

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Visit our website - *Click HERE*

COHU, INC. ELECTRONICS DIVISION

Installation and Operation Manual



Figure 1. Model 3930 Camera

3930 DSP DAY/NIGHT CAMERA

Rev.1 8-13-2003

Phone: 858-277-6700
FAX: 858-277-0221
Email: info@cohu.com
WEB: www.cohu-cameras.com
Cohu Electronics • 3912 Calle Fortunada • San Diego, CA 92123-1827

February 11, 2003

COHU
Cohu Inc., Electronics Division

LIST OF SECTIONS

SECTION	TITLE	PAGE
1.0	GENERAL DESCRIPTION	3
1.1	Electrical Characteristics	3
1.2	Meachanical Characteristics	3
2.0	INSTALLATION	3
2.1	Unpacking and Receiving Inspection	3
2.2	Static Discharge Protection	6
2.3	Installation Overview	8
2.4	Equipment Supplied	9
2.5	Equipment Required but Not Supplied	9
2.6	Power Requirements	9
2.7	Cabling Requirements	10
2.8	Installation	12
2.9	GUI Serial Interface	14
3.0	OPERATION	19

LIST OF TABLES

TABLE	TITLE	PAGE
1	Specifications	4
2	Rear Panel Connector Pin Functions (115 V ac)	11
3	Rear Panel Connector Pin Functions (24 V ac)	11
4	Required Cable Characteristics (Camera to Junction Box)	12
5	Communications Settings	16

LIST OF FIGURES

FIGURE	TITLE	PAGE
1	Model 3930 Camera	1
2	Model Number Interpretation	4
3	Dimensions, Camera Sunshield	5
4	Dimensions (Less Sunshield)	5
5	Camera Side View	6
6	Camera Rear View	6
7	Camera Front View	6
8	Typical Installation	7
9	232/422 Converter	8
10	Typical Rear Panel Mating Connector and Backshells	9
11	Camera Bottom View	10
12	Rear Panel Connector Pinout	11
13	Type CA-298A Cable Assembly, 115 V ac Input Power	12
14	Type CA-299A Cable Assembly, 24 V ac Input Power	13
15	Typical Win MPC Application	14
16	Typical Win MPC "Home" Screen	15
17	Typical Win MPC Communications Functions Screen	16
18	Find ID Screen	17
19	Day/Night DSP Camera Functions Screen	17
20	Message Programming Screen	18
21	Tours and Sectors Setup (Not Used)	18

This equipment has been tested and found to comply with limits for class A digital devices, pursuant to part 15 of the FCC rules.

1.0 GENERAL DESCRIPTION

The 3930 Camera (figure 1) integrates a high performance digital signal processing Camera and control receiver into one package.

Specifications are contained in table 1. A model number interpretation is provided in figure 2. This can be used to interpret an existing model number.

WARNING

This Camera can be operated from 115 V ac. Use all appropriate care when installing and maintaining this Camera or any equipment operating from 115 V ac.

1.1 ELECTRICAL CHARACTERISTICS

The Camera uses digital signal processing (DSP). It has an internal source ID generator. Integration control, plus a built-in video storage card provides full color continuous video even at very low light levels.

An automatic circuit places the Camera in monochrome mode at low light levels. This feature can be turned off if desired.

This Camera will operate in temperature ranges from -40° to +60° C. The sealed and pressurized enclosure protects against environmental hazards such as salt, road grime, dirt, moisture and other undesired contaminants in the atmosphere.

Most Camera functions are operable via RS-422 serial communications. This is typically required only during setup and adjustments, but the camera could also be controlled during normal operations from a distant location using RS-422. The integrated receiver/driver, contained within the Camera, communicates using Cohu protocol messages.

Win MPC Graphical User Interface (GUI) software is available for setting the address and performing field tests for each Camera. This can be obtained at no cost from either the cohu-cameras.com web site or by mail on either a floppy disk or CD Rom.

Installation and setup adjustments are typically performed on-site using a laptop computer running some form of the Windows operating system. The typical computer has an RS-232 serial output. This must be converted to RS-422 for connecting to the Camera. A small inexpensive 232-422 converter is available to do this.

1.2 MECHANICAL CHARACTERISTICS

The Camera can be considered as a single mechanical assembly for installation purposes, but it actually consists of two subassemblies: (1) the Camera environmental housing (figure 3) and (2) the sunshield (figure 4). Side, front, and rear views are shown in figures 5 through 7. Figure 11 is a bottom view.

All Camera circuits are contained within the sealed and pressurized environmental housing. It has a clear window at one end through which the Camera lens views the scenes of interest. This barrel is fully covered by the sun shield. It is spaced slightly away from the housing itself. This minimizes heat buildup due to sunlight and also serves to minimize sun flair by shading the lens at some Camera angles.

A single rear panel 18-pin cable connector provide for all signal and operating power connections for the Camera.

2.0 INSTALLATION

This section describes the installation of a Camera in a typical situation. Basically, it consists of bolting the Camera to a support, connecting it to a cable that runs to a nearby junction box, setting the field of view using a local on-site laptop computer, and then connecting the video to the system for viewing at the operator's control console. Details about these steps and supporting information are included in this section. Each Camera must be programmed with the altitude above sea level for the location where it will be mounted. This calibrates a low pressure circuit in the Camera.

2.1 UNPACKING AND RECEIVING INSPECTION

This item was thoroughly tested and carefully packed in the factory. Upon acceptance by the carrier, they assume responsibility for its safe arrival.

Table 1. Specifications

SPECIFICATION	CHARACTERISTIC
Imager	1/4 inch color interline transfer CCD, progressive scan
Resolution	470 horizontal tv lines
Lens	Integral 23X optical, 3.6 to 82.8 mm with 10X digital, auto/manual focus
Sync	Phase adjust line lock or crystal - selectable via RS-422 serial port
Day/Night Switchover	Day (color) / night (mono), selectable auto-switched, day only , or night only
Sensitivity	3.0 lux at 1/60 s (color day) 0.2 lux at 1/4 s (color day) 0.3 lux at 1/60 s (mono night) 0.02 lux at 1/4 s (mono night)
Power Input	120 V ac ±10% (108 - 135 V ac) 60 Hz 24 V ac ±10% (21.6 - 26.4) 60 Hz
Power Consumption	11 watts heaters off, 17 watts heaters on
Communications	Opto-isolated serial port RS-422; RS-232 and RS-485 available as options
Protocol	Non-propritary Cohu standard, others optional (see figure 2, protocols)
Firmware	Stored in flash memory; upgrade via RS-422 serial port
Title Generation	8 lines
Environmental	-40 to +60 °C Operating; -40 to +70 °C Non-operating
Humidity	100 percent, relative
Pressurization	Dry nitrogen; IP Rating IP67, NEMA 4X
Weight	6.1 lb (2.8 kg)

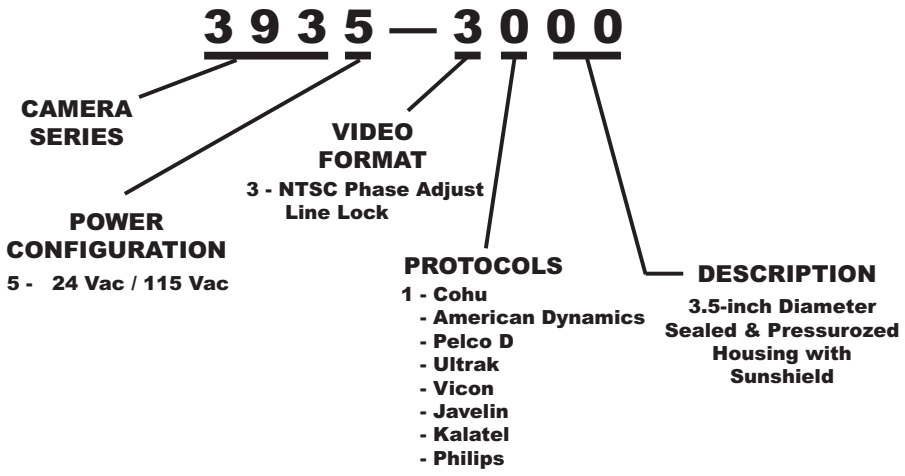


Figure 2. Model Number Interpretation

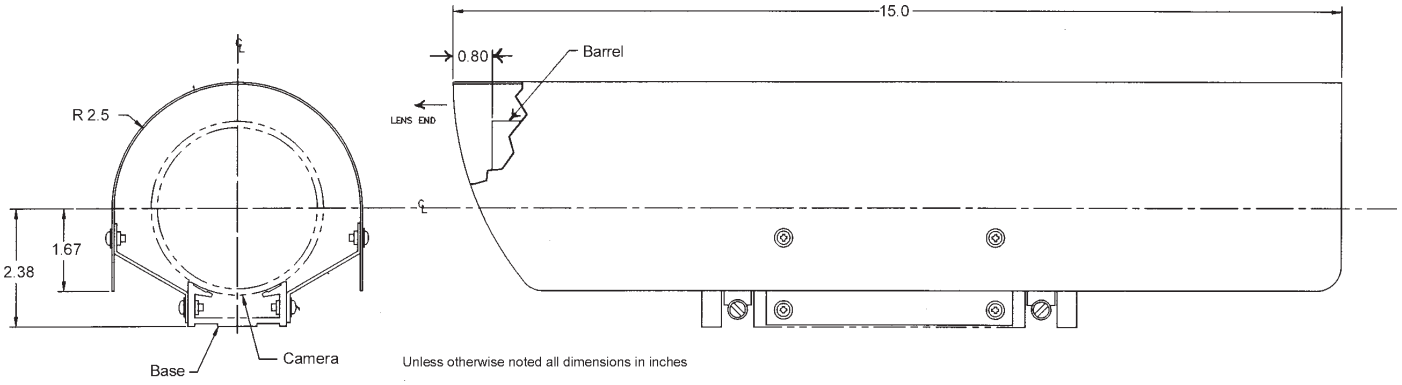


Figure 3. Dimensions, Camera Sunshield

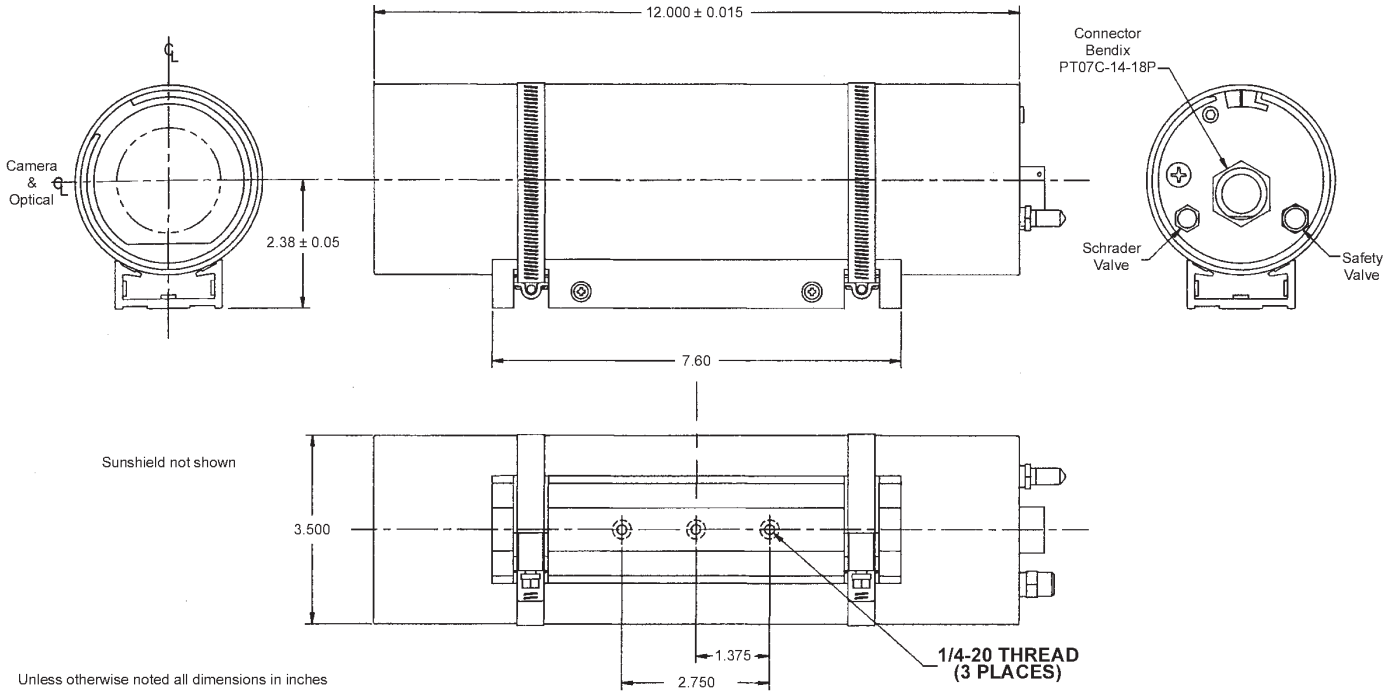


Figure 4. Dimensions (Less Sunshield)



Figure 5. Camera Side View



Figure 6. Camera Rear View



Figure 7. Camera Front View

Should you receive this item in a damaged condition, apparent or concealed, a claim for damage must be made to the carrier.

To return the product to the factory for service, please contact the Customer Service Department for a Return Authorization (RA) Number.

If a visual inspection shows any damage upon receipt of this shipment, it must be noted on the freight bill or express receipt and the notation signed by the carrier's agent. Failure to do this can result in the carrier refusing to honor the claim.“

When the damage is not apparent until the unit is unpacked, a claim for concealed damage must be made. Make a mail or phone request to the carrier for inspection immediately upon discovery of the concealed damage. Keep all cartons and packing materials. Since shipping damage is the carrier's responsibility, the carrier will furnish you with an inspection report and the necessary forms for filing the concealed-damage claim

2.2 STATIC DISCHARGE PROTECTION

Procedures in this manual do not require entry into the housing of the Camera. However in the event that an open unit were available, the following precautions should be followed:

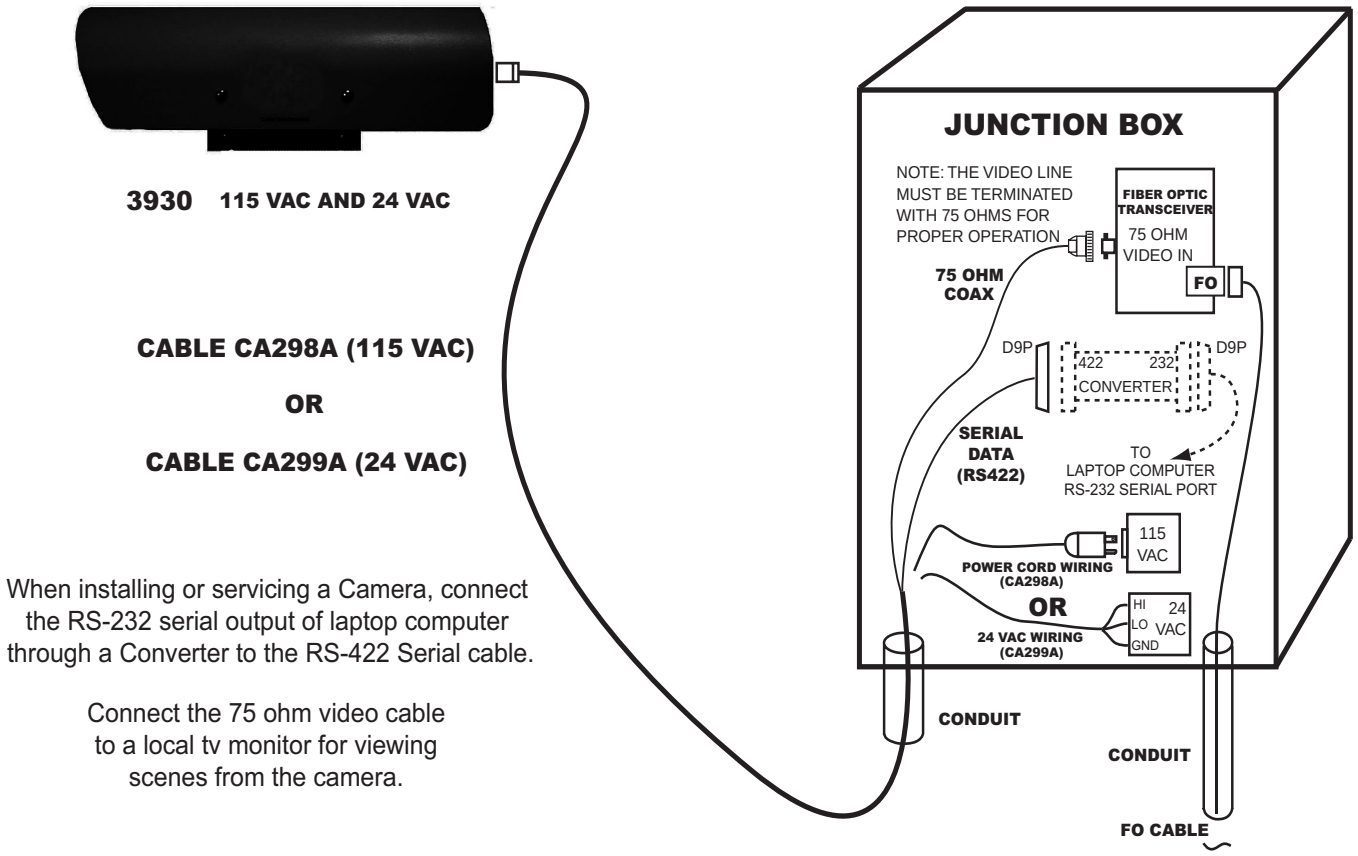


Figure 8. Typical Installation

CAUTION

This Camera contains sensitive devices that can be damaged by static discharge. Use appropriate static control methods when working inside the Camera.

Components used in modern electronic equipment, especially solid state devices, are susceptible to damage from static discharge. The relative susceptibility to damage for semiconductors varies from low with TTL to high with CMOS. Most other semiconductors fall between TTL and CMOS in susceptibility to static discharge. As a minimum, therefore, observe the following practices when working inside this or any other electronic equipment:

1. Use conductive sheet stock on the work bench surface.

2. Connect the sheet stock to ground through an 1 megohm or greater value resistor.

3. Use a wrist strap connected to ground through an 1 megohm or greater value resistor when working at the bench.

4. Maintain relative humidity of the room above 30 percent. This may require a room humidifier. Working on circuits with relative humidity below 30 percent requires extraordinary procedures not listed here.

5. Use antistatic bags to store and transport an exposes chassis, circuit boards, and components. Use new antistatic bags. Old, used bags loose their static protection properties.

This list serves as a reminder of the minimum acceptable practices. Be sure that all static discharge devices at the work bench are properly installed and maintained. Standard grounding mats and wrist straps purchased for use at work benches are supplied with leads having current limiting resistors for safety. Never substitute with a grounding lead not having the resistor.

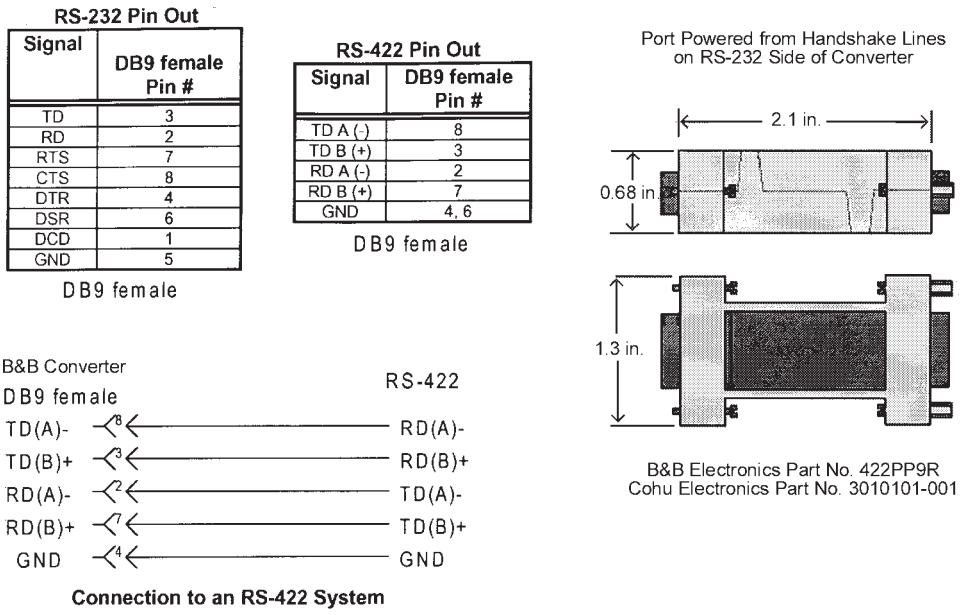


Figure 9. 232/422 Converter

2.3 INSTALLATION OVERVIEW

This section is an overview of installing the Camera at the location where it is mounted to a wall, a pole, or in some other manner.

This section further assumes that the Camera has previously had various internal functions set for the desired operating conditions. This typically is done at a maintenance service facility, though they could be performed after the Camera is mounted on-site. One such setting is the pressurization altitude compensation. Each camera must have programmed into it the altitude above sea level at its operating location. This calibrates the Low Pressure alert circuit. See section 2.9 for instructions regarding communicating with the Camera and setting the various operating conditions.

This summary procedure assumes that the Camera multiconductor cable will be routed from the Camera mounting location to a nearby junction box or control panel located where it is accessible by installation and service personnel. See figure 8. A typical on-site installation consists of the following basic steps:

1. Route the multiconductor cable from the Camera location to the nearby junction box. This will likely require pulling cable through conduit, pedestals, or walls, so preplan carefully for this step.

2. Mount the Camera at the intended viewing site pointing in the direction of interest. (The Camera may have to be repositioned, so do not snug down the fasteners too tight at this step.) Connect the cable to the rear panel connector.

3. Make the following connections at the junction box where the multiconductor cable from the Camera is to interconnect with system cables and power:

   a. Connect the RS-232 serial output of a laptop computer to the RS-422 cable (using a 232 to 422 converter). The laptop must have Win MPC software installed.

   b. Connect a viewing monitor to the 75 ohm coaxial cable.

   c. Connect the proper operating power for the Camera (24 V ac or 115 V ac). Each requires a different cable.

4. Initiate operation of the Win MPC software on the laptop.

5. Obtain a picture from the camera

6. Observe the scene from the Camera and reposition as necessary to obtain the field of view desired at that location. This is done by mechanically repositioning the Camera body while also setting the lens to the required field of view (zoom in-out) using the Cohu Win MPC software running on the laptop computer.

7. Secure the Camera in place once the desired field of view is obtained.

8. Verify or change as desired any of the various Camera functions that can be controlled by the Win MPC software.

9. Turn off power to the Camera, turn off the laptop, and turn off the viewing monitor.

10. Disconnect the laptop and monitor.

11. Connect the 75-ohm cable to the system interface cable.

12. Apply power to the Camera and verify that it is operational in the system.

The previous 12 steps summarize a typical installation. Additional information can be found in the remainder of this manual.

2.4 EQUIPMENT SUPPLIED

The basic Camera model number supplies the following item:

1. Camera module in pressurized environmental housing with integral attached mounting base and sun shield.

2.5 EQUIPMENT REQUIRED BUT NOT SUPPLIED

The following items are required to install a Camera and unless ordered with the Camera are not supplied:

1. Cable, multiconductor, Camera to junction box (CA-298A for 115 V ac or CA-299A for 24 V ac)

2. Mounting pedestal, arm, pole, or other device - including attachment hardware

3. Installation setup equipment, including:

   a. Win MPC test and setup GUI (available for no cost as either a download or on disk)

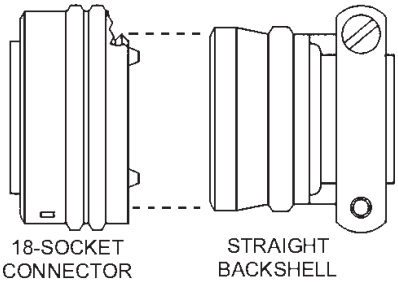
   b. Laptop computer running Windows

   c. RS-232 / RS-422 Converter (figure 9)

   d. Tv monitor for viewing Camera scenes

2.6 POWER REQUIREMENTS

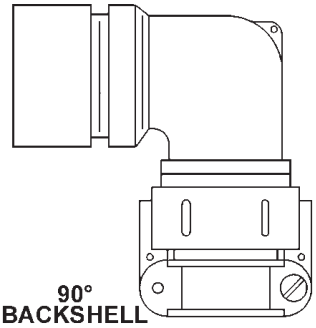
The Camera operates from either 24 V ac 60 Hz or 115 V ac 60 Hz power. Two cables are available. One is wired to use the 24 V ac input (CA-299A), the other is wired to use the 115 V ac input (CA-298A).



Cohu part no. 1310230-011

Amphenol/Bendix part no. PT06A-14-18S(SR)

This 90° backshell is installed on the connector in place of the straight backshell shown above



Note: 90° backshell cables are special order

Cohu part no. 1310371-001

Glenair part no. G819G148A

Figure 10. Typical Rear Panel Mating Connector and Backshells

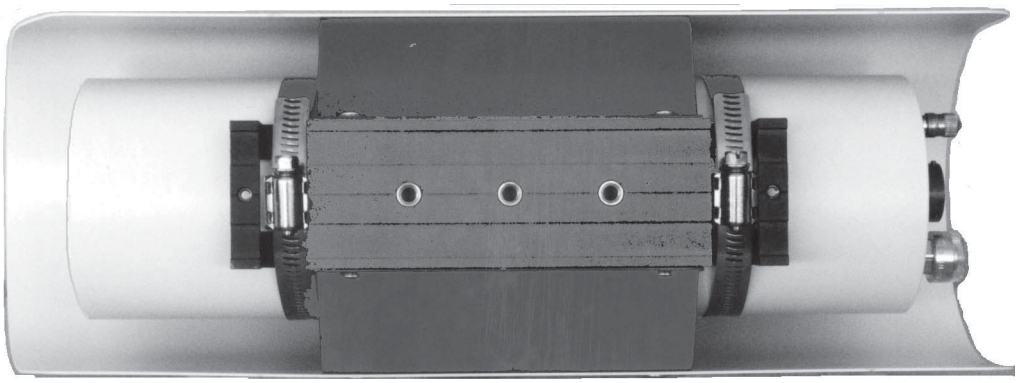


Figure 11. Camera Bottom View

Power consumption is 11 watts — increasing to 17 watts when the internal heaters cycle on and off during cold conditions.

All electrical connections to and from the Camera are made through a single 18-pin connector located on the rear panel. This connector provides operating voltage (115 or 24 V ac), RS-422 data, and 75 ohm video.

2.7 CABLING REQUIREMENTS

Always pre-plan all system cabling before starting an installation. Before a Camera is bolted in place, the Camera cable should be available to attach to the rear of the Camera.

Table 2 is the rear panel connector pin function list for a Camera being operated from 115 V ac, 60 Hz power. Table 3 lists pin functions when the Camera is to be operated from 24 V ac, 60 Hz power. These pin functions are determined by the system cable attached to the connector. The camera itself operates from either 115 or 24 V ac.

Most installations will require a nearby junction box where the camera cable will transition to the system cabling. Maximum cable length to this junction box for 115 V ac is 250 feet. The 24 V ac cable length is limited to 50 feet.

Table 4 lists some basic characteristics required for a typical cable between the Camera and nearby junction box.

Figure 10 shows the 18-pin mating connector with different versions of backshell. The CA-298A (115 V ac) and CA-299A (24 V ac) cables are assembled using the straight backshell; however, cables can be also constructed with a 90 degree backshell.

Figure 12 shows the rear panel connector on the Camera. This is a view looking at the rear panel from outside the Camera. The mating connector on the multiconductor Camera cable attaches here. This diagram can also be used as the pinout view for the wiring side of the mating connector.

Figure 13 is the wiring diagram for the 115 V ac cable (CA-298A). The maximum length for this cable is 250 feet. At the junction box end it has a BNC connector for the video, 115 V ac plug to supply power, and a D9P (pins) connector for the RS-422 data communications.

Figure 14 is the wiring diagram for the 24 V ac cable (CA-299A). The maximum length for this cable is 50 feet. At the junction box end this cable had a BNC connector, three stripped leads for connecting to the 24 V ac power source, and a D9P (pins) connector.

Both these cables use the straight backshell at the Camera end. Cables with the 90 degree backshell would be special order and have different cable type number designators.

Table 2. Rear Panel Connector Pin Functions (115 V ac use)

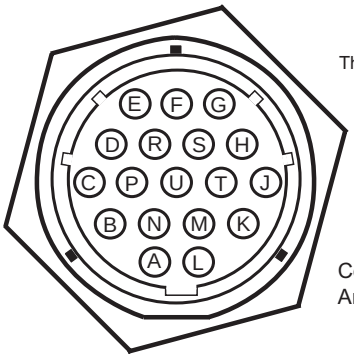
PIN	FUNCTION
S	video signal (75 ohm)
H	video shield
G	data ground
F	Tx- (RS-422)
E	Tx+ (RS-422)
M	Rx+ (RS-422)
N	Rx- (RS-422)
A	no connection
B	no connection
J	no connection
K	no connection
R	no connection
T	no connection
L	no connection
D	115 V ac line (hot/high)
C	115 V ac neutral (low)
P	115 V ac ground
T	no connection
R	no connection
U	overall shield

Table 3. Rear Panel Connector Pin Functions (24 V ac use)

PIN	FUNCTION
S	video signal (75 ohm)
H	video shield
G	data ground
F	Tx- (RS-422)
E	Tx+ (RS-422)
M	Rx+ (RS-422)
N	Rx- (RS-422)
A	no connection
B	no connection
J	no connection
K	24 V ac high
L	24 V ac low
R	no connection
T	no connection
D	no connection
C	no connection
P	24 V ac ground
T	no connection
R	no connection
U	overall shield

Note: A Camera can be operated from either 115 V ac or 24 V ac. Cable wiring determines how the Camera is powered.

Warning: Applying 24 V ac to pins K and L cause 115 V ac to be back fed out of pins D and C.

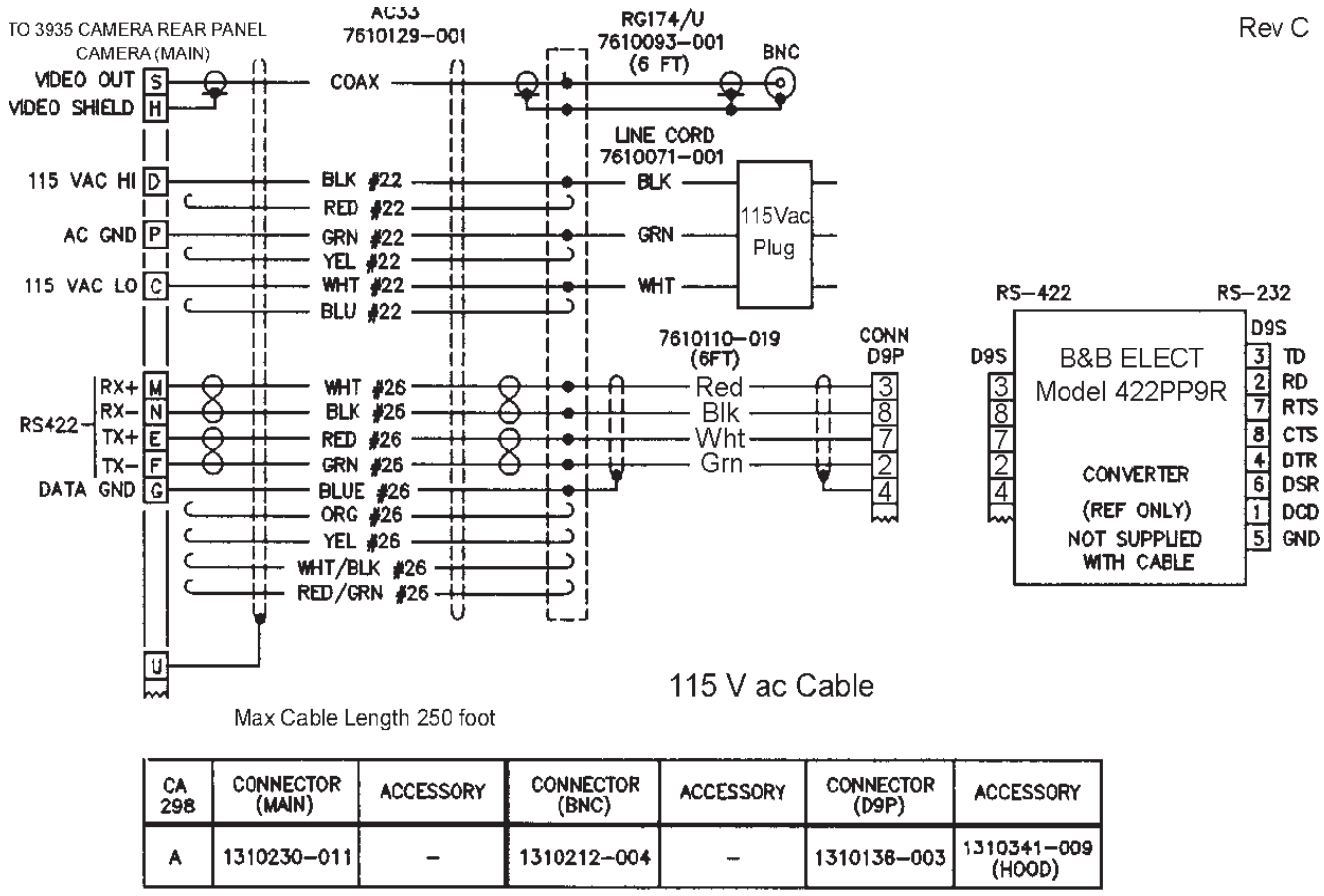


This Connector Has Pins
The Mating Cable Connector Requires Sockets

Cohu part no. 1310225-011
Amphenol/Bendix part no. PT07C-14-18P

MATING VIEW OF REAR PANEL CONNECTOR
(PIN LAYOUT SAME AS WIRING VIEW OF RELATED CABLE CONNECTOR)

Figure 12. Rear Panel Connector Pinout



CA 298	CONNECTOR (MAIN)	ACCESSORY	CONNECTOR (BNC)	ACCESSORY	CONNECTOR (D9P)	ACCESSORY
A	1310230-011	–	1310212-004	–	1310136-003	1310341-009 (HOOD)

Figure 13. Type CA-298A Cable Assembly, 115 V ac Input Power

Table 4. Required Cable Characteristics (Camera to Junction Box)

CONDUCTOR FUNCTION	CHARACTERISTICS
VIDEO	RG-174/U (75 ohm), 100 % copper conductor, 95% minimum braided shield
DATA	2 pair, twisted with overall shield, 26 AWG minimum (Belden 8723 or equivalent)
POWER	3-CONDUCTOR, 22 AWG (Belden 19401 or equivalent)
NOTE: For distances exceeding 50 feet for 24 V ac powered cameras or 250 feet for 115 V ac powered cameras, please contact an Applications Engineer at Cohu Electronics.	

2.8 INSTALLATION

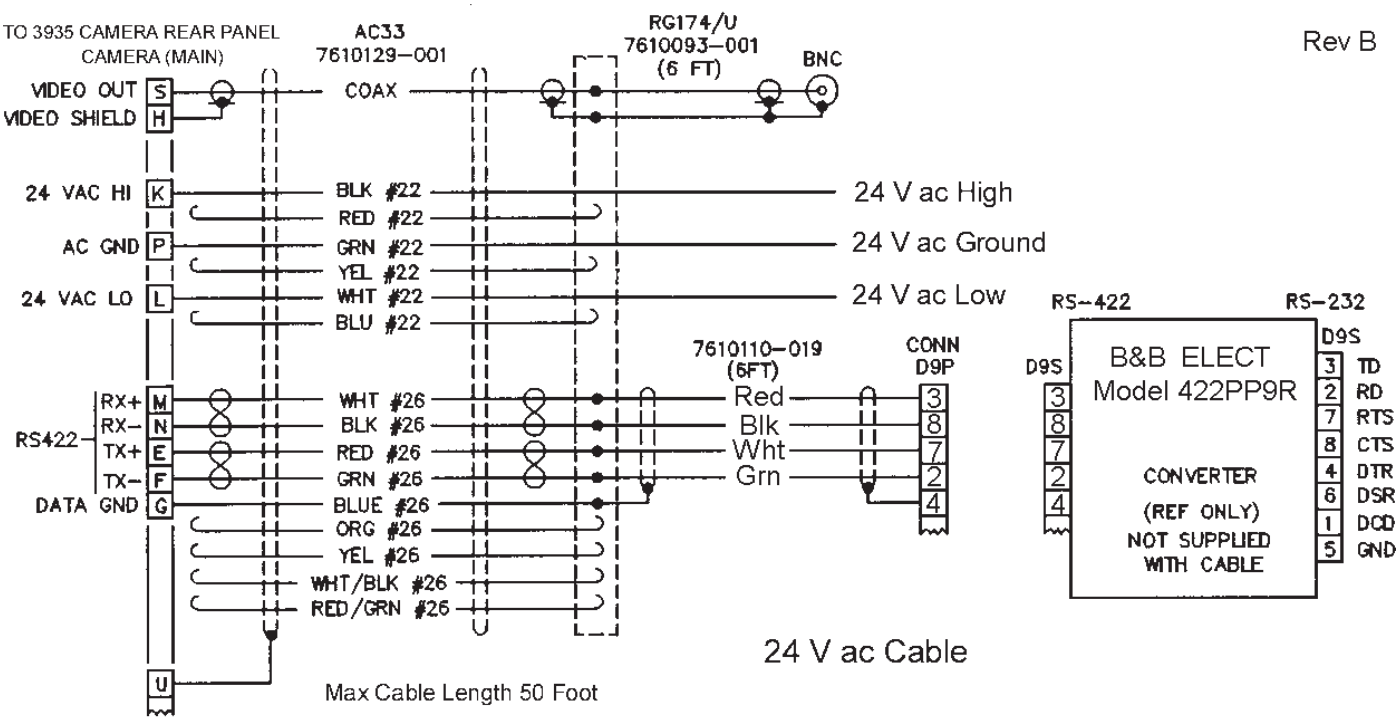
This section describes features of the rear panel, mounting base, and other considerations of interest when performing an installation.

2.8.1 Rear Panel

Most features of interest during installation and servicing of the Camera appear on the rear panel. These include:

1. 18-pin connector through which all signal and power connections are made with the Camera

2. 5 PSI MAX Schrader valve (covered with removable cap) for pressurizing the Camera with dry nitrogen. To relieve pressure from the housing, removing the cap and pressing down on or remove the valve stem.



CA 299	CONNECTOR (MAIN)	ACCESSORY	CONNECTOR (BNC)	ACCESSORY	CONNECTOR (D9P)	ACCESSORY
A	1310230-011	-	1310212-004	-	1310136-003	1310341-009 (HOOD)

Figure 14. Type CA-299A Cable Assembly, 24 V ac Input Power

3. SAFETY relief valve to prevent over-pressurization of the camera with dry nitrogen. This valve can also serve to flow dry nitrogen through the Camera to purge moisture out of it. Lift the valve “pop cap” and hold it while introducing dry nitrogen through the Schrader valve. If the internal desiccant bags have absorbed moisture, though, flowing dry nitrogen through the housing will not dry them.

4. PRESS RELIEF (pressure relief) hex head screw. The snap ring that holds a Camera together cannot be removed until this screw is removed. This threaded hole passes completely through the rear plate into the interior of the Camera. This ensures that the ring cannot be removed with pressure on the Camera. Never remove this screw without releasing pressure through the Schrader valve.

5. PHASE 1 2 3 4 5 6 label. Not a rear panel function on this model camera. Line lock phase is established with the RS-422 serial interface.

2.8.2 Mounting Considerations

Three 1/4-20 threaded screw holes on the base of this Camera (figures 4 and 11) are intended for securing it to a suitable platform. High strength stainless steel bolts should be used. Never use less than two bolts. Three are preferable.

2.8.3 Housing Pressure

The interior of the Camera housing must be maintained at a relative humidity near zero percent. This has several benefits.

One is to ensure that the inside of the window does not fog with cold temperatures. Internal Camera heaters usually maintain the faceplate temperature above the dew point, but in extreme cold conditions a Camera with internal moisture could still fog up.

Also, zoom lenses can absorb moisture between lens elements in high humidity conditions.

And other components inside the housing can be damaged by increased levels of humidity.

For these reasons, positive pressure must always be maintained on the Camera to prevent moisture laden outside air from being drawn in.

The Camera is normally pressurized with a nominal 5 psig (pounds square inch gauge) of dry nitrogen when serviced, but any positive pressure (e.g., 0.5 psig) would actually be sufficient. However a Camera with pressure near one or two pounds is best recharged before any further drop in pressure.

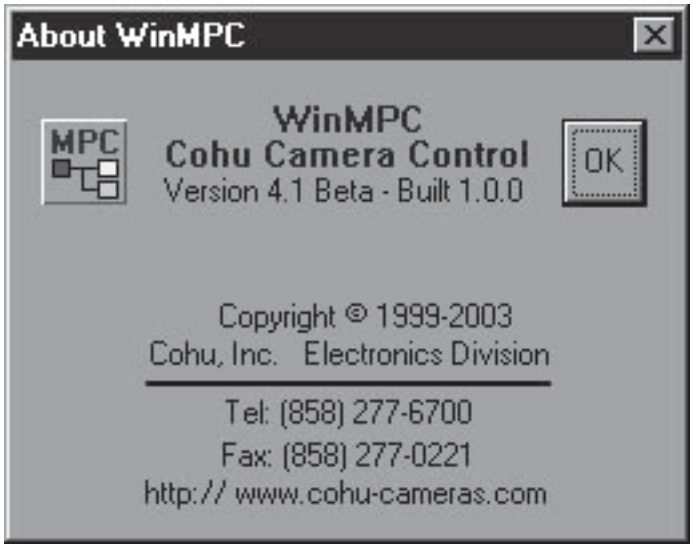
The Camera must be programmed with the altitude above sea level for its installation location. This calibrates the low pressure alert circuit.

2.9 GUI SERIAL INTERFACE

Win MPC is used to control a single Camera during installation or maintenance operations. Initial setup can be done either at a central shop facility or at the site location of the Camera. Final field of view settings, however, must be done on site to ensure proper coverage by the lens.

2.9.1 Win MPC Setup

When Win MPC (figure 15) is used to set up the Camera, it must be isolated from all other Cameras in the system. This generally is no problem since the Camera setup is performed either at a test bench location or at the actual camera site itself. If the address setting function of Win MPC were to be sent to multiple



NOTE: The WinMPC GUI is updated frequently and may differ slightly from the version shown in this manual.

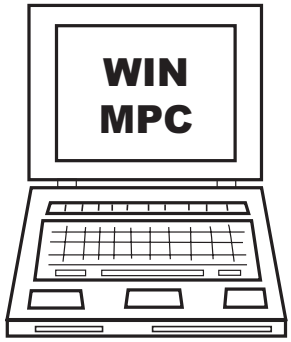


Figure 15. Typical Win MPC Application

Cameras they would all have identical addresses programmed into their memory. Since all Cameras (and other addressable equipment) in a system must have a unique address, this would result in an inoperative system.

2.9.2 Establishing Communications

Before any setups can be made, it is necessary to establish communications with the Camera. Figure 16 shows the home screen of a typical version of Win MPC. Proceed as follows:

1. Under the Special Functions menu area of the window, click on “Camera Setup.” The Setup window menu should appear. Figure 17 shows the Setup window of Win MPC with communications functions. Table 5 summarized the required communications selections:

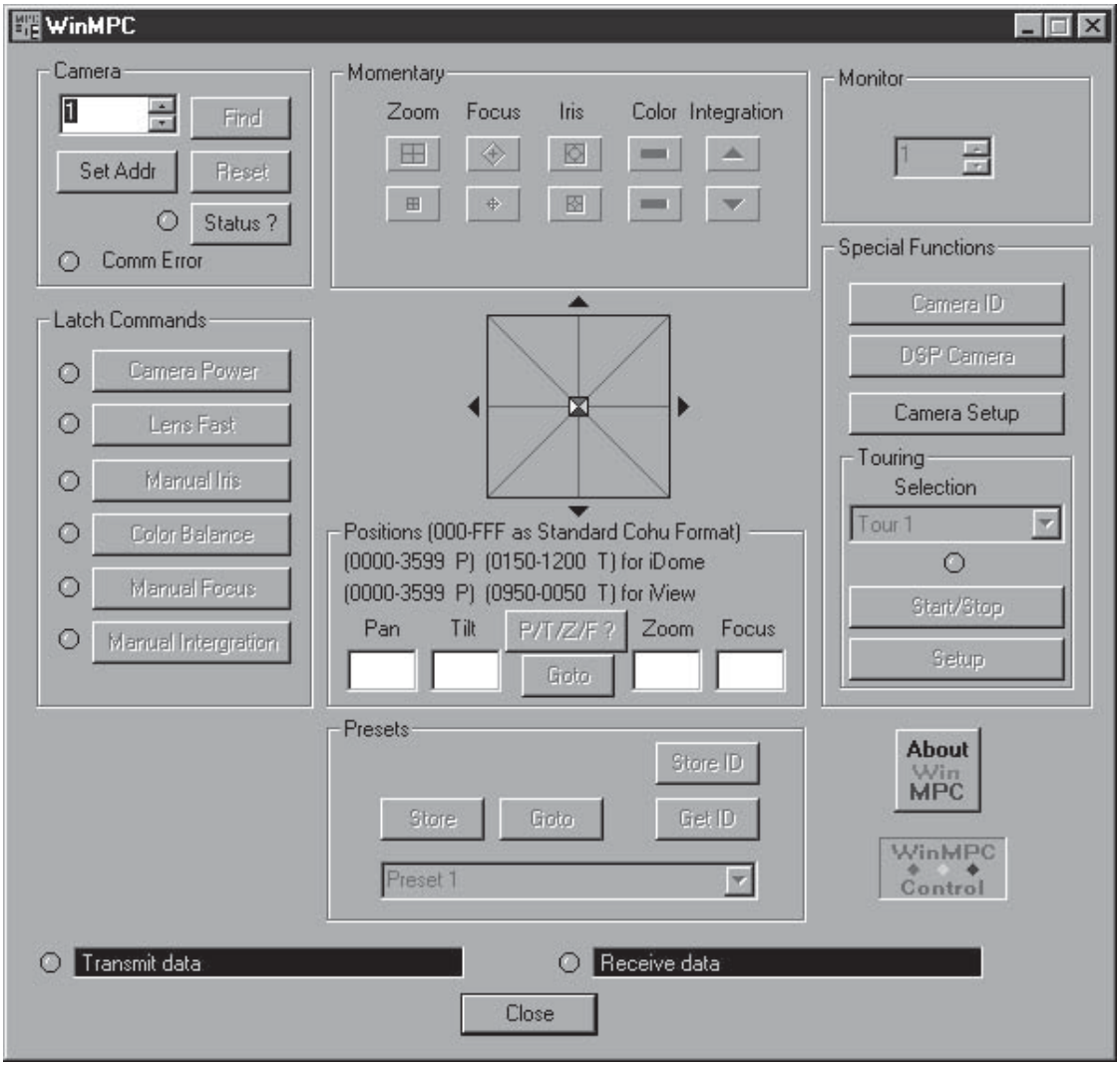


Figure 16. Typical Win MPC "Home" Screen

a. Port to "COM 1" (This is typically the serial port being used on a PC, but COM 2, COM 3, or COM 4 may possibly be the active port. Try these other ports if communications cannot be established using COM 1.)

b. Comm Mode "PC to MPC Receiver"

c. Baud Rate to "9600" (Click "Set Baud")

d. Camera to "Day/Night" and Video to "NTSC"

e. Receiver to "iDome/iView Camera"

2. The following items on the Setup screen are not related to establishing the serial communications with a Camera.

   a. Pan/Tilt. These selections do not pertain to this Camera.

   b. Pan/Tilt Background. These selections do not pertain to this Camera.

   c. Set Elevation (0-10,000 ft): This setting is performed in section 2.9.4

3. Click on "OK" to exit the Setup screen.

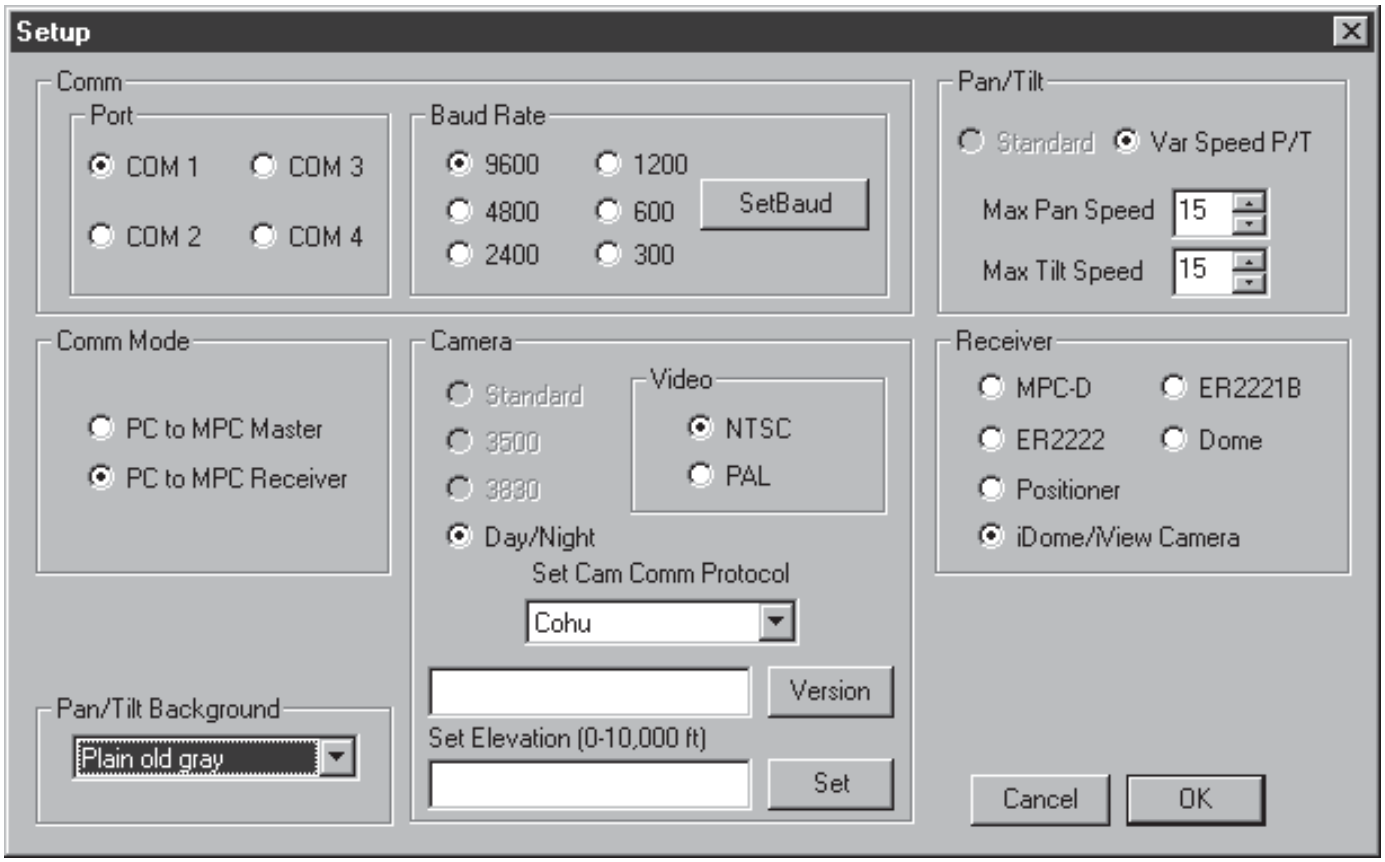


Figure 17. Win MPC Communications Functions Screen

2.9.3 Setting Camera Address

Any data address in the range 1 to 223 can be used for a Camera not connected into a control system. This model Camera typically does not connect into a control system. Thus, the RS-422 data lines to the Camera are used only during installation and servicing. For such a stand-alone Camera, a data address of 1 is preferable.

However, if the Camera were to be connected into a control system using the RS-422 data lines, then the camera must be set to a unique address compatible with that system.

After initial setup, it is a good idea to allow Win MPC to search for the existing Camera address (figure 18). This will verify that communications has been established.

Click on the FIND button at the upper left of the screen. A pop-up window will appear while Win MPC searches for all allowable Camera addresses (1 to 223).

Table 5. Communications Settings

COMMUNICATIONS FUNCTION	SETTING
Port	COM 1 (Typical. Verify)
Baud Rate	9600
Comm Mode	PC to MPC Receiver
Camera	Day/Night
Receiver	iDome/iView Camera
Note: These selections appear on the Setup Screen	

CAUTION: Win MPC is intended to be connected to one Camera at a time. If it were to be connected into a system of Cameras and the Address Set Function used, all Cameras (or other equipment) in the system would have their identifications set to the same address.

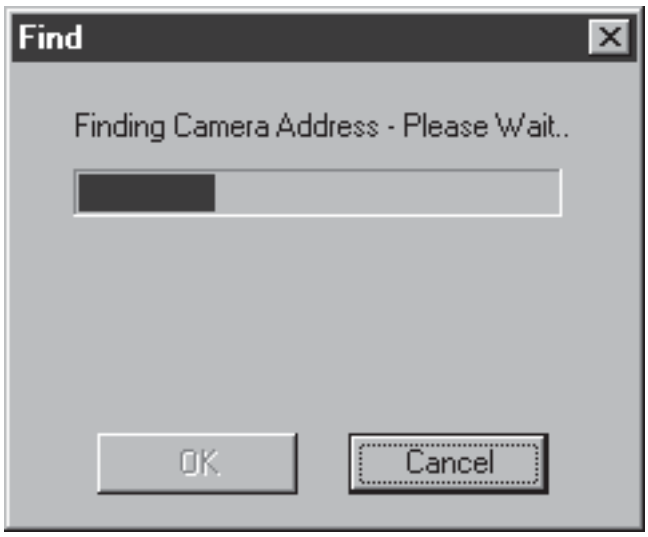


Figure 18. Find ID Screen

If this is not the required address for this Camera, then change the address to the required number and click on “Set Address.”

Click on the FIND button again to confirm that this new address has been accepted.

2.9.4 Pressurization Altitude Compensation

To ensure an accurate indication of low pressure in the housing, the altitude above sea level where the Camera will be installed must be stored in the Camera. This information is entered in the Setup screen.

1. Select “Camera Setup” on the Home screen (figure 16) to bring up the Setup screen (figure 17).
2. Enter the altitude above sea level in feet at the “Set Elevation (0-10,000)” Do not use a comma in numbers.
3. Click on the “Set” button to enter the data.
4. Click on the “OK” button to clear the screen.

2.9.5 Camera Functions Setup

The Day/Night DSP Camera Control screen (figure 19) consists of various setup settings for the Camera. Two functions on this screen do not function with this model Camera: Digital Zoom Range does not apply and Clear NVRAM is a password protected function.

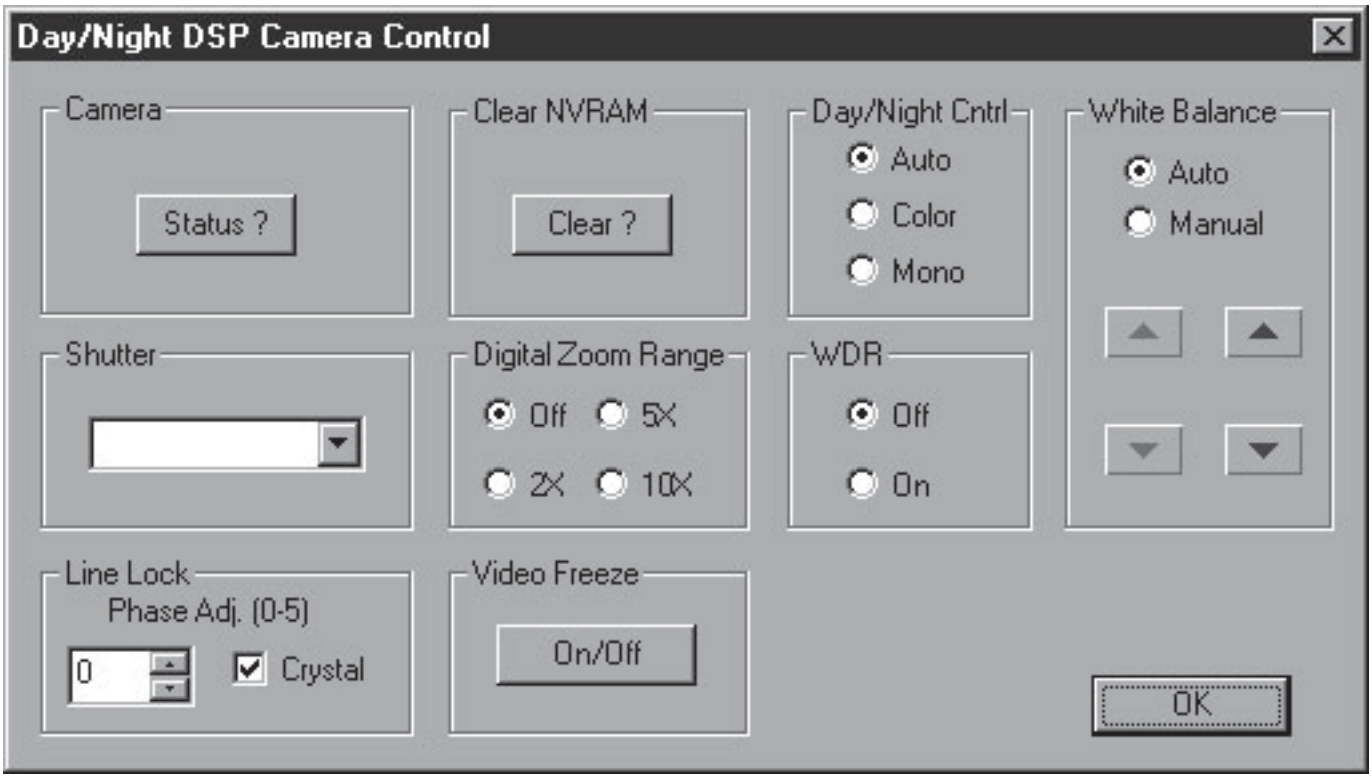
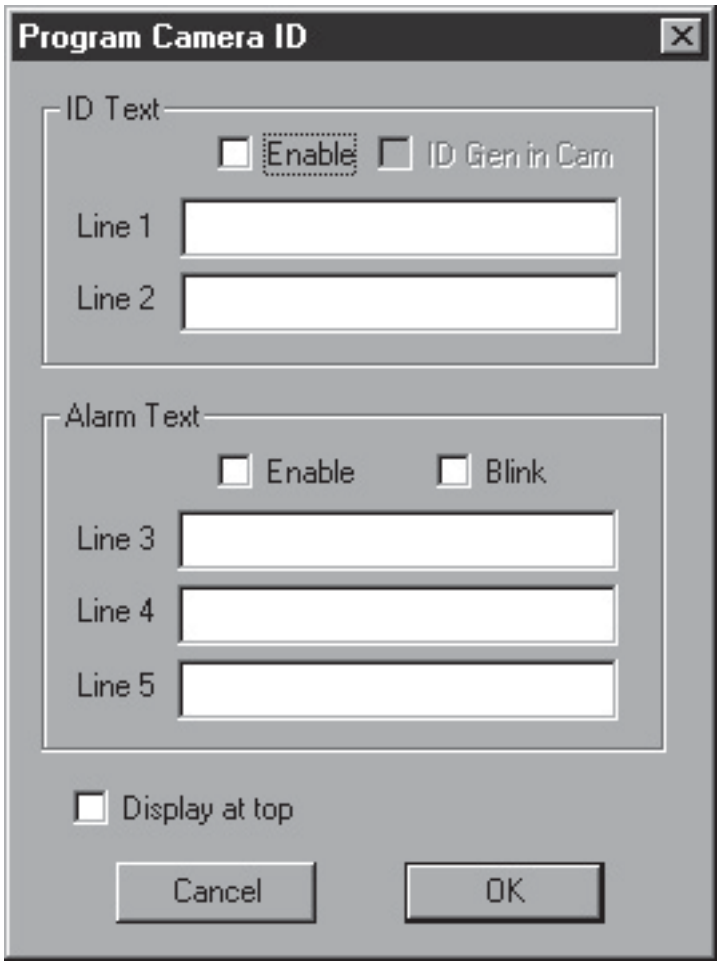


Figure 19. Day/Night DSP Camera Functions Screen



Note: This screen does not show previously programmed ID Text or Alarm Text from the Camera when it is accessed. "Low Pressure" is factory programmed in Line 3. This can be changed if desired.

Figure 20. Message Programming Screen

When this screen is accessed the status of each function will be displayed. If any change is made, the "Status" button can be clicked to verify that the Camera accepted the new setting.

The following settings are considered standard for a typical installation:

1. Shutter: "Auto"

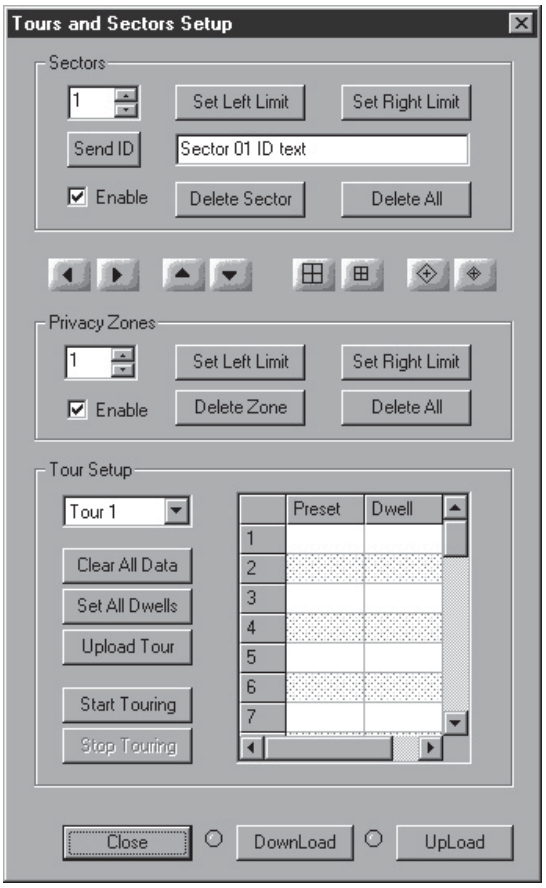
2. Line Lock: "Crystal" but "Line Lock" may be required depending on the synching requirements for a multi-camera system. When line lock is selected, the phase setting must be set so that the Camera is in sync with the reference Camera in the system.

3. Video Freeze: Off. Never leave a camera in the Freeze mode after doing maintenance or setup.

4. Day/Night Cntrl: "Auto" (This allows the camera to automatically switch between color and monochrome modes depending on the light level on the scene. Low light levels (night time) switch the Camera to monochrome mode.

5. WDR (Wide Dynamic Range): "Off" (But if the Camera typically looks at high contrast scenes then "On" might be the preferred setting.

6. White Balance: "Auto"



Note: This screen is shown for reference only. No functions on this screen apply to the model 3930

Figure 21. Tours and Sectors Setup Screen (NOT USED)

2.9.5 Checkout Procedure

After communications has been established with the Camera a functional test should be performed to verify proper operation. Use the Win MPC interface to perform tests and setups.

If the Camera is set to automatic day/night operation, cover the lens sufficiently to provide a dark scene and note whether the Camera reverted to monochrome mode for increases sensitivity.

If the line-lock mode has been set up, verify that this Camera is in vertical sync with the reference Camera.

If white balance is at its default Auto mode, note whether the Camera maintains proper color with a variety of different scenes.

Once it has been verified that the Camera is operating properly it can be released for use.

Be sure the Camera was not left in “freeze” mode after servicing it. This mode stores an image and maintains it as the display until being turned off. Removing power and reapplying also clears the “freeze” image.

2.10 PREPARATION FOR SHIPMENT AND STORAGE

For storage periods exceeding about one month, seal the unit in a vapor-proof bag containing a fresh desiccant pack.

Maintain the Camera storage environment within a range of -40 to 70 °C (-40 to 158 °F).

For shipment, package with enough foam padding or other packing material to prevent damage that can occur during shipping. The original shipping carton is a good container if it has not been damaged or subjected to excessive moisture. For shipping to the factory by Common Carrier, use the following address:

Cohu Electronics
3912 Calle Fortunada
San Diego, CA 92123-1827

Please contact the Customer Service Department for a Return Authorization (RA) number before sending any shipments to the factory:

cst@cohu.com
or
858-277-6700 extension 261

Prominently display the RA number on the outside of the shipping container(s) and on paperwork contained inside. Give a brief description of why the equipment is being returned and list the symptoms of any problems being experienced with the equipment.

3.0 OPERATION

A standard installation of this Camera provides for video back to the operator’s control console without any control functions being available. No features of the Camera are controllable by an operator in such an installation. The Camera is intended solely for 24 hour a day viewing of video from a fixed scene.

Note that if the Camera has been set up for day/night auto switching, it may revert to monochrome during low light conditions. This is entirely normal when the auto switching feature has been turned on during installation of the Camera.

During installation and maintenance, a local laptop PC running Win MPC software can be used to connect to the Camera at the on-site junction box for control and setup of all available functions.

If dry nitrogen in the Camera housing dissipates to reduce the pressure to a pre-set trigger point, a “Low Pressure” message will be displayed on the video image from the Camera. (The Camera is shipped with this message pre-programmed, but if it has been accidentally deleted during any setup or maintenance operations it will, of course, not appear.)

Also, other messages may be present on the screen if they have been programmed into the Camera.

COHU ELECTRONICS WARRANTY

Cohu, Inc., Electronics Division warrants equipment manufactured to be free from defects of material and workmanship. Any part or parts will be repaired or replaced when proven by Cohu examination to have been defective within two years from date of shipment to the original purchaser for standard CCD cameras and one year from date of shipment to the original purchaser for intensified CCD cameras and all other Cohu manufactured products.

Pressurized Housings: Pressurized camera products include a lifetime pressurization warranty. Cohu will re-pressurize at no charge returned environmental cameras not exhibiting evidence of physical damage due to misuse. All warranty repairs will be performed at the factory or as otherwise authorized by Cohu in writing. Purchaser shall prepay transportation charges to Cohu.

Extended IR Cameras: Cameras utilizing extended infrared (extended IR) sensors found to exceed acceptable white blemish specifications within one month of delivery shall be repaired without charge.

This warranty does not extend to Cohu equipment subjected to misuse, accident, neglect, improper application, or repaired or altered by other than Cohu or those authorized by Cohu in writing. Cameras utilizing extended IR sensors are not warranted for use in areas of elevated levels of cosmic radiation. Television image pickup tubes, image intensifiers, lenses, and products manufactured by companies other than Cohu are warranted by the original manufacturer.

This warranty is in lieu of all other warranties, express, implied, or statutory, including warranties of fitness for a particular purpose and merchantability, and set forth buyers sole remedy in connection with such warranties. Cohu, in no event, whether as a result of breach of contract or warranty, tort (including negligence) or otherwise, shall be liable for any penalties regardless of reason; collateral, consequential, incidental, or exemplary damages, including without limitation, any loss of profit or revenues, loss of use of any equipment or goods, or removal or re-installation of equipment without prior written approval.

A Return Authorization (RA) Number must be obtained from Cohu prior to returning any item for warranty repair or replacement.

4/03

COHU
Cohu Inc., Electronics Division

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP