

**ELECTRONIC  
REVISION  
CONTROLLED**

**Technical Manual  
DVD Player 0601-001**

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## 1. TECHNICAL SPECIFICATIONS AND REFERENCES

### 1.1. Pinout Information



The DVD Outline and Installation drawing is shipped with the packaging contents. If you are unable to locate the drawing, use the Rosen Aviation website to download a copy.

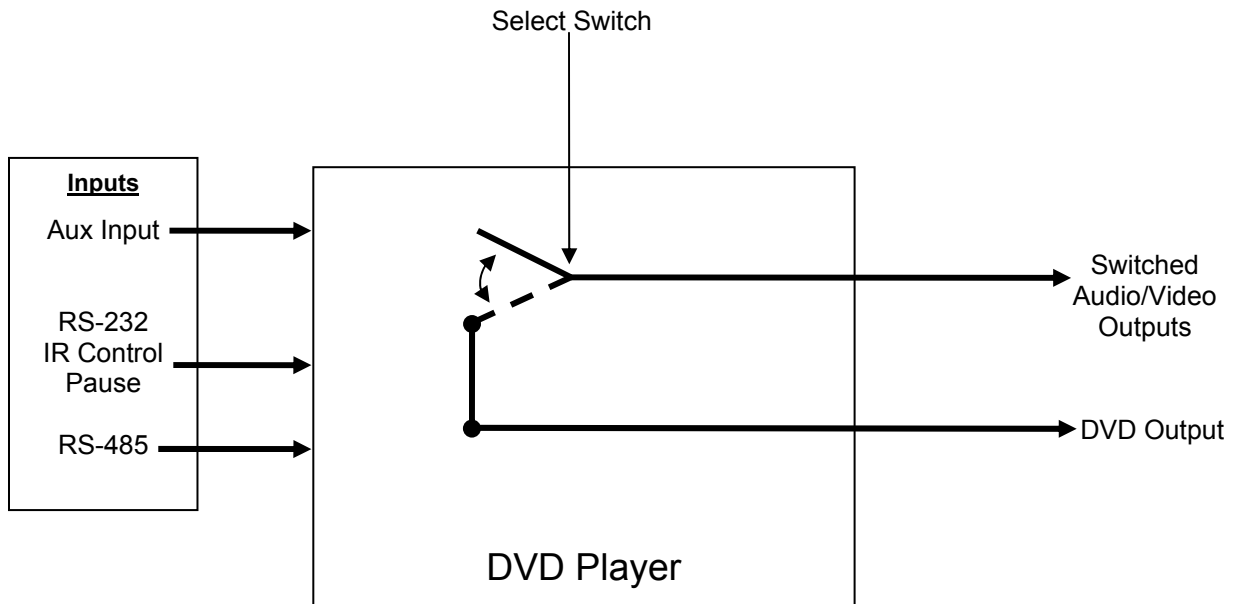
[www.rosenaviation.com](http://www.rosenaviation.com)

Click on the *Support & Documentation* tab. Select *Technical Drawings & Pinouts*, *Source Equipment*, and then choose the *DVD Player* drawing link.

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### 1.2. Connection Options

It is possible to connect an auxiliary audio/video source and switch between that source and this DVD audio video by connecting to the switched audio/video outputs.



**Note:** The switched audio/video outputs can be controlled with the select switch input or through RS-485, RS-232, or infrared (IR) remote control.

### 1.3. Control Inputs



For Controller information, access [www.rosenaviation.com](http://www.rosenaviation.com). Click on *Accessories* and select External Controllers. Scroll through the list to find the desired product.

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**RS-485:** Rosen DVD can be controlled with RS-485. For specifications see [Section 3, RS-485 Information](#).

**RS-232:** Rosen DVD can also be controlled with RS-232. For specifications please contact Rosen Aviation technical support at 541.342.3802.

**IR Remote:** Rosen DVD can be controlled using one of several of Rosen Aviation's pre-programmed remote controls. Visit the [Rosen Aviation](#) website for details.

**Cabin Briefing Pause:** pauses the DVD player for briefings when the cabin briefing pause input is enabled (low).

**Optional Cabin Briefing Pause:** The switched video output can be set to pause the DVD player and automatically switch to auxiliary video input during cabin briefings. To enable this feature, press the following button sequence (with no disc in the player):

1. ◀◀, ▶▶, ▲, ▼, ◀◀, ▶▶, ▲, ▼, ▲, ▲, ▲
2. While watching the red DVD LED, press the ▲eject button one time.
  - a. If the DVD LED light blinks twice, then the optional feature is active.
  - b. If the DVD LED light blinks once, cabin brief / pause is in default mode.

**Note:** Enabling or disabling this feature can be done one time per button sequence. To change the feature again, re-enter the button sequence.

**Select Switch:** Select switch is a momentary switch that can be used to switch between DVD and auxiliary audio/video sources when an auxiliary source is connected. Pressing select switch changes the source from DVD player to auxiliary source (or vice-versa).

### 1.4. Audio/Video Outputs

**DVD Video Out:** 1V peak-to-peak (p-p), 75 ohms

**DVD Audio Out:** 1V RMS (0db FS), 600 ohms

**Auxiliary Video In:** 1V p-p, 75 ohms

**Auxiliary Audio Line In:** 1V RMS nominal, 4.7k ohms; Max Input Voltage 5.8V p-p

**Switched Video Out:** 1V p-p, 75 ohms; unity gain from auxiliary video input

**Switched Audio Out:** Unity gain from auxiliary audio input is 600 ohms

**Note:** While there is an accepted standard of 1V p-p for video signals, the audio output level from different devices can vary considerably. If there is a large difference in audio level when switching between the DVD player and the auxiliary input, try adjusting the audio output level of the auxiliary device. If there is no output adjustment and the audio level from the auxiliary device is higher than the DVD player audio, then use a potentiometer, step-down transformer, or resistors to attenuate the auxiliary audio level. If the auxiliary audio level is lower than the DVD player audio, then install a line-level amplifier or step-up transformer to boost the signal.

## 2. ROSEN DVD PLAYER INDICATORS, CONTROLS AND CONNECTIONS



Figure 1 Rosen DVD Player front case showing LEDs and control buttons

### 2.1. Front Case Indicators and Controls

**Menu:** If a disc is inserted, pressing Menu will access the disc menu. If no disc is inserted, pressing Menu will access the DVD player's setup menu.

**◀◀:** Press this control to navigate left in a menu. If held in while a DVD is playing, this button will serve as a "rewind" for the DVD. Continue to hold the button and different rewind speed options become available.

**▶▶:** Press this control to navigate right in a menu. If held in while a DVD is playing, this button will "fast forward" the DVD. Continue to hold the button and different fast forward speed options become available.

**▲:** Press this control for navigating up through menu options.

**▼:** Press this control for navigating down through menu options.

**▶||:** Press this control to pause or play the movie. When navigating through a menu, this button is used to select menu options.

**■:** Press this control to stop the movie. When ■ is pressed once, press the ▶ button to resume the movie where it was stopped. If the ■ button is pressed twice, then pressing the ▶ button will start the movie back at the beginning.

**⏻:** Press the power button to turn the DVD player ON or put it into Standby Mode.

**▲:** Press the eject button to eject or insert a disc.

**Note:** The DVD player default setting is Auto Play.

#### LED Definitions:

All LEDs are inactive when no power is supplied.

**DISK STATUS LED:** Solid green indicates there is a disc in the mechanism; blinking indicates the DVD mechanism is opening or closing; and LED off indicates that there is no disc.

**POWER LED:** Green indicates the unit is powered up; amber indicates the unit is in standby mode.

**IR ACTIVE LED:** Flashes to indicate that an infrared (IR) command has been received.

## 2.2. Multiple DVD Control Setup

Individual control for up to 8 Rosen DVD players is possible. Control options include IR, RS-485 and RS-232.

### 2.2.1. IR Control

Some Rosen IR remote controls have configuration files available which allow separate control for several DVD players. Such controls require a unique network address for each DVD player.

Rosen DVD players have 8 optional network addresses (0-7). The default network address is 0. Complete the following to change the default network address.

1. Press the power button to turn on the Rosen DVD player and ensure that there is no disc inserted.
2. Enter the following sequence to establish a new network address for the DVD player:
  - a. On the DVD player front panel buttons press the following button sequence:  
◀◀, ▶▶, ▲, ▼, ◀◀, ▶▶, ▲, ▼, ▲, ▲, ▲ (must be done with no disc in player)

The network address is ready to be changed. It is set at its default of 0. Every time the ■ button is pressed the network address changes up 1 number. For example, if you press the ■ button one time it will change from 0 to 1. If you press the ■ button three times the network address will be 3. When the desired network address is reached, press the ▶|| button to establish the new network number.

To reset the network address to 0, press the sequence of control buttons again to access the network address change and then press ▶|| to exit.

## 3. RS-485 INFORMATION

This section defines the type, formats, and timing of serial message packets that can be used to control Rosen Aviation equipment through a daisy-chained RS-485 serial connection. All RS-485-enabled Rosen Aviation monitors and other Rosen Aviation equipment will fully implement the applicable messages in this document. A maximum of 31 devices may be connected on a half-duplex network. Each device should be assigned a unique address from 1 to 31. The method for assigning network addresses varies depending on the specific Rosen Aviation product with which you are working.



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The DVD player is set to address 20 by default.

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Please note that Rosen Aviation equipment is not specifically designed to operate as part of a network with other manufacturers equipment unless the other equipment meets the requirements defined in this document.

### 3.2. Communication Protocol

- 9600 baud
- 8 data bits
- 1 stop bit
- no parity

### 3.3. Packet Format

There are typically 3 bytes per message. The first byte is a header byte and the second identifies the specific command. The third byte is the network address. A network address byte of 0 is reserved as the “global” address, in other words all slave units should respond to that command.

### 3.4. Packet Timing

- Within a message packet, there is a maximum time of 20mSec between bytes. Messages with bytes sent more than 20mSec apart will not be recognized by the receiving unit.
- There should be a minimum elapsed time of 50mSec between any two message packets. This allows the given processor sufficient time to process the previous message.
- Messages sent less than 50mSec apart are not guaranteed to be processed by the receiving unit.

### 3.5. Wiring

Rosen Aviation equipment uses a half-duplex wiring layout. Only two RS-485 wires need to be run between each individual unit. On most products, the RS-485 wires have been internally daisy-chained so that four external pins exist on the connector.

### 3.6. Packet Format Descriptions for Single-Disc DVD Control Commands

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x01 “enter” command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x02 “menu left” command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x03 “menu right” command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x04 “menu up” command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x05 “menu down” command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x06 "eject" command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x07 "stop" command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x08 "next chapter" command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x09 "previous chapter" command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x0A "subtitle" command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x0D "Source" command toggles auxiliary output between internal and external source  
Byte 3: network id  
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x0E "Fast Forward" command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x0F "Reverse" command  
Byte 3: network id (value between 1-31) 0 is not a valid id for this command.

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x10 "play" command  
Byte 3: network id  
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x11 "play-pause" toggle command  
Byte 3: network id  
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x13 DVD "menu" command  
Byte 3: network id  
0x00 reserved for global id (all DVD units respond)

Byte 1: 0xB0 DVD Control Header  
Byte 2: 0x20 "DVD power toggle" command  
Byte 3: network id  
0x00 reserved for global id (all DVD units respond)



### 3.7. DVD General Status Request

Byte 1:	0xB8	DVD Status Request Header
Byte 2:	0x01	request general status
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	
<i>Response:</i>		
Byte 1:	0xB9	DVD Status Response Header
Byte 2:	<i>Bits 0-6 Device specific status bits</i>	
Bit 0	0 = disc not loaded, 1 = disc loaded	
Bit 1	0 = disc paused or stopped, 1 = disc playing	
Bit 2	0 = temperature normal, 1 = temperature out of range	
Bit 3	0 = self test passed, 1 = self test failure	
Bit 4	source selection, 0 = internal, 1 = external	
Bit 5	PA/Briefing override status, 0 = input low, 1 = input high	
Bit 6	Unit Power Status, 0 = standby, 1 = on	
Bit 7	always 0	

### 3.8. DVD Addressing

By default, single-disc DVD players are set to network address 20 (0x14 in hex). To change the address to any one of 8 possible values in the range from 20 to 27 (0x14 to 0x1B), use the button sequence described in [Section 2.2, Multiple DVD Control Setup](#).

### 3.9. Network Setup Ping Address

The Ping Address message is used by a “master” device to identify all the attached devices on a network.

Byte 1:	0x88	Ping Message Header
Byte 2:	0x55	Filler byte
Byte 3:	network id (value between 1-31) 0 is not a valid id for this command.	
<i>Response:</i>		
Byte 1:	0x77	Ping Response Header
Byte 2:	<i>bits 0-3 Device Identification</i>	
	0000 = 5.6" monitor	
	0001 = 8.4" monitor	
	0010 = 12" monitor	
	0011 = 15" monitor	
	0100 = 17" monitor	
	0101 = 17" WS monitor	
	0110 = 20" SL II monitor	
	0111 = 24" WS monitor	
	1000 = 7" monitor	
	1001 = 6.5" monitor	
	1100 = Universal Lift	
	1101 = DVD player	
	1111 = RosenView unit	

bits 4-7  
 0001 = Display, power slave only  
 0010 = Display, video slave only  
 0011 = Display, power and video slave  
 0100 = RS-485 Master  
 0000 = other (DVD, Universal Lift, or RosenView)

Byte 3: (for DVD player)  
 bits 0-6 Device specific status bits  
 Bit 0 0 = disc not loaded, 1 = disc loaded  
 Bit 1 0 = disc paused or stopped, 1 = disc playing  
 Bit 2 0 = temperature normal, 1 = temperature out of range  
 Bit 3 0 = self test passed, 1 = self test failure  
 Bit 4 reserved (not defined)  
 Bit 5 reserved (not defined)  
 Bit 6 reserved (not defined)  
 Bit 7 always 0

Example: If the responding unit is a single-disc DVD player, with a disc loaded and playing, the ping response bytes would be 0x77, 0x0D, 0x03.

## 4. TROUBLESHOOTING

### 4.1. Disc Removal—Use of disc with paper label NOT recommended



Testing has shown that use of discs with paper labels may jam and potentially be irretrievable from the DVD player. Industry research indicates that use of discs with paper labels may render discs unreadable.

**Emergency Eject Feature:** If a disc has become jammed in the player, shut off DVD power for an hour, then turn it on and press the eject button. If the disc is still stuck, press and hold the eject button for ten seconds and the eject motor will be forced on for 5 seconds.

If the emergency eject feature fails to eject the disk, contact Rosen Aviation Technical Support at 541.342.3802 and request the disc removal tool (P/N **100690**) and instruction (P/N **100691**) be sent.

## 5. REVISION HISTORY

Revision	Date	Revision Description	EC #
A	9/11/06	New Release	06199
B	10/11/06	Update housing photos	06267
C	11/20/06	Add TSG info	06317
D	12/15/06	Add disc removal tool info to troubleshooting	06366
F	04/02/07	Add RS-485 information	07085
G	04/17/07	Update cabin briefing pause	07130