SHIMAX

DIGITAL CONTROLLER

MAC6A／MAP6A SERIES

MAC6A
(W96×H96mm)

MAP6A
(W96×H96mm)

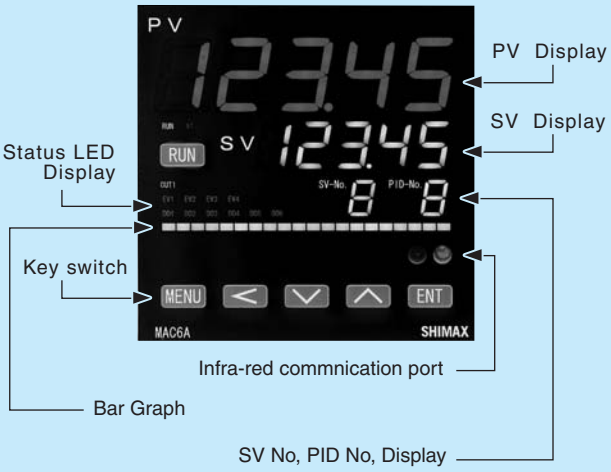
CE

MAC6A／MAP6A

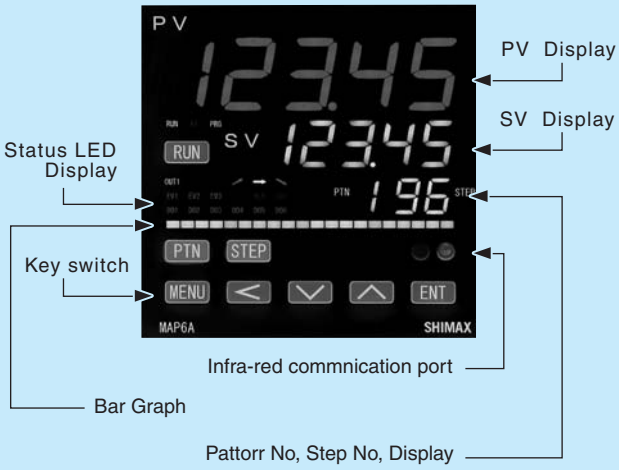
- High Accuracy 0.1%Fs + 1 digit.
- Program MAX 96steps 8patterns. (MAP6A)
- MAX 4zone PID control.
- Universal input. (Thermo couple RTD
  DC voltage. DC current)
- Sampling Period
  50msec, 166.7msec, 250msec, 500msec.
- PV-SV multi points compensation. (MAX11 points)
- Space-saving Design : Panel depth 65 mm

Explanation of Front panel

MAC6A



MAP6A



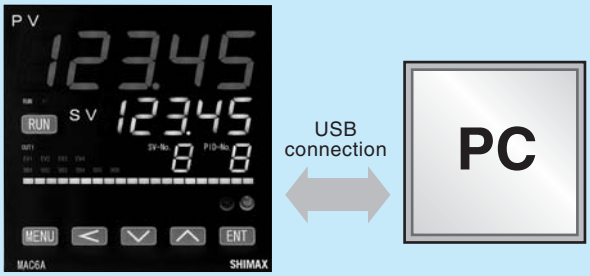
Features

Universal-input

Thermocouple
R.T.D
DC voltage
DC current

∗ Current input is executed through extemally attached shunt resistor with 100Ω

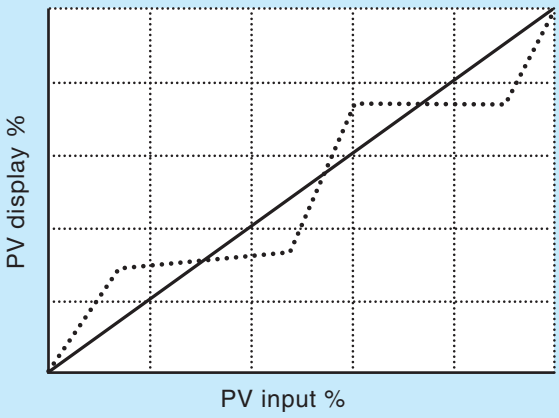
Infrared-ray communication



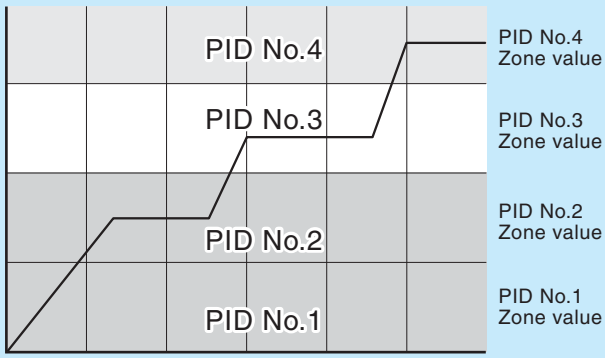
- Reading and writing of various parameters are possible.
- Saving and reading to files are possible.

PV-SV malti points compensation

Linearising nonlinear signal input Number of approximation point : Max.11



Zone PID (Max.4 zones)



1 Display

1 Display method

Digital display
: PV red 7segment LED 5 digits (height of the character 20mm)
: SV green 7segment LED 5Digits (height of the character 13mm)
: PTN/SV-No, green 7segment LED 1digit (height of the character 10mm)
: STEP/PID-No. green 7segment LED 2digit (height of the character10mm)

Bar graph display
: 20dots green LED
Non allotment、deviation、OUT1、OUT2
Servo valve position·····Servo
STEP time rate、PTN step rate、number of executions rate ···MAP6A

Status display
: OUT1、OUT2 green LED
: EV1～4 Yellow LED
: AT green LED
: RUN green LED (blinking at MANUAL)
: PRG green LED ····· MAP6A
: DO1～6 yellow LED
: GUA green LED ····· MAP6A
: HLD green LED ····· MAP6A
: ↗ (Up) yellow LED ····· MAP6A
: → yellow LED ····· MAP6A
: ↘ (Down) yellow LED ····· MAP6A

2 Display accuracy : TC ±(0.1%FS＋1digit)、CJ error not include
RTD ±(0.1%FS＋0.1deg)
Others ±(0.1%FS＋1digit)

3 Accuracy maintenance range : 23°C ± 5°C

4 Accuracy stability : ± 0.04%FS (90days 23°C)、± 0.06%FS (1year 23°C)

5 Display resolution : belong to measuring range and scaling (0.0001/0.001/0.01/0.1/1)

6 Display range : Within PV limiter (−10%～110% of measuring range)
※ Lower limit of Display is -270°C
※ Lower limit of measuring range is −240°C at P1, JP1, P2, and JP2

7 Display renewal period : same as sampling period (50, 166.7, 250, 500m sec)

8 Input scaling : Possible at current input and voltage input
(−20000～32000 span 10～50000)

9 Decimal point : Non、1/10 1/100 1/1000 1/10000、

2 Setting

1 Setting method : MAC6A By 6 front keys (RUN MENU ◀ ▼ ▲ ENT)
: MAP6A By 8 front keys (RUN MENU ◀ ▼ ▲ ENT STEP PTN)

2 Number of SV setting : MAX 8 points

3 SV setting range : Same as measuring range (within SV limiter)

4 Key lock : OFF、1～4 (5 levels)

operation	Level	contents
	OFF	No lock
Key setting	1	Execution SV and a manual numerical change are possible. And change of a key lock level is possible. (RUN key operation acceptable)
	2	Possible to change numerical value manually and key lock level (RUN key operation acceptable)
	3	Possible to change key lock level. (RUN key operation acceptable)
	4	Possible to change key lock level. (RUN key operation unacceptable)
DI setting		Shift between screens prohibited. Fixed only to the basic screen. (RUN key operation unacceptable)

5 PV limiter : Within measuring range (Lo＜Hi)
Over scale (HHHHH) or under scale (LLLLL) is displayed at outside measuring range

6 SV limiter : Upper limit and Lower limit can be set individually within measuring range (Lower limit＜Upper limit and within PV limit)

7 Unit setting : °C (Centigrade) °F (Fahrenheit) K (Kelvin)

8 PV−SV malti points compensation : 11point ± 10000digit

3 Input

1 Input : Universal input (TC・Pt・mV・V・mA)

Thermo couple
: Input resistance 500k Ω or more
: External resistance tolerance 100Ω or less
: Inferences of lead wire 1.2μV／10Ω
: Burn out Standard equipment up scale only
: Compensation accuracy of reference junction mode can be selected between internal and external.
: Compensation accuracy of reference junction
Within accuracy maintenance ± 1°C
(ambient temperature 5～45°C ± 2°C)
*1 ± 0.5%FS (PV value at −100 to 0°C)
*2 ± 0.7%FS (PV value at −100°C or less)
*3 Accuracy is not guaranteed below B:400°C (752°F)

Resistance bulb
: Stipulated current about 1mA
: Resistance latitude of lead wire 5Ω or less
(equivalent in the resistance value of 3 lines)
Inferences of lead wire resistance
Max 0.3%FS at 10Ω or more by each lead wire
Max 0.7%FS at 20Ω or more by each lead wire

Voltage : Input resistance 500kΩ or more

Current : Reception resistance 100Ω
(External resistance needed 0.05% 25ppm/°C)

2 Sampling period : 50, 166.7, 250, 500m sec

3 PV filter : 0 ～ 10000 sec

4 PV off set : ± 5000unit

5 PV gain : ± 5.000% −5.00%～105.00%

Measuring range

Character	°C Centigrade	°F Fahrenheit	K Kelvin
Thermocouple			
r 1	-50.0 ～ 1760.0	-50.0 ～ 3200.0	220.0 ～ 2030.0
P 1	-270.0 ～ 1370.0	-450.0 ～ 2500.0	0.0 ～ 1640.0
P2	0.0 ～ 800.0	0.0 ～ 1500.0	270.0 ～ 1070.0
P3	-200.0 ～ 400.0	-300.0 ～ 700.0	70.0 ～ 670.0
P4	0.0 ～ 300.0	0.0 ～ 600.0	270.0 ～ 570.0
J 1	-200.0 ～ 1200.0	-320.0 ～ 2200.0	70.0 ～ 1470.0
J2	0.0 ～ 600.0	0.0 ～ 1100.0	270.0 ～ 870.0
t 1	-270.0 ～ 400.0	-450.0 ～ 700.0	0.0 ～ 670.0
E 1	-270.0 ～ 1000.0	-450.0 ～ 1800.0	0.0 ～ 1270.0
S 1	-50.0 ～ 1760.0	-50.0 ～ 3200.0	220.0 ～ 2030.0
U 1	-200.0 ～ 400.0	-300.0 ～ 700.0	70.0 ～ 670.0
n 1	-270.0 ～ 1300.0	-450.0 ～ 2300.0	0.0 ～ 1570.0
b 1	0.0 ～ 1820.0	0 ～ 3300	270.0 ～ 2090.0
S-26	0.0 ～ 2320.0	0 ～ 4200	270.0 ～ 2590.0
PL2	0.0 ～ 1390.0	0.0 ～ 2500.0	270.0 ～ 1660.0
RTD			
P 1	-200.0 ～ 850.0	-300.0 ～ 1500.0	70.0 ～ 1120.0
P2	-200.00 ～ 300.00	-300.0 ～ 600.0	70.00 ～ 570.0
P3	-100.00 ～ 300.00	-150.0 ～ 600.0	170.0 ～ 570.0
P4	-100.00 ～ 200.00	-150.0 ～ 400.0	170.0 ～ 470.0
P5	-100.00 ～ 100.00	-150.00 ～ 200.00	170.0 ～ 370.0
P6	0.00 ～ 200.00	0.0 ～ 400.0	270.0 ～ 470.0
P7	0.00 ～ 100.00	0.00 ～ 200.00	270.0 ～ 370.0
P8	-50.00 ～ 50.00	-60.00 ～ 120.00	220.00 ～ 320.0
P9	-20.000 ～ 30.000	0.00 ～ 100.00	250.00 ～ 300.0
JP 1	-200.0 ～ 500.0	-300.0 ～ 900.0	70.0 ～ 770.0
JP2	-20.000 ～ 300.00	-300.0 ～ 600.0	70.00 ～ 570.0
JP3	-100.00 ～ 300.00	-150.0 ～ 600.0	170.0 ～ 570.0
JP4	-100.00 ～ 200.00	-150.0 ～ 400.0	170.0 ～ 470.0
JP5	-100.00 ～ 100.00	-150.00 ～ 200.00	170.0 ～ 370.0
JP6	0.00 ～ 200.00	0.0 ～ 400.0	270.0 ～ 470.0
JP7	0.00 ～ 100.00	0.00 ～ 200.0	270.0 ～ 370.0
JP8	-50.00 ～ 50.00	-60.00 ～ 120.0	200.0 ～ 320.0
JP9	-20.00 ～ 30.000	0.00 ～ 100.00	250.0 ～ 300.0
Liner input			
A 1	-100 ～ 100	mV	Scaling -20000～32000
A2	0 ～ 100		
A3	0 ～ 50		
A4	10 ～ 50		
A5	0 ～ 20		
A6	-10 ～ 10		
A7	0 ～ 10		
U 1	-10 ～ 10	V	Span 10～50000以下
U2	0 ～ 10		
U3	0 ～ 5		
U4	1 ～ 5		Decimal point Non 0.1～0.0001
U5	0 ～ 2		
U6	-1 ～ 1		
U7	0 ～ 1		
AA 1	0 ～ 20	mA	
AA2	4 ～ 20		

4 Control

1 Control method : 2mode PID method with Auto tuning ＋Zone PID method or ON−OFF operation

2 Number of PID : Max 8

3 Number of PID Zone : Max 4

4 Zone hysteresis : 1～10000 digits

5 Proportional band (P) : OFF , 0.1～1000.0%FS (On − Off operation by OFF setting)

6 ON-OFF Differential gap (H) : 1～10000 digits

7 ON-OFF Differential gap (L) : 1～10000 digits

8 Integration time (I) : OFF , 1～6000s (P or OD operation by OFF setting)

9 Differential time (D) : OFF , 1～3600s (P or PI operation by OFF setting)

10 Manual reset : ± 50.0% (Effective at I ＝OFF)

11 Dead band : −20000～30000 digits

12 Output limiter : (L) 0.0～99.9% (H) 0.1～100.0% (resolution 0.1)

13 Soft start : OFF , 0.1～300.0s (resolution 0.5)

14 Control output characteristic : Possible to choose from RA (Heating) or DA (Cooling)

15 Proportional period : 0.5～300.0s (resolution 0.5)

16 Output renewal period : Same as sampling period (50, 166.7, 250, 500m sec)

17 Manual output : 0.0～100.0% (resolution 0.1)

18 Flex PID setting method (ABC) : 0.00～1.00

5 Control Output 1

1 Contact : Normal open (1a) 240V AC 2A (resistance load)
2 Voltage pulse (SSR drive) : 12DC −1.5～＋1V (Max 20mA)
3 Current : 4 – 20mA (load resistance 500Ω) Load regulation 0.2%FS
4 Voltage : 0 – 10V (Max load 2mA)
5 Contact (Servo) : Normal open (2a) 240V AC 2A
6 SSR (Servo) : 2 circuits of Triode AC switch 240V AC 1.5A
7 Accuracy : ± 1.0%FS (5～100% Output)
8 Resolution : About 1／50000

6 Control Output2 (Option)

1 ～ 4 : Same as Control Output 1 (Exclusive selection option of Servo output)
5 ～ 6 : No function
7 Resolution : About 1/50000

7 Event Output (EV-3)

1 Output rating : Normal open (1ax3points) 240V AC 1A (resistance load)
2 Operation : ON – OFF operation
3 Differential gap : 1～10000 unit (At alarm function)
4 Types of Event : EV1 , EV2 and EV3

function		Note
No allotment	non	Default
Upper limit absolute value alarm	HA	
Lower limit absolute value alarm	LA	
Within absolute Value alarm	iA	
Within absolute Value alarm	oA	
Scale over alarm	So	
Upper limit deviation value alarm	Hd	
Lower limit deviation value alarm	Ld	
Within deviation alarm	id	
Without deviation alarm	od	
RUN signal	run	
CT1 Control loop alarm (heater braking)	ct1_b	
CT1 Control loop alarm (loop)	ct1_L	
CT2 Control loop alarm (Heater braking)	ct2_b	
CT2 Control loop alarm (loop)	ct2_L	
3 phases Control loop alarm (Heater braking)	ct3_b	
3 phases Control loop alarm (loop)	ct3_L	
Step signal	StP	
Pattern end signal	P_E	
Program end	End	
Step hold signal	HoLd	
Program signal	ProG	
Up slope signal	u_SL	
Down slope signal	d_SL	
Guarantee signal	GuA	
Time signal 1	tS1	
Time signal 2	tS2	
Time signal 3	tS3	
Time signal 4	tS4	

5 Setting range
Upper limit absolute alarm ,Lower limit absolute alarm : Within measuring range
Deviation alarm : Upper limit −20000～30000、Lower limit −20000～30000 Unit
Without deviation : 0～30000 Unit
Within deviation : 0～30000 Unit
Control loop : 0.0～50.0A

6 Stand by operation

OFF	No standby operation
1	Only at the time of Power on, stand by operation
2	At the time of Power On＋Execution SV、RUN／STBY、AUTO／MAN、and EV are changed.

7 Output characteristic : Normal open (NO)、Normal close (NC)
* If NC is chosen and power is turn on, relay become On about 1.5s and become off.
8 Latching : Available
9 Latching release : Release is done by key operation, DI or power OFF, In case of release by DI and power OFF
all the alarm are called off simultaneously
10 Output renewal period : 50, 166.7, 250, 500m sec

8 Event Output 4 (EV-4) (Option)

1 Output rating : Normal open (1a) 240V AC 2A (resistance load)
2 ～ 10 : same as EV1～3
11 Additional condition : Exclusive selection option of Servo Output2

9 External operation input (DI)

1 Number of input : 7points
2 Input detections : Edge and Level

Function		Input detection	Contents
No allotment	non		Default setting
SV selection SV 1 ↓ SV 8	Sv1 ↓ Sv8	Level	Priority is given to younger number
SV 3bit selection	Sv_3b	Level	3 bits of continuation is occupied by the younger DI allotment
RUN	run	Level	RUN／STBY (RST)
PRG	ProG	Level	PRG／FIX
MAN	MAn	Level	MANUAL／AUTO
AT	At	Edge	Auto tuning execution
PTN selection PTN1 ↓ PTN 8	Pt n1 ↓ Pto8	Level	Priority is given to younger number
PTN 3bit selection	Pto3b	Level	3 bits of continuation is occupied by the younger DI allotment
HOLD	HoLd	Level	Program time stop
SKIP	SKIP	Edge	Shift to the following step of program,
Latching release	L_rS	Edge	All latching release
Super Key lock	LocK	Level	Fixed only to the basic screen key operation unacceptable

3 Input rating : Voltage 5V DC (0.5mA／1 input)
4 Input signal time : Min 50msec
5 Operation input : Dry contact or Open collector (min 50msec)

10 External operation output (DO) (Option)

1 Number of output : 6 points
2 Types of Output : Same as EV1～3
3 Output rating : Open collector darlington output 24VDC (Max load 20mA)、ON saturated voltage 1.2V
4 Output renewal time : 50, 166.7, 250, 500m sec
5 Installation condition : DO4～6 Exclusive selection option of Feedback input and CT input

11 Program MAP6A

1 Number of pattern : Max 8 (1, 2, 3, 4, 6, 8patterns)
2 Number of steps : 12～96 (Total steps＝96)
3 Time setting : 0.0 hour ～3200.0 hours or ∞ (by each steps)
0 hour 0 minutes ～300 hours 00 minutes or ∞ (by each steps)
0 minutes 0 second～300 minuets 00 seconds or ∞ (by each steps)
4 Time setup resolution : 0.1 hour or 1 second
5 Time accuracy : ± (setting time ×0.02%＋0.1 second)
6 Step setting parameter : SV、step time 、PID No.
7 Step signal : At step to next step −1000.0.～1000.0s (setting resolution 0.5s)
8 Pattern end signal : At pattern end −1000.0.～1000.0s (setting resolution 0.5s)
9 Program END : At program end −1000.0.～1000.0s (setting resolution 0.5s)
10 Time signal : By each 1step (possible to set ON or OFF)
11 Pattern execution number : Max 30000 or ∞
12 PV start : ON／OFF
13 Guarantee soak : OFF、1～10000 units
14 Hold : Possible by front key, DI allotment or communication
15 Skip : Possible by front key, DI allotment or communication
16 Power failure compensation : ON／OFF (Step time which is at power failure is not guaranteed)

12 Communication function (Option)

1 Communication port : 1ch

2 Communication method : RS−232C／3 line system half-duplex system、
RS−485／2 line system half-duplex mulit-drop (bus) system

3 Synchronization method : The start stop synchronization system

4 Communications distance : RS−232C／Max15m、RS−485／ Max 500m (depend on a condition)

5 Communication speed : 1200、2400、4800、9600、19200、38400bps

6 Data format : Start1 Stop1、2 Data 7、8bit Non parity odd number、even number

7 Master mode : possible to chosen from SV、OUT1、OUT2 (1：n Number of slave max 255)
※When MAC6A(MAP6A) is a master, slave address range must be continuation.
※When MAC6A(MAP6A) is a master, bus connection with other host PCs is not allowed.
※Input range of master machine and slave machine should be equal, at the time of cascade control.

8 Slave address : 1～255

9 Parameter preservation mode : Choose from RAM, MIX and EEP mode.

10 Error detection : None, Choose from ADD, complement of ADD +2, exclusive OR, CRC-16 and LRC

11 Flow control : None

12 Delay : 1～500ms (resolution 1ms)

13 Communication code : ASCII code or binary code

14 Protocol : SHIMAX Standard or MODBUS ACII, MODBUS RTU protocol

16 Number of connection : RS−232C／1set, RS−485／Maximum 256 sets
(depends on conditions, host is included)

17 Termination resistance : RS−232C／Non need, RS−485／120Ω (External connection)

13 External analogue input (AI) (Option)

1 Number of input : 1ch

2 Allotment function : Execution SV、EV1～4 level、OUT1～2 Upper and lower limiter、PV Off set Manual output

3 Input rating : 4 – 20mA (Reception resistance100Ω)
0 – 10V (Input resistance about 500kΩ)

4 Accuracy : ± 0.1%FS

5 Sampling period : 0.2, 0.667, 1, 2 sec

6 Scaling : −19999～30000 reserve scaling permitted (within a setting range)

7 AI Filter : 0～10000 sec

8 AI offset : ± 50000 unit

9 AI gain : ± 5.000%

10 PV−AI Characteristics correction : 11point ± 32000digit

14 External analogue output (AO) (Option)

1 Number of output : 1ch

2 Allotment function : PV、Execution SV、OUT1、OUT2、CT1、CT2、DEV

3 Current : 4−20mA DC (Max load 300Ω) load regulation ± 0.05%FS

4 Voltage : 0−10V DC (Max load 2mA)

5 Output accuracy : ± 0.1%FS (±0.2%FS at PV output)

6 Scaling : Within measuring range or output range

7 Limiter : 0.0～100.0% (reserve setting permitted)

8 Output resolution : About 1／50000

9 Output renewal period : same as sampling period (50, 166.7, 250, 500m sec)

15 Current sensor input (CT1, 2) (Option)

1 Number of input : 2ch

2 Detection method : Current judging system by CT sensor

3 Detection range : 0.0～55.0A

4 Sampling period : 100m sec

5 Detection accuracy : ±3%fs

6 Detection delay time : 0.1～1000.0 sec (resolution 0.1 sec)

7 Alarm output : Assigned to event

8 Detection object : Assigned to OUT1、OUT2、EV1、EV2、EV3、EV4

9 Setting range : 0.0～50.0A (Default 0.0)

10 Recommended CT sensors : U_RD co., CTL-6-L CTL-6-V CTL-6-P-H CTL-6-S-H CTL-12L-8

11 Other condition : Exclusive selection option of Feedback input

16 Feedback input (FB) (Servo control option)

1 Potentiometer rating : Any between 100Ω and 2kΩ/ three-wire type

2 Input accuracy : ±1%FS

3 Sampling period : 100m sec

4 Zero span adjustment : Manual and Auto

5 FB filter : 0～10000 sec

17 Infrared-ray communication

1 Communication method : Infrared link system

2 Synchronous system : Start stop synchronization system

3 Communication speed : 9600bps

4 Data format : start 1 stop 1 Data 8bit non parity

5 Slave address : 1

6 Parameter preservation mode : EEP

7 Error detection : CRC−16

8 Communication code : binary code

9 Protocol : MODBUS−RTU

18 General specifications

1 Data save : By nonvolatile memory (EEPROM)

2 Temporary dead time : No influence within 0.05 second 100% dip

3 Use environmental condition : Temperature／−10～55°C
Humidity／Below 90%RH (no dew condensation)
Height／Altitude of 2000m or less
Category／II
Contamination degree／2

4 Storage temperature Conditions : −20～65°C

5 Power supply : 90～264V AC 50／60Hz

6 Input noise removal ratio : Normal 50dB or higher

7 Impulse-proof noise : Power-source Normal 100ns/1μs±1500V

8 Insulation resistance : Between input/output terminal and power supply terminal 500V DC 20Ω or higher
: Between input/output terminal and earth 500V DC 20MΩor more

9 Withstand voltage : Between input/output terminal and power supply 2300V AC 1minute
Output and earth 1500V AC 1 minute (Output and others500V)
Power supply and earth 1500V AC 1 minute
Input and earth 500V C 1 minute
Input and output 500V C 1 minute (Input and output(contact)2300V)

10 Resistance to vibration : Frequency 10～55～10Hz, amplitude 0.75mm (one side amplitude)
····100m/S2 Direction 3 directions
Sweep speed 1 octave/minute (about 5 minutes for both-way/cycle)
Number of sweep 10 times

11 Power consumption : 12VA

12 Applicable standard EMC : EN61326 – 1：1997＋Amendment1：1998＋Amendment2：2001
(EM1：ClassA EMS：AnnexA)
EN61000 – 3 – 2：2000 EN61000 – 3 – 3：1995＋
Amendment1：2001
Safety：IEC101 0– 1 and EN61010 – 1：2001
Oscillation：IEC60068−2−6／1995

13 Case material/color : PPO PPE／Light gray (Mansel value 3.73B7.77／0.25)

14 Outside dimension : H96×W96×D69mm(depth in panel 65mm)

15 Thickness of applied panel : 1.2～3.2mm
(Mounting is possible up to 20mm with mounting bracket)

16 Size of attachment hole : H92×W92mm

17 Group mounting : Group mounting is possible of horizontal direction
※Attachment is needed of dismounting vertical plural mounting

18 Weight : About 300g

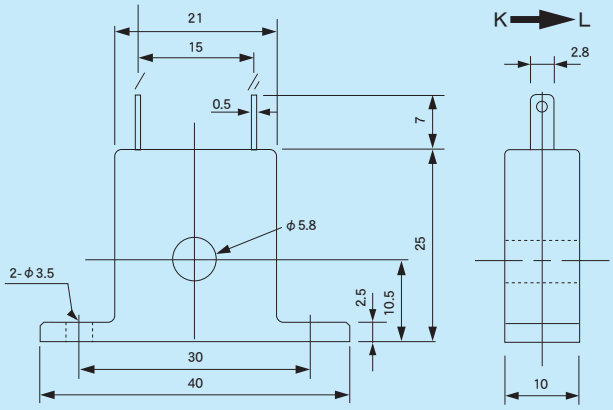
■Order Code table

MAC6A Code table

Item	Code	Specifications
1. Series	MAC6A—	96×96mm size program controller MAX 8patterns 96steps with Event 1～3. DI 1～7
2. Input ※1	M	Thermocouple（K、J、T、E、R、S、U、N、B、P L Ⅱ、WRe5-26） Input resistance about 500KΩor more Resistance Bulb (Pt100、JPt100） Specified Current 1mA Voltage（0-10mV、0-20mV、±10mV、0-50mV、0-100mV、±100mV）Input resistance about 500kΩor more Voltage（0-1V、0-2V、±1V、1-5V、0-5V、±10V）Input resistance 500kΩor more Current（4-20mA、0-20mA）
3. Control Output1	C	Contact 1a 240V AC 2A（resistance Load）
	S	Voltage pulse（SSR drive voltage） 12V DC Max Load current 20mA
	I	Current 4-20mA DC Max Load resistance 500Ω
	V	Voltage 0-10V DC Max Load resistance 2mA
	Y	Control motor（Servo drive） 1c 240V AC 2A ※2
	X	Control motor（Servo drive）SSR 240V AC 2A ※2
4. Power supply	F—	100-240V±10% AC
5. Event Output	E	Event output 3 points（EV1-3） 1a 240V 1A（Resistance Load）
6. Control Output2 ※2	N—	None
	C—	Contact 1a 240V AC 2A（resistance Load）
	S—	Voltage pulse（SSR drive voltage） 12V DC Max Load current 20mA
	I—	Cyrrent 4-20mA DC Max Load resistance 500Ω
	V—	Voltage 0-10V DC Max Load resistance 2mA
	E—	Event output 1 points（EV4） 1a 240V 1A（Resistance Load）
7. DI	D	DI 7points（DI1-7） 5V 0.5mA
8. DO— Ⅰ	N	None
	J	DO3 Points（DO1-3） 24V 20mA
9. DO— Ⅱ CT Input Fead back input	N	None
	J	DO3 points（DO4-6） 24V 20mA
	H	CT Input 2 points 50.0A
	P	Feadback potention input 3 wire 100-2kΩ
10. AI（Analogue Control Input）	N	None
	I	Current 4-20mA DC Resistance load 100Ω
	V	Voltage 0-10V DC Input resistance about 500KΩ
11. AO（Analogue status Output）	N	None
	T	Current 4-20mA DC Max load resistance 300Ω
	V	Volatge 0-10V DC Max load current 2mA
12. Communication	N	None
	R	RS485
	W	RS232

■Accessories

	Name of products	Model
1	CT sensor (Product of U_RD co.,LTD)	CTL-6-S-H（0.0～50.0A）
2	Infrared-ray commuication adaptor	ATT-03
3	Shunt resistance 100Ω 0.05% (Current input)	ATT-04



(CT Sensor U_RD co., LTD)

■Order Code table

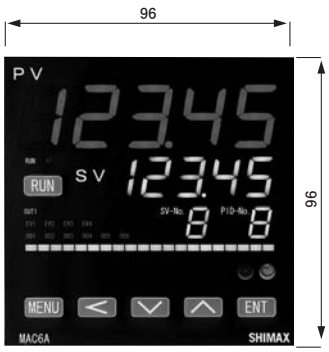
MAP6A Code table

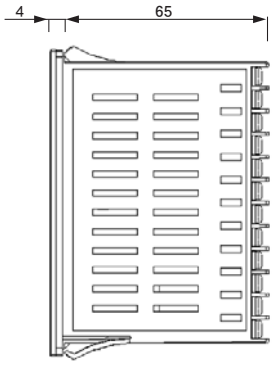
Item	Code	Specifications
1. Series	MAP6A—	96×96mm size program controller MAX 8patterns 96steps with Event 1～3. DI 1～7
2. Input ※1	M	Thermocouple（K、J、T、E、R、S、U、N、B、P L Ⅱ、WRe5-26） Input resistance about 500KΩor more Resistance Bulb (Pt100、JPt100） Specified Current 1mA Voltage（0-10mV、0-20mV、±10mV、0-50mV、0-100mV、±100mV) Input resistance about 500kΩor more Voltage（0-1V、0-2V、±1V、1-5V、0-5V、±10V) Input resistance 500kΩor more Current（4-20mA、0-20mA） ※Shunt resistance reguired at Current input(100Ω 0.05%)
3. Control Output1	C	Contact 1a 240V AC 2A（resistance Load）
	S	Voltage pulse（SSR drive voltage） 12V DC Max Load current 20mA
	I	Current 4-20mA DC Max Load resistance 500Ω
	V	Voltage 0-10V DC Max Load resistance 2mA
	Y	Control motor（Servo drive） 1c 240V AC 2A ※2
	X	Control motor（Servo drive）SSR 240V AC 2A ※2
4. Power supply	F—	100-240V±10% AC
5. Event Output	E	Event output 3 points（EV1-3） 1a 240V 1A（Resistance Load）
6. Control Output2 ※2	N—	None
	C—	Contact 1a 240V AC 2A（resistance Load）
	S—	Voltage pulse（SSR drive voltage） 12V DC Max Load current 20mA
	I—	Cyrrent 4-20mA DC Max Load resistance 500Ω
	V—	Voltage 0-10V DC Max Load resistance 2mA
	E—	Event output 1 points（EV4） 1a 240V 1A（Resistance Load）
7. DI	D	DI 7points（DI1-7） 5V 0.5mA
8. DO— Ⅰ	N	None
	J	DO3 Points（DO1-3） 24V 20mA
9. DO— Ⅱ CT Input Fead back input	N	None
	J	DO3 points（DO4-6） 24V 20mA
	H	CT Input 2 points 50.0A
	P	Feadback potention input 3 wire 100-2kΩ
10. AI（Analogue Control Input）	N	None
	I	Current 4-20mA DC Resistance load 100Ω
	V	Voltage 0-10V DC Input resistance about 500KΩ
11. AO（Analogue status Output）	N	None
	T	Current 4-20mA DC Max load resistance 300Ω
	V	Volatge 0-10V DC Max load current 2mA
12. Communication	N	None
	R	RS485
	W	RS232

※1 When using by current input, shunt resistance of option parts or same as items (less than 0.05% of 100Ω) is needed.
※2 When Motor control Y or X installed, Out2 and EV4 can not install.

External Dimension

MAC6A, MAP6A

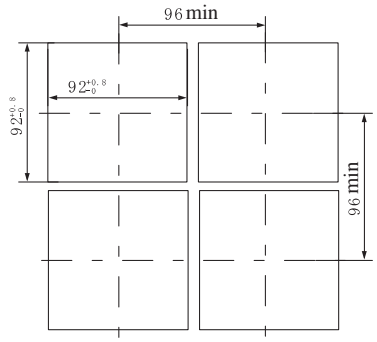


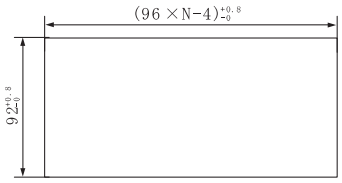


unit: mm

Panel Cutout

MAC6A, MAP6A

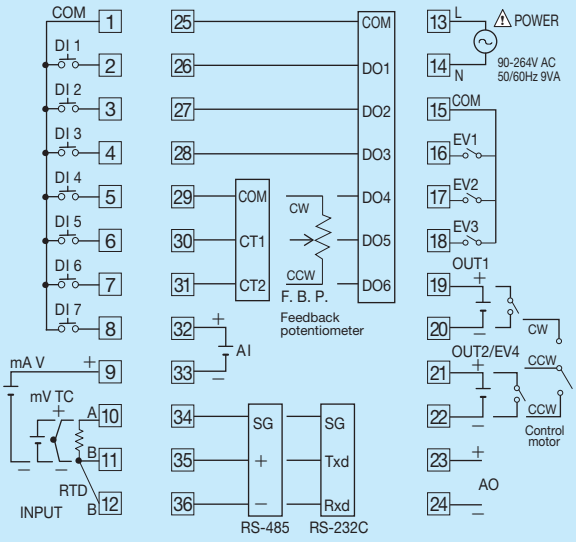




unit: mm

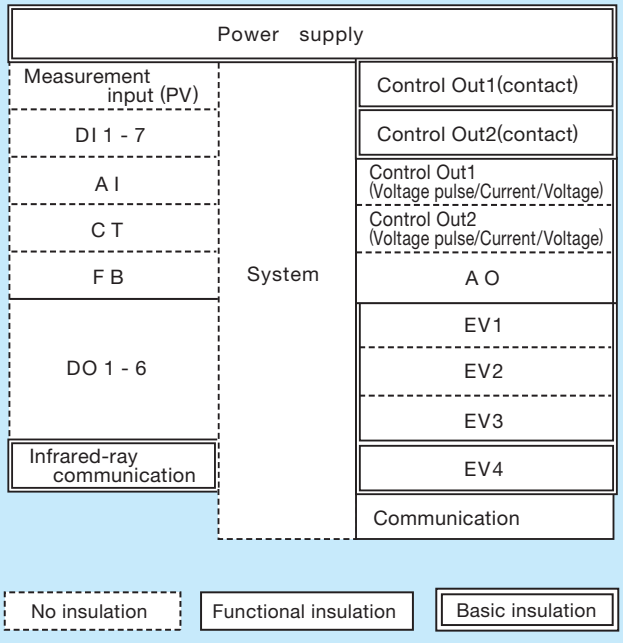
At the time of horizontal proximity attachment by a single hole
N: the number of equipment

Terminal arrangement



「Note」: If input type is thermocouple or voltage, errors may occur when terminal 11 and terminal 12 terminal are short-circuited

Isolation block chart



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