1A TYPE DATA STATION SELECTOR TRANSACTION NETWORK SUMMARIZING SPECIFICATION DATA SYSTEMS

1. GENERAL

SCOPE

1.01 This specification, together with the supplementary information listed herein, summarizes for ordering purposes the design requirements for apparatus, assembly, and circuits covering the 1A Type Data Station Selector (DSS) which is for use in the Transaction Network.

CAPACITY

1.02 The DSS provides a dualized half-duplex switched transmission interface between a pair of 4-wire message switch ports and a multiplicity of 2-wire polled terminal ports in the Transaction Network. The switching is directed by an auxiliary 3A processor at the message switch. It provides a means of polling from 6 to 61 ports depending upon the number of 8-line, 2-wire interface, RF4 circuit packs installed.

1.03 Each RF4 circuit pack has eight 2-wire interface circuits. The DSS can be equipped with 8 RF4 circuit packs but since 3 ports are used for internal functions, only 61 are available for service. There are 6 usable ports in the first RF4 circuit pack position, 8 in each of the next 6 positions, and 7 in the 8th position. The 1A-L1 DSS is provided with 2 RF circuit packs in the first 2 positions providing 14 usable ports. Additional RF4 circuit packs are ordered separately as required.

1.04 When the DSS is connected directly to the message switch, it operates in the primary mode with a maximum capacity of 61 customers. It can also be operated in a secondary mode where it is connected to the message switch through two ports of the primary DSS and for reliability each port should be assigned to a different RF4 circuit pack. The maximum number of customers that can be accommodated in the primary-secondary system is based on traffic constraints. For example, the maximum would be 68 customers for 8 service calls per customer per hour based on an average polling interval of 1.25 seconds per customer. This is detailed in the Transaction Network Engineering Considerations Section 880-480-000.

DESCRIPTION

1.05 The 1A Type DSS consists of a 55A1 data mounting equipped with an assortment of printed wiring boards. The 55A1 is 10 inches high, 11.9 inches deep, and 23 inches wide. The side mounting brackets can be moved to accommodate mounting on bulb angle, No. 5 Crossbar, unequal flange, uniframe or ESS bay frameworks. It is equipped with a printed wiring backplane having 4 908W and 13 KS-21479, L2 printed wiring board connectors, three 50-pin interface connectors, and a terminal strip. There is also a jack test panel in front and an associated test probe attached to a 5A cord reel. The 55A1 data mounting weighs 11 pounds.

1.06 The 1A-L1 DSS is a 55A1 data mounting equipped with two RG1, two RF1, two RF2, one RF3, and two RF4 circuit packs. This arrangement is shown in Fig. 1. It also accommodates, on an optional basis, either two RG2 circuit packs or two 829 (A, B, or C), L1A data auxiliary sets (DAS) and up to six more RF4 circuit packs. A fully equipped DSS, shown in Fig. 2, weighs 39 pounds.

1.07 Associated with the two RG2 circuit packs or the two 829 type DASs are four jacks on the front panel. These jacks are used in

Fig. 1—1A, L1 Data Station Selector

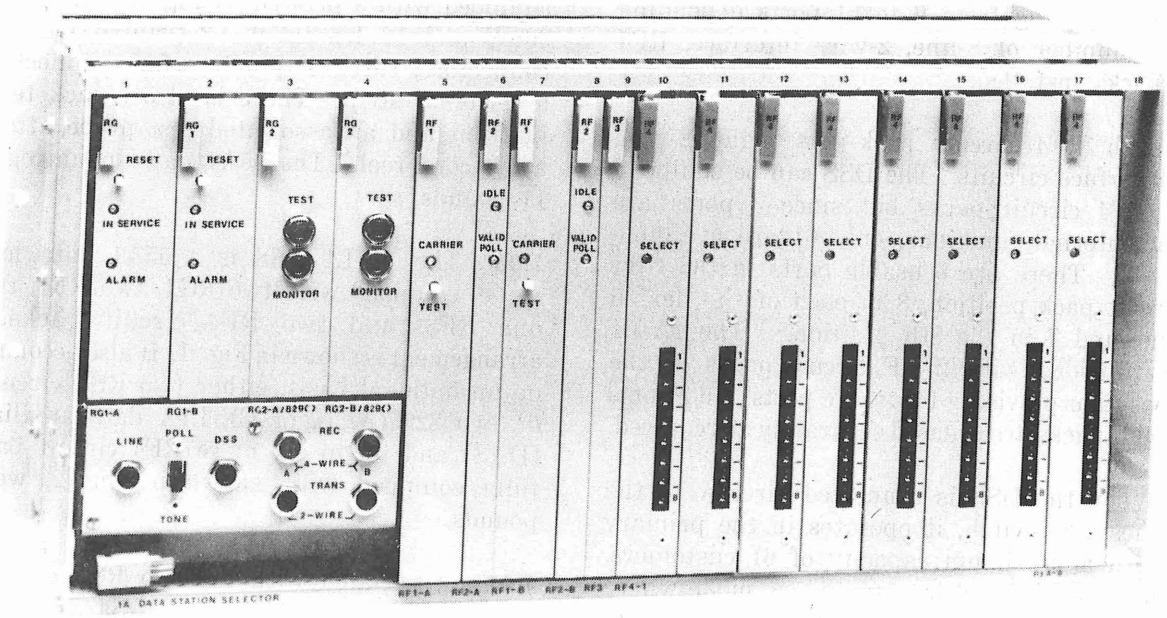

Fig. 2—Fully Equipped 1A Type Data Station Selector

conjunction with external test gear for in-line testing.

1.08 Also on the same panel are two additional jacks designated LINE and DSS, and a switch designated POLL-TONE that are associated with a test probe attached to a 5A cord reel. This probe (when plugged into one of the eight positions in the connector on the faceplate of an RF4 circuit pack) splits the associated output circuit connecting the line side of the customer loop to the jack designated LINE and the circuit side to the jack designated DSS. The POLL-TONE switch allows either the polling signal or the line-up tone to appear on the DSS jack. Fig. 3 shows the probe in position on the RF4-2 circuit pack.

1.09 The rear view of the DSS is shown in Fig. 4. Three 50-pin connectors provide the interface with the 2- and 4-wire lines. These mate with a KS-16689, L3 plug, or equivalent available on connector cables ED-73435-20, G8 or A25D (customer premises only) that can be ordered to any required length. Terminal strip on the right side is used to input one -48V ground and two -48V battery wires and output one signal ground and two alarm wires. The cover shown protects the printed wiring board connector terminals and does not have to be removed to install connector cables or wiring to the terminal strip.

1.10 When operated in the secondary mode, the DSS may be located at another central office or it may be located on the customer premises. If the customer location is a leased telephone equipment room with 23-inch bay frameworks and available -48V power, the installation will be the same as that in the central office.

1.11 For other customer premises installations, the DSS may be mounted in a KS-20018, L3 cabinet that is ordered separately. Also ordered separately and mounted in the cabinet are a KS-15620, L22 rectifier and an associated 102A apparatus mounting. The mounting extends the rectifier for 23-inch mounting and provides two -48V fused outputs and a terminal strip for interconnecting between the power supply, fuses, and DSS.

1.12 The KS-20018, L3 cabinet is designed for floor mounting. Where wall mounting is a requirement, the same cabinet arrangement can be used as described in 1.11. In addition, four 116A brackets, ordered separately, are mounted on the rear mounting supports on the inside of the cabinet with the two mounting screws provided. The bracket is Z-shaped and extends beyond the left and right cabinet sides. (The rear cabinet cover is not used when wall mounted.) These brackets, thus mounted in the four corners of the cabinet, provide four external mounting holes for No. 12 fasteners. Fig. 5 shows both the cabinet arrangement and wall mounting, with the cabinet cover removed. This cabinet arrangement weighs 84 pounds.

POWER REQUIREMENTS

1.13 Power for the DSS is provided by two RG1 power supply and switching circuit packs. Only one pack at a time powers the DSS while the other remains in a powered standby state. A failure in the 203A power unit on the circuit pack will cause it to be switched off of the output power bus and replaced by the standby unit. If a failure occurs when a unit is in standby, it will be detected and be prevented from powering the DSS. An alarm LED will light in the faceplate and a contact closure will provide a minor alarm indication to the central office alarm system.

1.14 The output voltages provided are ±12, +5, and -8 volts. The combined maximum output power is 10 watts.

1.15 The input to the power supply converters is standard, filtered, -48 Vdc central office battery that is also used to provide sealing current on the customer loops. Two separate battery distributions, each with a 1-1/3 ampere fuse should be provided. If only one distribution is available, two separately fused circuits are required from the single source. Maximum power dissipation at -48V is 14 watts for converter power and 36 watts loop sealing current for a total of 50 watts.

1.16 The customer premises installation with a -48V, KS-15620, L22 rectifier requires a 105- to 130-volt, 60-Hz single phase ac input power. A dedicated circuit with a 15-ampere circuit breaker should be provided.

1.17 The KS-15620, L22 rectifier is not equipped with a power cord. A 3-wire, 18-gauge cord such as the KS-14532, L13 equipped with spade lugs and a 3-wire plug, is a typical cord that should be used.

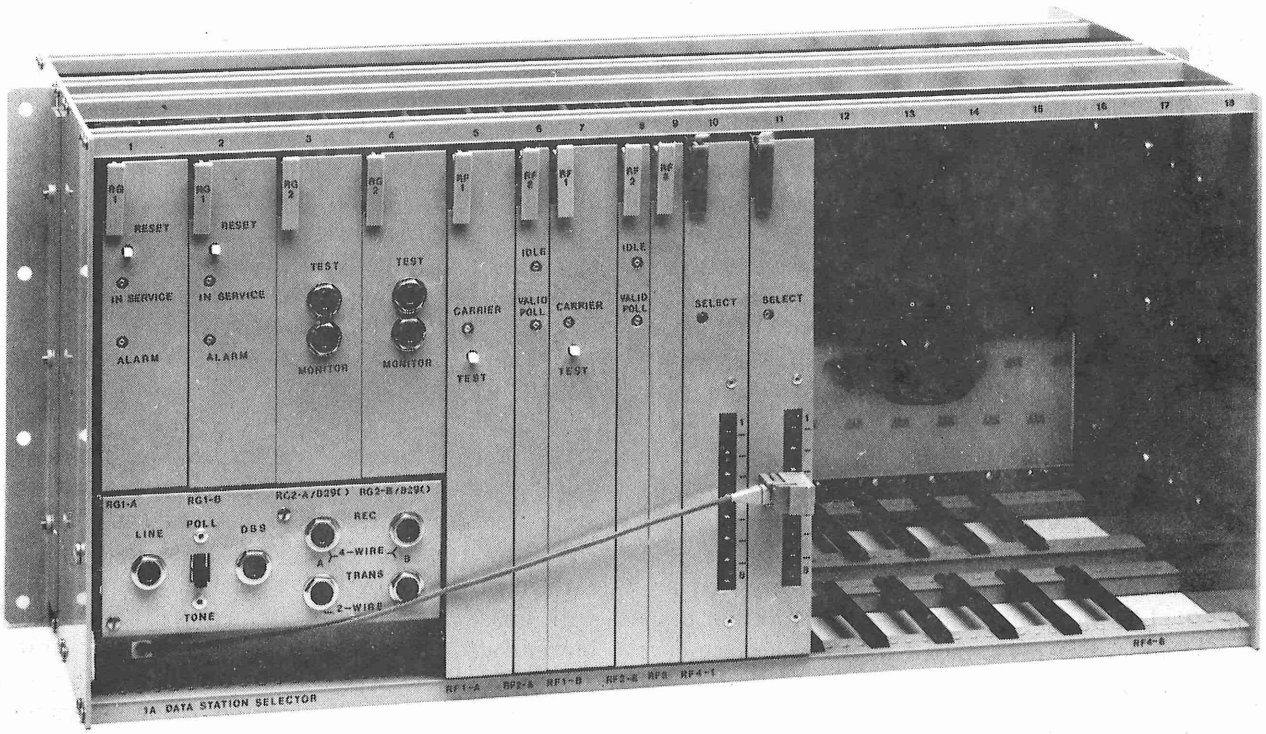

Fig. 3—1A Type Data Station Selector With Test Probe in Position on RF4-2

1.18 Signal ground and -48 Vdc ground appear on separate terminals on terminal strip TS1 on the rear of the DSS. A wire provided as a factory option between terminals 2 and 4 connects signal ground to -48V ground at this point. Some installations may require that signal ground be connected elsewhere such as at the top of the frame. In this case, the strap is removed and an appropriate run is made from terminal 4 to the grounding point with a minimum of 18-gauge wire.

OPTIONS

1.19 Circuit packs RF1, RF2 and RG2 and the 829 (A, B, or C), L1A DAS are equipped with a number of options that are factory arranged. These should be checked and rearranged per Section 590-105-110 as required before installing in the DSS.

1.20 On terminal strip TS1, the minor alarm contact is brought out to terminals 3 and 5. In central offices requiring a grounded contact, terminals 2 and 3 are connected with a minimum of 22-gauge wire.

ENVIRONMENT

1.21 The 1A Type DSS is designed to operate in an ambient environment of 40° to 120°F (5° to 49°C) at a relative humidity of 30 to 90 percent.

2. SUPPLEMENTARY INFORMATION

314-100-001—Transaction Network System Description
590-005-111—Transaction Network Reference Guide
590-105-110—1A Type Data Station Selector—Description and Operation
590-105-111—1A Type Data Station Selector—Task Oriented Practice
880-480-000—Transaction Network Engineering Considerations

3. DRAWINGS

3.01 Circuit schematic drawings for the 1A type data station selector are given in:

SD-1D274-01—1A Type Data Station Selector Schematic

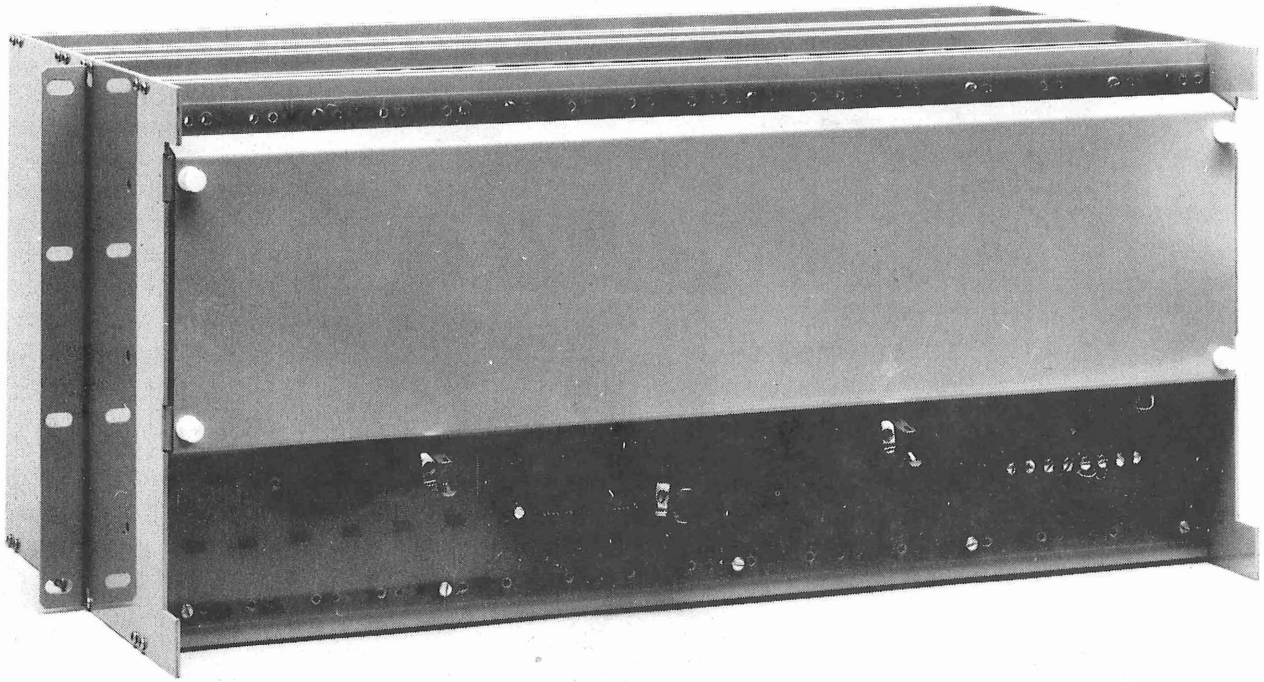

Fig. 4—1A Type Data Station Selector—Rear View

4. PRODUCT

CENTRAL OFFICE INSTALLATION

4.01 1A Type Data Station Selector—consists of a 55A1 data mounting equipped with circuit packs per the following orderable code:

List 1—Includes two RF1, two RF2, one RF3, two RF4, and two RG1 circuit packs. [Also required but ordered separately are either two RG2 circuit packs or two 829 (A, B, or C), L1A data auxiliary sets.] Six additional RF4 circuit packs can be equipped in the data mounting. These are ordered separately. (See Table A.)

CUSTOMER PREMISES INSTALLATION

4.02 1A Type Data Station Selector—same as in 4.01 and in addition:

One KS-15620, L22, -48V rectifier

One KS-14532, L13, 3-wire power cord

One 102A apparatus mounting—extends the rectifier for 23-inch mounting and also provides two fused outputs and a terminal block.

One KS-20018, L3 cabinet

Four 116A Brackets—for wall mounting, if required. (See Table A.)

5. GENERAL NOTES

5.01 The 1A Type Data Station Selector requires rear access for power, alarms, and line interconnection. It requires front access for test and maintenance.

5.02 When mounted in the KS-20018, L3 cabinet, the rear connections must be made prior to wall mounting.

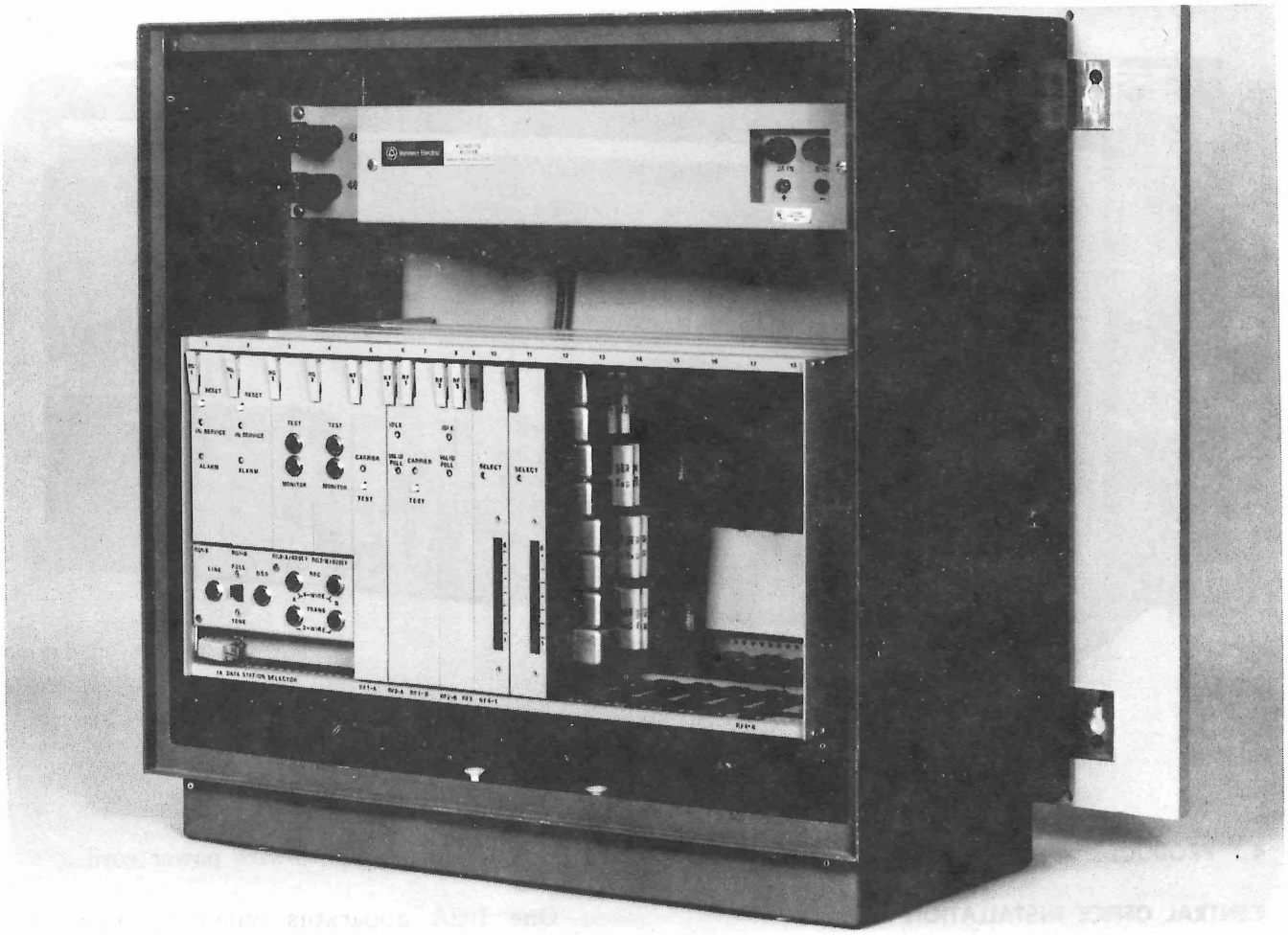

Fig. 5—Installation for Customer Premises With Front Cover Removed

TABLE A

AUTHORIZED ORDERABLE CODES

CODE	RATING
55A1 Data Mounting	AT&TCo Std
1A-L1 Data Station Selector	AT&TCo Std
RF1 Circuit Pack	AT&TCo Std
RF2 Circuit Pack	AT&TCo Std
RF3 Circuit Pack	AT&TCo Std
RF4 Circuit Pack	AT&TCo Std
RG1 Circuit Pack	AT&TCo Std
RG2 Circuit Pack	AT&TCo Std
829A, L1A Data Auxiliary Set*	AT&TCo Std
829B, L1A Data Auxiliary Set*	AT&TCo Std
829C, L1A Data Auxiliary Set*	AT&TCo Std
102A Apparatus Mounting	AT&TCo Std
116A Bracket	AT&TCo Std
KS-15620, L22 Rectifier	
KS-14532, L13 Cord	
KS-20018, L3 Cabinet	

Note: Ordering information for the above products should be listed in this form:

Pack, Circuit, RF1
Set, Auxiliary, Data 829, L1A

* Prior to Standard Production (1977), these Data Auxiliary Sets were orderable as:

X829A L1A, M11 DAS; X829B L1A, M11 DAS; or X829C L1A, M11 DAS.