

## Introduction

Supported *ADVANCED* Motion Controls drives allow the I/O to be expanded and allow for up to 32 digital inputs, 32 digital outputs, 4 analog inputs and 2 analog outputs. *ADVANCED* Motion Controls provides a development card to access this I/O.

**Note: Some of the drive's existing programmable digital I/O will be consumed in order to provide communication with the expanded I/O. At most, the I/O expansion will require 1 programmable digital input and 5 programmable digital outputs. At minimum, 1 programmable digital input and 3 programmable digital outputs will be required.**

## Network I/O Hardware Activation

The network I/O must first be activated in the drive before it can be used. When a particular I/O function is activated, the drive dedicates resources to using the selected I/O. This configuration area can be found under *Inputs/Outputs > Extended I/O* in the System Browser. Select the appropriate number of banks for each I/O type. For digital I/O, each bank represents 16 individual inputs or outputs. For analog I/O, each bank represents 4 analog inputs or 2 analog outputs.

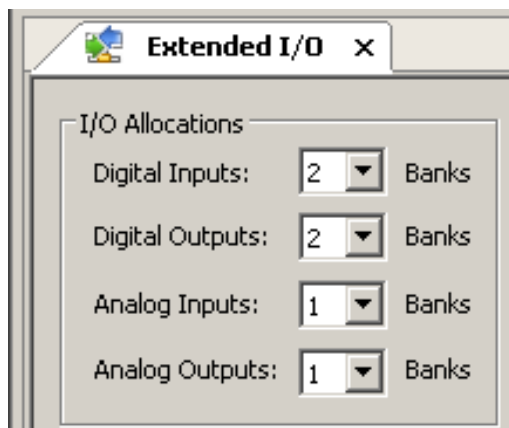


Figure 1 Extended I/O Window in DriveWare

## Network Digital Input Values

This read only command allows a host to read the digital input values from the network expansion card.

Network Digital Input Values	Index CANopen	Index RS232/485	Description	Access
Network Digital Input Values (15-0)	20A3.01h	A3.00h	Each bit represents the logic level on each of the first 16 network digital inputs. Bit 0 represents network input 0, bit 1 represents network input 1, etc.	RO
Network Digital Input Values (31-16)	20A3.02h	A3.01h	Each bit represents the logic level on each of the second group of 16 network digital inputs. Bit 0 represents network input 16, bit 1 represents network input 1, etc.	RO

## Network Analog Input Values

This read only command allows a host to read the analog input values from the network expansion card.

Network Analog Input Values	Index CANopen	Index RS232/485	Description	Access
Network ADC 1 raw value	20A4.01h	A4.00h	16-bit word representing the raw output of the network analog input value	RO
Network ADC 2 raw value	20A4.02h	A4.01h	16-bit word representing the raw output of the network analog input value	RO
Network ADC 3 raw value	20A4.03h	A4.02h	16-bit word representing the raw output of the network analog input value	RO
Network ADC 4 raw value	20A4.04h	A4.03h	16-bit word representing the raw output of the network analog input value	RO

## Network Digital Output Values

This command allows a host to set the digital output values on the network expansion card. This command is NOT stored to the drive's non-volatile memory.

Network Digital Output Values	Index CANopen	Index RS232/485	Description	Access
Network Digital Output Values (15-0)	20A7.01h	A7.00h	Each bit represents the logic level assigned to the first 16 network digital outputs. Bit 0 represents network output 0, bit 1 represents network output 1, etc.	R/W
Network Digital Output Values (31-16)	20A7.02h	A7.01h	Each bit represents the logic level assigned to the second 16 network digital outputs. Bit 0 represents network output 0, bit 1 represents network output 1, etc.	R/W

## Network Analog Output Values

This command allows a host to set the analog output values on the network expansion card. This command is NOT stored to the drive's non-volatile memory.

Network Analog Output Values	Index CANopen	Index RS232/485	Description	Access
Network Analog Output 1 DAC Value	20A8.01h	A8.00h	Bits 0:15 The value is in the format used by the hardware DAC on the expansion card. (most often a uint16)	R/W
Network Analog Output 2 DAC Value	20A9.02h	A8.01h	Bits 0:15 The value is in the format used by the hardware DAC on the expansion card. (most often a uint16)	R/W

## Network I/O Source

By default, network inputs are configured to be read over the network, with no associated mapping to drive functions. Network outputs are configured to be set or driven using network commands. If it is desirable to map drive functions to the network I/O (ex: Commanded Disable), it can be accomplished using the Network I/O source command.

Network I/O Source 20A0h	
20A0.01h	Network Digital Inputs Source
0:15	Each bit corresponds to the function mapping of the digital input 0: No Function Mapping (default) 1: Network input [0:15] mapped to the drive input [1:16] function
20A0.02h	Network Digital Outputs Source
0:15	Each bit corresponds to the function mapping of the digital output 0: Network output state controlled by network command (default) 1: Network output [0:15] mapped to the drive output [1:16] function
20A0.03h	Network Analog Inputs Source
0:3	Each bit corresponds to the function mapping of the analog input 0: No function mapping (default) 1: Network input [0:3] mapped to drive input [1:4] function
4:15	RESERVED. Write 0.
20A0.04h	Network Analog Outputs Source
0:1	Each bit corresponds to the function mapping of the analog output 0: Network output value is set by network command (default) 1: Network output value [0:1] is set by drive output [1:2] function
2:15	RESERVED. Write 0.