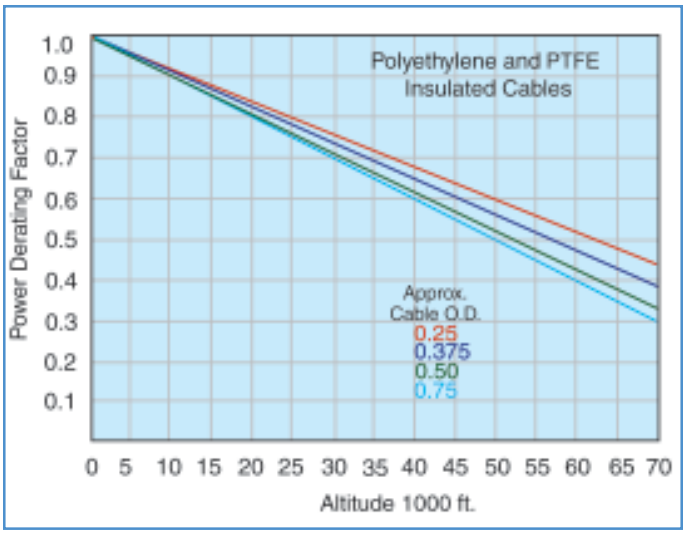
Fig. 7
Power Altitude Correction Factor



Temperature and altitude corrections are shown on Figures 6 and 7.

VSWR correction factor =

$$\frac{1}{1/2\,(VSWR + VSWR) + 1/2\,k1\,(VSWR - VSWR)}$$

Where k, is shown in Figure 8. Select a cable from the Attenuation and Power charts rated at this effective power level.

Note that the peak power handling capability of a cable is related to the maximum operating voltage rating. See Section E, below.

E. MAXIMUM OPERATING VOLTAGE

Care must be taken to ensure that the continuous voltage (and the peak voltage related to pulsed power conditions) applied to a cable is held below its maximum voltage rating. Note that there are two separate voltage ratings for a cable: Corona Voltage and Dielectric Withstanding Voltage:

1. Corona is a voltage related ionization phenomenon which causes noise generation, long term dielectric damage, and eventual breakdown of the cable. Thus, a cable cannot operate continuously with corona, and the maximum operating voltage must be less than the corona extinction level (extinction voltage) of the cable. The determination of corona voltages requires sensitive instrumentation capable of detecting the voltage induced ionization noise generation.

2. The Dielectric Withstanding Voltage, or dielectric strength of the cable, is a measure of the voltage level required to abruptly break down the dielectric employed in a cable. DWV testing requires less sensitive instrumentation, and is a test measurement where a voltage is applied to the cable for a limited time only, and monitored for current flow.

Maximum operating A.C. (RMS) voltage levels or peak voltage are given for each construction in the Cable Data Section of this catalog. The maximum permissible D.C. voltage level is conservatively 3 times the A.C. level.

To select a cable for a particular application, determine the actual RMS (peak /l.4) ,

$$\text{RMS voltage} = \frac{\text{(peak voltage value)}}{1.4}$$

or actual peak voltage = (RMS x value 1.4) from system requirements. Then determine the effective input voltage by multiplying the actual input voltage by the square root of the VSWR:

Effective voltage = Actual voltage x $(VSWR)^{1/2}$

Then select a cable with a maximum operating voltage greater than the effective RMS voltage. Maximum operating voltages are listed in the cable data section.

As the altitude where a cable is being used in-

Fig. 8
Second VSWR Correction Factor Multiplier K