

6. Communication program

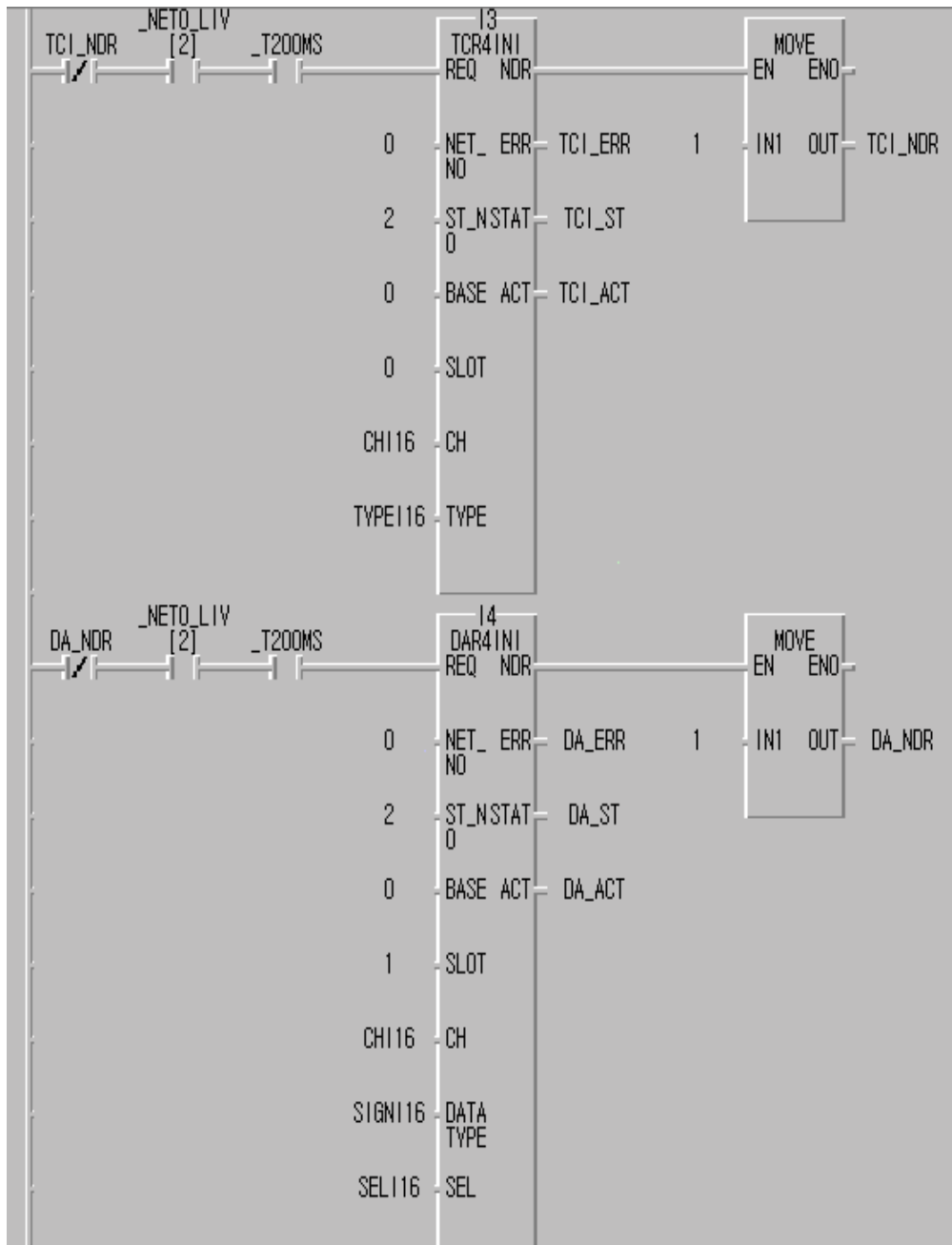


Fig. 6.6.6(A) Special module initialization program of remote I/O

Fig. 6.6.6(A) explains a program that initializes T/C and D/A module of slot 0 and 1 in remote system of Fig. 6.6.4(A). Read/write command can be performed only if special module initialization is successfully performed. To do this, NDR output of initialization F/B is set to 'B contact' for initialization request condition, and a program is made to retry with a period of 200ms until initialization is finished.

To make initialization *function block* not performed again after initialization is finished, NDR output with B contact is used as initialization request condition to perform it only once. To perform initialization in normal operation status, `_NET0_LIV[2]` flag is used to monitor operation of FMM in slot 0 and remote station 2. Program can be efficiently performed if `_NET0_LIV[2]` flag is used as request input in read/write *function block* of special module after initialization is finished.

Fig. 6.6.6(B) is an example of program, which initializes special module of remote station again when power of remote I/O station becomes down and recovered, and this should be used together with the program of Fig. 6.6.6(A).

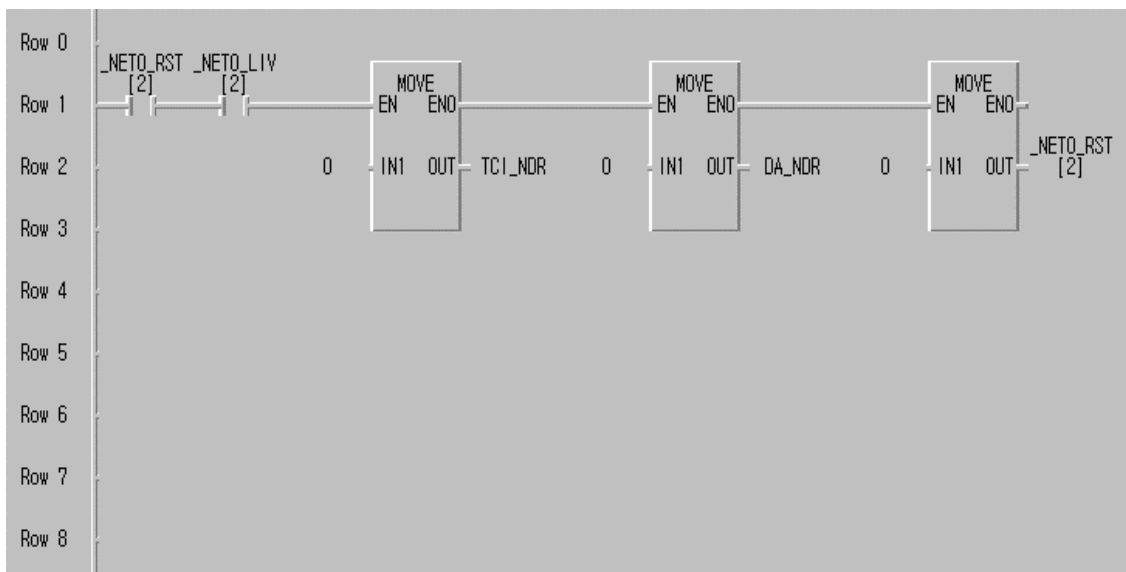


Fig. 6.6.6(B) Restart program when power failure is recovered

In Fig. 6.6.6(B), serial connection is made between `_NET0_RST[2]` and `_NET0_LIV[2]` flag to monitor other station when other station is recovered after power failure. At this time, each NDR output of initialization *function block* is cleared to perform initialization program of Fig. 6.6.6(A) again. After using `_NET0_RST[2]` flag, user should clear this flag as Fig. 6.6.6(B) to perform re-initialization only once and to reuse it for next power failure recovery, because this flag maintains final value until user clears it.

6.6.7 Setting emergency output data setting of remote module

If remote module cannot perform normal operation more than definite time(3~7sec.) because of communication line error connected in remote module, power error of master station, power failure and the others, then remote module outputs emergency data.

Emergency data can be specified using mode switch located in front of remote module(See 3.2.6 Fnet setting).

By mode switch setting :

1) Latch

Data of previous time point than the time when remote communication module cannot receive normal data is outputted and maintained(factory default).

2) User defined

User sets any data, and outputs specific data to remote I/O module.

(1) Specification by GMWIN emergency output data

After connecting remote I/O by remote 1 / 2 connection, choose 'Emergency Data' in On-line menu(See 6.4.2 GMWIN remote connection).

If user click 'Emergency output data', dialog box that user can specify emergency output data value of appropriate remote station is displayed as Fig. 6.6.7(B).



Fig. 6.6.7(A) On-line menu of emergency output data

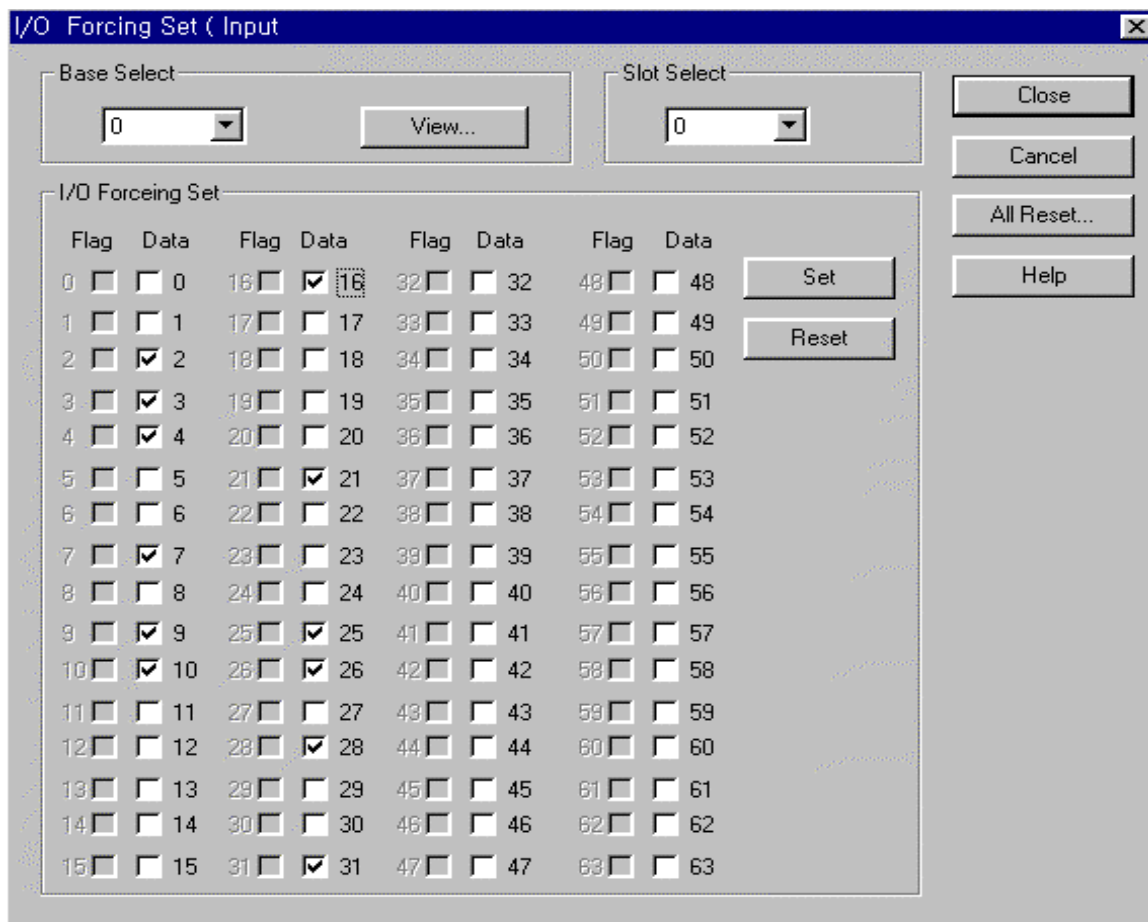


Fig. 6.6.7(B) Setting screen of emergency output data

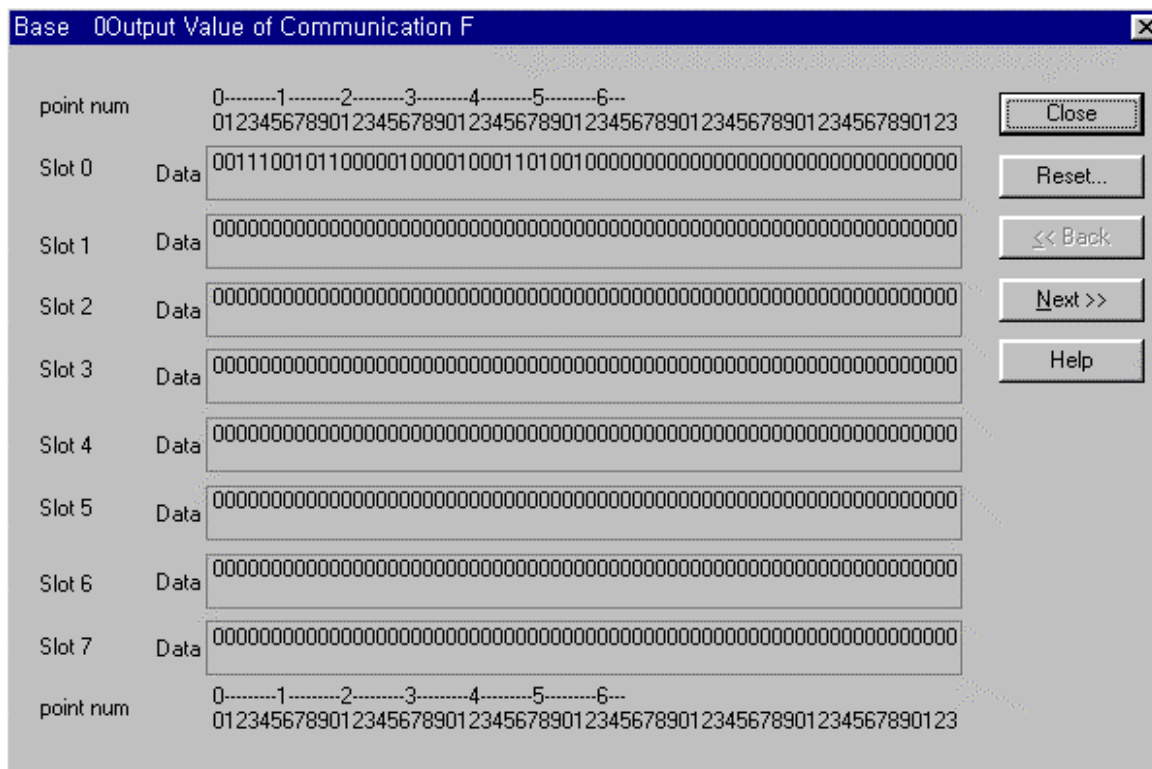


Fig. 6.6.7(C) Ex. of emergency output data setting according to base

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4 base(0~3) can be specified for base selection, and a base consists of 8 slot(0~7) and this can be set according to each slot. The contact that data box is marked in Fig. 6.6.7(B) is set to 'On' when emergency occurred, and user just click setting button whenever the setting according to each slot is finished.

If user click 'View setting' button in base selection box, user can monitor emergency output data value according to slot of appropriate base as Fig. 6.6.7(C). If all data values are specified, click 'Exit' to finish setting.

Remark

Emergency data set by above method is eliminated when power-off of remote communication module occurred. To make the emergency output performed regardless of power On/Off of remote module, use '_BASEx_DATA' flag that explained in the following.

(2) Emergency data specification using _BASEx_DATA flag

User can set certain data for each remote I/O module using '_BASEx_DATA' flag of FSM communication flag in *function block*, and this data is not eliminated even if power off of remote station occurred and emergency data can be simply maintained and outputted by downloading *function block* program. 'x' of _BASEx_DATA indicates base number of remote station, and this can be set to 0~3.

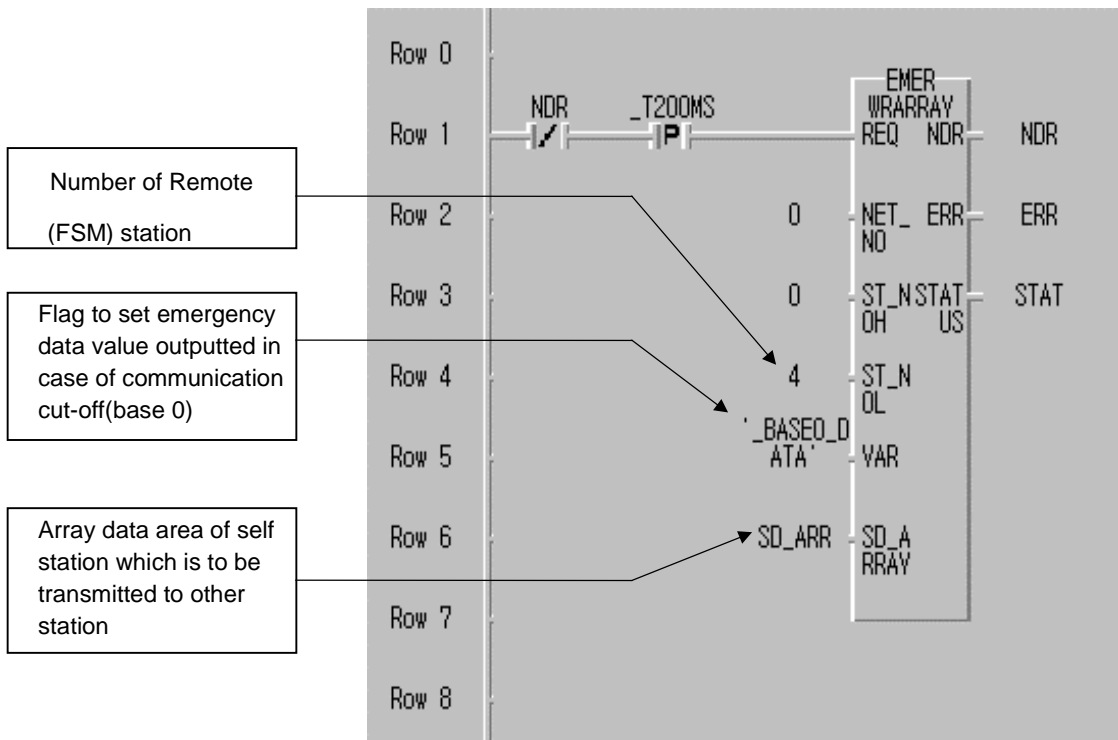


Fig. 6.6.7(D) Ex. of emergency data output program using _BASEx_DATA flag

Fig. 6.6.7(D) shows an example that transmits user-defined emergency data to remote station using `_BASEx_DATA` of FSM communication flag by GMWIN program. `WRARRAY` is used for *function block* as shown in Fig. 6.6.7(D). `NET_NO` indicates slot location that communication module(FMM) that this communication block is executed is mounted. Set `ST_NOH` to '0' and enter station number of remote module into `ST_NOL`. Use '`_BASE0_DATA`' flag(if remote 0 base) for variable identifier(VAR) to be transmitted to other station, and set `SD_ARR` that array data of self station to be transmitted to other station(station 04) to `SD_ARRAY`.

Specify data type as 'Array (0.. 31) OF WORD' in 'Variable add/edit' list as Fig. 6.6.7(E). (Set array number to 32 and set type to word type, because a slot is fixed with 4 word and a base can mount up 8 slot)

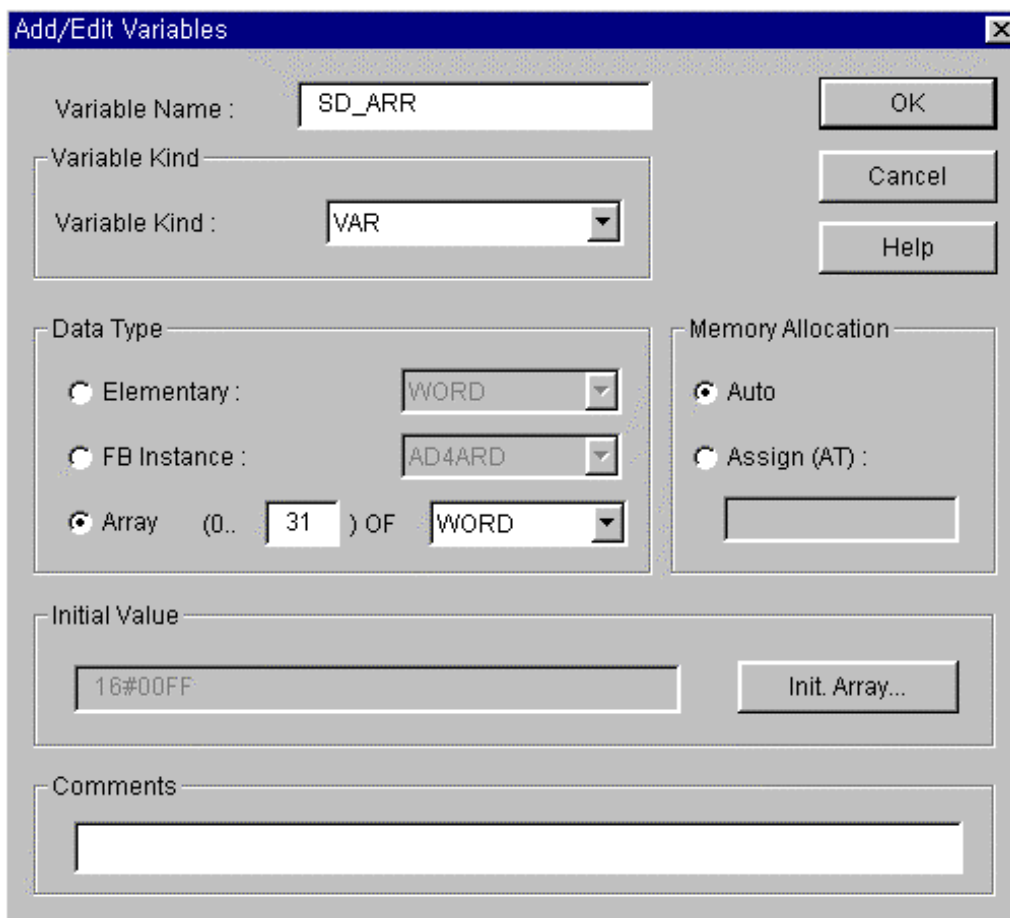


Fig. 6.6.7(E) Ex. of array data SD_ARRAY setting

To enter emergency data according to each slot, click 'Array initialization list' of Fig. 6.6.7(E), then 'Variable initialization' screen is displayed. Select 'Initialization' in dialog box and press 'Edit', then user can enter user-defined emergency data as Fig. 6.6.7(G).

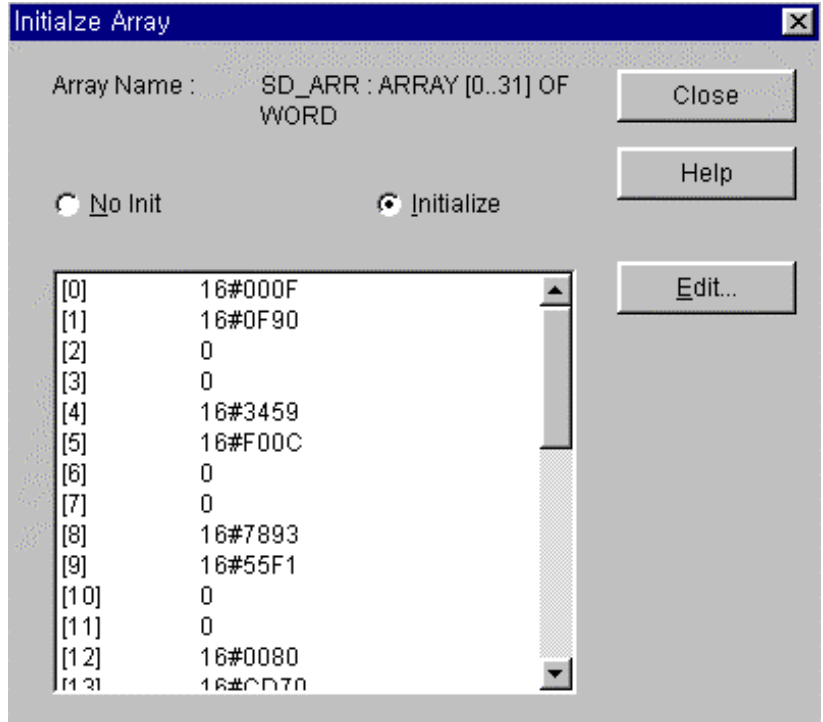


Fig. 6.6.7(F) Array initialization setting screen

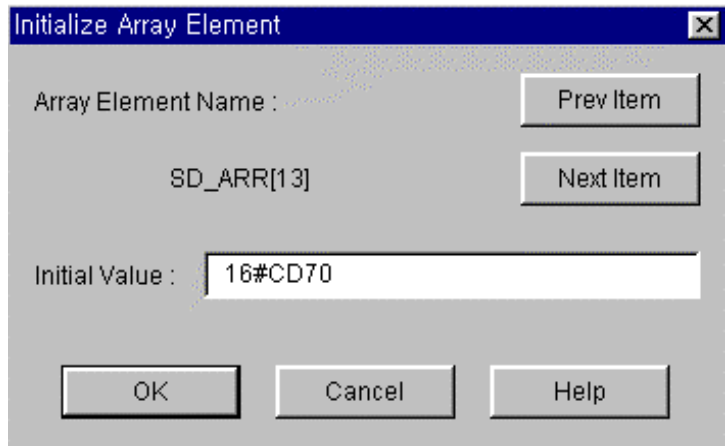


Fig. 6.6.7(G) Array element initial value input