Horstmann Timers and Controls

K,Y,Q Range

24 hour Timeswitches

The Horstmann range of K, Y and Q timeswitches has long held a large UK and world market for street lighting, heating and tariff control and for general switching requirements.

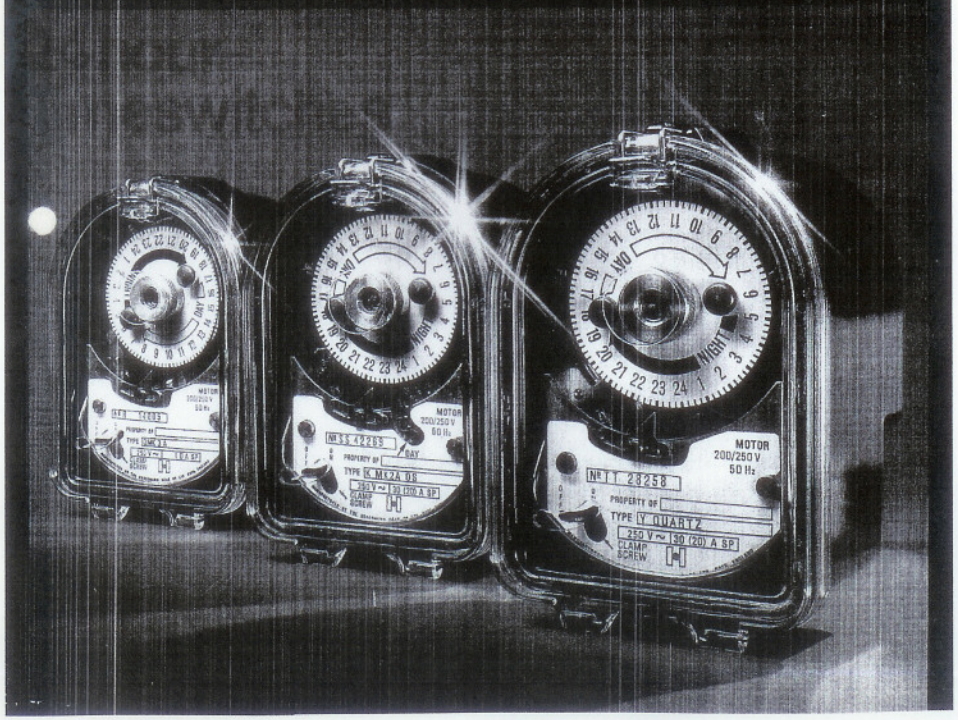
Sturdy, extremely reliable and simple to set, they offer all the traditional 'virtues' that lighting, heating, and electrical engineers look for when specifying or installing a time control. They are specifically designed to give many years of trouble free service, even in difficult or exposed locations.

But the range has also kept pace with technical advances. As well as synchronous and electrically wound movements, some are now available with quartz stepping motor drives, giving a rechargeable battery reserve of 150 hours as well as ensuring an accuracy of ± 5 minutes/year.

Both the K and Y single circuit units will handle a 30 amp resistive load (at 250V AC) while the Q dual circuit timeswitch can switch up to 10 amps per circuit.

Options in the range include the choice of one, two or three ON/OFF operations per day, with or without day or half-day omission. For street lighting applications, the range of solar compensating dials provide either all-night lighting, midnight OFF or midnight OFF/early morning ON.

Years of proven service have demonstrated that the Horstmann K, Y and Q range is designed to last.



Y Type Timeswitch

The Y is a single circuit timeswitch with a wide variety of applications including the control of street lighting, heating, tariff and general switching requirements.

Movements: There are two movement options:–

Quartz The quartz stepping motor drive is constantly being energised by a 1.2V trickle-charged ni-cad cell. Accuracy of the motor is controlled by a quartz crystal ensuring timekeeping of within 5 minutes/year. The battery ensures that in the event of a power failure the clock continues to keep time for up to 150 hours. On restoration of the supply the battery automatically recharges.

Electrically wound A self starting synchronous motor runs continuously to keep the mainspring of the clock in a fully wound condition. The clock is controlled by an eleven jewelled escapement for accurate timekeeping. The mainspring ensures that in the event of a power failure the clock continues to keep time for up to 12 hours. On restoration of the supply the mainspring is automatically rewound.

Dials: A choice of four basic dial arrangements is available, three of which are 24 hour hand-set dials, the fourth variation being an automatic solar dial primarily used for control of street lighting.

Hand set 2, 4 or 6 tappet dials allowing 1, 2 or 3 ON/OFF operations every 24 hours respectively.

Solar The solar compensating dial automatically alters the ON/OFF times throughout the year to allow for seasonal variations in sunrise and sunset times. This dial can either provide all-night lighting or can be fitted with intermediate tappets allowing 'midnight OFF' switching and also 'early morning ON' switching if required.

Selective device: (day omission) This facility is not available for use with Solar dials. Units fitted with 4 tappet hand set dials can be fitted with a selective device which gives the choice of either whole or half day omission. They are factory pre-set to either: 'OS' (OFF selective – permitting either one or both ON operations to be omitted on any day of the week); or 'MS' – made selective – permitting either one or both OFF operations to be omitted on any day or days of the week.

K Type Timeswitch

The K timeswitches offer all the facilities offered by the Y except that the K has a synchronous motor drive with no reserve facility. Where power supplies are reliable or where a reserve is not critical, K timeswitches represent an excellent low cost alternative to the Y. The K is physically smaller than the Y though it retains all the qualities of robust design, high reliability and simple operation. With the exception of the movement, all other ordering options are available as shown for the Y.

Movement: Self starting synchronous motor without spring reserve.

Q Type Timeswitch

This unit combines many features of the K and Y and is particularly suitable for lighting applications. The Q is a dual-circuit timeswitch fed from a common supply. Both circuits operate simultaneously for the first ON operation and then switch independently according to the type of dial used.

Movements: Quartz or electrically wound (as Y) or synchronous (as K).

Dials:

3 tappet One ON tappet switches both circuits ON simultaneously, say at dusk. The other two are OFF tappets, one of which switches one circuit OFF at, say, midnight, and the next OFF at, say, dawn.

4 tappet First ON tappet switches both circuits ON simultaneously at, say, dusk. First OFF tappet switches circuit No 1 OFF at, say, midnight. Second ON tappet switches circuit No 1 back ON. Second OFF tappet switches both circuits OFF at, say, dawn.

Solar Solar dials are available to provide both switching sequences as described above, but the ON/OFF times will relate to seasonal variations in sunrise and sunset times.

Selective devices: These are not available with the Q series.

Override

Advance lever

An override device is fitted as standard which allows the next ON or OFF tappet operation to be brought forward without altering the dial. When the tappet operates, the timeswitch returns to its normal automatic sequence.

Latching lever

A variation of this override device is available which allows the timeswitch to be switched to a permanently ON or OFF position. The timeswitch will not return to automatic operation unless the latching lever is manually reset to the automatic position.
NB. The latching lever cannot be used with units fitted with a selective device or solar dials.

Installation

The units are 'plug in' for ease of installation and servicing, making it unnecessary to disturb any fixed wiring. They can be supplied complete with a terminal socket block which can be permanently screwed and wired into position. Units supplied in moulded or metal boxes have the terminal block already built into the box. K and Y timeswitches are available with either common or independent motor switch connections – 3-pin for common connections, 4-pin independent connections.

Timeswitch ordering options

	MOVEMENT			DIALS						DAY OMISSION FACILITY		ENCLOSURES							
				Handset					Solar										
	Synchronous	Electrically wound	Quartz	2 tappet handset	4 tappet hand set	6 tappet hand set	All night	Midnight off	Midnight off/Early morning on	On operations omitted	Off operations omitted	Open	Moulded push-on cover	Hinged drum cover	149 moulded box	151 moulded box	40/41 Cast metal box	40A/42 Cast metal box	Latching lever
Type K																			
MK 2A	●			●	●	●				●		●	●	●		●	●		●
MK 2/OS	●				●						●	●	●	●		●	●		
MK 2A/MS	●				●							●	●	●		●	●		●
MK 2A Solar	●						●	●	●			●	●	●		●	●		●
Type Y																			
MK 2		●		●	●	●				●		●	●	●	●			●	●
MK 2/OS		●			●						●	●	●	●	●			●	
MK 2/MS		●			●							●	●	●	●			●	●
MK 2 Solar		●					●	●	●			●	●	●	●			●	●
Quartz			●	●	●	●				●		●	●	●	●			●	●
Quartz OS			●		●						●	●	●	●	●			●	
Quartz MS			●		●							●	●	●	●			●	●
Quartz Solar			●				●	●	●			●	●	●	●			●	●
Type Q																			
Q/3A	●				●		●	●	●			●	●	●		●	●		●
Q Quartz			●		●		●	●	●			●	●	●	●			●	●
Q/3 EW		●			●		●	●	●			●	●	●	●			●	●

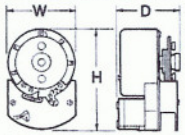
K.Y.Q Range 24 hour Timeswitches

Housings

There is a choice of housings to suit all locations and situations:

Moulded push on cover
A clear plastic cover that clips over the dial and switch mechanism.

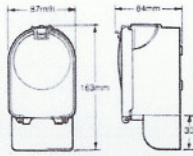
Hinged drum cover
A metal cover that hinges over the dial of the timeswitch.



Dimensions:
Standard units without box –
H – Height – 110mm, (113mm with cover)
W – Width – 73mm, (83mm with cover)
D – Depth ('K' and 'Q' syn) 70mm inc. terminal block, (77mm with cover).
D – Depth ('Y' and 'Q' EW and Quartz) 83mm inc. terminal block, (90mm with cover)

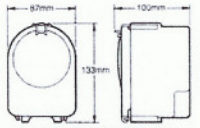
Moulded plastic boxes

These boxes have transparent front covers making the timeswitch visible within the box. Fastening is by means of a spring clip, with provision for a sealing tag to be fitted. Cable entry is through the bottom of the box and a cable entry cover is available as an optional extra.



Suitable for the 'K' and 'Q' (synchronous)

Type 151 moulded box



Suitable for the 'Y' and 'Q' EW and Quartz

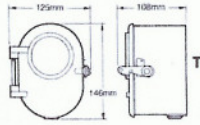
Type 149 moulded box

Cast metal boxes

These boxes have front covers that are either hinged at the top or at the side as shown in the illustrations. All boxes have the provision of sealing the covers. Cable entry is by a tapped 20mm conduit at the bottom of the box. The type 42 box has a built-in inspection window in the front cover.

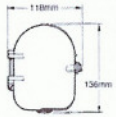
Type 40

Suitable for the 'K' and 'Q' (synchronous)

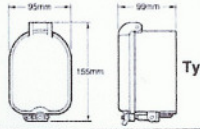


Type 42

Suitable for the 'Y' and 'Q' EW and Quartz



Type 41



Type 40A

Technical Specification:

Movements:

Y and Q Quartz movement
Motor operating voltage: 200/250V 50/60Hz. Accuracy: 5 mins/year. Reserve: 150 hours when fully charged.

Y and Q Electrically wound
Motor operating voltage: 200/250V 50Hz. Accuracy: 2 mins/week. Reserve: Minimum 12 hours.

K and Q Synchronous
Motor operating voltage: 200/250V 50Hz. Accuracy: To mains frequency. Reserve: None.
N.B. Certain non-standard voltages and frequencies available on request.

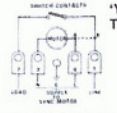
Type Y Output switching at 250V AC: 30 amps resistive, 20 amps tungsten lamp load. 12 amps reactive.
Switch contacts: Silver cadmium oxide single pole.

Type K Output switching at 250V AC: 30 amps resistive, 20 amps tungsten lamp load. 12 amps reactive.
Switch contacts: Silver cadmium oxide single pole.

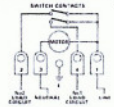
Type Q Output switching at 250V AC: 10 amps resistive per circuit. 10 amps tungsten lamp load per circuit.
Switch contacts: Silver cadmium oxide two pole.

Wiring Diagrams

Connection A – B omitted when independent motor connections are fitted.



'Y' and 'K' Timeswitches



'Q' Timeswitches

Horstmann Timers and Controls
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