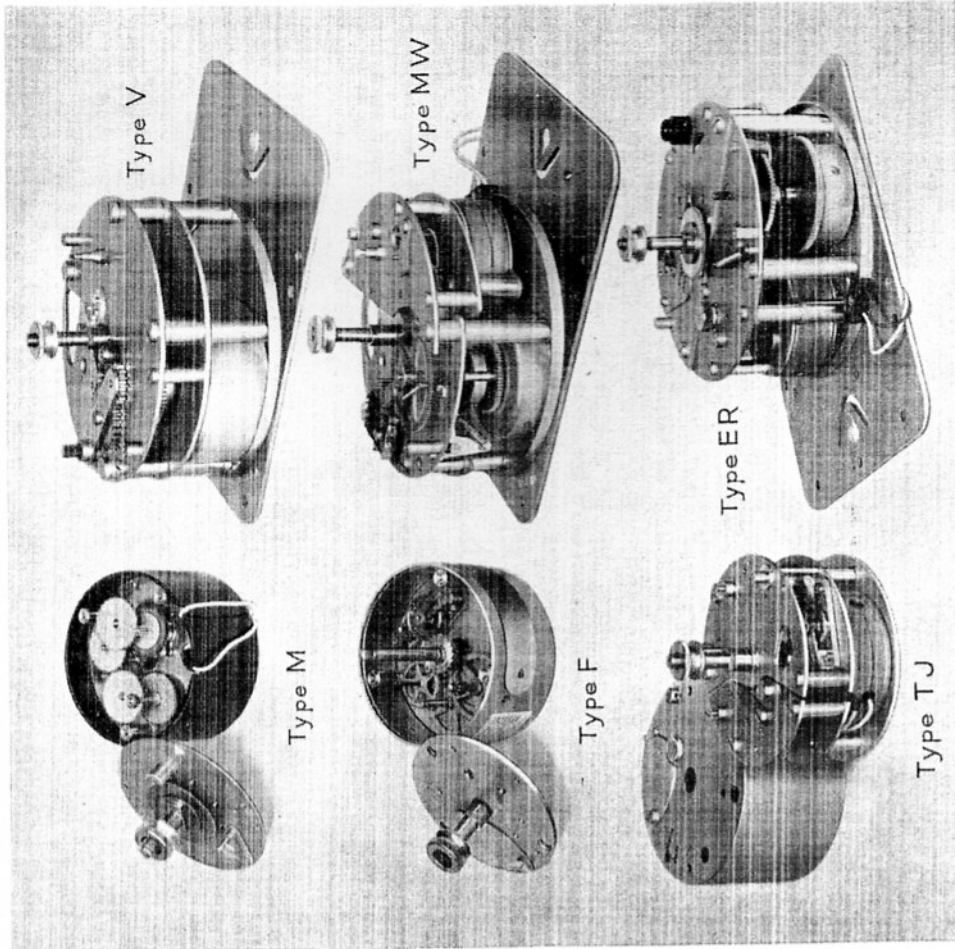
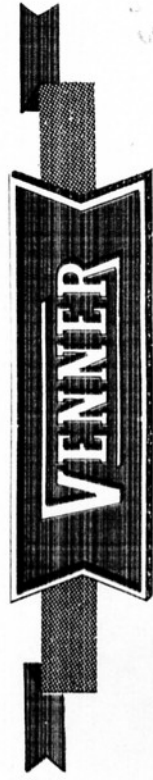


Venner Time Switch Clocks



CATALOGUE INDEX Part I Standard Time Switches

Description and Application	Capacity up to 250 volts.		Type of Clock	No. of Poles	Leaflet No.
	A.C.	D.C.			
SP and SL Range. Time Switches for street and shop window lighting, heating control and industrial use. Can be fitted with hour dial for use as a kindling control with automatic stokers.	15	—	Synchronous and 15-day hand-wound.	1	1
TJSSP Range. Time Switch for street and shop window lighting, heating control and industrial use.	20	—	Electrically-wound with Nine hours spring reserve.	1	2
BF-43 Range. Time Switch for street and shop window lighting and industrial use, particularly for D.C. supplies.	5	5	15-day hand-wound.	1	3
MSDC Range. Double circuit, double pole or single pole 2-way Time Switches for double circuit street lighting and industrial use.	7.5	—	Synchronous or 15-day hand-wound.	1 2	4
B Range. Time Switch for street and shop window lighting and industrial use.	1 5 20	—	Synchronous with and without spring reserve; 35-day hand-wound electrically-wound.	1 1 1	5

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Venner Time Switch Clocks (Continued)

This catalogue includes the majority of our standard range, but as we have not yet been able to include all the different types of apparatus which we now manufacture, we shall be very pleased to receive particulars of your requirements for any timing apparatus which is not met by the switches detailed in these leaflets.

It is hoped that the index, together with the information given below, will assist in determining which is the most suitable switch for your particular application, but we would stress that our Sales personnel will be only too pleased to give advice.

Venner Time Switch Dials

It will be noted that the majority of the standard time switches can be fitted with either a variable hand-set or solar dial. The standard hand-set dial indicated by the prefix D1 before the switch type letters is fitted with one ON and one OFF hand, (which can be set as required) so that the time switch opens and closes the contacts once daily. The times are adjustable. This type of dial can be fitted with an extra pair of hands, type designation D2, or two extra pairs of hands, type designation D3 to obtain two and three ON and OFF switchings daily. This type of dial is used in all cases where switching is to occur at varying times, other than the sunset and sunrise times normally required for public lighting.

The alternative dial is a solar dial, which compensates for the change in hours of daylight by closing the contacts every sunset and opening them at sunrise, repeating the operations automatically throughout the year. Included with this dial is an intermediate hand to obtain an OFF switching at a set time as an alternative to sunrise. Similarly, an extra hand can be supplied to close the contacts in the early hours of the morning after they have been opened by this intermediate hand. More detailed information on our solar dials is given in Leaflet No. 14.

Venner Time Switch Clocks

Six different types of clocks, illustrated on back page, are available for operating our time switches; these are as follows:-

Description	Application
<p>Types MW & EW. Electrically wound clock having 36 hours spring reserve. This type clock is available in two patterns, one for A.C. supplies, prefix MW and one for D.C. supplies, prefix EW. The timekeeping of the electrically wound clock is entirely dependent upon the adjustment of the escapement and is unaffected by any frequency variations when used on an A.C. supply. The A.C. type MW clock is wound by a synchronous motor while the D.C. EW clock is wound by a special vibratory motor. In both cases the winding motor is shut down by a pair of contacts which open when the main spring is fully wound, and recloses when approx. 8 hours spring reserve have been used.</p>	<p>Types MW & EW. These clocks are used where it is desirable for the timekeeping to be unaffected by frequency variations or power supply failure and where a 36 hours spring reserve is considered advisable.</p>
<p>Type TJ. Electrically wound clock with 9 hours spring reserve, prefix TJ, similar to type MW above but of smaller dimensions suitable at the moment for fitting to the TJD1SP range of switches detailed in leaflets 2 and 11. This clock differs from the MW clock in that the synchronous motor winding the spring operates continuously, the spring slipping in its barrel when fully wound.</p>	<p>Type TJ. This type of clock is used where it is desirable for the timekeeping to be unaffected by frequency variations or power supply failure and where a 9 hours spring reserve is considered sufficient.</p>
<p>Type ER. Synchronous motor clock with 36 hours spring reserve, prefix ER. This clock is synchronous motor driven when the A.C. supply is available, and therefore keeps synchronous time. It incorporates an auxiliary spring driven escapement train which is kept fully wound by the synchronous motor, the spring barrel being wound by the A.C. supply is available the escapement is held in its starting position by electro-magnets fed through a rectifier, thus when a supply failure occurs this spring driven train is released and drives the time switch dial through a differential. An important feature of this clock is that the spring driven train is kept free by releasing the escapement for an exercising period of approximately 10 minutes every 12½ hours.</p>	<p>Type ER. Used in similar circumstances to the electrically wound clock above, but on controlled frequency supplies only where it is desired that the clock keeps synchronous time.</p>

* The winding mechanism being designed to cease operating when the spring is fully wound.

Application

Type M. This clock is lower in price than any other, and is normally used for all time switches for use on controlled frequency supplies and where any power supply failures are unlikely.

Types F & V. These two types are normally used for time switches required to control D.C. supplies or to overcome the necessity of resetting the dials of the time switches after a power failure.

Description

Type M. Self-starting synchronous motor clock without spring reserve, prefix M.

Type F. 15-day hand wound clock, prefix F.

Type V. 35-day hand wound clock, prefix V.

CATALOGUE INDEX Part 1 Standard Time Switches (Continued)

Description and Application	Capacity up to 250 volts. Amps. A.C. D.C.	Type of Clock	No. of Poles	Leaflet No.
GP Range. Time Switch for industrial use with particular application for heating control.	15 —	Synchronous with and without spring reserve; 15-day and 35-day hand-wound; electrically-wound.	1 2 3	No. 6
C Range. Time Switch for shop window lighting and group control street lighting; electric signs and industrial use.	20 25 50	Synchronous with and without spring reserve; 15-day and 35-day hand-wound; electrically-wound.	1 2 3	No. 7
NZX Range. Time Switch primarily designed for Off-Peak water heating control and other industrial application.	15 30	Synchronous with and without spring reserve; 35-day hand-wound; electrically-wound.	1	No. 8
MPDC Poultry Switch. For controlling electric lighting in poultry houses.	15 —	Synchronous and 15-day hand-wound.	1	No. 9
ZM and ZO Range. Time Switches for maximum demand metering and furnace control with kindling contacts.	1 0.1	Synchronous; 35-day hand-wound; electrically-wound.	1	No. 10
TJD CO Range. Time Switch for heating control, Off-Peak switching and industrial use.	20 —	Electrically-wound with nine hours spring reserve.	1 2-way	No. 11
Box Leaflet. Dimensions and details of special switch boxes.				No. 12
Solar Dial Leaflet. Description of the construction and working of the solar dial.				No. 14

CATALOGUE INDEX Part 2

Timing Equipment

Description and Application	Capacity up to 250 volts. Amps. A.C. D.C.	Type of Clock	No. of Poles	Leaflet No.
Process Timers Types PT3, PTA, PTB and PTC. For industrial and domestic applications, washing machines, photographic machines, moulding presses, etc.	5 5 up to 24 10 volts	Spring and synchronous motor driven.	1	No. 51
Synchronous Motor Unit Type M. For driving, recording charts, animated signs, etc.	— —	Synchronous.	—	No. 53
Hour Meter Type CHM. For recording the number of hours a circuit is energised—for maintenance period indication and production costing.	— —	Synchronous.	—	No. 54
Prepayment Switch Type BRM. For obtaining a supply of electricity for a set period when a coin is inserted. For use with billiard tables, squash courts, etc.	10 —	Synchronous.	1	No. 55

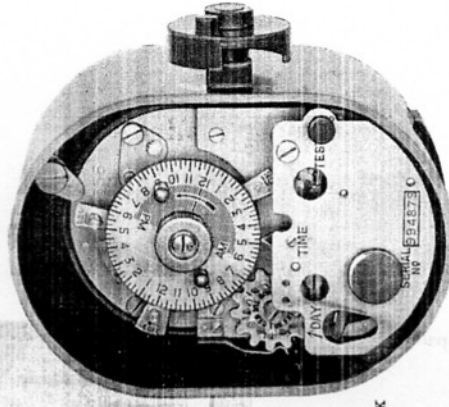


SYNCHRONOUS and 15 DAY HAND WOUND TIME SWITCHES

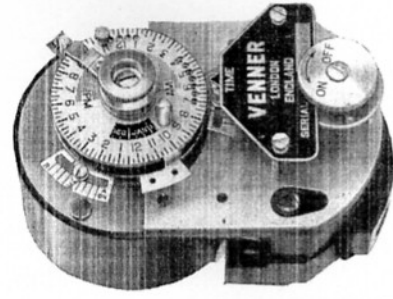
Types	MD1SP	FD1SL	FD1SL	FD2SL
	MD2SP	FD2SL	MD2SL	FD2SL
	MD3SP	FD3SL	MD3SL	FD3SL
	MSSP	FSSP	MSSL	FSSL
	MS2SP	FS2SP	MS2SL	FS2SL



Photo by courtesy of I.C.E.C.



MD1SLSEH
in Standard Box



MSSP Without Box

VENNER TIME SWITCHES APPLICATIONS

To list a comprehensive selection of applications controlled by standard types of Venner Time Switches would fill many pages. Should your requirements not be listed in this abbreviated list, please contact our Sales department whose technical staff will be glad to be of assistance.

- | | | |
|--------------------------|-------------------------|-----------------------|
| Automatic Stokers | Furnaces | Radio Beacons |
| Badminton Court Lighting | Furnace Kindling | Radio Switching |
| Battery Charging | Group Lighting | Shop Window Lighting |
| Billiard Table Lighting | Heating Installations | Sluice Gates |
| Cheap Rate Tariff | Hydraulic Valves | Squash Court Lighting |
| Concrete Mixers | Immersion Heaters | Staff Location |
| Conveyor Systems | Laundry Washers | Staircase Lighting |
| Double Circuit Lighting | Maximum Demand Metering | Street Lighting |
| Electric Fires | Moulding Presses | Sun Lamps |
| Electric Motors | Off-Peak Water Heating | Television Switching |
| Electric Ovens | Petrol Pumps | Tidal Switching |
| Electric Signs | Pneumatic Valves | Traffic Bollards |
| Emergency Lighting | Porch Lighting | Traffic Signs |
| Film Developer | Poultry House Lighting | Two-Rate Metering |
| Filtration Plant | Print Machines | Washing Machines |
| Floodlighting | Process Ovens | Water Pumps |
| Fuel Pumps | Protective Devices | Welding Machines |

In addition to standard types of time switch, we manufacture to order, special timers to meet industrial requirements necessitating complex switching sequences over a very large number of circuits.

Our boast is that—

There is a Venner Time Switch for every purpose

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VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY

SYNCHRONOUS and 15 DAY hand wound time switches for the control of Street Lighting, Traffic Bollards, Electric Signs, Immersion Heaters, Shop Window Lighting, Porch Lights, Electric Fires, etc., and Furnaces (including kindling control).

RATING

15 amps. S.P. 200/250 volts 50 cycles controlled frequency

SYNCHRONOUS AND 15 DAY HAND WOUND TIME SWITCHES

These are self-starting synchronous motor-driven, single pole Time Switches and are supplied with hand set dials to obtain one, two or three ON and OFF switchings daily or solar dials for sunset ON and sunrise OFF switching, together with an additional hand for switching OFF at a pre-determined time as an alternative to solar time. If desired, a further hand can be fitted (see "Extras") to obtain an early morning ON switching.

The solar hands are adjustable from 1 hour before to 1 hour after solar times, while the midnight OFF hand is adjustable from 11 p.m. to 1.0 a.m. in half-hour stages. The additional early morning ON hand is adjustable from 4 a.m. to 7 a.m. in half-hour stages.

The switches are of the plug-in type, fitted with an internal manual operating device, and are normally supplied in a Standard Box. A fuse is included in the synchronous motor circuit.

These switches can be supplied with a 15 day hand wound clock instead of a synchronous clock.

The SP and SL range of Time Switches can be supplied in alternative types of dustproof and weatherproof boxes, suitable for wall and spigot mounting, with or without fuses in the load circuit as follows:—

ALTERNATIVE BOXES

(See Price Summary and Box Leaflet No. 12)

Box No.	DESCRIPTION
C.131A	Dustproof, wall mounting, top hinge loose lid. (Will not accommodate fuses).
C.197AH	Dustproof, wall mounting, rectangular with window in lid. (Will not accommodate fuses).
C.116B	Weatherproof, wall mounting, tapped bosses for conduit entry top and bottom. (Will not accommodate fuses).
C.322	Weatherproof, wall mounting, tapped bosses for conduit entry top and bottom. (Will accommodate S.P. or D.P. fuses.)
C.118A	Weatherproof, wall mounting, tapped bosses for conduit entry top and bottom. (Will accommodate S.P. or D.P. fuses cartridge type only).
C.137A	Weatherproof; spigot mounting, tapped boss at top. (Will accommodate S.P. or D.P. fuses, cartridge type only).
C.108	Weatherproof, spigot mounting, tapped boss at top. Double compartment. (Will accommodate S.P. or D.P. fuses).

Pole straps can be supplied if required

VENNER LIMITED

Price List for Leaflet No. 1

**Handset Dial Type MD1SP
in Standard Box £5 11 0**

**Solar Dial Type MSSP
in Standard Box £6 2 0**

Without Fuses

Box Type	Handset Dial MD1SP		Handset Dial MD1SL		Solar Dial MSSP		Solar Dial MSSL	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
No box but complete with terminal block	4 12 6	4 17 3	4 17 3	5 8 3	5 3 6	5 8 3	5 8 3	
Standard Box	5 11 0	5 16 0	5 16 0	6 2 0	6 2 0	6 7 0	6 7 0	
C.131A	5 11 0	5 16 0	5 16 0	6 2 0	6 2 0	6 7 0	6 7 0	
C.197AH	6 14 3	6 19 3	6 19 3	7 5 3	7 5 3	7 10 3	7 10 3	
C.116B	7 10 0	7 14 9	7 14 9	8 1 0	8 1 0	8 5 9	8 5 9	
C.322	8 5 6	8 10 6	8 10 6	8 16 6	8 16 6	9 1 6	9 1 6	
C.118A	7 17 9	8 2 9	8 2 9	8 8 9	8 8 9	8 13 9	8 13 9	
C.137A	7 14 6	7 19 6	7 19 6	8 5 6	8 5 6	8 10 6	8 10 6	
C.108	9 12 3	9 17 3	9 17 3	10 3 3	10 3 3	10 8 3	10 8 3	

Continued overleaf

With S.P. Fuse

Box Type	Handset Dial		Solar Dial	
	MD1SP	MD1SL	MSSP	MSSL
C.322	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	8 17 9	9 2 6	9 8 9	9 13 6
C.118A	8 10 0	8 15 0	9 10 0	9 6 0
C.137A	8 6 9	8 11 6	8 17 9	9 2 6
C.108	10 4 3	10 9 3	10 15 3	11 0 3

With D.P. Fuses

Box Type	Handset Dial		Solar Dial	
	MD1SP	MD1SL	MSSP	MSSL
C.322	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	9 9 9	9 14 9	10 0 9	10 5 9
C.118A	9 2 0	9 7 0	9 13 0	9 18 0
C.137A	8 18 9	9 3 9	9 9 9	9 14 9
C.108	10 16 6	11 1 6	11 7 6	11 12 6

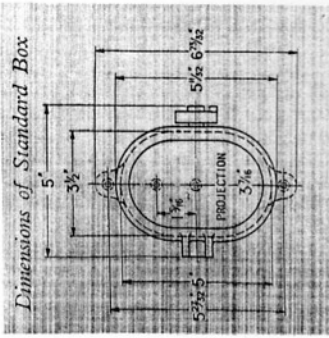
Extras

Fifteen day hand wound clock in place of synchronous,

Types FD1SP, FD1SL, etc.	£	s.	d.
Extra hand for solar dial, Types MS2SP, MS2SL, etc.	3	3	0
Extra pair of hands for handset dial Types MD2SP, MD2SL, etc.	1	9	1
Two extra pairs of hands for handset dial Types MD3SP, MD3SL, etc.	1	9	1
Selective device (SL range only)	3	6	3
Early hour device (SL range only)	11	6	6
Selective device and early hour device combined	1	2	0
External manual device (SL range only)	1	13	6
One Hour Dial for kindling control	11	0	0
Dials of other speeds (range on application)	11	0	0
Pole Strap	1	2	0
Extended terminal cover (Standard, C.131A and C.197AH boxes only)	14	6	6
	2		

6000/1/55

April 1955



Approximate weight 2 1/2 lbs. in Standard Box

This Standard cast aluminium box has three bushed terminal holes at the bottom, cam fastening and is finished in stoving enamel. It will not accommodate fuses.

NOTES

Handset dials are indicated by the symbols **D1, D2 or D3**, e.g. types MD1SP, MD3SL.

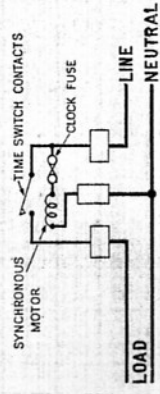
Solar dials are indicated by the symbols **S or S2**, e.g. types MSSP, MS2SL.

The basic differences between the SP and SL types are as follows:—

1. The SP types cannot be fitted with a selective device. This is available as an additional item on all SL types.
2. The operating hands on the SL switches can be set to give shorter operating periods than on the SP types.
SP types: ON to OFF 1 1/2 hours, OFF to ON 1/2 hour.
SL types: ON to OFF 1/4 hour, OFF to ON 1/4 hour.
3. The manual operating device of the SL switches can be arranged for external operation on certain boxes, whereas the SP manual device is only suitable for internal operation.

In view of the simpler switch design and consequent lower price, the SP type is recommended in preference to the SL type except where one or more of the above three requirements necessitate the use of the latter.

Wiring Diagram



VENNER

EXTRAS

(See Price Summary Sheet)

Early morning ON hand for solar dial; type designation altered from MSSP to MS2SP and MSSL to MS2SL.

Extra pairs of hands for handset dial (maximum 3 pairs) to obtain two or three ON and OFF switchings each 24 hours. Add figure 2 after D in type designation for two pairs, and figure 3 for three pairs, i.e. MD2SP, MD3SP.

15 day hand wound clock instead of synchronous. Replace M in type designation by F, i.e. FD1SP, FSSP, etc.

Selective Device to omit switching ON or OFF on selected day or days can be supplied with SL types only. Add suffix S, i.e. MD1SLS, MSSLS, etc.

Early Hour Device for obtaining earlier ON or OFF switching on selected days in addition to omitting switching operations can be supplied with SL types only. Add suffix EH, i.e. MD1SLSEH.

External Manual Device SL types only. Available on Standard and C.116B, C.131A and C.118A boxes.

Alternative Speed Clocks. One hour clocks particularly suited to kindling control. Details on application.

For operation on non-standard voltages or frequencies. Details on application.
Extended Terminal Cover. Standard, C.131A and C.197AH boxes only.

TECHNICAL DATA

Standard voltage ranges — 200/250 or 100/120, 50 cycles.

Approximate Consumption of Synchronous Motor

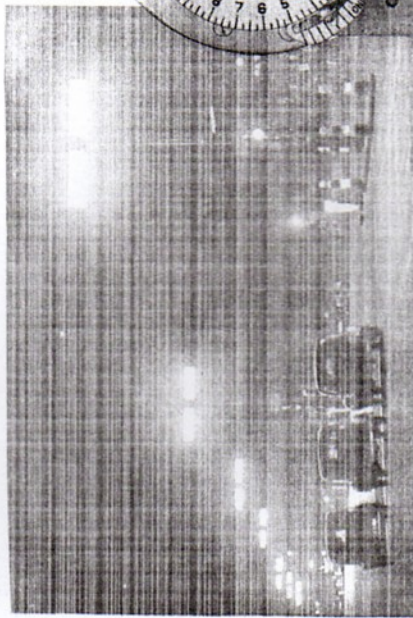
2.0 V.A.—1.6 watts at 200 volts, 50 cycles. 2.3 V.A.—1.8 watts at 210 volts, 50 cycles.
2.4 V.A.—2.1 watts at 230 volts, 50 cycles. 4.0 V.A.—2.6 watts at 250 volts, 50 cycles.
Rotor Speed—200 r.p.m. Rotor Torque—10.95 gm. centimetres.

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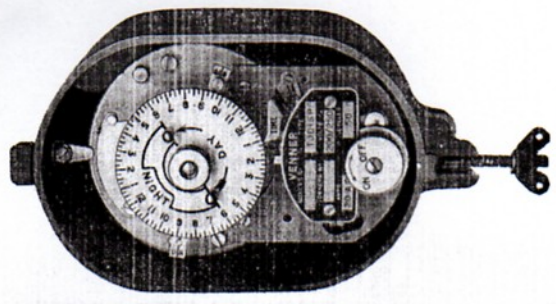
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VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY



Types TJSSP and TJDISP



Type TJSSP
without box

Type TJDISP
in standard box

Electrically wound, 9 hour spring reserve Time Switches

Overcomes resetting after power cuts when used for the control of Street Lighting, Traffic Bollards, Shop Window Lighting, Electric Signs, Immersion Heaters, Furnaces, Porch Lights, Electric Fires, etc.

Overall size of standard cast aluminium top hinge loose lid box :- 4 3/8" wide x 4 3/8" deep x 7" long.

RATING: 20 amps. single pole. 200/250 volts, 50 cycles.

FEATURES

- ★ Spring reserve of 9 hours minimum.
- ★ Not affected by frequency variations.
- ★ Automatic synchronous motor wind.
- ★ Solar or hand set dial.
- ★ Plug-in switch unit.
- ★ Compact but designed for long life.
- ★ Eleven jewel lever escapement.
- ★ Low running and maintenance costs.
- ★ 20 amps. capacity up to 250 volts A.C.

DESCRIPTION

The Venner type TJSSP is an electrically wound time switch carrying spring reserve power to maintain the clock during periods of shut-down in the electric supply. Once installed the switch requires no further attention.

Compact overall size, including stout metal case, makes the switch particularly suitable for street lighting columns, sign bollards and other applications where space is restricted.

The time piece and switchgear comprise an integral unit plugging into the main case terminal compartment. The switch can be removed or replaced conveniently without disturbing the box on site.

Winding is effected automatically by high torque synchronous motor, connected through suitable reduction gearing to the arbor of a spring barrel.

The clock cannot be overwound or strained by excess power from the winding gear.

Once fully wound, the clock has a reserve of 9 hours guaranteed minimum. In certain circumstances this will be well exceeded, but since it is dependent upon the elapsed time between the previous shut-down in the mains supply, it is recommended that 9 hours be regarded as the normal carry-over period.

The clock is fitted with a stop-start device which can be operated with a screwdriver so that it can be installed with its spring fully wound. The clock can also be wound by hand for testing purposes or to obtain an immediate start after a supply failure exceeding the length of spring reserve.

Timekeeping is controlled by a high quality 11 jewel lever escapement with Breguet overcoil and a balance fully compensated for temperature variation. To the top left of the clock is a 6 minute dial to facilitate timekeeping tests.

VENNER LIMITED

We have found it necessary to increase the price of all goods despatched on and after the 12th April, 1955 by 10%.

Price List for Leaflet No. 2

Handset Dial Type TJD1SP in Standard Box £10 4 6 Solar Dial Type TJSSP in Standard Box £10 14 6

Without Fuses		With S.P. Fuse		With D.P. Fuses	
Box Type	Handset Dial Type TJD1SP	Solar Dial Type TJSSP	Handset Dial Type TJD1SP	Solar Dial Type TJSSP	Solar Dial Type TJSSP
No box but complete with terminal block	£ s. d. 9 2 6	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —
Standard Box	10 4 6	10 14 6	10 4 6	10 14 6	10 14 6
C.138	12 3 0	12 13 0	12 3 0	12 13 0	12 3 0
C.322	12 14 0	13 4 0	12 14 0	13 4 0	12 14 0
C.157	12 8 6	12 18 6	12 8 6	12 18 6	12 8 6
C.308	13 18 3	14 8 3	14 9 3	14 19 3	14 19 3

Extras

- Extra pair of hands for handset dial, Type TJD2SP 1 9
- Two extra pairs of hands for handset dial, Type TJD3SP 3 6
- Pole Strap 13 3
- Extended terminal cover (Standard Box only) 2 6

The switch can be supplied with hand set or solar compensating dial. The solar dial is of a new design, larger and more robust than usually supplied with small switches of this type. Each dial is accurately plotted and cut to close approximation of true solar time for the area where the dial will be used—thus giving a saving of shut-off conditions representing a considerable economy of watt hours per annum where large numbers of switches are installed.

The solar hands are adjustable up to 1 hour before and after sunset and sunrise.

The solar dial is supplied as standard, with a pin for switching OFF between 10 p.m. and 1 a.m. as an alternative to sunrise, and a pin to obtain an early morning ON switching between 4 a.m. and 7 a.m. (adjustable in half-hour stages). Either or both of these pins should be removed if these additional switchings are not required.

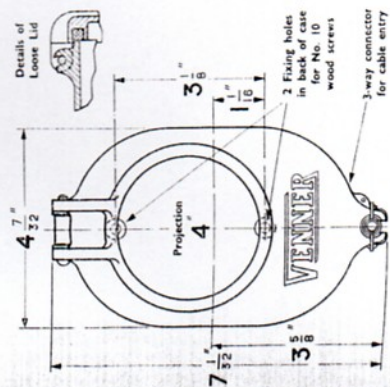
The switchgear is of single pole type fitted with fine silver contacts. These can be conveniently replaced if required, although experience is that replacement is not necessary, even after years of arduous service.

The switch is provided with facilities for internal manual operation independent of the clock, and is suitable for connection only to A.C. supplies of 100/110 volts or 200/250 volts, 50 cycles.

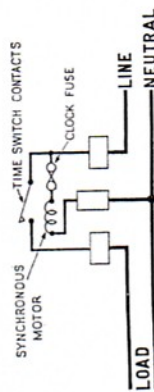
A fuse is included in the synchronous motor circuit.

Surge currents should not exceed 70 amps, otherwise contact life may be reduced.

Approximate weight in Standard Box
3 lbs. 12 ozs.



Wiring Diagram



Alternative Boxes—See Price Summary and Box Leaflet No. 12 for details.



15-Day Hand Wound A.C. - D.C. Time Switch

Type BF43



Particularly suitable for Direct Current Supplies or Universal Use on A.C. or D.C.

Type BF43S shown without box.

RATING
5 amps. A.C. or D.C. up to 250 volts

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Box No.	Description
C.138	Weatherproof, wall mounting, bosses for conduit entry top and bottom. (Will not accommodate fuses).
C.322	Weatherproof, wall mounting, bosses for conduit entry top and bottom. (Will accommodate s.p. or d.p. fuses).
C.157	Weatherproof, spigot mounting, boss at top, single compartment. (Will accommodate s.p. or d.p. fuses).
C.308	Weatherproof, spigot mounting, boss at top, double compartment. (Will accommodate s.p. or d.p. fuses).

NOTES

Type TJD1SP is fitted with a hand adjustable dial to switch ON and OFF once daily at required times. (See Extras)

Type TJSSP is fitted with a solar dial.

EXTRAS

Extra pair of hands for hand set dial. Available pairs, i.e. TJD2SP, TJD3SP.
Extended Terminal Cover. Available for Standard Box only.
For operation on non-standard voltages or frequencies. Details on application

TECHNICAL DATA

Minimum setting times ON to OFF 1½ hours, OFF to ON ¼ hour.
 Approximate consumption of synchronous motor (continuously running)
 2.0 v.a. - 1.6 watts at 200 volts, 50 cycles.
 2.3 v.a. - 1.8 watts at 210 volts, 50 cycles.
 2.4 v.a. - 2.1 watts at 230 volts, 50 cycles.
 4.0 v.a. - 2.6 watts at 250 volts, 50 cycle
 Rotor Torque 10.95 g.m. centimetres.
 Rotor Speed 200 r.p.m.

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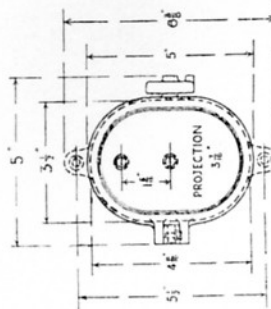
VENNER

15-DAY HAND WOUND TIME SWITCH TYPE BF43

For Direct Current Supplies or Universal Use on A.C. or D.C.

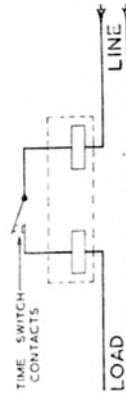
This 15-day hand-wound, single pole ON and OFF Time Switch incorporates silver button contacts in the switchgear mechanism and is fitted with a high quality clock movement representative of the best standards of modern horological technique. It is of sturdy construction throughout and reliability in performance has been proved under the most severe and varying climatic conditions.

Dimensions of Standard Box



Approximate weight in Standard Box 2 1/2 lbs.

Wiring Diagram



The cast aluminium Standard Box finished in stoving enamel, has two bushed terminal holes at the bottom and cam fastening. It will not accommodate fuses

A selective attachment for omitting switching operations on any certain day or days can be fitted. (See Extras and Price Summary sheet).

This switch is of the plug-in type and is normally supplied in a cast metal box. In addition, various types of dust-proof and weatherproof boxes, suitable for wall or spigot mounting with bushed holes for cable entry, with or without fuses in the load circuit, are also available as detailed on opposite page.

**Price List for Leaflet No. 3
BF43 in standard Box £8 5 0**

Box Type	Without Fuses	With S.P. Fuse	With D.P. Fuses
No Box but with terminal block	7 6 3	—	—
Standard Box	8 5 0	—	—
C.131A	8 5 0	—	—
C.197AH	9 6 0	—	—
C.116B	10 0 3	—	—
C.322	10 14 6	11 5 6	11 16 6
C.118A	10 8 0	10 19 0	11 10 0
C.137A	10 4 6	10 15 6	11 6 6
C.108	11 18 9	12 9 9	13 0 9

Extra pair of hands
 Two extra pairs of hands
 Selective attachment, Suffix S
 Pole Straps (C116B and C118A one strap—C322 two straps)
 Extended terminal cover (Standard, C.131A and C.197AH boxes only)

s. d. 1 6
 3 0
 10 6
 13 3
 2 6

Extras

VENNER LIMITED

despatched on and after the 12th April, 1955 by 10%.

ALTERNATIVE BOXES

(See Price Summary and Box Leaflet No. 12)

Box No.	Description
C.131A	Dustproof, wall mounting, top hinge loose lid. (Will not accommodate fuses).
C.197AH	Dustproof, wall mounting, rectangular with window in lid. (Will not accommodate fuses).
C.116B	Weatherproof, wall mounting, bosses top and bottom. (Will not accommodate fuses).
C.322	Weatherproof, wall mounting, bosses top and bottom. (Will accommodate s.p. or d.p. fuses).
C.118A	Weatherproof, wall mounting, bosses top and bottom. (Will accommodate s.p. or d.p. cartridge type fuses only).
C.137A	Weatherproof, spigot mounting, single compartment, top boss. (Will accommodate s.p. or d.p. cartridge type fuses only).
C.108	Weatherproof, spigot mounting, double compartment, top boss. (Will accommodate s.p. or d.p. fuses).

Pole straps can be supplied if required

EXTRAS

Extra Hands. Extra hands (maximum 3 pairs) can be supplied to obtain 2 or 3 ON and OFF switchings each 24 hours.

(This type of switch cannot be supplied with a solar dial).

Selective Device. A selective device to omit switching ON on any selected day or days, can be supplied. Add suffix S to type designation, i.e. BF43S.

Extended Terminal Cover for Standard, C.131A and C.197AH boxes only.

Closest Settings: ON to OFF $\frac{1}{2}$ hour. OFF to ON $3\frac{1}{4}$ hours.



Double Circuit & Double Pole Time Switches

Synchronous Motor
Driven or 15 day
Hand Wound Clock



Venner controlled Fluorescent lighting at Raynes Park S.W.20

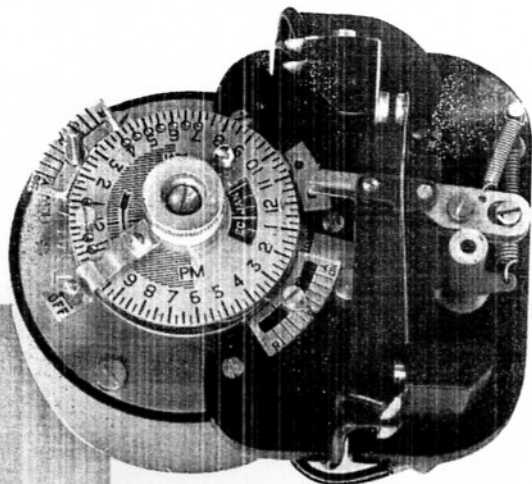
Types				
MDIDC	MSDC	FDIDC	FSDC	
MDIDP	MSDP	FDIDP	FSDP	
MDIDT	MSDT	FDIDT	FSDT	

Particularly suitable for
Full and Half-night
control of
Street Lighting

Type MSDC

(with switchgear shield removed)

7.5 amps. per circuit up to 250 volts A.C.



THE TYPE BF43 TIME SWITCH is only one of a large range of products manufactured by Venner Ltd., covering most requirements for automatic time control in industry and commerce.

In addition to standard types which will perform a variety of different switching operations, Venner Ltd., manufacture special timers to order to meet requirements necessitating complex switching sequences over many circuits.

It is true to say that—

There is a
Venner Time Switch
for every purpose

DOUBLE CIRCUIT Time Switches Types MDiDC and MSDC
for Full-night and Half-night Street Lighting Control

This double-circuit time switch has been specially designed to meet the growing need for a plug-in switch which, complete in a cast metal dustproof case, is sufficiently small for accommodating in the base of a street lighting column.

It is particularly suitable for the control of lighting fittings incorporating two or more lamps, as is the case with most fluorescent fittings, and will effect an appreciable saving in electricity costs by switching out a percentage of the lamps from midnight to sunrise, when full brilliance is not usually necessary.

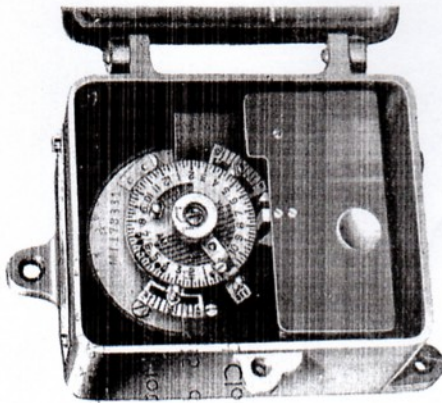
In addition, this switch can be easily adapted for use with combined lighting systems such as Mercury Vapour and Tungsten or Sodium and Tungsten, where allowance must be made for the delay in maximum brilliance of the major lamp when an early-morning changeover switching is required.

The switch can be fitted with a hand set dial (Type MDiDC) or solar dial (Type MSDC).

OPERATION

The solar dial is arranged to close both circuits at sunset, open one circuit at a later set time (adjustable between 11 p.m. and 1 a.m.) and the second circuit at sunrise. The sunset and sunrise switchings have an adjustment of one hour before and after solar time.

The MDiDC or MSDC may also be arranged to act as a double pole switch where conditions are such that a single pole type is undesirable. In this form it is known as Type MDiDP or MSDP Time Switch, and will operate so that both circuits are switched ON or OFF together.



View of switch in cast aluminium box

PRICE INCREASE

We regret that owing to wage awards and material price increases we have found it necessary to increase the price of all goods despatched on and after the 12th April, 1955 by 10%.

Price List for Leaflet No. 4

Type MSDC in Standard Box £7 12 6

Box Type	Without Fuses		With S.P. Fuse		With D.P. Fuses	
	Handset Dial Type MDiDC	Solar Dial Type MSDC	Handset Dial Type MDiDC	Solar Dial Type MSDC	Handset Dial Type MDiDC	Solar Dial Type MSDC
No box but complete with terminal block	£ s. d. 5 4 6	£ s. d. 5 14 6	£ s. d. —	£ s. d. —	£ s. d. —	£ s. d. —
Standard Box	7 2 6	7 12 6	—	—	—	—
C.118A	8 4 0	8 14 0	8 15 0	9 5 0	9 6 0	9 16 0
C.322	8 11 0	9 1 0	9 2 0	9 12 0	9 13 0	10 3 0
C.137A	8 1 0	8 11 0	8 12 0	9 2 0	9 3 0	9 13 0
C.108	9 15 3	10 5 3	10 6 3	10 16 3	10 17 3	11 7 3

Extras

15-day hand wound clock in place of synchronous, Types FDiDC, FSDC, etc. £ s. d. 2 17 3
 Double pole contacts in place of double circuit, Types MDiDP, MSDP, etc. No extra charge
 Single pole change over contacts in place of double circuit, Types MDiDT, MSDT No extra charge
 Pole Strap £ s. d. 13 3
 Extended terminal cover (Standard Box Only) £ s. d. 2 6

SINGLE POLE CHANGEOVER Time Switches Types MD1DT and MSD1T

These switches can also be supplied with single pole changeover contacts, types MD1DT or MSD1T.

TECHNICAL DATA

RATING—
Double Circuit 7.5 amps. per circuit, MSDC.

Double Pole 15 amps., MSDP.

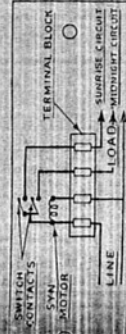
CONTACTS— Silver button air break.

CLOCK— Synchronous motor driven, 200/250 volts, 50 cycles or 100/120 volts, 50 cycles, consumption 2 watts at 230 volts, 50 cycles, (State voltage range when ordering), or 15 day Hand Wound clock. (See Price Summary).

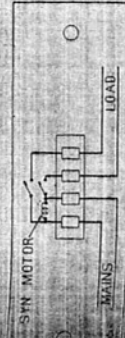
CASE— Cast aluminium, dustproof. Finished stove enamel, with window in lid for viewing dial.

Approximate weight in Standard Box - 2½ lbs.

Wiring Diagrams

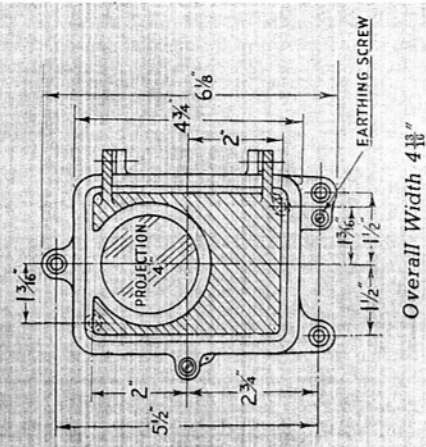


Double Circuit
Types MD1DC and MSDC

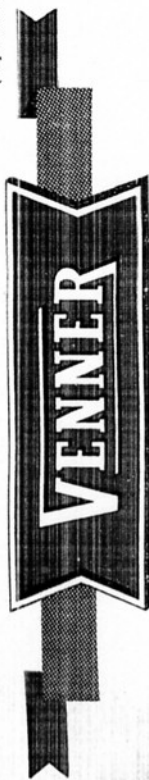


Double Pole
Types MD1DP and MSDP

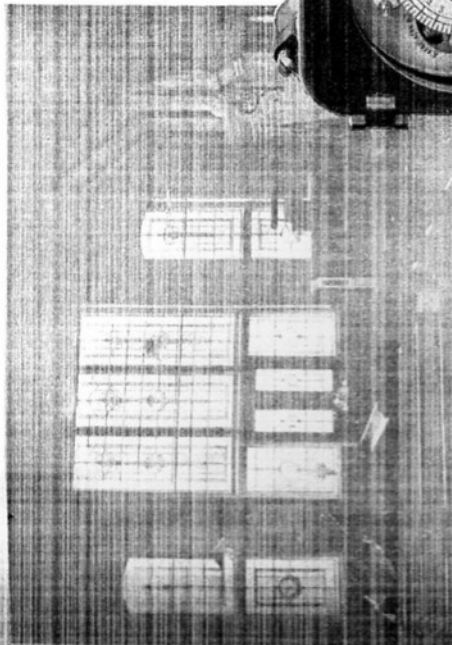
Dimensions of Standard Box



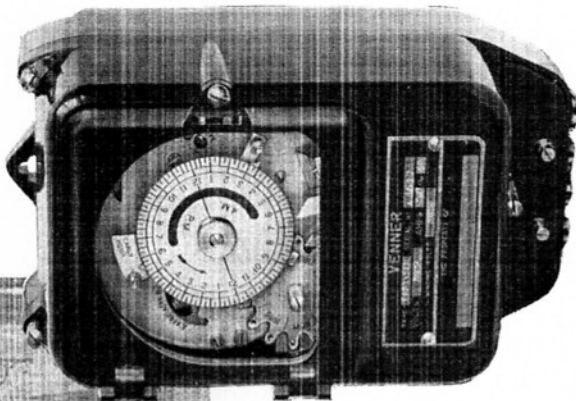
Overall Width 4 13/16"



'B' Range of Time Switches



Congregational Church, Hertford Heath, uses time switch control for off-peak heating under the Eastern Electricity Board cheap rate tariff.



Type ERDIBXXSEH shown in moulded case

SINGLE-POLE TIME SWITCHES FOR CHEAP RATE TARIFF, HEATING INSTALLATIONS & THE CONTROL OF SHOP WINDOW LIGHTING & NEON SIGNS

RATING

- 20 amps. A.C. only up to 250 volts
- 1 amp. A.C. or D.C. up to 250 volts
- 5 amps. A.C. or D.C. up to 250 volts

Telephone:
Malden 2442
(7 Lines)

Telegrams:
Cloxwiches Phone
New Malden

VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY

ALTERNATIVE BOXES

(See Price Summary and Box Leaflet No. 12)

Box No.	Description
C.118A	Weatherproof, wall mounting, bosses for conduit entry. One pole strap fixing. (Will accommodate s.p. or d.p. fuses, cartridge type only).
C.322	Weatherproof, wall mounting, bosses for conduit entry. Two pole strap fixing. (Will accommodate s.p., d.p. or t.p. fuses).
C.137A	Weatherproof, spigot mounting, single compartment, top boss. (Will accommodate s.p. or d.p. fuses, cartridge type only).
C.108	Weatherproof, spigot mounting, double compartment, top boss. (Will accommodate s.p., d.p. or t.p. fuses).

Pole straps can be supplied for boxes C118A and C322 if required

Extended terminal cover available for Standard Box only

Telephone:
Malden 2442
(7 Lines)

Telegrams
Cloxwiches Phone
New Malden

VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY

THE VENNER "B" RANGE OF TIME SWITCHES

These Single Pole Time Switches, having a simple and reliable switchgear design, are the answer to many problems connected with the control of Shop Window Lighting, Street Lighting and Neon Signs, in addition to having various industrial applications.

For Street Lighting Control, the Solar Dial giving sunset ON and sunrise OFF switching is fitted, having an additional hand for switching OFF at a fixed time as an alternative to solar time.

A hand set dial giving one ON and one OFF switching daily at adjustable times as required may be fitted if desired. Additional hands for two or three daily operations can be supplied. (see *Extras and Price Summary*)

Various types of Selective Devices can be fitted as follows, to:

1. Omit switchings completely on specified days.
2. Provide an earlier or later ON or OFF switching on specified days.
3. Combine both these functions, i.e. omit switchings on certain days and provide earlier or later switchings on other days.

The switches are normally supplied in either plastic, moulded or cast metal dustproof cases having bushed holes for cable entry. Alternatively, a case with a top hinged or loose lid for use in a restricted space can be supplied. Conduit entry weather proof cases for outdoor use, for wall, pole or spigot mounting, can also be provided. These will contain fuses if required. (see *Price Summary and Box Leaflet No. 12*).

CLOCK TYPES

- Prefix **M** Self-starting synchronous motor driven, 200/250 or 100/120 volts, 50 cycles A.C.
- Prefix **ER** Synchronous drive with 36 hours auxiliary spring reserve.
(Type ER Clock now embodies replaceable motor bearings)
- Prefix **MW** Electrically wound with 36 hours spring reserve, without synchronous correction. (A.C. only)
- Prefix **EW** Electrically wound with 36 hours spring reserve, for use on D.C. (200/250 or 220/250 volts).
- Prefix **V** 35 day hand wound.

BXX Switchgear, e.g., Types ERDIBXX, ERSBXX, etc.

Box Type	Handset Dial		Solar Dial	
	ER, MW or V Clock Types ERDIBXX, MWDIBXX, etc.	M Clock Type MDIBXX	ER, MW or V Clock Types ERSBXX, MWSBXX, etc.	M Clock Type MSBXX
C.170 Standard (Moulded)	f. s. d. 15 6 0	f. s. d. 6 15 6	f. s. d. 17 15 6	f. s. d. 9 5 0
C.107A Standard (Metal)	15 14 6	7 4 0	18 4 0	9 13 6
C.107TH	15 14 6	7 4 0	18 4 0	9 13 6
C.122A	17 1 0	8 10 6	19 10 6	11 0 0
C.142	17 18 6	9 8 0	20 8 0	11 17 6
C.167	17 18 6	9 8 0	20 8 0	11 17 6

B Switchgear, e.g., Types ERDIB, ERSB, etc.

Box Type	Handset Dial		Solar Dial	
	ER, MW or V Clock Types ERDIB, MWDIB, etc.	M Clock Type MDIB	ER, MW or V Clock Types ERSB, MWSB, etc.	M Clock Type MSB
C.170 Standard (Moulded)	f. s. d. 15 17 9	f. s. d. 7 7 3	f. s. d. 18 7 3	f. s. d. 9 16 9
C.107A Standard (Metal)	16 6 3	7 15 9	18 15 9	10 5 3
C.107TH	16 6 3	7 15 9	18 15 9	10 5 3
C.122A	17 12 9	9 2 3	20 2 3	11 11 9
C.142	18 10 3	9 19 9	20 19 9	12 9 3
C.167	18 10 3	9 19 9	20 19 9	12 9 3

Continued Overleaf

VENNER LIMITED

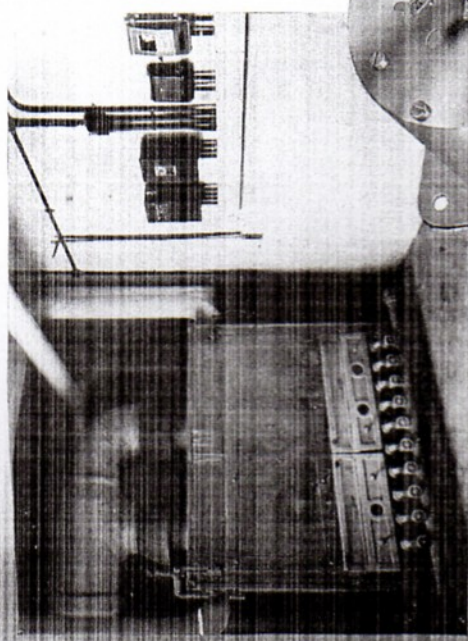
Price List or Leaflet No. 5

We have found it necessary to increase the price of all goods despatched on and after the 12th April, 1955 by 10%.



G.P. RANGE
TIME SWITCHES
FOR
AUTOMATIC CONTROL

This series of switches has an improved contact mechanism



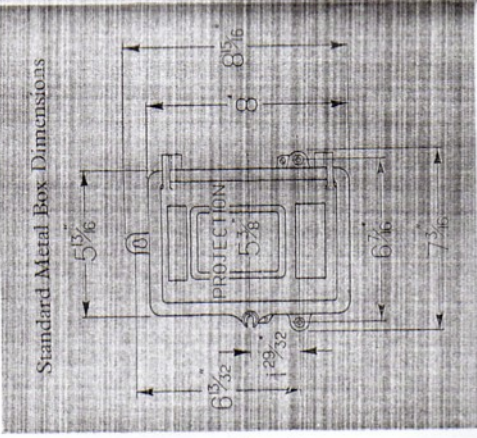
The G.P. Range of Time Switches is particularly suitable for the automatic control of Heating Plants and Two-Rate Metering.

Telephone: Malden 2442 (7 Lines)

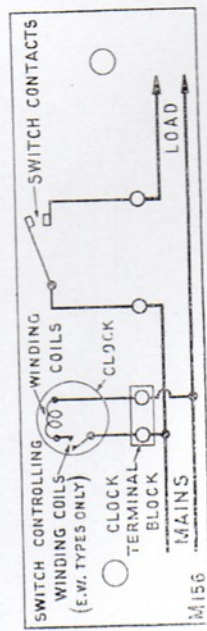
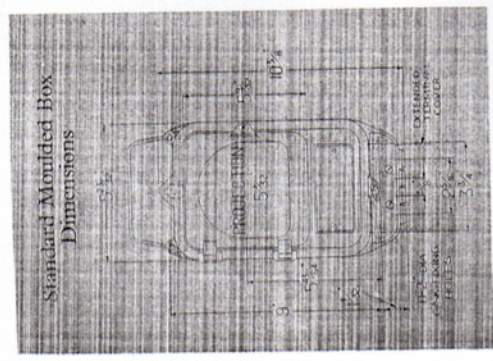
Telegrams: Cloxwiches Phone New Malden

VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY



Approximate weight in Standard Box Moulded 7 1/2 lb. Metal 9 lb.



Wiring Diagram

ALTERNATIVE BOXES

(See Price Summary and Box Leaflet No. 12)

Box No.	Description
C.107TH	Dustproof, as Standard Box but with top hinge loose lid.
C.122A	Weatherproof, wall mounting, bosses top and bottom. (If required will accommodate s.p. fuse).
C.142	As C.122A, but sufficiently large to accommodate d.p. fuses.
C.167	Weatherproof, spigot mounting, single compartment. (Will accommodate s.p. or d.p. fuses).

Boxes C.122A and C.142 can be supplied with pole straps

Venner Time Switch - Type 'GP'

This Time Switch provides for the numerous switching operations which varying conditions demand and at the same time enables them to be carried out with one basic type of switchgear.

The general arrangement provides for multi-circuit switching to a degree hitherto unobtainable on a standard product.

The day selector dial permits early or late switching, or the complete omission of switching operations during any selected day or days.

For the purposes of street lighting control, staircase lighting, etc., solar dials can be fitted to conform automatically to the lighting up and extinguishing times of the locality in which the time switch is to be installed.

The method of operating the contacts is such that in addition to the more usual ON and OFF or changeover switching sequence, the successive operation of the contacts at independently adjustable times throughout the 24 hours can be effected. A maximum of six circuits can be separately controlled.

The adaptability of this time switch is further emphasised by the fact that it can be supplied with either synchronous, hand wound, self-winding with spring reserve or synchronous with spring reserve clocks, the switchgear being common to any of these types.

The GP switch is supplied as standard in a cast metal box, and is available in single, double or triple pole form.

SPECIFICATION

- 1 Clock**
 Synchronous without spring reserve Prefix M
 Synchronous with 36 hour spring reserve ER
 Self-winding with 36 hour spring reserve MW
 Hand wound 15 day F
 Hand wound 35 day V
Type of clock required should be stated when ordering. See examples on Page 4

- 2 Dial**
 Hand set—One, Two or Three pairs of hands D₁, D₂, D₃
 Solar - ON sunset, OFF sunrise and intermediate OFF, adjustable S
 Intermediate ON hand, adjustable supplied on request S₂
Note: Solar switchings allow of one hour adjustment either way of sunset and sunrise.

- 3 Poles or Circuits**
 Single (1st bank) ON - OFF or changeover or changeover and OFF
 Double (2nd bank) ON - OFF or changeover or changeover and OFF
 Triple (3rd bank) ON - OFF or changeover or changeover and OFF
Number of poles, circuits and switching requirements should be stated when ordering.

- 4 Contacts**
 The silver button contacts are each mounted on an improved form of spring blade. The contact assembly is encased in a moulded mounting to prevent contact with live parts when carrying out adjustment or setting to time.

GP RANGE

Price List for Dealer No. 6

As a result of our award for 1955 and material price increases we have found it necessary to increase the price of all goods supplied on and after the 17th April, 1955 by 10%.

Type of Clock	Handset Dial	Solar Dial	Handset Dial	Solar Dial	Handset Dial	Solar Dial
Type M	f. s. d.	13 4 0	f. s. d.	13 14 0	f. s. d.	13 19 9
	Type F	16 1 3	f. s. d.	16 17 0	f. s. d.	17 7 0
Type ER	" MW	21 14 6	22 4 6	22 10 3	23 0 3	23 5 9
		" V	23 15 9	23 15 9	23 15 9	23 15 9

f. s. d.

Extras

C.122A Box (suitable for S.P. Types only)
 C.128 Box (suitable for D.P. and T.P. Types only) }
 Without fuse
 With single pole fuse
 With double pole fuse
 Pole Straps (2)
 Selective Device
 Extra pair of hands for handset dial
 Two extra pairs of hands for handset dial
 Early morning ON hand for solar dial
 Operation on higher or dual voltage

19 9
 1 10 6
 2 1 6
 2 12 9
 1 6 6
 1 6 6
 2 0 6
 1 6 1
 3 0 3
 0 3
 1 6 1
 1 16 3



Mercury Contact HEAVY DUTY Time Switches

TECHNICAL DATA

- 1 **Contact Rating**
Single, Double or Triple Pole 15 amps. per pole at 250 volts A.C. 50 cycles continuously rated, or 10 amps. at 500 volts A.C. 50 cycles continuously rated.
- 2 **Clock Operating Voltage**
100/120 or 200/250 volts A.C. 50 cycles. (Voltage must be stated when ordering). For higher or dual voltage see Price Summary.
- 3 **Synchronous Motor**
As fitted in all except hand wound clocks.
Rotor speed - 200 R.P.M. Rotor torque - 10.95 gm. centimetres.
Approximate consumption:
2.0 v.a. - 1.6 watts at 200 volts, 50 cycles.
2.3 v.a. - 1.8 watts at 210 volts, 50 cycles.
2.4 v.a. - 2.1 watts at 230 volts, 50 cycles.
4.0 v.a. - 2.6 watts at 250 volts, 50 cycles.

4 **Type Designation**
To assist in applying the correct type symbols when ordering, the following sequence should be observed. Clock type symbol (see page 2 specification, Clock). Dial type symbol (see page 2 specification, Dial). Switchgear type symbol GP followed by figure 4 for double pole or figure 6 for triple pole, and Day selector symbol S if required.

Example: If a synchronous single pole switch is required having 36 hour spring reserve and arranged to switch ON and OFF once daily at pre-set times, the type designation for the purpose of ordering would be:—
ER+D1+GP—Type ERD1GP (single pole ON and OFF)

If solar dial required	Type ERS	These type symbols should then be amplified when ordering by details of the switching programme required, i.e. SP ON and OFF or double-pole changeover etc.
If solar dial required without spring reserve	Type MSGP	}
If hand set dial required and synchronous clock	Type MD1GP	
If hand set dial required and synchronous clock and early OFF switching Saturday, OFF all day Sunday	Type MDGPS	

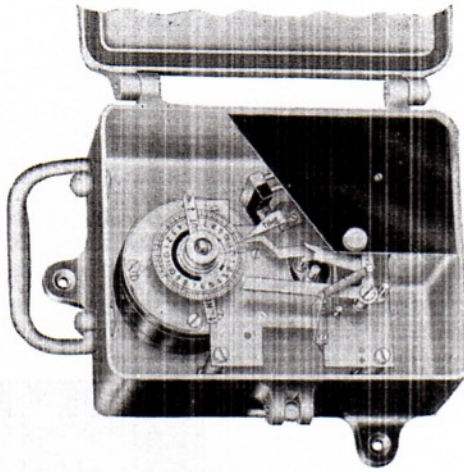
The maximum number of hands, three pairs, is always included when the day selector dial is fitted and the prefix figure symbols 1, 2 or 3 are not shown in such instances.

ALTERNATIVE BOXES

(See Price Summary and Box Leaflet No. 12)

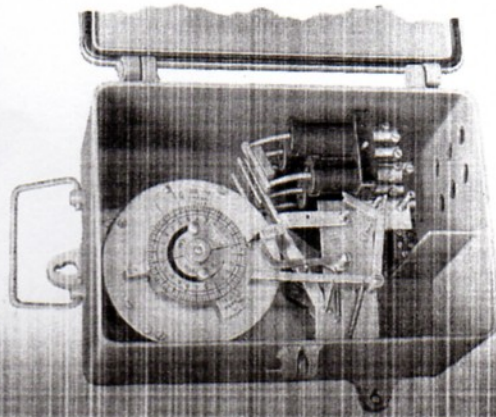
Box No.	DESCRIPTION
C.122A	Weatherproof, bosses top and bottom (suitable for single pole types only).
C.128	Weatherproof, bosses top and bottom (suitable for double or triple pole types, with accommodation for s.p. or d.p. fuses).

Either of the above boxes can be supplied with straps for pole mounting.



Type CF

CF and C Range



Type MWS6
with switchgear shield removed

FOR HEAVY DUTY A.C. AND D.C. LOADS
SHOP WINDOW LIGHTING, GROUP CONTROL
STREET LIGHTING & INDUSTRIAL APPLICATIONS

Switchgear Type	Rating			
	Up to 250 volts		Up to 500 volts	
	A.C.	D.C.	A.C.	D.C.
CF Single Pole	20	10	10	2
C Single Pole	50	25	25	10
CV Single Pole	50	50	50	25

MERCURY CONTACT TIME SWITCHES

We have found by many years of experience that a properly designed Mercury contact is best for Time Switches from 10 amps. D.C. or 20 amps. A.C. up to 50 amps. This is more than ever the case on circuits of gas-filled lamps, where the current-overshoot at the moment of switching on is 12 to 15 times the normal - making the switching ON (A.C. or D.C.) at least as difficult as the switching OFF is on direct current.



Our mercury cups are ingeniously designed. An actual copper-to-copper contact is made between the plunger and the copper screw at bottom of the cup - shown here in section. Only a small quantity of mercury is used to provide a larger and plastic contact surface. Oxidization does not affect the suitability of the mercury in the least, while the unspillable cup-tops prevent splashing or blowing out.

CF Range fitted with 15 day Hand Wound Clock only

Switchgear Type	No. of Poles	Rating Up to 250 volts		Rating Up to 500 volts		Approximate weight in lbs.
		A.C.	D.C.	A.C.	D.C.	
CF	Single	20	10	10	2	4½
CCF	Single	50	25	25	10	4½
CF4	Double	20	20	20	7	5½
CF6	Triple	20	20	20	7	7

C Range available with the following types of clocks

Synchronous without spring reserve Prefix M
 Synchronous with 30 hours spring reserve ER
 Electrically wound without synchronous correction (for A.C. supplies) MW
 Electrically wound (for D.C. supplies) EW
 35-day hand wound V

Switchgear Type	No. of Poles	Rating Up to 250 volts		Rating Up to 500 volts		Approximate weight in lbs.
		A.C.	D.C.	A.C.	D.C.	
C	Single	50	25	25	10	9½
CV	Single	50	50	50	25	13½
C4	Double	50	50	50	25	13½
C6	Triple	50	50	50	25	14
CDC	Double Circuit	50	25	25	10	14

CF Range

Box Type	Single Pole Type CF	Single Pole Type CCF	Double Pole Type CF4	Triple Pole Type CF6
Standard Box	17 14 9 £ s. d.	19 1 3 £ s. d.	19 19 3 £ s. d.	21 15 6 £ s. d.
C.121	18 16 0 £ s. d.	20 3 3 £ s. d.	21 1 3 £ s. d.	—
C.122A	—	—	—	23 2 0 £ s. d.

C Range fitted with type M Synchronous Clock

Box Type	Single Pole Type MD1C	Single Pole Type MD1CV	Double Pole Type MD1C4	Triple Pole Type MD1C6	Double Circuit Type MD1CDC
Standard Box	11 17 9 £ s. d.	14 6 9 £ s. d.	14 6 9 £ s. d.	16 17 9 £ s. d.	20 6 3 £ s. d.
C.128	13 4 3 £ s. d.	16 4 3 £ s. d.	16 4 3 £ s. d.	18 15 3 £ s. d.	22 3 9 £ s. d.
C.122A	—	—	—	—	—

C Range fitted with types ER, MW or V Clock

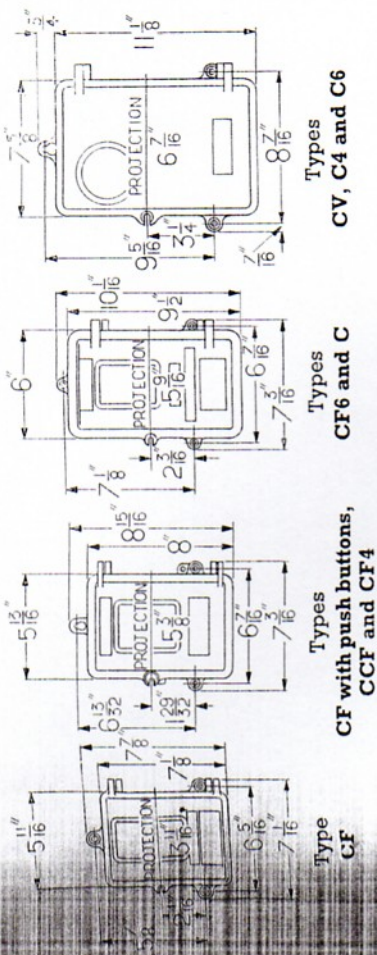
Box Type	Single Pole Type ERD1C	Single Pole Type ERD1CV	Double Pole Type ERD1C4	Triple Pole Type ERD1C6	Double Circuit Type ERD1CDC, etc.
Standard Box	20 8 6 £ s. d.	22 17 3 £ s. d.	22 17 3 £ s. d.	25 8 3 £ s. d.	28 16 9 £ s. d.
C.128	21 15 0 £ s. d.	24 14 9 £ s. d.	24 14 9 £ s. d.	27 5 9 £ s. d.	30 14 3 £ s. d.
C.122A	—	—	—	—	—

Price List for Leaflet No. 7

JENNERS LIMITED

We regret that owing to wage awards and material price increases we have found it necessary to increase the price of all goods despatched on and after the 1st April, 1955 by 10%.

STANDARD BOXES - Cast Aluminium finished in stoving enamel



Alternative Boxes

(See Price Summary and Box Leaflet No. 12)

Box No.	Description	Suitable for Switch Types
CT 23	Weatherproof, wall mounting, tapped bosses for conduit entry top and bottom	CF, CF4, CCF
CT 22A	"	CF6, C
CT 28	"	CV, C4, C6, CDC

The above boxes can be supplied with pole straps if required

Notes

- The CF range of switches are available with hand set dials only.
- The C range of switches are available with hand set dials (switchgear type designation preceded by prefix D1, i.e. MWDIC), or Solar dial, prefix MWSC.
- Two-hand set dial can be supplied with two pairs of hands to switch ON and OFF twice daily (prefix D2) or three pairs to switch ON and OFF three times daily (prefix D3).
- The solar dial is arranged to switch ON at sunset and OFF at sunrise, and an additional hand for switching OFF at a pre-determined time as an alternative to sunrise; an extra hand can be supplied to obtain an early morning ON switching. The solar hands are available in quarter-hour stages up to one hour after sunset and before sunrise.
- The double circuit switchgear is arranged to close both contacts together and open them separately. When fitted with a solar dial, both circuits are closed at sunset, one is opened at a later pre-determined time and the other at sunrise.

- D.C. electrically wound clock (prefix EW) in place of A.C. (prefix MW) C range only
- Solar Dial (prefix S) C range only
- Early morning ON hand for solar dial C range only
- Extra pair of hands for hand set dial
- Two extra pairs of hands for hand set dial
- Selective device to omit switching ON or OFF on selected day or days, suffix S
- Early or late hour device to obtain earlier or later switching on selected day or days, suffix EH or LH
- Selective and early or late hour device combined, suffix SEH or SLH
- External push button for manual operation ON or OFF, standard boxes only
- Two external push buttons for manual operation ON and OFF, standard boxes only
- A.C. electrically wound clock for 370/450 volts, 50 cycles
- Pole straps (two) for boxes C.121, C.122A and C.128

Extras



TIME SWITCHES FOR INDUSTRY

EXTRAS - See Price Summary

Selective Device to omit switching ON or OFF on selected day or days (state which is required). Suffix S, e.g., MWD₁CS.

Early Hour Device to obtain an earlier switching ON or OFF on selected day or days (state which is required) suffix EH, e.g., MWD₁CSEH.

Selective and Early Hour Devices combined, suffix SEH, e.g., MWD₁CSEH.

External Push Buttons for manual operation ON or OFF or both ON and OFF (state details).

Extra pair of hands for hand set dial (maximum two extra pairs) prefix D2 or D3.

Early morning ON hand for Solar dial, prefix S2.

D.C. electrically wound clock up to 250 volts, prefix EW.

Closest Settings

Switchgear Type	ON to OFF Hours	OFF to ON Hours	ON to ON Hours	OFF to OFF Hours
CF	1	1/4	2	5
CF4	1	1/4	2	5
C	1	3/4	1 1/4	3 1/4
C4	3/4	3/4	2	3 1/4

When ordering, please state :-

Type of clock, type of dial and number of hands required.

Type of switchgear.

Type of box if standard box is not required, (if tapped bosses are required, give details), voltage of supply, and whether A.C. or D.C. and frequency of A.C. supply.

Telephone:
Malden 2442
(7 Lines)

VENNER LIMITED

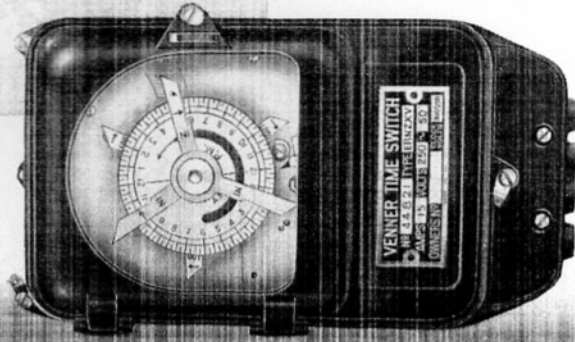
KINGSTON BY-PASS, NEW MALDEN, SURREY

Telegrams
Cloxwiches Phone
New Malden

Printed and Published by Venner Ltd.

Original Publication June 1928

Reprint February 1955



Type ERNZXV
Synchronous clock with spring reserve
in moulded plastic case

15 amp. types :-
ERNZXV, MWNZXV, VNZXV
30 amp. types :-
ERNZ30, MWNZ30, VNZ30

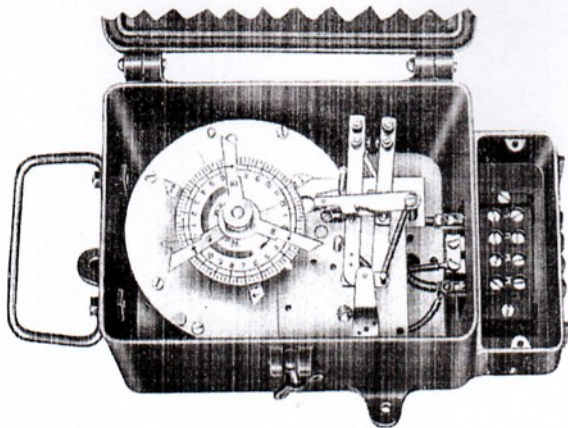
**FOR OFF-PEAK WATER
HEATING & SPECIALISED
INDUSTRIAL APPLICATIONS**

Telephone:
Malden 2442
(7 Lines)

Telegrams:
Cloxwiches Phone
New Malden

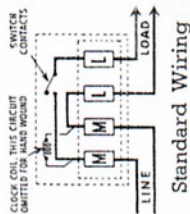
VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY

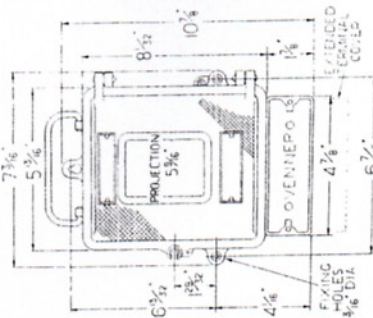
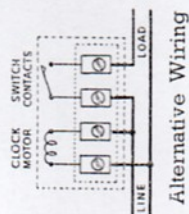


**Type
MWNZZXV**

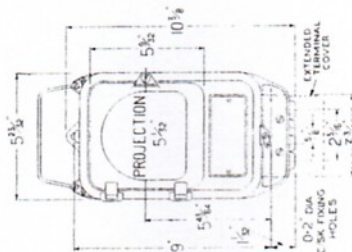
electrically wound
clock with spring
reserve shown in
a cast aluminium
case



**Wiring
Diagrams**



Cast Aluminium Case



Moulded Plastic Case

**Case
Dimensions**

**Time Switches for Industry
Types ERNZZV, MWNZZV and VNZZV**

Price List for Leaflet No. 8

VERNER LIMITED

We regret that owing to wage awards and material price increases we have found it necessary to increase the price of all goods despatched on and after the 1st April 1955 by 10%.

Switch Type	Clock Type	Standard Dustproof Metal Case	Moulded Plastic Case	Weatherproof Metal Case
ERNZZV	Synchronous motor driven with 36 hrs. spring reserve	£15 6 3	£14 8 9	£16 16 0
MWNZZV	Electrically wound with 36 hrs. spring reserve	£15 6 3	£14 8 9	£16 16 0
VNZZV	35-day hand wound spring movement	£15 6 3	£14 8 9	£16 16 0

Extras

Selective device to omit switching ON on any selected day—
add suffix 'S' to type designation, e.g. MWNZZXVS
370/450 volt clock circuit
Extended terminal cover
30 amps. switchgear (Types ERNZZO, MWNZZO and VNZZO)
£ s. d. 3 6 0
1 16 3
2 0 0
June 1954

Yenner NZZV and NZ30 Time Switches

for off peak space heating and water heating loads, and especially suitable for heavy duty industrial applications

These switches were primarily developed for "OFF PEAK" control of water heaters, where the advantage of having three pairs of hands (which can be super-imposed to obtain 1, 2 or 3 ON and OFF switchings daily), is particularly important. This flexibility of the switching operations, however, combined with the choice of alternative clocks, different cases and selective device, renders the NZZV and NZ30 range equally suitable for many other applications. Switches can be supplied in cast metal or moulded plastic cases as required.

SPECIFICATION

Contacts and Rating.

NZZV Silver Button, 15 amps. up to 350 volts A.C. or 7.5 amps. up to 500 volts A.C.
NZ30 Silver Button, 30 amps. up to 250 volts A.C. or 10 amps. up to 500 volts A.C.

Terminals.

The standard terminal compartment is external to the switch case.
An extended terminal cover is available.

Case.

The standard case supplied is in moulded plastic.
Cast aluminium, dustproof and weatherproof cases are also available.

Weight.

1 lb. in standard moulded plastic case
1.5 lbs. in cast aluminium dustproof case
2 lbs. in aluminium weatherproof case

When ordering please state Switch type, supply voltage (for electrical clocks), type of case, whether extended terminal cover or selective device is required.

Clock Types.

Synchronous motor (with 30 hours spring reserve). *Prefix ER*
Self-winding (with 36 hours spring reserve). *Prefix MW*
N.B. Clock voltages up to 250 volts are normally available, alternatively, 400/440 volts.
35 day Hand wound. *Prefix V*

Switching Programme.

1, 2 or 3 ON and OFF switchings daily.
Selective device (to omit switching ON on any selected day).
Add suffix "S" to type e.g. MWNZXVS

Settings.

Minimum time of operation between ON and OFF :-
ON to OFF $\frac{3}{4}$ hr. OFF to ON $\frac{1}{4}$ hr.
ON to ON 1 hr. OFF to OFF $1\frac{1}{4}$ hrs.

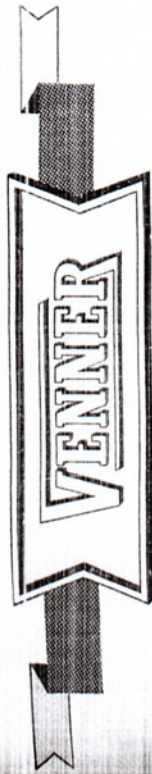
THE NZXV and NZ30 Range of Time Switches forms only part of the comprehensive series of both time switches and process timers manufactured by Venner Limited.

In addition to standard types which in themselves are capable of dealing with a very wide range of industrial processes, Venner Limited manufacture special timers to order to meet industrial requirements necessitating complex switching sequences over a number of circuits. Some special switches made by Venner Limited have controlled as many as 80 different circuits.

It is true to say that—

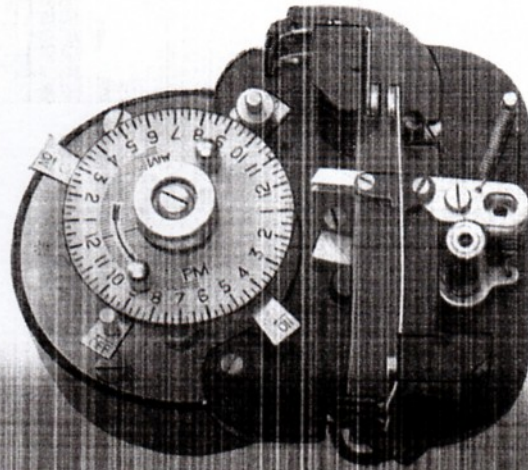
There is a
Venner Time Switch
for every purpose

Leaflet No. 9
(Superseding TS 3.)



POULTRY SWITCHES

OF
OPEN RUN
DEEP LITTER and
BATTERY HOUSES



Poultry Time Switch Type MPDC (switchgear shield removed) Rated at 15 amps. up to 250 volts A.C.

Telephone:
Malden 2442
(7 Lines)

Telegrams
Cloxwiches Phone
New Malden

VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY

PRICE INCREASE

We regret that owing to wage awards and material price increases we have found it necessary to increase the price of all goods despatched on and after the 12th April, 1955 by 10%.

VENNER LIMITED

Price List for Leaflet No. 9

For Open Run and Deep Litter Houses

Switch Type	Type of Clock	Price
MPDC	Synchronous	£7 2s. 6d.
FPDC	15 day Hand Wound	9 19 9

Type	Value	Price
SE	300-500 watts	£5 18s. 3d.
SE	500-1000 watts	7 14 0
DE	1000-2000 watts	12 13 0

DIMMING RESISTANCES

Extras £ s. d.
 Weatherproof box I 1 6

For Battery Type Houses

Switch Type	Type of Clock	Price
* BF43 (4 hands)	15 day Hand Wound	£8 6s. 6d.
§ CF (4 hands)	15 day Hand Wound	18 3 0
* MD2SL	Synchronous	5 7 0
† MD2C	Synchronous	12 6 9
† MWD2C	Self Winding	20 17 6
† EWD2C	Self Winding	26 7 6

Extras £ s. d.
 Weatherproof box for types marked thus * I 15 3
 " " " " § I 13 0
 " " " " † I 6 6

6000/11/54

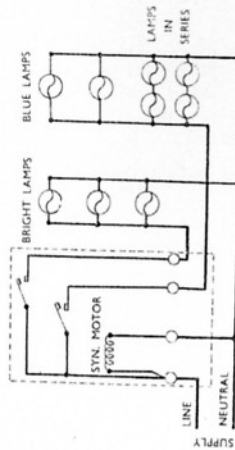
May 1954

for OPEN RUN and DEEP LITTER houses

The Venner Poultry Switch is specially designed for automatically switching ON and OFF the electric lighting representing artificial twilight and full daylight. Two methods of wiring are shown diagrammatically, one using two banks of lamps and the other involving a dimming resistance.

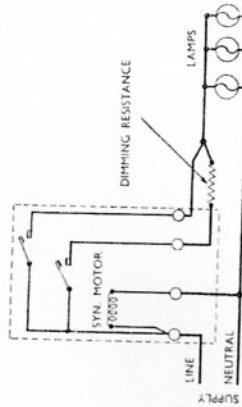
WIRING DIAGRAM

USING SECOND CIRCUIT OF BLUE LAMPS OR 2 LAMPS IN SERIES FOR DIM PERIOD



WIRING DIAGRAM

USING RESISTANCE TO DIM ALL LAMPS FOR THE DIM PERIOD



Rating

Up to 250 volts - 15 amperes A.C. only
 Total Wattage or No. of Lamps (at 230 volts) A.C. - 2,400 watts, or 24 100 watt lamps

HOW IT WORKS

Morning :

1. Switches Bright lights ON
2. Switches Bright lights OFF

(Dim light is Switched ON or approximately 15 minutes)

Evening :

1. Switches Bright lights ON
2. Switches Bright lights OFF and Dim lights ON
3. Switches Dim lights OFF

Types with hand-set dials which are suitable for open run and deep litter schemes :-

- MPDC - Synchronous (without spring reserve)**
- FPDC - 15 day Hand-wound**

These switches, of 'plug in' design, are supplied complete in cast metal dustproof case with bushed hole for cable entry.

Dimensions :- Height 6 1/4" Width 4 1/8" Projection 4"

for BATTERY type houses

For Battery Houses it is of course unnecessary to have the dim period of lighting, and for these installations one of the following types should be used depending upon whether the supply is A.C. or D.C. and the total wattage of the lamps to be controlled. These switches are arranged to switch ON and OFF twice daily at adjustable times as required to provide the morning and evening lighting times, and are supplied complete in a cast metal dustproof case.

Switch Type <i>Hand Set Dial</i>	Type of Clock	Rating up to 250 volts Amperes A.C. D.C.	Dimensions (in inches) Height Width Proj.	Total Wattage of Lamps (at 230 volts)
MD251	Synchronous	15 — 5½	5 3 ⅝	2,400 watts or 24—100 watt lamps
MD252 (4 hands)	15 Day Hand-Wound	5 5	" "	800 watts or 8—100 watt lamps
MD253 (4 hands)	15 Day Hand-Wound	20 10 7½	7 5 ½	3,200 w. A.C.—32-100 w. lamps 1,600 w. D.C.—16-100 w. lamps
MD254	Synchronous	50 — 10 7¼	5 ½	8,000 watts A.C. or 80—100 watt lamps 4,000 watts D.C. or 40—100 watt lamps
MD255	Electrically Wound (with spring reserve)	50 — " "	" "	
MD256	" "	— 25 " "	" "	

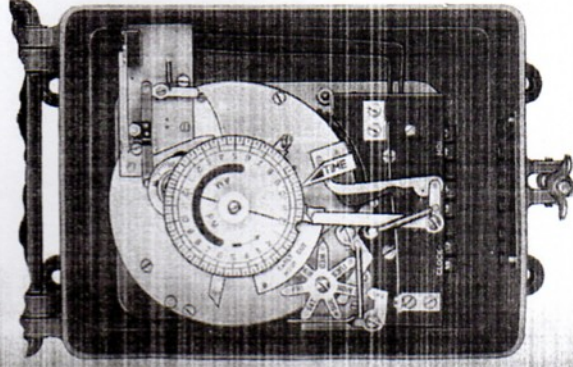
When ordering please state :-

Switch Type
Supply Voltage
Whether A.C. or D.C.
Frequency of A.C. Supply



ZM and ZO range of time switches

For resetting
Maximum Demand Meters

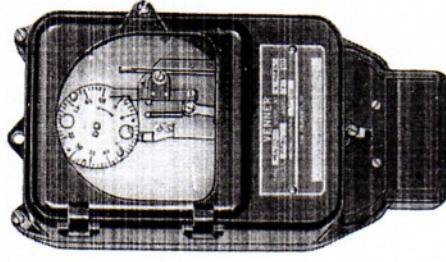


Type MWBZMSEH

Fitted with electrically wound clock with 36 hours spring reserve in cast metal case.

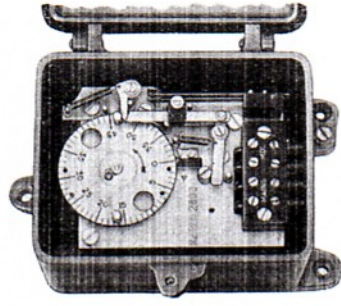
RATING

- 1 amp. up to 250 volts A.C.
- 0.5 amps. up to 500 volts A.C.
- 0.1 amps. up to 250 volts D.C.



Type MWZO

fitted with electrically wound clock with 36 hours spring reserve, in plastic case.



Type MZM

Fitted with synchronous motor clock without spring reserve in cast metal case.

THE VENNER POULTRY SWITCH is one specialised item in the large number of types of time switches in regular production. For use about the farm there are types of time switches which can switch on and off yard lights, sterilizing equipment, infra-red lamps for the benefit of young stock and many other jobs in the dairy and other departments.

There are delay switches for the brief use of lamps and equipment, and programme switches for the control of central heating and other plant requiring a regular Tuesday to Friday routine with a special week-end performance.

There are many other time switches, some simpler, others more complicated, which can be used in the home for the control of washing machines, immersion water heaters, space type storage heaters, radio and television sets, burglary prevention and such simple jobs as switching on lights, cookers and heaters prior to return home.

It is true to say that—

There is a
Venner Time Switch
for every purpose

ZM and ZO RANGE OF TIME SWITCHES

These switches are primarily intended for resetting Maximum Demand Indicators by momentarily energising or de-energising, according to the design of the meter, the coil carrying out the resetting function, at intervals which can be 10, 15, 20, 30 or 60 minutes. The switches are fitted with a dial revolving once every hour into which are fitted the appropriate number of pins to obtain the required interval periods. The switches are available with self-starting synchronous motor clocks without spring reserve (types MZM with normally open contacts closing momentarily, and MZO with normally closed contacts opening momentarily), and with electrically wound clocks with 36 hours spring reserve in the event of supply failure (types MWZM with normally open contacts closing momentarily and MWZO with normally closed contacts opening momentarily).

The electrically wound pattern is also available with an additional pair of contacts controlled by a dial revolving once every 24 hours, for use when maximum demand metering is only required during certain hours each day (types MWBZM with normally open contacts closing momentarily, and MWBZO with normally closed contacts opening momentarily). This type of switch can be fitted with a selective early hour device to omit week-end operations.

An alternative use for these two-contact switches is the control of automatic coal-fired heating plants where it is required to change over from thermostatic control during the daytime to kindling control at night and week-ends, the contacts operated by the 1 hour dial closing for an adjustable period of 5-15 minutes to boost the furnace at hourly intervals.

SPECIFICATION

Contacts: Platinum air break. Normally open - closing momentarily to reset.
Switchgear type ZM.
Normally closed - opening momentarily to reset.
Switchgear type ZO.
Rating: 1 amp. up to 250 volts A.C.
0.5 amp. up to 500 volts A.C.
0.1 amp. up to 250 volts D.C.

Closure Period: Approximately 5-6 seconds (can be increased if required).
Interval Period: 10, 15, 20, 30 or 60 minutes, as specified.

Type of Clock: Synchronous without spring reserve, *Prefix M.*
Electrically wound with 36 hours spring reserve for A.C. supplies, *Prefix MW.*
Electrically wound with 36 hours spring reserve, for D.C. supplies, *Prefix EW.*
35-day hand wound clock, *Prefix V.*

Case: Standard case for types MZM and MZO - cast metal dustproof, finished in stoving enamel.
Standard case for types MWZM and MWZO - plastic (alternatively in cast metal case).

ZM & ZO Range

Switch Type	Supply	Clock Type	Plastic Case	Metal Case
MZM or MZO	A.C.	Synchronous motor driven	—	7 s. d. 8 17 6
MWZM or MWZO	A.C.	Electrically wound, spring reserve	16 4 6	17 1 0
EWZM or EWZO	D.C.	Electrically wound, spring reserve	21 14 6	22 11 0
VZM or VZO	A.C. or D.C.	35-day hand wound	16 4 6	17 1 0

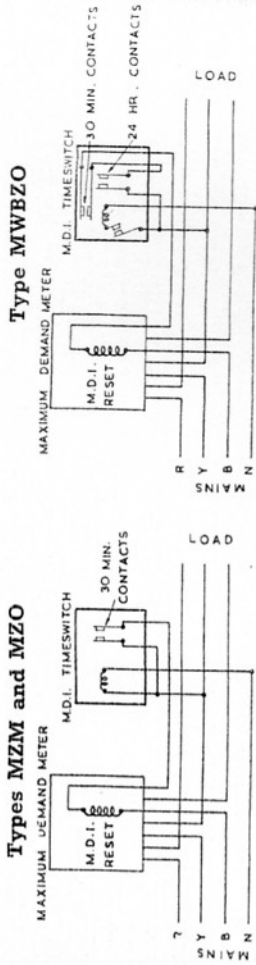
BZM & BZO Range

MWBZM or MWBZO	A.C.	Electrically wound, spring reserve	—	22 17 3
EWBZM or EWBZO	D.C.	Electrically wound, spring reserve	—	28 7 3
VBZM or VBZO	A.C. or D.C.	35-day hand wound	—	22 17 3

Extras

Extended terminal cover (for types MZM, MZO, or MWZM, VZM, EWZM in plastic case) 2 6
Additional pair of hands for 24 hour dial, BZM and BZO Range 9 0
Two additional pairs of hands for 24 hour dial, BZM and BZO Range 18 0
Select device to omit switchings on 24 hour dial on selected days, BZM and BZO Range. Add suffix S 2 0 6
Early or late hour device to obtain early or late hour switchings, BZM and BZO Range. Add suffix EH or LH 2 0 6
Combination of above two devices, BZM and BZO Range. Suffix SEH or SLH 2 18 6
M or MW clocks for 400/440 volts, 50 cycles 1 16 3
Hourly contacts closing for 5-15 minutes for stoker kindling control No extra charge

WIRING DIAGRAMS



NOTE:—Where it is necessary to make contact to reset (type MWBZM) the 30 minute and 24 hour contacts should be connected in parallel.

EXTRAS

The 24 hour contact dial can be supplied with an extra pair of hands to obtain 2 ON and 2 OFF switchings daily, or 2 extra pairs of hands to obtain 3 ON and OFF switchings daily.

Selective Device to omit switching ON or OFF on any selected day or days, add suffix S to type designation, i.e. MWBZMS.

Early Hour Device to obtain an earlier ON or OFF switching on any selected day or days, add suffix EH to type designation, i.e. MWBZMEH.

Selective Early Hour Device combining the above two devices, add suffix SEH to type designation, i.e. MWBZMSEH.

Standard clock voltage ranges 100/120 volts, 50 cycles; 100/120 volts D.C.
200/250 volts, 50 cycles; 200/230 volts D.C.
220/250 volts D.C.

Switches can be supplied for alternative voltages and frequencies: Details on application.

When ordering, please state voltage of supply, whether A.C. or D.C. and frequency of A.C. supply, type of clock and switch required, interval period, whether contacts are required normally open or closed. For the BZM and BZO range, please state whether single pole ON and OFF or changeover are required, and whether switch is to have selective and/or early hour device.

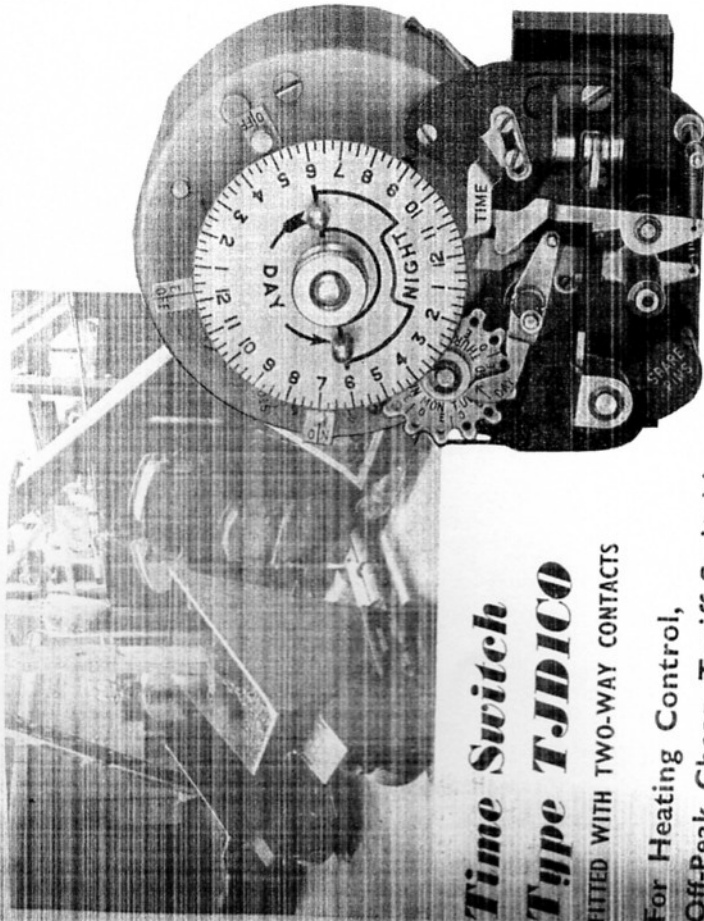
Telephone:
Malden 2442
(7 Lines)

Telegrams:
Cloxwiches Phone
New Malden

VENNER LIMITED

KINGSTON BY-PASS, NEW MALDEN, SURREY

VENNER



**Time Switch
Type TJDICO**

FITTED WITH TWO-WAY CONTACTS

**For Heating Control,
Off-Peak Cheap Tariff Switching,
and other Industrial Uses**

Type TJDICOSEH without box
(switchgear shield removed)

Electrically wound time switch with nine hours spring reserve to keep clock running during power cuts. This switch incorporates a selective early hour device for week-end control of heating.

RATING. 20 amps. 200/250 volts. 50 cycles

Venner Time Switch Type TJD100

20 AMPS. - 250 VOLTS A.C. - SINGLE POLE - TWO WAY

DESCRIPTION

This time switch which has been specifically designed to meet the demand for an inexpensive time switch incorporating spring reserve (to keep the clock running during power cuts), includes a selective early hour device which will switch OFF the heating or change it to a low thermostat circuit from mid-day Saturday to Monday morning. Having 2-way contacts it can be used to control day and night thermostat circuits. The switch is of plug-in design so that it can be easily removed during the summer months for cleaning and oiling and simply plugged back into the terminal block after servicing.

In addition to heating control this switch has many other industrial applications, particularly "Off Peak" switchings during specified hours to obtain the special rates for "Off Peak" electricity offered by Electricity Boards.

A synchronous motor driven switch without spring reserve, with 15 ampere one-way contacts, type MD1SLSEH (see Leaflet No. 1), will also obtain the same switching programme. To control day and night thermostats with this one-way switch, the thermostats should be connected in series and the time switch contacts connected to short-circuit the night or lower temperature thermostat during the hours when the day thermostat is required to take control.

FEATURES

- (1) Plug-in switch unit.
- (2) 5-way terminal block - 2 terminals for the clock.
3 for the contacts.
- (3) Electrically wound clock with 9 hours spring reserve in the event of power failure.
- (4) Contacts - Silver button air break, single pole 2-way, 20 amps., 250 volts A.C.

VENNER LIMITED

Price List for Leaflet No. 11

Switch Type TJD1CO

	List
Complete with 5-way terminal block but without box	£12 7 6
In dustproof box C325 with bushed hole cable entry	£15 0 0
In weatherproof box C.118a with tapped bosses	£16 1 9

Note: Switch can be supplied with synchronous clock instead of spring reserve clock at a reduction of £2-2-0 on above prices

	£	s.	d.
Solar Dial
Extras
Type TJSCO

* Selective device to omit switching on selected days

† Early hour device to obtain earlier switching on selected days

‡ Combination of both above features

Extra pair of hands for handset dial

Two extra pairs of hands for handset dial

** Selective or early hour device cannot be supplied when the switch has a solar dial.*

5/10/55

April 1955

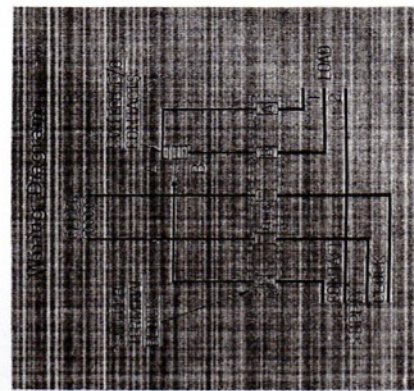
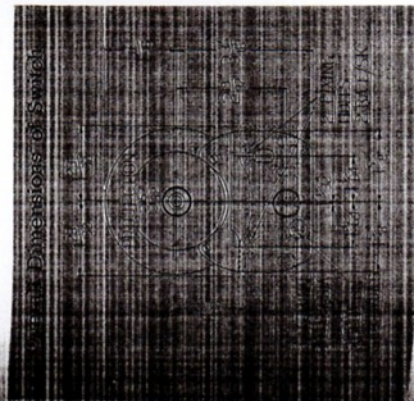
- (5) Can be fitted with (a) Selective device Type TJD1COS
 (b) Early Hour device Type TJD1COEH
 (c) Selective Early Hour device Type TJD1COSEH
 (d) Extra pair of hands Type TJD2CO
 (e) 2 extra pairs of hands Type TJD3CO

- (a) Omits switching operations on any selected day or days.
 (b) Obtains an earlier switching on selected day or days.
 (c) Omits switching operation on selected day or days and obtains earlier switching on other selected day or days.
 (d) Switches over and back twice daily.
 (When fitted with two pairs of hands and a selective device, the switch can be set to switch over and back twice on selected days, once on other selected day or days and omit all switchings on any other selected day or days).
 (e) Switches over and back again three times daily.

(6) Can be supplied without box or in two alternative types of box.

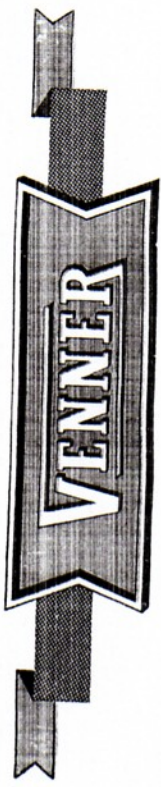
- (a) Dustproof box C325 with bushed hole cable entry.
 (b) Weatherproof box C118a with tapped top and/or bottom. (For dimensions see overleaf).

(7) Can be supplied with solar dial, type TJSCO providing a selective device or early hour device is not required.

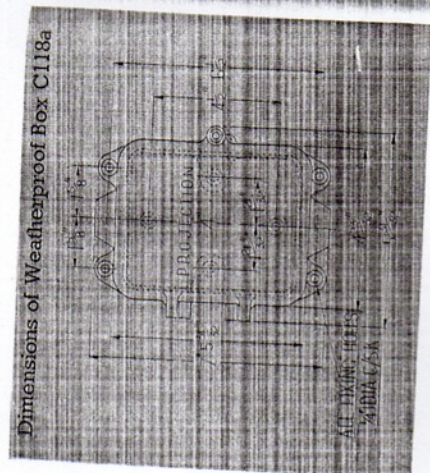
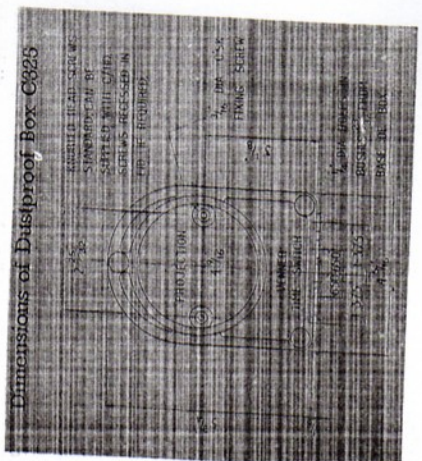


Venner Time Switch Type TJD100

Leaflet No. 12



BOX DIMENSIONS



- Weight.**
- Switch complete with terminal block but without box 2 lbs.
 - Switch complete with terminal block in cast metal dustproof box 3 1/2 lbs.
 - Switch complete with terminal block in cast metal weatherproof box 4 1/4 lbs.

Closest Settings.

- A—B 1 1/4 hours. B—A 1 1/2 hours. A—A 2 hours.
- B—B 2 hours. B—A when fitted with EH 2 1/2 hours.

The early hour device when fitted obtains an earlier switching from A to B.
 The selective device when fitted prevents the contacts from changing from B to A.

When ordering please state :-

- (2) Switch type designation.
 - (3) Voltage and frequency of supply.
 - (4) Switching programme required.
- Dustproof or weatherproof case and if the latter, tapping details.

Telephone: Malden 2442 (7 Lines)

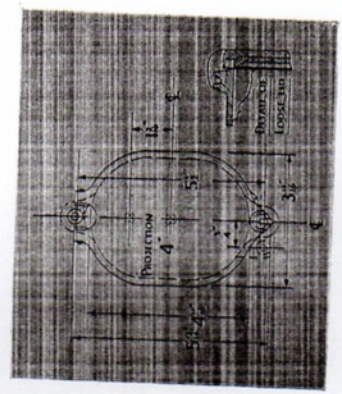
Telegrams: Cloxwiches Phone New Malden

VENNER LIMITED
KINGSTON BY-PASS, NEW MALDEN, SURREY

d and Published by Venner Ltd.

Original Publication January 1954

Reprint May 1955



C.131A Box

Suitable for SP, SL and BF.43 Range of Time Switches.

(Leaflets Nos. 1 and 3).

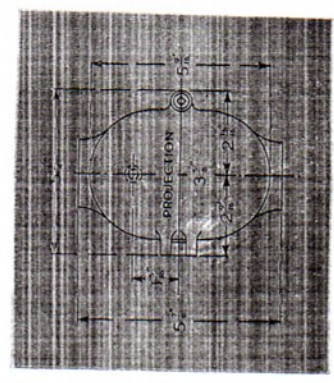
This box is fitted with a combined top hinged loose lid for use where space is restricted. Will not accommodate fuses.

C.116B Box

Suitable for SP, SL and BF.43 Range of Time Switches.

(Leaflets Nos. 1 and 3).

Weatherproof box with bosses top and bottom which can be tapped for conduit. Key or cam fastening. Will not accommodate fuses.



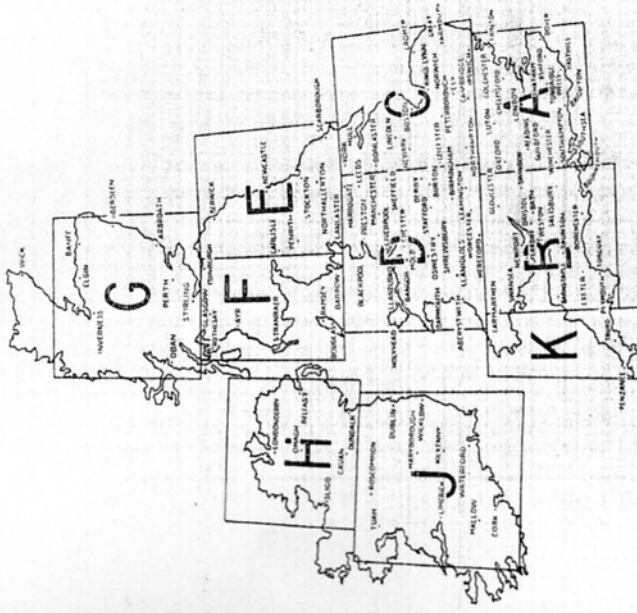
Telephone: Malden 2442 (7 Lines)

Telegrams: Cloxwiches Phone New Malden

VENNER LIMITED
KINGSTON BY-PASS, NEW MALDEN, SURREY



THE SOLAR DIAL For the control of most public lighting installations, it is desirable to have the time switch fitted with a solar dial which will automatically switch the lights ON at sunset, or at a fixed time before or after sunset, and OFF at sunrise, or at a fixed time before or after sunrise. It will be appreciated that solar dials must be designed for the locality in which the switch is required to operate, as of course the sunset and sunrise times vary with the latitude and longitude.

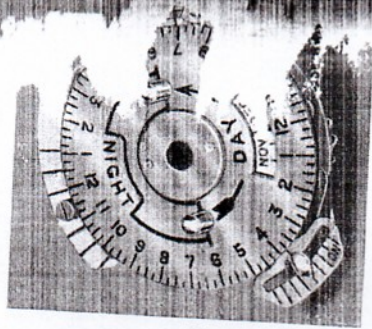


This map shows the different areas covered by the ten types of solar dial for the British Isles. The curves on the back page show the actual switching times obtained by each of these different dials.

THE VENNER SOLAR DIAL

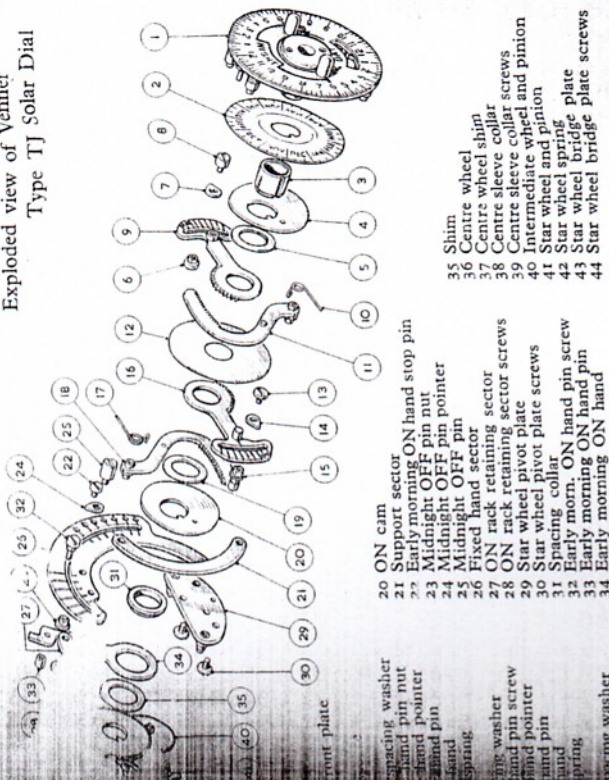
SOLAR TIME AND STANDARD TIME

The discrepancies between solar time (i.e. the actual time taken from the sun) and local time, are not usually very deeply considered, but of course, in designing a solar dial for use in any particular locality they become all important. Most people realise that every country takes its own standard time from a fixed meridian. When the sun appears to cross that meridian during the rotation of the Earth, it is noon in that country despite the fact that the sun will not cross a spot 1° West of that meridian until 4 minutes later. Similarly, for every degree of longitude West of the given meridian, standard time will be four minutes ahead of solar time and for every degree East, 4 minutes later. In some countries stretching for long distances the standard time for a certain prescribed area only, as otherwise the discrepancies at the extremes of the country would be too great for practical timekeeping. It will perhaps be realised that we have a locality in order to determine the setting (forward or back) of the solar dial upon its axis where up a switch for that locality.



Type Tj Solar Dial

Exploded view of Venner Type Tj Solar Dial



- 1 ON cam
- 2 Support sector
- 3 Early morning ON hand stop pin
- 4 Midnight OFF pin nut
- 5 Midnight OFF pin pointer
- 6 Fixed hand sector
- 7 ON rack retaining sector screws
- 8 Star wheel pivot plate
- 9 Spacing collar
- 10 Early morn. ON hand pin screw
- 11 Early morning ON hand
- 12 ON cam
- 13 Support sector
- 14 Early morning ON hand stop pin
- 15 Midnight OFF pin nut
- 16 Midnight OFF pin pointer
- 17 Fixed hand sector
- 18 ON rack retaining sector screws
- 19 Star wheel pivot plate
- 20 Spacing collar
- 21 Early morn. ON hand pin screw
- 22 Early morning ON hand
- 23 ON cam
- 24 Support sector
- 25 Early morning ON hand stop pin
- 26 Midnight OFF pin nut
- 27 Midnight OFF pin pointer
- 28 Fixed hand sector
- 29 ON rack retaining sector screws
- 30 Star wheel pivot plate
- 31 Spacing collar
- 32 Early morn. ON hand pin screw
- 33 Early morning ON hand
- 34 ON cam
- 35 Support sector
- 36 Early morning ON hand stop pin
- 37 Midnight OFF pin nut
- 38 Midnight OFF pin pointer
- 39 Fixed hand sector
- 40 ON rack retaining sector screws
- 41 Star wheel pivot plate
- 42 Spacing collar
- 43 Early morn. ON hand pin screw
- 44 Early morning ON hand

VARIATIONS IN SUNRISE AND SUNSET

As the solar dials have to deal with sunrise and sunset another problem arises. The inclination of the Earth's axis and its position relative to the sun during the revolution of the Earth around the sun cause the variations in "length of day" or times of sunrise and sunset in Summer and Winter. The variations become more and more pronounced the farther North or South of the Equator one goes. We therefore have to alter the design of the internal gearing of the solar dial to suit different latitudes. Expressed in graph form, the annual sunrise and sunset curves are fairly flat in tropical latitudes near the Equator, and rise to a higher and higher central peak in the Northern and Southern latitudes. Incidentally, the curve for the Southern Hemisphere is not an exact reflex of that for the Northern Hemisphere.

DETAILS REQUIRED FOR A SOLAR DIAL TIME SWITCH

The particulars of a locality we have to know to supply a time switch with a solar dial, may be summarised as follows:—

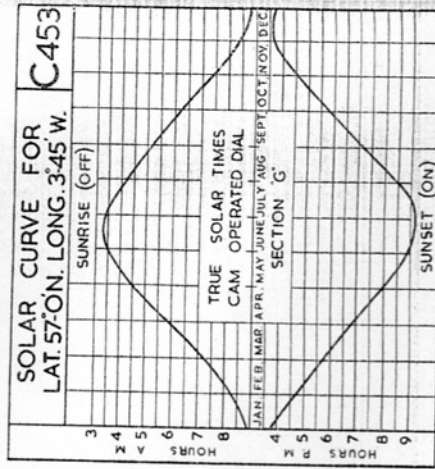
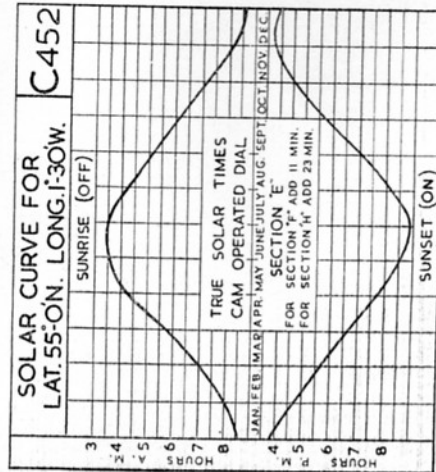
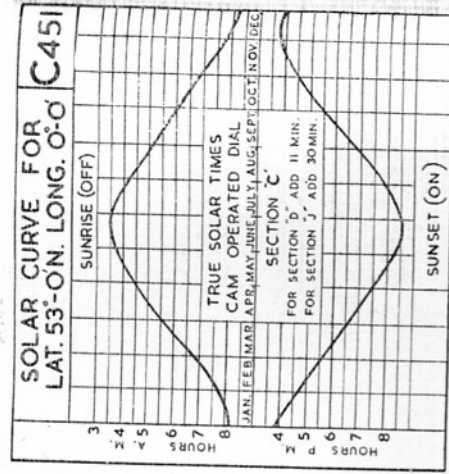
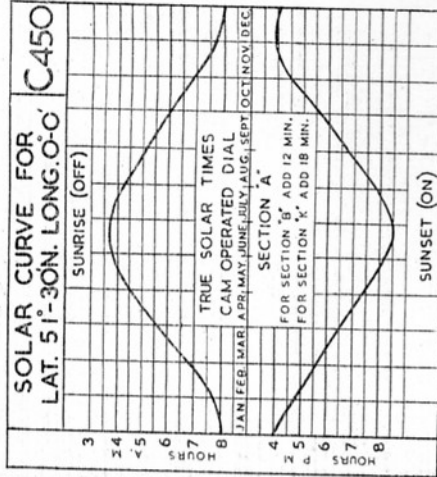
- (1) Distance East or West from the Meridian from which local standard time is taken (to set the dial to read standard time and give switchings by solar time).
- (2) Latitude (to design the mechanism giving "length of day" or sunrise and sunset, throughout the year).

SOLAR DIAL MECHANISM

The Venner solar dial is designed so that the switching hands follow these sunset and sunrise curves carrying out one complete cycle in 365 days. This movement of the hands is initiated by a star wheel at the back of the dial, which engages with a pin protruding from the clock; as the dial revolves once every 24 hours, this star wheel is moved through one tooth every day. The star wheel provides the necessary reduction to move the switching hands through the appropriate switching times. The solar dial is provided with a train of wheels shaped to obtain the appropriate switching times. The dial is divided into three divisions marked with the months of the year, each month being divided into three divisions. When the switch is being set, the star wheel, mentioned above, can be turned until the dial pointer indicates the day on which the switch is being set. "Summer" time where daylight must be ignored and the dial set to ordinary standard time.

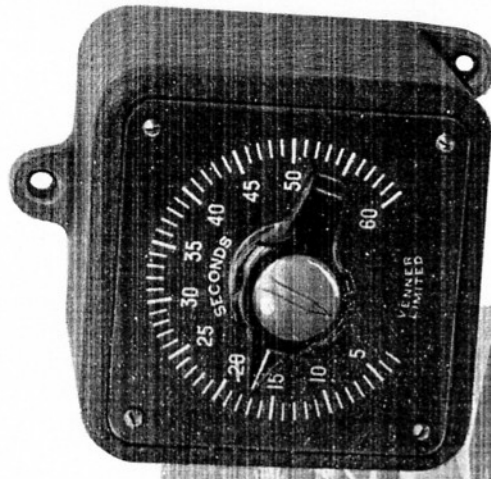
NOTE—Solar dials are not normally supplied for use in territory within latitudes 15° North and 15° South of the equator or for territory above 60° North as these areas have either too small a variation between Summer and Winter hours of darkness, or too large a variation to make the use of a solar dial practicable.

SWITCHING TIMES COVERING THE 10 TYPES OF SOLAR DIAL FOR THE BRITISH ISLES

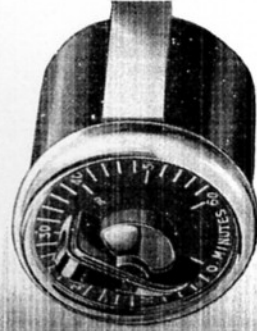


Leaflet No. 51

Process Timers
For industry and the Home



Synchronous motor
driven repeating
process timer
type PT4



Spring driven
process timer
type PTB

AUTOMATIC PRECISION TIMING OF
Industrial Processes
Battery Charging
Film Developing
Moulding Presses
Process Ovens
Sun Lamps, Etc.

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