



OPERATOR INTERFACE PRODUCTS APPLICATION NOTE

Subject: Terminology for Station ID and Multi-Link Setup

AN# 1107

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Page: 1 of 2

Description: A description to clear up some of the confusion surrounding terms for station ID and GP-unit number when setting up Multi-Link protocol

Affected Products:

GP and GLC series models when connecting to a Multi-Link capable PLC, and usually using RS422 physical layer protocol. PLCs supported include:

-Mitsubishi, Omron Sysmac, Hitachi Hidic, Matsushita MEWNET, Yokogawa Factory Ace, Toshiba Prosec T, AB SLC500, Keyence KZ 300/350.

Problem:

What is a station ID, what is a unit number, what is a GP unit number, etc. These terms may be confusing when reading the manuals and using the software. When connecting using Multi-Link (Digital's multi-drop network method), the confusion is compounded because there are two ID numbers floating around.

Solution:

The basic confusion is that there are two node IDs, or Machine numbers involved once we start to connect a Multi-Link protocol with multiple GPs.

- One is the Link Interface Unit's Machine Number or ID. That is required on the GP for the GP to know which PLC or Link Unit to send data to. Note that this ID is required in a one-to-one configuration too.
- The second is the Multi-Link Node Number used by Digital's protocol to control the token. This one is only required if the GP is configured for N:1 Multi-Link mode.

On the next page is a table of the various terms used showing which terms mean the same thing.



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Node Ids, and Address Terms

Offline Menu (under PLC setup)	GP Setup Dialog	Manual	Comment/Description
Starting address of system data area	System Start Address	System Area Setup	The address where the GP's own system information can be shared with the PLC.
Unit Number	Machine Number (0-31 for Omron)	Link I/F Machine number, or Station No.	The Link Interface ID number of the PLC or Link Unit that the GP is supposed to communicate with.
Network Information Address	Transmission Status	Network Information Address, or Connection List, or Storage Address (in the table on pg 4-7-3)	The address of the 2 words used in Multi-Link to enable/disable GP nodes from participating in the communications.
Station No. (0-15)	Node Number	Station No., or GP Station No.	The node number of this GP in the Multi-Link network set of GPs.

So an example setup for Multi-Link on an Omron PLC system might be:

On the PLC	On GP1	On GP2
	System Area Start Address: D0000	System Area Start Address: D0040
Link Unit Number: 3	Unit Number: 3	Unit Number: 3
	Network Information Address: D0020	Network Information Address: D0020
	GP Node No.: 0	GP Node No.: 1

Further information about these addresses and node numbers can be found in Chapter 4 of the PLC Connection Manual. It is strongly recommended that the user read the first 7 sections of that chapter before attempting to configure an N:1 network in this way. Chapter 5 includes information on each specific PLC type that can be used in Multi-Link configurations. A separate application note describes the steps to configure Multi-Link for the Omron PLC.