



**BLACK AND WHITE QUAD**

**Q4M**

**Q8M**

Installation and user manual

# **IMPORTANT SAFEGUARDS**

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## **READ THE INSTRUCTIONS**

Be sure to read all the safety and operating instructions before using the device.

## **KEEP THE INSTRUCTIONS**

Be sure to keep all the safety and operating instructions for possible future need and queries.

## **FOLLOW THE INSTRUCTIONS**

Be sure to follow all the safety and operating instructions.

## **WATER AND HUMIDITY**

Do not use the unit near water – for example near a bath tub, or in any area showing evidences of humidity.

## **POWER SUPPLY**

This equipment can be fed only by the type of supply quoted by a production code on the device. Do not overload electric adapters and extension cords as this can result in fire or electric shock.

## **REPAIR**

Do not attempt to open covers and to service this unit yourself, refer all repairs to qualified service personnel.

## **UNPACKING**

Transfer package is a safe covering for device transportation. We recommend to keep the wrapping for relevant future usage.

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## **INTRODUCTION**

Programmable quad Q4M (Q8M) is a digital apparatus, which enables displaying of 4 cameras (two pages of four cameras) on one output (QUAD).

It also enables switching of input video signals of the cameras and a quad screen. The switching can be provided manually or with the help of programmed sequence for the main output (MAIN). It is possible to set up cameras, which are at the right time available for automatic switching. This makes possible to disconnect temporarily uninteresting or disconnected cameras. An operator attention can be focused only on important camera images.

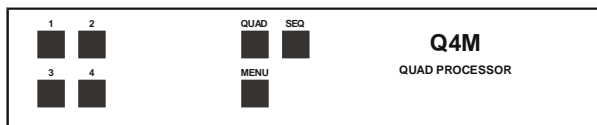
The unit contains 4 (8) alarm inputs. The quad itself remembers the last setting of active cameras, a programmed sequence and the time of switching an alarm output, even after the unit had been switched off.

## **MAIN CHARACTERISTICS**

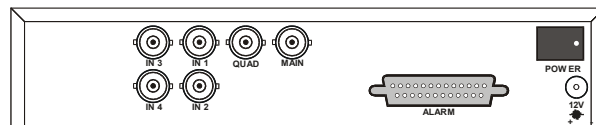
- 4 (8) video inputs
- main and auxiliary video output
- high differential ability
- 512 TV lines (480 for EIA)
- 256 gray scale
- on screen menu control
- automatic norm detection of connected cameras
- light signaling of disconnected cameras on the operating panel
- programmable switching sequence for the main monitor
- alarm input for each video input
- potentialless alarm output
- freeze picture
- 2 alarm setting modes
- acoustic and optical alarm signaling

# OPERATING ELEMENTS AND FUNCTIONS

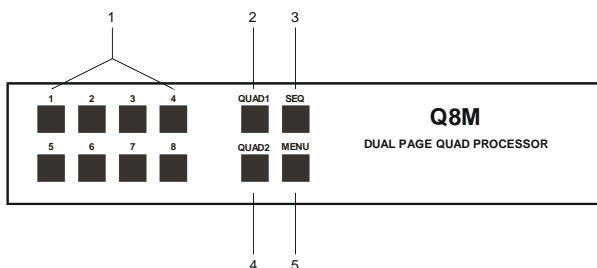
Pict.1: Front panel Q4M



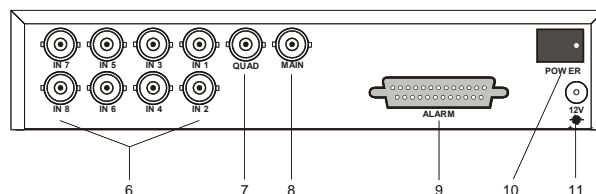
Pict.3: Back panel Q4M



Pict.2: Front panel Q8M



Pict.4: Back panel Q8M



## 1. 1 - 8

Press the button 1 – 8 to display the appropriate camera image.

## 2. QUAD1

Press the button QUAD1 to display the split screen containing cameras 1 – 4.

## 3. SEQ

Press the button SEQ to start the automatic camera switching, according to the programmed sequence.

## 4. QUAD2

Press the button QUAD2 to display the quad screen containing cameras 5 – 8 (only for quads Q8M).

## 5. MENU

Press the button MENU to display the control menu on the screen.

## 6. IN1 – IN8

Video inputs for cameras 1 – 8.

## 7. QUAD

Quad screen video output.

## 8. MAIN

Main video output.

## 9. ALARM

Connector for connecting alarm inputs and outputs. This connector enables connecting of alarm contact makers, sensors, etc.

## 10. POWER

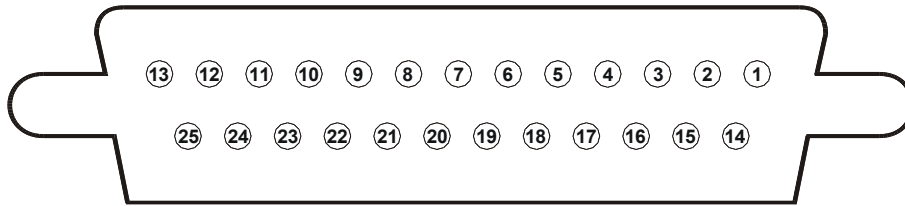
Press the switch POWER to start the quad.

## 11. 12V

Connector for connecting power supply.

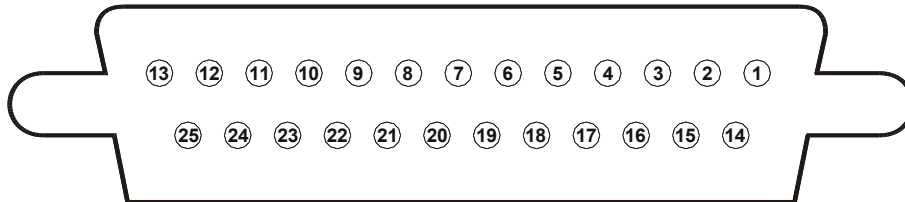
# OPERATING ELEMENTS AND FUNCTIONS (CONTINUATION)

Pict. 5: Alarm connector CANNON 25 for Q4M



- |   |  |
|---|--|
| <b>(1)</b> Alarm output – normally open contact 1 | <b>(14)</b> Alarm output – normally open contact 2 |
| <b>(2)</b> Reserve                                | <b>(15)</b> Reserve                                |
| <b>(3)</b> Alarm input 1                          | <b>(16)</b> Alarm input 2                          |
| <b>(4)</b> Alarm input 3                          | <b>(17)</b> Alarm input 4                          |
| <b>(5)</b> Reserve                                | <b>(18)</b> Reserve                                |
| <b>(6)</b> Reserve                                | <b>(19)</b> Reserve                                |
| <b>(7)</b> Common conductor – ground (GND)        | <b>(20)</b> Common conductor – ground (GND)        |
| <b>(8)</b> Reserve                                | <b>(21)</b> Reserve                                |
| <b>(9)</b> Reserve                                | <b>(22)</b> Reserve                                |
| <b>(10)</b> Reserve                               | <b>(23)</b> Reserve                                |
| <b>(11)</b> Reserve                               | <b>(24)</b> Reserve                                |
| <b>(12)</b> Common conductor – ground (GND)       | <b>(25)</b> Common conductor – ground (GND)        |
| <b>(13)</b> Common conductor – ground (GND)       |  |

Pict. 6: Alarm connector CANNON 25 for Q8M



- |   |  |
|---|--|
| <b>(1)</b> Alarm output – normally open contact 1 | <b>(14)</b> Alarm output – normally open contact 2 |
| <b>(2)</b> Reserve                                | <b>(15)</b> Reserve                                |
| <b>(3)</b> Alarm input 1                          | <b>(16)</b> Alarm input 2                          |
| <b>(4)</b> Alarm input 3                          | <b>(17)</b> Alarm input 4                          |
| <b>(5)</b> Alarm input 5                          | <b>(18)</b> Alarm input 6                          |
| <b>(6)</b> Alarm input 7                          | <b>(19)</b> Alarm input 8                          |
| <b>(7)</b> Common conductor – ground (GND)        | <b>(20)</b> Common conductor – ground (GND)        |
| <b>(8)</b> Reserve                                | <b>(21)</b> Reserve                                |
| <b>(9)</b> Reserve                                | <b>(22)</b> Reserve                                |
| <b>(10)</b> Reserve                               | <b>(23)</b> Reserve                                |
| <b>(11)</b> Reserve                               | <b>(24)</b> Reserve                                |
| <b>(12)</b> Common conductor – ground (GND)       | <b>(25)</b> Common conductor – ground (GND)        |
| <b>(13)</b> Common conductor – ground (GND)       |  |

# **INSTALLATION QUAD CONTROLLING**

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## **MONITOR OUTPUTS**

Outputs QUAD and MAIN are individual video outputs for connecting monitor or VCR. For the correct function of the connected apparatus the signal cables must have the impedance load of  $75\Omega$ .

## **ALARM INPUTS**

One alarm input is suitable for one video input. Alarm loops are connected between alarm input and common conductor - ground (GND).

## **ALARM OUTPUT**

Quad has its own potentialless alarm output made of the normally open contacts of the relay.

## **ALARM CONNECTOR**

Alarm connector is used for connecting alarm inputs and outputs. The connection of 25 outlet connector CANNON is illustrated on the pictures 5 and 6 (page 4).

## **POWER SUPPLY INPUT**

Quads Q4M (Q8M) are supplied from a uni-flow supply of 12 V. Energy input is 4 W maximum. For connecting supply voltage is used a concentric connector 5,5 x 2,1 mm. The positive supply pole is on the inside contact of the concentric connector, the connector jacket is the negative pole.

## **BASIC MODE**

After turning on, the quad cyclically switches among active cameras according to the sequence, which has been set up. The automatic switching is signaled by the SEQ light-emitting diode (LED), the camera displayed on the main video output (MAIN) is signaled by the diode of the buttons 1 – 4 or QUAD (1 – 8, QUAD1 AND QUAD2 for Q8M).

## **MANUAL SWITCHING**

Press the corresponding button to display cameras 1 – 8 or quad screens QUAD, QUAD1 and QUAD2.

## **AUTOMATIC SWITCHING**

The automatic switching starts by pressing the button SEQ.

If the quad does not start to switch automatically, check the camera settings in the menu SEQUENCE and TIME (page 6).

## **CAMERA FREEZE IN QUAD SCREEN**

Be sure, there is a quad picture displayed on the output MAIN.

Press and keep the button 1 – 8, the camera screen will stop (freeze) or run-up if it was stopped. When the picture is frozen, the camera LED is shining together with the quad picture LED QUAD, QUAD1 and QUAD2.

If the LED above the buttons 1 – 4 (1 - 8 by Q8M) is shining, the video signal of corresponding cameras is missing.

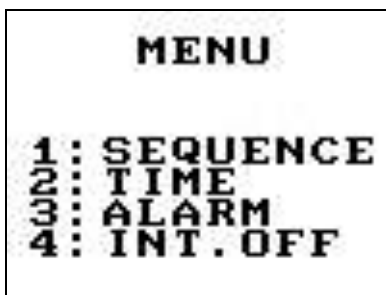
## QUAD CONTROLLING (continuation)

Quads Q4M and Q8M contain a graphical menu, which enables the setting of the following functions.

- Cameras activation for automatic switching
- Switching period set up
- Alarm functions set up
- Interlace correction

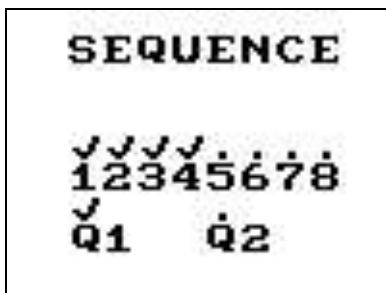
### MENU - MAIN MENU

To display the main menu on the screen press the button MENU. Choose the required function by pressing the buttons 1, 2 and 3.



### SEQUENCE – CAMERAS ACTIVATION

By pressing the button 1 is the menu for cameras activation and deactivation for automatic switching displayed.

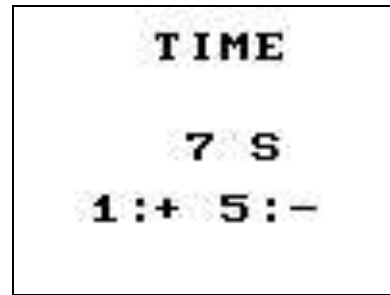


By pressing the buttons of individual cameras activate or deactivate automatic switching cameras. Activated cameras are marked by sign ✓.

If the cameras are set up, the quad will switch automatically among cameras 1, 2, 3, 4, Q1, 1, 2, ...

In case you make a mistake by sequence programming (none or only one camera is active) and you start the switching sequence by pressing the button SEQ on the front panel, notice „**INCORRECT SEQUENCE**“ will appear. In that case is necessary to set up cameras in the SEQUENCE menu properly.

### TIME – SWITCHING PERIOD



By using the buttons 1 and 3 (1 and 5 by Q8M) is possible to prolong or slow down the switching time among individual cameras and quad pictures, at intervals 1 – 99 sec.

### ALARM – ALARM SET UP



The quad detects an alarm, when the connection is provided between the alarm input 1 – 8 on the CANNON connector of the back panel and the common conductor – ground (GND). By the help of the buttons 1 and 3 (1 and 5 Q4M) set up quad reaction for an alarm. The reaction can be:

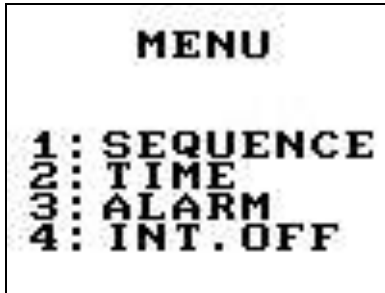
- OFF** - alarm is off - quad does not respond to the alarm.
- FOLLOW** - quad signalizes an alarm as long as any alarm input is active.
- 2-255 S** - quad signalizes an alarm for the set up time since the alarm event had occurred.

If an alarm occurs, the quad makes the following steps:

1. it switches the alarm output (relay) – signaled acoustically (beep).
2. it switches a camera corresponding to the alarm input for the set up time.

The alarm stops after the end of the set up time interval, after pressing any button or after the end of the alarm event in the mode FOLLOW

### INTERLACE CORRECTION ON/OFF



By pressing the button 4 switch ON/OFF the interlace correction. Off interlace correction of the life screen can cause a gliding effect, which is evoked by projection of different half-fields of the same camera. If you choose the item (INT.ON), always the same half-field will be shown. With the stability screen improvement will be the projection slower.





YOUR TROUBLE	THE CAUSE AND ITS SOLUTION
<p><b>After connecting the supply voltage device does not work.</b></p>	<p>The power supply is not connected.  <i>Check the supply connector and the polarity of power supply, switch on the power breaker.</i></p> <p>The supply adapter is not dimensioned sufficiently.  <i>Check if the adapter power output and voltage agree with the quad requirements.</i></p>
<p><b>After connecting the supply voltage the LEDs are on, but the device does not work.</b></p>	<p>The supply adapter is not dimensioned sufficiently.  <i>Check if the adapter power output and voltage agree with the quad requirements.</i></p>
<p><b>Horizontal stripes go over the quad screen.</b></p>	<p>The supply adapter is not dimensioned sufficiently.  <i>Check if the adapter power output and voltage agree with the quad requirements.</i></p>
<p><b>Horizontal stripes appear over the individual screen quadrants.</b></p>	<p>Strong interference from power distribution has debased the camera signal.  <i>Check the camera connection.</i>  <i>Check the camera and monitor ground conductor.</i></p>
<p><b>Automatic switching sequence can not be switched on.</b></p>	<p>Cameras listed in the switching sequence are off from the switching.  <i>Correct the sequence and check the sequence period (page 6).</i></p>
<p><b>The picture in the quad screen has stopped.</b></p>	<p>The picture has been stopped from the keyboard.  <i>Check the LEDs on the display (page 5). Press and keep the buttons of the shining LEDs 1 – 8.</i>                      Camera was disconnected or switched off.  <i>Check the camera power supply and connection.</i></p>
<p><b>Device does not react to alarm inputs.</b></p>	<p>The alarm processing is switched off in the main menu.  <i>Set up the alarm with the function of ALARM (page 6).</i>                      The connection of the alarm signals is disconnected.  <i>Check the connection of the alarm connector.</i></p>
<p><b>There is no picture on the monitor.</b></p>	<p>The quad and monitor patchcord is defective.  <i>Check the patchcord carefully.</i></p>

# TECHNICAL SPECIFICATION

PICTURE PARAMETERS	
TV standard:	CCIR / EIA
Number of the active TV lines:	512 / 480
Samples per TV line:	864 / 856
Gray scale:	256
VIDEO INPUTS	
Number:	4 (8 by Q8M)
Amplitude:	0,75 - 1,5 V <sub>p-p</sub>
Input impedance:	75 Ω
Connectors:	BNC
VIDEO OUTPUTS	
Number:	2 individual
Standard:	CCIR / EIA
Amplitude:	1 V <sub>p-p</sub> load 75 Ω
Connector:	BNC
ALARM INPUTS	
Number:	4 (8 by Q8M)
Loop connection:	input – ground (GND)
Activity:	normally open
Maximum alarm loop impedance:	1 kΩ
Connector:	CANNON 25 pin socket
ALARM OUTPUT	
Output:	2 low voltage relay contacts
Maximum switching voltage:	40 V
Maximum switching current:	0,5 A
TEMPERATURE CONDITIONS	
Range of operating temperatures:	0 – 40 °C
Humidity:	max. 85 %
POWER SUPPLY	
Input voltage:	12 VDC
Power consumption:	max. 4 W
Connector:	Concentric 5,5 × 2,1 mm
MECHANICAL PARAMETERS	
Dimensions:	218(W) × 44,5(H) × 230(D) mm
Weight:	1,4 kg
ACCESSORIES	
Alarm connector mate + cover:	1 p

