



PRODUCT SPECIFICATION

CM9500 Series Matrix

MICROPROCESSOR-BASED CROSS-POINT VIDEO SWITCHER, 208 X 16

Product Features

- Maximum of 208 Inputs x 16 Monitor Outputs (Fully Configured)
- Compatible with all Existing Coaxitron® Receivers
- 14 Programmable Tours (64 Steps Each, Including Presets)
- Two Line X 28 Character Message Titring Capability Plus Camera ID and Time and Date
- RS-422 Serial Communications Port
- Printer Interface for Recording System Status and Events
- Preset Capability Standard
- Programmable Events (Timed Tours)
- Up to 64 Alarms Inputs
- Single Compact CPU, Card Cage and Power Supply Requires 12.20 Inches (30.98 cm) of Rack Space
- Menu Driven Programming
- Eight Keyboard Capability
- Password Enabled User/Keyboard Priority, Partitioning, Protection



CM9502 CARD CAGE/CPU AND CM9502-KBD KEYBOARD CONTROL

The **System 9500** Coaxitron Matrix is a microprocessor-based cross-point video switcher engineered to fulfill the needs of medium to large facilities. The CM9502 is designed for ease of installation, operation and management of complex CCTV systems.

Aesthetic, easy-to-use keyboards and menu driven programming combine to facilitate system operation and management.

Priority, partitioning and lockout are all user programmable from the highest priority level. Password priority additionally enables any degree of flexibility required to manage user restrictions and capabilities from any system keyboard.

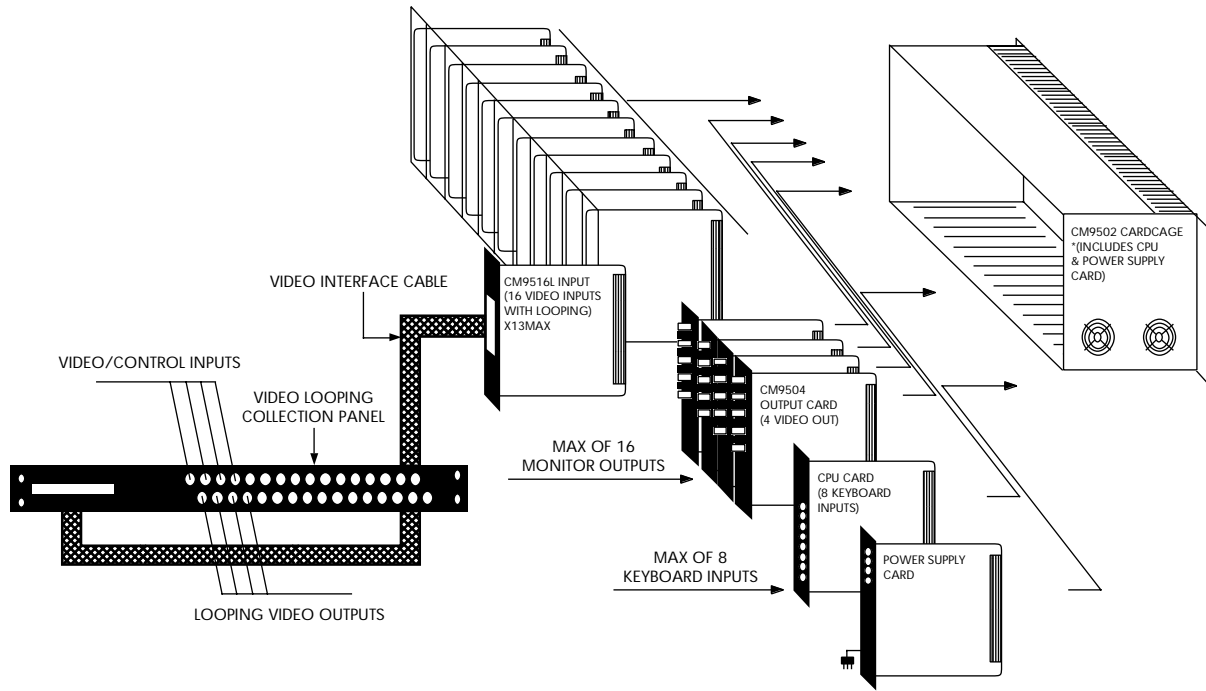
In its basic configuration, the CM9502 may be configured to accommodate a maximum of 208 video inputs, 16 monitor outputs, and 8 independent keyboards.

Standard features include the ability to program camera presets, sequences, tours, events, alarms, and block switching. Each unit is equipped with a RS-422 serial communications port and a printer interface port.

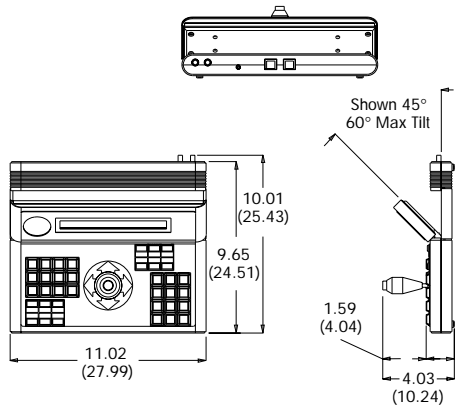
The Pelco **System 9500** is designed to meet the most demanding CCTV system requirements.



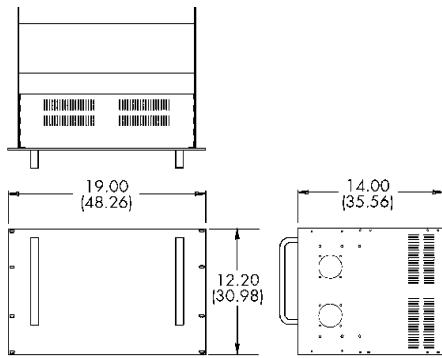
International Standards Organization Registered Firm ISO 9001 Quality System



CM9500 SYSTEM CARD CAGE CONFIGURATION, 208 INPUTS, 16 OUTPUTS



CM9502-KBD KEYBOARD CONTROL



CM9502 CARD CAGE/CPU

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS, ALL OTHERS ARE INCHES.



CM9505D3 DESKTOP KEYBOARD



CM9505R3 RACK MOUNT KEYBOARD



CM9502 (REAR VIEW)
(CONFIGURED WITH 11 INPUT CARDS,
4 OUTPUT CARDS, 2 BLANK-OFF PLATES)

TECHNICAL SPECIFICATIONS

CARD CAGE

GENERAL

Programmable Switching Duration	1 second min.; 99 seconds max.
Maximum Amount of Tours	14
Programmable Number of Steps Per Tour	64
Programmable Number of Cameras/Presets Per Step	16/16

CAMERA INPUTS

Number	208 max. per card cage (no alarm, relay follow); 16 per video input card
Type	75 ohm unbalanced terminating or looping; jumper selectable
Level	1V peak-to-peak (± 6 dB)
Connector	Panel mount BNC(s)

MONITOR OUTPUTS*

Number	16 per card cage; 4 per output card
Type	75 ohm unbalanced
Level	1V peak-to-peak nominal
DC Level	Blanking on OV, sync tip clamped
Video Fail Detection	
Type	Horizontal sync detector
Action	Switch to black source from power supply
Connector	PC mount BNC(s)

VIDEO

Frequency Response	± 3 dB @ 6 MHz
Gain	0 dB (± 0.5 dB)
Differential Gain	Typical 0.5%–max. <1.0%
Differential Phase	Typical 0.5°–max. <1.0°
Field Tilt	Typical 0.3%–max. <0.5%
Line Tilt	Typical 0.25%–max. <0.5%
Hum	<60 dB (below <1V peak-to-peak)
Signal-to-Noise Ratio	58 dB
Crosstalk (input to input)	60 dB at 6 MHz
Feedthrough (input to output)	60 dB at 6 MHz

CHARACTER GENERATOR

Display	White with black border
Camera Identification	Two lines of 28 characters
Programmable	Yes; on-screen, menu driven

KEYBOARD INTERFACE

Protocol	RS-422
Number of Ports	Eight
Maximum Number of Independent Keyboards	Eight maximum. (CPU will power only two keyboards. Each additional keyboard will require a CM9505UPS remote power supply.)
Speed	1200 baud
Connector Label	Control keyboards
Connector Type	8-pin modular type female (RJ-45)
Cable Type	25-foot (7.62 m) flat unshielded (supplied); (may be shielded)

ALARM OUTPUTS

Number of Outputs	Two
Connector Type	Two 37-pin, D-type male
Contact Configuration	Normally open and normally closed
Contact Rating	1 amp (60 watts AC/30 watts DC)

ALARM INPUTS*

Number of Alarms	64
Connector Label	Alarm input connector
Connector Type	Two 37-pin, D-type female
Sensing	Either N.O. or N.C. (auto sensed upon system power-up)

*The CM9502 operating system grants top priority to monitor control and active camera control, regardless of alarm programming. In order to ensure accurate alarm reporting, alarms should always be programmed to report to a dedicated monitor or group of monitors.

SERIAL INTERFACE

Physical Layer	RS-422
Protocol	ASCII
Number of Ports	Two, looped
Communication Parameters	4800 baud, 8 data bits, 1 start bit, 1 stop bit, even parity (11-bit word)

PARALLEL PORT (PRINTER) INTERFACE

Number of Ports	One
Speed	Programmable
Connector Type	25-pin, D-type (female)
Maximum Cable Length	50 feet (15.24 m) single ended

POWER SUPPLY

Voltage	240 volts, 50 Hz or 120 volts, 60 Hz (selectable)
Range	+10/-20%
Consumption	200 watts
Temperature	20 to 95°F (-7 to 35°C)
Humidity	80% maximum
Fusing	1.5A at 230 volt AC operation 3A at 120 volt AC operation
Switch	Rocker type

PHYSICAL SPECIFICATIONS

Dimensions	19" W x 12.20" H x 14" D (48.26 x 30.98 x 35.56 cm)
Shipping Weight	45 lb (20.39 kg) approximate (fully configured)

KEYBOARD

GENERAL

Number Key Pad	0–9, CLEAR, SELECT
Programming Functions	F1 – F12
Selection Functions	Monitor (MON) Camera (CAM) TOUR Preset, seq/go ALARM ACK IRIS, OPEN/CLOSE Focus, near/far ZOOM, TELE/WIDE (in/out)
Lens Functions	Pan up/down Tilt left/right

Note: Variable speed Legacy® pan & tilts must be used with a variable-speed keyboard.

POWER SUPPLY

Voltage	± 12 V from Matrix
Consumption	7 watts
Temperature	20 to 95°F (-7 to 35°C)
Humidity	80% maximum
Connector	8-pin modular connector (RJ-45)

KEYBOARD COMMUNICATIONS

Protocol	Balanced RS-422
Number of Ports	Two
Maximum Number of Keyboards	Eight keyboard ports available
Speed	1200 baud
Connector type	8-pin modular connector (RJ-45)

PHYSICAL SPECIFICATIONS

Dimensions	
CM9502-KBD	See dimension drawing
CM9505D3	3.5" H x 17.00" W x 5.25" D (8.89 x 43.18 x 13.33 cm)
CM9505R3	3.5" H x 19.00" W x 5.25" D (8.89 x 48.26 x 13.33 cm)
CM9505R5	5.25" H x 19.00" W x 2.00" D (13.33 x 48.26 x 5.08 cm)
CM9505R5-VS	5.25" H x 19.00" W x 2.00" D (13.33 x 48.26 x 5.08 cm)
Shipping Weight (approximate)	
CM9502-KBD	3 lb (1.36 kg)
CM9505D3	6 lb (2.72 kg)
CM9505R3	7 lb (3.17 kg)
CM9505R5	7 lb (3.17 kg)
CM9505R5-VS	7 lb (3.17 kg)



TECHNICAL SPECIFICATIONS

CARD CAGE/CPU/POWER SUPPLY

- CM9502 System 9500 rack-mounted matrix card cage with CPU card and power supply card. Seventeen available slots can be configured with any combination of the following: Up to thirteen CM9516 input cards, four CM9504 output cards, two CM9532 relay follow cards, or one CM9564 alarm interface card.
- CM9502-PAL Same as CM9502, except for 230 VAC, 50 Hz International PAL operation.
- CM9501B1 Blank-off plate to cover one unused slot on the rear of the CM9502 card cage.

VIDEO INPUT CARDS

- CM9516 16-channel video input/output control card assembly. Equipped with BNC connectors for video input/Coaxitron control output to 16 cameras. Inputs may be individually unterminated, if necessary. Looping applications use CM9516L.
- CM9516L 16-channel video input/output card assembly. Inputs are individually switchable for terminated or looping operation. External, rack-mounted video collection panel with 4-foot coaxial ribbon cable provides easy access looping capability for all 16 inputs.

MONITOR OUTPUT CARD

- CM9504 Video and control output switch card. Provides video output with character generation for 4 monitors. Supports NTSC and PAL video formats.

CONTROL/PROGRAMMING KEYBOARDS

- CM9502-KBD Full function desktop keyboard. Provides variable speed joystick control for pan & tilt functions, lens control switches, auxiliary function switches, numeric data entry keypad, 12-key function keypad, and 40-character x 2-row backlit LCD display. Derives power from main CPU/card cage. Connects to CPU utilizing integral RJ-45 8-pin modular connector; 25-foot (7.62 m) interconnect cable included. Keyboard compatible with external fiber optic/wireless receivers and transmitters. Wrist rest included
- CM9505D3 Same as CM9502-KBD except slant design (3.5" H x 17" W x 5.25" D) Wrist rest not included.
- CM9505R3 Same as CM9505D3 except rack mountable (3.5" H x 19" W x 5.25" D)
- CM9505R5 Same as CM9505R3 except 5.25" H x 19" W x 2.00" D
- CM9505R5-VS Same as CM9505R5 except has variable speed joystick control

KEYBOARD OPTIONS

- CM9505IC 25-foot (7.62 m) interconnecting cable, CPU to keyboard, pre-assembled with modular RJ-45 connectors

- CM9505IC-50 Same as CM9505IC except 50-foot (15.24 m) cable
- CM9505J Junction box set to adapt keyboard RJ-45 8-pin male modular cord/connector to multiconductor cable. Set of two. Barrier strip to RJ-45 8-pin female modular connector. Also includes one pre-assembled cable for CPU end.
- CM9505UPS Remote power supply for CM9505 Series keyboards. Use when power supplied from CPU is inadequate due to excessively long wire runs or when CPU derived power is impractical or impossible (i.e., fiber optic transmission of RS-422 keyboard data). (Required for each additional keyboard if more than two are used. CPU will only power two keyboards.)
- CM9505UPS-X Same as CM9505UPS except 230 VAC operation
- CM9505UPS-422 Same as CM9505UPS except has RS-422 repeater
- CM9505UPS-422X Same as CM9505UPS-422 except 230 VAC operation

ALARM INTERFACE CARD

- CM9564 64-input alarm interface card. Provides for 64 NO/NC inputs to CPU via two 37-pin female D-connectors
- CM9564J/64 64-input alarm interface panel. Provides barrier strip for incoming alarm wiring and two 37-pin D-connector outputs for CM9564 alarm interface card. Includes two D-to-D interconnect cables
- CM9564J/32 Same as CM9564J/64 except for 32 inputs and supplied with one interconnect cable

RELAY INTERFACE CARD

- CM9532A 32-output relay interface card. Provides 32 NO/NC outputs controlled by CPU. D-connector output (for use with CM9502 card cage only)
- CM9532J/32 32-output relay interface panel. Provides barrier strip for outgoing relay pairs and D-connector for interconnect to CM9532 relay interface card. Supplied with four D-to-D interconnect cables
- CM9532J/8 Same as CM9532J/32 except for 8 outputs and supplied with one interconnect cable

RELATED PRODUCTS

- ERD2200 Outdoor, fixed speed, Coaxitron receiver (See C1506spec)
- IRD2024 Indoor, fixed speed, Coaxitron receiver (See C1506 spec)
- CX9000RX Series Outdoor fixed speed Coaxitron with presets (See C554 spec)
- LRD41A11 Series Legacy fixed speed receiver with presets (See C553 spec)
- LRD41C21 Series Legacy fixed speed receiver with presets (See C557 spec)
- LRD41C22 Series Legacy variable speed receiver, with presets (See C557 spec)

Indicates change or addition since last revision.

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MATRIX SWITCHERS
CM9500 MATRIX