



# C200 series Controller

## *Operating Instructions*



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# **C240 CONTROLLER OPERATING INSTRUCTIONS**

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## **C240 PROGRAMMABLE BELL CONTROL SYSTEM**

The Controller has ten separate Program memories all of which can be programmed with up to one hundred weekly operating times of Tolling or Angelus bell functions, Hour strike and Quarter Chime bells and Tune Playing.

Each Program can contain different sequences of times to give varying seven day programmes which can then be selected when required.

As well as Automatic bell operating times the Controller has the facility to operate the Bells manually as listed in the MANUAL section below.

The speed of the blows on all bell functions are also adjustable to suit the site requirements.

The Controller memory will retain the time and date information together with any customer programmes and individual settings for many years without external power. The Controller Security Key Switch on the front panel selects the following.

### **AUTO**

This is the standard position during normal operation.

The Display, from the top line shows the current time and date, the Controller Model number and 'AUTO MODE'.

For ease of viewing the time is repeated in large numbers and the bottom line shows the actual Program number selected.

The switch must be in the 'AUTO' position to allow an automatic program to operate.

### **MANUAL**

This position allows instant operation of the Bell functions.

The Manual bell functions on Model C240 are-

Service Tolling, Angelus bell sequence of 3-3-3 and then 9 blows,

Funeral Tolling, Single Blow on a bell, Tune Playing and various Silencing functions.

### **SET**

From this 'SET-UP' screen all of the adjustable bell functions such as Programming weekly Service Bell functions, Clock bell silencing times and bell speed adjustments are accessed.

If a pre-programmed sequence has been requested this normally will be set into Program 1. A listing of any pre-programmed functions will be included in these instructions. The Controller Display will show the Program number currently selected and the Controller will follow any bell sequences requested.

The Security Switch should be set and left in 'AUTO'.

**NB. As the Controller is programmable, the Key should be removed when unattended to prevent unauthorised operation or alteration of existing programmed information.**

## **MANUAL SINGLE BELL FUNCTIONS**

**Turn the Security Key** to the 'MANUAL' position.

The MANUAL FUNCTION screen appears showing the options.  
Select the bell function required.

### **SERVICE TOLLING**

**Press button 1** for Service Tolling.

The 'TOLLING TIME' screen appears, select the required tolling time and -

**Press the button number** showing against the selection.

The bell will ring for the time selected and then automatically switch off.  
(Except for Number 8 - the CONTINUOUS selection.)

**Turn the Security Key** back to 'AUTO'.

The Controller will return to AUTO mode on completion.

The tolling can be immediately stopped by pressing any button once.

### **ANGELUS BELL SEQUENCE**

**Press button..2..** for the Angelus bell sequence 3 – 3 – 3 – 9 blows.

The Angelus bell will ring the sequence and then automatically switch off.

The screen will show 'ANGELUS RINGING'.

**Turn the Security Key** back to 'AUTO'.

The Controller will return to AUTO mode on completion.

The Angelus can be stopped by pressing any button once.

### **FUNERAL TOLLING**

**Press button 3..** for Funeral Bell Tolling.

The 'TOLLING TIME' screen appears, select the required tolling time and-

**Press the button number** showing against the selection.

The bell will ring for the time selected and then automatically switch off.

(Except for Number 8 - the CONTINUOUS selection.)

**Turn the Security Key** back to 'AUTO'.

The Controller will return to 'AUTO' mode on completion.

The tolling can be immediately stopped by pressing any button once.

### **SINGLE BLOW**

**Press button 5** for a Single blow on the bell.

Each time button 5 is pressed the bell will ring a Single Blow.

Turn the Security Key back to 'AUTO' on completion.

The Controller will return to 'AUTO' mode.

## **MANUAL TUNE PLAYING**

Choose a tune from the page headed LIST OF TUNES and note the Tune Number.

**Turn the Security Key** to the 'MANUAL' position.

The MANUAL FUNCTION screen appears showing the options.

**Press button 4** -- 'TUNE PLAYER'

The TUNE SELECTION screen appears showing a number with the first Digit flashing on and off.

**Press button 4** to increment the number on the flashing digit

Press the button repeatedly until the correct number shows.

**Press button 3** to move to the next digit which will then flash.

Repeat these two operations until the complete required number shows.

All three digits must match the tune number selected to play.

**Press button 6** to accept the Tune number selected.

The display will show the Title of the tune selected and ask for confirmation.

**Press button 6** if the Tune selected is **incorrect**.

The tune selection screen will re-appear.

OR

**Press button 3** to play the Tune.

The Tune playing can be immediately stopped by pressing any button once. If more tunes are to be played, wait until the tune has finished, the screen will return to the MANUAL FUNCTION screen ready for another selection to be made.

If no more manual functions are required, the Key switch may be returned to 'AUTO' as soon as the tune has been started.

**Turn the Security Key** back to 'AUTO'.

The Controller will return to AUTO mode on completion of the tune playing.

## **MANUAL BELL SILENCING**

These Bell Silencing functions allow either temporary or permanent Silencing of automatic bell functions. eg. during funerals or specific times when silence is appropriate.

The silencing functions available are-

**ALL BELLS SILENT.**--- - Turns ALL automatic bell functions Off or On.  
**HOUR STRIKE AND QUARTER CHIMES.** Turns Strike and Chimes On or Off.  
**TOGGLE AUTOMATIC CLOCK SILENCER.** This function will toggle the Automatic Silencer to the opposite state. So if the Silencer is currently Off it will be turned On or if the Silencer is On it will be turned Off. The Automatic Silencer will continue to operate normally at the next automatic programmed time.  
eg. This would allow the clock bells to be silenced from, say, mid-afternoon onwards and then automatically switch back on again at the next pre- programmed ON time the following morning.

**Turn the Security Key switch** to the ‘SET’ position.

The SET UP screen will appear.

**Press button 2** - ‘BELL SILENCERS’.

The Bell Silencer screen appears.

**Select the appropriate function required.**

**Press button 5** **HOURS AND QUARTER CHIMES SILENT.** This will silence both Quarter Chimes and Hour Strike irrespective of any automatic silencing times but leave all other Automatic functions operational.

**Press button 7** **TOGGLE AUTO SILENCER.** This function will toggle the Automatic Silencer to the opposite state. So if the Silencer is currently Off it will be turned On or if the Silencer is On it will be turned Off. The Automatic Silencer will continue to operate normally at the next automatic programmed time.

**Press button 3** **ALL BELLS SILENT** this will stop every Automatic bell function from occurring until this selection is reversed.

**Press button 1** to return to the SET-UP screen.

**Turn the Security Key switch** to the ‘AUTO’ position.

**The AUTO MODE screen will show which manual silencers have been selected.**

## **SELECTING ALTERNATIVE PROGRAMS**

**Any of the ten Programs can be selected to have the Automatic Operations set in. Different weekly programs can be entered and then selected whenever required.**

**Turn the Security Key switch to the 'SET' position.**

The SET UP screen will appear.

**Press button 6** - 'PROGRAM No. SELECT'.

The current Program number is displayed.

**Press button 2** to advance the number.

**Press button 3** when the required Program number shows.

**Turn the Security Key switch to 'AUTO'.**

## **REVIEWING EXISTING PROGRAM ENTRIES**

This allows the listing and deleting of all Automatic Bell functions set into memory on the any of the Ten Automatic Programs.

**Check that the Program number showing on the 'AUTO MODE' screen is the Program number to be reviewed, if not, follow the above 'SELECTING ALTERNATIVE PROGRAM NUMBER' instructions first.**

**Turn the Security Key switch to 'SET' position.**

**Press button 1** 'LIST SELECTED PROG'.

The display screen shows the first entry in the Program.

At this point there are 3 options available and shown on the screen.

**Press button 1** to 'RETURN' the Controller to the SET-UP screen.

Or

**Press button 2** to show the 'NEXT' entry in the Program

The whole program can be listed by continually pressing button 2.

A message will appear on the screen after the last entry has been displayed.

**Press button 3** to 'DELETE' the entry.

The entry will be Deleted and the screen will show the next entry in the program.

**NB. Any Deleted entry will disappear totally from the Program.**

**Turn the Security Key switch to 'AUTO'.**

## ADDING A NEW ENTRY TO A PROGRAM

If a new entry is added to an existing program then check that the new function time and days do not coincide with any existing entry on the same program.

**Check that the Program number showing on the 'AUTO MODE' screen is the Program number to be reviewed, if not, follow the above 'SELECTING ALTERNATIVE PROGRAMS' instructions first.**

**Go to the relevant sub heading dealing with the function required.**

### ADDING AN ANGELUS BELL

**Turn the Security Key to the 'SET' position.**

The SET UP screen appears.

**Press button 3** 'PROGRAM SET-UP'.

From the list on the screen choose the function required.

**Press button 3** for the ANGELUS bell function.

The 'DAY SELECTION' screen appears and shows the days of the week with an arrow under the first day.

Select the day(s) of the week on which the bell function is required to ring.

**Press button 3** to select or deselect the day above the arrow.

When the letters representing the days are in **lower case**, the day is **not selected**.

The letters change to **upper case** or capital letters when they **are selected**.

**Press button 2** to move to the next day position.

Repeat these two operations to obtain the required combination of days.

If a day is incorrectly selected, set the arrow under the day and de-select it by pressing button 3.

**Press button 4** when the combination of days is correct.

The Display will now show the function START TIME screen.

Enter the time (in 24 hour format) when the Angelus bell is to start ringing.

**Press button 4** to increment the flashing digit or –

**Press button 3** to select the next digit.

Repeat these two operations until the required time is correctly entered.

**Press button 6** to accept the entry.

The screen returns to the PROGRAM SET-UP screen.

If **more ANGELUS entries** are to be set up then go back to 3<sup>rd</sup> line of this instruction.

If there are **no more** entries

**Press button 1** to return to the SET-UP Screen

**Turn the Security Key switch to 'AUTO'**

## **ADDING A SERVICE TOLLING BELL**

**Turn the Security Key to the 'SET' position.**

The SET UP screen appears.

**Press button 3** 'PROGRAM SET-UP'.

**Press button 4** for the SERVICE TOLLING bell function.

The 'DAY SELECTION' screen appears and shows the days of the week with an arrow under the first day. When the letters representing the days are in lower case, the day is not selected. The letters change to upper case or capital letters when they are selected.

Select the day(s) of the week on which the bell function is required to ring.

**Press button 3** to select the day above the arrow.

**Press button 2** to move to the next day position.

Repeat these operations to obtain the required combination of days.

If a day is incorrectly selected, set the arrow under the day and de-select it by pressing button 3.

**Press button 4** when selection of days is correct.

The Display will now show the 'TOLLING START TIME' screen.

Enter the time (in 24 hour format) when the SERVICE bell is to start ringing.

**Press button 4** to increment the flashing digit or –

**Press button 3** to select the next digit.

Repeat these two operations until the required time is correctly entered.

**Press button 6** to accept the entry.

Now enter the number of minutes the Tolling bell is to ring.

**Press button 4** to increment the flashing digit.

OR–

**Press button 3** to select the next digit.

Repeat these two operations until the required time is correctly entered.

**Press button 6** to accept the entry.

The display returns to the SET-UP screen.

If there are more entries go back to line 3 of this instruction sheet

If there are **no more** entries

**Press button 1** to return to the SET-UP Screen

**Turn the Security Key switch to 'AUTO'**

## **ADDING CLOCK BELL SILENCING TIMES**

The SILENCER is to restrict the times that the Hour Strike and Quarter Chimes bells will ring. Without this function the bells will ring at every hour and quarter hour. If a new entry is added to an existing program then check that the new function time and days do not coincide with an existing entry on the same program.

**Turn the Security Key to the 'SET' position.**

The SET UP screen appears.

**Press button 3** 'PROGRAM SET-UP.'

The 'PROGRAM SET-UP' screen appears.

**Press button 2** - 'AUTO CLOCK SILENT.'

The 'DAY SELECTION' screen appears and shows the days of the week with an arrow under the first day. When the letters representing the days are in lower case, the day is not selected. The letters change to upper case or capital letters when they are selected.

Select the day(s) of the week on which the Auto Silencer function is required.

**Press button 3** to select or deselect the day above the arrow.

**Press button 2** to move to the next day position.

Repeat these two operations to obtain the required combination of days.

If a day is incorrectly selected, set the arrow under the day and de-select it by pressing button 3.

**Press button 4.** when combination of days is correct

The Display will now show the 'STRIKE AND QUARTERS START' screen.

Enter the time (in 24 hour format) when the clock bells should START ringing on the selected days. Enter a time five minutes before the first bell is required.

**Press button 4** to increment the flashing digit or –

**Press button 3** to select the next digit.

Repeat these two operations until the required time is correctly entered

**Press button 6** to accept the entry

The screen now shows 'STRIKE AND CHIMES END' time...

Enter a time 5 minutes after the last clock bells should stop ringing,

**Press button 4** to increment the flashing digit or –

**Press button 3** to select the next digit.

Repeat these operations until the required time is correctly entered.

**Press button 6** to accept the entry.

The display returns to the SET-UP screen.

## ADDING AUTOMATIC TUNE PLAYING TIMES.

If a new entry is added to an existing program then check that the new function time and days do not coincide with an existing entry on the same program.

**Turn the Security Key to the 'SET' position.**

The SET UP screen appears.

**Press button 3** 'PROGRAM SET-UP.'

The 'PROGRAM SET-UP' screen appears.

**Press button 5** - 'TUNE PLAYER.'

The 'DAY SELECTION' screen appears and shows the days of the week with an arrow under the first day. When the letters representing the days are in lower case, the day is not selected. The letters change to upper case or capital letters when they are selected.

Select the day(s) of the week on which the Tune is required.

**Press button 3** to select or deselect the day above the arrow.

**Press button 2** to move to the next day position.

Repeat these two operations to obtain the required combination of days.

If a day is incorrectly selected, set the arrow under the day and de-select it by pressing button 3.

**Press button 4.** when combination of days is correct

The Display will now show the 'TUNE START TIME.' screen.

Enter the time (in 24 hour format) when the TUNE should start playing on the selected days.

**Press button 4** to advance the flashing number

**Press button 3** to select the next digit.

Repeat these two operations until the required time is correctly entered

**Press button 6** to accept the entry.

The SELECT TUNE screen appears showing a number with the first Digit flashing on and off.

**Press button 4** to increment the number on the flashing digit

Press the button repeatedly until the correct number shows

**Press button 3** to move to the next digit which will then flash.

Repeat these two operations until the complete required number shows.

All three digits must match the tune number selected to play.

**Press button 6** to accept the Tune number selected.

The display will show the Title of the tune selected and ask for confirmation.

**Press button 6** if the Tune selected is **incorrect**.

The tune selection screen will re-appear.

OR

**Press button 3** if the Title of the tune **is** correct.

The screen returns to the PROGRAM SET UP.

Repeat the whole instruction for more tune programming.

Or-

**Press button 1** to return to the SET UP screen

**Return the Security Key switch to 'AUTO'**

## **BELL SPEED ADJUSTMENT**

### **SERVICE TOLLING    ANGELUS    FUNERAL TOLLING** **CLOCK QUARTER CHIMES        HOUR STRIKE BELL** **TUNE PLAYING**

Turn the Security Key switch to 'SET' position . The SET UP screen will appear.

**Press button 4** 'SPEED SET'.

The SPEED SET screen shows the Bell functions.

Select the function requiring adjustment.

**For adjustments to the TUNE PLAYER speeds see the next page.**

**Press button 2** for adjustment to the SERVICE TOLLING speed.

or

**Press button 3** for adjustment to the ANGELUS speed

or

**Press button 4** for adjustment to the FUNERAL TOLLING speed

or

**Press button 5** for adjustment to the CLOCK QUARTER CHIMES speed.

or

**Press button 6** for adjustment to the HOUR STRIKE speed.

The screen shows the number of seconds set between each blow of the bell.

**Press button 2** to increment the number of seconds, this is variable from 1 second up to a maximum of 9.9 seconds for, Service Tolling and Angelus bells, or 10 to 60 seconds for the Funeral bell. The Clock Quarter Chimes and Hour Strike are adjustable from 0.5 seconds to 3 seconds.

If advanced past the maximum time the number reverts to the minimum time.

**Press button 3** 'APPLY' when the required rate is set.

(If an adjustment has been made to the Clock Chimes or Strike the Controller will immediately demonstrate the new setting of the bell speed.)

The screen returns to 'SPEED SET' If there are no more adjustments Press button 1 'CANCEL' to return to the 'SET UP' screen.

Return the Security Key switch to 'AUTO'

The Display reverts back to AUTO MODE

## ADJUSTING INDIVIDUAL TUNE SPEEDS

Turn the Security Key switch to 'SET' position . The SET UP screen will appear.

Press button 4 'SPEED SET'.

The SPEED SET screen shows the Bell functions.  
Select the function requiring adjustment.

Press button 7 for TUNE PLAYER speed adjustment.

The SELECT TUNE screen appears showing a number with the first Digit flashing on and off.

Press button 4 to increment the number on the flashing digit

Press the button repeatedly until the correct number shows.

Press button 3 to move to the next digit which will then flash.

Repeat these two operations until all three digits match the required tune number.

Press button 6 to accept the Tune number selected.

The display will show the Title of the tune selected and ask for confirmation.

Press button 6 if the Tune selected is **incorrect**.

The tune selection screen will re-appear

Or

Press button 3 if the Tune selected is **correct**.

The TUNE SPEED screen appears with the speed number currently set for this Tune.  
Tune speeds are represented by a number from 5 to 30  
5 is the fastest speed available and 30 is the slowest.

Press button..2 to increment the number.

The number will **only** increment, therefore a smaller number has to be reached by pressing the button a number of times to increase the number to it's maximum where upon it will revert to the minimum number.

Selecting a **lower** number will **increase** the speed at which the tune plays and a **higher** number will **decrease** the speed of playing.

Press button 3 to Accept the new speed

OR

Press button 1 to cancel the speed adjustment.

The display returns to the ' SPEED SET ' screen

**NB It is important to note that with real bells, there is always a maximum speed at which mechanical bell hammers can operate when playing. Each hammer will have different characteristics and this restriction will vary between different hammers. It is, therefore, possible that a speed could be selected which would exceed this limit and result in certain notes not playing on some tunes. (especially where there are fast repeat notes on the same bell)**

**Our digital BELL SOUND systems are not speed limited in any way.**

## **RESETTING THE DISPLAY TIME AND DATE**

When entering this SET UP function the Controller real time clock will stop, therefore, it is necessary to adjust the time to a few minutes in advance of real time so that when the adjustments are finished the display clock can be started at the exact time. The seconds are automatically zeroed.

**Turn the Security Key Switch** to 'SET' position.

The SET UP screen will appear

**Press button 5** to select TIME AND DATE SET-UP

The screen shows the DISPLAY CLOCK SET-UP screen

The Hour digits are selected and flashing at the top of the screen.

**Press button 2.** To increment the flashing number.

Or

**Press button 3** To advance to the next digit

When all adjustments are made wait until real time reaches the time set into the clock and then

**Press button 6** at the exact second to return to the SET UP screen

Return the Security Key switch to 'AUTO'

# 120 & 180 WATT BELL SOUND CABINET WIRING AND LAYOUT

