

Chapter 1 Telephone Equipment

	Page
Section I. Telephones	1-2
TA-1/PT Telephone Set	1-2
TA-236/FT Telephone Set	1-4
TA-312/PT and TA-43/PT Telephone Sets	1-6
TA-341/TT Telephone Set	1-8
TA-838/TT Telephone Set	1-10
TA-938/G Telephone Set	1-12
TA-954/TT Digital Nonsecure Voice Terminal	1-14
TSEC/KY-68 Digital Subscriber Voice Terminal	1-16
TA-1035/U Digital Nonsecure Voice Terminal	1-18
TA-1042A/U Digital Nonsecure Voice Terminal	1-20
Section II. Switchboards	1-22
SB-22/PT and SB-22A/PT Manual Telephone Switchboards	1-22
SB-3614(V)/TT and SB-3614A(V)/TT Telephone Switchboards	1-24
Section III. Auxiliary Telephone Equipment	1-27
CV-1918A(V)/G Telephone Signal Converter	1-27
J-1077A/U and J-2317A/U Signal Distribution Panels	1-29
TA-248/TT Static Ringing Generator	1-31
TM-184 Terminal Strip and TA-125/GT Terminal Box	1-33

Section I. Telephones

**TA-1/PT
Telephone Set**

NSN: 5805-00-521-1320

Reference: TM 11-5805-243-12

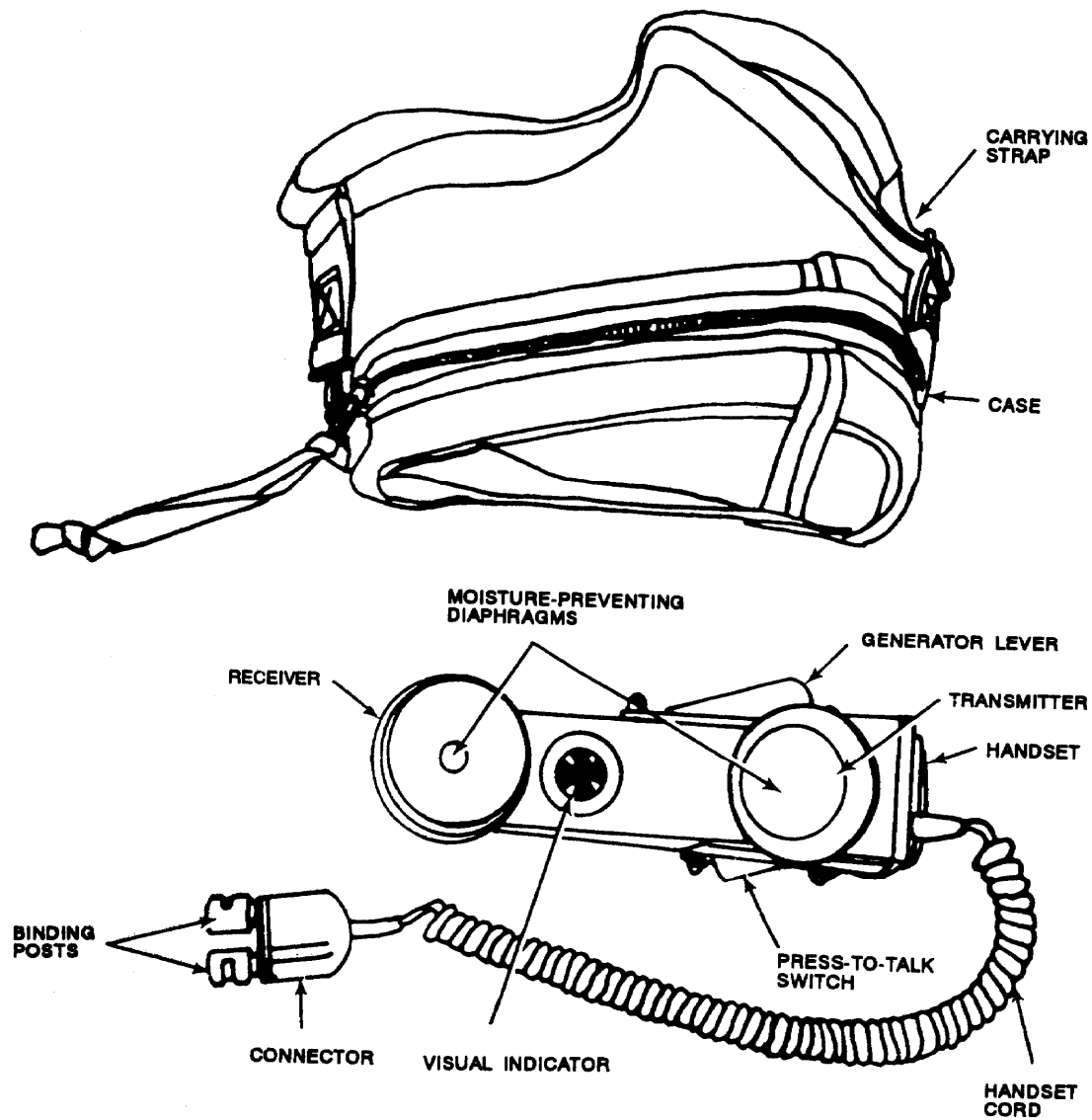
General Information

The TA-1/PT is a lightweight, weatherproof, sound-powered telephone intended for use on field wire lines in forward areas. It can be used for communications with any local battery field telephone or local battery switchboard. It includes a generator for producing a 20-Hz ringing current.

Technical Characteristics

Range	Approximately 6 km (3.7 mi) using Field Wire WD-1/TT (10 dB working limit)
Type of Operation	Local battery
Signaling Voltage	65 to 80 V AC, 20 Hz
Type of Signaling	
Visual	Nonadjustable Maltse cross
Audible	Buzzer, adjustable from LOUD to OFF
Power Requirement	Sound-powered
Weight:	
Telephone	1.25 kg (2.75 lb)
Carrying Case	3.97 kg (14 oz)

TA-1/PT Telephone Set



FM 24-24

TA - 236/FT
Telephone Set

NSN: 5805-00-503-2774

Reference: TM 11-468

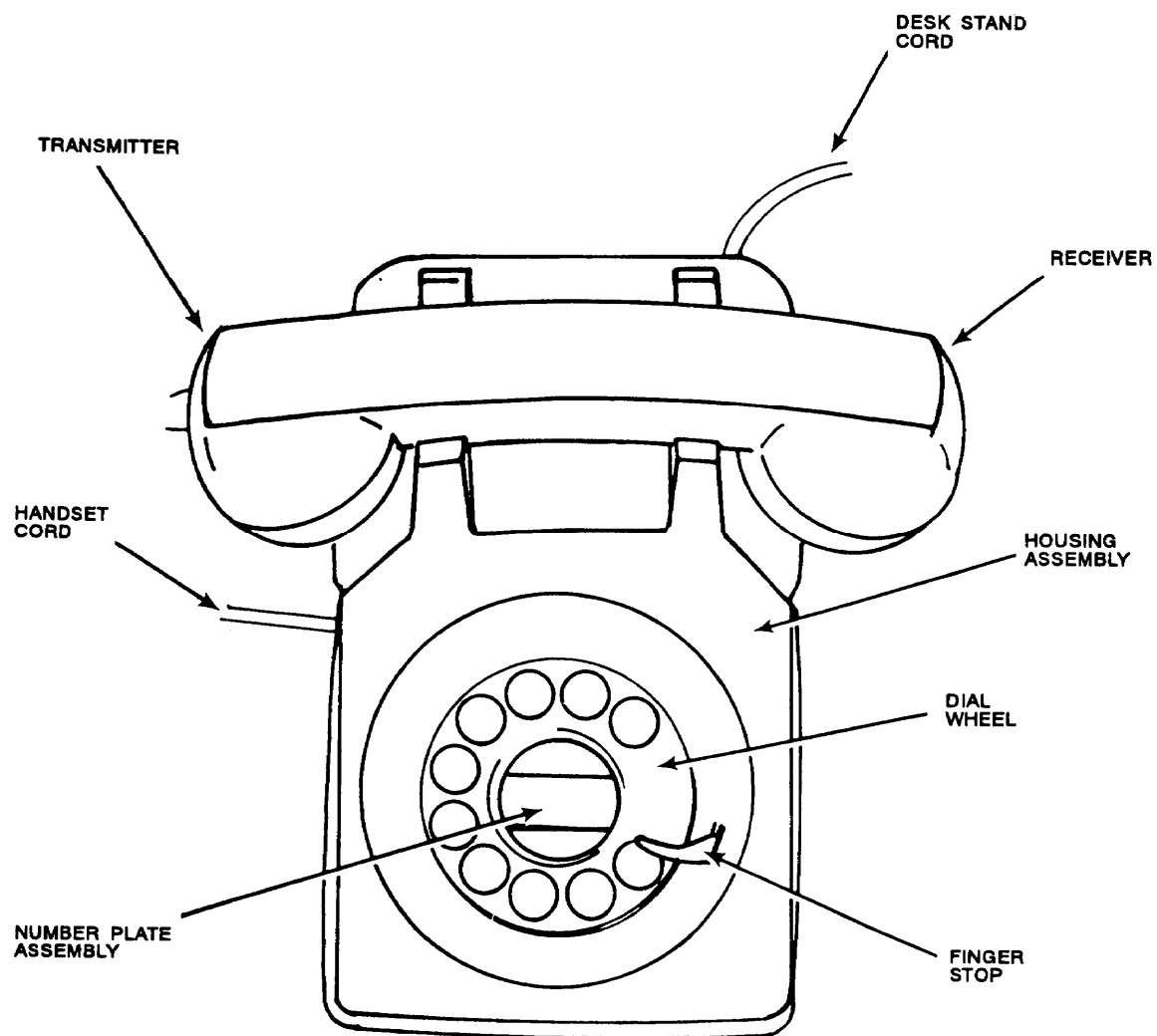
General Information

The TA-236/FT is a general purpose, common-battery telephone (manual or dial), and is compatible with all common-battery dial pulse equipment.

Technical Characteristics

Range	Approximately 8 km (5 mi) from central office (36 dB working limit)
Type of Operation	Common battery
Signaling (outgoing)	Dial pulse
Signaling (Incoming)	90 V AC, 20 Hz
Type of Signal	Bell with adjustable volume
Power Requirement	Supplied by central office
Weight	2.27 kg (5 lb)

TA-236/FT Telephone Set



TA-312/PT and TA-43/PT Telephone Sets

NSN: 5805-00-543-0012 (TA-312/PT)
6805-00-503-2775 (TA-43/PT)

Reference: TM 11-5805-201-12 (TA-312/PT)
TM 11-5805-256-13 (TA-43/PT)

General Information

The TA-312/PT and the TA-43/PT are two-wire, battery-operated field telephones. They may be used in a point-to-point wire system or in any two-wire ring-down subscriber position of a telephone communications system. The Handset H-60 contains a push-to-talk switch which connects power for talking. The TA-312/PT has a built-in Receptacle Connector U-79/U for use with a headset and an associated EXT-INT switch; the TA-43/PT does not. The TA-43/PT is being replaced by the TA-312/PT. The TA-955 dual tone multifrequency (DTMF) adapter allows push button operational interface with automatic analog switches.

Technical Characteristics

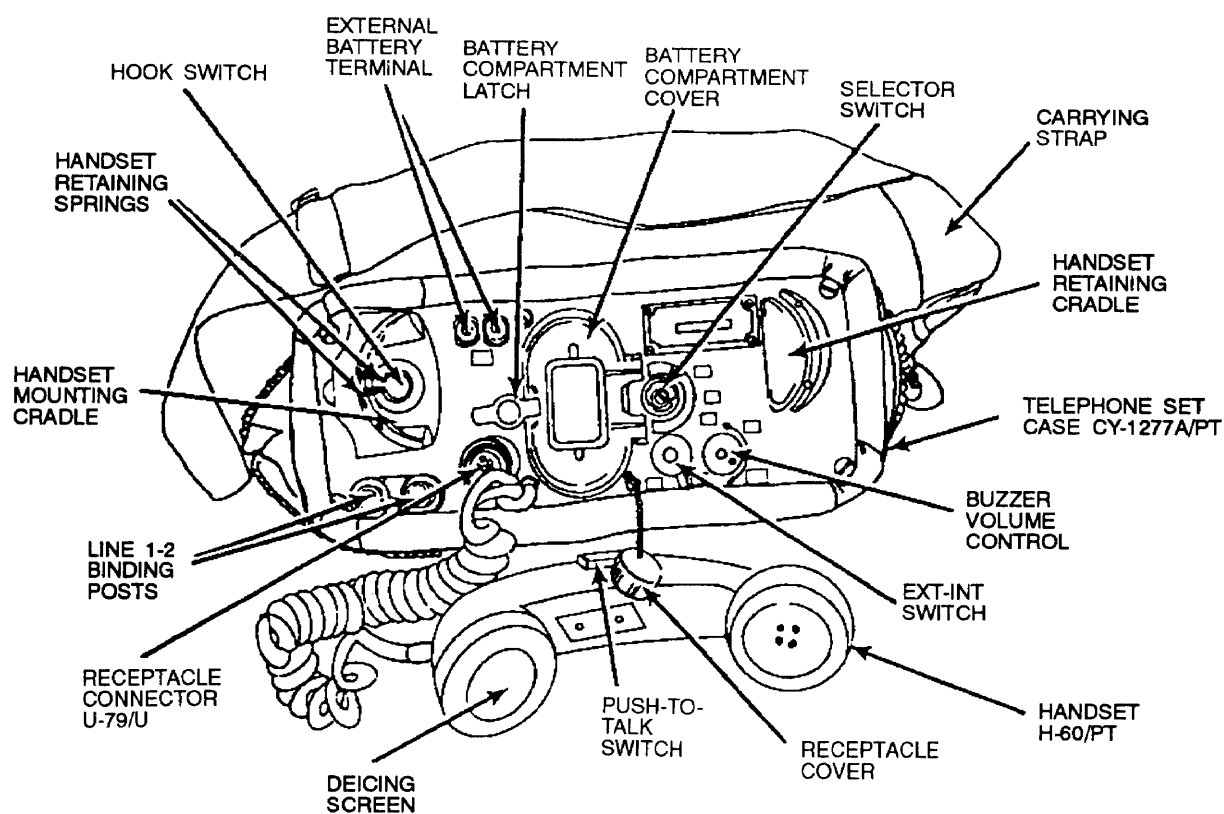
Range:

Wet Approximately 22.5 km (14 mi) on WD-1/TT
(36 dB working limit)
Dry Approximately 36.4 km (22 mi) on WD-1/TT
(36 dB working limit)

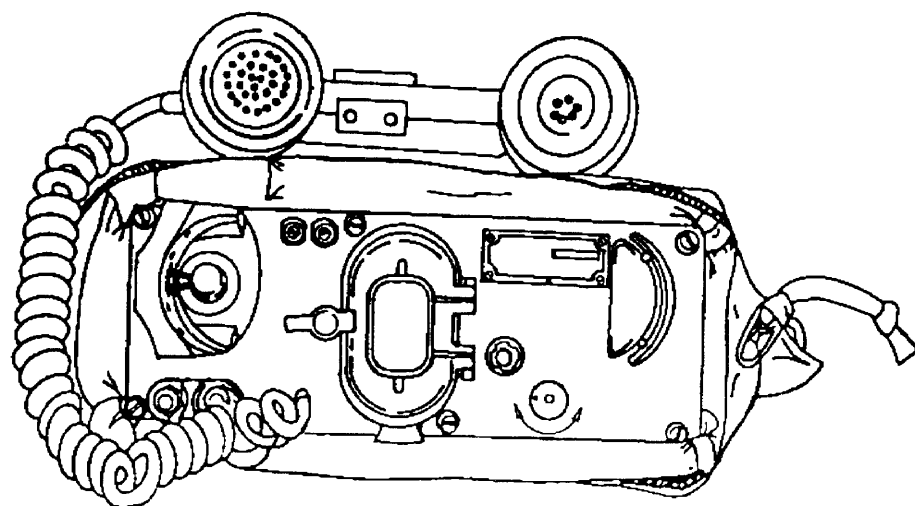
Type of Operation:

Common Battery Voice transmission and signaling
power supplied by switchboard
Local Battery Voice transmission power supplied
by two BA-30s, signaling power
supplied by a hand-crank generator
Common-Battery Signaling Signaling power supplied by
switchboard, voice transmission
provided by two BA-30s
Signaling (Outgoing) Hand generated, 90 to 100 V AC, 20 Hz
Signaling (Incoming) Audible tone, adjustable volume

TA-312/PT and TA-43/PT Telephone Sets



TA-312/PT



TA-43/PT

FM 24-24

**TA-341/TT
Telephone Set**

NSN: 5805-00-910-8844

Reference: TM 11-5805-384-12

General Information

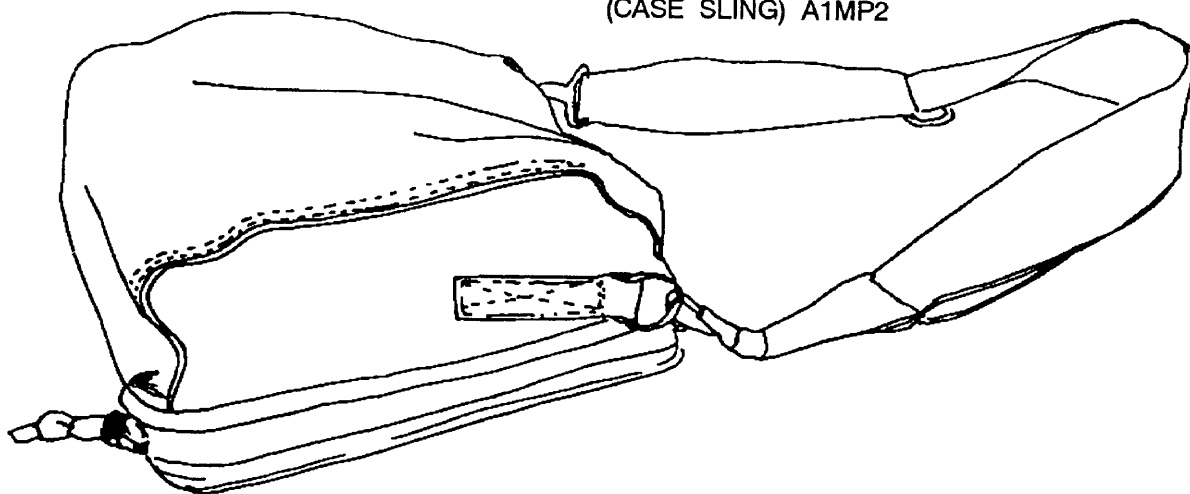
The TA-341/TT is a four-wire, transistor, local-battery telephone intended for use in sheltered areas. It is designed for use with tactical automatic switches but also can be used in a point-to-point mode. Up to four sets can be bridged across a single four-wire line for extension service. DTMF tones activated by a push-button key sender are used for signaling.

Technical Characteristics

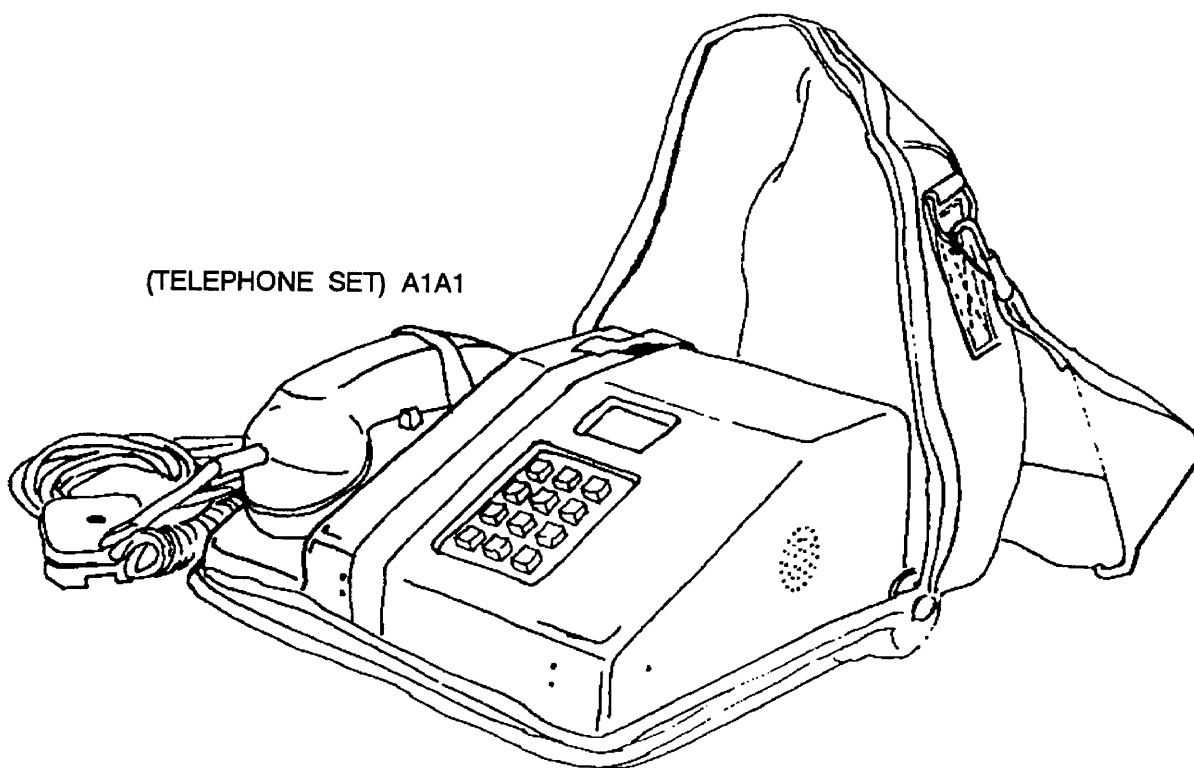
Range	3 km (2 mi) from AN/TTC-38 under worst conditions
Type of Operation	Local or common battery
Signaling (Outgoing)	900 to 3400 Hz DTMF
Signaling (Incoming)	90 V AC, 20 Hz
Type of Signal	Audible tone, adjustable volume
Power Requirement	6 V DC (four BA-42s or equivalent)
Weight	3.2 kg (7 lb)

TA-341/TT Telephone Set

(CASE SLING) A1MP2



(TELEPHONE SET) A1A1



TA-838/TT
Telephone Set

NSN: 5805-00-124-8678

Reference: TM 11-5805-650-12

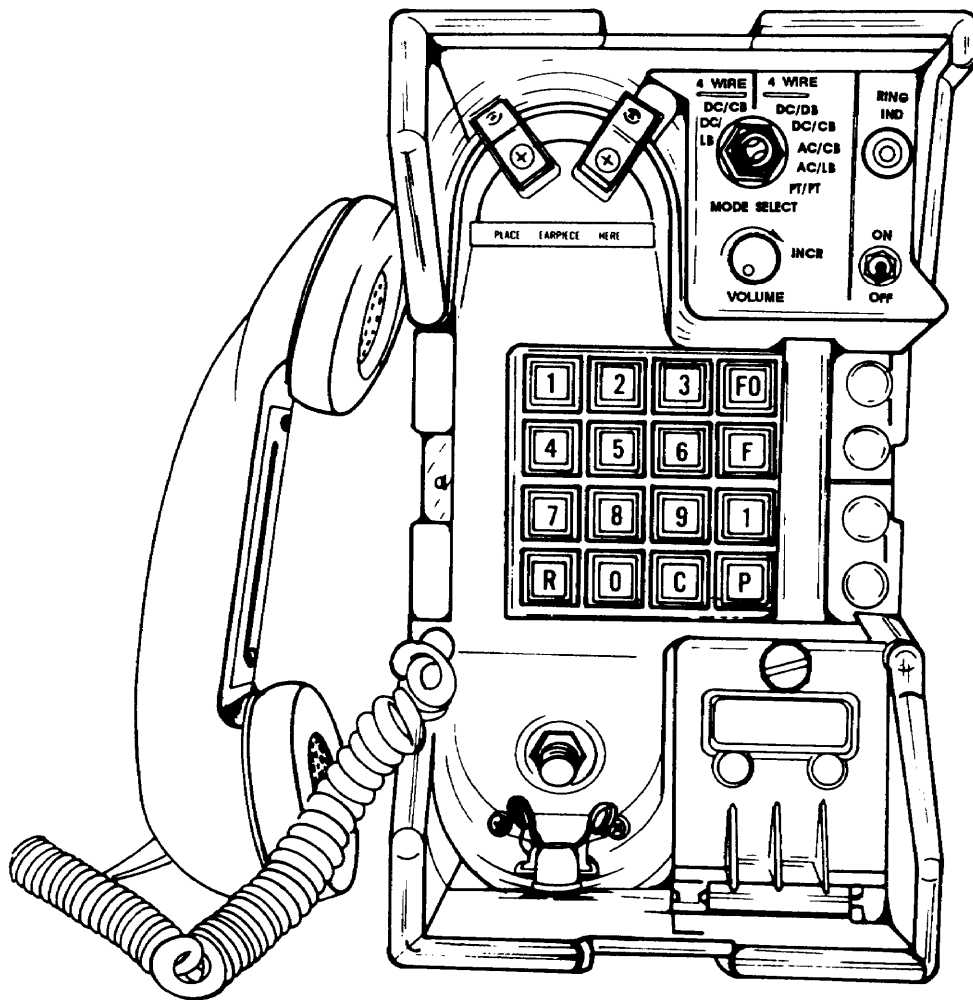
General Information

The TA-838/TT is a rugged, solid-state, field telephone designed for use with switchboards SB-3614/TT and SB-3614/AT or with the Tactical Automatic Switches AN/TTC-25, AN/TTC-38, AN/TTC-39, and AN/TTC-39A and is capable of compatible inter-operation with TA-341/TT and C-6709 net radio interface (NRI) equipment. It is a two or four-wire local or common-battery set using DTMF tones for signaling and will work with any DTMF semiautomatic or automatic circuit. Using the TA-838/TT, up to three extensions may be added in the four-wire mode and only one extension maybe used in the two-wire mode.

Technical Characteristics

Range	3.2 km (2 mi) from SB-3614/TT under worst conditions
Type of Operation	Local or common battery
Signaling (Outgoing)	900 to 3400 HzDTMF
Signaling (Incoming)	90 V AC,20 Hz
Type of Signal	Audible tone, adjustable volume
Power Requirement	6 V DC (four BA-42s or BA-2042s)
Weight	3.6 kg (8 lb)

TA-838/TT Telephone Set



FM 24-24

TA-938/G
Telephone Set

NSN: 5805-00-134-2599

Reference: Not available

General Information

The TA-938/G is a two-wire common-battery telephone set intended for use in sheltered areas. The telephone uses DTMF signaling. Two sets can be bridged across a single two-wire line for extension service.

Technical Characteristics

Range	Approximately 8 km (5.0 mi) from central office
Type of Operation	Common battery
Signaling Voltage	90 V AC, 20 Hz
Type of Signal	Bell
Power Requirement	Supplied by central office
Weight	1.8 kg (4 lb)

TA-938/G
Telephone Set



TA-954/TT
Digital Nonsecure Voice Terminal

NSN: 5805-01-159-9691

Reference: TM 11-5805-735-12

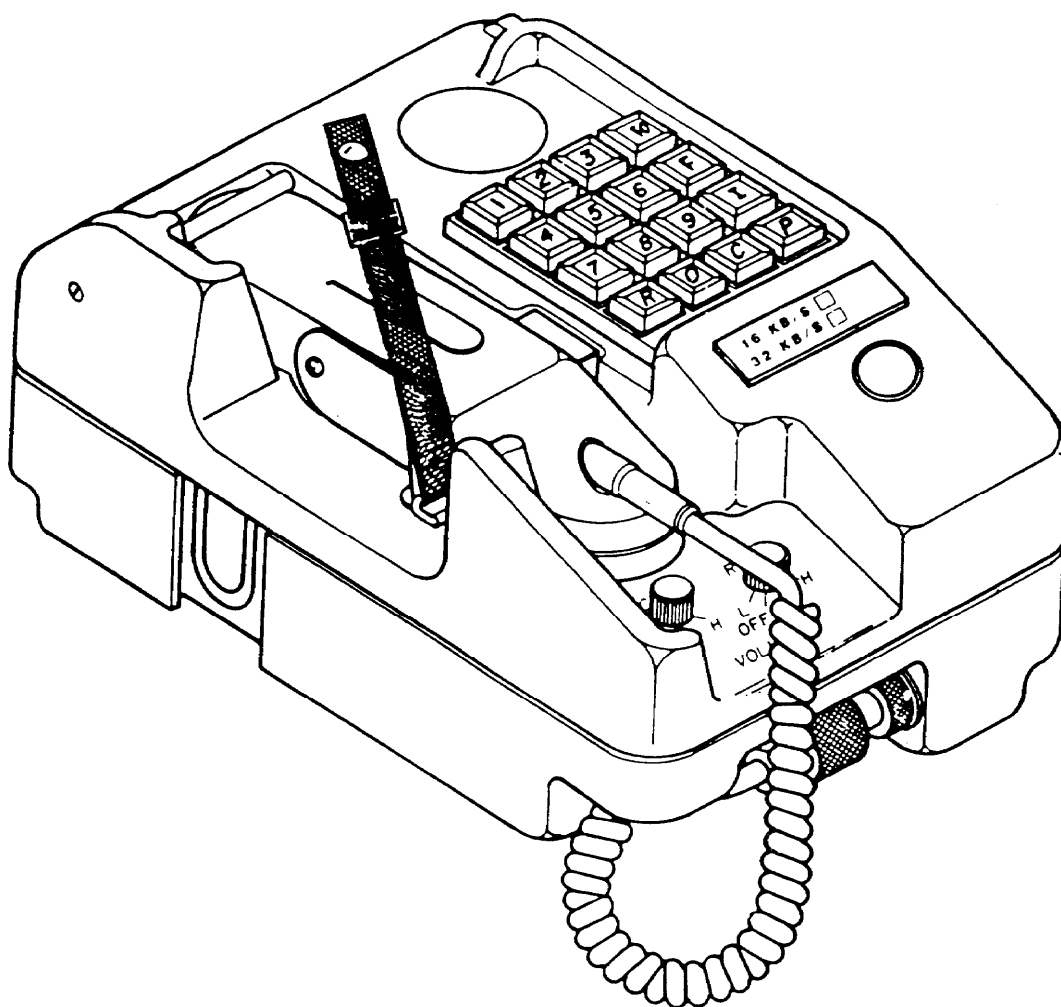
General Information

The digital nonsecure voice terminal (DNVT) TA-954/TT is a four-wire terminal contained in a ruggedized case, which transmits and receives conditioned diphas-modulated digitized voice and loop signaling information at 16 or 32 kb/s. The DNVT has a 16-key push button keyboard, receiver and ring volume controls, an incoming call/off-hook indicator light, and writing pad. It contains built-in protection from nuclear energy electromagnetic pulses and lightning. Handset H-350/U is issued with the DNVT. The microphone element is activated when the handset is removed from the cradle (hot mike). The push-to-net radio interface switch is only pressed to key the C-6709. The DNVT provides a digital communications interface with Tri-Service Tactical Communications (TRI-TAC) and Mobile Subscriber Equipment (MSE) circuit switches.

Technical Characteristics

Channel Interface-Field Wire	4-wire field cable
Transmission Range	4 km (2.4 mi) max
Input Power-Power Drain:	
On Hook	300 mW, max
Off Hook	1.5 W, max
Power Requirement	+24 to +56 V DC
Current Drain:	
On Hook	12.5 Ma, +24 V DC
	5.0 Ma, +56 V DC
Off Hook	62 Ma, +24 V DC
	25 Ma, +56 V DC
Weight	2.7 kg (5.8 lb)

TA-954/TT
Digital Nonsecure Voice Terminal



FM 24-24

TSEC/KY-68
Digital Subscriber Voice Terminal

NSN: 5810-01-082-8404

Reference: TM 11-5810-329-10

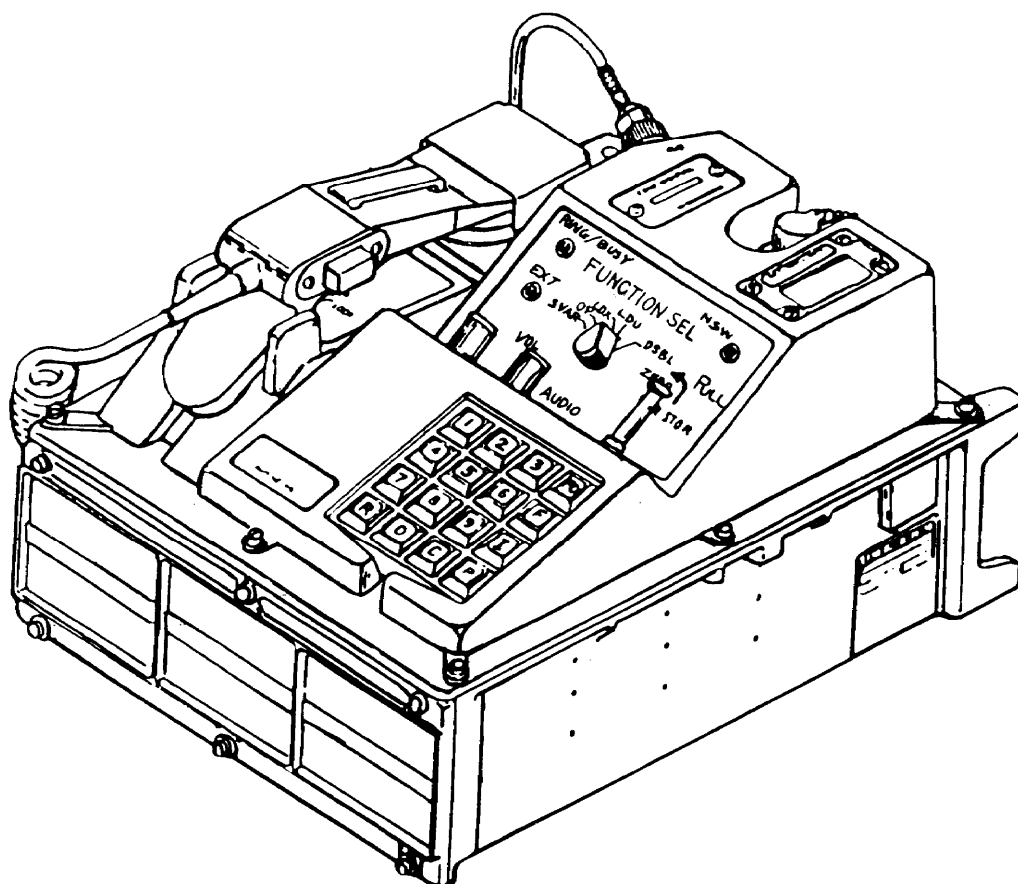
General Information

The digital subscriber voice terminal (DSVT) KY-68 is used for encrypting/decrypting voice traffic and provides secure digitized data traffic. It operates as a full-duplex or half-duplex voice/data subscriber terminal at 16 to 32 kb/s. The KY-68 provides secure and nonsecure access to the switched networks and secure access to non-switched networks. Handset H-350/U is normally issued with the DSVT and includes a push-to-talk switch which is used when the DSVT is operating in the half-duplex mode to allow for voice transmission. The terminal consists of a five-position function switch, audio and ring volume controls, ring/busy, extension, and nonsecure warning indicators. The DSVT provides a digital communications interface with TRI-TAC and MSE circuit switches.

Technical Characteristics

Channel Interface-Field Wire	4-wire field cable
Power Requirement	-21 to -56 V DC (DC voltage is provided by the auxiliary power supply HYF-71/TSEC)
Weight	6.3 kg (13.8 lb)

TSEC/KY-68 **Digital Subscriber Voice Terminal**



TA-1035/U
Digital Nonsecure Voice Telephone

NSN: 5805-01-246-6826

Reference: TM 11-5805-761-12&P

General Information

As a prime subscriber terminal, the TA-1035/U provides full-duplex, conditioned, diphasic digital voice and loop signaling information with wire and mobile access equipment. It also provides supervisory, clock, plain text, and voltage reference signals with data devices. The TA-1035/U provides a data port for interfacing the communications terminal (CT) and AN/UXC-7 data devices to the echelons corps and below (ECB) network. The TA-1035/U operates in a common-battery power mode, deriving its power from the switch line termination circuit.

Technical Characteristics

Cables:

Channel interface 4 conductor field wire, 1,000 ft max (305)

Channel interface	1 conductor, hold wire, 1,000 ft max (300)
Data device interface	Signal cable

Power Requirements:

Input power (power drain)

On-hook	300 mW, max
-------------------	-------------

Off-hook	1.5 W, max
----------------	------------

Input power (voltage)	+24 to +56 V DC
-----------------------------	-----------------

Input power (current drain)

(On-hook	12.5 mA @ +24 V DC
----------------	--------------------

5.0 mA @ +56 V DC

Off-hook 62 mA @ +24 V DC

25 mA @ +56 V DC

Weights and Dimensions:

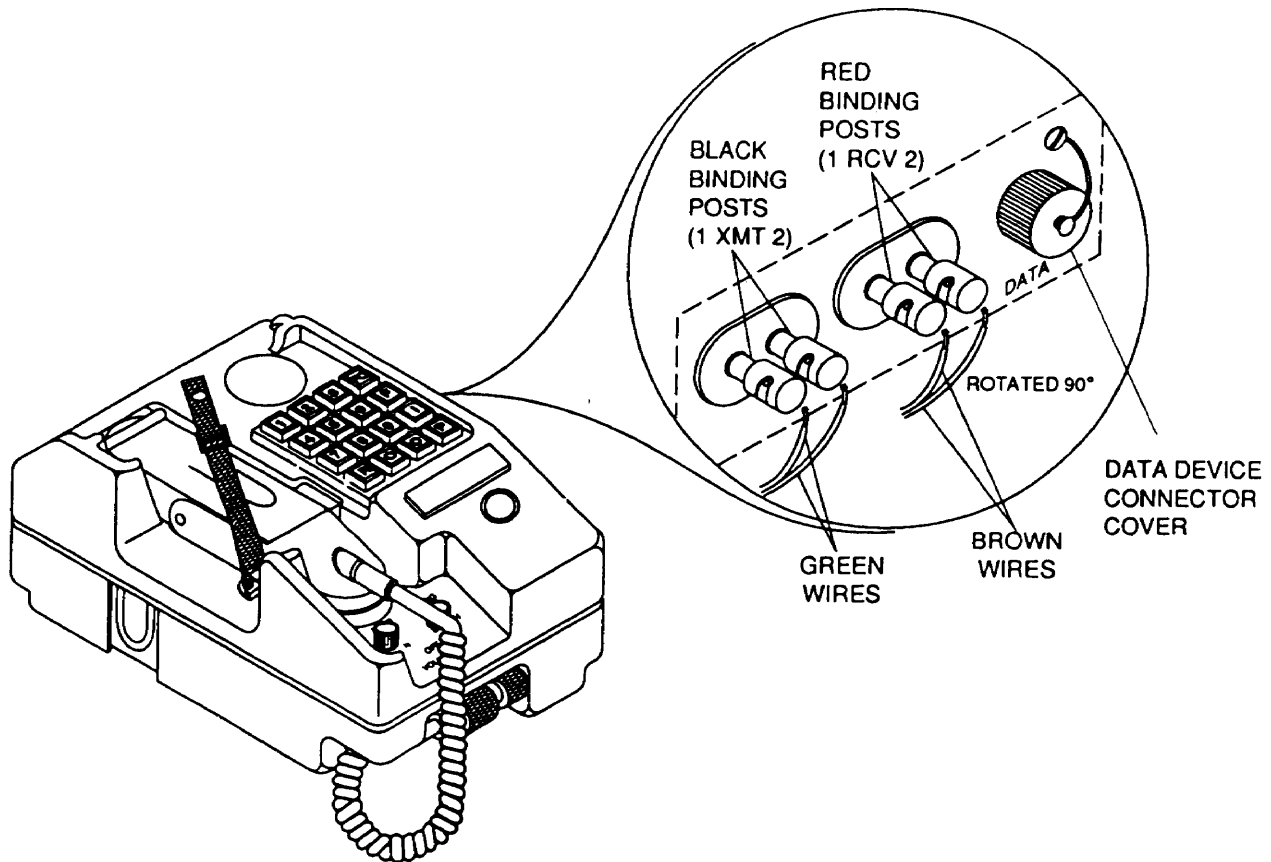
Length 10 in (257.0 mm)

Width 7-3/8 in (185.9 mm)

Height 4-5/8 in (118.9 mm)

Weight 5-3/4 lb (2.6 kg)

TA-1035/U Digital Nonsecure Voice Telephone



GREEN WIRES
CROSS SECTION



BROWN WIRES
CROSS SECTION

TA-1042A/U
Digital Nonsecure Voice Terminal

NSN: Not available

Reference: TM 11-5805-780-12&P

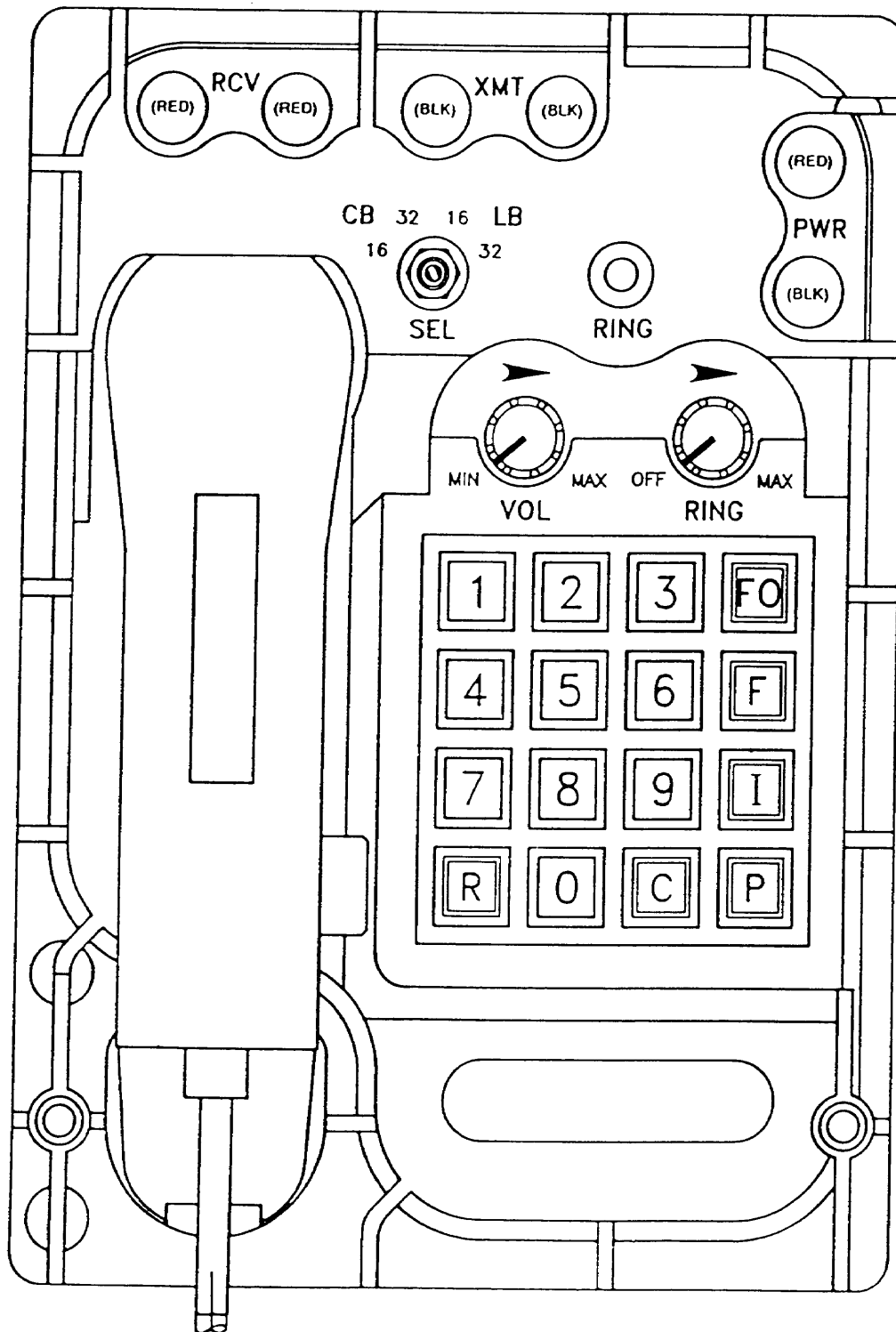
General Information

The digital nonsecure voice terminal (DNVT) is a ruggedized field telephone. It is operable as a tabletop device in tents, shelters, and office environments. It also may be operated outdoors while strapped to a tree or pole. The DNVT is designed for durability to exposure of the elements during operation and transportation. Voice communication is accomplished through the handset. Digital data from an external device interfaces through the TA-1042A/U's digital data port (DDP). The DNVT transmits and receives full duplex, conditioned diphase digital voice and loop signaling information at 16 or 32 kb/s rates. The DNVT is a nonsecure telephone with no encryption capability. It digitizes voice information using continuously variable slope delta (CVSD) modulation. Digital communication transmissions, both to and from the DNVT, are accomplished using a conditioned diphase (CDP) data transmission method. This is accomplished by using the DDP. The DNVT operates in both common battery mode and local battery point-to-point mode, but not simultaneously.

Technical Characteristics

Overall Dimensions:	
Width	7 in
Height	4.25 in
Length	9.75 in
Weight	4.5 lb(approx)
Temperature Range:	
Normal Operating	-30 C (-22 F) to +52 C (+125 F)
Storage	-57 C (-70 F) to +71C (+160F)
Humidity Range	Up to 98%

TA-1042/U **Digital Nonsecure Voice Terminal**



Section II. Switchboards

SB-22/PT and SB-22A/PT
Manual Telephone Switchboards

NSN: 5805-00-257-3602 (SB-22/PT)
5805-00-715-6171 (SB-22A/PT)

Reference: TM 11-5805-262-12

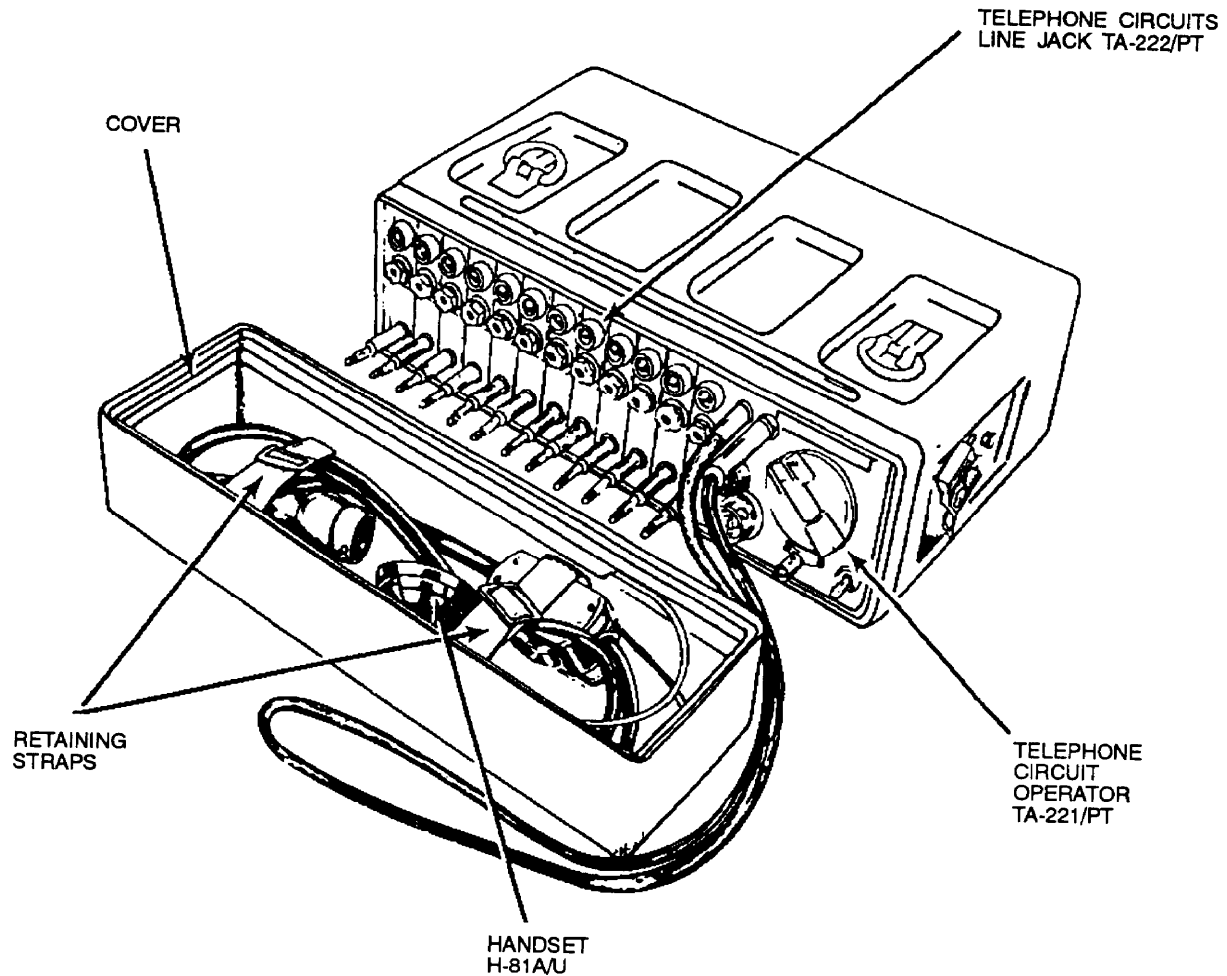
General Information

The SB-22/PT and the SB-22A/PT are tactical, manual switchboards that can be rapidly installed to provide field facilities for interconnecting 12 local-battery telephone circuits, remote controlled radio circuits, or voice frequency (VF) teletypewriter circuits. Two SB-22/PTs may be stacked to provide a 29-circuit capability by removing one TA-221/PT (operator's pack) and inserting five TA-222/PTs (line packs). Replacing a line pack with a trunk pack permits one-way ring-down, and one-way automatic trunk circuits between the SB-22A/PT and any other switchboard with common-battery signaling. The Tone-Signaling Adapter TA-977/PT provides the operator with a two-wire push-button tone-signaling capability for interfacing automatic switches without operator intervention.

Technical Characteristics

Type of Operation	Manual with local battery
Line Capacity	12
Signaling (Outgoing)	90 to 100 V AC, 20 Hz
Signaling (Outgoing) with adapter.	DTMF
Signaling (Incoming)	90 V AC, 20 Hz
Type of Signal	Audible or visual alarm
Power Requirement:	
Operator's Talking Circuit	3 V DC (two BA-30s)
Night Alarm and Panel Light	3 V DC (two BA-30s)
Weight	15.4 kg (34 lb)

SB-22/PT and SB-22A/PT Manual Telephone Switchboards



SB-3614(V)/TT and SB-3614A(V)/TT Telephone Switchboards

NSN: 5805-01-032-1694 (SB-3614(V)/TT)
5805-01-216-0887 (SB-3614A(V)/TT)

Reference: TM 11-5805-695-12 (SB-3614(V)/TT)
TM 11-5805-749-12 (SB-3614A(V)/TT)

General Information

The SB-3614 is a tactical, ruggedized, 30-terminal automatic switchboard. It provides rapid, cordless service to various interfaces. It may operate as a 30-terminal, single-switching facility or maybe connected with additional switchboards to form a 60- or 90-line system. The switchboard operator can monitor, answer, initiate, extend, preempt, and release calls using the four-by-four key sender and other functional push buttons. Any connection can be broken down manually, through operator intervention and action, or automatically, through a subscriber going to an on-hook condition. A maximum of 18 terminals may be connected as either four-wire DTMF signaling trunks, or DC closure dial pulse or DTMF trunks, ear and mouth (E&M) dial pulse or DTMF lines or trunks. The switchboards provide fully automatic operation with touch tone subsets and two- and four-wire trunks and limited service with rotary dial pulse subsets. The SB-3614(V)/TT requires manual tandem dialing when dialing outside of your local switchboard. The SB-3614A(V)/TT automatically routes the call through the network using primary or alternate routes. For common-battery signaling or ring-down lines and trunks without DTMF capability, the switchboard provides call extension service. DTMF subscribers have direct distant dialing (7-, 10-, and 13-digit) and Defense Switching Network (DSN), Dial Central Office (DCO), and commercial access capabilities. Other features of the SB-3614A(V)/TT include facsimile service, call forwarding, preemption by precedence, conference calling, and subscriber (loop) hunting.

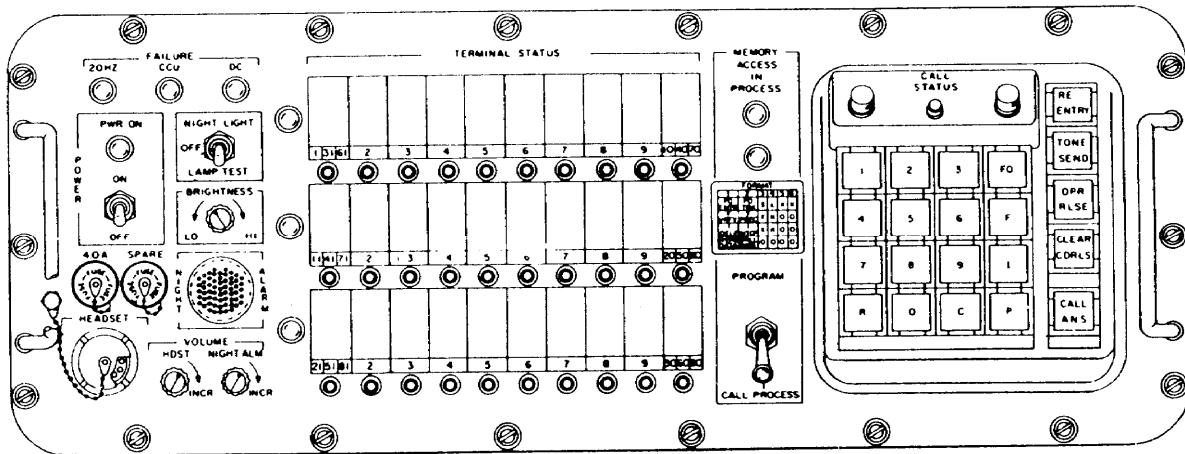
Technical Characteristics

Type of Operation	Manual or automatic
Power Requirement	24 V DC, 5 amp (max)
Terminals	30 in each switchboard 60 or 90 in expanded mode
Simultaneous Conversations	15 for one switchboard 30 for expanded operation
Precedence Levels	SB-3614(V)/TT: routine and priority SB-3614A(V)/TT: routine, priority, immediate, flash, and flash override

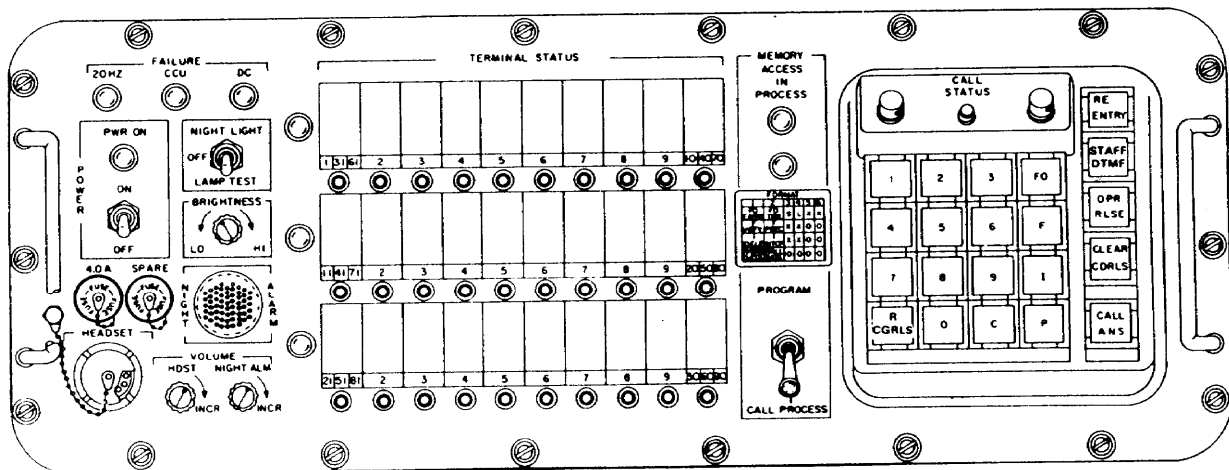
**Technical Characteristics
(Cont.)**

Types of Terminal PCB	Type I
	Type II
	Type III
	Type IV
	Type V
	Type VI (SB-3614A(V)/TT only)
	Type XI (SB-3614A(V)/TT only)

SB-3614(V)/TT Telephone Switchboard



SB-3614A(V)/TT Telephone Switchboard



Section III. Auxiliary Telephone Equipment

CV-1918A(V)/G Telephone Signal Converter

NSN: 5805-00-504-9103 (CV-1918A(V)1/G)
5805-00-137-7674 (CV-1918A(V)3/G)

Reference: TM 11-5805-553-13

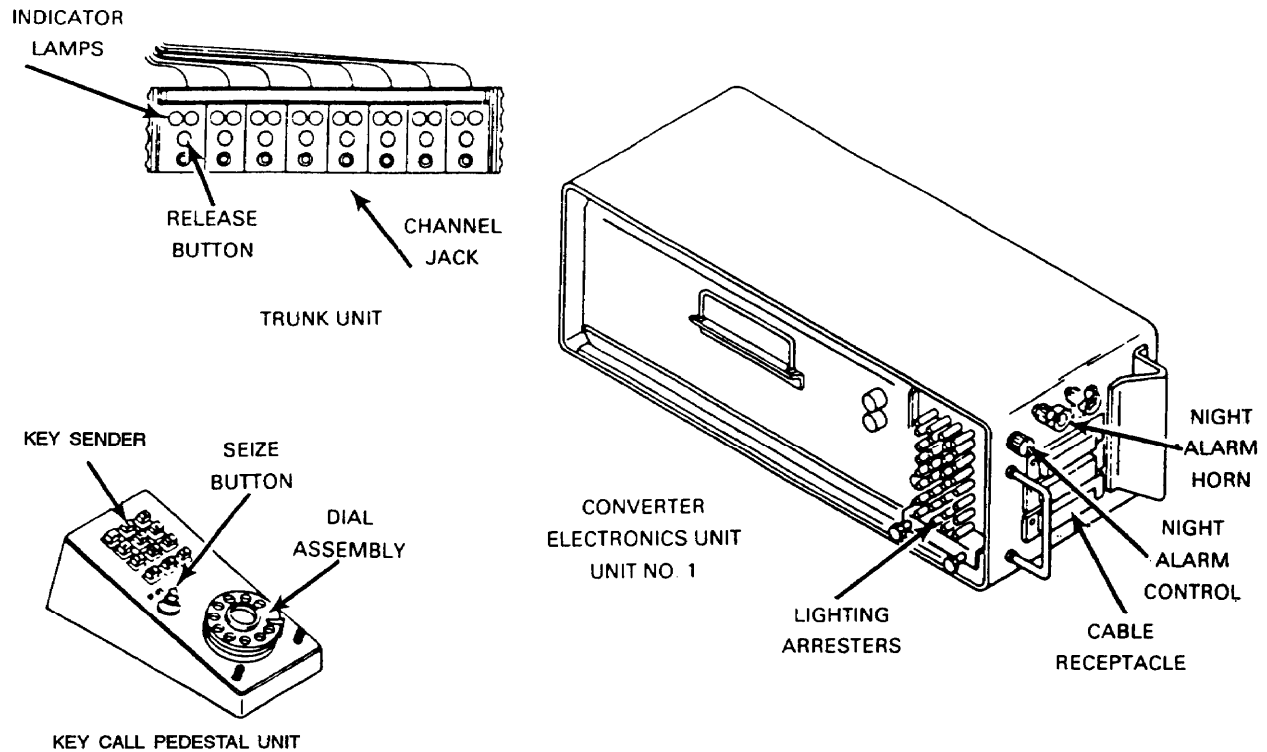
General Information

The CV-1918A(V)/G is a transistorized, eight-channel telephone signal converter designed to interface between automatic and manual telephone central offices. The CV-1918A(V)/G and the automatic telephone central office communicate with each other using electronic signal tones. The operator's actions are translated into signal tone commands by the CV-1918A(V)/G. When installed on either the SB-249TT/C or SB-1398/GTA-14(V) switchboard, the converter provides two-wire to four-wire and four-wire to two-wire telephone signal compatibility. In addition to establishing a voice path between the two different telephones, the CV-1918A(V)/G generates the tones required to activate the automatic telephone central office switching functions. The manual switchboard operator can dial into the automatic switch using the DTMF dialing capability on the CV-1918A(V)/G. The three CV-1918A(V)/G models differ only in the quantities of components used in their configuration.

Technical Characteristics

Transmission Range	3.2 km (2mi)
Circuit Capacity	8 channels
Voice Frequency Range	300 to 3500 Hz
Operating Power:	
Internal	6 and-3 V DC
External	48 V DC
Type of signal	Audible night alarm with adjustable volume
Weight	55.4 kg (122 lb) (CV-1918A(V)1/G)
	36 kg (80 lb) (CV-1918A(V)2/G)
	33.1 kg (73 lb) (CV-1918A(V)3/G)

CV-1918A(V)/G Telephone Signal Converter



CV-1918 COMPONENT QUANTITIES

SYSTEM COMPONENTS	CV-1918A(V)1/G	CV-1918A(V)2/G	CV-1918A(V)3/G
Electronics Units	1	1	1
Universal Mounting Plate	2	2	2
Trunk Unit	9	3	2
Key Call Pedestal	9	3	2
Distribution Box	1	1	1
CX-2584/U Signal Cable	18	6	4
Power Cable	1	1	1

J-1077A/U and J-2317A/U Signal Distribution Panels

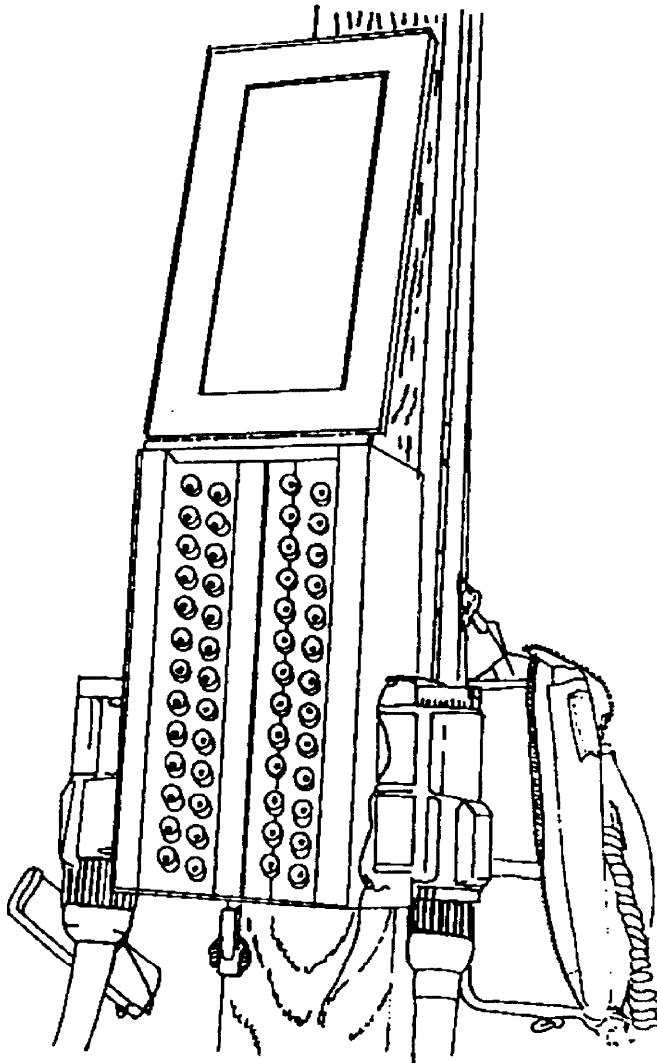
NSN: 6110-00-985-7574 (J-1077A/U)
6110-00-937-4964 (J-2317A/U)

Reference: TM 11-6110-201-12P (J-1077A/U)
TM 11-6110-243-14P (J-2317A/U)

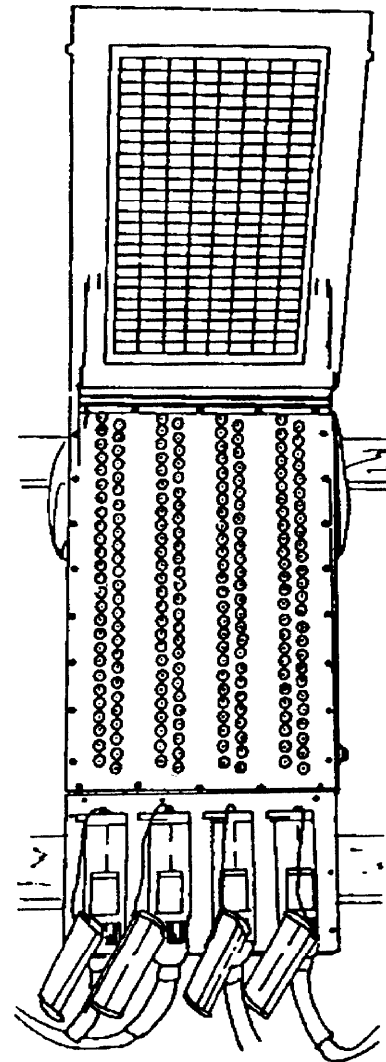
General Information

The J-1077A/U is a hard-wired (normal through) distribution box. It is used for interconnecting field wire or any other wire lines which are accessible for binding post connection traffic capability using 26, two-wire lines. Two J-1077A/U's are required for use during field expedient patching. The J-2317A/U has four 26-pair connectors. Each connector terminates on respective binding post strips A, B, C, or D. The primary use of the J-2317A/U is field expedient patching or main frame distribution. All circuits used must be internally patched with jumper wires.

J-1077A/U and J-2317A/U Signal Distribution Panels



J-1077A/U



J-2317A/U

TA-248/TT
Static Ringing Generator

NSN: 5805-00-503-1482

Reference: TM 11-5805-298-15

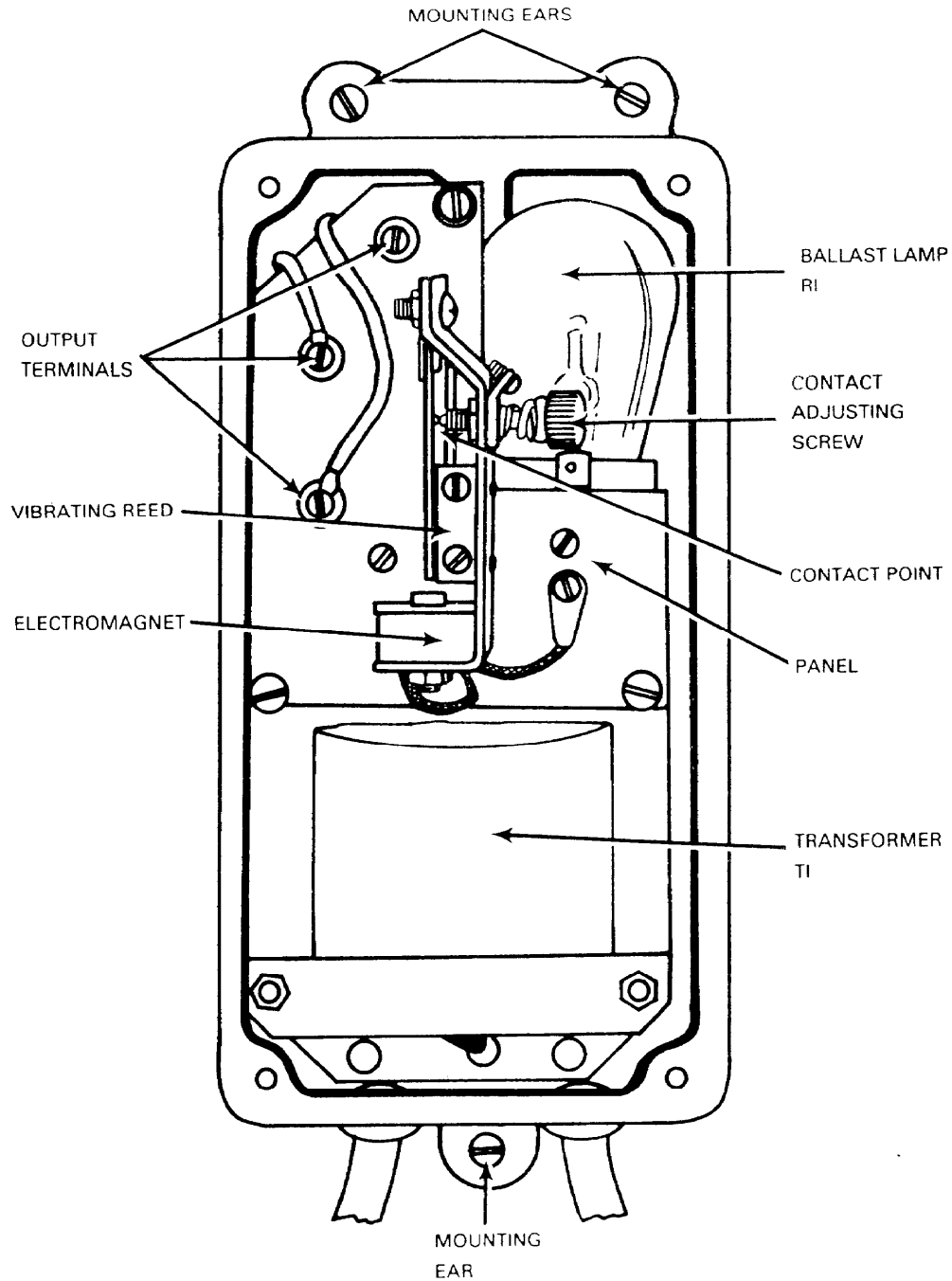
General Information

The TA-248/TT produces a 90 V AC, 20-Hz ringing voltage for telephone switchboards.

Technical Characteristics

Power Requirement	110 V AC, 50 to 60 Hz
Output	90 V AC, 20 Hz
Weight	3.4 kg (7.5 lb)

TA-248/TT Static Ringing Generator



**TM-184 Terminal Strip
and TA-125/GT Terminal Box**

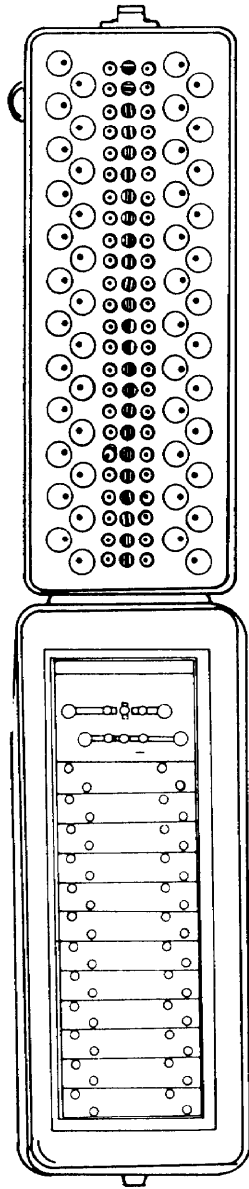
NSN: 6110-00-538-0777 (TA-125/GT)

Reference: FM 24-20 (TM-184)
TM 11-2138 (TA-125/GT)

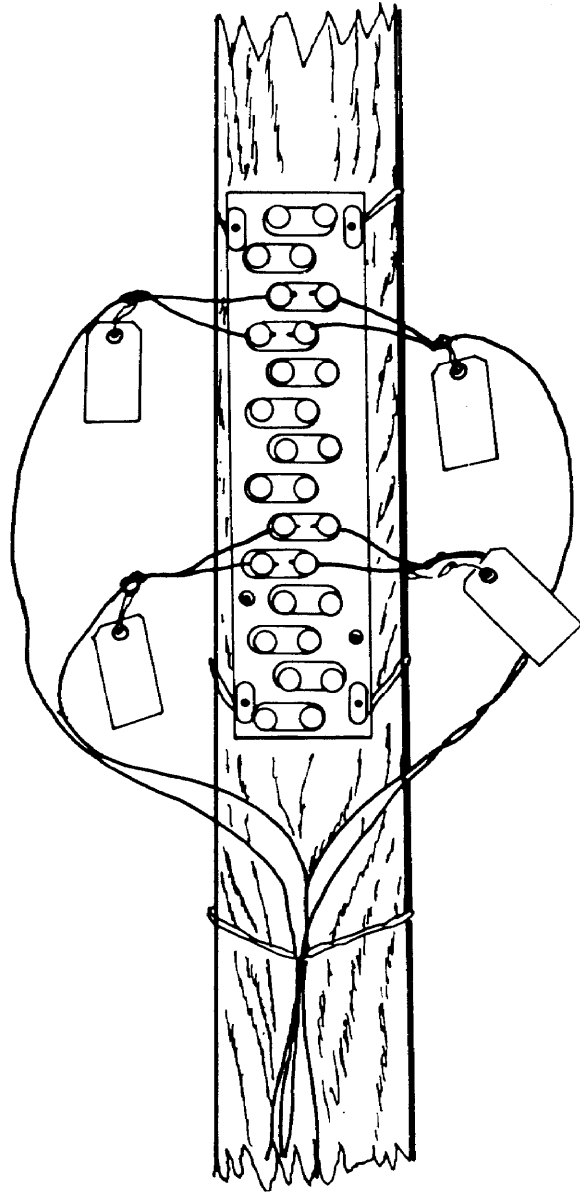
General Information

The TM-184 is a block of insulating material on which 28 insulation-piercing binding posts and four mounting holes are mounted. This terminal strip can terminate seven pairs of wires. The TA-125/GT is a small, lightweight terminal. It is used at signal centers and test points where weatherproof terminations are essential for uninterrupted service. The terminal box is used wherever rapid installation of field wire or cable circuits is required. It also may be used as a main distributing frame for small manual telephone switchboards.

TM-184 Terminal Strip and TA-125/GT Terminal Box



TA-125/GT



TM-184