

## M-7000 Address Mapping

### M-7005

Address	Description	Attribute
00001 ~ 00006	Digital output value of channel 0 to 5	R/W
00097 ~ 00102	Safe value of digital output channel 0 to 5	R/W
00193 ~ 00198	Power-on value of digital output channel 0 to 5	R/W
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W
00261	1: enable, 0: disable host watchdog	R/W
00267	Temperature scale, 1: Celsius, 0: Fahrenheit	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00272	Write 1 to load factory calibration parameters	W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
00289 ~ 00296	Write 1 to clear low latched alarm of channel 0 to 7	W
00305 ~ 00312	Write 1 to clear high latched alarm of channel 0 to 7	W
00321 ~ 00328	Enable/disable high alarm of channel 0 to 7	R/W
00329 ~ 00336	Enable/disable low alarm of channel 0 to 7	R/W
00337 ~ 00344	High alarm type of channel 0 to 7, 0: latched, 1: momentary	R/W
00345 ~ 00352	Low alarm type of channel 0 to 7, 0: latched, 1: momentary	R/W
10129 ~ 10136 00129 ~ 00136	Over/under range status of channel 0 to 7	R
30001 ~ 30008 40001 ~ 40008	Analog input value of channel 0 to 7	R

Address	Description	Attribute																				
40225 ~ 40232	High alarm limit of channel 0 to 7	R/W																				
40233 ~ 40240	Low alarm limit of channel 0 to 7	R/W																				
40257 ~ 40262	Type code of channel 0 to 7	R/W																				
40289 ~ 40294	Temperature offset of channel 0 to 7 in 0.1°C, valid range: -128 ~ 127	R/W																				
40321 ~ 40328	High alarm DO port of channel 0 to 7	R/W																				
40329 ~ 40336	Low alarm DO port of channel 0 to 7	R/W																				
40385 ~ 40390	Resistance offset of channel 0 to 7 in 0.1 ohms, valid range: 0 ~ 255	R/W																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A <table border="1" data-bbox="407 1050 1068 1203"> <tbody> <tr> <td>Code</td> <td>0x03</td> <td>0x04</td> <td>0x05</td> <td>0x06</td> </tr> <tr> <td>Baud</td> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> </tr> <tr> <td>Code</td> <td>0x07</td> <td>0x08</td> <td>0x09</td> <td>0x0A</td> </tr> <tr> <td>Baud</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </tbody> </table> Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	Code	0x03	0x04	0x05	0x06	Baud	1200	2400	4800	9600	Code	0x07	0x08	0x09	0x0A	Baud	19200	38400	57600	115200	R/W
Code	0x03	0x04	0x05	0x06																		
Baud	1200	2400	4800	9600																		
Code	0x07	0x08	0x09	0x0A																		
Baud	19200	38400	57600	115200																		
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				
40513 ~ 40520	Steinhart Coefficient A of type code 70 to 77	R/W																				
40545 ~ 40552	Steinhart Coefficient B of type code 70 to 77	R/W																				
40577 ~ 40584	Steinhart Coefficient C of type code 70 to 77	R/W																				

**M-7011**

Address	Description	Attribute
30001 40001	Analog input value of channel 0	R
30129 40129	CJC temperature in 0.01C	R
30097 40097	Counter value of DI 0	R
40225 ~ 40226	Low/high alarm limits	R/W
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	Module address	R/W
40486	Baud rate	R/W
40487	Type code	R/W
40488	Modbus response delay time in ms	R/W
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W
40491	Module CJC offset in 0.01C	R/W
40492	Host watchdog timeout count, write 0 to clear	R/W
40495	LED mode, 1: controlled by module, 2: controlled by host (for M-7011D only)	R/W
40496	LED data for host control mode, valid ranges: -19999 ~ + 19999 (for M-7011D only)	W
10001 00001	Digital input channel 0	R
10129 00129	1: thermocouple open wire	R
00033 ~	Digital outputs	R/W
00097 ~	Safe values of digital outputs	R/W
00193 ~	Power on values of digital outputs	R/W
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W
00261	1: enable, 0: disable host watchdog	R/W
00262	1: enable, 0: disable alarm	R/W
00263	1: latch, 0: momentary alarm	R/W
00264	1: clear latch alarm	W
00266	1: clear counter	W
00268	1: enable, 0: disable CJC offset	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W

00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00273	Reset status, 1: first read after power d on, 0: not the first read after powered on	R
00276	Open wire detection, 1: enable, 0: disable	R/W

### M-7015/M-7015P (firmware version B202 and later)

Address	Description	Attribute																				
10129 ~ 10134 00129 ~ 00134	Over/under range status of channel 0 to 5	R																				
30001 ~ 30006 40001 ~ 40006	Analog input value of channel 0 to 5	R																				
40257 ~ 40262	Type code of channel 0 to 5	R/W																				
40289 ~ 40294	Temperature offset of channel 0 to 5 in 0.1°C, valid range: -128 ~ 127	R/W																				
40385 ~ 40390	Resistance offset of channel 0 to 5 in 0.1 ohms, valid range: 0 ~ 255	R/W																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A <table border="1" data-bbox="406 1092 1068 1249"> <tbody> <tr> <td>Code</td> <td>0x03</td> <td>0x04</td> <td>0x05</td> <td>0x06</td> </tr> <tr> <td>Baud</td> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> </tr> <tr> <td>Code</td> <td>0x07</td> <td>0x08</td> <td>0x09</td> <td>0x0A</td> </tr> <tr> <td>Baud</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </tbody> </table> Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	Code	0x03	0x04	0x05	0x06	Baud	1200	2400	4800	9600	Code	0x07	0x08	0x09	0x0A	Baud	19200	38400	57600	115200	R/W
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Baud	1200	2400	4800	9600																		
Code	0x07	0x08	0x09	0x0A																		
Baud	19200	38400	57600	115200																		
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				

Address	Description	Attribute
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W
00261	1: enable, 0: disable host watchdog	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00272	Write 1 to load factory calibration parameters	W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
00275	1: force to return 32767 for wire opening	R/W

Notes:

1. The max number of analog output registers written in a command is 11.
2. The command of loading factory calibration parameters takes about 3 seconds. The next command should be sent after 3 seconds.

**M-7016**

Address	Description	Attribute
30001 40001	Analog input value of channel 0	R
30002 40002	Analog input value of channel 1	R
30097 40097	Counter value of digital input	R
40033	Output value of excitation voltage, 0 ~ 10000	R/W
40193	Power on value of excitation voltage, 0 ~ 10000	R/W
00001	Digital input value of channel 0	R
00033	Digital output value of channel 0	R/W
00034	Digital output value of channel 1	R/W
00035	Digital output value of channel 2	R/W
00036	Digital output value of channel 3	R/W
00097	Safe value of digital output channel 0	R/W
00098	Safe value of digital output channel 1	R/W
00099	Safe value of digital output channel 2	R/W
00100	Safe value of digital output channel 3	R/W
00193	Power on value of digital output channel 0	R/W
00194	Power on value of digital output channel 1	R/W
00195	Power on value of digital output channel 2	R/W
00196	Power on value of digital output channel 3	R/W
40161	S1 value of linear mapping	R/W
40162	S2 value of linear mapping	R/W
40163	T1 value of linear mapping	R/W
40164	T2 value of linear mapping	R/W
40225	Low limit of alarm value	R/W
40226	High limit of alarm value	R/W
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	Module address (1 ~ 247)	R/W
40486	Baud rate (3 ~ 10)	R/W
40487	Type code (0 ~ 6)	R/W
40488	Response delay time (0 ~ 30)	R/W
40489	Host watchdog timeout time in 100ms (0 ~ 255)	R/W
40490	Channel mode, 0: channel 0, 1: channel 1, 2: 2-channel mode	R/W
40492	Host watchdog timeout count, write 0 to clear	R/W
40495	LED control mode, 1: module, 2: host	R/W
40496	LED data in host control mode, -19999 ~ +19999, read as 0	W
00257	Protocol selection, 0: DCON, 1: Modbus RTU	R/W
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W

00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W
00261	Host watchdog, 0: disable, 1: enable	R/W
00262	Alarm, 0: disable, 1: enable	R/W
00263	Alarm type, 0: momentary, 1: latched	R/W
00264	1 to clear latched alarm	W
00265	Linear mapping, 0: disable, 1: enable	R/W
00266	1 to clear counter	W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watchdog timeout status, write 1 to clear host watch dog timeout status	R/W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R



**M-7017/M-7017R/M-7017C/M-7017RC/M-7017R-A5 (firmware version B300 and later)**

Address	Description	Attribute																				
10129 ~ 10136 00129 ~ 00136	Over/under range status of channel 0 to 7 for 4 ~ 20mA or 0 ~ 20mA ranges	R																				
30001 ~ 30008 40001 ~ 40008	Analog input value of channel 0 to 7	R																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Code</th> <th>0x03</th> <th>0x04</th> <th>0x05</th> <th>0x06</th> </tr> </thead> <tbody> <tr> <td>Baud</td> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> </tr> <tr> <th>Code</th> <th>0x07</th> <th>0x08</th> <th>0x09</th> <th>0x0A</th> </tr> <tr> <td>Baud</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </tbody> </table> Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	Code	0x03	0x04	0x05	0x06	Baud	1200	2400	4800	9600	Code	0x07	0x08	0x09	0x0A	Baud	19200	38400	57600	115200	R/W
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Baud	19200	38400	57600	115200																		
40487	Type code	R/W																				
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable, 00h ~ FFh	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W																				
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W																				
00261	1: enable, 0: disable host watchdog	R/W																				
00269	Modbus data format, 0: hex, 1: engineering	R/W																				
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W																				
00271*	1: enable, 0: disable fast mode	R/W																				
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R																				

**Note:** Address 00271 is only available to the M-7017R and M-7017R-A5.

## M-7017Z

Address	Description	Attribute																				
10129 ~ 10138 00129 ~ 00138	Over/under range status of channel 0 to 9 for 4 ~ 20mA or 0 ~ 20mA ranges	R																				
30001 ~ 30020 40001 ~ 40020	Analog input value of channel 0 to 19	R																				
40257 ~ 40276	Type code of channel 0 to 19	R/W																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A <table border="1"> <tbody> <tr> <td>Code</td> <td>0x03</td> <td>0x04</td> <td>0x05</td> <td>0x06</td> </tr> <tr> <td>Baud</td> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> </tr> <tr> <td>Code</td> <td>0x07</td> <td>0x08</td> <td>0x09</td> <td>0x0A</td> </tr> <tr> <td>Baud</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </tbody> </table> Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	Code	0x03	0x04	0x05	0x06	Baud	1200	2400	4800	9600	Code	0x07	0x08	0x09	0x0A	Baud	19200	38400	57600	115200	R/W
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40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable, low word	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				
40497	Channel enable/disable, high word	R/W																				
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W																				
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W																				
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W																				
00261	1: enable, 0: disable host watchdog	R/W																				
00269	Modbus data format, 0: hex, 1: engineering	R/W																				
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W																				

00271	1: enable, 0: disable fast mode	R/W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
00277	1: single-ended mode, 0: differential mode	R/W

### M-7018/M-7018R (firmware version B305 and later)

Address	Description	Attribute																				
30001 ~ 30008 40001 ~ 40008	Analog input value of channel 0 to 7	R																				
30129 40129	CJC temperature in 0.01°C	R																				
40353 ~ 40360	CJC offset of channel 0 to 7 in 0.1°C. 1 for 0.1, 127 for 12.7, 255 for -0.1, 128 for -12.8	R/W																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A <table border="1" data-bbox="406 871 1063 1018"> <tbody> <tr> <td>Code</td> <td>0x03</td> <td>0x04</td> <td>0x05</td> <td>0x06</td> </tr> <tr> <td>Baud</td> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> </tr> <tr> <td>Code</td> <td>0x07</td> <td>0x08</td> <td>0x09</td> <td>0x0A</td> </tr> <tr> <td>Baud</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </tbody> </table> Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	Code	0x03	0x04	0x05	0x06	Baud	1200	2400	4800	9600	Code	0x07	0x08	0x09	0x0A	Baud	19200	38400	57600	115200	R/W
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Baud	1200	2400	4800	9600																		
Code	0x07	0x08	0x09	0x0A																		
Baud	19200	38400	57600	115200																		
40487	Type code	R/W																				
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable, 00h ~ FFh	R/W																				
40491	Module CJC offset in 0.01°C	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W																				
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W																				
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W																				
00261	1: enable, 0: disable host watchdog	R/W																				
00268	1: enable, 0: disable CJC	R/W																				
00269	Modbus data format, 0: hex, 1: engineering	R/W																				
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W																				

00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
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## M-7018Z

Address	Description	Attribute																				
30001 ~ 30010 40001 ~ 40010	Analog input value of channel 0 to 9	R																				
30129 40129	CJC temperature in 0.01°C	R																				
40257 ~ 40266	Type code of channel 0 to 9	R/W																				
40353 ~ 40362	CJC offset of channel 0 to 9 in 0.1°C. 1 for 0.1, 127 for 12.7, 255 for -0.1, 128 for -12.8	R/W																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
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Baud	19200	38400	57600	115200																		
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable, 000h ~ 3FFh	R/W																				
40491	Module CJC offset in 0.01°C	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W																				
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W																				
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W																				
00261	1: enable, 0: disable host watchdog	R/W																				
00268	1: enable, 0: disable CJC	R/W																				
00269	Modbus data format, 0: hex, 1: engineering	R/W																				
00270	Host watch dog timeout status, write 1 to clear host	R/W																				

	watch dog timeout status	
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R

### M-7019R (firmware version B300 and later)

Address	Description	Attribute																				
10129 ~ 10136 00129 ~ 00136	Over/under range status of channel 0 to 7	R																				
30001 ~ 30008 40001 ~ 40008	Analog input value of channel 0 to 7	R																				
30129 40129	CJC temperature in 0.01°C	R																				
40257 ~ 40264	Type code of channel 0 to 7	R/W																				
40289 ~ 40296	Temperature offset of channel 0 to 7 in 0.1°C, valid range: -128 ~ 127	R/W																				
40353 ~ 40360	CJC offset of channel 0 to 7 in 0.01°C, valid range: -4096 ~ 4096	R/W																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A <table border="1" data-bbox="407 1171 1068 1325"> <tbody> <tr> <td>Code</td> <td>0x03</td> <td>0x04</td> <td>0x05</td> <td>0x06</td> </tr> <tr> <td>Baud</td> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> </tr> <tr> <td>Code</td> <td>0x07</td> <td>0x08</td> <td>0x09</td> <td>0x0A</td> </tr> <tr> <td>Baud</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </tbody> </table> Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	Code	0x03	0x04	0x05	0x06	Baud	1200	2400	4800	9600	Code	0x07	0x08	0x09	0x0A	Baud	19200	38400	57600	115200	R/W
Code	0x03	0x04	0x05	0x06																		
Baud	1200	2400	4800	9600																		
Code	0x07	0x08	0x09	0x0A																		
Baud	19200	38400	57600	115200																		
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable, 00h ~ FFh	R/W																				
40491	Module CJC offset in 0.01°C	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				
40493	CJC update setting, 0 ~ 2	R/W																				



<b>Address</b>	<b>Description</b>	<b>Attribute</b>
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W
00261	1: enable, 0: disable host watchdog	R/W
00268	1: enable, 0: disable CJC	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00272	Write 1 to load factory calibration parameters	W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
00274	Sampling rate, 1: 8Hz, 0: 10Hz	R/W
00276	Open thermocouple detection, 1: enable, 0: disable (for firmware version B307 and later)	R/W

Notes:

1. The max number of analog output registers written in a command is 11.
2. The command of loading factory calibration parameters takes about 3 seconds.  
The next command should be sent after 3 seconds.

## M-7019Z

Address	Description	Attribute																				
10129 ~ 10138 00129 ~ 00138	Over/under range status of channel 0 to 9	R																				
30001 ~ 30010 40001 ~ 40010	Analog input value of channel 0 to 9	R																				
30129 40129	CJC temperature in 0.01°C	R																				
40257 ~ 40266	Type code of channel 0 to 9	R/W																				
40289 ~ 40298	Temperature offset of channel 0 to 9 in 0.1°C, valid range: -128 ~ 127	R/W																				
40353 ~ 40362	CJC offset of channel 0 to 9 in 0.01°C, valid range: -4096 ~ 4096	R/W																				
40481	Firmware version (low word)	R																				
40482	Firmware version (high word)	R																				
40483	Module name (low word)	R																				
40484	Module name (high word)	R																				
40485	Module address, valid range: 1 ~ 247	R/W																				
40486	Bits 5:0 Baud rate, 0x03 ~ 0x0A <table border="1" data-bbox="407 1163 1068 1318"> <tbody> <tr> <td>Code</td> <td>0x03</td> <td>0x04</td> <td>0x05</td> <td>0x06</td> </tr> <tr> <td>Baud</td> <td>1200</td> <td>2400</td> <td>4800</td> <td>9600</td> </tr> <tr> <td>Code</td> <td>0x07</td> <td>0x08</td> <td>0x09</td> <td>0x0A</td> </tr> <tr> <td>Baud</td> <td>19200</td> <td>38400</td> <td>57600</td> <td>115200</td> </tr> </tbody> </table> Bits 7:6 00: no parity, 1 stop bit 01: no parity, 2 stop bits 10: even parity, 1 stop bit 11: odd parity, 1 stop bit	Code	0x03	0x04	0x05	0x06	Baud	1200	2400	4800	9600	Code	0x07	0x08	0x09	0x0A	Baud	19200	38400	57600	115200	R/W
Code	0x03	0x04	0x05	0x06																		
Baud	1200	2400	4800	9600																		
Code	0x07	0x08	0x09	0x0A																		
Baud	19200	38400	57600	115200																		
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W																				
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W																				
40490	Channel enable/disable, 000h ~ 3FFh	R/W																				
40491	Module CJC offset in 0.01°C	R/W																				
40492	Host watchdog timeout count, write 0 to clear	R/W																				
40493	CJC update setting, 0 ~ 2	R/W																				

<b>Address</b>	<b>Description</b>	<b>Attribute</b>
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W
00259	Filter setting, 0: 60Hz rejection, 1: 50Hz rejection	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout status	R/W
00261	1: enable, 0: disable host watchdog	R/W
00268	1: enable, 0: disable CJC	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00272	Write 1 to load factory calibration parameters	W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
00276	Open thermocouple detection, 1: enable, 0: disable	R/W

Notes:

1. The max number of analog output registers written in a command is 11.
2. The command of loading factory calibration parameters takes about 3 seconds.  
The next command should be sent after 3 seconds.

**M-7022** (firmware version B102 and later)

Address	Description	Attribute
40001 ~ 40002	Analog output value	R/W
40065 ~ 40066	Analog output read back	R
40097 ~ 40098	Safe output value	R/W
40193 ~ 40194	Power on output value	R/W
40257 ~ 40258	Type code	R/W
40289 ~ 40290	Slew rate	R/W
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	Module address	R/W
40486	Baud rate	R/W
40488	Modbus response delay time in ms	R/W
40489	Host watchdog timeout in 0.1s	R/W
40492	Host watchdog timeout count, write 0 to clear	R/W
00257	Protocol, 0:DCON, 1:Modbus	R/W
00258	Modbus Protocol, 0:RTU, 1:ASCII	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout	R/W
00261	1: enable, 0:disable host watchdog	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00273	Reset status, 1: first read after power ed on, 0: not the first read after powered on	R

Type Code	Output Range	Data Format	Max	Min
0	0 ~ 20 mA	Engineering	20000	0
		Hexadecimal	0FFFh	0000h
1	4 ~ 20 mA	Engineering	20000	4000
		Hexadecimal	0FFFh	0000h
2	0 ~ 10 V	Engineering	10000	0
		Hexadecimal	0FFFh	0000h
4	0 ~ 5 V	Engineering	5000	0
		Hexadecimal	0FFFh	0000h

**Note:** Engineering data format and type code 4 are supported by firmware version B102 and later.

**M-7024** (firmware version A201 and later)

Address	Description	Attribute
40001 ~ 40004	Analog output value	R/W
40065 ~ 40068	Analog output read back	R
40097 ~ 40100	Safe output value	R/W
40193 ~ 40196	Power on output value	R/W
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	Module address	R/W
40486	Baud rate	R/W
40487	Type code	R/W
40488	Modbus response delay time in ms	R/W
40489	Host watchdog timeout in 0.1s	R/W
40492	Host watchdog timeout count, write 0 to clear	R/W
40494	Slew rate	R/W
00257	Protocol, 0:DCON, 1:Modbus	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout	R/W
00261	1: enable, 0:disable host watchdog	R/W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00273	Reset status, 1: first read after power ed on, 0: not the first read after powered on	R

Type Code	Output Range	Data Format	+F.S.	-F.S.
30	0 to 20 mA	Engineering	20000	0
		Hexadecimal	3FFF	0000
31	4 to 20 mA	Engineering	20000	04000
		Hexadecimal	3FFF	0000
32	0 to +10 V	Engineering	10000	0
		Hexadecimal	3FFF	0000
33	-10 to +10 V	Engineering	+10000	-10000
		Hexadecimal	3FFF	C000
34	0 to +5 V	Engineering	+5000	0
		Hexadecimal	3FFF	0000
35	-5 to +5 V	Engineering	+5000	-5000
		Hexadecimal	3FFF	C000

## M-7024R

Address	Description	Attribute
40001 ~ 40004	Analog output value	R/W
40065 ~ 40068	Analog output read back	R
40097 ~ 40100	Safe output value	R/W
40129 ~ 40133	Counter value of digital input	R
40193 ~ 40196	Power on output value	R/W
00033 ~ 00037	Digital input value	R
00065 ~ 00069	High latched value of DI	R
00097 ~ 00101	Low latched value of DI	R
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	Module address	R/W
40486	Baud rate	R/W
40487	Type code	R/W
40488	Modbus response delay time in ms	R/W
40489	Host watchdog timeout in 0.1s	R/W
40492	Host watchdog timeout count, write 0 to clear	R/W
40494	Slew rate	R/W
00257	Protocol, 0:DCON, 1:Modbus	R/W
00260	Modbus host watchdog mode 0: same as I-7000 1: can use AO and DO command to clear host watchdog timeout	R/W
00261	1: enable, 0:disable host watchdog	R/W
00264	Write 1 to clear latched DI	W
00269	Modbus data format, 0: hex, 1: engineering	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00273	Reset status, 1: first read after power ed on, 0: not the first read after powered on	R
00513 ~ 00517	Write 1 to clear DI counter value	W

## M-7026

Address	Description	Attribute
00001 ~ 00003	Reads the current status of the Digital Output or sets the Digital Output to either active or inactive	R/W
00129 ~ 00131	Reads/sets the Digital Output Safe Value	R/W
00161 ~ 00163	Reads/sets the Digital Output Power-on Value	R/W
00193 ~ 00195	Reads/sets the status of the Digital Input Edge 0: Falling Edge 1: Rising Edge	R/W
00257	Reads/sets the Communication Protocol 0: DCON 1: Modbus RTU	R/W
00259	Reads/sets the Filter Settings 0: 60 Hz Rejection 1: 50 Hz Rejection	R/W
00260	Reads/sets the Host Watchdog Mode 0: The same as for I-7000 series modules 1: Analog Output and Digital Output commands can be used to clear the status of the Host Watchdog timeout	R/W
00261	Enables or disables the Host Watchdog, or reads the status of the Host Watchdog 0: Disable 1: Enable	R/W
00264	Clears the latched Digital Input and Digital Output channels. Write 1 to clear	W
00265	Sets the active Digital Input mode: 0: Normal 1: Inverse	W
00266	Sets the active Digital Output mode: 0: Normal 1: Inverse	W
00269	Reads/sets the Modbus Data Format 0: 2's Complement Hexadecimal 1: Engineering Units	R/W
00270	Reads the status of the Host Watchdog timeout. Write 1 to clear.	R/W
00271	Reads/sets the Analog Input Filter Format 0: Normal 1: Fast	R/W
00272	Loads the factory calibration parameters. Write 1 to load.	W
00273	Reads the Reset status 0: This is <b>NOT</b> the first time the module has been read since being powered on 1: This is the first time the module has been read since being powered on	R



Address	Description	Attribute
00280	Clears the high latch values for all Analog Input channels. Write 1 to clear.	W
00281	Clears the low latch values for all Analog Input channels. Write 1 to clear.	W
00284	Enables or disables calibration, or reads the status of the calibration function 0: Disabled 1: Enabled	R/W
00285	Sets the Analog Input zero calibration. Write 1 to set.	W
00286	Sets the Analog Input span calibration. Write 1 to set.	W
00289 ~ 00294	Reads/clears the status of the low alarm for channels 0 to 5. Write 1 to clear.	R/W
00305 ~ 00310	Reads/clears the status of the high alarm for channels 0 to 5. Write 1 to clear.	R/W
00321 ~ 00326	Enables or disables the Analog Input Alarm, or reads the status of the Analog Input Alarm 0: Disabled 1: Enabled	R/W
00337 ~ 00342	Reads/sets the Analog Input Alarm mode 0: Momentary 1: Latched	R/W
00385 ~ 00390	Clears the high latched Analog Input for channels 0 to 5. Write 1 to clear.	W
00417 ~ 00422	Clears the low latched Analog Input for channels 0 to 5. Write 1 to clear.	W
00513 ~ 00515	Resets the Digital Input counter for channels 0 to 2. Write 1 to reset.	W
10033 ~ 10035	Reads the status of the Digital Input for channels 0 to 2	R
10065 ~ 10067	Reads the status of the high latched Digital Input channels	R
10073 ~ 10075	Reads the status of the high latched Digital Output channels	R
10097~ 10099	Reads the status of the low latched Digital Input channels	R
10105 ~ 10107	Reads the status of the low latched Digital Output channels	R
10225 ~ 10230	Reads whether or not Analog Input channels 0 to 5 are under range	R
10241 ~ 10242	Reads the status of the wire connection for Analog Output channels 0 to 1	R
30001 ~ 30006	Reads the Analog Input value for channels 0 to 5	R
30065 ~ 30066	Reads the current output value for Analog Output channels 0 to 1	R

Address	Description	Attribute
30129 ~ 30131	Reads the Digital Input counter for channels 0 to 2	R
30513 ~ 30518	Reads the high latch value for Analog Input channels 0 to 5	R
30545 ~ 30550	Reads the low latch value for Analog Input channels 0 to 5	R
40033 ~ 40034	Reads/writes the Analog Output value for channels 0 to 1	R/W
40097 ~ 40098	Reads/writes the safe value for Analog Output channels 0 to 1	R/W
40193 ~ 40194	Reads/writes the power-on value for Analog Output channels 0 to 1	R/W
40225 ~ 40230	Reads/writes the Analog Input high alarm value	R/W
40233 ~ 40238	Reads/writes the Analog Input low alarm value	R/W
40257 ~ 40262	Reads/writes the Type Code for Analog Input channels 0 to 5	R/W
40289 ~ 40290	Reads/writes the Analog Output Slew Rate for channels 0 to 1	R/W
40417 ~ 40418	Reads/writes the Type Code for Analog Output channels 0 to 1	R/W
40481	Reads the Firmware Version (high word)	R
40482	Reads the Firmware Version (low word)	R
40483	Reads the Name of the Module (high word)	R
40484	Reads the Name of the Module (low word)	R
40485	Reads the Module address. The valid range is 0x1 to 0xF7	R
40486	Reads/writes the Baud Rate Bits 5:0 Baud Rate Bits 7:6 Reserved	R/W
40488	Reads/writes the Response Delay Time in ms. The valid range is 0 to 30ms.	R/W
40489	Reads/writes the Host Watchdog Timeout value in 0.1s increments. The valid range is 0 to 255.	R/W
40490	Reads the status of the Analog Input channel, or sets the Analog Input channel to enabled or disabled.	R/W
40492	Reads/clears the Host Watchdog Timeout count. Write 0 to clear.	R/W

**Note:**

The command to load the factory calibration parameters (00272) takes about 3 seconds to be processed. Subsequent commands should not be sent before this time has elapsed.

**M-7033**

Address	Description	Attribute
30001 40001	Analog input value of channel 0	R
30002 40002	Analog input value of channel 1	R
30003 40003	Analog input value of channel 2	R

**M-7000 DIO**

Address	Channel	Description	Attribute
00001~00032	DO 0 ~ DO 31	Current DO value	R/W
00033~00064	DI 0 ~ DI 31	Current DI value	R
00065~00096	0~31	DIO Latch high value	R
00097~00128	0~31	DIO Latch low value	R
00257		Write 1 to clear latch values	W
00513~00544	DI0 ~ DI31	Write 1 to clear DI counter	W
30001~30032 40001~40032	DI 0 ~ DI 31	DI counter value	R

## M-7080

Address	Description	Attribute
40001	Counter/frequency value of channel 0 (low word)	R
40002	Counter/frequency value of channel 0 (high word)	R
40003	Counter/frequency value of channel 1 (low word)	R
40004	Counter/frequency value of channel 1 (high word)	R
40065	Max. value of counter 0 (low word)	R/W
40066	Max. value of counter 0 (high word)	R/W
40067	Max. value of counter 1 (low word)	R/W
40068	Max. value of counter 1 (high word)	R/W
40097	Preset value of counter 0 (low word)	R/W
40098	Preset value of counter 0 (high word)	R/W
40099	Preset value of counter 1 (low word)	R/W
40100	Preset value of counter 1 (high word)	R/W
40161	Low level width threshold in us	R/W
40162	High level width threshold in us	R/W
40163	Low voltage trigger value in 0.1V	R/W
40164	High voltage trigger value in 0.1V	R/W
00001	DO 0	R/W
00002	DO 1	R/W
00065	Overflow flag of counter 0	R
00066	Overflow flag of counter 1	R
00129	Input mode of channel 0, 0:non-isolated, 1:isolated	R/W
00130	Input mode of channel 1, 0:non-isolated, 1:isolated	R/W
00131	0: gate is low active, 1: gate is high active, when gate control is enabled	R/W
00132	Gate control, 0: enable, 1:disable	R/W
00133	Set counter 0 to preset value	W
00134	Set counter 1 to preset value	W
00135	Start(1)/Stop(0) counter 0	R/W
00136	Start(1)/Stop(0) counter 1	R/W
00139	Enable(1)/disable(0) digital filter	R/W
00142	Frequency gate time, 0:0.1second, 1: 1.0second	R/W
00143	LED configuration, 0:ch0, 1: ch1	R/W

Address	Description	Attribute
00145 <sup>*1</sup>	Counter mode of channel 0, 1: stop counting on overflow, 0: continuous	R/W
00146 <sup>*1</sup>	Counter mode of channel 1, 1: stop counting on overflow, 0: continuous	R/W

\*1: only available with firmware version 0A24 and later. In continuous counting mode, the maximum value is ignored. When the count reaches FFFFFFFFh, it restarts from 0 and the overflow flag is set. In this mode, the overflow flag can be cleared by writing zero to the overflow flag register. The default mode is stop counting on overflow.

**M-7080B**

Address	Description	Attribute
40001	Counter/frequency value of channel 0 (low word)	R
40002	Counter/frequency value of channel 0 (high word)	R
40003	Counter/frequency value of channel 1 (low word)	R
40004	Counter/frequency value of channel 1 (high word)	R
40065	Max. value of counter 0 (low word)	R/W
40066	Max. value of counter 0 (high word)	R/W
40067	Max. value of counter 1 (low word)	R/W
40068	Max. value of counter 1 (high word)	R/W
40097	Preset value of counter 0 (low word)	R/W
40098	Preset value of counter 0 (high word)	R/W
40099	Preset value of counter 1 (low word)	R/W
40100	Preset value of counter 1 (high word)	R/W
40161	Low level width threshold in us	R/W
40162	High level width threshold in us	R/W
40163	Low voltage trigger value in 0.1V	R/W
40164	High voltage trigger value in 0.1V	R/W
00001	DO 0	R/W
00002	DO 1	R/W
00065	Overflow flag of counter 0	R
00066	Overflow flag of counter 1	R
00129	Input mode of channel 0, 0:non-isolated, 1:isolated	R/W
00130	Input mode of channel 1, 0:non-isolated, 1:isolated	R/W
00131	0: gate is low active, 1: gate is high active, when gate control is enabled	R/W
00132	Gate control, 0: enable, 1:disable	R/W
00135	Start(1)/Stop(0) counter 0	R/W
00136	Start(1)/Stop(0) counter 1	R/W
00139	Enable(1)/disable(0) digital filter	R/W
00142	Frequency gate time, 0:0.1second, 1: 1.0second	R/W
00143	LED configuration, 0:ch0, 1: ch1	R/W

NOTE: When the type code is 52 and registers 40097 ~ 40100 are set, the current counter values are set to the preset values, too.

**M-7084**

Address	Description	Attribute
30001 ~ 30016	Counter/frequency value of channel 0 to 7, two registers for each channel	R
40065 ~ 40080	Maximum value for up counter 0 to 7, two registers for each channel	R/W
40097 ~ 40112	Preset value of counter 0 to 7, two registers for each channel	R/W
40161	Frequency measurement timeout in 100ms, 1 ~ 255	R/W
40162	Low-pass filter time for channel 0 and 1 in us, 1 ~ 32767	R/W
40163	Low-pass filter time for channel 2 and 3 in us, 1 ~ 32767	R/W
40164	Low-pass filter time for channel 4 to 7 in us, 1 ~ 32767	R/W
40257 ~ 40264	Type code of channel 0 to 7	R/W
40481	Firmware version (low word)	R
40482	Firmware version (high word)	R
40483	Module name (low word)	R
40484	Module name (high word)	R
40485	Module address, valid range: 1 ~ 247	R/W
40486	Bits 5:0 Baud rate, valid range: 3 ~ 10 Bits 7:6 00: no parity, 1 stop bit 10: even parity, 1 stop bit 11: odd parity , 1 stop bit	R/W
40488	Modbus response delay time in ms, valid range: 0 ~ 30	R/W
40489	Host watchdog timeout value, 0 ~ 255, in 0.1s	R/W
40490	Start/stop counting, bit 0 for ch0, bit 1 for ch1, ..., 00h ~ FFh	R/W
40492	Host watchdog timeout count, write 0 to clear	R/W
00033 ~ 00040	Input status after XOR mask for channel 0 to 7	R
00041 ~ 00048	Input status after low-pass filter for channel 0 to 7	R
00065 ~ 00072	Counter overflow status for channel 0 to 7. Write 1 to clear	R/W

Address	Description	Attribute
00257	Protocol, 0: DCON, 1: Modbus RTU	R/W
00261	1: enable, 0: disable host watchdog	R/W
00269	Data format for frequency type, 0: hex, 1: float	R/W
00270	Host watch dog timeout status, write 1 to clear host watch dog timeout status	R/W
00273	Reset status, 1: first read after powered on, 0: not the first read after powered on	R
00513 ~ 00520	Write 1 to clear counter 0 ~ 7	W
00769 ~ 00776	Enable battery backup for counter 0 to 7	R/W
00801 ~ 00808	Automatic switching between high/low frequency mode for frequency measurement of channel 0 to 7	R/W
00833 ~ 00840	High/low frequency mode for frequency measurement of channel 0 to 7	R/W
00865 ~ 00872	Stop counting on counter overflow for channel 0 to 7	R/W
00897 ~ 00904	Enable low pass filter for channel 0 to 7	R/W
00929 ~ 00936	XOR mask for channel 0 to 7	R/W