Communication with the SIS-4X4 is defined using 2 bytes of information. Data transfer is at 9600 baud, with no parity, 8 data bits and one stop bit.

MSB	1st byte	LSB		MSB	2nd byte	LSB
N7 N6 N5 N4 N3 N2 N1 N0				N15 N14 N13 N12 N11 N10 N9 N8		
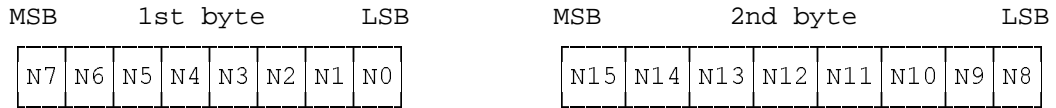
where

N7 = 0 (continue bit).
N6N5N4N3 = 1000 (transmitted by the machine (to the PC), but not necessary
          when transmitting to the machine).
N2N1N0 is the binary value of the machine being addressed (or of the machine
      sending its data) minus one, eg. N2N1N0=000 to address machine #1
      (the master); N2N1N0=101 to address machine #6.
N15 = 1 (continue bit).
N14 = 0 for all communication to and from the PC.
N13 is high if N12N11N10N9N8 is an opcode. The opcodes are defined as:
    N12N11N10N9N8 = 00001 instructs a machine to send its present status.
    N12N11N10N9N8 = 00010 success code (change in status was performed).
    N12N11N10N9N8 = 00011 non-success (change in status not was performed).
 NB:- Success/non-success codes, (according to the validity of the request),
    are returned from the machine which was instructed to change its status.
N13 is low when a change in the machine's status is made (via the front
    panel switches), or when a change in the status is requested (by
    RS-232). N13 is also low when the machine sends its present status
    (when answering to opcode 00001, and when the machine is turned on).
    When N13 is low, the value of N12N11N10N9N8 corresponds to the status
    (or the required change in status) of the machine, as described below:

	OUTPUT1	OUTPUT2	OUTPUT3	OUTPUT4	ALL
FROM INPUT 1	1	2	3	4	21
FROM INPUT 2	5	6	7	8	22
FROM INPUT 3	9	10	11	12	23
FROM INPUT 4	13	14	15	16	24
OFF	17	18	19	20	25

For example, to connect input 4 to output 2, N12N11N10N9N8 should be set up as 01110 (=14). To connect input 3 to all the outputs, N12N11N10N9N8 = 10111 (=23). To disconnect output 1, N12N11N10N9N8 = 10010 (=17). Similarly, if the front panel switches were pressed to connect input 2 to output 3, then N12N11N10N9N8 would be transmitted as 00111 (=7).

NB - Set the DIP switches at the back of the machine as per the table below before turning on the SIS-4X4:

MACHINE NUMBER	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
1 (MASTER)	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
3	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
4	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
5	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
6	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
7	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
8	OFF	ON	OFF	OFF	OFF	ON	ON	ON

Note: The VS-4x4YC may be operated using one of two protocols. To switch the VS-4x4YC to Protocol 2000 set dip-switch #5 to OFF. To switch the VS-4x4YC to this protocol (old one) set dip-switch #5 to ON. The machine may be operated via K-switch using the old protocol and via K-ontrol using Protocol 2000. In other instances it is recommended to operate using Protocol 2000.