

**DC-TO-DC CONVERTER UNIT  
SWITCHED ACCESS SYSTEM  
EQUIPMENT DESIGN REQUIREMENTS  
OPERATIONAL SUPPORT SYSTEMS**

**1. GENERAL**

**Scope**

**1.01** This specification, together with its supplementary information listed herein, covers the design requirements for the engineering, manufacturing, and installation of a -72 volt and +24 volt DC-to-DC regulated converter. This unit is used to provide power to a maximum of 10 Remote Test Ports (RTP) associated with the Switched Access System (SAS).

**1.02** (Reserved for future use.)

**1.03** This converter is designed to operate on a -48 volt (V) office battery.

**Capacity**

**1.04** The converter is rated at a -48 volt input having two output voltages of -72 and +24 volts.

**1.05** Power is furnished to a maximum of 6 RTPs (X option) or 10 RTPs (Y option).

**1.06** Two DC output current ratings are available:

(a) (X Option):  
-72V at 300 mA (6 outputs at 50 mA each)  
+24V at 300 mA (6 outputs at 50 mA each)

(b) (Y Option):  
-72V at 500 mA (10 outputs at 50 mA each)  
+24V at 500 mA (10 outputs at 50 mA each)

**Description**

**1.07** The unit uses a DC/DC converter module to convert the -48V office battery into two 24 volt outputs.

**1.08** One of the 24V outputs is connected in series with the office -48V talk battery to provide -72V talk battery.

**1.09** The second 24V output provides +24V signal battery.

**1.10** The output voltages are distributed to the RTPs through resistance lamps which provide output current protection and regulation.

**Equipment Arrangement**

**1.11** The equipment consists of a DC-to-DC power module, resistance lamps and terminal strips mounted on a 6-inch by 23-inch mounting plate.

**Cabling and Wiring**

**1.12** The unit is cabled to a maximum of 6 RTPs for X option or 10 RTPs for Y option.

**1.13** The unit is also cabled to a -48V fuse panel.

**Power**

**1.14** The unit requires two sources of -48V DC, each fused at 1-1/3 amperes. One source is talk battery, and the other is signal battery.

**1.15** The maximum 48V signal current drain for the unit is 850 mA with X option or 1 amp with Y option.

**1.16** The maximum 48V talk drain for the unit is 300 mA with X option or 500 mA with Y option.

**2. SUPPLEMENTARY INFORMATION**

Circuit Description	— PCD-1P002-01
SAS RTP	— Section 666-610-900PT
Manufacturing Test Procedure	— MTP-1P002

**NOTICE**

Not for use or disclosure outside the Bell System except under written agreement

**3. DRAWINGS**

Circuit — PSD-1P002-01  
Equipment — PJ1P002A-1  
Wiring — PT-1P002-10

**4. EQUIPMENT**

*PJ1P002A-1 (PT&T Co Std) — DC-to-DC  
Converter Unit, -48V Input, -72 and +24 Volt  
Outputs*

Equipment — PJ1P002A-1

*List 1 — Assembly, wiring, and equipment for a relay rack mounted DC/DC converter unit arranged for distribution to a maximum of six RTPs in accordance with PSD-1P002-01, Fig. 1, X option.*

*List 2 — Assembly, wiring, and equipment for a relay rack mounted DC/DC converter unit arranged for distribution to a maximum of 10 RTPs in accordance with PSD-1P002-01, Fig. 1, Y option.*