

WESCOM DUALINE PLUS
DIGITAL SINGLE SUBSCRIBER CARRIER SYSTEM
DDL 221 CENTRAL OFFICE TERMINAL
(COT) COMMON UNIT

1 GENERAL

- 1.01 This section is a cover sheet for the Wescom DuaLine Plus DDL 221 Central Office Terminal (COT) Common Unit for use at the subscriber location. This section is copyrighted and reproduced with the permission of Charles Industries.
- 1.02 Whenever this section is reissued the reason(s) for reissue will be listed in this paragraph.
- 1.03 The Wescom DuaLine Plus System is a general purpose digital single subscriber carrier (DSSC) system that provides pair gain capability over a non-loaded, two wire, copper facility.

The DuaLine Plus requires installation of a central office terminal and a field module, located at or near the subscriber premise.

- 1.04 Associated practices for installation and maintenance of the system are:

<u>Section</u>	<u>Title</u>
363-400-800SW	System Overview
502-204-800SW	DDL 102 DuaLine Plus Remote Terminal
502-204-801SW	DDL 104 DuaLine Plus Remote Terminal
502-204-802SW	DDL 112 DuaLine Plus Remote Terminal
363-400-801SW	DDL 201 DuaLine Plus Central Office Terminal Shelf (23 inches)
363-400-802SW	DDL 210 DuaLine Plus Central Office Terminal (COT) Power Unit
363-400-804SW	DDL 230 DuaLine Plus Central Office Terminal (COT) Line Unit
363-400-805SW	DDL 391 DuaLine Plus Line Unit
502-204-803SW	DDL 190 DuaLine Plus Remote Terminal Simulator
502-204-804SW	Digital Signal Trak-A-Tone Model 92-5

- 1.05 If corrections are required in the attached document, use Form-3973 as described in Section 000-010-015.
- 1.06 If manufacturing and/or design problems are encountered, refer to Section SW 010-522-906 for procedures on filing an Engineering Complaint.

2 ORDERING PROCEDURES

- 2.01 Components of the DuaLine Plus System may be ordered via the Southwestern Inventory Management System (SWIMS).
- 2.02 To order additional copies of this practice, use WSCM 363-400-803SW.

PROPRIETARY
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**Wescom® DDL221 DualLine Plus™
Central Office Terminal (COT) Common Unit
CLEI™ Code: SIPQ0181AA**

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1. GENERAL

1.01 This Practice provides a general description of the Wescom DDL221 DualLine Plus Central Office Terminal (COT) Common Unit (Issue 1). The DDL221 COT Common Unit is depicted in Figure 1.

1.02 Third Printing of this Practice was issued to add DDL-002-100 to Paragraphs 1.03 and 11.01 and to modify Figure 3.

1.03 The DDL221 COT Common Unit provides circuitry for major and minor alarm indications and power monitoring for the DualLine Plus System when mounted in a DDL201 or DDL205 COT Shelf. Refer to Section DDL-000-100 or DDL-002-100 for a general description and features of the DualLine Plus System.

1.04 The Wescom DDL221 COT (Central Office Terminal) Common Unit provides following alarm LEDs and front-panel switches:

- Minor Alarm LED (Yellow)
- Major Alarm LED (Red)
- ACO (Alarm Cut Off) Switch
- LED Test Switch

2. CIRCUIT DESCRIPTION

2.01 The Wescom DDL221 COT Common Unit provides front panel LED and switches for the following functions (refer to Figure 2):

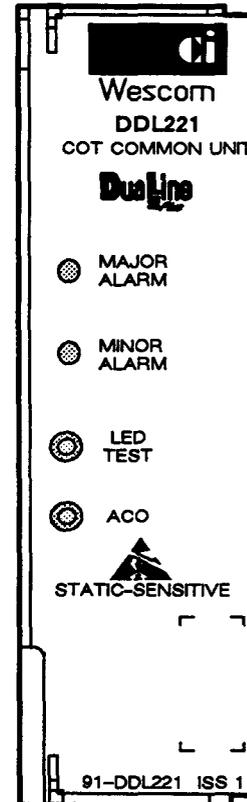


Figure 1. DDL221 COT Common Unit

MAJOR ALARM LED (Red)

(a) The front-panel MAJOR ALARM LED lights when all installed Digital Subscriber Loops are out of service. The Common Unit contains a Power Monitoring circuit which will generate a Major alarm if power is lost to the COT shelf.

MINOR ALARM LED (Yellow)

(b) The front-panel MINOR ALARM LED lights when there is LOS (Loss of Service) on one or more installed Digital Subscriber Loops. LOS could be caused by loss of the signal synchronization, or by an open or short on the Digital Subscriber Loop's tip and ring. A Major alarm condition will override a Minor alarm condition.

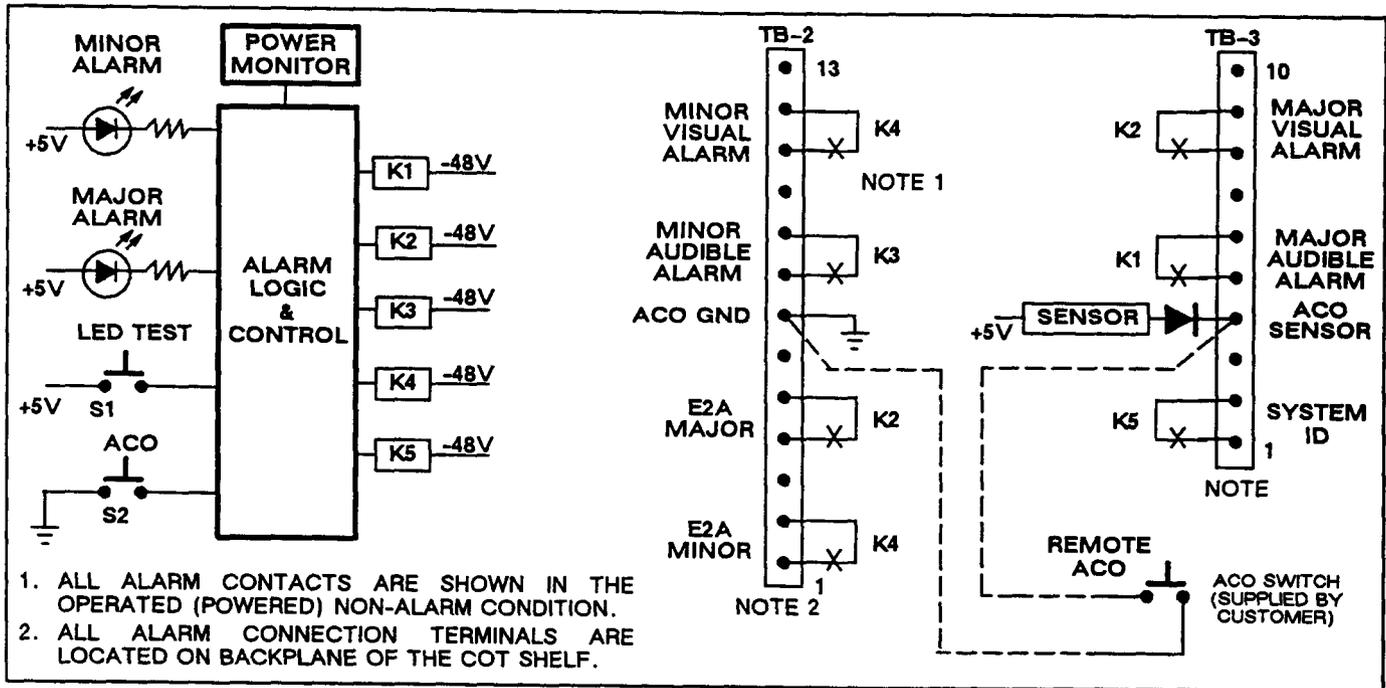


Figure 2. DDL221 COT Common Unit Block Diagram

LED TEST Switch

(c) A front-panel LED TEST switch is provided to periodically verify that all LEDs are functioning. NOTE: When the LED TEST switch is operated, the POWER/SELF TEST LED on the DDL23X (DDL230 or DDL235) COT Line Unit will flash if full idle power is present on the Digital Subscriber Loop.

ACO (Alarm Cut Off) Switch

(d) A front-panel ACO switch is provided to cancel all alarms except System ID (see NOTE). A remote ACO switch can also be connected via terminals on the backplane of the COT shelf. See Figure 2.

NOTE

When the front-panel ACO switch is depressed, the alarm illuminated LED (MAJOR or MINOR) will flash three times and then remain lit until the condition causing the alarm is cleared.

Alarm Contacts

(e) The COT Common Unit also provides alarm contacts for external alarm indicators. See Figure 2.

3. PRE-PROVISIONING

3.01 The Pre-provisioning feature allows the user to install COT Line Units in the COT Shelf without generating alarms prior to the Line Units being synchronized with the associated Remote Terminal (RT). This allows the installation of the Line Units and the RTs at different times. When a Line Unit synchronizes with an RT, the Pre-provisioning feature for that line is canceled and normal alarm

reporting resumes. To activate this feature, the following three-step procedure must be performed.

Step 1

Prepare the DDL221 COT Common Unit for Pre-provisioning

- (a) Depress and hold the front panel LED TEST push-button switch (DO NOT release).
- (b) Depress and hold the front panel ACO push-button switch (DO NOT release).
- (c) Observe that the MAJOR AND MINOR LEDs flash three times at a fast rate and then extinguish.
- (d) Release the LED TEST and ACO push-buttons.
- (e) Observe that the Common Unit MAJOR AND MINOR LEDs flash at a slow rate.
- (f) The DDL221 COT Common Unit is now "Ready" for pre-provisioning.

Step 2

Install COT Line Units

- (a) Install the DDL Line Units in the shelf that are to be pre-provisioned.

NOTE

Any Line Units that were previously installed will not be pre-provisioned unless they are unplugged at this time (for at least five seconds) and then re-installed.

Step 3

Activate Pre-provisioning

- (a) Observe that the Common Unit MAJOR AND MINOR LEDs are flashing at a slow rate.
- (b) Depress and hold the front panel LED TEST push-button switch (DO NOT release).
- (c) Depress and hold the front panel ACO push-button switch (DO NOT release).
- (d) Observe that the Common Unit MAJOR AND MINOR LEDs flashes three times at a fast rate and then extinguish.
- (e) Release the LED TEST and ACO push-buttons.

NOTE

If the "Ready" period of the COT Common Unit is allowed to time out before the pre-provisioning is Activated, all Line Units installed in the shelf (in Step 2) will not be pre-provisioned and will report alarm conditions. The "Ready" period of the DDL221 COT Common Unit times out in twenty minutes.

NOTE

If power to the shelf is interrupted, any Line Unit installed in the shelf will not be pre-provisioned and will report alarm conditions.

3.02 Alarm LEDs on pre-provisioned COT Line Units will be lit. However the COT Common Unit will not report alarms from these COT Line Units (LEDs

or Relays). The COT Common Unit will report alarms from in-service COT Line Units.

4. INSPECTION

4.01 Inspect the equipment thoroughly upon delivery. If the equipment has been damaged in transit, immediately report the extent of damage to the transportation company.

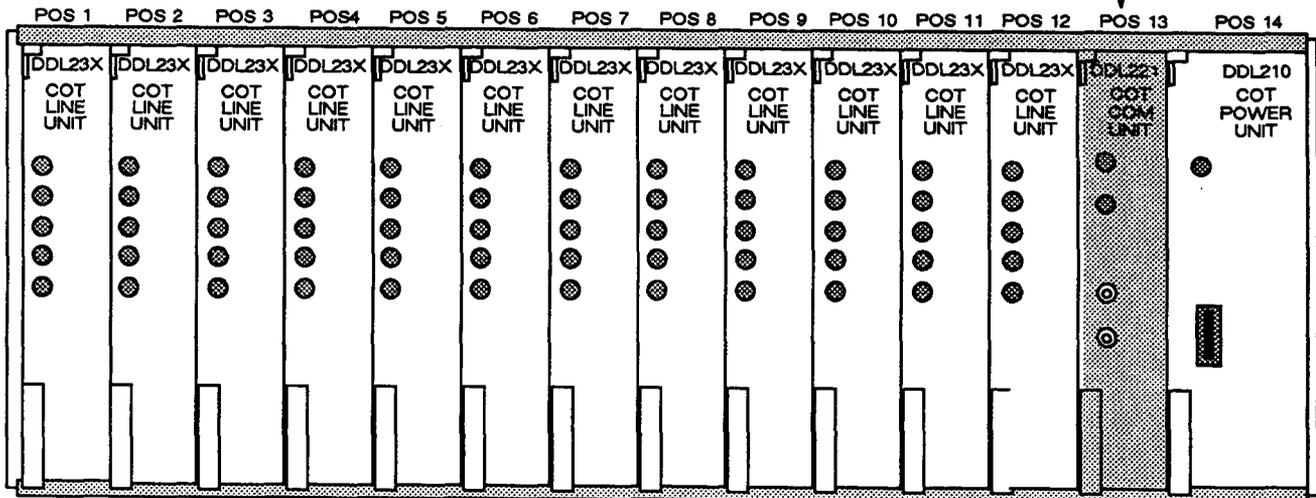
4.02 Wescom equipment is identified by a model and issue number imprinted on the front panel or located elsewhere on the equipment. Each time a major engineering design change is made on the equipment, the issue number is advanced by one number on any subsequent models that are manufactured. Therefore, be sure to include both the model number and its issue number when making inquiries about the equipment.

4.03 Each module is shipped in static-protective packaging to prevent electrostatic charges from damaging static-sensitive devices. Use approved static-preventive measures, such as static-conductive wrist straps and a static-dissipative mat, when handling modules outside of their protective packaging. A module intended for future use should be tested as soon as possible and returned to its original protective packaging for storage.

CAUTION

Do not ship or store modules near strong electrostatic, electromagnetic, or magnetic fields. Also, make sure to use the original static-protective packaging for shipping or storage.

DDL221 COT Common Unit Mounting Position (See Note)



Note: DDL221 is mounted in Position No.10 of the DDL205 COT Shelf

Figure 3. DDL201 COT Shelf Showing Common Unit Module Position (Front View)

5. MOUNTING

5.01 Wescom DDL221 COT Common Unit mounts in the Common Unit Position of the DDL201 (position 13) or the DDL205 (position 10) DualLine Plus Central Office Terminal shelf. Figure 3 shows the DDL221 shelf position in the DDL201 COT shelf.

CAUTION

Installation and removal of channel units should be done with care. Use static-preventive measures when handling. Do not force a unit into place. If excessive resistance is encountered during installation, remove the unit and check the card guides and connector to verify proper alignment and the absence of foreign material.

6. INSTALLER CONNECTIONS

6.01 No installer connections are required for the DDL221 COT Common Unit.

7. OPTIONS

7.01 There are no options on the DDL221 COT Common Unit.

8. TESTING

8.01 The DDL221 COT Common Unit test is part of the Wescom DDL DualLine Plus Central Office Terminal's COT MODULE INSTALLATION AND POWER UP and is covered in Section DDL-201-801 or Section DDL-205-801.

9. TECHNICAL ASSISTANCE

9.01 If technical assistance is required, contact the Technical Services Department of Charles Industries-Wescom, by calling:
1-708-806-8500
FAX 1-708-806-6231

10. WARRANTY AND CUSTOMER SERVICE

10.01 Wescom offers an industry-leading, 5-year warranty on products manufactured by Wescom. Contact your local Sales Engineer for warranty details. The warranty provisions are subject to change

without notice. The terms and conditions applicable to any specific sale of product shall be defined in the resulting sales contract.

10.02 Field repairs involving the replacement of components within a unit are not recommended. If a unit is in need of repair, contact Wescom by telephone, letter, or FAX for instructions regarding replacement or repair.

10.03 If a replacement is required, it will be shipped in the fastest manner consistent with the urgency of the situation. Upon receipt of the replacement unit, return the out-of-service unit in the carton in which the replacement was shipped, using the pre-addressed shipping label provided.

Repair or Exchange Services

10.04 Wescom offers a repair or exchange service for those units out of warranty. Under this arrangement, out-of-service units may be shipped to Wescom and either completely repaired and quality-tested or exchanged for a replacement unit. To obtain details of this service and a schedule of prices, contact your local Sales Engineer.

11. SPECIFICATIONS

11.01 The physical characteristics of the DDL221 COT Common Unit are as follows:

NOTE

The electrical characteristics of the DDL221 COT Line Common are provided in Sections DDL-000-100 and DDL-002-100 as part of the DualLine Plus System.

- (a) OPERATING ENVIRONMENT: Temperature, 32° to 122°F (0° to 50°C).
- (b) WEIGHT: 8.64oz (225g), nominal.
- (c) DIMENSIONS: Height, 6.5 in. (16.5cm); width, 1.37 in. (3.47cm); depth, 10.54 in. (26.77cm).
- (d) MOUNTING: Common Unit Position of the DDL201 (position 13) or the DDL205 (position 10) DualLine Plus Central Office Terminal shelf.