



DRP16 Series

DVR Surge Protector & UPS

User Guide



DITEK Corporation

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Thank you for trusting DITEK to protect your valuable Digital Recording equipment and welcome to a growing group of value conscious people who use DITEK Surge Protection products.

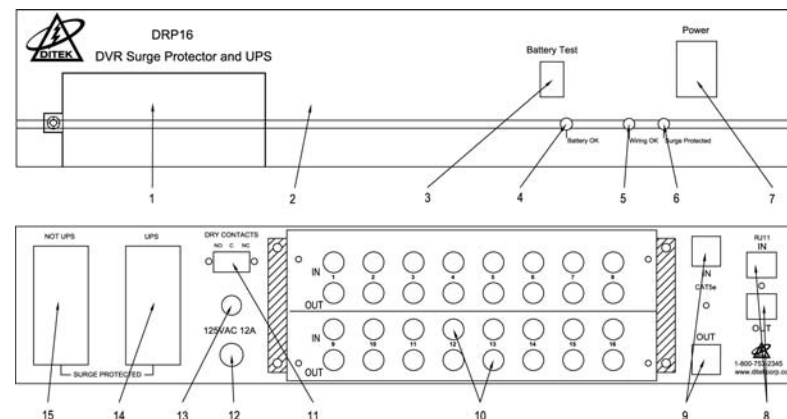
This User Guide explains the features of the DRP16, DRP16C, DRP16B and the DRP16T models.

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DVR Surge Protector & UPS

Catalog Number DTK-DRP16

Catalog Number DTK-DRP16C

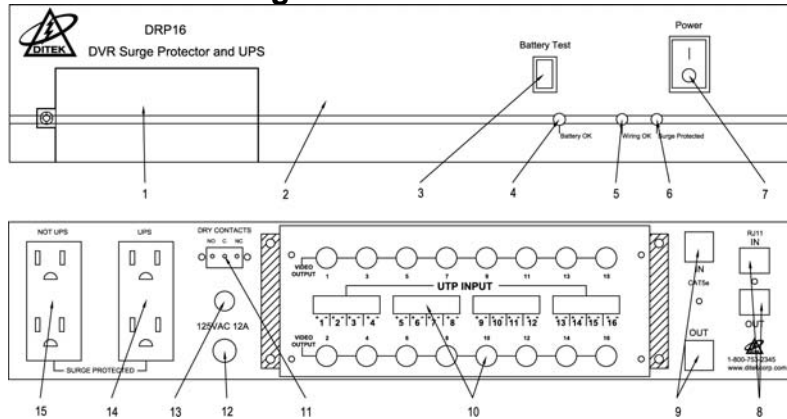


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KEY:

1. Replaceable Battery
2. Internal Warning Audible Alarm (Inside)
3. Battery Test Switch
4. Battery Functional Indicator
5. Wiring Functional Indicator
6. Surge Protection Functional Indicator
7. On/Off Master Switch
8. 1 set of RJ11 Tele/Data Line Jacks – Surge Protected
9. 1 set of RJ45 Category 5 Data Jacks – Surge Protected
10. 16 set BNC Video Ports (IN/OUT) - Surge Protected
11. Dry Contacts
12. Power Cord
13. 15A Resettable Circuit Breaker
14. Surge Protected Duplex Outlet – UPS Protected
15. Surge Protected Duplex Outlet – Not UPS Protected

Catalog Number DTK-DRP16B



KEY:

1. Replaceable Battery
2. Internal Warning Audible Alarm (Inside)
3. Battery Test Switch
4. Battery Functional Indicator
5. Wiring Functional Indicator
6. Surge Protection Functional Indicator
7. On/Off Master Switch
8. 1 set of RJ11 Tele/Data Line Jacks – Surge Protected
9. 1 set of RJ45 Category 5 Data Jacks – Surge Protected
10. 16 UTP Input and 16 BNC Output ports - Surge Protected
11. Dry Contacts
12. Power Cord
13. 15A Resettable Circuit Breaker
14. Surge Protected Duplex Outlet – UPS Protected
15. Surge Protected Duplex Outlet – Not UPS Protected

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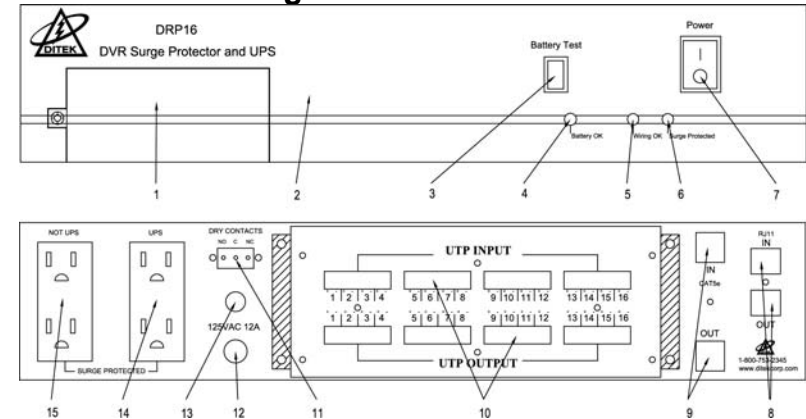
About DITEK Corporation

Founded in 1988, DITEK Corporation is a premier manufacturer of integrated surge protection solutions for the rapidly growing global electronic security industry. Constant innovation drives DITEK's strong growth and market penetration. Product designs are at the forefront of current technology due to frequent input from industry leaders who design, manufacture, and install video surveillance, fire and intrusion detection, access control, and building automation systems.

DITEK is an ISO 9001 certified manufacturer, and DITEK's Technical Support Team is available 24/7 to answer application or installation questions by phone or Internet live chat. Live and Web-based dealer training, CEU courses, and collateral materials are readily available.

DITEK provides the industry's most comprehensive line of surge protection devices for power, video, voice, and data signals in industrial, commercial, institutional, and residential applications. DITEK's system-specific product designs cover the full spectrum of application requirements, delivering optimum protection and performance.

Catalog Number DTK-DRP16T



KEY:

1. Replaceable Battery
2. Internal Warning Audible Alarm (Inside)
3. Battery Test Switch
4. Battery Functional Indicator
5. Wiring Functional Indicator
6. Surge Protection Functional Indicator
7. On/Off Master Switch
8. 1 set of RJ11 Tele/Data Line Jacks – Surge Protected
9. 1 set of RJ45 Category 5 Data Jacks – Surge Protected
10. 16 UTP Input and 16 UTP Output ports - Surge Protected
11. Dry Contacts
12. Power Cord
13. 15A Resettable Circuit Breaker
14. Surge Protected Duplex Outlet – UPS Protected
15. Surge Protected Duplex Outlet – Not UPS Protected

1. Replaceable Battery

The DRP16 Series is equipped with a replaceable battery. Replacement of the battery should be done with the unit in an off position and unplugged from the wall outlet to ensure no AC voltage exists. The battery has a limited lifespan. Battery duration will decrease with repeated usage and age. If battery duration becomes extremely short, it may be time to replace the battery. The battery must be replaced with a sealed lead acid battery rated to 12V 5.5AH. Contact your authorized DITEK dealer. (See battery warnings on page 7 of this manual)

2. Internal Warning Audible Alarm

When the DRP16 is switched on, the audible alarm will sound once for safety diagnosis. After 5 seconds, the DRP16 will check the strength of the battery. If the battery is weak, the audible alarm will sound continuously for 30 seconds. Alarm will sound at any time for battery failure. Contact your authorized DITEK dealer.

3. Battery Test Switch

Press this button to test the status of battery. The battery indicator LED will light up if the voltage of the battery is greater than 11.5V.

4. Battery Functional Indicator

When the DRP16 is powered up by the master switch, it performs a self-test to determine battery condition. If the audible alarm sounds for 30 seconds, the DRP16 needs to charge for 24 hours. Then, retest the battery by depressing the Battery Test Switch. The indicator should light as the switch is depressed. If, after charging, the indicator fails to light when the switch is depressed, the battery needs to be replaced. Contact your authorized DITEK dealer.

5. Wiring Functional Indicator Light

This indicator instantly alerts you of incorrect outlet wiring at your facility (either no ground circuit or a reversed polarity in the building wiring). If this light is off, consult a qualified electrician to examine your building wiring.

6. Surge Protection Functional Indicator Light

This indicator shows the status of your AC surge protection circuitry. This indicator is lighted when the unit has active surge protection on the AC power circuit. Should one or more of your camera circuits lose surge protection, it will be evidenced by signal degradation appearing on the monitor screen for that particular camera. Should the surge protector self sacrifice on the data line circuit, it will be evidenced by "noise" on that line.

7. On/Off Master Switch

The main power switch controls the power to all of the outlets. "I" means ON and "O" means OFF.

DRP16T**Electrical Specifications**

Class: Digital Recorder Protector / Battery Back-Up
 Installation Point: Audio-video Point of Use
 Connection Method: 6 Foot Power Cord
 Continuous Current: 12 Amps
 Response Time: <5 nS
 MCOV: 130VAC
 Operating Frequency: 50 – 60 Hz
 AC Protection Modes: L – G, L – N, N – G
 Service Voltage: 125 VAC
 Diagnostics: Surge Protection Active, Line Fault, Dry Contact (120 VAC, 1A Max)
 EMI/RFI Noise Filtering: 150KHz – 100mHz up to 58dB
 Max. Surge Current: 58,500Amps (Peak)
 Max. Energy Dissipation: 1665 Joules (Single Pulse)
 Features: 4 AC Outlets, 16 - In / 16 - Out Coax, and 2 In/2Out RJ Connectors
 Battery Backup Rating: 450VA / 250W (Max.)
 Battery Output Voltage: 120VAC +5%
 Battery Charge Mode: Full Time
 Battery Recharge Time: 12 Hours from total discharge (Typical)
 Battery Life: 3-6 Years (Typical)
 Battery Back up Response Time: 4 mS

Phone/Fax/Modem Protection Specifications

Connection Method: RJ11
 Max. Spike Energy: 160 Joules
 Clamping Voltage: 395V

Data Line Protection Specifications

Class: CAT5e Data Line Protector
 Connection Method: Modular Plug RJ45
 Continuous Current: 0.3 Amps
 Response time: <1nSec
 MCOV: 8VDC
 Peak Pulse Power Dissipation: 3KW (10/1000uS)
 Nominal Clamp Voltage: 6.8V

DVR Protection Specifications

Designed for baseband video channel signal transmission over UTP cable. Can be used for either NTSC, SECAM or PAL video signal. Built-in impedance matching device and filter for video signal transmission. Compatible with qualified cameras with Built-in UTP transmitter.
 Class: UTP Video Protector
 Connection Method: Pluggable Terminal Block
 Wire size: 26-12 AWG
 Peak Pulse Power Dissipation: 4.5KW (10/1000uS) per module
 Nominal Clamp Voltage: 6.8V (L-G) 2.8V (L-L)
 Frequency: DC-10 MHz
 Typical Insertion Loss: <0.1 dB
 Characteristic Impedance: 100 Ohms
 Mating Transceiver: DTK-DPBP, DTK-PVP-TPV, DTK-DP4P-TPV

DRP16B

Electrical Specifications

Class: Digital Recorder Protector / Battery Back-Up
 Installation Point: Video Point of Use
 Connection Method: 6 Foot Power Cord
 Continuous Current: 12 Amps
 Response Time: <5 nS
 MCOV: 130VAC
 Operating Frequency: 50 – 60 Hz
 AC Protection Modes: L – G, L – N, N – G
 Service Voltage: 120 VAC
 Diagnostics: Surge Protection Active, Line Fault, Dry Contact (120 VAC, 1A Max)
 EMI/RFI Noise Filtering: 150KHz – 100mHz up to 58dB
 Max. Surge Current: 13,500Amps (Peak)
 Max. Energy Dissipation: 1665 Joules (Single Pulse)
 Connections: 4 AC Outlets, 16 – In UTP / 16 - Out BNC, 1 In/1Out RJ 11, and 1 In/1Out RJ 45Connectors
 Battery Backup Rating: 450VA / 250W (Max.)
 Battery Output Voltage: 120VAC +-5%
 Battery Charge Mode: Full Time
 Battery Recharge Time: 12 Hours from total discharge (Typical)
 Battery Life: 3-6 Years (Typical)
 Battery Back up Response Time: 4 mS

Phone/Fax/Modem Protection Specifications

Class: Phone/Fax/Modem protector
 Connection Method: RJ11
 Max. Spike Energy: 160 Joules
 Clamping Voltage: 395V

Data Line Protection Specifications

Class: CAT5e Data Line Protector
 Connection Method: Modular Plug RJ45
 Continuous Current: 0.3 Amps
 Response time: <1nSec
 MCOV: 6VDC
 Peak Pulse Power Dissipation: 3KW (10/1000uS)
 Nominal Clamp Voltage: 6.8V

DVR Protection Specifications

Class: UTP Video Protector
 Connection Method: Terminal Block / BNC
 Peak Pulse Power Dissipation: 3KW (10/1000uS) per module
 Nominal Clamp Voltage: 6.8V
 Frequency: 10 MHZ
 Typical Insertion Loss: <0.1 dB
 Characteristic Impedance: 75 Ohm Input, 100 Ohm Output

8. RJ11 Telephone Jacks

The DRP16 is equipped with a phone/fax/modem line surge protector. Connect the incoming phone line to the "IN" jack and a patch cord (not supplied) to the "OUT" jack and then to the equipment.

9. Category 5 Data Jacks

These jacks are marked "IN" and "OUT". Connect the incoming 100 Base-T cable to the jack marked "IN". Use a Cat 5 patch cable (not supplied) to connect the "OUT" jack to the DVR.

10a. Video Cable Protection (DRP16 and DRP16C)

The DRP16 has multiple pairs of BNC connector ports marked "IN" and "OUT". Connect the incoming coaxial cable from camera to the "BNC IN", and coaxial cable from the "BNC OUT" to the DVR

10b. Video Cable Protection (DRP16B)

The DRP16B has multiple pairs of UTP connector ports marked "IN" and BNC marked "OUT". Connect the incoming UTP cable from camera to the "UTP IN", and coaxial cable from the "BNC OUT" to the DVR

11. Dry Contacts – Form C (N/O, N/C, Common)

The DRP16 is equipped with dry contacts used to remotely monitor the power status of the DVR surge protector and UPS.

12. AC Power Cord

The DRP16 is equipped with a 15A 125VAC rated power cord.

13. 15 Amp Resettable Circuit Breaker

If the DRP16 is overloaded, it will trigger this circuit breaker and disconnect the power. If this occurs, the black button will pop out, and AC power will be removed from all outlets. (Battery power will still be provided to UPS protected outlets.) If this happens, unplug at least one piece of equipment and reset the circuit breaker by pressing the button back into place.

14. UPS Protected AC Power Outlets

These 2 battery power supplied outlets provide surge protection and battery back up. Plug your digital video recorder into this outlet.

IMPORTANT: Do not plug a laser printer into the UPS protected outlets. Because the power demand is much higher than other peripherals, it may cause the circuit breaker to trip or cause an overload condition.

15. Non-UPS Protected AC Power Outlets

These 2 outlets will not supply battery back up. These are for the monitor and printer that do not require battery back up to record images. Surge protection is always there, even if the main power is switched off.

Setting Up the DRP16

- Step 1:** Please note that the battery in DRP16 is expected to lose some charge in shipping and storage. It will recharge completely in approximately 4 hours of normal operation. Do not expect full battery run time during this charging period.
- Step 2:** Plug the DRP16 into an electrical outlet that does not share circuit with heavy electrical loading (e.g. air conditioner, refrigerator, etc.) If "wiring functional" light does not light up, refer to page 5, Item No.5.
- Step 3:** Plug your DVR power cord into the DRP16 UPS protected outlet. (Not Suitable for Camera Power Supplies)
- Step 4:** Connect the coaxial or UTP cable runs from cameras to the "IN" connectors on the DRP16. Attach patch cords of at least 3 feet in length to the "OUT" connectors on the DRP16 and then to the feed ports on your DVR.
- Step 5:** Connect the incoming 100 Base-T line to the "IN" jack on the DRP16 marked "CAT-5e" Connect patch cord at least 3 feet in length between the "OUT" jack and your DVR.
- Step 6:** Connect your incoming phone/fax/modem line to the DRP16 jack marked "RJ IN". Use a patch cord of at least 3 feet in length to connect the "OUT" jack to your equipment.
- Step 7:** Plug in your DVR, then switch on the DRP16. It will run a 5 second self-test to determine the strength of the battery. Refer to page 5, Item No. 2.

Physical Specifications

Housing: Painted Steel
 Housing Color: Black
 Housing Size: 17.13" W x 7.31" L x 3.5" H
 Weight: 14.00 lbs

Battery Backup Specifications and Replacement

The DRP16 battery back up is rated at 450VA / 250W. It has an expected battery life of 3 to 6 years dependant on weather and storage. The battery run time for a typical DVR system is 13 to 15 minutes.

Replace battery only with a rechargeable sealed lead acid rated to 12V 5.5AH. Improper battery might cause premature failure and excessive heat. Servicing of batteries should be performed or supervised by personnel knowledgeable about batteries and required precautions.

MAKE SURE THE DRP16 IS IN THE OFF POSITION AND UNPLUGGED FROM THE WALL OUTLET. To replace the battery, remove the hex head screw and remove the access panel. Pull the battery strap to slide battery out, grab the battery and slide out the remainder of the way. Remove the positive and negative leads. Contact DITEK for battery disposal.

DRP16C

Electrical Specifications

Class: Digital Recorder Protector / Battery Back-Up
 Installation Point: Video Point of Use
 Connection Method: 6 Foot Power Cord
 Continuous Current: 12 Amps
 Response Time: <5 nS
 MCOV: 130VAC
 Operating Frequency: 50 – 60 Hz
 AC Protection Modes: L – G, L – N, N - G
 Service Voltage: 120 VAC
 Diagnostics: Surge Protection Active, Line Fault, Dry Contact (120 VAC, 1A Max)
 EMI/RFI Noise Filtering: 150KHz – 100mHz up to 58dB
 Max. Surge Current: 13,500Amps (Peak)
 Max. Energy Dissipation: 1665 Joules (Single Pulse)
 Connections: 4 AC Outlets, 16 - In / 16 - Out BNC, 1 In/1Out RJ 11, and 1 In/1Out RJ 45Connectors
 Battery Backup Rating: 450VA / 250W (Max.)
 Battery Output Voltage: 120VAC +-5%
 Battery Charge Mode: Full Time
 Battery Recharge Time: 12 Hours from total discharge (Typical)
 Battery Life: 3-6 Years (Typical)
 Battery Back up Response Time: 4 mS

Phone/Fax/Modem Protection Specifications

Class: Phone/Fax/Modem protector
 Connection Method: RJ11
 Max. Spike Energy: 160 Joules
 Clamping Voltage: 395V

Data Line Protection Specifications

Class: CAT5e Data Line Protector
 Connection Method: Modular Plug RJ45
 Continuous Current: 0.3 Amps
 Response time: <1nSec
 MCOV: 6VDC
 Peak Pulse Power Dissipation: 3KW (10/1000uS)
 Nominal Clamp Voltage: 6.8V

DVR Protection Specifications

Class: Coaxial Video Protector
 Connection Method: BNC
 Peak Pulse Power Dissipation: 3KW (10/1000uS) per module
 Nominal Clamp Voltage: 6.8V
 Frequency: 10 MHZ
 Typical Insertion Loss: <0.1 dB
 Characteristic Impedance: 75 Ohm

DRP16

Electrical Specifications

Class: Digital Recorder Protector / Battery Back-Up
 Installation Point: Video Point of Use
 Connection Method: 6 Foot Power Cord
 Continuous Current: 12 Amps
 Response Time: <5 nS
 MCOV: 130VAC
 Operating Frequency: 50 – 60 Hz
 AC Protection Modes: L – G, L – N, N – G
 Service Voltage: 120 VAC
 Diagnostics: Surge Protection Active, Line Fault, Dry Contact (120 VAC, 1A Max)
 EMI/RFI Noise Filtering: 150KHz – 100mHz up to 40dB
 Max. Surge Current: 13,500Amps (Peak)
 Max. Energy Dissipation: 1665 Joules (Single Pulse)
 Connections: 4 AC Outlets, 16 - In / 16 - Out BNC, 1 In/1Out RJ 11, and 1 In/1Out RJ 45Connectors
 Battery Backup Rating: 450VA / 250W (Max.)
 Battery Output Voltage: 120VAC +-5%
 Battery Charge Mode: Full Time
 Battery Recharge Time: 12 Hours from total discharge (Typical)
 Battery Life: 3-6 Years (Typical)
 Battery Back up Response Time: 4 mS

Phone/Fax/Modem Protection Specifications

Class: Phone/Fax/Modem protector
 Connection Method: RJ11
 Max. Spike Energy: 160 Joules
 Clamping Voltage: 395V

Data Line Protection Specifications

Class: CAT5e Data Line Protector
 Connection Method: Modular Plug RJ45
 Continuous Current: 0.3 Amps
 Response time: <1nSec
 MCOV: 6VDC
 Peak Pulse Power Dissipation: 3KW (10/1000uS)
 Nominal Clamp Voltage: 6.8V

DVR Protection Specifications

Class: Coaxial Video Protector
 Connection Method: BNC
 Peak Pulse Power Dissipation: 3KW (10/1000uS) per module
 Nominal Clamp Voltage: 2.8V
 Frequency: 10 MHZ
 Typical Insertion Loss: <0.1 dB
 Characteristic Impedance: 75 Ohm

To reinstall battery, insert the positive and negative leads making sure the negative terminal is facing towards the rear and right of the unit ; place the battery strap above the battery and gently slide the battery inside making sure that it slides all the way in and making sure that the terminals do not touch the wall of the battery enclosure. If the battery does not fully insert, slide the battery out and make sure the wires are not being kinked in the back; straighten out the battery leads and reinstall the battery. Once the battery is completely in, install the access panel and reinstall screw.

Safety Precautions

CAUTION: Do not plug DRP16 into a power strip or daisy chain into another surge protector.

CAUTION: Risk of Energy Hazard, 12V, 5.5 Ampere-hour battery. Before replacing batteries, remove conductive jewelry such as chains, wrist watches, and rings. High energy through conductive materials could cause severe burns.

CAUTION: Do not dispose of batteries in a fire. The batteries may explode.

CAUTION: Do not open or mutilate batteries. Released material is harmful to the skin and eyes. It may be toxic.

CAUTION: DRP16 has an internal battery source. When the On/Off switch is on, the battery supplied outlets are energized, even when the unit is not plugged in.

CAUTION: Use only indoors and in dry locations.

CAUTION: Connect the DRP16 to a NEMA 5 – 15R, grounded outlet. Make sure the branch is protected by a fuse or circuit breaker, and not servicing equipment requiring heavy electricity (e.g. refrigerator, air conditioner, copier, etc.)

CAUTION: Never plug the DRP16 into itself; this will cause a short circuit.

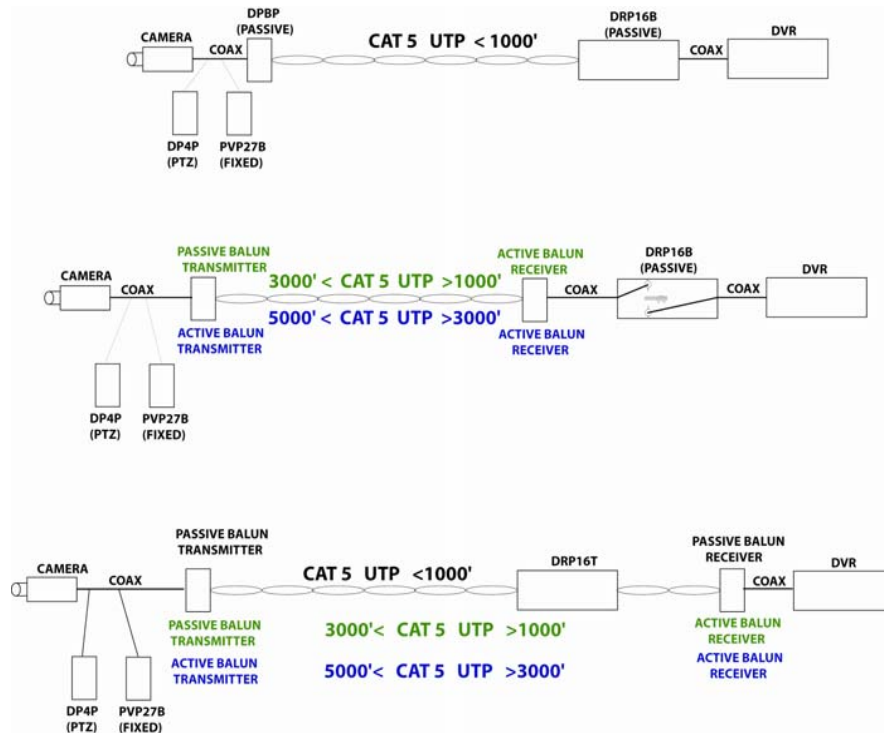
NOTICE: For use in a controlled environment. Use of the DRP16 in life support applications is NOT recommended.

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

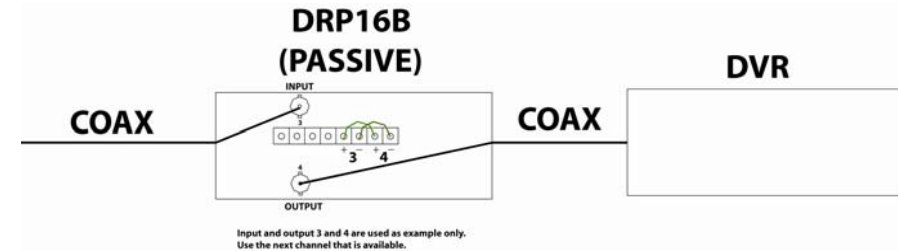
Please note that baluns should be used in the following configurations: Active-to-Active, Passive-to-Passive, or Passive(transmit)-to-Active(receive). Maximum transmission range for Active-to-Active baluns connected through a DRP16-B is 3,000 to 5,000 feet, and up to 1,000 feet using Passive-to-Passive baluns. Passive(transmit)-to-Active(receive) transmission range is 1,000 to 5,000 feet.

Actual transmission ranges may be higher or lower than these distances and will depend upon the baluns being used. Consult the balun manufacturers' specifications for your application. Please refer to the diagram on page 8. If you are connecting an active balun receiver, install the DRP16 between the receiver and DVR and refer to the UTP connection diagram on page 9.

Typical Connection Methods and Distances



Balun UTP – Coax Connection – DRP16B



Note: Input and output 3 and 4 are used as examples only. Use the next channel that is available.