

Appendix

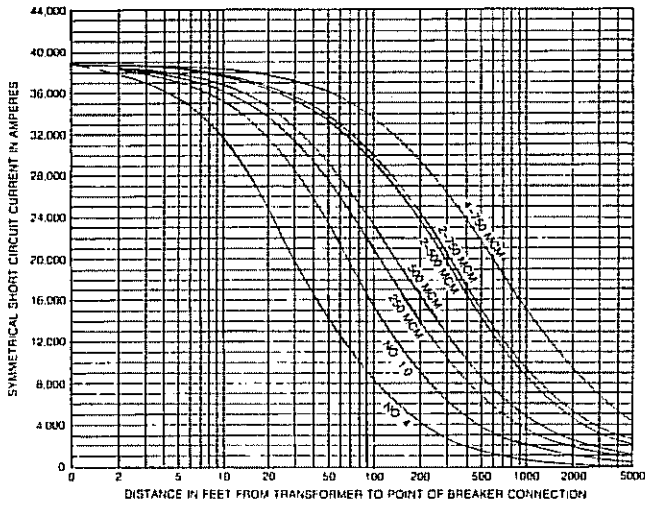


Fig. 26-27 Transf: 1500 kVA, 480V, 5.75%Z

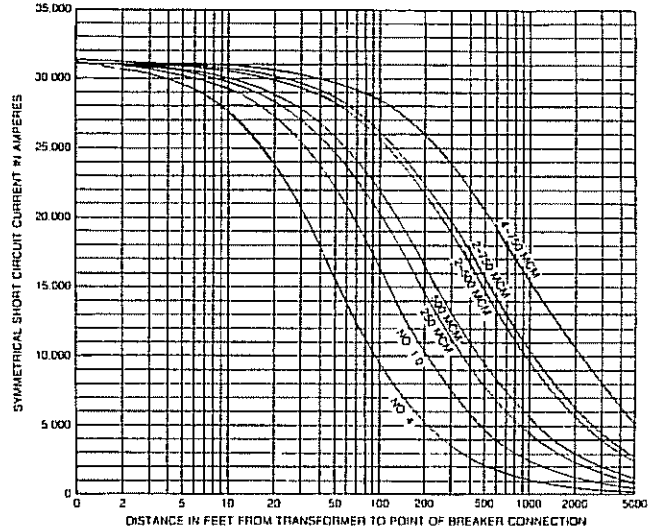


Fig. 25-28 Transf: 1500 kVA, 600V, 5.75%Z

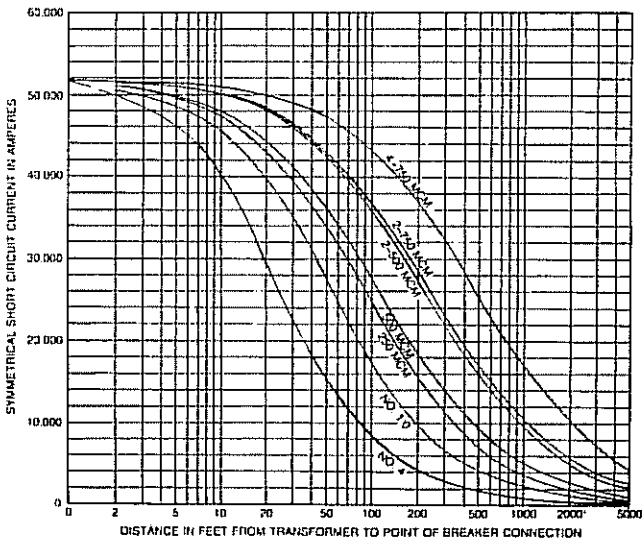


Fig. 25-29 Transf: 2000 kVA, 480V, 5.75%Z

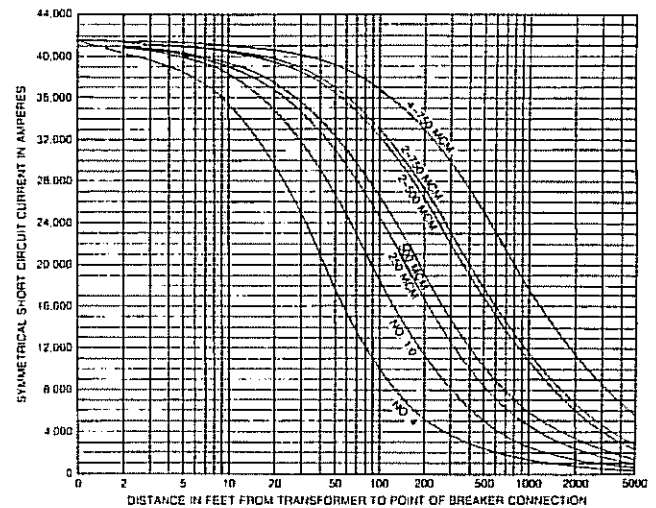
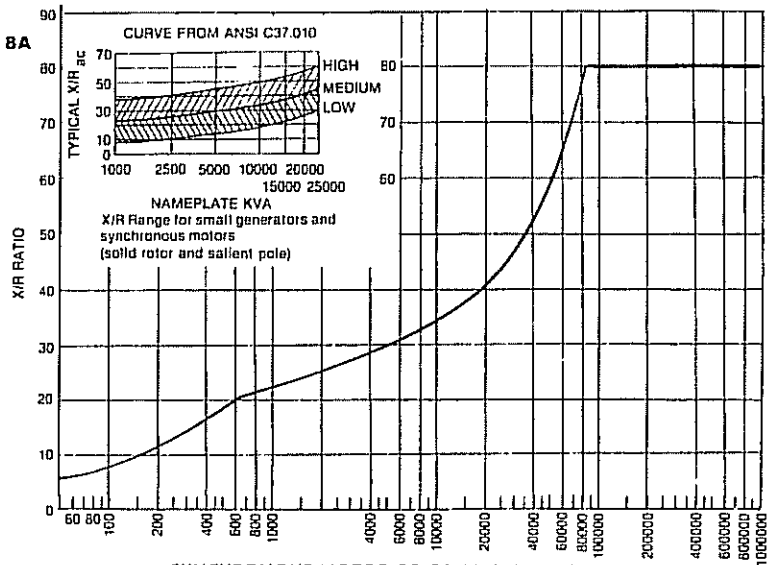


Fig. 25-30 Transf: 2000 kVA, 600V, 5.75%Z

TABLE 8A



PART II— Impedance Data

The approximate impedance data listed in these tables are representative of standard equipment in current production. The impedance values of this equipment change from time to time so that the up-to-date validity of the impedance values should be verified.

X/R Ratios

Typical values for generators, synchronous motors, power transformers, induction motors, utility sources, and reactors. (From ANSI Standard C37.010)

A. Large generators and hydrogen-cooled synchronous condensers

Range	Typical
40-120	80

B. Generators and synchronous motors (See TABLE 8A)

C. Power transformer (See TABLE 8B)

D. Induction motors (See TABLE 8C)

E. Utility source

1. Near generating plant
Range: 15-30
2. Long open-wire line
Range: 2-16
3. Typical
Range: 5-12

F. Reactors

Range	Typical
40-120	80

TABLE 9—Primary Substation Transformers (501-5000 kVA 1 ϕ , 501—10,000 kVA 3 ϕ) 65C rise ANSI C57.12.00

STANDARD IMPEDANCES

High-voltage Winding BIL kV	Low-voltage Winding BIL kV	Percent Impedance*
110	45	5.75
	60-110	5.5
150	45	5.75
	60-110	5.
200	45	7.25
	60-150	7.0
250	45	7.75
	60-200	7.5
350	60-250	8.0
450	60-350	8.5
550	60-450	9.0
650	60-550	9.5

* For load tap changing (LTC) transformers, add 0.5 to values listed.

TABLE 10—Network Transformers Three-phase (Low Voltages 216Y/125 or 480Y/277 volts)

STANDARD IMPEDANCES

kVA	Percent Impedance
1000 kVA and Below	5.0
Above 1000 kVA	7.0

TABLE 8B

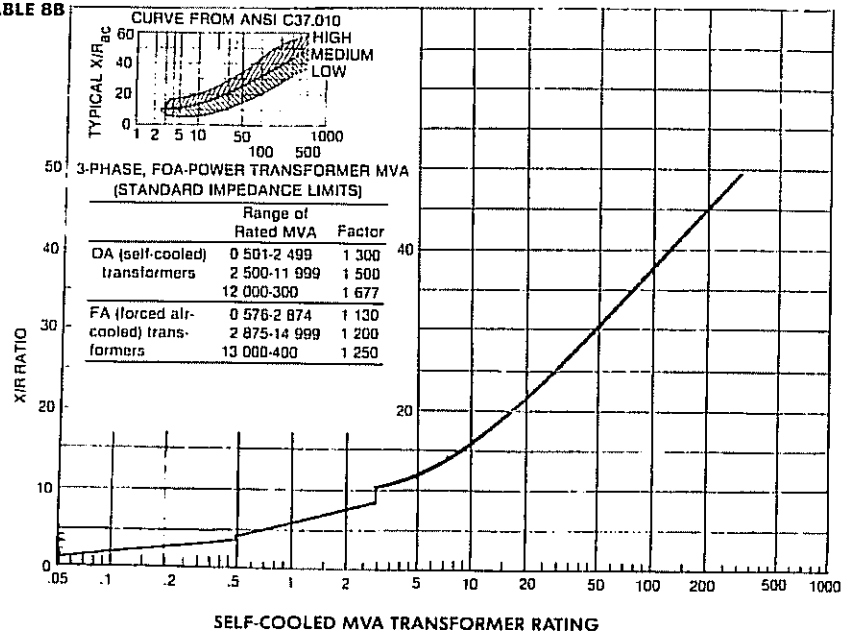


TABLE 8C

