LTC 8784/50, LTC 8784/60
RS-232 to Biphase Converter

Installation Instructions

Eng

Philips
Communication &
Security Systems

PHILIPS

IMPORTANT SAFEGUARDS

1. Read Instructions - All the safety and operating instructions should be read before the unit is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the unit and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Cleaning - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture - Do not use this unit near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, or any area which is classified as a wet location.
8. Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only with a stand, tripod, bracket, or mount recommended by the manufacturer, or sold with the product. Any mounting of the unit should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
   An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
9. Ventilation - Openings in the enclosure, if any, are provided for ventilation and to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. This unit should not be placed in a built-in installation unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.
11. Grounding or Polarization - This unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
    Alternately, this unit may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
12. Power-Cord Protection - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
13. Power Lines - An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.
14. Overloading - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.
15. Object and Liquid Entry - Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
16. Servicing - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
17. Damage Requiring Service - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power-supply cord or plug is damaged.
    b. If liquid has been spilled, or objects have fallen into the unit.
    c. If the unit has been exposed to rain or water.
    d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
    e. If the unit has been dropped or the cabinet has been damaged.
    f. When the unit exhibits a distinct change in performance--this indicates a need for service.
18. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
19. Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.
20. Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded. U.S.A. models only--Section 810 of the National Electrical Code, ANSI/NFPA
    No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
21. Lightning - For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power-line surges.

FCC & ICES INFORMATION

(U.S.A. AND CANADIAN MODELS ONLY)

WARNING - This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Intensional or unintensional changes or modifications not expressly approved by the party responsible for compliance shall not be made. Any such changes or modifications could void the user's authority to operate the equipment.

If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No.004-000-00345-4.

Warning
This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

SAFETY PRECAUTIONS

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This label may appear on the bottom of the unit due to space limitations.

The lightning flash with an arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE UNITS NOT SPECIFICALLY DESIGNED FOR OUTDOOR USE TO RAIN OR MOISTURE.

Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

Power Disconnect. Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON-OFF switch is in the ON position. The power cord is the main power disconnect for all units.

External Power Supplies
Use only the Recommended Power Supplies. Power supplies must comply with the requirements of the latest version of IEC 65/VDE 0860. Substitutions may damage the unit or cause a fire or shock hazard.

24 VAC Units

Do Not Exceed 30 VAC Input. Voltage applied to the unit's power input should not exceed 30 VAC. Normal input voltage is 24 VAC. User supplied wiring from 24 VAC supply to unit must be in compliance with electrical codes (Class 2 power levels). Do not ground 24 VAC supply at power supply terminals or at unit's power supply terminals.

220-240 V, 50 Hz Power Cords

220-240 V, 50 Hz power cords, input and output, must comply with the latest versions of IEC Publication 227 or IEC Publication 245.

SECURITE

ATTENTION

RISQUE DE CHOC ELECTRIQUE. NE PAS OUVRIR.

DANGER: POUR ÉVITER TOUT RISQUE D'ÉLECTROCUTION, NE PAS OUVRIR LE BOÎTIER. IL N'Y A PAS DE PIÈCES REMPLAÇABLES À L'INTÉRIEUR. POUR TOUTE RÉVISION, S'ADRESSER À UN TECHNICIEN SPÉCIALISÉ.

En raison de limitation de place, cette étiquette peut être placée sur le dessous de l'appareil.

L'éclair fléché dans un triangle équilatéral, avertit l'utilisateur de la présence d'une "tension dangereuse" non isolée à l'intérieur de l'appareil et d'une valeur suffisante pour constituer un risque d'électrocution.

Le point d'exclamation contenu dans un triangle équilatéral, avertit l'utilisateur de la présence, dans la documentation qui accompagne l'appareil, de consignes d'utilisation et de maintenance importantes.

ATTENTION
POUR ÉVITER LE RISQUE D'ÉLECTROCUTION OU D'INCENDIE, NE PAS EXPOSER À LA PLUIE OU À L'HUMIDITÉ UN APPAREIL NON CONÇU POUR UNE UTILISATION EXTÉRIEURE.

Attention: L'installation doit être effectuée uniquement par du personnel de service qualifié conformément à la réglementation du Code Electrique National ou à la réglementation locale.

Disjonction de l'alimentation. Les appareils avec ou sans commutateurs ON-OFF sont alimentés à chaque fois que le cordon d'alimentation est branché à la source d'alimentation; toutefois, les appareils disposant de commutateurs ON-OFF ne fonctionnnent que lorsque le commutateur ON-OFF est sur la position ON. Le cordon d'alimentation est la disjonction d'alimentation principale pour tous les appareils.

Sources d'alimentation extérieures
Utiliser uniquement les sources d'alimentation recommandées. Les sources d'alimentation doivent être conformes aux réglementations de la dernière version IEC 65/VDE 0860. Toute modification peut endommager l'appareil ou provoquer un incendie ou un choc électrique.

Appareils 24 VCA

Ne pas excéder 30 VCA. La tension appliquée à l'entrée d'alimentation de l'appareil ne devrait pas excéder 30 VCA. Toute installation électrique fournissant du 24 Volts courant alternatif doit être conforme aux codes électriques. (Niveaux d'alimentation de la Classe 2). Ne pas brancher une prise de terre sur les bornes d'alimentation 24 Volts ou aux bornes d'alimentation de l'appareil.

Les cordons secteur 220-240 V, 50 Hz

Les cordons secteur 220-240 V, 50 Hz, entrée et sortie, doivent êtro conformes aux versions les plus récentes de la publication 227 de la C.I.E. ou à la publication 245 de la C.I.E.

SICHERHEITSVORKEHRUNGEN

VORSICHT

RISIKO EINES ELEKTRISCHEN SCHLAGES NICHT ÖFFNEN!

VORSICHT: UM EINEN ELEKTRISCHEN SCHLAG ZU VERMEIDEN, ABDECKUNG NICHT ENTFERNEN. WARTUNGEN ALLER ART QUALIFIZIERTEM PERSONAL ÜBERLASSEN.

Aus Platzgründen kann diese Warnung auf der Unterseite des Gerätes angebracht sein.

Das Blitzsymbol im gleichseitigen Dreieck soll den Benutzer auf nicht isolierte "Hochspannung" im Gehäuse aufmerksam machen, die eventuell stark genug ist, um einen elektrischen Schlag zu verursachen.

Das Ausrufezeichen im gleichseitigen Dreieck soll den Benutzer auf wichtige Bedienungs- und Wartungsanleitungen in der dem Gerät beigefügten Literatur aufmerksam machen.

WARNUNG
UM FEUER ODER ELEKTRISCHE SCHLÄGE ZU VERMEIDEN, SETZEN SIE DAS GERÄT NIEMALS REGEN ODER FEUCHTIGKEIT AUS.

Achtung! Die Installation sollte nur von qualifiziertem Kundendienstpersonal gemäß jeweilig zutreffender Elektrovorschriften ausgeführt werden.

Netzanschluß. Geräte mit oder ohne Netzschalter haben Spannung am Gerät anliegen, sobald der Netzstecker in die Steckdose gesteckt wird. Das Gerät ist jedoch nur betriebsbereit, wenn der Netzschalter (EIN/AUS) auf EIN steht. Wenn man das Netzkabel aus der Steckdose zieht, dann ist die Spannungszufuhrung zum Gerät vollkommen unterbrochen.

Externe Netzgeräte

Nur vom Hersteller empfohlene Netzgeräte verwenden! Die Netzgeräte müssen der jeweils gültigen Version der IEC 65/VDE 0860 Bestimmungen entsprechen. Andere Ersatznetzgeräte können das vorliegende Gerät beschädigen und Feuer oder Elektroschlag bewirken.

24 VAC Geräte

Achtung! 30 Volt Eingangswechselspannung darf für 24 VAC Modelle nicht überschritten werden. Normal-betrieb findet bei 24 Volt Wechselspannung statt. Die Kabel- bzw. Drahtverbindung vom Netzgerät zu dem vor-liegenden Gerät muß die Bestimmungen der Schutz-klasse II erfüllen. Nicht die 24-Volt-Leitung erden weder am Netzgerät noch an den Anschlußklemmen des vorlie-genden Gerätes.

220-240 V, 50 Hz Netzkabel, Eingang und Ausgang

220-240 V, 50 Hz Netzkabel, Eingang und Ausgang, muß die neueste Version der IEC Vorschriften, Veröffentlichung 227 oder 245, erfüllen.

PRECAUCIONES DE SEGURIDAD

PRECAUCION

RIESGO DE CHOQUE ELECTRICO. ¡NO ABRIR!

PRECAUCION: PARA REDUCIR EL RIESGO DE CHOQUE ELÉCTRICO, FAVOR NO ABRIR LA CUBIERTA. ESTE EQUIPO NO CONSTA DE PIEZAS O PARTES QUE REQUIEREN SERVICIO O MANTENIMIENTO. PARA REPARACIONES FAVOR REFERIRSE A UN TÉCNICO CALIFICADO.

Debido a limitaciones de espacio, esta etiqueta puede aparecer en la parte inferior de la unidad.

El símbolo representado por un relámpago con punta de flecha dentro de un triángulo equilátero, se muestra con el objetivo de alertar al usuario que existen "voltages peligrosos" sin aislamiento, dentro de la cubierta de la unidad. Dichos voltages pueden ser de tal magnitud que constituyen un riesgo de choque eléctrico a personas.

El símbolo de exclamación dentro de un triángulo equilátero, se muestra con el objetivo de alertar al ususario de que instrucciones de operación y mantenimiento importantes acompañan al equipo.

PELIGRO
PARA EVITAR EL PELIGRO DE INCENDIO Ó CHOQUE ELÉCTRICO, NO EXPONGA A LA LLUVIA Ó HUMEDAD, EQUIPOS QUE NO HAN SIDO DISEÑADOS PARA USO EXTERIOR.

Atención: La instalación de este equipo debe ser realizada por personal capacitado, solo en acuerdo, y en cumplimiento de normas del "National Electric Code" (Código Eléctrico Nacional) ó las normas del Gobierno Nacional Local.

Para Desconectar la Alimentación: Unidades no equipadas con interruptores ON/OFF, son alimentadas cuando el cable de alimentación es conectado a la corriente eléctrica. Las unidades equipadas con interruptores son alimentadas de igual forma, pero adicionalmente requieren que el interruptor esté posicionado en ON. El cable de alimentación es el medio principal de desconexión del equipo.

Fuentes de Alimentación Externas

Usar solo las fuentes de alimentación recomendadas. Las fuentes de alimentación deben cumplir con los requisitos de la versión más reciente de la IEC 65/VDE 0860. El uso de substitutos puede dañar la unidad, ó crear peligro de incendio o choque eléctrico.

Unidades de 24 VCA: No exceder 30 VCA de entrada. Voltage suplido a la unidad no debe exceder 30 VCA. Voltage de entrada normal es de 24 VCA. El cableado de 24 VCA provisto por el usuario debe cumplir con las normas eléctricas (Clase 2 de niveles de alimentación). No conectar los 24 VCA a tierra en las terminales de la alimentación ó a las terminales de la fuente de alimentación de la unidad.

220-240 V, los cables eléctricos de 50 Hz:

220-240 V, los cables eléctricos de 50 Hz, de entrada y de salida, deben cumplir con las versiones mas recientes de la publicación IEC 227 ó la Publicación IEC 245.

CONTENTS

UNPACKING

Unpack carefully. This is electronic equipment and should be handled with care.

Check for the following items:

- LTC 8784/50 or LTC 8784/60 Data Converter unit.
- Power supply adapter.
- 1.8m (5.75 feet) power supply cable with bayonette plug.
- 3m (10 feet) 6-conductor data cable with RJ-11 connectors.
- Subminature 9pin-D to RJ-11 Adapter.

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. If any items are missing, notify your Philips Communication & Security Systems Sales Representative or Customer Service.

The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

SERVICE

If the unit ever needs repair service, the customer should contact the nearest Philips Communication & Security Systems Service Center for return authorization and shipping instructions.

DESCRIPTION

The LTC 8784 Series are data converters designed to convert Philips "Receiver/driver and AutoDome RS-232 Control Code Protocol" into Allegiant biphase control code.

The Philips "Receiver/driver and AutoDome RS-232 Control Code Protocol" is a simplex RS-232 data format designed to communicate with the Philips line of receiver/drivers, AutoDome cameras, LTC 8784 converters, and other compatible accessory devices. Complete information on the protocol is published in a manual which is available from your local Philips CSS Publication Distribution Center (Document number 3935 890 01511).

The input RS-232 baud rate of the LTC 8784 Series is fixed at 9600 baud, 1 stop bit, 8 data bits, no parity, and no handshake. The device generating the RS-232 data will need to conform to these specifications.

The LTC 8784 Series unit is supplied with a data cable and adapter which allows it to be connected directly to the RS-232 serial port of a PC. If the unit will be connected to another type of connection or another RS-232 device, the supplied cable may need to be modified or adapted as necessary.

An appropriate power supply and interface cable is supplied to provide power to the LTC 8784 Series unit.

POWER

Model No.	Rated Voltage	Voltage Range	Nominal Power[1]
LTC 8784/60	120 VAC, 50/60 Hz	105 to 132	3 W
LTC 8784/50	220-240 VAC, 50/60 Hz	195.5 to 253	3 W

1. At rated voltage.

INSTALLATION

Mounting

The LTC 8784 Series data converters are rated for indoor use only. If desired, four holes are provided for mounting the unit to a flat surface.

It is recommended that the converter unit is located within 3 m (10 feet) of the device generating the RS-232 signals so the supplied cable can be used. If this is not possible, an appropriate length of cable suitable for use with RS-232 signals (not supplied) will need to be installed between the RS-232 device and the LTC 8784 unit. If the distance between the RS-232 device and the LTC 8784 unit is much over 20-30 meters (60-90 ft), the use of 'short haul modems' (supplied by others) or other RS-232 line extender devices may be required. They must be able to support an RS-232 simplex transmission rate of 9600 baud.

Power Supply Connections

The LTC 8784 unit should be installed within 1.8m (5.75 feet) of the mains power source. Connect the 'bayonet' style connector of the power supply cable into the jack located on the side of the converter unit. Plug the power supply adapter into a suitable AC power source.

If the power supply must be located beyond 1.8m, the supplied power supply cable can be extended or replaced with an appropriate user supplied cable. The LTC 8784 is not polarity sensitive, so it does not matter which direction the cable is attached to the power supply adapter.

Data Input Connections

The data input connections to the converter unit vary depending upon the specific application. Although various connection options are possible, two of the more typical applications are described in the sections below. Follow which ever application is most suitable to your configuration. Typical configuration diagrams are included in this manual for use as a reference.

PC RS-232 Interface

In this application, the LTC 8784 is connected directly to the serial port of a PC. The user supplied software installed on the PC must be designed to output "Receiver/driver and AutoDome RS-232 Control Code Protocol" data. This RS-232 data is converted into Allegiant biphase protocol using the LTC 8784 unit. The biphase data is then connected to the AutoDome cameras or Allegiant receiver/driver units as described below.

Attach the supplied 9pin-D to RJ-11 adapter to the serial port of the PC. Connect the supplied 3 m (10 ft) data cable between the adapter on the PC and the RJ-11 jack on the LTC 8784 converter unit. The orientation is not important -- either end may be connected to either device.

Skip to the section on "AutoDome Camera or Receiver/Driver Site Configuration" to complete the installation.

'Other' RS-232 Device Interface

In this application, Allegiant biphase control code is being converted into RS-232 which is then transmitted over some type of RS-232 communication link (fiber optics, microwave, dial-up phone modems, etc.). At the camera side end of the RS-232 transmission link, the RS-232 data is converted back into Allegiant biphase protocol using the LTC 8784 unit. The biphase data is then connected to the AutoDome cameras or Allegiant receiver/driver units as described above.

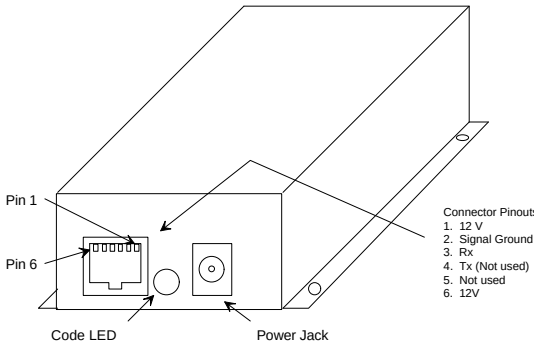
The RS-232 communication link must be able to support an RS-232 simplex transmission rate of 9600 baud.

Connect one end of the supplied 3 m (10 ft) data cable to the RJ-11 jack on the LTC 8784 converter unit. The orientation is not important -- either end of the cable may be used. The other end of the cable must now be interfaced to the RS-232 communication link. The communication link will probably not accept the RJ-11 connector directly, so it may be necessary to use some type of adapter (user supplied) or cut off the RJ-11 connector and splice into the appropriate wires.

If the distance between the RS-232 communication link and the LTC 8784 converter unit is greater than 3 m (10 feet), install an appropriate length of cable suitable for use with RS-232 signals (user supplied). Since the data format is an RS-232 simplex transmission, only 2 signal wires (Data and Ground) will be required.

If the distance between the LTC 8784 unit and the camera site is over 20-30 meters (60-90 ft), the use of 'short haul modems' (supplied by others) or other RS-232 line extender devices may be required. They must be able to support an RS-232 simplex transmission rate of 9600 baud.

If it becomes necessary to splice into the cable, the wiring pinouts of the LTC 8784 series are shown below for your reference:



Interface unit Connector Details

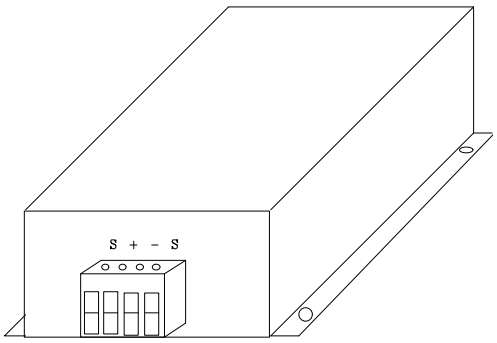
Only the "Rx" and "Signal Ground" connections will be required. The remaining pinouts should be left 'un-connected'.

Data Output Connection

The LTC 8784 Series provides a single biphase control code output. Connect a shielded-twisted-pair cable (BELDEN 8760 or equivalent) from the biphase control code output of the converter unit to the camera site. Typically, a single camera site receiver/driver or AutoDome is connected, but the biphase output of the converter unit is rated to handle up to 8 devices when connected in a "daisy chain" configuration to a maximum of 1.5 km (5000 ft). For a "daisy chain" connection, the cable is "looped" through each AutoDome camera or receiver/driver along the way. The last (and only the last) unit in the "daisy chain" connection should be terminated. All other receiver/drivers should have their terminating resistor removed when the 'looping' cable is connected.

If necessary, it is possible to 'expand' the single biphase output of the converter unit using a LTC 8780 series accessory unit. The LTC 8780 series unit provides up to 15 individual biphase outputs, each rated to handle up to 8 receiver/drivers when connected in a daisy chain configuration to a maximum of 1.5 km (5000 ft). Follow the instructions supplied with the LTC 8780 series unit to configure it as a biphase distribution unit.

The removable terminal block for the biphase code output has four connections: "+", "-", and two "S" (Shields) as shown in the diagram below:



LTC 8784 Series Data Converter Unit

Select and maintain a wire color convention to avoid confusion at the camera site(s).

Example: White to "+", Black to "-", and Shield to "S".

Note that either one of the 2 shield terminals of the interface unit can be connected to the shield wire of the cable.

AutoDome Camera or Receiver/Driver Site Configuration

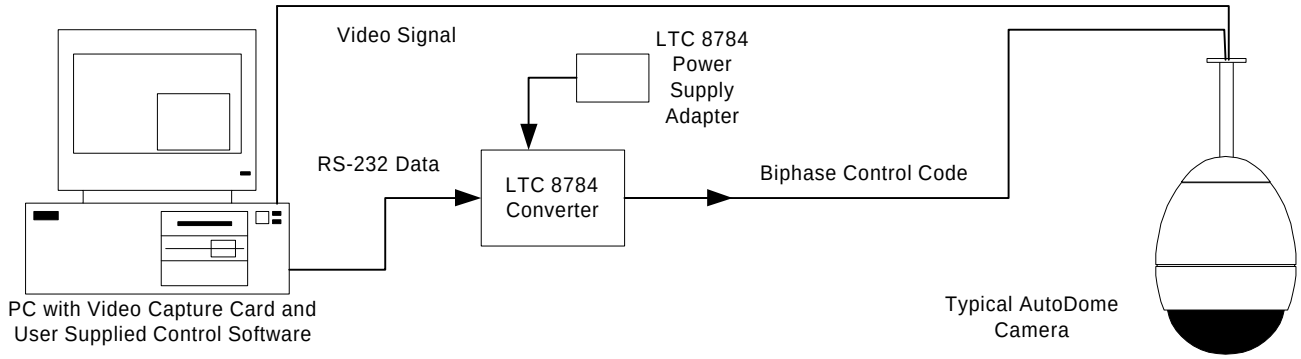
Follow the standard installation instructions as provided with the AutoDome Camera or Allegiant series Receiver/Driver unit to connect the data cable to the unit. Set the Thumbwheel located in the AutoDome camera or receiver/driver to the camera number that will be associated with the software or device generating the RS-232 data.

Video signals from the camera site are NOT associated with this product. The video signal(s) from the camera site(s) should be connected to an appropriate viewing monitor or other video processing equipment (switcher, PC video capture card, etc.).

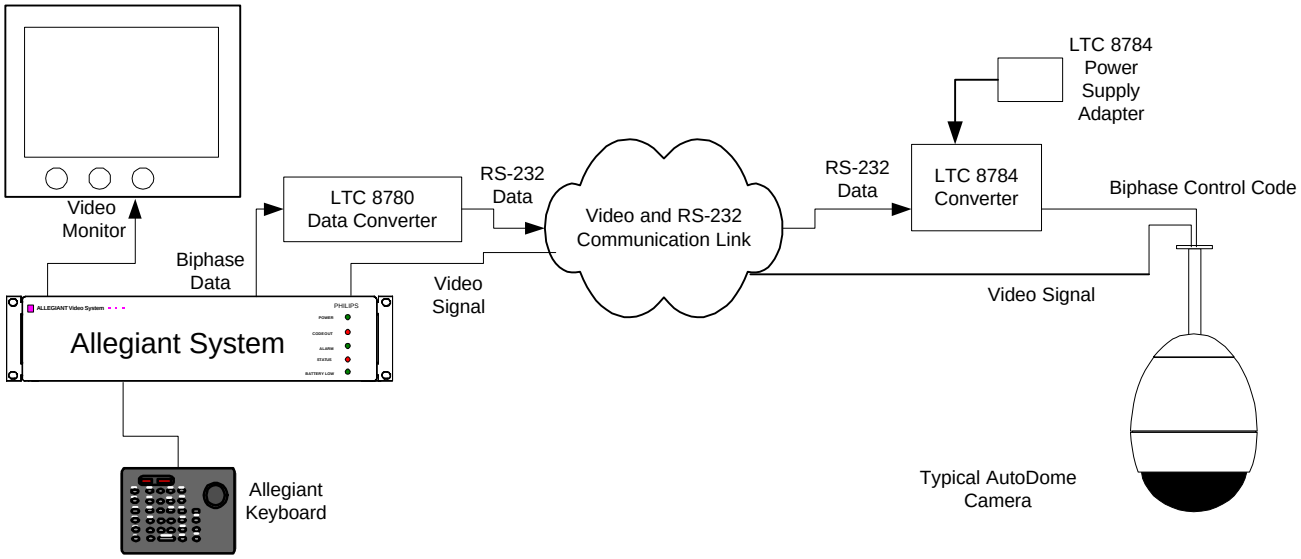
OPERATION

Operation of the LTC 8784 Series is quite simple. An LED in the converter unit will flash to indicate that the unit has converted RS-232 data into biphase control code. No programming or other user adjustments are required.

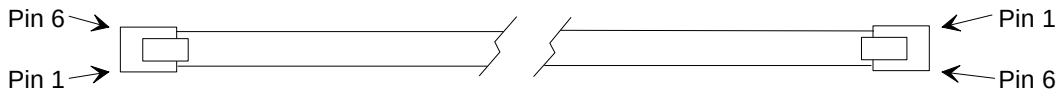
ILLUSTRATIONS



Typical Configuration Using PC As Source Of RS-232 Data



Typical Configuration When Used as Remote RS-232 To Biphase Data Converter



Supplied 6-Conductor 3m (10 ft) Data Cable Detail

Supplied 9-Pin Adapter		Supplied Data Cable		Data ConverterUnit
Computer/Adapter	Adapter	RJ-11 Cable	RJ-11 Cable	Data Converter Unit
9-pin D	RJ-11	Adapter End	Converter End	RJ-11
	6	6	1	1 - 12 V
5 - Ground	5	5	2	2 - Signal Ground
3 - Tx	4	4	3	3 - Rx
2 - Rx	3	3	4	4 - Tx (Not Used)
	2	2	5	5 - Not Used
	1	1	6	6 - 12 V

Supplied 9-Pin To RJ-11 Adapter Designations

3935 890 15411 99-27
Printed In U.S.A.