Understand ControlLogix Controller Interface Structures

The 1756-DNB scanner module supports several sizes of input, output, and status structures over the ControlLogix backplane. These I/O structures were created to reduce the complexity of connecting DeviceNet I/O and status data with ladder programs.

The module creates all three structures whether DeviceNet devices are configured or online.

RSLogix 5000 software directs the controller to connect to these predefined default I/O structures. The controller automatically performs periodic updates of the structures on a cyclic basis.

RSNetWorx for DeviceNet software configures scanlist map segments that are used to copy specific portions of I/O data between the I/O structures and DeviceNet network packets.

IMPORTANT Only one Logix controller at a time can send outputs to the 1756-DNB scanner module.

Output Structure

The controller controls output I/O by writing output data to an output structure in the 1756-DNB scanner module. The scanner module then delivers a copy of these output values to modules on DeviceNet. The output structure consists of a 32-bit command register and a variable size 32-bit array of up to 123 words for output data.

Output Structure Element	Description	Data Type
module command register	This 32-bit register consists of several bits that affect the module's behavior on the network.	1 x 32-bit register
output_data		123 x 32-bit data array

Module Command Register Bit Definitions

The bits of the Module Command Register are defined as follows.

Bit	Name	Description
0	Run	1 = run mode 0 = idle mode
1	Fault	1 = fault network
2	DisableNetwork	1 = disable network
3	HaltScanner	1 = halt module (the 1756-DNB scanner module ceases all operation.)
4	Reset	1 = reset module (put back to 0 to resume operation.)
5...31	Reserved	Unused

IMPORTANT If the module is halted because the HaltScanner bit is set, power must be physically recycled to restart the module.