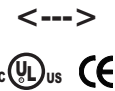


# C-more 3" Micro-Graphic STN Touch Panel

Model EA1-S3ML C-more 3" Micro-Graphic touch panel has a 3.1-inch STN LCD monochrome display and five selectable LED-driven backlight colors: Green, Red, Amber, Yellow and Lime. It features a 128 x 64 dot display, and five user-defined function keys each with a user-defined red LED indicator. The panel can display up to 10 lines by 32 characters of static text and up to 10 lines by 21 characters of dynamic text with embedded variables and phrases mixed with graphics. It is rated UL for use on a flat surface of Type 1, 4X enclosure (for indoor use only). This Micro-Graphic panel can receive power from the serial communications port of most AutomationDirect PLCs. An EA-MG-SP1 Serial Port with DC Power Adapter option module (RS-232/422/485) is required when using other controllers.

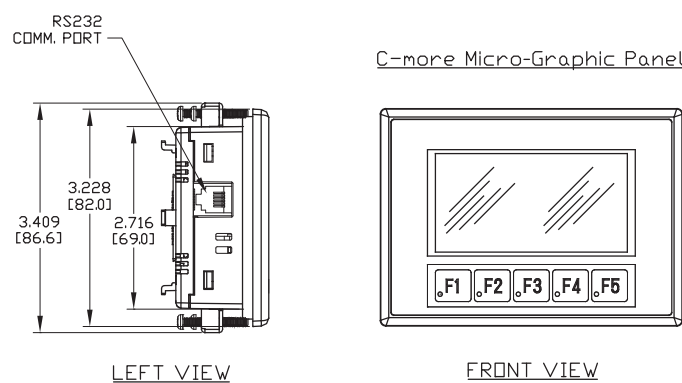
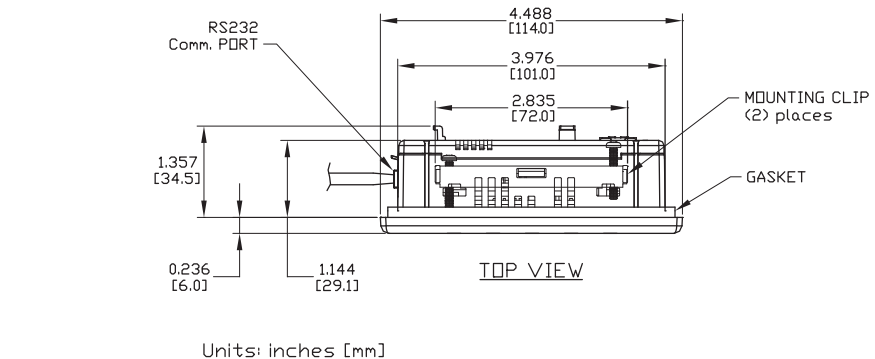
Part No. EA1-S3ML



## Features

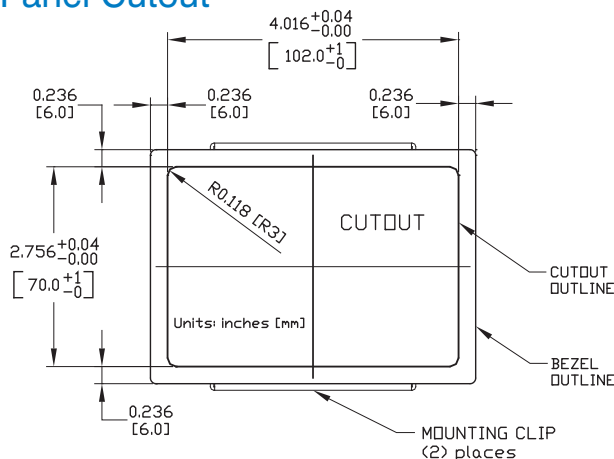
- Touch screen display
- Free downloadable programming software
- 128 x 64 Dot display with up to 10 lines by 32 characters of text and graphics
- Up to 10 lines by 21 characters of dynamic text with embedded variables and phrases mixed with graphics
- 5 programmable function keys can change with every screen. Can increment / decrement values, trigger recipes, view index of screens.
- 5-Color LED backlight for longer lifetime; Green, Red, Amber, Yellow and Lime
- 2 optional snap-on keypad bezels
- 768 KB memory
- Panel is powered from PLC comm port when using select AutomationDirect PLCs. Use optional DC power adapter and serial port modules if needed for other controllers (RS-232/422/485)
- Built in Alarm Control setup that activates beep, backlight flash, customized alarm banner, and LED blinking
- 0 to 50 °C (32 to 122 °F) operating temperature range (IEC 60068-2-14)
- NEMA 4/4X, IP65 compliant when mounted correctly, indoor use only
- UL, cUL & CE agency approvals
- 2-year warranty from date of purchase

## Dimensions

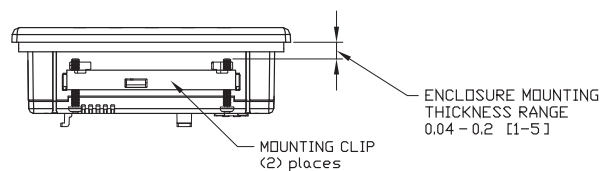


**NOTE: Don't forget the optional keypad bezels, DC power adapter and serial port with DC power adapter shown in the Accessories.**

## Panel Cutout



## Panel Thickness



**NOTE: The C-more 3" Micro-Graphic cutout dimensions are not equivalent to previous AutomationDirect text panels. The C-more Micro-Graphic panels will not fit in cutouts for DV-1000, EZText or Optimate panels.**

# C-more 3" Micro-Graphic STN Touch Panel

Model EA1-S3MLW C-more 3" Micro-Graphic touch panel has a 3.1-inch STN LCD monochrome display and five selectable LED-driven backlight colors: White, Pink1, Pink2, Pink3 and Red. It features a 128 x 64 dot display, and five user-defined function keys each with a user-defined red LED indicator. The panel can display up to 10 lines by 32 characters of static text and up to 10 lines by 21 characters of dynamic text with embedded variables and phrases mixed with graphics. It is rated UL for use on a flat surface of Type 1, 4X enclosure (for indoor use only). This Micro-Graphic panel can receive power from the serial communications port of most AutomationDirect PLCs. An EA-MG-SP1 Serial Port with DC Power Adapter option module (RS-232/422/485) is required when using other controllers.

Part No. EA1-S3MLW



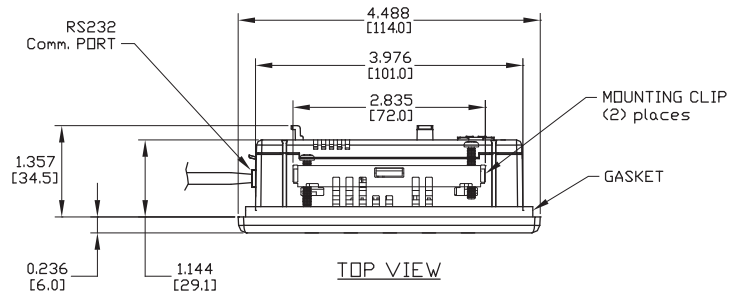
## Features

- Touch screen display
- Free downloadable programming software
- 128 x 64 Dot display with up to 10 lines by 32 characters of text and graphics
- Up to 10 lines by 21 characters of dynamic text with embedded variables and phrases mixed with graphics
- 5 programmable function keys can change with every screen. Can increment / decrement values, trigger recipes, view index of screens.
- 5-Color LED backlight for longer lifetime; White, Pink1, Pink2, Pink3 and Red
- 2 optional snap-on keypad bezels
- 768 KB memory
- Panel is powered from PLC comm port when using select AutomationDirect PLCs. Use optional DC power adapter and serial port modules if needed for other controllers (RS-232/422/485)
- Built in Alarm Control setup that activates beep, backlight flash, customized alarm banner, and LED blinking
- 0 to 50 °C (32 to 122 °F) operating temperature range (IEC 60068-2-14)
- NEMA 4/4X, IP65 compliant when mounted correctly, indoor use only
- UL, cUL & CE agency approvals
- 2-year warranty from date of purchase

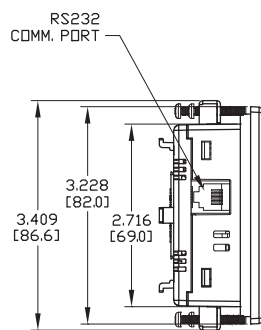


**NOTE: Don't forget the optional keypad bezels, DC power adapter and serial port with DC power adapter shown in the Accessories.**

## Dimensions

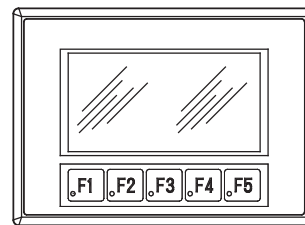


Units: inches [mm]



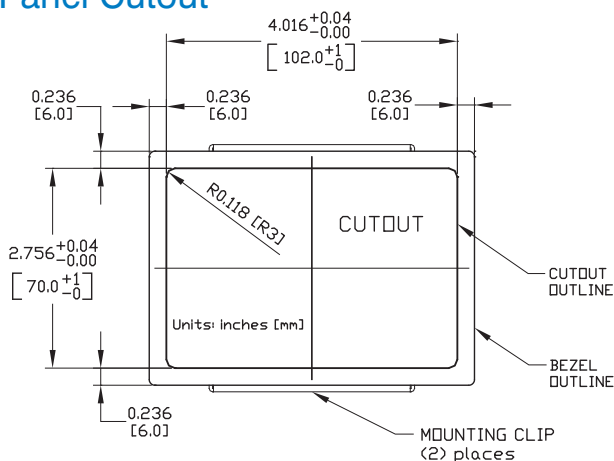
LEFT VIEW

C-more Micro-Graphic Panel

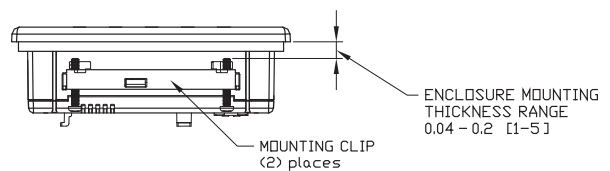


FRONT VIEW

## Panel Cutout



## Panel Thickness



**NOTE: The C-more 3" Micro-Graphic cutout dimensions are not equivalent to previous AutomationDirect text panels. The C-more Micro-Graphic panels will not fit in cutouts for DV-1000, EZText or Optimate panels.**

# C-more 3" Micro-Graphic Specifications

Specification	Model	3" STN Micro-Graphic Panel Touch Screen	3" STN Micro-Graphic Panel Non-Touch Screen
<b>Part Number</b>		EA1-S3ML, EA1-S3MLW	EA1-S3ML-N, EA1-S3MLW-N
<b>Description</b>		128 x 64 dots LCD display, five user defined keypad function buttons, and five user defined LED's	
<b>Display</b>			
• <b>Type</b>		3.1" STN monochrome LCD, graphical characters	
• <b>Resolution</b>		128 (W) x 64 (H) dots	
• <b>Color</b>		2 colors (normal / inverse)	
• <b>Viewing Area Size</b>		2.789" (W) x 1.385" (H) [70.8 mm x 35.2 mm]	
• <b>Active Area Size</b>		2.670" (W) x 1.259" (H) [67.8 mm x 32.0 mm]	
• <b>Contrast</b>		Adjusted from the panel's built-in configuration setup menu	
• <b>Viewing Angle</b>		3, 9 o'clock axis → 45 degrees 6 o'clock axis → 45 degrees 12 o'clock axis → 30 degrees	
<b>Backlight</b>			
• <b>Type</b>		LED	
• <b>Color</b>		5 user defined colors: <b>EA1-S3ML, EA1-S3ML-N</b> - Red, Green, Amber, Lime, and Yellow <b>EA1-S3MLW, EA1-S3MLW-N</b> - White, Pink1, Pink2, Pink3 and Red	
• <b>User Replaceable</b>		No	
<b>Touch Screen</b>			
• <b>Type</b>		Analog touch panel	N/A
• <b>Operation</b>		51 gram force [0.5 N] maximum	N/A
• <b>Life</b>		Minimum of 1,000,000 cycles	N/A
<b>Features</b>			
• <b>User Memory</b>		768 KB	
• <b>Number of Screens</b>		Up to 999 – limited by project memory usage	
• <b>Beep (Internal)</b>		Yes	
• <b>Keypad Function Buttons</b>		Five user defined function key buttons with the ability to customize the label. Minimum of 500,000 cycles	
• <b>Keypad Function Button LEDs</b>		Each function key button includes a red LED that can be user programmed.	
• <b>Serial Communications</b>		Built-in RJ12 serial communications port (RS-232). Optional serial communications port (RS-232, RS-485/422) when using the optional EA-MG-SP1 Serial Port with DC Power Adapter.	
• <b>Expansion Connection</b>		Yes – used with optional Keypad Bezels, EA-MG-BZ1 & BZ2, and EA-MG-P1 DC Power Adapter, and EA-MG-SP1 Serial Port with DC Power Adapter.	
<b>Screen Objects</b>			
• <b>Functional Devices</b>		Push Button, Switch, Indicator Button, Indicator Light, Graphic Indicator Light, Numeric Display, Numeric Entry, Inc/Dec Value, Bar Graph, Bitmap Button, Static Bitmap, Dynamic Bitmap, Recipe Button, Static Text, Lookup Text, Dynamic Text, Scroll Text, Screen Change Push Button, Screen Selector, Adjust Contrast, Function, Key Configuration Object, Realtime Graph, Line Graph, Analog Meter	
• <b>Static Shapes</b>		Lines, Rectangles, Circles and Frames	
• <b>Displayable Fonts</b>		Fixed fonts: 6x6, 6x8, 8x16, 16x16, 32x16, 32x32 / Windows fonts	
<b>C-more 3" Micro-Graphic panel specifications continued on next page.</b>			



NOTE: Photo includes EA-MG-BZ2

# C-more 3" Micro-Graphic Specifications

Specification	Model	3" STN Micro-Graphic Panel Touch Screen	3" STN Micro-Graphic Panel Non-Touch Screen
<b>Part Number</b>		EA1-S3ML, EA1-S3MLW	EA1-S3ML-N, EA1-S3MLW-N
<b>Electrical</b>			
• <b>Input Voltage Range</b>		5.0 VDC (4.75 – 5.25 VDC)	
• <b>Input Power</b>		Supplied through the panel's RJ12 serial communications port connection when used with any AutomationDirect PLC having an RJ12 communication port. Can also be supplied from an external 12-24 VDC power source when using the optional EA-MG-P1 DC Power Adapter, or the optional EA-MG-SP1 Serial Port with DC Power Adapter	
• <b>Power Consumption</b>		1.05W (220mA @ 4.75 VDC)	
• <b>Recommended Fuse</b>		Type AGC fast acting glass fuse, 250 mA, 250 VAC, ADC p/n AGC-25 No fuse required when directly connected to a PLC or PC with recommended cable.	
• <b>Maximum Inrush Current</b>		1 A for 500 $\mu$ s	
• <b>Acceptable External Power Drop Duration</b>		Maximum 1 ms	
<b>Environmental</b>			
• <b>Operating Temperature</b>		0 to 50 °C (32 to 122 °F) Maximum surrounding air temperature rating: 50 °C	
• <b>Storage Temperature</b>		-20 to +60 °C (-4 to +140 °F)	
• <b>Humidity</b>		5-95% RH (non-condensing)	
• <b>Environmental Air</b>		For use in Pollution Degree 2 Environment	
• <b>Vibration</b>		IEC60068-2-6 (Test Fc), 5-9 Hz: 3.5 mm amplitude, 9-150 Hz: 1.0G, sweeping, at a rate of 1 octave/min. ( $\pm$ 10%), 10 sweep cycles per axis on each of 3 mutually perpendicular axes	
• <b>Shock</b>		IEC60068-2-27 (Test Ea), 15 G peak, 11 ms duration, three shocks in each direction per axis, on 3 mutually perpendicular axes (total of 18 shocks)	
• <b>Noise Immunity</b>		NEMA ICS3-304 RFI, (145 MHz- 440 Mhz 10 W @ 10 cm) Impulse 1000 V @ 1 $\mu$ s pulse	
• <b>Enclosure</b>		For use on a flat surface of Type 1, 4X enclosure (Indoor use only)	
• <b>Agency Approvals</b>		CE (EN61131-2), UL508, CUL Canadian C22.2 No. 142-M95, UL File E157382	
<b>Physical</b>			
• <b>Dimensions</b>		4.488" (W) x 3.228" (H) x 1.593" (D) [114.0 mm x 82.0 mm x 40.5 mm]	
• <b>Enclosure Mounting Thickness Range</b>		0.04" – 0.2" [1 – 5 mm]	
• <b>Mounting Clip Screw Torque Range</b>		21 – 28 oz-in [0.15 – 0.2 Nm]	
• <b>Depth from bezel rear with options Module</b>		2.295" [58.3 mm]	
• <b>Weight</b>		5.82 oz. (165 g)	



**NOTE: The environmental specifications for the panels shown above are also applicable for the C-more Micro-Graphic Accessories shown later in this section of the catalog.**



NOTE: Photo includes EA-MG-BZ2

# C-more 3" Micro-Graphic Power Connection Wiring

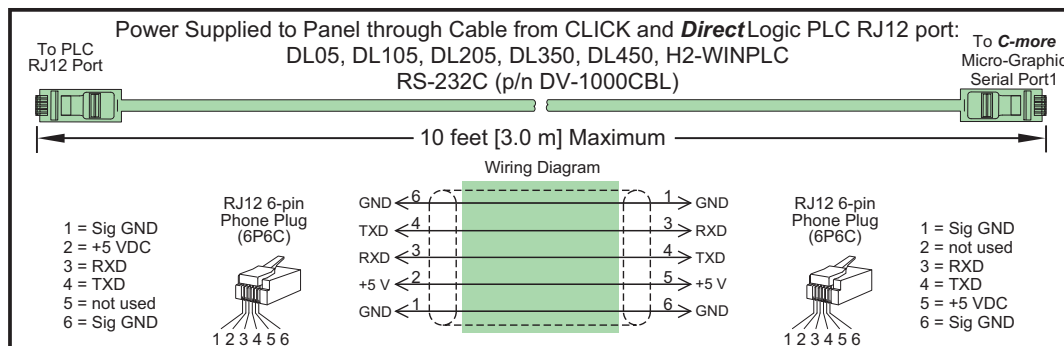
## Providing power to the touch panel

- The **C-more** 3" Micro-Graphic panel is powered during programming from the PC through the USB to RS-232 Programming Cable Assembly, EA-MG-PGM-CBL.
- During operation, the **C-more** Micro-Graphic panel is powered from an **AutomationDirect** CLICK or **DirectLOGIC** PLC RJ12 serial communications port by using the DV-1000CBL communications cable for CLICK and most **DirectLOGIC** PLCs.

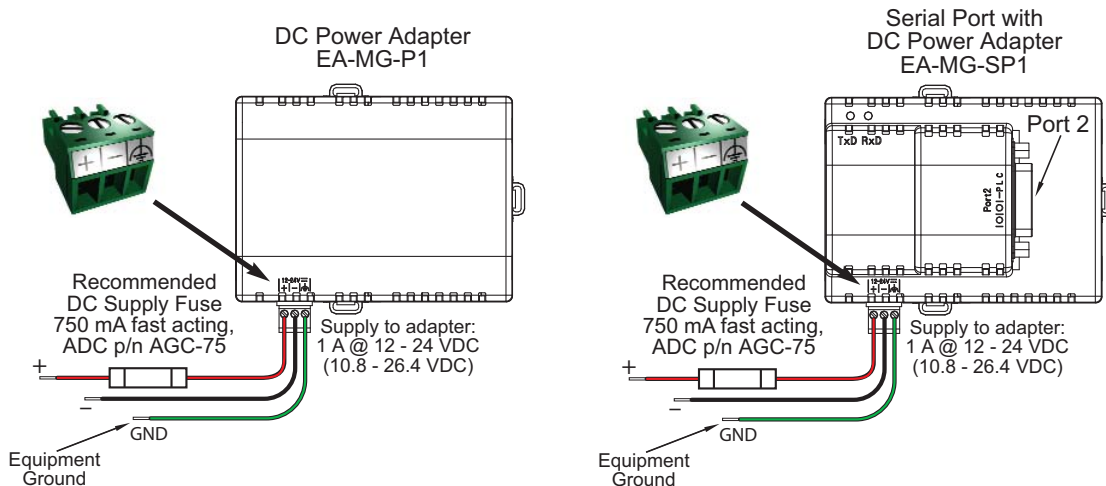
See the PLC Communication Protocol & Cabling Chart for 3" panels that follows for other choices.

- Or install either the DC Power Adapter, EA-MG-P1, or the Serial Port with DC Power Adapter, EA-MG-SP1, to the rear of the panel and supply the adapter from a 12-24 VDC power source.

## 3" Panel powered from AutomationDirect CLICK or DirectLOGIC PLC via communications cable

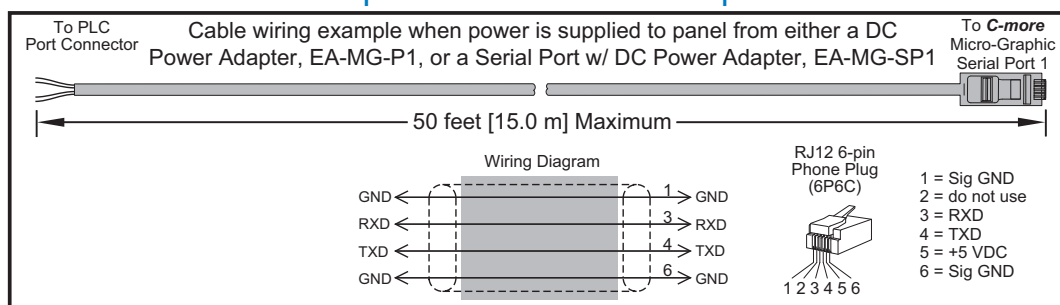


## 3" panel powered from a DC power adapter – wiring diagram



**NOTE: Recommended DC power supply to power either DC Power Adapter, AutomationDirect Part No. PSP24-024S or PSP24-024C.**

## Maximum communication cable length when 3" panel is powered from an optional DC Power Adapter





# C-more 3" Micro-Graphic PLC Connections

## Cabling requirements

When using the built-in RJ12 serial port on the **C-more 3"** Micro-Graphic panel to connect with the CLICK, DL05, DL06, DL105, DL205, D3-350 and DL405 CPUs, your cabling choices are fairly simple.

- DV-1000CBL — connects to CLICK, DL05, DL06, DL105, DL205, D3-350 and D4-450 phone jack.
- D4-1000CBL — connects to all DL405 CPU 15-pin ports.

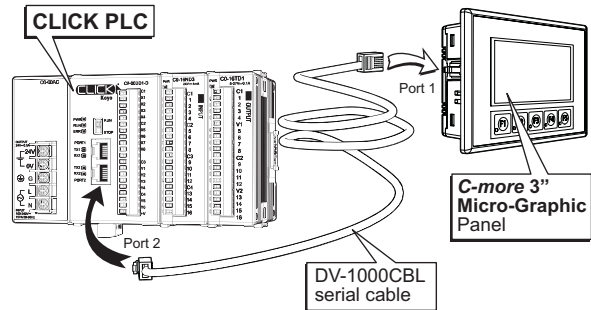
A maximum cable length of **10 feet** between the **C-more** Micro-Graphic panel and the PLC is recommended when powering the panel from the PLC.

The Serial Port with DC Power Adapter module, EA-MG-SP1, can be used if the application requires the use of RS-422 or RS-485. The serial port on the adapter, designated as port 2, can also be wired for RS-232. The use of the adapter permits greater cable length distances. See the Communication Protocols & Cabling Charts in this catalog section for details on the selection of various controllers, protocols, and connectivity.

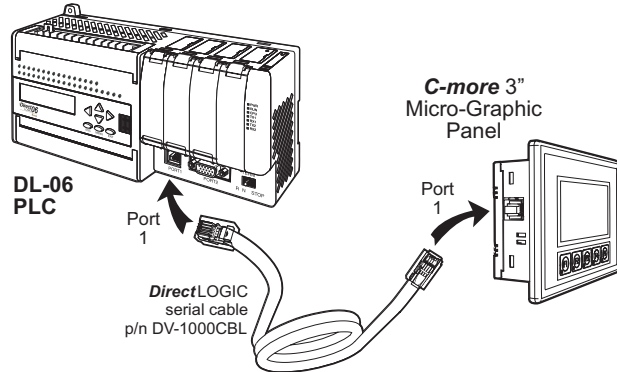
## Supported controller protocols

- AutomationDirect CLICK (Modbus)
- **Direct**LOGIC K-sequence
- **Direct**NET
- Modbus (Koyo Addressing)
- Modbus RTU
- Entivity Modbus RTU
- Allen-Bradley DF1 Half Duplex
- Allen-Bradley DF1 Full Duplex
- Allen-Bradley PLC5 DF1
- Allen-Bradley DH485
- GE Fanuc SNPX (90/30, 90/70, Micro 90, VersaMax Micro)
- Omron Host Link (C200 Adapter, C500)
- Omron FINS Serial (CJ1, CS1)
- Mitsubishi Melsec FX
- Mitsubishi Q and QnA
- Siemens PPI

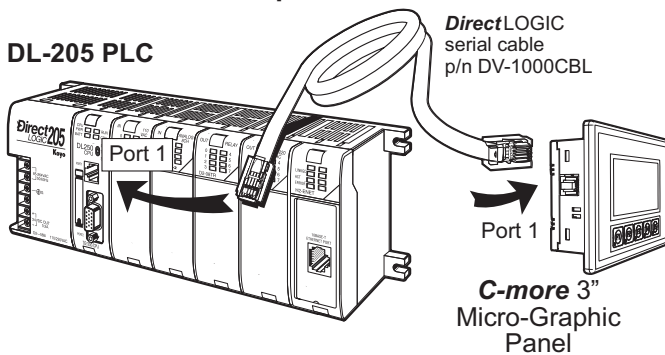
### C-more 3" Micro-Graphic Port 1 to CLICK PLC Port 2



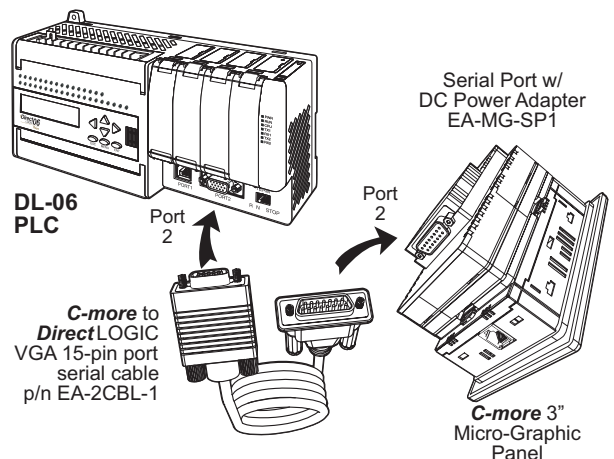
### C-more 3" Micro-Graphic Port 1 to DL06 PLC Port 1



### C-more 3" Micro-Graphic Port 1 to DL205 PLC Port 1



### C-more 3" Micro-Graphic Port 2 to DL06 PLC Port 2



# C-more 3" Micro-Graphic Communication Protocols & Cabling Chart

## Controller Compatibility & Connection Chart

PLC			C-more Micro-Graphic Panel								
Family	CPU	Port & Type	Panel to PLC Cabling Components Required for Specific Port and Protocol being used.								
			PLC Port Powered Powered with 5 VDC from the connected PLC's comm. port.		DC Power Adapter Powered from an external 24 VDC source using the DC Power Adapter, EA-MG-P1.		Serial Port with DC Power Adapter Powered from an external 24 VDC source using the Serial Port with DC Power Adapter, EA-MG-SP1.				
			Using panel's RJ12 port 1		Using panel's RJ12 port 1		Using panel's RJ12 port 1		Using adapter's serial Port 2 15-pin D-sub - female		
			Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type	
CLICK	all versions	Port 1 RJ12 - 6 pin	Automation Direct Modbus (CLICK)	DV-1000CBL RS-232	Automation Direct Modbus (CLICK)	DV-1000CBL RS-232	Automation Direct Modbus (CLICK)	DV-1000CBL RS-232	Automation Direct Modbus (CLICK)	EA-2CBL RS-232	
DirectLOGIC DL05 (see D0-DCM under DL06)	all versions	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232	
		Port 2 RJ12 - 6 pin									
DirectLOGIC DL06	all versions	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232	
		Port 2 DB15HD (female)		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		EA-2CBL-1 RS-232 See Note RS-422	
	D0-DCM	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232	
		Port 2 DB15HD (female)		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		EA-2CBL-1 RS-232 See Note RS-422	
		D0-DCM	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232
			Port 2 DB15HD (female)		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		EA-2CBL-1 RS-232 See Note RS-422
D0-DCM	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232		
	Port 2 DB15HD (female)		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		EA-2CBL-1 RS-232 See Note RS-422		
DirectLOGIC DL105	all versions	Port 1 RJ12 - 6 pin	K-sequence	DV-1000CBL RS-232	K-sequence	DV-1000CBL RS-232	K-sequence	DV-1000CBL RS-232	K-sequence	EA-2CBL RS-232	
DirectLOGIC DL205	D2-230	Port 1 RJ12 - 6 pin	K-sequence	DV-1000CBL RS-232	K-sequence	DV-1000CBL RS-232	K-sequence	DV-1000CBL RS-232	K-sequence	EA-2CBL RS-232	
		Port 2 RJ12 - 6 pin	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	EA-2CBL RS-232	
	D2-240	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232	
		Port 2 RJ12 - 6 pin		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		EA-2CBL-1 RS-232 See Note RS-422	
	D2-250-1	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232	
		Port 2 DB15HD (female)		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		EA-2CBL-1 RS-232 See Note RS-422	
	D2-260	Port 1 RJ12 - 6 pin	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL RS-232	K-sequence, DirectNET, Modbus RTU	EA-2CBL RS-232	
		Port 2 DB15HD (female)		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		DV-1000CBL + FA-15HD RS-232		EA-2CBL-1 RS-232 See Note RS-422	
	D2-DCM	Port 1 DB 25 pin (female)	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	EA-4CBL-2 RS-232 See Note RS-422	
		Port 2 RJ12 - 6 pin		Modbus RTU		DV-1000CBL RS-232		Modbus RTU		DV-1000CBL RS-232	Modbus RTU
WINPLC		Port 1 RJ12 - 6 pin	Modbus RTU	DV-1000CBL RS-232	Modbus RTU	DV-1000CBL RS-232	Modbus RTU	DV-1000CBL RS-232	Modbus RTU	EA-2CBL RS-232	

**Note: See the C-more Micro-Graphic Hardware User Manual, Chapter 6: PLC Communications, for wiring diagrams that the user can use to construct their own cables. Available for download at [www.automationdirect.com](http://www.automationdirect.com). PLC Compatibility & Connection Chart continued on next page.**

# C-more 3" Micro-Graphic Communication Protocols & Cabling Chart (cont'd)

Controller Compatibility & Connection Chart										
PLC			C-more Micro-Graphic Panel							
Family	CPU	Port & Type	Panel to PLC Cabling Components Required for Specific Port and Protocol being used.							
			PLC Port Powered Powered with 5 VDC from the connected PLC's comm. port.		DC Power Adapter Powered from an external 24 VDC source using the DC Power Adapter, EA-MG-P1.		Serial Port with DC Power Adapter Powered from an external 24 VDC source using the Serial Port with DC Power Adapter, EA-MG-SP1.			
			Using panel's RJ12 port 1		Using panel's RJ12 port 1		Using panel's RJ12 port 1		Using adapter's serial Port 2 15-pin D-sub - female	
			Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type
DirectLOGIC DL305	D3-330 or D3-340	D3-232-DCU DB 25 pin (female)	Not Possible		DirectNET	See Note RS-232	DirectNET	EA-4CBL-2 RS-232	DirectNET	EA-4CBL-2 RS-232
		D3-422-DCU DB 25 pin (female)	Not Possible		Not Possible		Not Possible		DirectNET	See Note RS-422
	D3-340	Port 1 RJ11 - 4 pin	Not Possible		DirectNET	OP-3CBL-1 RS-232	DirectNET	OP-3CBL-1 RS-232	DirectNET	EA-3CBL RS-232
		Port 2 RJ11 - 4 pin	Not Possible		DirectNET, Modbus RTU		DirectNET, Modbus RTU		DirectNET, Modbus RTU	
	D3-350	Port 1 RJ12 - 6 pin	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	EA-2CBL RS-232
		Port 2 DB 25 pin (female)	Not Possible		K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	EA-4CBL-2 RS-232 See Note RS-422
D3-DCM D3-350 only	Port 1 DB 25 pin (female)	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	See Note RS-232	DirectNET	EA-4CBL-2 RS-232 See Note RS-422	
DirectLOGIC DL405	D4-430	Port 0 DB 15 pin (female)	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	EA-4CBL-1 RS-232
		Port 1 DB 25 pin (female)	Not Possible		K-sequence, DirectNET	DV-1000CBL & FA-CABKIT RS-232	K-sequence, DirectNET	DV-1000CBL & FA-CABKIT RS-232	K-sequence, DirectNET	EA-4CBL-2 RS-232 See Note RS-422
	D4-440	Port 0 DB 15 pin (female)	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	EA-4CBL-1 RS-232
		Port 1 DB 25 pin (female)	Not Possible		K-sequence, DirectNET	DV-1000CBL & FA-CABKIT RS-232	K-sequence, DirectNET	DV-1000CBL & FA-CABKIT RS-232	K-sequence, DirectNET	EA-4CBL-2 RS-232 See Note RS-422
	D4-450	Port 0 DB 15 pin (female)	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	D4-1000CBL or DV-1000CBL & FA-CABKIT RS-232	K-sequence	EA-4CBL-1 RS-232
		Port 1 DB 25 pin (female)	Not Possible		K-sequence, DirectNET, Modbus RTU	DV-1000CBL & FA-CABKIT RS-232	K-sequence, DirectNET, Modbus RTU	DV-1000CBL & FA-CABKIT RS-232	K-sequence, DirectNET, Modbus RTU	EA-4CBL-2 RS-232 See Note RS-422
		Port 3 DB 25 pin (female)	Not Possible		Not Possible		Not Possible		K-sequence, DirectNET, Modbus RTU	See Note RS-422
		Port 2 RJ12 - 6 pin	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	DV-1000CBL RS-232	K-sequence, DirectNET	EA-2CBL RS-232
	D4-DCM	Port 1 DB 25 pin (female)	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	See Note RS-232	K-sequence, DirectNET, Modbus RTU	See Note RS-232	DirectNET	EA-4CBL-2 RS-232 See Note RS-422

Note: See the C-more Micro-Graphic Hardware User Manual, Chapter 6: PLC Communications, for wiring diagrams that the user can use to construct their own cables. Available for download at [www.automationdirect.com](http://www.automationdirect.com). PLC Compatibility & Connection Chart continued on next page.



# C-more 3" Micro-Graphic Communication Protocols & Cabling Chart (cont'd)

Controller Compatibility & Connection Chart																																					
PLC			C-more Micro-Graphic Panel																																		
Family	CPU	Port & Type	Panel to PLC Cabling Components Required for Specific Port and Protocol being used.																																		
			PLC Port Powered Powered with 5 VDC from the connected PLC's comm. port.		DC Power Adapter Powered from an external 24 VDC source using the DC Power Adapter, EA-MG-P1.		Serial Port with DC Power Adapter Powered from an external 24 VDC source using the Serial Port with DC Power Adapter, EA-MG-SP1.																														
			Using panel's RJ12 port 1		Using panel's RJ12 port 1		Using panel's RJ12 port 1		Using adapter's serial Port 2 15-pin D-sub - female																												
			Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type	Protocol(s) Supported	Components & Network Type																											
Allen-Bradley MicroLogix	1000, 1100, 1200, 1500	8-pin mini-din port	Not Possible	Not Possible	Not Possible	DF1 Full Duplex DF1 Half Duplex	EA-MLOGIX-CBL RS-232																														
		RJ45 8-pin phone plug						DH485/AIC/AIC+	EA-DH485-CBL RS-232																												
Allen-Bradley SLC500	5/03, 5/04, 5/05 5/01, 5/02, 5/03	9-pin D-sub port						Not Possible	Not Possible	Not Possible	DF1 Full Duplex DF1 Half Duplex	EA-SLC-232-CBL RS-232																									
		RJ45 8-pin phone plug											DH485/AIC/AIC+	EA-DH485-CBL RS-232																							
Allen-Bradley ControlLogix	all	9-pin D-sub port											Not Possible	Not Possible	Not Possible	DF1 Full Duplex DF1 Half Duplex	EA-SLC-232-CBL RS-232																				
Allen-Bradley CompactLogix	all	9-pin D-sub port																Not Possible	Not Possible	Not Possible	DF1 Full Duplex DF1 Half Duplex	EA-SLC-232-CBL RS-232															
Allen-Bradley FlexLogix	all	9-pin D-sub port																					Not Possible	Not Possible	Not Possible	DF1 Full Duplex DF1 Half Duplex	EA-SLC-232-CBL RS-232										
Allen-Bradley PLC5	all	25-pin D-sub port																										Not Possible	Not Possible	Not Possible	DF1 Full Duplex	EA-PLC5-232-CBL RS-232					
		RJ45 8-pin phone plug																															DH485/AIC/AIC+	EA-DH485-CBL RS-232			
GE	90/30, 90/70 Micro 90, VersaMax Micro	15-pin D-sub port																															Not Possible	Not Possible	Not Possible	SNPX	EA-90-30-CBL RS-422
		RJ45 Port 1																																			
Mitsubishi	Melsec FX Series Q / QnA	25-pin D-sub port																																			Not Possible
		8-pin mini-din port	EA-MITSU-CBL-1 RS-422																																		
Omron	C200 (Adapter), C500 CJ1, CS1, CQM1, CPM1, CPM2, C200	25-pin D-sub port	Not Possible	Not Possible	Not Possible	Host Link	EA-OMRON-CBL RS-232																														
		9-pin D-sub port						See Note RS-232																													
Modicon	984 CPU, Quantum 113 CPU, AEG Modicon Micro Series 110 CPU	varies					Not Possible	Not Possible	Not Possible	Modbus RTU	See Note RS-232																										
		varies										See Note RS-232																									
Siemens	S7-200 CPU	9-pin D-sub port 0 or 1									Not Possible	Not Possible	Not Possible	PPI	See Note RS-485																						

Note: See the C-more Micro-Graphic Hardware User Manual, Chapter 6: PLC Communications, for wiring diagrams that the user can use to construct their own cables. Available for download at [www.automationdirect.com](http://www.automationdirect.com). Available cables with descriptions shown on the next page.

# C-more 3" Micro-Graphic Communication Cables and Cable Kits

Cable Description	Cable Part Number	Price
<b>Cables for direct connect to panel's serial Port1 (Panel powered from PLC's serial port.)</b>		
AutomationDirect CLICK, <i>Direct</i> LOGIC PLC RJ-12 port, DL05, DL06, DL105, DL205, D3-350, D4-450 & H2-WinPLC (RS-232C).	<b>DV-1000CBL</b>	<--->
<i>Direct</i> LOGIC DL405 PLC 15-pin D-sub port, DL405 (RS-232C).	<b>D4-1000CBL</b>	<--->
<i>Direct</i> LOGIC (VGA Style) 15-pin port, DL06, D2-250 (250-1), D2-260 (RS-232C). Use with DV-1000CBL cable.	<b>FA-15HD</b>	<--->
<i>Direct</i> LOGIC PLC 15-pin D-sub port, DL405 (RS-232C). Use with DV-1000CBL cable.	<b>FA-CABKIT</b>	<--->
<b>Cables for direct connect to panel's serial port 1 (Panel powered from either optional DC Power Adapter, EA-MG-P1, or Serial Port w/ DC Power Adapter, EA-MG-SP1.)</b>		
<i>Direct</i> LOGIC PLC RJ-11 port, D3-340 (RS-232C).	<b>OP-3CBL-1</b>	<--->
<b>Cables used with optional serial Port2 (Panel powered from optional Serial Port w/ DC Power Adapter, EA-MG-SP1.)</b>		
AutomationDirect CLICK, <i>Direct</i> LOGIC PLC RJ-12 port, DL05, DL06, DL105, DL205, D3-350, D4-450 & H2-WinPLC (RS-232C).	<b>EA-2CBL</b>	<--->
<i>Direct</i> LOGIC (VGA Style) 15-pin port, DL06, D2-250 (250-1), D2-260 (RS-232C).	<b>EA-2CBL-1</b>	<--->
<i>Direct</i> LOGIC PLC RJ-11 port, D3-340 (RS-232C).	<b>EA-3CBL</b>	<--->
<i>Direct</i> LOGIC DL405 PLC 15-pin D-sub port, DL405 (RS-232C).	<b>EA-4CBL-1</b>	<--->
<i>Direct</i> LOGIC PLC 25-pin D-sub port, DL405, D3-350, DL305 DCU and all DCMs (RS-232C).	<b>EA-4CBL-2</b>	<--->
Allen-Bradley MicroLogix 1000, 1100, 1200 & 1500 (RS-232C)	<b>EA-MLOGIX-CBL</b>	<--->
Allen-Bradley SLC 5-03/04/05, ControlLogix, CompactLogix, FlexLogix DF1 port (RS-232C)	<b>EA-SLC-232-CBL</b>	<--->
Allen-Bradley PLC-5 DF1 port (RS-232C)	<b>EA-PLC5-232-CBL</b>	<--->
Allen-Bradley MicroLogix, SLC-5-01/02/03, PLC5 DH485 port (RS-232C)	<b>EA-DH485-CBL</b>	<--->
GE 90/30 and 90/70, Micro 90, VersaMax Micro (Port 2) 15-pin D-sub port (RS-422A)	<b>EA-90-30-CBL</b>	<--->
MITSUBISHI FX Series 25-pin port (RS-422A)	<b>EA-MITSU-CBL</b>	<--->
MITSUBISHI FX Series 8-pin mini-DIN (RS-422A)	<b>EA-MITSU-CBL-1</b>	<--->
OMRON Host Link C200 Adapter, C500 (RS-232C)	<b>EA-OMRON-CBL</b>	<--->



Part No. DV-1000CBL



Part No. D4-1000CBL



Part No. OP-3CBL-1



Part No. FA-15HD



Part No. FA-CABKIT



Part No. EA-2CBL



Part No. EA-2CBL-1



Part No. EA-3CBL



Part No. EA-4CBL-1



Part No. EA-4CBL-2



Part No. EA-MLOGIX-CBL



Part No. EA-SLC-232-CBL



Part No. EA-PLC5-232-CBL



Part No. EA-DH485-CBL



Part No. EA-90-30-CBL



Part No. EA-MITSU-CBL



Part No. EA-MITSU-CBL-1



Part No. EA-OMRON-CBL

# C-more 3" Micro-Graphic Panel Accessories

## 8-button Keypad Bezel

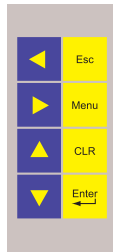
The 8-button keypad bezel can be used with both the touch and non-touch **C-more 3"** Micro-Graphic panels. The keypad includes four directional arrow cursor buttons, and one each of an ESCAPE, MENU, CLEAR and ENTER button. The keypad is intended to be used with the numeric entry object (Style 3) to allow changing of a

value, and can also be used to navigate & select objects when using the non-touch panel version. The keypad bezel is designed for easy drop-in of a **C-more 3"** Micro-Graphic panel. No panel configuration required.

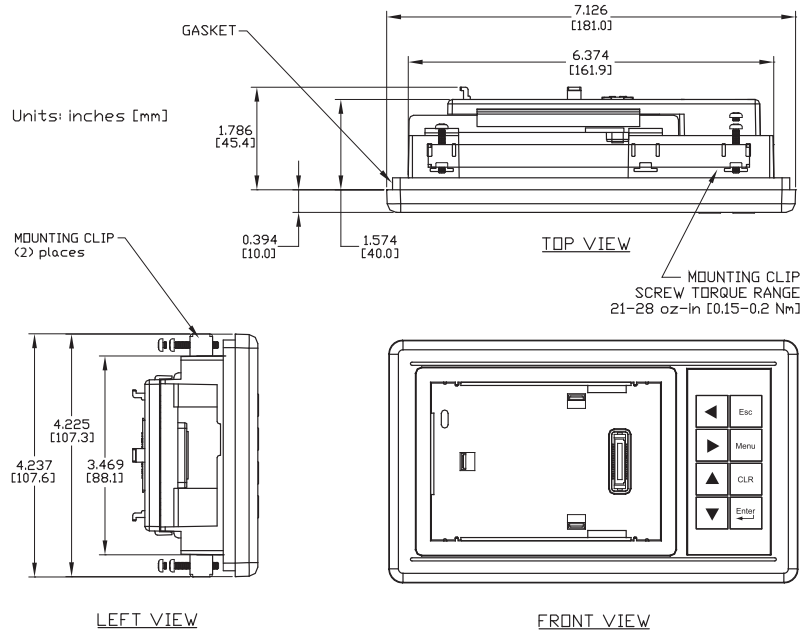
### Part No. EA-MG-BZ1



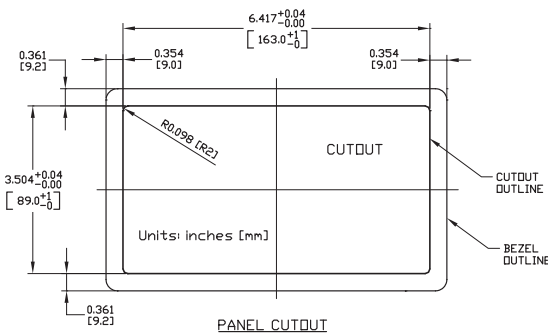
Four directional cursor buttons, and ESC, MENU, CLEAR and ENTER buttons.



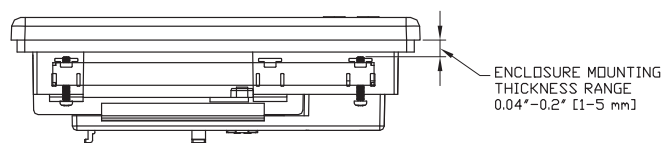
### Dimensions



### Panel Cutout



### Panel Thickness



### 8-Button Keypad Bezel Specifications

Part Number	EA-MG-BZ1
<b>General</b>	
• <b>C-more Micro-Graphic Panels Supported</b>	EA1-S3ML, EA1-S3MLW, EA1-S3ML-N, EA1-S3MLW-N
• <b>Connection</b>	Connects with expansion connector on the rear of a <b>C-more 3"</b> Micro-Graphic panel. An expansion connector is also located on the rear of the keypad bezel to allow the EA-MG-P1 DC Power Adapter, or the EA-MG-SP1 Serial Port with DC Power Adapter to be attached.
• <b>Power Consumption</b>	None
• <b>Keypad Button Life</b>	Minimum of 500,000 cycles
• <b>Enclosure Mounting</b>	(2) mounting clips, EA-MG-BZ1-BRK, included. Note: The <b>C-more 3"</b> Micro-Graphic panel is installed into the keypad bezel using the EA-MG-S3ML-BRK mounting clips that are supplied with the panel.
<b>Physical</b>	
• <b>Dimensions</b>	7.126" (W) x 4.225" (H) x 2.180" (D) [181.0 mm x 107.3 mm x 55.4 mm]
• <b>Weight</b>	7.05 oz. [200 g]
• <b>Environmental</b>	See environmental specifications at the beginning of this catalog section.

# C-more 3" Micro-Graphic Panel Accessories

## 20-Button Keypad Bezel

The 20-button keypad bezel can be used with both the touch and non-touch **C-more 3"** Micro-Graphic panels. The keypad includes four directional arrow cursor buttons, a full numeric keypad, and one each of an ESCAPE, MENU, CLEAR and ENTER button. The keypad is intended to be used with the numeric entry object (Style 3) to allow changing of a value, and can also be

used to navigate & select objects when using the non-touch panel version. The numeric buttons can be used to enter a new value. The keypad bezel is designed for easy drop-in of a **C-more 3"** Micro-Graphic panel. No panel configuration required.

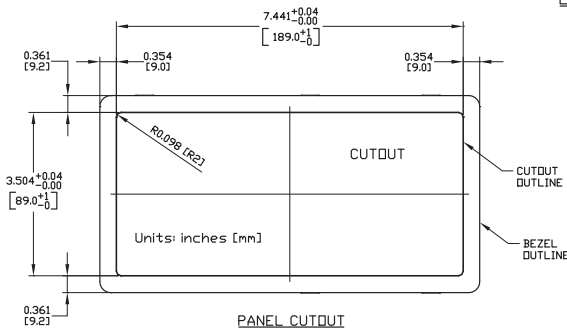
Part No. EA-MG-BZ2



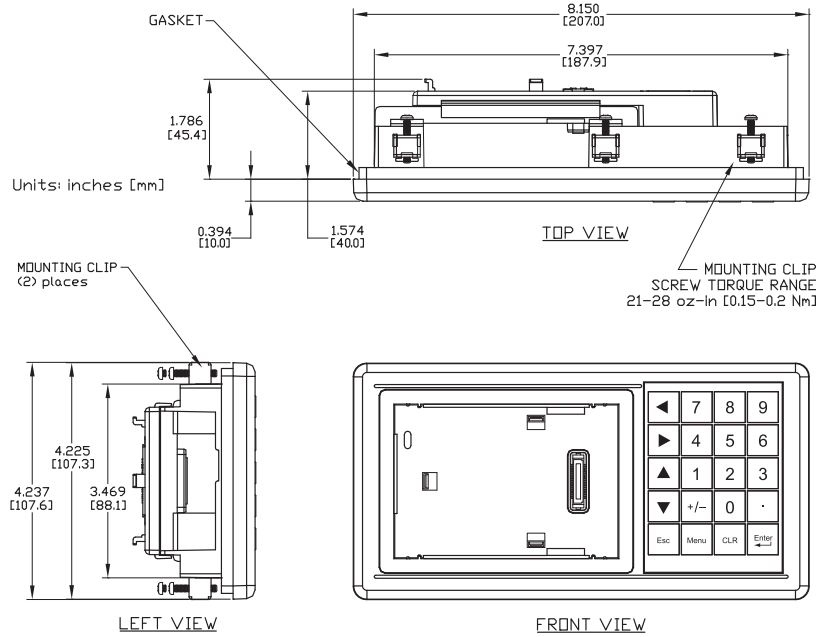
Four directional cursor buttons, numeric buttons, and ESC, MENU, CLEAR and ENTER buttons.



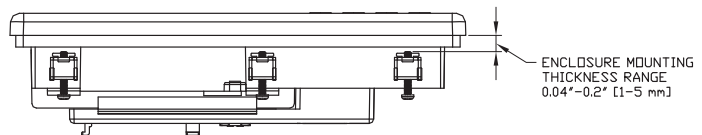
### Panel Cutout



### Dimensions



### Panel Thickness



### 20-Button Keypad Bezel Specifications

Part Number	EA-MG-BZ2
<b>General</b>	
• <b>C-more Micro-Graphic Panels Supported</b>	EA1-S3ML, EA1-S3MLW, EA1-S3ML-N, EA1-S3MLW-N
• <b>Connection</b>	Connects with expansion connector on the rear of a 3" <b>C-more</b> Micro-Graphic panel. An expansion connector is also located on the rear of the keypad bezel to allow the EA-MG-P1 DC Power Adapter, or the EA-MG-SP1 Serial Port with DC Power Adapter to be attached.
• <b>Power Consumption</b>	None
• <b>Keypad Button Life</b>	Minimum of 500,000 cycles
• <b>Enclosure Mounting</b>	(6) mounting clips, EA-MG-BZ2-BRK, included. Note: The <b>C-more 3"</b> Micro-Graphic panel is installed into the keypad bezel using the EA-MG-S3ML-BRK mounting clips that are supplied with the panel.
<b>Physical</b>	
• <b>Dimensions</b>	8.150" (W) x 4.225" (H) x 2.180" (D) [207.0 mm x 107.3 mm x 55.4 mm]
• <b>Weight</b>	7.40 oz. [210 g]
<b>Environmental</b>	
See environmental specifications at the beginning of this catalog section.	

# C-more 3" Micro-Graphic Panel Accessories

## DC Power Adapter

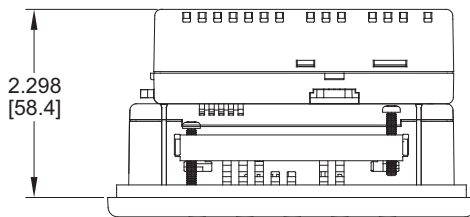
The **C-more 3"** Micro-Graphic panel is designed to use the 5 VDC power that is available from an RJ12 serial communications port found on CLICK and most **DirectLOGIC** PLCs from **AutomationDirect**. However, for other devices that do not supply power through their serial communications port, the EA-MG-P1 DC power adapter or EA-MG-SP1 serial port with

DC power adapter must be used. Both adapters require power from a 12-24 VDC source. The EA-MG-P1 DC Power Adapter for **C-more 3"** Micro-Graphic panels is designed to easily snap on to the rear of a **C-more 3"** Micro-Graphic panel or the rear of an optional Keypad Bezel being used with a **C-more 3"** Micro-Graphic panel.

### Part No. EA-MG-P1



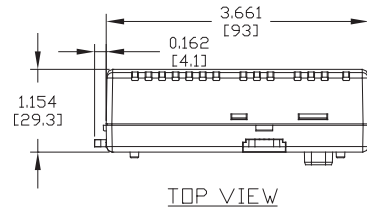
### Panel overall depth with adapter installed



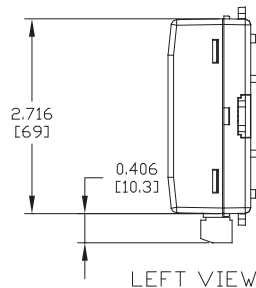
Units: inches [mm]

### Dimensions

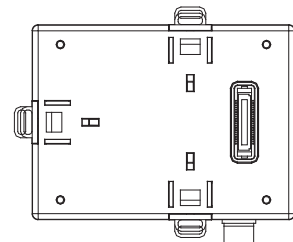
Units: inches [mm]



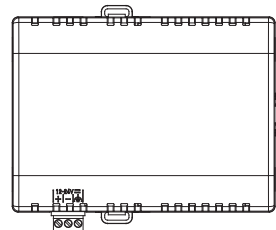
TOP VIEW



LEFT VIEW



REAR VIEW



FRONT VIEW

### DC Power Adapter Specifications

Part Number	EA-MG-P1
<b>Electrical</b>	
• <b>Input Voltage</b>	12-24 VDC
• <b>Input Voltage Range</b>	10.8-26.4 VDC
• <b>Power Consumption</b>	100 mA @ 24 VDC
• <b>Maximum Power</b>	2.90 Watts
• <b>Maximum Inrush Current</b>	5 A @ 500 $\mu$ s with 12 VDC applied, 10 A @ 500 $\mu$ s with 24 VDC applied
• <b>Recommended Fuse</b>	Type AGC fast acting glass fuse, 750 mA, 250 VAC, ADC #AGC-75
• <b>Connector Type</b>	3-pin screw type terminal block
<b>Physical</b>	
• <b>Dimensions</b>	3.823" (W) x 3.284" (H) x 1.331" (D) [97.1 mm x 83.4 mm x 33.8 mm]
• <b>Weight</b>	2.8 oz. [80 g]
<b>Environmental</b>	See environmental specifications at the beginning of this catalog section.



**NOTE: Recommended DC power supply to power either DC Power Adapter, AutomationDirect Part No. PSP24-024S or PSP24-024C.**



# C-more 3" Micro-Graphic Panel Accessories

## Serial Port with DC Power Adapter

The **C-more 3" Micro-Graphic panel** is designed to use the 5 VDC power that is available from an RJ12 serial communications port of CLICK and most **DirectLOGIC** PLCs from **AutomationDirect**. However, for other devices that do not supply power through their serial communications port, the EA-MG-P1 DC power adapter or EA-MG-SP1 serial port with DC power adapter must be used. The EA-MG-SP1, with D-Sub 15-pin

RS-232/RS-422/485 serial port, can be used to connect to a PLC using RS-232 or RS-422/485. The adapter requires power from a 12-24 VDC source. This optional Serial Port with DC Power Adapter for **C-more 3" Micro-Graphic panels** is designed to easily snap on to the rear of a **C-more 3" Micro-Graphic panel** or the rear of an optional Keypad Bezel being used with a **C-more 3" Micro-Graphic panel**.

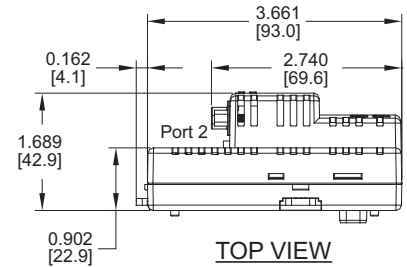
### Part No. EA-MG-SP1



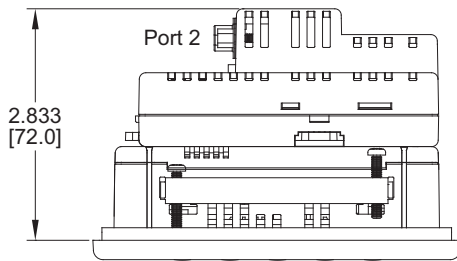
Supports:  
RS-232,  
RS-485,  
& RS-422

### Dimensions

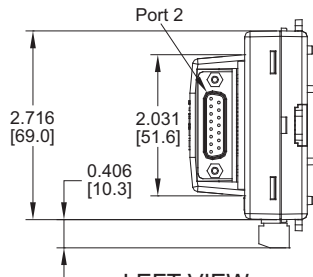
Units: inches [mm]



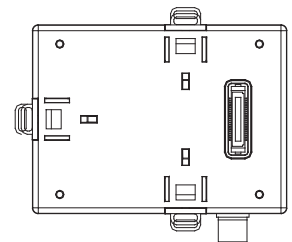
<--->  
**Panel overall depth  
with adapter installed**



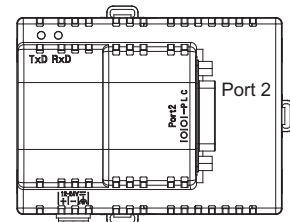
Units: inches [mm]



LEFT VIEW



REAR VIEW



FRONT VIEW

Serial Port w/ DC Power Adapter Specifications	
<b>Part Number</b>	EA-MG-SP1
<b>Serial PLC Interface</b>	
• <b>Interface Standard</b>	RS-232 & RS-485/422
• <b>Adjustable Settings from Software (Dependent on PLC Protocol)</b>	Baud rate: 9600, 19200 or 38400 bits/sec Data bits: 7/8 bits Parity: None, Odd/Even Stop bits: 2/1 bits
• <b>Connector Type</b>	15-pin D-sub connector (female)
<b>Electrical</b>	
• <b>Input Voltage</b>	12-24 VDC
• <b>Input Voltage Range</b>	10.8-26.4 VDC
• <b>Power Consumption</b>	100 mA @ 24 VDC
• <b>Maximum Power</b>	2.90 Watts
• <b>Maximum Inrush Current</b>	5 A @ 500 μs with 12 VDC applied, 10 A @ 500 μs with 24 VDC applied
• <b>Recommended Fuse</b>	Type AGC fast acting glass fuse, 750 mA, 250 VAC, ADC #AGC-75
• <b>Connector Type</b>	3-pin screw type terminal block
<b>Physical</b>	
• <b>Dimensions</b>	3.823" (W) x 3.284" (H) x 1.331" (D) [97.1 mm x 83.4 mm x 33.8 mm]
• <b>Weight</b>	2.8 oz. [80 g]
• <b>Environmental</b>	See environmental specifications at the beginning of this catalog section.



**NOTE: Recommended DC power supply to power either DC Power Adapter, AutomationDirect Part No. PSP24-024S or PSP24-024C.**

## PLC Serial Communications Port 2

Pin	Signal	Pin	Signal	Pin	Signal
1	Frame GND	6	LE	11	TXD+ (422/485)
2	TXD (232C)	7	CTS (232C)	12	TXD- (422/485)
3	RXD (232C)	8	RTS (232C)	13	Term. Resistor
4	Future	9	RXD+ (422/485)	14	do not use
5	Logic GND	10	RXD- (422/485)	15	do not use

