

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

This non-Touch Screen version of the C-more Micro-Graphic panel has a 3.1-inch STN LCD monochrome display. Model EA1-S3ML-N has 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 NEMA 4/4X, IP-65 (when mounted correctly, for indoor use only). This Micro-Graphic panel can receive power from the serial communications port of most DirectLOGIC PLCs. An EA-MG-SP1 Serial Port with DC Power Adapter option module (RS-232/422/485) is required when using 3rd party PLCs.

Part No. EA1-S3ML-N



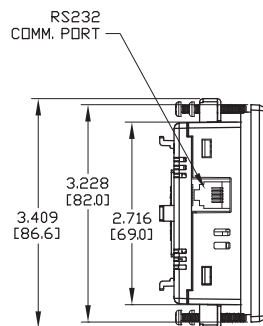
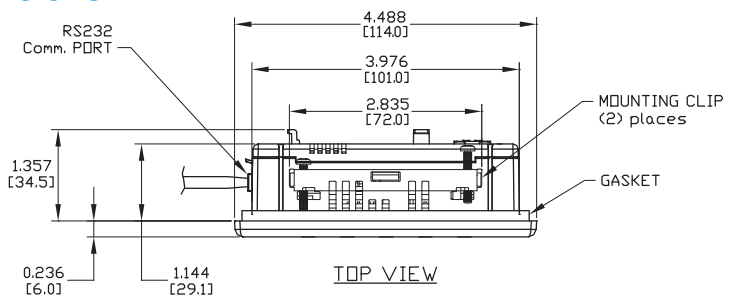
## Features

- 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 even 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 **Direct**LOGIC PLCs. Use optional DC power adapter and serial port modules if needed for other PLC's (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, IP-65 compliant when mounted correctly, indoor use only
- UL, cUL & CE agency approvals
- 2-year warranty from date of purchase

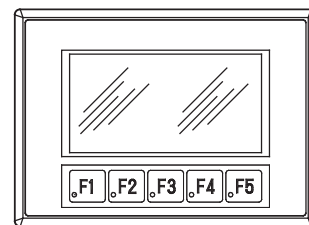


**NOTE: Don't forget the optional keypad bezels, DC power adapter and serial port with DC power adapter shown in the accessories.**

## Dimensions



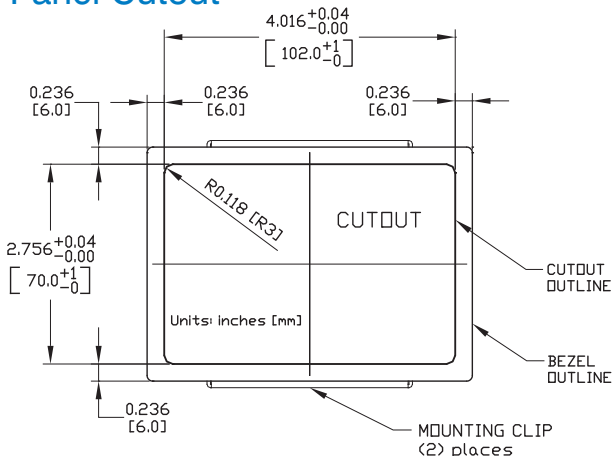
C-more Micro-Graphic Panel



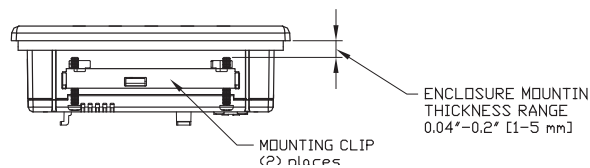
LEFT VIEW

FRONT VIEW

## Panel Cutout



## Panel Thickness



**NOTE: The C-more 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.**

- PLC Overview
- DL05/06 PLC
- DL105 PLC
- DL205 PLC
- DL305 PLC
- DL405 PLC
- Field I/O
- Software
- C-more HMIs
- Other HMI
- AC Drives
- Motors
- Steppers/Servos
- Motor Controls
- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
- Current Sensors
- Pushbuttons/Lights
- Process
- Relays/Timers
- Comm.
- TB's & Wiring
- Power
- Circuit Protection
- Enclosures
- Appendix
- Part Index

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

This non-Touch Screen version of the C-more Micro-Graphic panel has a 3.1-inch STN LCD monochrome display. Model EA1-S3MLW-N has five selectable LED-driven backlight colors including 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 NEMA 4/4X, IP-65 (when mounted correctly, for indoor use only). This Micro-Graphic panel can receive power from the serial communications port of most DirectLOGIC PLCs. An EA-MG-SP1 Serial Port with DC Power Adapter option module (RS-232/422/485) is required when using 3rd party PLCs.

Part No. EA1-S3MLW-N



## Features

- 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 even 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 **Direct**LOGIC PLCs. Use optional DC power adapter and serial port modules if needed for other PLC's (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, IP-65 compliant when mounted correctly, indoor use only
- UL, cUL & CE agency approvals
- 2-year warranty from date of purchase

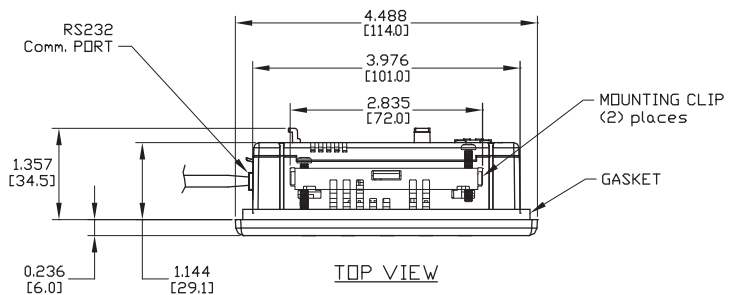


**NOTE: Don't forget the optional keypad bezels, DC power adapter and serial port with DC power adapter shown in the accessories.**

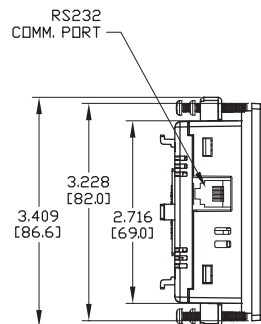
←---→



## Dimensions

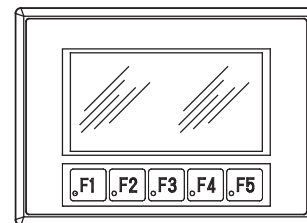


Units: inches [mm]



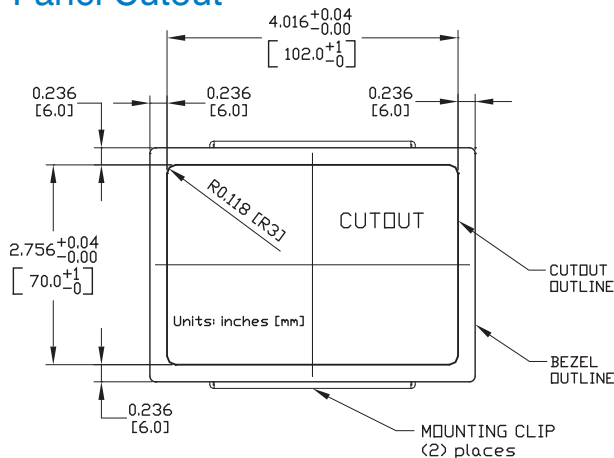
LEFT VIEW

C-more Micro-Graphic Panel

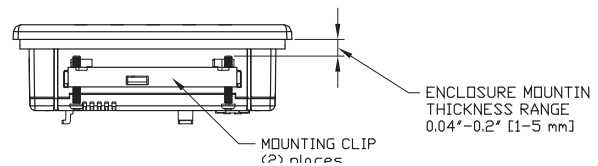


FRONT VIEW

## Panel Cutout



## Panel Thickness



**NOTE: The C-more 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 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	
<b>Static Shapes</b>		Lines, Rectangles, Circles and Frames	
<b>Displayable Fonts</b>		Fixed fonts: 4x6 (only static text), 6x6, 6x8, 8x16, 8x32, 16x16, 16x32, 32x16, 32x32 /Windows fonts	
<b>Micro-Graphic panel specifications continued on next page.</b>			



NOTE: Photo includes EA-MG-BZ2

# C-more 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 <i>Direct</i> LOGIC PLCs having a 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>		1.05 W @ 5 VDC (210 mA)	
<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)	
<b>Storage Temperature</b>		-20 to +60 °C (-4 to +140 °F)	
<b>Humidity</b>		5–95% RH (non-condensing)	
<b>Environmental Air</b>		No corrosive gases permitted	
<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>		EMA ICS3-304 RFI, (145 MHz, 440 Mhz 10 W @ 10 cm) Impulse 1000 V @ 1 $\mu$ s pulse	
<b>Enclosure</b>		NEMA 4/4X, IP-65 (When mounted correctly, for 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