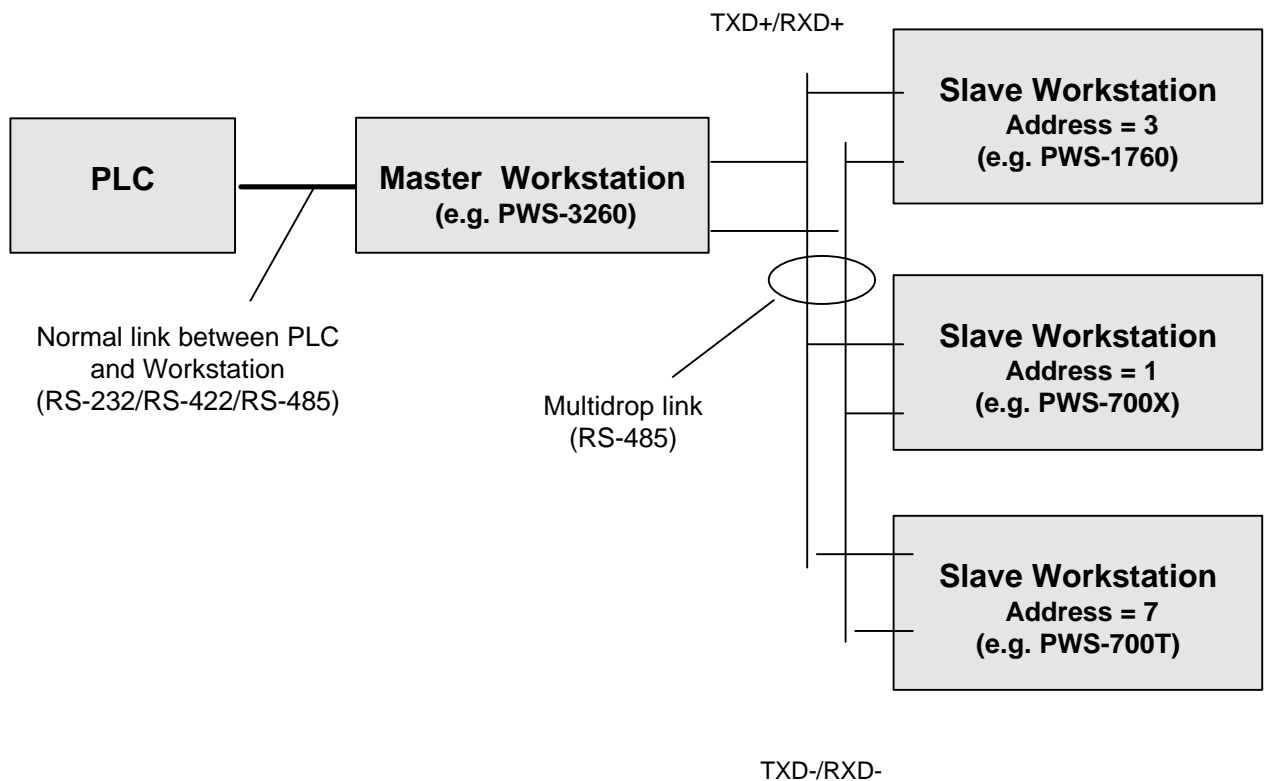


Multidrop Link Guide

Introduction

The multidrop link provides you an economical and convenient way to let several Workstations talk to a PLC or PLC's through a single PLC's communication port. On the multidrop link, you need one master Workstation and you can have up to eight slave Workstations. The master Workstation is the only Workstation that is physically connected to a PLC and it is responsible for exchanging data between the PLC and all other slave Workstations on the link. Each slave Workstation must be assigned a unique address in order that the master Workstation knows who is requesting PLC data and whom the data transmitted from the PLC should be sent to.

The following picture shows how to connect four Workstations with one PLC virtually. The RS-485 connection is always used for the multidrop link. Note that each slave Workstation has a unique address.



The communication method and the cable connection between the master Workstation and the PLC are the same as of a normal 1-to-1 application. The RS485 cable is used for the connection among the master Workstation and the slave Workstations. Each slave Workstation must be assigned a unique address (1~15).

To set up an application for a master or slave Workstation, use the same way as you do for a normal application.

The multidrop link is supported with version 1.3 of ADP3 or later and not all PLCs are supported.

Communication Parameters

To set communication parameters for the multidrop link, select Workstation Setup in the Application menu to get Workstation Setup dialog box, then click Communications button to get Communications Parameters dialog box. Figure 4-1 shows the Communication Parameters dialog box where a set of selections is made for a master Workstation.

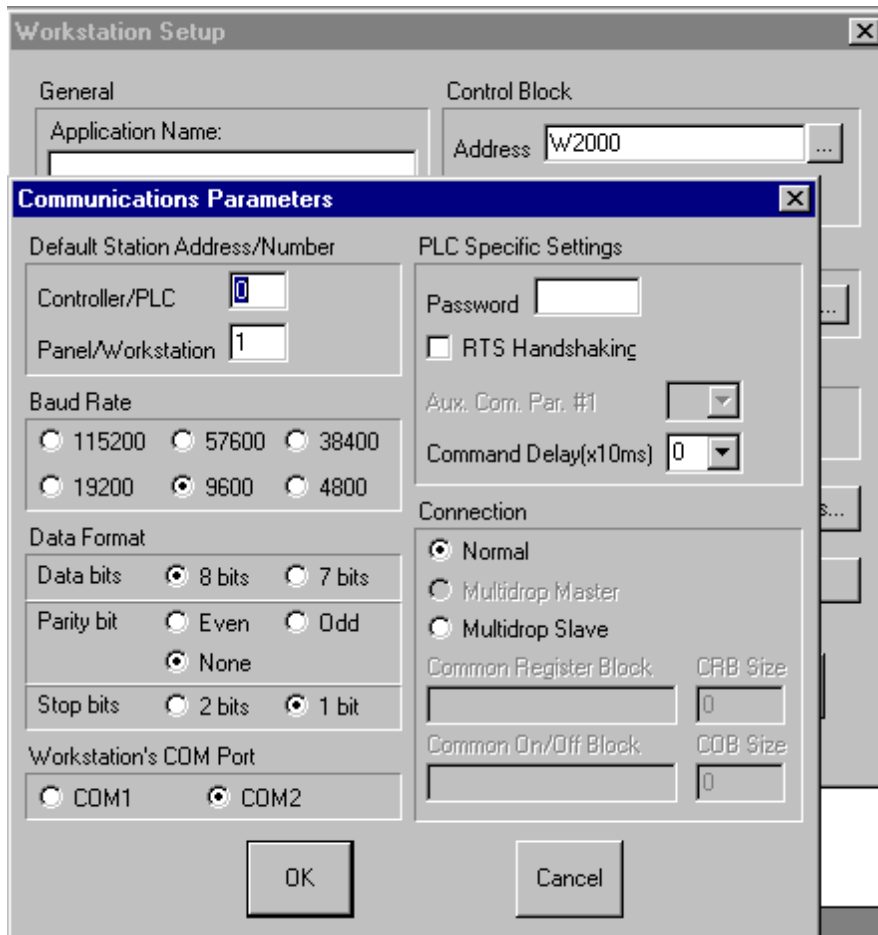


Figure 4-1 Communications Parameters dialog box (master Workstation)

You don't have to select the baud rate and data format for the communication between master and slave Workstations, because a fixed baud rate and data format are used for the multidrop link. The baud rate used is 57600 and the data format uses eight data bits, one even parity bit, and one stop bit.

For a master Workstation, the option of Multidrop Master should be selected. Common Register Block (CRB), Common On/Off Block (COB), and their sizes must be specified for improving communication performance. The purpose of CRB and COB will be explained in the next section. All other options in the Communications Parameters dialog box are related to PLC communications and have nothing to do with the multidrop link.

Note: When setting up the Master Workstation, it is important that the Workstation's COM Port be set to the port that will connect to the PLC. If this is not set correctly, a communication fault will occur.

For a slave Workstation, the option of Multidrop Slave should be selected. Common Register Block, Common On/Off Block, and their sizes must be specified for improving communication

performance and should be exactly the same as of its master Workstation. If the slave Workstation is to use downloaded communication parameters, i.e. the DIP switch #5 is set to off, you should assign it a unique address by setting the Default Station Address/Number of Panel/Workstation in the dialog box. Always compile and download your application again after you made any change to the address. If a slave Workstation uses communication parameters set in the Configuration Table of the Workstation, i.e. the DIP switch #5 is set to on, you should assign a unique address to it by setting the Workstation Node Address in the Configuration Table of the Workstation. The address can be any number between 1 and 15. Note that it doesn't matter what the master Workstation's address is. A slave Workstation talks to a master Workstation instead of a PLC, so the selections of baud rate and data format in the dialog box are meaningless. However,

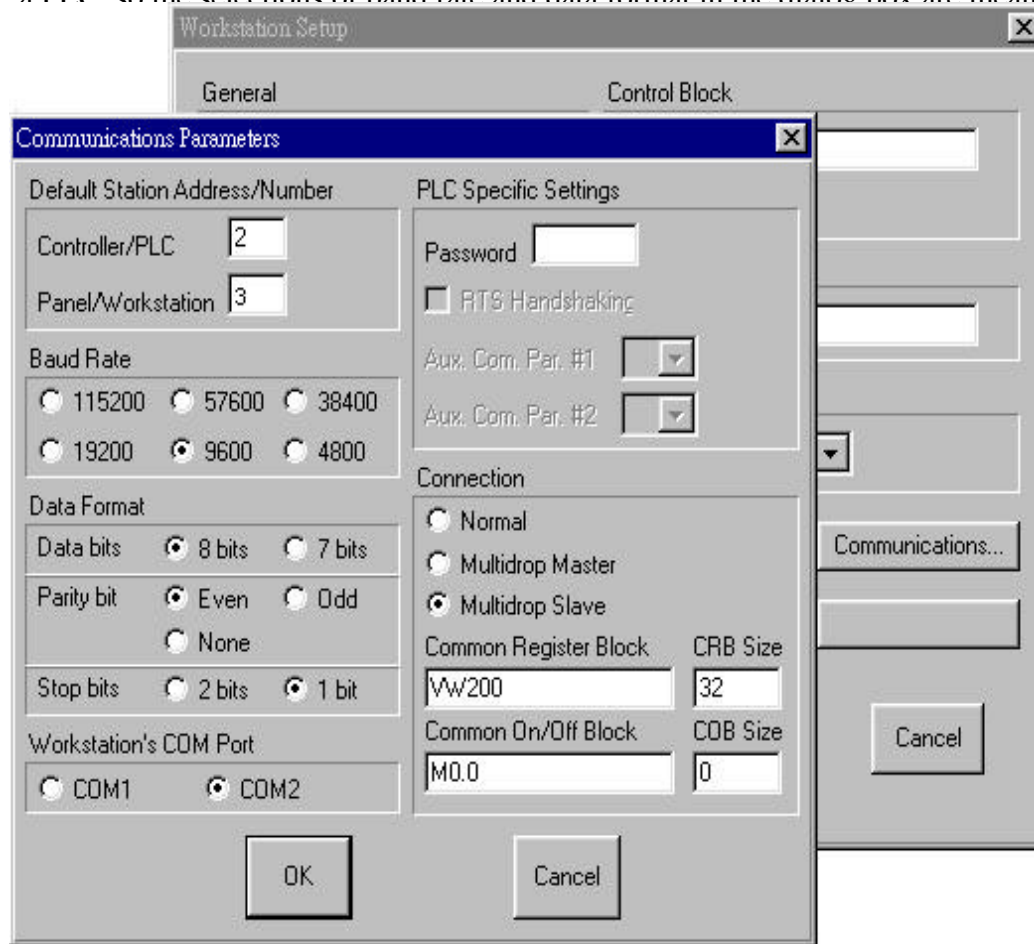


Figure 4-2 Communications Parameters dialog box (slave Workstation)

Figure 4-2 shows the Communication Parameters dialog box where a set of selections is made for a slave Workstation. From the dialog box, we know:

1. this application is for a slave Workstation,
2. the slave Workstation talks to the master Workstation via COM2,
3. the address of the slave Workstation is 3,
4. CRB starts from VW200 and the size is 32 words,
5. COB is not used because its size is 0.

Improving Performance

The ADP3 allows you to specify a Common Register Block (CRB) and a Common On/Off Block (COB) for a master or slave Workstation. See the section of Setting Communication Parameters to know how to specify those two blocks. CRB is a block of registers in the PLC that the master Workstation will read it once in every read cycle. COB is a block of on/off locations in the PLC that the master Workstation will also read it once in every read cycle. The master Workstation broadcast the data of CRB and COB that it read from the PLC to all slave Workstations in every read cycle. The maximal size of CRB and COB is 128 words and 256 bits respectively. You have to specify same CRB and COB for all Workstations on the same multidrop link. A slave Workstation does not generate requests of reading data for locations that are in CRB or COB, it gets those locations' data directly from a buffer where the broadcast data are saved. Using CRB and COB is the major key to improve performance, because they reduce the traffic on the multidrop link as well as the PLC connection.

Arranging Control Blocks of the Workstations in the CRB is the most effective way to improve the performance. Arranging variables that are common to some Workstations in CRB or COB will improve the performance a lot also. You get high refresh rate for those variables arranged in CRB and COB, because it is guaranteed that the variables will be refreshed in every read cycle.

Besides CRB and COB, remember always to take advantage of register blocks and on/off blocks for screens, because reducing the number of read commands will lessen the burden of master Workstation.

Note that you had better specify a block for contiguous locations used in a screen even if those locations are in CRB or COB.

Important Notes

1. The RS-485 communication method is used.

PWS-COM2 Port 25-pin female-----CABLE-----	PWS- COM2 Port 25-pin female
TXD+/RXD+ 14 -----	14 TXD+/RXD+
TXD- /RXD- 15 -----	15 TXD-/RXD-
GND 7-----	7 GND

2. Each slave Workstation must have a unique address.
3. All Workstations on the same multidrop link must have the same CRB and COB.
4. A master Workstation should not start running until all slave Workstations displays their first screen. You can delay the start-up of a Workstation by setting the Start Up Delay in the Miscellaneous Settings dialog box as shown in Figure 4-3. To get Miscellaneous Settings dialog box, click Miscellaneous button in the Workstation Setup dialog box.

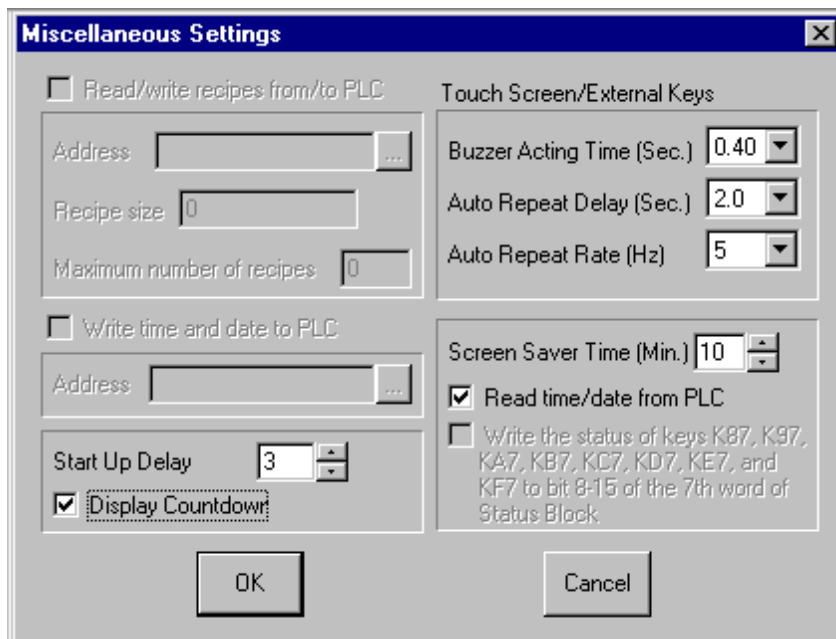


Figure 4-3 Miscellaneous Settings dialog box

Supported Protocols

The multidrop link is now available for the following protocols:

	Driver File For P.L.C		Multidrop
1.	P513.TSK	Allen-Bradley MICROLOGIX 1000	Yes
2.	P553.TSK	Allen-Bradley PLC-5	Yes
3.	P503.TSK	Allen-Bradley SLC 5/03 & 5/04	Yes
4.	P003.TSK	Computer (as master)	No
5.	P013.TSK	Computer (as slave)	No
6.	PH03.TSK	Facon FB Series	Yes
7.	PA13.TSK	Fuji NB Series	No
8.	PA03.TSK	Fuji Micrex-F Series	Yes
9.	P413.TSK	GE Series 90 CCM	No
10.	P403.TSK	GE Series 90 SNP	No
11.	PB13.TSK	Hitachi EC Series	Yes
12.	PB03.TSK	Hitachi H Series	Yes
13.	PE63.TSK	IDEC FA-2J	Yes
14.	PE53.TSK	IDEC Micro-3	No
15.	PK53.TSK	Jetter NANO-B	Yes
16.	PK03.TSK	Klockner Moeller PS4-201	No
17.	PK13.TSK	Klockner Moeller PS316	No
18.	P913.TSK	KOYO Direct DL Series	No
19.	PL03.TSK	LG K10/60H/200H	Yes
20.	PL23.TSK	LG K500H/1000H	Yes
21.	P703.TSK	Mitsubishi FX Series	Yes
22.	P713.TSK	Mitsubishi FX-10GM/20GM Series	No
23.	P723.TSK	Mitsubishi FX2N Series	Yes
24.	P803.TSK	Mitsubishi AnA Series	Yes
26.	P813.TSK	Mitsubishi A1S/A2S CPU Port	Yes
27.	P823.TSK	Mitsubishi A2A/A2AS CPU Port	Yes
28.	P833.TSK	Mitsubishi A1N CPU Series	Yes
29.	P843.TSK	Mitsubishi A3N CPU Series	Yes
30.	P853.TSK	Mitsubishi A0J2 CPU Series	No
31.	P303.TSK	Modicon PC984(RTU mode)	Yes
32.	P603.TSK	Matsushita FP Series	Yes
27.	P103.TSK	Omron C Series	Yes
33.	P113.TSK	Omron CV Series	Yes
34.	PY53.TSK	Sharp JW Series	No
35.	P203.TSK	Simatic S5 Series (90U, 95U, 100U, 102U, 103U, 115U, 135U) via PG port	Yes
36.	P213.TSK	Simatic S5 3964R	Yes
37.	P253.TSK	Simatic S7-200 Series (mono-link PPI port)	No
38.	P257.TSK	Simatic S7-200 Series (multi-link PPI port)	No
39.	P263.TSK	Simatic S7 3964R-CP340	Yes
39.	P273.TSK	Simatic S7-300 Series (via MPI cable)	No
40.	P277.TSK	Simatic S7-300 Series (via HMI cable)	Yes
30.	PD03.TSK	Square D Model 400-700	No

41.	PY03.TSK	Taian TP Series	No
42.	PW03.TSK	Telemecanique TSX Micro	No
43.	P903.TSK	TI 500/505	Yes
44.	P913.TSK	TI 435	No
45.	P923.TSK	TI 325/330	No
46.	PT03.TSK	Toshiba M20/M40	No
47.	PT13.TSK	Toshiba T1/T2	No
48.	P013.TSK	Unidriver UD70	No