

## SLC4000 Addendum - Direct Digital Control Interface

The SLC4000 provides a number of interface control points that can be interfaced with a Building Automation System (BAS) via Direct Digital Control (DDC) I/O.

Item	Description of Signal	DDC Type	DDC Direction	DDC Range	Remarks
1.	<b>Thermostat command</b>	Analog	Input	2-10V, 0-10V, 4-20ma, User-defined	Several analog voltage and current inputs available. <a href="#"><u>See Reference Document #1 for additional information.</u></a>
2.	<b>Load Limiting</b>	Analog	Output	0-1.2VDC 0-5VDC *1 0-10VDC *1 4-20ma *2	*1 Requires 2-resistor network (available from Selectronix) *2 Add suffix -02 for pre-programmed 4-20 ma. or field program for 20% offset Requires external 61.9 ohm resistor required. Order SLC4040-61.9 <a href="#"><u>See Reference Document #2 for additional information.</u></a>
3.	<b>'Any On' Output</b>	Digital	Input	Voltage connected to 'RLYCOM'	For isolated contact output, install an interposing relay. A SPDT relay can provide both 'Any On' and 'All Off' contacts. <a href="#"><u>See Reference Document #3 for additional information.</u></a>
4.	<b>'All Off' Output</b>	Digital	Input	Voltage connected to 'RLYCOM'	For isolated contact output, install an interposing relay. This output can also be produced by a SPDT relay installed on the 'Any On' output. <a href="#"><u>See Reference Document #3 for additional information.</u></a>
5.	<b>'Fault'</b>	Digital	Input	Voltage connected to 'RLYCOM'	For isolated contact output, install an interposing relay. This output is activated anytime the SLC4000 detects a fault condition, which may be inputs out-of-range, or an internal condition. <a href="#"><u>See Reference Document #3 for additional information.</u></a>
6.	<b>SLC4000 RS-485 bus Comm</b>	PTP	Input		Monitoring of the internal RS-485 communications of the SLC4000 bus using SLC4051 or SLC4052 adapters

## Monitoring SLCnet

The SLCnet, which is the communication link between the master and the expansion units, may be monitored to receive the following information:

1. The quantity of expansion boards in the system.
2. The quantity of relays in service on each of the boards.
3. The activation state of each of the relays.

### SLC4029 SLCnet To RS485 Terminating Adapter

- This board is connected to the Selectronix master or expansion boards by a cascading cable, SLC4020-x, where x is the length in feet of the cable with a choice of 1, 2 or 3.
- The non-isolated, RS485 wires are terminated with a 120 ohm resistor.
  - Conductor 4 is (-)
  - Conductor 5 is (+)

### SLCnet Monitoring Protocol

The SLCnet is ASCII text, serial 9600 baud, No parity, and 1 stop bit.  
Commands are issued by the master

Cmd	Description	Sender	Receiver/ Responder	Data Range	Gateway Internal Variable	Remarks
\$	Command Preamble	Master				
!	Answer Preamble	Responder				
~**	Host OK	Master	Expansion Units			
F	Fault Code	Master	Expansion Units, Gateway	0-9 (Verify range)	g_ucSLCnetFaultCode	
G	Get Gateway Request	Master	Gateway as Expander	0-9 (Verify range)		
I	Get Input Configuration	Master	Gateway as Expander			
Q	Get Quantity Relays	Master	Expanders	1-8		
S	Set Relay Image	Master	Expanders	0-255	g_ucRelayImg[]	

CR is 0x0D, ASCII carriage return

#### Command Message Format

[\$[Address]][Command] <CR>

#### Response Message Format

![Address][Response]<CR>

#### Example:

- Master queries expansion unit 1 for quantity of relays: \$01Q<CR>
  - Expansion unit 1 responds: !01Q8<CR>

**Reference Documents available at [www.selectronix.us](http://www.selectronix.us) or by using the hyperlink:**

1. [SLC4000InstallationAndOperatingManual.pdf](#)
2. [SLC4000Addendum\\_LoadLimitCfgs.pdf](#)
3. [SLC4000Addendum\\_AltFuncRlys.pdf](#)

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