

[The following is a June 1939 IBM price list for master clocks and various master clock components and associated equipment and is presented here only for its historical interest and not as a guide to current values or appraisals.]

### MASTER CLOCKS

	Without Duration Contact
No. 25 Magnet Wound	\$145.00
No. 13 Magnet Wound	145.00
No. 35 Motor Wound	255.00
No. 16 Motor Wound	255.00

No additional charge to above for Duplex Self-Regulating.

**Winding Voltages:** Magnet Wound, 24 Volts D.C. Standard. Other D.C. Voltages up to 110, no extra Charge.

Motor Wound, 110 Volts A.C. or D.C. Standard. Optional, 220 Volts A.C. or D.C.

**Dials:** Black Litho Dial Aluminum Center Square (25 and 35 Models Only) 600  
 White Enamel Dial (Arabic) (13 and 16 Models Only) Standard 601  
 Sunburst Aluminum Dial (Arabic) (13 and 16 Models Only) No Extra Charge

**Flush Type Cases:** Can be furnished for \$35.00 additional. *No Rouging-in box included.*

**Finish:** See finish chart.\*

### Options and Specials to Master Clocks

Mercurial Pendulum. . . . . (Ordered Separately 60.00) . . . . .	\$50.00
Invar Pendulum . . . . . (Ordered Separately 40.00) . . . . .	30.00
Plate Glass Door. . . . .	10.00
Impulse Accumulator. . . . .	75.00
Synchronizer Attachment. . . . .	25.00
15-Minute Contact. . . . .	30.00
Seconds Beat Contact. . . . .	10.00
Duration Contact (Maximum of two can be used) . . . . . (Each)	7.50
Half Minute Contact (In place of regular S.R. Minute Contact) . . . . .	2.50
610 Brushed Silver and Etched (Arabic) (16 and 13 Models Only). . . . .	15.00
620 Brushed Silver, Raised Bronze Arabic Numerals, Engraved Minute Circle, Bronze Serpentine Hands (16 and 13 Models Only). . . . .	40.00

Refer to Sales Department for price on dials with Roman numerals

Filter (Radio Disturbance Suppressor).....See Section 6\*  
 Outlet Box (5910).....See Section 7\*

**No. 18 Master Time Control**

No. 18-8 (24 to 110 Volts D.C.)..... \$115.00  
 No. 18-9 (110 Volts A.C. 50 or 60 Cycle Clock Circuit 24 Volt)..... 150.00

Voltages and frequencies other than indicated will be furnished for additional charges as shown for similar control equipment in Section 6\*.

**Flush Type Cases:** can be furnished for \$12.50.

**Finish:** See Finish Chart\*

**Duplex Self Regulating** .....Add \$3.00  
 (24 volt battery or 24 volt constant voltage power unit must be provided.)

**No. 15 Master Program Clock**

(See Section 5)\*

For Prices on Floor Type Master Clocks — Refer to Sales Dept.

**Master Clock Movements (Unmounted)**

(See Section 6\* for Mounted Prices)

<b>Description</b>	<b>Movement and Hands Only Without Duration Contact</b>	<b>Movement, Hands, Dial Pendulum, Weights, Etc. Without Duration Contact</b>
60-Beat Magnet Wound	043... .56.00	053... .70.00
60-Beat Motor Wound	046.. .149.00	056.. .180.00

*Specify Hands For Standard Or Modern Dial*

**No. 13 Master Clock** contains a magnet wound, spring drive, self-regulating movement; surface wall type case, 62-11/16" x 20" x 8-5/16"; plain glass door; 12" Arabic dial, 60-beat metal bob

pendulum. No. 25 Master Clock is the same as above except the case is of a new modern design. Overall dimensions of No. 25 case — 63" x 18-5/8" x 7-9/16".

**No. 16 Master Clock** contains a motor wound, weight driven, self-regulating movement; surface wall type case, 62-11/16" x 20" x 8-5/16"; plain glass door; 12" Arabic dial and 60-beat metal bob pendulum. No. 35 Master Clock is the same as the No. 16 with the exception that the case is of a new modern design. Overall dimensions of No. 35 case — same as No. 25 case.

**No. 18 Master Time Control** is furnished in an 8530 cabinet. This unit contains a magnet wound spring driven, self-regulating contactor movement with calibrated setting disc; A.C. or D.C. Master Relay; and a 72-beat Invar Compensating Pendulum that will rate a self-regulating time system within 30 seconds a month of true time. The movement can be equipped with contacts, etc., the same as a regular master clock with the exception of a dial, seconds beat contacts, impulse accumulator, fractional hour contacts, which cannot be provided because of mechanical arrangement of the movement. No program machine or additional relays can be installed in cabinet because of space limitations. Will operate one clock circuit (2 amps.- 24 volts D.C.).

**Mercurial Pendulum** Any of our 60-beat master clocks when equipped with this type pendulum are guaranteed to rate within 10 seconds per month of correct time when installed in a place free from vibration and regulated in position.

**Invar Pendulum:** Any of our 60-beat master clocks when equipped with this type pendulum are guaranteed to rate within 15 seconds per month of correct time when installed in a place free from vibration and regulated in position.

**Impulse Accumulator** will cause a Self-Regulating System to recover up to 12 hours of lost time at the rate of one minute every two seconds, immediately upon restoration of power. The impulse accumulator will not function while the minute hand is between the 50th and 60th minutes; however, it will function as soon as the minute hand passes the 60th minute.

**Synchronizer Attachment** consists of a magnet that operates a stop which engages a notched disc on the clock escape shaft. By rating the clock a few seconds per day fast it can always be brought to correct time by energizing the synchronizer magnet and releasing it exactly on time, during any minute of the day. The control circuit to the synchronizer can be controlled by a push button for manual correction or by the minute impulses from one of our clock systems. Sometimes a main master clock is used with a master relay to send out plain minute impulses to synchronize sub-master clocks located in various buildings scattered over a wide area. Furnished for either A.C. or D.C. 24 to 110 Volts. Specify Voltage and kind of current when ordering.

**Filters** for master clock contacts are used to suppress noise in radio apparatus. Two filters are required when seconds beat contact is used. (See 829-0, Section 6\*).

**15-Minute Contact** is commonly used to trip Westminster Chime Control, etc. This contact closes each 15 minutes.

**Seconds Beat Contact** can be used continuously or in series with a duration contact, a fractional hour or 24-hour contact or a switch. Duration is constant and about 1/3 second. Cannot be used on Nos. 18 or 15 clocks because they are equipped with 72-beat movements.

**Duration Contact:** Maximum of two can be used. Duration adjustable up to 15 seconds. They are regularly set to close about two seconds after the even minute. Where only a short program signal or impulse is desired the regular minute impulse that drives the program magnet can be used for duration of the bell circuit relay, the maximum duration, however, will be the length of the clock impulse. When the latter arrangement is used the bell circuit relays are D.C. operated and if circuit push buttons are required, add List 810-0 heavy duty push button maximum 50 watts; list 810-1 maximum 100 watts at 110 volts.

**Half Minute Impulse Contact** (In place of regular self-regulating contact) is used in conjunction with half minute impulse equipment only. If a system is to be made up of both regular impulse and half minute impulse equipment a duration contact with special cam may be used as a half minute impulse at an extra cost of \$12.50. When this contact is used only one signal duration may be installed in the master clock. Separate control units must be used with such type of an arrangement.

### **Contacts**

Master clock contacts are tipped with heavy points turned from solid grade 999 silver. On minute operation they will carry 5 watts A.C. or 3 watts D.C. When operated not more than 20 or 25 times per day, they will carry as much as 20 watts A.C. or 12 watts D.C.

The maximum load for a master clock is one self-regulating assembly either minute or half-minute impulse but not both, two duration contacts, one seconds beat contact and one fractional hour or fractional 24-hour contact but not both. Refer unusual contact problems to the factory for their recommendations.

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\* Not included in original document.