FC-LOG USB Data Logger and Mass Storage Unit

Product Guide

Description:

The FC-LOG is a low cost, user-configurable DIN-rail or side mount data logger. When connected to a PC through a USB cable, the FC-LOG appears as a removable drive on the PC. When connected to a 24VDC supply or powered by the serial port of a PLC, the FC-LOG will log data from the PLC and store the data in a standard CSV formatted file. Each item logged is date-time stamped in the CSV file. The files can be retrieved from the logger and imported into the software of your choosing. The logged data is stored on an internal 4GB microSD card and won't be lost in the event of a power failure.

The FC-LOG currently supports DirectNET protocol for most AutomationDirect DirectLOGIC PLCs. It also supports Modbus protocol for some DirectLOGIC PLCs, Do-more PLCs, CLICK PLCs, Productivity PLCs and other Modbus devices.

Specifications	
Power Specifications	
Input Voltage (Vin)	USB: 5VDC ±10%, Vin Terminal: 24VDC ±10%, PLC RJ12 Port: 5VDC ±10%
Input Current at Vin	200mA (5VDC - USB), 200mA (24VDC - terminal block), 150mA (5VDC - PLC RJ12)
Protection Type, Component	Polarity/surge, polarity protection diode
General Specifications	
Mounting	35mm DIN Rail or panel mount (with no restrictions)
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Humidity	5 to 95% (non-condensing)
Environmental air	No corrosive gases permitted (EN61131-2 pollution degree 1)
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC 60068-2-27 (Test Ea)
Communication Max Length	RS232: 50ft (91.4 m) RS485: 3,280ft (1000 m)
Weight	0.3 lbs (136g)
Agency Approvals	UL508 File E157382 Canada & USA CE (EN61131-2*)

* Meets EMC and Safety requirements.
See the D.O.C. for details.

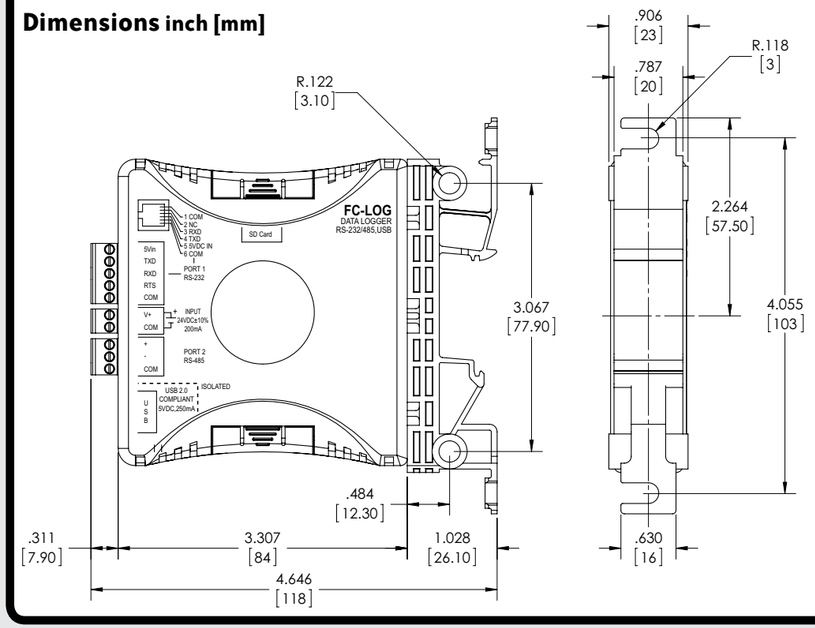
Specifications (continued)	
Terminal Block Specifications	
Field Wiring	Removable Screw Type Terminal Block
Number of Positions	2 (Dinkle: EC350V-02P), 3 (Dinkle: EC350V-03P), 5 (Dinkle: EC350V-05P)
Wire Range	28-16 AWG Solid or Stranded Conductor; Wire strip length 5/16 in (6-7 mm)
Screw Driver Size (Slotted)	0.4T x 2.5W mm (AutomationDirect part number TW-SD-VSL-1)
Screw Size	M2
Screw Torque	1.7 inch-pounds (.19 Nm)
Battery Specifications	
Battery Type	Coin, lithium (included)
Battery Voltage Rating	3.0VDC
Battery Current Rating	560mA
Replacement Part Number	CR2354 (AutomationDirect D2-BAT-1)
Battery Life	9 years (with no power applied). Battery only runs clock when power is not applied. All data is stored on the internal microSD card.
Serial Communications Port Specifications	
Communication Standards	RS-232, RS-485 (single device)
Communication Protocols	DirectNet, Modbus RTU
Selectable Baud Rates	9600, 19200, 38400, 57600, 115200K
Cable Required	AutomationDirect part number ZL-RJ12-CBL-2 (when using RJ12 connector) (Cable included)
Minimum Sample Rate	As fast as baud rate will allow. 130 samples per second @ 115.2K
Log Data File Type	Comma Separated Value - CSV
Compatible PLCs	CLICK PLC, DL05, DL06, D2-240, D2-250-1, D2-260, D4-430, D4-440, D4-450, Productivity PLCs, Do-More, or any Modbus RTU-capable PLC or device
USB Communications Port Specifications	
USB Mode	Mass storage device
USB Speed	Full speed, USB 2.0 compliant
Mass Storage Memory	4GB microSD (included); 8GB Max
Quiescent Current	1.0mA
User-Configurable Logging Parameters	
Source of Date and Time	On-board real time clock or PLC
Logging Data Trigger	Interval (1 second minimum), PLC event, or continuous
Number of Samples Logged per Trigger	1 to 100
Create New Log File	Day, Week, Month, PLC Event
Log File Name	0001LOG.CSV, 0002LOG.CSV, etc.

Modes of Operation

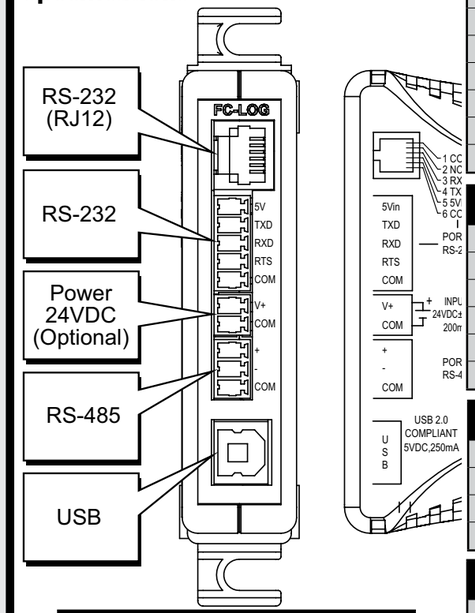
USB Mode (Mass Storage Device)
When the logger is connected to a PC via USB cable, the module stops logging and will appear as a removable drive on the computer. The logger files are then available for editing, saving, or sharing.

Logging Mode
When USB is not connected, external power is applied and a valid RS232/485 connection is made to a properly configured PLC, the FC-LOG will poll the PLC and log the configured items.

Dimensions inch [mm]



Port and Terminal Block Specifications



Input Power	
Terminal Name	**Signal**
V+	+24VDC ±10% connection
COM	Common

RJ12 Port (RS-232)	
Pin Number	**Description**
1	Common
2	Not used
3	RXD; Receive
4	TXD; Transmit
5	+5VDC IN
6	Common

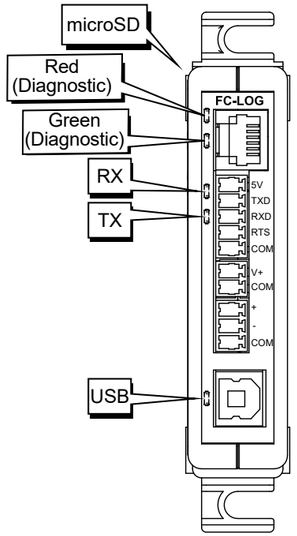
RS-232 Port 1 Terminal Block	
Terminal Name	**Signal**
5V	+5VDC Input
TXD	Transmit
RXD	Receive
RTS	Request to Send
COM	Common

RS-485 Port 2 Terminal Block	
Terminal Name	**Signal**
+	Transmit
–	Receive
COM	Common

USB Port	
Pin Number	**Signal**
1	+5VDC IN
2	-Data
3	+Data
4	Common

Do not connect if powered with 5VDC.

LED Status Indicators / Diagnostic LEDs



LED Status Indicators		
LED	***Status***	***Description***
Red (Diagnostic)	On	Diagnostic indication - see table below
	Off	
Green (Diagnostic)	On	Diagnostic indication - see table below
	Off	
Green (RXD)	On	RS-232/RS-485 activity: Flashes when activity occurs on the RS-232/RS-485 receive lines
	Off	No Signal
Green (TXD)	On	RS-232/RS-485 activity: Flashes when activity occurs on the RS-232/RS-485 transmit lines
	Off	No signal
Yellow (USB)	On	USB Connected
	Off	USB Not Connected
*microSD (Yellow)**	On	The yellow LED blinks whenever the SD card is being accessed. It may even appear to be on solid while in connected to a PC.
	Off	No Access

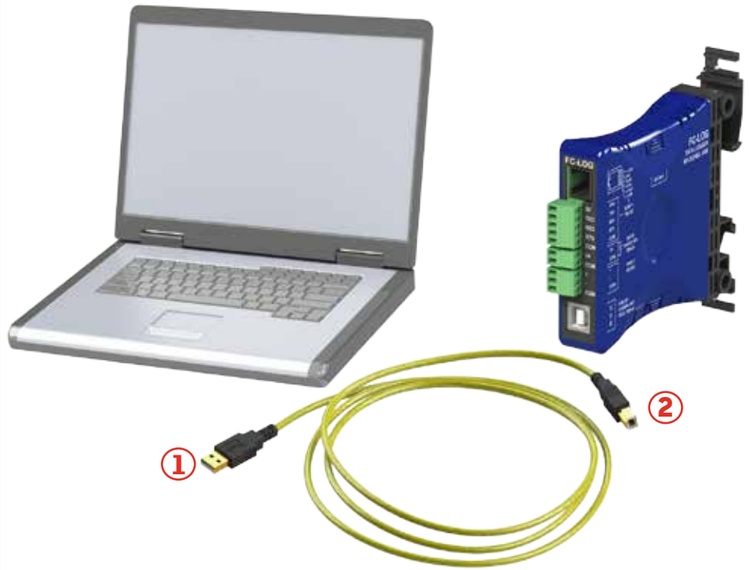
***Located at the top, center, on LEFT face of module.**

Red and Green Diagnostic LEDs		
LED	***Cause***	***Solution***
Green Fast Flashing	Normal operation as a mass storage device. This means the data logger is connected to a USB port and has a usable SD card installed in the drive.	Normal Operation- no solution required.
Green Slow Flashing	Normal operation as a Data Logger. This means the device has a usable SD card installed in the drive and a valid configuration file.	Normal Operation- no solution required.
Red, Green Flashing (Red/Red/Green Sequence)	Logger Critical Error	Check the ERRORS.TXT file in the root of the microSD card for error information.
Red Fast Flashing	No SD card or unusable SD card in drive	Insert proper SD card into the holder and make sure it snaps into place.
Red/Green Fast Flashing	Firmware error	Boot loader senses that firmware image in flash memory is corrupted. Update firmware.

USB Mode - Connecting the Data Logger to a PC

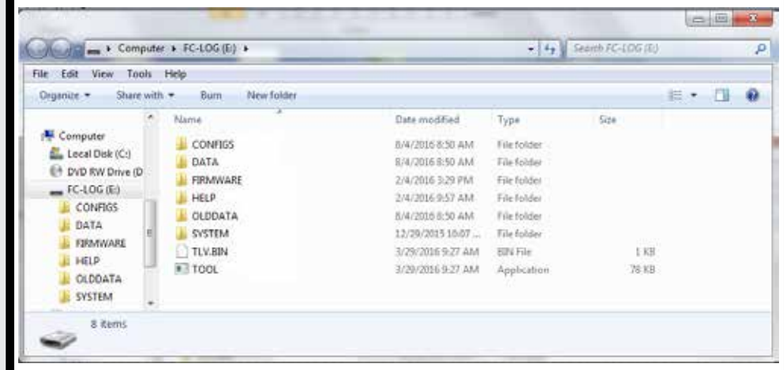
1 Connect USB Type-A connector into PC USB Port.

2 Connect USB Type-B connector into FC-LOG USB Port.



3 Use Windows Explorer to browse to removable disk drive labeled “FC-LOG”.

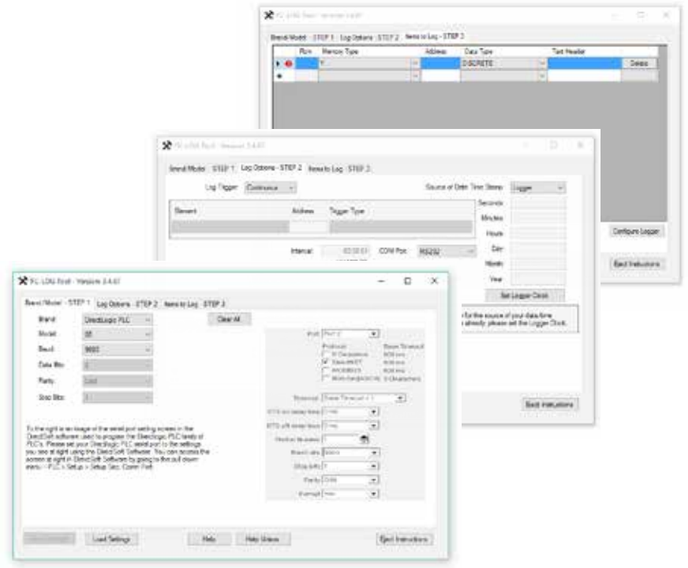
4 Double click on “TOOL.exe” to run the configuration utility directly from the microSD card.



Configure the Data Logger

The configuration tool is easy to use. As simple as 1, 2, 3.

1. Select the device you want to log into.
2. Select how you want the logger to trigger.
3. Select the locations from which you want to log data.



To access the user manual included with the FC-LOG:

1. Connect the USB cable to the FC-LOG and to your PC.
2. Press the Windows key + E to open Windows File Explorer.
3. In the left pane, click on the drive labeled FC-LOG.
4. In the right pane, double-click the HELP folder.
5. To view the user manual, double-click HELP.
6. To view a tutorial showing how to configure the FC-LOG, in the main folder click Overview.