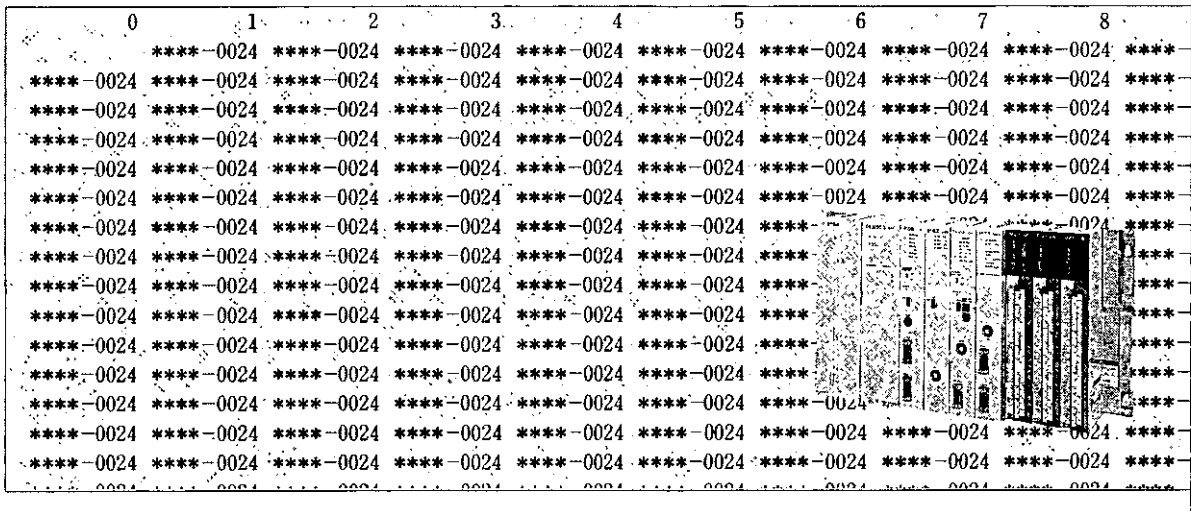
LADDER LISTER
DESCRIPTIVE INFORMATION

PROGRAMMBLE CONTROLLER: MEMOCON-SC GL60S



YASKAWA

MANUAL NO. SIE-C815-14.15B

NOTES FOR SAFE OPERATION

Read these manuals thoroughly before use of MEMOCON-SC GL60S. In these manuals, NOTES FOR SAFE OPERATION are classified as "WARNING" and "CAUTION."

⚠ WARNING : Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to personnel.

⚠ CAUTION : Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to personnel and damage to equipment. It may also be used to alert against unsafe practices.

Even items described in ⚠CAUTION may result in a vital accident in some situations. In either case, follow these important notes.

The following shows the symbols of prohibition and mandatory action.

PROHIBITION : Specifies prohibited handling.

MANDATORY ACTION : Specifies actions that must be taken.

After reading these manuals, keep them readily available for those using the equipment.

1 WIRING

INSERT THE INTERFACE CABLES PROPERLY

· Insert the connectors of the various interface cables that are connected to MEMOCON-SC into the communication parts and secure them properly. Failure to observe this instruction may result in malfunctions.

2 PRECAUTION UPON USE

⚠ CAUTION

· Operations such as RUN, STOP, forced output, and program change during operation must be carried out with care. Operational errors may damage the machine or cause accidents.

WHEN USING A MODEM, TURN THE POWER SUPPLY OFF OR ON CAREFULLY

· If the power supply of a slave machine is turned ON or OFF while the modem power supply is ON, the modem will output unnecessary signals to the twisted-pair cable for several tens of milliseconds. If any messages are being transmitted at this time, a transmission error will occur. To avoid problems, turn ON the power supply of a slave machine before turning ON the power supply of the modem and turn OFF the power supply of the modem before turning OFF the power supply of the slave machine. Alternatively, turn ON and OFF the power supplies of a slave machine and a modem simultaneously.

PROGRAMMING PANEL OPERATING PRECAUTIONS

· Be sure not to use the single sweep function while the machine is operating. Do not use the single sweep for testing purposes, once machinery, processes, or conveyor equipment has begun operating. On completion of decoding, the MEMOCON-SC will stop after output has been sent. Subsequent decoding will not be executed, so all further input signals will be ignored resulting in the likelihood of severe damage to any machine connected to the MEMOCON-SC.

3 GENERAL PRECAUTION

- MEMOCON-SC was not designed or manufactured for use in devices or systems that concern peoples' lives.
  Users who intend to use the product described in this manual for special purposes such as devices or systems relating to transportaion, medical, space aviation, atomic power control, or underwater use must contact YASKAWA representatives beforehand.
- This product has been manufactured under strict quality control guidelines. However, if this product is to be installed in any location in which a failure of MEMOCON-SC involves a life and death situation or in a facility where failure may cause a serious accident, safety devices must be installed to minimize the likelihood of any accident.
- Any illustrations, photographs, or example used in this manual are provided as examples only and may not apply to all product to which this manual is applicable.
- The products and specifications described in this manual or the content and presentation of the manual may be changed without notice to improve the product and/or the manual.
  A new version of the manual will be re-released under a revised document number when any changes are made.
- Contact your YASKAWA representative listed on the back of this manual to order a new manual whenever this manual is damaged or lost.
  Please provide the document number listed on the front cover of this manual when ordering.
- Contact your YASKAWA representative listed on the back of this manual to order new nameplates whenever a nameplate becomes worn or damaged.
- YASKAWA cannot make any guarantee for products which have been modified.
  YASKAWA assumes no responsibility for any injury or damage caused by a modified product.

OVERVIEW OF MANUAL

· This manual describes functions, specifications, and application methods of the MEMOCON-SC GL60S ladder lister.

· Read this manual carefully in order to use the ladder lister properly. Also, keep it in a safe place so that it can be used whenever necessary.

· Refer to the following manuals as necessary.

	Document Title	Document Number	Content
CPU Module	MEMOCON-SC GL60S DESCRIPTIVE INFORMATION	SIE-C815-14.1	Describes system configuration devices and their fumctions, specifications, application methods, etc., for the MEMOCON-SC GL60S.
Man/ Machine Interface	MEMOCON-SC GL60S P150 PROGRAMMING PANEL DESCRIPTIVE INFORMATION	SIE-C815-14.2	Describes the functions, specifications, application methods, etc., for the P150 Programming Panel.
	MEMOCON-SC GL60S P150 PROGRAMMING PANEL SFC INFORMATION	SIE-C815-14.3	Describes the SFC functions, specifications, application methods, etc., for the P150 Programming Panel.

· Throughly check the specifications and conditions or restriction of the product before use.

1. INTRODUCTION

The GL60S ladder lister is a ladder list system created to print out data of the Memocon-SC GL60S efficiently. Various features based on our abundant system integration and drawing creation experiences are integrated in this system.

The following are some features.

* Abundant printing mode functions.
  - The GL60S system status can be printed out.
  - The allocation can be printed out.
  - The cross reference can be printed out.
  - MODE can be printed out.
  - FLOW can be printed out.
  - LADDER can be printed out.
  - SUBROUTINE can be printed out.
  - Status such as coil or input relay can be printed out.
  - Contents of registers can be printed out.

* P150 can also be operated independently.
  Printing can also be executed without connecting P150 to GL60S.
  Just prepare the system disk, data disk, blank disk and printer.

— CONTENTS —

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2. PREPARATION

2.1 FLOPPY DISK

Prepare the following three floppy disks:

- System disk(Type F60S-E002)
- Data disk(With data(e.g.network) saved)
- Blank disk(Type F150-000)

2.2 PRINTER

(1) Applicable Printer

Since this ladder list is designed for printer model PC-PR201H (made by NEC Corp.), any host compatible printer of this model can be used. Printing line number differs by model (80 lines or 136 lines). In this system, both models can be used.

(2) Accessories

Name	Specification	Remarks
Cable between P150 and Printer	Delivered with printer.	Purchased from maker or agents.
Printer	Host compatible printer of PC-PR201H (136 lines) Host compatible printer of PC-PR101L (80 lines)	
Printing Paper	10×11 inches	

(3) Communication Parameter Setting

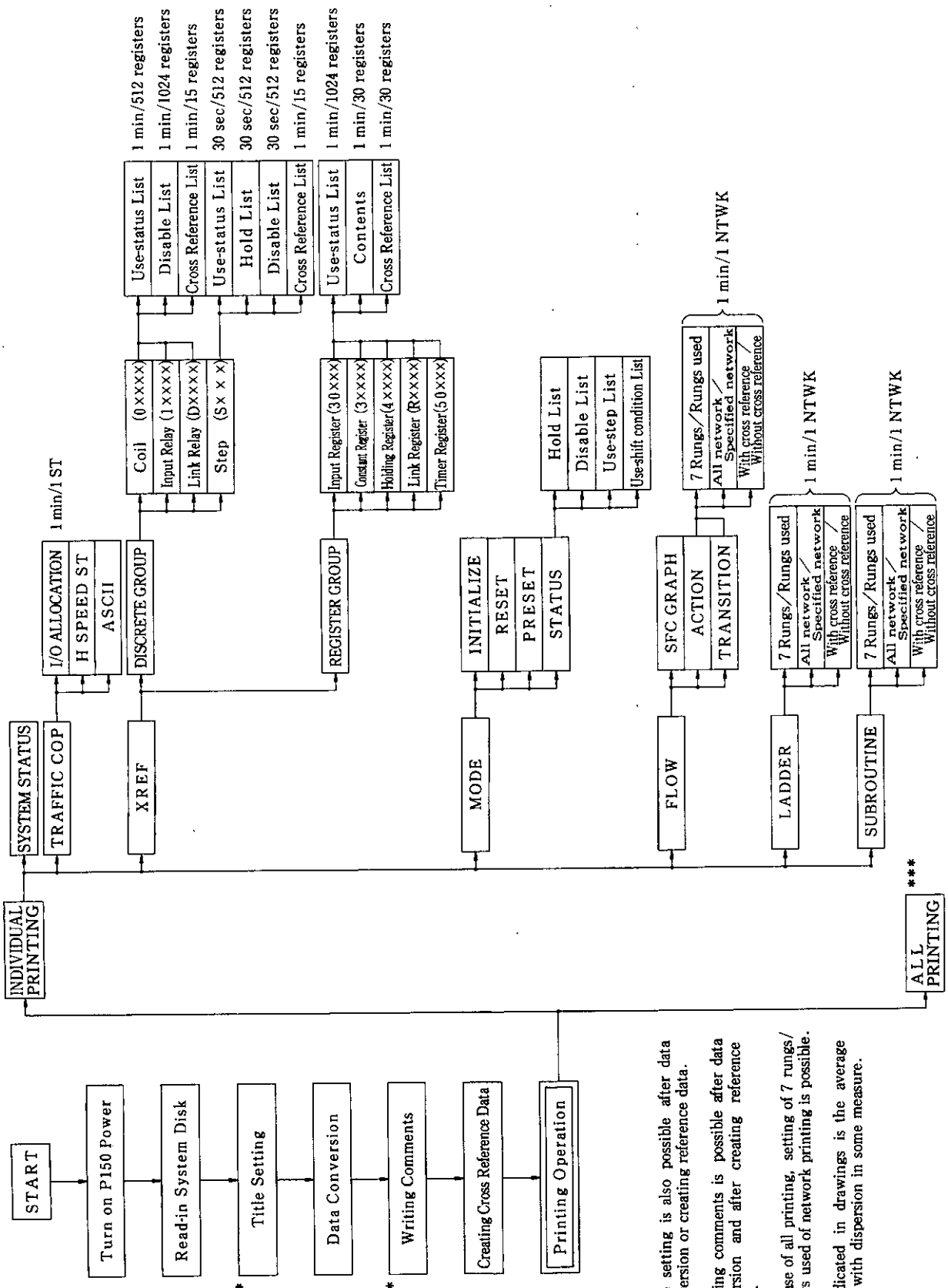
Setting the switches is unnecessary because they have been pre-set at the factory. Make sure that the settings are the same as the factory settings.

When resetting the switches, turn off the printer power before resetting.

(4) Connection Cable for Printer

Use the cable attached to the printer, and connect it to the parallel port (Centronics interface) of P150.

3. LADDER LISTER OPERATION TREE



NOTES

*···Title setting is also possible after data conversion or creating reference data.

**···Writing comments is possible after data coversion and after creating reference data.

***···In case of all printing, setting of 7 rungs/rungs used of network printing is possible.

The time indicated in drawings is the average printing time with dispersion in some measure.

4. OPERATION PROCEDURE

(1) Power ON and System Disk Read-in

①Turn on the power of the P150 and the connected printer.
②Insert the system disk(Type:F60S-E002)in drive A.
The system disk is read-in automatically, and after inputting date and time, the work menu is displayed.

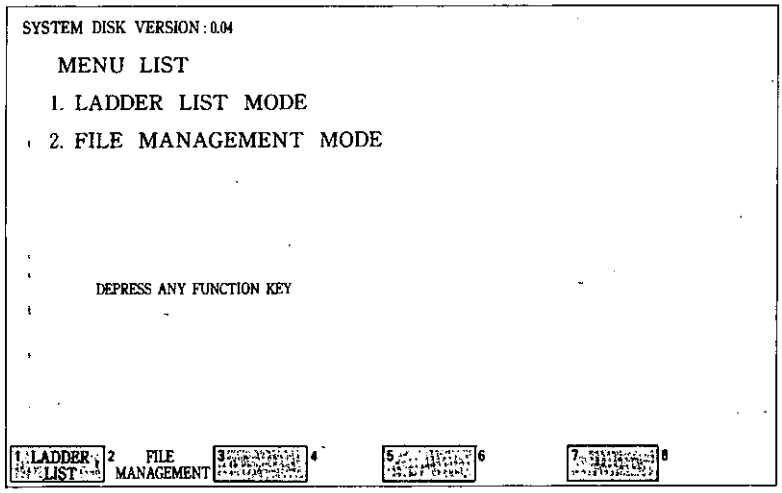


Fig. 4. 1 Work Menu

③By selecting LADDER LIST, operation of par. 4 (2) and the following pars. become possible and the display shifts to the supervisory view.
By selecting FILE MANAGEMENT, disk operation and file operation become possible.

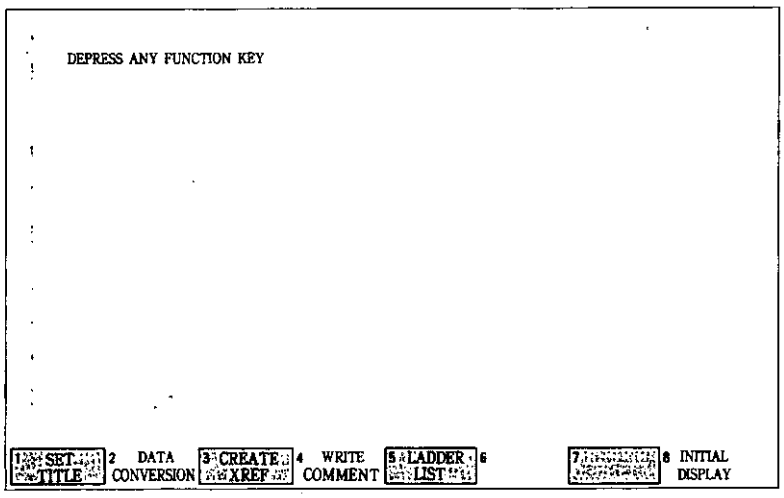


Fig. 4. 2 Supervisory View

COMMENT

(1)By depressing [SUPER VISORY] while depressing [SHIFT] , the display returns to the work menu.
(2)For file management operation, refer to Section 4 of "Memocon-SC GL60S P150 PROGRAMMING PANEL BASIC INFORMATION".

(2) Title Setting

The title, date, and order number of files saved from GL60S are set and altered.

START

Display the supervisory view, and depress (SET TITEL) .

Insert the data disk in drive A. Input the file name, and depress ENTER

Input the title, and depress ENTER . (If this operation is not necessary, depress only ENTER .)

Input the date, and depress ENTER . (If this operation is not necessary, depress only ENTER .)

```
                    * SET TITLE *
INSERT DATA DISK IN DRIVE A:, BLANK DISK IN DRIVE B:
INPUT FILE NAME
 FILE NAME ( CPU MEMORY )        :
```

Fig. 4. 3

```
                    * SET TITLE *
INSERT DATA DISK IN DRIVE A:, BLANK DISK IN DRIVE B:
INPUT FILE NAME
 FILE NAME ( CPU MEMORY )        : CHKLDRF1.60S
INPUT TITLE
 TITLE          : gl60 check ladder memory full
```

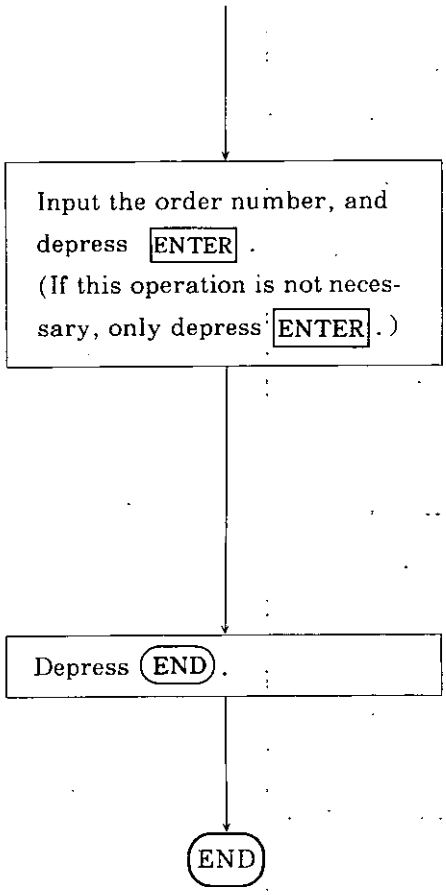
Fig. 4. 4

```
                    * SET TITLE *
INSERT DATA DISK IN DRIVE A:, BLANK DISK IN DRIVE B:
INPUT FILE NAME
 FILE NAME ( CPU MEMORY )        : CHKLDRF1.0S
INPUT TITLE
 TITLE          : gl60 check ladder memory full
INPUT DATE
 DATE           : 03-04-1988
```

Fig. 4. 5

```
                    * SET TITLE *
INSERT DATA DISK IN DRIVE A:, BLANK DISK IN DRIVE B:
INPUT FILE NAME
 FILE NAME ( CPU MEMORY )        : CHKLDRF1.60S
INPUT TITLE
 TITLE          : gl60 check ladder memory full
INPUT DATE
 DATE           : 03-04-1988
INPUT ORDER #
 ORDER #        : 1988030401
```

Fig. 4. 6



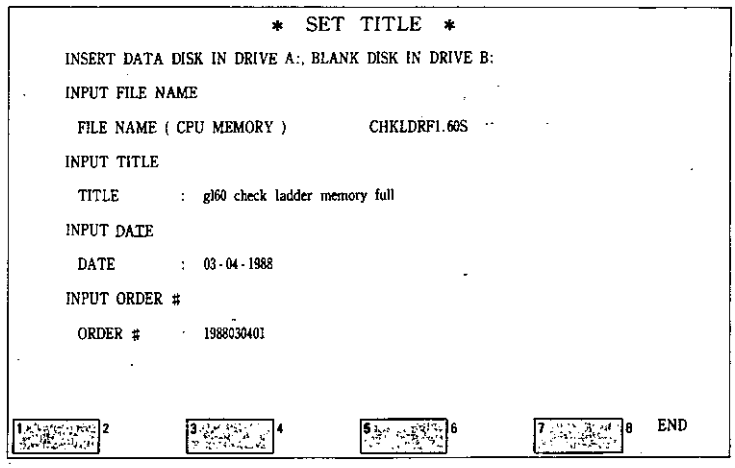


Fig. 4. 7

COMMENT

Title setting operation is also possible after data conversion or reference data making.

(3) Data Conversion

Files saved from the GL60S cannot be directly used on this GL60S ladder lister system. The data must be converted before it is printed.

START

Display the supervisory view, and depress (DATA CONVERSION).

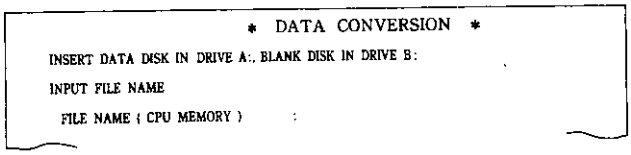


Fig. 4. 8

Insert the data disk in drive A and a blank disk in drive B.
Input the file name in which CPU, comment, and extended data are saved, and depress [ENTER].
(If the operation for comment or extended data is not necessary, depress only [ENTER].) **

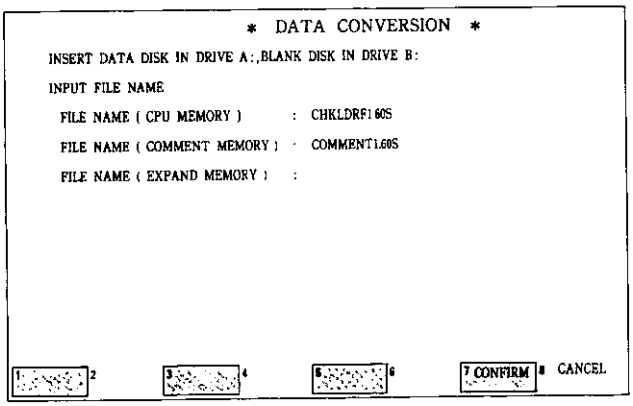


Fig. 4. 9

Depress (CONFIRM).

The message "CONVERTING…… ×××× (file name) " is displayed. When data conversion has completed, the message "DATA CONVERSION COMPLETE" is displayed and a buzzer sounds for two seconds.

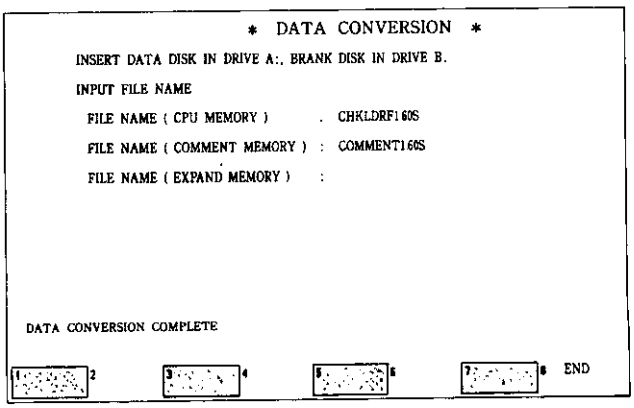


Fig. 4. 10

Depress (END).

END

** When making a comment file newly, input the new comment file name in this process. Used memory will amount to about 333K byte.

When printing a newly created ladder combined with existing comments, copy the existing file into the FD in which the newly created ladder is stored, before performing data conversion.

COMMENT

(1)By performing this data converting operation, the following three files are automatically created in the disk inserted in drive B.

- GL$CVNET.IDX
- GL$CVENT.IDX
- GL$CVLST.DAT

(2)When a comment file saved from GL60S is stored in the disk in drive A and it is selected by this data conversion, the comment is converted into an extended one for future use.

(3)After performing this operation, if the same disk is used to perform this operation again with another saved file, the created file will automatically be initialized, and a new set of the above three files will be created.
Therefore, a needed number of blank disks should be perpared previously.

(4)While the time necessary for data conversion differs with file contents saved, the time obtained from the following rough estimation formula can be used as a measure.

Data conversion time=0.00375 x+y(sec)
x: Used memory
y: 550……with comment file
50 ……without comment file

(4) Creating Reference Data

Data such as cross reference data are created from saved files and files created through data conversion.

START

Display the supervisory view, depress (CREATE XREF).

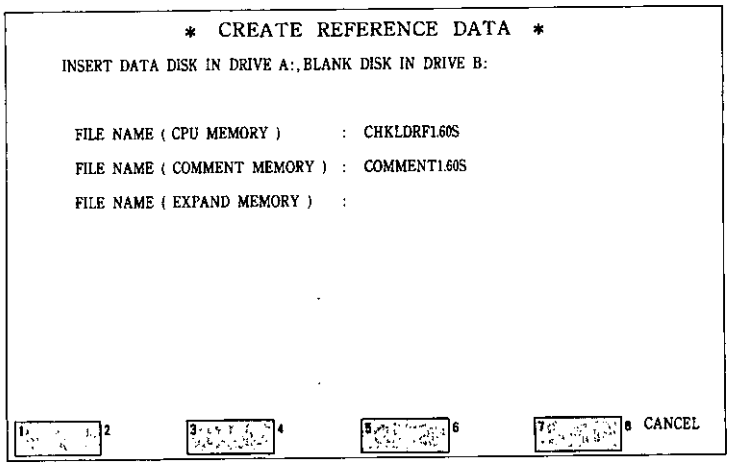


Fig. 4.11

Insert the data disk in drive A and the disk that completed data conversion in drive B, and depress (CONFIRM).

The message "CREATING…… ×××× (file name) " is displayed. When creating reference data has completed, the message "CREATE REFERENCE DATA COMPLETE" is displayed and a buzzer sounds for two seconds.

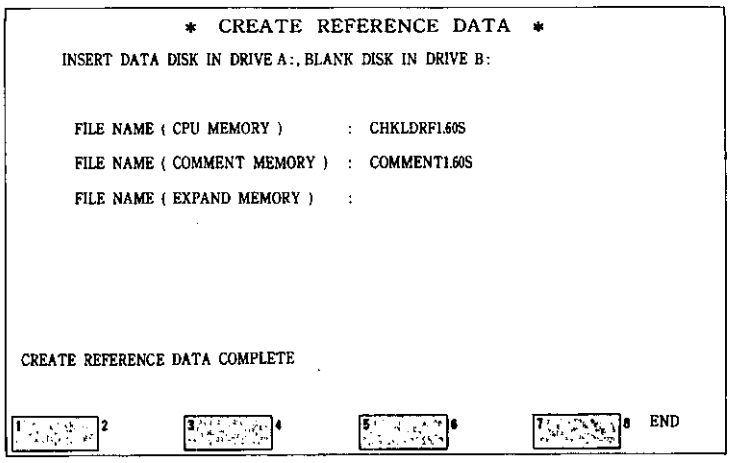


Fig. 4.12

Depress (END).

END

COMMENT

(1)By performing this reference data creating operation, the following 20 files are automatically created in the disk inserted in drive B.

- GL$XCOIL. IDX
- GL$XLDSC. IDX
- GL$XIRLY. IDX
- GL$XSTEP. IDX
- GL$XINRG. IDX
- GL$XCNRG. IDX
- GL$XHLRG. IDX
- GL$XLKRG. IDX
- GL$TMRG. IDX
- GL$XCOIL. DAT
- GL$XLDSC. DAT
- GL$IRLY. DAT
- GL$XSTEP. DAT
- GL$XINRG. DAT
- GL$XCNRG. DAT
- GL$XHLRG. DAT
- GL$XLKRG. DAT
- GL$XTMRG. DAT
- GL$XUSED. DAT
- GL$XGRUP. DAT

(2)After performing this operation, if the same disk is used to perform this operation again with another saved file, like the case of data conversion, the created 20 files will be initialized and new files will be created.
Therefore, great care should be taken.

(3)While the time necessary for creating reference data differs with file contents saved, the time obtained from the following rough estimation formula can be used as a measure.

Reference data creating time=15 ℓ (sec)

ℓ : the number of networks

(5) Comment Operation

Symbols and comments can be input in discrete and comments can be input in registers and networks, and they can be printed out together in printing.

Type	Reference Range	Symbol	Comment
Coil	1 to 8192	Alphabet, numeral, (within 6 characters)	Alphabet, numeral, (within 16 characters)
Input Relay	10001 to 14096	Alphabet, numeral, (within 6 characters)	Alphabet, numeral, (within 16 characters)
Link Relay	D0001 to D1024	Alphabet, numeral, (within 6 characters)	Alphabet, numeral, (within 16 characters)
Step	S001 to S512	Alphabet, numeral, (within 6 characters)	Alphabet, numersl, (within 8 characters)
Input Register	30001 to 30512	—	Alphabet, numeral, (within 16 characters)
Holding Register	40001 to 40512	—	Alphabet, numeral, (within 16 characters)
Link Register	R0001 to R1024	—	Alphabet, numeral, (within 16 characters)
Network	L0001 to L4096 *	—	Alphabet, numeral, (within 8 characters)

*Comments can be input up to the used network number.
However, if 4097 or more networks are used, comments cannot be input in any network after 4097.

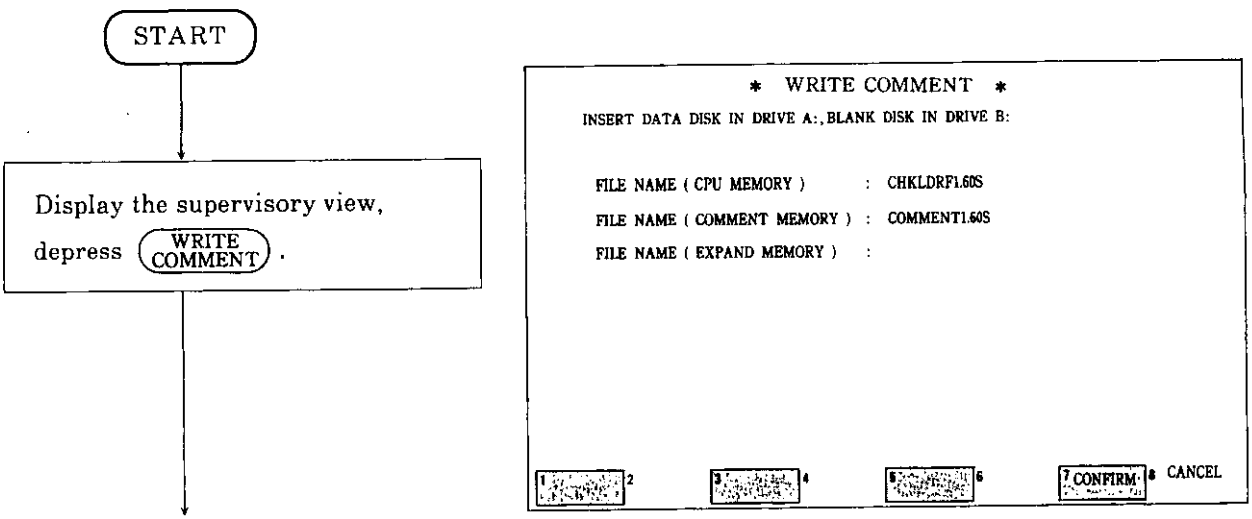


Fig. 4.13

Insert the data disk in drive A and the disk that completed data conversion in drive B, and depress (CONFIRM).

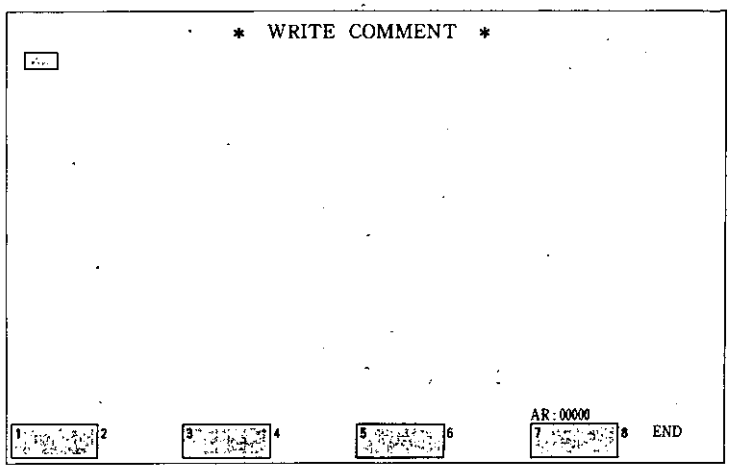


Fig. 4.14

Set the reference number to AR, and depress [ERASE / GET].

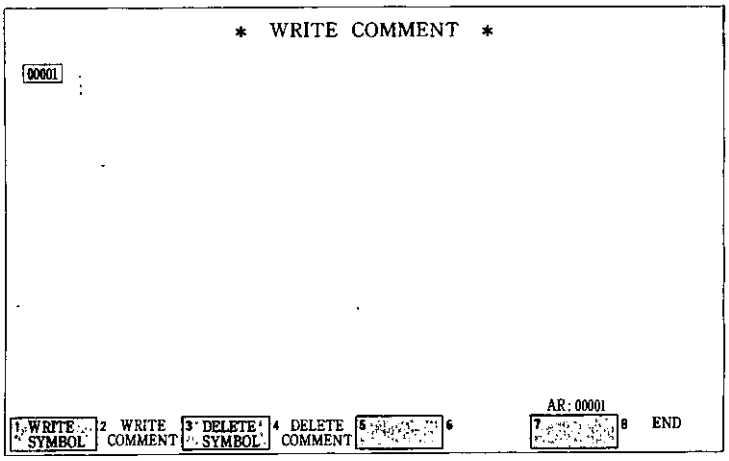


Fig. 4.15

Depress (WRITE SYMBOL) if a symbol, and depress (WRITE COMMENT) if a comment, and input the symbol or comment.

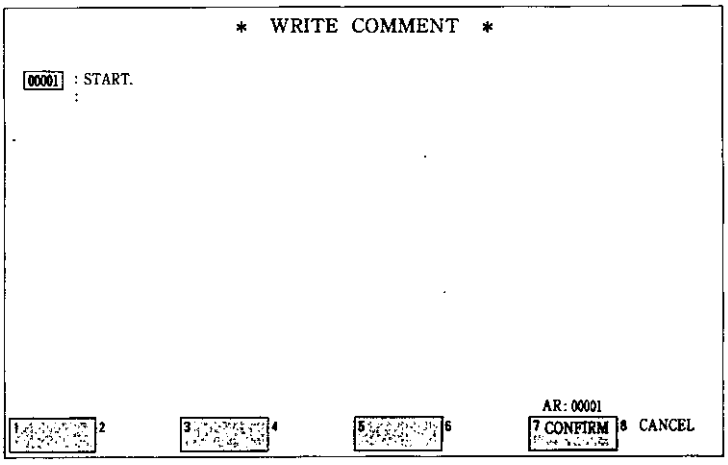


Fig. 4.16

When inputting symbol or comment completed, depress (CONFIRM) .

When operation completed, depress (END).

END

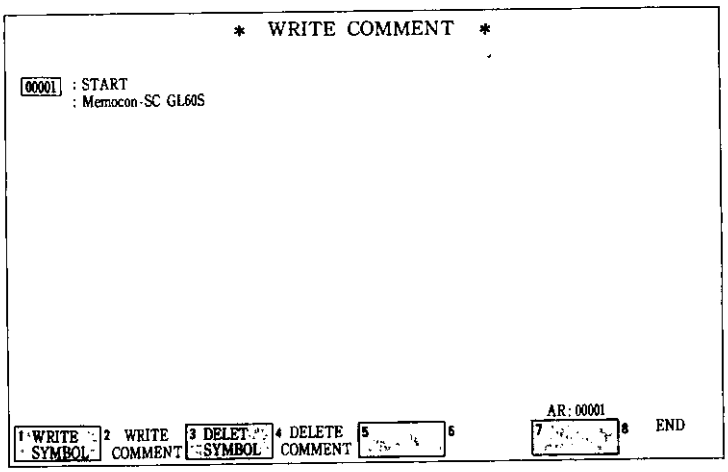


Fig. 4. 17

(COMMENT)

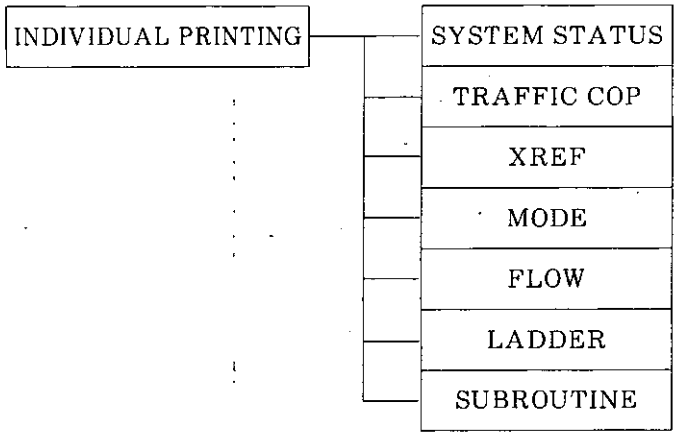
(1)By displaying a symbol or comment and depressing (DELETE SYMBOL) or (DELETE COMMENT) , the symbol or comment is deleted.

(2)By depressing (CANCEL) instead of (CONFIRM) with Fig.4. 16 displayed, the display is not altered but returns to the original display.

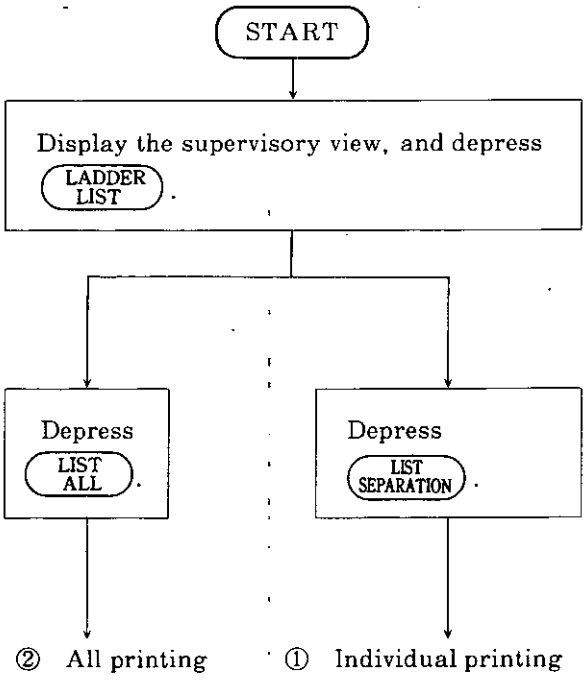
(3)When memory for comments is added to GL60S in the future, files extended by this GL60S ladder lister can be used and stored in the loader of the GL60S programmer.

(6) Printing Operation

Printing is broadly divided into all printing and individual printing. Individual printing can be printed out individual mode according g to CPU memory contents as shown below.



All printing prints out all modes of individual printing in the block.



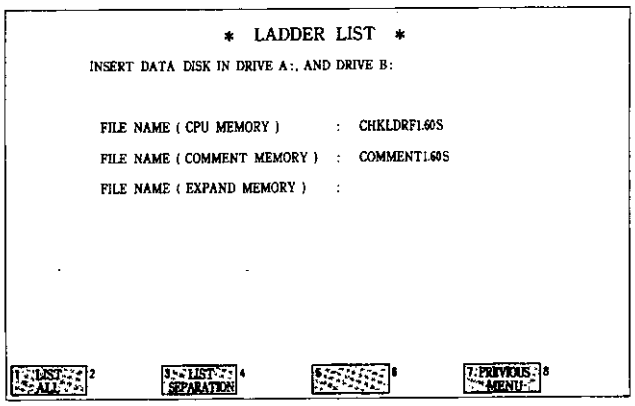


Fig. 4.18

① Individual Printing

(a) SYSTEM STATUS
Printing of GL60S system status, parameters, etc.

(b) TRAFFIC COP
Printing of I/O allocation, highspeed station allocation, and ASCII allocation. The parameter view below is prepared to enable printing range specification.

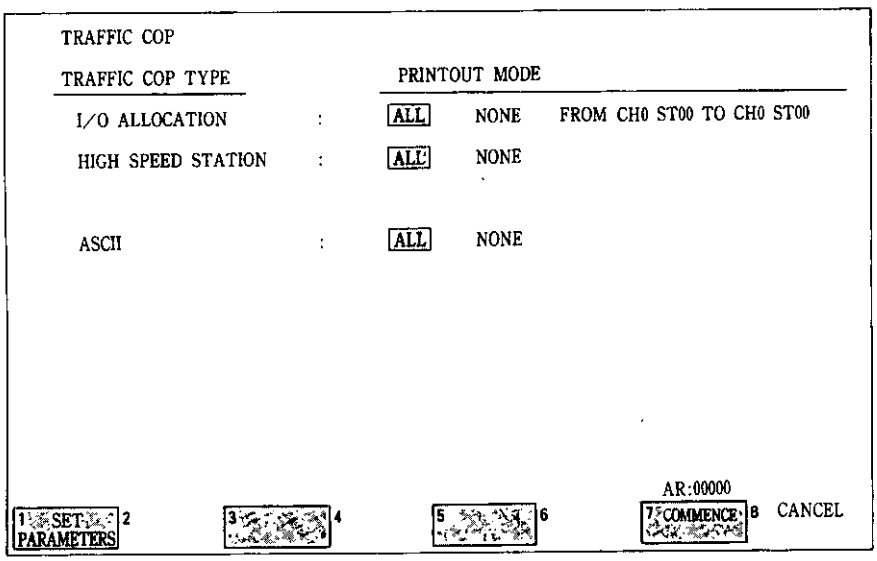


Fig. 4.19

• All initial values are "ALL".

(c) XREF
Printing of the use status list of discrete, disable list, use status list and contents of cross referense lists and registers, and cross reference list.

Parameter views are prepared for the discrete and register to enable printing range specification.

★ DISCRETE

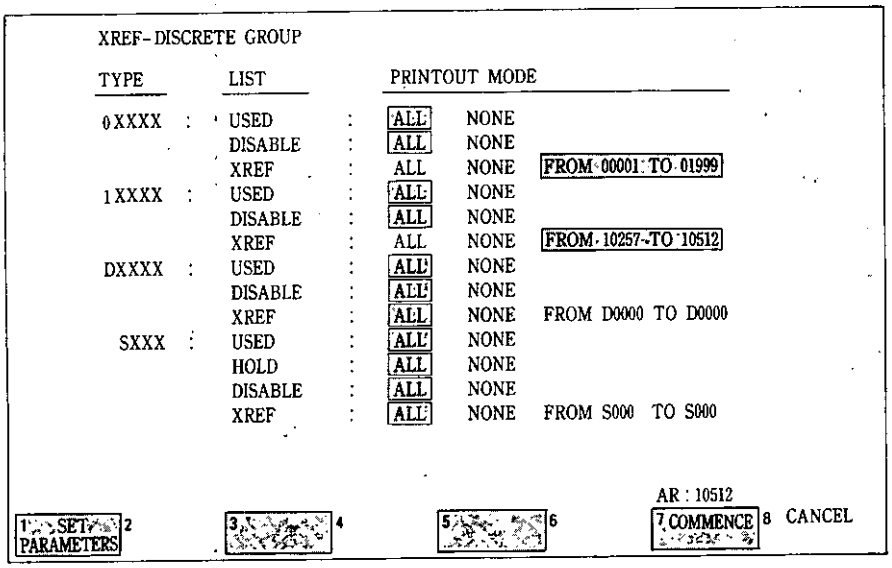


Fig. 4.20

★ REGISTER

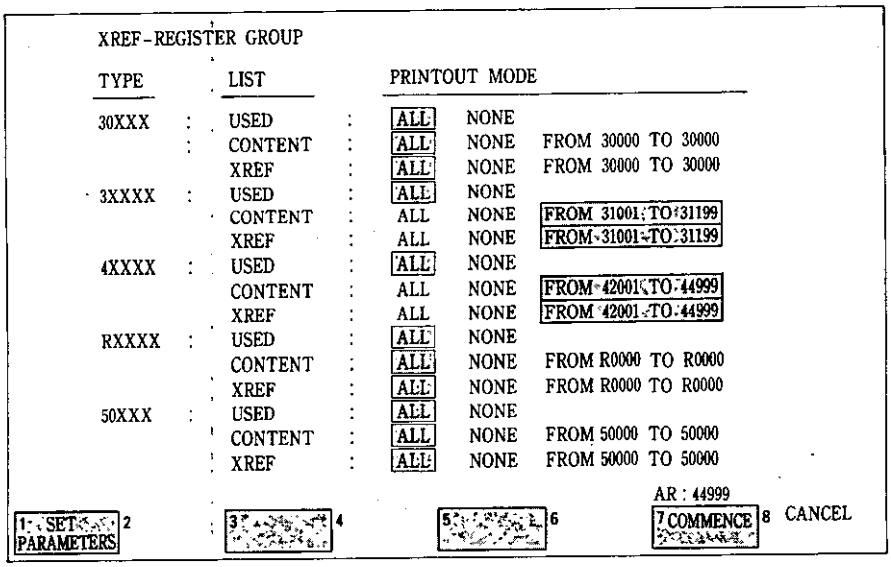


Fig. 4.21

• All initial values are "ALL".

(d) MODE

Printing of mode conditions, such as initialization and reset for SFC, and the SFC status. The parameter view is prepared to enable printing range specification.

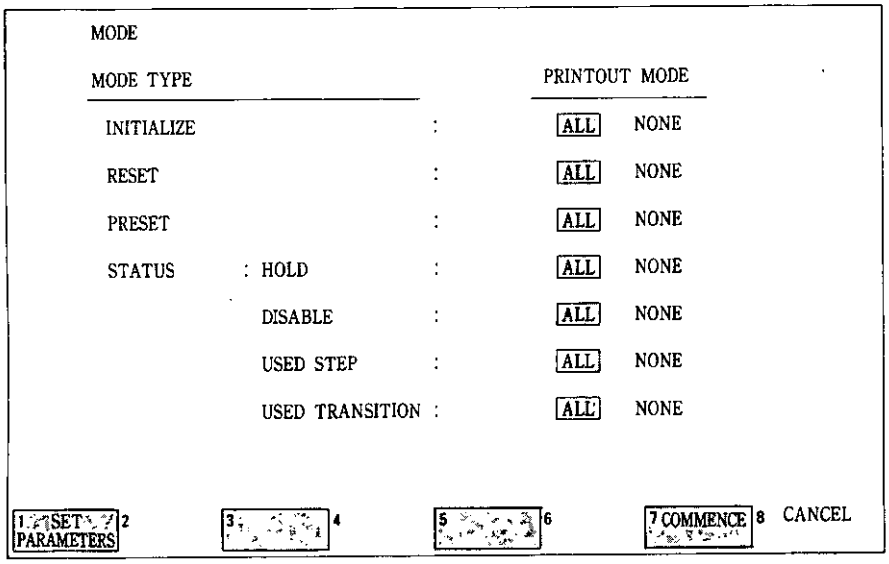


Fig. 4.22

- All initial values are "ALL".

(e) FLOW

Printing of SFC, ACTION circuit, and TRANSITION circuit. The parameter view is prepared to enable printing range specification.

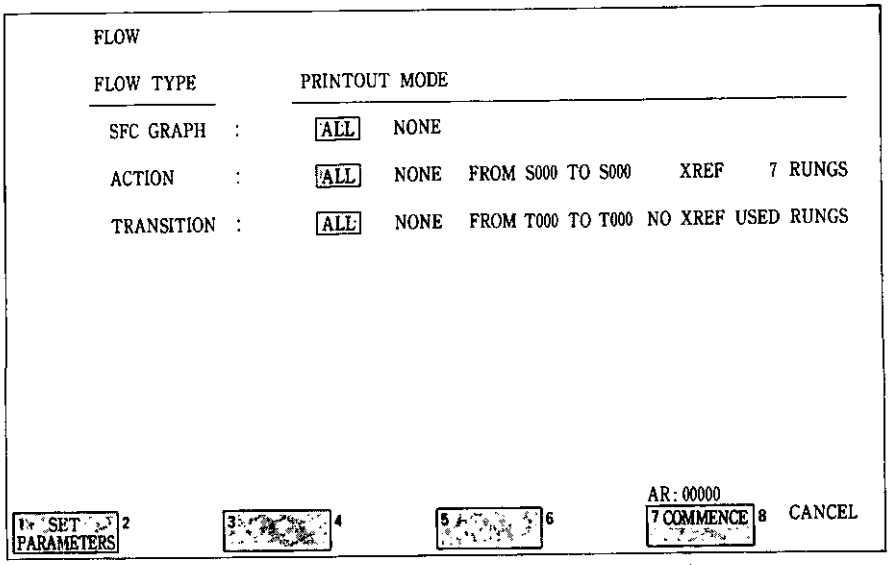


Fig. 4.23

- All initial values are "ALL".
- In case of ACTION or TRANSITION network, the initial value is 7 rung printing with cross.

(f) LADDER

Printing of networks. The parameter view is prepared to enable printing mode specification.

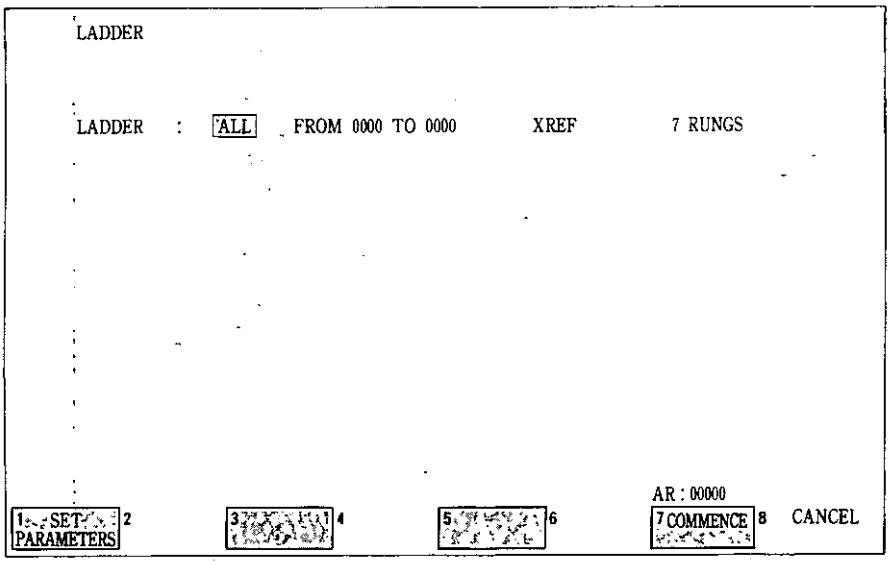


Fig. 4.24

- The initial value is "ALL" and 7 rung printing with cross.

(g) SUBROUTINE

Printing of subroutine circuit. The parameter view is prepared to enable printing mode specification.

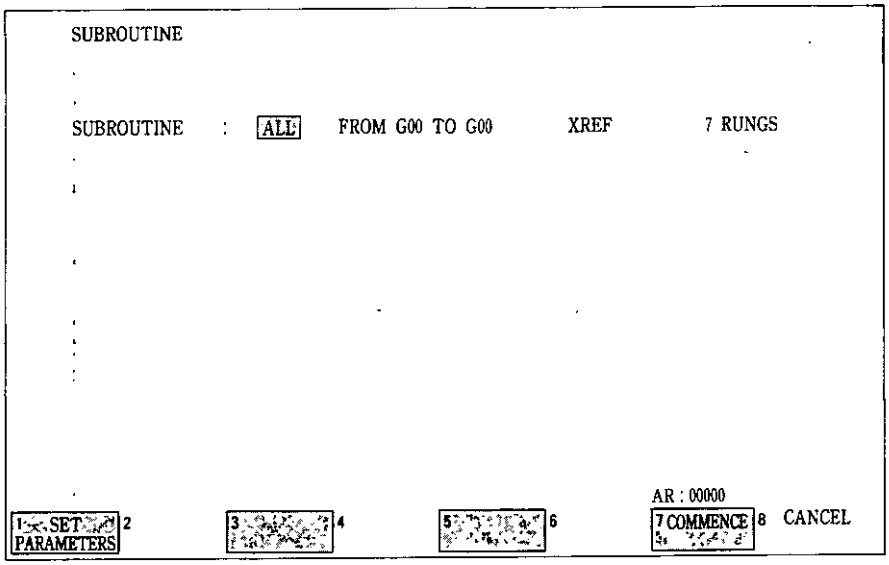


Fig. 4.25

- The initial value is "ALL" and 7 rung printing with cross.

COMMENT

(1)When setting or altering of parameters, depress (SET PARAMETERS) in the parameter view and move the cursor.

(2)After setting parameter is completed, depress (END PARAMETERS).

(3)Depress (COMMENCE) to start printing.

② All Printing
Printing of all individual printings from (a) to (g). For network (LADDER/ACTION/TRANSITION/SUBROUTINE), the parameter view below is prepared.

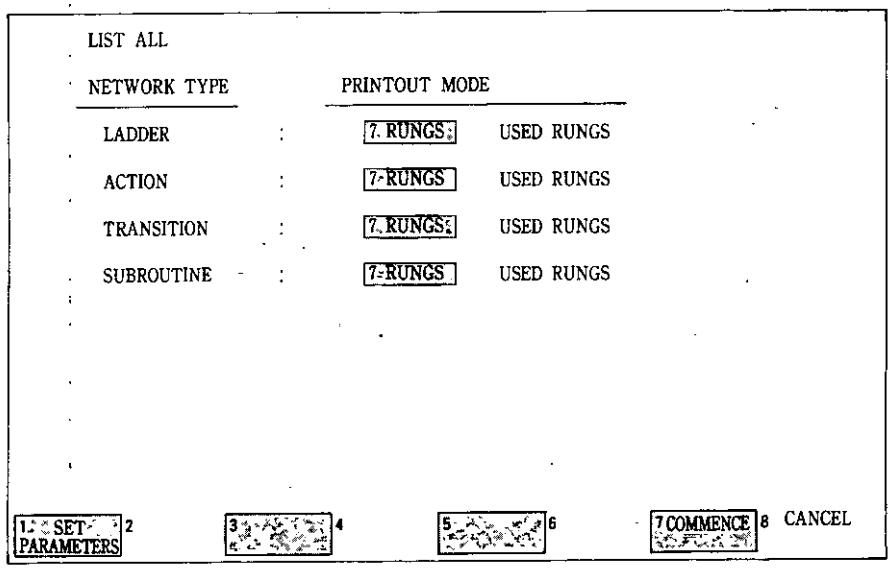


Fig. 4.26

• All initial values are " 7 RUNGS".

COMMENT

(1) When setting or altering of parameters, depress (SET PARAMETERS) in Fig.4.26 and move the cursor.

(2) After setting parameter is completed, depress (END PARAMETERS).

(3) Depress (COMMENCE) in Fig.4.26 to start printing.
The printing order is as follows.

① SYSTEM STATUS
② TRAFFIC COP
③ MODE
④ FLOW
⑤ LADDER
⑥ SUBROUTINE
⑦ XREF

5. PRINTING EXAMPLES

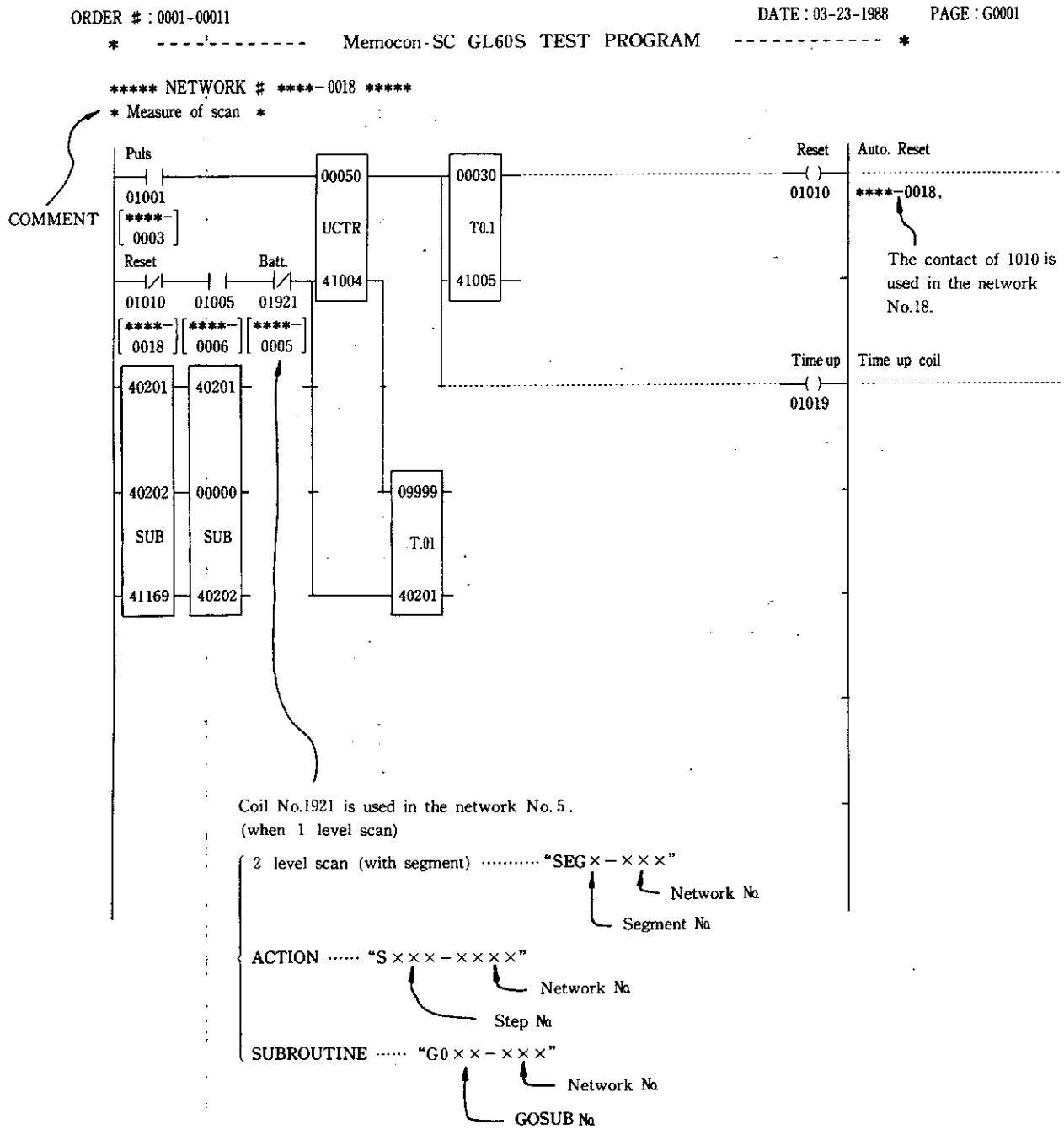
(1) SYSTEM STATUS

TITLE

```
ORDER #: 0001-00011                                          DATE: 03-23-1988    PAGE: A0001
   *   ------------   Memocon-SC GL60S TEST PROGRAM   ------------  *

   **  SYSTEM STATUS  **

       Memocon-SC GL60S

        TOTAL LOGIC WORDS  :  32768

             LADDER         :  29696  ( 29695 )
             ACTION         :  01024  ( 01023 )
             TRANSITION     :  01024  ( 01023 )
             SUBROUTINE     :  01024  ( 01023 )

             SCAN LEVEL     :  1
             SEGMENT        :  1

             COILS                    :  00001 - 08192
             DISCRETE INPUTS          :  10001 - 14096
             INPUT REGISTERS          :  30001 - 30512
             CONSTANT REGISTERS       :  31001 - 35096
             HOLDING REGISTERS        :  40001 - 49999
             TIMER REGISTERS          :  50001 - 50512
             LINK DISCRETES           :  D0001 - D1024
             LINK REGISTERS           :  R0001 - R1024
             STEPS                    :   S001 -  S512
             TRANSITIONS              :   T001 -  T512

             BATTERY COIL               :  08192
             SCAN TIMER REGISTER        :  49998
             CONSTANT SWEEP REGISTER    :  49999
             CONSTANT SWEEP TIME        :  00000
```

(2) NETWORK (LADDER/ACTION/TRANSITION/SUBROUTINE)

- With cross reference



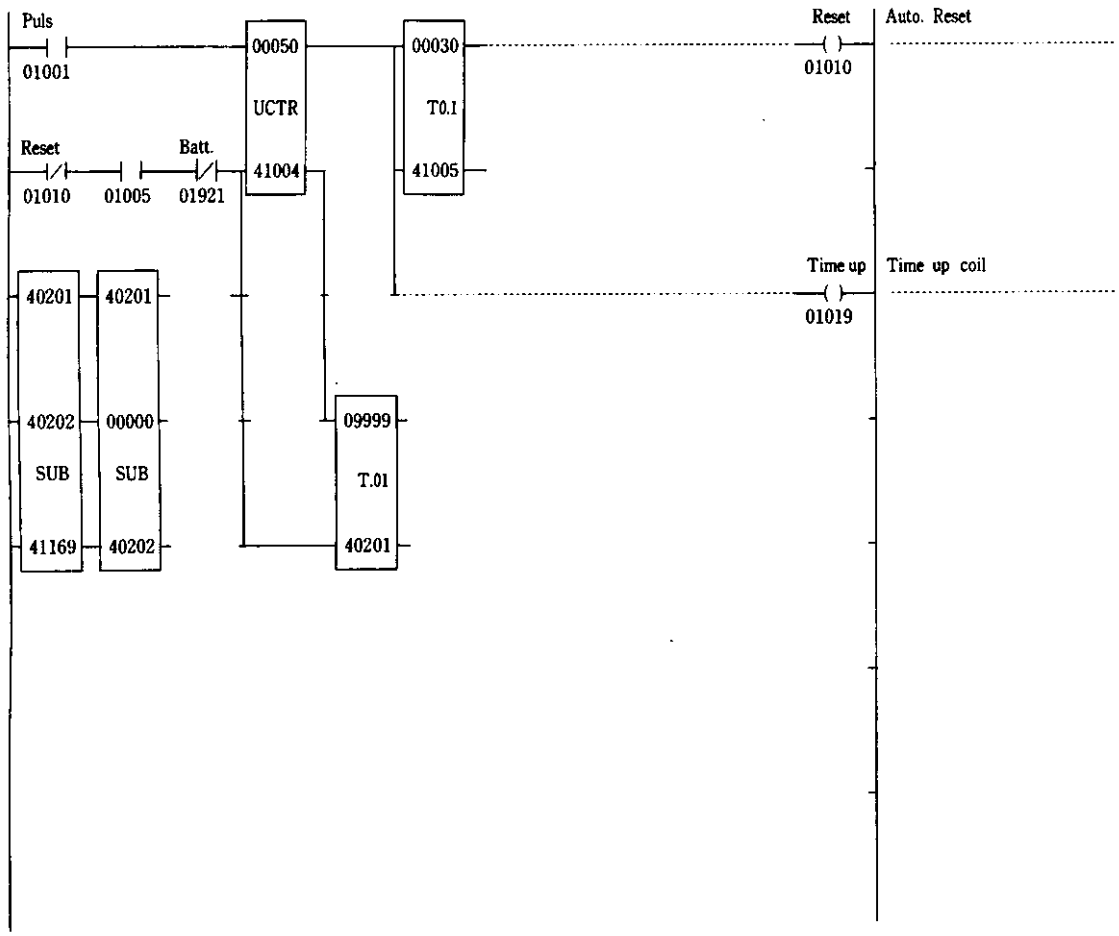
· Without cross reference

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : G0001

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

***** NETWORK # ****-0018 *****

* Measure of scan *

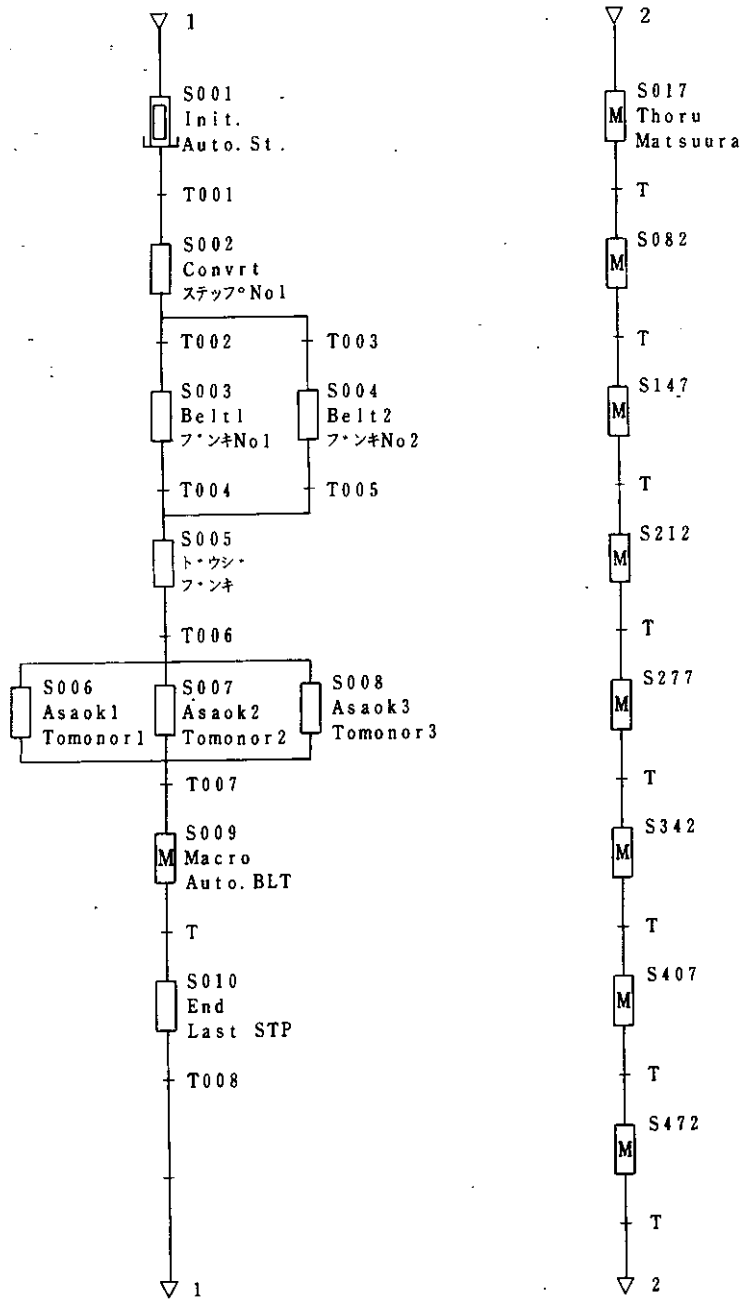


(3) SFC

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : D0001

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

***** MACRO STEP : S000 *****



(4) TRAFFIC COP

① I/O ALLOCATION

ORDER # : 0001-00011 DATE:03-23-1988 PAGE:B0001

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

** TRAFFIC COP **

< I/O ALLOCATION >

CHANNEL : 1

RACK	SLOT	DISCRETE INPUT REF #	POINTS	OUTPUT REF #	POINTS	REGISTER INPUT REF #	SIZE	OUTPUT REF #	SIZE
1	1	10001	128	00001	128	30001	1	40001	1
	2	-----	---	-----	---	30002	1	40002	1
	3	-----	---	-----	---	30003	1	40003	1
	4	-----	---	-----	---	30004	1	40004	1
	5	-----	---	-----	---	30005	1	40005	1
	6	-----	---	-----	---	30006	1	40006	1
2	1	-----	---	-----	---	30007	1	40007	1
	2	10129	64	00129	64	30008	1	40008	1
	3	10193	64	00193	64	30009	1	40009	1
	4	-----	---	-----	---	30010	1	40010	1
	5	-----	---	-----	---	30011	1	40011	1
	6	-----	---	-----	---	30012	1	40012	1
	7	-----	---	-----	---	30013	1	40013	1
	8	-----	---	-----	---	30014	1	40014	1
	9	-----	---	-----	---	30015	1	40015	1
3	1	-----	---	-----	---	30016	4	40016	4
	2	-----	---	-----	---	30020	4	40020	4
	3	-----	---	-----	---	30024	4	40024	4
	4	-----	---	-----	---	30028	3	40028	3
	5	-----	---	-----	---	30031	1	40031	1
	6	-----	---	-----	---	30032	1	40032	1
	7	-----	---	-----	---	30033	1	40033	1
	8	-----	---	-----	---	30034	1	40034	1
	9	-----	---	-----	---	30035	1	40035	1
4	1	-----	---	-----	---	30036	1	40036	1
	2	-----	---	-----	---	30037	1	40037	1
	3	-----	---	-----	---	30038	1	40038	1
	4	-----	---	-----	---	30039	1	40039	1
	5	-----	---	-----	---	30040	1	40040	1
	6	-----	---	-----	---	30041	1	40041	1
	7	-----	---	-----	---	30042	1	40042	1
	8	-----	---	-----	---	30043	1	40043	1
	9	-----	---	-----	---	30044	1	40044	1
5	1	-----	---	-----	---	30045	4	40045	4
	2	-----	---	-----	---	30049	4	40049	4
	3	-----	---	-----	---	30053	4	40053	4
	4	-----	---	-----	---	30057	3	40057	3
	5	-----	---	-----	---	30060	1	40060	1
	6	-----	---	-----	---	30061	1	40061	1
	7	-----	---	-----	---	30062	1	40062	1
	8	-----	---	-----	---	30063	1	40063	1
	9	-----	---	-----	---	30064	1	40064	1

② HIGH SPEED STATION

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : B0002

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

** TRAFFIC COP **

< HIGH SPEED STATION >

NO.	CH #	ST #	DISCRETE INPUT REF #	POINTS	OUTPUT REF #	POINTS	REGISTER INPUT REF #	SIZE	OUTPUT REF	SIZE
1	2	1	10257	64	00257	64	30065	16	40065	16
2	2	5	-----	---	00353	128	-----	--	40085	16
3	2	25	10641	256	00481	512	30122	48	40101	40
4	2	29	10897	240	00993	768	30170	24	40141	16
5	2	30	11537	64	01761	32	30194	8	40157	24
6	2	31	11601	256	01793	256	30202	16	40181	14
7	3	10	11889	64	02049	128	30226	16	40211	32
8	3	30	-----	---	-----	---	30242	16	40243	16

(5) MODE

① INITIALIZE, RESET, PRESET

ORDER # : 0001 - 00011 DATE : 03 - 23 1988 PAGE : C0001

* ---------- Memocon - SC GL60S TEST PROGRAM ---------- *

** MODE **

< RESET >

NO.	REF #	STATUS	STEP NO. / REGISTER NO.							
ALL	14096	ON								
1	10001	ON	S100	S101	S102	S103	-----	-----	-----	-----
2	10002	ON	30001	30101	S201	-----	-----	-----	-----	-----
3	10003	ON	30200	-----	-----	-----	-----	-----	-----	-----
4	10004	ON	30201	-----	-----	-----	-----	-----	-----	-----
5	10005	ON	30203	-----	-----	-----	-----	-----	-----	-----
6	10006	ON	30204	-----	-----	-----	-----	-----	-----	-----
7	10007	ON	30205	-----	-----	-----	-----	-----	-----	-----
8	10008	ON	30211	-----	-----	-----	-----	-----	-----	-----
9	10016	ON	S301	30511	30512	30511	-----	-----	-----	-----
10	10017	ON	300 2	30298	S388	30511	-----	-----	-----	-----
11	10025	ON	S055	-----	-----	-----	-----	-----	-----	-----
12	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
13	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
14	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
15	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
16	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
17	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
18	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
19	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
20	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
21	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
22	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
23	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
24	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
25	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
26	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
27	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
28	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
29	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
30	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
31	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
32	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
33	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
34	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
35	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
36	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
37	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
38	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
39	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
40	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
41	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
42	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
43	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
44	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
45	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
46	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
47	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
48	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
49	-----	---	-----	-----	-----	-----	-----	-----	-----	-----
50	-----	---	-----	-----	-----	-----	-----	-----	-----	-----

② STATUS

- Hold, Disable, Used step, Used transition

```
ORDER # : 0001-00011                                   DATE : 03-23-1988    PAGE : C0003
  *  ------------   Memocon-SC GL60S TEST PROGRAM   ------------ *

  * *  MODE  * *

  < HOLD >

          0   1   2   3   4   5   6   7   8   9
S00× :        H   --  --  --  --  --  --  --  --
S01× :    --  --  --  --  --  --  --  --  --  --
S02× :    --  --  --  --  --  --  --  --  --  --
S03× :    --  --  --  --  --  --  --  --  --  --
S04× :    --  --  --  --  --  --  --  --  --  --
S05× :    --  --  --  --  --  --  --  --  --  --
S06× :    --  --  --  --  --  --  --  --  --  --
S07× :    --  --  --  --  --  --  --  --  --  --
S08× :    --  --  --  --  --  --  --  --  --  --
S09× :    --  --  --  --  --  --  --  --  --  --
S10× :    --  --  --  --  --  --  --  --  --  --
S11× :    --  --  --  --  --  --  --  --  --  --
S12× :    --  --  --  --  --  --  --  --  --  --
S13× :    --  --  --  --  --  --  --  --  --  --
S14× :    --  --  --  --  --  --  --  --  --  --
S15× :    --  --  --  --  --  --  --  --  --  --
S16× :    --  --  --  --  --  --  --  --  --  --
S17× :    --  --  --  --  --  --  --  --  --  --
S18× :    --  --  --  --  --  --  --  --  --  --
S19× :    --  --  --  --  --  --  --  --  --  --
S20× :    --  --  --  --  --  --  --  --  --  --
S21× :    --  --  --  --  --  --  --  --  --  --
S22× :    --  --  --  --  --  --  --  --  --  --
S23× :    --  --  --  --  --  --  --  --  --  --
S24× :    --  --  --  --  --  --  --  --  --  --
S25× :    --  --  --  --  --  --  --  --  --  --
S26× :    --  --  --  --  --  --  --  --  --  --
S27× :    --  --  --  --  --  --  --  --  --  --
S28× :    --  --  --  --  --  --  --  --  --  --
S29× :    --  --  --  --  --  --  --  --  --  --
S30× :    H   H   H   H   H   H   H   H   H   (H)
S31× :    H   --  H   --  H   --  H   --  H   --
S32× :    H   --  --  H   --  --  H   --  --  -H
S33× :    H   --  --  H   --  --  H   --  --  -H
S34× :    --  H   --  H   --  H   --  H   --  -H
S35× :    --  H   H   --  H   H   --  H   H   --
S36× :    --  H   H   --  H   H   --  H   H   --
S37× :    --  --  --  --  --  --  --  --  --  --
S38× :    --  --  --  --  --  --  --  --  --  --
S39× :    --  --  --  --  --  --  --  --  --  --
S40× :    --  --  --  --  --  --  --  --  --  --
S41× :    --  --  --  --  --  --  --  --  --  --
S42× :    --  --  --  --  --  --  --  --  --  --
S43× :    --  --  --  --  --  --  --  --  --  --
S44× :    --  --  --  --  --  --  --  --  --  --
S45× :    --  --  --  --  --  --  --  --  --  --
S46× :    --  --  --  --  --  --  --  --  --  --
S47× :    --  --  --  --  --  --  --  --  --  --
S48× :    --  --  --  --  --  --  --  --  --  --
S49× :    H   H   H   H   H   H   H   H   H   H
S50× :    --  --  --  --  --  --  --  --  --  --
S51× :    --  --  --
```

Step №309 is hold.

DISABLE ..... "D"
USED STEP .....
  ..... "A"
  ..... "M" (macro)
USED TRANSITION
  ..... "T"

(6) XREF

① USED LIST

- Coil, Link relay

```
OPDER # : 0001-00011                                        DATE : 03-23-1988     PAGE : I0001
    *   ------------   Memocon-SC GL60S TEST PROGRAM   ------------ *

    * *  CROSSREFERENCE  * *

    < USED LIST OF COIL >

                0        1        2        3        4        5        6        7        8        9
0000× :          ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0001× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0002× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0003× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0004× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0005× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0006× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0007× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0008× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0009× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0010× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0011× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0012× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0013× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0014× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0015× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0016× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0017× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0018× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0019× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0020× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0021× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0022× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0023× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0024× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0025× : ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024 ****-0024
0026× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0027× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0028× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0029× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0030× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0031× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0032× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0033× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0034× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0035× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0036× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0037× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0038× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0039× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0040× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0041× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0042× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0043× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0044× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0045× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0046× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0047× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0048× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
0049× : --------- --------- --------- --------- --------- --------- --------- --------- --------- ---------
```

Coil №250 is used in the network №24 (1 level scan)

{ 2 level····· "SEG×－××××" ACTION····· "S×××－××××" SUBROUTINE ·····"G0××－××××"

• Input relay

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : I0001

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

** CROSSREFERENCE **

〈 USED LIST OF DISCRETE INPUT 〉

	0	1	2	3	4	5	6	7	8	9
1000× :		**	**	**	**	**	**	**	**	**
1002× :	**	**	**	**	**	**	**	**	**	**
1004× :	**	**	**	**	**	**	**	**	**	**
1006× :	**	**	**	**	**	**	**	**	**	**
1008× :	**	**	**	**	**	**	**	**	**	**
1010× :	**	**	**	**	**	**	**	**	**	**
1012× :	**	**	**	**	**	**	**	**	**	**
1014× :	**	**	**	**	**	**	**	**	**	**
1016× :	**	**	**	**	**	**	**	**	**	**
1018× :	**	**	**	**	**	**	**	**	**	**
1020× :	**	**	**	**	**	**	**	**	**	**
1022× :	**	**	**	**	**	**	**	**	**	**
1024× :	**	**	**	**	**	**	**	**	**	**
1026× :	--	--	--	--	--	--	--	--	--	--
1028× :	--	--	--	--	--	--	--	--	--	--
1030× :	--	--	--	--	--	--	--	--	--	--
1032× :	--	--	--	--	--	--	--	--	--	--
1034× :	--	--	--	--	--	--	--	--	--	--
1036× :	--	--	--	--	--	--	--	--	--	--
1038× :	--	--	--	--	--	--	--	--	--	--
1040× :	--	--	--	--	--	--	--	--	--	--
1042× :	--	--	--	--	--	--	--	--	--	--
1044× :	--	--	--	--	--	--	--	--	--	--
1046× :	--	--	--	--	--	--	--	--	--	--
1048× :	--	--	--	--	--	--	--	--	--	--
1050× :	--	--	--	--	--	--	--	--	--	--
1052× :	**	**	**	**	**	**	**	**	**	--
1054× :	--	--	--	--	--	--	--	--	--	--
1056× :	--	--	--	--	--	--	--	--	--	--
1058× :	--	--	--	--	--	--	--	--	--	--
1060× :	--	--	--	--	--	--	--	--	--	--
1062× :	--	--	--	--	--	--	--	--	--	--
1064× :	--	--	--	--	--	--	--	--	--	--
1066× :	--	--	--	--	--	--	--	--	--	--
1068× :	--	--	--	--	--	--	--	--	--	--
1070× :	--	--	--	--	--	--	--	--	--	--
1072× :	--	--	--	--	--	--	--	--	--	--
1074× :	--	--	--	--	--	--	--	--	--	--
1076× :	--	--	--	--	--	--	--	--	--	--
1078× :	--	--	--	--	--	--	--	--	--	--
1080× :	--	--	--	--	--	--	--	--	--	--
1082× :	--	--	--	--	--	--	--	--	--	--
1084× :	--	--	--	--	--	--	--	--	--	--
1086× :	--	--	--	--	--	--	--	--	--	--
1088× :	--	--	--	--	--	--	--	--	--	--
1090× :	--	--	--	--	--	--	--	--	--	--
1092× :	--	--	--	--	--	--	--	--	--	--
1094× :	--	--	--	--	--	--	--	--	--	--
1096× :	--	--	--	--	--	--	--	--	--	--
1098× :	--	--	--	--	--	--	--	--	--	--

	0	1	2	3	4	5	6	7	8
1001× :	**	**	**	**	**	**	**	**	**
1003× :	**	**	**	**	**	**	**	**	**
1005× :	**	**	**	**	**	**	**	**	**
1007× :	**	**	**	**	**	**	**	**	**
1009× :	**	**	**	**	**	**	**	**	**
1011× :	**	**	**	**	**	**	**	**	**
1013× :	**	**	**	**	**	**	**	**	**
1015× :	**	**	**	**	**	**	**	**	**
1017× :	**	**	**	**	**	**	**	**	**
1019× :	**	**	**	**	**	**	**	**	**
1021× :	**	**	**	**	**	**	**	**	**
1023× :	**	**	**	**	**	**	**	**	**
1025× :	**	**	**	**	**	**	--	--	--
1027× :	--	--	--	--	--	--	--	--	--
1029× :	--	--	--	--	--	--	--	--	--
1031× :	--	--	--	--	--	--	--	--	--
1033× :	--	--	--	--	--	--	--	--	--
1035× :	--	--	--	--	--	--	--	--	--
1037× :	--	--	--	--	--	--	--	--	--
1039× :	--	--	--	--	--	--	--	--	--
1041× :	--	--	--	--	--	--	--	--	--
1043× :	--	--	--	--	--	--	--	--	--
1045× :	--	--	--	--	--	--	--	--	--
1047× :	--	--	--	--	--	--	--	--	--
1049× :	--	--	--	--	--	--	--	--	--
1051× :	--	--	--	**	**	**	**	**	**
1053× :	--	--	--	--	--	--	--	--	--
1055× :	--	--	--	--	--	--	--	--	--
1057× :	--	--	--	--	--	--	--	--	--
1059× :	--	--	--	--	--	--	--	--	--
1061× :	--	--	--	--	--	--	--	--	--
1063× :	--	--	--	--	--	--	--	--	--
1065× :	--	--	--	--	--	--	--	--	--
1067× :	--	--	--	--	--	--	--	--	--
1069× :	--	--	--	--	--	--	--	--	--
1071× :	--	--	--	--	--	--	--	--	--
1073× :	--	--	--	--	--	--	--	--	--
1075× :	--	--	--	--	--	--	--	--	--
1077× :	--	--	--	--	--	--	--	--	--
1079× :	--	--	--	--	--	--	--	--	--
1081× :	--	--	--	--	--	--	--	--	--
1083× :	--	--	--	--	--	--	--	--	--
1085× :	--	--	--	--	--	--	--	--	--
1087× :	--	--	--	--	--	--	--	--	--
1089× :	--	--	--	--	--	--	--	--	--
1091× :	--	--	--	--	--	--	--	--	--
1093× :	--	--	--	--	--	--	--	--	--
1095× :	--	--	--	--	--	--	--	--	--
1097× :	--	--	--	--	--	--	--	--	--
1099× :	--	--	--	--	--	--	--	--	--

Input relay №10520 is used.

• Register

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : J0001

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

** CROSSREFERENDE **

< USED LIST OF INPUT REGISTER >

Input register №30009 is used.

	0	1	2	3	4	5	6	7	8	9
3000× :		**	**	**	**	**	**	**	**	**
3002× :	**	**	**	**	**	**	**	**	**	**
3004× :	**	**	**	**	**	**	**	**	**	**
3006× :	**	**	**	**	**	--	--	--	--	--
3008× :	--	--	--	--	--	--	--	--	--	--
3010× :	--	--	--	--	--	--	--	--	--	--
3012× :	--	--	--	--	--	--	--	--	--	--
3014× :	--	--	--	--	--	--	--	--	--	--
3016× :	--	--	--	--	--	--	--	--	--	--
3018× :	--	--	--	--	--	--	--	--	--	--
3020× :	--	--	--	--	--	--	--	--	--	--
3022× :	--	--	--	--	--	--	--	--	--	--
3024× :	--	--	--	--	--	--	--	--	--	--
3026× :	--	--	--	--	--	--	--	--	--	--
3028× :	--	--	--	--	--	--	--	--	--	--
3030× :	--	--	--	--	--	--	--	--	--	--
3032× :	--	--	--	--	--	--	--	--	--	--
3034× :	--	--	--	--	--	--	--	--	--	--
3036× :	--	--	--	--	--	--	--	--	--	--
3038× :	--	--	--	--	--	--	--	--	--	--
3040× :	--	--	--	--	--	--	--	--	--	--
3042× :	--	--	--	--	--	--	--	--	--	--
3044× :	--	--	--	--	--	--	--	--	--	--
3046× :	--	--	--	--	--	--	--	--	--	--
3048× :	--	--	--	--	--	--	--	--	--	--
3050× :	--	--	--	--	--	--	--	--	--	--

	0	1	2	3	4	5	6	7	8	9
3001× :	**	**	**	**	**	**	**	**	**	**
3003× :	**	**	**	**	**	**	**	**	**	**
3005× :	**	**	**	**	**	**	**	**	**	**
3007× :	--	--	--	--	--	--	--	--	--	--
3009× :	--	--	--	--	--	--	--	--	--	--
3011× :	--	--	--	--	--	--	--	--	--	--
3013× :	--	--	--	--	--	--	--	--	--	--
3015× :	--	--	--	--	--	--	--	--	--	--
3017× :	--	--	--	--	--	--	--	--	--	--
3019× :	--	--	--	--	--	--	--	--	--	--
3021× :	--	--	--	--	--	--	--	--	--	--
3023× :	--	--	--	--	--	--	--	--	--	--
3025× :	--	--	--	--	--	--	--	--	--	--
3027× :	--	--	--	--	--	--	--	--	--	--
3029× :	--	--	--	--	--	--	--	--	--	--
3031× :	--	--	--	--	--	--	--	--	--	--
3033× :	--	--	--	--	--	--	--	--	--	--
3035× :	--	--	--	--	--	--	--	--	--	--
3037× :	--	--	--	--	--	--	--	--	--	--
3039× :	--	--	--	--	--	--	--	--	--	--
3041× :	--	--	--	--	--	--	--	--	--	--
3043× :	--	--	--	--	--	--	--	--	--	--
3045× :	--	--	--	--	--	--	--	--	--	--
3047× :	--	--	--	--	--	--	--	--	--	--
3049× :	--	--	--	--	--	--	--	--	--	--
3051× :	--	--	--							

② DISABLE LIST

• Coil, Input relay, Link relay

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : I0001

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

** CROSSREFERENCE **

Disable OFF

Disable ON

< DISABLE LIST OF DISCRETE INPUT >

	0	1	2	3	4	5	6	7	8	9
1000× :		0	0	0	0	0	0	0	0	(0)
1002× :	1	1	1	1	1	1	1	1	1	(1)
1004× :	0	0	0	0	0	0	0	0	0	0
1006× :	0	0	0	0	0	0	0	0	0	0
1008× :	0	0	0	0	0	0	0	0	0	0
1010× :	--	--	--	--	--	--	--	--	--	--
1012× :	--	--	--	--	--	--	--	--	--	--
1014× :	--	--	--	--	--	--	--	--	--	--
1016× :	--	--	--	--	--	--	--	--	--	--
1018× :	--	--	--	--	--	--	--	--	--	--
1020× :	--	--	--	--	--	--	--	--	--	--
1022× :	--	--	--	--	--	--	--	--	--	--
1024× :	--	--	--	--	--	--	--	--	--	--
1026× :	--	--	--	--	--	--	--	--	--	--
1028× :	--	--	--	--	--	--	--	--	--	--
1030× :	--	--	--	--	--	--	--	--	--	--
1032× :	--	--	--	--	--	--	--	--	--	--
1034× :	--	--	--	--	--	--	--	--	--	--
1036× :	--	--	--	--	--	--	--	--	--	--
1038× :	--	--	--	--	--	--	--	--	--	--
1040× :	--	--	--	--	--	--	--	--	--	--
1042× :	--	--	--	--	--	--	--	--	--	--
1044× :	--	--	--	--	--	--	--	--	--	--
1046× :	--	--	--	--	--	--	--	--	--	--
1048× :	--	--	--	--	--	--	--	--	--	--
1050× :	--	--	--	--	--	--	--	--	--	--
1052× :	--	--	--	--	--	--	--	--	--	--
1054× :	--	--	--	--	--	--	--	--	--	--
1056× :	--	--	--	--	--	--	--	--	--	--
1058× :	--	--	--	--	--	--	--	--	--	--
1060× :	--	--	--	--	--	--	--	--	--	--
1062× :	--	--	--	--	--	--	--	--	--	--
1064× :	--	--	--	--	--	--	--	--	--	--
1066× :	--	--	--	--	--	--	--	--	--	--
1068× :	--	--	--	--	--	--	--	--	--	--
1070× :	--	--	--	--	--	--	--	--	--	--
1072× :	--	--	--	--	--	--	--	--	--	--
1074× :	--	--	--	--	--	--	--	--	--	--
1076× :	--	--	--	--	--	--	--	--	--	--
1078× :	--	--	--	--	--	--	--	--	--	--
1080× :	--	--	--	--	--	--	--	--	--	--
1082× :	--	--	--	--	--	--	--	--	--	--
1084× :	--	--	--	--	--	--	--	--	--	--
1086× :	--	--	--	--	--	--	--	--	--	--
1088× :	--	--	--	--	--	--	--	--	--	--
1090× :	--	--	--	--	--	--	--	--	--	--
1092× :	--	--	--	--	--	--	--	--	--	--
1094× :	--	--	--	--	--	--	--	--	--	--
1096× :	--	--	--	--	--	--	--	--	--	--
1098× :	--	--	--	--	--	--	--	--	--	--

	0	1	2	3	4	5	6	7	8	9
1001× :	0	0	0	0	0	0	0	1	1	1
1003× :	1	1	1	0	0	0	0	0	0	0
1005× :	0	0	0	0	0	0	0	0	0	0
1007× :	0	0	0	0	0	0	0	0	0	0
1009× :	0	0	0	0	0	0	0	0	0	0
1011× :	--	--	--	--	--	--	--	--	--	--
1013× :	--	--	--	--	--	--	--	--	--	--
1015× :	--	--	--	--	--	--	--	--	--	--
1017× :	--	--	--	--	--	--	--	--	--	--
1019× :	--	--	--	--	--	--	--	--	--	--
1021× :	--	--	--	--	--	--	--	--	--	--
1023× :	--	--	--	--	--	--	--	--	--	--
1025× :	--	--	--	--	--	--	--	--	--	--
1027× :	--	--	--	--	--	--	--	--	--	--
1029× :	--	--	--	--	--	--	--	--	--	--
1031× :	--	--	--	--	--	--	--	--	--	--
1033× :	--	--	--	--	--	--	--	--	--	--
1035× :	--	--	--	--	--	--	--	--	--	--
1037× :	--	--	--	--	--	--	--	--	--	--
1039× :	--	--	--	--	--	--	--	--	--	--
1041× :	--	--	--	--	--	--	--	--	--	--
1043× :	--	--	--	--	--	--	--	--	--	--
1045× :	--	--	--	--	--	--	--	--	--	--
1047× :	--	--	--	--	--	--	--	--	--	--
1049× :	--	--	--	--	--	--	--	--	--	--
1051× :	--	--	--	--	--	--	--	--	--	--
1053× :	--	--	--	--	--	--	--	--	--	--
1055× :	--	--	--	--	--	--	--	--	--	--
1057× :	--	--	--	--	--	--	--	--	--	--
1059× :	--	--	--	--	--	--	--	--	--	--
1061× :	--	--	--	--	--	--	--	--	--	--
1063× :	--	--	--	--	--	--	--	--	--	--
1065× :	--	--	--	--	--	--	--	--	--	--
1067× :	--	--	--	--	--	--	--	--	--	--
1069× :	--	--	--	--	--	--	--	--	--	--
1071× :	--	--	--	--	--	--	--	--	--	--
1073× :	--	--	--	--	--	--	--	--	--	--
1075× :	--	--	--	--	--	--	--	--	--	--
1077× :	--	--	--	--	--	--	--	--	--	--
1079× :	--	--	--	--	--	--	--	--	--	--
1081× :	--	--	--	--	--	--	--	--	--	--
1083× :	--	--	--	--	--	--	--	--	--	--
1085× :	--	--	--	--	--	--	--	--	--	--
1087× :	--	--	--	--	--	--	--	--	--	--
1089× :	--	--	--	--	--	--	--	--	--	--
1091× :	--	--	--	--	--	--	--	--	--	--
1093× :	--	--	--	--	--	--	--	--	--	--
1095× :	--	--	--	--	--	--	--	--	--	--
1097× :	--	--	--	--	--	--	--	--	--	--
1099× :	--	--	--	--	--	--	--	--	--	--

③ CROSS REFERENCE LIST

• Discrete

```
ORDER # : 0001-00011                                        DATE : 03-23-1988     PAGE : I0001
    *    ------------    Memocon-SC GL60S TEST PROGRAM    ------------ *

    * *  CROSSREFERENCE  * *

< XREF LIST OF COIL >

    01001 : [****-0003] : Puls      :
              ┤ ├       : ****-0006, ****-0018, ****-0021, ****-0042
              ┤/├       : ****-0003
              ┤↑├       : ****-0036
              ┤↓├       : ****-0036

    01002 : [****-0003] :           :
              ┤ ├       : ****-0027, ****-0028, ****-0029, ****-0030
              ┤/├       : ****-0027
              ┤↑├       : ****-0004, ****-0008, ****0009, ****-0010, ****-0011, ****-0012, ****-0013

    01003 : [****-0004] :           :
              ┤/├       : ****-0005, ****-0006

    01005 : [****-0006] :           :
              ┤ ├       : ****-0018, ****-0023
              ┤/├       : ****-0039

    01006 : [****-0007] :           :
              ┤/├       : ****-0007

    01007 : [****-0007] :           :
              ┤/├       : ****-0197, ****-0198

    01008 : [****-0015] :           :
              ┤ ├       : ****-0016

    01009 : [****-0016] :           :
              ┤ ├       : ****-0016

    01010 : [****-0018] : Reset     : Auto. Reset
              ┤/├       : ****-0018

    01011 : [****-0021] :           :
              ┤ ├       : ****-0022, ****-0024
              ┤/├       : ****-0021

    01012 : [****-0022] :           :
              ┤ ├       : ****-0023

    01013 : [****-0022] :           :
              ┤ ├       : ****-0023

    01014 : [****-0023] :           :
              ┤ ├       : ****-0023
              ┤/├       : ****-0021, ****-0024

    01019 : [****-0018] : Timeup    Time up coil
    01021 : [****-0026] :           :
              ┤ ├       : ****-0028, ****-0028, ****-
              ┤/├       : ****-0039

    01022 : [****-0026] :           :
              ┤/├       : ****-0039
```

Coil №1011 is used in the network №21.
NO contact of coil №1011 is used in the networks №22 and 24.
NC contact of coil №1011 is used in the network №21.

• Register

```
ORDER # : 0001-00011                                        DATE : 03-23-1988     PAGE : J0001
    *  ------------    Memocon-SC GL60S TEST PROGRAM    ------------ *

    * *  CROSSREFERENCE  * *

    〈 XREF LIST OF HOLDING REGISTER 〉


40001 : ﾊｷﾀﾒﾚｼｽﾀ
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40002 :  Memocon-SC GL60S
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40003 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40004 : ｼｰﾄ'ｳｿｳｺNo.1
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40005 : ｼｰﾄ'ｳｿｳｺNo.2
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40006 : ｼｰﾄ'ｳｿｳｺNo.3
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40007 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40008 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40009 : T.A. 1958-10-19
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40010 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40011 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40012 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40013 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40014 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40015 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40016 :
      : ****-0010, ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40017 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40018 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40019 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40020 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40021 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40022 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40023 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40024 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40025 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40026 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
40027 :
      : ****-0011, ****-0012, ****-0013, ****-0022, ****-0024
```

Holding register №40018 is used in the networks №11, 12, 13, 22 and 24.

④ CONTENT LIST

• Input register, Constant register, Holding register, Link register

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : J0003

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

** CROSSREFERENCE **

〈 CONTENT LIST OF CONSTANT REGISTER 〉

	DECIMAL	HEXADECIMAL	+/−	BINARY	ASCII
32053 :	0046	002E	+0046	0000 0000 0010 1110	万.
32054 :	0047	002F	+0047	0000 0000 0010 1111	万/
32055 :	0048	0030	+0048	0000 0000 0011 0000	万0
32056 :	0049	0031	+0049	0000 0000 0011 0001	万1
32057 :	0050	0032	+0050	0000 0000 0011 0010	万2
32058 :	0051	0033	+0051	0000 0000 0011 0011	万3
32059 :	0052	0034	+0052	0000 0000 0011 0100	万4
32060 :	0053	0035	+0053	0000 0000 0011 0101	万5
32061 :	0054	0036	+0054	0000 0000 0011 0110	万6
32062 :	0055	0037	+0055	0000 0000 0011 0111	万7
32063 :	0056	0038	+0056	0000 0000 0011 1000	万8
32064 :	0057	0039	+0057	0000 0000 0011 1001	万9
32065 :	0058	003A	+0058	0000 0000 0011 1010	万:
32066 :	0059	003B	+0059	0000 0000 0011 1011	万;
32067 :	0060	003C	+0060	0000 0000 0011 1100	万<
32068 :	0061	003D	+0061	0000 0000 0011 1101	万=
32069 :	0062	003E	+0062	0000 0000 0011 1110	万>
32070 :	0063	003F	+0063	0000 0000 0011 1111	万?
32071 :	0064	0040	+0064	0000 0000 0100 0000	万@
32072 :	0065	0041	+0065	0000 0000 0100 0001	万A
32073 :	0066	0042	+0066	0000 0000 0100 0010	万B
32074 :	0067	0043	+0067	0000 0000 0100 0011	万C
32075 :	0068	0044	+0068	0000 0000 0100 0100	万D
32076 :	0069	0045	+0069	0000 0000 0100 0101	万E
32077 :	0070	0046	+0070	0000 0000 0100 0110	万F
32078 :	0071	0047	+0071	0000 0000 0100 0111	万G
32079 :	0072	0048	+0072	0000 0000 0100 1000	万H
32080 :	0073	0049	+0073	0000 0000 0100 1001	万I
32081 :	0074	004A	+0074	0000 0000 0100 1010	万J
32082 :	0075	004B	+0075	0000 0000 0100 1011	万K
32083 :	0076	004C	+0076	0000 0000 0100 1100	万L
32084 :	0077	004D	+0077	0000 0000 0100 1101	万M
32085 :	0078	004E	+0078	0000 0000 0100 1110	万N
32086 :	0079	004F	+0079	0000 0000 0100 1111	万O
32087 :	0080	0050	+0080	0000 0000 0101 0000	万P
32088 :	0081	0051	+0081	0000 0000 0101 0001	万Q
32089 :	0082	0052	+0082	0000 0000 0101 0010	万R
32090 :	0083	0053	+0083	0000 0000 0101 0011	万S
32091 :	0084	0054	+0084	0000 0000 0101 0100	万T
32092 :	0085	0055	+0085	0000 0000 0101 0101	万U
32093 :	0086	0056	+0086	0000 0000 0101 0110	万V
32094 :	0087	0057	+0087	0000 0000 0101 0111	万W
32095 :	0088	0058	+0088	0000 0000 0101 1000	万X
32096 :	0089	0059	+0089	0000 0000 0101 1001	万Y
32097 :	0090	005A	+0090	0000 0000 0101 1010	万Z
32098 :	0091	005B	+0091	0000 0000 0101 1011	万[
32099 :	0092	005C	+0092	0000 0000 0101 1100	万¥

• Timer register

ORDER # : 0001-00011 DATE : 03-23-1988 PAGE : J0001

* ---------- Memocon-SC GL60S TEST PROGRAM ---------- *

** CROSSREFERENCE **

Register №5001 was active during 879.8 seconds.

< CONTENT LIST OF TIMER REGISTER >

	0	1	2	3	4	5	6	7	8	9
5000× :		879.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5001× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5002× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5003× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5004× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5005× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5006× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5007× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5008× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5009× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5010× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5011× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5012× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5013× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5014× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5015× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5016× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5017× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5018× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5019× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5020× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5021× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5022× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5023× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5024× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5025× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5026× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5027× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5028× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5029× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5030× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5031× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5032× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5033× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5034× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5035× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5036× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5037× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5038× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5039× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5040× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5041× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5042× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5043× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5044× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5045× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5046× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5047× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5048× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5049× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5050× :	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5051× :	0.0	0.0	0.0							

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