MIC 1462 1/4 DIN SETPOINT PROGRAMMER

QUICK START USER MANUAL

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POWER UP PROCEDURE

Verify all electrical connections have been properly made before applying power to the instrument.

If the instrument is being powered for the first time, it may be desirable to disconnect the controller output connections. The instrument will be into control following the power up sequence and the output(s) may turn on. During Power up, a self-test procedure is initiated during which all LED segments in the two front panel displays appear and all LED indicators are on. When the self-test procedure is complete, the instrument reverts to normal operation.

Note: When power is first applied, a delay of approximately 3 seconds will be seen before the displays light up.

KEYPAD OPERATION

MODE Key
Cycles through modes available in the instrument.
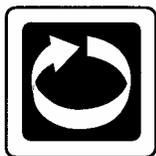
SCROLL Key
Displays the next parameter in sequence (indicated by Message display).
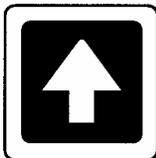
UP Key
Increments displayed parameter value/cycles through options.
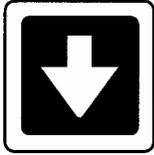
DOWN Key
Decrements displayed parameter value/cycles through options.

PROF Key
Cycles through Program (profile) numbers.

RUN/HOLD Key
Runs, holds or aborts current program (profile).
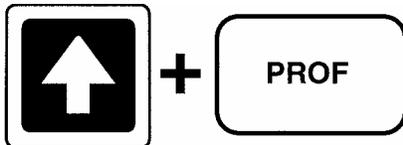
Jumps to next segment, when program is running.

Selects/de-selects Manual Control.
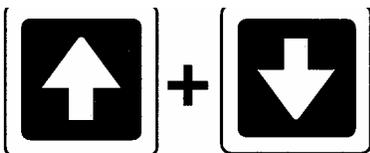
Sets a segment to Dwell when defining a program.

INDICATORS

Control Status Indicators

● AT
● ALM
● OP1
● OP2
● MAN

AT - On when Self-Tune is active; flashes when PreTune is active.

ALM - Flashes when any alarm is active.

OP1 - On when primary control output is active.

OP2 - On when secondary control output (if fitted) is active.

MAN - On when Manual Control is selected.

Run Status Indicators

RUN ●
HLD ●
x60 ●

RUN -   On - Program running or (if HLD On also) held
Flashing - Program in Delayed state

HLD -   On - Program held
Flashing - Program in Auto-Hold

X60 -   Off - timebase = hours/minutes
On - timebase = minutes/seconds

Event Indicators

EV1 ●
EV2 ●
EV3 ●
EV4 ●

Each indicates the status (active or inactive) of a user-defined event
(Off = inactive, On = active)

Mode Indicators
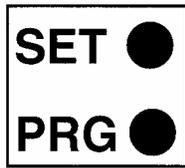
SET ● SET - On when Profile Set Mode is entered; flashes when viewing parameters in Configuration Mode after entry from Base Mode.

PRG ● PRG - On when Profile Set Mode is entered.

DISPLAYS

UPPER DISPLAY
Process Variable value

LOWER DISPLAY
Setpoint value or value/setting of parameter being viewed/edited.

MESSAGE DISPLAY

CURRENT RAMP STATE
▲ = UP Ramp
▼ = DOWN Ramp
BOTH ON = Dwell
Both flashing = In Manual Control while program is running

PROGRAM NUMBER
Number of currently-selected program

SEGMENT NUMBER
Number of current segment
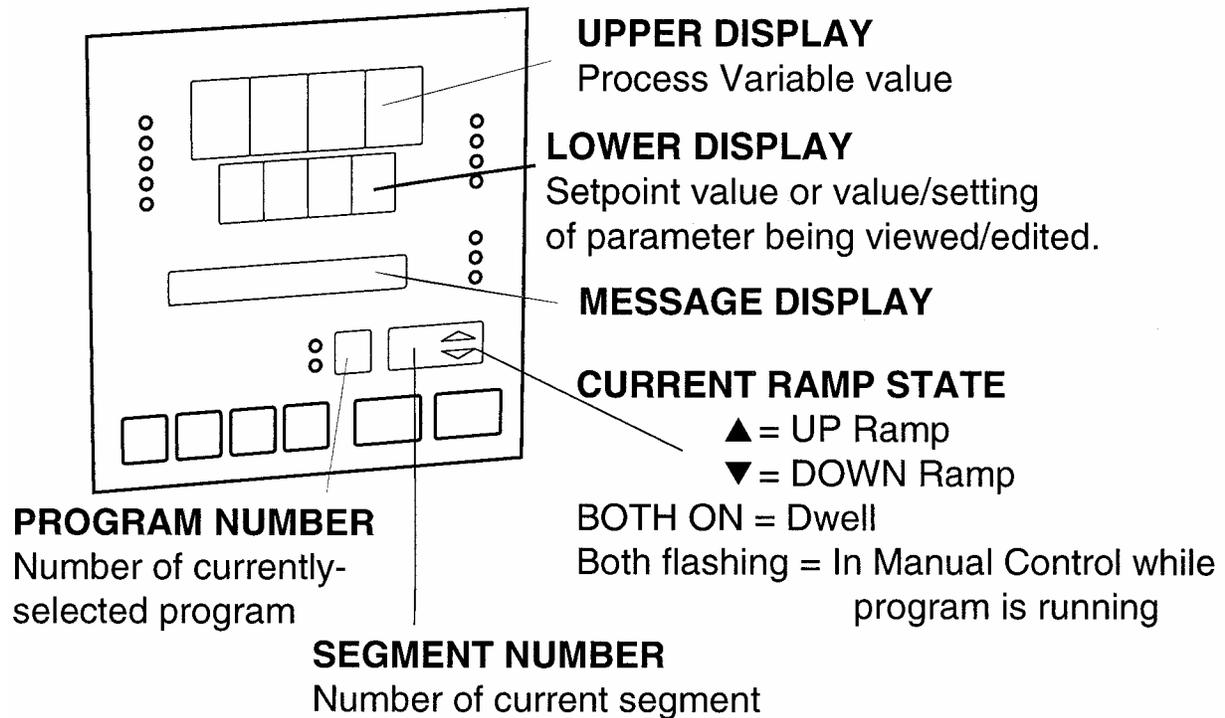
Single Setpoint/Base Mode Control

With the Setpoint Programmer in Base Mode (i.e. with the RUN, HLD, SET, and PRG indicators off), the two main displays will show the process variable value (upper display) and the setpoint value (lower display - Read Only). To change the setpoint value:

1. Press the SCROLL key until the Message Area displays Setpoint.

2. If Setpoint has been enabled in the Enable Mode, the UP and DOWN keys may be used to change the setpoint value (in the lower display) as required.

3. When the setpoint value is set as desired, press the SCROLL key again to view the input units.

4. Press the SCROLL key until Outputs is displayed in the message display. Use the up and down arrow keys to turn output on or off.

Selecting And Running A Program

When no program is running, the instrument is in Base Mode and the RUN and HLD indicators are off. In this mode, select a program as follows:

1. Hold down the PROF key until the required program number is displayed.

2. Press the RUN/HOLD key once to start the program. The RUN indicator will then go ON, or flash if a delayed start has been programmed. The instrument is now in Program Run Mode. In Program Run Mode, the process setpoint and event outputs are controlled by the program selected.

Holding A Program Manually

The operator may hold or freeze a program by momentarily pressing the RUN/HOLD key. The HLD indicator will then go on (the RUN indicator staying on) and the program will stop execution. The program may subsequently be restarted by momentarily pressing the RUN/HOLD key again.

HLD INDICATOR FLASHING: Before the operator holds the program manually, the HLD indicator may start flashing. This indicates that the program is currently subject to a Deviation-Hold. If the RUN/HOLD key is pressed (for a manual Hold), the HLD

indicator will go on continuously. When the operator removes the manual Hold (by pressing the RUN/HOLD key again), the HLD indicator will either flash (indicating that the Deviation-Hold conditions still prevail) or go off (indicating that the Deviation-Hold conditions no longer prevail).

RUN INDICATOR FLASHING: This indicates that the program is in a Delay state (i.e. is timed to start after a user-defined delay has elapsed). When the delay period has elapsed, the program will run and the RUN indicator will come on continuously.

Aborting A Program

The operator may abort (i.e. terminate) the current program by holding down the RUN/HOLD key for more than five seconds. When the program is aborted, a return is made to the Base Mode and the Message area will read Aborted.

This message will be removed by the next key press.

"End Of Program" Indication

When the program has completed its End Segment (i.e. the last segment to be performed), the message display will read At End, and a return is made to the Base Mode. Press any key to clear the Message Display.

MIC 1462 PROFILE PROGRAMMING

Programming a profile into the MIC1462 control is broken into three categories:

GLOBAL - Those parameters common to all programs.
PROGRAM - Those which apply to a specific program as a whole.
SEGMENT - Those relevant to a specific segment in a specific program.

Global Parameters (common to all programs)
(Program Number = A, Segment Number = Blank)

1. Press the mode key until the message display reads "Prof Par".

2. Press the scroll key once.

3. Press the Prof key until the program number display reads "A".

4. The global parameters will now be displayed in the message display and the setting will be displayed in the lower display.

5. Press the scroll key to go from one parameter to the next.

6. Press the up or down arrow to change the displayed setting.

The parameters common to all programs (global parameters) are presented for editing/viewing in the following sequence:

Global Profile Parameters Table

STEP	DESCRIPTION	MESSAGE DISPLAY	FUNCTION	AVAILABLE SETTING
1	Start On	Start On	Defines setpoint value at start of each program	SEtP - Current Controller setpoint value Proc - Current Process variable value
2	Go To	Go To	Defines Base Mode Status and end of each program	On - Outputs are active Off - Outputs are inactive
3	End On	End on	Defines setpoint value at end of each program	F_SP-End on Final SP value * SEtP-End on Controller SP value
4	Delay Time	Delay	Defines delay (in hours/min) between initiating the program and actually starting	Numerical value, with the decimal point separating the hours and minutes.

STEP	DESCRIPTION	MESSAGE DISPLAY	FUNCTION	AVAILABLE SETTING
5	Program Lock	LockProg	Defines whether the operator is permitted to change program definitions while a program is running/held	On - No changes permitted Off - changes permitted
6	Power Fail Recovery Period	Recovery	Defines length of power loss before automatic return to Base Mode after restoration of power, regardless of Recovery Type.	1:00 - 24:59 NOTE: If the real time clock option has not been provided, changing this value to 0.01 will allow selection of Recovery Type. Setting this to 00:00 will force a return to Base Mode.
7	Power Fail Recovery Type	Rec Type	Defines response to restoration of power after a power loss. This parameter does not appear if Recovery is set to 0.00. These settings can be overridden by the Recovery parameter.	cont - Continue with mode of operation at time of power failure. rESt - Restart program running at time of power failure. If one was not running, return to Base Mode. PFH - Setpoint and event outputs are held at values at time of power loss. P.F. Hold is displayed until a key other than RUN/HOLD is pressed. Pressing the RUN/HOLD key will continue the profile if one was running. Holding this key for more than five seconds will abort the profile.
8	Time of day	RTC Time **	Sets clock time of real-time clock option	1:00 - 24:59
9	Day of week	RTC Day **	Sets day of real-time clock option	Sun through SAt
10	External Selection	Ext. Sel ***	Defines functions which may be controlled externally	nonE = No external selection SEL = Program selection only run = Only Run, Hold, Abort and x60 functions both = All program selection and run control functions

* The Final Setpoint value for the End Segment of each program.

** Only if real-time clock is fitted.

*** Only if external options are fitted.

Program Parameters (apply as a whole to a specific program)

(Program Number = 1 to 8, Segment = Blank)

1. Press the mode key until the message display reads "Prof Par"

2. Press the scroll key once.

3. Press the Prof key until the desired program # is shown in the program number display.

4. The program parameters will now be displayed in the message display and the setting will be displayed in the lower display.

5. Press the scroll key to go from one program parameter to the next.

6. Use the up and down arrows to change the setting.

Only the parameters relevant to the displayed program number (which can be changed using the PROG key) are presented. The parameter sequence is as follows:

Program Profile Parameters Table

STEP	DESCRIPTION	MESSAGE DISPLAY	FUNCTION	AVAILABLE SETTING
1	Cycle Count	Cycles	Defines the number of times the program will be repeated	1-9999 Program will repeat the set number of times inF = Program will repeat indefinitely
2	Deviation Hold	Dev.Hold	Selects operation of Deviation Hold facility (relative to setpoint)	OFF = No Deviation Hold H_SP = Deviation Hold above setpoint only L_SP = Deviation Hold below setpoint only both = Deviation Hold above and below setpoint
3 *	Hold Band	HoldBand	Defines the width of the Hold Band	Numerical value (0.0 to span)
4 *	Hold On	Hold on	Defines whether the Deviation Hold facility is used on ramps only, dwells only or both	d_r = Deviation Hold on ramps and dwells d = Deviation Hold on dwells only r = Deviation Hold on ramps only
5	Pre-x60	Pre-x60	Determines whether the timebase for the program is pre-selected to be hours/minutes or minutes/seconds	nonE = No pre-selection On = Operates MINS/SECS OFF = Operates HRS/MINS
6	Autostart time Enable	Timer	Selects whether autostart is active for this profile	On OFF

STEP	DESCRIPTION	MESSAGE DISPLAY	FUNCTION	AVAILABLE SETTING
7	Start Time**	Strt-ti	Determines the automatic start time for the profile	1:00 - 24:59 OFF = manual start only
8	Start Day **	Strtday	Determines the day of the week when start time applies	ALL = 7 days a week Mon = Monday tuE = Tuesday Wed = Wednesday thu = Thursday Fri = Friday SAt = Saturday Sun = Sunday 5 dy = Mon - Fri 6 dy = Mon - Sat

* Not displayed if deviation hold is off.
** Only displayed when real-time clock is fitted, or if timer is set to On.

Editing/Viewing Parameters In Any/Each Segment In A Specific Program
(Program Number = 1 to 8, Segment Number = 1-16)

Adjust the Program Number (using the PROF key) and the Segment Number (using the RUN/HOLD key) as required. The parameters presented will be these relevant to the program and segment whose numbers are displayed. The parameters sequence for each segment is as follows. Press the SCROLL key to step through each parameter.

Segment Programming

1. After all the program parameters are set for a particular program number, be sure the desired program # is still displayed and then press the Run/Hold key. A one should now be displayed in the segment # display.

2. The segment programming parameters will now be displayed in the message display and the setting will be displayed in the lower display.

3. Press the up or down arrow to change the values in the lower display, press the scroll key to go to the next parameter in the message display. Not ethe program number and segment number displayes will remind you which program and step you are currently programming.

4. To get 4 dashes "----" on the display for the final SP, press the up and down arrow at the same time.

5. To enter "End" into the time for the final segment, press down arrow to go below 0.

Segment Profile Parameters Table

STEP	DESCRIPTION	MESSAGE DISPLAY	FUNCTION	AVAILABLE SETTING
1	Final Setpoint Value	Final SP	Defines the final value of the setpoint for this segment, selects a dwell segment or indicates a Join, Repeat, or End Program segment	Numeric value (limited by SPHi and SPLo) or (by pressing the UP/DOWN keys simultaneously) indicates a dwell with: "_ _ _ _" or, if the segment is already a Join, Repeat, or End Program segment, as shown below
	Segment Time or Ramp Rate as selected by Segment Mode parameter in Configuration Mode	Time or RampRate	Defines the duration/ramp rate of the segment or whether this is a Join, Repeat or End Program segment *	Four-digit number in the form nn.nn (hours-minutes or minutes-seconds) or negative values as follows (press DOWN key): JO1 - Join to Program 1 JO2 - Join to Program 2 JO3 - Join to Program 3 JO4 - Join to Program 4 JO5 - Join to Program 5 JO6 - Join to Program 6 JO7 - Join to Program 7 JO8 - Join to Program 8 rEP - Repeat Segment End - End Program
3	Event †	Event	Defines the states of the four event outputs for this segment	Four-bit binary number (0=inactive, 1=active) (0010 = only event 2 active)

*   If a segment is set to be a Join segment, a repeat segment or an End Program segment, the next depression of the SCROLL key will set the Segment Number to 1. Otherwise, the next depression of the SCROLL key will display the next segment final SP, or Event for the current segment if the Event Output hardware is fitted.

†   This parameter appears in the sequence only if the Event Output hardware is fitted, in which case this parameter will be followed by the Final Setpoint Value parameter for the next segment. If this hardware is not fitted, this parameter will be omitted from the sequence and the segment number will be advanced, causing the Final Setpoint Value parameter for the next segment to appear immediately.

Exiting Profile Set Mode

The operator may exit from Profile Set Mode by pressing the MODE key. To return to Base Mode, press the MODE key until the Base Mode prompt appears in the Message Display, then press the SCROLL key.

SAMPLE PROFILE

The Control is capable of storing eight (8) profiles with up to sixteen (16) segments depending on memory. Each segment consists of a final setpoint, time, and event(s) status. The sample profile below is set up to use Profile number 1.

Temperature Profile
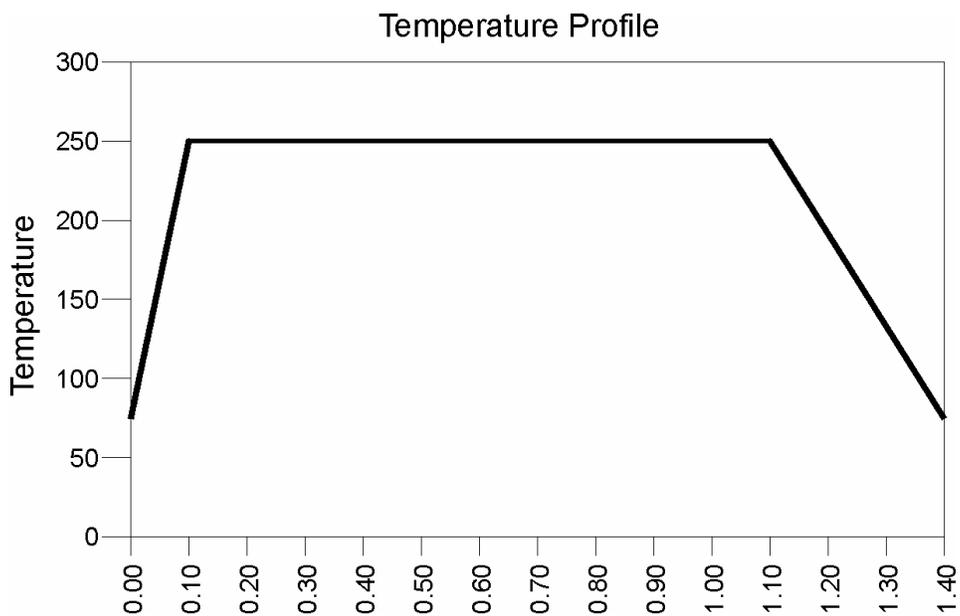
Entering Global Parameters For The Profile

Press the mode key until Prof Par is displayed in the Message Display.

Press the SCROLL key and Cycles will be displayed with 1 displayed in the Program display. Make changes with the UP and Down arrow keys. Press the SCROLL key to move to the next display.

Note: the segment display must be blank. If not, press RUN/HOLD key until the segment display is blank.

Description	Message Display	Setting In Lower Display
Cycle Count	Cycles	1
Deviation Hold	Dev. Hold	OFF
Time Base	Pre-x60	ON
Autostart Time Enable	Timer	OFF

Entering Parameters Common To All Profiles

With Cycles displayed in the Message Display, Press the PROF key until A is displayed in the Program Display. . Make changes with the UP and Down arrow keys. Press the SCROLL key to move to the next display.

Description	Message Display	Setting In Lower Display
Start On	Start On	Proc
Go To	Go To	OFF
Delay Time	Delay	0.00
Program Lock	Lock Prog	ON
Power Fail Recovery Period	Recovery	0.01
Power Fail Recovery Type	Rec Type	Cont
Time of Day *	RTC Time	Enter time
Day of Week *	RTC Day	Enter Day

* Only used if Real Time Clock is installed in the Control.

Running The Profile

Press the PROF key until 1 is displayed in the Program Display. Press the Run/HOLd key until 1 is displayed in the Segment Display and Final SP is displayed in the message display. Make changes with the UP and Down arrow keys. Press the SCROLL key to move to the next display.

Segment	Description	Message Display	Setting In Lower Display
	Setpoint	Final SP	250
#1	Ramp Time	Time	0.10
	Event Status	Event	0001
	Setpoint	Final SP	250 (or "- - - -")
#2	Soak Time	Time	1.00
	Event Status	Event	0001
	Setpoint	Final SP	70
#3	Ramp Time	Time	0.25
	Event Status	Event	0000
	Setpoint	Final SP	70 (or "- - - -")
#4	Time	Time	End *
	Event Status	Event	0000

* Press and hold the Down arrow key until "End" is displayed.

Press the mode key to return to the base mode. Press the PROF key until 1 is displayed in the segment display. Press the Run/HOLd key to start the profile.