

Application Note

Using AN-X2-DHP to Route Messages from a PLC-5



This application note describes how to send remote messages from a PLC-5 on Data Highway Plus over Ethernet to a destination station, using the routing function on the AN-X2-DHP.

Routing requires version 4.7 or above of the AN-X2-DHP firmware.

In this example, the AN-X is at node address 14 octal on Data Highway Plus and the PLC-5 is at node address 0 octal. The AN-X has IP address 192.168.1.14.

To send remote messages from a PLC-5:

1. Configure the AN-X router
2. Create remote messages on the PLC

AN-X Router Configuration

In this example, AN-X will be assigned local Link ID 122.

The PLC-5 will be sending remote messages to:

- a ControlLogix processor in slot 1 of a rack that contains a 1756-ENBT at IP address 192.168.1.65, using link ID 1
- an Ethernet/IP enabled PLC-5 at IP address 192.168.1.24, using link ID 2

The AN-X router configuration file will then look like this:

```
LocalLinkID 122
1 Eth 192.168.1.65 Slot 1 CLX
2 Eth 192.168.1.24 PLC
```

Preparing the ControlLogix

You must configure a mapping table in the ControlLogix to allow the controller to accept messages from controllers that cannot access ControlLogix tags directly.

In RSLogix 5000:

1. Select Logic/Map PLC Messages
2. In the File number column of the table, enter the file number you want to map to a tag. For example, to map a tag to N7, enter 7.
3. In the Name column of the table, enter the name of the tag you want to map to that file number.
4. Click OK

PLC-5 Remote Messages

To send a message to the ControlLogix to read 20 integers from a data tag that has been mapped to file 100:

1. Add a MSG instruction to the PLC program.
2. Set Read/Write to the appropriate value.
3. Set the Target Device to the correct type, in this case, PLC5.
4. Set Local/Remote to Remote.
5. Assign an address for the Control Block
6. Double click on Setup Screen to configure the message.

In the *This Controller* area:

1. Select an appropriate Communication Command.
2. Set the Data Table Address on the PLC-5 for the data we are sending or receiving.
3. Set the Size in Elements. In this example, we are reading 20 integers.
4. Set the Port Number to match the Data Highway Plus channel on the PLC-5.

In the *Target Device* area:

1. Enter the Data Table Address in the destination device. In this example, the data in the ControlLogix has been mapped to file 100.
2. Set the Local DH+ Node to match the Data Highway Plus address of the AN-X that is routing the message. In this example, the AN-X is at Data Highway Plus address 14 octal
3. Set Local/Remote to Remote.
4. Set the Remote Link Type to Data Highway.
5. Set the Remote Station address to be the Data Highway Plus address of the destination device. This is necessary only if the AN-X is routing the message to a device on another Data Highway Plus network. In this example, leave it as 0.
6. Set the Remote Bridge Link ID to be the Link ID of the routing table entry in the AN-X. In this case, Link ID 1 is the path to the ControlLogix and Link ID 2 is the path to the PLC-5.

MSG - MG26:1 : (1 Elements)

General

This PLC-5

Communication Command : PLC-5 Typed Read

Data Table Address : N27:0

Size in Elements : 20

Port Number: 1A

Target Device

Data Table Address: N100:0

Local DH+ Node (Octal): 14

Local / Remote : Remote

Remote Link Type: Data Highway

Remote Station Address: 0

Remote Bridge Link ID: 1

Control Bits

Ignore if timed out (TO): 0

To be retried (NR): 0

Awaiting Execution (EW): 0

Continuous Run (CO): 0

Error (ER): 0

Message done (DN): 0

Message Transmitting (ST): 1

Message Enabled (EN): 1

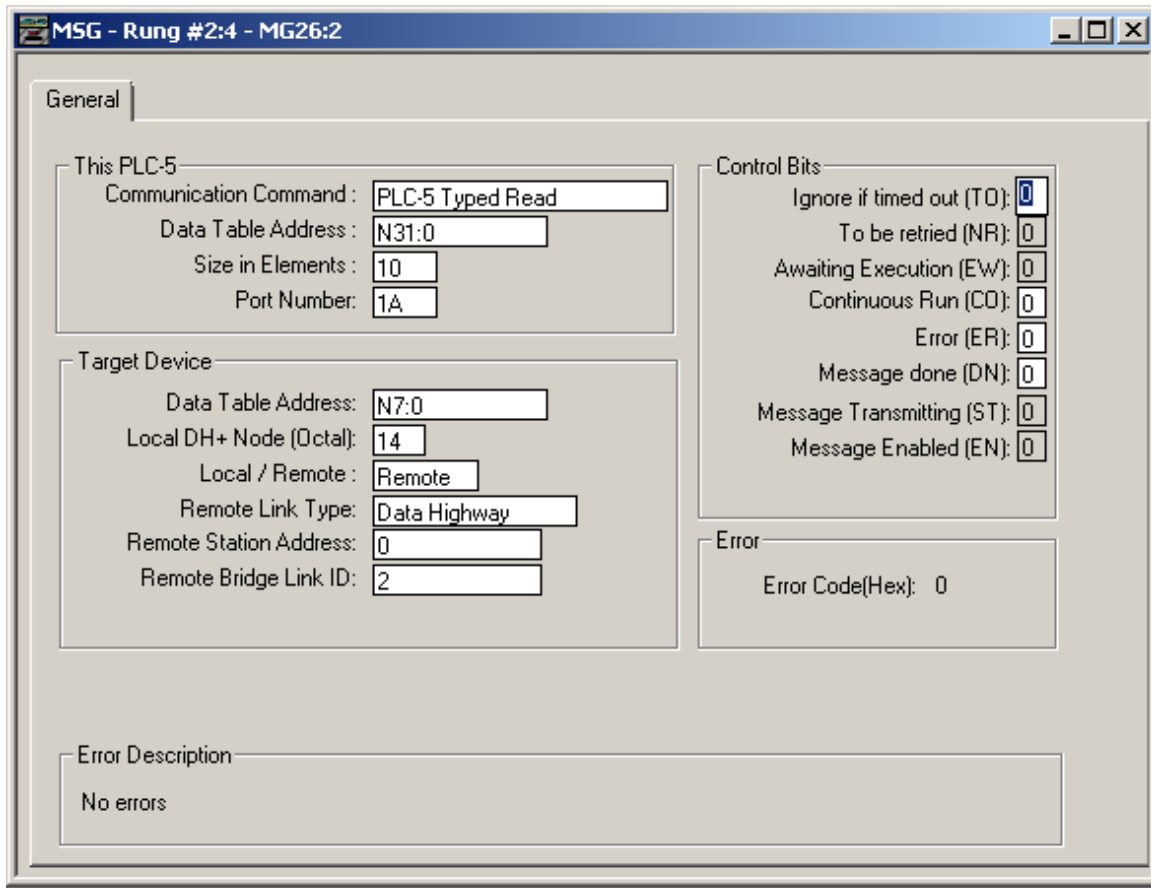
Error

Error Code(Hex): 0

Error Description

No errors

To send a message to the Ethernet PLC-5, using link ID 2, add another MSG instruction, with appropriate parameters and with the Remote Bridge Link ID set to 2.



Local Messages

It's also possible to define a default path in the AN-X router configuration file. This default path always uses Link ID 0.

Local messages sent to the DH+ address of the ANX will be routed using the default path.

For example, to send messages to the ControlLogix in the previous example, using the default path, add a line to the router configuration file.

```
LocalLinkID 122
0 Eth 192.168.1.65 Slot 1 CLX
1 Eth 192.168.1.65 Slot 1 CLX
2 Eth 192.168.1.14 PLC
```

Now, add a local message in the SLC program with the destination set to the DH+ address of the AN-X. In this example, the AN-X is at Data Highway Plus address 14.

MSG - MG26:3 : (1 Elements)

General

This PLC-5

Communication Command :

Data Table Address :

Size in Elements :

Port Number:

Control Bits

Ignore if timed out (TO):

To be retried (NR):

Awaiting Execution (EW):

Continuous Run (CO):

Error (ER):

Message done (DN):

Message Transmitting (ST):

Message Enabled (EN):

Target Device

Data Table Address:

Local DH+ Node (Octal):

Local / Remote :

Error

Error Code(Hex): 0

Error Description

No errors



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