

Accessing and Programming the Communication Board

The CDI 5200-SC serial communication boards employ the Modbus RTU protocol to communicate over an RS-485 serial line at 9600 baud. Communication parameters are either no parity and two stop bits or even parity and one stop bit. When the node address is programmed, the board adopts the parity (none or even) of the network doing the programming.

Addressing registers in the CDI 5200-SC and CDI 6000-SC Serial Communication Boards

Several different addressing schemes are used by communication (server) software to identify registers in a remote instrument. The table below indicates how the three registers that are used in the CDI 5200-SC and CDI 6000-SC can be addressed with various addressing schemes.

Addressing Scheme	flow	usage	node address
Absolute, zero based	0	1	63
Generic, one based	1	2	64
Modbus, six digit	300001	300002	400127
Modbus, five digit	30001	30002	40064

Data Formats

Flow is transmitted as a 16-bit unsigned integer, sometimes referred to as data type *word*. It is transmitted in units of 0.1 scfm, 0.1 Nm³/h, or 0.01 Mm³/min, depending on the units used by the display.

Usage is transmitted as a 32-bit unsigned integer, sometimes referred to as data type *dword*. The low-order half of the value is transmitted first. Each count corresponds to ten cubic feet or one cubic meter, depending on the units used by the display.

The **node address** is stored as an unsigned integer, data type *word*, at the location indicated in the table above.

Programming the node address

There is a small button on the serial communication board. When this button is pressed, the board temporarily assumes the node address 247. To program a new node address into the board, press and hold the button, and with it pressed, write the desired address, as an unsigned binary value, to the location indicated in the table above. Any address from one to 246 can be used, as long as it does not duplicate another address on the network. The display will behave abnormally during and after the programming operation, but it will resume normal operation after ten to fifteen seconds.

MeterGrapher Software

MeterGrapher software, available on the CDI website, facilitates logging data from the meters and changing node addresses.