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ATV320 Altivar Machine & ATV630/930 Altivar Process Drives - Integration to Logix Controller over EtherNet/IP

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This document offers guidelines on how to integrate ATV320 Altivar Machine and ATV630/930 Altivar Process drives when connected to Allen-Bradley CompactLogix controller over EtherNet/IP network. It does not replace User Manuals and if further assistance is required then please call your local Schneider Electric Technical Support Centre.

Required hardware:

ATV320 Altivar Machine variable speed drive

If using the Compact format – must add 1x **VW3A3600** (option module adapter) and 1x **VW3A3616** (Modbus TCP and EtherNet/IP dual port network card)

If using the Book format - must only add 1x **VW3A3616** (Modbus TCP and EtherNet/IP dual port network card)

ATV600/900 Altivar Process variable speed drive

If using ATV630/650 – must add 1x **VW3A3720** (Modbus TCP and EtherNet/IP dual port network card)

If using ATV930/950 – your drive already got Modbus TCP and EtherNet/IP dual port network on board

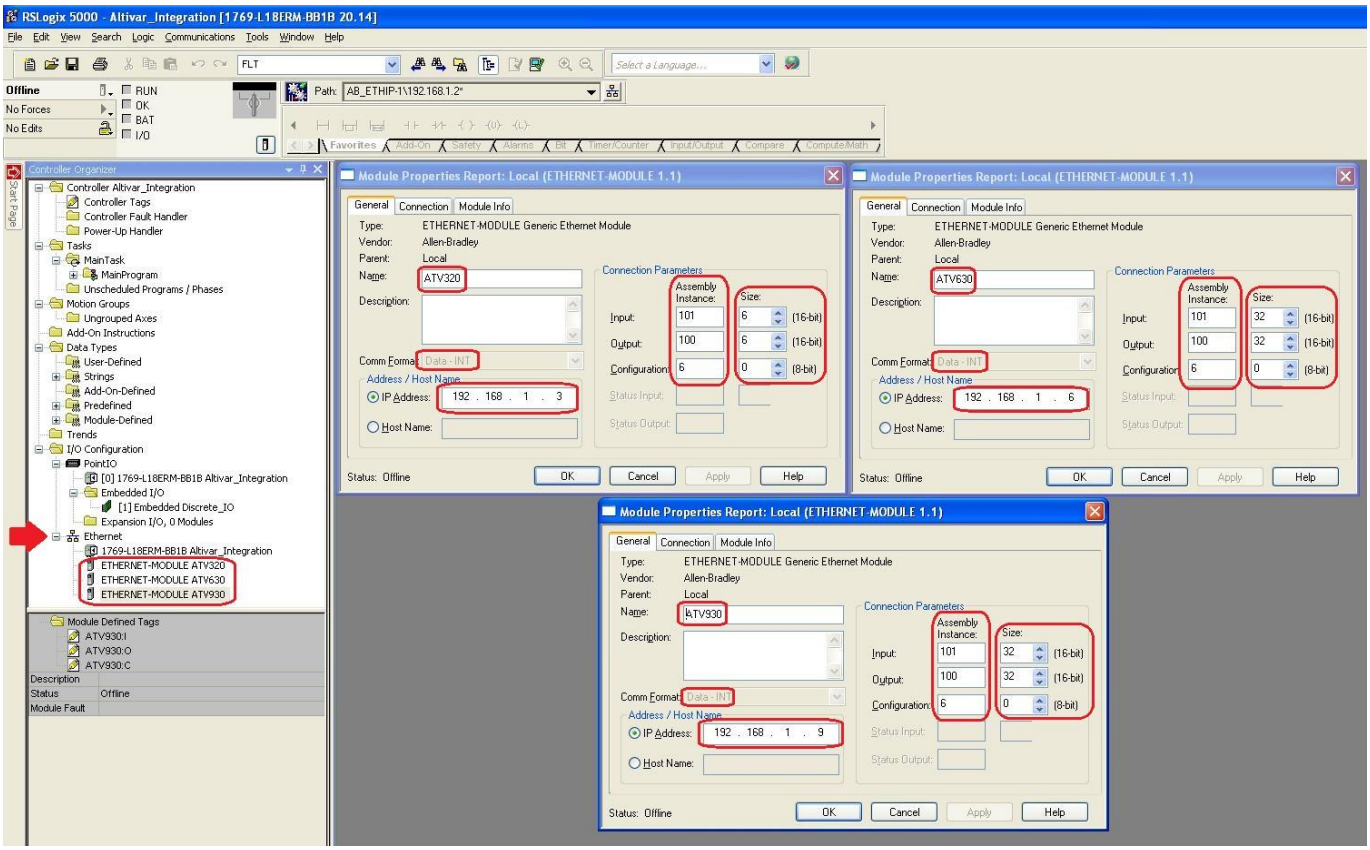
Allen-Bradley CompactLogix Setup:

Using RSLogix5000 or Studio5000 add a generic ETHERNET-MODULE corresponding to each drive that you want on the EtherNet network as showed below.

For this example, we will add three drives with their name tags representing each Altivar model so please observe the association in regard to Name and data Size.

IP Address must be unique and Assembly Instance will be the same no matter what drive model.

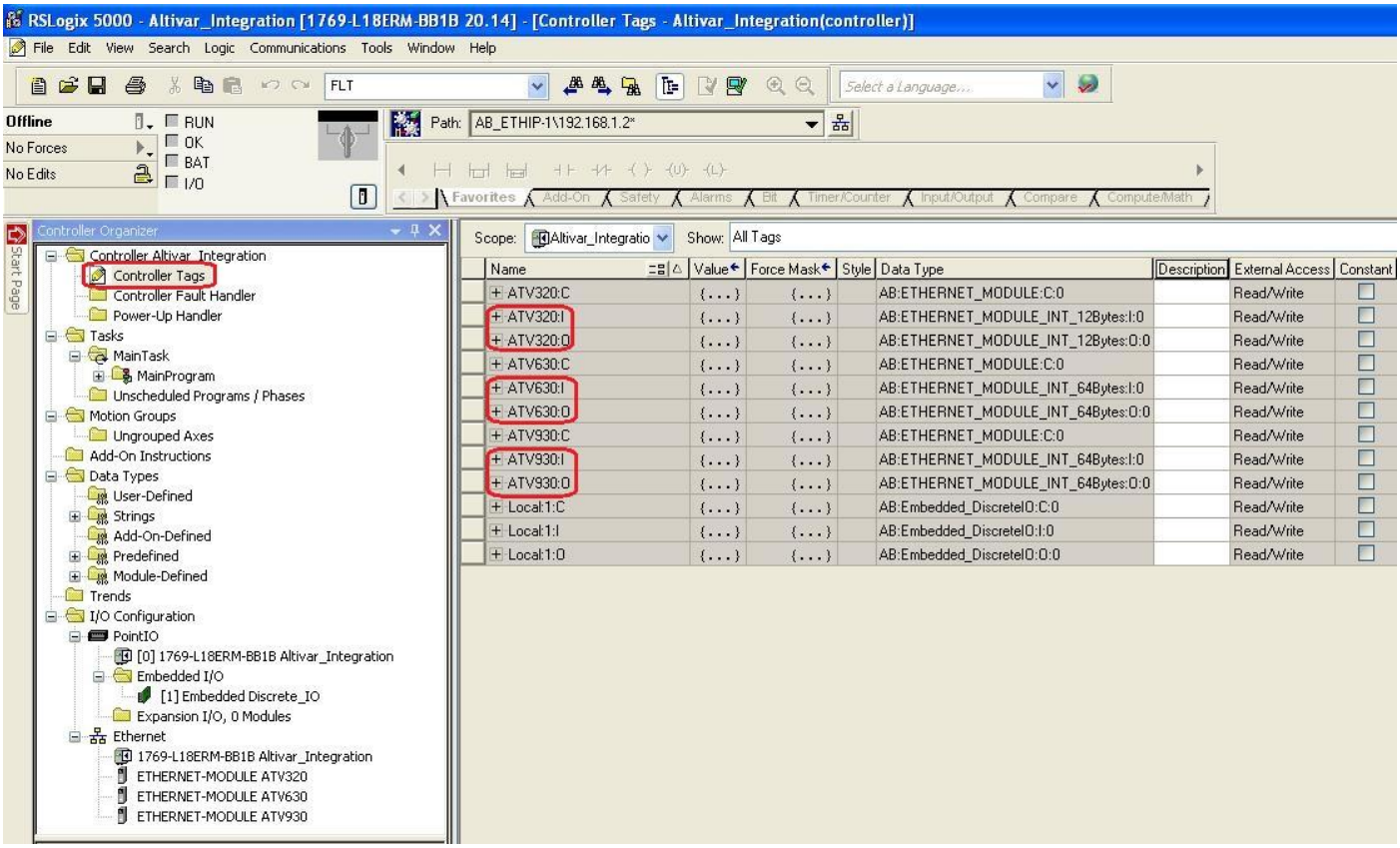
Don't forget to set Comm Format to Data-INT so we have 16-bit words.



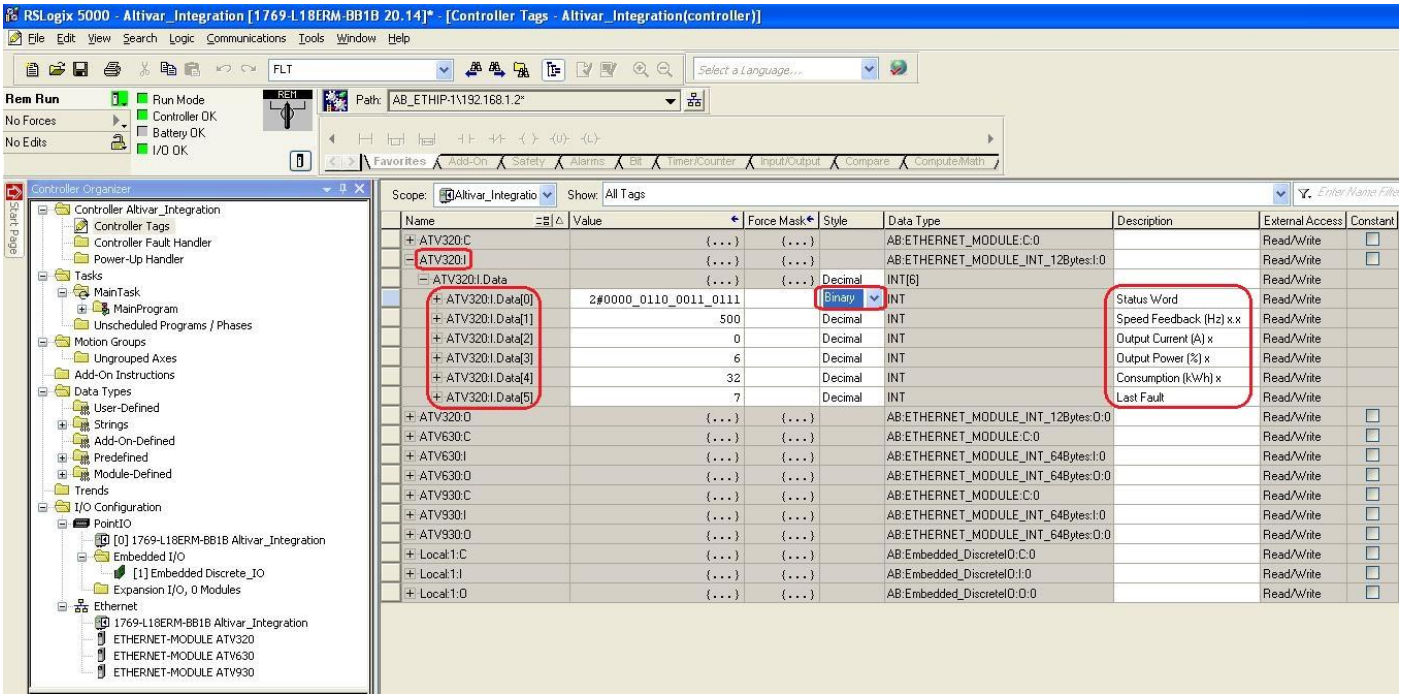
Once each drive gets added to the network we can start exploring the tags that will be used in ladder logic to trigger commands and read status.

Exploring tags and their meaning:

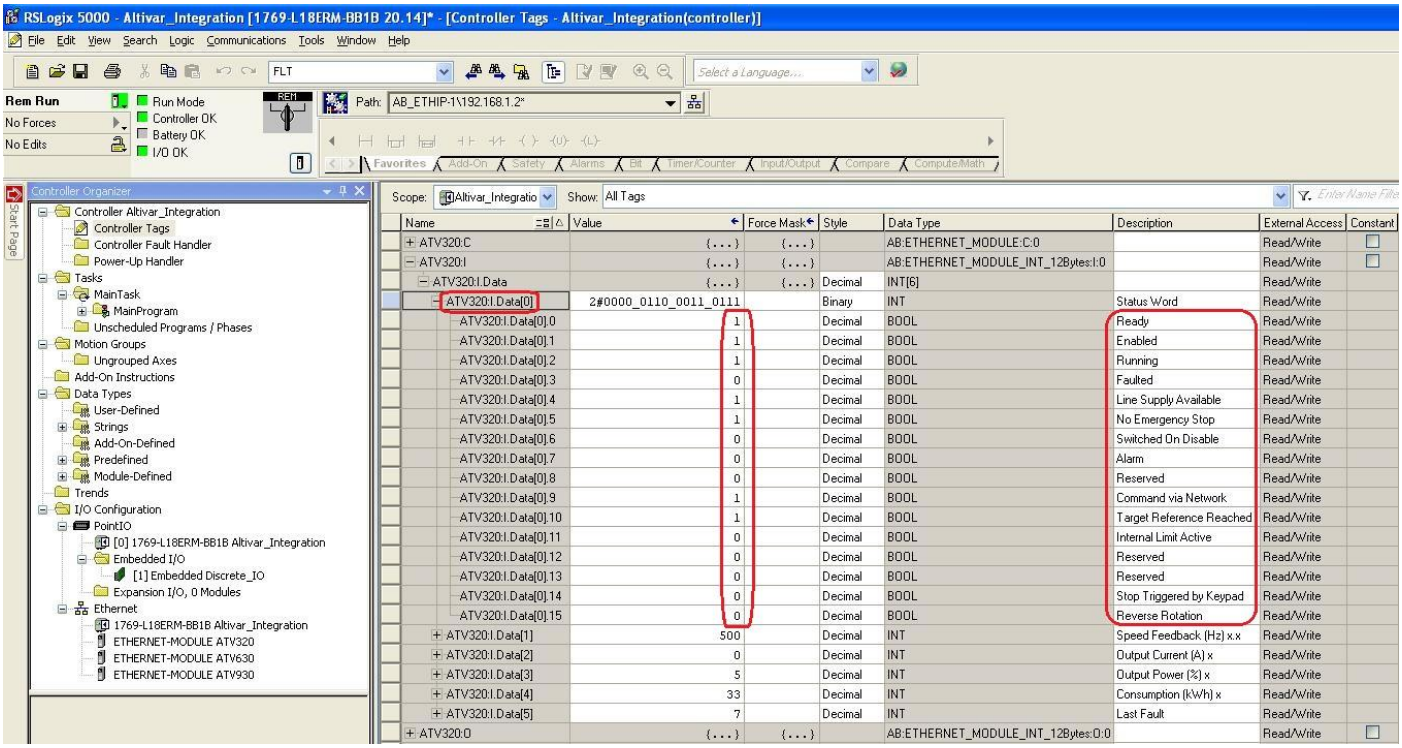
Click on Controller Tags to see all tags associated to the drives that you have added. Each drive will come with input (<name>:I) and output (<name>:O) tags as showed below.



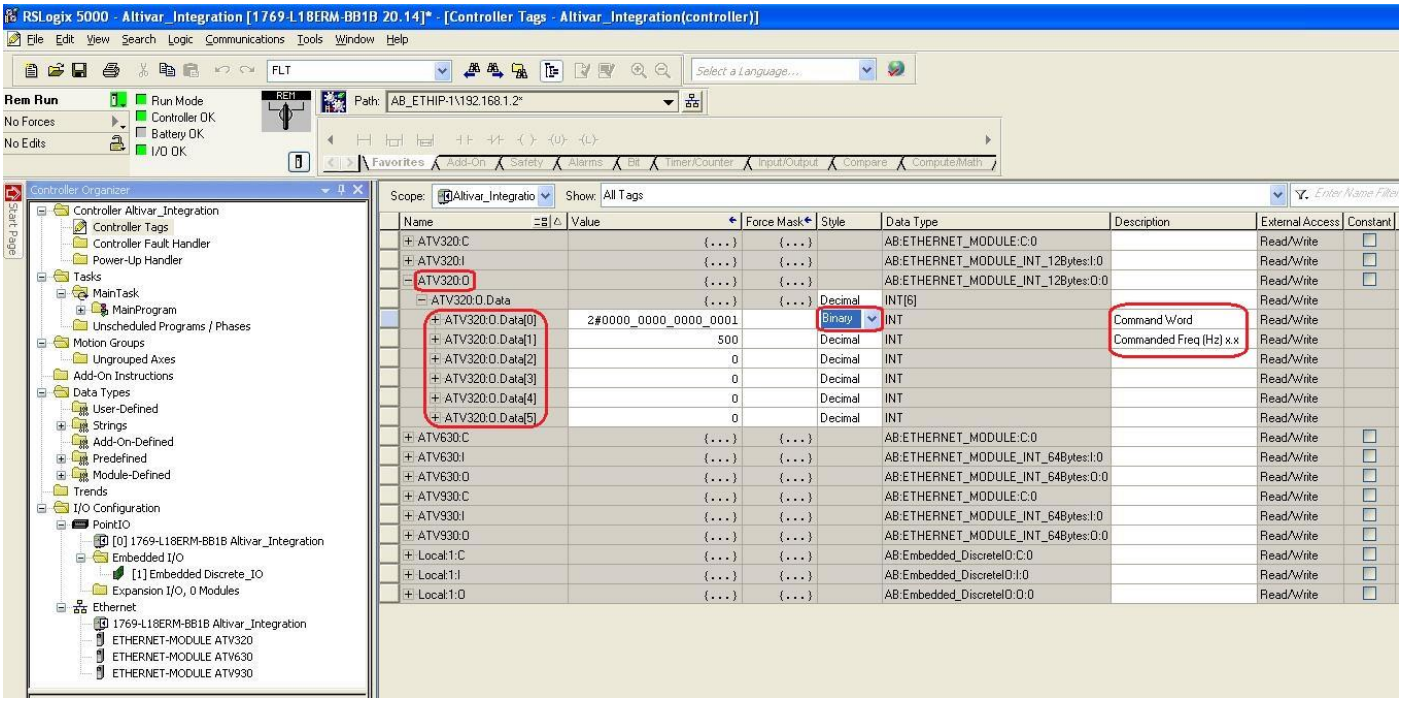
Expanding the Input tags of **ATV320** drives. First 16-bit word will provide this drive's status therefore you must look at the Binary style. Remaining words are to be kept in Decimal style and this will represent whatever drive's parameters that you want to read on the controller, in this example we have selected (on the drive) the parameters highlighted under Description.



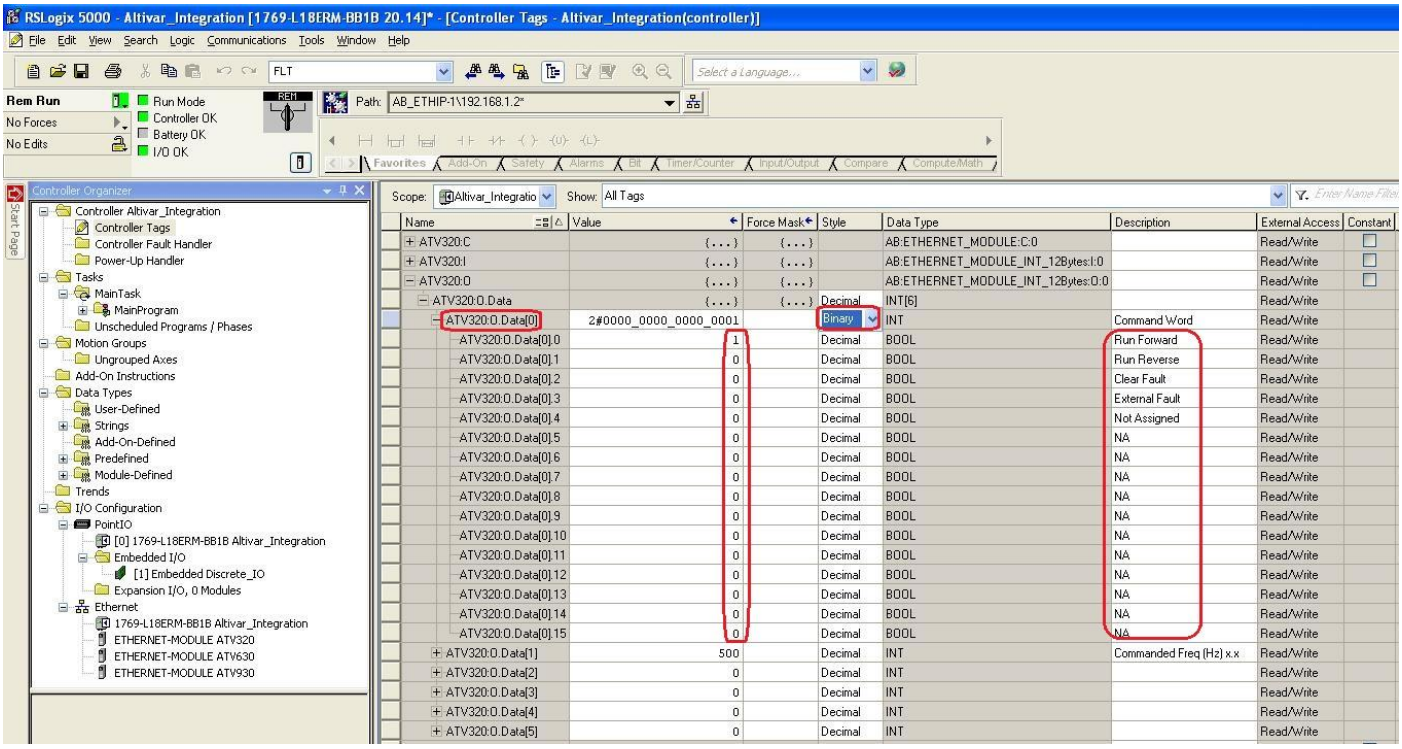
By expanding the <name>:I.Data(0) word, we can see the meaning of each bit and this tags can be used directly on the ladder logic as input status from drive.



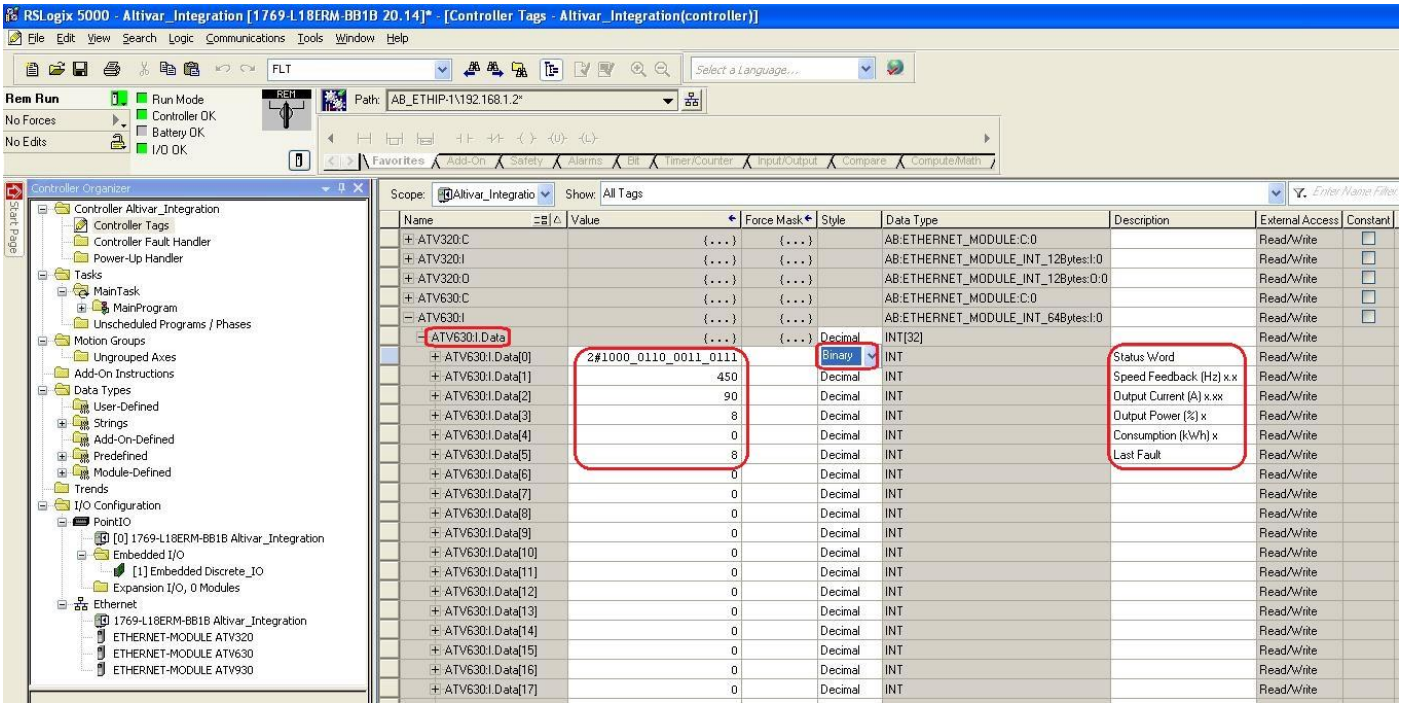
Expanding the Output tags of **ATV320** drives. First 16-bits will provide this drive's command word therefore you must look at the Binary style. Remaining words are to be kept in Decimal style and this will represent whatever parameter's values that you want to send to the drive, in this example we have selected (on the drive) the parameters highlighted under Description.



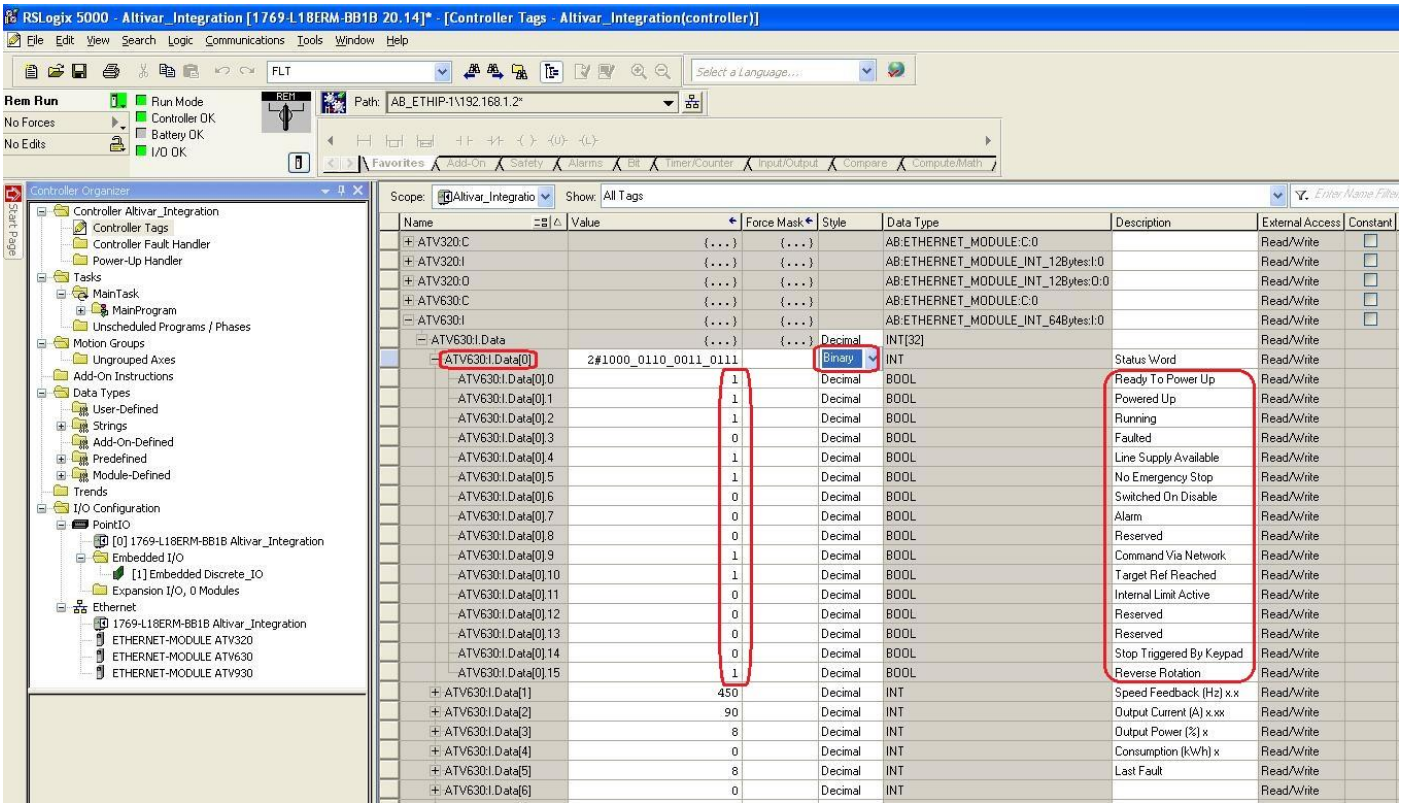
By expanding the <name>:O.Data(0) word, we can see the meaning of each bit and this tags can be used directly on the ladder logic as command to drive. The 'Run Forward' bit comes by default while remaining bits were configured on the drive to allow 'Run Reverse' and 'Clear Fault' to name a couple.



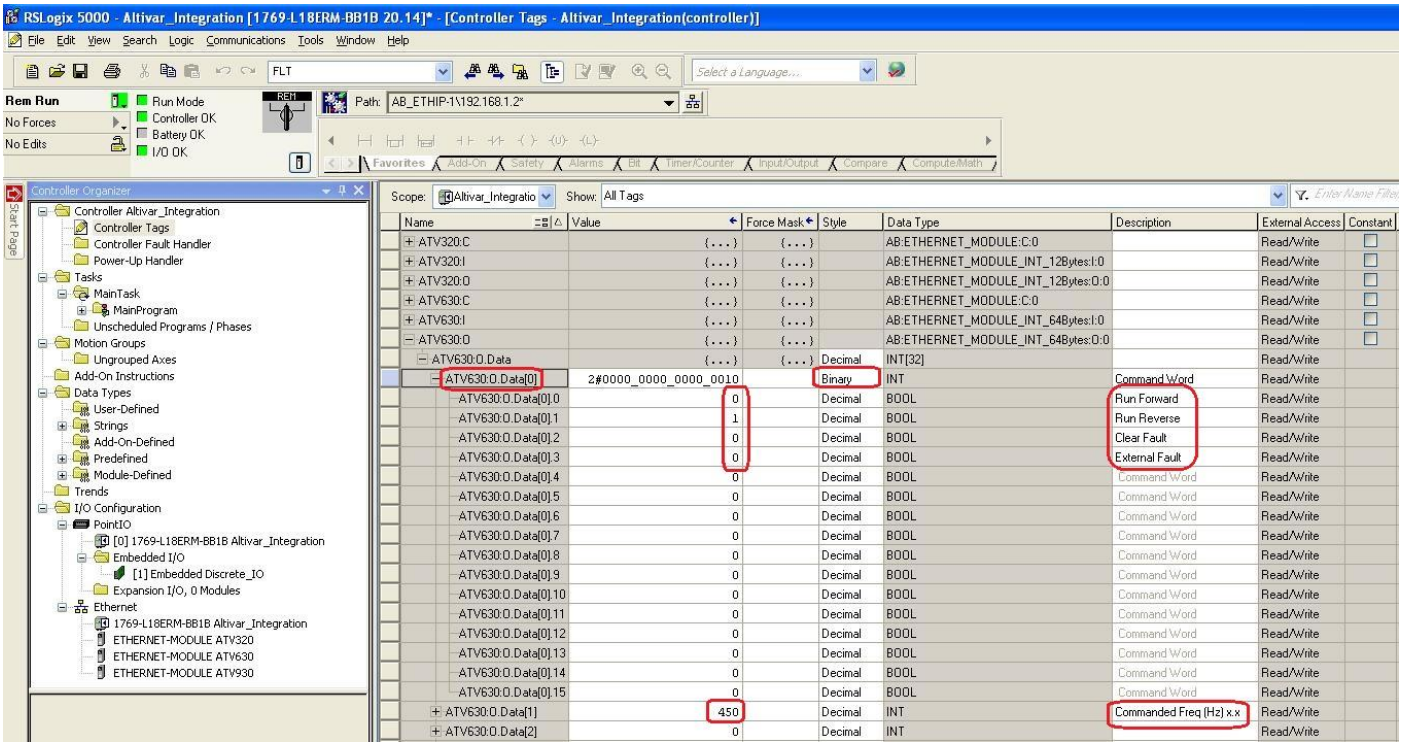
Expanding the Input tags of **ATV630** drives. First 16-bit word will provide this drive's status therefore you must look at the Binary style. Remaining words are to be kept in Decimal style and this will represent whatever drive's parameters that you want to read on the controller, in this example we have selected (on the drive) the parameters highlighted under Description.



By expanding the <name>:I.Data(0) word, we can see the meaning of each bit and this tags can be used directly on the ladder logic as input status from drive.

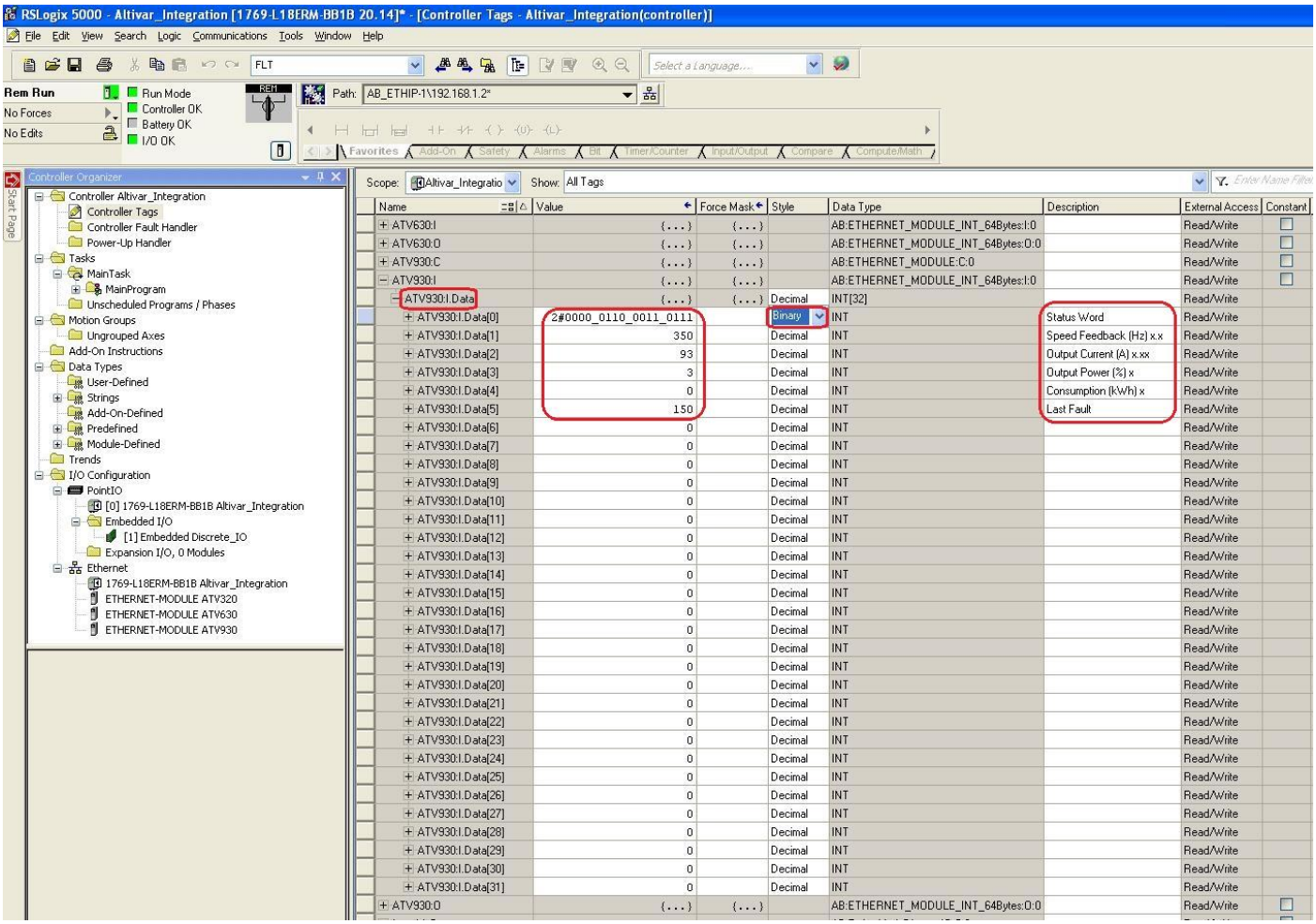


Expanding the Output tags of **ATV630** drives. First 16-bits will provide this drive's command word therefore you must look at the Binary style. Remaining words are to be kept in Decimal style and this will represent whatever parameter's values that you want to send to the drive, in this example we have selected (on the drive) the parameters highlighted under Description.

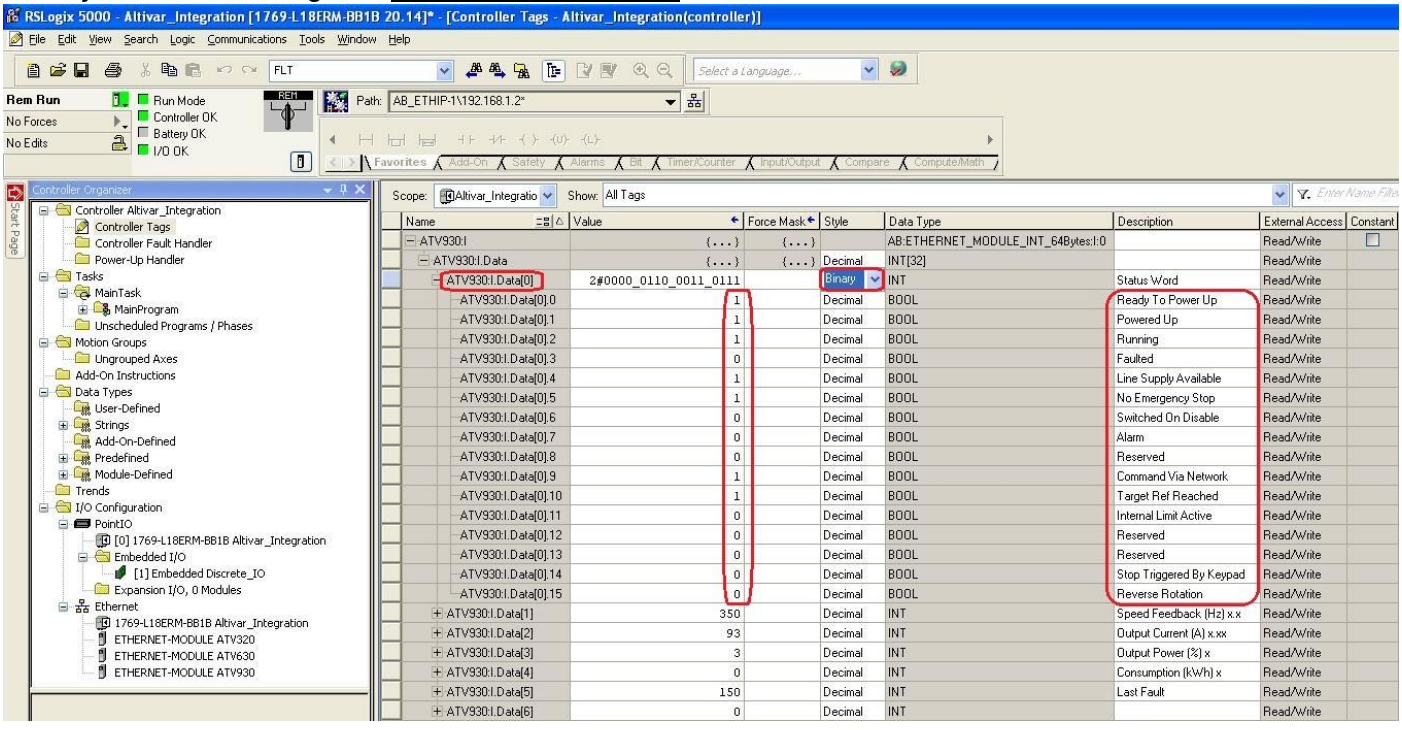


By expanding the <name>:O.Data(0) word, we can see the meaning of each bit and this tags can be used directly on the ladder logic as command to drive. The 'Run Forward' bit comes by default while remaining bits were configured on the drive to allow 'Run Reverse' and 'Clear Fault' to name a couple.

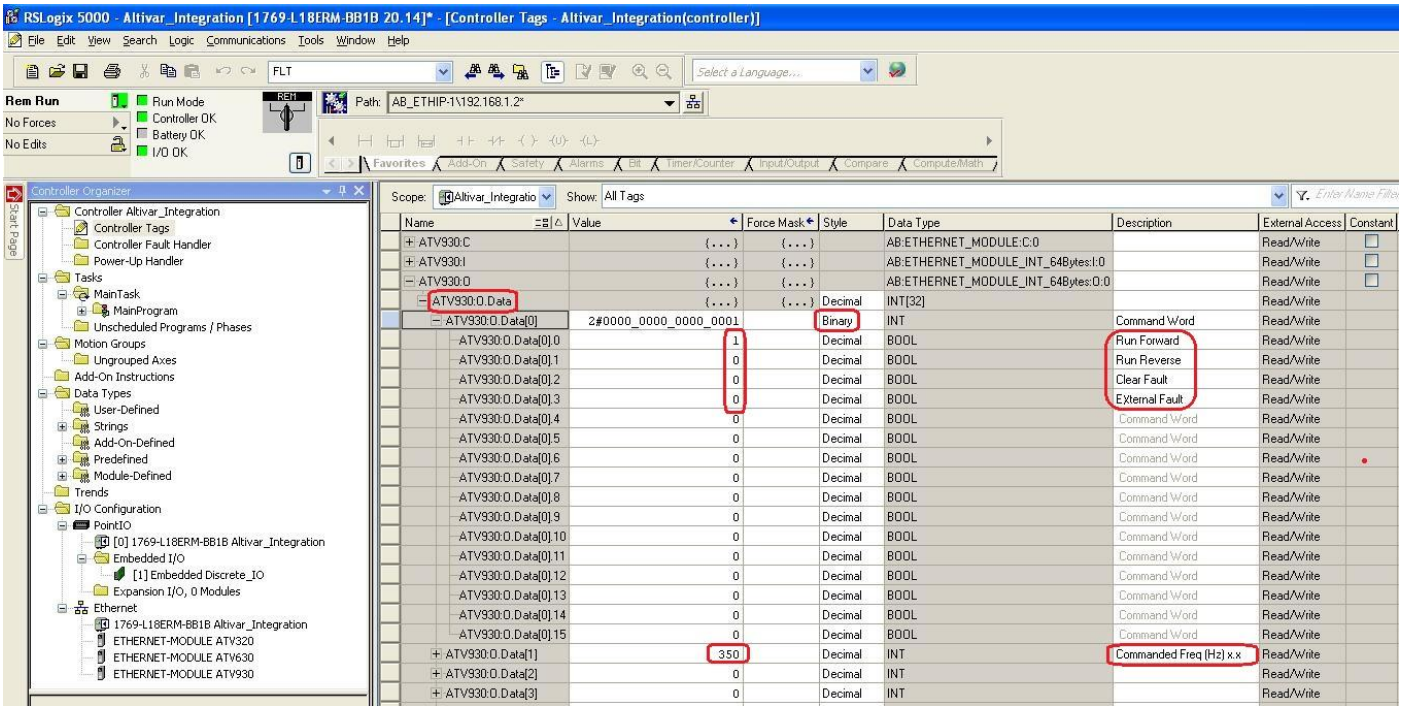
Expanding the Input tags of **ATV930** drives. First 16-bit word will provide this drive's status therefore you must look at the Binary style. Remaining words are to be kept in Decimal style and this will represent whatever drive's parameters that you want to read on the controller, in this example we have selected (on the drive) the parameters highlighted under Description.



By expanding the <name>:I.Data(0) word, we can see the meaning of each bit and this tags can be used directly on the ladder logic as input status from drive.



Expanding the Output tags of **ATV930** drives. First 16-bits will provide this drive's command word therefore you must look at the Binary style. Remaining words are to be kept in Decimal style and this will represent whatever parameter's values that you want to send to the drive, in this example we have selected (on the drive) the parameters highlighted under Description.

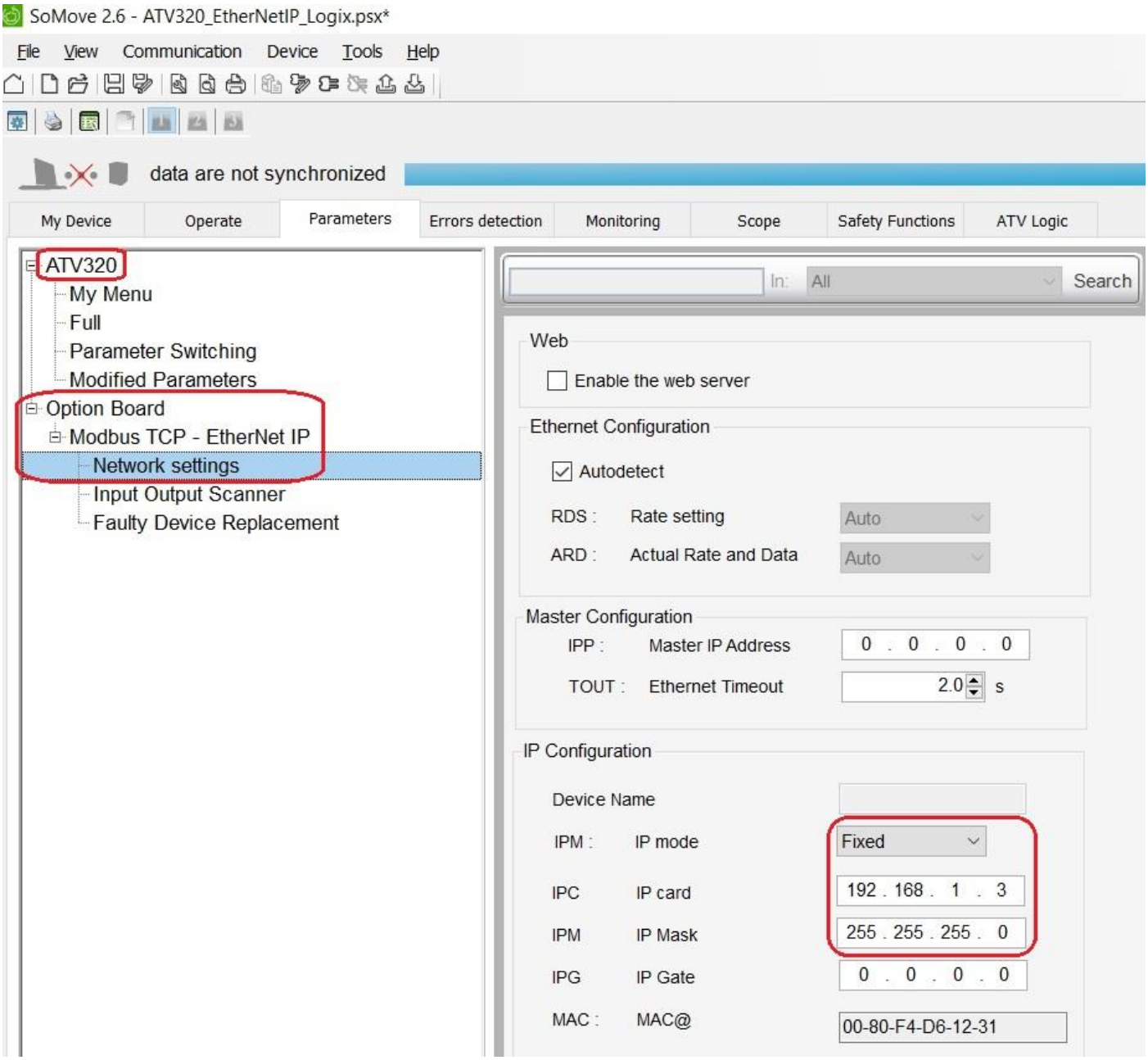


By expanding the <name>:O.Data(0) word, we can see the meaning of each bit and this tags can be used directly on the ladder logic as command to drive. The 'Run Forward' bit comes by default while remaining bits were configured on the drive to allow 'Run Reverse' and 'Clear Fault' to name a couple.

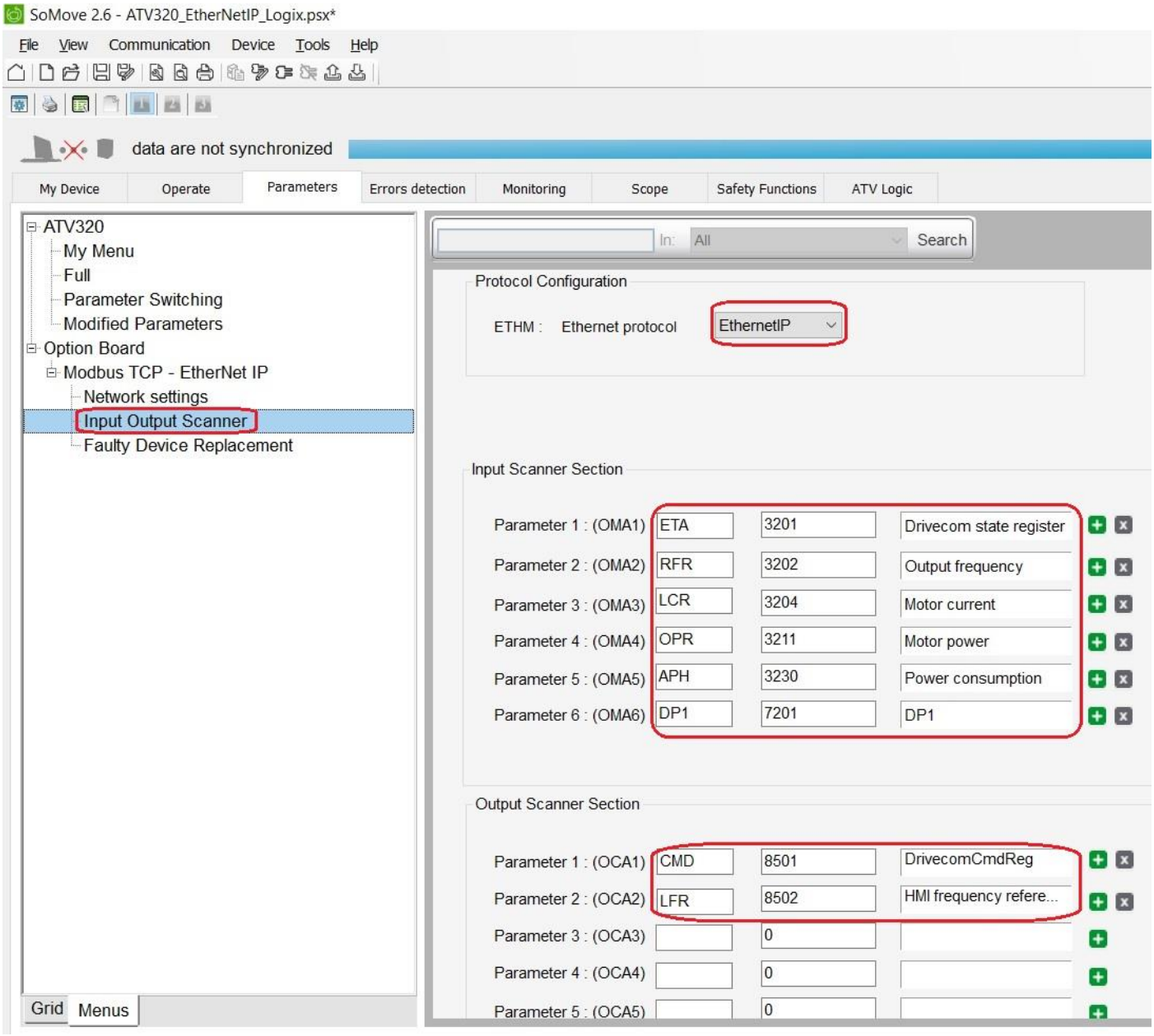
ATV320 Altivar Machine - Variable Speed Drive Setup:

Using SoMove software (download from Schneider Electric website) access parameters corresponding to each drive that you have on the EtherNet network as showed below. Although you can setup most parameters through drive's keypad, there are few parameters associated to assemblies/instances that are only configurable via SoMove software therefore you must have it installed and be online with your drives to access these settings.

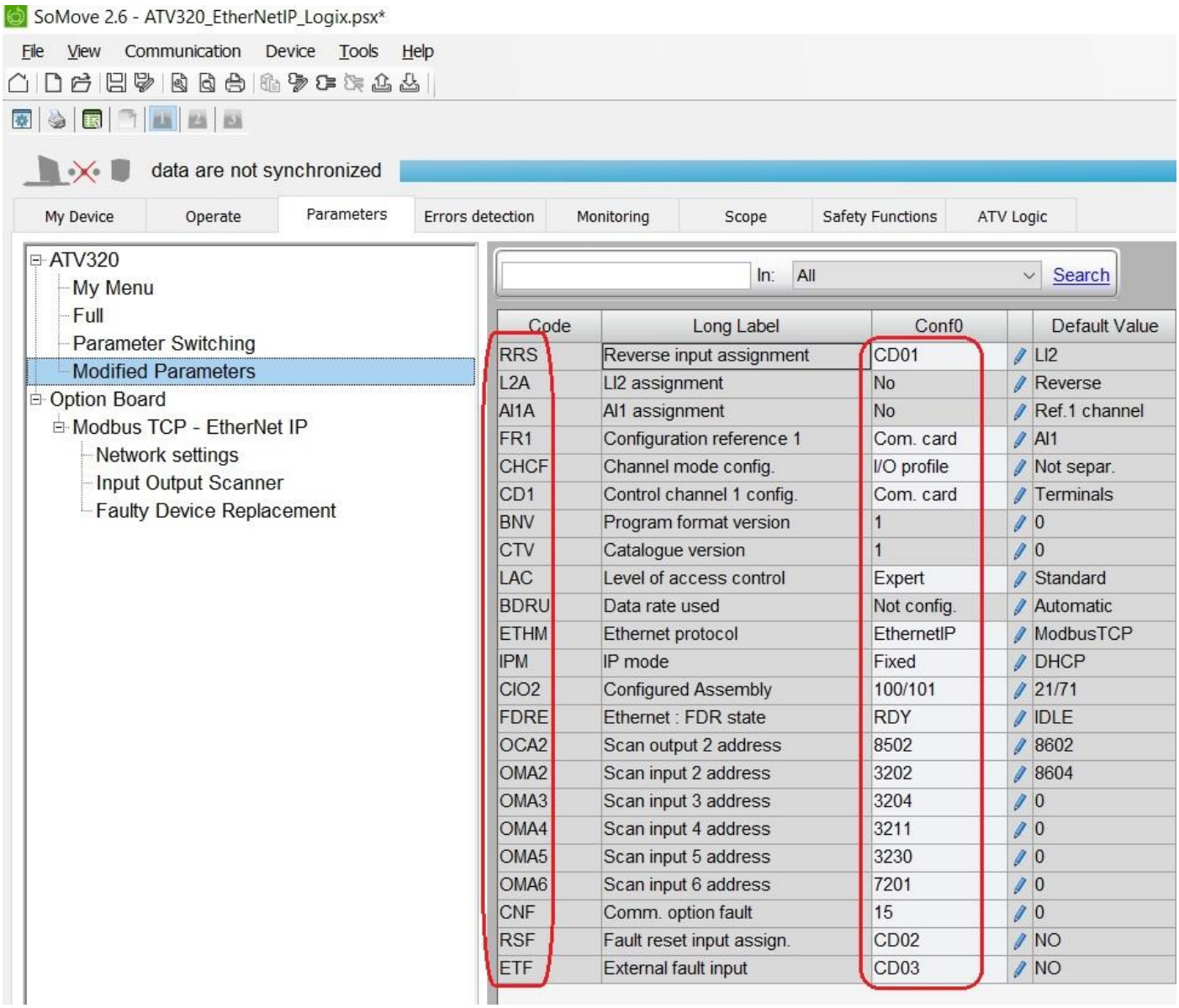
1) Ensure your drive has a fixed IP address configured in the option board.



2) Configure the Input Output Scanner as per example below. Ensure that **EthernetIP** is selected for Ethernet protocol.



3) Configure the following parameters as showed below. Special attention to CHCF (Channel mode config.) that must be configured for 'I/O profile'. After this setting are in place it's recommended to cycle power to the drive and upon reconnecting to SoMove confirm that it's all been kept.



Code	Long Label	Conf0	Default Value
RRS	Reverse input assignment	CD01	LI2
L2A	LI2 assignment	No	Reverse
AI1A	AI1 assignment	No	Ref.1 channel
FR1	Configuration reference 1	Com. card	AI1
CHCF	Channel mode config.	I/O profile	Not separ.
CD1	Control channel 1 config.	Com. card	Terminals
BNV	Program format version	1	0
CTV	Catalogue version	1	0
LAC	Level of access control	Expert	Standard
BDRU	Data rate used	Not config.	Automatic
ETHM	Ethernet protocol	EthernetIP	ModbusTCP
IPM	IP mode	Fixed	DHCP
CIO2	Configured Assembly	100/101	21/71
FDRE	Ethernet : FDR state	RDY	IDLE
OCA2	Scan output 2 address	8502	8602
OMA2	Scan input 2 address	3202	8604
OMA3	Scan input 3 address	3204	0
OMA4	Scan input 4 address	3211	0
OMA5	Scan input 5 address	3230	0
OMA6	Scan input 6 address	7201	0
CNF	Comm. option fault	15	0
RSF	Fault reset input assign.	CD02	NO
ETF	External fault input	CD03	NO

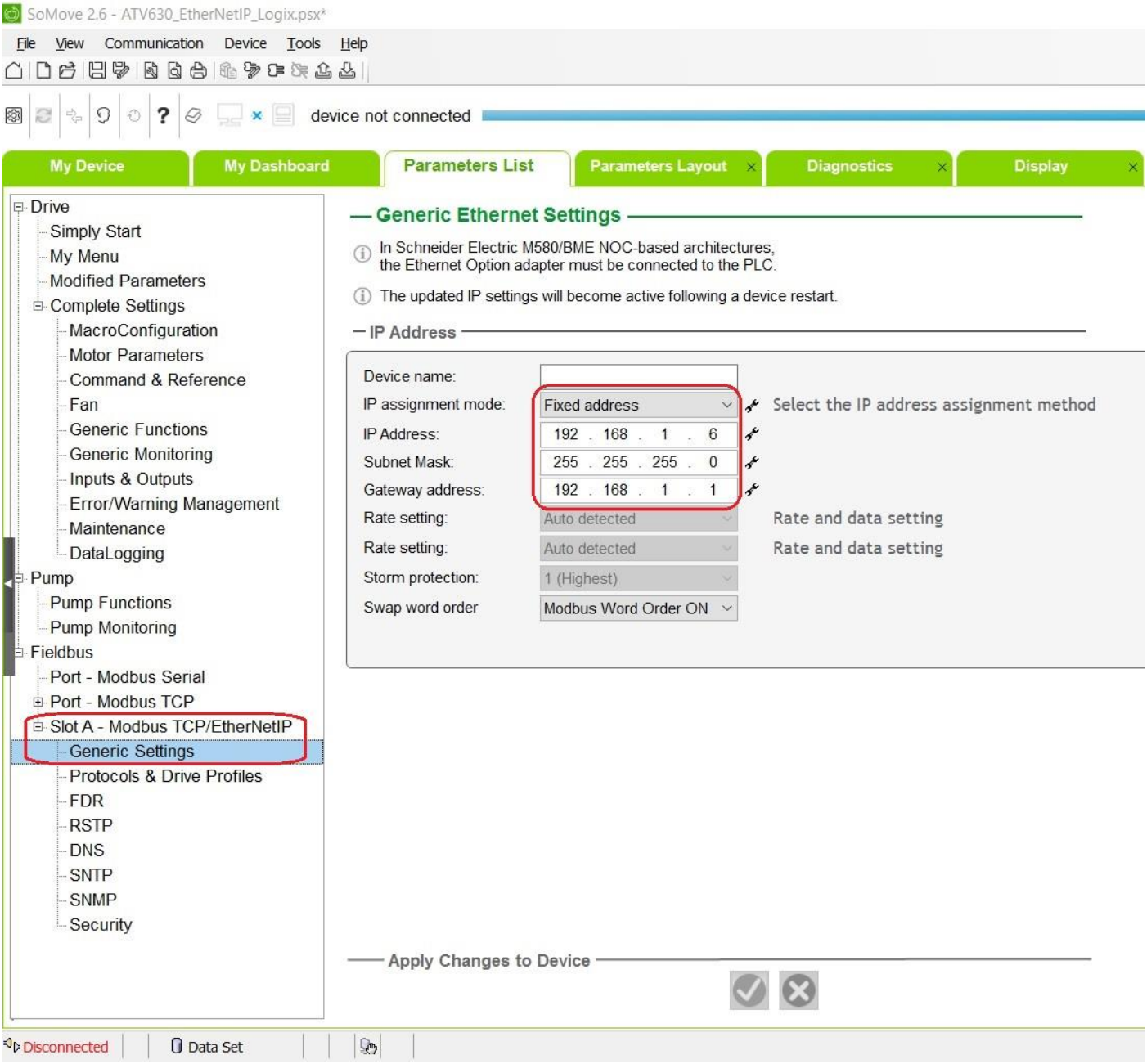
4) Your ATV320 Altivar Machine should now be online and communicating with the controller.

This concludes the purpose of this document in regards to ATV320 Machine however there is still a need to configure parameters on the ATV320 that will correspond to the application itself, like motor data, speed limits, acceleration/deceleration times to name a few. If further assistance is required then please contact your local Schneider Electric Technical Support Centre.

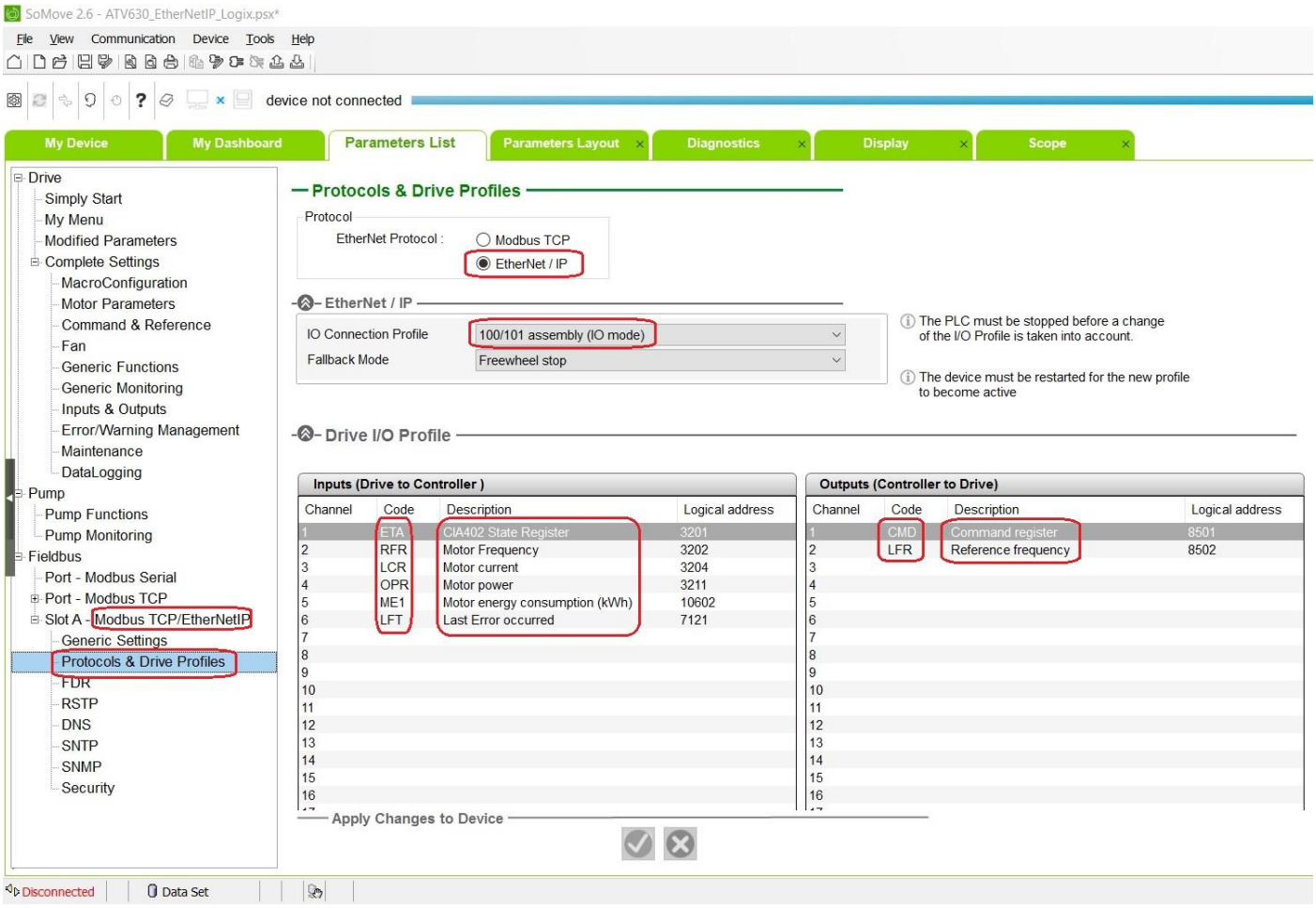
ATV630 Altivar Process - Variable Speed Drive Setup:

Using SoMove software (download from Schneider Electric website) access parameters corresponding to each drive that you have on the EtherNet network as showed below. Although you can setup most parameters through drive's keypad, there are few parameters associated to assemblies/instances that are only configurable via SoMove software therefore you must have it installed and be online with your drives to access these settings.

1) Ensure your drive has a fixed IP address configured in the option board as showed below.

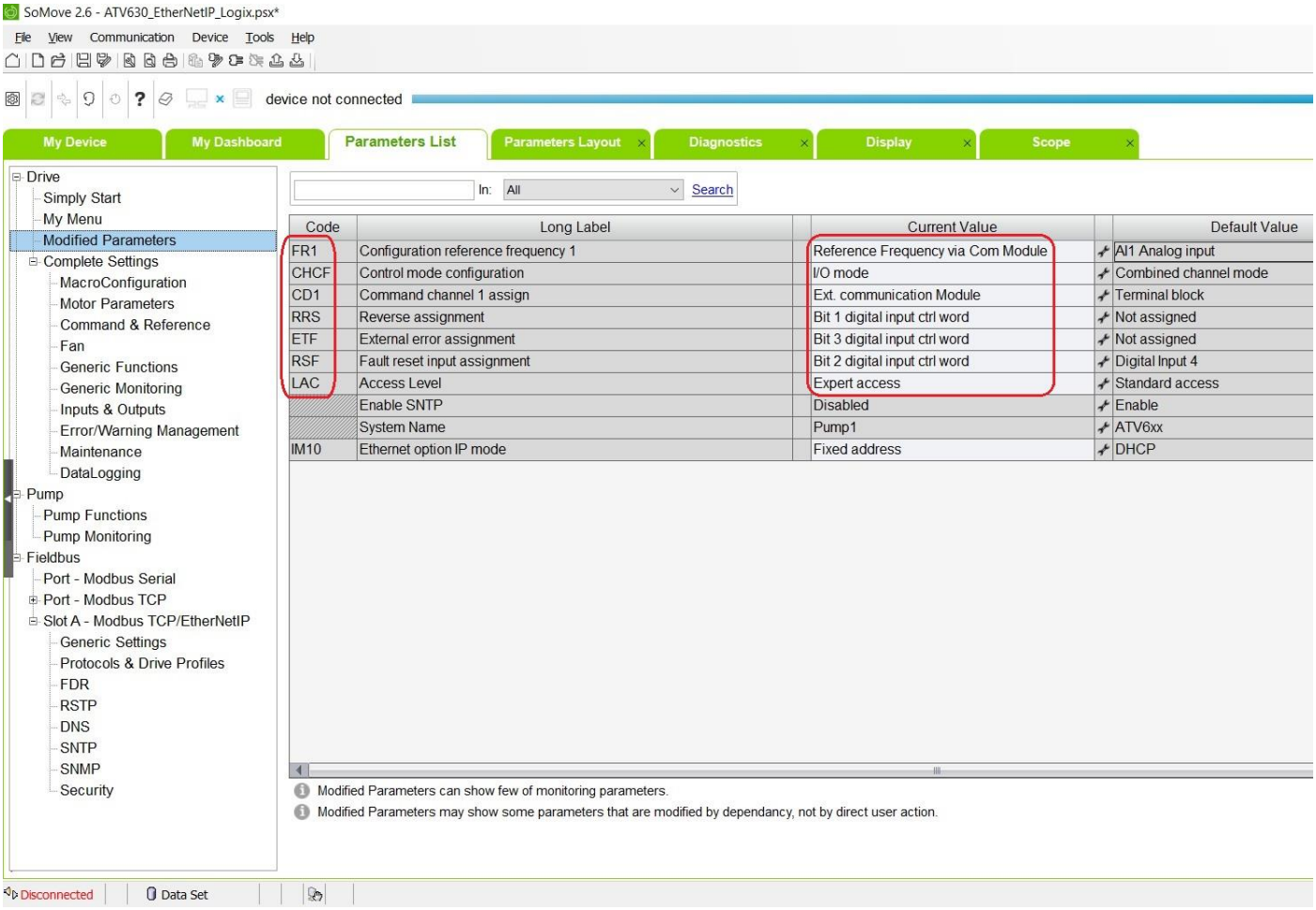


2) Configure the Inputs (Drive to Controller) and Outputs (Controller to Drive) as per example below. Ensure **Ethernet/IP** is selected for Ethernet Protocol and that **100/101 assembly (IO mode)** is selected for IO Connection Profile.



You can select any available parameter to send to the controller, this example refers to some of the most common ones.

3) Configure the following parameters as showed below. Special attention to CHCF (Channel mode configuration) that must be configured for 'I/O mode'. After this setting are in place it's recommended to cycle power to the drive and upon reconnecting to SoMove confirm that it's all been kept.



Please note that only Bit 0 has a fixed configuration (Run Forward) while remaining bits in the command word are user configurable. This example has selected some of the most common actions like Run Reverse (assign to Bit 1) and Fault Reset (assign to Bit 2) to name a couple.

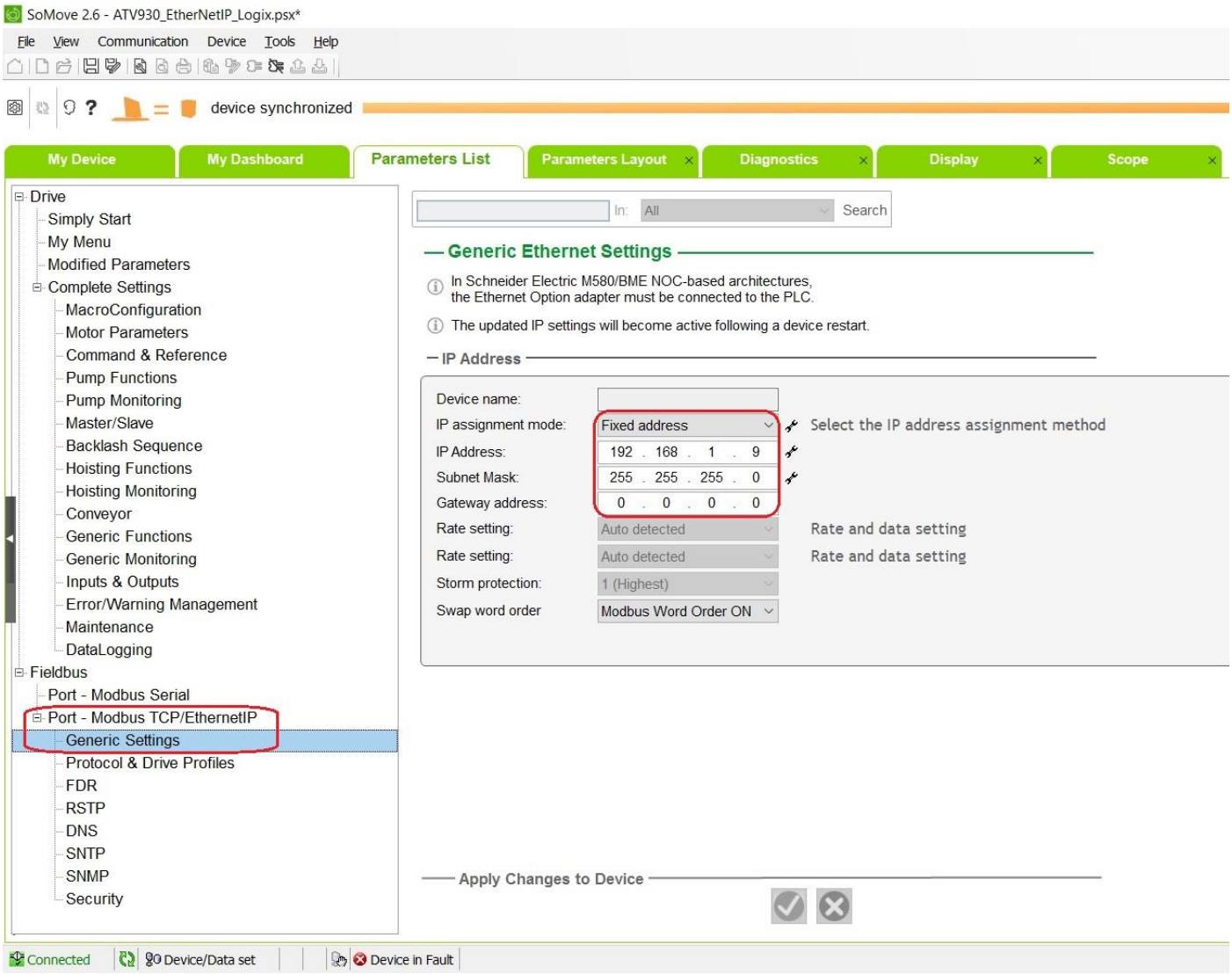
4) Your ATV630 Altivar Process should now be online and communicating with the controller.

This concludes the purpose of this document in regards to ATV630 Altivar Process however there is still a need to configure parameters on the ATV630 that will correspond to the application itself, like motor data, speed limits, acceleration/deceleration times to name a few. If further assistance is required then please contact your local Schneider Electric Technical Support Centre.

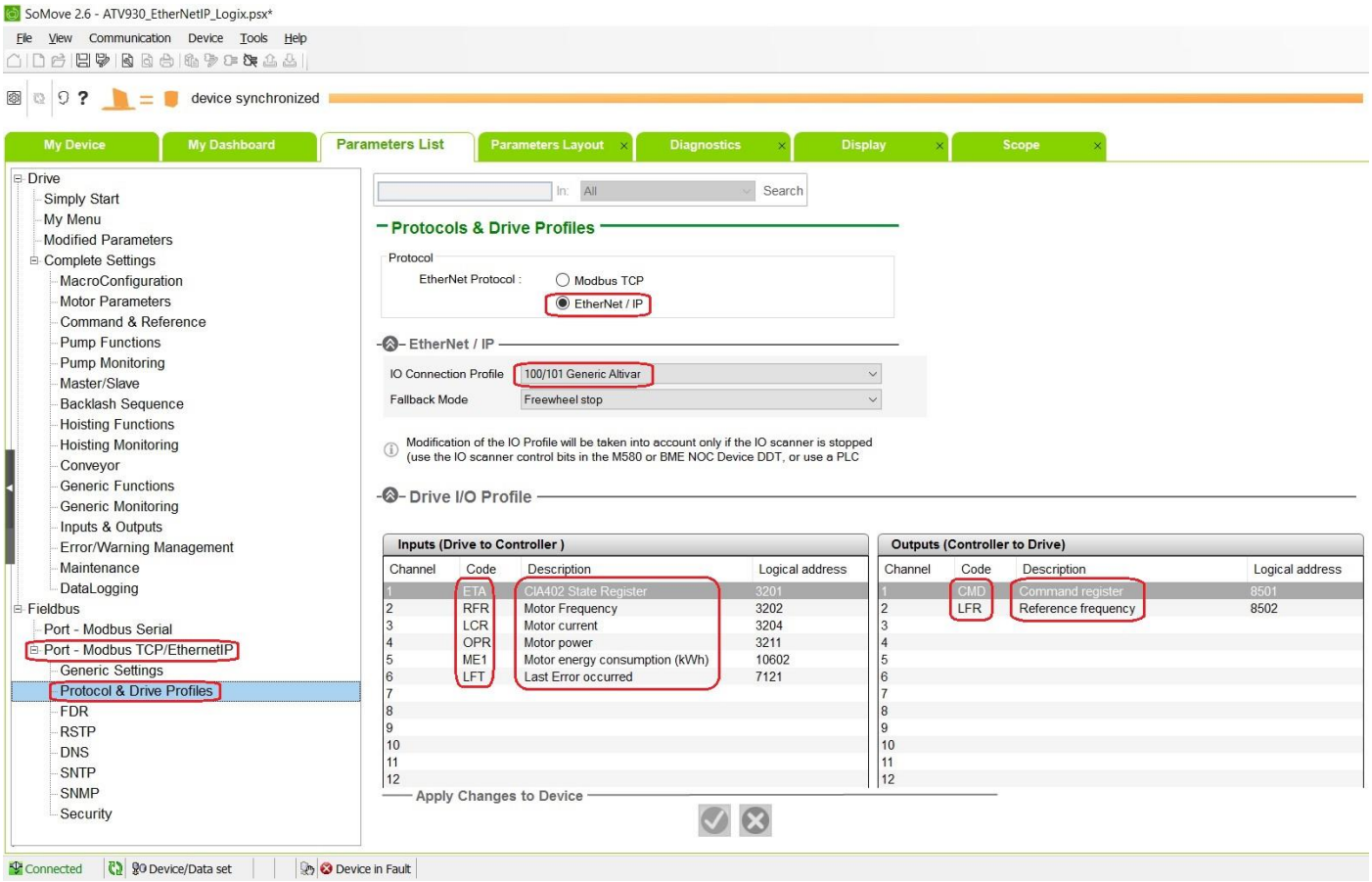
ATV930 Altivar Process - Variable Speed Drive Setup:

Using SoMove software (download from Schneider Electric website) access parameters corresponding to each drive that you have on the EtherNet network as showed below. Although you can setup most parameters through drive's keypad, there are few parameters associated to assemblies/instances that are only configurable via SoMove software therefore you must have it installed and be online with your drives to access these settings.

1) Ensure your drive has a fixed IP address configured in the option board as showed below.

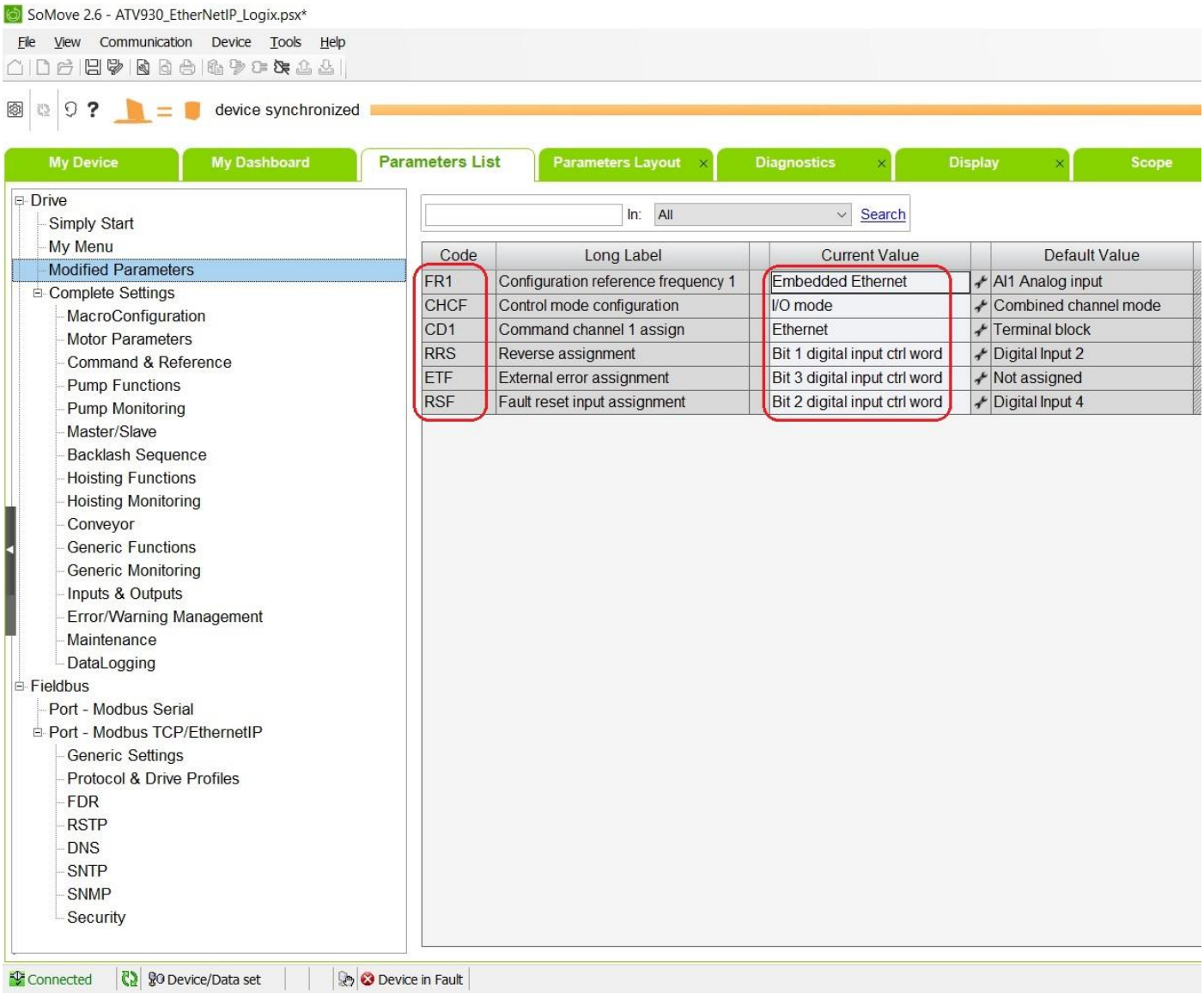


2) Configure the Inputs (Drive to Controller) and Outputs (Controller to Drive) as per example below. Ensure **Ethernet/IP** is selected for Ethernet Protocol and that **100/101 Generic Altivar** is selected for IO Connection Profile.



You can select any available parameter to send to the controller, this example refers to some of the most common ones.

3) Configure the following parameters as showed below. Special attention to CHCF (Channel mode configuration) that must be configured for 'I/O mode'. After this setting are in place it's recommended to cycle power to the drive and upon reconnecting to SoMove confirm that it's all been kept.



Please note that only Bit 0 has a fixed configuration (Run Forward) while remaining bits in the command word are user configurable. This example has selected some of the most common actions like Run Reverse (assign to Bit 1) and Fault Reset (assign to Bit 2) to name a couple.

4) Your ATV930 Altivar Process should now be online and communicating with the controller.

This concludes the purpose of this document in regards to ATV930 Process however there is still a need to configure parameters on the ATV930 that will correspond to the application itself, like motor data, speed limits, acceleration/deceleration times to name a few. If further assistance is required then please contact your local Schneider Electric Technical Support Centre.