product documentation is intended to ensure that products are properly installed and handled in order to maintain them in a safe condition. It is assumed that everyone who will be associated with the equipment will be familiar with the contents of the Safety Section.

Explanation of symbols and labels

The meaning of symbols and labels that may be used on the equipment or in the product documentation is given below.



Installing, Commissioning and Servicing



Equipment connections

Personnel undertaking installation, commissioning or servicing work on this equipment should be aware of the correct working procedures to ensure safety. The product documentation should be consulted before installing, commissioning or servicing the equipment.

Terminals exposed during installation, commissioning and maintenance may present a hazardous voltage unless the equipment is electrically isolated.

If there is unlocked access to the equipment, care should be taken by all personnel to avoid electric shock or energy hazards.

Voltage and current connections should be made using insulated crimp terminations to ensure that terminal block insulation requirements are maintained for safety. To ensure that wires are correctly terminated, the correct crimp terminal and tool for the wire size should be used.

Before energizing the equipment, it must be grounded (earthed) using the protective ground (earth) terminal, or the appropriate termination of the supply plug in the case of plug connected equipment. Omitting or disconnecting the equipment ground (earth) may cause a safety hazard.

The recommended minimum ground (earth) wire size is 2.5 mm^2 (#12 AWG), unless otherwise stated in the technical data section of the product documentation.

Before energizing the equipment, the following should be checked:

1. Voltage rating and polarity
2. CT circuit rating and integrity of connections
3. Protective fuse rating
4. Integrity of ground (earth) connection (*where applicable*)
5. Equipment operating conditions

The equipment should be operated within the specified electrical and environmental limits.

Current transformer circuits

Do not open the secondary circuit of a live CT since the high voltage produced may be lethal to personnel and could damage insulation.

External resistors

Where external resistors are fitted to relays, these may present a risk of electric shock or burns, if touched.

Battery replacement

Where internal batteries are fitted, they should be replaced with the recommended type and be installed with the correct polarity, to avoid possible damage to the equipment.
Internal battery: None required for M570D

Insulation and dielectric strength testing

Insulation testing may leave capacitors charged up to a hazardous voltage. At the end of each part of the test, the voltage should be gradually reduced to zero, to discharge capacitors, before the test leads are disconnected.

WARNING: EMISSIONS - CLASS A DEVICE (EN55011)

This is a Class A industrial device. Operation of this device in a residential area may cause harmful interference, which may require the user to take adequate measures.

DECOMMISSIONING AND DISPOSAL

1. Decommissioning

The auxiliary supply circuit in the relay may include capacitors across the supply or to ground (earth). To avoid electric shock or energy hazards, after completely isolating the supplies to the relay (both poles of any dc supply), the capacitors should be safely discharged via the external terminals before decommissioning.

2. Disposal

It is recommended that incineration and disposal to watercourses is avoided. The product should be disposed of in a safe manner. Any products containing batteries should have them removed before disposal, taking precautions to avoid short circuits. Particular regulations within the country of operation may apply to the disposal of lithium batteries.

1.0 INTRODUCTION

This manual applies to display models M570D and M570DA.. The M570DA display is a more energy efficient replacement to the M570D. An adapter, M570-ADPT2, allows dual connectivity of M570DA displays through the P1 display port on M57x IED models. Unless otherwise specified, references to M570D throughout this manual apply for the M570DA display as well.

The M570D Display connects to the M57x family of instruments through one of the serial communications ports. The M570D is designed to provide a convenient way to view measurements made by the M57x family. A maximum of 64 user-configurable measurement screens can be displayed. When using the M570D, these 64 screens can be assigned between one or two displays. The instrument can be set to display a single screen continually or automatically scroll through all available screens. Additionally, the user may manually step through all available screens. All of the screens can be scrolled.

1.1 Features

- Rugged Bitronics design
- Bright LED display, 3 lines of 5 digits and a one line, 8 character alphanumeric
- Standard mounting: DIN compatible; Mountable as replacement to 4" round display
- Configurable RS232 communication
- PC based configuration tool for quick setup
- Front panel service port
- Front panel Demand and Energy reset (if enabled)

1.2 Specifications

Display:	3 lines of 5 digits, Red LED, 0.56" High 1 line by 8 character alphanumeric, Red LED, 0.11" High
User Interface:	4 pushbuttons
Communication:	RS232, full duplex Selectable 9600, 19200, or 38400 baud 8 bit, No parity, 1 stop bit
Distance:	50 ft. (15m) RS232
Addressability:	Display Addresses 1 .. 15

Power Supply Requirements:

DC power is derived from P1 Display port jack located on M57x family of IED instruments (e.g. M571).

Nominal:	15Vdc, powered from M57x P1 Display Port
Operating Range:	10-16Vdc
Current:	350mA max

1.3 Environmental

Operating Temperature: -40 to 70degC

Humidity: 0-95% non-condensing

Installation Category: IC III (Distribution Level), Pollution Degree 2
(See Definitions, page 2)
Enclosure Protection: IP52 – Front Panel, IP20 – Rear
(to IEC 60529: 1989) Ratings are applicable for enclosure category 2.
(see Definitions, below)

Altitude: Up to and including 2000m above sea level

Intended Use: Indoor; Indoor/Outdoor use when mounted in an appropriately rated protective enclosure to NEMA or IP protection classifications, as required for the installation.

1.4 Physical

Connections: Rear: Modular jack, RJ11- 6 position (RJ12) - voltage and signal

Front panel: Standard 9 pin RS232 (DB9F) for service port

Package: 4.62" (118mm) square plastic case. Case depth is 1.1" (28mm) with modular jack extending 0.25" (6.5mm) from back mounting surface. Mounting studs and modular jack are located on backside of the Display case. A cutout is required to connect IDC flat cable to the modular jack. Allow a minimum depth of 1 " (25mm) behind the far side of the mounting surface for the mounting hardware and the display cable.

Definitions:

Enclosure Category 2:
Enclosures where no pressure difference relative to the surrounding air is present.

Installation Category (Overvoltage Category) III: Distribution Level, fixed installation, with smaller transient overvoltages than those at the primary supply level, overhead lines, cable systems, etc.

Pollution: Any degree of foreign matter, solid, liquid, or gaseous that can result in a reduction of electric strength or surface resistivity of the insulation.

Pollution Degree 2: Only non-conductive pollution occurs except that occasionally a temporary conductivity caused by condensation is to be expected.

1.5 Standards and Certifications

UL/CSA Recognized, File Number E164178
UL61010-1, 2nd edition (July 12, 2004);
CAN/CSA 61010-1-04 (2nd edition, July 12, 2004)

CE

European Community Directive on EMC 2004/108/EC (replaces former directive 89/336/EEC amended by 92/31/EEC, 93/68/EEC, 98/13/EC), and Directive 91/263/EEC [TTE/SES].
European Community Directive on Low Voltage 2006/95/EC (replaces former Directive 73/23/EEC).

Product and Generic Standards
The following generic standards were used to establish conformity:
Low Voltage (Product Safety): EN 61010-1: 2001
EMC: EN 61326-1 : 2006, EN 61000-6-2: 2005, EN 61000-6-4: 2007

Radiated Emissions Electric Field Strength
EN 55011: 2007 / A2: 2007 (supersedes EN 55011: 1998 / A1: 1999 /A2: 2002)
Group 1, Class A
Frequency: 30 - 1000 MHz

AC Powerline Conducted Emissions
EN 55011: 2007 / A2: 2007 (supersedes EN 55011: 1998 / A1: 1999 /A2: 2002)
Group 1, Class A
Frequency: 150 kHz – 30 MHz

Electrostatic Discharge (ESD)
EN 61000-4-2: 1995/ A1: 1998 / A2: 2001
Discharge voltage: ± 8 KV Air; ± 4 KV Contact (Additionally meets ± 6kv Contact)

Immunity to Radiated Electromagnetic Energy (Radio Frequency)
EN 61000-4-3: 2006 / A2: 2008, Class III (supersedes ENV50204: 1996 on Immunity to Radiated Electromagnetic Energy -Digital Radio Telephones, 900 MHz & 1890 MHz)

Frequency: 80 – 1000 MHz	Amplitude: 10.0 V/m	Modulation: 80% AM @ 1 kHz
Frequency: 1400 – 2000 MHz	Amplitude: 3.0 V/m	Modulation: 80% AM @ 1 kHz
Frequency: 2000 – 2700 MHz	Amplitude: 1.0 V/m	Modulation: 80% AM @ 1 kHz

Electrical Fast Transient / Burst Immunity
EN 61000-4-4: 2004
Burst Frequency: 5 kHz
Amplitude, AC Power Port: Not applicable
Amplitude, Signal Port: ± 2 KV

Current/Voltage Surge Immunity
EN61000-4-5: 2006 (supersedes EN 61000-4-5: 1995/ A1: 2001)
Open Circuit Voltage: 1.2 / 50 μs
Short Circuit Current: 8 / 20 μs
Amplitude, I/O Signal Port: Not applicable
Amplitude, AC Power Port: Not applicable

Immunity to Conducted Disturbances Induced by Radio Frequency Fields
EN 61000-4-6: 2007 (supersedes EN 61000-4-6: 1996/ A1: 2001)
Level: 3

Frequency: 150 kHz – 80 MHz
Amplitude: 10 V rms
Modulation: 80% AM @ 1 kHz

AC Supply Voltage Dips and Short Interruptions
EN 61000-4-11: 2004 (supercedes EN 61000-4-11: 1994/ A1: 2001)
Not applicable

2.0 INSTALLATION

WARNING - INSTALLATION AND MAINTENANCE SHOULD ONLY BE PERFORMED BY PROPERLY TRAINED OR QUALIFIED PERSONNEL.

2.1 Initial Inspection

Bitronics instruments are carefully checked and "burned in" at the factory before shipment. Damages can occur, however, so please check the instrument for shipping damage as it is unpacked. Notify Bitronics LLC immediately if any damage has occurred, and save any damaged shipping containers.

2.2 Instrument Mounting

The instrument may be mounted on a 19" Rack panel if desired. Three units will fit side by side on a standard 5.25" high panel. See Figure 2 for panel cutout dimensions. The unit should be mounted using the four #8-32 studs attached to the back plate. Use four #8-32 Nuts with integral lockwashers applied onto studs. Recommended Torque is 12 in-lbs (1.36 N-m). The mounting bolts must connect to earth ground.
Make sure that any paint or other coatings on the panel do not prevent electrical contact.

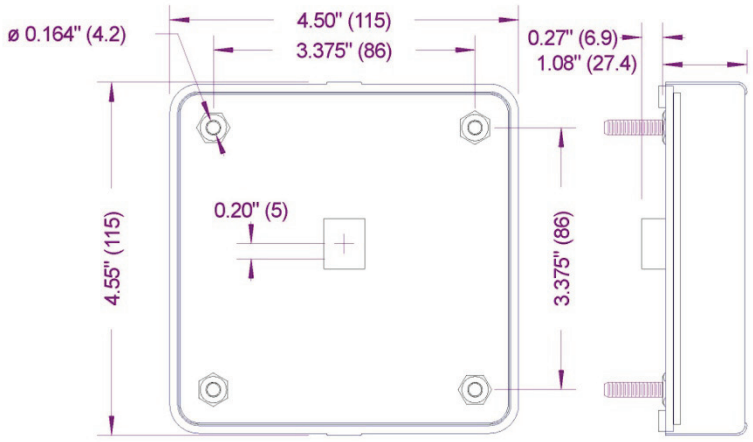


Figure 1 – Instrument Dimensions

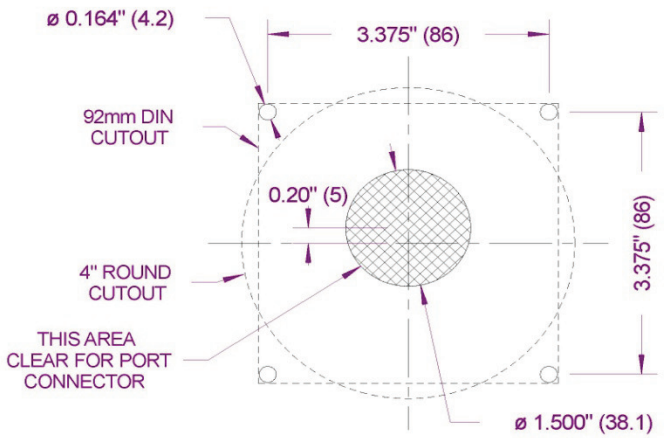


Figure 2 - Panel Cutout Dimensions

Note: In order to accommodate the ground clip located adjacent to the modular RJ11 6 position (RJ12) display port connector, the Panel Cutout diameter has been increased from a diameter of 1.00 inch (25.4mm) to a diameter of 1.5 inch (38.1 mm). The port connector and ground clip fit within the 1.5 inch cutout area.

2.3 Mounting and connecting to the Adapter M570-ADPT2 for dual display connectivity (Used only with M570DA display)

The M570-ADPT2 adapter allows for the connection of two displays to a M57x IED via the IEDs P1 display port. The adapter is intended to mount via L-brackets onto two of the four rear mounting studs that extend beyond the back side of the panel. Once the two displays have been mounted and fastened to the panel (refer to section 2.2), loosely attach the two L-brackets to the bottom two studs on one of the displays. Make sure each L-bracket is positioned facing upward so the adapter rests on top of the bracket. Insert the two 5/8 inch long #8-32 bolts up through each L-bracket hole to hold the L-bracket and adapter together and fasten loosely in place using the two #8-32 Nuts with integral lockwashers. Once all hardware is fitted in place, tighten fasteners to a recommended torque of 12 in-lbs (1.36 N-m).
Make sure that panel and L-bracket mounting areas are free of any paint, coating, etc. that may prevent electrical contact.

Figure 3 shows the adapter when mounted to the bottom rear studs of the display. Various other mounting arrangements are possible. If necessary the adapter can be mounted in other positions or orientations onto any two of the rear display studs. This provides some degree of flexibility when mounting the adapter onto the display studs. Careful consideration should be given to allow adequate hand and finger clearance from the back side of the display, in order to allow for connection and disconnection of display cables at the RJ11 connectors for service and maintenance personnel.

Connect the shielded display cable from the P1 port of the M57x IED to the M570-ADPT2 adapter's IN jack, which is the center jack. Connect a shielded cable from one of the adapter's OUT jacks to the rear jack of one of the displays. Connect a shielded cable from the adapter's second OUT jack to the rear jack on the second display. Both OUT jacks are identical and may connect with either of the two displays.

If there are excess cable lengths that need to be bundled then cable clamps may be secured to the remaining display studs to dress or harness the cables. There is also an intentional gap behind the adapter which may be used to anchor and secure a cable tie.

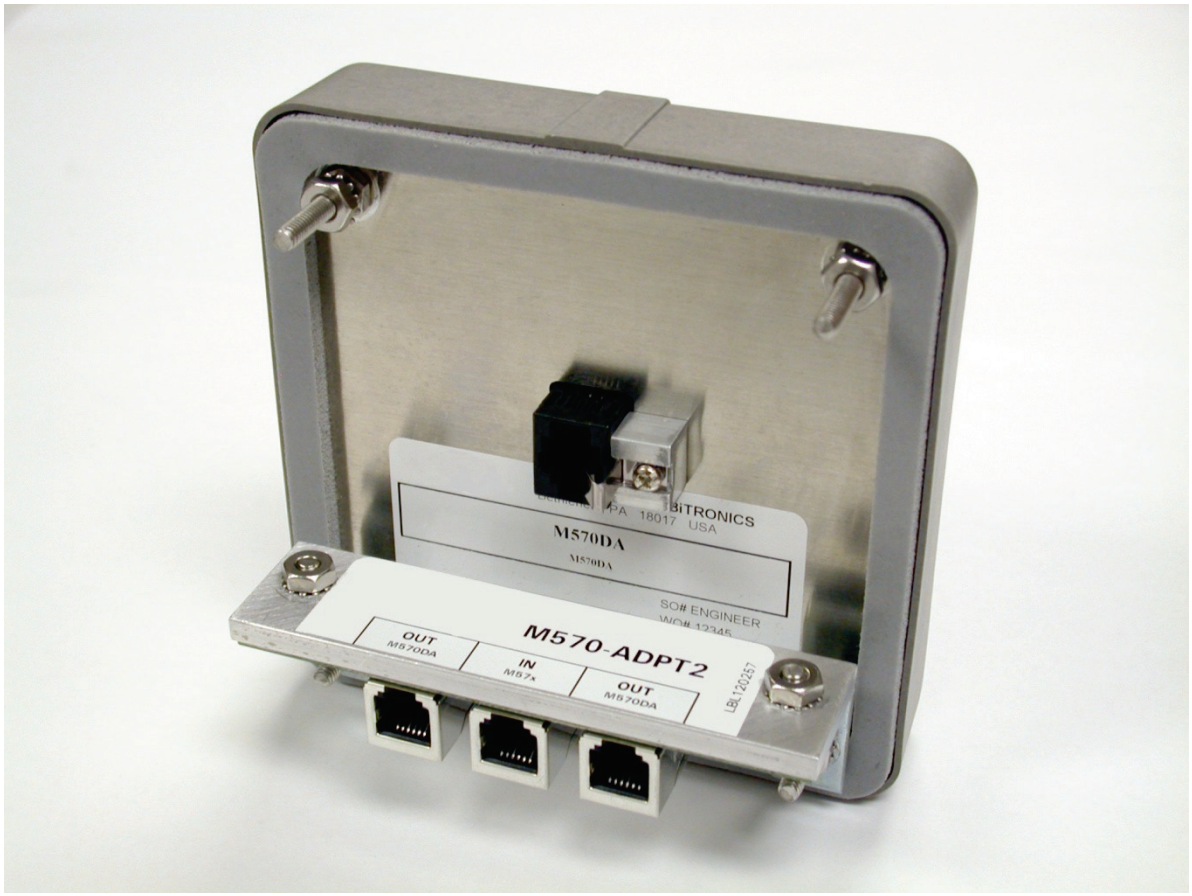


Figure 3 – Example of Adapter mounted to M570DA display at bottom studs (shown without panel)

Ferrite installation onto Display cable:

Requirements for CE compliance:

On the shielded display cable that attaches to the RJ11-6 rear panel port on the display, install snap-on ferrite (Fair-Rite part number 0431164281 or equivalent) onto the cable. Locate the ferrite at approximately 2 inches (5 cm) from the display end of the cable. Use one ferrite with each display.

If the display cable is supplied with the ferrite pre-installed, then plug the cable end that contains the ferrite, into the RJ11-6 rear panel port of the display.

2.4 Surge Protection

Surge protection is provided for the signal lines in the M570D Display. In addition power supply surge protection in the M57x IED is utilized. The back plate of the M570D Display is earth grounded through the mounting studs.

2.5 Overcurrent Protection

Refer to the section on Overcurrent Protection in the User Manual, which pertains to the M57x IED (e.g. M571). The power supply inputs to the M57x IED must be fused. There are no additional fusing requirements when making connections between the M570D Display and an M57x IED.

2.6 Supply/Mains Disconnect

The M57x IED, which powers the M570D Display, shall be provided with a Supply/Mains Disconnect that can be actuated by the operator and simultaneously open both sides of the mains input line. The Disconnect should be UL recognized in order to maintain any UL product approval. **The Disconnect should be acceptable for the application and adequately rated for the equipment.**

2.7 Power Supply Connections

Power and ground are applied to the M570D Display through the modular jack, RJ11 – 6 position (RJ12) Display port, positioned on the backside of the display. The modular jack on the M570D Display needs to protrude through the mounting surface. A cutout is required on the mounting surface for the area behind the modular jack. A Display cable must be used to connect between the M570D Display *and* an M57x IED (see Figure 3.1).

The back plate of the Display **MUST** be connected to Earth Ground. **Connection of the chassis ground is required; see Section 2.3**. Bitronics recommends that all grounding be performed in accordance with ANSI/IEEE C57.13.3-1983.

2.8 Cleaning

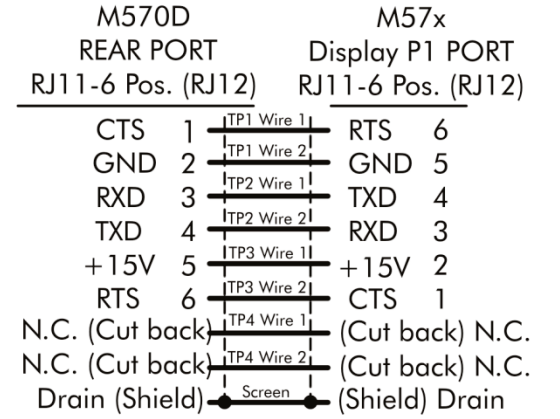
Cleaning the exterior of the instrument shall be limited to the wiping of the instrument using a soft damp cloth applicator with cleaning agents that are not alcohol based, and are non-flammable, non-explosive.

3.0 SETUP

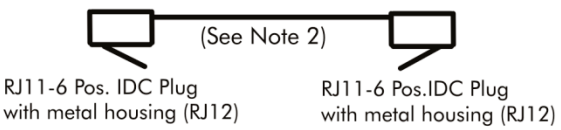
3.1 Communications Connections

M570D Display RS-232 Cable Connections

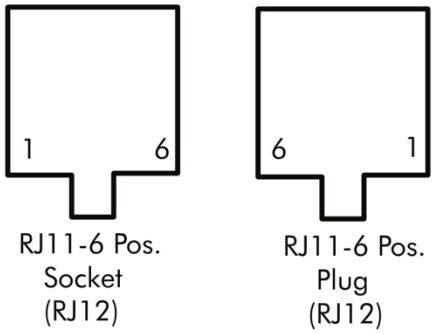
M570D Display Rear Port to M57x Port P1



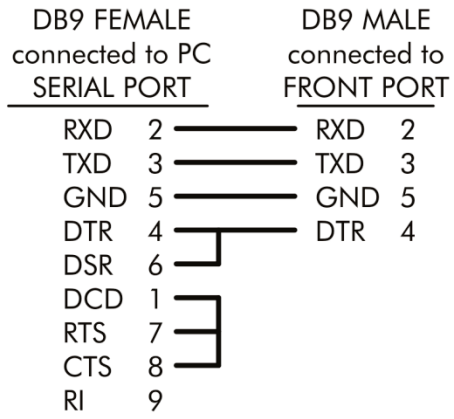
Cat 5e Shielded Cable - 8 Position



Pin Designations for RJ11-6 Position (RJ12)

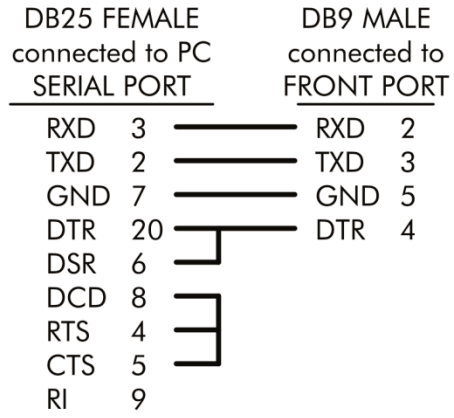


M570D-DB9F Front Port to PC DB9M



The cable should be Belden 9842 or equivalent.

M570D-DB9F Front Port to PC DB25M



The cable should be Belden 9842 or equivalent.

1. The rear port of the M570Display and the Host port of the M57x must be set to RS-232, matching Baud rates, parity, and Display protocol.

2. The cable should be 5e screened 100 ohm 26AWG patch cord, Quabbin Datamax 2900 or equivalent. The maximum cable length for RS-232 is 50 ft. (15m). Drain wire must solder to the metal housing on RJ11-6 pos. (RJ12) connectors at each end of the cable. Cut back the unused wire pair to coincide with end of the cable jacket. Datacomm Cables, Inc., 800-422-2531, is a source for custom length cables. Datacomm Cables P/N 1212-7/SH is 7 feet in length.

M570D_RDSCablesR2-232.cdr, 31MAR06

3.2 Setup Mode

The M570D has three configurable parameters that must be set to match the device to which it is connected. Press the up arrow key and the right arrow key simultaneously to enter the display setup mode. The alphanumeric display will describe the selected parameter, while the digit display will show the value. Use the up and down arrow keys to scroll through the available values for that parameter. When the desired value is displayed, press the right arrow button to confirm the setting. The left arrow button is used to go to the next configurable parameter. When 'Exit' appears in the alphanumeric display, press the right arrow key to return to normal operation. The instrument will automatically return to normal operation if no keys have been pressed in approximately 20 seconds. This timeout prevents the instrument from inadvertently being left in setup mode.

The settings for Meter ID, Baud and Mode must match the corresponding settings of the M870 series instrument to which it is connected. Factory defaults for the parameters are: Meter ID = 1, Baud = 9600, Mode = 232

Parameter	Available Values
Meter ID	1 – 15
Baud	9600,19200, 38400 Baud
Mode	**RS232 only, (RS485 is not supported; if RS485 selected, Display reverts to RS232 operation.)**
Version	Displays current version information. This value cannot be modified.
Exit	Allows exiting setup mode.

Table 1 – Configurable Parameters

WARNING - THE METER ADDRESS, COMMUNICATION MODE, AND BAUD RATE PARAMETERS ARE STORED IN NON-VOLATILE MEMORY. THIS MEMORY STORAGE HAS A 1,000,000 CYCLE ENDURANCE RATING. (PARAMETERS CAN BE CHANGED 1,000,000 TIMES).

3.3 Measurement Screens

Measurements that are shown on the M570D are setup using the Windows® based M57x Configurator. There are two folders under Communication which must be configured before the M570D can be used. The first folder is used to setup the Port Assignments, as shown in Figure 4. Set the protocol of the port to which the Remote Display is connected to Zmodem/Display/Log. Set the Media, Parity, and Baud settings as required. The RxD to TxD parameter can be set to zero and the Run Display box must be checked. In this example, Port 1 is set to run the display.

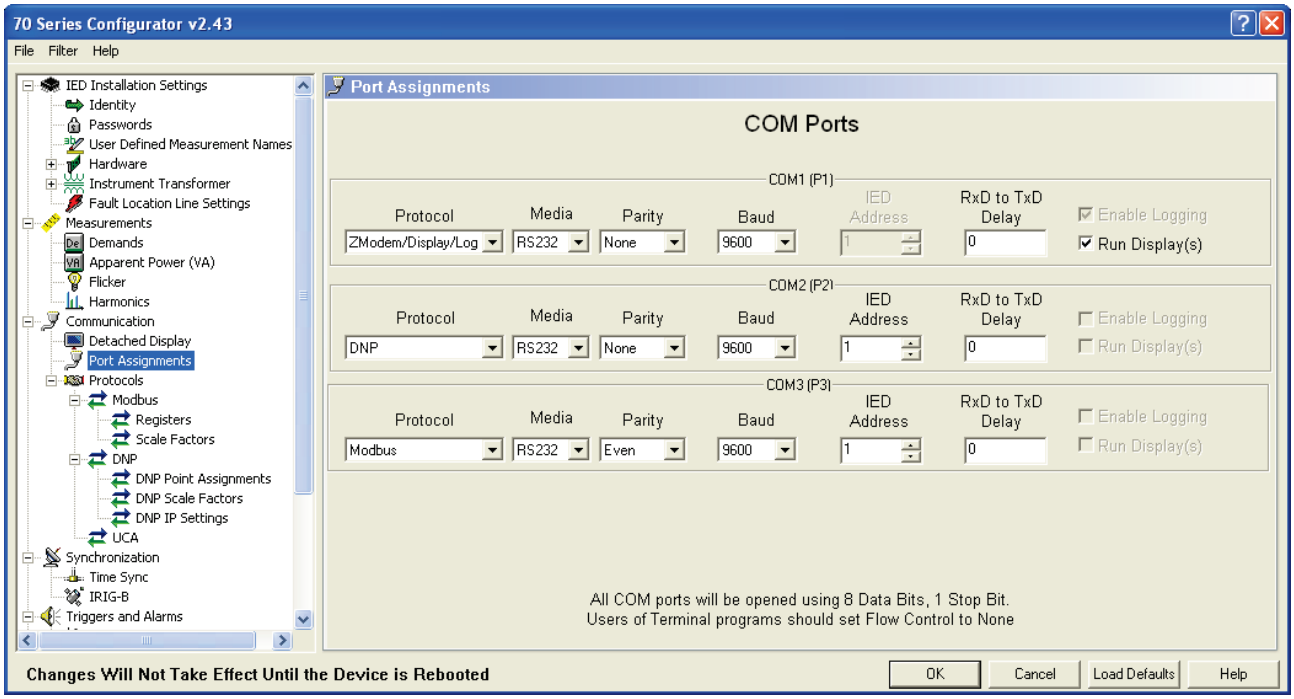


Figure 4 – Configurator Communication/Port Assignments Folder

The Detached Display Folder must now be set up to show the proper measurements. Figure 5 shows the layout of this folder.

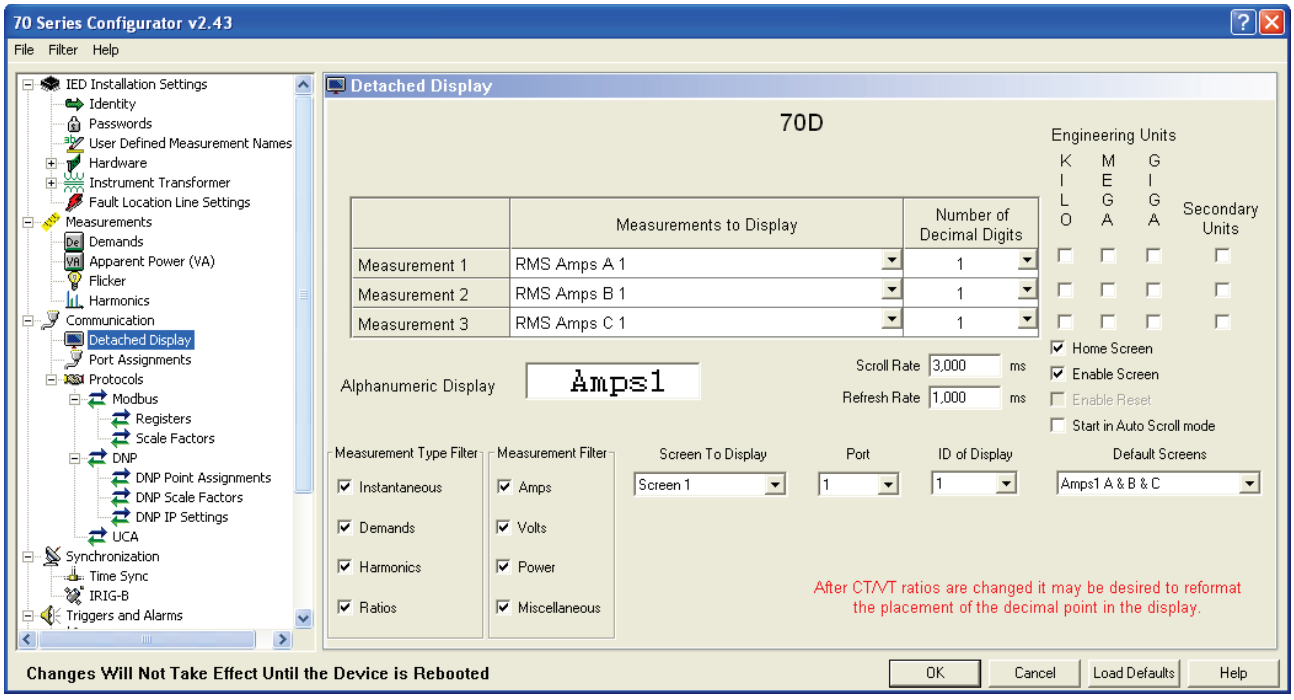


Figure 5 – Configurator Communication/Detached Display Folder

Screens are defined by choosing measurements from a drop down list and then specifying the resolution, scale factor, and text information for the screen. Up to 64 screens can be defined for each display. The M570D Display connects to and is powered from the Display P1 port of an M57x IED. If an application requires the use of additional displays, then M870D Displays should be connected to the serial ports on an M57x IED and configured from the Configurator Display tab.

If using additional displays, then the total number of available screens is limited to 64. Each screen can be assigned to a particular M57x serial port and remote display address. The screen definitions are stored in the M57x and not in the Remote Display.

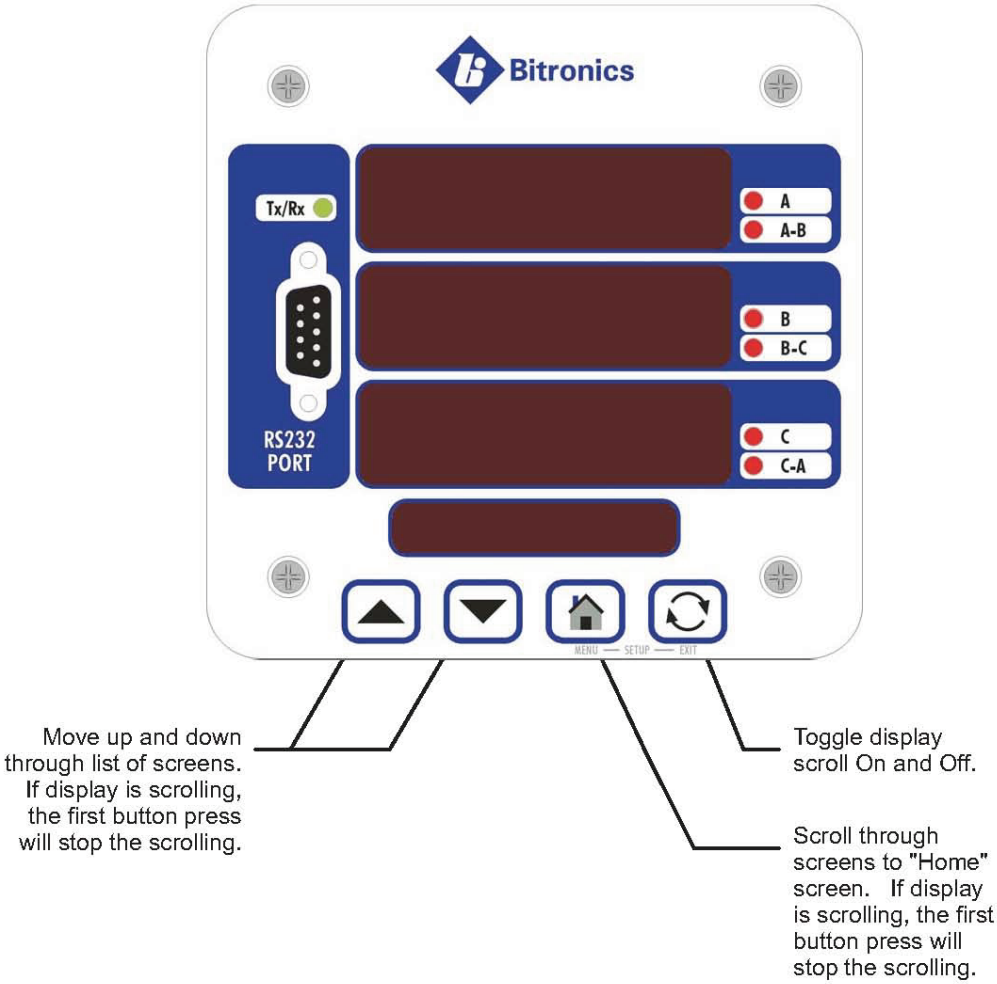
Demand and Energy values may be reset from the front panel if this option is selected in the configuration software. If this option is chosen, the displayed values will be reset when the right two buttons on the front panel are depressed simultaneously.

Please refer to the online help in the 70 Series Configurator for additional information.

Note: The Meter ID of the M570D must match the "ID of Display" value.

3.4 Operation

3.4.1 Overview



1. Pressing any button when the display is scrolling will end the scroll.
2. Connect to the front panel RS232 port with a "straight through" cable. Do NOT use a "null-modem" cable.

3.4.2 Keypad

Measurements screens may be stepped through manually by pushing the up and down arrow keys. Pushing the right arrow key turns the scroll function off and on. When the scroll function is activated, the measurement screens will automatically step through the user-defined screens. Pressing the left arrow key will initiate a single pass automatic scroll through the measurements, stopping on the Home screen. The scroll rate and home screen are setup in the 70 Series Configurator software.

Button	Function
Up Arrow	Next measurement/value
Down Arrow	Previous measurement/value
Left Arrow	Scroll to designated home screen
Right Arrow	Toggle Auto Scroll On/Off
Combination Up and Right Arrow keys	Enter Setup Mode
Combination Down and Left Arrow keys	Enter Firmware Upgrade Mode
Combination Left and Right Arrow Keys	Reset Displayed Value (if enabled)

Table 2 – Pushbutton Functions

3.4.3 Tx/Rx LED

The Tx/Rx LED located on the front panel above the RS232 port lights whenever activity is detected on either of the instruments communications ports.

3.5 RS232 Service Port

The front panel port acts as an extension to the M57x instrument family service port (P1). This port can be connected to a terminal or a PC running a terminal emulator program, such as Hyperterminal. Through this connection it is possible to view log messages, set the date/time, and transfer files. Refer to the M57x User Manual for further information.

When transferring files using the front panel service port the display is not updated. A message indicating a file transfer is in progress is displayed at this time.

When connecting the Service Port to a PC, a straight through cable, either 9-pin to 9-pin or 9-pin to 25-pin, is required. A null modem cable is not required.

4.0 TROUBLESHOOTING

4.1 Error/Informational Messages

Message	Explanation	Action
No Comm	No valid messages are being received by the display.	Check cable connections and setup parameters on the Remote Display and M57x transducer.
Config Error	There was an error in the stored configuration parameters. The default parameters have been restored.	Enter setup mode and check that all parameters are set properly. If error persists contact the factory.
Remove Power!	Instrument configuration has been changed or new code has been downloaded. Applies only to devices manufactured prior to July, 2002.	Remove power to the instrument for a few seconds and then reapply.

5.0 FIRMWARE UPGRADES

The M570D is field upgradable. Please refer to specific instructions provided with new firmware.

Bitronics
A NovaTech Company

Measurement Products

Change of Company Name / Ownership

Product Technical Compliance, Type Test Certificates & Declarations of Conformity

Areva's Transmission & Distribution Measurement Unit based in Bethlehem Pennsylvania, USA was purchased by NovaTech LLC on July 1, 2008, and henceforth continues to operate as an affiliate of NovaTech LLC under the company name of:

Bitronics LLC
261 Broadhead Road
Bethlehem, PA 18017, USA

The change of ownership and company name at the Bethlehem location has resulted in the Measurement organization and it's operations remaining substantially the same. In regards to product technical compliance and performance claims, the following points indicate business continues as usual for the Bethlehem site:

- Technical Staff have been retained.
- Instruments will continue to be designed in Bethlehem.
- Production processes are unchanged.
- Measurement products are retained.
- A revision on product labels to indicate Bitronics as the company name shall be implemented.
- A strategic partnership agreement has been entered with Areva T&D, such that Bitronics LLC will manufacture products to be globally distributed under the AREVA T&D MICOM brand. A revision to product labels is anticipated.

Continuing to the subject addressing some of the necessary technical documentation, which is relied upon, the intent is to utilize existing product Type Test Certificates and Declarations of Conformity. The change of company name will not be implemented retroactively on these types of documents. Instead the change of company name to Bitronics will appear on new documents moving forward, that are created after July 1, 2008. Existing product approvals will be relied upon.

André Wagner

Andre Wagner – R&D Manager

Date: Oct 2, 2008

Issue 1

261 Brodhead Road, Bethlehem, PA 18017 USA Phone: 610.997.5100 Fax: 610.997.5450 www.novatechweb.com

Bitronics
A NovaTech Company

EC Declaration of Conformity

We, the undersigned:

Manufacturer:	**Bitronics LLC** 261 Brodhead Road Bethlehem, PA 18017-8698 USA **T** +610.997.5100 **F** +610.997.5450 **E** bitronics@novatechweb.com	**Authorized Representative in the European Union:**	**NovaTech Europe BVBA** Kontichsesteenweg 71 2630 Aartselaar Belgium **T** +32.3.458.0807 **F** +32.3.458.1817 **E** info.europe@novatechweb.com

hereby declare that the following product(s) :

Product type :	M570Dx Display
Description :	70 Series Remote Display
Models :	M570D, M570DA, M570-ADPT2

Conform(s) with the protection requirements of the following directive(s) :

1. European Community Directive on EMC 2004/108/EC, and Directive 91/263/EEC [TTE/SES].
2. European Community Directive on Low Voltage 2006/95/EC.

The following route(s) were used to establish conformity :

1. 2004/108/EC : In accordance with Article 7 Annex II (internal production control supported by a Technical File).

Technical Construction File No. :	TF B004
Date Revised :	2-April-2009 (original issue dated 03-Apr-2006)
Conformity Assessment Body : (C.A.B.)	Underwriters Laboratories, Inc., Melville Division 1285 Walt Whitman Road, Melville, NY 11747-3081 USA
Compliance Certificate / Test Report:	E164178, 05ME14868, M570D, MA/EMC 06MEL37 E164178, #695962, M570DA (Dual), MA/EMC MEL E164178, 1001052984, M87x, M57x, M870D, M570Dx EMC 09CA09082

2. 2006/95/EC : Self Certification supported by a Technical File.

Technical File No. :	TF B004
Date Revised :	2-April-2009 (original issue dated 03-Apr-2006)

Reference Number : DOC B004 **Issue :** F

Date of issue : 4-December-2012

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The following standards were used for reference and to establish conformity :

EN 61010-1: 2001 **UL 61010-1, 2nd edition (July 12, 2004)** **CAN/CSA C22.2 No. 61010-1-04, 2nd ed. (2004/7/12)**	Safety requirements for electrical equipment for measurement, control, and laboratory use. Part 1: General requirements
EN 61326-1: 2006	Electrical Equipment for measurement, control and laboratory use – EMC requirements
EN 61000-6-4: 2007	Electromagnetic compatibility Part 6-4: Generic emission standard – Industrial environment.
EN 61000-6-2: 2005	Electromagnetic compatibility (EMC) Part 6-2: Generic standards - Immunity for Industrial environments.
EN 55011: 2007 / A2: 2007, **Group 1 Class A**	Radiated Emissions Electric Field Strength, AC Powerline Conducted Emissions
EN 61000-4-2: 1995 / A1: 1998 / A2: 2001	Electrostatic Discharge (ESD)
EN 61000-4-3: 2006 / A1: 2008 **Class III**	Immunity to Radiated Electromagnetic Energy (Radio Frequency)
EN 61000-4-4: 2004	Electrical Fast Transient / Burst Immunity
EN 61000-4-5: 2006, **Installation Class 3,** **(Test not applicable)**	Surge Immunity (Test not applicable)
EN 61000-4-6: 2007, **Level 3**	Immunity to Conducted Disturbances Induced by Radio Frequency Fields
EN 61000-4-11: 2004, **(Test not applicable)**	AC Supply Voltage Dips and Short Interruptions (Test not applicable)

Signed on behalf of the Company :	Andre Wagner, Product Development, Director Bitronics, LLC

CE Marking Year 2006, 2007, 2009

Reference Number : DOC B004 **Issue :** F

Date of issue : 4-December-2012

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Revision	Date	Changes	By
A	01/30/2009	Update Bitronics Name, Logo	E. DeMicco
B	05/01/09	Updated logos and cover page	MarCom
C	9/30/09	Updated section standards in section 1.5 and updated Declaration of Conformity	RAF/EJD
D	3/13/13	Updated Declaration of Conformity	E. DeMicco

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