COMPUTRONIC

EXCELLENCE IN CCTV

BLACK&WHITE AND COLOUR
REAL TIME QUADS

QR4M
QR4C
QR8M
QR8C

Installation and user manual

IMPORTANT SAFEGUARDS

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 bathtub, 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 open covers and repair this unit yourself, refer all repairs to a qualified person.

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

TABLE OF CONTENTS

INTRODUCTION

Real time quads are digital devices, which enable simultaneous displaying of 4 cameras on one monitor in the real time. QR8M and QR8C (QR8x) quads enable also displaying of two pages each of 4 cameras.
QR4C and QR8C have one main and two spot video outputs. The main video output is used for displaying quad screen and a full size picture of each camera as well. The quad video outputs BNC and S-VHS are identical; they have quad picture usually used for VCR recording.
QR4x and QR8x quads can cooperate with security system devices by 4 (8) alarm inputs and one potentialless alarm output.
The quad itself remembers all its parameters, even after the unit had been switched off.

MAIN CHARACTERISTICS

- 4+1 (8+1 at QR8x) video inputs
- main, spot and S-VHS video output
- refreshing frequency of 50 frames per second (60 for EIA)
- high resolution
- 512 TV lines (480 for EIA)
- 256 gray scale (B&W only)
- 16 million colours (colour only)
- on screen menu control
- automatic detection of connected cameras norm
- time, date and titles on the screen
- freeze picture
- digital zoom at VCR quad picture displaying.
- 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
- 2 alarm modes
- acoustic and optical alarm signaling

OPERATING ELEMENTS AND FUNCTIONS

Fig. 1: Front panel QR4x

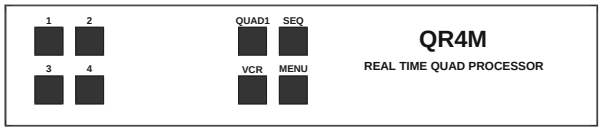


Fig. 2: Back panel QR4x

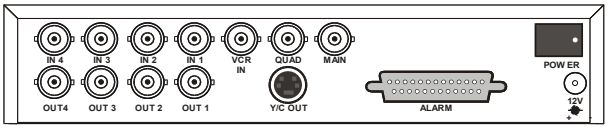


Fig. 3: Front panel QR8x

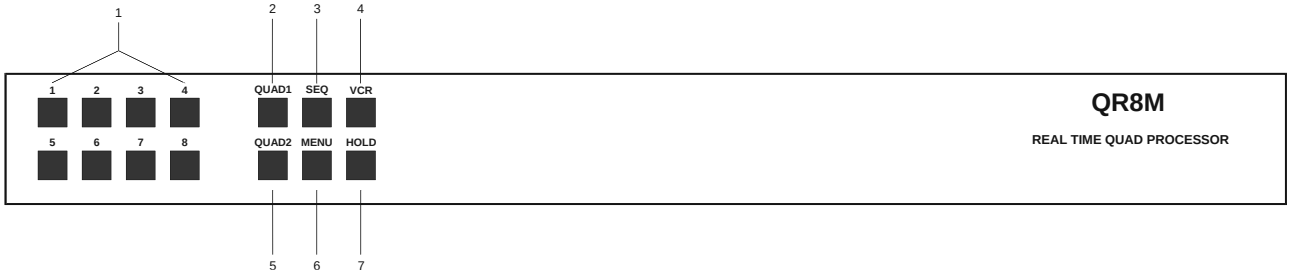
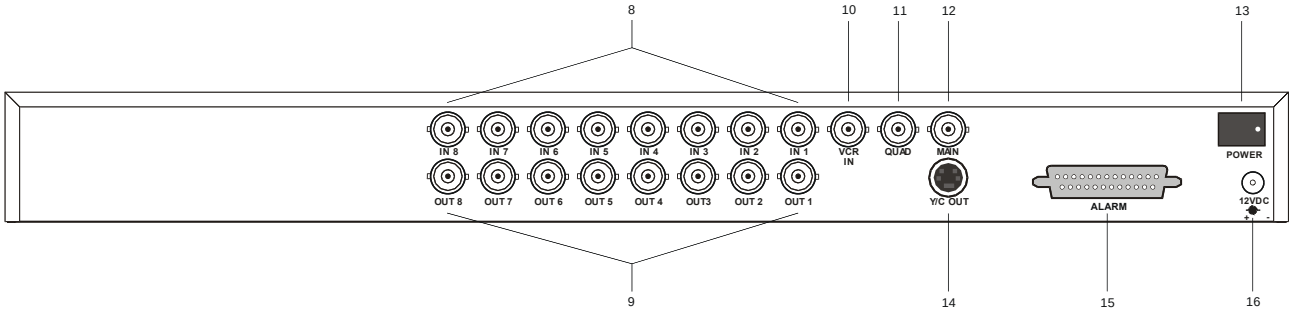


Fig. 4: Back panel QR8x



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. VCR
Press the button VCR to display the vide signal from the input VCR IN (nm.10).

5. QUAD2
Press the button QUAD2 to display the quad screen containing cameras 5 – 8 (only for quads QR8x).

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

7. HOLD (only for QR8x)
By pressing the button HOLD the picture of all cameras QUAD1 and QUAD2 will be stopped. Press the button HOLD again to switch on the cameras.

8. IN1 – IN8
Camera video inputs 1 – 8.

9. OUT1 – OUT8
Camera video outputs 1 - 8. The outputs that are not used, must be set with 75 Ω load terminators (added to wrapping).

10. VCR IN
Video input for VCR.

11. QUAD
Quad screen video output.

12. MAIN
Main video output.

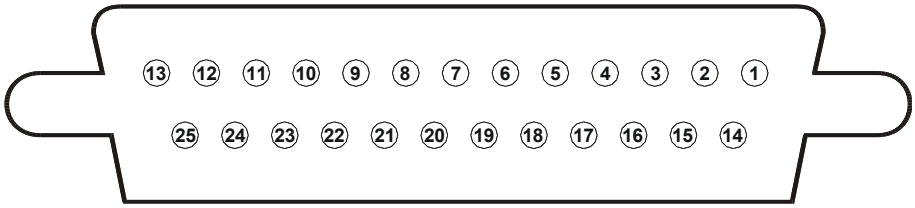
13. POWER
Press the switch POWER to start the quad.

14. Y/C OUT
The S-VHS quad screen video output is used for connecting to a monitor or a VCR (colour versions only).

15. ALARM
Used for connecting alarm inputs such as alarm contact makers, sensors, etc.

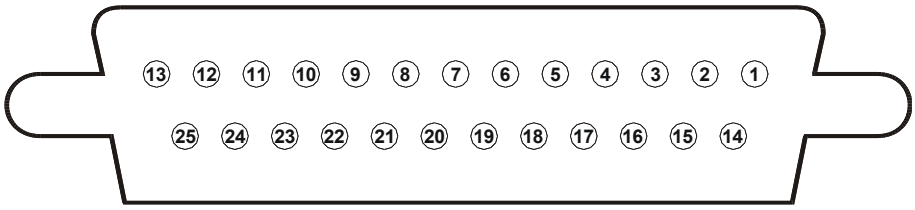
16. 12VDC
Power supply.

Fig. 5: Alarm D-SUB25M connector at QR4x quads



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

Fig. 6: Alarm D-SUB25M connector at QR8x quads



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

INSTALLATION

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 75Ω.

Y/C OUTPUT
The Y/C OUT is a S-VHS video output used for connecting to a monitor or a VCR.

ALARM INPUTS
Each alarm input corresponds to one video input. Alarm loops are connected between alarm input and common conductor - ground (GND).

ALARM OUTPUT
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-pin D-SUB25M connector is illustrated on the fig. 5 and 6 (page 5).

POWER SUPPLY INPUT
Quads QR4x and QR8x are supplied from a DC supply of 12 V. Energy input is 6 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.

QUAD CONTROLLING

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 at QR8x).

MANUAL SWITCHING
Press the corresponding button to display cameras 1 – 8, quad screens QUAD (QUAD1 and QUAD2 at QR8x) or video inputs VCR, .

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, CAMERAS IN SEQUENCE and TIME MULTIPLIER (page 7).

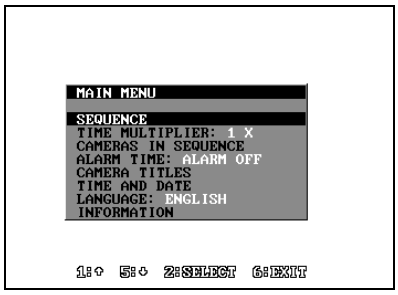
CAMERA FREEZE ON QUAD SCREEN
Be sure, there is a quad picture displayed on the output MAIN.
Press and keep the button 1 – 8, the camera screen will stop (freeze) or run-up if it was stopped.
By pressing the button HOLD (QR8x only) all cameras will stop (freeze) or run-up if they were stopped.
When the 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 at QR8x) is twinkling, the video signal of corresponding cameras is missing.

DISPLAY VCR VIDEO SIGNAL
Press the button VCR to display the video signal connected to the input VCR IN. Watching the quad screen you can zoom the camera picture corresponding to a pressing number 1-4 (1-8 at QR8x).

Real time quads contain a graphical menu, which enables the setting of all quad functions. There is an operating line with buttons at the bottom of the screen, which makes the operation easier. The individual button functions are:

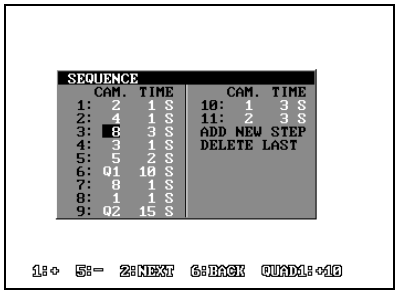
- Buttons **1** and **3** (**1** and **5** at QR8x) enable the movement up and down or correcting the edited value.
- Button **2** (**NEXT**) chooses a submenu or a changeover to the next level.
- Button **4** (**6** at QR8x) (**BACK**) ends the current menu level and goes over to the previous level.
- Button **QUAD** (**QUAD1** at QR8x) improves the edited level by 10.

MAIN MENU



To display the main menu on the screen press the button **MENU**.

SEQUENCE



This menu programs the sequence and time period of the displaying individual camera inputs and the quad pictures. The sequence can use 2 up to 16 switching steps. The individual steps are numbered by sequence numbers and sequenced one under another. If you want to change the camera or the time of an appropriate step, choose the required step by arrows up and down. Then press the button 2 (CHOOSE) and after that you can change the camera number or the quad screen by the help of the arrows.

ADD NEW STEP - addition of a new step to the sequence

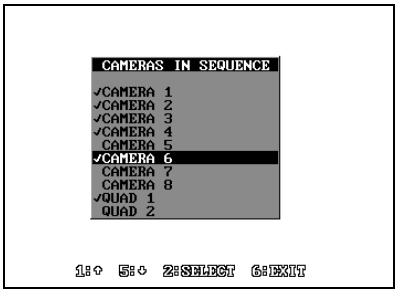
DELETE LAST STEP – erasing of the last sequence step

By pressing the button 4 (END) is possible to end the sequence edition and go back to the main menu.

TIME MULTIPLIER

If the camera switching speed is not suitable, it is not necessary to reprogram the switching sequence. All the time data of the sequence are multiplied by the parameter TIME MULTIPLIER (see the MAIN MENU). By setting up this level you can lengthen or shorten the time of the displaying particular cameras considerably and the persistence of displaying individual steps (cameras) stays retained. But note that the multiplied time of one step remains in range 1-255 sec.

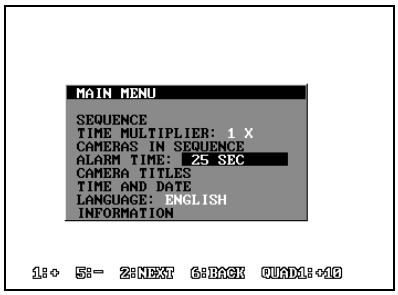
CAMERAS IN SEQUENCE



The selection of the cameras into the sequence enables to select or deselect individual cameras or quad screens from the switching sequence. During the automatic switching are unselected cameras omitted. Sign ✓ marks the choice . If you make a mistake by sequence programming a notice **„INCORRECT SEQUENCE“** will appear, in this case is necessary to reprogram the sequence.

QUAD CONTROLLING (continuation)

ALARM TIME



There are three possibilities to set-up the alarm:

ALARM OFF – alarm is off the quad does not respond to the alarm inputs.

FOLLOW INPUT – the quad signalizes the alarm event for the time, when any alarm input is active (if the alarm is not switched off by pressing any button).

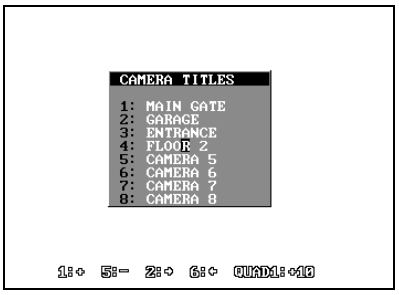
2 – 255 S – the quad signalizes the alarm for the set up time since the alarm event had occurred (if the alarm is not switched off by pressing any button).

The quad detects the alarm when the alarm inputs 1 - 8 are connected to the common conductor GND on the connector D-SUB25M of the back panel. After the alarm is switched on, the quad does the following operations:

1. It connects the potentialless alarm output (relay) – signaled acoustically.
2. It switches on the camera, which corresponds to the last alarm input for the set up time.

The alarm is switched off either after the set up time limit, by stopping the alarm signal in the observation mode or by pressing any of the buttons.

CAMERA TITLES

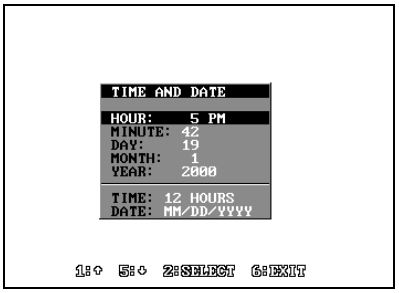


Each camera can have its own title for a better identification. The title is displayed on the monitor screen and can include up to 12 symbols. It is possible to use letters from A - Z, numerals from 0 – 9 and a space.

CAMERA PICTURE SETTING

You can set the brightnees, contrast, colour for each camera.

TIME AND DATE



The current time, date and its format can be installed by using of this function.

LANGUAGE

The menu enables you to choose the language, in which the quad will communicate with the operator.

INFORMATION

There is information about the quad in this menu.

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

TECHNICAL SPECIFICATION

PICTURE PARAMETERS	
TV standard colour (Black&White):	PAL/NTSC (CCIR / EIA)
Number of the active TV lines:	512 / 480
Samples per TV line:	864 / 856
Number of colours:	256
VIDEO INPUTS	
Number:	4 +1 (8+1 at QR8C)
Amplitude:	0,75 - 1,5 Vp-p
Input impedance:	75 Ω
Connectors:	BNC
VIDEO OUTPUTS	
Number:	2 individual + 1 S-VHS
Standard:	CCIR / EIA
Amplitude:	1 V_{p-p} load 75 Ω
Connector:	BNC, S-VHS
ALARM INPUTS	
Number:	4 (8 at QR8x)
Loop connection:	input – ground (GND)
Activity:	normally open
Maximum alarm loop impedance:	1 kΩ
Connector:	D-SUB25M 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. 6 W
Connector:	Concentric 5,5 × 2,1 mm
MECHANICAL PARAMETERS	
Dimensions QR4x:	218(W) × 44,5(H) × 230(D) mm
Dimensions QR8x:	436(W) x 44,5(H) x 230(D) mm
Weight QR4x:	1,4 kg
Weight QR8x:	2,7 kg
ACCESSORIES	
Alarm connector mate + cover:	1 piece