

# Communication protocol

## MTD-48

### 1.Details

(1) Communication based on Modbus RTU, support 03 read command, 06 and 10 write command

(2) Communication model: 2 wire system, half-duplex, single drop connection

(3) Communication speed: 2400, 4800, 9600, 19200 baud rate

(4) Data format: 1 start bit + 8 data bit + No parity bit + 1 stop bit

(5) Instrument support maximum 36 write command, support maximum 37 read command

### Communication Address

Name	Address (HEX)	Data range	Attribute	Decimal
Measured Value (PV)	0000H	FUL range	R	0, 1, 2, 3
OUTPUT1 Value	0001H	0-1000 (0-100.0%)	R	1
Alarm lamp (8 bits)	0002H	0: ON 1: OFF see *1	R	0
Spare address	0003H			
Spare address	0004H			
Set value (SV)	0005H	-1999-9999	R	0, 1, 2, 3
Spare address	0006H			
Auto tuning (AT)	0007H	0: No 1: Auto tuning	R/W	0
Alarm 1 (AL1)	0008H	-1999~9999	R/W	0, 1, 2, 3
Alarm 2 (AL2)	0009H	-1999~9999	R/W	0, 1, 2, 3
PV compensation (SC)	000AH	-199.9~199.9	R/W	0, 1, 2, 3
Spare address	000BH			
Proportional band P	000CH	0-200.0	R/W	1
Integral time I	000DH	0-3600	R/W	0
Derivative time d	000EH	0-200	R/W	0
Spare address	000FH			
Spare address	0010H			2
Proportioning cycle C Y T	0011H	0-100	R/W	0
Control Hysteresis H Y S	0012H	0-100.0	R/W	1
Spare address	0013H			
Spare address	0014H			
Spare address	0015H			
Spare address	0016H			
Spare address	0017H			
Spare address	0018H			
Spare address	0019H			
Spare address	<b>001AH</b>			

<b>PID reset windup</b>	<b>001BH</b>			
Spare address	<b>001CH</b>			
Spare address	<b>001DH</b>			
Spare address	<b>001EH</b>			
Spare address	<b>001FH</b>			
Spare address	<b>0020H</b>			
Spare address	<b>0021H</b>			
Spare address	<b>0022H</b>			
Data lock LCK	0023H	0-255	R/W	0
Main input type 1nP1	0024H	See *2	R/W	0
Decimal point dP (only for Analog input)	0025H	<b>0~3</b>	R/W	
Low setting Limiter LSPL	0026H	-1999~9999	R/W	0, 1, 2, 3
High setting limiter USPL	0027H	-1999~9999	R/W	0, 1, 2, 3
Display scale UNit	0028H	0: Centigrade, <b>3= no unit</b> 1: Fahrenheit	R/W	0
Spare address	0029H			
PV follow-up PV input filter PVFt	002AH	0-60	R/W	0
Spare address	002BH			
Spare address	002CH			
Spare address	002DH			
Spare address	002EH			
Alarm1 mode ALd1	002FH	0~16	R/W	0
Alarm1 differential gap AH1	0030H	0.0~100.0	R/W	1
Alarm2 mode ALd2	0031H	0~16	R/W	0
Alarm2 differential gap AH2	0032H	0.0~100.0	R/W	1
Spare address	0033H			
Spare address	0034H			
Control action for OUT1 OUD	0035H	0:Reverse action (Heating) 1: Direct action (Cooling)	R/W	0
Control output type OUt	0036H	0: Relay 1:SSR	R/W	0
Spare address	0037H			
SSR drive output method SSRM	0038H	0: Stand 1: CYCL 2: PHAS	R/W	0
Power frequency HZ	0039H	0: 50HZ 1: 60HZ	R/W	0
LBA monitoring time LbAt	003AH	0~9999 seconds	R/W	0
LBA monitoring range LbAb	003BH	0-9999	R/W	0

\*1 : Alarm lamp (8 bits) , Address: 0002H 0: ON 1: OFF

bit0: COM bit1:MAN bit2:AL3 bit3: AL2 bit4:AL1 bit5:AT bit6:OUT2 bit7:OUT1

\*2: Main input type InP1

INP1=	Input sign	Low range	High range	Scale
0	K	0	1300	°C
1	E	0	600	°C
2	J	0	800	°C
3	N	0	1300	°C
4	Wu3/Re25	0	2000	°C
5	S	0	1600	°C
6	T	0.0	400.0	°C
7	R	0	1700	°C
8	B	0	1800	°C
9	Pt100	-200	800	°C