



PRODUCT SPECIFICATION

CM6700 Matrix

MICROPROCESSOR-BASED SWITCHER/CONTROLLER, 16 X 2/4



Product Features

Standard Features (all models)

- 16 Video Inputs; 2 or 4 Video Outputs
- 20-Character Camera Title
- Time (24-hour or AM/PM formats); Date (4 formats)
- Alarm Display Call-up from 18 Direct-Connect Alarm Inputs
- Video Inputs Individually Selectable for Terminating or Looping
- Coaxitron® Compatible
- Individual Monitor Sequential Switching with Preset Call
- Compatible with Pelco's RS-422 D or P Protocol
- Camera Control Selection: Coaxitron® or RS-422; Individually Selectable per Camera
- Full Duplex RS-485 Keyboard Communications
- Selectable Data Port – RS-232/RS-422/RS-485
- Password Protected Menu Programming
- User Partitioning to Prevent Unauthorized Viewing
- Keyboards:
 - KBD100 — Switcher Only
 - KBD200 — Switcher Plus Multi-Speed Control, Presets, Patterns, Receiver/Driver Aux
 - KBD300 — Switcher Plus 3-axis Joystick for Variable Speed Pan/Tilt and Zoom Lens Control, Presets, Patterns, Receiver/Driver Aux
 - KBD300V — Switcher Plus 4-inch (10.16 cm) Active Matrix Monitor Display, 3-axis Joystick for Variable Speed Pan/Tilt and Zoom Lens Control, Presets, Patterns, Receiver/Driver Aux
- Optional CM6700-VMC Two-Monitor Expansion Card

The **CM6700 Matrix** Switcher/Controller is a very affordable, highly versatile, full-featured cross-point matrix switcher. The **CM6700** provides switching and control for 16 video inputs and up to 4 monitor outputs from any one of up to 8 keyboards.

The **CM6700 Matrix** switching unit is designed to be remotely operated from desktop keyboards or external computer systems.

The versatile mounting system allows for installation in a variety of ways: either 19-inch rack (front or rear mount), wall or shelf mount. In this way, the bulk of the video cables can be routed to a convenient area such as a telephone room instead of the operator location.



CM6700-MXB SWITCHER/CONTROLLER



KBD300 KEYBOARD

Straightforward on-screen menus make programming the **CM6700** simple and easy. The user enabled character display shows time and date, operation mode, camera number, and a 20-character title for quick, easy identification of the on-screen video. The display characters are white with black outline for viewing under varying lighting conditions. The display can be located anywhere on the viewing monitor and can be turned on or off.

The **CM6700** supports two system macros, or salvo sequences, to allow quick call-up of up to four cameras to four monitors – simultaneously. Salvo sequences include preset call of suitably equipped (PTZ or dome) receiver/drivers.

External alarms will call cameras to selected monitors and override the current operational display. An alarm will automatically call a preset and pre-position a camera with suitable (PTZ or dome) receiver/drivers. Alarms are cleared either by keyboard acknowledgment, alarm contact deactivation or time out. Two extra alarm inputs allow for alarm-activated salvo sequence call-up. A "Form C" alarm relay output allows for automatic activation of an alarm event recorder or other device. In addition, this relay is manually controllable from the system keyboard.



SYSTEM COMPONENTS



KBD100



KBD200



KBD300



KBD300V

SYSTEM KEYBOARDS

KBD100/200/300/300V Series keyboards have been engineered for use with the CM6700 Matrix Switcher. Each keyboard in the series offers a different level of control and functionality in order to provide maximum versatility in every application.

KBD100

Our most economical keyboard, the KBD100 features limited CM6700 Matrix control for operator locations where pan/tilt/zoom (PTZ) functions are not intended or not required. Features include programming capabilities, camera and monitor call-up, operation of sequences and patterns, and three function keys to allow local auxiliary activation.

KBD200, KBD300 and KBD300V

Standard Features

These full-feature keyboards offer PTZ control, programming capabilities, camera and monitor call-up, operation of sequences and patterns, and local auxiliary activation. Added function keys allow control of receiver/driver auxiliaries. The function keys have dual selections to allow remote control of multiplexer functions when a Pelco MX4000 Series multiplexer is used in conjunction with the CM6700 Matrix Switcher.

These keyboards can be configured for Direct Mode operation; see below.

Exclusive Keyboard Features

KBD200

This economical keyboard features "Touchspeed" multi-speed control of variable speed receiver/drivers.

KBD300

This keyboard features a three-axis, vector solving joystick that includes a twisting, return-to-center head for precise, single-hand control of PTZ functions.

KBD300V

The KBD300V offers a complete, stand-alone control and viewing package, featuring a 4-inch (10.16 cm) diagonal active matrix monitor and vector solving joystick.

Direct Mode Receiver/Driver Control

The KBD200, KBD300, and KBD300V keyboards can be alternately configured for Direct Mode operation.

Direct Mode control is a feature that allows two-wire control of up to 16 daisy-chained receiver/drivers directly from the keyboard.

When configured for Direct Mode control, keyboards output Pelco P protocol at 4800 baud.

Direct Mode control features include programming and call-up of presets, full PTZ control of variable speed receiver/drivers, and activation of receiver/driver auxiliaries.



TECHNICAL SPECIFICATIONS

SWITCHER

GENERAL

Memory Protection	Replaceable lithium battery provides data protection for ten years
Keyboards	Eight
Receiver/Dome Control	Coaxitron® and RS-422
Alarm Inputs	Eighteen, programmable (includes presets and NO/NC device)
Alarm Relay Outputs	One, DPST
Rating	0.5 amp @ 125 VAC
General Purpose Outputs	Two, open collector; 32 VDC max., 25 mA max.
Data Ports	Three
Keyboard	RS-485, 9600 baud.
Receiver/Driver	RS-422, D protocol 2400 baud, P protocol 2400-9600 baud
Data (Computer)	RS-232/422/485, 1200-19.2K baud

ELECTRICAL

Power Source	120V or 230V, 50/60 Hz
Power Consumption	10W

SWITCHER CHARACTERISTICS

Video Inputs	Sixteen inputs, BNC, terminating or looping (jumper selectable) .5 to 2.0 Vp-p composite video
Video Outputs	Two or four outputs, BNC
Switching Type	Cross-point video matrix. RS-170, NTSC, CCIR and PAL compatible
Switching Method	Vertical interval switching
Switching Time	Less than 16 milliseconds (typical)

VIDEO

Bandwidth	17 MHz
Frequency Response	Flat to 8 MHz, ± 1 dB to 15 MHz
Signal to Noise Ratio	-55 dB (peak-to-peak vs. RMS noise)
Cross Talk	-50 dB typical at 3.58 MHz
Differential Gain	2% typical
Differential Phase	0.2° typical
Tilt	0.5% typical
Gain	Unity (± 1 dB)
DC Output	Zero volts

CHARACTER GENERATION

Character Type	White with black outline
Camera Identification	One line, twenty characters plus camera number
Date/Time	One line
Programmable	On-screen, menu driven
Character Set	80 ASCII characters

MECHANICAL

Dimensions (switcher only)	3.5" H (2 RU) x 17" W x 10.5"D (8.89 cm x 43.18 cm x 26.67 cm)
Mounting (switcher only)	Factory configured for EIA rack mount; rack ears can be removed for wall mount or free standing applications

KEYBOARD

ELECTRICAL

Input Voltage	KBD300V only +12 VDC @ 1 amp All others 12 VAC or ± 12 VDC
Power Consumption	KBD300V only 8 watts All others 1 watt
Connector Type	RJ-45, 8-pin modular (female)

KEYBOARD COMMUNICATION

Standard 6700 Mode Operation	
Protocol	RS-485
Baud Rate	9600
Comm Parameters	8 data bits, odd parity, 1 stop bit
Direct Mode Operation (not applicable to KBD100)	
Protocol	RS-422, Pelco P
Baud Rate	4800
Comm Parameters	8 data bits, no parity, 1 stop bit

GENERAL

Keyboard Keypad	Mechanical
Joystick	
(KBD300, KBD300V)	3-axis, vector solving, twisting head
Display	
KBD100	7-segment digital display: Red LED, 1 cell
KBD200, KBD300, KBD300V	7-segment digital display: Red LED, 2 cells Multiplexer mode indicator: Green LED
KBD300V	LCD Monitor
Display Size	4-inch (10.16 cm) diagonal
Display Method	TFT active matrix system
Input Signal	NTSC/PAL
Input Signal Level	1 Vp-p, 75 ohms
Backlight	CCFT Backlight
Power Supply	+12 VDC 10% 350 mA
Storage Temperature	-4° to 140°F (-20° to 60°C)
Screen Controls	Brightness, contrast and tint
Tilt Stand	Adds additional 20° viewing angle
Ambient Operating	
Temperature	23° to 104°F (-5° to 40°C)
Humidity	10-90% non-condensing
Dimensions	
KBD100	6"W x 7.125"L x 2.25"H (15.24 cm x 18.1 cm x 5.72 cm)
KBD200	8.125"W x 7.125"L x 2.25"H (20.64 cm x 18.1 cm x 5.72 cm)
KBD300	9.5"W x 7.125"L x 2.25"H (24.13 cm x 18.1 cm x 5.72 cm)
KBD300V	14.63"W x 7.125"L x 2.25"H (37.2 cm x 18.1 cm x 5.7 cm)
Weight	
KBD100	Unit 1.9 lb (0.86 kg) Shipping 3 lb (1.35 kg)
KBD200	2.1 lb (0.97 kg) 3 lb (1.35 kg)
KBD300	2.5 lb (1.12 kg) 4 lb (1.81 kg)
KBD300V	4.3 lb (1.95 kg) 7 lb (3.17 kg)



MODELS AND ACCESSORIES

MODELS

Matrix Bay

CM6700-MXB2	Switcher/controller. 16 inputs, 2 outputs, NTSC, 120V, 50/60 Hz
CM6700-MXB4	Switcher/controller. 16 inputs, 4 outputs, NTSC, 120V, 50/60 Hz
CM6700-MXB2-X	Switcher/controller. 16 inputs, 2 outputs, PAL, 230V, 50/60 Hz
CM6700-MXB4-X	Switcher/controller. 16 inputs, 4 outputs, PAL, 230V, 50/60 Hz

Keyboards

KBD100	Desktop keyboard, switcher only, 120V, 50/60 Hz
KBD100-X	Same as KBD100 except 230V, 50/60 Hz
KBD200	Desktop keyboard, multi-speed PTZ, 120V, 50/60 Hz
KBD200-X	Same as KBD200 except 230V, 50/60 Hz
KBD300	Desktop keyboard, vari-speed PTZ, 120V, 50/60 Hz
KBD300-X	Same as KBD300 except 230V, 50/60 Hz
KBD300V	Same as KBD300 except has integrated video display, 120V, 50/60 Hz
KBD300V-X	Same as KBD300V except 230V, 50/60 Hz

Note: In addition, the KBD200, KBD300, and KBD300V control keyboards provide control capabilities for Pelco multiplexers. The function key icons shown are active only when used in conjunction with an appropriate Pelco multiplexer.

OPTIONS

CM6700-VMC2	2-monitor output expansion card (NTSC). Expands a CM6700-MXB2 to a four-monitor system and features easy installation and plug-and-play functionality
CM6700-VMC2-X	2-monitor output expansion card (PAL). Use with CM6700-MXB2-X

CERTIFICATIONS

- ◆ CE compliant (CM6700-MXB2-X, CM6700-MXB4-X, CM6700-VMC2-X, KBD100-X, KBD200-X and KBD300-X)

Specifications subject to change without notice.
©Copyright 1998, PELCO. All rights reserved.