

MW10E Product Description

I. Product Overview

- Built-in high-performance, low-power microprocessor
- Peripheral features
 - Supports 0-20mA/4-20mA and 0-5V/10VDC dual setpoint
 - Two digital switch inputs
- Wide range main circuit input voltage (AC110-440V)
- Efficient heat dissipation design for compact size and light weight
- True RMS current/voltage detection (extension module)

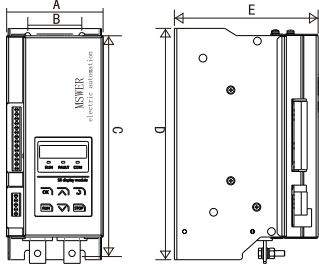
- Practical alarm functions
 - Phase loss
 - Overheat
 - Overcurrent
 - Load disconnection

- One relay output
 - 3A AC250V
 - 3A DC30V
- Maximum current 800A

- Modbus-RTU for centralized control, expandable to Profibus DP.

- Modbus TCP/IP (Extension module)

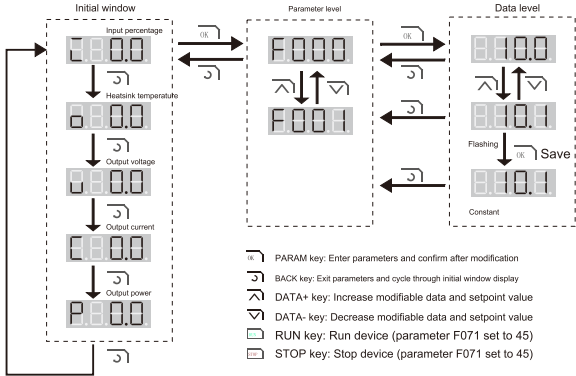
II. Installation Dimensions



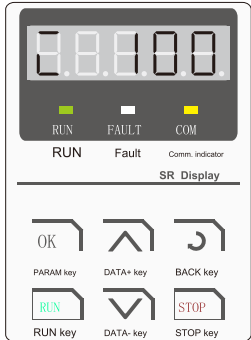
Rating (A)	A	B	C	D	E	Mounting bolt
10-170	106	60	240	255	158	M6
200-320	135	80	280	295	207	M6
450-600	200	120	460	480	225	M8
800	185	120	460	480	225	M8
1000	240	120	750	770	351	M8
1500	250	170	976	998	363	M8

(Unit: mm)

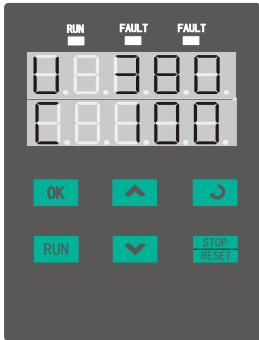
III. Keyboard Operation



- PARAM key: Enter parameters and confirm after modification
- BACK key: Exit parameters and cycle through initial window display
- DATA+ key: Increase modifiable data and setpoint value
- DATA- key: Decrease modifiable data and setpoint value
- RUN key: Run device (parameter F071 set to 45)
- STOP key: Stop device (parameter F071 set to 45)

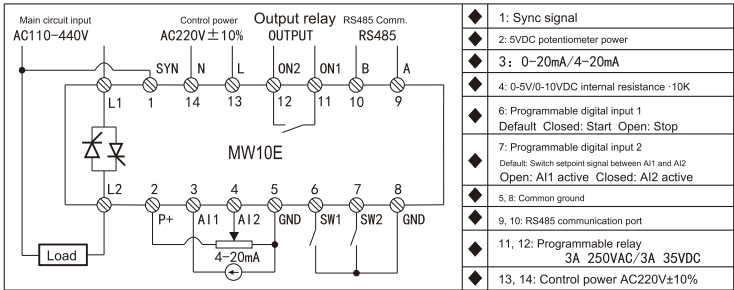


Display panel



External display panel

IV. Terminal Description



V. Communication

MW10E series power regulators support Modbus-RTU communication

- ▶ protocol: Function codes: Supports 3, 4, 6, 16 (four function codes)
- ▶ Baud rate: Supports 2400 4800 9600 19200 38400
- ▶ Data format: 8n2, 8e, 8o1, 8n1 (four types)
- ▶ Station address: 1-247
- ▶ Register type: 16-bit unsigned

Note: Each frame cannot exceed 20 bytes, so max 10 parameters per frame. Decimals not supported; to write 56.7,
first adjust to integer 567 then write. Host register address starts from 1, register No. needs +1, e.g., F004 register No. _____

should be filled as 5.

- ▶ Read holding register frame format

0	1	2	3	4	5	6	7
Device Address	03H	Parameter Address H	Parameter Address L	Reg. Reg. count H	Reg. Reg. count L	CRC L	CRC H

- ▶ Preset single register frame format

0	1	2	3	4	5	6	7
Device Address	06H	Parameter Address H	Parameter Address L	Data H	Data L	CRC L	CRC H

The following are concise operating parameters. R = read-only, RW = read/write. Modify parameters only when stopped.

Param. No.	Description	Range	Factory Value	Attribute & Permission	Register No.
F-000	Setpoint value total	0-100.0 [%] 0.1%	0	r	0
F-004	Output voltage	0-3000.0 [V] 0.1V	0	r	4
F-005	Output current	0-3000.0 [A] 0.1A	0	r	5
F-006	Output power	0-3000.0 [KW] 0.1KW	0	r	6
F-017	Current fault value Current fault code value, corresponds to fault code table	0-100	0	r	17
F-030	Communication setpoint register Communication setpoint value written to this parameter	0-100.0 [%] 0.1%	0	r/w	30
F-055	Menu permission 0: Display read-only parameters only 35: Display simple application and read-only parameters	0-30000	0	r/w	55
F-061	Setpoint signal type 50: Analog 51: Digital	23-36	50	r/w	61
F-065	Digital setpoint type 0: Keyboard 1: Communication	0-1	0	r/w	65
F-066	Digital setpoint power-off save 0: Save 1: No save	0-1	1	r/w	66
F-067	Setpoint minimum setting	0-100.0 [%] 0.1%	0	r/w	67
F-068	Setpoint maximum setting	0-100.0 [%] 0.1%	100.0	r/w	68
F-069	Setpoint ramp-up time	0-120	2	r/w	69
F-070	Setpoint ramp-down time	0-120	2	r/w	70
F-071	Start/Stop signal source 36: SW1 45: Keyboard	/	36	r/w	71
F-077	Rated voltage Same as nameplate, can be modified according to actual load, to achieve the purpose of protecting equipment. Note: Must not exceed nameplate rated value	110-440V [V] 1V	380	r/w	77
F-081	Rated current Same as nameplate, can be modified according to actual load, to achieve the purpose of protecting equipment. Note: Must not exceed nameplate rated value	0-3000A [A] 1A	Same as nameplate	r/w	81
F-086	Closed-loop type 7: Constant voltage 8: Constant current 9: Constant power	0-19	7	r/w	86
F-097	A11 signal type 0: 0-20mA 1: 4-20mA 2: Combined slope	0-2	1	r/w	97
F-099	A12 signal type 0: 0-5V 1: 0-10V	0-1	1	r/w	99
F-111	Control mode 0: Open loop 1: Closed loop	0-1	1	r/w	111
F-114	Trigger mode 0: Phase shift 1: Zero-crossing trigger	0-1	0	r/w	114
F-125	Previous fault type	0-100	0	r	125
F-127	Power fault protection 0: Disable 1: Alarm 2: Alarm+Relay 3: Alarm+Relay+Shutdown	0-3	2	r/w	127
F-128	Load fault protection 0: Disable 1: Alarm 2: Alarm+Relay 3: Alarm+Relay+Shutdown	0-3	0	r/w	128
F-129	Load disconnection threshold Calculation formula see Section 7.1 Fault Table E004	10-70 [%] 1%	70	r/w	129
F-133	Device slave address This parameter sets the Modbus address	1-247	123	r/w	133
F-134	Baud rate 0: 2400 1: 4800 2: 9600 3: 19200 4: 38400	0-4	2	r/w	134
F-135	Data format 0: 8n2 8 data bits, no parity, 2 stop bits 1: 8e1 8 data bits, even parity, 1 stop bit 2: 8o1 8 data bits, odd parity, 1 stop bit 3: 8n1 8 data bits, no parity, 1 stop bit	0-3	1	r/w	135

VII. Fault and Maintenance

7. 1 Fault Table

Fault code	Description
E-002	Main power fault, possible causes: 1. Main circuit input voltage abnormal or inconsistent with nameplate. 2. Terminal 1 not connected to sync line, refer to wiring diagram.
E-003	Overcurrent, detected current >1.25x rated current, alarm activated. Possible causes: 1. Load suddenly reduced or short circuit 2. Thyristor damaged.
E-004	Load disconnection, actual current < setpoint%*rated current*load threshold, alarm activated. Possible fault causes: 1. Load disconnected 2. Load current too low 3. Load disconnection threshold (F-129) set too high.
E-005	Regulator overheat, heatsink temperature >85°C detected, alarm activated. Possible causes: 1. Ambient temperature above 45°C 2. Fan damaged 3. Air duct dust accumulation
E-009	Regulator overload, load current exceeds regulator rated current
E-010	Thyristor damaged, thyristor damage detected and alarm activated.

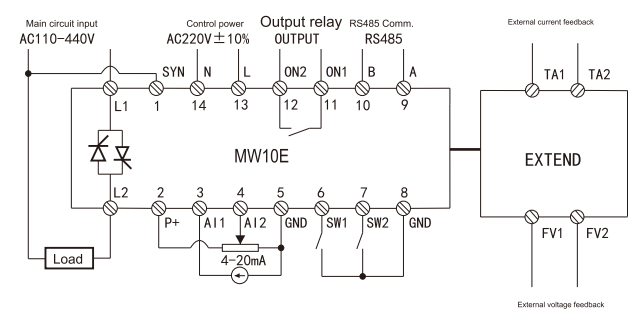
7. 2 Maintenance and Care

Due to the effects of temperature, humidity, dust, vibration in the operating environment, and aging of internal components, may cause device failure. Regular maintenance is required. Users can schedule inspections every 3-6 months to inspect and maintain the device. Check the following:

1. Main circuit terminal connections are reliable.
2. Circuit board, air duct, and cooling fan dust must be thoroughly cleaned.
3. The regulator should be powered on once every 3 months if not used for extended periods.
4. Storage location should avoid high temperature, humidity, and metal dust.
7. 3 Repair/Spare Parts
1. For repairs, please contact Maiswer after-sales service center
2. For spare parts, please contact Maiswer after-sales service center.

In practical applications of power regulators, some users prefer external voltage/current feedback to suit their own usage method.

External voltage/current feedback wiring example



8.2 Profibus DP

Standard Profibus DP communication protocol, supports max baud rate 12M, auto-adaptive baud rate. Supports 20 slots sufficient for device parameter read/write operations. Device address is set in F-035. COM indicator on display panel flashes when communication is normal.

The table below shows the correspondence between parameter numbers and register numbers. See parameter table for register RW attributes:

Param. No.	Register No.	Param. No.	Register No.	Param. No.	Register No.
F-000	0	F-004	4	F-008	8
F-001	1	F-005	5	F-009	9
F-002	2	F-006	6	F-0..	..
F-003	3	F-007	7	F-058	58

8.3 Load Protection Extension

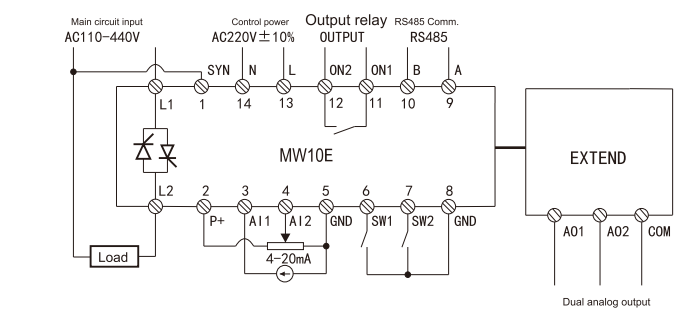
Load protection function calculates load resistance (F018) through real-time voltage/current feedback during controller operation, and by setting resistance values, comparing resistance status and triggering alarm (E-04) in time.

Param. No.	Description	Range	Factory Value	Visible/Changeable
F-018	Load resistance monitoring value	—	—	F-055=0 R
F-142	Load resistance setpoint value	0-100.00	—	F-055=0 R
F-143	Load resistance high alarm value	0-200.00	—	F-055=0 R
F-144	Load resistance low alarm value	0-100.00	—	F-055=0 R

8.4 Analog Output

With the continuous development of industrial control facilities, some control systems require regulators to provide analog output as feedback or other signals, such as DCS, etc.

Analog output wiring example



Related parameter description:

Param. No.	Description	Range	Factory Value	Visible/Changeable
F-103	AO1 analog output signal source 0: Input percentage 2: Output percentage 4: Output voltage 5: Output current 6: Output power	0-19	0	F-055=66 R
F-105	AO1 signal type 0: 0-20mA 1: 4-20mA	0-1	1	F-055=66 R
F-106	AO2 analog output signal source 0: Input percentage 2: Output percentage 4: Output voltage 5: Output current 6: Output power	0-19	0	F-055=66 R
F-108	AO2 signal type 0: 0-20mA 1: 4-20mA	0-1	1	F-055=66 R

IX. Ordering Code

MW10E

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Single-phase Power Regulator

Rated current (A)

Options

Options: P Profibus DP
C MODBUS TCP/IP
R TRMS True RMS
ED External display extension
EF External feedback extension