

# LTC 8781 Series



Security Systems

EN | Instruction Manual  
Time/Date  
Converter Units

# BOSCH

## Important Safeguards

1. **Read, Follow, and Retain Instructions** - All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.
2. **Heed Warnings** - Adhere to all warnings on the unit and in the operating instructions.
3. **Attachments** - Attachments not recommended by the product manufacturer should not be used, as they may cause hazards.
4. **Installation Cautions** - 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 manufacturer-recommended accessories, or those sold with the product. Mount the unit per the manufacturer's instructions. Appliance and cart combination should be moved with care. Quick stops, excessive force, or uneven surfaces may cause the appliance and cart combination to overturn.
5. **Cleaning** - Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a damp cloth for cleaning is sufficient. Do not use liquid cleaners or aerosol cleaners.
6. **Servicing** - Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
7. **Damage Requiring Service** - Unplug the unit from the main AC power source and refer servicing to qualified service personnel under the following conditions:
  - When the power supply cord or plug is damaged.
  - If liquid has been spilled or an object has fallen into the unit.
  - If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
  - If the unit does not operate normally, when following the operating instructions. Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may result in damage, and require extensive work by a qualified technician to restore the unit to normal operation.
  - If the unit has been dropped or the cabinet damaged.
  - If the unit exhibits a distinct change in performance, this indicates that service is needed.
8. **Replacement Parts** - When replacement parts are required, the service technician should use replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electrical shock or other hazards.
9. **Safety Check** - Upon completion of servicing or repairs to the unit, ask the service technician to perform safety checks to ensure proper operating condition.
10. **Power Sources** - Operate the unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact your dealer or local power company.
  - For units intended to operate from battery power, refer to the operating instructions.
  - For units intended to operate **with External Power Supplies**, use only the recommended approved power supplies.
  - For units intended to operate with a limited power source, this power source must comply with EN60950. Substitutions may damage the unit or cause fire or shock.
  - For units intended to operate at 24 VAC, normal input voltage is **24 VAC**. Voltage applied to the unit's power input should not exceed 30 VAC. User-supplied wiring, from the 24 VAC supply to unit, must be in compliance with electrical codes (Class 2 power levels). Do not ground the 24 VAC supply at the terminals or at the unit's power supply terminals.
11. **Coax Grounding** - If an outside cable system is connected to the unit, ensure that the cable system is grounded. U.S.A. models only - Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information regarding 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.
12. **Grounding or Polarization** - This unit may be equipped with a polarized alternating current line plug (a plug with one blade wider than the other). This safety feature allows the plug to fit into the power outlet in only one way. If unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternately, this unit may be equipped with a 3-wire grounding plug (a plug with a third pin, for grounding). This safety feature allows the plug to fit into a grounding power outlet only. If unable to insert the plug into the outlet, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the grounding plug.
13. **Lightning** - For added protection during a lightning storm, or when this unit is left unattended and unused for long periods of time, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

### For Indoor Product

1. **Water and Moisture** - Do not use this unit near water - for example, in a wet basement, in an unprotected outdoor installation or in any area classified as a wet location.
2. **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 electrical shock. Never spill liquid of any kind on the unit.
3. **Power Cord and Power Cord Protection** - For units intended to operate with 230 VAC, 50 Hz, the input and output power cord must comply with the latest versions of IEC Publication 227 or IEC Publication 245.  
Power supply cords should be routed so they are not likely to be walked on or pinched. Pay particular attention to location of cords and plugs, convenience receptacles, and the point of exit from the appliance.
4. **Overloading** - Do not overload outlets and extension cords; this can result in a risk of fire or electrical shock.

### For Outdoor Product

**Power Lines** - An outdoor system should not be located in the vicinity of overhead power lines, electric lights or power circuits, or where it may contact such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching power lines or circuits, as this contact might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.

### For Rack-mount Product

1. **Ventilation** - This unit should not be placed in a built-in installation or rack, unless proper ventilation is provided, or the manufacturer's instructions have been adhered to. The equipment must not exceed its maximum operating temperature requirements.
2. **Mechanical Loading** - Mounting of the equipment in a rack shall be such that a hazardous condition is not achieved due to uneven mechanical loading.



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC SENSITIVE  
DEVICES

#### WARNING:

Electrostatic-sensitive device. Use proper CMOS/MOSFET handling precautions to avoid electrostatic discharge.

**NOTE:** Grounded wrist straps must be worn and proper ESD safety precautions observed when handling the electrostatic-sensitive printed circuit boards.

### FCC & ICES INFORMATION

#### (U.S.A. and Canadian Models Only)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer, or an experienced radio/TV technician for help.

Intentional or unintentional 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. 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.

## Safety Precautions



### CAUTION

RISK OF ELECTRIC SHOCK. DO NOT OPEN!



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



This symbol indicates the presence of uninsulated “dangerous voltage” within the product’s enclosure. This may constitute a risk of electric shock.



The user should consult the operating and maintenance (servicing) instructions in the literature accompanying the appliance.



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.

## Sécurité



### ATTENTION

RISQUE D'ÉLECTROCUTION. NE PAS OUVRIR!



**ATTENTION : POUR ÉVITER TOUT RISQUE D'ÉLECTROCUTION, N'ESSAYEZ PAS DE RETIRER LE CAPOT (OU LE PANNEAU ARRIÈRE). CET APPAREIL NE CONTIENT AUCUN COMPOSANT SUSCEPTIBLE D'ÊTRE RÉPARÉ PAR L'UTILISATEUR. CONFIEZ LA RÉPARATION DE L'APPAREIL À DU PERSONNEL QUALIFIÉ.**



Ce symbole signale que le produit renferme une « tension potentiellement dangereuse » non isolée susceptible de provoquer une électrocution.



Ce symbole invite l'utilisateur à consulter les instructions d'utilisation et d'entretien (dépannage) reprises dans la documentation qui accompagne l'appareil.



Attention : l'installation doit exclusivement être réalisée par du personnel qualifié, conformément au code national d'électricité américain (NEC) ou au code d'électricité local en vigueur.



Coupeure de l'alimentation. Qu'ils soient pourvus ou non d'un commutateur ON/OFF, tous les appareils reçoivent de l'énergie une fois le cordon branché sur la source d'alimentation. Toutefois, l'appareil ne fonctionne réellement que lorsque le commutateur est réglé sur ON. Le débranchement du cordon d'alimentation permet de couper l'alimentation des appareils.

## Table of Contents

Important Safeguards .....	2
FCC Information .....	3
1.0 UNPACKING .....	6
1.1 Parts List .....	6
2.0 SERVICE .....	6
3.0 DESCRIPTION .....	6
4.0 INSTALLATION .....	7
4.1 Power .....	7
4.2 Mounting .....	7
4.3 Control Code Inputs .....	7
4.4 RS-232 Connector .....	7
4.5 Adjustments .....	7
5.0 OPERATION .....	7
6.0 PIN OUTS .....	7
6.1 Code Input Connector .....	7
6.2 RS-232 Input/Output Connector .....	7

## 1.0 UNPACKING

This electronic equipment should be unpacked and handled carefully.

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 Bosch Security Systems Inc. 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.

### 1.1 Parts List

Qty	Item
1	One (1) cable with 15-pin connectors at one end
1	One (1) RS-232 to RS-422 converter

## 2.0 SERVICE

If the unit ever needs repair service, contact the nearest Bosch Security Systems Inc. Service Center for authorization to return and shipping instructions

### Service Centers

#### USA

Phone: 800-366-2283 or 717-735-6638

Fax: 800-366-1329 or 717-735-6639

#### CCTV Spare Parts

Phone: 800-894-5215 or 408-956-3853 or 3854

Fax: 408-957-3198

E-mail: [BoschCCTVparts@ca.slr.com](mailto:BoschCCTVparts@ca.slr.com)

#### Canada

Phone: 514-738-2434

#### Europe, Middle East & Asia Pacific Region

Phone: 32-1-440-0711

For additional information, see

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

## 3.0 DESCRIPTION

The LTC 8781 Series Time/Date Converter units are designed to operate with Allegiant® Series Video Matrix Switcher/Controllers, and Kalatel KTS-53 Series Time/Date/Title Generators.

The LTC 8781 Series unit is designed to receive Allegiant biphasic control code, and decode the time/date information contained within it. This time/date data is then converted by the LTC 8781 Series into NMEA style \$GPZDA time/date format, which is recognized by the Kalatel KTS-53 Series units. A simple Allegiant Time Event is used to determine how often an Allegiant CPU will generate the time/date information in its biphasic control code output. The Time Event is programmed using the Allegiant Master Control Software package.

The LTC 8781 Series provides an RS-232 interface using one RS-232 interface connector. The interface connector labeled *RS-232* provides a standard RS-232 interface for connection to an external RS-232 to RS-422 converter. The data rate of this RS-232 interface is 4800 baud, in compliance with NMEA standard 0183 v. 2.0. This standard is used by most global positioning system receivers. The CONSOLE interface is not used, and should not be connected.

LED indicators on the front panel show RS-232 data being transmitted (RS-232 OUT), biphasic data being received (CODE IN), and power ON. The LED indicators labeled RS-232 IN and CODE OUT are not used (and will not be illuminated). See *Figure 4*. A conceptual block diagram is shown in *Figure 1* for reference purposes.

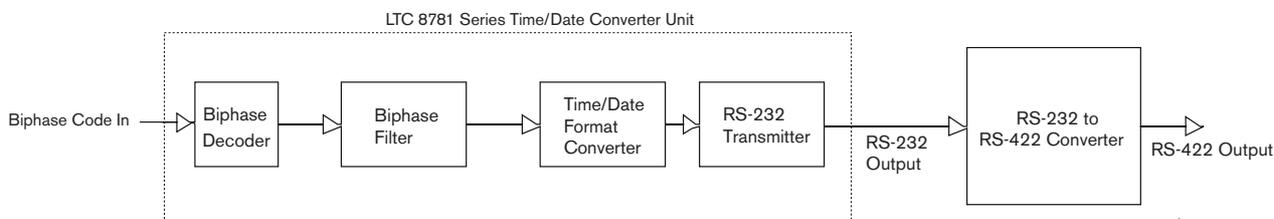


Figure 1: LTC 8781 Series Conceptual Operational Block Diagram

## 4.0 INSTALLATION

### 4.1 Power

Model No. <sup>1</sup>	Rated Voltage	Voltage Range	Nominal Power <sup>2</sup>
LTC 8781/60	120 VAC, 50/60 Hz	105 to 130	4 W
LTC 8781/50	230 VAC, 50/60 Hz	195.5 to 253	4 W

<sup>1</sup>The model number and operating voltage are shown on the label located on the bottom of the unit. These units are supplied with grounded power cords. Grounding must not be defeated.

<sup>2</sup>At rated voltage.

### 4.2 Mounting

LTC 8781 Series are supplied as desktop units. For rack mounting, the optional LTC 9101/00 Rack-mount Kit is available. LTC 8781 Series are half-rack units.

### 4.3 Control Code Inputs

The biphas code input connector is located on the rear of the unit, next to the power cord. See *Figure 5*. Connection is made using one of the supplied 15-pin cable assemblies. Only the CODE IN -, SHIELD, and CODE IN + pins of this connector are used. Other wires on the supplied cable should be removed or cut off. The CODE IN -, SHIELD, and CODE IN + wires are then connected to the device generating the biphas code (such as the CODE or SDA output of an Allegiant main CPU bay or an output from a LTC 8568/00 Signal Distribution unit).

### 4.4 RS-232 Connector

This connector is used for interfacing the LTC 8781 Series to a Kalatel KTS-53 Series unit. See *Figure 5*. Connect the RS-232 to RS-422 converter to the rear panel of the Kalatel unit using the two-wire cable. Note that the two-wire cable that carries the RS-422 signal has polarity; incorrectly connecting this cable will cause the data to be improperly decoded, and therefore, ignored. Consult the Kalatel manual for additional installation information relating to the KTS-53 Series unit. Finally, attach the external RS-232 to RS-422 converter unit directly to the RS-232 connector on the rear panel of the LTC 8781 Series unit.

The rear panel console and the three Code Output connectors are not used and should be ignored.

### 4.5 Adjustments

Although the LTC 8781 Series units have several sets of internal DIP switches, none of these switches are used. No user-selectable adjustments are required.

## 5.0 OPERATION

After the unit has been connected and powered up, normal operation will begin. Consult the Allegiant Master Control Software User Manual or LTC 8850/00 Graphical Users Interface (GUI) with Allegiant Server User Manual to set up the Synchronize Satellite command in the Time Event table. Optimum accuracy is assured when the command is sent as frequently as possible (every 5 minutes), but less frequent updates may be acceptable. Note that the Kalatel KTS-53 Series unit will appear to be about half a second fast -- this is normal.

## 6.0 PIN OUTS

### 6.1 Code Input Connector

Pin	Connection	Pin	Connection
1	Code In -	9	No Connect
2	No Connect	10	No Connect
3	No Connect	11	Code In +
4	No Connect	12	No Connect
5	No Connect	13	No Connect
6	Shield	14	No Connect
7	No Connect	15	No Connect
8	No Connect		

### 6.2 RS-232 Input/Output Connector

Pin	Connection	Pin	Connection
1	No Connect	6	No Connect
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	No Connect
5	Ground		

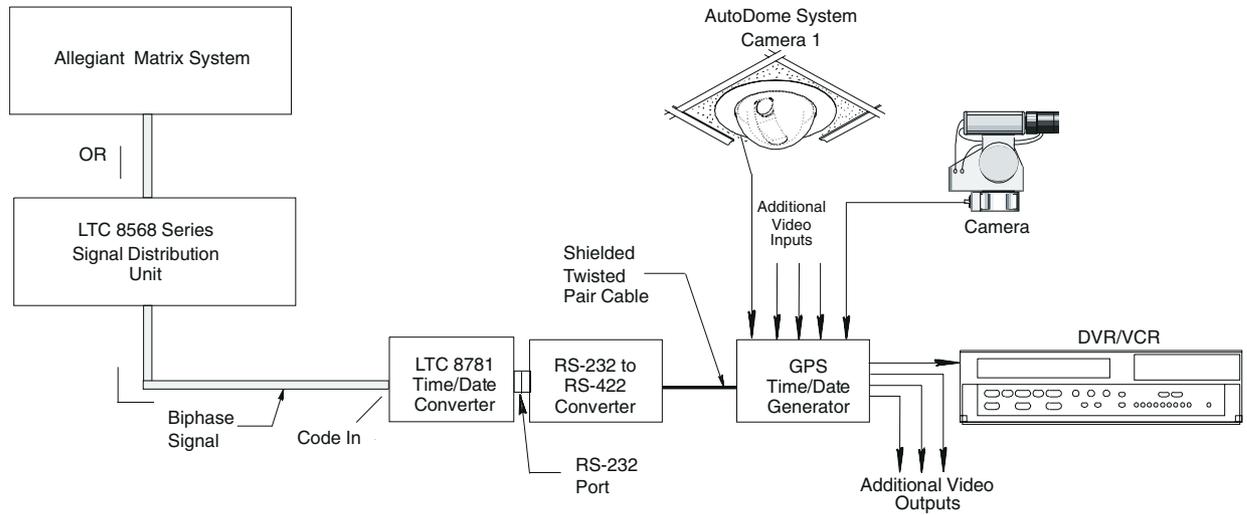


Figure 2: LTC 8781 Series Typical Application Diagram

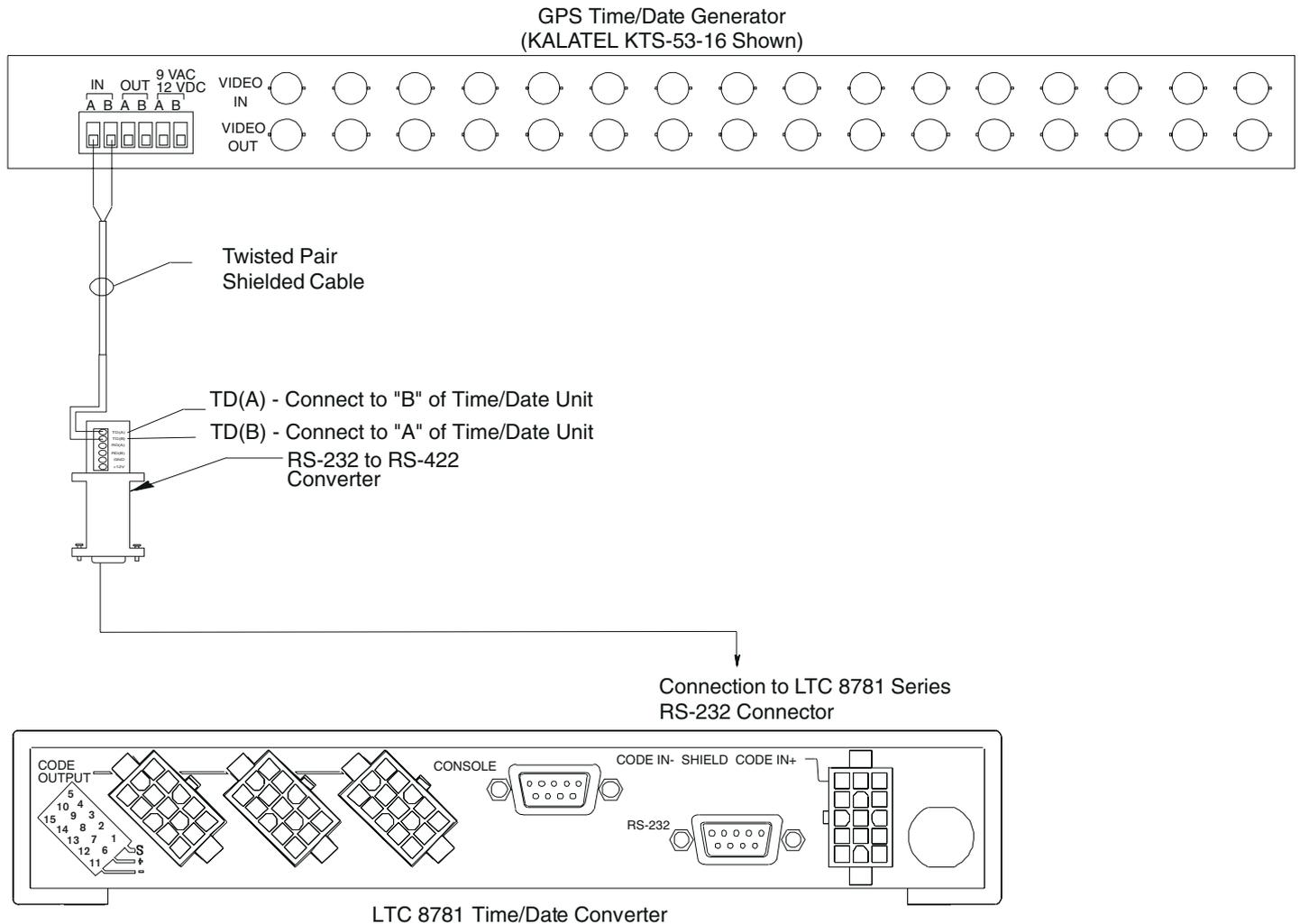


Figure 3: Connection Between LTC 8781 and Kalatel Unit

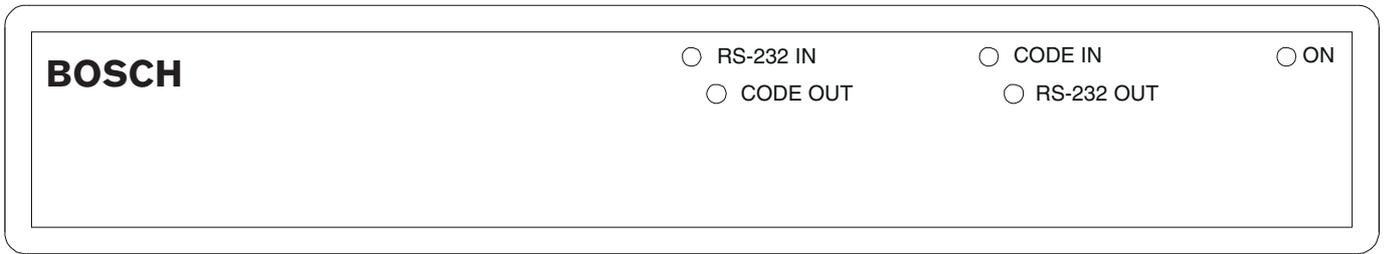


Figure 4: Front Panel

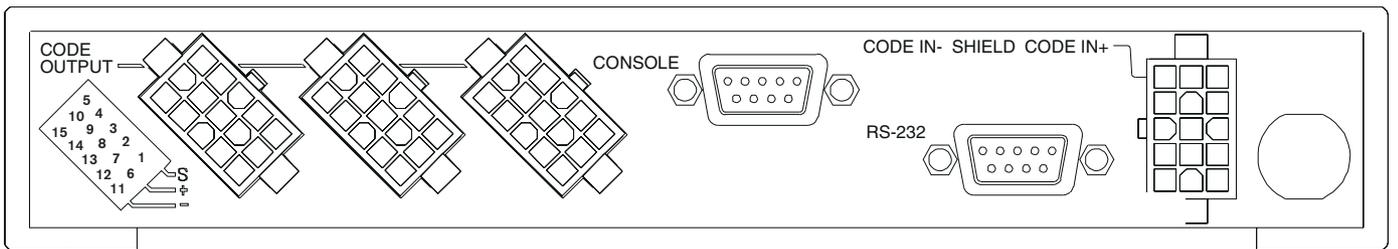


Figure 5: Rear Panel





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