SAMWON TECH

TEMI1000 SERIES

COMMUNICATION MANUAL

TEMPERATURE & HUMIDITY
PROGRAMMABLE CONTROLER

※ This manual applies to TEMI1300, TEMI1500 and TEMI1900
The model stated the manual content is TEMI1500.

Contents

1 Safety Precautions

Thank you for purchasing TEMI1500, programmable temperature & humidity controller.
This Communication Manual describes communication of the TEMI1500 controller.

CAUTION

SAFETY SYMBOL MARKS

(A) Symbolizes 'Caution' and 'Warning'. The information with this symbol is especially important for preventing from user injury and protecting the product and system.

(1) Product : This symbol indicates an imminently hazardous situation which if not avoided, will result in serious injury or system damage.
(2) Communication Manual : This symbol indicates potential hazard that may cause personal injury by electrical shock.

(B) Symbolizes 'Protective Earth (PE) Terminal.'

This symbol indicates that the terminal must be connected to the Ground prior to operating.

(C) Symbolizes 'Supplementary Explanation.'

The information with this symbol describes additional explanation for features.

(D) Symbolizes 'Reference.'

☞ This symbol indicates further information and page to refer.

CAUTION

Precautionary Remarks on this Communication Manual

(A) This manual should be passed on the End- User and kept at a suitable place for easy review in time.
(B) Read and understand this Communication Manual carefully before using the product.
(C) This Communication Manual describes functions and features of the product in detail, and SAMWONTECH can not guarantee against over applications would suit a customer's particular purpose which is not described in this manual.
(D) Unauthorized duplication and modification of this Communication Manual are strongly prohibited.
(E) The contents of this manual may be modified without prior notice.
(F) If any errors or omissions in this manual should come to the attention of the user, feel free to contact our sales representatives or our sales office.

Precautions for Safety and Unauthorized Modification

(A) For protecting and ensuring the safety of this product and relevant system, all of the safety instructions and precautions should be well recognized and strictly observed by all users.

(B) SAMWONTECH does not guarantee against damage resulting from unauthorized alteration, misuse, or abuse.

(C) When using additional safety circuit or part such as Noise Filter to protect this product and relevant system, it is strongly required to install that to outside of this product. Additional installation and modification inside of this product are prohibited.

(D) Do not try to disassemble, repair, or modify the product. It may become the cause of a trouble such as malfunction, electric shock, fire.

(E) Contact our sales dept. for part replacement or consumables.

(F) Keep the product away from water inflowing. This may become a critical cause of trouble.

(G) External shock on the product may lead to damage and malfunction.

Limitation of Liability

(A) SAMWONTECH does not guarantee or accept responsibility for this product other than the clauses stated in our warranty policy.

(B) SAMWONTECH assumes no liability to any party for any loss or damage, direct or indirect, caused by the use or any unpredictable defect of the product.

Warranty Policy

(A) Warranty term of this TEMI1500 is one year after delivery to the first purchaser for being free of defects in materials and faulty workmanship under the condition that the product has been applied according to this manual.

(B) The repairing cost will be charged for defective product out of warranty period. This charge will be the actual cost estimated by SAMWONTECH.

(C) Repairing cost may be charged even if within warranty period for following cases.

(1) Damage due to USER FAULT (Ex.: Product initialization by password loss)

(2) Damage due to natural disaster (Ex.: fire, flood)

(3) Damage due to additional removal and re-installation after the first one.

(4) Damage due to unauthorized disassembles, modification and alternation.

(5) Damage due to unexpected power failure caused unstable power supply.

(6) Others

(D) If any A/S is required, feel free to contact our sales office or a representative.

2. Communication Specification

The TEMI1500 controller provides Half-Duplex method support on RS232C and RS485 communication interface.
- RS232C interface supports 1:1 direct communication between host computer on network system and TEMI1500.
- RS485 interface supports to connect upper level network system with up to 31 slave TEMI1500 controller.

▌Parameters for communication setting

Parameter	Range	Description
PROTOCOL	PCLINK	Default protocol
	PCLINK+SUM	Default protocol + CheckSum
	MODBUS ASC	MODBUS ASCII
	MODBUS RTU	MODBUS RTU
SPEED (BPS)	9600	9600 bps
	19200	19200 bps
	38400	38400 bps
	57600	57600 bps
	115200	115200 bps
PARITY	NONE	None Parity
	EVEN	Even Parity
	ODD	Odd Parity
STOP BIT	1	1 bit
	2	2 bits
DATA LENGTH	7	7 bits
	8	8 bits
ADDRESS	1~99	Address
RESPONSE TIME	0~10	RESPONSE TIME (=PRCESS TIME+RESPONSE*10msec)

■ Factory default value

• PROTOCOL	PCLINK+SUM(PCLINK+CheckSum)
• SPEDD (BPS)	9600 bps
• PARITY	NONE
• STOP BIT	1 (1 bit)
• DATA LENGTH	8 (8 bits)
• ADDRESS	1
• RESPONSE	0 (Process time + 10 msec)

3. Communication setting

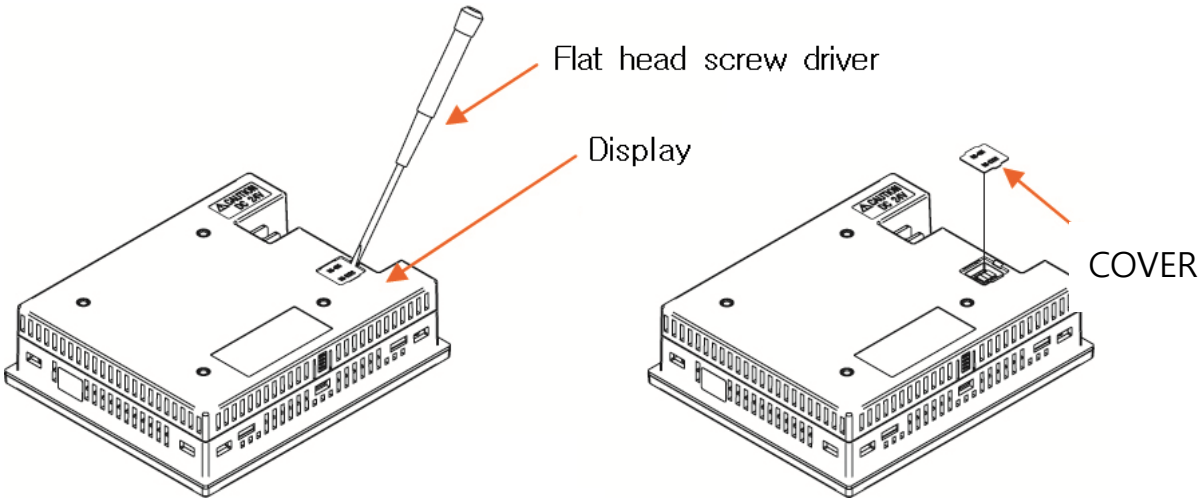
TEMI1500 provides flexible communication interface RS232C or RS485 from Control Unit directly.

▶ In [Figure 1], Using a flat head screw driver to remove the cover.

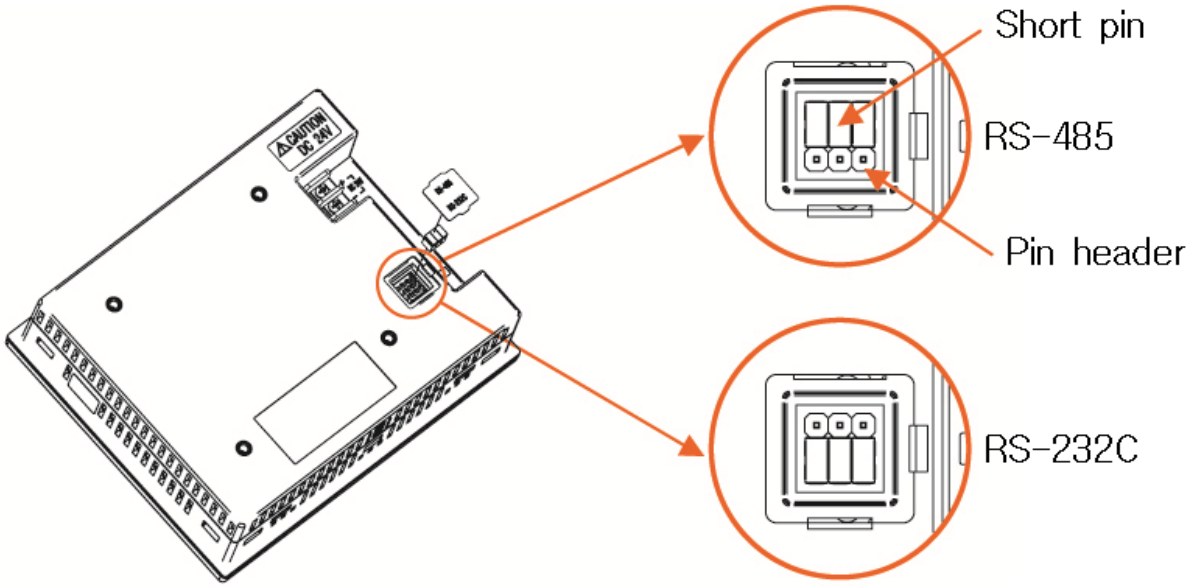
▶ In [Figure 2], Communication settings by moving the socket

▶ It is recommended to use tool like tweezers for setting socket to pin-header correctly.

☞ **Make sure setup completed correctly.**



[Figure-1] TEMI1500 Display



[Figure-2] TEMI1500 Communication Setting

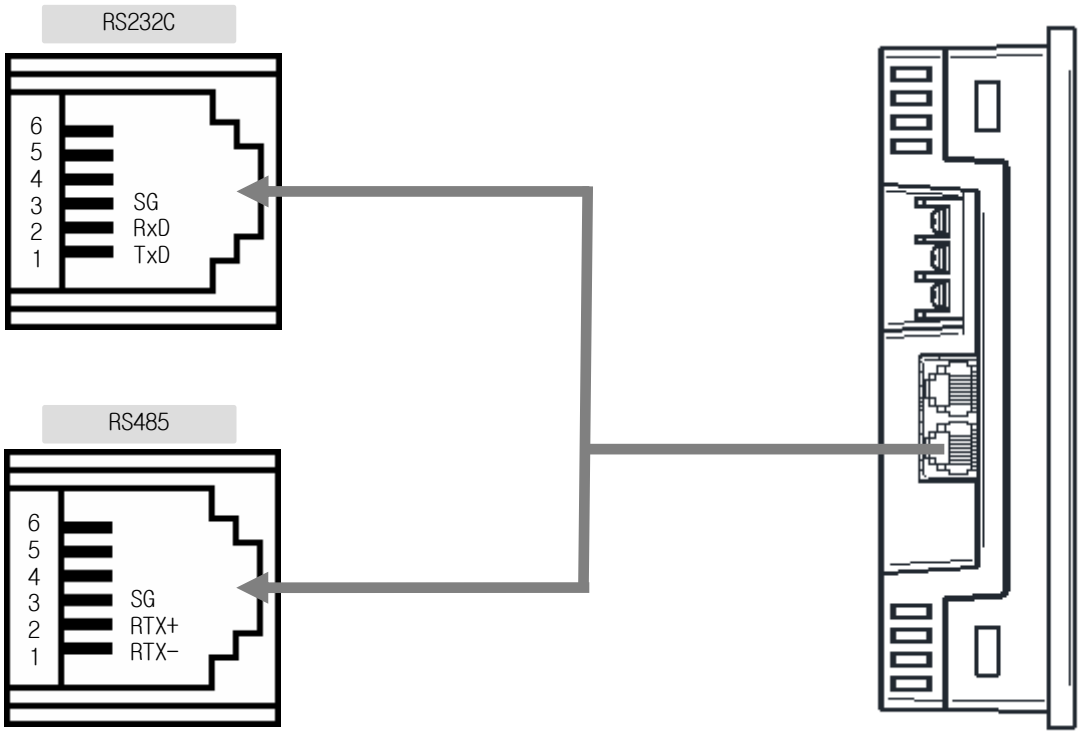
NOTE

▶ Do not disassemble Power board from Control Unit case during setting comm. interface.
▶ It is recommended to use tool like tweezers for setting comm. interface.
▶ Make sure setup completed correctly.

4. Wiring for Communication

Connector wiring between TEMI1500 and network system depends on communication interface setting (RS232C/RS485).

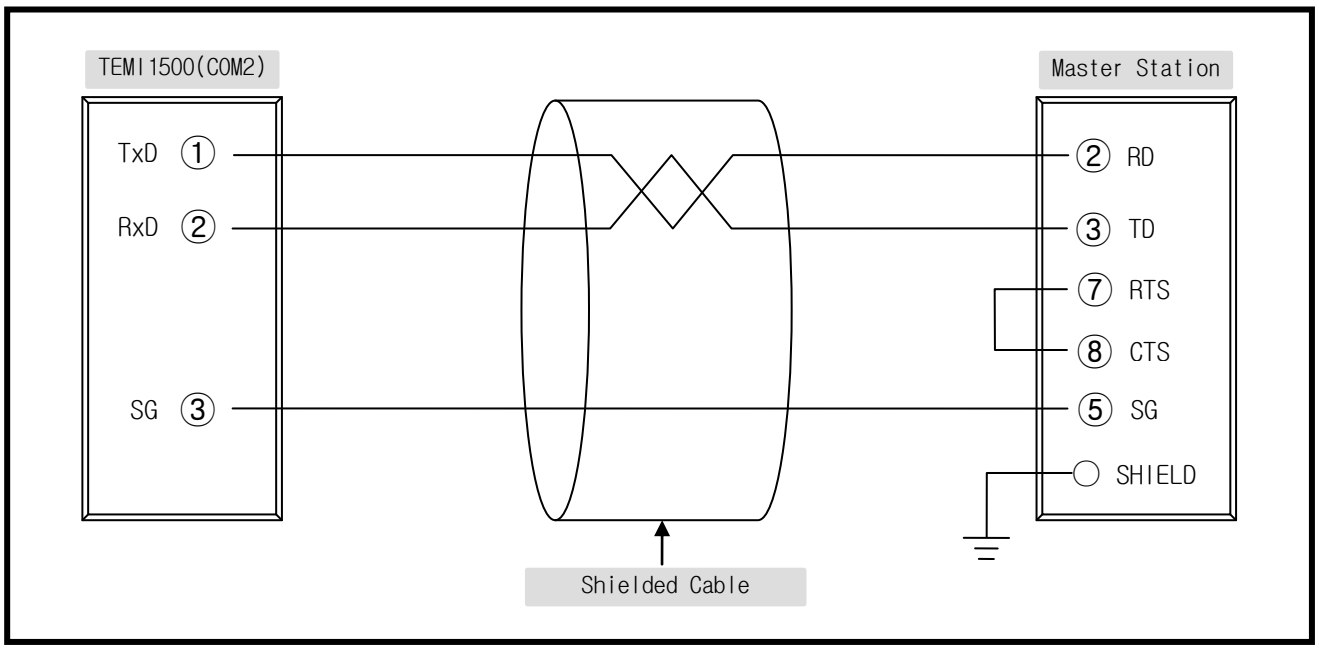
■ Modular Connector Pin-Mapping for COM2 port



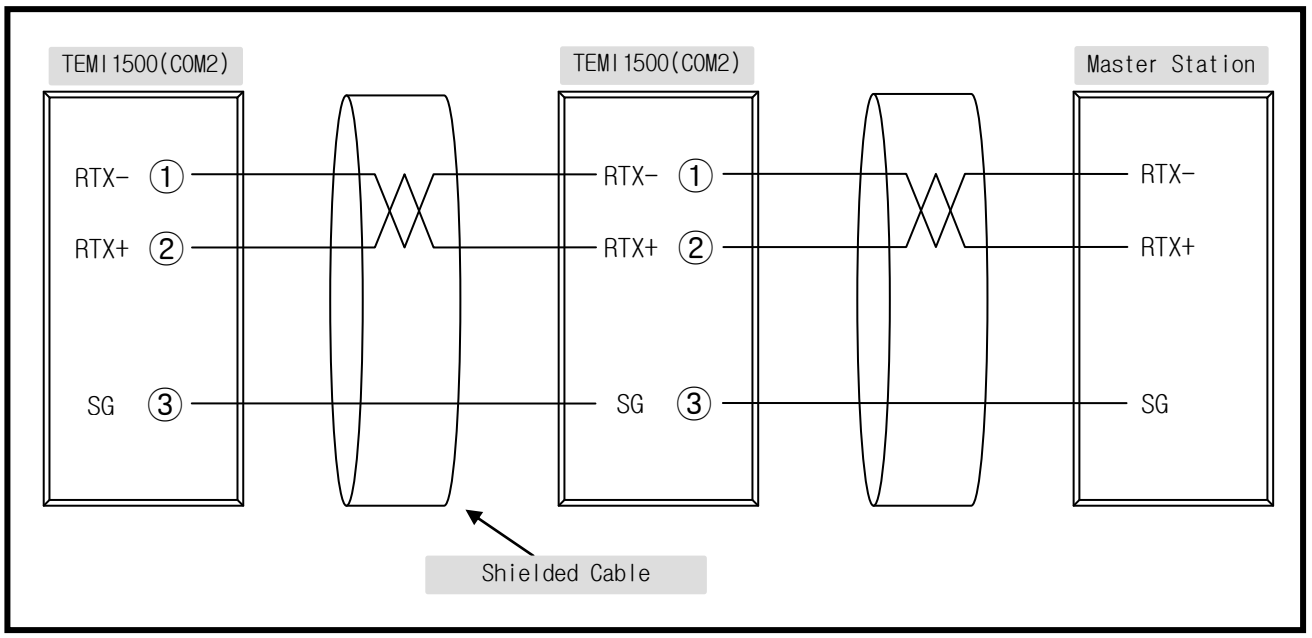
■ Description of Modular Connector Pin-Mapping for COM2 port

PIN no.	RS232C		RS485	
	Signal	Symbol	Signal	Symbol
1	Transmit Data	TxD	Receive/Transmit Data -	RTX-
2	Receive Data	RxD	Receive/Transmit Data +	RTX+
3	Signal Ground	SG	Signal Ground	SG
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-

▌6 Pin connector wiring for RS232C interface



▌6 Pin connector wiring for RS485 interface



☞ Up to 31 slave TEMI1500 controllers can be connected to a master device by multi-drop networking.

☞ Make sure to install 200Ω(1/4W) resistor on Last Leg at both end of terminal Slave and Master(PC, PLC).

5. Communication Command

5.1 The Frame Structure of standard protocol

The frame structure of protocol transmitting upper-level network system to TEMI1500

①	②	③	④	⑤	⑥	⑦	⑧
STX	Address	Command	,	Data	SUM	CR	LF

① Protocol Header

The beginning of communication command with STX (Start of Text), ASCII string with 0x02.

② Slave TEMI1500 Address

Slave unit address of TEMI1500.

③ Command

Function Command for communication. (Refer to 5.2 ~ 5.10).

④ Delimiter

Symbolize to separate Command and Data by Comma. (',')

⑤ Data

Formal text strings regulated by communication command rule.

⑥ Check Sum

- 'SUM' protocol is a more sophisticated one which includes Check Sum as an error check.
- Check Sum is calculated as following.

1) Add the ASCII code of characters from the character next to STX one by one up to the character prior to SUM
2) Represent the lowest one byte of the sum as a hexadecimal notation (2 characters).

⑦, ⑧ Protocol Tail

ASCII code to close communication command by indicating CR(0x0D) and LF(0x0A).

▌Example for SUM

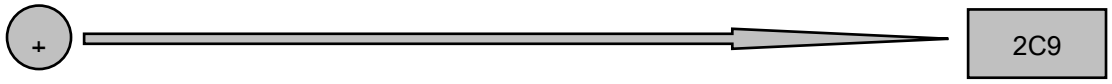
◈ Example

To read the consecutively D-Register from D0001 (TEMP.PV) to D0006 (HUMI.SP)

- Request : [stx]01RSD,06,0001[cr][lf]
- Request (with CheckSum) : [stx]01RSD,06,0001**C9**[cr][lf]

☞ As shown below, hexa decimal value adding each text at 01RSD,06,0001 by ASCII code is 2C9, and lower digit 2 characters **C9** will be used for CheckSum.

Text	0	1	R	S	D	,	0	6	,	0	0	0	1
Ascii value	30	31	52	53	44	2C	30	36	2C	30	30	30	31



▌ASCII Table

상 / 위	0	1	2	3	4	5	6	7
0	NUL	DLE	SPACE	0	@	P	`	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	“	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4	EOT	DC4	$	4	D	T	d	t
5	ENQ	NAK	%	5	E	U	e	u
6	ACK	SYN	&	6	F	V	f	v
7	BEL	ETB	‘	7	G	W	g	w
8	BS	CAN	(	8	H	X	h	x
9	HT	EM	)	9	I	Y	i	y
A	LF	SUB	*	:	J	Z	j	z
B	VT	ESC	+	;	K	[	k	{
C	FF	FS	,	<	L	¥	l	|
D	CR	GS	-	=	M	]	m	}
E	SO	RS	.	>	N	^	n	~
F	SI	US	/	?	O	_	o	DEL

5.2 Type of Communication Command

Two types of commands are provided on TEMI1500. One is general READ/WRITE command to read and write information on D-Register, and the other is Reference command to read self-information of TEMI1500.

▣ Reference Command

Command	Description
AMI	Displays model name and Version-Revision of TEMI1500

▣ READ/WRITE Command

Command	Description
RSD	Read data in consecutive D-Register in sequence (Read)
RRD	Read data in arbitrary single D-Register (Read)
WSD	Write data in consecutive D-Register in sequence (Write)
WRD	Write data in arbitrary single D-Register (Write)
STD	Register arbitrary single address to monitor (D-Register Monitoring Set)
CLD	Read data in address registered by STD command (D-Register Monitoring Call)

☞ Each Command can read or write up to 64 D-Register and all of the SED/CLD data will be reset by power OFF, so the data should be registered again.

5.3 ERROR Response

When an Error occurs during communication, TEMI1500 transmits a frame as following.

Bytes	1	2	2	2	2	1	1
Frame	STX	Address	NG	Error Code	SUM	CR	LF

▣ Description of Error Code

Error Code	Description	Remarks
01	Invalid Command setting	
02	Invalid D-Register setting	
04	Data Setting Error	Invalid text data input (Available 0~9, A~F : hexadecimals)
08	Invalid Format configuration	▪ Different command format with designated ▪ Differnet number of setting with designated
11	CheckSum Error	
12	Monitoring Command Error	No setup Monitoring Command
00	Other Errors	

5.4 RSD Command

RSD Command is used to read data in a part of D-Register by consecutive address in sequence.

▣ Request Message Frame

Bytes	1	2	3	1	2	1	4	2	1	1
Frame	STX	Address	RSD	,	Count Number	,	D-Reg.	SUM	CR	LF

▣ Response Message Frame

Bytes	1	2	3	1	2	1	4	1	…
Frame	STX	Address	RSD	,	OK	,	Data - 1	,	…

1	4	2	1	1
,	Data - n	SUM	CR	LF

- Count Number : 1 ~ 64
- Data : Hexa-decimal 16bit string 4 character with no decimal point

◈ Example

To read the D-Register **FROM** D0001 (TEMP.PV) **TO** D0002 (TEMP.SP)

- Request : [stx]01RSD,02,0001[cr][lf]
- Request (with CheckSum) : [stx]01RSD,02,0001C5[cr][lf]
  ([stx] = 0x02, [cr] = 0x0d, [lf] = 0x0a)

Response data will be same as below, when 50.0 of D0001 (TEMP.PV) and 30.0 of D0002 (TEMP.SP)

- Response : [stx]01RSD,OK,01F4,012C[cr][lf]
- Response (with CheckSum) : [stx]01RSD,OK,01F4,012C19[cr][lf]

※ Converting procedure 4digits hexadecimal response to decimal value.

① Radix conversion (Decimalize) : 01F4(hexadecimal) → 500(decimal)
② Multiply factor (decimal point) : 500 * 0.1 → 50.0

5.5 RRD Command

RRD Command is used to read data in arbitrary single D-Register.

▣ Request Message Frame

Bytes	1	2	3	1	2	1	4	1	…
Frame	STX	Address	RRD	,	Count Number	,	D-Reg.- 1	,	…

1	4	2	1	1
,	D-Reg.- n	SUM	CR	LF

▣ Response Message Frame

Bytes	1	2	3	1	2	1	4	1	…
Frame	STX	Address	RRD	,	OK	,	Data - 1	,	…

1	4	2	1	1
,	Data - n	SUM	CR	LF

- Count Number : 1 ~ 64
- Data : Hexa-decimal 16bit string 4 character with no decimal point

◈ Example

To read the D-Register D0001 (TEMP.PV) and D0002 (TEMP.SP)

- Request : [stx]01RRD,02,0001,0002[cr][lf]
- Request (with CheckSum) : [stx]01RRD,02,0001,0002B2[cr][lf]

Response data will be same as below, when 50.0 of D0001 (TEMP.PV) and 30.0 of D0002 (TEMP.SP)

- Response : [stx]01RRD,OK,01F4,012C[cr][lf]
- Response (with CheckSum) : [stx]01RRD,OK,01F4,012C18[cr][lf]

5.6 WSD Command

WSD command is used to write data to a part of D-Register by consecutive address in sequence.

▣ Request Message Frame

Bytes	1	2	3	1	2	1	4	1	4
Frame	STX	Address	WSD	,	Count Number	,	D-Reg.	,	Data - 1

1	…	1	4	2	1	1
,	…	,	Data - n	SUM	CR	LF

▣ Response Message Frame

Bytes	1	2	3	1	2	2	1	1
Frame	STX	Address	WSD	,	OK	SUM	CR	LF

- Count Number : 1 ~ 64
- Data : Hexa-decimal 16bit string 4 character with no decimal point

◈ Example

To write data to the D-Register **FROM** D0102 (TEMP.SP) **TO** D0103 (HUMI.SP) on FIX mode operation

- Setting TEMP.SP : 50.0 ℃ → Remove decimal point(500) → Hexadecimalize (0x01F4)
- Setting HUMI.SP : 80.0 % → Remove decimal point(800) → Hexadecimalize (0x0320)

- Request : [stx]01WSD,02,0102,01F4,0320[cr][lf]
- Request(with CheckSum) : [stx]01WSD,02,0102,01F4,0320C4[cr][lf]

5.7 WRD Command

WRD Command is used to write data in arbitrary single D-Register.

▣ Request Message Frame

Bytes	1	2	3	1	2	1	4	1	4
Frame	STX	Address	WRD	,	Count Number	,	D-Reg.- 1	,	Data - 1

1	…	1	4	1	4	2	1	1
,	…	,	D-Reg. - n	,	Data - n	SUM	CR	LF

▣ Response Message Frame

Bytes	1	2	3	1	2	2	1	1
Frame	STX	Address	WRD	,	OK	SUM	CR	LF

- Count Number : 1 ~ 64
- Data : Hexa-decimal 16bit string 4 character with no decimal point

◈ Example

To write 50.0 ℃ into the D0102(TEMP.SP) and 0.5 ℃ into the D0106(TEMP.SLOPE) on FIX mode operation.

- Setting TEMP.SP : 50.0 ℃ → Remove decimal point (500) → Hexadecimalize (0x01F4)
- Setting TEMP.SLOPE : 0.5 ℃ → Remove decimal point (5) → Hexadecimalize (0x0005)

- Request : [stx]01WRD,02,0102,01F4,0106,0005[cr][lf]
- Request(with CheckSum) : [stx]01WRD,02,0102,01F4,0106,0005B6[cr][lf]

5.8 STD Command

STD Command is used to list the D-Registers that is necessary to monitor frequently.

▣ Request Message Frame

Byte	1	2	3	1	2	1	4	1	4
Frame	STX	Address	STD	,	Count Number	,	D-Reg. - 1	,	D-Reg. - 2

1	…	1	4	1	4	2	1	1
,	…	,	D-Reg. - (n-1)	,	D-Reg. - n	SUM	CR	LF

▣ Response Message Frame

Byte	1	2	3	1	2	2	1	1
Frame	STX	Address	STD	,	OK	SUM	CR	LF

▪ Count Number : 1 ~ 64

◈ Example

To register D0001(TEMP.PV), D0002(TEMP.SP), D0005(HUMI.PV) and D0006(HUMI.SP)

- Request : [stx]01STD,04,0001,0002,0005,0006[cr][lf]
- Request(with CheckSum) : [stx]01STD,04,0001,0002,0005,00069A[cr][lf]

5.9 CLD Command

CLD Command is used to read data in the address which had been registered by STD command.

▣ Request Message Frame

Bytes	1	2	3	2	1	1
Frame	STX	Address	CLD	SUM	CR	LF

▣ Response Message Frame

Bytes	1	2	3	1	2	1	4	1	4
Frame	STX	Address	CLD	,	OK	,	Data - 1	,	Data - 2

1	…	1	4	1	4	2	1	1
,	…	,	Data - (n-1)	,	Data - n	SUM	CR	LF

▪ Count Number : 1 ~ 64

5.10 AMI Command

AMI Command is used to get the controller own-information.

▣ Request Message Frame

Bytes	1	2	3	2	1	1
Frame	STX	Address	AMI	SUM	CR	LF

▣ Response Message Frame

Bytes	1	2	3	1	2	1
Frame	STX	Address	AMI	,	OK	,

9	2	7	2	1	1
Model Name	SPACE	Version-Revision	SUM	CR	LF

◈ Exmaple

To confirm controller own information

- Request : [STX]01AMI[CR][LF]
- Response (with CheckSum) : [STX]01AMI38[CR][LF]

- Response : [STX]01AMI,OK,TEMI-2000[sp][sp]V00-R00[CR][LF]
- Response (with CheckSum) : [stx]01AMI,OK,TEMI-2000[sp][sp]V00-R001D[cr][lf]

6. MODBUS Protocol

6.1 The Frame Structure of MODBUS protocol

▣ Data Format

Item	ASCII	RTU
Protocol Header	:(Colon)	N/A
Protocol Tail	[CR][LF]	N/A
Data length	7-bit(Fixed)	8-bit(Fixed)
Data type	ASCII	Binary
Error detecting	LRC (Longitudinal Redundancy Check)	CRC-16 (Cyclic Redundancy Check)
Data time interval	Under 1sec.	Under 24-bit time

▣ The Frame Structure of MODBUS protocol

▶ Modbus ASCII

Protocol Header	Address	Function Code	Data	LRC Check	Protocol Tail
1 character	2 character	2 character	N character	2 character	2 character (CR+LF)

▶ Modbus RTU

Protocol Header	Address	Function Code	Data	LRC Check	Protocol Tail
N/A	8-Bit	8-Bit	N * 8-Bit	16-Bit	N/A

▪ N : Number of Hexadecimal data

6.2 Function Code

TEMI1500 MODBUS protocol provides two function code subsets for READ/WRITE of D-Register and Loop-Back detecting test.

Function Code	Description
03	Read data in consecutive D-Register in sequence
06	Write data to arbitrary single D-Register
08	Diagnostics(Loop-Back Test)
16	Write data to consecutive D-Register in sequence

When using MODBUS, D-Register has to be subtracted '1' from the D-Register table we offer this manual, because it starts '0' D-Register address on MODBUS protocol.

6.3 Function code - 03

Function code-03 is used to read the data of consecutive D-Register block in sequence up to 64 registers.

▣ Request Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave Address	2 characters	8-Bit
Function code-03	2 characters	8-Bit
D-Register Hi	2 characters	8-Bit
D-Register Lo	2 characters	8-Bit
Address Count Hi	2 characters	8-Bit
Address Count Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Exmaple

Request message to read the D-Register **FROM** D0001 (TEMP.PV) **TO** D0002 (TEMP.SP) should be

- MODBUS ASCII :010300000002FA[cr][lf]
- MODBUS RTU 010300000002C40B

☞ **D-Register has to be subtracted '1' from the designated address number on D-Register table in this manual.**

▣ Response Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave Address	2 characters	8-Bit
Function code-03	2 characters	8-Bit
Data byte count	2 characters	8-Bit
Data - 1 Hi	2 characters	8-Bit
Data - 1 Lo	2 characters	8-Bit
…	…	…
Data - n Hi	2 characters	8-Bit
Data - n Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Example

Response data will be same as below, when 49.3 of D0001 (TEMP.PV) and 10.8 of D0002 (TEMP.SP)

- MODBUS ASCII :01030401ED006C9E[cr][lf]
- MODBUS RTU 01030401ED006C6BD7

6.4 Function code - 06

Function code-06 is used to write data in arbitrary single D-Register.

▣ Request Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave Address	2 characters	8-Bit
Function code-06	2 characters	8-Bit
D-Register Hi	2 characters	8-Bit
D-Register Lo	2 characters	8-Bit
Write Data Hi	2 characters	8-Bit
Write Data Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Example

Request message to write '2' to D0100 (pattern number) should be

- MODBUS ASCII :01060063000294[cr][lf]
- MODBUS RTU 010600630002F815

☞ D-Register has to be subtracted '1' from the designated address number on D-Register table in this manual.

▣ Response Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave Address	2 characters	8-Bit
Function code-06	2 characters	8-Bit
D-Register Hi	2 characters	8-Bit
D-Register Lo	2 characters	8-Bit
Write Data Hi	2 characters	8-Bit
Write Data Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Example

Without any trouble, response message will be

- MODBUS ASCII :01060063000294[cr][lf]
- MODBUS RTU 010600630002F815

6.5 Function code - 08

Function code-08 is used to test loopback for self-diagnosis.

▣ Request Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave Address	2 characters	8-Bit
Function code-08	2 characters	8-Bit
Diagnosis code Hi	2 characters	8-Bit
Diagnosis code Lo	2 characters	8-Bit
Data Hi	2 characters	8-Bit
Data Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Example

Request message to test loopback for self-diagnosis should be

- MODBUS ASCII :010800000002F5[cr][lf]
- MODBUS RTU 01080000000261CA

▣ Response Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave Address	2 characters	8-Bit
Function code-08	2 characters	8-Bit
Diagnosis code Hi	2 characters	8-Bit
Diagnosis code Lo	2 characters	8-Bit
Data Hi	2 characters	8-Bit
Data Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Example

Without any trouble, response message will be

- MODBUS ASCII :010800000002F5[cr][lf]
- MODBUS RTU 01080000000261CA

6.6 Function code - 16

Function code-16 is used to write the data into consecutive D-Register block in sequence up to 64 registers.

▣ Request Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave address	2 characters	8-Bit
Function code-16	2 characters	8-Bit
D-Register Hi	2 characters	8-Bit
D-Register Lo	2 characters	8-Bit
Address Count Hi	2 characters	8-Bit
Address Count Lo	2 characters	8-Bit
Data byte Count	2 characters	8-Bit
Data - 1 Hi	2 characters	8-Bit
Data - 1 Lo	2 characters	8-Bit
…	…	…
Data - n Hi	2 characters	8-Bit
Data - n Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Example

Request message to write '10.0' to the D0102(TEMP.SP) and '20.0' to the D0103(HUMI.SP) on FIX mode operation should be

- MODBUS ASCII :011000650002040064000C858[cr][lf]
- MODBUS RTU 011000650002040064000C875F1

▣ Response Message Frame

Factor	ASCII	RTU
Protocol Header	:(Colon)	-
Slave address	2 characters	8-Bit
Function code-16	2 characters	8-Bit
D-Register Hi	2 characters	8-Bit
D-Register Lo	2 characters	8-Bit
Address Count Hi	2 characters	8-Bit
Address Count Lo	2 characters	8-Bit
Error detecting	2 characters	16-Bit
Protocol Tail	2 characters (CR+LF)	-

◈ Example

Without any trouble, response message will be

- MODBUS ASCII :01100065000288[cr][lf]
- MODBUS RTU 0110006500025107

7. D-REGISTER Description

D-Register is group of communication data to monitor and control all status of TEMI1500.

D-Register is grouped by consecutive 100 addresses based on its concerned function as shown below.

D-Register address	Group Name	Description	Read	Write
D0001~D0099	PROCESS	General operation process information	○	◈
D0100~D0199	FUNCTION	Operating Function setting	○	△
D0200~D0299	RESERVATION	Time & Reserve operation setting	○	△
D0300~D0399	ON/OFF SIGNAL	ON/OFF signal setting	○	○
D0400~D0499	INNER SIGNAL	INNER signal setting	○	○
D0500~D0599	ALARM SIGNAL	ALARM signal setting	○	○
D0600~D0699	TIME SIGNAL	TIME signal setting	○	○
D0700~D0799	PID	P.I.D setting	○	○
D0800~D0899	COMMUNICATION	Communication concerned information	○	◈
D0900~D0999	INPUT	Sensor Input setting	○	○
D1000~D1099	OUTPUT	Control Output setting	○	○
D1100~D1199	DO CONFIG1	DO(Digital Output) setting - 1	○	△
D1200~D1299	DI CONFIG1	DI(Digital Input) setting	○	○
D1300~D1399	DI CONFIG2	DI NAME input-1	○	○
D1400~D1499	DI CONFIG3	DI NAME input-2	○	○
D1500~D1599	DO CONFIG2	DO(Digital Output) setting - 2	○	○
D1600~D1699	INITIAL1	Initial system setting - 1	○	○
D1700~D1799	PROGRAM	Program pattern profile setting	○	○
D1800~D1899	PATTERN INF01	Pattern profile information -1	○	◈
D1900~D1999	PATTERN INF02	Pattern profile information -2	○	◈
D2000~D2099	INITIAL2	Initial system setting - 2	○	○
D2100~D2999	FILE1 ~ FILE9	Recorded Trend file information	○	◈
D3000~D3099	INITIAL3	Initial system setting - 3	○	○
D3100~D3199	INITIAL4	Initial system setting - 4	○	○
D3200~D3299	LOGICAL SIG1	Logical signal setting - 1	○	○
D3300~D3399	LOGICAL SIG2	Logical signal setting - 2	○	○

☞ **D-Register is composed of hexadecimal 4 digit (2-Byte).**

- ○ : Available to read / write over all designated address range.
- △ : Available to read / write in part of designated address range.
- ◈ : Not available to read / write over all designated address range

7.1 PROCESS Group

PROCESS group consists of fundamental parameter information concerned with operation process and status.
Below table describes the detail Bit Map information of some parameter that indicates its status by Bit.

■ Bit Map information of TEMI1500

BIT	NOWSTS	IS.STS	TS.STS	ALM.STS	ONOFF.STS	DOCTR.STS	CTR.STS
	(D0010)	(D0011)	(D0012)	(D0013)	(D0014)	(D0015)	(D0016)
0	RESET	IS1	TS1	ALM1	T1	T.RUN	T.RUN
1	FIX	IS2	TS2	ALM2	T2	H.RUN	H.RUN
2	PROG	IS3	TS3	ALM3	T3	T.WAIT	T.WAIT
3	HOLD	IS4	TS4	ALM4	T4	H.WAIT	H.WAIT
4	WAIT	IS5		ALM5	T5	T.UP	T.UP
5	TEMP AT	IS6		ALM6	T6	T.SOAK	T.SOAK
6	HUMI AT	IS7		ALM7	T7	T.DOWN	T.DOWN
7		IS8		ALM8	T8	H.UP	H.UP
8		IS9			T9	H.SOAK	H.SOAK
9		IS10			T10	H.DOWN	H.DOWN
10						FEND	FEND
11					H1	PTEND	PTEND
12					H2	DRAIN	DRAIN
13					H3	1.REF	1.REF
14					H4	2.REF	2.REF
15					H5		

BIT	USEROUT.STSL	USEROUT.STSH	DI.DATA	ADERR.STS	SYS.STS	LOGICAL.STS	
	(D0017)	(D0018)	(D0019)	(D0020)	(D0045)	(D0046)	
0	D01	D017	DI1	TEMP +OVER	CTR.COMERR	LOG1	
1	D02	D018	DI2	TEMP -OVER	IO.COMERR	LOG2	
2	D03	D019	DI3	TEMP S.OPN		LOG3	
3	D04	D020	DI4			LOG4	
4	D05	D021	DI5			LOG5	
5	D06	D022	DI6			LOG6	
6	D07	D023	DI7			LOG7	
7	D08	D024	DI8			LOG8	
8	D09	D025	DI9	HUMI +OVER			
9	D010	D026	DI10	HUMI -OVER			
10	D011	D027	DI11	HUMI S.OPN			
11	D012	D028	DI12				
12	D013	D029	DI13				
13	D014	D030	DI14				
14	D015	D031	DI15				
15	D016	D032	DI16	DRY PV OVER			

■ Bit Map status information D-Register

D-Reg.	Symbol	Descriptions
D0010	NOWSTS	Current operation status information.
D0011	IS.STS	INNER signal generating status information.
D0012	TS.STS	TIME signal generating status information.
D0013	ALM.STS	ALARM signal generating status information.
D0014	ONOFF.STS	ON/OFF signal generating status information.
D0015	DOCTR.STS	Other DO signal generating status information.
D0016	CTR.STS	Displayed DO signal status information on 2nd Oper screen
D0017	USEROUT.STSL	Actual generating Do signal status through I/O board
D0018	USEROUT.STSH	
D0010	DI.DATA	DI Error outbreak status information.
D0020	ADERR.STS	Error status out of control range
D0045	SYS.STATUS	Error status communication link
D0046	LOGICAL.STATUS	LOGICAL signal generating status information.

■ Common process information D-Register for both PROG / FIX

D-Reg.	Symbol	Descriptions
D0001	TEMP.NPV	Current temperature PV
D0002	TEMP.NSP	Current temperature SP
D0003	WET.NPV	Current WET temperature PV
D0004	WET.NSP	Current WET temperature SP
D0005	HUMI.NPV	Current relative humidity PV
D0006	HUMI.NSP	Current humidity SP
D0007	TEMP.MVOUT	Current temperature percentage control output (MV)
D0008	HUMI.MVOUT	Current humidity percentage control output (MV)
D0009	C.PIDNO	Currently running PID number
D0024	RUN.TIME_H	Process time (Hour)
D0025	RUN.TIME_M	Process time (Minute)
D0026	RUN.TIME_S	Process time (Second)
D0052	TEMP.DP	Decimal point position of temperature
D0053	HUMI.DP	Decimal point position of humidity

■ PROGRAM operation process information D-Register

D-Reg.	Symbol	Descriptions
D0027	RUN.PTNO	Currently running program pattern number
D0028	RUN.SEGNO	Currently running program segment number
D0029	NOW.PT.RPT	Count of current Repeat operation at running pattern
D0030	TOTAL.PT.RPT	Total Programmed Count of Repeat op. at running pattern
D0031	NOW.SEG.RPT	Count of current Repeat operation at running segment
D0032	TOTAL.SEG.RPT	Total Programmed Count of Repeat op. at running segment
D0033	NOW.SEGTIME_H	Process time(High) of currently running segment
D0034	NOW.SEGTIME_L	Process time(Low) of currently running segment
D0035	TOTAL.SEGTIME_H	Programmed total time(High) of currently running segment
D0036	TOTAL.SEGTIME_L	Programmed total time(Low) of currently running SEG
D0039	PREV.TEMP.TSP	Temperature Target Set Point of the preceding segment
D0040	NOW.TEMP.TSP	Temperature Target Set Point of the current segment
D0041	PREV.HUMI.TSP	Humidity Target Set Point of the preceding segment
D0042	NOW.HUMI.TSP	Humidity Target Set Point of the current segment
D0050	USED PATTERN	Total number of programmed pattern
D0051	USED SEGMENT	Total number of programmed segment

7.2 FUNCTION Group

FUNCTION group consists of setting parameter D-register related with operational function and process.

▌Common Operational Function setting D-Register for both PROG / FIX

D-Reg.	Symbol	Descriptions
D0106	TEMP.SLOPE	FUZZY Function (0:OFF, 1:ON)
D0107	TEMI.SLOPE	KEYLOCK Function (0:OFF, 1:ON)
D0108	FUZZY	FUZZY Function (0:OFF, 1:ON)
D0112	KEYLOCK	KEYLOCK Function (0:OFF, 1:ON)
D0114	LIGHT.OFFTM	Backlight ON time
D0120	RESTRICT_MAIN	Verify the restrict of main button
D0129	REC.OP	Set the RECORDING operation(0:Auto, 1:Manual)
D0130	REC.CYCLE	Sampling time for recording
D0136	TEMP.AT	Carrying out temperature Auto-Tuning (0:OFF, 1:ON)
D0137	HUMI.AT	Carrying out humidity Auto-Tuning (0:OFF, 1:ON)
D0147	DANGER.DISPLAY	Set the internal memory warning(0:Show, 1:Not Show)
D0148	HUMI.DISPLAY	Relative Humidity display (0:AUTO, 1:MANUAL)
D0149	BUZ.ONOFF	Buzzer sound (0: UNUSED, 1: USE)
D0160	USER KEY	User key(0:UNUSED, 1:USE)

▌PROGRAM Operation & Function setting D-Register

D-Reg.	Symbol	Descriptions
D0100	SET_PTNO	Pattern Number to run program operation
D0140	WAIT.USE	WAIT Function (0:UNUSE, 1:USE)
D0141	WAIT_TZONE	Temperature WAIT ZONE setting
D0142	WAIT_HZONE	Humidity WAIT ZONE setting
D0143	WAIT_TIME	WAIT TIME setting
D0144	WAIT.METHOD	Target of WAIT function (0:ALL, 1:SEG)

▌FIX Operation & Function setting D-Register

D-Reg.	Symbol	Descriptions
D0102	FIX.TEMP_TSP	Temperature Set Point on FIX operation
D0103	FIX.HUMI_TSP	Humidity Set Point on FIX operation
D0109	TIME.OP	TIME OPERATION (0:UNUSE, 1:USE)
D0110	TIME.OP_H	HOUR setting for TIME OPERATION
D0111	TIME.OP_M	MINUTE setting for TIME OPERATION

▌OPERATION mode & performance setting D-Register

D-Reg.	Symbol	Process method	Setting	Description
D0101	COM.OPMODE	RUN/STOP	1	Start/Stop running PROG/FIX Oper.
		HOLD	2	HOLD ON/OFF
		STEP	3	Segment STEP
D0104	OP.MODE	PROG	0	Set PROG Operation MODE
		FIX	1	Set FIX Operation MODE
D0105	PWR.MODE	STOP	0	Not using Power-Mode
		COLD	1	COLD MODE
		HOT	2	HOT MODE

☞ To activate PROG operation RUN or FIX operation RUN, TEMI1500 should be in individual corresponding STOP(PROG STOP/FIX STOP) state. For example, to activate PROG operation RUN from currently operating FIX RUN state, convert the operation state to PROG STOP (D0104 = 0000, D0101 = 0001[Operation stop trigger]) first, then you can activate PROG operation RUN.

7.3 RESERVATION Group

RESERVATION group consists of setting and information parameter D-Register related with TIME for Reserve Operation and current time installed in TEMI1500.

▌TIME setting and information D-Register

D-Reg.	Symbol	Description	Read	Write
D0201	NOW.YEAR	Current YEAR installed in TEMI1500	○	×
D0202	NOW.MONTH	Current MONTH installed in TEMI1500	○	×
D0203	NOW.DAY	Current DAY installed in TEMI1500	○	×
D0204	NOW.AMPM	Current TIME-AM/PM installed in TEMI1500	○	×
D0205	NOW.HOUR	Current HOUR installed in TEMI1500	○	×
D0206	NOW.MIN	Current MN. installed in TEMI1500	○	×
D0207	C.YEAR	Current YEAR setting in TEMI1500	×	○
D0208	C.MONTH	Current MONTH setting in TEMI1500	×	○
D0209	C.DAY	Current DAY setting in TEMI1500	×	○
D0210	C.AMPM	Current TIME-AM/PM setting in TEMI1500	×	○
D0211	C.HOUR	Current HOUR setting in TEMI1500	×	○
D0212	C.MIN	Current MN. setting in TEMI1500	×	○
D0213	R.YEAR	YEAR setting for RESERVE Operation	○	○
D0214	R.MONTH	MONTH setting for RESERVE Operation	○	○
D0215	R.DAY	DAY setting for RESERVE Operation	○	○
D0216	R.AMPM	TIME-AM/PM setting for RESERVE Operation	○	○
D0217	R.HOUR	HOUR setting for RESERVE Operation	○	○
D0218	R.MIN	MIN. setting for RESERVE Operation	○	○

▌RESERVE Operation

D-Reg.	Symbol	Operation	Setting	Description
D200	RESERVE	OFF	0	Release RESERVE Oper.
		ON	1	Set RESERVE Oper.

7.4 ON/OFF SIGNAL Group

This setting parameter D-register group is used to establish 9 ON/OFF SIGNALs for temperature and 4 ON/OFF signal for humidity.

■ ON/OFF SIGNAL setting D-Register

D-Reg.	Symbol	Descriptions
D0301	T1.LSP	Low SP for temperature ON/OFF SIGNAL 1 (T1)
D0302	T1.MSP	Middle SP for temperature ON/OFF SIGNAL 1 (T1)
D0303	T1.HSP	High SP for temperature ON/OFF SIGNAL 1 (T1)
D0304	T1.HDV	High zone Deviation for operating Point at High Zone T1
D0305	T1.LDV	Low zone Deviation for operating Point at Low Zone T1
.	.	.
.	.	.
.	.	.
D0385	H4.LSP	Low SP for humidity ON/OFF SIGNAL 4 (H4)
D0386	H4.MSP	Middle SP for humidity ON/OFF SIGNAL 4 (H4)
D0387	H4.HSP	High SP for humidity ON/OFF SIGNAL 4 (H4)
D0388	H4.HDV	High zone Deviation for operating Point at High Zone H4
D0389	H4.LDV	Low zone Deviation for operating Point at Low Zone H4

7.5 INNER SIGNAL Group

This setting parameter D-register group is used to establish 10 INNER SIGNALs.

■ INNER SIGNAL setting D-Register

D-Reg.	Symbol	Descriptions
D0401	IS1.TGT	Target of INNER SIGNAL 1 (Temp/Humi)
D0402	IS1.TYPE	Object Type of Target of INNER SIGNAL 1 (SP/PV/MV)
D0403	IS1.BAND	Direction Band of INNER SIGNAL 1 (IN-B/OUT-B)
D0404	IS1.TEMPRH	Temperature range HIGH of INNER SIGNAL 1
D0405	IS1.TEMPRL	Temperature range LOW of INNER SIGNAL 1
D0406	IS1.TEMPDYT	DELAY TIME of Temperature INNER SIGNAL 1
D0407	IS1.HUMIRH	Humidity range HIGH of INNER SIGNAL 1
D0408	IS1.HUMIRL	Humidity range LOW of INNER SIGNAL 1
D0409	IS1.HUMIDYT	DELAY TIME for Humidity INNER SIGNAL 1
. . .	. . .	. . .
D0482	IS10.TGT	Target of INNER SIGNAL 10 (Temp/Humi)
D0483	IS10.TYPE	Object Type of Target of INNER SIGNAL 10 (SP/PV/MV)
D0484	IS10.BAND	Direction Band of INNER SIGNAL 10 (IN-B/OUT-B)
D0485	IS10.TEMPRH	Temperature range HIGH of INNER SIGNAL 10
D0486	IS10.TEMPRL	Temperature range LOW of INNER SIGNAL 10
D0487	IS10.TEMPDYT	DELAY TIME of Temperature INNER SIGNAL 10
D0488	IS10.HUMIRH	Humidity range HIGH of INNER SIGNAL 10
D0489	IS10.HUMIRL	Humidity range LOW of INNER SIGNAL 10
D0490	IS10.HUMIDYT	DELAY TIME for Humidity INNER SIGNAL 10

7.6 ALARM SIGNAL Group

This setting parameter D-register group is used to establish 8 ALARM signals.

■ ALARM signal setting D-Register

D-Reg.	Symbol	Descriptions
D0500	ALM.OP	Condition of ALARM Operation (RUN/ALWAYS)
D0501	ALM1.TGT	Target object of ALARM signal 1 (TEMP/HUMI)
D0502	ALM1.TYPE	Type of ALARM signal 1
D0503	ALM1.TPOINT	Target Point of Temperature ALARM signal 1
D0504	ALM1.TH_POINT	Limit HIGH point of Temperature ALARM signal 1
D0505	ALM1.TL_POINT	Limit LOW point of Temperature ALARM signal 1
D0506	ALM1.THYS	Hysteresis of Temperature ALARM signal 1
D0507	ALM1.TDYT	DELAY TIME of Temperature ALARM signal 1
D0508	ALM1.HPOINT	Target Point of Humidity ALARM signal 1
D0509	ALM1.HH_POINT	Limit HIGH point of Humidity ALARM signal 1
D0510	ALM1.HL_POINT	Limit LOW point of Humidity ALARM signal 1
D0511	ALM1.HHYS	Hysteresis of Humidity ALARM signal 1
D0512	ALM1.HDYT	DELAY TIME of Humidity ALARM signal 1
. . .	. . .	. . .
D0585	ALM8.TGT	Target object of ALARM signal 1 (TEMP/HUMI)
D0586	ALM8.TYPE	Type of ALARM signal 1
D0587	ALM8.TPOINT	Target Point of Temperature ALARM signal 1
D0588	ALM8.TH_POINT	Limit HIGH point of Temperature ALARM signal 1
D0589	ALM8.TL_POINT	Limit LOW point of Temperature ALARM signal 1
D0590	ALM8.THYS	Hysteresis of Temperature ALARM signal 1
D0591	ALM8.TDYT	DELAY TIME of Temperature ALARM signal 1
D0592	ALM8.HPOINT	Target Point of Humidity ALARM signal 1
D0593	ALM8.HH_POINT	Limit HIGH point of Humidity ALARM signal 1
D0594	ALM8.HL_POINT	Limit LOW point of Humidity ALARM signal 1
D0595	ALM8.HHYS	Hysteresis of Humidity ALARM signal 1
D0596	ALM8.HDYT	DELAY TIME of Humidity ALARM signal 1

■ ALARM signal operation condition D-Register

D-Reg.	기 호	내 용
D0667	AL1.OPMODE	Condition of operation for ALARM signal 1(RUN/ALWAYS)
. . .	. . .	. . .
D0674	AL8.OPMODE	Condition of operation for ALARM signal 8 (RUN/ALWAYS)

7.7 TIME SIGNAL Group

This setting parameter D-register group is used to establish 16 TIME SIGNALs.

▌TIME SIGNAL setting D-Register

D-Reg.	Symbol	Descriptions
D0601	TS2DYTM_H	DELAY TIME (HOUR) of generating TIME SIGNAL 2.
D0602	TS2DYTM_L	DELAY TIME (MIN.& SEC.) of generating TIME SIGNAL 2.
D0603	TS2KPTM_H	OPER.TIME (HOUR) to keep generating TIME SIGNAL 2.
D0604	TS2KPTM_L	OPER.TIME (MIN.& SEC.) to keep generating TIME SIGNAL 2.
. . .	. . .	. . .
D0661	TS17DYTM_H	DELAY TIME (HOUR) of generating TIME SIGNAL 17.
D0662	TS17DYTM_L	DELAY TIME (MIN.& SEC.) of generating TIME SIGNAL 17.
D0663	TS17KPTM_H	OPER.TIME (HOUR) to keep generating TIME SIGNAL 17.
D0664	TS17KPTM_L	OPER.TIME (MIN.& SEC.) to keep generating TIME SIGNAL 17

7.8 PID Group

This setting Group is used for 6 PID subsets for Temperature/Humidity and 3 subsets for Temperature only.

▌PID setting D-Register

D-Reg.	Symbol	Descriptions
D0701	T.RP1	Temperature Reference Point 1 (T1) to define PID ZONE
D0702	T.RP2	Temperature Reference Point 2 and 3 (T2, T3) to define PID ZONE
D0703	T.RP3	
D0705	H.RP1	Humidity Reference Point 1 and 2 (T1, T2) to define PID ZONE
D0706	H.RP2	
D0708	AT_DISPLAY	Setting to display or hide AT KEY
D0709	TEMP.AT_POINT	Temperature Point for Auto-Tuning
D0710	HUMI.AT_POINT	Humidity Point for Auto-Tuning
D0711	HUMI.CMOD	Humidity Control Mode
D0715	1.TEMP_P	Temperature Proportional band of PID1
D0716	1.TEMP_I	Temperature Integral time of PID1
D0717	1.TEMP_D	Temperature Differential time of PID1
D0718	1.TEMP_OH	Temperature control Output High limit of PID1
D0719	1.TEMP_OL	Temperature control Output Low limit of PID1
. . .	. . .	. . .
D0785	6.HUMI_P	Humidity Proportional band of PID6
D0786	6.HUMI_I	Humidity Integral time of PID6
D0787	6.HUMI_D	Humidity Differential time of PID6
D0788	6.HUMI_OH	Humidity control Output High limit of PID6
D0789	6.HUMI_OL	Humidity control Output Low limit of PID6

7.9 COMMUNICATION Group

This group is consists of information parameter D-Register concerned communication.

■ COMMUNICATION concerned information D-Register

D-Reg.	Symbol	Descriptions
D0801	PROTOCOL	Communication Protocol information
D0802	BPS	Communication speed (Baud Rate) information.
D0803	PARITY	Parity information
D0804	STOP.BIT	Stop Bit information
D0805	DATA.LENGTH	Data Length information
D0806	ADDRESS	Slave Address information
D0807	RESPONSE	Response Time information.
D0808	COMM.LOCK	Communicatoin lock information.

7.10 INPUT Group

This INPUT group is used for setting parameter D-Register for sensor and its bias.

▌INPUT setting D-Register

D-Reg.	Symbol	Descriptions
D0901	TEMP.IN	Temperature INPUT SENSOR type
D0902	TEMP.INRH	Temperature Range HIGH
D0903	TEMP.INRL	Temperature Range LOW
D0904	TEMP.BIAS	Temperature offset value of ALL BIAS for whole range.
D0905	TEMP.INFL	Temp. sensor filter to suppress fluctuation by Noise
D0906	TEMP.INSH	Temperature SCALE HIGH of whole range (SPAN)
D0907	TEMP.INSL	Temperature SCALE LOW of whole range (SPAN)
D0910	HUMI.IN	Humidity INPUT SENSOR type
D0911	HUMI.INRH	Humidity Range HIGH
D0912	HUMI.INRL	Humidity Range LOW
D0913	HUMI.BIAS	Humidity offset value of ALL BIAS for whole range.
D0914	HUMI.INFL	Humidity sensor filter to suppress fluctuation by Noise
D0915	HUMI.DFL	Humidity Display Filter to adjust PV waving
D0916	HUMI.INSH	Humidity SCALE HIGH of whole range (SPAN)
D0917	HUMI.INSL	Humidity SCALE LOW of whole range (SPAN)
D0920	DRY.LH	DRY temperature range Limit HIGH
D0921	DRY.LL	DRY temperature range Limit LOW
D0922	WET.ADJV	Equalize DRY and WET temperature
D0933~D0936	BP1.DDV~BP4.DDV	Piece BIAS offset value for each DRY temp. Bias Point
D0937~D0940	BP1.DPV~BP4.DPV	DRY temp.Bias Point to apply offset value
D0943~D0946	BP1.WDV~BP4.WDV	Piece BIAS offset value for each WET temp. Bias Point
D0947~D0950	BP1.WPV~BP4.WPV	WET temp.Bias Point to apply offset value
D0953~D0956	BP1.HDV~BP4.HDV	Piece BIAS offset value for each Humidity Bias Point
D0957~D0960	BP1.HPV~BP4.HPV	Humidity Bias Point to apply offset value

7.11 OUTPUT Group

This INPUT group is used for setting parameter D-Register for control output and retransmission.

▉ OUTPUT setting D-Register

D-Reg.	Symbol	Descriptions
D1002	TEMP.DIR	PID Control DIRECTION (FWD/REV) for temperature
D1003	TEMP.HCT	Pulse CYCLE TIME when 'SSR' temperature Control Output
D1004	TEMP.ARW	ARW (Anti Reset Wind-up) function for temperature
D1005	TEMP.HATG	Temperature Auto-Tuning GAIN value for Manual PID
D1009	HUMI.DIR	PID Control DIRECTION (FWD/REV) for humidity
D1010	HUMI.HCT	Pulse CYCLE TIME when 'SSR' humidity Control Output
D1011	HUMI.ARW	ARW (Anti Reset Wind-up) function for humidity
D1012	HUMI.ATG	Humidity Auto-Tuning GAIN value for Manual PID
D1015	TEMP.RETT	Target TYPE of temperature retransmission
D1016	TEMP.RETH	Range HIGH of temperature retransmission
D1017	TEMP.RETL	Range LOW of temperature retransmission
D1020	HUMI.RETT	Target TYPE of humidity retransmission
D1021	HUMI.RETH	Range HIGH of humidity retransmission
D1022	HUMI.RETL	Range LOW of humidity retransmission
D1031	OUT1.TYPE	Control type of OUTPUT 1
D1032	OUT2.TYPE	Control type of OUTPUT 2
D1033	OUT3.TYPE	Control type of OUTPUT 3
D1034	OUT4.TYPE	Control type of OUTPUT 4
D1037	OUT1.TYPE	Control mode of OUTPUT 1(0:SSR, 1:SCR)
D1038	OUT2.TYPE	Control mode of OUTPUT 2(0:SSR, 1:SCR)
D1039	OUT3.TYPE	Control mode of OUTPUT 3(0:SSR, 1:SCR)
D1040	OUT4.TYPE	Control mode of OUTPUT 4(0:SSR, 1:SCR)

7.12 DO CONFIG Group

DO CONFIG group consists of setting and information parameter D-Register related to establish RELAY number on I/O board to generate signal and its sub setting for auxiliary Digital Output.

■ DO CONFIG setting and information D-Register - 1

D-Reg.	Symbol	Descriptions
D1101~D1110	IS1.RLY~IS10.RLY	RELAY No.on I/O for INNER SIGNAL
D1111	UKEY.RLY	RELAY No.on I/O for USER KEY signal
D1112~D1115	TS1.RLY~TS4.RLY	RELAY No.on I/O for TIME SIGNAL
D1116~D1123	ALM1.RLY~ALM8.RLY	RELAY No.on I/O ALARM signal
D1124~D1153	T1.RLY~H5.DYT	RELAY No.on I/O and DELAY TIME for ON/OFF SIGNAL
D1154,D1155	TRUN.RLY,TRUN.DYT	RELAY No.on I/O and DELAY TIME for TEMP. RUN signal
D1156,D1157	HRUN.RLY,HRUN.DYT	RELAY No.on I/O and DELAY TIME for HUMI. RUN signal
D1158,D1159	TSOPN.RLY,TSOPN.KPT	RLY No.on I/O and KEEP TIME for TEMP.SENSOR-OPEN signal
D1160,D1161	HSOPN.RLY,HSOPN.KPT	RLY No.on I/O and KEEP TIME for HUMI.SENSOR-OPEN signal
D1162,D1163	TWAIT.RLY,TWAIT.KPT	REALY No.on I/O and KEEP TIME for TEMP. WAIT signal
D1164,D1165	HWAIT.RLY,HWAIT.KPT	REALY No.on I/O and KEEP TIME for HUMI. WAIT signal
D1166,D1167	TUP.RLY,TUP.DEV	RELAY No.on I/O and DEVIATION for TEMP. UP signal
D1168,D1169	HUP.RLY,HUP.DEV	RELAY No.on I/O and DEVIATION for HUMI. UP signal
D1170,D1171	TSOAK.RLY,TSOAK.KPT	REALY No.on I/O and KEEP TIME for TEMP. SOAK signal
D1172,D1173	HSOAK.RLY,HSOAK.KPT	REALY No.on I/O and KEEP TIME for HUMI. SOAK signal
D1174,D1175	TDOWN.RLY,TDOWN.DEV	RELAY No.on I/O and DEVIATION for TEMP. DOWN signal
D1176,D1177	HDOWN.RLY,HDOWN.DEV	RELAY No.on I/O and DEVIATION for HUMI. DOWN signal
D1178,D1179,D1180	FEND.RLY,FEND.DLT, FEND.OPT	RLY No. on I/O, DELAY TIME and KEEP TIME for FIX-END signal
D1181,D1182,D1183	PTEND.RLY,PTEND.DLT, PTEND.OPT	RLY No. on I/O, DELAY TIME and KEEP TIME for program PTN-END signal
D1184,D1185	DRAIN.RLY,DRAIN.OPT	RELAY No.on I/O and OPER.TIME for DRAIN signal
D1186,D1187	DRAIN_RH,DRAIN_RL	Range High/Low limit for DRAIN ON/OFF operation
D1188,D1189	ERROR.RLY,ERROR.KPT	REALY No.on I/O and KEEP TIME for ERROR signal
D1190,D1191	1REF.RLY,1REF.DYT	RELAY No.on I/O and DELAY TIME for 1st Refrigerator oper.
D1192,D1193	2REF.RLY,2REF.DYT	RELAY No.on I/O and DELAY TIME for 2nd Refrigerator oper.
D1194	UKEY.OPT	Operation time for USER KEY signal

▌DO CONFIG setting and information D-Register - 2

D-Reg.	Symbol	Descriptions
D1270	DI1.RLY	RELAY No.on I/O for DI SIGNAL 1
. . .	. . .	. . .
D1285	DI16.RLY	RELAY No.on I/O for DI SIGNAL 16
D1286	USER.RLY1	RELAY No.on I/O for MANUAL SIGNAL 1
. . .	. . .	. . .
D1297	USER.RLY12	RELAY No.on I/O for MANUAL SIGNAL 12
D1298	USER.RLY_ON/OFF	ON/OFF the relay MANUAL SIGNAL
D1559	TFIXTIMER.RLY	RELAY No.on I/O for TEMP. FIXTIMER SIGNAL
D1560	TFIXTIMER.DEV	DEVIATION for TEMP. FIXTIMER SIGNAL
D1561	TFIXTIMER.DLY	DELAY TIME for TEMP. FIXTIMER SIGNAL
D1562	TFIXTIMER.OPT	OPERATION TIME for TEMP. FIXTIMER SIGNAL
D1563	HFIXTIMER.RLY	RELAY No.on I/O for HUMI. FIXTIMER SIGNAL
D1564	HFIXTIMER.DEV	DEVIATION for HUMI. FIXTIMER SIGNAL
D1565	HFIXTIMER.RLY	DELAY TIME for HUMI. FIXTIMER SIGNAL
D1566	HFIXTIMER.DEV	OPERATION TIME for HUMI. FIXTIMER SIGNAL
D1570~D1577	LOG1.RLY~LOG8.RLY	RELAY No.on I/O for LOGICAL SIGNAL
D1578~D1579	HOLD.RLY, HOLD.OPT	RELAY No.on I/O and OPERATION TIME for LOGICAL SIGNAL
D1591	TEMPUP.DEVSEL	Set the operating conditions of the TEMP. UP SIGNAL (0:[TSP-NSP] ,1:[TSP-NPV])
D1592	TEMPDN.DEVSEL	Set the operating conditions of the TEMP. DOWN SIGNAL (0:[TSP-NSP] ,1:[TSP-NPV])
D1593	HUMIUP.DEVSEL	Set the operating conditions of the HUMI. UP SIGNAL (0:[TSP-NSP] ,1:[TSP-NPV])
D1594	HUMIDN.DEVSEL	Set the operating conditions of the HUMI. DOWN SIGNAL (0:[TSP-NSP] ,1:[TSP-NPV])

7.13 DI CONFIG Group

DI CONFIG group consists of setting parameter D-Register for DI ERROR and its name.

▌DI CONFIG setting D-Register

D-Reg.	Symbol	Descriptions
D1202	DI1.OP_MODE	OPERATION MODE when DI 1 ON
D1203	DI2.OP_MODE	OPERATION MODE when DI 2 ON
D1204	DI3.OP_MODE	OPERATION MODE when DI 3 ON
D1205	BUZ.TIME	KEEP TIME to generating BUZZER sound
D1206	DIDET.TIME	DETECT TIME to recognize DI ERROR from actual occurrence
D1209,D1210	DI1.OP,DI1.DYT	DI 1 OPERATION after detecting and DELAY TIME
. . .	. . .	. . .
D1239,D1240	DI16.OP,DI16.DYT	DI 16 OPERATION after detecting and DELAY TIME
D1242	DI1.DETECT	DI 1 DETECTION mode (0:A-TYPE, 1:B- TYPE)
. . .	. . .	. . .
D1257	DI16.DETECT	DI 1 DETECTION mode (0:A- TYPE, 1:B- TYPE)
D1301~D1312	DI1.NAME1~DI1.NAME12	DI 1 ERROR NAME.
. . .	. . .	. . .
D1485~D1496	DI16.NAME1~DI16.NAME12	DI 16 ERROR NAME

7.14 INITIAL Group

INITIAL group consists of setting parameter D-Register for system initial configuration.

▌INITIAL setting D-Register

D-Reg.	Symbol	Descriptions
D1601	LANGUAGE	Language for using TEMI1500
D1603	UKEY.USE	Setting for using USER KEY
D1604	UKEY.KIND	Setting for type of USER KEY
D1606~D1609	UKEY.NAME1~UKEY.NAME4	Setting for name of USER KEY
D1606~D1618	INFORM1.NAME1 ~INFORM1.NAME13	Name of INIT INFORMATION 1 when setting 'TEXT' on DISPLAY MODE
. . .	. . .	. . .
D1632~D1644	INFORM3.NAME1 ~INFORM3.NAME13	Name of INIT INFORMATION 3 when setting 'TEXT' on DISPLAY MODE
D2001~D2066	LAMP_IS1~LAMP_LOG8	Setting for status LAMP

▌LED 명칭 관련 D-Register

D-Reg.	Symbol	Descriptions
D3001 ~ D3003	LED1.NAME1 ~ LED1.NAME3	Setting for name of LED 1
. . .	. . .	. . .
D3197 ~ D3199	LED66.NAME1 ~ LED66.NAME3	Setting for name of LED 66

7.15 PROGRAM PATTERN Group and Setting

7.15.1 PROGRAM Group

PROGRAM group consists of parameter D-Register to arrange program PATTERN organized by each segment profile. Each segment should be established step by step.

▌Program PATTERN setting D-Register

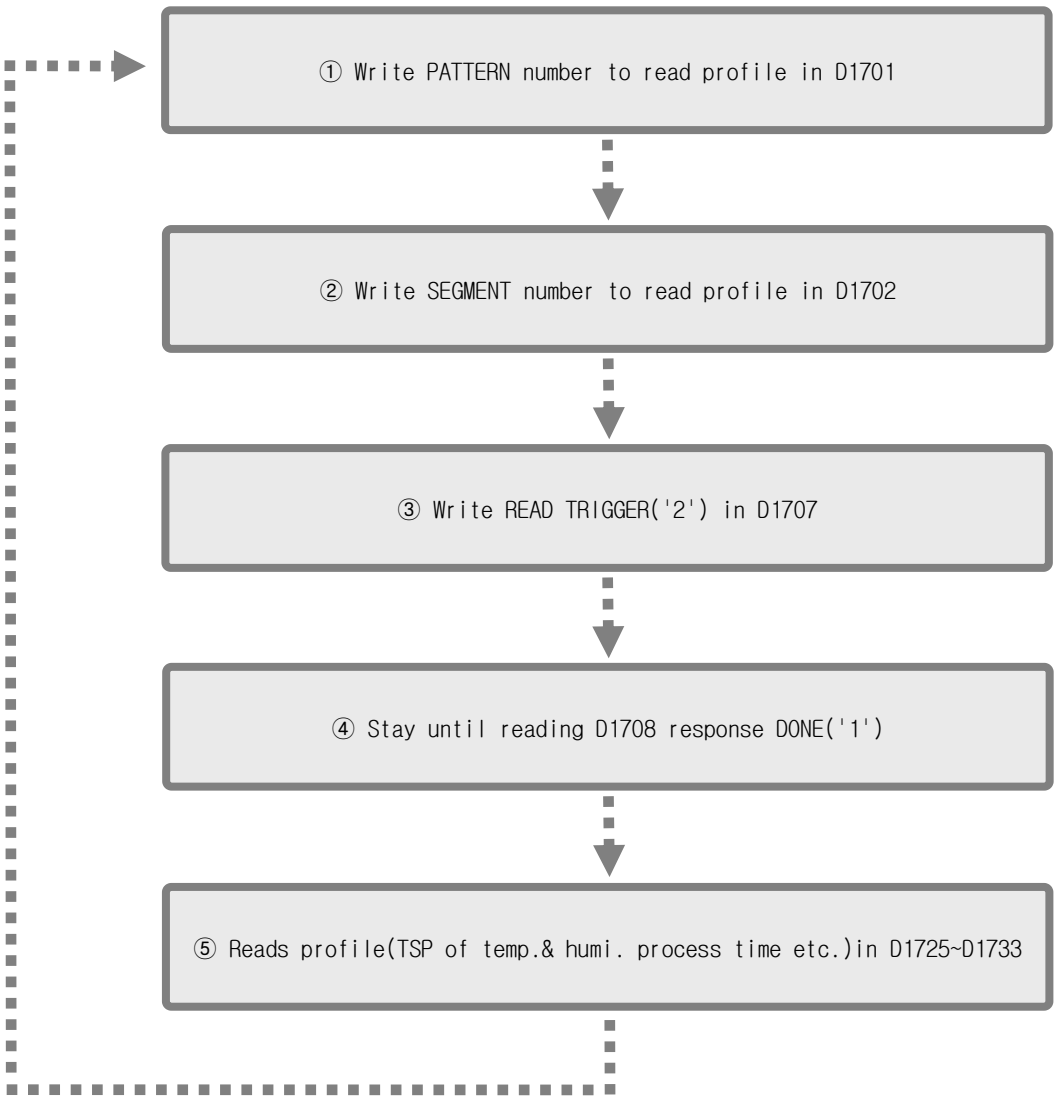
D-Reg.	Symbol	Range	Description
D1701	COM_PTNO	1~120	Program PATTERN number to Read or Write
D1702	COM_SEGNO	0	To Read or Write in D1736~D1757
		1~99	Segment number to Read or Write
D1703	PTCOPY_START	-	First target (START) pattern number to paste
D1704	PTCOPY_END	-	Last target (END) pattern number to paste
D1705	PTDEL_START	-	First target (START) pattern number to delete
D1706	PTDEL_END	-	Last target (END) pattern number to delete
D1707	TRIGGER	1	INIT : Initialize D1701~D1708 to '0'
		2	READ : Read profiles in D1701 and D1702
		3	WRITE : Write profiles in D1701 and D1702
		4	PT COPY : Copy PTN in D1701 to PTN designated in D1703~1704
		5	PT DEL : Delete PTN designated in D1705~D1706
		6	PT NAME READ : Read PTN NAME in D1701
		7	PT NAME WRITE : Write PTN NAME in D1701
		8	ALL PT : Write pattern profile at D1701 into D2100
D1708	ANSWER	0	FULL : Excessive number of pattern or segment setting
		1	DONE : Normally accessed of D1707(TRIGGER) command
		2	PT EMPTY : No profile in designated pattern
		3	SEG EMPTY : No profile in designated segment
		4	PT RUN : Program RUN state of designated PTN
		5	PARA ERROR : Program setting Error of D1701~D1707
D1711~D1722	PATTERN_NAME1~12	-	Pattern NAME to Read or Write
D1725	TEMP.TSP	-	TEMP. Target Set Point(TSP) to Read or Write
D1726	HUMI.TSP	-	HUMI. Target Set Point(TSP) to Read or Write
D1727	SEG.TIME_H	-	Target Process time (HOUR) of segment to Read or Write
D1728	SEG.TIME_L	-	Target Process time (MIN & SEC) of segment to Read or Write
D1729	TS1	-	TS1 to Read or Write
D1730	TS2	-	TS2 to Read or Write
D1731	TS3	-	TS3 to Read or Write
D1732	TS4	-	TS4 to Read or Write
D1733	SEG.WAIT	-	WAIT to Read or Write

■ PROGRAM and its REPEAT operation setting D-Register

D-Reg.	Symbol	Descriptions
D1736	START.CODE	START CODE for operation (0:NOW PV, 1:TEMP SP, 2:HUMI SP)
D1737	START.TEMP_SP	Temperature START SP (TEMP.SSP)
D1738	START.HUMI_SP	Humidity START SP (HUMI.SSP)
D1741	PT.RPT	Count number for PATTERN REPEAT (0:Infinitely, 1 ~ 99)
D1742	PT.EMOD	PATTERN END MODE (0:RESET, 1:SEG HOLD, 2:LINK RUN)
D1743	LINK.PT	LINK PATTERN (1 ~ 120)
D1746	SEG_RPT.S1	SEGMENT REPEAT START-1
D1747	SEG_RPT.E1	SEGMENT REPEAT END-1
D1748	SEG_RPT.C1	SEGMENT REPEAT COUNT-1
D1749	SEG_RPT.S2	SEGMENT REPEAT START-2
D1750	SEG_RPT.E2	SEGMENT REPEAT END-2
D1751	SEG_RPT.C2	SEGMENT REPEAT COUNT-2
D1752	SEG_RPT.S3	SEGMENT REPEAT START-3
D1753	SEG_RPT.E3	SEGMENT REPEAT END-3
D1754	SEG_RPT.C3	SEGMENT REPEAT COUNT-3
D1755	SEG_RPT.S4	SEGMENT REPEAT START-4
D1756	SEG_RPT.E4	SEGMENT REPEAT END-4
D1757	SEG_RPT.C4	SEGMENT REPEAT COUNT-4

7.15.2 How to READ program PATTERN

▶ Below describes process step to read programmed PATTERN profile in TEMI1500.

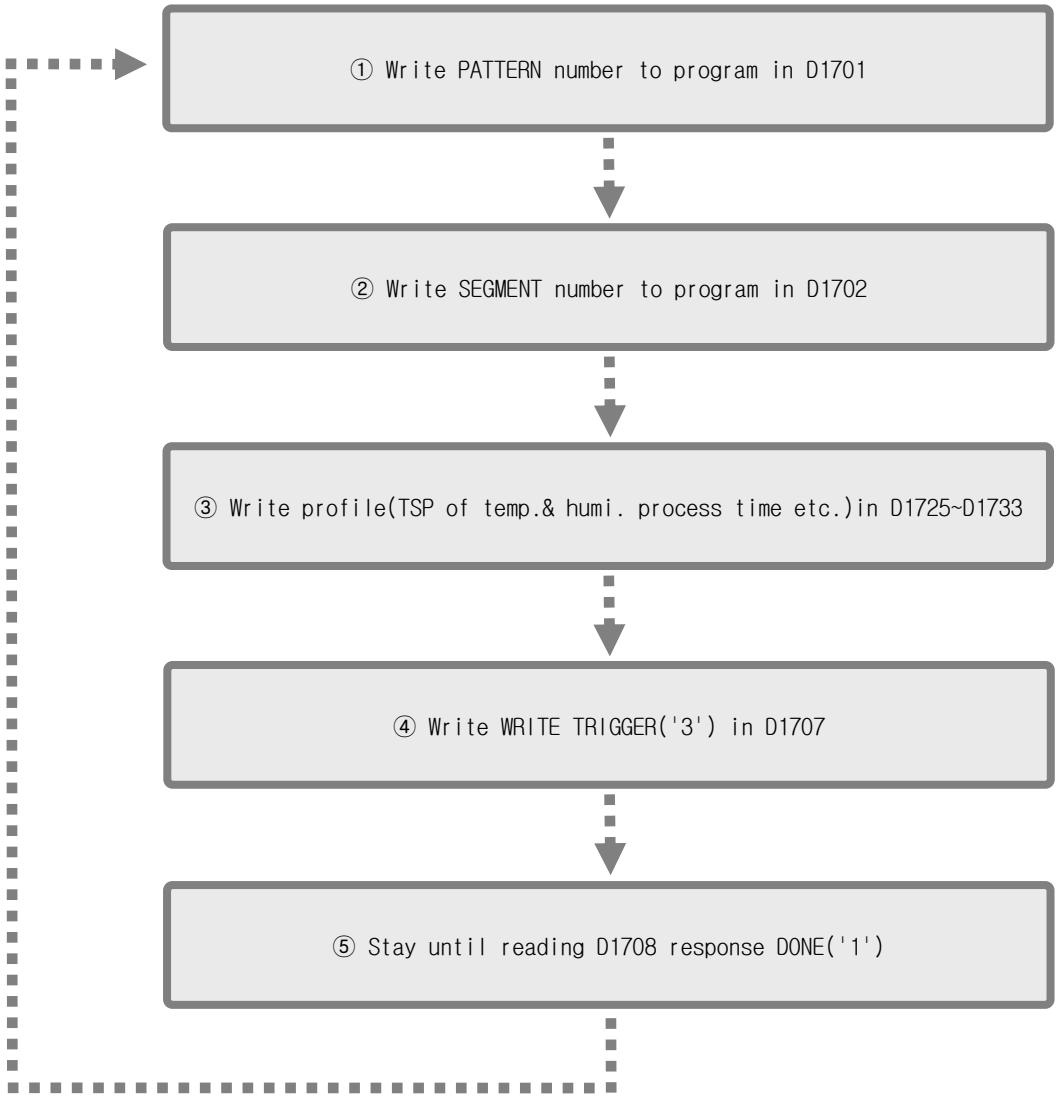


NOTE

Above process step ① ~ ⑤ is used to read 'ONE SEGMENT' profile among all in programmed pattern.
To read many segments, reiterate ① ~ ⑤ process step by changing segment number.
Setting '0' in D1702 at process step ② will read profile in D1736~D1757.

7.15.3 How to WRITE program PATTERN

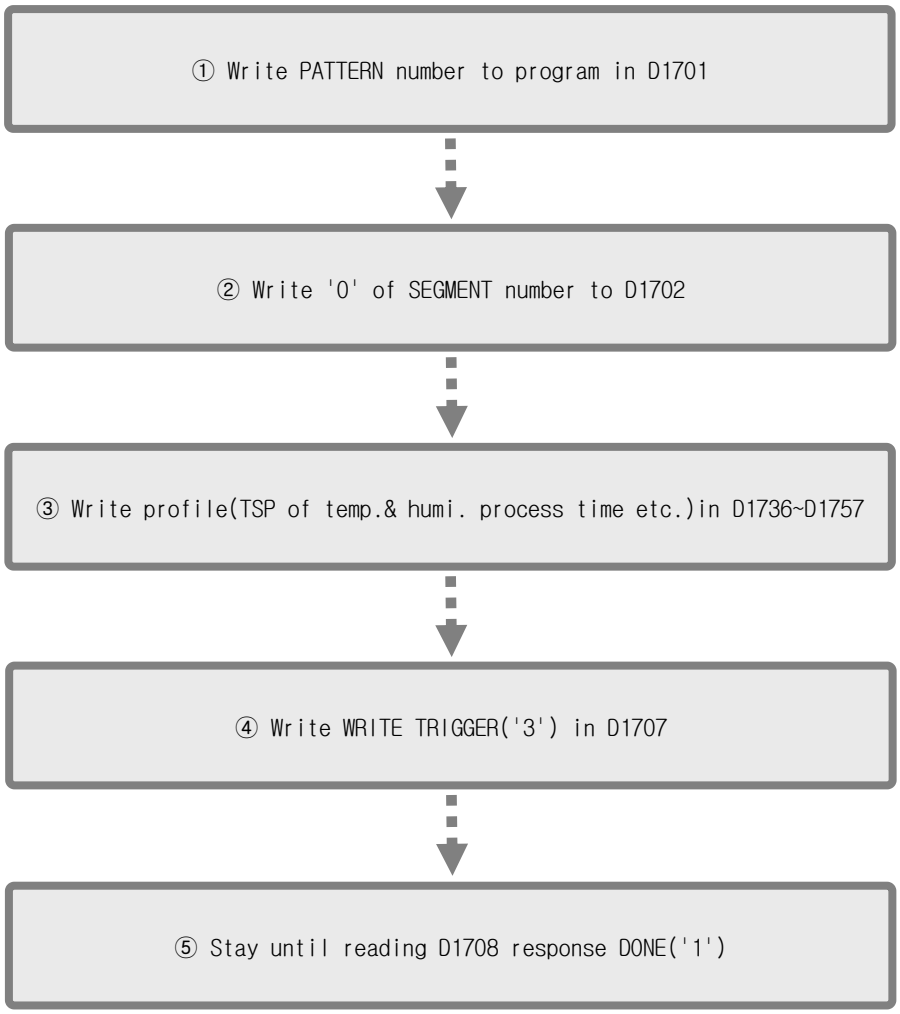
▶ Below describes process step to write programming PATTERN profile in TEMI1500.



NOTE

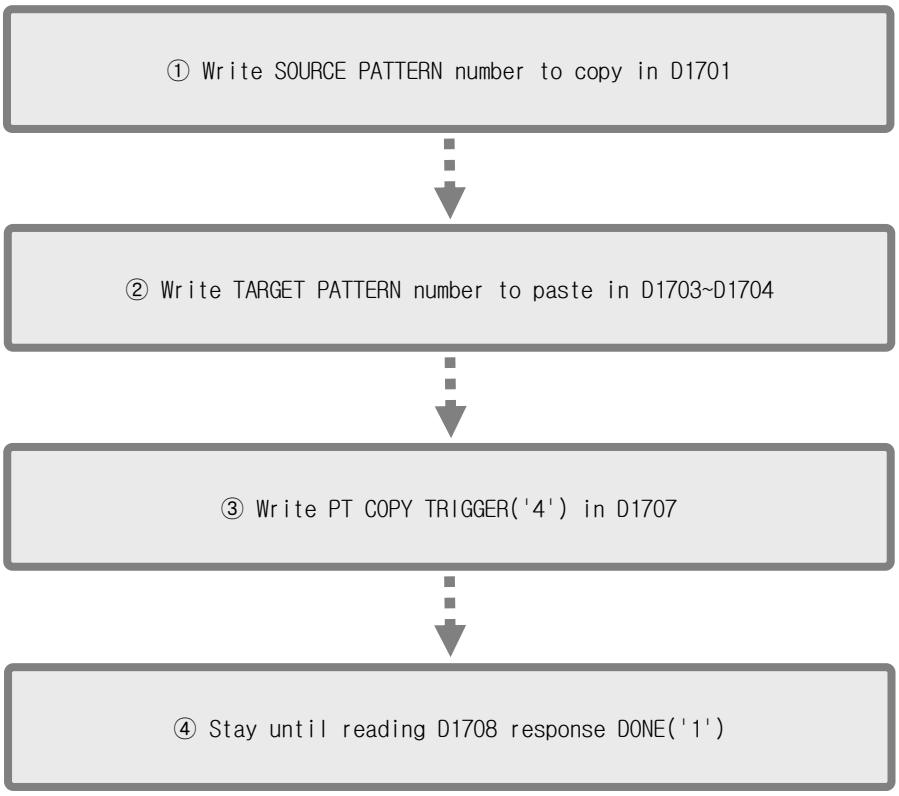
Above process step ① ~ ⑤ is used to write 'ONE SEGMENT' profile among all in programmed pattern.
Reiterate ① ~ ⑤ process step by changing segment number to write many segments.

▶ Below describes process step to write program in D1736~D1757.

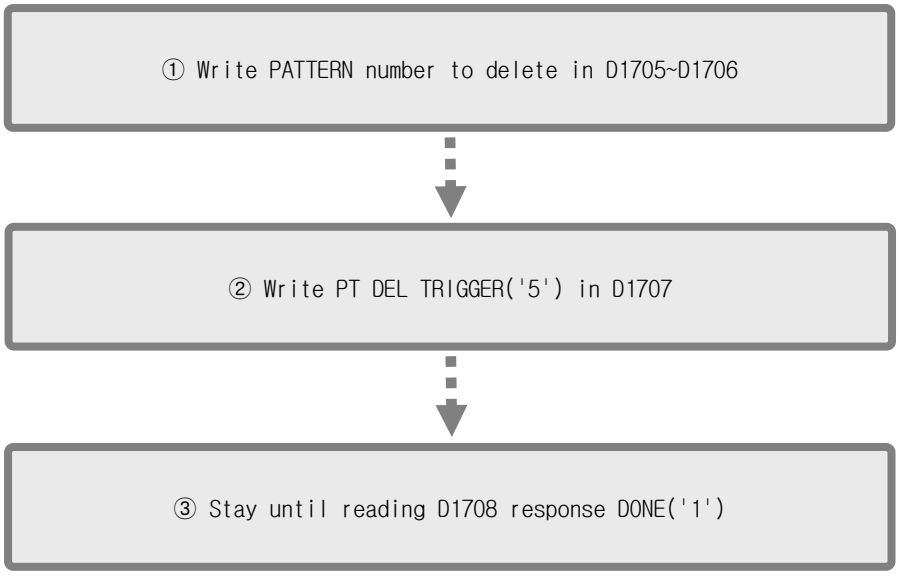


7.15.4 FILE EDIT (PATTERN COPY / DELETE)

▶ Below describes step to copy pattern.



▶ Below describes step to delete pattern.



7.16 PATTERN INFO

PATTERN INFO group consists of programmed pattern and segment information parameter D-Register.

■ Programmed pattern and segment information D-Register

D-Reg.	Symbol	Descriptions
D1801	NPT1	The number of programmed SEGMENT in PATTERN no.1
.	.	.
.	.	.
.	.	.
D1920	NPT120	The number of programmed SEGMENT in PATTERN no.120

7.17 FILE

FILE group consists of profile information of programmed pattern parameter D-Register.

■ FILE information D-Register

D-Reg.	Symbol	Descriptions
D2101~D2199	C.TSP1~C.TSP99	Temperature SP in reading pattern.
D2201~D2299	C.HSP1~C.HSP99	Humidity SP in reading pattern.
D2301~D2399	C.SRTIME_H1~C.SRTIME_H99	Total operation time (Hour) in reading pattern.
D2401~D2499	C.SRTIME_L1~C.SRTIME_L99	Total operation time (Minute&Second) in reading pattern.
D2501~D2599	C.TS1_1~C.TS1_99	TS1 in reading pattern.
D2601~D2699	C.TS2_1~C.TS2_99	TS2 in reading pattern.
D2701~D2799	C.TS3_1~C.TS3_99	TS3 in reading pattern.
D2801~D2899	C.TS4_1~C.TS4_99	TS4 in reading pattern.
D2901~D2999	C.WAIT_USE1~C.WAIT_USE99	WAIT function profile in reading pattern.

7.18 LOGIC SIG Group

LOGIC SIG group consists of setting parameter D-Register for logical signal configuration.

■ LOGICAL SIGNAL setting D-Register

D-Reg.	Symbol	Descriptions
D3201	LOG1_SIGNAL1	Set the application object 1 of the LOGIC SIG 1.
D3202	LOG1_ACT1	Set the output method 1 of the LOGIC SIG 1.
D3203	LOG1_DYT1	Set the delay time 1 of the LOGIC SIG 1.
. .	. .	. .
D3205	LOG1_SIGNAL4	Set the application object 4 of the LOGIC SIG 1.
D3206	LOG1_ACT4	Set the output method 4 of the LOGIC SIG 1.
D3207	LOG1_DYT4	Set the delay time 4 of the LOGIC SIG 1.
D3208	LOG1_OPERAND1	Set the operator 1 of LOGIC SIG 1.
D3209	LOG1_OPERAND2	Set the operator 2 of LOGIC SIG 1.
D3210	LOG1_OPERAND3	Set the operator 3 of LOGIC SIG 1.
. . .	. . .	. . .
D3301	LOG8_SIGNAL1	Set the application object 1 of the LOGIC SIG 8.
D3302	LOG8_ACT1	Set the output method 1 of the LOGIC SIG 8.
D3303	LOG8_DYT1	Set the delay time 1 of the LOGIC SIG 8.
. .	. .	. .
D3305	LOG8_SIGNAL4	Set the application object 4 of the LOGIC SIG 8.
D3306	LOG8_ACT4	Set the output method 4 of the LOGIC SIG 8.
D3307	LOG8_DYT4	Set the delay time 4 of the LOGIC SIG 8.
D3308	LOG8_OPERAND1	Set the operator 1 of LOGIC SIG 8.
D3309	LOG8_OPERAND2	Set the operator 2 of LOGIC SIG 8.
D3310	LOG8_OPERAND3	Set the operator 3 of LOGIC SIG 8.

D-Register 0000 ~ 0599

: Read Only

D-Reg.	PROCESS	FUNCTION	RESERVATION	ON/OFF SIGNAL	INNER SIGNAL	ALARM SIGNAL
	0	100	200	300	400	500
0		SET.PTNO	RESERVE			
1	TEMP.NPV	COM.OPMODE	NOW.YEAR	T1.LSP	IS1.TGT	ALM1.TGT
2	TEMP.NSP	FIX.TEMP_TSP	NOW.MONTH	T1.MSP	IS1.TYPE	ALM1.TYPE
3	WET.NPV	FIX.HUMI_TSP	NOW.DAY	T1.HSP	IS1.BAND	ALM1.TPOINT
4	WET.NSP	OP.MODE	NOW.AMPM	T1.HDV	IS1.TEMPRH	ALM1.TH_POINT
5	HUMI.NPV	PWR.MODE	NOW.HOUR	T1.LDV	IS1.TEMPRL	ALM1.TL_POINT
6	HUMI.NSP	TEMP.SLOPE	NOW.MIN		IS1.TEMPDYT	ALM1.THYS
7	TEMP.MVOUT	HUMI.SLOPE	C.YEAR		IS1.HUMIRH	ALM1.TDYT
8	HUMI.MVOUT	FUZZY	C.MONTH	T2.LSP	IS1.HUMIRL	ALM1.HPOINT
9	C.PIDNO	TIME.OP	C.DAY	T2.MSP	IS1.HUMIDYT	ALM1.HH_POINT
10	NOW.STS	TIME.OP_H	C.AMPM	T2.HSP	IS2.TGT	ALM1.HL_POINT
11	IS.STS	TIME.OP_M	C.HOUR	T2.HDV	IS2.TYPE	ALM1.HHYS
12	TS.STS	KEYLOCK	C.MIN	T2.LDV	IS2.BAND	ALM1.HDYT
13	ALM.STS		R.YEAR		IS2.TEMPRH	ALM2.TGT
14	ONOFF.STS	LIGHT.OFFTM	R.MONTH		IS2.TEMPRL	ALM2.TYPE
15	DOCTR.STS		R.DAY	T3.LSP	IS2.TEMPDYT	ALM2.TPOINT
16	CTR.STS		R.AMPM	T3.MSP	IS2.HUMIRH	ALM2.TH_POINT
17	USEROUT.STSL		R.HOUR	T3.HSP	IS2.HUMIRL	ALM2.TL_POINT
18	USEROUT.STSH		R.MIN	T3.HDV	IS2.HUMIDYT	ALM2.THYS
19	DI.DATA			T3.LDV	IS3.TGT	ALM2.TDYT
20	ADERR.STS	RESTRICT_MAIN			IS3.TYPE	ALM2.HPOINT
21					IS3.BAND	ALM2.HH_POINT
22				T4.LSP	IS3.TEMPRH	ALM2.HL_POINT
23				T4.MSP	IS3.TEMPRL	ALM2.HHYS
24	RUN.TIME_H			T4.HSP	IS3.TEMPDYT	ALM2.HDYT
25	RUN.TIME_M			T4.HDV	IS3.HUMIRH	ALM3.TGT
26	RUN.TIME_S			T4.LDV	IS3.HUMIRL	ALM3.TYPE
27	RUN.PTNO				IS3.HUMIDYT	ALM3.TPOINT
28	RUN.SEGNO				IS4.TGT	ALM3.TH_POINT
29	NOW.PT.RPT	REC.OP		T5.LSP	IS4.TYPE	ALM3.TL_POINT
30	TOTAL.PT.RPT	REC.CYCLE		T5.MSP	IS4.BAND	ALM3.THYS
31	NOW.SEG.RPT			T5.HSP	IS4.TEMPRH	ALM3.TDYT
32	TOTAL.SEG.RPT			T5.HDV	IS4.TEMPRL	ALM3.HPOINT
33	NOW.SEGTIME_H			T5.LDV	IS4.TEMPDYT	ALM3.HH_POINT
34	NOW.SEGTIME_L				IS4.HUMIRH	ALM3.HL_POINT
35	TOTAL.SEGTIME_H				IS4.HUMIRL	ALM3.HHYS
36	TOTAL.SEGTIME_L	TEMP.AT		T6.LSP	IS4.HUMIDYT	ALM3.HDYT
37		HUMI.AT		T6.MSP	IS5.TGT	ALM4.TGT
38				T6.HSP	IS5.TYPE	ALM4.TYPE
39	PREV.TEMP.TSP			T6.HDV	IS5.BAND	ALM4.TPOINT
40	NOW.TEMP.TSP	WAIT.USE		T6.LDV	IS5.TEMPRH	ALM4.TH_POINT
41	PREV.HUMI.TSP	WAIT_TZONE			IS5.TEMPRL	ALM4.TL_POINT
42	NOW.HUMI.TSP	WAIT_HZONE			IS5.TEMPDYT	ALM4.THYS
43		WAIT_TIME		T7.LSP	IS5.HUMIRH	ALM4.TDYT
44		WAIT.METHOD		T7.MSP	IS5.HUMIRL	ALM4.HPOINT
45	SYS.STATUS			T7.HSP	IS5.HUMIDYT	ALM4.HH_POINT
46	LOGICAL.STATUS			T7.HDV	IS6.TGT	ALM4.HL_POINT
47		DANGER.DISPLAY		T7.LDV	IS6.TYPE	ALM4.HHYS
48		HUMI.DISPLAY			IS6.BAND	ALM4.HDYT
49		BUZ.ONOFF			IS6.TEMPRH	ALM5.TGT

D-Reg.	PROCESS	FUNCTION	RESERVATION	ON/OFF SIGNAL	INNER SIGNAL	ALARM SIGNAL
	0	100	200	300	400	500
50	USED PATTERN			T8.LSP	IS6.TEMPRL	ALM5.TYPE
51	USED SEGMENT			T8.MSP	IS6.TEMPDYT	ALM5.TPOINT
52	TEMP.DP			T8.HSP	IS6.HUMIRH	ALM5.TH_POINT
53	HUMI.DP			T8.HDV	IS6.HUMIRL	ALM5.TL_POINT
54				T8.LDV	IS6.HUMIDYT	ALM5.THYS
55					IS7.TGT	ALM5.TDYT
56					IS7.TYPE	ALM5.HPOINT
57				T9.LSP	IS7.BAND	ALM5.HH_POINT
58				T9.MSP	IS7.TEMPRH	ALM5.HL_POINT
59				T9.HSP	IS7.TEMPRL	ALM5.HHYS
60		USER.KEY		T9.HDV	IS7.TEMPDYT	ALM5.HDYT
61				T9.LDV	IS7.HUMIRH	ALM6.TGT
62					IS7.HUMIRL	ALM6.TYPE
63					IS7.HUMIDYT	ALM6.TPOINT
64				H1.LSP	IS8.TGT	ALM6.TH_POINT
65				H1.MSP	IS8.TYPE	ALM6.TL_POINT
66				H1.HSP	IS8.BAND	ALM6.THYS
67				H1.HDV	IS8.TEMPRH	ALM6.TDYT
68				H1.LDV	IS8.TEMPRL	ALM6.HPOINT
69					IS8.TEMPDYT	ALM6.HH_POINT
70					IS8.HUMIRH	ALM6.HL_POINT
71				H2.LSP	IS8.HUMIRL	ALM6.HHYS
72				H2.MSP	IS8.HUMIDYT	ALM6.HDYT
73				H2.HSP	IS9.TGT	ALM7.TGT
74				H2.HDV	IS9.TYPE	ALM7.TYPE
75				H2.LDV	IS9.BAND	ALM7.TPOINT
76					IS9.TEMPRH	ALM7.TH_POINT
77					IS9.TEMPRL	ALM7.TL_POINT
78				H3.LSP	IS9.TEMPDYT	ALM7.THYS
79				H3.MSP	IS9.HUMIRH	ALM7.TDYT
80				H3.HSP	IS9.HUMIRL	ALM7.HPOINT
81				H3.HDV	IS9.HUMIDYT	ALM7.HH_POINT
82				H3.LDV	IS10.TGT	ALM7.HL_POINT
83					IS10.TYPE	ALM7.HHYS
84					IS10.BAND	ALM7.HDYT
85				H4.LSP	IS10.TEMPRH	ALM8.TGT
86				H4.MSP	IS10.TEMPRL	ALM8.TYPE
87				H4.HSP	IS10.TEMPDYT	ALM8.TPOINT
88				H4.HDV	IS10.HUMIRH	ALM8.TH_POINT
89				H4.LDV	IS10.HUMIRL	ALM8.TL_POINT
90					IS10.HUMIDYT	ALM8.THYS
91						ALM8.TDYT
92						ALM8.HPOINT
93						ALM8.HH_POINT
94						ALM8.HL_POINT
95						ALM8.HHYS
96						ALM8.HDYT
97						
98						
99						

D-Register 0600 ~ 1199

D-Reg.	TIME SIGNAL	PID	COMMUNICATION	INPUT	OUTPUT	DOCONFIG1
	600	700	800	900	1000	1100
0						
1	TS2DYTM_H	T.RP1	PROTOCOL	TEMP.IN		IS1.RLY
2	TS2DYTM_L	T.RP2	BPS	TEMP.INRH	TEMP.DIR	IS2.RLY
3	TS2KPTM_H	T.RP3	PARITY	TEMP.INRL	TEMP.HCT	IS3.RLY
4	TS2KPTM_L		STOP.BIT	TEMP.BIAS	TEMP.ARW	IS4.RLY
5	TS3DYTM_H	H.RP1	DATA.LENGTH	TEMP.INFL	TEMP.HATG	IS5.RLY
6	TS3DYTM_L	H.RP2	ADDRESS	TEMP.INSH		IS6.RLY
7	TS3KPTM_H		RESPONSE	TEMP.INSL		IS7.RLY
8	TS3KPTM_L	AT_DISPLAY	COMM.LOCK			IS8.RLY
9	TS4DYTM_H	TEMP.AT_POINT			HUMI.DIR	IS9.RLY
10	TS4DYTM_L	HUMI.AT_POINT		HUMI.IN	HUMI.HCT	IS10.RLY
11	TS4KPTM_H	HUMI.CMOD		HUMI.INRH	HUMI.ARW	UKEY.RLY
12	TS4KPTM_L			HUMI.INRL	HUMI.HATG	TS1.RLY
13	TS5DYTM_H			HUMI.BIAS		TS2.RLY
14	TS5DYTM_L			HUMI.INFL		TS3.RLY
15	TS5KPTM_H	1.TEMP_P		HUMI.DFL	TEMP.RETT	TS4.RLY
16	TS5KPTM_L	1.TEMP_I		HUMI.INSH	TEMP.RETH	ALM1.RLY
17	TS6DYTM_H	1.TEMP_D		HUMI.INSL	TEMP.RETL	ALM2.RLY
18	TS6DYTM_L	1.TEMP_OH				ALM3.RLY
19	TS6KPTM_H	1.TEMP_OL				ALM4.RLY
20	TS6KPTM_L	2.TEMP_P		DRY.LH	HUMI.RETT	ALM5.RLY
21	TS7DYTM_H	2.TEMP_I		DRY.LL	HUMI.RETH	ALM6.RLY
22	TS7DYTM_L	2.TEMP_D		WET.ADJV	HUMI.RETL	ALM7.RLY
23	TS7KPTM_H	2.TEMP_OH				ALM8.RLY
24	TS7KPTM_L	2.TEMP_OL				T1.RLY
25	TS8DYTM_H	3.TEMP_P				T1.DYT
26	TS8DYTM_L	3.TEMP_I				T2.RLY
27	TS8KPTM_H	3.TEMP_D				T2.DYT
28	TS8KPTM_L	3.TEMP_OH				T3.RLY
29	TS9DYTM_H	3.TEMP_OL				T3.DYT
30	TS9DYTM_L	4.TEMP_P				T4.RLY
31	TS9KPTM_H	4.TEMP_I			OUT1.TYPE	T4.DYT
32	TS9KPTM_L	4.TEMP_D			OUT2.TYPE	T5.RLY
33	TS10DYTM_H	4.TEMP_OH		BP1.DDV	OUT3.TYPE	T5.DYT
34	TS10DYTM_L	4.TEMP_OL		BP2.DDV	OUT4.TYPE	T6.RLY
35	TS10KPTM_H	5.TEMP_P		BP3.DDV		T6.DYT
36	TS10KPTM_L	5.TEMP_I		BP4.DDV		T7.RLY
37	TS11DYTM_H	5.TEMP_D		BP1.DPV	OUT1.MODE	T7.DYT
38	TS11DYTM_L	5.TEMP_OH		BP2.DPV	OUT2.MODE	T8.RLY
39	TS11KPTM_H	5.TEMP_OL		BP3.DPV	OUT3.MODE	T8.DYT
40	TS11KPTM_L	6.TEMP_P		BP4.DPV	OUT4.MODE	T9.RLY
41	TS12DYTM_H	6.TEMP_I				T9.DYT
42	TS12DYTM_L	6.TEMP_D				T10.RLY
43	TS12KPTM_H	6.TEMP_OH		BP1.WDV		T10.DYT
44	TS12KPTM_L	6.TEMP_OL		BP2.WDV		H1.RLY
45	TS13DYTM_H	7.TEMP_P		BP3.WDV		H1.DYT
46	TS13DYTM_L	7.TEMP_I		BP4.WDV		H2.RLY
47	TS13KPTM_H	7.TEMP_D		BP1.WPV		H2.DYT
48	TS13KPTM_L	7.TEMP_OH		BP2.WPV		H3.RLY
49	TS14DYTM_H	7.TEMP_OL		BP3.WPV		H3.DYT

D-Reg.	TIME SIGNAL	PID	COMMUNICATION	INPUT	OUTPUT	DOCONFIG1
	600	700	800	900	1000	1100
50	TS14DYTM_L	8.TEMP_P		BP4.WPV		H4.RLY
51	TS14KPTM_H	8.TEMP_I				H4.DYT
52	TS14KPTM_L	8.TEMP_D				H5.RLY
53	TS15DYTM_H	8.TEMP_OH		BP1.HDV		H5.DYT
54	TS15DYTM_L	8.TEMP_OL		BP2.HDV		TRUN.RLY
55	TS15KPTM_H	9.TEMP_P		BP3.HDV		TRUN.DYT
56	TS15KPTM_L	9.TEMP_I		BP4.HDV		HRUN.RLY
57	TS16DYTM_H	9.TEMP_D		BP1.HPV		HRUN.DYT
58	TS16DYTM_L	9.TEMP_OH		BP2.HPV		TSOPN.RLY
59	TS16KPTM_H	9.TEMP_OL		BP3.HPV		TSOPN.KPT
60	TS16KPTM_L	1.HUMI_P		BP4.HPV		HSPON.RLY
61	TS17DYTM_H	1.HUMI_I				HSOPN.KPT
62	TS17DYTM_L	1.HUMI_D				TWAIT.RLY
63	TS17KPTM_H	1.HUMI_OH				TWAIT.KPT
64	TS17KPTM_L	1.HUMI_OL				HWAIT.RLY
65		2.HUMI_P				HWAIT.KPT
66		2.HUMI_I				TUP.RLY
67	AL1.OPMODE	2.HUMI_D				TUP.DEV
68	AL2.OPMODE	2.HUMI_OH				HUP.RLY
69	AL3.OPMODE	2.HUMI_OL				HUP.DEV
70	AL4.OPMODE	3.HUMI_P				TSOAK.RLY
71	AL5.OPMODE	3.HUMI_I				TSOAK.KPT
72	AL6.OPMODE	3.HUMI_D				HSOAK.RLY
73	AL7.OPMODE	3.HUMI_OH				HSOAK.KPT
74	AL8.OPMODE	3.HUMI_OL				TDOWN.RLY
75		4.HUMI_P				TDOWN.DEV
76		4.HUMI_I				HDOWN.RLY
77		4.HUMI_D				HDOWN.DEV
78		4.HUMI_OH				FEND.RLY
79		4.HUMI_OL				FEND.KPT
80		5.HUMI_P				FEND.OPT
81		5.HUMI_I				PTEND.RLY
82		5.HUMI_D				PTEND.KPT
83		5.HUMI_OH				PTEND.OPT
84		5.HUMI_OL				DRAIN.RLY
85		6.HUMI_P				DRAIN.OPT
86		6.HUMI_I				DRAIN_RH
87		6.HUMI_D				DRAIN_RL
88		6.HUMI_OH				ERROR.RLY
89		6.HUMI_OL				ERROR.KPT
90						1REF.RLY
91						1REF.DYT
92						2REF.RLY
93						2REF.DYT
94						UKEY.OPT
95						
96						
97						
98						
99						

D-Register 1200 ~ 1799

D-Reg.	DI CONFIG1	DI CONFIG2	DI CONFIG3	DO CONFIG2	INITIAL1	PROGRAM
	1200	1300	1400	1500	1600	1700
0						
1		DI1.NAME1	DI9.NAME1		LANGUAGE	COM_PTNO
2	DI1.OP_MODE	DI1.NAME2	DI9.NAME2			COM_SEGNO
3	DI2.OP_MODE	DI1.NAME3	DI9.NAME3		UKEY.USE	PTCOPY_START
4	DI3.OP_MODE	DI1.NAME4	DI9.NAME4		UKEY.KIND	PTCOPY_END
5	BUZ.TIME	DI1.NAME5	DI9.NAME5			PTDEL_START
6	DIDET.TIME	DI1.NAME6	DI9.NAME6		UKEY.NAME1	PTDEL_END
7		DI1.NAME7	DI9.NAME7		UKEY.NAME2	TRIGGER
8		DI1.NAME8	DI9.NAME8		UKEY.NAME3	ANSWER
9	DI1.OP	DI1.NAME9	DI9.NAME9		UKEY.NAME4	
10	DI1.DYT	DI1.NAME10	DI9.NAME10			
11	DI2.OP	DI1.NAME11	DI9.NAME11		INFORM1.NAME1	PATTERN_NAME1
12	D2I.DYT	DI1.NAME12	DI9.NAME12		INFORM1.NAME2	PATTERN_NAME2
13	DI3.OP	DI2.NAME1	DI10.NAME1		INFORM1.NAME3	PATTERN_NAME3
14	DI3.DYT	DI2.NAME2	DI10.NAME2		INFORM1.NAME4	PATTERN_NAME4
15	DI4.OP	DI2.NAME3	DI10.NAME3		INFORM1.NAME5	PATTERN_NAME5
16	DI4.DYT	DI2.NAME4	DI10.NAME4		INFORM1.NAME6	PATTERN_NAME6
17	DI5.OP	DI2.NAME5	DI10.NAME5		INFORM1.NAME7	PATTERN_NAME7
18	DI5.DYT	DI2.NAME6	DI10.NAME6		INFORM1.NAME8	PATTERN_NAME8
19	DI6.OP	DI2.NAME7	DI10.NAME7		INFORM1.NAME9	PATTERN_NAME9
20	DI6.DYT	DI2.NAME8	DI10.NAME8		INFORM1.NAME10	PATTERN_NAME10
21	DI7.OP	DI2.NAME9	DI10.NAME9		INFORM1.NAME11	PATTERN_NAME11
22	DI7.DYT	DI2.NAME10	DI10.NAME10		INFORM1.NAME12	PATTERN_NAME12
23	DI8.OP	DI2.NAME11	DI10.NAME11		INFORM1.NAME13	
24	DI8.DYT	DI2.NAME12	DI10.NAME12		INFORM2.NAME1	
25	DI9.OP	DI3.NAME1	DI11.NAME1		INFORM2.NAME2	TEMP.TSP
26	DI9.DYT	DI3.NAME2	DI11.NAME2		INFORM2.NAME3	HUMI.TSP
27	DI10.OP	DI3.NAME3	DI11.NAME3		INFORM2.NAME4	SEG.TIME_H
28	DI10.DYT	DI3.NAME4	DI11.NAME4		INFORM2.NAME5	SEG.TIME_L
29	DI11.OP	DI3.NAME5	DI11.NAME5		INFORM2.NAME6	TS1
30	DI11.DYT	DI3.NAME6	DI11.NAME6		INFORM2.NAME7	TS2
31	DI12.OP	DI3.NAME7	DI11.NAME7		INFORM2.NAME8	TS3
32	DI12.DYT	DI3.NAME8	DI11.NAME8		INFORM2.NAME9	TS4
33	DI13.OP	DI3.NAME9	DI11.NAME9		INFORM2.NAME10	SEG.WAIT
34	DI13.DYT	DI3.NAME10	DI11.NAME10		INFORM2.NAME11	
35	DI14.OP	DI3.NAME11	DI11.NAME11		INFORM2.NAME12	
36	DI14.DYT	DI3.NAME12	DI11.NAME12		INFORM2.NAME13	START.CODE
37	DI15.OP	DI4.NAME1	DI12.NAME1		INFORM3.NAME1	START.TEMP_SP
38	DI15.DYT	DI4.NAME2	DI12.NAME2		INFORM3.NAME2	START.HUMI_SP
39	DI16.OP	DI4.NAME3	DI12.NAME3		INFORM3.NAME3	
40	DI16.DYT	DI4.NAME4	DI12.NAME4		INFORM3.NAME4	
41		DI4.NAME5	DI12.NAME5		INFORM3.NAME5	PT.RPT
42	DI1.DETECT	DI4.NAME6	DI12.NAME6		INFORM3.NAME6	PT.EMOD
43	DI2.DETECT	DI4.NAME7	DI12.NAME7		INFORM3.NAME7	LINK.PT
44	DI3.DETECT	DI4.NAME8	DI12.NAME8		INFORM3.NAME8	
45	DI4.DETECT	DI4.NAME9	DI12.NAME9		INFORM3.NAME9	
46	DI5.DETECT	DI4.NAME10	DI12.NAME10		INFORM3.NAME10	SEG_RPT.S1
47	DI6.DETECT	DI4.NAME11	DI12.NAME11		INFORM3.NAME11	SEG_RPT.E1
48	DI7.DETECT	DI4.NAME12	DI12.NAME12		INFORM3.NAME12	SEG_RPT.C1
49	DI8.DETECT	DI5.NAME1	DI13.NAME1		INFORM3.NAME13	SEG_RPT.S2

D-Reg.	DI CONFIG1	DI CONFIG2	DI CONFIG3	DO CONFIG2	INITIAL1	PROGRAM
	1200	1300	1400	1500	1600	1700
50	DI9.DETECT	DI5.NAME2	DI13.NAME2			SEG_RPT.E2
51	DI10.DETECT	DI5.NAME3	DI13.NAME3			SEG_RPT.C2
52	DI11.DETECT	DI5.NAME4	DI13.NAME4			SEG_RPT.S3
53	DI12.DETECT	DI5.NAME5	DI13.NAME5			SEG_RPT.E3
54	DI13.DETECT	DI5.NAME6	DI13.NAME6			SEG_RPT.C3
55	DI14.DETECT	DI5.NAME7	DI13.NAME7			SEG_RPT.S4
56	DI15.DETECT	DI5.NAME8	DI13.NAME8			SEG_RPT.E4
57	DI16.DETECT	DI5.NAME9	DI13.NAME9			SEG_RPT.C4
58		DI5.NAME10	DI13.NAME10			
59		DI5.NAME11	DI13.NAME11	TFIXTIMER.RLY		
60		DI5.NAME12	DI13.NAME12	TFIXTIMER.DEV		
61		DI6.NAME1	DI14.NAME1	TFIXTIMER.DLY		
62		DI6.NAME2	DI14.NAME2	TFIXTIMER.OPT		
63		DI6.NAME3	DI14.NAME3	HFIXTIMER.RLY		
64		DI6.NAME4	DI14.NAME4	HFIXTIMER.DEV		
65		DI6.NAME5	DI14.NAME5	HFIXTIMER.DLY		
66		DI6.NAME6	DI14.NAME6	HFIXTIMER.OPT		
67		DI6.NAME7	DI14.NAME7			
68		DI6.NAME8	DI14.NAME8			
69		DI6.NAME9	DI14.NAME9			
70	DI1.RLY	DI6.NAME10	DI14.NAME10			
71	DI2.RLY	DI6.NAME11	DI14.NAME11			
72	DI3.RLY	DI6.NAME12	DI14.NAME12			
73	DI4.RLY	DI7.NAME1	DI15.NAME1			
74	DI5.RLY	DI7.NAME2	DI15.NAME2			
75	DI6.RLY	DI7.NAME3	DI15.NAME3			
76	DI7.RLY	DI7.NAME4	DI15.NAME4			
77	DI8.RLY	DI7.NAME5	DI15.NAME5			
78	DI9.RLY	DI7.NAME6	DI15.NAME6			
79	DI10.RLY	DI7.NAME7	DI15.NAME7			
80	DI11.RLY	DI7.NAME8	DI15.NAME8			
81	DI12.RLY	DI7.NAME9	DI15.NAME9			
82	DI13.RLY	DI7.NAME10	DI15.NAME10			
83	DI14.RLY	DI7.NAME11	DI15.NAME11			
84	DI15.RLY	DI7.NAME12	DI15.NAME12			
85	DI16.RLY	DI8.NAME1	DI16.NAME1			
86	USER.RLY1	DI8.NAME2	DI16.NAME2			
87	USER.RLY2	DI8.NAME3	DI16.NAME3			
88	USER.RLY3	DI8.NAME4	DI16.NAME4			
89	USER.RLY4	DI8.NAME5	DI16.NAME5			
90	USER.RLY5	DI8.NAME6	DI16.NAME6			
91	USER.RLY6	DI8.NAME7	DI16.NAME7	TEMPUP.DEVSEL		
92	USER.RLY7	DI8.NAME8	DI16.NAME8	TEMPDN.DEVSEL		
93	USER.RLY8	DI8.NAME9	DI16.NAME9	HUMIUP.DEVSEL		
94	USER.RLY9	DI8.NAME10	DI16.NAME10	HUMIDN.DEVSEL		
95	USER.RLY10	DI8.NAME11	DI16.NAME11			
96	USER.RLY11	DI8.NAME12	DI16.NAME12			
97	USER.RLY12					
98	USER.RLY_ON/OFF					
99						

D-Register 1800 ~ 2399

D-Reg.	PATTERN INF01	PATTERN INF02	INITIAL2	FILE1	FILE2	FILE3
	1800	1900	2000	2100	2200	2300
0		NPT100				
1	NPT1	NPT101	LAMP_IS1	C.TSP1	C.HSP1	C.SRTIME_H1
2	NPT2	NPT102	LAMP_IS2	C.TSP2	C.HSP2	C.SRTIME_H2
3	NPT3	NPT103	LAMP_IS3	C.TSP3	C.HSP3	C.SRTIME_H3
4	NPT4	NPT104	LAMP_IS4	C.TSP4	C.HSP4	C.SRTIME_H4
5	NPT5	NPT105	LAMP_IS5	C.TSP5	C.HSP5	C.SRTIME_H5
6	NPT6	NPT106	LAMP_IS6	C.TSP6	C.HSP6	C.SRTIME_H6
7	NPT7	NPT107	LAMP_IS7	C.TSP7	C.HSP7	C.SRTIME_H7
8	NPT8	NPT108	LAMP_IS8	C.TSP8	C.HSP8	C.SRTIME_H8
9	NPT9	NPT109	LAMP_IS9	C.TSP9	C.HSP9	C.SRTIME_H9
10	NPT10	NPT110	LAMP_IS10	C.TSP10	C.HSP10	C.SRTIME_H10
11	NPT11	NPT111	LAMP_TS1	C.TSP11	C.HSP11	C.SRTIME_H11
12	NPT12	NPT112	LAMP_TS2	C.TSP12	C.HSP12	C.SRTIME_H12
13	NPT13	NPT113	LAMP_TS3	C.TSP13	C.HSP13	C.SRTIME_H13
14	NPT14	NPT114	LAMP_TS4	C.TSP14	C.HSP14	C.SRTIME_H14
15	NPT15	NPT115	LAMP_AL1	C.TSP15	C.HSP15	C.SRTIME_H15
16	NPT16	NPT116	LAMP_AL2	C.TSP16	C.HSP16	C.SRTIME_H16
17	NPT17	NPT117	LAMP_AL3	C.TSP17	C.HSP17	C.SRTIME_H17
18	NPT18	NPT118	LAMP_AL4	C.TSP18	C.HSP18	C.SRTIME_H18
19	NPT19	NPT119	LAMP_AL5	C.TSP19	C.HSP19	C.SRTIME_H19
20	NPT20	NPT120	LAMP_AL6	C.TSP20	C.HSP20	C.SRTIME_H20
21	NPT21		LAMP_AL7	C.TSP21	C.HSP21	C.SRTIME_H21
22	NPT22		LAMP_AL8	C.TSP22	C.HSP22	C.SRTIME_H22
23	NPT23		LAMP_IS1	C.TSP23	C.HSP23	C.SRTIME_H23
24	NPT24		LAMP_T2	C.TSP24	C.HSP24	C.SRTIME_H24
25	NPT25		LAMP_T3	C.TSP25	C.HSP25	C.SRTIME_H25
26	NPT26		LAMP_T4	C.TSP26	C.HSP26	C.SRTIME_H26
27	NPT27		LAMP_T5	C.TSP27	C.HSP27	C.SRTIME_H27
28	NPT28		LAMP_T6	C.TSP28	C.HSP28	C.SRTIME_H28
29	NPT29		LAMP_T7	C.TSP29	C.HSP29	C.SRTIME_H29
30	NPT30		LAMP_T8	C.TSP30	C.HSP30	C.SRTIME_H30
31	NPT31		LAMP_T9	C.TSP31	C.HSP31	C.SRTIME_H31
32	NPT32		LAMP_T10	C.TSP32	C.HSP32	C.SRTIME_H32
33	NPT33		LAMP_H1	C.TSP3	C.HSP33	C.SRTIME_H33
34	NPT34		LAMP_H2	C.TSP34	C.HSP34	C.SRTIME_H34
35	NPT35		LAMP_H3	C.TSP35	C.HSP35	C.SRTIME_H35
36	NPT36		LAMP_H4	C.TSP36	C.HSP36	C.SRTIME_H36
37	NPT37		LAMP_H5	C.TSP3	C.HSP37	C.SRTIME_H37
38	NPT38		LAMP_DI1	C.TSP38	C.HSP38	C.SRTIME_H38
39	NPT39		LAMP_DI2	C.TSP39	C.HSP39	C.SRTIME_H39
40	NPT40		LAMP_DI3	C.TSP40	C.HSP40	C.SRTIME_H40
41	NPT41		LAMP_DI4	C.TSP41	C.HSP41	C.SRTIME_H41
42	NPT42		LAMP_DI5	C.TSP42	C.HSP42	C.SRTIME_H42
43	NPT43		LAMP_DI6	C.TSP43	C.HSP43	C.SRTIME_H43
44	NPT44		LAMP_DI7	C.TSP44	C.HSP44	C.SRTIME_H44
45	NPT45		LAMP_DI8	C.TSP45	C.HSP45	C.SRTIME_H45
46	NPT46		LAMP_DI9	C.TSP46	C.HSP46	C.SRTIME_H46
47	NPT47		LAMP_DI10	C.TSP47	C.HSP47	C.SRTIME_H47
48	NPT48		LAMP_DI11	C.TSP48	C.HSP48	C.SRTIME_H48
49	NPT49		LAMP_DI12	C.TSP49	C.HSP49	C.SRTIME_H49

D-Reg.	PATTERN INF01	PATTERN INF02	INITIAL2	FILE1	FILE2	FILE3
	1800	1900	2000	2100	2200	2300
50	NPT50		LAMP_DI13	C.TSP50	C.HSP50	C.SRTIME_H50
51	NPT51		LAMP_DI14	C.TSP51	C.HSP51	C.SRTIME_H51
52	NPT52		LAMP_DI15	C.TSP52	C.HSP52	C.SRTIME_H52
53	NPT53		LAMP_DI16	C.TSP53	C.HSP53	C.SRTIME_H53
54	NPT54		LAMP_TRUN	C.TSP54	C.HSP54	C.SRTIME_H54
55	NPT55		LAMP_HRUN	C.TSP55	C.HSP55	C.SRTIME_H55
56	NPT56		LAMP_REF1	C.TSP56	C.HSP56	C.SRTIME_H56
57	NPT57		LAMP_REF2	C.TSP57	C.HSP57	C.SRTIME_H57
58	NPT58		LAMP_DRAN	C.TSP58	C.HSP58	C.SRTIME_H58
59	NPT59		LAMP.LOG1	C.TSP59	C.HSP59	C.SRTIME_H59
60	NPT60		LAMP.LOG2	C.TSP60	C.HSP60	C.SRTIME_H60
61	NPT61		LAMP.LOG3	C.TSP61	C.HSP61	C.SRTIME_H61
62	NPT62		LAMP.LOG4	C.TSP62	C.HSP62	C.SRTIME_H62
63	NPT63		LAMP.LOG5	C.TSP63	C.HSP63	C.SRTIME_H63
64	NPT64		LAMP.LOG6	C.TSP64	C.HSP64	C.SRTIME_H64
65	NPT65		LAMP.LOG7	C.TSP65	C.HSP65	C.SRTIME_H65
66	NPT66		LAMP.LOG8	C.TSP66	C.HSP66	C.SRTIME_H66
67	NPT67			C.TSP67	C.HSP67	C.SRTIME_H67
68	NPT68			C.TSP68	C.HSP68	C.SRTIME_H68
69	NPT69			C.TSP69	C.HSP69	C.SRTIME_H69
70	NPT70			C.TSP70	C.HSP70	C.SRTIME_H70
71	NPT71			C.TSP71	C.HSP71	C.SRTIME_H71
72	NPT72			C.TSP72	C.HSP72	C.SRTIME_H72
73	NPT73			C.TSP73	C.HSP73	C.SRTIME_H73
74	NPT74			C.TSP74	C.HSP74	C.SRTIME_H74
75	NPT75			C.TSP75	C.HSP75	C.SRTIME_H75
76	NPT76			C.TSP76	C.HSP76	C.SRTIME_H76
77	NPT77			C.TSP77	C.HSP77	C.SRTIME_H77
78	NPT78			C.TSP78	C.HSP78	C.SRTIME_H78
79	NPT79			C.TSP79	C.HSP79	C.SRTIME_H79
80	NPT80			C.TSP80	C.HSP80	C.SRTIME_H80
81	NPT81			C.TSP81	C.HSP81	C.SRTIME_H81
82	NPT82			C.TSP82	C.HSP82	C.SRTIME_H82
83	NPT83			C.TSP83	C.HSP83	C.SRTIME_H83
84	NPT84			C.TSP84	C.HSP84	C.SRTIME_H84
85	NPT85			C.TSP85	C.HSP85	C.SRTIME_H85
86	NPT86			C.TSP86	C.HSP86	C.SRTIME_H86
87	NPT87			C.TSP87	C.HSP87	C.SRTIME_H87
88	NPT88			C.TSP88	C.HSP88	C.SRTIME_H88
89	NPT89			C.TSP89	C.HSP89	C.SRTIME_H89
90	NPT90			C.TSP90	C.HSP90	C.SRTIME_H90
91	NPT91			C.TSP91	C.HSP91	C.SRTIME_H91
92	NPT92			C.TSP92	C.HSP92	C.SRTIME_H92
93	NPT93			C.TSP93	C.HSP93	C.SRTIME_H93
94	NPT94			C.TSP94	C.HSP94	C.SRTIME_H94
95	NPT95			C.TSP95	C.HSP95	C.SRTIME_H95
96	NPT96			C.TSP96	C.HSP96	C.SRTIME_H96
97	NPT97			C.TSP97	C.HSP97	C.SRTIME_H97
98	NPT98			C.TSP98	C.HSP98	C.SRTIME_H98
99	NPT99			C.TSP99	C.HSP99	C.SRTIME_H99

D-Register 2400 ~ 2999

D-Reg.	FILE4	FILE5	FILE6	FILE7	FILE8	FILE9
	2400	2500	2600	2700	2800	2900
0						
1	C.SRTIME_L1	C.TS1_1	C.TS2_1	C.TS3_1	C.TS4_1	C.WAIT_USE1
2	C.SRTIME_L2	C.TS1_2	C.TS2_2	C.TS3_2	C.TS4_2	C.WAIT_USE2
3	C.SRTIME_L3	C.TS1_3	C.TS2_3	C.TS3_3	C.TS4_3	C.WAIT_USE3
4	C.SRTIME_L4	C.TS1_4	C.TS2_4	C.TS3_4	C.TS4_4	C.WAIT_USE4
5	C.SRTIME_L5	C.TS1_5	C.TS2_5	C.TS3_5	C.TS4_5	C.WAIT_USE5
6	C.SRTIME_L6	C.TS1_6	C.TS2_6	C.TS3_6	C.TS4_6	C.WAIT_USE6
7	C.SRTIME_L7	C.TS1_7	C.TS2_7	C.TS3_7	C.TS4_7	C.WAIT_USE7
8	C.SRTIME_L8	C.TS1_8	C.TS2_8	C.TS3_8	C.TS4_8	C.WAIT_USE8
9	C.SRTIME_L9	C.TS1_9	C.TS2_9	C.TS3_9	C.TS4_9	C.WAIT_USE9
10	C.SRTIME_L10	C.TS1_10	C.TS2_10	C.TS3_10	C.TS4_10	C.WAIT_USE10
11	C.SRTIME_L11	C.TS1_11	C.TS2_11	C.TS3_11	C.TS4_11	C.WAIT_USE11
12	C.SRTIME_L12	C.TS1_12	C.TS2_12	C.TS3_12	C.TS4_12	C.WAIT_USE12
13	C.SRTIME_L13	C.TS1_13	C.TS2_13	C.TS3_13	C.TS4_13	C.WAIT_USE13
14	C.SRTIME_L14	C.TS1_14	C.TS2_14	C.TS3_14	C.TS4_14	C.WAIT_USE14
15	C.SRTIME_L15	C.TS1_15	C.TS2_15	C.TS3_15	C.TS4_15	C.WAIT_USE15
16	C.SRTIME_L16	C.TS1_16	C.TS2_16	C.TS3_16	C.TS4_16	C.WAIT_USE16
17	C.SRTIME_L17	C.TS1_17	C.TS2_17	C.TS3_17	C.TS4_17	C.WAIT_USE17
18	C.SRTIME_L18	C.TS1_18	C.TS2_18	C.TS3_18	C.TS4_18	C.WAIT_USE18
19	C.SRTIME_L19	C.TS1_19	C.TS2_19	C.TS3_19	C.TS4_19	C.WAIT_USE19
20	C.SRTIME_L20	C.TS1_20	C.TS2_20	C.TS3_20	C.TS4_20	C.WAIT_USE20
21	C.SRTIME_L21	C.TS1_21	C.TS2_21	C.TS3_21	C.TS4_21	C.WAIT_USE21
22	C.SRTIME_L22	C.TS1_22	C.TS2_22	C.TS3_22	C.TS4_22	C.WAIT_USE22
23	C.SRTIME_L23	C.TS1_23	C.TS2_23	C.TS3_23	C.TS4_23	C.WAIT_USE23
24	C.SRTIME_L24	C.TS1_24	C.TS2_24	C.TS3_24	C.TS4_24	C.WAIT_USE24
25	C.SRTIME_L25	C.TS1_25	C.TS2_25	C.TS3_25	C.TS4_25	C.WAIT_USE25
26	C.SRTIME_L26	C.TS1_26	C.TS2_26	C.TS3_26	C.TS4_26	C.WAIT_USE26
27	C.SRTIME_L27	C.TS1_27	C.TS2_27	C.TS3_27	C.TS4_27	C.WAIT_USE27
28	C.SRTIME_L28	C.TS1_28	C.TS2_28	C.TS3_28	C.TS4_28	C.WAIT_USE28
29	C.SRTIME_L29	C.TS1_29	C.TS2_29	C.TS3_29	C.TS4_29	C.WAIT_USE29
30	C.SRTIME_L30	C.TS1_30	C.TS2_30	C.TS3_30	C.TS4_30	C.WAIT_USE30
31	C.SRTIME_L31	C.TS1_31	C.TS2_31	C.TS3_31	C.TS4_31	C.WAIT_USE31
32	C.SRTIME_L32	C.TS1_32	C.TS2_32	C.TS3_32	C.TS4_32	C.WAIT_USE32
33	C.SRTIME_L33	C.TS1_33	C.TS2_33	C.TS3_33	C.TS4_33	C.WAIT_USE33
34	C.SRTIME_L34	C.TS1_34	C.TS2_34	C.TS3_34	C.TS4_34	C.WAIT_USE34
35	C.SRTIME_L35	C.TS1_35	C.TS2_35	C.TS3_35	C.TS4_35	C.WAIT_USE35
36	C.SRTIME_L36	C.TS1_36	C.TS2_36	C.TS3_36	C.TS4_36	C.WAIT_USE36
37	C.SRTIME_L37	C.TS1_37	C.TS2_37	C.TS3_37	C.TS4_37	C.WAIT_USE37
38	C.SRTIME_L38	C.TS1_38	C.TS2_38	C.TS3_38	C.TS4_38	C.WAIT_USE38
39	C.SRTIME_L39	C.TS1_39	C.TS2_39	C.TS3_39	C.TS4_39	C.WAIT_USE39
40	C.SRTIME_L40	C.TS1_40	C.TS2_40	C.TS3_40	C.TS4_40	C.WAIT_USE40
41	C.SRTIME_L41	C.TS1_41	C.TS2_41	C.TS3_41	C.TS4_41	C.WAIT_USE41
42	C.SRTIME_L42	C.TS1_42	C.TS2_42	C.TS3_42	C.TS4_42	C.WAIT_USE42
43	C.SRTIME_L43	C.TS1_43	C.TS2_43	C.TS3_43	C.TS4_43	C.WAIT_USE43
44	C.SRTIME_L44	C.TS1_44	C.TS2_44	C.TS3_44	C.TS4_44	C.WAIT_USE44
45	C.SRTIME_L45	C.TS1_45	C.TS2_45	C.TS3_45	C.TS4_45	C.WAIT_USE45
46	C.SRTIME_L46	C.TS1_46	C.TS2_46	C.TS3_46	C.TS4_46	C.WAIT_USE46
47	C.SRTIME_L47	C.TS1_47	C.TS2_47	C.TS3_47	C.TS4_47	C.WAIT_USE47
48	C.SRTIME_L48	C.TS1_48	C.TS2_48	C.TS3_48	C.TS4_48	C.WAIT_USE48
49	C.SRTIME_L49	C.TS1_49	C.TS2_49	C.TS3_49	C.TS4_49	C.WAIT_USE49

D-Reg.	FILE4	FILE5	FILE6	FILE7	FILE8	FILE9
	2400	2500	2600	2700	2800	2900
50	C.SRTIME_L50	C.TS1_50	C.TS2_50	C.TS3_50	C.TS4_50	C.WAIT_USE50
51	C.SRTIME_L51	C.TS1_51	C.TS2_51	C.TS3_51	C.TS4_51	C.WAIT_USE51
52	C.SRTIME_L52	C.TS1_52	C.TS2_52	C.TS3_52	C.TS4_52	C.WAIT_USE52
53	C.SRTIME_L53	C.TS1_53	C.TS2_53	C.TS3_53	C.TS4_53	C.WAIT_USE53
54	C.SRTIME_L54	C.TS1_54	C.TS2_54	C.TS3_54	C.TS4_54	C.WAIT_USE54
55	C.SRTIME_L55	C.TS1_55	C.TS2_55	C.TS3_55	C.TS4_55	C.WAIT_USE55
56	C.SRTIME_L56	C.TS1_56	C.TS2_56	C.TS3_56	C.TS4_56	C.WAIT_USE56
57	C.SRTIME_L57	C.TS1_57	C.TS2_57	C.TS3_57	C.TS4_57	C.WAIT_USE57
58	C.SRTIME_L58	C.TS1_58	C.TS2_58	C.TS3_58	C.TS4_58	C.WAIT_USE58
59	C.SRTIME_L59	C.TS1_59	C.TS2_59	C.TS3_59	C.TS4_59	C.WAIT_USE59
60	C.SRTIME_L60	C.TS1_60	C.TS2_60	C.TS3_60	C.TS4_60	C.WAIT_USE60
61	C.SRTIME_L61	C.TS1_61	C.TS2_61	C.TS3_61	C.TS4_61	C.WAIT_USE61
62	C.SRTIME_L62	C.TS1_62	C.TS2_62	C.TS3_62	C.TS4_62	C.WAIT_USE62
63	C.SRTIME_L63	C.TS1_63	C.TS2_63	C.TS3_63	C.TS4_63	C.WAIT_USE63
64	C.SRTIME_L64	C.TS1_64	C.TS2_64	C.TS3_64	C.TS4_64	C.WAIT_USE64
65	C.SRTIME_L65	C.TS1_65	C.TS2_65	C.TS3_65	C.TS4_65	C.WAIT_USE65
66	C.SRTIME_L66	C.TS1_66	C.TS2_66	C.TS3_66	C.TS4_66	C.WAIT_USE66
67	C.SRTIME_L67	C.TS1_67	C.TS2_67	C.TS3_67	C.TS4_67	C.WAIT_USE67
68	C.SRTIME_L68	C.TS1_68	C.TS2_68	C.TS3_68	C.TS4_68	C.WAIT_USE68
69	C.SRTIME_L69	C.TS1_69	C.TS2_69	C.TS3_69	C.TS4_69	C.WAIT_USE69
70	C.SRTIME_L70	C.TS1_70	C.TS2_70	C.TS3_70	C.TS4_70	C.WAIT_USE70
71	C.SRTIME_L71	C.TS1_71	C.TS2_71	C.TS3_71	C.TS4_71	C.WAIT_USE71
72	C.SRTIME_L72	C.TS1_72	C.TS2_72	C.TS3_72	C.TS4_72	C.WAIT_USE72
73	C.SRTIME_L73	C.TS1_73	C.TS2_73	C.TS3_73	C.TS4_73	C.WAIT_USE73
74	C.SRTIME_L74	C.TS1_74	C.TS2_74	C.TS3_74	C.TS4_74	C.WAIT_USE74
75	C.SRTIME_L75	C.TS1_75	C.TS2_75	C.TS3_75	C.TS4_75	C.WAIT_USE75
76	C.SRTIME_L76	C.TS1_76	C.TS2_76	C.TS3_76	C.TS4_76	C.WAIT_USE76
77	C.SRTIME_L77	C.TS1_77	C.TS2_77	C.TS3_77	C.TS4_77	C.WAIT_USE77
78	C.SRTIME_L78	C.TS1_78	C.TS2_78	C.TS3_78	C.TS4_78	C.WAIT_USE78
79	C.SRTIME_L79	C.TS1_79	C.TS2_79	C.TS3_79	C.TS4_79	C.WAIT_USE79
80	C.SRTIME_L80	C.TS1_80	C.TS2_80	C.TS3_80	C.TS4_80	C.WAIT_USE80
81	C.SRTIME_L81	C.TS1_81	C.TS2_81	C.TS3_81	C.TS4_81	C.WAIT_USE81
82	C.SRTIME_L82	C.TS1_82	C.TS2_82	C.TS3_82	C.TS4_82	C.WAIT_USE82
83	C.SRTIME_L83	C.TS1_83	C.TS2_83	C.TS3_83	C.TS4_83	C.WAIT_USE83
84	C.SRTIME_L84	C.TS1_84	C.TS2_84	C.TS3_84	C.TS4_84	C.WAIT_USE84
85	C.SRTIME_L85	C.TS1_85	C.TS2_85	C.TS3_85	C.TS4_85	C.WAIT_USE85
86	C.SRTIME_L86	C.TS1_86	C.TS2_86	C.TS3_86	C.TS4_86	C.WAIT_USE86
87	C.SRTIME_L87	C.TS1_87	C.TS2_87	C.TS3_87	C.TS4_87	C.WAIT_USE87
88	C.SRTIME_L88	C.TS1_88	C.TS2_88	C.TS3_88	C.TS4_88	C.WAIT_USE88
89	C.SRTIME_L89	C.TS1_89	C.TS2_89	C.TS3_89	C.TS4_89	C.WAIT_USE89
90	C.SRTIME_L90	C.TS1_90	C.TS2_90	C.TS3_90	C.TS4_90	C.WAIT_USE90
91	C.SRTIME_L91	C.TS1_91	C.TS2_91	C.TS3_91	C.TS4_91	C.WAIT_USE91
92	C.SRTIME_L92	C.TS1_92	C.TS2_92	C.TS3_92	C.TS4_92	C.WAIT_USE92
93	C.SRTIME_L93	C.TS1_93	C.TS2_93	C.TS3_93	C.TS4_93	C.WAIT_USE93
94	C.SRTIME_L94	C.TS1_94	C.TS2_94	C.TS3_94	C.TS4_94	C.WAIT_USE94
95	C.SRTIME_L95	C.TS1_95	C.TS2_95	C.TS3_95	C.TS4_95	C.WAIT_USE95
96	C.SRTIME_L96	C.TS1_96	C.TS2_96	C.TS3_96	C.TS4_96	C.WAIT_USE96
97	C.SRTIME_L97	C.TS1_97	C.TS2_97	C.TS3_97	C.TS4_97	C.WAIT_USE97
98	C.SRTIME_L98	C.TS1_98	C.TS2_98	C.TS3_98	C.TS4_98	C.WAIT_USE98
99	C.SRTIME_L99	C.TS1_99	C.TS2_99	C.TS3_99	C.TS4_99	C.WAIT_USE99

D-Register 3000 ~ 3199

D-Reg.	INITIAL3	INITIAL4	LOGIC SIG1	LOGIC SIG2		
	3000	3100	3200	3300		
0						
1	LED1.NAME1	LED34.NAME1	LOG1_SIGNAL1	LOG7_SIGNAL1		
2	LED1.NAME2	LED34.NAME2	LOG1_ACT1	LOG7_ACT1		
3	LED1.NAME3	LED34.NAME3	LOG1_DYT1	LOG7_DYT1		
4	LED2.NAME1	LED35.NAME1	LOG1_SIGNAL2	LOG7_SIGNAL2		
5	LED2.NAME2	LED35.NAME2	LOG1_ACT2	LOG7_ACT2		
6	LED2.NAME3	LED35.NAME3	LOG1_DYT2	LOG7_DYT2		
7	LED3.NAME1	LED36.NAME1	LOG1_SIGNAL3	LOG7_SIGNAL3		
8	LED3.NAME2	LED36.NAME2	LOG1_ACT3	LOG7_ACT3		
9	LED3.NAME3	LED36.NAME3	LOG1_DYT3	LOG7_DYT3		
10	LED4.NAME1	LED37.NAME1	LOG1_SIGNAL4	LOG7_SIGNAL4		
11	LED4.NAME2	LED37.NAME2	LOG1_ACT4	LOG7_ACT4		
12	LED4.NAME3	LED37.NAME3	LOG1_DYT4	LOG7_DYT4		
13	LED5.NAME1	LED38.NAME1	LOG1_OPERAND1	LOG7_OPERAND1		
14	LED5.NAME2	LED38.NAME2	LOG1_OPERAND2	LOG7_OPERAND2		
15	LED5.NAME3	LED38.NAME3	LOG1_OPERAND3	LOG7_OPERAND3		
16	LED6.NAME1	LED39.NAME1	LOG2_SIGNAL1	LOG8_SIGNAL1		
17	LED6.NAME2	LED39.NAME2	LOG2_ACT1	LOG8_ACT1		
18	LED6.NAME3	LED39.NAME3	LOG2_DYT1	LOG8_DYT1		
19	LED7.NAME1	LED40.NAME1	LOG2_SIGNAL2	LOG8_SIGNAL2		
20	LED7.NAME2	LED40.NAME2	LOG2_ACT2	LOG8_ACT2		
21	LED7.NAME3	LED40.NAME3	LOG2_DYT2	LOG8_DYT2		
22	LED8.NAME1	LED41.NAME1	LOG2_SIGNAL3	LOG8_SIGNAL3		
23	LED8.NAME2	LED41.NAME2	LOG2_ACT3	LOG8_ACT3		
24	LED8.NAME3	LED41.NAME3	LOG2_DYT3	LOG8_DYT3		
25	LED9.NAME1	LED42.NAME1	LOG2_SIGNAL4	LOG8_SIGNAL4		
26	LED9.NAME2	LED42.NAME2	LOG2_ACT4	LOG8_ACT4		
27	LED9.NAME3	LED42.NAME3	LOG2_DYT4	LOG8_DYT4		
28	LED10.NAME1	LED43.NAME1	LOG2_OPERAND1	LOG8_OPERAND1		
29	LED10.NAME2	LED43.NAME2	LOG2_OPERAND2	LOG8_OPERAND2		
30	LED10.NAME3	LED43.NAME3	LOG2_OPERAND3	LOG8_OPERAND3		
31	LED11.NAME1	LED44.NAME1	LOG3_SIGNAL1			
32	LED11.NAME2	LED44.NAME2	LOG3_ACT1			
33	LED11.NAME3	LED44.NAME3	LOG3_DYT1			
34	LED12.NAME1	LED45.NAME1	LOG3_SIGNAL2			
35	LED12.NAME2	LED45.NAME2	LOG3_ACT2			
36	LED12.NAME3	LED45.NAME3	LOG3_DYT2			
37	LED13.NAME1	LED46.NAME1	LOG3_SIGNAL3			
38	LED13.NAME2	LED46.NAME2	LOG3_ACT3			
39	LED13.NAME3	LED46.NAME3	LOG3_DYT3			
40	LED14.NAME1	LED47.NAME1	LOG3_SIGNAL4			
41	LED14.NAME2	LED47.NAME2	LOG3_ACT4			
42	LED14.NAME3	LED47.NAME3	LOG3_DYT4			
43	LED15.NAME1	LED48.NAME1	LOG3_OPERAND1			
44	LED15.NAME2	LED48.NAME2	LOG3_OPERAND2			
45	LED15.NAME3	LED48.NAME3	LOG3_OPERAND3			
46	LED16.NAME1	LED49.NAME1	LOG4_SIGNAL1			
47	LED16.NAME2	LED49.NAME2	LOG4_ACT1			
48	LED16.NAME3	LED49.NAME3	LOG4_DYT1			
49	LED17.NAME1	LED50.NAME1	LOG4_SIGNAL2			

D-Reg.	INITIAL3	INITIAL4	LOGIC SIG1	LOGIC SIG2		
	3000	3100	3200	3300		
50	LED17.NAME2	LED50.NAME2	LOG4_ACT2			
51	LED17.NAME3	LED50.NAME3	LOG4_DYT2			
52	LED18.NAME1	LED51.NAME1	LOG4_SIGNAL3			
53	LED18.NAME2	LED51.NAME2	LOG4_ACT3			
54	LED18.NAME3	LED51.NAME3	LOG4_DYT3			
55	LED19.NAME1	LED52.NAME1	LOG4_SIGNAL4			
56	LED19.NAME2	LED52.NAME2	LOG4_ACT4			
57	LED19.NAME3	LED52.NAME3	LOG4_DYT4			
58	LED20.NAME1	LED53.NAME1	LOG4_OPERAND1			
59	LED20.NAME2	LED53.NAME2	LOG4_OPERAND2			
60	LED20.NAME3	LED53.NAME3	LOG4_OPERAND3			
61	LED21.NAME1	LED54.NAME1	LOG5_SIGNAL1			
62	LED21.NAME2	LED54.NAME2	LOG5_ACT1			
63	LED21.NAME3	LED54.NAME3	LOG5_DYT1			
64	LED22.NAME1	LED55.NAME1	LOG5_SIGNAL2			
65	LED22.NAME2	LED55.NAME2	LOG5_ACT2			
66	LED22.NAME3	LED55.NAME3	LOG5_DYT2			
67	LED23.NAME1	LED56.NAME1	LOG5_SIGNAL3			
68	LED23.NAME2	LED56.NAME2	LOG5_ACT3			
69	LED23.NAME3	LED56.NAME3	LOG5_DYT3			
70	LED24.NAME1	LED57.NAME1	LOG5_SIGNAL4			
71	LED24.NAME2	LED57.NAME2	LOG5_ACT4			
72	LED24.NAME3	LED57.NAME3	LOG5_DYT4			
73	LED25.NAME1	LED58.NAME1	LOG5_OPERAND1			
74	LED25.NAME2	LED58.NAME2	LOG5_OPERAND2			
75	LED25.NAME3	LED58.NAME3	LOG5_OPERAND3			
76	LED26.NAME1	LED59.NAME1	LOG6_SIGNAL1			
77	LED26.NAME2	LED59.NAME2	LOG6_ACT1			
78	LED26.NAME3	LED59.NAME3	LOG6_DYT1			
79	LED27.NAME1	LED60.NAME1	LOG6_SIGNAL2			
80	LED27.NAME2	LED60.NAME2	LOG6_ACT2			
81	LED27.NAME3	LED60.NAME3	LOG6_DYT2			
82	LED28.NAME1	LED61.NAME1	LOG6_SIGNAL3			
83	LED28.NAME2	LED61.NAME2	LOG6_ACT3			
84	LED28.NAME3	LED61.NAME3	LOG6_DYT3			
85	LED29.NAME1	LED62.NAME1	LOG6_SIGNAL4			
86	LED29.NAME2	LED62.NAME2	LOG6_ACT4			
87	LED29.NAME3	LED62.NAME3	LOG6_DYT4			
88	LED30.NAME1	LED63.NAME1	LOG6_OPERAND1			
89	LED30.NAME2	LED63.NAME2	LOG6_OPERAND2			
90	LED30.NAME3	LED63.NAME3	LOG6_OPERAND3			
91	LED31.NAME1	LED64.NAME1				
92	LED31.NAME2	LED64.NAME2				
93	LED31.NAME3	LED64.NAME3				
94	LED32.NAME1	LED65.NAME1				
95	LED32.NAME2	LED65.NAME2				
96	LED32.NAME3	LED65.NAME3				
97	LED33.NAME1	LED66.NAME1				
98	LED33.NAME2	LED66.NAME2				
99	LED33.NAME3	LED66.NAME3				

SAMWONTECH CO,. LTD.

202-703, Buchon Techno-Park,
Yakdae-dong, Wonmi-gu, Buchon-si
Gyeonggi-do, Korea 420-773
TEL : +82-32-326-9120
FAX : +82-32-326-9119
Website : http://www.samwontech.com
e-mail : webmater@samwontech.com

Further information contact SAMWONTECH

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