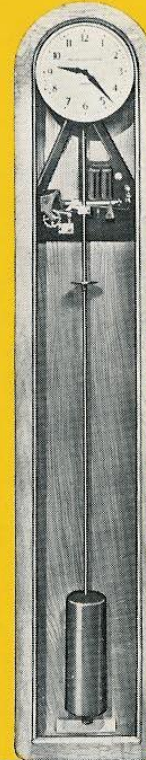


# Some well-known users of E.C.S. Master Clock Systems

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## SMITHS



# E.C.S. PENDULUM MASTER CLOCK AND AUXILIARY EQUIPMENT

## English Clock Systems

179-185 GREAT PORTLAND ST., LONDON, W.1. LANGHAM 7226  
BRANCH OFFICES IN BIRMINGHAM, MANCHESTER, GLASGOW, BELFAST

A Branch of the  
Clock and Watch  
Division of  
**SMITHS**

## THE MASTER CLOCK

The Pendulum Master Clock, working independently of the mains for its timekeeping, controls a whole system of slave-clocks, time recorders and audible time signals and provides accurate and uniform time throughout the building.

E.C.S have provided Master Clock installations of all types for factories, offices and public buildings throughout the world; the well-known names of some of the users of this system are listed on the back of this leaflet.

In cases of difficulty our technical staff is available to offer assistance and advice.



# THE MASTER CLOCK

# AUXILIARY EQUIPMENT

Here, briefly, is described the function of the Master Clock and its auxiliary equipment.

## FUNCTION

To control by half-minute impulses any number of Slave Clocks, Time Recorders and audible Time Signals.

## CASE

Oak or mahogany finish, designed for wall mounting. The glazed door is fitted with a lever lock and two hook fasteners.

## DIAL

White enamel with Perpetua numerals in black. Dial diameter 7". Fitted with standard half-minute impulse movement indicating the time shown on all clocks connected to the Master.

## MOVEMENT

Designed and manufactured to conform to the accepted principles of all "free" pendulum Master Clocks. Contact points are of iridium and platinum. Control lever is fitted for advancing or retarding all clocks in the circuit. Complete movement is mounted on a heavy cast-iron base plate.

## PENDULUM

Full seconds—fully compensated. Made from "Invar" alloy having an extremely low coefficient of expansion of 0.0000008 per 1°C. The pendulum is kept in vibration by accurate and regular mechanical impulses received at half-minute intervals from the gravity lever. The cylindrical pendulum bob weighs 17 lbs.

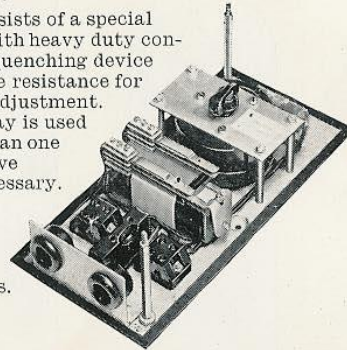
## TIMEKEEPING QUALITIES

Accurate time can be obtained to within plus or minus three seconds per week by careful regulation of the pendulum.

Dimensions: Height: 4' 4½", Width: 10½", Depth: 5½". Weight: 46 lbs.

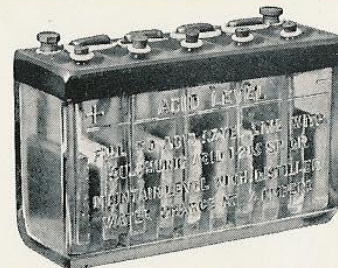
## SLUG RELAY

This unit consists of a special Slug Relay with heavy duty contacts, spark quenching device and a variable resistance for line current adjustment. The Slug Relay is used when more than one circuit of Slave Clocks is necessary. Dimensions: Height 10", Width 4½", Depth 3½". Weight: 4½ lbs.



## DRY CELLS

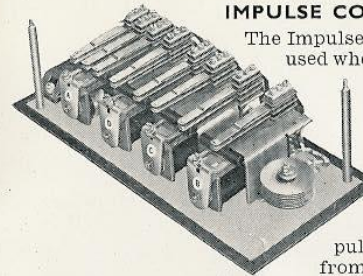
1½ volt Dry Cells require no attention and are recommended for small single circuit Master and Slave Clock Installations. The approximate life of these high capacity cells is 2½-3 years. Dimensions: Height 7½", Width 3½", Depth 3½". Weight: 4½ lbs.



## ACCUMULATORS CODE WT/10

10 volt unit in a single glass container having a capacity of 10 ampere hours. These cells are recommended for the small Master, slave clock and Time Recorder system. Dimensions: Height 6", Width 8½", Depth 3½". Weight: 4½ lbs (dry).

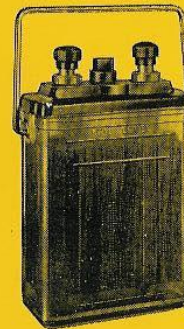
## IMPULSE CONVERTER



The Impulse Converter is used when Time Recorders are operated from the Master Clock. It converts the half-minute impulses received from the Master Clock to one minute impulses required for the Time Recorders and can operate up to 12 Time Recorders without any additional relays. Dimensions: Height 10", Width 4½", Depth 3½". Weight: 6 lbs.

## 2 VOLT ACCUMULATORS

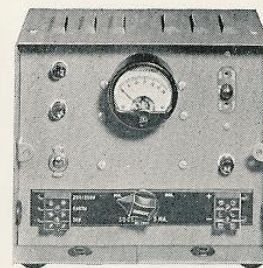
For large installations 2 volt cells are recommended having a 20 ampere hour capacity or larger, to suit the particular size of the system.



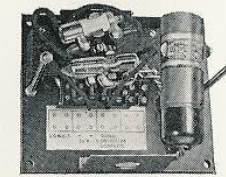
## TRICKLE CHARGER CODE O/25

Input 200/250 volts 50 cycles single phase. Output suitable to charge 5 to 30 2 volt lead acid cells (10 to 60 volts) at 10 to 25 milliamperes. Used for straight forward Master Clock Installation

where only one circuit of Clocks is required. It is not for use when Time Recorders are operated from the Master Clock. Dimensions: Height 5½", Width 8", Depth 7". Weight: 6 lbs.



## DURATION CONTROLLER



The standard duration of signal from the Bell Signal Clock when operated by the Master Clock is 30 seconds. When this signal is considered to be too long, the Duration Controller may be incorporated to reduce the duration of the signal to 8-10 seconds.

Dimensions: Height 5½", Width 6½", Depth 4½". Weight: 4 lbs.

## 36 VOLT RELAY

When more than 12 Time Recorders are operated from the Master Clock through an impulse converter, this relay is necessary to operate each circuit of Time Recorders.



## TRICKLE CHARGER CODE 15/50/2M

Input 200/250 volt 50 cycles single phase. Output suitable to charge 15 to 50 2 volt lead acid cells (30 to 100 volts D.C.) at 10 to 200 milliamperes. Use with Master Clock Installations where more than one circuit of Clocks is required or when Time Recorders are operated from the Master Clock. Dimensions: Height 8½", Width 12", Depth 9". Weight: 13½ lbs.

**TRICKLE CHARGER CODE 200/36/1** Input 200/250 volt 50 cycles single phase. Output suitable to charge 12 volt lead acid cells (36 volts D.C.) at 0.1 to 1 amp. The use of this Trickle Charger is recommended (a) Where the A.C. Mains Supply is not continuous, (b) For large Time Recorder installations. Dimensions: Height 8½", Width 12", Depth 9". Weight: 14 lbs.

