High Speed Pan/Tilt System

UPH-2D, UPH-3D, UPH-Z Series

BOSCH

en Instruction Manual

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1 Safety

1.1 Important safety instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Cleaning -** Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a dry cloth for cleaning is sufficient, but a moist fluff-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.
2. **Heat Sources -** Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.
3. **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. Do not place objects filled with liquids, such as vases or cups, on the unit.
4. **Lightning -** For added protection during a lightning storm, or when leaving this unit unattended and unused for long periods, unplug the unit from the supplied voltage and disconnect the cable system. This will prevent damage to the unit from lightning and power line surges.
5. **Controls adjustment -** Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit. Use of controls or adjustments, or performance of procedures other than those specified, may result in hazardous radiation exposure.
6. **Overloading -** Do not overload outlets and extension cords. This can cause fire or electrical shock.
7. **Power sources -** Operate the unit only from the type of power source indicated on the label. Before proceeding, be sure to disconnect the power from the cable to be installed into the unit.
   - For 24 VAC units, voltage applied to the unit's power input should not exceed ±10% VAC. User-supplied wiring must comply with local electrical codes (Class 2 power levels). Do not ground the supply at the terminals or at the unit's power supply terminals.
   - If unsure of the type of power supply to use, contact your dealer or local power company.
8. **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.
9. **Damage requiring service -** Unplug the unit from the power source and refer servicing to qualified service personnel when any damage to the equipment has occurred, such as:
   - the power supply cord or plug is damaged;
   - liquid has been spilled in or on the equipment;
   - an object has fallen into the unit;
   - unit has been dropped or the unit cabinet is damaged;
   - unit exhibits a distinct change in performance;
   - unit does not operate normally when the user correctly follows the operating instructions.
10. **Replacement parts -** Be sure the service technician uses replacement parts specified by the manufacturer, or that have the same characteristics as the original parts. Unauthorized substitutions may cause fire, electrical shock, or other hazards.

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11. **Safety check -** Safety checks should be performed upon completion of service or repairs to the unit to ensure proper operating condition.
12. **Installation -** Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.
13. **Attachments, changes or modifications -** Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warrantee or, in the case of an authorization agreement, authority to operate the equipment.

1.2 Safety precautions

DANGER! High risk:
This symbol indicates an imminently hazardous situation such as "Dangerous Voltage" inside the product.
If not avoided, this will result in an electrical shock, serious bodily injury, or death.

WARNING! Medium risk:
Indicates a potentially hazardous situation.
If not avoided, this could result in serious bodily injury or death.

CAUTION! Medium risk:
Indicates a potentially hazardous situation.
If not avoided, this may result in minor or moderate injury.
Alerts the user to important instructions accompanying the unit.

CAUTION! Low risk:
Indicates a potentially hazardous situation.
if not avoided, this may result in property damage or risk of damage to the unit.

NOTICE!
This symbol indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

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1.3 Important notices

Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury and/or serious damage to the unit. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer. When a cart is used, use caution and care when moving the cart/apparatus combination to avoid injury from tip-over. Quick stops, excessive force, or uneven surfaces may cause the cart/unit combination to overturn. Mount the unit per the manufacturer's instructions.

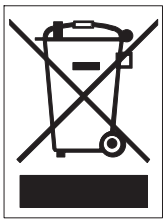
CAUTION!

Incorporate an all-pole magnetic and residual current power switch, with a contact separation of at least 3 mm in each pole, into the electrical installation of the building. If it is needed to open the housing for servicing and/or other activities, use this all-pole switch as the main disconnect device for switching off the voltage to the unit.

Camera signal - Protect the cable with a primary protector if the camera signal is beyond 140 feet, in accordance with *NEC800 (CEC Section 60)*.

Coax grounding:

- Ground the cable system if connecting an outside cable system to the unit.
- Connect outdoor equipment to the unit's inputs only after this unit has had its grounding plug connected to a grounded outlet or its ground terminal is properly connected to a ground source.
- Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding plug or grounding terminal.
- Follow proper safety precautions such as grounding for any outdoor device connected to this unit.



Disposal - Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these units at an environmentally compatible recycling facility, per *European Directive 2002/96/EC*.

Environmental statement - Bosch has a strong commitment towards the environment. This unit has been designed to respect the environment as much as possible.

Electrostatic-sensitive device - Use proper ESD handling precautions to avoid electrostatic discharge.

NOTE: Wear required grounded wrist straps and observe proper ESD precautions when handling the electrostatic-sensitive printed circuit boards.

Grounding and polarization - This unit may be equipped with a 3-wire grounding connector for earth grounding.

Moving - Disconnect the power before moving the unit. Move the unit with care. Excessive force or shock may damage the unit.

Outdoor signals - The installation for outdoor signals, especially regarding clearance from power and lightning conductors and transient protection.

Permanently connected equipment - Incorporate a readily accessible disconnect device in the building installation wiring.

Video loss - Video loss is inherent to digital video recording; therefore, Bosch Security Systems cannot be held liable for any damage that results from missing video information. To minimize the risk of lost digital information, Bosch Security Systems recommends multiple,

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redundant recording systems, and a procedure to back up all analog and digital information.

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2 Unpacking

This equipment should be unpacked and handled with care. If an item appears to have been damaged in shipment, notify the shipper immediately.
Verify that all the parts listed in *Section 2.1 Parts List* are included. If any items are missing, notify your Bosch Security Systems Sales or Customer Service Representative.
The original packing carton is the safest container in which to transport the unit and must be used if returning the unit for service. Save it for possible future use.

2.1 Parts List

The High Speed Pan/Tilt System includes the following components:
- One (1) Unitized Pan Head (UPH) device
- One (1) small box of accessories:
  - One (1) 4 mm allen wrench
  - One (1) moisture bag with salt, metal fixing accessory and two (2) fixing screws
  - One (1) serial extension cable
  - One (1) serial adapter
  - One (1) safety label
  - One (1) instruction manual
  - Two (2) tie thread
  - One (1) plastic tube
- One (1) box containing:
  - One (1) base with power supply box

2.2 Tools Required

- Small, straight-blade screwdriver - 2.5 mm (0.1 in.)
- 3 mm Allen wrench

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2.3 Safety Rules

To ensure safety, the following warnings are specified:

- The device must be installed and maintained by skilled technical personnel.
- Connect the device to a power source corresponding to the indications given on the marking label.
- The device has been designed for permanent installation in a building or other suitable structure.
- Moving parts may result in risk of injury, therefore, the device should be mounted so that it is accessible only to the technician/installer.
- Place the safety label near the UPH. See *Figure 6.4* for illustration of safety label.
- Before carrying out any technical work on the UPH, tilt the UPH all the way up or all the way down, then disconnect the power supply and cables from all other devices.
- Do not use power cables with signs of wear or aging.
- Do not use the device in the presence of inflammable substances.
- Do not allow children or unauthorized personnel to use the device.
- The device should be switched **OFF** when the power supply has been disconnected and the connecting cables to other devices have been removed.
- Keep this manual for future reference.

CAUTION! Before disconnecting the power supply to the UPH, tilt the device either all the way up or all the way down. When the UPH loses power, depending on how it is positioned, the unit may drop slightly forward or backward. Therefore, failure in correctly positioning the UPH before disconnecting the power supply may result in personal injury or possible damage to the device.

3 Description

The Bosch High-Speed Positioning System is a complete, high-performance, high quality solution that can pan 360 degrees continuously at speeds of up to 100 degrees per second. An extensive range of options lets you tailor the system to your specific requirements. For example, a wide variety of video cameras and lenses, including the optimized Dinion^{XF} camera and zoom combinations, are available.

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4 Installing the High Speed Pan/Tilt

This chapter outlines the procedures needed to install the High Speed Pan/Tilt. Installation should only be done by qualified service personnel in conformance to all local codes.

NOTICE!
The High Speed Pan/Tilt unit cannot be mounted upside down! This will stress bearings and mechanical components; no liabilities are accepted and all warranties are void.

4.1 Mounting the High Speed Pan/Tilt

The High Speed Pan/Tilt System can be mounted with either a wall mount (MTC-WUPH, sold separately) or pole mount (MTC-PUPH, sold seperately).
To install the device, proceed as follows:

1. Determine the location to install the device.
   - When selecting a location, a minimum clearance of 300 mm (12 in.) in front of the unit and 300 mm (12 in.) in back of the unit is required to facilitate component removal and installation.
   - The device should be installed vertically. Any other position could impair the performance of the device.
   - Do not attach the device upside down.
2. Insert the cables into the optional wall or pole mount so they protrude approximately .5 m (19.7 in.) (see *Figure 4.1*).

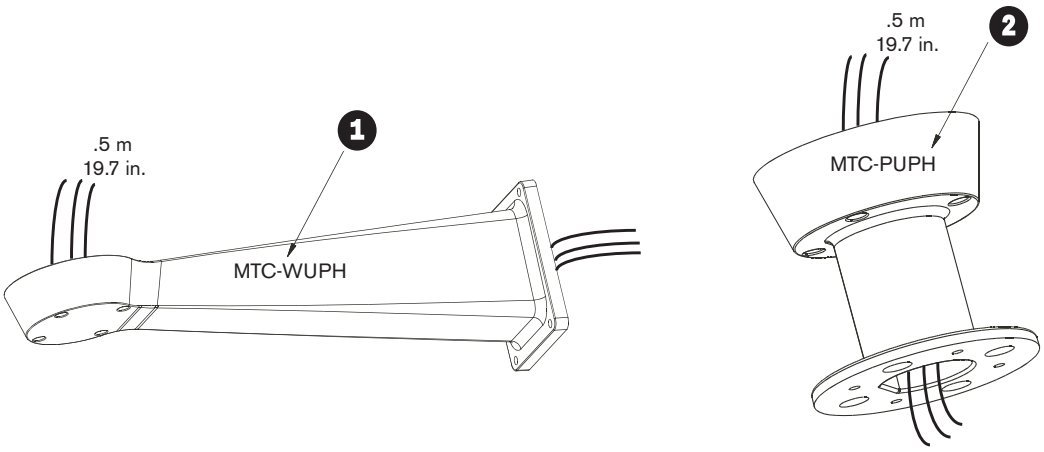

Fig. 4.1 Optional Wall Mount (1) or Pole Mount (2)

WARNING! Medium Risk:
The cables should not be accessible by unauthorized personnel; cables should be secured to fixed locations at appropriate intervals to bare the weight of the cables, e.g. cables running inside a tall camera pole.

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CAUTION! Medium Risk:
Be sure to use appropriately strong and load bearing bolts and other fixing materials when installing any UPH mountings to any surface.
When the MTC-WUPH Wall Mount is fixed to a wall, each fixing dowel must be able to support a traction load of 300daN or more. It is necessary to use 8 mm (0.315 in.) diameter bolts with appropriate length.

3. Attach the optional wall or pole mount according to the specific mounting manual (see *Table 4.1* for mounting options).

Part #	Description
MTC-PUPH	Outdoor Pole Mount for UPH Series
MTC-WUPH	Outdoor Wall Mount for UPH Series
MTC-POLE-W	Pole Adapter for MTC-WUPH
MTC-CORN-W	Corner Adapter for MTC-WUPH

Table 4.1 Mounting Options

NOTICE!
If using a washer kit, the spray support should be installed before positioning and wiring the pan/tilt. For additional information, see *Section 5 Connecting the Washer Pump (optional)*.

4. Remove the cable glands from the base and fit the gasket / seal ring *(see Figure 4.3)*.
5. Insert the cables into the cable glands while holding the base approx. 20 cm from the bracket (see *Figure 4.2*). Note that there are three glands; one for power, one for video, and one for data / IO cables.

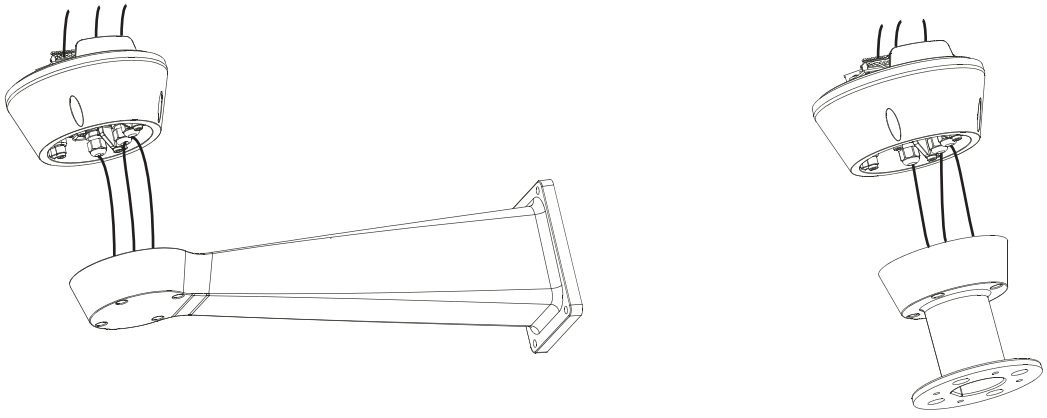

Fig. 4.2 Inserting the Cables through the Cable Glands

6. Securely lock the cable glands into place (gland closing torque 5 Nm); they accept cables 5-10 mm in diameter. The cable glands can be changed to accept smaller 3-7 mm in diameter cables, available from www.cembre.com and browse "Cable glands IP68 MAXIblock" (model number: 1910.M16 M16x1.5). The gland (5-10 mm or 3-7 mm) closing torque is 5 Nm; use a calibrated torque wrench to ensure closure.
7. Position the base on the optional wall or pole mount, guiding the cables so that they are positioned inside the wall or pole mount *(see Figure 4.3)*.

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8. Fasten the base to the wall or pole mount with the supplied screws and washers (use a calibrated torque wrench setting of 2.1 Nm).

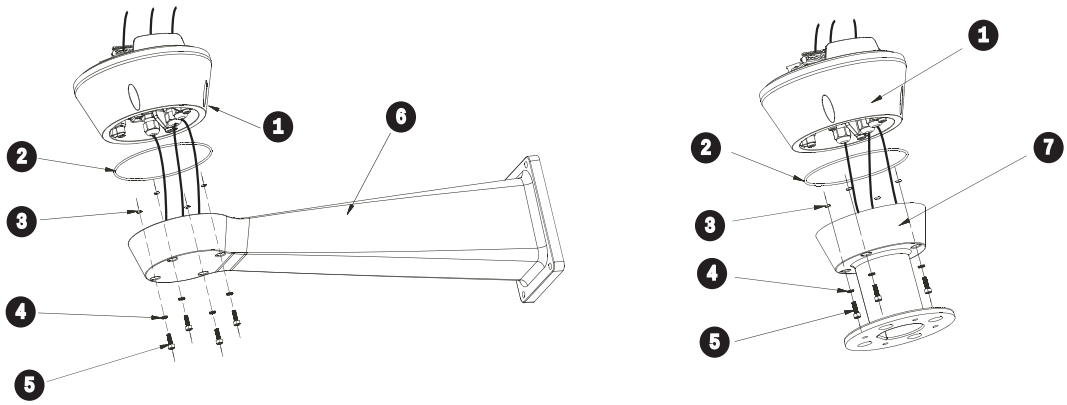

Fig. 4.3 Wiring the Device

Reference #	Description
1	Base
2	Gasket
3	Screw Ring
4	Washer
5	Screw
6	Bracket
7	Support

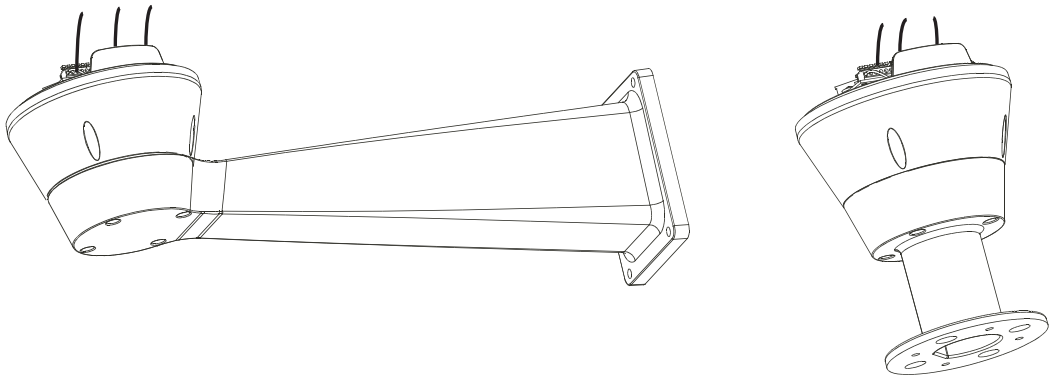

Fig. 4.4 Preparing the Cables for Wiring

9. Cut the cables to approximately 152.4 mm (6 in) *(see Figure 4.4)*. The earth cable must be longer then the power wires approximately 10 mm or more to prevent the stretch disconnecting.
10. Cover the cable with a plastic tube and fix it with the tie thread.

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11. Make a group with all signal cables and fix them with the tie thread. *Figure 4.5* indicates a proper cable connection.

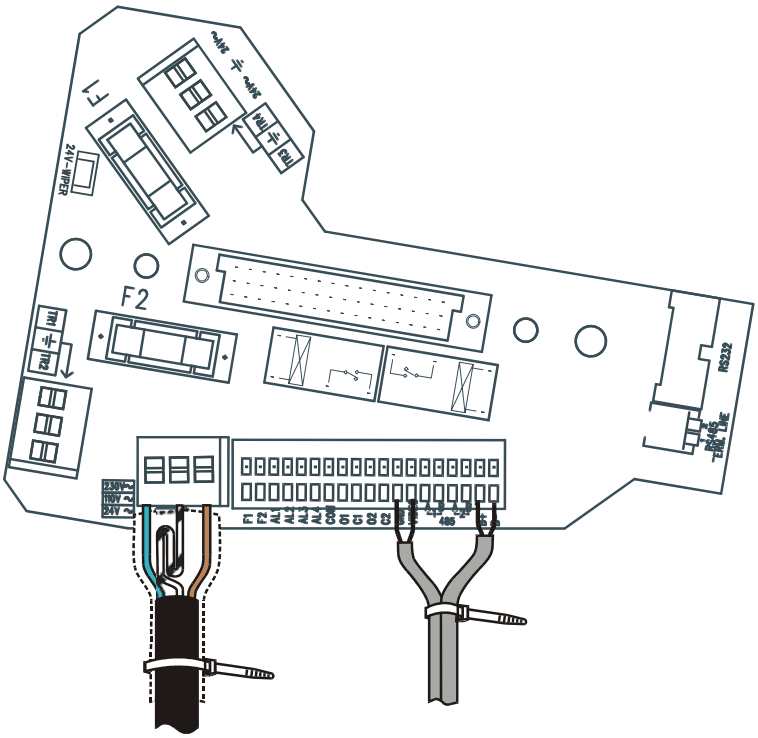

Fig. 4.5 Tie Threads used to Group and Secure Signal Cables

4.2 Wiring the Video Cable

To wire the video cable, proceed as follows:

1. Strip the video cable with a pair of wire strippers.
2. Cut the length of the center conductor and the braid to approximatley 30 mm (1.2 in.).
3. Twist the braid into a single conductor.
4. Use a small screwdriver to press down on the GND push latch (see *Figure 4.6*) and attach the single braid to the GND terminal.
5. Use a small screwdriver to press down on the VIDEO push latch (see *Figure 4.6*) and attach the center conductor to the VIDEO terminal.

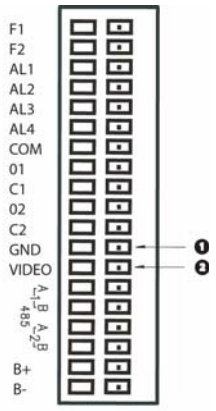

Fig. 4.6 Wiring the Terminal

Note: The above terminals support AWG 20 (0.5 mm^2) to AWG 28 (0.08 mm^2).

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4.3 Connecting the Power Supply

The base with power supply box is available in two (2) power supply voltages (24 VAC or 230 VAC). Before proceeding with the installation, check the identification label of the product to verify that the device coincides with the power supply requirements.

CAUTION!
When connecting the base, make sure the power supply is disconnected and that the disconnecting switch is open.

When the base is opened, the power supply board appears as shown below. To connect the power supply, make the connections as seen in *Figure 4.7*.

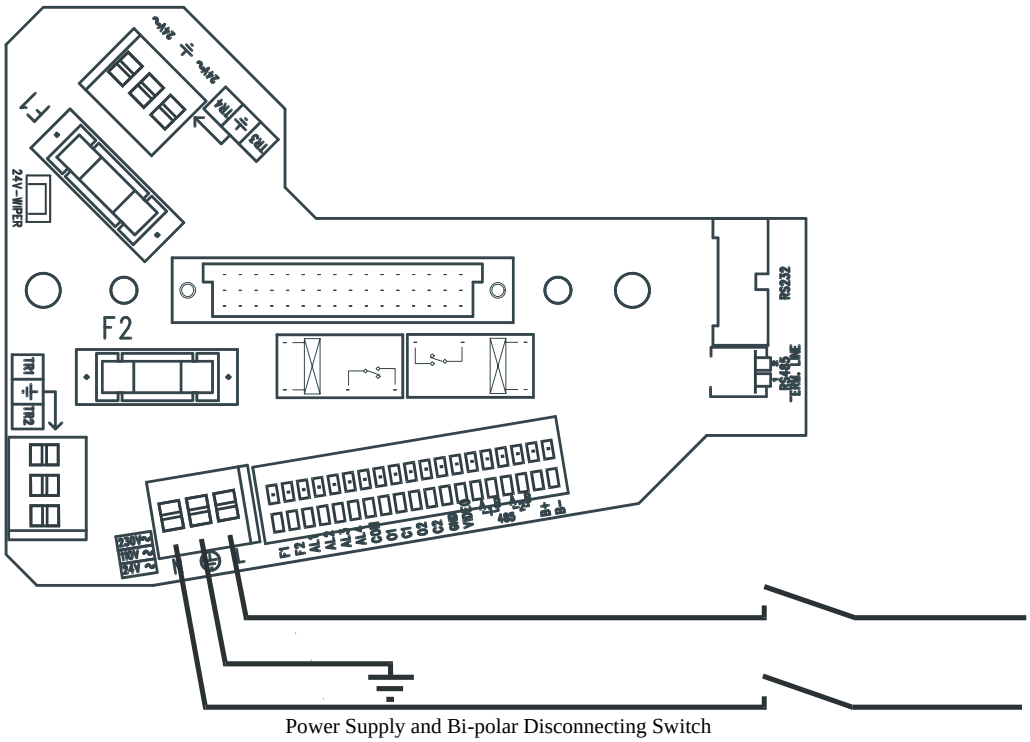

Fig. 4.7 Connecting the Power Supply

To wire the power cable (not supplied), use *Table 4.2* to attach the appropriate colored wire to the appropriate terminal.

Wire Color	24 VAC Terminal Connection
Per local Installer	Neutral
Per local Installer	Live/Active
Green/Yellow	Earth

Wire Color	230 VAC Terminal Connection
Blue	Neutral
Brown	Live/Active
Green/Yellow	Earth

Table 4.2 Terminal Connections

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Note: The power cable must be double insulated, i.e. each separate cable is individually insulated, then contained in an outer insulated cover. The cable type must be chosen in accordance with local and national wiring rules; recommended cable type H05RN-F 1mm^2 both for 24 VAC and 230 VAC installations.

CAUTION!
The device must be wired by skilled technical personnel. Never make any changes or connections that are not described in this handbook. Failure to follow the instructions indicated in this manual may result in system or safety hazards, thus invalidating the guarantee.

CAUTION!
When wiring for external/outdoor environments, be sure to use appropriately rated cables.

4.4 Wiring Biphase

To wire for Biphase, connect the C+ terminal wire to the B+ terminal and the C- terminal wire to the B- terminal respectively.

4.5 RS-232

RS-232 is used for firmware upgrades only *(see Figure 4.8)*.

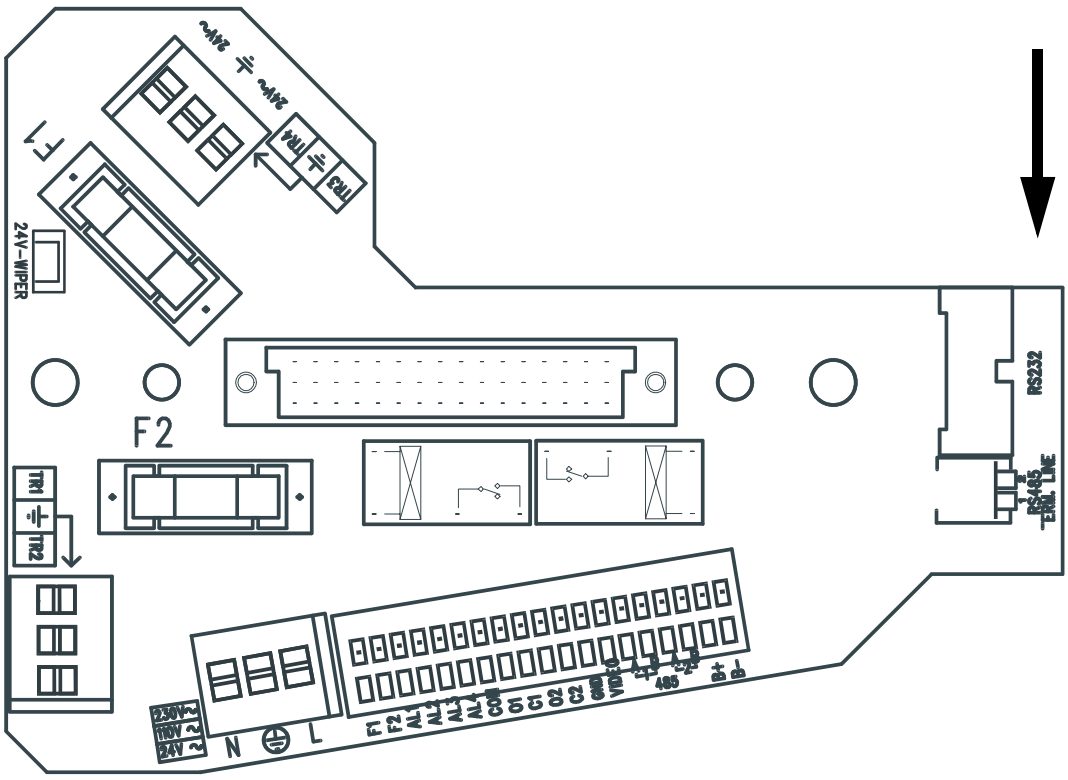

Fig. 4.8 RS-232 Location

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5 Connecting the Washer Pump (optional)

The device must be wired by skilled technical personnel. Never make any changes or connections that are not described in this handbook. Failure to follow the instructions indicated in this manual may result in system or safety hazards, thus invalidating the guarantee.

The High Speed Pan/Tilt System may have an optional washer pump. To connect the washer pump for the HAC-WAS05-20, HAC-WAS05-50, and HAC-WAS30-50, proceed as follows:

1. Attach the mount, (optional wall or pole mount) by positioning the washer pipe support in the desired position (see *Figure 5.1*).

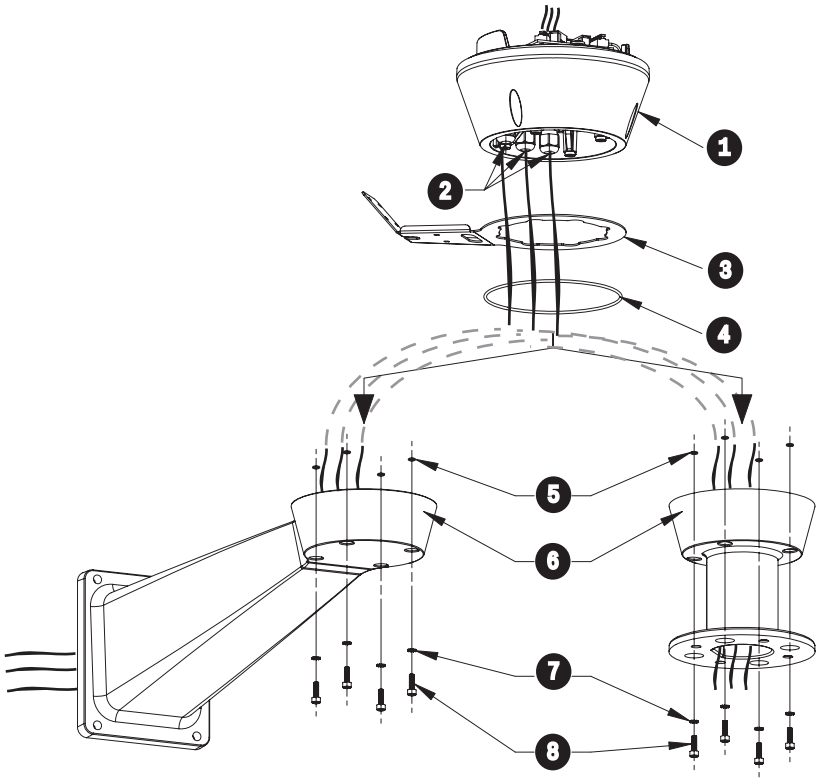

Fig. 5.1 Installing the Washer Cables

Reference #	Description
1	Base
2	Cable Glands
3	Washer Pipe Support
4	Gasket
5	Screw Seals
6	Bracket or Pole Support
7	Washers
8	Screws

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2. Insert the cables inside the mount so they protrude approximately 0.5 m (19.7 in.).
3. Insert the cable into the cable glands and, keeping the base at about 20 cm (7.9 in.) from the support, lock the cable glands.
4. Set the base on the mount, aiding the cables to achieve the correct position inside.
5. Attach the base to the mount using the supplied screws.
6. Cut the cables to size and either restore or make the connections to the positioning unit.
7. After you have attached the base to the mount, shorten the washer pipe as required and attach it to the coupling as follows:
   a. unfasten the nut from the coupling,
   b. insert it into the pipe,
   c. insert the end of the pipe onto the nosecap.
   d. Lock the nut to the coupling (see *Figure 5.2*).

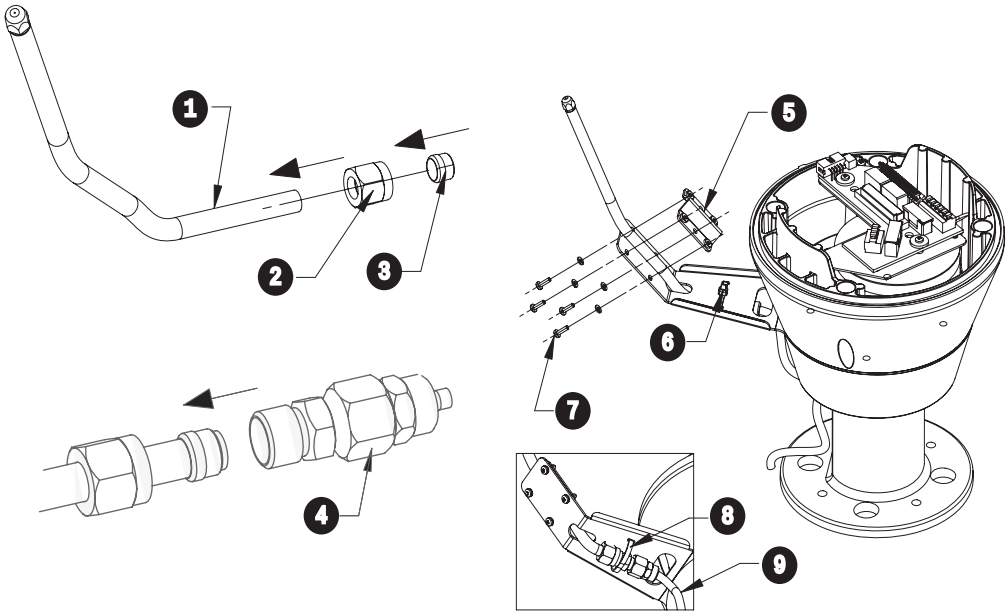

Fig. 5.2 Installing the Washer Pipe

Reference #	Description
1	Washer Pipe
2	Nut
3	Nosecap
4	Coupling
5	Bracket
6	Noseclip
7	Screws
8	Washers
9	Delivery Hose

8. Attach the pipe to the washer support using the supplied bracket, screws, and washers.
9. Lock the coupling using the supplied hoseclip and connect the delivery hose.
10. Calibrate the jet (see *Figure 5.3*) by directing the nozzle towards the glass of the housing.

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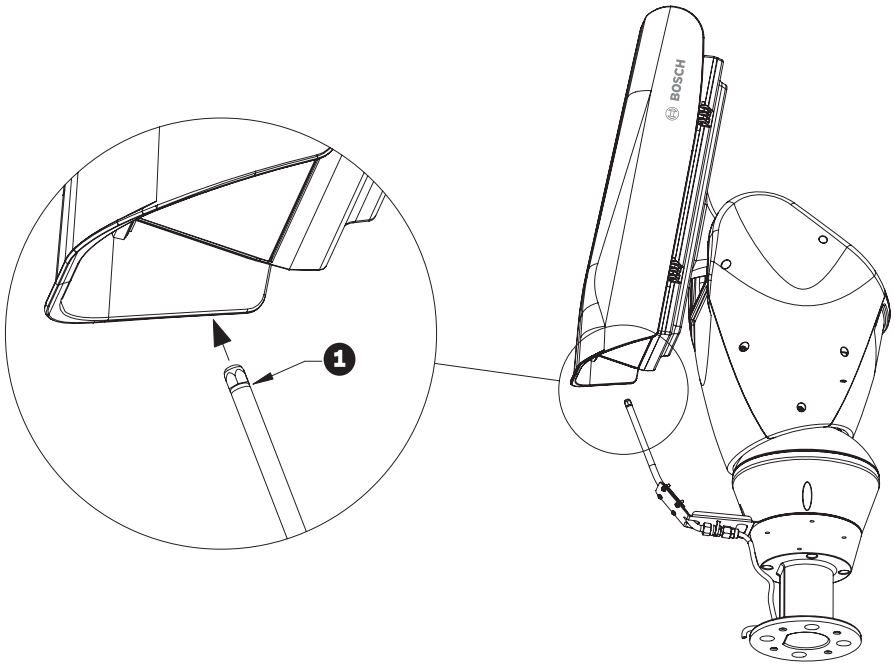

Fig. 5.3 Calibrating the Nozzle

The diagram below refers to the 19-pin connector on the base board of the pan/tilt.

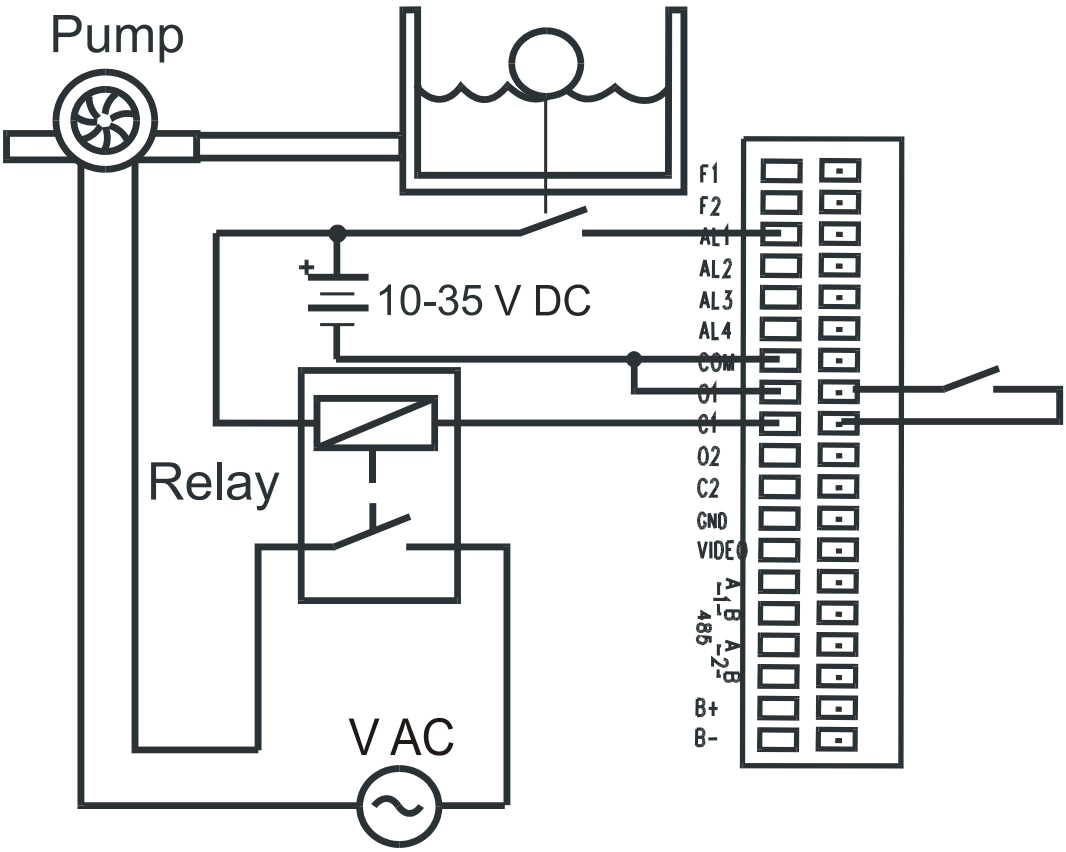

Fig. 5.4 Connecting the Washer Pump

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Reference	Description
AL1	Alarm input, voltage-controlled (10-35 V), to monitor the presence of water in the tank. For devices with level sensors (HAC-WAS05-50, HAC-WAS30-50), closure of the contact, if enabled, generates an on-screen alarm (see *Figure 11.3.5* to configure the alarm).
O1-C1	Clean contact for starting the water pump.
K1	Power relay (external), able to start the water pump.
F1-F2	Wiper power supply (max 24 Vac – 0.75 A from TR3 and TR4), from safety transformer housed in the base of the device (factory fitted with wiper option). Note: Only required for UPH-Z Series; not required for UPH-2D or UPH-3D Series.

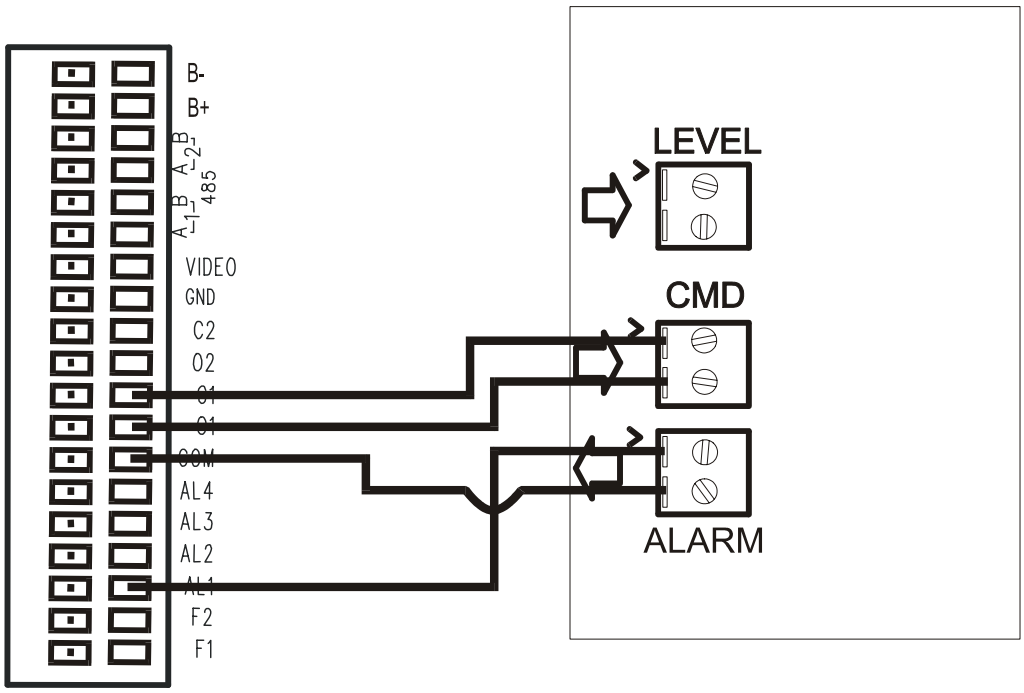

Fig. 5.5 Connecting the Washer System with Level Sensor Capabilities

NOTICE!
The HAC-WAS05-10 washer system does not have a level sensor. Therefore, it is not necessary to connect the alarm input.

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5.1 Connecting the Peripherals

The base has a 19-pin connector for which the following connections are illustrated:

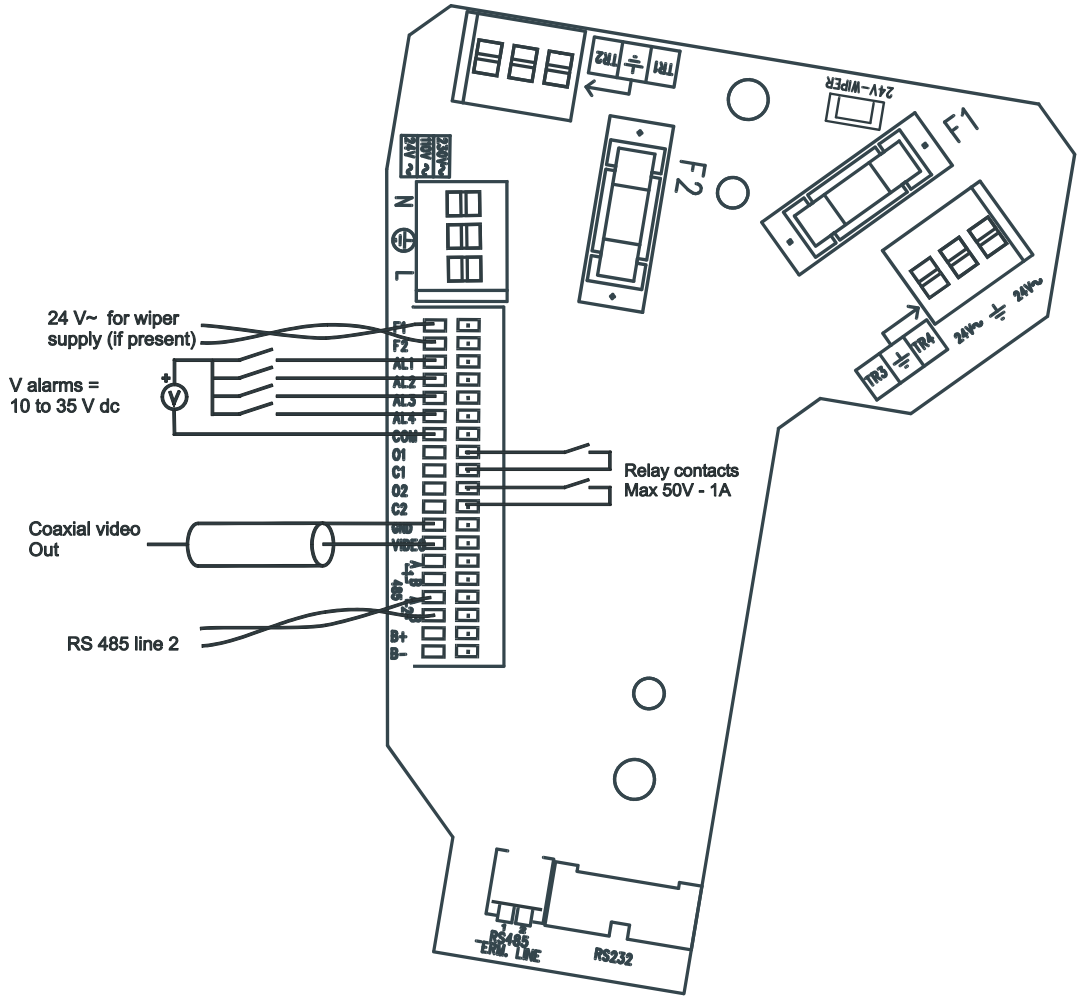

Fig. 5.6 Base with 19-pin Connector for Connecting Peripherals

Reference	Description
RS-485-2	Dedicated communication port for Pelco D (2400 baud, 8N1)
Video	Composite video out 1 Vpp
O1-C1 and O2-C2	Clean output contacts that can be activated by alarm or by user (50 VDC or 30 VAC @ 1A)
A1, A2, A3, and A4	Alarm in, voltage-controlled (10-35 VDC), referred to common COM
B+ and B-	Biphase communication lines

CAUTION! The system is TNV-1 type, do not connect to SELV circuits.

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6 Attaching the Top Unit

Each time the top unit requires re-assembling, the screw seals should be replaced (use a calibrated torque wrench setting of 2.1 Nm) to ensure the appliance remains water tight.
Inside the bottom cover there is a small bag containing mineral salts that are used to prevent moisture formation in the base and near the connector boards. This salt does not require any maintenance; however, remove the salt bag from the base before installing the unit.
To attach the top unit, proceed as follows:

1. Place the salt bag inside the housing as shown in *Figure 6.1*, with the salt bag secured into position by the metal fixing accessory and two fixing screws (supplied in small box of accessories).

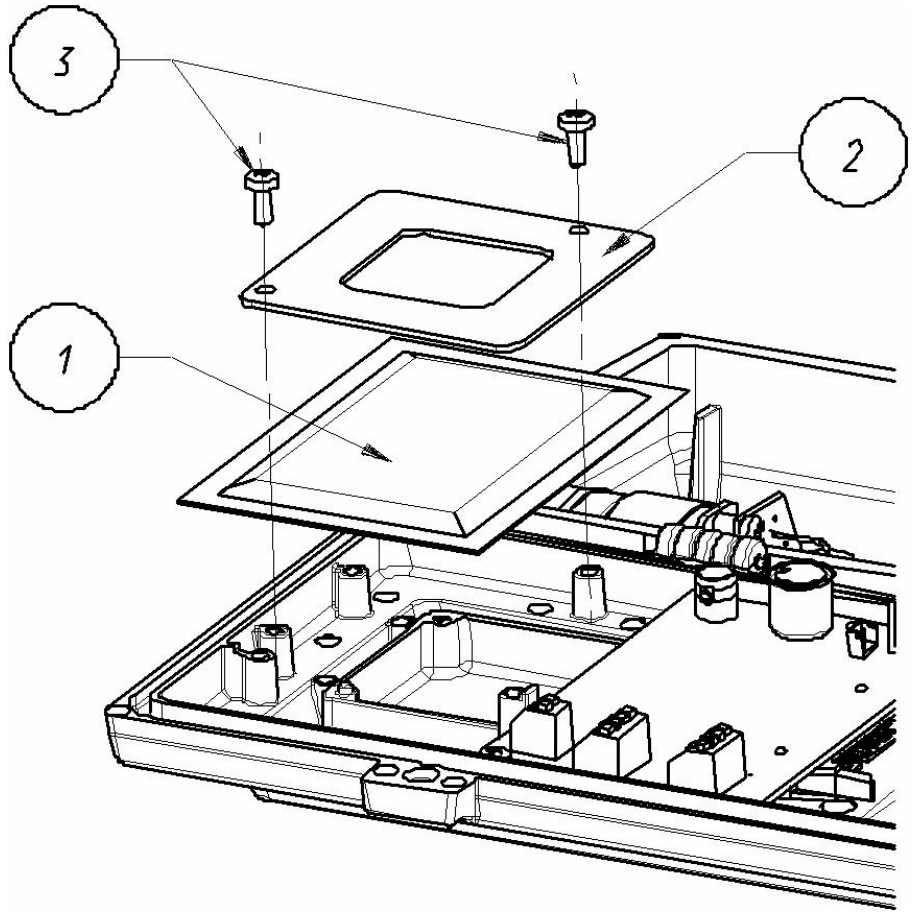

Fig. 6.1 Salt Bag Placement

Reference #	Description
1	Salt Bag
2	Metal Fixing Accessory
3	Fixing Screws

2. Remove the camera packaging material.
3. Make sure the gasket is present and in good condition.
4. Place the unit on the base. Align the tabs on the sides (see *Figure 6.2*) and verify that the parts are positioned correctly. Be careful not to pinch any of the wires.

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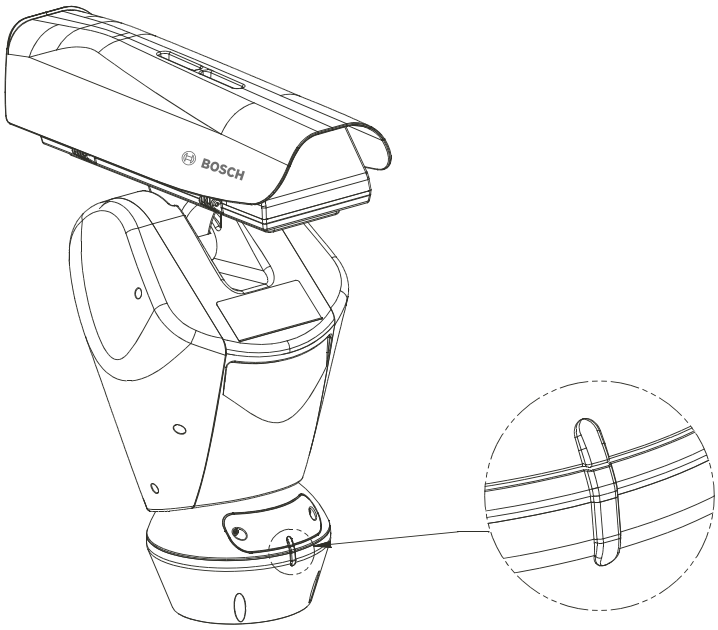

Fig. 6.2 Aligning the Tabs

5. Push down to snap into place.
6. Attach the top unit to the base using the supplied attachment screws and corresponding seals (see *Figure 6.3*).
7. Tighten the base with a 4 mm Allen wrench.

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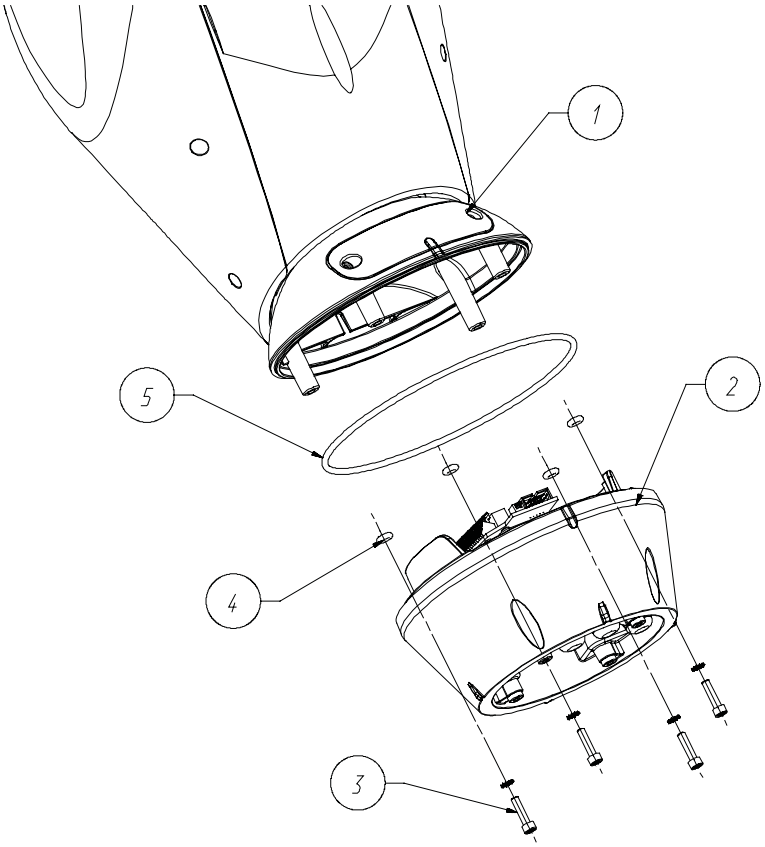

Fig. 6.3 Attaching the Top Unit

Reference #	Description
1	Configuration Window
2	Base
3	Screw
4	Screw Seal
5	Gasket

CAUTION! Medium Risk:
Place safety label near unit that warns of moving parts.

Fig. 6.4 Safety Label

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7 Configuring the Device

Before powering the High Speed Pan/Tilt, it must be properly configured. To configure the DIP switches inside the configuration window, proceed as follows:

1. Open the configuration window by unscrewing the screws with a 3 mm Allen wrench. See *Figure 6.3* for the location of the configuration window.
2. Verify that the position of the DIP switches are the same as in *Figure 7.1*. Starting from the left, we see the baud rate, protocol, and the peripheral address selectors, respectively.

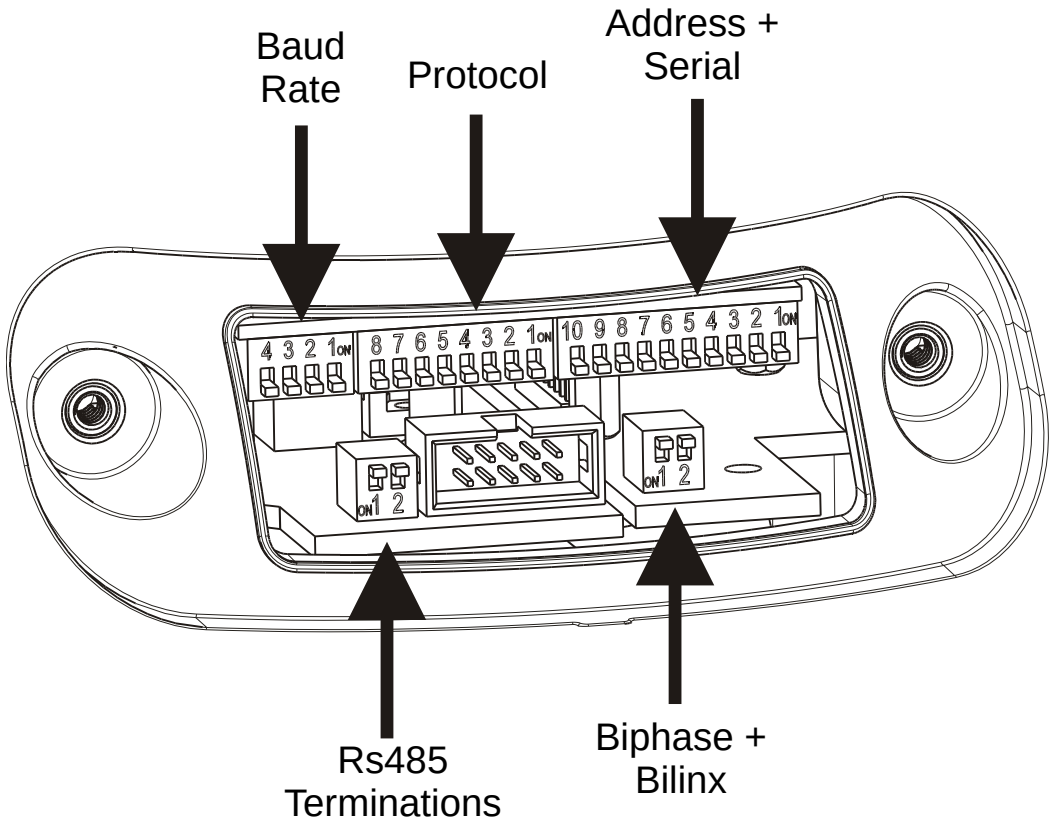

Fig. 7.1 Positioning the DIP Switches

For all DIP switches, when the rocker is down the switch is **OFF**, or represents the logical value “0”; when the rocker is up, the switch is **ON**, with logical value “1”. The white rectangle represents the position of the rocker.

7.1 Baud Rate Switches

DIP switches 4, 3, and 2 are not used; the unit has fixed baud rates. DIP switch No. 1 is used to update the firmware: **PROGRAM. ON** and **PROGRAM. OFF**. During normal use, make sure the rocker for DIP switch No. 1 is **OFF** (**PROGRAM. OFF**).

DIP-SWITCH 1 (for updating the firmware)	Program ON	Program OFF

Table 7.1 Updating the Firmware

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7.2 Protocol Switches

There is no need to set any particular protocol, the UPH is auto-sensing. The protocols supported are:

Protocol	Baud Rate	Menu setup (OSD)
Pelco D	2400 (8N 1)	Preset 95
Biphase and Bilinx	Auto	AUX-On 200

Table 7.2 Supported Protocols

7.3 Setting the Address

The UPH address can have a setting from 1 to 255. Binary code is used to select the address, using the 8 DIP switches on the far right. The up position represents binary value “1”, while the down position represents binary value “0”.
See *Figure 7.2* for all possible combinations (the white rectangle represents the position of the switch).

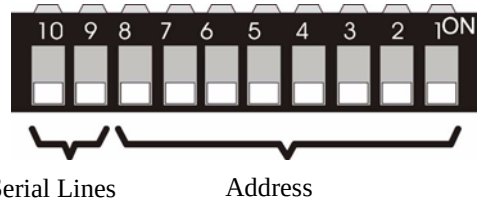

Table 7.3 All Possible Settings for Setting the UPH Address

Serial Lines Switches:
Dip-switches 10 and 9 are not used; the unit has fixed serial line mode.

Serial Lines Termination Switches:
Dip-switch 1 is not used (the RS485-1 line is not available).
Dip-switch 2 is used to enable the line termination of RS485-2 serial line.

Bilinx and Biphase Switches:
Dip-switch 1 is used to enable the line termination of Biphase serial line.
Dip-switch 2 is used to select the video format (ON = PAL, OFF = NTSC).

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7.3.1 Address Combinations

Fig. 7.2 Address table

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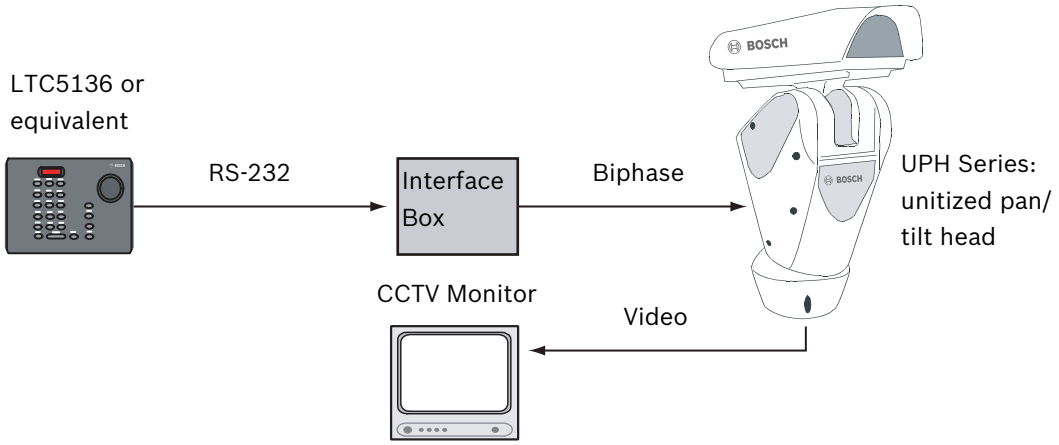
7.4 Connections

Please take note of the particular UPH model that you have installed. All three versions, UPH-Z, UPH-2D, and UPH-3D Series, support Bilinx and Biphase telemetry control, i.e.: PTZ.
The camera menu setup of UPH-Z Series is done via the OSD, i.e.: **AUX ON** - **200** - **Enter**. The camera menu setup of UPH-2D and UPH-3D Series is done via two different AUX commands, i.e.: **AUX ON** - **46** - **Enter** (Dinion^{XF} main menu) and **AUX ON** - **801** - **Enter** (Dinion^{XF} installation menu). See *Figure 10.1* for more information about keyboard commands.
Bilinx is a Bosch two-way communication protocol that allows remote control, configuration, and updates over a video coax cable. Bilinx is available on all UPH models.
Biphase is used for communicating telemetry (control) and set up information with the UPH-Series units. Biphase does not pass the video signal from the UPH-Series units, so a separate video coax cable is required. Biphase should be wired with Belden 8760 or equivalent.
Biphase is available on all UPH models.
Note: If the UPH is the only unit connected, or the last unit in a daisy chain configuration, then turn **ON** dip-switch 1 of Biphase + Bilinx to terminate the data line. Turn **OFF** dip-switch 1 of Biphase + Bilinx for each UPH in a daisy chain (i.e. unterminated). A maximum of four (4) UPH units can be daisy chained together.



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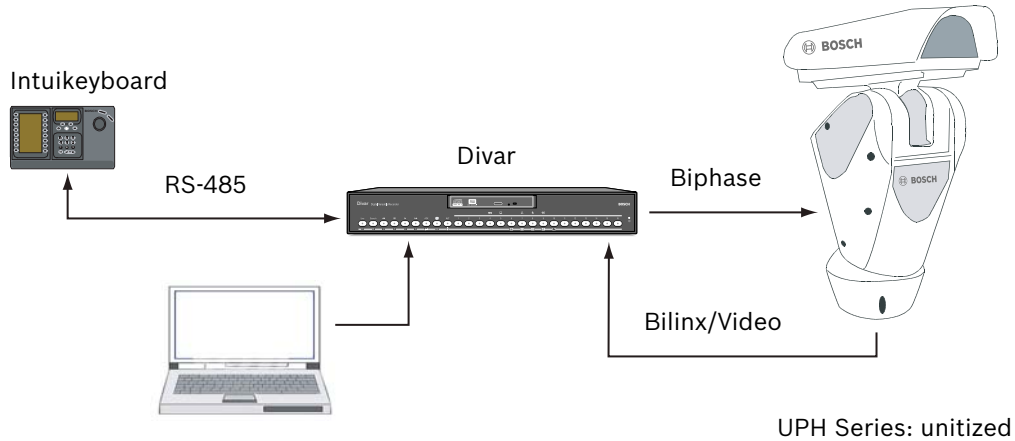
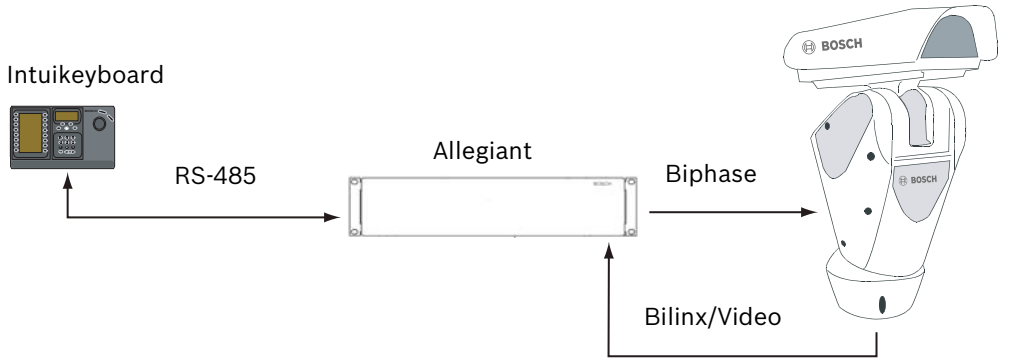
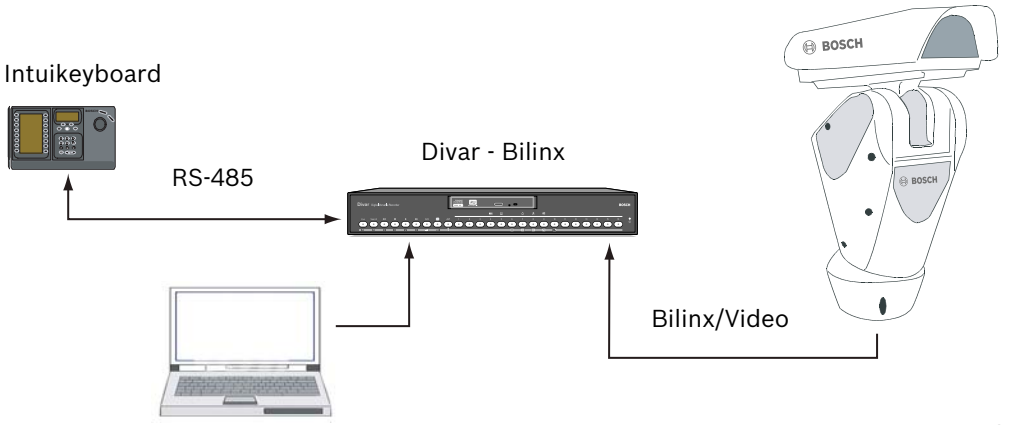
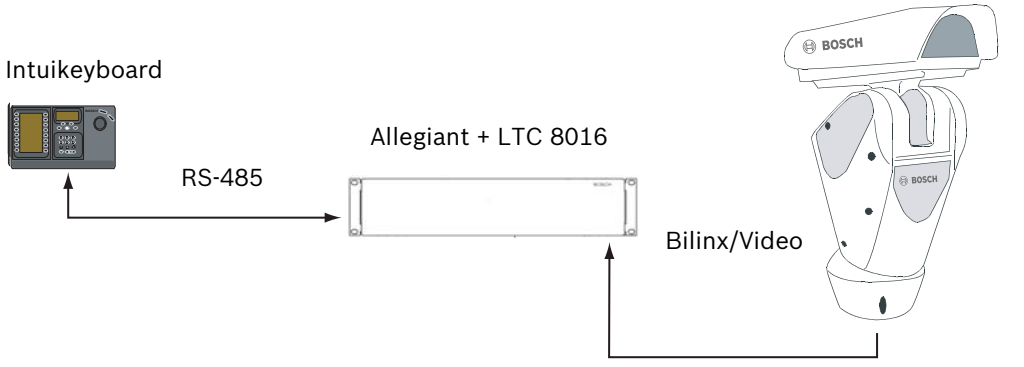


UPH Series: unitized pan/tilt head





UPH Series: unitized pan/tilt head



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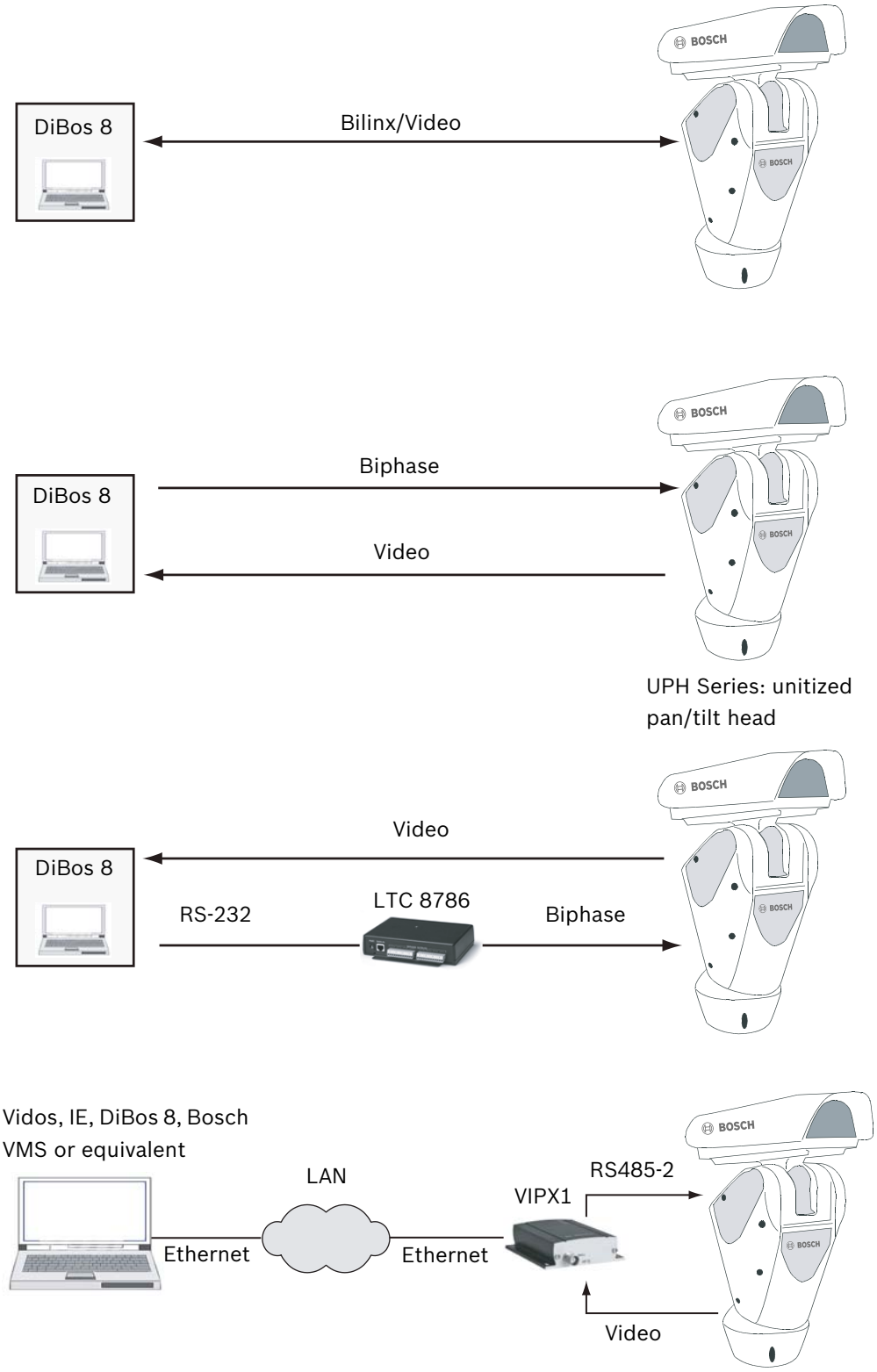

Fig. 7.3 Connection Diagrams

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8 Switching On and Off

Systems in the UPH line are switched on by simply connecting the power supply, and switched off by disconnecting the power supply. When the UPH is powered up in an environment below 0 °C, the device checks it's internal components to make sure that they are warm enough to start without damage. If the internal components' temperatures are too low, the OSD displays a warning message and the UPH automatically enters its de-icing mode. In de-icing mode the UPH is powered in an attempt to raise its internal temperature. A timer appears on the screen and counts down showing how much time remains for de-icing to complete.

NOTICE!
De-icing can take between 30 and 105 minutes, after which time it is ready for use, assuming that a safe internal temperature is reached; otherwise, it is too cold to safely operate the UPH and it remains off.

8.1 Configuring the Device

The first time the UPH is switched on, make sure it is configured correctly.
To configure the UPH, proceed as follows:

1. Disconnect the power supply by first tilting the device either all the way up or all the way down. When the UPH loses power, depending on how it is positioned, the unit may automatically tilt forward or backward. Therefore, failure in correctly positioning the UPH before disconnecting the power supply may result in personal injury or possible damage to the device.
2. Remove the DIP switch configuration window (see *Figure 6.2*).
3. Set the firmware update DIP switch rocker to the up position (PROGRAM. **ON**). See *Figure 7.1*.
4. Connect a monitor to the video output and power the device. After a few seconds, it is possible to check the settings on the monitor screen. Check these settings to verify that the unit is configured correctly.
5. After completing the check, switch off the device and re-toggle the firmware update DIP switch rocker to the down position (**PROGRAM. OFF**).
6. Close the c window and re-connect the power supply.

WARNING!
1. Make sure the UPH system and other components of the installation are closed so it is impossible to come into contact with live parts.
2. Make sure all parts are fastened down firmly and safely.
3. Make sure the power source and connecting cables are suitable for the power consumption of the system.

CAUTION!
Do not stay in the vicinity of the device when it is powered. There is a risk of crushing.

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NOTICE! High temperatures can also have a negative effect on camera image. If the ambient (outside) air temperature exceeds 40 deg Celsius (104 deg Fahrenheit), the HSPT will continue to operate, however some unusual effects may appear on the video signal. These are blemishes that appear as very small white dots on the video picture. They are usually only noticeable during and few a few hours after dusk, when the overall scene becomes darker, and the housing is still cooling down as the sun goes down.
Continued exposure of the HSPT to excessive ambient (outside) air temperatures will effect the long-term reliability of the HSPT, cause blemished to become more severe, and may introduce fixed pattern noise (FPN) on the video signal.

Solution: via Bilinx change the SensUp setting in the camera to OFF; this reduces the number and intensity of the blemishes.

9 On-screen Display (OSD)

During normal UPH operation, it is possible to activate the on-screen menu in order to set the advanced functions using the corresponding key/s.
When using a Bosch keyboard, control the OSD with the **Iris** and **Focus** buttons. For dynamic masking, the **SET** - **1** - **Enter** and **SET** - **2** - **Enter** keys are used.
Consult the user's manual for other keyboard brands.

9.1 Using the Joystick

In order to move through the OSD, move the joystick up or down through the menus.
To enter a menu, press the **Focus Near** or **Focus Far** button. To exit a menu, press the **Iris Open** or **Iris Close** button.

10 Moving Around the Menus

Each on-screen display (OSD) shows a list of parameters or submenus that can be selected by the operator. For example, to access the main menu in the High Speed Pan/Tilt (see *Figure 10.1*), click **AUX** - **ON** - **200**, then **Enter**. If the camera is a Dinion^{XF} option, then the Dinion^{XF}'s main menu (see *Figure 10.2*) can be accessed by clicking **AUX** - **ON** - **46**, followed by **Enter**. The Dinion^{XF}'s Installer menu can be accessed by clicking **AUX** - **ON** - **801**, followed by **Enter**.

1. To scroll through the parameters, move the cursor by operating the joystick up and down.
   - To scroll through the parameters, move the cursor by operating the joystick up or down.
   - The cursor is indicated by the "→" symbol at the beginning of a line, i.e. on the left side of the screen/monitor.
2. The "→" symbol at the end of a line, i.e. on the on the right of the screen/monitor, indicates the presence of a submenu. To enter the submenu, confirm the menu item by pressing the **Focus Near** or **Far** key.
3. To exit the submenu, press **Iris Open** or **Iris Close** button.

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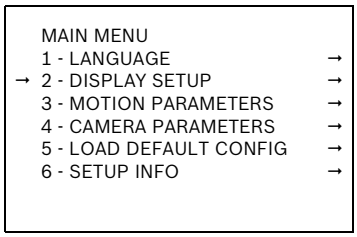

Fig. 10.1 Accessing the Main Menu - AUX On 200

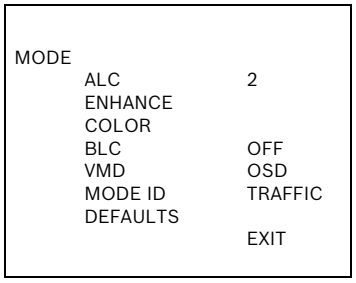

Fig. 10.2 Accessing the Dinion^{XF} camera Setup Menu - AUX On 46
(screen may differ depending on the camera type)

10.1 Keyboard Commands List

Setup and Configuration

Open OSD configuration: **AUX ON** - **200** - **Enter**

Dinion^{XF} main menu on: **AUX ON** - **46** - **Enter**

Dinion^{XF} installation menu on: **AUX ON** - **801** - **Enter**

Receiver reset/home: **AUX ON** - **911** - **Enter**

Receiver offset re-calibration: **AUX ON** - **204** - **Enter**

Auxiliary Connections

Relay number 2 activation: **AUX ON** - **65** - **Enter**

Relay number 2 de-activiation: **AUX OFF** - **65** - **Enter**

Wiper start: **AUX ON** - **202** - **Enter**

Wiper stop: **AUX OFF** - **202** - **Enter**

Washer start: **AUX ON** - **201** - **Enter**

Presets

Store preset position: **Show Shot** - **n** - **Enter** (n = 01 - 99, i.e. 99 presets)

Move to a preset position: **Show Shot** - **n** - **Enter** (n = 01 - 99, i.e. 99 presets)

Erase preset position: **Show Shot** - **9n** - **Enter** (n = 01 - 99, e.g. to erase preset position #31, then push **Show Shot** - **931** - **Enter**)

Standard preset patrol start: **AUX ON** - **8** - **Enter**

Standard preset patrol stop: **AUX OFF** - **8** - **Enter**

Recalibrate presets: **AUX ON** - **204** - **Enter**

Autopan (requires left and right limits to be set in OSD)

Autopan start: **AUX ON** - **1** - **Enter**

Autopan stop: **AUX OFF** - **1** - **Enter**

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10.2 Changing the Settings

To change a setting, proceed as follows:

1. **AUX ON** - **200** - **Enter** to enable the OSD.
2. Move the cursor to the parameter to be changed.
3. Press the confirmation (**Focus**) button. The field starts flashing, indicating that it is in change mode. Operating the joystick (up and down) shows the alternative choices.
4. After identifying the desired selection, press the confirmation (**Focus**) button; the parameter stops flashing.

Note: For UPH-2D and UPH-3D Series (Dinion^{XF}) models, use up and down to scroll through the menus, Focus to enter a submenu, and left and right to change values.

10.3 Changing the Numeric Fields

To change a numeric field, proceed as follows:

1. Use the joystick to scroll to the parameter you would like to edit.
2. Press the confirmation (**Focus**) button. The cursor starts flashing for the character to be changed, indicating it is in edit mode.
   - The minimum and maximum values allowed are displayed at the bottom of the screen. If you try to insert a value outside the limits, the field is forced to the minimum or maximum allowed value.
   - Operating the joystick (up and down) shows the alternative choices. If there is more than one field on the same line, it is necessary to select the field by moving the joystick (left and right).
3. After making the change, press the confirmation (**Focus**) button.
   - The first digit in the numeric field to be changed flashes and the last line of the display shows the accepted limits for the field.
   - Move within the field (left and right) and change the sign or the numeric value (up and down).

Note: For UPH-2D and UPH-3D Series (Dinion^{XF}) models, use up and down to scroll through the menus, Focus to enter a submenu, and left and right to change values.

11 Configuring the System

The UPH High Speed Pan/Tilt can be configured through the on-screen display (OSD). Open the main menu by pressing **AUX ON** - **200** - **Enter**.

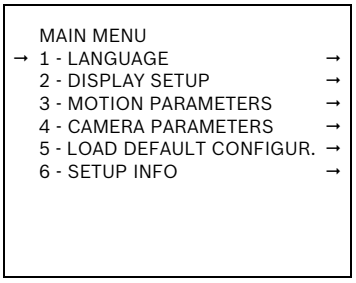

Fig. 11.1 OSD (On-screen Display) Main Menu

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11.1 Language Menu

This menu is used to select and set the desired language. The default setting is English.

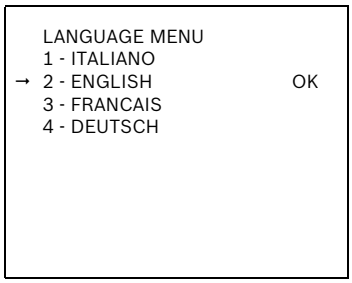

Fig. 11.2 Language Menu with English Selected.

OK is displayed next to your choice, and the language is changed immediately.

11.2 Display Setup Menu

The **Display Setup** menu is used to define settings for the information that is permanently displayed on the screen.

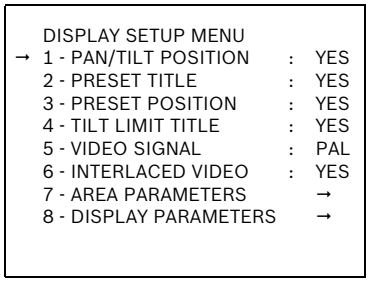

Fig. 11.3 Display Setup Menu

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Feature	Description	Default	Options
PAN/TILT POSITION	Shows the current position of the device (in degrees) with reference to the home position.	YES	YES, NO
PRESET TITLE	Enables or disables the preset title on the display.	YES	YES, NO
PRESET POSITION	Enables or disables the preset number reached on the display.	YES	YES, NO
TILT LIMIT TITLE	Enables or disables displaying if the tilt limit is reached.	YES	YES, NO
VIDEO SIGNAL	Type of video signal.	PAL	PAL, NTSC
INTERLACED VIDEO	Enables or disables the display for interlaced video.	YES	YES, NO
AREA PARAMETERS	Information about area (or sector) that the unit is pointing towards.		
DISPLAY PARAMETERS	Setup of location of text position/type on the display.		

NOTICE! Over time, due to environmental factors such as wind and vibration, preset positions may not always align with what they were at installation. Use **AUX ON** - **204** - **Enter** to correct this. It takes 30-45 seconds to cycle through this process, during which time there is no user control. Once it has finished the process and corrected for the effect of any environmental factors, the user regains full control.

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11.2.1 Area Parameters Menu

The **Area Parameters** menu enables the user to show a message on the screen, depending on the horizontal position reached by the device; this is sometimes known as sector information. From this menu, it is possible to enter two (2) lower menus that are used to set the text for each area, and the start and end positions (in degrees) of these areas. It is possible to set up to eight (8) areas with their own title, start, and end positions.

For example, to activate the first title and obtain a message when the device is between +80 ° and +120 ° in the horizontal (pan) direction, proceed as follows:

1. Enter the **Position Area** menu.
2. Select Area 1 by pressing **Focus**; an arrow starts blinking next to the start position. Press **Focus** again, use the joystick to enter the value +080.00 in the left column (start position of text coming on screen), then press **Focus** to store that value. Repeat the process, but put +120.00 in the right column (stop position of text removed from the screen).
3. In the **Text** (String) **Area** menu, select the first line and enter the desired text.

Note: If the area position start and end values are set to +0.00, this disables the text display.

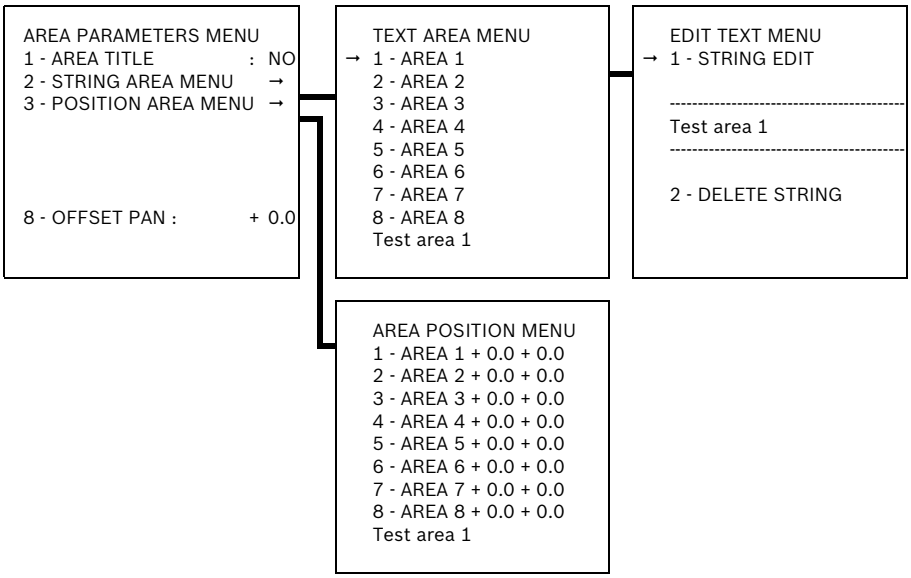

Fig. 11.4 Area Parameters Menu

Feature	Description	Default	Options
AREA TITLE	Enables / disables the on-screen message depending on the horizontal position reached by the device.	NO	YES, NO
STRING AREA MENU	Enables the user to edit a customized, on-screen text message that is activated when the device reaches a defined, horizontal position.		
POSITION AREA MENU	The horizontal position reached by the device that prompts a customized on-screen text message.		
OFFSET PAN	Adds a corresponding value (offset) in degrees to the pan references used for displaying the area text. For example, if this value is set to +45.0 ° then all references will be shifted in PAN by +45 ° with respect to the system's physical reference.	+0.00	-180.00 to +180.00

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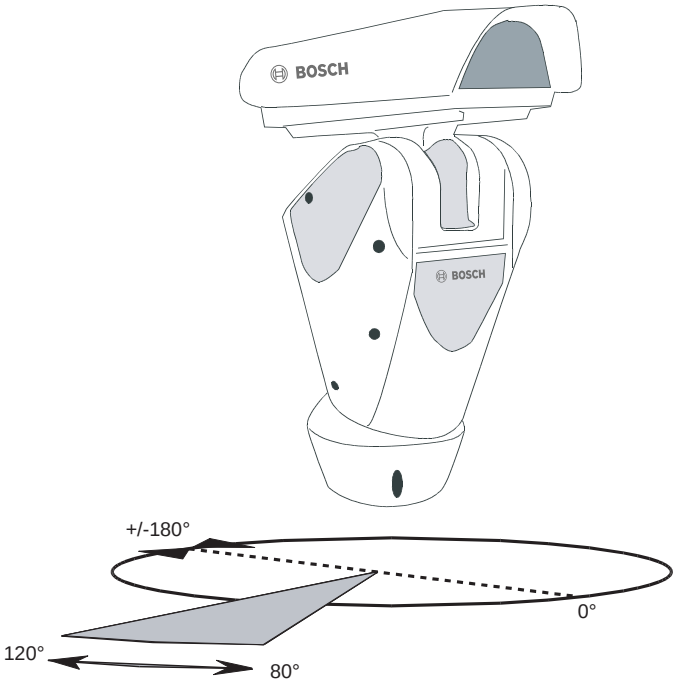

Fig. 11.5 Setting the Area Position Values

11.2.2 Changing the Edit Text Menu

To change the text within the **Edit Text** menu, proceed as follows:

1. Upon accessing the **Edit Text** menu, select **String Edit**. The first field flashes a "v", indicating it is in **Edit** mode (see *Figure 11.6*).
2. Press the **Focus** button. The cursor flashes at the bottom of the screen, corresponding to the groups of alpha/numeric characters. Operate the joystick (up, down, left, and right) to select a group of characters.
3. Press the confirmation (**Focus**) button to confirm the alpha/numeric group containing the character to be added. The first value in the sequence you selected starts flashing.
4. Move the joystick up or down to choose a value.
5. When finished, press the **Focus** button to confirm your choice. The "v" automatically moves to the right.
6. Repeat steps 2-5 until finished.
7. When finished, press the Iris button to exit the menu.

NOTICE!
To skip a space while in edit mode, press the Iris button, then move the joystick to the right past the number spaces you would like to skip. Press the Focus button to resume adding values.

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The character being edited flashes and the joystick (up and down) can be used to change it. After making the change, confirm and continue to edit the text, or else exit with the **Iris** button.

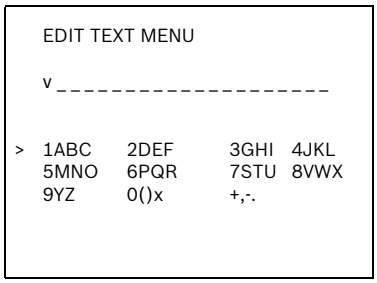

Fig. 11.6 Edit Text Menu

Offset Pan

By default, the offset pan is +0.00. The value can be changed to move the default pan position of the unit to wherever is convenient. For example, if the installation requires that the NORTH position should be at 0.00 ° (pan), then an offset pan can be entered to compensate for any deviation from NORTH. After mounting, the NORTH position was found to be +41.37 ° (pan position); therefore, the offset pan should be set to - 41.37 ° to make the pan +0.00 ° position point to NORTH.

This has an effect on the Area Titles as defined in the **Area Position** menu. In the above example, after the offset pan has been set to -41.37 °, the Area Text Menu "1 - Area" could be changed to "1 - NORTH" to display NORTH on the screen at pan +0.00 ° position.

11.2.3 Display Parameters

The **Display Parameters** menu is used to enter the settings menus for the device movement parameters.

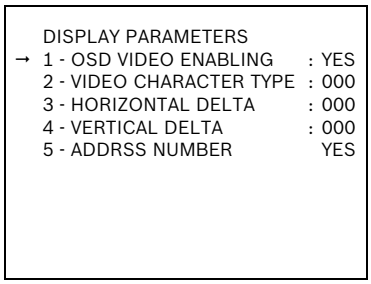

Fig. 11.7 Display Parameters Menu

OSD Video Enabling	Set to **YES** to superimpose the menu text over the video signal from the camera. Set to **NO** to have a blue screen behind the menu TEXT.
Video Character Type	Set to 0 to make the background of the text to transparent; set to 1 to make it black.
Horizontal Delta/Vertical Delta	These set the position of reference to the titler so that the text can be centralized.
Address Number	If enabled, the address number of the unit is shown at the top left of the screen during normal operation.

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11.3 Motion Parameters Menu

The **Motion Parameters** menu is used to control the speed, limits, preset/patrol/autopan, wiper-washer, and the alarm settings of the UPH.

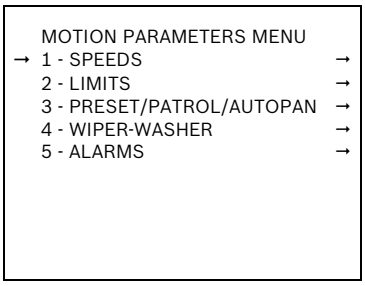

Fig. 11.8 Motion Parameters Menu

11.3.1 Speed Menu

The **Speed** menu is used to control the pan and tilt movement of the UPH in manual control mode using the joystick. See *Figure 11.3.3* for setting pan & tilt speeds for the presets, patrols, and scans.

.

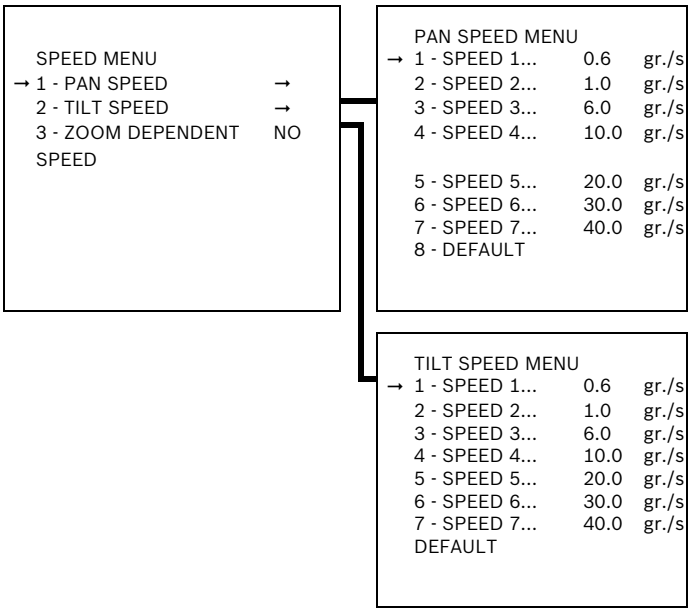

Fig. 11.9 Speed Menu

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Feature	Description	Default	Options
PAN SPEED 1	Correspondance between joystick position and UPHspeed. Joystick positions have been divided into 7 levels for both axis (pan & tilt); each level corresponds to a defined speed which can be modified by the user.	1.0	0.1-100.0
PAN SPEED 2		2.0	0.1-100.0
PAN SPEED 3		5.0	0.1-100.0
PAN SPEED 4		10.0	0.1-100.0
PAN SPEED 5		20.0	0.1-100.0
PAN SPEED 6		30.0	0.1-100.0
PAN SPEED 7		40.0	0.1-100.0

The data is expressed as degrees per second.

Feature	Description	Default	Options
TILT SPEED 1	Correspondance between joystick position and UPHspeed. Joystick positions have been divided into 7 levels for both axis (pan & tilt); each level corresponds to a defined speed which can be modified by the user.	1.0	0.1-40.0
TILT SPEED 2		2.0	0.1-40.0
TILT SPEED 3		3.0	0.1-40.0
TILT SPEED 4		5.0	0.1-40.0
TILT SPEED 5		8.0	0.1-40.0
TILT SPEED 6		10.0	0.1-40.0
TILT SPEED 7		20.0	0.1-40.0

The data is expressed as degrees per second.

Zoom dependent speed by default is turned off. When the zoom-dependent function is turned off, then the pan and tilt speeds of the UPH are unaffected by the zoom measurement of the camera/lens combination. If the zoom-dependent function is turned on, the zoom measurement of the camera/lens combination affects the pan and tilt speeds. This is useful when the zoom is in telephoto (i.e. zoomed in); it slows down the pan and tilt speeds so that very fine adjustments can be made to follow moving subjects.

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11.3.2 Limits

The **Limits** menu sets the movement limits for the UPH. These limits apply to all presets, autopan and patrols, including manual operation of the UPH using the joystick. After the limits are set in the OSD and the UPH moves into the "limited pan and tilt zone", it will not move outside of those limits until they are altered in the OSD or the UPH is reset. On reset, the UPH returns to within the limited pan and tilt zone.

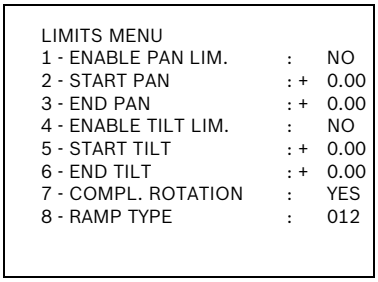

Fig. 11.10 Limits Menu

Feature	Description	Default	Options
ENABLE PAN LIM.	Enables limits and values in degrees taken by the device in pan. Enables or disables complete rotation for scan/patrol/autopan movements (this function is useful when using accessories with external cables, such as infrared spotlights, where continuous rotation of the UPH could break the accessories themselves).	NO	YES, NO
START PAN	Enables the location that the UPH begins to pan.	+0.00	-180.00° - +180.00°
END PAN	Enables the location that the UPH stops panning.	+0.00	-180.00° - +180.00°
ENABLE TILT LIM.	Enables limits and values in degrees taken by the device in tilt.	NO	YES, NO
START TILT	Enables the location that the UPH begins to tilt.	+0.00	-40.00° - +90.00°
END TILT	Enables the location that the UPH stops tilting.	+0.00	-40.00° - +90.00°
COMPL. ROTATION	Enables the search for the shortest route during scan, patrol, and autopan movements.	YES	YES, NO
RAMP TYPE	Changes start and stop times for the UPH. The higher the number, the greater the acceleration/deceleration during starting/stopping.	012	000 - 012

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11.3.3 Preset/Patrol/Autopan

The **Preset/Patrol/Autopan** menu sets the movement limits related to the UPH.

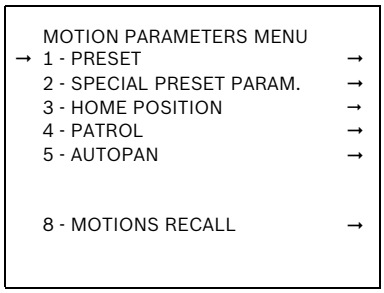

Fig. 11.11 Preset/Patrol/Autopan Menu

Feature	Description
PRESET	A pre-selected and stored combination of pan, tilt and zoom positions that allow a set view to be recalled.
SPECIAL PRESET PARAMETER	Allows change to the default values for preset speeds and forces it into all presets.
HOME POSITION	A special preset that is automatically recalled after an interval of time (see other config. menu).
PATROL	Manually change the path of the automatic cycle between preset positions.
AUTOPAN	The camera pans continuously between right and left limit settings.
MOTIONS RECALL	Allows definition of action after an interval of inactivity (it can recall a patrol, autopan, home position, etc).

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Preset Menu

The **Preset** menu displays and allows changes to all parameters for the available preset positions in the UPH. Use the up and down function of the joystick to move between the presets in units, i.e.: PRST 01 to PRST 02 to PRST 03. Use the left and right function of the joystick to move between the presets in tens, i.e.: PRST 01 to PRST 11 to PRST 21. Press **Focus** to edit the chosen preset, using the joystick and **Focus** button to fine tune these parameters. Use the **Iris** button to exit.

```
        PRESET EDIT MENU
PRST    PAN             :   + 0.0
01      TILT            :   + 0.0
        ENABLE          :   NO
        ZOOM            :   00000
        FOCUS           :   00000
        IRIS            :   00000
        SPEED           :   040.0
        DWELL           :   00001
        TXT: PRESET NR. 1
```

Fig. 11.12 Preset Menu

Feature	Description	Default	Options
PAN	Moves a camera on a horizontal axis.	0.0	-180.00° - +180.00°
TILT	Moves a camera on a vertical axis.	0.0	-40.00° - +90.00°
ENABLE	Enables preset.	NO	YES, NO
ZOOM	Changing the effective focal length to allow different fields of view to fill the picture area. Zoom can be optical, where the lens is adjusted, or digital, where a portion of the view selected is magnified electronically.	00000	65535
FOCUS	Positions	00000	65535
IRIS	Positions	00000	65535
SPEED	Speed for reaching the position when the preset position is loaded by the patrol function.	040.0	.1 - 100.0°
DWELL	Dwell time during patrol and auto-pan movements.	00001	00000 - 01000 sec.
TXT: PRESET NR. 1	Message displayed when the preset position is reached.		

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Special Preset Parameters

The **Special Preset Parameters** menu can be used to make parameter settings. Increase the default value to increase the speed between presets or the scan speed.

```
   SPECIAL PRESET PARAMETER MENU
→ 1 - PRESET SPEED  REF.        : 20.0
   2 - SCAN SPEED                : 20.0
   3 - TILT SPEED                : 100
   REDUCTION
   6 - FIRST DWELL               00005
   TIME
   7 - FORCE PRST                NO
   DW.TIME
   8 - FORCE PRST                NO
   SPEED
```

Feature	Description	Default	Options
PRESET SPEED REF.	Default value whenever a preset position is stored.	20.0	0.1 - 100.0
SCAN SPEED	Reference speed used when a preset position is recalled by the scan function.	20.0	0.1 - 100.0
TILT SPEED REDUCTION	Tilt speed reducing factor with respect to pan speed.	100.0	0.1 - 100.0
FIRST DWELL TIME	Time in seconds to dwell at preset position.	00005	00001 - 01000
FORCE PRST DW.TIME	Forces the default dwell time value for all presets.	NO	YES, NO
FORCE PRST SPEED	Forces the default speed value for all presets.	NO	YES, NO

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Home Position

The **Home Position** menu is one of the 250 presets which can be defined as a preset position. Please note that through the normal Set Shot Command, only 99 presets can be stored. Use this menu for presets 100 to 250.

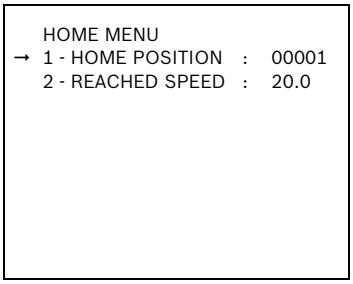

Fig. 11.13 Home Menu

Feature	Description	Default	Options
HOME POSITION	Preset position associated with the home function.	00001	00001 - 00250
REACHED SPEED	Speed for reaching the home position when it is loaded.	20.0	.1 - 100.0

Note: Increase the reached speed from the default value to reach presets faster.

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Patrol (loading of preset positions)

The **Patrol** menu is a defined path from preset to preset. This can be from two (2) presets up to 250. For example, the random option allows various presets such as preset 4, then preset 1, then preset 8, then preset 3.

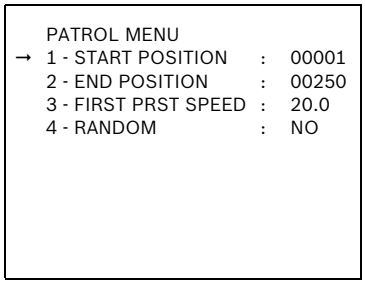

Fig. 11.14 Patrol Menu

Feature	Description	Default	Options
START POSITION	The first preset position considered valid for carrying out the patrol function.	00001	00001 - 00250
END POSITION	The last preset position considered valid for carrying out the patrol function.	00250	00001 - 00250
FIRST PRST SPEED	Speed at which the UPH reachs the first preset position when the patrol function is activated. Increase the First PRST Speed from the default value to reach presets faster.	20.0	01 - 100.0°
RANDOM	Enables execution of the Patrol function by passing through the defined positions in a random manner. The random sequence is continually recalculated.	NO	YES, NO

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Autopan

The **Autopan** menu is used to indicate preset position settings.

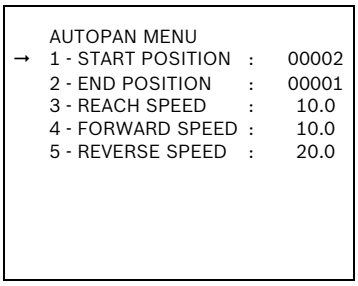

Fig. 11.15 Autopan Menu

Feature	Description	Default	Options
START POSITION	First preset position.	00002	00001 - 00250
END POSITION	Second preset position.	00001	00001 - 00250
REACH POSITION	Preset position to be reached.	010.0	.1 - 100.0
FORWARD SPEED	Speed for reaching the first preset position when the autopan function is loaded.	010.0	.1 - 100.0
REVERSE SPEED	The return speed going from 2-1 (autopan only).	020.0	.1 - 100.0

Motions Recall Menu

The **Motions Recall** menu is used to activate the camera after a period of time that the joystick is not used. The options available are:

– Home - return camera to Home position
– Autopan - start the Autopan feature
– Patrol - start the Patrol feature

The period of time between the joystick not being used and activating one of the motion types is based on the dwell before activity setting (in seconds); by default the dwell is 50 seconds.

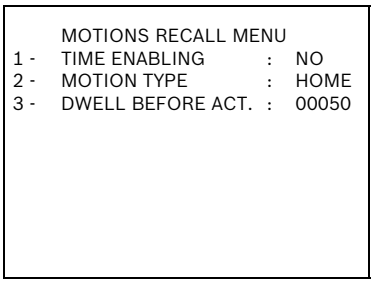

Table 11.1 Motions Recall Menu

Feature	Description	Default	Options
TIME ENABLING	When set to YES, the functionality is enabled and the action will be done after the dwell of inactivity. When set to NO, no action takes place after the dwell of inactivity.	NO	YES, NO
MOTION TYPE	Enables the type of movement to be loaded.	HOME	HOME, AUTOPAN, PATROL
DWELL BEFORE ACT.	Interval that the joystick is inactive before the movement setting is loaded.	00050	00005 - 01000 sec.

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11.3.4 Wiper-Washer

Select UPH Pan/Tilt models have a wiper option used to operate an (external) pump for cleaning the glass. The spray for cleaning the glass is on the outside of the pan/tilt (see *Figure 11.16*). For cleaning, the UPH must be positioned with the glass facing the spray. Start the pump for the glass cleaning liquid and then start the wiper. It is necessary to set a preset position corresponding to the spray which is loaded when the “wiper” function is started. For washer models with a level sensor, the UPH displays an on-screen message when the level of liquid in the tank is too low (only if using a pump with high discharge head from the UPTWASA Series).

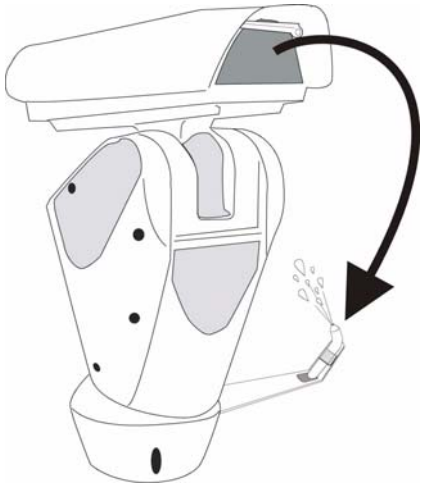

Fig. 11.16 Wiper-washer Function

```
    WIPER-WASHER MENU
→   1 - ENABLED          :  NO
    2 - PRESET POSITION  :  00001
    3 - RELAYS NR.       :  00002
    4 - PUMP DELAY       :  00003
    5 - WIPER DURATION   :  00005
    6 - DELAY WIPER OFF  :  00002
```

Fig. 11.17 Wiper-washer Menu

Feature	Description	Default	Options
ENABLED	Enables the wiper function.	NO	YES, NO
PRESET POSITION	Enables the preset position to be reached.	00001	00001 - 00250
RELAYS NR.	Enables the relay to activate for water pump control.	00002	00001 - 00002
PUMP DELAY	The delay between the pump command and when the wiper starts moving.	00003	00001 - 00050
WIPER DURATION	The amount of time that the wiper wipes.	00005	00001 - 00050
DELAY WIPER OFF	The amount of time that the wiper wipes without water.	00002	00001 - 00050

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11.3.5 Alarms

The **Alarms** menu is used to set up the action and duration of the alarm when it is activated.

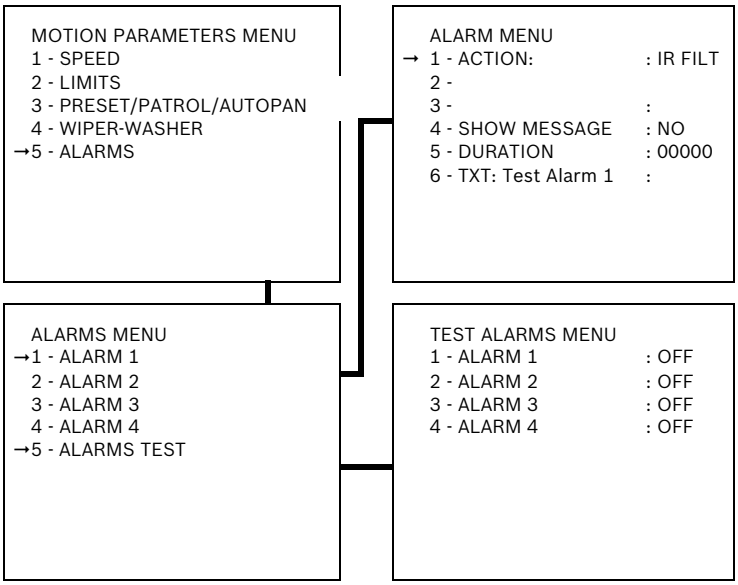

Fig. 11.18 Alarms Menu

Feature	Description	Default	Options
ACTION	Enables the action to take place when the alarm is activated.	DISABLE	DISABLE, SCAN, RELAY, AUTOPAN, PATROL, IR FILT
SHOW MESSAGE	Enables the display of an alarm message.	NO	YES, NO
DURATION	Length (in seconds) of alarm message display (0 means for the complete duration of the alarm).	00000	00000 - 01000
TXT: Test Alarm 1	Text associated with the alarm.		
ALARMS TEST	Displays the status of Alarm Inputs 1, 2, 3, and 4; either ON or OFF status (not user selectable).		

11.4 Camera Parameters

There are some differences between the UPH-Z Series, and the UPH-2D and UPH-3D Series. *Figure 11.4.1* refers to the camera parameters of the UPH-2D and UPH-3D Series, i.e. units with Dinion^{XF} cameras and motorized zoom lenses. *Figure 11.4.2* refers to the camera module parameters of the UPH-Z Series.

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11.4.1 UPH-2D and UPH-3D Series (Dinion^{XF} Cameras)

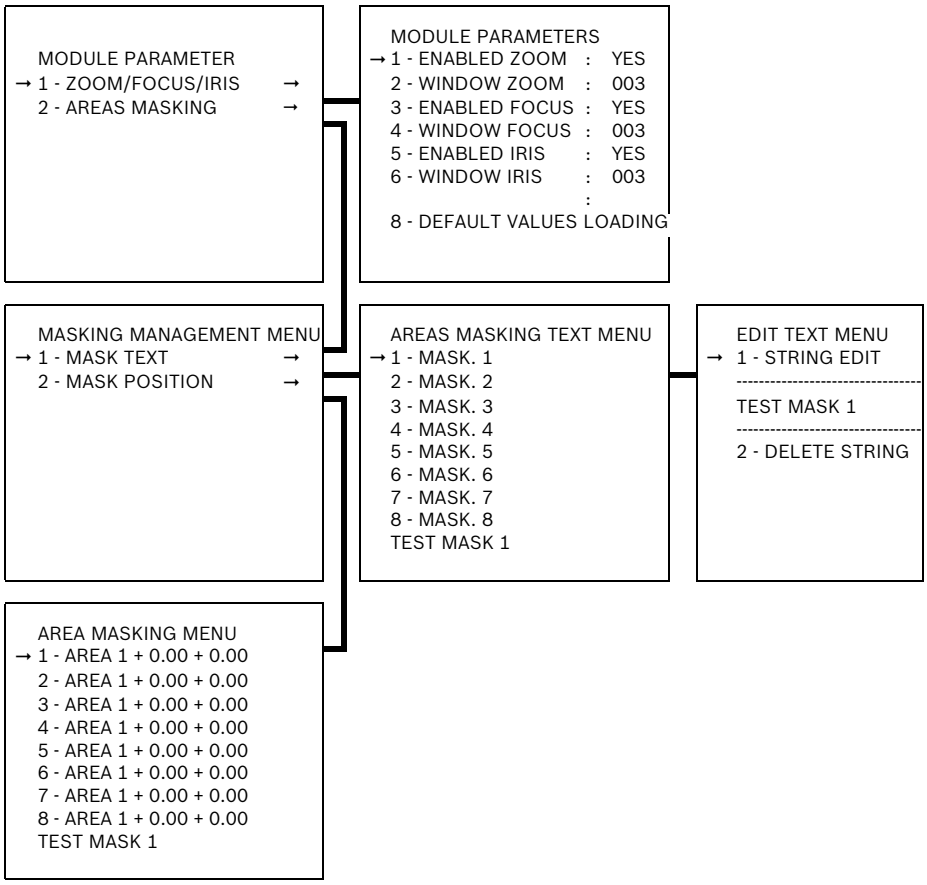

Fig. 11.19 Camera Parameters Menu

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11.4.2 UPH-Z Series (camera module)

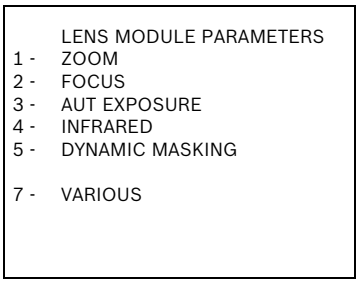

Fig. 11.20 Camera Module Parameters Menu

Feature	Description	Default	Options
ZOOM	Electronically or optically enlarging or reducing the size of an image.		
FOCUS	To adjust a lens so that it produces the sharpest visual image.		
AUT EXPOSURE	To select the exposure mode: AUTOMATIC or MANUAL.		
INFRARED	Electromagnetic radiation with wavelengths between 700 nm and 1 mm, that is longer than visible light but shorter than radio waves.		
DYNAMIC MASKING	Create and modify the Dynamic Masks with the menu (for Sony module only).		
VARIOUS	Manages various features, such as back light compensation or digital image stabilization.		

Zoom Parameters Menu

The **Zoom Parameters** menu is used to enable digital zoom and speed.

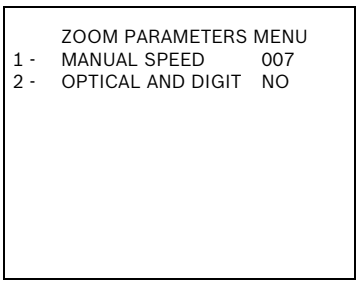

Fig. 11.21 Zoom Parameters Menu

Feature	Description	Default	Options
MANUAL SPEED	The speed can take values between 0 (minimum speed) and 7, maximum speed.	007	000 - 007
OPTICAL AND DIGIT	Enables digital zoom.	NO	YES, NO

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Focus Parameters Menu

The **Focus Parameters** menu is used to enable focus settings.

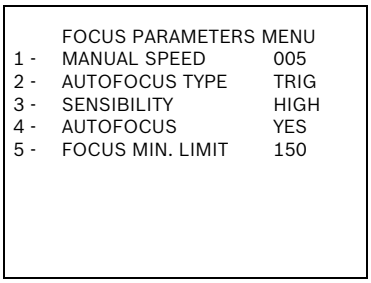

Fig. 11.22 Focus Parameters Menu

Feature	Description	Default	Options
MANUAL SPEED	The speed can take values between zero (0) minimum speed and seven (7) maximum speed.	005	0-7
AUTOFOCUS TYPE	Normal: standard operating mode for auto focus. Interval: load the auto focus function at intervals. Loading is set at every five (5) seconds. Trigger: load auto focus whenever the zoom or pan and tilt movements move and return to manual focus.	TRIG	NORM, INTER, TRIG
SENSIBILITY	High: focusing at the higher speed. Low: slower focusing. This is useful when the lighting is poor because it makes the image more stable.	LOW	AUTOMATIC or MANUAL
AUTOFOCUS	MANUAL MODE: the user always manually adjusts the exposure via the iris buttons. AUTOMATIC MODE: the exposure normally stays in automatic mode. Moreover, the user can override the exposure manually via Iris.		
FOCUS MIN LIMIT	Set the minimum object distance for focus (cm).	150	016 - 192

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Auto Exposure Parameters Menu

The **Auto Exposure Parameters** menu is used to control the iris of the UPH-Z Series. In Automatic mode the iris of the camera/lens combination automatically reacts to light level changes. In **Manual** mode the user has full control of the iris.

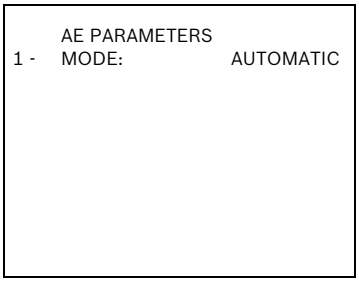

Fig. 11.23 AE Parameters Menu

Feature	Description	Default	Options
MODE	Type of exposure control	AUTOMATIC	

Parameters Mode - Infrared Menu

The **Parameters Mode - Infrared Menu** controls how the IR-cut filter of the camera/lens combination reacts to light changes.

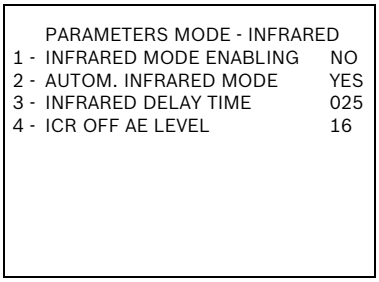

Fig. 11.24 Parameters Mode Menu

Feature	Description	Default	Options
INFRARED MODE ENABLING	Continuous activation of infrared mode.	NO	YES, NO
AUTOM. INFRARED MODE	Enables the automatic function with automatic switching to infrared mode.	YES	YES, NO
INFRARED DELAY TIME	Delayed recognition of daylight (color) mode; the parameter is shown in seconds.	25	005 - 255
ICR OFF AE LEVEL	Changes the point of switching the IR-cut filter (ICR) between day and night time. The lower the value, the earlier the ICR changes (i.e. more sensitive to low light).	16	1, 10, 16, 18, 20, 22, 24, 26

Dynamic Masking (UPH-Z Series only)

With dynamic masking, it is possible to create up to 24 masks so as to hide specific areas defined by the user. The masks are defined in the space and take into account the horizontal, vertical, and depth position of the zoom at the time of the setting.
The UPH automatically holds the position and the size of the masking, according to the area displayed.

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It is possible to set up a maximum of eight (8) simultaneous masks. If the device is used at the maximum speed, video signal update times become critical and it is necessary to create masks that are larger than the object to be hidden to be sure it will not be seen.

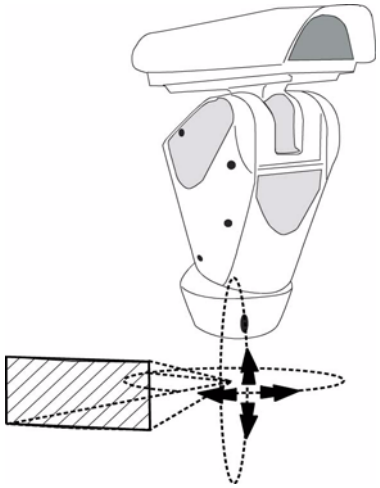

Fig. 11.25 Dynamic Masking

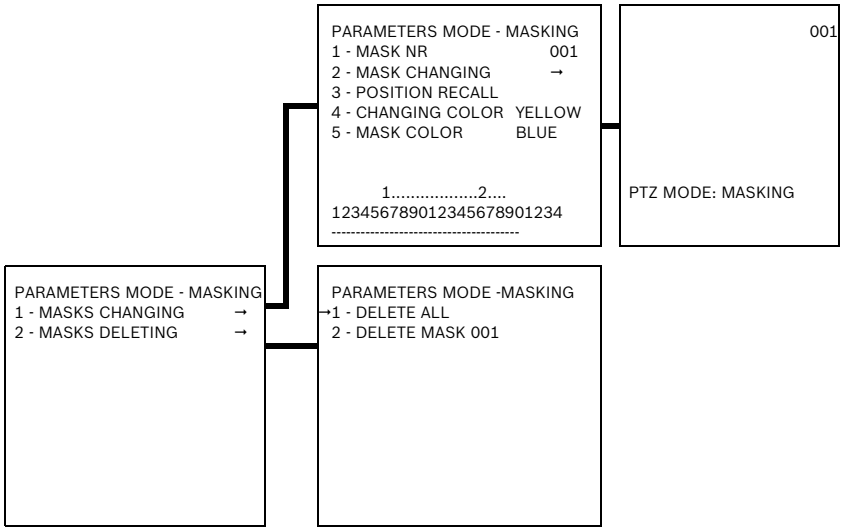

Fig. 11.26 Parameters mode - Masking Menu

Feature	Description	Default	Options
MASK NR	Enables the mask to be worked on.	001	001 - 024
MASK CHANGING	Enables the menu for creating/ editing the mask.		
POSITION RECALL	Enables the position where the mask was defined.		
CHANGING COLOUR	Enables the color of the mask being modified.	YELLOW	VARIOUS
MASK COLOR	Enables the color of the mask.	BLUE	VARIOUS

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11.5 Creating a New Dynamic Mask

Select "Mask Changing" and an 8 x 6 grid is displayed on the screen. In the top right corner is the Mask Number, and in the bottom left corner is the text "PTZ Mode: Masking". Then proceed as follows:

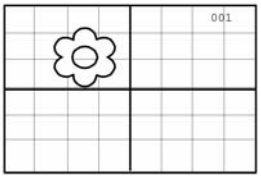
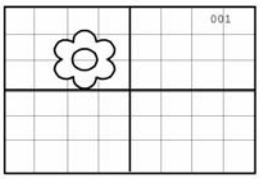
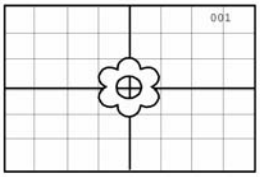
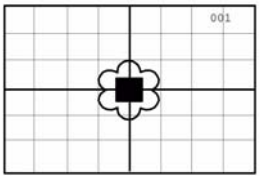
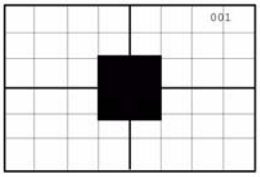
	Press **Set Shot - 1 - Enter** to change from **masking** mode to **move camera** mode. PTZ MODE: MASKING
	Operate the joystick on the keyboard to move the UPH and, if necessary, operate the zoom to center the object that will be masked. In this example, we are going to mask a flower. PTZ MODE: MOVE CAMERA
	When the object is centered, press the **Set Shot - 2 - Enter** and press Iris Open or Close. PTZ MODE: MOVE CAMERA
	A small yellow rectangle is displayed. Operate the joystick (left, right, up & down) to enlarge the rectangle until it covers the whole flower. PTZ MODE: MASK CHANGING
	When the desired result is obtained, confirm by pressing the Iris Open or Close button. A message indicates that the mask has been saved. PTZ MODE: MASKING

Fig. 11.27 Creating new dynamic masks

An "x" is displayed at the bottom of the parameters mode masking screen, indicating a mask has been set.

Note: The tilt angle at which you can set the mask is between -40 to +70 degrees. It is recommended that you set the mask size to larger than the object size (height and width) - this is to ensure masking even during pan, tilt and zoom.

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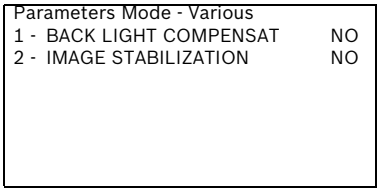

Fig. 11.28 Parameters Mode - Various

Feature	Description	Default	Options
BACK LIGHT COMPENSAT	Reduces negative effects from bight backlights. This feature is scene dependent, therefore, it is recommended to test this feature on site.	NO	YES, NO
IMAGE STABILIZATION	Turn on this feature when the image is affected by vibration that causes the picture to move.	NO	YES, NO

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11.6 Load Default Configuration

The **Load Default** menu is used to load the default settings.

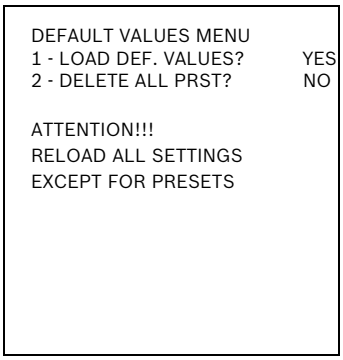

Fig. 11.29 Load Default Menu

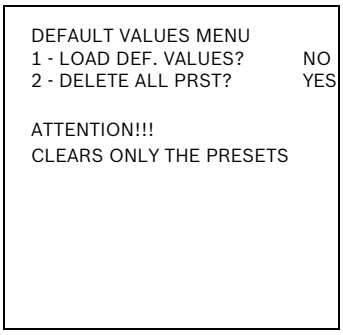

Fig. 11.30 Clear All Presets

11.7 Setup Info Menu

The **Setup Info** menu is used to check the device configuration and the software versions of the UPH boards.

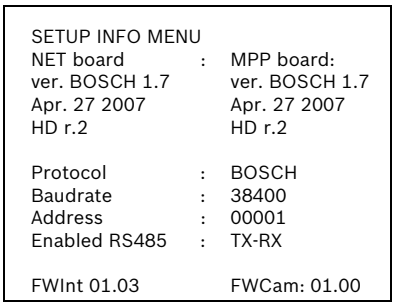

Fig. 11.31 Setup Info Menu

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12 Maintenance

UPH pan/tilt devices require no particular maintenance.

12.1 Cleaning

To clean the device, use neutral detergent and a non-abrasive cloth.

12.2 Replacing the Fuses

There are two (2) preset fuses on the connection board. Sizes are related to the power supply voltage, as shown in *Table 12.1*..

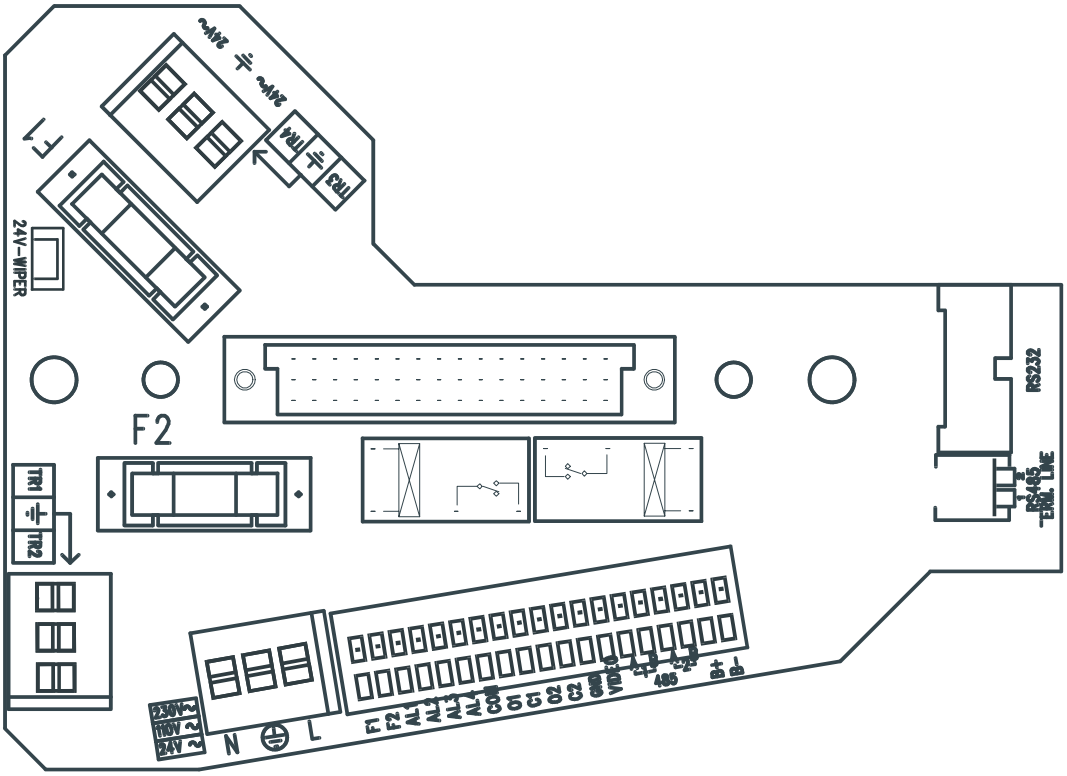

Fig. 12.1 Fuses on the Connection Board

Voltage	Fuse F1	Fuse F2
24 VAC 50/60 Hz	T 4A L 250 V	T 6.3A H 250 V
230 VAC 50/60 Hz	T 4A L 250 V	T 2A H 250 V

Table 12.1 Fuse Values for Replacement

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13 Troubleshooting

Problem	Possible Cause	Solution
The device is switched off and shows no signs of life.	Incorrect wiring, fuses blown.	Make sure all the connections are correct, check the continuity of the fuses and, if there is a failure, replace them according to the values shown in the table. NOTE: if the fuses blow repeatedly, contact the authorized service centre.
There is no image on the screen, just a blue screen with the message NO VIDEO SIGNAL!!!	Incorrect camera or module wiring, camera failure.	Make sure all connections are correct for the camera version and motorised lenses.
Presets are not as accurate as they were during installation.	Wind, vibration, and other environmental conditions.	AUX On - 204 - Enter command recalibrates presets; takes 30-45 seconds to complete.
Under particular zoom conditions, the housing or sunshield interferes with the image (only for versions with motorised lens).	The camera is too far behind the glass.	Adjust the camera position by adjusting the slide until the correct position is found.
De-icing counter appears on the screen and user has no control.	It is too cold for the UPH to safely be used.	Wait for de-icing procedure to complete (30-105 minutes).
Data transfer stops.	Power spike/fluctuation or spurious noise on video/data line.	Reset power on UPH and the unit recovers, although some OSD changes may be lost and need to be re-entered.
The monitor does NOT show the image photographed by the UPH, but shows a display similar to *Figure* .	Programming dip switch on (up position).	Switch off the pan & tilt, switch off (down position) the “PROGRAM.” dip switch (dip-switch number 1 in the baud rate section) and then switch the device on again.
There is no video.	Wire(s) may be installed incorrectly. Monitor input may be on incorrect setting. The motor may be working improperly.	Re-check all wires and cables to ensure that they are properly secure. Verify that monitor is displaying the correct input setting. Remove power to the unit, re-apply power, and allow the device to go through its homing phase.

NET board	MPP board
ver. Bosch 1.7	ver. Bosch 1.7
Apr 27 2007	Apr 27 2007
HD r.2	HD r.2
Protocol	:BOSCH
Baudrate	:38400
Address	:00001
Enabled RS485 TX-RX	
Dip-switch upgrade ON	

Troubleshooting Error

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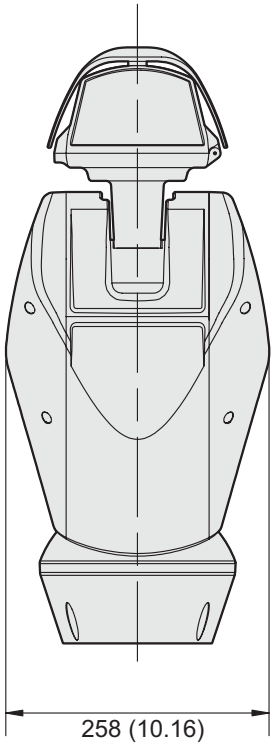
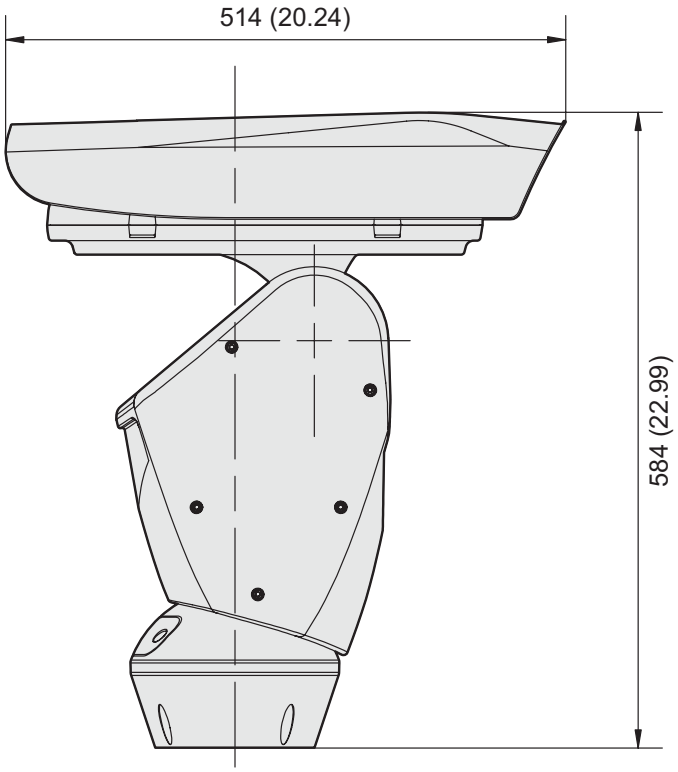
13.1 Dimensions and Range of Movement





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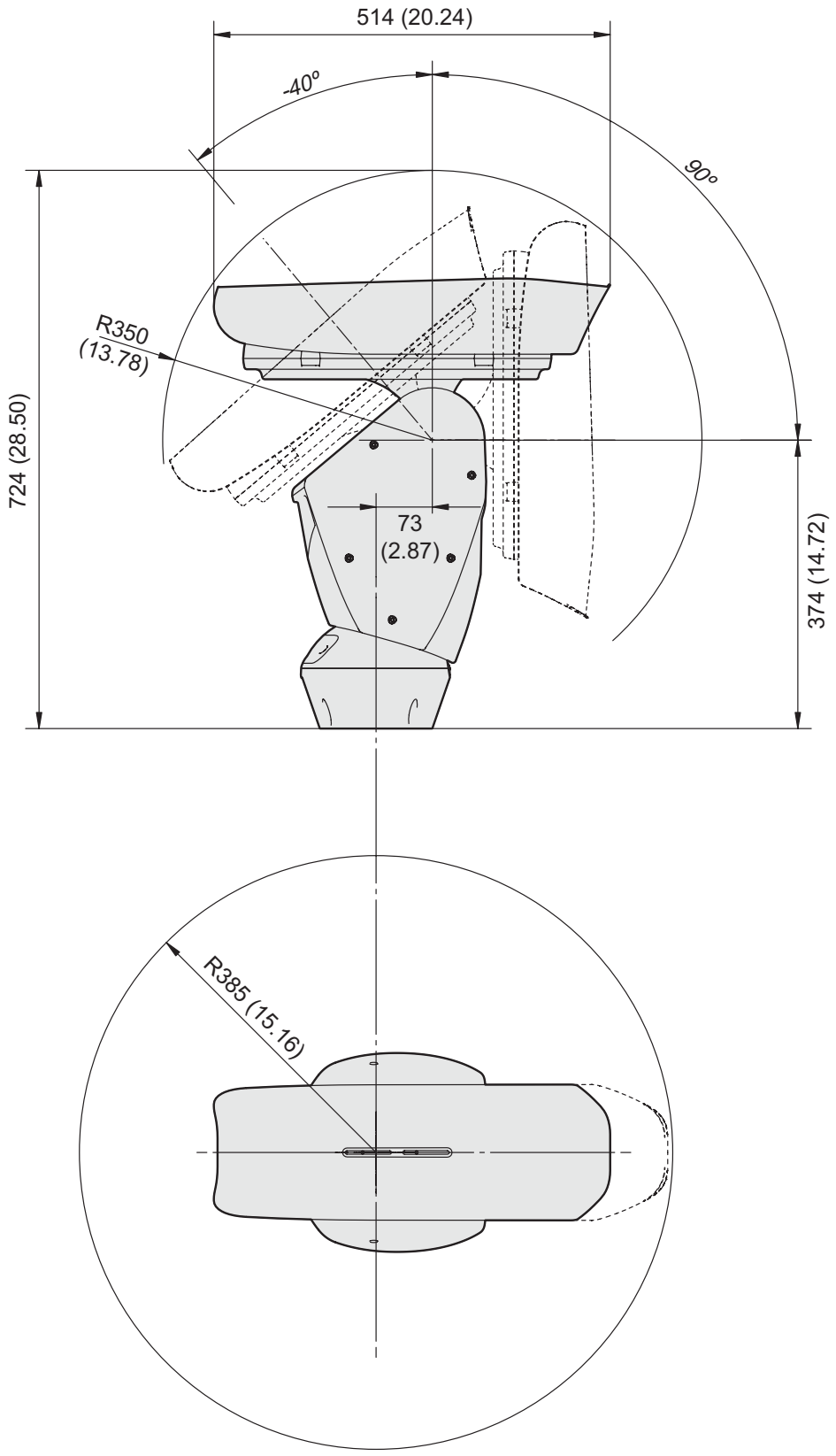

Fig. 13.1 Dimensions and Range of Movement

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14 Technical Specifications

Horizontal movement (Pan)	Continuous rotation
Vertical movement (Tilt)	+90 ° / -40 °
Horizontal pan speed	Variable from 0.1 °/s to 100 °/s
Vertical tilt speed	Variable from 0.1 °/s to 40 °/s
Operating temperature	UPH-Z Series: -20 °C to +40 °C UPH-2D Series: -20 °C to +40 °C UHP-3D Series: -20 °C to +40 °C
Power supply	230 VAC 50/60 Hz 24 VAC 50/60 Hz
Current consumption	0.5 A (230 VAC) 4.0 A (24 VAC)
Input line cable dimension	AWG: 16-30
Signal cable dimension	AWG: 20-28
Alarm input (voltage-controlled)	10-35 VDC
Clean contact	Maximum 50 VDC or 30 VAC @ 1A
Video line type	Coaxial cable (1 Vpp, 75 Ohm)
Paint	RAL 7035 (light grey) with epoxy powder
Construction	Die-cast aluminum, outer body in ABS
Protection	IP66 IEC 60529
Weight (unit only)	14 kg
Dimensions	258 x 584 x 514 mm (W x H x D)

Table 14.1 Technical Specifications for the High Speed Pan/Tilt System

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Robert-Koch-Straße 100
D-85521 Ottobrunn
Germany
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