

### Primary Temperature Module

Keys command:

1. Press "SET" to select
2. Press return key move to next operation mode
3. Up/Down arrow keys to adjust value or select type

Main Screen: SV = 50

Press return key and release

Operation Mode	Select type/value	Comment
r-S	Run	Run/Stop
SP	0	Decimal point position
AL1H	375	Upper alarm setting
AL1L	0	Lower alarm setting
LoC	OFF	Lock mode(lock all keys or only up/down arrow able to use)
Out1	- (read-only)	Heater output %
Out2	- (read-only)	Cooling output %

### Primary Temperature Module (continued)

Press and hold down "SET" for 5-sec

Operation Mode	Select type/value	Comment
InPt	J	Input type
tPUn	C	Temperature unit
tP-H	1200	Upper-limit range
tP-L	-100	Lower-limit temperature range
CTRL	PID	Control mode (ON/OFF, MANUAL, PID and PID PROG)
S-HC	H1C2	Output 1 is Heating and output 2 is Cooling
ALA1	6	Alarm operates when PV value is higher than AL1H setting or PV value is lower than AL1L setting
SALA	OFF	System alarm
CoSH	ON	Communication write function that able to use set point from software
C-SI	RTU	Format type
C-no	1	Communication address
bPS	9600	Communication baud rate
Len	8	Data length setting
PrtY	Even	Parity bit setting
StoP	1	Stop bit setting

### Primary Temperature Module (continued)

Press "SET" and release

Operation Mode	Select type/value	Comment
At	OFF	Auto Tuning ON/OFF
PID0	0	The 0 <sup>th</sup> PID Parameter
SV	0	The 0 <sup>th</sup> SV
P0	11.8	Proportional control
I0	375	Integral control
D0	93	Derivative control
IoF0	0	Integral value offset
HtPd	5	Heat cycle control
HcPd	5	Cool cycle control
CoEF	1	multiplier for cooling PID
dEAd	0	Dead band
tPoF	0	Inaccuracy adjustment

## TDM / MCM Module

Keys command:

1. Press "SET" to select
2. Press return key move to next operation mode
3. Up/Down arrow keys to adjust value or select type

Main Screen: SV = 0

Press return key and release

Operation Mode	Select type/value	Comment
r-S	Run	Run/Stop
SP	0	Decimal point position
LoC	OFF	Lock mode(lock all keys or only up/down arrow able to use)
Out1	- (read-only)	Motor output %

Press and hold down "SET" for 5-sec

Operation Mode	Select type/value	Comment
InPt	v5	Input type (v5 = 0-5V, v10 = 0-10V, nA0 = 0-20mA, nA4 = 4-20mA, nV = 0-50mV)
tP-H	2206	Upper-limit range
tP-L	0	Lower-limit temperature range
CTRL	PID	Control mode (ON/OFF, MANUAL, PID and PID PROG)
S-HC	Heat	Heat/Cool control
ALA1	0	Alarm mode
SALA	OFF	System alarm
CoSH	ON	Communication write function that able to use set point from software
C-SI	RTU	Format type
C-no	2	Communication address
bPS	9600	Communication baud rate
Len	8	Data length setting
PrtY	Even	Parity bit setting
StoP	1	Stop bit setting

### TDM / MCM Module (continued)

Press "SET" and release

Operation Mode	Select type/value	Comment
At	OFF	Auto Tuning ON/OFF
PID0	0	The 0 <sup>th</sup> PID Parameter
SV	0	The 0 <sup>th</sup> SV
P0	170	Proportional control
C0	1	Integral control
D0	0	Derivative control
CoF0	0	Integral value
HtPd	.5	Heat/Cool cycle control
tPoF	0	Inaccuracy adjustment

## Pressure Module

Keys command:

1. Press "SET" to select
2. Press return key move to next operation mode
3. Up/Down arrow keys to adjust value or select type

Main Screen: SV = 80% of span

Press return key and release

Operation Mode	Select type/value	Comment
r-S	Run	Run/Stop
SP	TBD [0 if psi] [1 if Bar] [2 if MPa]	Decimal point position
AL1H	0	Upper-limit alarm 1
LoC	OFF	Lock mode(lock all keys or only up/down arrow able to use)

## Pressure Module (continued)

Press and hold down “SET” for 5-sec

Operation Mode	Select type/value	Comment
InPt	V5	Input type (V5 = 0-5V, V10 = 0-10V, nA0 = 0-20mA, nA4 = 4-20mA, nV = 0-50mV)
tP-H	determined by transducer**	Upper-limit pressure range
tP-L	0	Lower-limit pressure range
CTRL	ON/OFF	Control mode (ON/OFF, MANUAL, PID and PIDPROG)
S-HC	Heat	Heat/Cool control
ALA1	2	Alarm operates when PV value is higher than SV Value + ALH setting
SALA	OFF	System alarm
CoSH	ON	Communication write function that able to use set point from software
C-SI	RTU	Format type
C-no	3	Communication address
bPS	9600	Communication baud rate
Len	8	Data length setting
PrtY	Even	Parity bit setting
StoP	1	Stop bit setting

\*\* Set tP-H according to the following:

Transducer range - psi	tP-H for psi	tP-H for Bar	tP-H for MPa
200	200	13.79	1.38
500	500	34.47	3.45
1000	1000	68.95	6.89
2000	2000	137.9	13.79
3000	3000	206.8	20.68
5000	5000	344.7	34.47

Press “SET” and release

Operation Mode	Select type/value	Comment
HtS	0	Heating hysteresis setting
tPoF	0	Temperature correction

## HTM / ETLM Module

Keys command:

1. Press "SET" to select
2. Press return key move to next operation mode
3. Up/Down arrow keys to adjust value or select type

Main Screen: SV = 375

Press return key and release

Operation Mode	Select type/value	Comment
r-S	Run	Run/Stop
SP	0	Decimal point position
AL1H	TBD [0 if HTM] [375 if ETLM]	Upper-limit alarm 1
AL1L	0	Lower-limit alarm 1
LoC	OFF	Lock mode(lock all keys or only up/down arrow able to use)
Out1	- (read-only)	Heater Output %

**Press and hold down "SET" for 5-sec**

Operation Mode	Select type/value	Comment
InPt	J	Input type
tPUn	C	Temperature unit
tP-H	1200	Upper-limit temperature range
tP-L	-100	Lower-limit temperature range
CTRL	ON/OFF	Control mode (ON/OFF, MANUAL, PID and PID PROG)
S-HC	Heat	Heat/Cool control
ALA1	TBD [2 if HTM] [6 if ETLN]	Alarm operates when PV value is higher than AL1H value
SALA	OFF	System alarm
CoSH	ON	Communication write function that able to use set point from software
C-SI	RTU	Format type
C-no	4	Communication address
bPS	9600	Communication baud rate
Len	8	Data length setting
PrtY	Even	Parity bit setting
StoP	1	Stop bit setting

**Press "SET" and release**

Operation Mode	Select type/value	Comment
HtS	0	Heating hysteresis setting
tPoF	0	Temperature correction

## MTM Module

Keys command:

1. Press "SET" to select
2. Press return key move to next operation mode
3. Up/Down arrow keys to adjust value or select type

Main Screen: SV = 100

Press return key and release

Operation Mode	Select type/value	Comment
r-S	Run	Run/Stop
SP	1	Decimal point position
LoC	OFF	Lock mode(lock all keys or only up/down arrow able to use)

Press and hold down "SET" for 5-sec

Operation Mode	Select type/value	Comment
InPt	v10	Input type (v5 = 0-5V, v10 = 0-10V, nA0 = 0-20mA, nA4 = 4-20mA, nV = 0-50mV)
tP-H	TBD [142.9 for 90VDC, 115V] [120.4 for 180VDC, 230V] [153.2 for 90VDC, 230V]	Upper-limit range
tP-L	0	Lower-limit temperature range
CTRL	ON/OFF	Control mode (ON/OFF, MANUAL, PID and PID PROG)
S-HC	Heat	Heat/Cool control
ALA1	0	Alarm mode
SALA	OFF	System alarm
CoSH	ON	Communication write function that able to use set point from software
C-SI	RTU	Format type
C-no	4	Communication address
bPS	9600	Communication baud rate
Len	8	Data length setting
PrtY	Even	Parity bit setting
StoP	1	Stop bit setting

MTM Module (continued)

Press "SET" and release

Operation Mode	Select type/value	Comment
HtS	0	Hysteresis
TPoF	0	Inaccuracy adjustment
CrHI	0	Analog output low
CrLo	0	Analog output high

### Analog Input Modules (0-5VDC, 0-10VDC, 4-20mA)

Keys command:

4. Press "SET" to select
5. Press return key move to next operation mode
6. Up/Down arrow keys to adjust value or select type

Main Screen: SV = 100

Press return key and release

Operation Mode	Select type/value	Comment
r-S	Run	Run/Stop
SP	1	Decimal point position
AL1H	100	Upper-limit alarm 1
AL1L	0	
LoC	OFF	Lock mode(lock all keys or only up/down arrow able to use)

### Analog Input Modules (continued)

Press and hold down "SET" for 5-sec

Operation Mode	Select type/value	Comment
InPt	TBD [V5 for 0-5VDC] [V10 for 0-10VDC] [nA4 for 4-20mA]	Input type (V5 = 0-5V, V10 = 0-10V, nA0 = 0-20mA, nA4 = 4-20mA, nV = 0-50mV)
tP-H	TBD [5.0 for 0-5VDC] [10.0 for 0-10VDC] [20.0 for 4-20mA]	Upper-limit sensor range
tP-L	TBD [0 for 0-5VDC] [0 for 0-10VDC] [4.0 for 4-20mA]	Lower-limit sensor range
CTRL	ON/OFF	Control mode (ON/OFF, MANUAL, PID and PIDPROG)
S-HC	Heat	Heat/Cool control
ALA1	0	Alarm mode (0 is disabled)
SALA	OFF	System alarm
CoSH	ON	Communication write function that able to use set point from software
C-SI	RTU	Format type
C-no	6	Communication address
bPS	9600	Communication baud rate
Len	8	Data length setting
PrtY	Even	Parity bit setting
StoP	1	Stop bit setting

Press "SET" and release

Operation Mode	Select type/value	Comment
HtS	0	Heating hysteresis setting
tPoF	0	Temperature correction