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# MODEL CUB5USB - USB PROGRAMMING OPTION CARD

DESCRIPTION

This bulletin serves as a guide for the installation, configuration and operation of the CUB5 USB Programming plug-in card for the CUB5. The plug-in card is a separately purchased option card that plugs into the main circuit board of the meter. The CUB5USB card in conjunction with the Crimson® programming software enables the user to configure CUB5 on a PC. The CUB5USB requires installation of drivers which are included with the Crimson Programming software. Following installation of the drivers, the card appears as a Virtual communications port.

Crimson is a Windows® based program that allows configuration of the CUB® 5 meters from a PC. Crimson offers standard drop-down menu commands, that make it easy to program the CUB5 meters. The CUB5 program can then be saved in a PC file for future use. A CUB5 serial plug-in card is required to program the meter using the software.

INSTALLING PLUG-IN CARDS

The card plugs into the main circuit board of the meter as shown.
Perform USB driver installation below prior to powering the CUB5 and connecting CUB5USB to a PC USB port.

USB Card
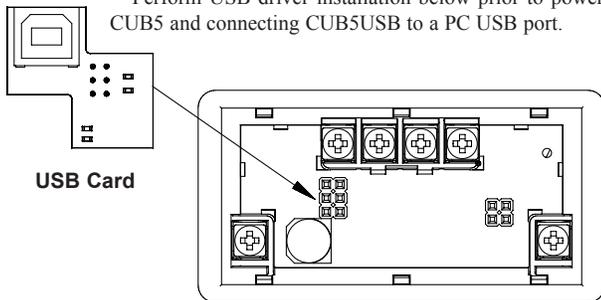
⚡ **WARNING: Disconnect all power to the unit before installing Plug-in card.**

⚠ **CAUTION**: The Plug-in cards and main circuit board contain static sensitive components. Before handling the cards, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the cards at a static controlled clean workstation. Also, only handle the cards by the edges. Dirt, oil or other contaminants that may contact the cards can adversely affect circuit operation.

USB DRIVER INSTALLATION

1. Download and install the latest Crimson 2 build on your Windows® compatible PC. Earlier builds may not have the RLC Virtual Comm port drivers. Crimson software is available as a free download at http://www.redlion.net.
2. Install CUB5USB card into CUB5 meter and apply power to the CUB5.
3. Connect Type A USB cable to computer and CUB5USB option card. Windows will prompt you for the location of the drivers for the device. The default location for these drivers is "C:\Program Files\Red Lion controls\Crimson 2.0\Device." When the hardware setup appears, choose "Install from a list or Specific location," click Next, and then check "Include this location..." and click the Browse button. Point the Wizard at the location specified above or whatever other location you specified during installation of the software. It is important that you perform this step correctly, or you may have to manually remove the drivers using the Device Manager, and repeat the installation once more.
   Note: Crimson's USB drivers have not been digitally signed by Microsoft®, and you will therefore see a dialog offering you the chance to stop the installation. You should be sure to select the Continue option to indicate that you do indeed wish to install the drivers.
4. Windows will automatically assign a comms port to the CUB5USB. To determine the port assigned, open "System Properties" from within Windows® Control Panel. Select the Hardware tab, and click the "Device Manager" button. Expand the "Ports" line. Take note of which Comms port is assigned to "RLC Virtual Comm port". It must be Com4 or lower to operate with Crimson 2. If higher, right-click on the entry and select "Properties," "Port Settings" tab, and then "Advanced" button. Select a Coms port that is COM4 or lower and is not physically being used.

SPECIFICATIONS

CUB5USB PROGRAMMING CARD
Type: USB Virtual Comms Port
Baud Rate: 300 to 38.4k
Unit Address: 0 to 99

CRIMSON 2 SYSTEM REQUIREMENTS

• Windows 2000, XP, or Vista
• RAM and free disk space as required by the chosen operating system.
• An additional 50 MB of disk space for software installation.
• A display of at least 800 by 600 pixels
• A USB port for downloading to the CUB5

ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBER
CUB5USB	CUB5 USB Programming Card	CUB5USB0
CBLUSB	Type A to B USB Cable	CBLUSB00
SFCRUSB*	USB Programming Kit containing USB Card, USB Cable and Crimson software	SFCRUSB0
SFCRD*	Crimson 2 PC Configuration Software for Windows 98, ME, 2000 and XP	SFCRD200

* Crimson software is available for download from http://www.redlion.net/

MODULE 5 - Serial Communications Parameters (5-5Er)

PARAMETER MENU

```
5-5Er IAL
```
SEL ↓

```
bAUd  →  dAtA  →  PAr ItY  →  Addr  →  Abbr  →  Prnt OPt  →  Pro
```
Baud Rate | Data Bit * | Parity Bit * | Meter Address | Abbreviated Printing * | Print Options *

* - Disregard these parameters when configuring unit to upload or download wth Crimson.
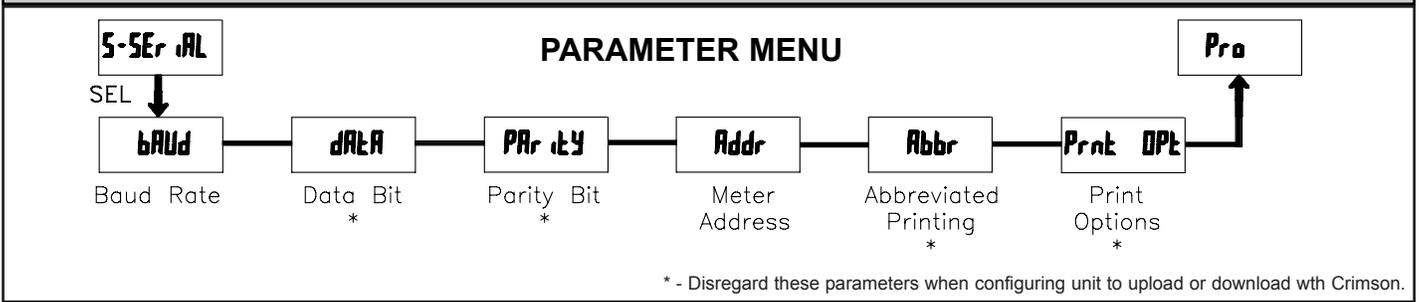
Module 5 is the programming module for the Serial Communications Parameters. The only paramters of concern when utilizing the CUB5USB programming option card to communicate with Crimson 2 programming software is the Baud Rate and Meter Address. The Parameters are only accessible when an optional CUB5USB, RS232 or RS485 serial communications card is installed in the meter.

```
Indicates Program Mode Alternating Display.
Parameter    bAUd  ⤴
             ⤵  9600   Selection/Value
Factory Settings are shown.
```

BAUD RATE

```
bAUd  ⤴
⤵  9600
```

| 300 | 1200 | 4800 | 19200 |
| 600 | 2400 | 9600 | 38400 |
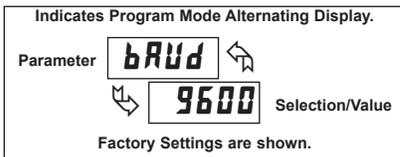
Set the baud rate to match that of other serial communications equipment. Normally, the baud rate is set to the highest value that all of the serial communications equipment is capable of transmitting and receiving.

DATA BIT *

```
dAtA  ⤴
⤵  7-b it
```
7-b it   8-b it

Select either 7- or 8-bit data word length. Set the word length to match the other serial communications equipment on the serial link.

PARITY BIT*

```
PAr  ⤴
⤵  Odd
```
nO   Odd   EUEn

This parameter only appears when the Data Bit parameter is set to a 7-bit data word length. Set the parity bit to match that of the other serial equipment on the serial link. The meter ignores parity when receiving data and sets the parity bit for outgoing data. If parity is set to nO, an additional stop bit is used to force the frame size to 10 bits.

METER ADDRESS

```
Addr  ⤴
⤵  00
```
0 to 99

Enter the serial node address. With a single unit, an address is not needed and a value of zero can be used (RS232 applications). Otherwise, with multiple bussed units, a unique address number must be assigned to each meter. The node address applies specifically to RS485 applications.

ABBREVIATED PRINTING *

```
Abbr  ⤴
⤵  nO
```
nO   YES

This parameter determines the formatting of data transmitted from the meter in response to a Transmit Value command or a Block Print Request. Select nO for a full print transmission, consisting of the meter address, mnemonics, and parameter data. Select YES for abbreviated print transmissions, consisting of the parameter data only. This setting is applied to all the parameters selected in the PRINT OPTIONS. (Note: If the meter address is 0, the address will not be sent during a full transmission.)

PRINT OPTIONS *

```
OPt  ⤴
⤵  nO
```
nO   YES

This parameter selects the meter values transmitted in response to a Print Request. A print request is also referred to as a block print because more than one parameter can be sent to a printer or computer as a block.

Selecting YES displays a sublist for choosing the meter parameters to appear in the print block. All active parameters entered as YES in the sublist will be transmitted during a block print. Parameters entered as nO will not be sent.

The "Print All" (P·ALL) option selects all meter values for transmitting (YES), without having to individually select each parameter in the sublist.

Note: Inactive parameters will not be sent regardless of the print option setting. For example, the Setpoint value(s) will not be sent unless an optional setpoint card is installed in the meter.

* - Disregard these parameters when configuring unit to upload or download wth Crimson software.