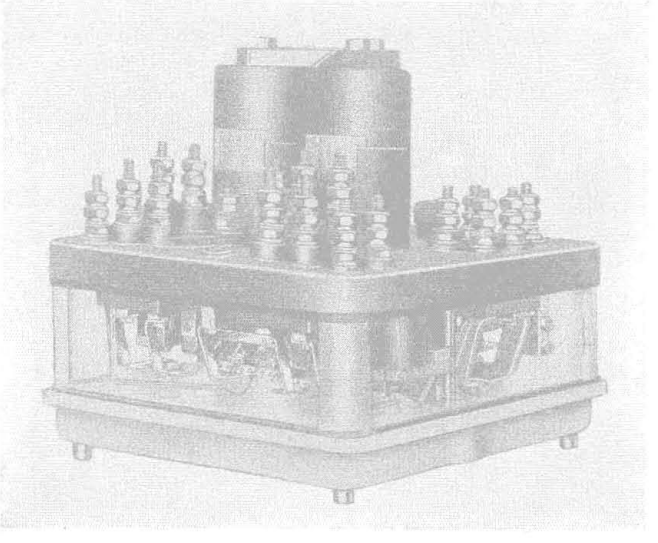
Stranded cable for messenger and guying purposes is also available in the Hitenso "BB" alloy, as well as in the alloys known as Red Brass "80 per cent" and Calsun Bronze. The Red Brass stranded cable has a conductivity 25 per cent that of copper, while the second product has a conductivity of 15 per cent. The individual wires of these stranded wires are preformed at the mill, and when the cable is cut, the individual strands do not spread out. It is said that Anaconda cable is the only stranded non-ferrous cable manufactured in accordance with the preforming process. Both of these non-ferrous cables are available in sizes from ¼ to ¾ in. and vary in number of strands from 3 to 19, respectively. The breaking strength of the ⅜-in. Red Brass "80 per cent" messenger cable is 9,900 lb. and of the Calsun Bronze cable 10,430 lb. The corresponding limits for the ¼-in. cable are, Red Brass, 4,500 lb., and Calsun Bronze, 4,670 lb. These stranded cables all possess a high resistance to corrosion and a high scrap value.

A Time-Element Relay

THE Union Switch & Signal Company recently announced the development of a new direct-current time-element relay, called the Style DT-10, which is useful in providing an automatic release for route locking, in dispatcher-control, or in other circuits requiring a relay of this character.

Several important features are offered in this new relay, one of the most important being the method of operation which is economical and certain. It is



A time-element relay of modern design

said that the time element of this relay cannot be defeated; the pick-up of the neutral armature requires the normal operation of the relay and cannot be accomplished by changing the external connections. Also on this relay there is a check contact which closes after each de-energization of the relay and indicates that it is ready for the next operation. Another important item is the simplified construction which results in a compact arrangement that saves space in the instrument shelter.

The Union time-element relay has only one set of main operating coils and two small auxiliary coils; the time interval is obtained by the action of the oscillating armature which is converted to rotary motion by means of a ratchet wheel and pawl which drive a set of planetary gears. These gears are so arranged that when power is applied to the relay, a part of the main flux is used to operate a clutch which engages the stationary gear of the planetary system. The operation of the clutch permits the remainder of the planetary system to be rotated about the stationary gear, until it closes a contact which energizes the auxiliary coils and permits the neutral armature to pick up. When this occurs, auxiliary contacts are opened which stop the action of the oscillating armature, and at the same time, the auxiliary coil circuit is opened and additional resistance inserted in the relay circuit to reduce power consumption. The planetary gear is so arranged that when energy is taken off the relay, the clutch holding the stationary gear releases it and allows the gear train to drop to the normal position. The check contact, by this means, is closed to indicate that the relay is in proper condition for the next operation.

This relay has either of two ranges of time adjustment, the first range being from 10 to 120 sec. and the second from ½ to 6 min. This is accomplished by providing a different gear ratio in the planetary system. The time element is adjustable anywhere within these ranges, and this adjustment, which can be sealed and locked, is accomplished by a special key which is introduced through the top plate. The relay is designed for operation at 10 volts, and has excellent time regulation for given voltage variations.

Flasher contacts can be added and the relay made to operate as a flasher relay under certain conditions. This relay is of great advantage in highway crossing installations using d-c. circuits and involving a time element. A good example of a case where this relay would be advantageous is an installation where a great deal of switching occurs over the crossing. In such a case, the new Union DT-10 time-element relay might be used both as a time-element and a flasher relay.

This new relay has the improved terminal post arrangement that is characteristic of all Union Type-DN relays; the terminal posts are arranged in rows at different levels and parallel to the base, which facilitates the making of connections to the relay and the tracing of circuits in the instrument shelter. The top plate is moulded bakelite and the base structure has a metal bottom and plate glass sides. The terminals are lettered for easy identification. The base structure on all models is equipped with lugs which support the relay and also provide a means of attaching shock-absorbing springs. The standard mounting is the shelf type, but a bracket may be attached to the top plate for wall mounting.

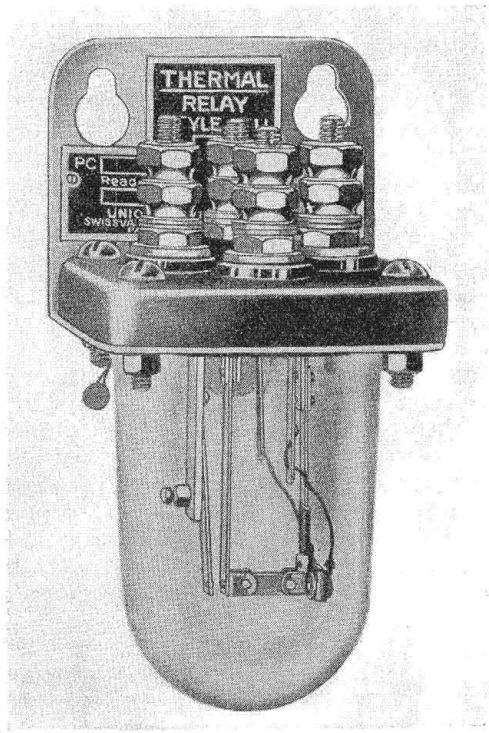
"Union" Thermal Relay

THE Union Switch & Signal Company recently developed a new thermal relay that finds a field of great usefulness in A. P. B. signaling, or in other circuits where a time element is required. When used in A. P. B. circuits, this relay bridges over the time interval between the clearing of the track section in the rear and the shunting of the one in advance, so that light engines or gas-electric units may be operated with no loss of the directional signal control features.

This relay can be furnished for any usual delay time. When adjusted for 5 to 10 sec. operating time, it requires approximately 8 watts, and when furnished

for a higher adjustment it has a slightly higher power consumption. The standard relay is designed for 8 to 10-volt operation; however, special relays can be furnished for other voltages when desired.

The thermal relay is small in size, being 3 in. wide, 3⅜ in. deep and 5½ in. high. It is arranged for wall

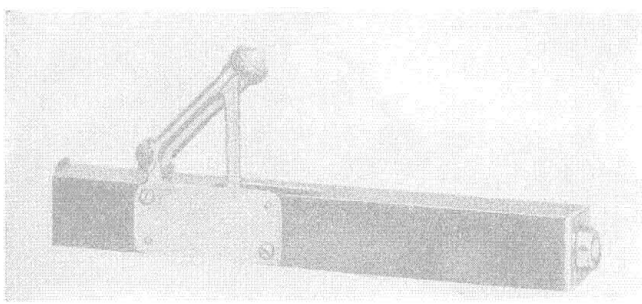


The Union thermal relay

or shelf mounting, the same bracket being used for either. The top plate is of moulded brown bakelite and has mounted on it four A. R. A. terminals.

Instrument Estimates Height of Poles Quickly

AN instrument that quickly figures the height of poles, wires, buildings, etc., and which can be carried in the vest pocket has been placed on the market by the W. N. Matthews Corporation, St.

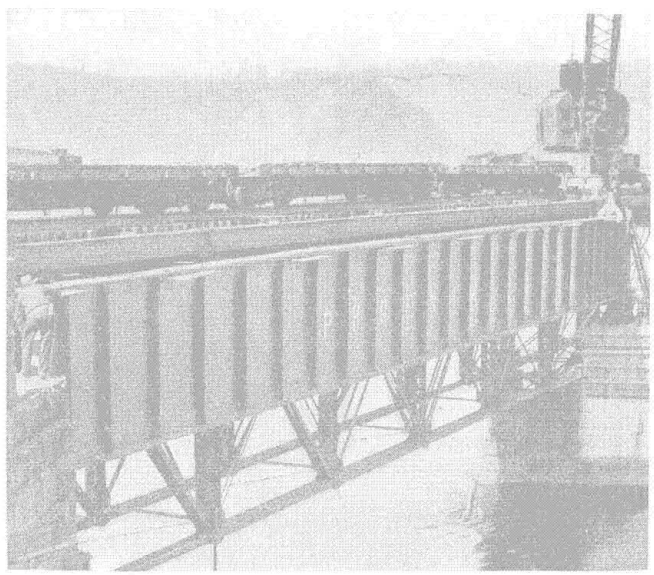


Matthews Type-CW "Teleheight" for computing heights of poles, wires, etc.

Louis. With this device linemen, foremen, inspectors and engineers can compute heights rapidly when figuring the amount of clearance between wires at an overhead pole line crossing, or when determining the proper length of anchor guys. This instrument is designated as the Type-CW "Teleheight." All that is necessary in using this device is to sight to the top of the pole, or other object, through the "Teleheight" and the height is easily computed. A level is incorporated in the device, and the sighting tube is arranged at an angle of 45 deg. to this level, so that, when the bubble is in mid-center, the line of sight is 45 deg. above horizontal. Hence, the height of the object is the sum of the distance of the observer from the object and the distance of the "Teleheight" above ground. This follows from the fact that the two short legs of a 45-deg. triangle are equal in length. This instrument can be furnished with a leather carrying case if desired.

Armored Cables of Large Diameters

POWER and control cable with interlocked, flexible metal armor for installation without a conduit in interior wiring has been announced by the General Electric Company. Cable provided with the armor can be run along walls, between partitions and under floors without the use of ducts, and the construction of the armor is such that turns in the cable can be made easily. Varnished cambric and rubber-insulated, either taped, braided or leaded, and paper-insulated, lead-covered cable can be supplied with the armor, in lengths up to 1,000 ft., for cables with an overall diameter less than one inch, and in lengths up to 2,000 ft. for cables with an overall diameter between one and three inches. The cables can have any number and combination of conductors, and any outside diameter up to three inches. The armor is a layer of overlapping and interlocking metal tape, either galvanized steel or aluminum, so applied that the cable is always mechanically protected under reasonable installation conditions. The steel armor is suitable for most installations; the aluminum tape is for use where a non-corroding armor is required, and for single-conductor cable carrying alternating current, where the magnetic effect of steel is undesirable.



Erecting a 126-ft 7-in. girder weighing 65 tons on the Boston & Maine in a bridge over the Connecticut river near Westboro, N. H.