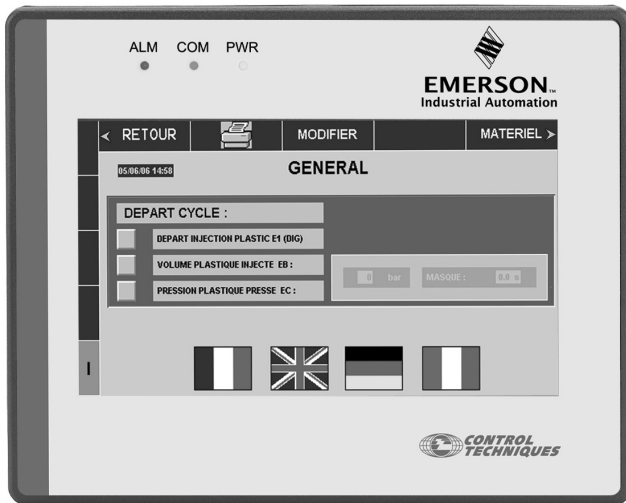


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MODEL 304K - OPERATOR INTERFACE WITH TFT DISPLAY



- CONFIGURED USING CTVue CONFIGURATOR SOFTWARE
- TWO SERIAL COMMUNICATIONS PORTS (1 RS-232 AND 1 RS-232/422/485)
- UNIT'S CONFIGURATION IS STORED IN NON-VOLATILE FLASH MEMORY
- BRIGHT 4.3-INCH TFT ACTIVE MATRIX 256 COLOR 480 x 272 PIXEL DISPLAY
- THREE FRONT PANEL LED INDICATORS
- NEMA 4/IP65 FRONT PANEL
- POWER UNIT FROM 12-28 VDC
- RESISTIVE ANALOG TOUCHSCREEN



GENERAL DESCRIPTION

The 4.3-inch CTVUE-304K was designed for applications in which available mounting space is at a premium. Though diminutive in size, the 304K boasts a bright TFT display with full 256-color support. With a resolution of 480 x 272, the 4.3-inch display has a higher resolution and better image clarity than most 6-inch HMIs.

The 304K offers two high-speed serial ports in the form of one RS-232 and one RS-232/422/485 ports. This allows the operator interface to simultaneously communicate with devices from different manufacturers, as well as to perform protocol conversion.

The 304K is programmed with CTVue Configurator Software. The software offers easy to use drag and drop communications configuration, while the embedded image library allows the programmer to create intuitive screens and prompts for the operator.

SAFETY SUMMARY

All safety related regulations, local codes and instructions that appear in the manual or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

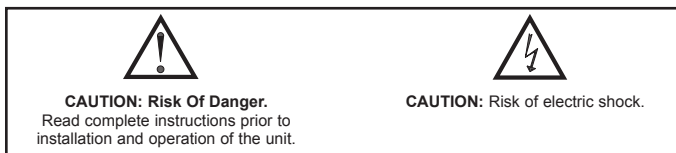
Do not use the controller to directly command motors, valves, or other actuators not equipped with safeguards. To do so can be potentially harmful to persons or equipment in the event of a fault to the unit.

CONTENTS OF PACKAGE

- 304K Operator Interface.
- Hardware packet for mounting unit into panel.
- Terminal block for connecting power.
- Spare fuse.

ORDERING INFORMATION

DESCRIPTION	PART NUMBER
4.3" TFT Operator Interface	CTVUE-304K
CTVUE Programming Software CD	CTVUE-CONFIG-CD
USB to RS-232 Adaptor, includes "Y" cable	CTVUE-USB-232
Female DB9 to RS-485 Adaptor, 2-wire	CTVUE-ADK-485
"Y" Cable	CTVUE-SK0-000



SPECIFICATIONS

1. POWER REQUIREMENTS:

Must use Class 2 or SELV rated power supply.

Power connection via removable three position terminal block.

Supply Voltage: 12-28 VDC, Class 2

Maximum Power: 3.6 W; Start up current may be as high as 700 mA

Fused: Fast-blow 800mA, 5x20mm

2. LCD DISPLAY:

SIZE	4.3-inch
TYPE	TFT
COLORS	256
PIXELS	480 X 272
BRIGHTNESS	300 cd/m ²
BACKLIGHT TYPE	LED
BACKLIGHT LIFE	50,000 HR TYP.

3. **TOUCHSCREEN:** Four-wire resistive analog

4. **MEMORY:** 2MB of non-volatile flash memory

5. **COMMUNICATIONS:** Two Serial Ports - One RS-232 port, one RS-232/422/485

Serial Ports: Format and Baud Rates for each port are individually software programmable up to 115,200 baud.

6. ENVIRONMENTAL CONDITIONS:

Operating Temperature Range: 0 to 45 °C

Operating and Storage Humidity: 10-90% relative humidity (non-condensing) from 0 to 45°C.

Vibration: Operational 10 to 25 Hz in X, Y, Z direction for 30 minutes, 2 g's.

7. CERTIFICATIONS AND COMPLIANCES:

ELECTROMAGNETIC COMPATIBILITY

Consult factory for EMC specifications

8. **CONNECTIONS:** Compression cage-clamp terminal block.

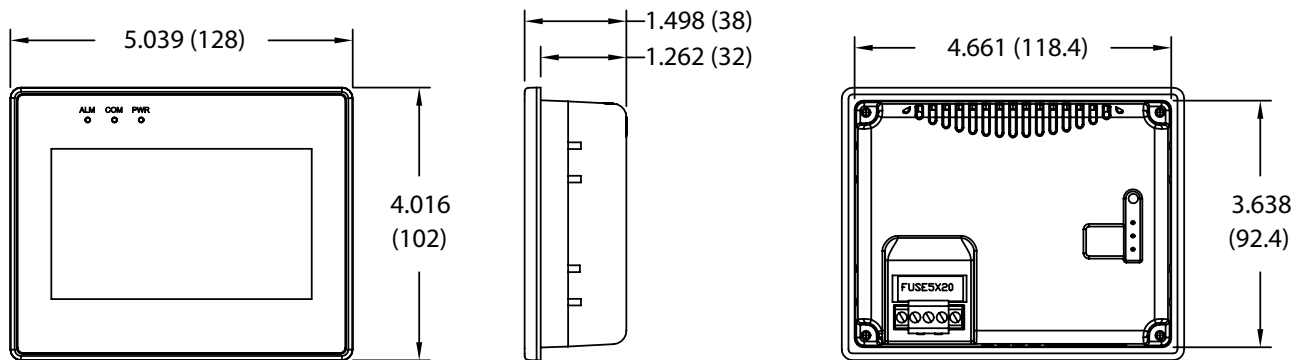
Wire Gage: 12-28 AWG copper wire

Communications: DB9M connection

9. **CONSTRUCTION:** Plastic enclosure with NEMA 4/IP65 front panel when properly installed.

10. **WEIGHT:** 9.4 oz (270 g)

DIMENSIONS In inches (mm)

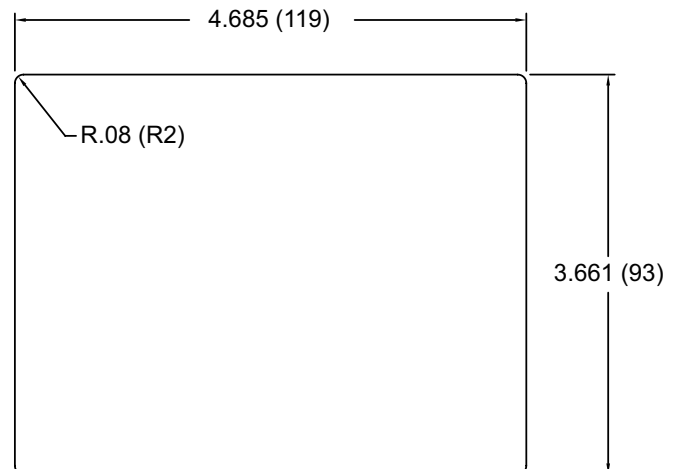


INSTALLING AND POWERING THE 304K

MOUNTING INSTRUCTIONS

The unit can be mounted into enclosures with a depth of 4". It is recommended that the unit be mounted on the front panel of a steel enclosure. Allow clearance of 1" around the sides of the unit for the mounting hardware.

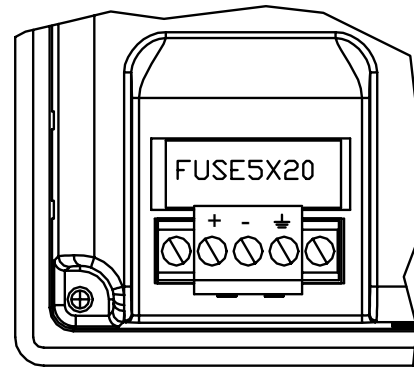
Place the unit in the panel cutout. Slide clamps into the four holes provided at the top and bottom of the case. Tighten the clamping screws in an even pattern until the unit is secured in the panel. Caution: Do not over tighten the clamps. To seal to NEMA4 specifications, all supplied mounting clamps must be used. The panel must not flex more than 0.010".



POWER SUPPLY REQUIREMENTS

The 304K requires a 12-28 VDC power supply. Please take care to observe the following points:

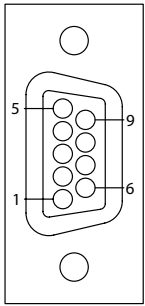
- The wire used to connect the operator interface's power supply should be at least 22-gage wire. If a longer cable run is used, a heavier gage wire should be used. The routing of the cable should be kept away from large contactors, inverters, and other devices which may generate significant electrical noise.
- A power supply with a Class 2 or SELV rating is to be used. A Class 2 or SELV power supply provides isolation to accessible circuits from hazardous voltage levels generated by a mains power supply due to single faults. SELV is an acronym for "safety extra-low voltage." Safety extra-low voltage circuits shall exhibit voltages safe to touch both under normal operating conditions and after a single fault, such as a breakdown of a layer of basic insulation or after the failure of a single component has occurred.



COMMUNICATING WITH THE 304K

The 304K has two serial ports combined into a single DB9-M connector.

PC (RS-232)

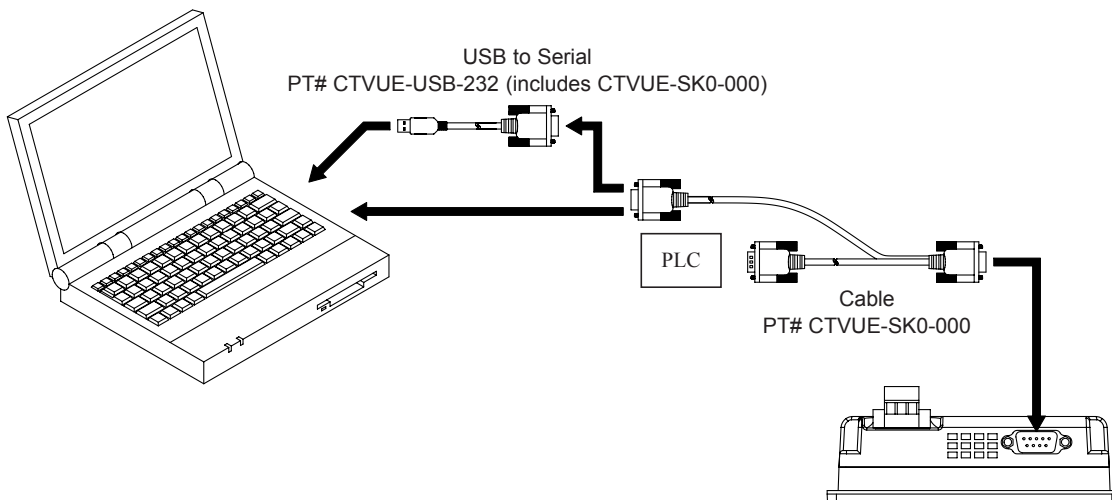


DB9-M

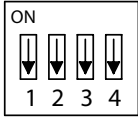
PIN	SYMBOL	PLC (RS-485) 4 wire	PLC (RS-485) 2 wire	PLC (RS-232)	PC (RS-232)
1	Rx-	Rx-	Data-		
2	Rx+	Rx+	Data+		
3	Tx-	Tx-			
4	Tx+	Tx+			
5	GND	Signal Ground			
6	TxD			Transmit	
7	TxD				Transmit
8	RxD				Receive
9	RxD			Receive	

PC CONNECTION

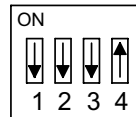
Configuration files are downloaded to the unit via the PC port, which can be connected to a computer via various cables.



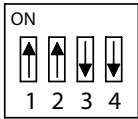
SETTING THE SWITCHES



Normal mode.



Lowers the intensity of the backlight.



Cycle power or press reset button with the switches as shown in order to display the Clear Database prompt. Touch the left side of the display to clear the database; touch the right side to continue in normal mode.

SOFTWARE/UNIT OPERATION

CTVue CONFIGURATOR SOFTWARE

CTVue Configurator Software is available as a free download from Control Techniques's website or it can be purchased on a CD, see "Ordering Information" for part number. The latest version of the software is always available from the website, and updating your copy is free.

FRONT PANEL LEDs

There are three front panel LEDs. Shown below is the default status of the LEDs.

LED	INDICATION
RED (ALM)	
FLASHING	Tag is in an alarm condition and not acknowledged
STEADY	Acknowledged alarm exists.
FLASHING RAPIDLY	In conjunction with green com LED while unit is in bootloader
GREEN (COM)	
OFF	Communications not established
STEADY	No communication errors are present
FLASHING RAPIDLY	In conjunction with the red ALM LED while the unit is in bootloader.
FLICKERING	Communication error exists
ORANGE (PWR)	
STEADY	Power is applied.

TOUCHSCREEN

This operator interface utilizes a resistive analog touchscreen for user input. The unit will only produce an audible tone (beep) when a touch on an active touchscreen cell is sensed. The touchscreen is fully functional as soon as the operator interface is initialized, and can be operated with gloved hands.

TROUBLESHOOTING YOUR 304K

If for any reason you have trouble operating, connecting, or simply have questions concerning your new 304K, contact Control Techniques's technical support. For contact information, refer to the front page of this bulletin for phone and fax numbers.

EMAIL: info@emersonct.com
 Web Site: <http://www.emersonct.com>



CAUTION: The circuit board contains static sensitive components. Before handling the operator interface without the rear cover attached, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the operator interface at a static controlled clean workstation. Also, do not touch the surface areas of the circuit board. Dirt, oil, or other contaminants may adversely affect circuit operation.