MIC-BP3 Bi-Phase Converter Card for the MIC400 PTZ Camera Series

Bosch Security Systems

EN | Installation and Operation Manual

BOSCH
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MIC-BP3 Bi-phase Converter Card
For the MIC400 camera series

Installation and Operation Manual

Chapters

Safety Precautions

The following symbols are used throughout this manual please pay careful attention to their meaning.

The lightning flash with an arrowhead symbol within a triangle is intended to alert the user to the presence of non-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 a triangle is intended to alert the user to the presence of important safety, operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important Safety Instructions

CAUTION
TO REDUCE THE RISK OF ELECTRICAL SHOCK, DISCONNECT POWER SUPPLY BEFORE OPENING THE POWER SUPPLY UNIT.
POWER DISCONNECT: POWER SUPPLY UNITS HAVE POWER SUPPLIED WHENEVER THE POWER CORD IS INSERTED INTO THE POWER SOURCE

WARNING
INSTALLATION SHOULD BE CARRIED OUT BY QUALIFIED PERSONNEL ONLY IN ACCORDANCE WITH THE APPLICABLE LOCAL CODES.
BOSCH SECURITY SYSTEMS ACCEPTS NO LIABILITY FOR ANY DAMAGES OR LOSSES CAUSED DUE TO INCORRECT OR IMPROPER INSTALLATION

1. Read all instructions prior to installation.
2. Keep this manual for future reference.
3. Heed all warnings.
4. Install according to manufacturer's instructions.
5. Qualified persons only should install this product, if in doubt consult a qualified installer.
6. Use correct electrostatic discharge handling procedures when handling printed circuit boards to avoid damage to electro-sensitive components.
7. Do not install near any strong heat sources such as furnaces.
8. Never push objects or pour liquids into the product enclosure as this can cause a fire or electrical shock hazard.
9. Only use electronic cleaning solvent in the unlikely event of the card requiring cleaning.
10. Ensure that the product is correctly earthed.
11. Use only the power sources indicated in this user guide and ensure that the current rating of the supply cable is adequate for the product.
12. Do not overload power supply sockets as this can be a fire or electrical shock hazard.
13. In the event of failure do not attempt to service this product yourself, please contact Bosch Security Systems for assistance.
14. Only use approved attachments or accessories specified by the manufacturer. Any changes or modifications made to the equipment, not expressly approved in writing by Bosch Security Systems, could prevent proper or safe operation of the product and will invalidate the warranty.
15. Please dispose of disused electrical & electronic equipment at an environmentally compatible recycling facility (Please contact Bosch Security Systems for further details).

This product complies with the following EC directives:-

EMC Directive (89/336/EC as amended)
Machinery Directive (98/37/EC)
LV Directive (73/23/EC)

RoHS (Restriction of Hazardous substances) 2002/95/EC
WEEE (Waste Electrical & Electronic Equipment) 2002/96/EC

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local supplier for procedures for recycling this equipment.

Reference

Glossary of Terms

PTZ	-	Pan/Tilt/Zoom
Bi-phase	-	Bosch Bi-phase telemetry protocol (see pg8)
PSU	-	Power Supply Unit
IR	-	Infra Red (MIC cameras with IR lamps MUST use an IR psu)
MIC-BP3	-	Bi-phase converter card for MIC400 power supplies without an available expansion slot
STP	-	Shielded Twisted Pair cable

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CHAPTER 1

Introduction

The MIC-BP3 Bi-phase converter card allows translation of the Bosch Bi-phase protocol signals to RS485, half duplex telemetry signals. This enables Bosch Security Systems MIC400 PTZ camera to interface with Bosch Bi-phase equipment.

The MIC-BP3 Bi-phase converter card also enables the camera address to be set through its integrated DIP switch selector.

Versions

This manual covers the installation & operation of Bosch Security Systems MIC-BP3 Bi-phase converter card for use in power supplies without an available expansion slot such as the MIC-IR range of psus or where the expansion slot is already being used; for example, a MIC-ALM 8 –input alarm card may be fitted.

CAUTION: The MIC-BP3 converter card is for use with power supplies which do not have a free expansion slot. Please note IR and MDPS power supplies do not have an expansion slot and must use the MIC-BP3.

For customers requiring RS485 to Bosch Bi-phase protocol translation using other MIC400 power supply variants; please refer to the following list to select the correct card for the appropriate power supply configuration:-

Converter Card Type

MIC-BP3	-	Card is mounted in an external enclosure for PSU's With out an expansion slot available (header CN2), can be used with any FV PSU.
MIC-BP4	-	Plug in card for power supplies were the CN2 expansion slot is available.
MIC-BP5	-	Plug in card for MIC-UNI-60 or MIC-UNI-100 only (this card has a different layout and is not interchangeable with the BP4)

MIC-PSU		**BP Converter Card Type**
MIC-IR-PSU (all types)	-	No expansion slot; BP3 Only
MIC-240PSU	-	1 expansion slot; BP3 or BP4
MIC-12PSU	-	1 expansion slot; BP3 or BP4
MIC-24PSU	-	1 expansion slot; BP3 or BP4
MIC-115PSU	-	1 expansion slot; BP3 or BP4
MIC-THERMAL-PSU	-	1 expansion slot; BP3 or BP4
MDPS PSU's	-	BP3 or BP4 depending on expansion slot

Unpacking

- Check the exterior of the packaging for visible damage. If any items appear to have been damaged in transit please inform the shipping company.
- Unpack the card carefully; this is electronic equipment and should be handled with care.
- Do not use if any component appears to be damaged. Please contact Bosch Security Systems in the event of damaged goods.
- The shipping carton is the best way to transport the unit, save it and all other packaging materials for future use. If the unit must be returned, use the original packing materials.

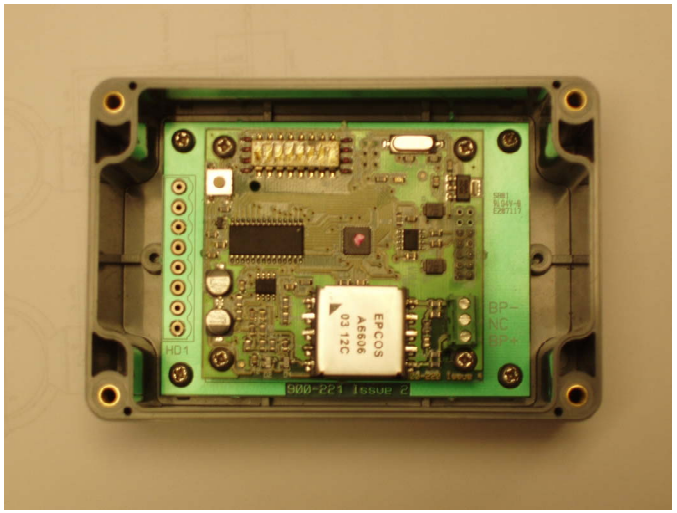
CAUTION: Use proper ESD handling precautions to avoid electrostatic discharge. Wear a grounded wrist strap to prevent damage when handling electro-sensitive printed circuit boards.

Packaging Contents

Please check for the following contents

- MIC-BP3 Bi-phase converter card Installation & Operation manual (this guide)
- MIC-BP3 Bi-phase card and attached interface header board
- MIC-BP3 IP65 enclosure with 3 glands
- MIC-BP3 Bi-phase card 12VDC external power supply block

CHAPTER 2 MIC-BP3 Bi-phase Converter Card



The MIC-BP3 Bi-phase converter card allows Bosch control systems with Bi-phase output to interface with MIC400 cameras. The MIC-BP3 Bi-phase converter card is supplied in an IP65 plastic enclosure with 3 glands and consists of a lower interface header card with the Bi-phase converter card attached on top as shown above.

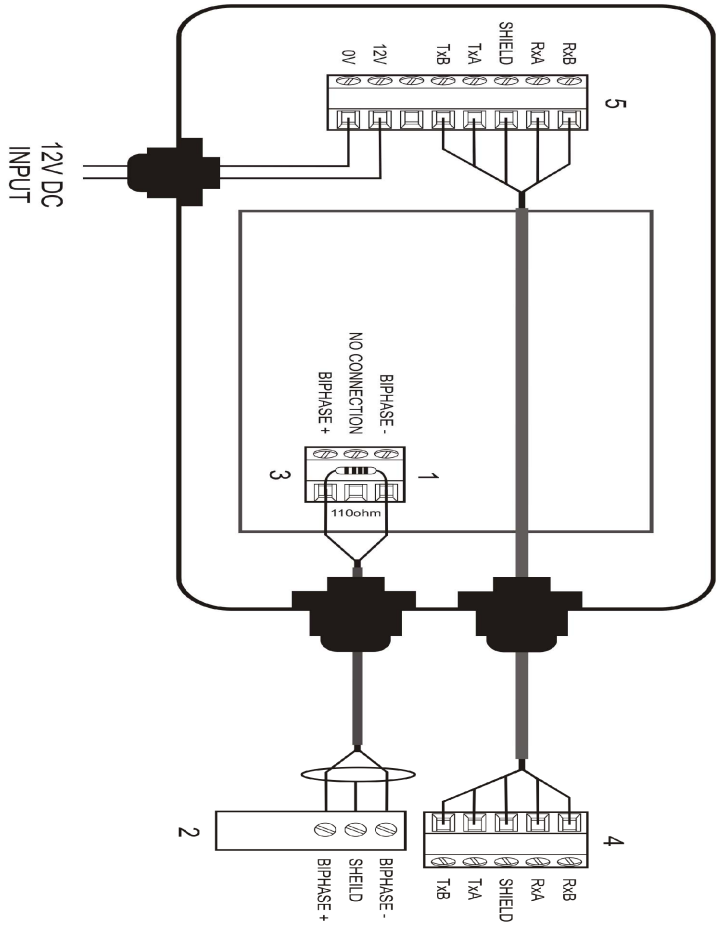
Bi-phase Specifications

Shielded 2-wire, half-duplex, multi-drop, 5000 ft cable limit using 18AWG wire. Bi-phase is the standard Bosch protocol used to send Pan/Tilt/Zoom control over 2-wire shielded twisted pair (STP) terminated with an 110Ω terminal resistor.

Cable Type	STP - Shielded Twisted Pair
Distance	1524 m (5000 ft) Belden 8760 recommended
Transmission Rate	31.25 KHz
Gage	1.02 mm (18 AWG)
Termination	110 Ω
Terminal Connector	Screw terminals
Voltage	4 Vp-p

Figure 1 below illustrates the connections necessary for Bi-phase operation.

1	BP3 Bi-phase to RS485 Converter Card
2	Bi-phase output to Bosch Control System
3	HD2 Screw Terminal Header on BP3 card
4	HD5 Plug in Terminal Block in MIC-PSU
5	HD1 Plug in Terminal Block in BP3 Card Enclosure



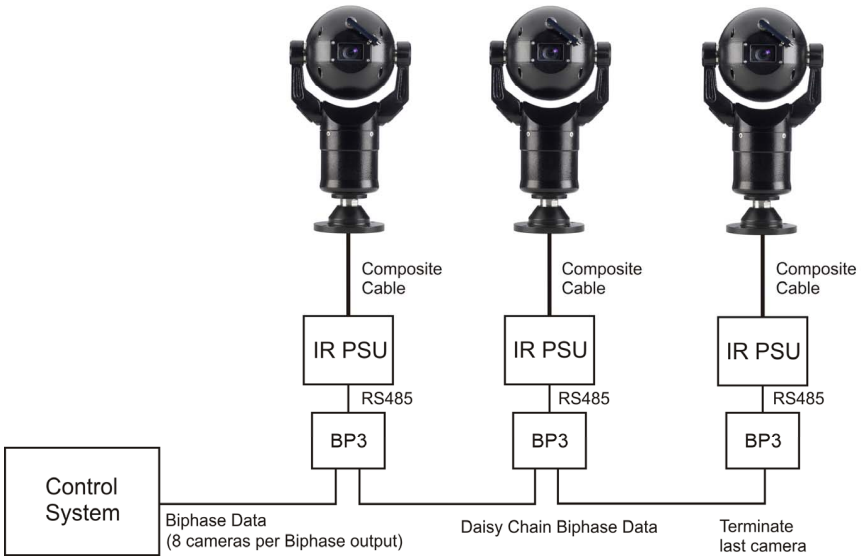
The MIC-BP3 has a 110 Ω termination resistor between the Bi-phase + and – terminals which should be removed unless the camera is the last in the daisy chain of cameras.

CAUTION: The shield must be connected to the controller end only

Typical Wiring Example

In a daisy chain configuration (as shown in Figure 2 below), a termination resistor of 110 Ω must be added to the last MIC400 in the series. You can daisy chain a maximum of eight (8) MIC400's per Bi-phase output.

Figure 2: Daisy chain configuration forBP3 Bi-phase controller



Installation of the MIC-BP3 Bi-phase Converter Card

WARNING: Electrical Danger: Ensure all power is disconnected before opening or working upon any Power Supply Unit.
Installation must be carried out by suitably qualified persons & all local safety regulations should be followed.

1. The MIC400 power supply and the MIC-BP3 external 12V power supply unit must be switched off and unplugged prior to carrying out any work.
2. Fix the MIC-BP3 enclosure in a location where it cannot be interfered with intentionally or accidentally, a secure equipment cabinet is recommended.
3. Connect the Bi-phase +, Bi-phase - signals in the Shielded Twisted Pair (STP) cable from the control system to the appropriate HD2 screw terminals on the MIC-BP3 card (as shown in points 1, 2 & 3, Figure 1)
4. Connect the RS485 cable to the appropriate HD1 screw terminals on the MIC-BP3 card (as shown in point 5, Figure 1) to the telemetry header on the MIC400 power supply, (identified as HD5 on the MIC400 power supply PCB, the connections are shown in point 4 , Figure 1).

CAUTION: The shield must be connected to the controller end only.

5. Connect the external 12V DC power supply to the appropriate HD1 screw terminals on the MIC-BP3 card (as shown in point 5, Figure 1)
6. Adjust slack on STP and power cables and then tighten the cable glands to seal the enclosure.
7. Turn on MIC power supply and 12V DC power supplies.

8. A status LED will flash (every 3 seconds) indicating the operation of the Bi-phase to RS485 converter.

9. To verify the Bi-phase signal are being received and converted, send a PTZ commands from the control system. The status LED will flash whilst commands are being converted to RS485.

Setting the MIC400 Address (in Hardware)

The MIC-BP3 Bi-phase converter supports changing the address of the MIC400 at the pole base through hardware.

It should be noted that the MIC-BP3 converts all Bi-phase data into RS485 data regardless of the address setting on the DIP switches. The MIC400 will filter and process commands that match the current address of the MIC400.

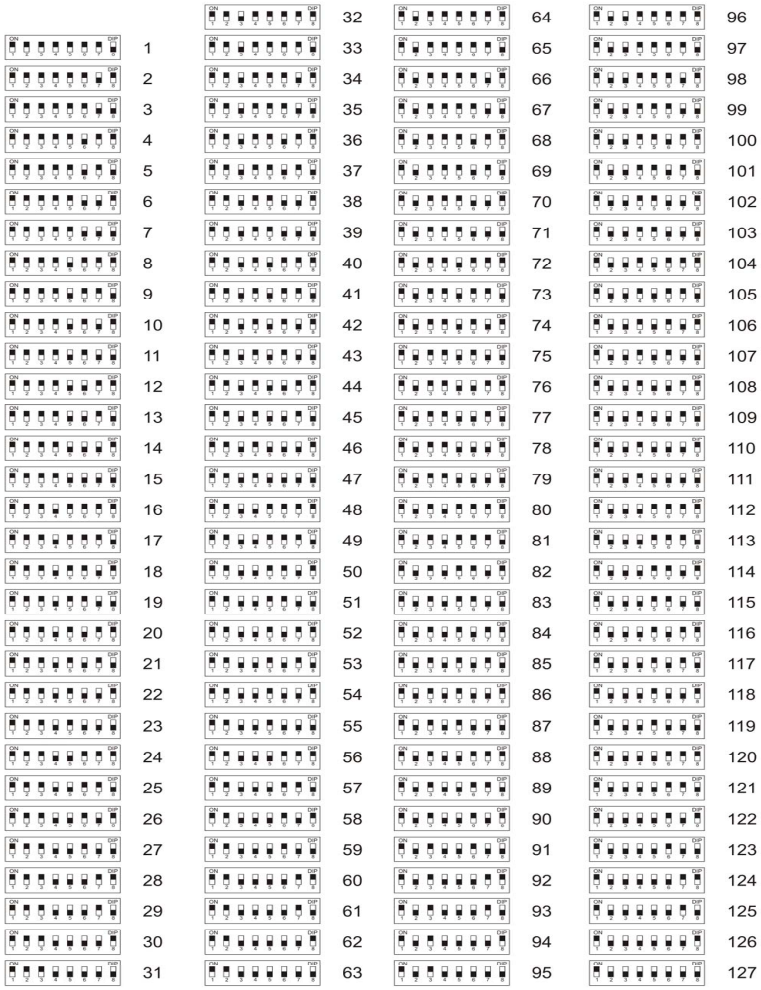
The address setting procedure is as follows:

1. Select the appropriate address (1-255) by setting up the DIP switches. (See tables below)

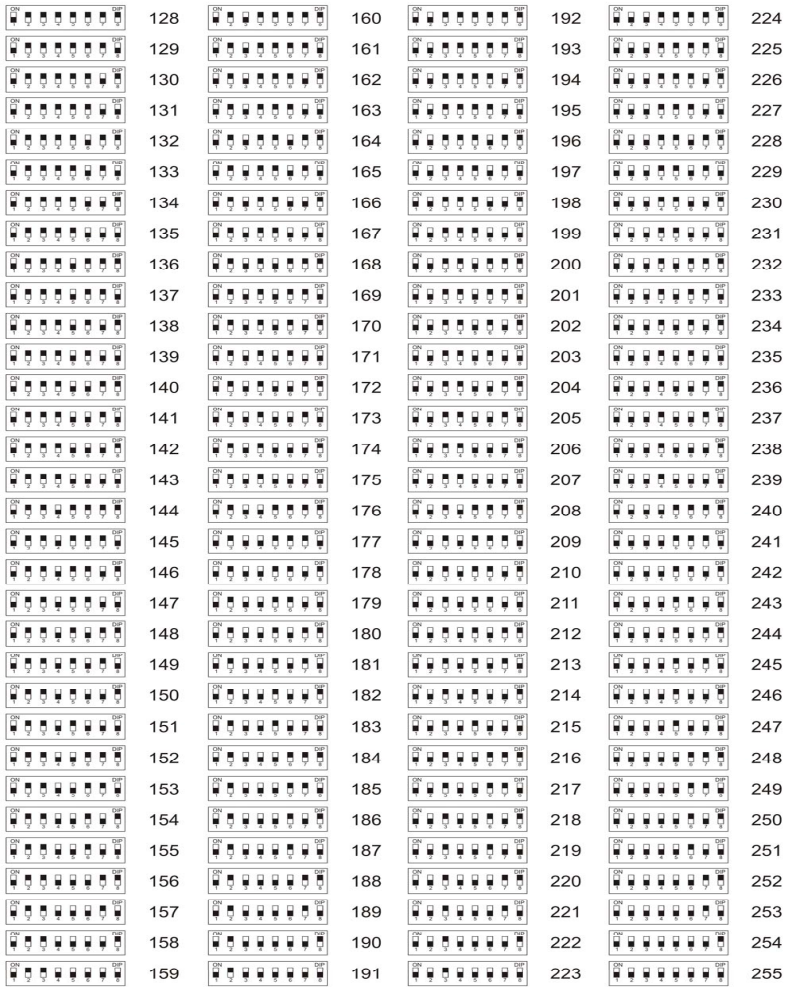
2. Press the push button (SW2) adjacent to the DIP switches to set the address. The status LED will flash once indicating the start of the address setting procedure. You should then observe the MIC400 panning and tilting confirming that the MIC400 has been set to the new address.

3. The status LED will be illuminated for the duration of this procedure.

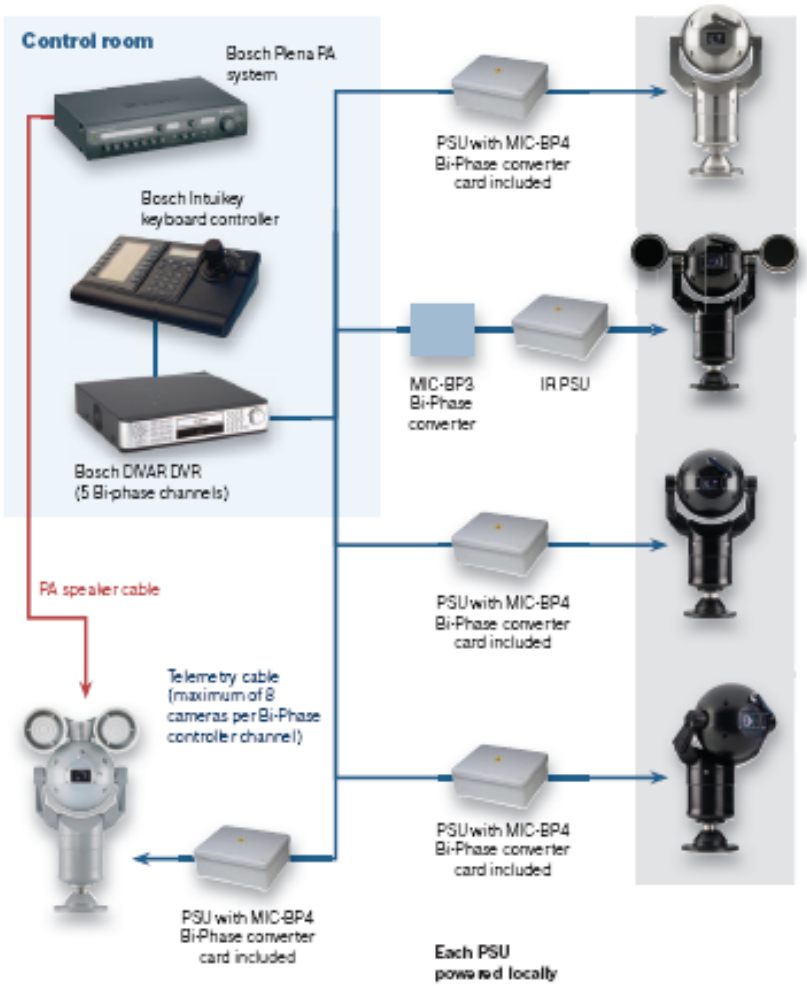
MIC400 DIP Switch Address Settings 1 to 127



MIC400 DIP Switch Address Settings 128 to 255



An example of a public space CCTV installation with the MIC1-400 PTZ camera range using Bosch Bi-phase protocol



CHAPTER 3 **Technical Specifications**

Physical Dimensions and Recommended Cable sSpecification

MIC-BP3 IP65 enclosure dimensions
120 mm (W) x 55 mm (H) x 80 mm (D)

MIC-BP3 card dimensions
60 mm (W) x 10mm (H) x 70mm (D)

Bi-phase Specifications:- Shielded 2-wire, half-duplex, multi-drop, 5000 ft cable limit requires 18 AWG wire for 5000ft distance.

Cable Type	STP - Shielded Twisted Pair
Distance	1524 m (5000 ft) Belden 8760 recommended
Transmission Rate	31.25 KHz
Gage	1.02 mm (18 AWG)
Termination	110 Ω
Terminal Connector	Screw terminals
Voltage	4 Vp-p

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