

AG25, AG26

RSLogix™ 500 EtherNet/IP™ Sample Program for MicroLogix™ 1400 Controllers

Software Description



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1 General Notes

1.1 Trademarks

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1.2 Liability

SIKO GmbH assumes no warranty whatsoever regarding topicality, correctness, completeness or quality of the information or software products provided. All liability claims against SIKO GmbH referring to material or immaterial damages caused by using or not using the information or software provided or by using erroneous or incomplete information or software are always excluded.

1.3 Limitations

This example and its function were tested on a MicroLogix™ 1400 1766-L32BWA. The module was programmed using RSLogix™ 500 version V9.05.01 (CPR 9).

Controlling I/O with explicit messages is relatively complex compared to normal implicit I/O control known from ControlLogix® and CompactLogix™ controllers. The MicroLogix™ 1400 controller supports only explicit messages.

You can control the drive with a MicroLogix™ 1400 controller with the following limitations:

- An explicit message is a much slower form of control and is nondeterministic. This means that you cannot guarantee how long the drive will take to start up or stop when the command is given. Therefore, all equipment used in this manner should be subject to a risk assessment, taking into account the mechanical and electrical implementation.
- A timeout value (in milliseconds) in the drive will issue a drive fault if a message is not received from the controller within the specified time. However, the controller has no way of detecting a loss of communication to the drive until the next cycle of explicit messages. This is another factor in the risk assessment.
- Any additional drives to be controlled will require additional explicit messages for their control, and they need to be carefully sequenced. Most controllers have small communication queues (see its user manual), which need to be carefully managed if messages shall not get lost.
- Each controller has a limited number of communication connections (see its user manual for maximum connections), which will limit the number of drives that can be connected.

1.4 Requirements

- AG2X firmware version C/V 01.05 upwards.
- Basic knowledge of handling and programming Allen-Bradley® systems.
- Familiarity with EtherNet/IP™.

1.5 Versions Overview

This manual is related to the example project “SIKO_AG2X_RSL500_example_V100”.

1.6 List of Abbreviations

EIP	EtherNet/IP™
SW	Status Word
CW	Control Word

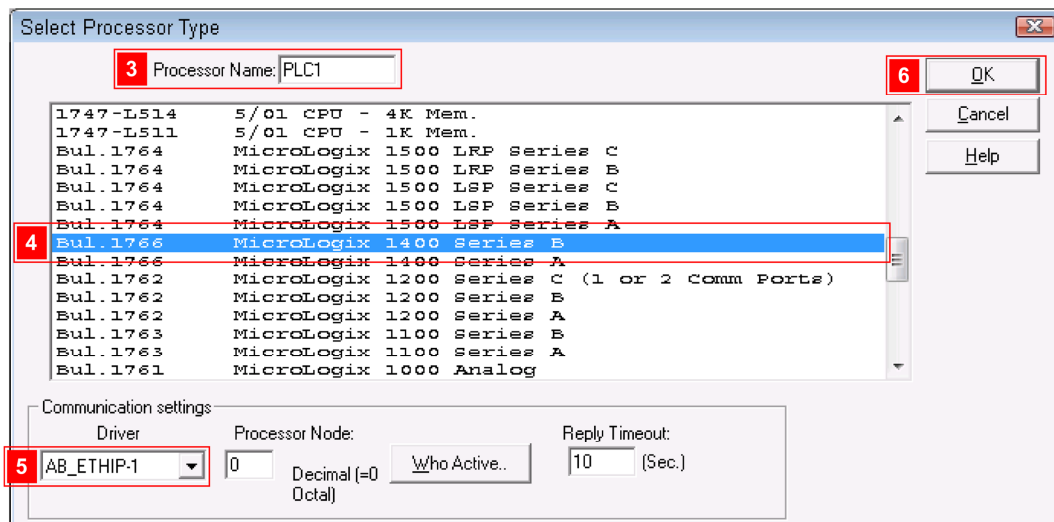
2 Example Ladder Logic Program

Functions of the example:

- Data exchange using explicit messages
- Read/write the Configuration Assembly
- Mapping of the Control and Status Word

2.1 Create a New Project

1. Start RSLogix™ 500 software.
2. Execute the command "File" > "New".
3. Enter "PLC1" into the "Processor Name" field.
4. Choose the processor from the "Select Processor Type" dialog box.
5. Choose "AB_ETHIP-1" from the dropdown list "Driver".
6. Confirm with "OK".



2.2 Channel Configuration

NOTICE

The IP settings in this example can cause serious network problems under certain circumstances. If you are in doubt about the correct IP settings for your network, ask your system administrator for assistance.

1. Double-click on "Channel Configuration".
2. Select the tab "Channel 1".
3. Deselect "BOOTP Enable".
4. Enter "192.168.1.164" into the "IP Address" field.
5. Enter "255.255.255.0" into the "Subnet Mask" field.
6. Confirm with "OK".

Channel Configuration

General | Channel 1 | Channel 2

Driver: Ethernet

Hardware Address: 00:00:00:00:00:00

Network Link ID: 0

4 IP Address: 192 . 168 . 1 . 164

5 Subnet Mask: 255 . 255 . 255 . 0

Gateway Address: 0 . 0 . 0 . 0

Default Domain Name:

Primary Name Server: 0 . 0 . 0 . 0

Secondary Name Server: 0 . 0 . 0 . 0

User Provided Web Pages

Starting Data File Number: 0

Number of Pages: 1

Protocol Control

3 ☐ BOOTP Enable ☐ DHCP Enable

☒ SNMP Server Enable ☐ SMTP Client Enable

☒ HTTP Server Enable ☐ DNP3 over IP Enable

☐ Modbus TCP Enable

☐ Disable EtherNet/IP Incoming Connections

☒ Auto Negotiate ☐ Disable Duplicate IP Address Detection

Port Setting: 10/100 Mbps Full Duplex/Half Duplex

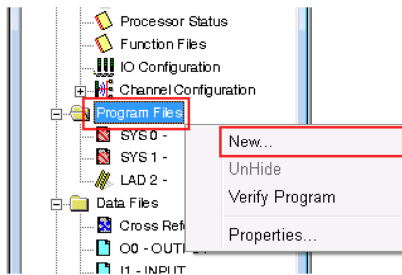
Contact:

Location:

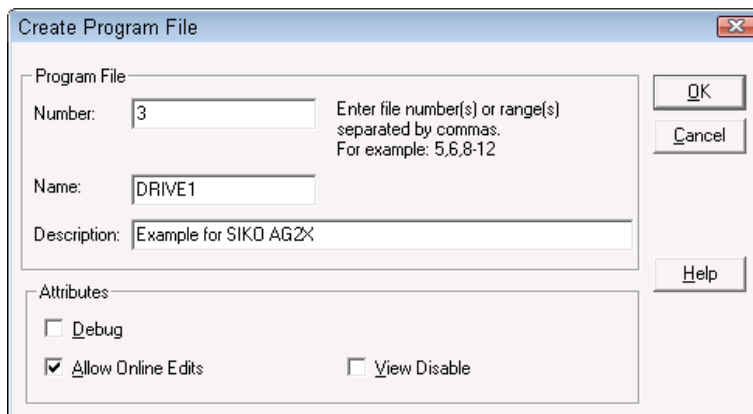
6 OK Abbrechen Übernehmen Hilfe

2.3 Create a New Subroutine

1. Right-click on folder "Program Files" and execute command "New...".



2. Enter "3" into the "Number" field.
3. Enter "DRIVE1" into the "Name" field.
4. Enter a device description.
5. Confirm with "OK".



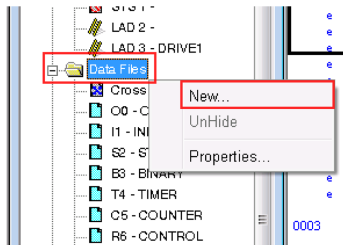
2.4 Create a Call of the Subroutine in the Main Ladder Program

1. Double-click "LAD 2" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter "JSR 3".
5. Press "ENTER".

2.5 Create Data Files

2.5.1 Create Data File Table N20

1. Right-click on folder "Data Files" and execute command "New...".



2. Make the settings according to the following table.

Name	Value
File	20
Type	Integer
Name	DRIVE01
Desc	Drive01 Data Table
Elements	89

 A screenshot of the 'Create Data File' dialog box. The fields are filled as follows:

- File: 20
- Type: Integer (dropdown menu)
- Name: DRIVE01
- Desc: Drive01 Data Table
- Elements: 89
- Last: (empty field)
- Attributes:
 - ☐ Debug
 - ☐ Skip When Deleting Unused Memory
- Scope:
 - ☒ Global
 - ☐ Local (To File: 2 - dropdown menu)
- Protection:
 - ☐ Constant
 - ☐ Static
 - ☒ None
 - ☐ Memory Module / Download
 - ☐ Web View Disable
 - ☐ LCD Edit Disable

 At the bottom are buttons for 'OK', 'Cancel', and 'Help'.

3. Confirm with "OK".

2.5.2 Structure of Data File N20

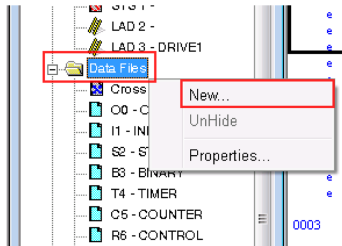
Data Table Address	Description
N20:0	Status Word
N20:1	Actual Value LSW
N20:2	Actual Value MSW
N20:3	Digital Inputs Status
N20:4	Control Word
N20:5	Target Value LSW
N20:6	Target Value MSW
N20:7	Digital Outputs Control
N20:8	Enable Configuration Assembly
N20:9	P513 LED Functionality
N20:10	P545 Service Interface Baud Rate
N20:11	P769 Digital Output 1 Functionality
N20:12	P771 Digital Outputs Polarity
N20:13	P1025 Digital Input 1 Functionality
N20:14	P1026 Digital Input 2 Functionality
N20:15	P1027 Digital Input 3 Functionality
N20:16	P1028 Digital Input 4 Functionality
N20:17	P1030 Digital Inputs Polarity
N20:18	P1537 Controller Parameter P
N20:19	P1538 Controller Parameter I
N20:20	P1539 Controller Parameter D
N20:21	P1540 A-Pos
N20:22	P1541 V-Pos
N20:23	P1542 D-Pos
N20:24	P1543 A-Rot
N20:25	P1544 A-Inch
N20:26	P1545 V-Inch
N20:27	P1546 Pos Window
N20:28	P1547 Gear Ratio Numerator
N20:29	P1548 Gear Ratio Denominator
N20:30	P1549 Spindle Pitch LSW
N20:31	P1549 Spindle Pitch MSW
N20:32	P1550 Calibration Value LSW
N20:33	P1550 Calibration Value MSW
N20:34	P1551 Software Limit 1 LSW
N20:35	P1551 Software Limit 1 MSW
N20:36	P1552 Software Limit 2 LSW
N20:37	P1552 Software Limit 2 MSW
N20:38	P1553 Delta Inch LSW
N20:39	P1553 Delta Inch MSW

Data Table Address	Description
N20:40	P1554 Sense of Rotation
N20:41	P1555 Pos Type
N20:42	P1556 Operating Mode
N20:43	P1557 Inching 2 Stop Mode
N20:44	P1558 Inpos Mode
N20:45	P1559 Loop Length
N20:46	P1560 Contouring Error Limit
N20:47	P1561 Current Limiting
N20:48	P1562 Inching 2 Offset
N20:49	P1563 Inching 2 Acceleration Type
N20:50	P1564 Offset Value LSW
N20:51	P1564 Offset Value MSW
N20:52	P2338 PCM Position 1 LSW
N20:53	P2338 PCM Position 1 MSW
N20:54	P2339 PCM Position 2 LSW
N20:55	P2339 PCM Position 2 MSW
N20:56	P2340 PCM Position 3 LSW
N20:57	P2340 PCM Position 3 MSW
N20:58	P2341 PCM Position 4 LSW
N20:59	P2341 PCM Position 4 MSW
N20:60	P2342 PCM Position 5 LSW
N20:61	P2342 PCM Position 5 MSW
N20:62	P2343 PCM Position 6 LSW
N20:63	P2343 PCM Position 6 MSW
N20:64	P2344 PCM Position 7 LSW
N20:65	P2344 PCM Position 7 MSW
N20:66	P2370 PCM Acceleration 1
N20:67	P2371 PCM Acceleration 2
N20:68	P2372 PCM Acceleration 3
N20:69	P2373 PCM Acceleration 4
N20:70	P2374 PCM Acceleration 5
N20:71	P2375 PCM Acceleration 6
N20:72	P2376 PCM Acceleration 7
N20:73	P2402 PCM Velocity 1
N20:74	P2403 PCM Velocity 2
N20:75	P2404 PCM Velocity 3
N20:76	P2405 PCM Velocity 4
N20:77	P2406 PCM Velocity 5
N20:78	P2407 PCM Velocity 6
N20:79	P2408 PCM Velocity 7
N20:80	P2434 PCM Deceleration 1
N20:81	P2435 PCM Deceleration 2

Data Table Address	Description
N20:82	P2436 PCM Deceleration 3
N20:83	P2437 PCM Deceleration 4
N20:84	P2438 PCM Deceleration 5
N20:85	P2439 PCM Deceleration 6
N20:86	P2440 PCM Deceleration 7
N20:87	P2849 Configuration
N20:88	P2850 Message Control Timeout
N20:89	P3073 S Command

2.5.3 Create Data File Table B21

1. Right-click on folder "Data Files" and execute command "New...".



2. Make the settings according to the following table.

Name	Value
File	21
Type	Binary
Name	DRIVE C/S
Desc	Control and Status Bits
Elements	5

 A screenshot of the 'Create Data File' dialog box. The settings are as follows:

- File: 21
- Type: Binary (dropdown menu)
- Name: DRIVE C/S
- Desc: Control and Status Bits
- Elements: 5
- Last: (empty)
- Attributes:
 - ☐ Debug
 - ☐ Skip When Deleting Unused Memory
- Scope:
 - ☒ Global
 - ☐ Local To File: 2 - (dropdown menu)
- Protection:
 - ☐ Constant
 - ☐ Static
 - ☒ None
 - ☐ Memory Module / Download
 - ☐ Web View Disable
 - ☐ LCD Edit Disable
- Buttons: OK, Cancel, Help

3. Confirm with "OK".

2.5.4 Structure of Data File B21

Data Table Address	Description
B21:0	Control Word
B21:0/0	OFF1
B21:0/1	OFF2
B21:0/2	OFF3
B21:0/3	Intermediate Stop
B21:0/4	Start Travel Job
B21:0/5	Acknowledge Error
B21:0/6	Inching Mode 1
B21:0/7	Inching Mode 2 Positive
B21:0/8	Inching Mode 2 Negative
B21:0/9	Reserved, always 0
B21:0/10	Relative Positioning
B21:0/11	Reserved, always 0
B21:0/12	Reserved, always 0
B21:0/13	Reserved, always 0
B21:0/14	Reserved, always 0
B21:0/15	Reserved, always 0

Data Table Address	Description
B21:1	Status Word
B21:1/0	Supply
B21:1/1	Readiness to Travel
B21:1/2	Upper Limit
B21:1/3	Lower Limit
B21:1/4	Actuator Travels/Stands Still
B21:1/5	Inpos
B21:1/6	Active Travel Job
B21:1/7	Fault
B21:1/8	Operation Enabled
B21:1/9	Switch-lock
B21:1/10	Travel Job Acknowledgement
B21:1/11	Battery Warning
B21:1/12	Current Limiting
B21:1/13	Reserved
B21:1/14	Reserved
B21:1/15	Reserved

Data Table Address	Description
B21:2	Digital Inputs Status
B21:2/0	Digital Input 1
B21:2/1	Digital Input 2
B21:2/2	Digital Input 3
B21:2/3	Digital Input 4

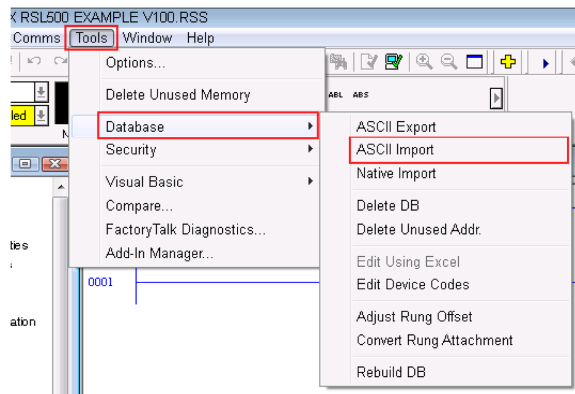
Data Table Address	Description
B21:3	Digital Outputs Control
B21:3/0	Digital Output 1

Data Table Address	Description
B21:4	Miscellaneous
B21:4/0	Execute Configuration Assembly Read
B21:4/1	Execute Configuration Assembly Write

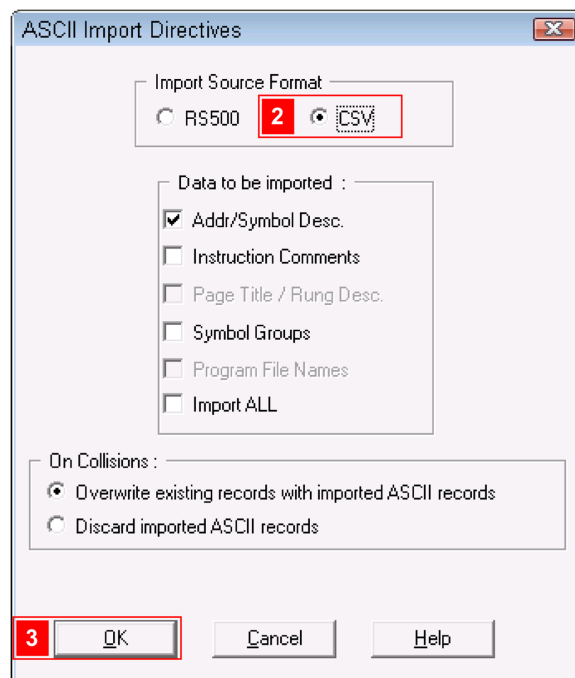
2.5.5 Import Database for Data Files

Together with the example project there is an additional database file supplied. The database file includes symbol information and description for data files N20 and B21. The file can be edited to make it suitable for your demands.

1. Execute command "Tools" > "Database" > "ASCII Import".



2. Select "CSV".
3. Confirm with "OK".

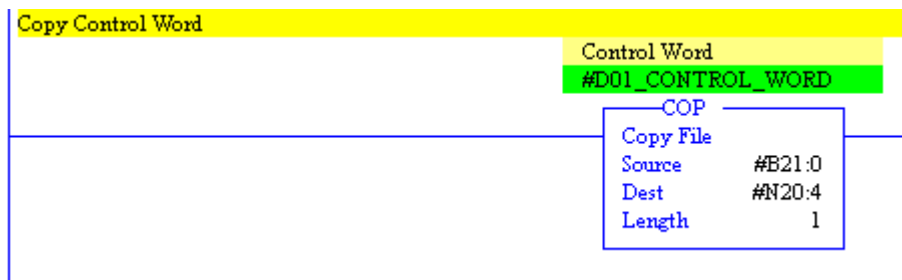


4. Select the file "SIKO_AG2X_RSL500_SYMBOLS_V100.csv".
5. Open the file.

2.6 Create Ladder Logic

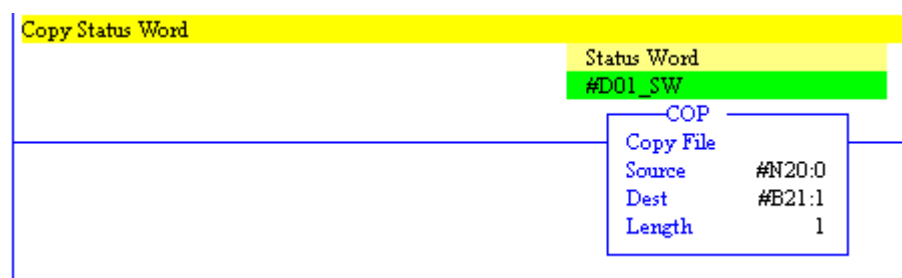
2.6.1 Ladder Logic to Copy the Control Word

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
COP #B21:0 #N20:4 1
5. Press "ENTER".



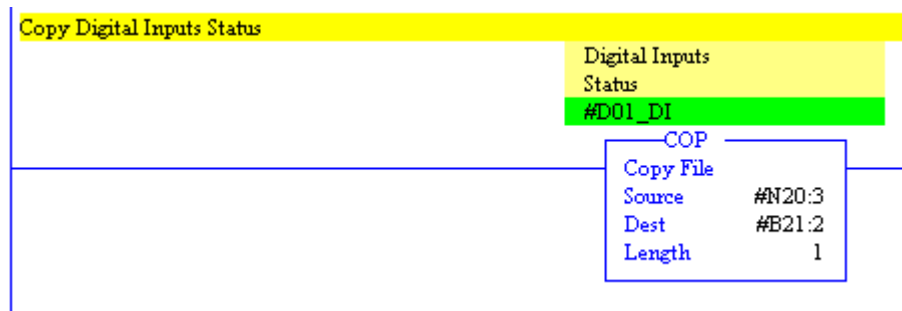
2.6.2 Ladder Logic to Copy the Status Word

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
COP #N20:0 #B21:1 1
5. Press "ENTER".



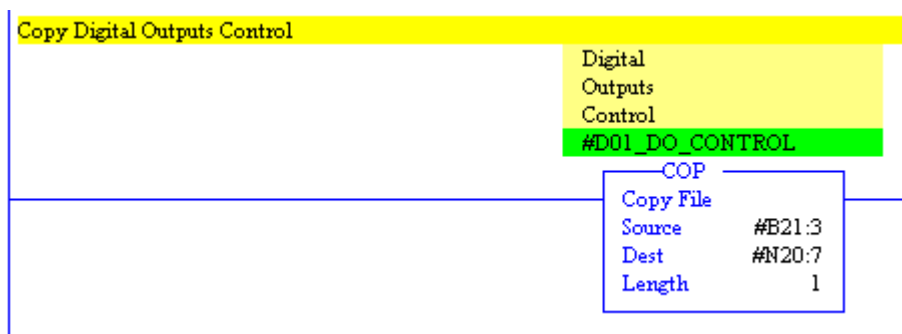
2.6.3 Ladder Logic to Copy the Digital Inputs Status

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
COP #N20:3 #B21:2 1
5. Press "ENTER".



2.6.4 Ladder Logic to Copy the Digital Outputs Control

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
COP #B21:3 #N20:7 1
5. Press "ENTER".



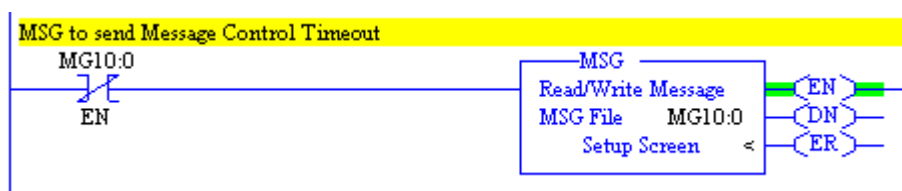
2.6.5 Ladder Logic to Send the Message Control Timeout

NOTICE	The IP settings in this example can cause serious network problems under certain circumstances. If you are in doubt about the correct IP settings for your network, ask your system administrator for assistance.
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NOTICE	Set the Message Control Timeout value to a non-zero value. This value need to be set between 5000 and 20000 milliseconds. The value is stored in volatile memory. Anytime the drive is power cycled this timeout value must be re-written again. If the value is set to zero the process data output message will be ignored. The drive will issue a drive fault if a message is not received from the controller within the specified time
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1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
XIO MG10:0/EN MSG MG10:0
5. Press "ENTER".
6. In the MSG instruction, double-click "Setup Screen" to launch the message configuration dialog box.
7. Configure the input fields of the "General" tab.
8. Configure the input field "To Address" of the "MultiHop" tab.

General Tab: This Controller	Setting
Channel	1 (Integral)
Communication Command	CIP Generic
Data Table Address (Send)	N20:88. P2850 Message Control Timeout
Size in Bytes (Send)	2
General Tab: Target Device	Setting
Extended Routing Info File (RIX)	RIX9:0. An unused extended routing information file
Service	Generic Set Attribute Single
Class (hex)	A2
Instance (hex)	B22
Attribute (hex)	5
MultiHop Tab	Setting
To Address	192.168.1.165. The IP address of the drive.



MSG - MG10:0 : (1 Elements)

General MultiHop Send Data Receive Data

This Controller

Channel: 1 (Integral)

Communication Command: CIP Generic

(Send): N20:88

Size in Bytes (Receive): N/A (Send): 2

Target Device

Message Timeout: 5

Local / Remote: Local MultiHop: Yes

Extended Routing Info File(RIX): RIX9:0

Service: Generic Set Attribute Single Service Code (hex): 10

Class (hex): A2 (dec): 162

Instance (hex): B22 (dec): 2850

Attribute (hex): 5 (dec): 5

Control Bits

Ignore if timed out (TO): 0

Break Connection (BK): 0

Awaiting Execution (EW): 0

UnConnected (UC): 0

Error (ER): 0

Message done (DN): 0

Message Transmitting (ST): 0

Message Enabled (EN): 0

Error

Error Code(Hex): 0

Error Description

No errors

MSG - MG10:0 : (1 Elements)

General MultiHop Send Data Receive Data

Ins = Add Hop Del = Remove Hop

From Device	From Port	To Address Type	To Address
This MicroLogix	Channel 1	EtherNet/IP Device (str.)	192.168.1.165

2.6.6 Ladder Logic for Process Data Output

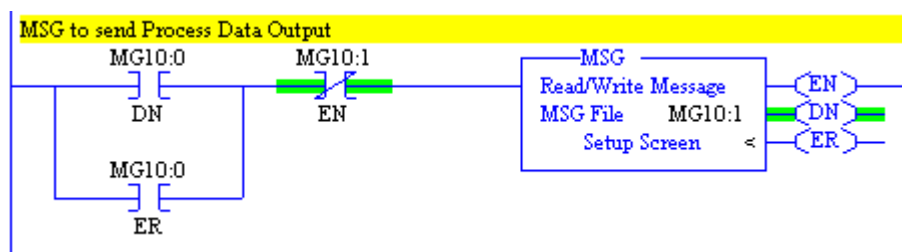
NOTICE

The IP settings in this example can cause serious network problems under certain circumstances. If you are in doubt about the correct IP settings for your network, ask your system administrator for assistance.

This message writes the Control Word, Target Value and Digital Output Control.

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
BST XIC MG10:0/DN NXB XIC MG10:0/ER BND XIO MG10:1/EN MSG MG10:1
5. Press "ENTER".
6. In the MSG instruction, double-click "Setup Screen" to launch the message configuration dialog box.
7. Configure the input fields of the "General" tab.
8. Configure the input field "To Address" of the "MultiHop" tab.
9. Close the message configuration dialog box.

General Tab: This Controller	Setting
Channel	1 (Integral)
Communication Command	CIP Generic
Data Table Address (Send)	N20:4. Storage location of process data output
Size in Bytes (Send)	7
General Tab: Target Device	Setting
Extended Routing Info File (RIX)	RIX9:1. An unused extended routing information file
Service	Write Assembly
Class (hex)	4
Instance (hex)	96
Attribute (hex)	3
MultiHop Tab	Setting
To Address	192.168.1.165. The IP address of the drive.



MSG - MG10:1 : (1 Elements)

General MultiHop Send Data Receive Data

This Controller

Channel: 1 (Integral)

Communication Command: CIP Generic

(Send): N20:4

Size in Bytes (Receive): N/A (Send): 7

Target Device

Message Timeout: 33

Local / Remote: Local MultiHop: Yes

Extended Routing Info File(RIX): RIX9.1

Service: Write Assembly Service Code (hex): 10

Class (hex): 4 (dec): 4

Instance (hex): 96 (dec): 150

Attribute (hex): 3 (dec): 3

Control Bits

Ignore if timed out (TO): 0

Break Connection (BK): 0

Awaiting Execution (EW): 0

UnConnected (UC): 0

Error (ER): 0

Message done (DN): 1

Message Transmitting (ST): 0

Message Enabled (EN): 0

Error

Error Code(Hex): 0

Error Description

No errors

MSG - Rung #3:1 - MG10:1

General MultiHop Send Data Receive Data

Ins = Add Hop Del = Remove Hop

From Device	From Port	To Address Type	To Address
This MicroLogix	Channel 1	EtherNet/IP Device (str.)	192.168.1.165

2.6.7 Ladder Logic for Process Data Input

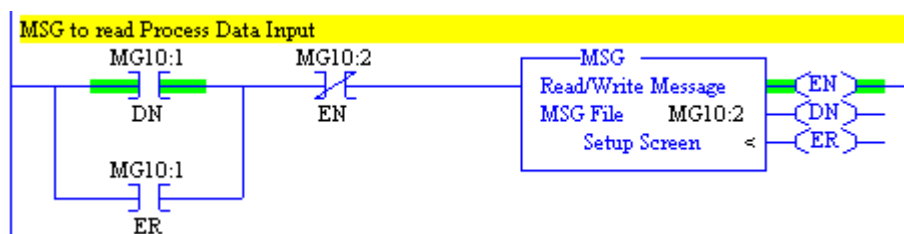
NOTICE

The IP settings in this example can cause serious network problems under certain circumstances. If you are in doubt about the correct IP settings for your network, ask your system administrator for assistance.

This message reads the Status Word, Actual Value and Digital Inputs Status.

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
BST XIC MG10:1/DN NXB XIC MG10:1/ER BND XIO MG10:2/EN MSG MG10:2
5. Press "ENTER".
6. In the MSG instruction, double-click "Setup Screen" to launch the message configuration dialog box.
7. Configure the input fields of the "General" tab.
8. Configure the input field "To Address" of the "MultiHop" tab.
9. Close the message configuration dialog box.

General Tab: This Controller	Setting
Channel	1 (Integral)
Communication Command	CIP Generic
Data Table Address (Receive)	N20:0. Storage location of process data input.
Size in Bytes (Receive)	7
General Tab: Target Device	Setting
Extended Routing Info File (RIX)	RIX9:2. An unused extended routing information file
Service	Read Assembly
Class (hex)	4
Instance (hex)	64
Attribute (hex)	3
MultiHop Tab	Setting
To Address	192.168.1.165. The IP address of the drive.



MSG - MG10:2 : (1 Elements)

General MultiHop Send Data Receive Data

This Controller

Channel: 1 (Integral)

Communication Command: CIP Generic

Data Table Address (Receive): N20:0

Size in Bytes (Receive): 7 (Send): N/A

Target Device

Message Timeout: 33

Local / Remote: Local MultiHop: Yes

Extended Routing Info File(RIX): RIX9.2

Service: Read Assembly Service Code (hex): E

Class (hex): 4 (dec): 4

Instance (hex): 64 (dec): 100

Attribute (hex): 3 (dec): 3

Control Bits

Ignore if timed out (TO): 0

Break Connection (BK): 0

Awaiting Execution (EW): 0

UnConnected (UC): 0

Error (ER): 0

Message done (DN): 0

Message Transmitting (ST): 1

Message Enabled (EN): 1

Error

Error Code(Hex): 0

Error Description

No errors

MSG - MG10:2 : (1 Elements)

General MultiHop Send Data Receive Data

Ins = Add Hop Del = Remove Hop

From Device	From Port	To Address Type	To Address
This MicroLogix	Channel 1	EtherNet/IP Device (str.)	192.168.1.165

2.6.8 Ladder Logic to Read the Configuration Assembly

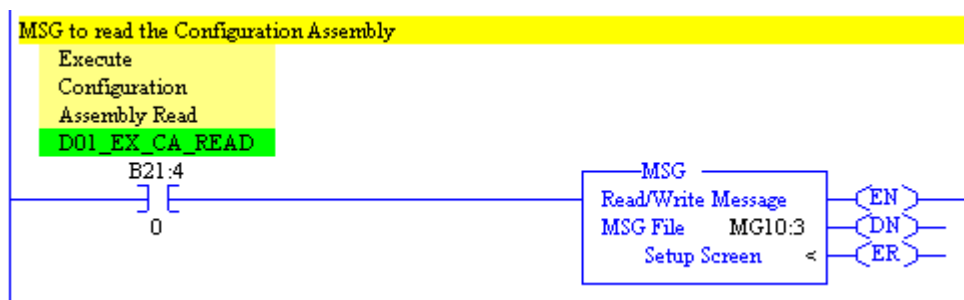
NOTICE

The IP settings in this example can cause serious network problems under certain circumstances. If you are in doubt about the correct IP settings for your network, ask your system administrator for assistance.

The Configuration Assembly structure corresponds with the data table address range N20:8 ... N20:89.

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
XIC B21:4/0 MSG MG10:3
5. Press "ENTER".
6. In the MSG instruction, double-click "Setup Screen" to launch the message configuration dialog box.
7. Configure the input fields of the "General" tab.
8. Configure the input field "To Address" of the "MultiHop" tab.
9. Close the message configuration dialog box.

General Tab: This Controller	Setting
Channel	1 (Integral)
Communication Command	CIP Generic
Data Table Address (Receive)	N20:8. Configuration Assembly start address.
Size in Bytes (Receive)	164
General Tab: Target Device	Setting
Extended Routing Info File (RIX)	RIX9:3. An unused extended routing information file
Service	Read Assembly
Class (hex)	4
Instance (hex)	5
Attribute (hex)	3
MultiHop Tab	Setting
To Address	192.168.1.165. The IP address of the drive.



MSG - Rung #3:7 - MG10:3

General MultiHop Send Data Receive Data

This Controller

Channel: 1 (Integral)

Communication Command: CIP Generic

Data Table Address (Receive): N20:8 (Send: N/A)

Size in Bytes (Receive): 164 (Send: N/A)

Target Device

Message Timeout: 5

Local / Remote: Local MultiHop: Yes

Extended Routing Info File(RIX): RIX:3

Service: Read Assembly Service Code (hex): E

Class (hex): 4 (dec): 4

Instance (hex): 5 (dec): 5

Attribute (hex): 3 (dec): 3

Control Bits

Ignore if timed out (TO): 0

Break Connection (BK): 0

Awaiting Execution (EW): 0

UnConnected (UC): 0

Error (ER): 0

Message done (DN): 0

Message Transmitting (ST): 0

Message Enabled (EN): 0

Error

Error Code(Hex): 0

Error Description

No errors

MSG - Rung #3:7 - MG10:3

General MultiHop Send Data Receive Data

Ins = Add Hop Del = Remove Hop

From Device	From Port	To Address Type	To Address
This MicroLogix	Channel 1	EtherNet/IP Device (str.)	192.168.1.165

2.6.9 Ladder Logic to Write the Configuration Assembly

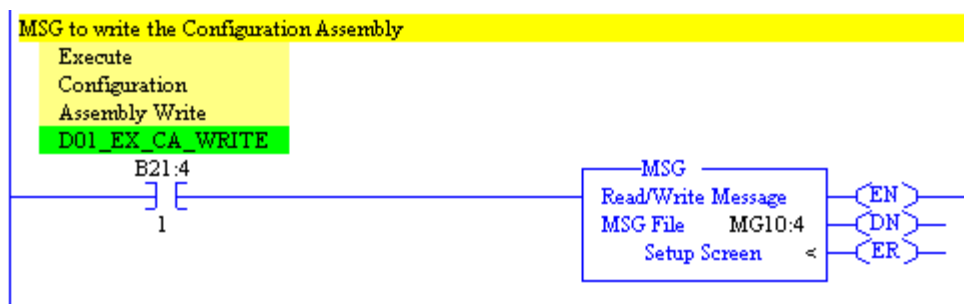
NOTICE

The IP settings in this example can cause serious network problems under certain circumstances. If you are in doubt about the correct IP settings for your network, ask your system administrator for assistance.

The Configuration Assembly structure corresponds with the data table address range N20:8 ... N20:89.

1. Double-click "LAD 3" in the folder "Program Files".
2. Insert a ladder rung.
3. Double-click the rung to display the rung editor.
4. Enter the following text:
XIC B21:4/1 MSG MG10:4
5. Press "ENTER".
6. In the MSG instruction, double-click "Setup Screen" to launch the message configuration dialog box.
7. Configure the input fields of the "General" tab.
8. Configure the input field "To Address" of the "MultiHop" tab.
9. Close the message configuration dialog box.

General Tab: This Controller	Setting
Channel	1 (Integral)
Communication Command	CIP Generic
Data Table Address (Receive)	N20:8. Configuration Assembly start address.
Size in Bytes (Receive)	164
General Tab: Target Device	Setting
Extended Routing Info File (RIX)	RIX9:4. An unused extended routing information file
Service	Write Assembly
Class (hex)	4
Instance (hex)	5
Attribute (hex)	3
MultiHop Tab	Setting
To Address	192.168.1.165. The IP address of the drive.



MSG - Rung #3:8 - MG10:4

General MultiHop Send Data Receive Data

This Controller

Channel: 1 (Integral)

Communication Command: CIP Generic

Data Table Address (Receive): N/A (Send: N20:8)

Size in Bytes (Receive): N/A (Send: 164)

Target Device

Message Timeout: 5

Local / Remote: Local MultiHop: Yes

Extended Routing Info File(RIX): RIX9.4

Service: Write Assembly Service Code (hex): 10

Class (hex): 4 (dec): 4

Instance (hex): 5 (dec): 5

Attribute (hex): 3 (dec): 3

Control Bits

Ignore if timed out (TO): 0

Break Connection (BK): 0

Awaiting Execution (EW): 0

UnConnected (UC): 0

Error (ER): 0

Message done (DN): 0

Message Transmitting (ST): 0

Message Enabled (EN): 0

Error

Error Code(Hex): 0

Error Description

No errors

MSG - Rung #3:8 - MG10:4

General MultiHop Send Data Receive Data

Ins = Add Hop Del = Remove Hop

From Device	From Port	To Address Type	To Address
This MicroLogix	Channel 1	EtherNet/IP Device (str.)	192.168.1.165

2.7 Verify and Download Project

1. Execute command "Edit" > "Verify Project".
2. Debug project if necessary.
3. If the project is error free you can download the project.

2.8 Read the Configuration Assembly

1. Go online.
2. Double-click data file "B21" in the folder "Data Files".
3. Double-click data file "N20" in the folder "Data Files".
4. Set bit B21:4/0 "Execute Configuration Assembly Read".

The left screenshot shows the 'Data File B21 (bin)' window. The 'Offset' column ranges from 15 to 0. The 'B21:4/0' bit is highlighted with a blue background and a value of 1. The 'Symbol' field is set to 'D01 EX CA READ' and the 'Desc' field is 'Execute Configuration Assembly Read'. The 'Radix' is set to 'Binary' and 'Columns' is 16.

The right screenshot shows the 'Data File N20 (dec)' window. The 'Offset' column ranges from 33 to 0. The 'N20:8' value is highlighted with a blue background and a value of 1. The 'Symbol' field is set to 'D01 ENABLE CA' and the 'Desc' field is 'Enable Configuration Assembly'. The 'Radix' is set to 'Decimal' and 'Columns' is 10.

2.9 Write the Configuration Assembly

1. Go online.
2. Double-click data file "B21" in the folder "Data Files".
3. Double-click data file "N20" in the folder "Data Files".
4. Set parameter N20:8 "Enable Configuration Assembly" to 1.
5. Ensure that the data file addresses N20:9 ... N20:89 are set up with valid values. You can read the Configuration Assembly in advance to fill up N20:9 ... N20:89 with valid values.
6. Set bit B21:4/1 "Execute Configuration Assembly Write".

The left screenshot shows the 'Data File B21 (bin)' window. The 'Offset' column ranges from 15 to 0. The 'B21:4/1' bit is highlighted with a blue background and a value of 1. The 'Symbol' field is set to 'D01 EX CA WRITE' and the 'Desc' field is 'Execute Configuration Assembly Write'. The 'Radix' is set to 'Binary' and 'Columns' is 16.

The right screenshot shows the 'Data File N20 (dec)' window. The 'Offset' column ranges from 33 to 0. The 'N20:8' value is highlighted with a blue background and a value of 1. The 'Symbol' field is set to 'D01 ENABLE CA' and the 'Desc' field is 'Enable Configuration Assembly'. The 'Radix' is set to 'Decimal' and 'Columns' is 10.