Subject: Application Note	Product: Tag Gen	Doc#: AN.AFD.16
Title: Using the Yaskawa Tag Generation utility with RSLogix™ 5000		

Application Note

Adding Drive I/O Tags to RSLogix™ 5000 with Yaskawa's Tag Generation Utility

Applicable Products:

CM012, CM013, CM053, CM056, CM057, CM058, CM059, CM092, CM093, SI-N3, SI-N3/V, SI-EN3, SI-EN3/V

DeviceNet and EtherNet/IP Communications Option Kits

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INTRODUCTION

Meaningful names (tags) for PLC inputs and outputs are essential to understanding, programing and maintaining PLC programs. Previously the names had to be entered manually. This took a lot of time and was prone to naming errors. The following document describes the use of Yaskawa's Tag Generation utility to add meaningful names (tags) to Yaskawa's drive I/O in Allen-Bradley's RSLogix™ 5000 software.

INTENDED AUDIENCE

This document assumes that the reader is familiar with Yaskawa AC drives, DeviceNet and EtherNet/IP technical terminology and operation, and with RSLogix™ 5000 programming.

REFERENCES

Other Yaskawa application notes that pertain to interfacing Yaskawa drives to Rockwell PLCs.

- AN.V1000.01 Using the Yaskawa V1000 AC Drive and SI-N3/V DeviceNet Option Kit with an A-B CompactLogix Programmable Controller
- AN.AFD.10 Commissioning the Yaskawa AC Drive "EtherNet/IP" Option with the Rockwell BOOTP/DHCP Server
- AN.AFD.22 Using Yaskawa's EtherNet/IP Options with ControlLogix and
- CompactLogix Controllers

The tags for RSLogix can be generated at any time before or after the drives have been added to the system. The only requirements are:

- Node Names must be unique. If tags are generated for nodes of the same name, the last tags imported will overwrite the previous tags.
- The drives must be entered into RSLogix™ 5000 with the appropriate names prior to importing the tag file.

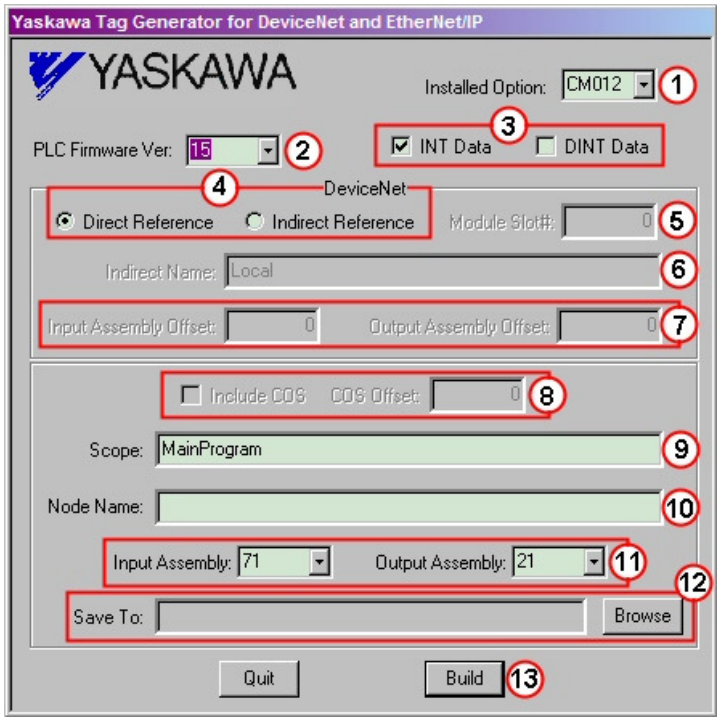
A sample procedure:

- Define the DeviceNet or EtherNet/IP network. Define how the network is to be laid out and the name and address of each device on the network.
- Add and define the system network devices as new modules to the PLC program or the scanner module, making sure to follow the device names generated in the step above.
- Create the tag file for the Yaskawa drives using the tag generation utility. The tags can be generated as separate files for each drive, drive sections or all of the drives in the entire system.
- After all the system devices have been added to the PLC program and the scanner downloaded to the PLC program, import the tag file.

Caution:

If a tag file already exists and is chosen as the file to hold additional tags, the generated tags will be appended to the file. The decision on whether to create a new file or append to an existing one is based on the header information at the beginning of the file. If the information is incorrect, the file may be overwritten and the existing data could possibly be corrupted.

TAG GEN – MAIN FUNCTIONS



Tag Gen Main Screen

1. **Installed Option:** The communications option installed on the drive for which the tags are to be generated. Available options include CM012, CM013, CM053, CM056, CM057, CM058, CM059, CM092, CM093, SI-N3, SI-N3/V, SI-EN3 and SI-EN3/V.
   a. Selecting a communications option will automatically:
      i. Enable Reference (Direct Reference / Indirect Reference) selections and their subordinate selections.
      ii. Enable COS selection for appropriate option selections.
      iii. Alters the Input (11) and Output (11) Assembly selections to be compatible with the option selected.
2. **PLC Firmware Ver:** The format of the tag file varies according to the PLC's software version. Select the version that matches the PLC program. PLC program versions greater than 17 should use version 17+.
3. **Data Type (INT Data/DINT Data):** Select the data type of the PLC data associated with the drive. It is recommended that INT data be used where possible. INT data matches the format of the drive data type.
4. **Referenced (Direct Reference/Indirect Reference):** Reference refers to how a device on the network is addressed. A **Direct Reference** device is a device that is added directly to the PLC's I/O. It is added as a "New Module", has a unique name and address and is accessed directly by the PLC program. An **Indirect Reference** device is a device that is added to the PLC's I/O as part of a network module. It is not accessed directly but through an I/O map supplied by the associated module. A device connected to the PLC via a DeviceNet scanner that has the device as part of a "Scan List" would be an **Indirect Referenced** device.

Note: EtherNet/IP devices are typically **Direct Referenced** while DeviceNet devices are typically **Indirect Referenced**. If a device is addressed directly (**Direct Reference**) items 5, 6 and 7 below may be skipped.

5. **Module Slot#:** The slot in the PLC rack that holds the module containing device information. This is only available to **Indirect Reference** devices.
6. **Indirect Name**: The name that is associated with the module's memory map. Typically the name defaults to "Local".
7. **Input Assembly Offset/ Output Assembly Offset**: When an **Indirect Reference** device is mapped to the scanner, its' inputs and outputs are mapped to scanner memory. Addresses typically start at 0 for the first device and increase incrementally with the addition of new devices to the network. The input and output assembly offsets represent the offsets in the scanner memory from 0. For example: if a device is mapped to address I:2:1 it has an offset of 1 (**I**nput: Slot(2):memory address **1**).
8. **COS:** Certain communications options include COS (Change of State) instances. If the option selected has the COS option, it will become enabled when that option is selected. In some cases COS will interfere with an input assembly. In that case either COS will not be allowed to be selected or the input assembly will be deleted from the list of available input assemblies.

   COS Offset: Just as the device's input and output assemblies are mapped to the scanner memory, the COS inputs are also mapped, typically (but not necessarily) adjacent to the input assembly memory. The COS Offset is the offset of the beginning of the COS memory from scanner memory 0.
9. **Scope:** Scope refers to the area for which the I/O point has influence. Program scope I/O is only available to the program for which it is defined, while Controller scope is available to all programs in the PLC. An empty scope field represents Controller or global scope. If program scope is desired, the name of the task containing the program must be entered. Typically this is "Main Program".
10. **Node Name:** A **Direct Reference** device **Node Name** is the name given to the device as it was entered into RSLogix™ 5000 as a new module. An **Indirect Reference** device can have any **Node Name**. All names should have some reference to the function of the device and must be unique.
11. **Input Assembly:** The **Input Assembly** is the polled I/O assembly that contains data that is read by the PLC. Default input assemblies would be assemblies 70 (0x46) and 71 (0x47). The input assembly selected must match the input assembly entered in the PLC memory when configuring the drive or when the drive is added to the scanner scan list in order for the tags to match up with the drive I/O.

    Output Assembly: The **Output Assembly** is the polled I/O assembly that contains data that is written by the PLC to the drive. Default output assemblies would be assemblies 20 (0x14) and 21 (0x15). The output assembly selected must match the output assembly entered in PLC memory when configuring the drive or when the drive is added to the scanner scan list in order for the tags to match up with the drive I/O.
12. **Save To:** The **Save To** field displays the name of the file to which the created tags are saved. This is the file that is imported into RSLogix™ 5000.

    Browse: The **Browse** button opens the file dialog and allows the selection of an existing or the entry of a new file that will contain the tags generated. If an existing file is selected, the generated tags will be appended to that file. Care should be taken when selecting an existing file to make sure that it is a tag file of the correct format.
13. **Build:** The **Build** button generates tag based on the information entered into the form and stores them in the file displayed in the **Save To** field. If no file has been selected, the file dialog will open so that a new file can be created or an existing file can be selected.

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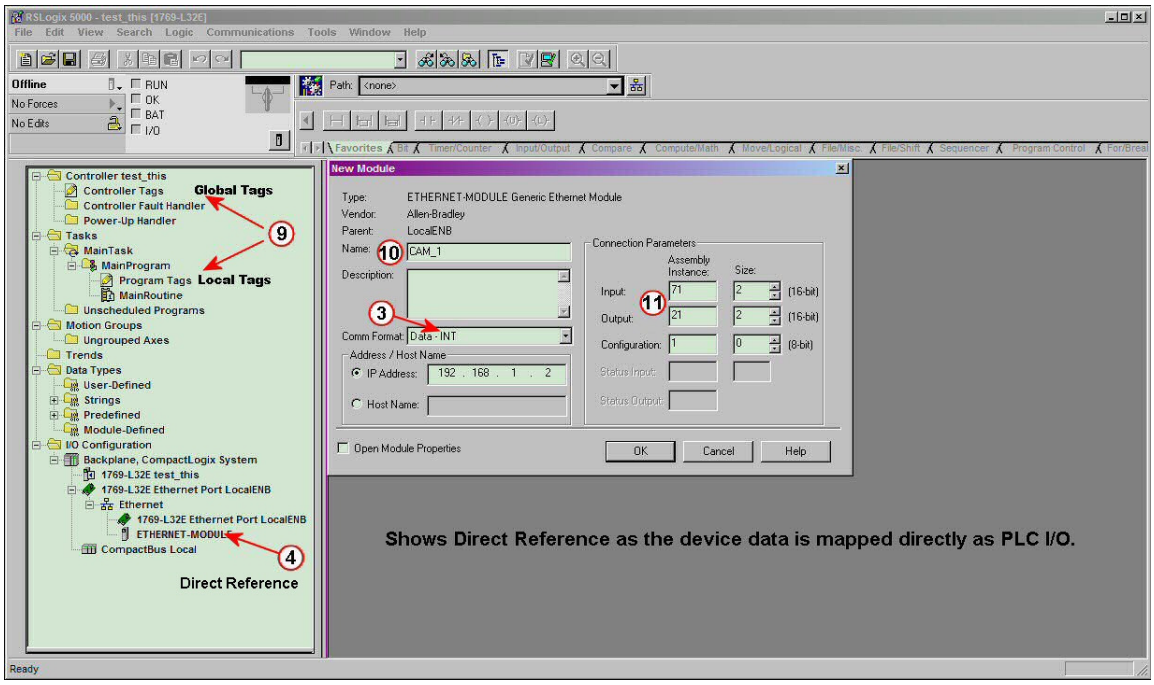
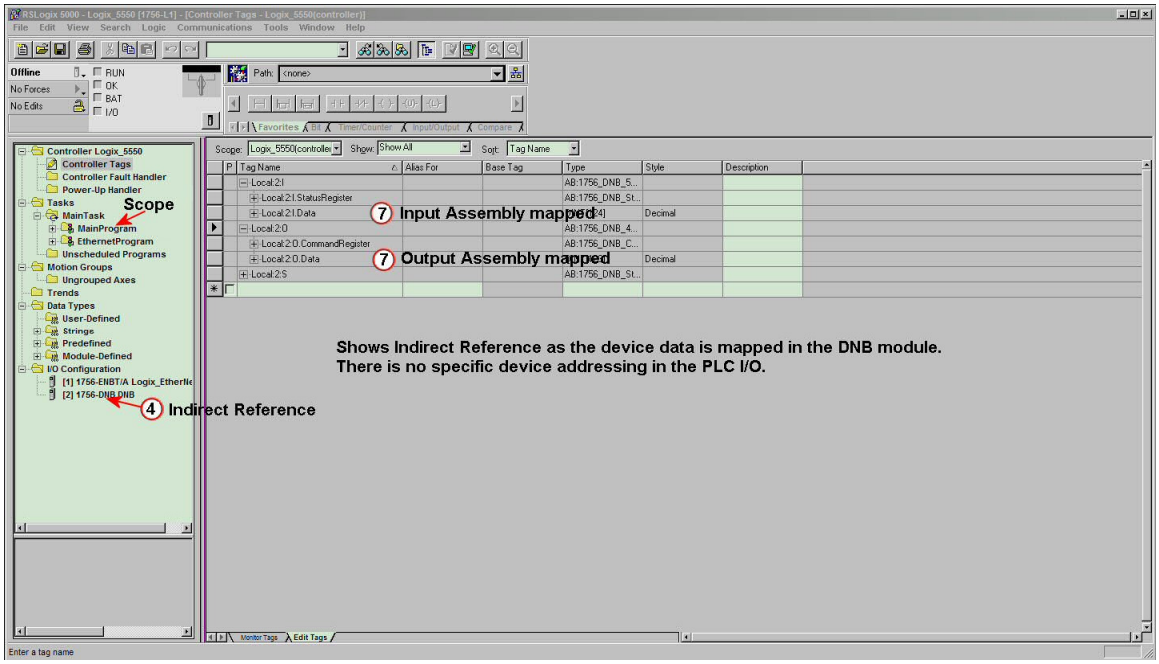
TAG GEN RELATIONSHIP TO RSLOGIX™ 5000



Tag Gen Relationship to RSLogix™ 5000 for Direct Reference Devices



Tag Gen Relationship to RSLogix™ 5000 for Indirect Reference Devices

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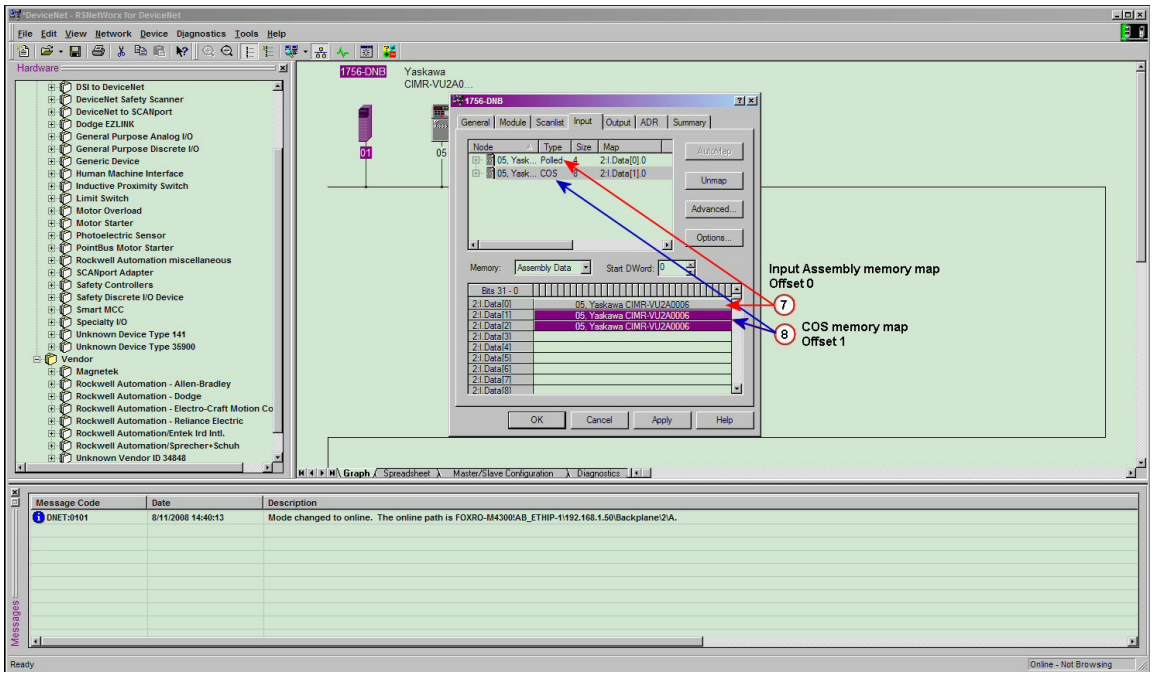
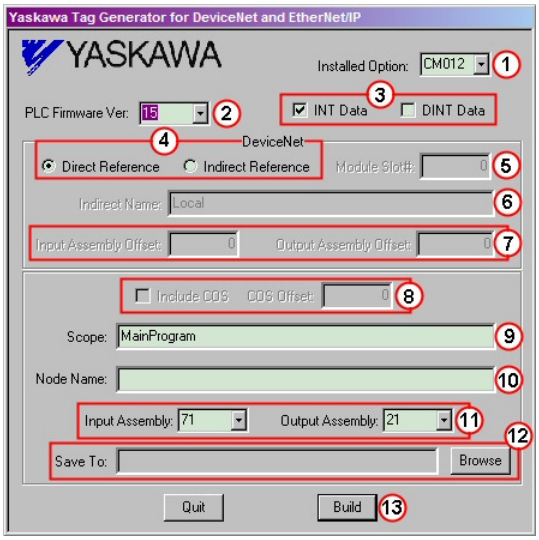
INDIRECT REFERENCE RSNETWORX™ FOR DEVICENET



Tag Gen Relationship to RSLogix™ 5000 for Direct Reference Devices

TAG GEN - PROCEDURE



Tag Gen Procedure

1. Select the **Installed Option** (1) for which the tags are to be generated. Available options include CM012, CM013, CM053, CM056, CM057, CM058, CM059, CM092, CM093, SI-N3, SI-N3/V, SI-EN3 and SI-EN3/V.
2. Select the **PLC Firmware Ver**: (2) that matches the version of the PLC to which the tags are to be imported. PLC program versions greater than 17 should use version 17+.
3. Select the data type (**INT** or **DINT** (3)) for which the tags are to be generated. **INT Data** (3) should be used whenever possible.
4. Select whether the tags are for a **Direct** or **Indirect Reference** (4) to the device. The area affecting **Indirect Reference** will be enabled or disabled by the option selected. If **Indirect Reference** is selected, enter the appropriate data in the **Module Slot#** (5), **Indirect Name** (6), **Input Assembly Offset** (7) and **Output Assembly Offset** (7) fields.
5. The COS selection is enabled or disabled by the option selected. If it is enabled, place a check in the **Include COS** (8) checkbox to generate COS tags. Enter the **COS Offset** (8), which is the memory offset for the COS mapped memory.
6. Enter the desired **Scope** (9) of the tags to be generated. An empty (9) **Scope** field represents Controller or global scope. If task or program scope is desired, enter the name of the task. Typically this is “Main Program”
7. Enter the **Node Name** (10) to be associated with the drive for which the tags are to be generated. For Direct Reference devices this name must match exactly the name given to the device as it is added to the PLC I/O. For Indirect Reference devices, the name can be anything so long as it is uniqueSelect the **Input Assembly** (11) and **Output Assembly** (11) that are being used by the drive. These selections must match exactly the assemblies chosen when configuring the drive.
8. If the **Save To** (12) field is empty, select **Browse** (12) and select or create the file to hold the tags generated. If the Save To field contains a filename and the generated tags are to be appended to that file, skip directly to **Build** (13).
9. Select **Build** (13) to generate the tags based on the information entered in the form and saved to the file displayed in the **Save To** field.

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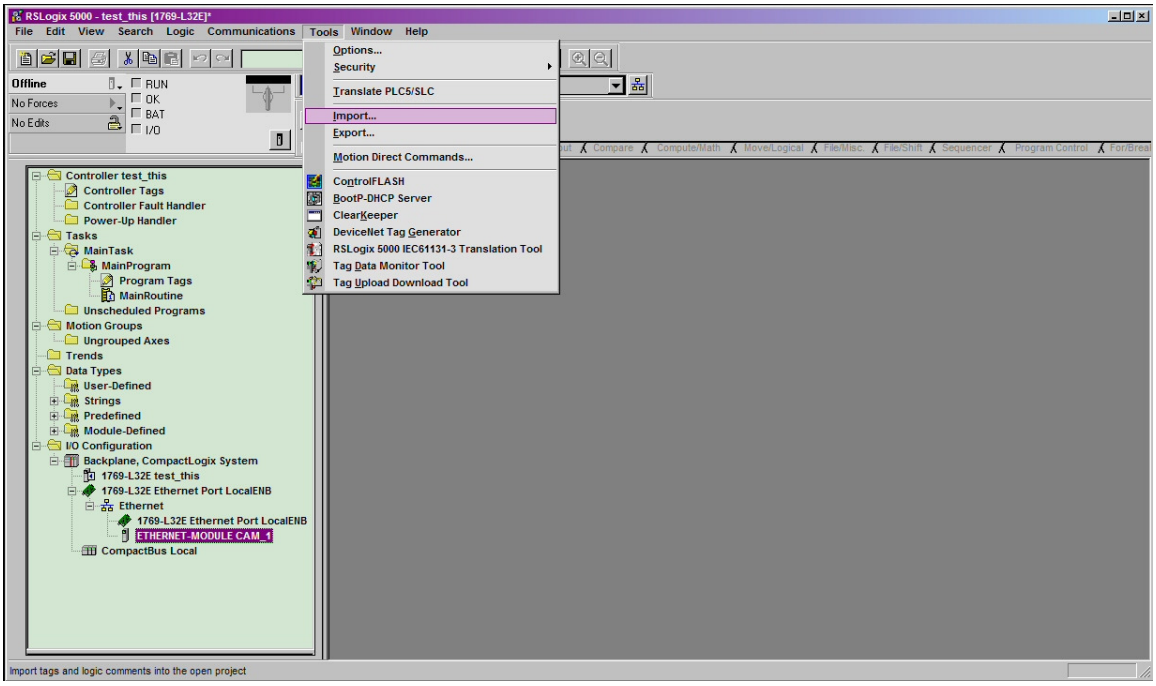
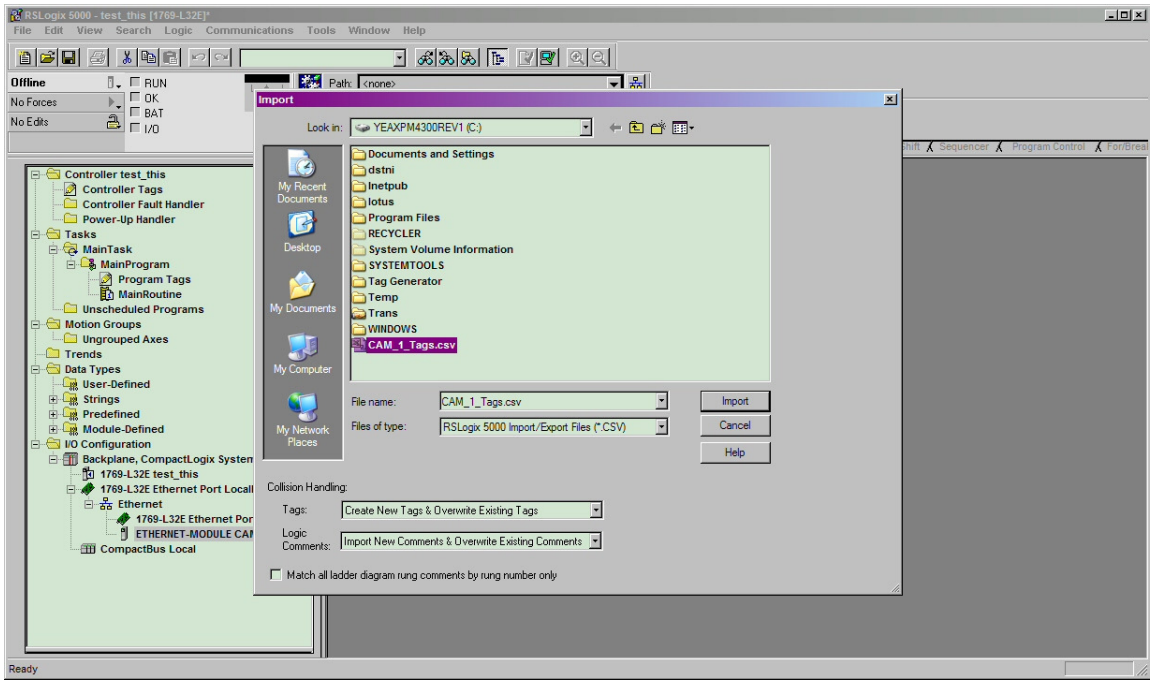
IMPORTING TAGS INTO RSLOGIX™ 5000



Select Import From the Tools Menu



Select the ".CSV" File to Import

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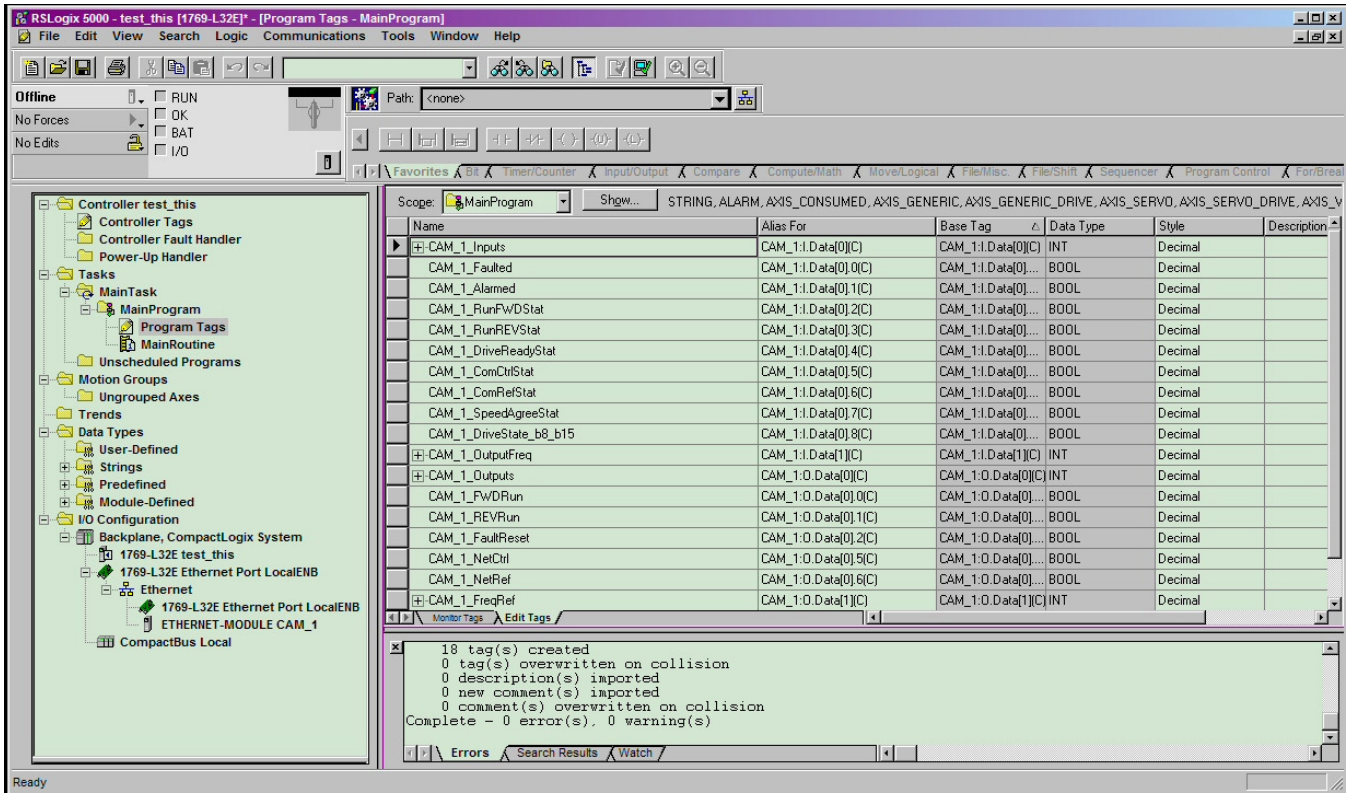

Program Tags displayed after Import

ANATOMY OF A TAG FILE

Below is a copy of the tag file created from the information entered into the tag generation program above. The file is a CSV (Comma Separated Values) text file that consists of a two line header followed by the main body of the file. All fields in each line of the file are separated by commas.

Tag Format

The tag format is described in the second line of the file header. The tag fields are separated by commas.

TYPE	The type of tag. Our tags are Aliases for the actual polled input and output assemblies Input and Output data words and bits
SCOPE	The area of the PLC that the tag has influence. Controller scope (global) is indicated by an empty SCOPE filed. Typically the scope is limited to the program area in which it is used. The SCOPE can contain only alphanumeric characters.
NAME	The name of the drive as it is entered into RSLogix™ 5000 is inserted before the tag name itself in order to differentiate tags between drives.. Short descriptive names are preferable. The drive Name can contain only alphanumeric characters.
DESCRIPTION	The description field is currently left empty.
DATATYPE	The data type of the value to which the tag refers. In out case it is either INT or BOOL. The data type field is left blank because it is automatically determined by the tag specifier. If the specifier ends in [#] the tag represents an INT. If the specifier ends with [#].#, the tag represents a BOOL.
SPECIFIER	The specifier is the designation of the input and output points and are generated as module defined and controller scope when the drive is added as a new module.
ATTRIBUTES	Attribute is the displayed radix.

Tag Field Descriptions

Direct Reference Tags

0.3
TYPE,SCOPE,NAME,DESCRIPTION,DATATYPE,SPECIFIER,ATTRIBUTES
ALIAS,MainProgram,CAM_1_Inputs,,,CAM_1:I.Data[0],(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_Faulted,,,CAM_1:I.Data[0].0,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_Alarmed,,,CAM_1:I.Data[0].1,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_RunFWDStat,,,CAM_1:I.Data[0].2,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_RunREVStat,,,CAM_1:I.Data[0].3,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_DriveReadyStat,,,CAM_1:I.Data[0].4,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_ComCtrlStat,,,CAM_1:I.Data[0].5,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_ComRefStat,,,CAM_1:I.Data[0].6,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_SpeedAgreeStat,,,CAM_1:I.Data[0].7,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_DriveState_b8_b15,,,CAM_1:I.Data[0].8,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_OutputFreq,,,CAM_1:I.Data[1],(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_Outputs,,,CAM_1:O.Data[0],(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_FWDRun,,,CAM_1:O.Data[0].0,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_REVRun,,,CAM_1:O.Data[0].1,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_FaultReset,,,CAM_1:O.Data[0].2,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_NetCtrl,,,CAM_1:O.Data[0].5,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_NetRef,,,CAM_1:O.Data[0].6,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_FreqRef,,,CAM_1:O.Data[1],(RADIX := Decimal)

Indirect Reference Tags

0.3
TYPE,SCOPE,NAME,DESCRIPTION,DATATYPE,SPECIFIER,ATTRIBUTES
ALIAS,MainProgram,CAM_1_Inputs,,,Local:2:I.Data[0],(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_Faulted,,,Local:2:I.Data[0].0,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_Alarmed,,,Local:2:I.Data[0].1,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_RunFWDStat,,,Local:2:I.Data[0].2,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_RunREVStat,,,Local:2:I.Data[0].3,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_DriveReadyStat,,,CAM_1:I.Data[0].4,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_ComCtrlStat,,,Local:2:I.Data[0].5,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_ComRefStat,,,Local:2:I.Data[0].6,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_SpeedAgreeStat,,,CAM_1:I.Data[0].7,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_DriveState_b8_b15,,,CAM_1:I.Data[0].8,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_OutputFreq,,,Local:2:I.Data[1],(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_Outputs,,,Local:2:O.Data[0],(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_FWDRun,,,Local:2:O.Data[0].0,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_REVRun,,,Local:2:O.Data[0].1,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_FaultReset,,,Local:2:O.Data[0].2,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_NetCtrl,,,Local:2:O.Data[0].5,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_NetRef,,,Local:2:O.Data[0].6,(RADIX := Decimal)
ALIAS,MainProgram,CAM_1_FreqRef,,,Local:2:O.Data[1],(RADIX := Decimal)

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The table below shows the tag fields in table form in order to make the tag description easier to follow. The tag names used are for this example only.

TYPE	SCOPE	NAME	DESCRIPTION	DATATYPE	SPECIFIER	ATTRIBUTES
ALIAS	MainProgram	CAM_1_Inputs			CAM_1:I.Data[0]	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_Fault			CAM_1:I.Data[0].0	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_Alarm			CAM_1:I.Data[0].1	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_RunFWDSt			CAM_1:I.Data[0].2	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_RunREVSt			CAM_1:I.Data[0].3	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_DriveReadySt			CAM_1:I.Data[0].4	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_ComCtrlSt			CAM_1:I.Data[0].5	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_ComRefSt			CAM_1:I.Data[0].6	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_SpeedAgreeSt			CAM_1:I.Data[0].7	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_DriveState			CAM_1:I.Data[0].8	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_OutputFreq			CAM_1:I.Data[1]	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_Outputs			CAM_1:O.Data[0]	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_FWDRun			CAM_1:O.Data[0].0	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_REVRun			CAM_1:O.Data[0].1	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_FaultReset			CAM_1:O.Data[0].2	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_NetCtrl			CAM_1:O.Data[0].5	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_NetRef			CAM_1:O.Data[0].6	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_FreqRef			CAM_1:O.Data[1]	(RADIX := Decimal)

Direct Reference Program Scope Tags in Table Form

TYPE	SCOPE	NAME	DESCRIPTION	DATATYPE	SPECIFIER	ATTRIBUTES
ALIAS		CAM_1_Inputs			CAM_1:I.Data[0]	(RADIX := Decimal)
ALIAS		CAM_1_Fault			CAM_1:I.Data[0].0	(RADIX := Decimal)
ALIAS		CAM_1_Alarm			CAM_1:I.Data[0].1	(RADIX := Decimal)
ALIAS		CAM_1_RunFWDSt			CAM_1:I.Data[0].2	(RADIX := Decimal)
ALIAS		CAM_1_RunREVSt			CAM_1:I.Data[0].3	(RADIX := Decimal)
ALIAS		CAM_1_DriveReadySt			CAM_1:I.Data[0].4	(RADIX := Decimal)
ALIAS		CAM_1_ComCtrlSt			CAM_1:I.Data[0].5	(RADIX := Decimal)
ALIAS		CAM_1_ComRefSt			CAM_1:I.Data[0].6	(RADIX := Decimal)
ALIAS		CAM_1_SpeedAgreeSt			CAM_1:I.Data[0].7	(RADIX := Decimal)
ALIAS		CAM_1_DriveState			CAM_1:I.Data[0].8	(RADIX := Decimal)
ALIAS		CAM_1_OutputFreq			CAM_1:I.Data[1]	(RADIX := Decimal)
ALIAS		CAM_1_Outputs			CAM_1:O.Data[0]	(RADIX := Decimal)
ALIAS		CAM_1_FWDRun			CAM_1:O.Data[0].0	(RADIX := Decimal)
ALIAS		CAM_1_REVRun			CAM_1:O.Data[0].1	(RADIX := Decimal)
ALIAS		CAM_1_FaultReset			CAM_1:O.Data[0].2	(RADIX := Decimal)
ALIAS		CAM_1_NetCtrl			CAM_1:O.Data[0].5	(RADIX := Decimal)
ALIAS		CAM_1_NetRef			CAM_1:O.Data[0].6	(RADIX := Decimal)
ALIAS		CAM_1_FreqRef			CAM_1:O.Data[1]	(RADIX := Decimal)

Direct Reference Controller Scope Tags in Table Form

TYPE	SCOPE	NAME	DESCRIPTION	DATATYPE	SPECIFIER	ATTRIBUTES
ALIAS	MainProgram	CAM_1_Inputs			LOCAL:2:I.Data[0]	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_Fault			LOCAL:2:I.Data[0].0	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_Alarm			LOCAL:2:I.Data[0].1	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_RunFWDSt			LOCAL:2:I.Data[0].2	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_RunREVSt			LOCAL:2:I.Data[0].3	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_DriveReadySt			LOCAL:2:I.Data[0].4	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_ComCtrlSt			LOCAL:2:I.Data[0].5	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_ComRefSt			LOCAL:2:I.Data[0].6	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_SpeedAgreeSt			LOCAL:2:I.Data[0].7	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_DriveSta			LOCAL:2:I.Data[0].8	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_OutputFreq			LOCAL:2:I.Data[1]	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_Outputs			LOCAL:2:O.Data[0]	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_FWDRun			LOCAL:2:O.Data[0].0	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_REVRun			LOCAL:2:O.Data[0].1	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_FaultReset			LOCAL:2:O.Data[0].2	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_NetCtrl			LOCAL:2:O.Data[0].5	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_NetRef			LOCAL:2:O.Data[0].6	(RADIX := Decimal)
ALIAS	MainProgram	CAM_1_FreqRef			LOCAL:2:O.Data[1]	(RADIX := Decimal)

Indirect Reference Program Scope Tags in Table Form

TYPE	SCOPE	NAME	DESCRIPTION	DATATYPE	SPECIFIER	ATTRIBUTES
ALIAS		CAM_1_Inputs			LOCAL:2:I.Data[0]	(RADIX := Decimal)
ALIAS		CAM_1_Fault			LOCAL:2:I.Data[0].0	(RADIX := Decimal)
ALIAS		CAM_1_Alarm			LOCAL:2:I.Data[0].1	(RADIX := Decimal)
ALIAS		CAM_1_RunFWDSt			LOCAL:2:I.Data[0].2	(RADIX := Decimal)
ALIAS		CAM_1_RunREVSt			LOCAL:2:I.Data[0].3	(RADIX := Decimal)
ALIAS		CAM_1_DriveReadySt			LOCAL:2:I.Data[0].4	(RADIX := Decimal)
ALIAS		CAM_1_ComCtrlSt			LOCAL:2:I.Data[0].5	(RADIX := Decimal)
ALIAS		CAM_1_ComRefSt			LOCAL:2:I.Data[0].6	(RADIX := Decimal)
ALIAS		CAM_1_SpeedAgreeSt			LOCAL:2:I.Data[0].7	(RADIX := Decimal)
ALIAS		CAM_1_DriveState			LOCAL:2:I.Data[0].8	(RADIX := Decimal)
ALIAS		CAM_1_OutputFreq			LOCAL:2:I.Data[1]	(RADIX := Decimal)
ALIAS		CAM_1_Outputs			LOCAL:2:O.Data[0]	(RADIX := Decimal)
ALIAS		CAM_1_FWDRun			LOCAL:2:O.Data[0].0	(RADIX := Decimal)
ALIAS		CAM_1_REVRun			LOCAL:2:O.Data[0].1	(RADIX := Decimal)
ALIAS		CAM_1_FaultReset			LOCAL:2:O.Data[0].2	(RADIX := Decimal)
ALIAS		CAM_1_NetCtrl			LOCAL:2:O.Data[0].5	(RADIX := Decimal)
ALIAS		CAM_1_NetRef			LOCAL:2:O.Data[0].6	(RADIX := Decimal)
ALIAS		CAM_1_FreqRef			LOCAL:2:O.Data[1]	(RADIX := Decimal)

Indirect Reference Controller Scope Tags in Table Form

LIST OF TAGS USED

COS Tags

_COS_GetActSpd	_COS_GetActTrq	_COS_GetAlarmSt	_COS_GetDrvRdySt
_COS_GetExtFltSt	_COS_GetFaultRstSt	_COS_GetFltRst	_COS_GetFltSt
_COS_GetInputs	_COS_GetInputs_2	_COS_GetMFIn_SSt	_COS_GetMtrSel
_COS_GetNetCtrlSt	_COS_GetNetRefSt	_COS_GetOPEFltSt	_COS_GetREVSt
_COS_GetRunFWDSt	_COS_GetRunREVSt	_COS_GetRunSt	_COS_GetSpdAgreeSt
_COS_GetUVFltSt	_COS_GetZeroSpdSt	_COS_GetZeroSrvSt	

Input Tags

_GetActSpd	_GetActTrq	_GetAlarmSt	_GetAmpsOut
_GetAnalogIn	_GetAnalogOut	_GetAttr	_GetAttribute
_GetClass	_GetClass_Attr	_GetData	_GetDataLSB
_GetDataMSB	_GetDrvRdySt	_GetDrvSt	_GetDynamicError_1
_GetDynamicError_2	_GetErr_0	_GetErr_1	_GetErr_2
_GetErrCode	_GetFltRstSt	_GetFltSt	_GetFuncCode
_GetFuncCode_b0	_GetFuncCode_b1	_GetFuncCode_RgistrMSB	_GetInderect_F723
_GetInderect_F724	_GetInderect_F725	_GetInderect_F726	_GetInderect_F727
_GetInderect_F728	_GetInderect_F729	_GetInderect_F730	_GetInderect_F731
_GetInderect_F732	_GetInputSt	_GetLocRemSt	_GetMainCrctDCVolts
_GetMFIn_Out	_GetMFIn_SSt	_GetMFInSt	_GetMFOut_St
_GetMFOutSt	_GetMtrSel	_GetMtrSpd	_GetNetCtrlSt
_GetNetRefSt	_GetOPEFltSt	_GetPGCntCh1	_GetPGCntCh2
_GetPGCount	_GetRdThruSt	_GetRefFreq	_GetRegisterLSB_DataMSB
_GetREVSt	_GetRgstrAddr	_GetRgstrLSB	_GetRgstrMSB
_GetRunFWDSt	_GetRunREVSt	_GetRunSt	_GetSpdAgreeSt
_GetSrvCode	_GetUVFltSt	_GetZeroSpdSt	_GetZeroSrvSt

Output Tags

_SetAccelTime_1	_SetAnalogOut	_SetAnalogOut_1	_SetAnalogOut_2
_SetAttribute	_SetClass	_SetClass_Attr	_SetData
_SetDataLSB	_SetDataMSB	_SetDecelTime_1	_SetExtFlt
_SetFltRst	_SetFreqRef	_SetFuncCode	_SetFuncCode_b0
_SetFuncCode_b1	_SetFuncCode_RgstrMSB	_SetInderect_F733	_SetInderect_F734
_SetInderect_F735	_SetInderect_F736	_SetInderect_F737	_SetInderect_F738
_SetInderect_F739	_SetInderect_F740	_SetInderect_F741	_SetInderect_F742
_SetMFIn_S3	_SetMFIn_S4	_SetMFIn_S5	_SetMFIn_S6
_SetMFIn_S7	_SetMFIn_S8	_SetMFInput_S1	_SetMFInput_S10
_SetMFInput_S11	_SetMFInput_S12	_SetMFInput_S2	_SetMFInput_S3
_SetMFInput_S4	_SetMFInput_S5	_SetMFInput_S6	_SetMFInput_S7
_SetMFInput_S8	_SetMFInput_S9	_SetMFInputs	_SetMFOut
_SetMFOut_1	_SetMFOut_2	_SetMFOut_3	_SetMFOutputs
_SetNetCtrl	_SetNetRef	_SetNetRef_NetCtrl	_SetOutputs
SetOutputs	_SetRgstrAddr	_SetRgstrLSB	_SetRgstrLSB_DataMSB
_SetRgstrMSB	_SetRunFWD	_SetRunREV	_SetSrvCode
_SetTermA1	_SetTermA2	_SetTrqComp	_SetTrqRef