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CAMPLEX CP-601 MULTIPLEXING SYSTEM: APPROXIMATE CABLE DISTANCE CAPABILITY

The Complex PDC-340A camera power components contained within the CP-601 multiplexing system produce a maximum of 60 Watts of DC power at the input to the Complex camera adapter. The Complex camera adapter components require approximately 8 Watts, leaving a maximum of approximately 52 Watts to operate a camera equipped with a VCR or camera adapter, lens, and viewfinder. The PDC-340A unit can also provide power to operate the lens, viewfinder, and camera that has a VTR attached in place of the manufacturer's camera adapter; or it can power the lens, viewfinder, and camera portion of a one-piece camcorder-style camera.

Please **note**: The PDC-340A unit alone does not produce sufficient power to operate a VTR that is part of the camera configuration. However, in some instances, the unit can be operated in parallel with the camera's battery to provide sufficient power to operate the VTR as well as camera, lens, and viewfinder. If you desire additional information regarding this capability, please contact your Complex sales representative.

The Complex PDC-340A power unit provides a maximum of 48 VDC output at the multiplex connector at the control unit. A worst-case value of 16 VDC is required at the multiplex connector at the Complex camera adapter to provide sufficient voltage for regulation of the output power into the attached camera. Therefore, the maximum voltage drop allowable for any length or type of multiplex cable is 32 VDC (48 VDC – 16 VDC = 32 VDC). At a maximum current draw of 4.0 Amps, the maximum DC resistance (DCR) allowable by any cable is 8.00 Ohms ($E/I=R$; $32\text{ VDC}/4.0\text{ Amps} = 8.00\text{ Ohms}$). The distance that a 75 Ohm coaxial or triaxial cable can deliver Complex power at full load can be determined by dividing 8.00 Ohms by the total of the cable and computing the length of the cable based upon this ratio. The total DCR (what we call "loop resistance") can be measured by shorting the center conductor to the shield and using an Ohmmeter to measure the resistance from the other end of the cable. Total DCR can also be calculated as the sum of the shield resistance and the center conductor resistance, based on the cable manufacturer's specifications for a given length of cable.

The distance that Complex power can be delivered along a 75 Ohm coaxial or triaxial multiplexing cable is affected by several factors:

- 1) the power demand of the camera, lens, and viewfinder (the greater the demand, the shorter the distance);
- 2) the length and total DCR of the cable (the lower the DCR, the greater the distance);
- 3) the amount of operational heat build-up within the cable (the greater the heat, the shorter the distance);
- 4) the quality/composition of cable and connectors (copper is better than steel);
- 5) the proper set-up of the Complex system.

With these factors in mind, here are approximate distances that some typical cameras can deliver Complex power. Please remember these figures are approximate. Allow 15%-20% for temperature increase and variance. (Power distances based on approximately 14.5 VDC at indicated amperage into the attached camera):

Type	Manufacturer	Number	Total DCR Ohms/1K ft. (295 m.)		4 Amps 56 Watts	3 Amps 42 Watts	2 Amps 28 Watts
RG-59	Belden	8241	49.60	Ohms	161 ft. (49 m)	215 ft. (65 m)	322 ft. (98 m)
	Belden	9259	17.60	Ohms	454 ft. (138 m)	606 ft. (184 m)	909 ft. (277 m)
	Clark	CV7559	13.32	Ohms	600 ft. (183 m)	801 ft. (244 m)	1201 ft. (366 m)
RG-6U	Belden	8281	11.00	Ohms	727 ft. (221 m)	970 ft. (295 m)	1454 ft. (443 m)
	Belden	8281F	13.50	Ohms	592 ft. (180 m)	790 ft. (240 m)	1185 ft. (361 m)
	Belden/Zack	Complex 1800	10.00	Ohms	800 ft. (243 m)	1067 ft. (325 m)	1600 ft. (487 m)
	Canare	LV-77S	17.10	Ohms	467 ft. (142 m)	623 ft. (190 m)	935 ft. (285 m)
	Clark	Complex 1	13.50	Ohms	592 ft. (180 m)	790 ft. (240 m)	1185 ft. (361 m)
	Clark	CV752	11.00	Ohms	727 ft. (221 m)	970 ft. (295 m)	1454 ft. (443 m)
RG-11	Belden	8213	3.70	Ohms	2162 ft. (659 m)	2883 ft. (879 m)	4324 ft. (1318 m)
	Belden	8238	7.30	Ohms	1095 ft. (334 m)	1461 ft. (445 m)	2191 ft. (668 m)
	Belden	9292	5.60	Ohms	1428 ft. (435 m)	1905 ft. (580 m)	2857 ft. (871 m)
	Clark	Complex 2	5.47	Ohms	1462 ft. (445 m)	1950 ft. (594 m)	2925 ft. (891 m)
Other	Antec	500CA	1.68	Ohms	4761 ft. (1451 m)	6351 ft. (1936 m)	9523 ft. (2903 m)
	Antec	625	1.07	Ohms	7476 ft. (2279 m)	9971 ft. (3040 m)	14953 ft. (4558 m)

*Calculations based upon the cable manufacturer's specifications measured at ambient 68° F (20° C) and are subject to change without notice. Due to the high resistance of Belden #8241 (and equivalents), Complex Corporation does not recommend it for use with the CP-601 multiplexing system except for very short (under 100 foot/30 meter) cable runs.