

R A D I O N I C S

FastLink C601 Encoder
Programming and Operation Manual

Notice

The material and instructions covered in this manual have been carefully checked for accuracy and are presumed to be reliable. However, Radionics, Inc., assumes no responsibility for inaccuracies and reserves the right to modify and revise this manual without notice.

It is our goal at Radionics to always supply accurate and reliable documentation. If a discrepancy is found in this documentation, please mail a photocopy of the corrected material to:

Radionics, Inc.,
c/o Technical writing Dept.
1800 Abbott Street
P.O. Box 80012
Salinas, CA 93912-0012

Radionics
c/o Technical Support
1 Park Gate Close, Bredbury
Stockport, Cheshire, SK6 2SZ, England

© 1991 Radionics, Inc., Salinas, CA, U.S.A. All rights reserved.

FCC Notices

Part 15

This equipment generates and uses radio frequency energy. If not installed and used in accordance with the manufacturer's instructions, it may cause interference to radio and television reception. It has been tested and found to comply with the specifications in Part 15 of FCC rules for Class B Computing Devices.

If this equipment causes interference to radio or television reception - which can be determined by turning the equipment on and off - the installer is encouraged to correct the interference by one or more of the following measures: 1) Reorient the antenna of the radio/television. 2) Connect the AC transformer to a different outlet so the control panel and radio/television are on different branch circuits. 3) Relocate the control panel with respect to the radio/television.

If necessary, the installer should consult an experienced radio/television technician for additional suggestions, or send for the "Interference Handbook" prepared by the Federal Communications Commission. This booklet is available from the U.S Government Printing Office, Washington D.C. 20402, stock number 004-000-00450-7.

Part 68

This equipment complies with Part 68 of FCC rules. A label contains, among other information, the FCC registration number and ringer equivalence number (REN). If requested, this information must be provided to the telephone company.

The Radionics C601 Encoder is registered for connection to the public telephone network using an RJ38X or RJ31X jack.

The ringer equivalence number (REN) is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5). To be certain of the number of devices that may be connected to the line, as determined by the RENs, contact the telephone company to determine the maximum REN for the calling area.

If the C601 Encoder causes harm to the telephone network, the telephone company will notify you in advance. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with the C601 Encoder, please contact Radionics Technical Support for repair and/or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved. User repairs must not be made, and doing so will void the user's warranty.

This equipment cannot be used on public coin service provided by the telephone company. Connection to Party Line service is subject to state tariffs. (Contact your state public utilities commission for information.)

FCC Registration Number: AJ915R-61924-AL-N

Ringer Equivalence: 0

Service Center in U.S.A:

Radionics, Inc.,
1800 Abbott Street
P.O. Box 80012
Salinas, CA 93912-0012

(800) 538-5807

FCC regulations require that a label be attached to the product. This label is provided with the product and should be mounted to the inside door of the enclosure as shown below.

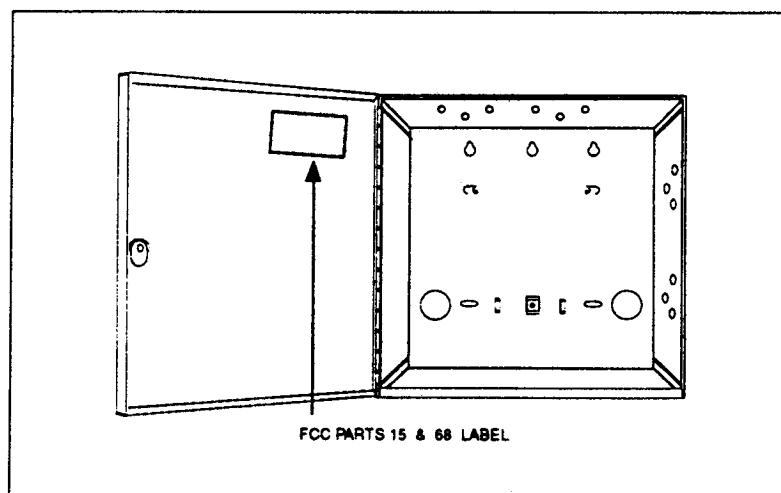


Table of Contents

Contents	Page
FCC Notices	1
Installation Instructions	
General System Description	4
Mounting	5
Connecting the RF Transmitter	5
Zone Input Configuration & Jumper Settings	6
Phone Supervision Jumper	7
Protective Zone Connections	7
Supervisory Features	8
Opening and Closing Reports	8
Time Test Button	8
AC Supervision	8
Power Up/Reset Button	8
Telephone Connections	9
Registration	9
Phone Cord Connections	9
Telephone Line Fault	9
Power Supply	9
Primary Power	9
Battery supervision	9
The Transmit LED	10
Zone Input Connections From Radionics' Control Panels & Modules	10
Connection to D4112	10
Connection to D6112	10
Connection to D8112	11
Connection to D8112 Using D811 Arm Status Relay Module	11
Connection to D8112 Using D8129 OctoRelay Module	11
Connection to D8112 Using C8137 Encoder Interface Module	12
Quick Reference Terminal and Jumper Description	13
Programming Instructions	
Programmer Connection	14
Accessing the C601 Handler	14
Copying and Loading the Panel	14
Account and System ID Numbers	15
Programming Zones	15
2.0 Input Type Programming	15
2.1 Zone Polarity Programming	15
3.1 Delay Before Alarm Programming	16
4.1 Report Type Programming	17
Supervision Reports	17
5.0 Opening and Closing	17
6.0 Phone Line Supervision	18
7.0 - 8.0 Power Supervision	19
9.0 Power Up/Reset	19
Automatic Test Reports	20
Transmission Format	20
Central Station Messages	22
Specifications	23

Installation Instructions

General System Description

The C601 Encoder is a 1-way RF interface module that signals status reports through an RF transmitter to be monitored by the D6500 Receiver equipped with the C6560 RF Line Card and C6565 Terminator Card. To avoid confusion, the line card does not display duplicate alarm or trouble messages received within a three minute time period, unless there has been an intermediate restoral message. The C601 works in conjunction with the C472TX, C472TP, C474TX, and C474TP RF Transmitter Modules.

The C601 Encoder uses eight separate protection zones to detect and respond to intrusion and system status conditions. Each zone is programmed individually with several options to custom-fit the system to a particular installation. Optional zone programming responses include: Delay Time before alarm activates on each zone, Polarity, and Alarm/Trouble/Restoral Reports by zone.

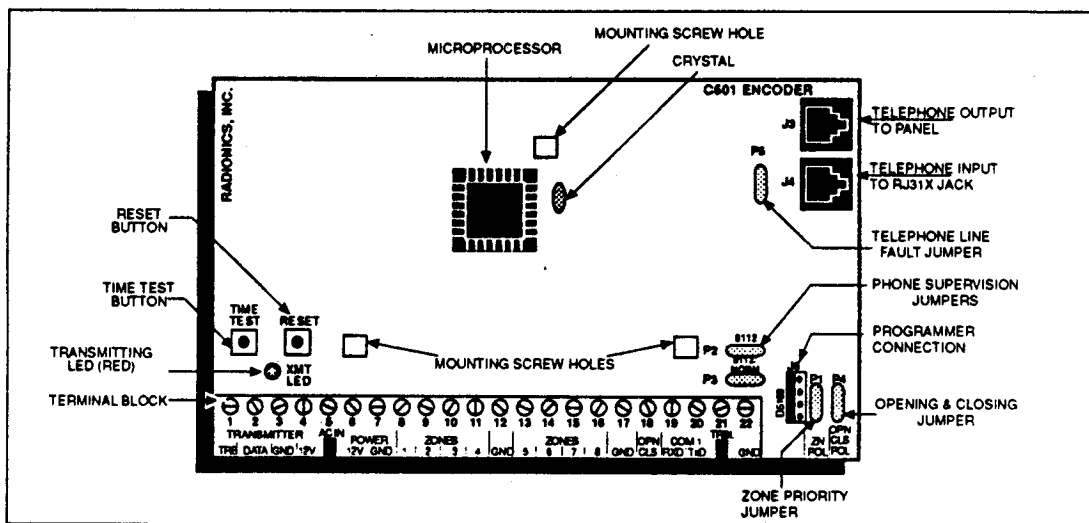


Figure 1: C601 Encoder Board

Transmission Scheme (See Programming Section, Transmission Format)

For signals to be transmitted, you must program a transmitting sequence. Radio signals are transmitted in bursts, each consisting of several rounds. One round contains a complete alarm message, including the account number and the event information, which is repeated several times during one burst. There is an interval between bursts, which may be programmed as constant or randomized. Varying the interval between bursts increases the probability of reception, even if there are simultaneous transmissions from other alarm transmitters being used on the frequency. (See figure 2).

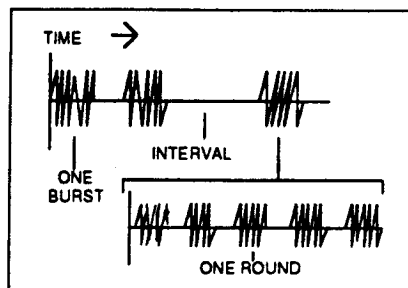


Figure 2: Burst and Round Description

Mounting

The C601 can be mounted in the standard D8103 Enclosure, or a D6103 Enclosure. If you are using a D8103 Enclosure, you can mount the encoder directly to the enclosure. If you are using the D6103 Enclosure, first mount the encoder board onto a D137 Bracket, then mount this assembly into the D6103 Enclosure.

Connecting the RF Transmitter

① ② ③ ④

Warning: Do not connect power to the C601 Encoder until the transmitter is wired. Do not connect the 12VDC power supply to the transmitter until you have installed the antenna or a 50Ω dummy load.

1. Connect the transmitter ground wire to pin 3 on the encoder.
2. Connect the transmitter +12V input wire to pin 4 on the encoder.
3. Connect the transmitter data input wire to pin 2 on the encoder.
4. If the transmitter has an SWR (Standing Wave Ratio) supervision circuit, connect the SWR trouble output wire (marked TRB) from the radio transmitter to a hardwire zone on the control/communicator panel. Connect the ground wire from the panel to ground terminal #7 on the encoder. To supervise the wire from the panel to the radio transmitter, connect a 1KΩ resistor between GND and SWR on the radio transmitter.
5. Connect the Transmitter Trouble (i.e., enclosure tamper) output from the transmitter to an alarm zone on the encoder, or a hardwire zone on the panel. Connect the common ground wire from the panel to the ground terminal on the encoder.

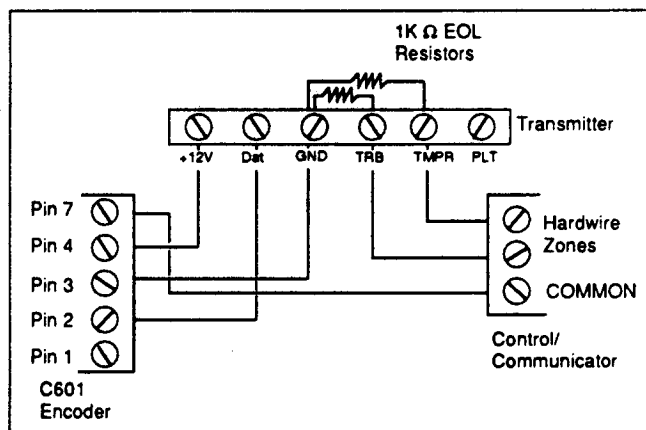
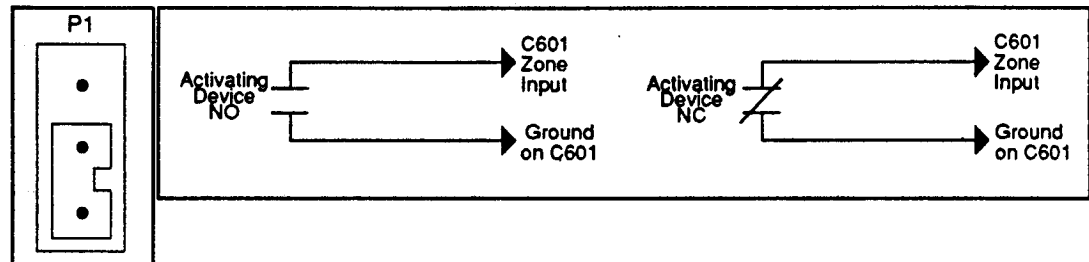


Figure 3: Connecting the RF Transmitter

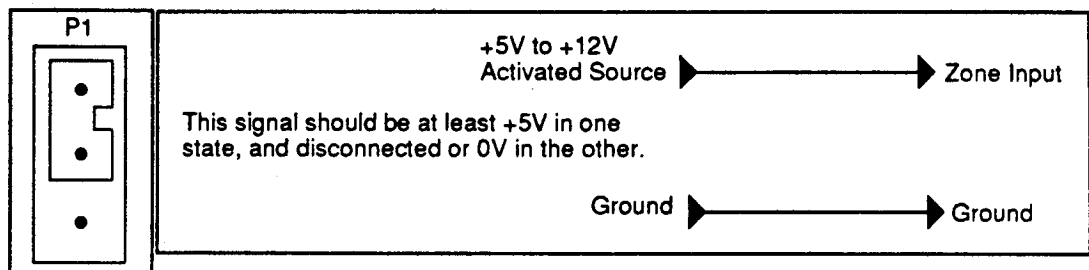
Zone Input Configuration & Jumper Settings

All eight of the C601 Encoder zone inputs can be configured as dry contact to ground, positive voltage, or dry contact with 1K Ω EOL resistor. However, once you choose a configuration, it must be the same for each input.

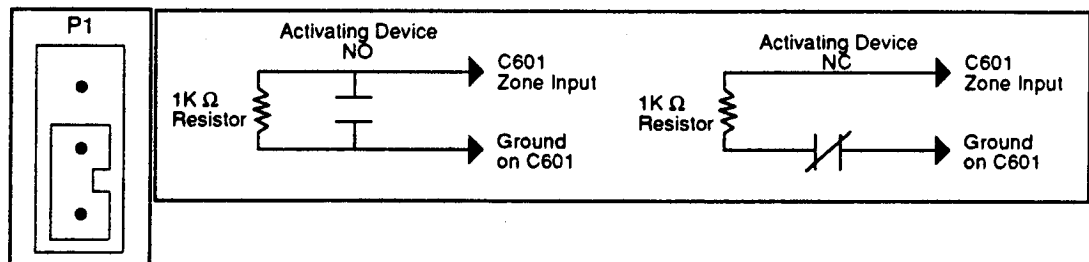
Program Type 0 Dry contact to ground input. If you use this kind of input, be sure to set the P1 jumper in the lower position. In this configuration, an open loop reads 4.5-12.0VDC; a shorted loop reads 0.0-2.0VDC.



Program Type 1 Positive voltage input. If you use this kind of input, be sure to set the P1 jumper in the upper position.



Program Type 2 Normally open or normally closed contact with 1K Ω EOL resistor input. If you use this kind of input, be sure to set the P1 jumper in the lower position.



The C601 Encoder supervises the protective zones by responding to normal, open, or shorted conditions between a zone input (8-11, 13-16) and a zone common (12, 17). The voltage parameters that determine the condition of the zone are listed below.

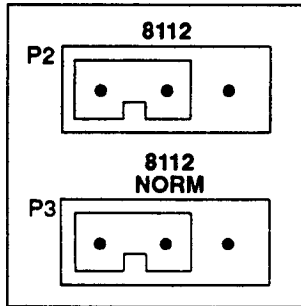
Normal Loop:	Voltmeter reading greater than 2.0VDC but less than 3.0VDC
Shorted Loop:	Voltmeter reading less than 1.0VDC
Open Loop:	Voltmeter reading greater than 4.0VDC

Having decided on the type of inputs for your system, set the P1 jumper, then connect each wire (up to eight hardware zones) to the encoder. If the encoder inputs are connected to a panel, connect a ground wire from the panel to a ground common connection (pin 7) on the encoder. If you are wiring the zones directly to alarm detectors, be sure to connect a ground wire.

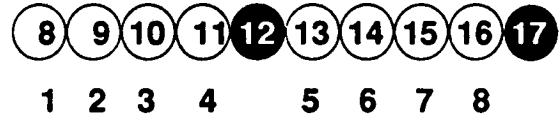
Phone Supervision Jumper

Jumpers P2, P3

Set the P2 and P3 jumpers in the left hand position for all systems installed in the United States and Canada.



Protective Zone Connections



Description

The C601 Encoder has eight separate protective zones. Each zone functions independently, and does not interfere with the operation of the others. When wiring the zone inputs as open/closed contacts with EOL resistors, install a 1KΩ resistor at the far end of the loop to provide a reference for supervision. Dry contact sensing devices may be connected in series (normally closed) or parallel (normally open) to any of these loops.

Note: Connect a common ground between the C601 Encoder and the panel or input device.

Important: The C601 Encoder has a built-in voltage regulator with two safety features: thermal overload shutdown, and voltage overload shutdown. If the C601 Encoder gets too hot, it automatically shuts down. It automatically starts up again after it is cool. The voltage shutdown feature becomes active if you try to apply voltage to a system configured for dry contacts. As soon as the voltage is removed and the regulator temperature returns to normal, the encoder will start.

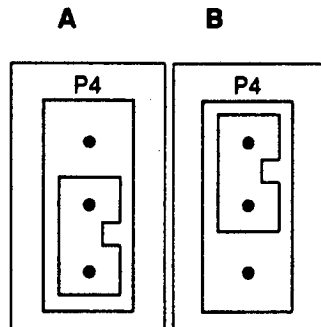
Supervisory Features

18, Jumper P4

Opening and Closing Reports

To configure the C601 Encoder for opening and closing reports:

1. Connect a control panel opening/closing output to the opening and closing input, pin 18, on the encoder board. The control panel output can be a dry contact or a voltage output.
2. Program item 5.0 O/CE_n accordingly.
3. Program item 5.1 O/CPolar accordingly.
4. Program item 5.2 O/CDelay accordingly.
5. Set the P4 jumper in one of the positions shown below:



A. P4 in lower position for dry contact configuration.

B. P4 in upper position for voltage configuration.

Time Test Button

Press this button to initiate a test transmission. This signal is received as a RESTORAL ZN E by the D6500 Receiver.

Note: All unsent bursts still in the C601 Encoder buffer are erased when this button is pressed. You can use this feature as an ABORT button.

AC Supervision

5

The C601 Encoder supervises the AC line if it is programmed to do so. To configure the encoder for AC supervision, connect a single wire from either leg of the AC input on the panel, to pin 5, AC IN, on the encoder board. Make sure program items 7.0 ACSupvEn and 7.1 AC60Hz are set accordingly.

Note: If you do not use AC supervision, and an AC wire is not present, connect terminal 5 to terminal 7 (ground).

This is a separate signal, not a piggyback signal, as with Radionics BFSK and Modem. A 10 second delay is provided.

Power Up/Reset Button

Pressing this button at any time sends a RESTORAL ZN 9, followed by a zone status report to the central station. The encoder can be programmed to send a Power Up/Reset report to the central station:

- After programming is completed and the C601 has completed its 20 second initialization routine.
- Any time the Reset button is pressed.

After you power up the encoder for the first time, press this button to reboot the microprocessor software program. The LED below the button lights up for 20 seconds. When the encoder is operational, this LED flickers. It lights steadily for 1 second when Power Up/Reset data is being transmitted.

Telephone Connections

Registration

The C601 Encoder is registered with the FCC under part 68, for connection to the public telephone system using an RJ31X or RJ38X jack.

FCC Registration Number: AJ915R-61924-AL-N

Ringer Equivalence: 0

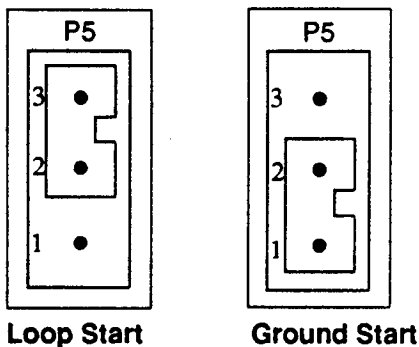
Phone Cord Connections (See Figure 1)

1. Connect one end of a D161 or D162 phone cord to the RJ31X or RJ38X phone jack, and the other end to the J4 connector (Telephone Input) on the encoder.
2. Connect one end of another D161 phone cord (for D8112 and D6112) or a D160 phone cord (for D4112) to the Telco connector and the other end to the J3 connector (Telephone Output) on the encoder.

Telephone Line Fault

Jumper P5

The C601 Encoder supervises the telephone line. To establish this feature, determine the type of telephone line you have. If the line is loop start, set the P5 jumper in the upper position. If you have a ground start system set the P5 jumper in the lower position. Set program items 6.0 PhSupvEn and 6.1 PhSupvTime accordingly.



Power Supply

6 7

Primary Power

The C601 Encoder uses +12VDC supplied by the Aux Power output of the panel. When using a C472 or C474 Transmitter, the C601 Encoder draws a nominal 25 mA in the idle state and 500 mA during transmission.

Note: 500 mA includes the power to the transmitter. It is important that you do not exceed the current rating of your control panel in the idle state. Check to ensure that your transmitter can draw the current it needs (for 1 or 2 seconds) from Aux power on the panel and/or the battery.

Battery supervision

When the battery slowly discharges and the voltage to the C601 Encoder drops below 11.2VDC, the encoder transmits a TROUBLE ZN 9 signal to the central station, if it is programmed to do so. It also sends a RESTORAL ZN 9 signal when the battery recharges to 12.6VDC, if it is programmed to do so. (See Program item 8.0 BatSupvEn).

The Transmit LED

This LED, located below the TEST and RESET buttons at the left hand corner of the encoder board, flickers during normal operation. When the encoder is generating data for transmission, the LED lights steadily. It also lights steadily (for 20 seconds) upon power up or reboot, when the encoder is in the initialization mode.

Note: During reboot, all eight zones and supervisory functions are inactive.

Zone Input Connections From Radionics' Control Panels & Modules**Connection to D4112**

C601	D4112
⑧ Zone 1	⑤ Alarm Output
⑨ Zone 2	⑦ Alternate Alarm Output
⑥ 12V	③ Aux Power
⑦ GND	④ Ground

Notes: Set the P1 jumper in the upper position to use voltage inputs.
 Set program item 2.0 in the C601 Program to 1.
 Set program item 2.1 and 2.2 in the C601 Program to 0.
 To activate the Alarm Output, make sure the third digit of the loop code is 1.
 To activate the Alternate Alarm Output, install a D136 Relay in socket K5, and make sure the third digit of the loop code is 2.

Connection to D6112

C601	D6112
⑧ Zone 1	⑤ Alarm Output
⑥ 12V	⑦ Aux Power
	⑧ Relay Common
⑨ Zone 2	⑩ Relay NO
⑦ GND	③ Ground

Notes: Set the P1 jumper in the upper position to use voltage inputs.
 Set program item 2.0 in the C601 Program to 1.
 Set program item 2.1 and 2.2 in the C601 Program to 0.
 To activate the Alarm Output, make sure the third digit of the loop code is set to 1.
 To activate the Aux Relay Output, install a D136 Relay in socket K5, and make sure the third digit of the loop code is 2.

Connection to D8112

C601	D8112
⑧ Zone 1	⑥ Alarm Output
⑨ Zone 2	⑦ Alternate Alarm Output
⑩ Zone 3	⑧ Silent Alarm Output
⑥ 12V	③ Aux Power
⑦ GND	④ Ground

Notes: To activate terminal 6 on the D8112, the third digit of your loop code must be 3 or 7. Also make sure that programming at line 75 of the D8112:MAIN Program is set to **No**. To activate terminal 7 on the D8112, the third digit of your loop code must be 4 or 8. Also make sure that programming at line 94 of the D8112:MAIN Program is set to **No**.

Set the P1 jumper in the upper position if you are using voltage inputs, and in the lower position if you are using dry contact inputs.

To activate the Alternate alarm Output, install a D136 Relay in socket K6.

To activate the Silent Alarm Output, install a D136 Relay in socket K7.

Set program item 2.0 in the C601 Program to 1.

Set program items 2.1, 2.2 and 2.3 in the C601 Program to 0.

Connection to D8112 Using D811 Arm Status Relay Module

C601	D811	D8112
	Data	③① Data Out
⑥ 12V	Aux	③ Aux Power
	⑤ Relay Com	
⑦ GND	GND	④ Ground
⑱ Opn/Cls	⑤ Relay NO	

Notes: Set the P4 jumper in the upper position.

Set program item 5.1 in the C601 Program to 1.

Set program item 5.2 in the C601 Program to 3.

Connection to D8112 Using D8129 OctoRelay Module (System Status 9 Mode)

C601	D8129	D8112
	Data	③① Data Out
⑥ 12V	Aux	③ Aux Power
	⑤ Relay Com	
⑦ GND	GND	④ Ground
⑱ Opn/Cls	⑤ Relay NO	

Notes: Set the P4 jumper in the upper position.

Set program item 5.1 in the C601 Program to 1.

Set program item 5.2 in the C601 Program to 3.

Set the D8129 in the System Status 9 Mode.

**Connection to D8112 Using C8137 Encoder Interface Module
(With C601 as Dry Contact)**

C601	C8137	D8112
	Serial In	Data Out
⑥ 12 V	12V In	③ Aux Power
⑦ GND	Com	④ Ground
⑱ Opn/Cls	O/C	

Notes: Set the P1 and P4 jumpers in the lower position.
 Set program item 2.0 in the C601 Program to 0.
 Set program items 2.1 through 2.8 in the C601 Program to 1.
 Set program item 5.0 in the C601 Program to 3.
 Set program item 5.1 in the C601 Program to 0.

QUICK REFERENCE TERMINAL DESCRIPTION

C601 Terminal	Function	Description
1	Not Used	
2	Transmitter Control Terminals	Data output to the transmitter
3		Ground
4		Provides power (+12V) to the transmitter
5	AC Signal In	For 50/60Hz signal and AC supervision
6(+)	Battery Positive (+) or Aux Power Terminal	Connect terminal 6 to the positive terminal of the battery at the panel
7(-)	Battery Negative or Ground Terminal	Connect terminal 7 to the negative terminal of the battery at the panel
8, 9, 10, 11, 13, 14, 15, 16	Protective Zone Inputs	Connect to dry contact or positive voltage inputs
12, 17, 22	System Ground Terminals	Terminals 12, 17, and 22 are system common ground connections
18	Openings & Closings Terminal	Connect the dry contact or voltage inputs at this terminal to the terminal at the panel that indicates armed status
TERMINALS 19 & 20 ARE RESERVED FOR FUTURE USE		
21	Not Used	
J3 J4	Telephone Terminals	J3 is the telephone output to panel J4 is the telephone input from RJ31X
D5100 J6	Programmer Connection	Plug in jack (with D5106 Programmer Interface) from the D5100 Bar Code Programmer here

QUICK REFERENCE JUMPER DESCRIPTION

Jumper	Function	Description
P1	Zone Polarity Jumper	Used with programming options Use upper position for positive voltage (type 1) inputs Use lower position for dry contact to ground (type 0) inputs and dry contact with EOL resistors (type 2) inputs
P2 P3	Phone Supervision Jumpers	Use in left hand position when using Radionics products
P4	Opening/Closings Polarity Jumpers	Used with programming options Use upper position for positive voltage (type 1) inputs Use lower position for dry contact to ground (type 0) inputs
P5	Loop/Ground Start Jumper	Use in upper position for loop start phone line Use in lower position for ground start phone line

Programming Instructions

Programmer Connection

The D5100 Bar Code Programmer must be connected to the C601 Encoder when copying and loading programs. Make this connection at the Programmer Connection (J6) located at the end of the terminal strip on the C601. This connection can be performed while the encoder is powered up. **Note:** Connect a D5106 Programmer Interface to the D5100 Programmer Connector Cord.

1. Make sure your D5100 has been loaded with the C601 Product Handler.
2. Plug the D5100 Data/Power cord into the J6 Programmer Connector.
3. Advance the D5100 display to a C601 program file. (See *D5100 Bar Code Programmer Operation Manual*.)
4. Press the Power Up/Reset Button. The red LED stays lit until the programming session is complete and the connector removed.
5. Perform the desired function (i.e., copy or load program).
6. Remove the programmer connection cord.
7. Wait until the encoder has completed its initialization; the red LED starts to blink. This takes about 20 seconds.

Note: A Restoral Zn 9 message, followed by a zone status report is sent on power up and after the new program initialization routine.

Accessing the C601 Handler

To access the C601 Encoder Product Handler, advance to the **C601** prompt and stroke **Enter**. When you see the **C601:New File** prompt, stroke **Enter** and add the name you want to call the file, then stroke **Enter** again. Start programming for the C601 Encoder at the **1.1 Acct: 0001** prompt. During programming the red LED at the lower left hand side of the encoder board lights steadily.

Copying and Loading the Panel

Note: The D5100 Programmer cannot communicate with the C601 Encoder unless the voltage being supplied to the C601 is at least 9.6VDC.

Advance to the **C601:New File** prompt as above. Stroke either **Copy Panel** or **Load Panel**, as required. The prompt **Reset Target** appears. Press the Reset button on the encoder board. Stroke **Copy Panel** or **Load Panel**, as required. The **C601:** prompt appears with the filename you just entered.

Account and System ID Numbers

In order for the D6500 to determine which installation is transmitting reports, each installation must be programmed with an Account and System ID number. The Account number must be programmed into each Radionics C601 Encoder system. However, it may happen that this number is the same as another company's installation operating in the same region, on the same frequency. For this reason, each installation has to be programmed with a unique System ID number. This System ID number makes it possible for the receiver to distinguish between one dealer's account and that of another dealer. It is assigned to the Radionics C6560 RF Line Card.

This section describes how to program the Account and System ID numbers.

Prompt & Default	Selections	Description
1.1 Acct 0001	0001-8000	Enter a 4 digit Account number between 0001 and 8000.
1.2 SysID 001	001-255	Enter a three digit System ID number between 001 and 255. The number must match the intended receiver/line card number.

Programming Zones

The C601 Encoder has eight programmable zones. These have to be programmed with an input type and a polarity type. The input type must be the same for all eight zones, but the polarity type can vary for each zone.

2.0 InputTyp 1	0-3	<p>The Input Type defines the kind of inputs you want. <i>InputTyp</i> can be either dry contact to ground, voltage or dry contact with EOL resistors. All eight inputs must be configured with the same input type.</p> <p>0= Dry contact to ground inputs 1= Positive voltage inputs 2= Dry contact with EOL resistor inputs 3= Not operational (for future use)</p> <div style="border: 1px solid black; padding: 5px;"> <p>Note: When you choose 1, set the P1 jumper in the +12V position.</p> </div> <p>When using a C601 with a C8137 Encoder Interface, program this item as 0.</p>
----------------	-----	--

2.1 Zn1Polar 0	0 or 1	<p>The Polarity type defines how the Zone responds. For example, whether +12V present is the alarm or the restored condition.</p> <p>Dry contact to ground (<i>InputTyp</i> 0) inputs.</p> <p>Program 0 Open= Alarm Closed= Restored (Normal)</p> <p>Program 1 Open= Restored (Normal) Closed =Alarm</p> <p>(Cont'd)</p>
2.2 Zn2Polar 0		
2.3 Zn3Polar 0		
2.4 Zn4Polar 0		
2.5 Zn5Polar 0		
2.6 Zn6Polar 0		
2.7 Zn7Polar 0		
2.8 Zn8Polar 0		

DescriptionPositive voltage (*InputTyp 1*) inputs

Program 0 +12VDC= Alarm

0VDC= Restored (Normal)

Program 1 +12VDC= Restored (Normal)

0VDC = Alarm

Dry contact with 1K Ω EOL resistor (*InputTyp 2*) inputs

Program 0 Open= Trouble

Closed= Restored (Normal)

Short= Alarm

Program 1 Open= Alarm

Closed = Restored (Normal)

Short= Trouble

QUICK REFERENCE CHART 1

Program Items 2.0 - 2.8		Report Response Conditions		
Input Typ #	Zn# Polar #	Alarm	Restore	Trouble
Type 0 Dry Contact to Ground	Polarity 0	Open	Closed	N/A
	Polarity 1	Closed	Open	N/A
Type 1 Voltage	Polarity 0	+12V	0V	N/A
	Polarity 1	0V	+12V	N/A
Type 2 EOL	Polarity 0 (NO)	Short	1K Ω	Open
	Polarity 1 (NC)	Open	1K Ω	Short

Prompt & Default

3.1 Zn1Delay 1
3.2 Zn2Delay 1
3.3 Zn3Delay 1
3.4 Zn4Delay 1
3.5 Zn5Delay 1
3.6 Zn6Delay 1
3.7 Zn7Delay 1
3.8 Zn8Delay 1

Selections

1-7

DescriptionEach Zone can be programmed with a **Delay** time before it goes into alarm.

1=100 msec. delay

2=200 msec. delay

3=500 msec. delay

4=1 sec. delay

5=2 sec. delay

6=5 sec. delay

7=10 sec. delay

Prompt & Default	Selections	Description
4.1 Zn1Report 3	0-7	Each Zone can be programmed separately to send Reports via RF. 0= Zone disabled 1= Only alarm messages sent 2= Only restoral messages sent 3= Alarm and restoral messages sent 4= Only trouble messages sent 5= Trouble and Alarm messages sent 6= Trouble and restoral messages sent 7= Trouble, alarm, and restoral messages sent
4.2 Zn2Report 3		
4.3 Zn3Report 3		
4.4 Zn4Report 3		
4.5 Zn5Report 3		
4.6 Zn6Report 3		
4.7 Zn7Report 3		
4.8 Zn8Report 3		

Note: Zone trouble reports only apply to dry contact with EOL resistor inputs.

Supervision Reports

The C601 Encoder can be programmed to send opening and closing reports to the panel. In order to do so, the type of reports wanted, and the polarity of the zone to report openings and closings must be programmed.

Note: When you configure a D8112 to report openings and closings digitally, the RF closing report is not sent until the digital acknowledgment tone has been received. If the digital closing report is not acknowledged, the RF closing report is sent when the control panel goes into communications failure. If the panel is configured (using a D8129 OctoRelay or a D811 Arm Status Relay Module) to send opening and closing reports solely by RF, the report is sent at the end of the entry/exit delay time.

5.0 O/CEn 0	0, 1, 2, 3	To Enable the C601 to send Opening and Closing reports, enter a value: 0= No messages sent 1= Only closing messages sent 2= Only opening messages sent 3= opening and closing messages sent
5.1 O/CPolar 0	0 or 1	Opening /Closing Polarity (see Quick Reference Guide 2) 0= With dry contacts: Open contacts report opening. Closed contacts report closing. With voltage contacts: +12V contacts report opening. 0V contacts report closing. 1= With dry contacts: Open contacts report closing. Closed contacts report opening. +12 contacts report closing. 0V contacts report opening.

Note: Make sure the P4 jumper setting corresponds with the programming.

QUICK REFERENCE GUIDE 2

Program Item 5.1		Report Response Condition	
Input Type	Polarity	Opening	Closing
Dry Contacts	0	Open	Ground
	1	Ground	Open
Positive Voltage	0	+12V	0V
	1	0V	+12V

Prompt & Default

5.2 O/CDelay 3

Selections

0-7

Description

To program the **Delay** time before a change of state is recognized, and an opening or closing is transmitted, enter a value:

0= 200 msec.

1= 1 sec

2= 2 sec.

3= 5 sec. (Minimum recommended for D8112)

4= 10 sec.

5= 20 sec.*

6= 1 min.

7= 2 min.

* To perform a disable/restart on a D8112 using R.A.M, set item 5.2 to 5 (20 sec.) to prevent false open/close reports.

Phone Line Supervision

The C601 Encoder can be programmed to transmit change of phone line status reports. In order to do so, enable the option, and program the type of reports to be transmitted.

6.0 PhSupvEn 0

0, 1, 2, 3

To Enable the C601 to transmit reports regarding Phone line Supervision, enter a value:

0= No messages sent

1= Trouble messages sent

2= Restoral messages sent

3= Trouble and restoral message sent

6.1 PhSupvTime 2

1-7

Phone Supervision Time. To program the period the phone line must be out of service before the C601 transmits a trouble signal, enter one of the following values. (This is also the period the phone line must be back in service before a restoral signal is sent).

1= 15 sec.

2= 30 sec.

3= 45 sec.

4= 60 sec.

5= 90 sec.

6= 120 sec.

7= 240 sec.

The D6500 Receiver interprets these signals as TROUBLE ZN B and RESTORAL ZN B.

Power Supervision

The C601 Encoder can be programmed to send AC Trouble and Restoral, Low Battery and Battery Restoral reports. It can also be set to determine a 60 cycle AC signal to ensure the accuracy of the internal clock, and its subsequent reports.

Prompt & Default	Selections	Description
7.0 AC SupvEn 0	0, 1, 2, 3	<p>To Enable the C601 to Supervise the AC line to the panel and transmit Supervision reports, enter a value:</p> <p>0= No messages sent 1= Only AC trouble messages sent 2= Only AC restoral messages sent 3= AC trouble and restoral messages sent</p> <p>The D6500 interprets this signal as TROUBLE ZN 0 and RESTORAL ZN 0.</p> <p>Note: If <i>ACSupvEn</i> is programmed 0, and an AC line is not present, connect a wire between terminals 5 and 7.</p>
7.1 AC60Hz Yes	Yes or No	<p>The C601 counts the cycles (50 or 60Hz) in the AC signal to assure accuracy of the internal clock, and its subsequent automatic test reports. This ensures that the clock in the C601 system does not gain or lose time (accurate within +/- 2 minutes a month).</p> <p>Enter Yes for U.S. and Canadian installations (60Hz) Enter No for European installations (50 Hz)</p>
8.0 BatSupvEn 3	0, 1, 2, 3	<p>To Enable the C601 to Supervise the Battery voltage status and transmit a trouble signal when it drops below 11.2V, enter a value:</p> <p>0= No messages sent 1= Only low battery messages sent 2= Only battery restoral messages sent 3= Low battery and restoral messages sent</p> <p>The D6500 interprets this signal as TROUBLE ZN 9 and RESTORAL ZN 9.</p>

Power Up/Reset

9.0 ResetEn 1	0 or 1	<p>To Enable the C601 to supply a power up/Reset message when power is initially applied, or when the RESET button is pressed, enter a value:</p> <p>0= No messages sent 1= Message sent</p> <p>The D6500 Receiver interprets this signal as RESTORAL ZN 9 and a zone status report.</p>
----------------------	--------	--

Automatic Test Reports

The C601 can generate automatic test reports at programmable intervals (5 minutes-24 hours). The interval is the period between automatic test reports. After the report is sent, the time of the next test report is advanced the interval set in the program. All time programming is done in the 24 hour HHMM format, where H=hour and M=minute.

Prompt & Default	Selections	Description
10.0 TestEn 1	0-7	To Enable the C601 to send a Test signal, enter a value: 0= No test sent 1= Test every 24 hrs. 2= Test every 12 hrs. 3= Test every 6 hrs. 4= Test every 2 hrs. 5= Test every 1 hr. 6= Test every 30 mins. 7= Test every 5 mins. The D6500 Receiver interprets this signal as RESTORAL Z N E.
10.1 Nxt TstHr 0	00-23	Enter Hour(s) to Next Test
10.2 Nxt TstMn 1	00-59	Enter Minutes to Next Test

Transmission Format

Before the transmission of messages is possible, a transmitting sequence must be chosen. (For further detail see *Operation and Installation*.)

Important: The C6560 Line card has a built-in buffer to filter out redundant messages sent by multiple bursts of an RF transmitter. If the same message is received within a three minute period, it is not displayed a second time. This prevents single alarm messages being printed more than once. An exception to this would be if a restoral message from the same event is received within the three minute period. In this case, the alarm signal is decoded and displayed a second time.

1.0 RFRounds 15	6-15	Select a number, 6-15, for the number of RF data Rounds in each burst of radio transmission
11.1 RFBursts 3	1-63	Select a number, 1-63, for the number of RF carrier Bursts transmitted for each event
11.2 Intrval 20	1-255	Select a number, 1-255, for the Interval (in seconds) between the end of one RF transmission burst and the beginning of the next burst.

Prompt & Default**Selections****Description****11.3 Random 7**

0, 1, 3, 7, 15, 31, 63

The timing between bursts can be programmed to be **Random**. Random intervals reduce clashing reports by staggering bursts. **Warning! The randomized interval must not be greater than the interval between bursts.**

0= No variation between bursts

1= +1 second variation

3= +3 second variation

7= +7 second variation

15= +15 second variation

31= +31 second variation

63= +63 second variation

11.4 PreData 6

0-7

When radio signals are passing through a repeater, it takes a finite period of time for the repeater to detect the signal and turn on the transmitter. In this situation, the radio carrier should be transmitted **Preceding the Data**. To set the delay between the time the transmitter powers up and transmits data, enter a value:

0= No delay

1= 10 msec. delay

2= 20 msec. delay

3= 50 msec. delay

4= 100 msec. delay

5= 200 msec. delay

6= 500 msec. delay

7= 1 sec. delay

Central Station Reports

The following reports are sent to the central station:

MESSAGE FROM C601 ENCODER	D6500 INTERPRETATION	DEFINITION
Zone 1-8 Report: Alarm	ALARM ZNS 1-8	Zones 1-8 report an alarm condition
Zone 1-8 Report: Trouble	TROUBLE ZNS 1-8	Zones 1-8 report a trouble condition
Zone 1-8 Report: Restoral	RESTORAL ZNS 1-8	Zones 1-8 report a restoral condition
Opening	OPENING REPORT	System disarmed
Closing	CLOSING REPORT	System armed
Phone supervision		
Trouble	TROUBLE ZN B	Trouble condition on the phone line
Restoral	RESTORAL ZN B	Restoral condition on the phone line
AC Supervision		
Trouble	TROUBLE ZN 0	Loss of AC power
Restoral	RESTORAL ZN 0	Restoral of AC power
Battery Supervision		
Low Battery	TROUBLE ZN 9	Low battery condition
Restoral	RESTORAL ZN 9	Battery restoral
Power Up/Reset	RESTORAL ZN 9	Power has been applied to the C601 Encoder, or the RESET button has been pressed
Test	RESTORAL ZN E	Automatic Test Report Signal

Specifications

Power Input

+12VDC from Aux Power on Radionics panels

Current Consumption

Idle: 25mA

Transmitting: 500mA (with a C472 or C474 Radio Transmitter)

Operating Temperature

0°F to 120°F

Physical Dimensions

5" x 3" x 1"

Telephone Connections

Two RJ31X Modular Jacks

FCC Registration Number

AJ916R-61924-AL-N

© 1991 Radionics, Inc., Salinas, CA, U.S.A. All rights reserved.

™ The Radionics logo is a registered trademark of Radionics, Inc., Salinas, CA.



Radionics™

Radionics, Inc., 1800 Abbott Street
Salinas, CA, 93901, U.S.A.
Technical Support: (800) 538-5807

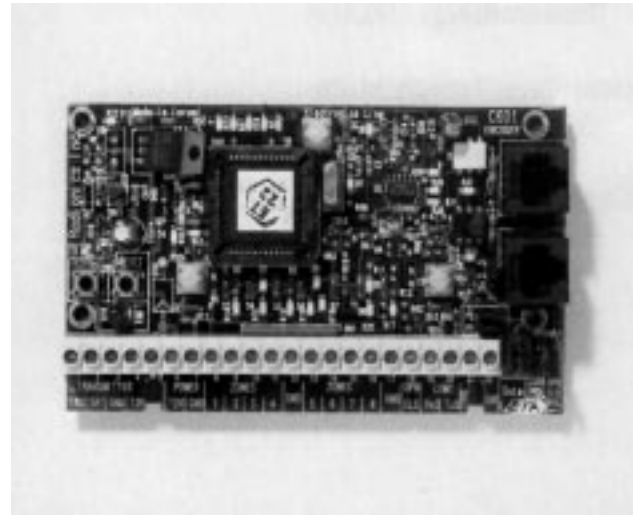
Radionics, 1 Park Gate Close, Bredbury
Stockport, Cheshire, SK6 2SZ, England
Technical Support: (061) 494-0851

C601 Encoder Module Specifications Sheet



Features

- Eight Zone Slave Device
- Separate Opening and Closing Zone
- Six Reportable Supervisory Functions including opening/closing, low battery, AC power loss, telephone line loss, automated test signals and power on/reset
- 8000 RF Account Numbers
- Programmable Test Signal Intervals
- Telephone Line Supervision Circuit
- Mounts into D8103/D6103 Enclosure
- Uses D5100 Bar Code Programmer



Description

The FastLink Long Range RF Alarm Monitoring System gives you the ability to offer cost effective monitoring services to clients who want a higher level of security than that offered by digital communicators alone. The FastLink System also gives you the ability to monitor remote subscriber facilities which are unavailable through the switched telephone network.

The C601 Encoder Module is located at the protected premises. It is usually mounted in the same enclosure as the control panel, and can be connected to a Radionics D8112, D6112*, or D4112† Control/ Communicator.

The C601 Encoder Module sends transmissions to a D6500 Security Receiver equipped with a C6560 Line Card and C6565 Terminator Card. It is normally used in conjunction with a C472TX, C472TP, C474TX or C474TP Transmitter Module. The C601 Encoder has eight protective zones which can be activated by a voltage input or an open or shorted loop. Optional programming parameters include: zone activation delay time, zone polarity and choice of alarm/trouble/restoral reports. Each zone is programmed individually, allowing customization of the system for each installation.

The C601 Encoder also performs various supervisory functions. Opening and closing signals can be sent reliably. The unit can monitor the status of the battery and AC power. There is a built-in telephone line monitoring circuit capable of generating a trouble message on loop start or ground start telephone lines. Automated test signals can be programmed to send at various time intervals from once each day to once every five minutes.

The length of each transmission, the interval between transmissions, and the number of repeat transmissions for each event are all selectable.

Programming of the C601 Encoder is accomplished at the protected premises with a standard Radionics D5100 Bar Code Programmer (using the D5106 Programmer Interface) loaded with the C601 Product Handler.

* When the C601 is used with a D6103 enclosure, a D137 bracket is required.

† When the C601 is used with a D4112, a D6103 (with a D137 bracket) or D8103 enclosure is required.

Specifications

Power

+12VDC supplied by Aux Power on the control/communicator.

Current Consumption

Idle: 25mA

Transmitting: 500mA

Operational Temperature

-30°C - +50° C

Telephone Connections

RJ31X Modular Jacks

Dimensions

5" x 3" x 1"

FCC Registration Number

AJ915R-61924-AL-N

The C601 complies with specifications in Part 15 of the FCC Rules for Class B Computing devices.

© 1991 Radionics, Inc., Salinas, CA, U.S.A. All rights reserved.

™ The Radionics logo is a registered trademark of Radionics, Inc., Salinas, CA, U.S.A.



Radionics™

Radionics, Inc., 1800 Abbott Street
Salinas, CA 93901, U.S.A.
Technical Support: (800) 538-5807