SHIMADEN MR13/FP93

Please visit http://www.shimaden.co.jp for details of the product, this driver supports MR13, FP93 devices.

HMI Setting:

Parameters	Recommended	Options	Notes
PLC Type	SHIMADEN MR13/FP93		
COM Port	RS485		
Data Bits	7	7 or 8	
Stop Bits	1	1	
Baud Rate	9600	1200-19200	
Parity	E	None/Even	
PLC Station No.	**1**	**1~255**	
Start Character Mode	**Select 3：@_:_CR**	**0, 1 : STX_ETX_CR** **2 : STX_ETX_CR LF** **3 : @_:_CR**	**For FP93, select 0,1**
BCC Operation Method	**Select 3：XOR**	**0, 1 : Addition** **2 : Addition +2's complement** **3 : XOR** **4 : None**	

Note：

Address 018C is a communication control register, only when it is set to 1 can this register be allowed to write to other registers.

Device Address:

Bit/Word	Device Type	Format	Range	Memo
Word	Address_CH1	HHH	0-FFFF	Read/Write 1st Channel Register
Word	Address_CH2	HHH	0-FFFF	Read/Write 2nd Channel Register
Word	Address_CH3	HHH	0-FFFF	Read/Write 3rd Channel Register

Wiring Diagram:

weinview MT8000 HMI
PLC[485] 9P D-SUB

MR13/FP93
RS-485

COM1		COM3	
1	RX-	6	Data-
2	RX+	9	Data+
5	GND	5	GND

25	-
24	+
23	GND

MR13 Communication Parameter Settings

Data Address (hex)	Parameter	Details of Parameter	R /W (Read/ Write)
0100	PV Value	Within measuring range	R
0101	E_SV Execution SV Value	Within setting range	R
0102	OUT Control Output Value	Within range 0.0～100.0%	R
0103	Reserved		
0104	Action Flag	（See detailed explanation below.）	R
0105	Event Output Flag	（See detailed explanation below.）	R
0106	Reserved		
0107	Reserved		
0108	REM Value	Within setting range	R
0109	Reserved		
010A	Reserved		
010B	DI Input State Flag	（See detailed explanation below.）	R

Data Address (hex)	Parameter	Details of Parameter	R /W (Read/ Write)
0111	RANGE	Refer to the measuring range code list.	R

Data Address (hex)	Parameter	Details of Parameter	R/W (Read/Write)
0112	Reserved		
0113	DP Decimal Point	Position of decimal point（0:Without decimal point 1:With decimal point）	R
0114	PV Sc_L　Lower Limit	For Linear Imput:-1999～9999 unit	R
0115	PV Sc_H　Higher Limit	For Thermocouple, and RTD Input: Measuring range to be displayed.	R

Data Address (hex)	Parameter	Details of Parameter	R/W (Read/Write)
0120	E_PRG	Program Action Flag	R
0121	Reserved		
0122	Reserved		
0123	E_PRT	The number of execution patterns （When program is reset, value=7FFEH）	R
0124	E_STP	Execution step number （When program is reset, value=7FFEH）	R
0125	E_TIM	Remaining time of execution step （When program is reset, value=7FFEH）	R
0126	E_PID	Execution PID number （When program is reset, value=7FFEH）	R

Data Address (hex)	Parameter	Details of Parameter	R/W (Read/Write)
0184	AT　Auto Tuning	0:No execution　　　1:Execution	W

018C	Operation	0:Local　　1:COM	W

0190	PROG RUN/RST Program Run/Reset	0：RST, 1：RUN （Writing is possible only in CH1）	W

0191	PROG HLD Program Hold	0：Release, 1：HLD （Writing is possible only in CH1）	W

0300	SV	Local SV Value, within set value limiter	R/W

Data Address (hex)	Parameter	Details of Parameter	R/W (Read/Write)
030A	SV Limt_L　Lower Limit	Within measuring range,	R/W

030B	SV Limt_h Higher Limit	On condition that SV Limt_L<SV Limt_H	

0314	REM SC_L	Within measuring range	R/W
0315	REM SC_H	On condition that REM SC_L≠REM SC_H	
0316	REM Bias	Range: -1999～5000 unit	R/W
0317	REM Filt	Range: 0～100 seconds	R/W

031A	REM-CH	Remote channel assignment 0：OFF，1：CH1，2：CH2，3：CH3	R/W

Data Address (hex)	Parameter	Details of Parameter	R/W (Read/ Write)
0320	SV Follow SW	CH2 & CH3 SV follow setting flag 1: Follow 0:No	R/W
0321	SV Follow	Follow type deviation SV set value: 1999～5000 unit	R/W

0400	FIX P	Control Output Proportional Baud Range: 0.0～999.9%（0.0:OFF)	R/W
0401	FIX I	Control Output Integral Time Range: 0～6000 Seconds (0.0:OFF)	R/W
0402	FIX D	Control Output Derivative Time Range 0～3600 Seconds (0.0:OFF)	R/W
0403	FIX MR	Manual Reset Range: -50.0～50.0%	R/W
0404	FIX DF	Hysteresis Range: 1～999 unit	R/W
0405	FIX OUT Limt_L	Control Output Lower Limit Output Limiter Range: 0.0～99.9%	R/W
0406	FIX OUT Limt_H	Control Output Higher Limit Output Limiter Range: 0.1～100.0%	R/W
0407	FIX SF	Control Output Target Value Function Range: OFF，0.01～1.00	R/W
0408	Prog P1	PROG mode PB1 Range: 0.0～999.9% (0.0:OFF)	R/W
0409	Prog I1	PROG mode IT1 Range: 0～6000 seconds (0.0:OFF)	R/W
040A	Prog D1	PROG mode DT1 Range: 0～3600 seconds (0.0:OFF)	R/W
040B	Prog MR1	PROG mode MR1 Range: -50.0～50.0%	R/W
040C	Prog DF1	PROG mode DF1 Range: 1～999 unit	R/W

040D	Prog O_Lmt_L1	PROG mode lower limit side output limiter 1 Range: 0.0〜99.9%	R/W
040E	Prog O_Lmt_H1	PROG mode higher limit side output limiter 1 Range: 0.1〜100.0%	R/W
040F	Prog SF1	PROG mode target value function 1 Range: OFF,0.01〜1.00	R/W
0410	Prog P2	PROG mode PB2 Range: 0.0〜999.9% (0.0:OFF)	R/W
0411	Prog I2	PROG mode IT2 Range: 0〜6000 seconds　(0.0:OFF)	R/W
0412	Prog D2	PROG mode DT2 Range: 0〜3600 seconds　(0.0:OFF)	R/W
0413	Prog MR2	PROG mode MR2 Range: -50.0〜50.0%	R/W
0414	Prog DF2	PROG mode DF2 Range: 1〜999 unit	R/W
0415	Prog O_Lmt_L2	PROG mode lower limit side output limiter 2 Range: 0.0〜99.9%	R/W
0416	Prog O_Lmt_H2	PROG mode higher limit side output limiter 2 Range: 0.1〜100.0%	R/W
0417	Prog SF2	PROG mode target value function 2 Range: OFF,0.01〜1.00	R/W
0418	Prog P3	PROG mode PB3 Range: 0.0〜999.9% (0.0:OFF)	R/W
0419	Prog I3	PROG mode IT3 Range: 0〜6000 seconds　(0.0:OFF)	R/W
041A	Prog D3	PROG mode DT3 Range: 0〜3600 seconds　(0.0:OFF)	R/W
041B	Prog MR3	PROG mode MR3 Range: -50.0〜50.0%	R/W
041C	Prog DF3	PROG mode DF3 Range: 1〜999 unit	R/W
041D	Prog O_Lmt_L3	PROG mode lower limit side output limiter 3 Range: 0.0〜99.9%	R/W
041E	Prog O_Lmt_H3	PROG mode higher limit side output limiter 3 Range: 0.1〜100.0%	R/W
041F	Prog SF3	PROG mode target value function 3 Range: OFF,0.01〜1.00	R/W

0500	EV1_MODE	0:Not assigned 1:Higher limit deviation value 2:Lower limit deviation value 3:Out of range between higher & lower limits 4:Within range between higher & lower limits 5:Higher limit absolute value	R/W

		6:Lower limit absolute value 7:Scaleover　　　　　　8:Program RUN 9:Program END　　　　10:Program STEP Only when Subaddress=EV1_CH.	
0501	EV1 Set Point	1. Higher limit deviation value alarm: 0～1999 unit 2. Lower limit deviation value alarm: 0～-1999 unit 3. Out of range between higher & lower limits value alarm: 0～1999 unit 4. Within range between higher and lower limits value alarm: 0～1999 unit 5. Higher limit absolute value alarm: Within measuring range 6. Lower limit absolute value alarm: Within measuring range Only when Subaddress=EV1_CH.	R/W
0502	EV1 Diffrnt	Alarm hysteresis 1～999 unit Only when Subaddress=EV1_CH.	R/W
0503	EV1 Inhibit	Alarm stand by 1～4 Only when Subaddress=EV1_CH.	R/W
0504	EV1 Delay	Alarm delay time 0～9999 seconds Only when Subaddress=EV1_CH.	R/W

0506	EV1_CH	Channel number setting 1:CH1, 2:CH2, 3:CH3	R/W

0510	EV2_MODE	0:Not assigned 1:Higher limit deviation value 2:Lower limit deviation value 3:Out of range between higher & lower limits 4:Within range between higher & lower limits 5:Higher limit absolute value 6:Lower limit absolute value 7:Scaleover　　　　　　8:Program RUN 9:Program END　　　　10:Program STEP Only when Subaddress=EV2_CH.	R/W
0511	EV2 Set Point	1. Higher limit deviation value alarm: 0～1999 unit 2. Lower limit deviation value alarm: 0～-1999 unit 3. Out of range between higher & lower limits value alarm: 0～1999 unit	R/W

		4. Within range between higher and lower limits value alarm: 0～1999 unit 5. Higher limit absolute value alarm: Within measuring range 6. Lower limit absolute value alarm: Within measuring range Only when Subaddress=EV2_CH.	
0512	EV2 Diffrnt	Alarm hysteresis 1～999 unit Only when Subaddress=EV2_CH.	R/W
0513	EV2 Inhibit	Alarm stand by 1～4 Only when Subaddress=EV2_CH.	R/W
0514	EV2 Delay	Alarm delay time 0～9999 seconds Only when Subaddress=EV2_CH.	R/W

0516	EV2_CH	Channel number setting 1:CH1, 2:CH2, 3:CH3	R/W

0520	EV3_MODE	0:Not assigned 1:Higher limit deviation value 2:Lower limit deviation value 3:Out of range between higher & lower limits 4:Within range between higher & lower limits 5:Higher limit absolute value 6:Lower limit absolute value 7:Scaleover 8:Program RUN 9:Program END 10:Program STEP Only when Subaddress=EV3_CH.	R/W
0521	EV3 Set Point	1. Higher limit deviation value alarm: 0～1999 unit 2. Lower limit deviation value alarm: 0～-1999 unit 3. Out of range between higher & lower limits value alarm: 0～1999 unit 4. Within range between higher and lower limits value alarm: 0～1999 unit 5. Higher limit absolute value alarm: Within measuring range 6. Lower limit absolute value alarm: Within measuring range Only when Subaddress=EV3_CH	R/W
0522	EV3 Diffrnt	Alarm hysteresis 1～999 unit Only when Subaddress=EV3_CH.	R/W
0523	EV3 Inhibit	Alarm stand by 1～4 Only when Subaddress=EV3_CH.	R/W
0524	EV3 Delay	Alarm delay time 0～9999 seconds	R/W

		Only when Subaddress=EV3_CH.	

0526	EV3_CH	Channel number setting 1:CH1, 2:CH2, 3:CH3	R/W

0580	DI	DI setting flag 0:NON 1:FLW 2:RUN 3:HLD 4:ADV	R/W

05B0	MEM	1:EEP Program Memory 0:RAM Random Memory	R/W

0600	Out Actn	Output characteristic setting flag 0:Rev Act. 1:Dir Act	R/W
0601	Out Cyc	Control output cycle (Unit:0.5 seconds) Range: 0.5～120.0 seconds	R/W
0602	Reserved		
0603	SOFTSW	Soft start setting flag 0:OFF 1:ON	

0610	AT Point	AT pointer Range: 0～5000 unit	R/W
0611	Key Lock	0:OFF 1:LOCK1 2:LOCK2 3:LOCK3	R/W

● When Out_Cyc is written, writing data is adjusted to 0.5 sec as one unit.

● The write command lock by keylock is the same as the screen lock. (Refer to the manual of the instrument.)

● If there is a change in EV1_CH,EV2_CH,EV3_CH, the related parameters are initialized.

0701	PV Bias	PV bias Range: -1999～1999 unit	R/W
0702	PV Filt	PV filter Range: 0～100 seconds	R/W

0710	PFLW	Setting of CH2, CH3 PV input follow 0:OFF 1:ON	R/W
0711	CH_P	Selection of CH2, CH3 PV display or not 0-0 Window 0: Without 1: With	R/W

0800	FP_MOD	Selection between FIX and PROG 0:FIX 1:PROG (Writing possible only in CH1)	R/W
0801	PV_ST	Setting of PV start 0:OFF 1:ON (Writing possible only in CH1)	R/W

0882	STP	The number of steps 1～9 (Writing possible only in CH1)	R/W
0883	RPT	The number of execution repetitions 1～9999 (Writing possible only in CH1)	R/W
0884	ST_SV	Start SV　(Writing possible only in CH1)	R/W

● For CH1, PFLW (window 1~30), CH_P (window1-29）display- - - -.The read value is: 7FFEH,
   To a write command, error（0BH）is returned.

08A0	Step1 SV	Step No. 1 SV Value (Writing possible only in CH1)	R/W
08A1	Step1 Time	Step No. 1 Step Time (Writing possible only in CH1)	R/W
08A2	Step1 PID No	Step No. 1 PID No.	R/W
08A3	Reserved		
08A4	Step2 SV	Step No. 2 SV Value (Writing possible only in CH1)	R/W
08A5	Step2 Time	Step No. 2 Step Time (Writing possible only in CH1)	R/W
08A6	Step2 PID No	Step No. 2 PID No.	R/W
08A7	Reserved		
08A8	Step3 SV	Step No. 3 SV Value (Writing possible only in CH1)	R/W
08A9	Step3 Time	Step No. 3 Step Time (Writing possible only in CH1)	R/W
08AA	Step3 PID No	Step No. 3 PID No.	R/W
08AB	Reserved		
08AC	Step4 SV	Step No. 4 SV Value (Writing possible only in CH1)	R/W
08AD	Step4 Time	Step No. 4 Step Time (Writing possible only in CH1)	R/W
08AE	Step4 PID No	Step No. 4 PID No.	R/W
08AF	Reserved		
08B0	Step5 SV	Step No. 5 SV Value (Writing possible only in CH1)	R/W
08B1	Step5 Time	Step No. 5 Step Time (Writing possible only in CH1)	R/W
08B2	Step5 PID No	Step No. 5 PID No.	R/W
08B3	Reserved		
08B4	Step6 SV	Step No. 6 SV Value (Writing possible only in CH1)	R/W
08B5	Step6 Time	Step No. 6 Step Time (Writing possible only in CH1)	R/W

08B6	Step6 PID No	Step No. 6 PID No.	R/W
08B7	Reserved		
08B8	Step7 SV	Step No. 7 SV Value (Writing possible only in CH1)	R/W
08B9	Step7 Time	Step No. 7 Step Time (Writing possible only in CH1)	R/W
08BA	Step7 PID No	Step No. 7 PID No.	R/W
08BB	Reserved		
08BC	Step8 SV	Step No. 8 SV Value (Writing possible only in CH1)	R/W
08BD	Step8 Time	Step No. 8 Step Time (Writing possible only in CH1)	R/W
08BE	Step8 PID No	Step No. 8 PID No.	R/W
08BF	Reserved		
08C0	Step9 SV	Step No. 9 SV Value (Writing possible only in CH1)	R/W
08C1	Step9 Time	Step No. 9 Step Time (Writing possible only in CH1)	R/W
08C2	Step9 PID No	Step No. 9 PID No.	R/W