

# MA Series Temperature Controllers

## Temperature Controllers MAQ - Quarter DIN Controllers MAE - Eighth DIN Controllers

- *Touch-Tune Automatic Tuning*
- *Separate Displays for Process & Setpoint*
- *Single or Dual Output*
- *Internal INSTA-SET Memory*
- *Programmable Sensor Inputs & Scaling*
- *Setting Value Lock Function*
- *Front Panel Sensor Offset*
- *Compact Size (less than 3-1/2" deep)*



### Optional Features

- Internal Insta-Set Memory (8 recipes)
- Dual Outputs & Dual Alarms
- Heater Burnout Alarm
- RS-485 Digital Communications

### Additional Quarter DIN Options

- Remote Setpoint
- Process Variable Output
- Auto/Manual Control

### Introduction

MA Series controllers offer functionality and accurate performance at an affordable price.

The MA Series is a microprocessor based, single zone temperature controller from Barber-Colman featuring Touch-Tune™ automatic tuning, “load line” adjustment, sensor offset, a setting “lock” function, power failure memory, as well as complete setup and configuration from the front of the instrument.

Individual recipes are called by external switch selection. A MACS switch unit is offered for connecting as many as 32 separate controllers.

# MA Series Temperature Controllers

## Ordering Information

**MODEL** M A   -      -    -  -

Field No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Fields 1 through 3. CONTROLLER SIZE

- MAQ Quarter DIN (96 mm square)
- MAE Eighth DIN (48 mm W x 96 mm H)

### Field 4. OUTPUT 1

- 1 - Relay Contact
- 2 - Non-Contact Voltage (for SSR)
- 3 - Current (4 to 20 mAdc)
- C - Current (2 to 12 mAdc)
- T - Triac Output

### Field 5. OUTPUT 2

- 0 - None
- 1 - Relay Contact
- 2 - Non-Contact Voltage, (for SSR)
- 3 - Current (4 to 20 mAdc) (n/a for MAE)
- C - Current (2 to 12 mAdc) (n/a for MAE)
- 4 - Alarm 2 (shipped as Process Alarm)
- T - Triac Output

### Fields 6 and 7. INPUT

#### Thermocouple

19* Type K (0 to 2400 °F)	<b>Current (4 to 20 mAdc)</b>	40 -199.9 to 999.9
02 Type K (0 to 1200 °C)		41 -1999 to 9999
03 Type J (0 to 1600 °F)		
04 Type J (0 to 800 °C)	<b>Voltage (0 to 5 Vdc)</b>	
07 Type R (0 to 3200 °F)		50 -199.9 to 999.9
08 Type R (0 to 1600 °C)		51 -1999 to 9999
09 Type S (0 to 3200 °F)		
10 Type S (0 to 1600 °C)	<b>Voltage (1 to 5 Vdc)</b>	
11 Type B (0 to 3200 °F)		60 -199.9 to 999.9
12 Type B (0 to 1800 °C)		61 -1999 to 9999
13 Type T (-199.9 to 750.0 °F)		
14 Type T (-199.9 to 400.0 °C)	<b>Voltage (0 to 10 Vdc)</b>	
15 PL II (0 to 2400 °F)		70 -199.9 to 999.9
16 PL II (0 to 1300 °C)		71 -1999 to 9999
17 Type C (0 to 4200 °F)		
18 Type C (0 to 2300 °C)		

#### RTD

- 32 - PLT 100 DIN (.00385Ω/Ω/°C)(-199.9 to 400 °C)
- 33 - PLT 100 DIN (.00385Ω/Ω/°C)(-199.9 to 999.0 °F)

### Field 8. DIGITAL COMMUNICATIONS

- 0 - None
- 1 - RS-485 (MAQ)
- 2 - RS-485 (MAE, 120 Vac only)
- 3 - RS-485 (MAE, 240 Vac only)

### Field 9. SPECIAL OPTIONS MAQ (1/4 DIN) only

- 0 - None
- 1 - Auto/Manual
- 2 - Auto/Manual & Remote Setpoint (4 to 20 mA)
- 3 - Auto/Manual & Process Variable Output (4 to 20 mA)
- 4 - Auto/Manual & Remote Setpoint & Process Variable Output (both 4 to 20 mA)
- 5 - Auto/Manual & Remote Setpoint (1 to 5 Vdc)
- 7 - Auto/Manual & Remote Setpoint (1 to 5Vdc) & Process Variable Output (4 to 20 mA)

### Field 10. INSTA-SET MEMORY

- 0 - None
- 1 - Memory for 8 Sets of Setting Values

### Field 11. HOUSINGS

- 0 - Panelmount (standard)
- 1 - Shipped without housing. Order housing separately.

### Field 12. HEATER BURNOUT FUNCTION

Requires option 1, 2 or T in field 4. Not available on MAE with digital communications (Field 8, option 1).

- 0 - None
- 1 - Calibrated 5 Amps
- 2 - Calibrated 10 Amp
- 3 - Calibrated 20 Amps
- 4 - Calibrated 30 Amps
- 5 - Calibrated 40 Amps
- 6 - Calibrated 50 Amps

### Field 13. ALARM 1

- 0 - No Temperature Alarm
- 1 - High Deviation Alarm
- 2 - Low Deviation Alarm
- 3 - Dev Band (de-energized in the band)
- 4 - Dev Range Band (energized in the band)
- 5 - Process Alarm
- 6 - High Dev with Stand-by function
- 7 - Low Dev with Stand-by function
- 8 - Dev Band (de-energized in the band) with Standby

### Fields 14 and 15. SPECIALS

See price list

\*19 replaces 01

# MAP Programmer/Controllers

## MAP Series Quarter DIN Programmer/Controller

- **Ten Patterns, Ten Steps per Pattern**
- **Patterns can be linked (100 Steps)**
- **Battery Backed Memory**
- **Pattern End Output**
- **Touch-Tune™ Automatic Tuning**
- **PID, WAIT, & Alarm Block Functions**
- **Time Block Functions**
- **High/Low Deviation Alarms**
- **Front Panel Thermocouple Selection**
- **Adjustable Setting Value Range**



### Optional Features

- Standby or Hold after Power Failure
- Remote Stop, Hold, Advance, and Run
- 7 Time Signal Outputs (Event Outputs)
- Process Variable Output
- Setpoint Output
- RS-485 Digital Communications
- Guaranteed Ramp/Soak using External Input and Event Module (A-12366)

### Introduction

The MA-P is a microprocessor based time variable programmer with a built in single loop controller.

As many as 10 separate patterns of 10 steps each can be programmed, or patterns can be linked up to a maximum of 100 steps. Step duration can be from 0 to 99 hours 59 minutes.

Programmer block functions allow for storage of tuning constants, wait temperature settings, and alarms. Blocks can be assigned to as many program steps as necessary.

Optional time signal blocks (16 different Off/On settings) can be assigned to any of seven different open-collector time signal outputs.

# MAP Programmer/Controllers

## Ordering Information

**MODEL M A P**    - **0**     -   **0** -  - **0 0**  
Field No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

### Fields 1 through 3.

#### 1/4 DIN MA SERIES PROGRAMMER/CONTROLLER

Key Standard Features:

- 10 Patterns of 10 Steps each.
- Patterns can be Linked to reach maximum of 100 Steps.
- TouchTune™ Automatic Tuning.
- High/Low Deviation Alarms.
- Pattern End Output.
- 10 PID, Wait, and Alarm Blocks.
- Start Program by Run selection.

#### Field 4. OUTPUT 1

- 1 - Relay Contact (reverse acting)
- 2 - Non-Contact Voltage (for SSR) (reverse acting)
- 3 - Current (4 to 20 mAdc) (reverse acting)
- 4 - SSR Output (reverse acting)
- 6 - Relay Contact (direct acting)
- 7 - Non-Contact Voltage (for SSR) (direct acting)
- 8 - Current (4 to 20 mAdc) (direct acting)
- 9 - SSR Output (direct acting)

#### Field 5. RESERVED

#### Field 6 & 7. INPUT

##### Thermocouple:

- 19 - Type K (0 to 2400 °F)
- 02 - Type K, (0 to 1200 °C)
- 03 - Type J (0 to 1600 °F)
- 04 - Type J (0 to 800 °C)
- 07 - Type R (0 to 3200 °F)
- 08 - Type R (0 to 1600 °C)
- 09 - Type S (0 to 3200 °F)
- 10 - Type S (0 to 1600 °C)
- 11 - Type B (0 to 3200 °F)
- 12 - Type B (0 to 1800 °C)
- 13 - Type T (-199.9 to 750.0°F)
- 14 - Type T (-199.9 to 400.0°C)
- 17 - Type C (0 to 4200 °F)
- 18 - Type C (0 to 2300 °C)

##### RTD

- 32 - PLT 100 DIN (.00385 Ω/Ω°C) (-100.0 to 400.0 °C)
- 33 - PLT 100 DIN (.00385 Ω/Ω°C) (-100.0 to 400.0 °F)
- Current (4-20 mAdc)
- 42 - 0 to 100.0

#### Field 8. DIGITAL COMMUNICATIONS

- 0 - None
- 1 - RS-485, 1200 bps
- 2 - RS-485, 2400 bps
- 3 - RS-485, 4800 bps
- 4 - RS-485, 9600 bps

#### Field 9. OPTIONS

- 0 - None
- 1 - Process Variable Output (4 to 20 mAdc)
- 2 - Setpoint Output (4 to 20 mAdc)

#### Field 10. SPECIAL OPTIONS

- 0 - None
- 1 - External Input  
Stop, Hold, Advance, and Run
- 2 - Time Signal Outputs  
7 Open Collector Outputs; 15 Time Blocks  
(User supplied 50 mA 24 Vdc max.)
- 3 - Special Options 1 and 2

#### Field 11. POWER FAILURE MODE/STARTING PROGRAM

- 0 - Continue Program after restoring Power (standard)
- 1 - Standby Status after restoring Power
- 2 - Hold Status after restoring Power
- 3 - Process Value Start
- 4 - Automatic Start on Powerup

#### Field 12. RESERVED

#### Field 13. ALARM OPTIONS

- 0 - High/Low Deviation Alarms (standard)
- 1 - Dual Process Alarms

#### Field 14 & 15. RESERVED

# MAQ6-6 Controllers

## MA Series Temperature Controllers MAQ6-6 Quarter DIN Controller with Electric Actuator Positioning Slidewire Feedback Output

- *Touch-Tune Automatic Tuning*
- *Separate Displays for Process & Setpoint*
- *Programmable Sensor Inputs & Scaling*
- *Auto/Manual Control*
- *Setting Value Lock Function*
- *Front Panel Sensor Offset*
- *Compact Size (less than 3-1/2" deep)*
- *Accepts 100 to 1.2K  $\Omega$  Feedback Pot*



### Options

- Internal INSTA-SET™ Memory (8 Recipes)
- Alarm Output
- Process Variable Output or Percent Output
- RS-485 Digital Communications

### Introduction

MA Series controllers offer functionality and performance at an affordable price.

The MAQ6-6 is a microprocessor based, single zone temperature controller from Barber-Colman Company featuring Touch-Tune™ automatic tuning, Automatic/Manual control select, "load line" adjustment, sensor offset, a setting "lock" function, power failure memory, as well as complete setup and configuration from the front of the instrument.

Options for the MAQ6-6 Electric Actuator Positioning Controller include a choice of alarm functions (including a Standby function), internal INSTA-SET™ memory, process variable output or percent output and RS-485 digital communications.

# MAQ6-6 Controllers

## Ordering Information

### MAQ6-6 Quarter DIN Controller with Electric Actuator Slidewire Feedback

**MODEL** M A Q 6 - 6     -  0 0 -  -    
 Field No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

#### Fields 1 through 5. BASE

MAQ6-6 - Base Model

#### Fields 6 and 7. INPUT

##### Thermocouple

- 19 - Type K 0 to 2400°F
- 02 - Type K 0 to 1200°C
- 03 - Type J 0 to 1600°F
- 04 - Type J 0 to 800°C
- 07 - Type R 0 to 3200°F
- 08 - Type R 0 to 1600°C
- 09 - Type S 0 to 3200°F
- 10 - Type S 0 to 1600°C
- 11 - Type B 0 to 3200°F
- 12 - Type B 0 to 1800°C
- 13 - Type T -199.9 to 750.0°F
- 14 - Type T -199.9 to 400.0°C
- 15 - PLII 0 to 2400°F
- 16 - PLII 0 to 1300°C
- 17 - Type C 0 to 4200°F
- 18 - Type C 0 to 2300°C

##### RTD

- 32 - PLT 100 DIN (0.00385Ω/Ω/°C) (-199.9 to 400°C)
- 33 - PLT 100 DIN (0.00385Ω/Ω/°C) (-199.9 to 999.9°F)

##### Current (4 to 20 mAdc)

- 40 - Scaled -199.9 to 999.9
- 41 - Scaled -1999 to 9999

#### Field 8. DIGITAL COMMUNICATIONS

- 0 - None
- 1 - RS-485

#### Field 9. OPTIONS

- 1 - Auto/manual (standard)
- 3 - Auto/manual and process variable output (4 to 20 mAdc)
- 5 - Auto/manual and remote setpoint (1 to 5 Vdc)

#### Field 10. INSTA-SET™ MEMORY

- 0 - None
- 1 - For eight sets of setting values

#### Fields 11 and 12. RESERVED

#### Field 13. ALARM 1

- 0 - None
- 1 - High deviation alarm
- 2 - Low deviation alarm
- 3 - Deviation band (de-energized in band)
- 4 - Deviation range band (energized in band)
- 5 - Process alarm
- 6 - High deviation with standby function
- 7 - Low deviation with standby function
- 8 - Deviation band with standby function

#### Fields 14 and 15. SPECIALS

- 00 - None
- XX - See Price List

## Specifications

<b>Supply Voltage:</b>	115/230 Vac ±10%, 50/60 HZ
<b>Power Consumption:</b>	approx. 5W
<b>Ambient Temperature:</b>	0 to 50 °C (32 to 112 °F)
<b>Relative Humidity:</b>	Up to 85% (non-condensing)
<b>Weight:</b>	approx. 18 oz.
<b>Accuracy:</b>	Within ±0.3% of scaling range full scale + 1 digit
	<b>Thermocouple:</b> 300 °C (550 °F) span or more
	<b>RTD:</b> 100.0 °C (200.0 °F) span or more

# MB Series Temperature Controllers

## MBQ and MBE Temperature Controllers

- *Separate Displays for Process and Setpoint*
- *Programmable Sensor Inputs and Scaling*
- *Optional Dual Temperature Alarms*
- *Front Panel Sensor Offset*
- *Setting Value Lock*
- *Status Displays for Output, Alarms*
- *Sensor/Heater Burnout and Auto Tuning*



MB Series controllers are configurable, low cost autotuning controllers for applications where input ranges do not exceed 999.

### Introduction

The MB (Manufacturing Basic) Series temperature controllers provide dependable performance at an affordable price. The advanced microprocessor design minimizes circuit components, permitting a low-priced unit without penalty to control performance.

Touch-Tune™ automatic tuning is standard on both the MBQ and MBE. Auto-Tuning saves start-up time and provides reliable temperature control.

The MB is at home in the toughest environments. Units withstand ambient temperatures to 130 °F; reject 20 KV of electrostatic discharge and 4 KV of line voltage noise - and continue to maintain control of the process.

The MB Series comes pre-configured from the factory, ready for use after entering setpoints and tuning. Units can be re-configured in the field from the front panel to change scaling, alarm types and thermocouple types. This minimizes stocking and spare requirements. Because of the outstanding accuracy for the price ( $\pm 0.3\%$  +1 digit), the MB should be considered as a replacement to upgrade inaccurate, costly-to-repair analog instrumentation.

# MB Series Temperature Controllers

## Ordering Information

### MB Series Temperature Controllers

**MODEL:** M B   -    0 0 - 0   -  -

Field No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

#### Fields 1, 2. BASE

MB - Base model

#### Field 3. CONTROLLER SIZE (W x H)

E - Eighth DIN (48 mm x 96 mm)  
Q - Quarter DIN (96 mm x 96 mm)

#### Field 4. OUTPUT 1

A - Relay contact  
B - Non-contact voltage (for SSR)  
C - 4 to 20 mAdc  
T - Triac

#### Field 5. OUTPUT 2/ALARM 2

0 - None  
A - Output 2 relay contact  
4 - Alarm 2 relay contact (shipped as process alarm)  
5 - Output 2 and alarm 2 (shipped as process alarm)

#### Fields 6, 7. INPUT

##### Thermocouple (MBE ranges, three digit display)

20 - Type K, °F (0 to 999°F)  
21 - Type K, °C (0 to 999°C)  
22 - Type J, °F (0 to 999°F)  
04 - Type J, °C (0 to 800°C)

##### Thermocouple (MBE and MBQ ranges, four digit display)

19 - Type K, °F (0 to 2400°F)  
02 - Type K, °C (0 to 1200°C)  
03 - Type J, °F (0 to 1600°F)  
04 - Type J, °C (0 to 0800°C)

##### RTD (MBE ranges, three digit display)

36 - Pt 100 DIN (0.00385Ω/Ω/°C) (-199 to 400°C)  
37 - Pt 100 DIN (0.00385Ω/Ω/°C) (-199 to 999°F)  
34 - Pt 100 DIN (0.00385Ω/Ω/°C) (-19.9 to 99.0°C)  
35 - Pt 100 DIN (0.00385Ω/Ω/°C) (-19.9 to 99.9°C)

##### RTD (MBE and MBQ ranges, four digit display)

32 - Pt 100 DIN (0.00385Ω/Ω/°C) (-199.0 to 400.0°C)  
33 - Pt 100 DIN (0.00385Ω/Ω/°C) (-199.9 to 999.9°F)

#### Fields 8, 9, 10. RESERVED

#### Field 11. HOUSINGS

0 - Panelmount (standard)  
1 - MBE shipped without housing  
2 - MBQ shipped without housing

#### Field 12. HEATER BURNOUT CALIBRATION

Not applicable when option C, field 4, or option 5, field 5 selected.

0 - None  
1 - 5 Amp  
2 - 10 Amp  
3 - 20 Amp  
4 - 30 Amp  
5 - 40 Amp  
6 - 50 Amp

#### Field 13. ALARM 1

0 - No temperature alarm  
1 - High deviation alarm  
2 - Low deviation alarm  
3 - Deviation band (de-energized in the band)  
4 - Deviation range band (energized in the band)  
5 - Process alarm  
6 - High deviation with standby function  
7 - Low deviation with standby function  
8 - Deviation band with standby function

#### Fields 14, 15. SPECIALS

See MA/MB Series Specials page



# MA/MB Series Parts & Accessories

## Series MA/MB Controllers Accessories

Part Number	Series	Description
6-770	MAQ	Front Molding
6-771	MAE	Front Molding
6-774	MAM	Front Molding
6-1006	MAQ	Dust Cover for MAQ Series Controllers
6-1017	MSQ	Flexible Plastic Cover
13-04888-000-0-00	MAE	Adapter Plate for 520 Cutout
13-04904-000-0-00	MAE	Adapter Plate for Quarter DIN Cutout
13-04905-000-0-00	MAE	Adapter Plate for 270, 290 and 790 Cutout
13-04906-000-0-00	MAE	Adapter Plate for 470 Cutout
13-04907-000-0-00	MAE	Adapter Plate for 530 or 540 Cutout
13-04962-000-0-00	MAQ	Adapter Plate for 270, 290 and 790 Cutout
13-04963-000-0-00	MAQ	Adapter Plate for 470 Cutout
13-04966-000-0-00	MAQ	Adapter Plate for 530 or 540 Cutout
13-05086-000-0-XX	MAE	Flange Only With Openings 2,3,4,5,6,7,8,9 Horizontally and 1 or 2 Rows Vertical (Each row must have the same number of openings) 1st X = Horizontal Openings; 2nd X = Vertical Openings
20-2009	MAQ	Wiring Label
20-2010	MAE	Wiring Label
25-408	MAP	Terminal Screw (Tin)
25-409	MAP	Terminal Screw (Gold)
30-454	MA/MB	Current Transformer For Heater Burnout 0-20 Amps
30-458	MAE	Power Transformer
31-1075	MAP	Transistor for adding Process & Setpoint Output
31-1101	MB	Photocoupler For adding Alarm Output
31-1102	MAP	Photocoupler For adding Process & Setpoint Output
32-466	MAE	Front Membrane
32-467	MAQ	Front Membrane
32-468	MAM	Front Membrane
32-479	MAQ	Keyboard Switch Replacement Switch
37-231	MAQ	Diode Stack For adding Remote Setpoint & Process Output or RS-485 Digital Communications
37-233	MAE, MAQ	Triac Module For changing to Triac Output 1
38-218	MAE, MAQ	Alarm Relay For adding Alarm 1 (see Part Number E16-115 for Alarm 2)
38-220	MAM	Alarm Relay
39-480	MAQ	Capacitor for adding Remote Setpoint and/or Process Variable Output or RS-485 Digital Communications
39-482	MAQ	Capacitor 6.3 Volt, 10 MFD: used on RTD Input (MCD-20)
40-2053	MAE, MAQ	Resistor For changing to Non-Contact Voltage (SSR) Output 1 or Output 2
40-2054	MAE	Resistor/Transistor For changing from Current to Relay Output
40-2055	MAE, MAQ	Resistor 3k ohm for changing from TC to RTD Input
50-1539	MAQ	Mounting Hardware Screw Type Mounting (1 set of 2)
50-1540	MAE, MAM	Mounting Hardware. Spring Type "One touch" hardware for 1 mm to 3mm panel thickness (1 set of 2)
50-1541	MAE	Screw Mounting Hardware
50-1748	MAQ	Setup Block. For simultaneously pressing the switches required to enter the setup mode
50-1781	MAM	Flexible Plastic Cover For water sealing MAM front panel
50-1749	MAE	Setup Block. For simultaneously pressing the switches required to enter the setup mode

# MA/MB Series Parts & Accessories

## Series MA/MB Controllers Accessories (continued)

Part Number	Series	Description
71-743	MAE, MAQ	Left side terminal assembly. Includes 10 each of terminal nut, screw and contact (tin)
71-744	MAE, MAQ	Right side terminal assembly. Includes 10 each of terminal nut, screw and contact (tin)
71-745	MAE, MAQ	Sensor Terminal Assembly. Includes 5 each of terminal nut, screw and contact (gold)
30-464	MA, MB	Current Transformer For heater burnout 0 to 50 Amps
A-13460-000-0-XX	MAQ	Multiple housing w/ horizontal number of housings 2, 3, 4, 5, 6, 7, 8, 9 and 1 or 2 rows vertical (each row must have the same number of openings) 1st X = horizontal openings; 2nd X = vertical openings
A-13461-000-0-XX	MAE	Multiple housing w/ horizontal number of housings 2, 3, 4, 5, 6, 7, 8, 9 and 1 or 2 rows vertical (each row must have the same number of openings) 1st X = horizontal openings; 2nd X = vertical openings
A-13462	MAQ	Cover Plate
A-13463	MAE	Cover Plate
A-13483	MAQ	PCB Assembly For adding remote setpoint
A-13483-100	MAQ	PCB Assembly For adding Process Variable Output
A-13483-200	MAQ	PCB Assembly For adding Remote Setpoint AND Process Variable Output
A-13484	MAQ	PCB Assembly For adding Current Output 2
A-13495	MAQ	Housing and Mounting Hardware
A-13496	MAE	Housing and Mounting Hardware
A-13497	MAE, MAQ	PCB Assembly for Current Output 1 <b>Obsolete - replaced by A-13759</b>
A-13498	MAQ	PCB Assembly For adding RS485 Digital Communications
A-13513	MAP	Housing
A-13518	MAM	Housing
A-13529	MAQ8, MAQ9	Housing
A-13702	MBQ	Housing
A-13703	MBE	Housing
A-13704	MAE8, MAE9	Housing
A-13729	MSQ	Housing
A-13759	MAP, MAQ6-6 MAE, MAQ	PCB Assembly for Process Variable Output and Current Output 1
E16-115	MAE, MAQ	Relay For changing Output 1 to Relay Contact Output (same Relay for adding Alarm 2/Output 2)
E19-503	MAE, MAQ	Resistor For changing from Thermocouple Input to DC mA Input
CYZR-862-401	MAE	(R1) Resistor for changing from T/C to 0 - 5 or 1 -5 Volt Input
CYZR-862-430	MAE	(R1) Resistor for changing from T/C to 0 - 10 Volt Input
CYZR-862-201	MAE	(R2) Resistor for changing from T/C to All Volt Inputs
MACS	MAE, MAQ	Memory Setting Call Switch