

16-10 SYNCHRO CONTROL TRANSFORMERS

Very commonly the process of controlling with reasonable exactness the instant-by-instant angular position of a shaft calls for the exertion of large torques. When selsyn equipment must exert these torques directly, a very considerable and intolerable sacrifice in the faithfulness of position reproduction may result. For such control purposes, it is common to apply the self-synchronous principle in such a manner that a voltage is produced whose magnitude is a function of the angular displacement between the positions of two shafts. Such a voltage is an error voltage, for its presence indicates a discrepancy in the position of the shaft being controlled. The error voltage may then be fed into other devices to instigate correction of the discrepancy causing it. The selsyns themselves thus do not have to supply mechanical power. The error voltage may be referred to as an error-modulated signal—a carrier wave whose amplitude is proportional to the error and whose instantaneous polarity is determined by the sign of the error.

Fig. 16-29.

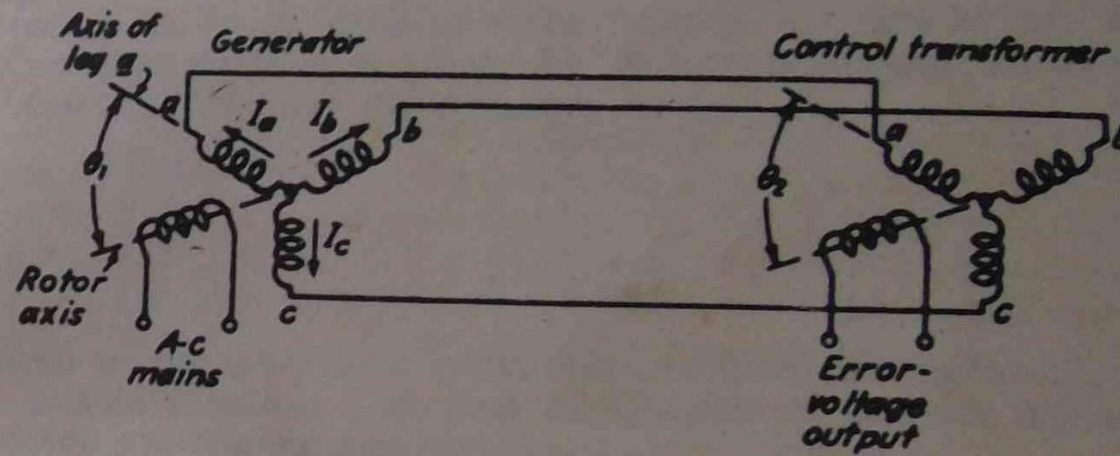


Fig. 16-30.

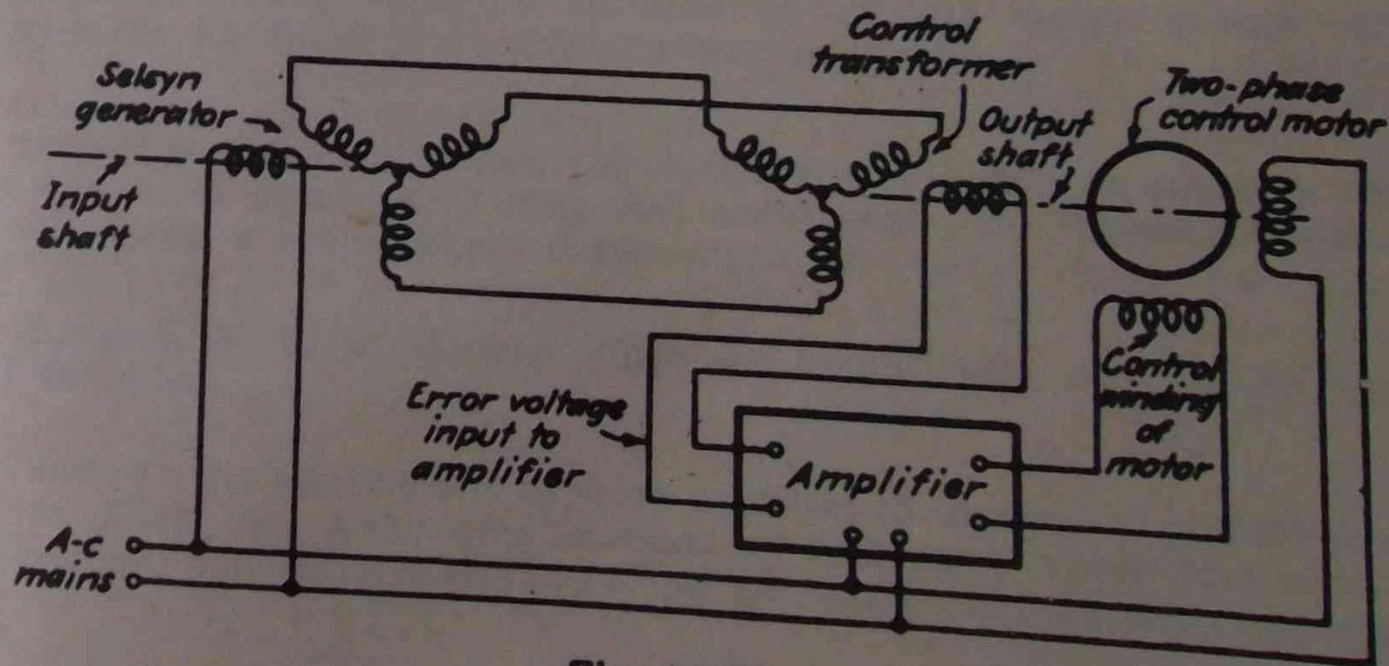


Fig. 16-31.