Input - Output - extension

CamCon DC91/IO

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For your attention

This instruction manual relates to the CamCon DC91/IO from 3/2000. The company Digitronic Automationsanlagen GmbH reserves the right to make changes which present an improvement of the quality or functionality of the device without prior notice. The instruction manual was created with great care, although it may not be error-proof. We would be grateful for any communication relating to any errors you may have found.

UP-date
You can also obtain this instruction manual on the Internet at **http://www.digitronic.com** in the latest version as PDF file.

Qualified personnel
This device may only be started and operated by qualified staff. By qualified we mean personnel who are entitled to handle, to earth and to lable devices, systems and power circuits in accordance with the technology safety standards.

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(1) The supplier is liable for damages caused by himself or by the owner of the rights up to the sum of the sales price. He is not liable for loss of profits, forfeited savings, intermediate and successive damages.

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Note: We have examined the devices of the CamCon series for year 2000 compatibility and have not found any adverse effects on any functions.

Note: CamCon is a registered trademark of the company Firma Digitronic Automationsanlagen GmbH.

Note: The devices of the CamCon series comply with the standards for electromagnetic compatibility: EN 55011, EN 55022, EN 55024 Part 2, EN 50082 Part 2, ENV 50140, VDE 0843 Part 2, VDE 0843 Part 4, VDE 0871, VDE 0875 Part 3 ("N"), VDE 0875 Part 11, VDE 0877 Part 2, IEC 801 Part 3, IEC 801 Part 2, IEC 801 Part 4, IEC 801 Part 5.

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Content

1. Introduction

The CamCon DC91/IO module is used as an input / output extension for the electronic cam-switch mechanisms of the CamCon series. Each CamCon DC91 module has got 16 inputs and 24 outputs, it can be connected using a 6 pole data cable to the external interface of the CamCon DC50, 90, 115 and 1756-DICAM. By a series connection of several CamCon DC91/IO modules it is possible to increase the total number of inputs and outputs at one Camcon to at maximum 200 inputs and 200 outputs. Thus, at a CamCon DC51 having 32 outputs another 7 CamCon DC91/IO modules could be connected. With 7 CamCon DC91/IO modules, for instance, you have got additionally 168 outputs and 112 inputs at your disposal.

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2. Assembling

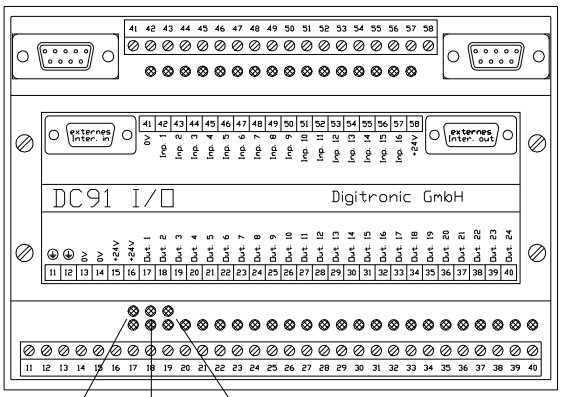
The CamCon DC91/IO input – output extension module is locked on an EN carrier bar in the switch cabinet. The earthing clamps shall be connected to the central earth connection point of the mounting panel on the shortest possible way. All cable connections shall be established in cold state! Each CamCon DC91/IO module shall be connected with the supply voltage which amounts to 24VDC +/-20 %. The external interface of the CamCon DC50,90,115 and/or 1756-DIAM becomes with a cable of type: KK91/IO-XX with the 9pol. D Sub pin plug **"external inter. in"** connected at the CamCon DC91 module. Each further CamCon DC91 module is attached with a cable of the same type to the plug **"external inter out"**. The data line of the CamCon DC91/IO modules are connected to each other via optical-couplers, thus being free of potentials. For monitoring the data exchange you should program the safety output of the CamCon at the last CamCon DC91/IO module, because this will switch off in the case of an interruption of the cable connection.

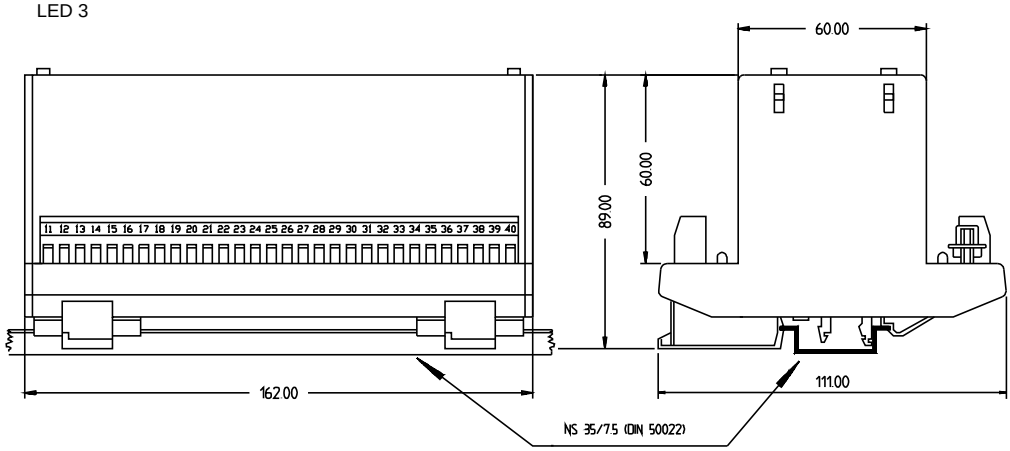
3. Status LED

The CamCon DC91 module has got three additional status LED (see chapter 4. Dimensions).

LED 1 Indicates to supply voltage.
LED 2 Indicates that the outputs switched off by overload or short-circuit
LED 3 indicates that for the moment no data exchange via CamCon and the DC91 is active. The possible causes are: the cable length exceeds the permissible border of 300 meters, the CamCon is switched off, and/or data exchange is interrupted (broken wire). In all cases all outputs of the CamCon DC91 module are reset.

4. Dimensions





The following carrier rails my be used to assemble the case: NS 35/15 (DIN 50022)
NS 32 (DIN 50035)

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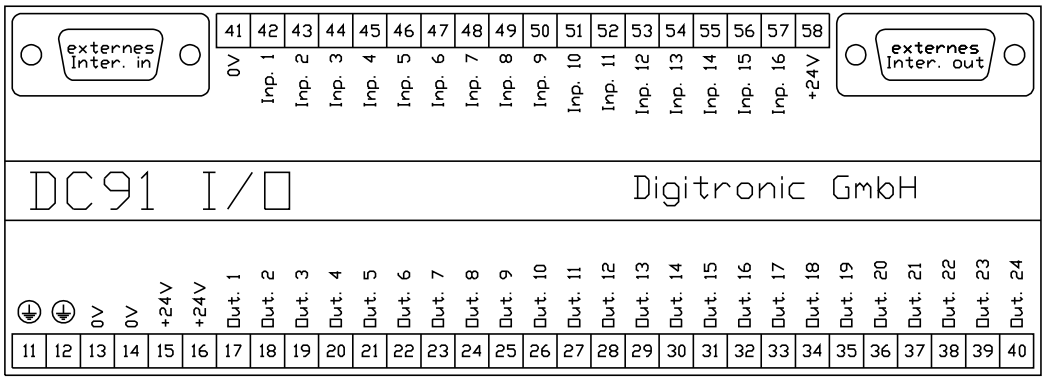
5. Electrical connections

Before you begin with wiring, please consult the following chapters: "5.2. The Outputs" on page 6, "5.3. The Inputs" on page 7.

5.1. Clamping allocation



5.1.1. Clamping allocation of power supply

Clamp	11:	Earth connection/shielding
Clamp	12:	Earth connection/shielding
Clamp	13:	0V
Clamp	14:	0V
Clamp	15:	+24V DC Power supply
Clamp	16:	+24V DC Power supply

5.1.2. Clamping allocation of the outputs

Clamp	17:	Output 1	Clamp	29:	Output 13
Clamp	18:	Output 2	Clamp	30:	Output 14
Clamp	19:	Output 3	Clamp	31:	Output 15
Clamp	20:	Output 4	Clamp	32:	Output 16
Clamp	21:	Output 5	Clamp	33:	Output 17
Clamp	22:	Output 6	Clamp	34:	Output 18
Clamp	23:	Output 7	Clamp	35:	Output 19
Clamp	24:	Output 8	Clamp	36:	Output 20
Clamp	25:	Output 9	Clamp	37:	Output 21
Clamp	26:	Output 10	Clamp	38:	Output 22
Clamp	27:	Output 11	Clamp	39:	Output 23
Clamp	28:	Output 12	Clamp	40:	Output 24

5.1.3. Clamp allocation of the inputs

Clamp	41:	0V of the Inputs			
Clamp	42:	Input 1	Clamp	50:	Input 9
Clamp	43:	Input 2	Clamp	51:	Input 10
Clamp	44:	Input 3	Clamp	52:	Input 11
Clamp	45:	Input 4	Clamp	53:	Input 12
Clamp	46:	Input 5	Clamp	54:	Input 13
Clamp	47:	Input 6	Clamp	55:	Input 14
Clamp	48:	Input 7	Clamp	56:	Input 15
Clamp	49:	Input 8	Clamp	57:	Input 16

Clamp 58: +24V DC for power supply of external inputs connected to Clamp 15 and 16.

Note: Clamp 15, 16 and 58 are connected with each other.
Clamp 41, 13 and 14 are connected with each other.
Clamp 11 and 12 are connected with each other.

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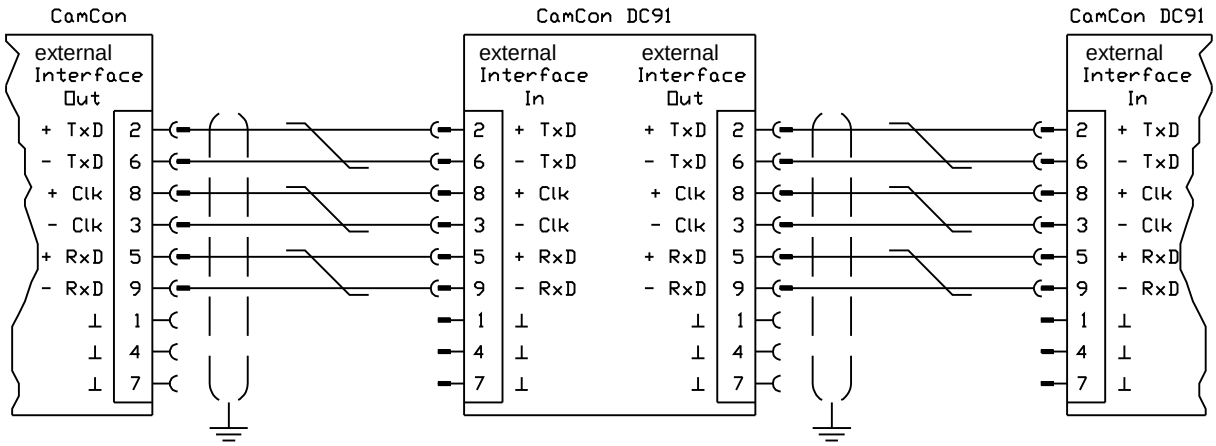
5.1.4. Pin allocation of the external interface

The CamCon DC91 module has an external interface via which the data exchange with the camswitch is processed. Via the interfaceinput also the data exchange with the CamCon DC 50 i.e. DC 90 or DC115 is done. The interface output is used for the data exchange with another CamCon DC91 module. By this way of switching it is possible to switch up tio 7 CamCon DC91 module to a CamCon DC50 i.e. DC90 or DC115. A shielded 6 pole data cable with pairly wired cores is required for this purpose. the maximum wiring distance is 300 meters. As an option, distances up to 100 meters are possible. the data exchange is realised by optical couplers and therefore free of potentials. For the monitoring of the data exchange you should program the safety output of the CamCon DC50, DC90 or DC115 at the last CamCon DC91, fo rit will switch of if the wire is broken.

DSUB 9 male and female plug

Pin 1,4,7	GND							
Pin 2	TxD	+	Pin 8	CLK	+	Pin 5	RxD	+
Pin 6	TxD	-	Pin 3	CLK	-	Pin 9	RxD	-



5.2. The Outputs

The CamCon DC91 Modul has got 24 short - circuit - proof outputs. They deliver 24V highly active signals and they are not free of potentials to the supply voltage of the device. They are supplied with +24 V via the clamps 15 and 16. For each output one Status LED shows the status of the output. The device's outputs are supplied by clamp 15 and 16.

5.2.1. The 40mA outputs (devices up to 5/97)

If all outputs are switched on, you must not take more than 40 mA constant currentts from each single output in the full temperature range, since otherwise the device switches off reporting the error message "**Off-Err**". if a higher output perfomance is required, you have to know that the ourtputs are gathered in three groups with eight outputs each. Every group is able to provide 480 mA constant current at a working temperature of 50°C, and for a working temperature of 25°C evenb 700mA. Thgis constant current may be splitted up within the groups as long as the single output current of 300mA is not outrunned.

5.2.2. The 500mA outputs (devices up to 5/97)

At a surrounding temperature of 25°C an output provides up to 500mA constant current. If the output is overloaded or short circuited, the devices switches off reporting the error message "**Off-Err".** UAt a

Note: *For inductive loads the outputs must be wired with a free-wheeling diode.*

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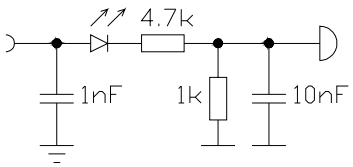
5.3. The Inputs

The CamCon DC91 Modul has got 16 inputs. These inputs function with highly active 24 V signals and are not free of potentials. The reference potential (0V) of the inputs is on clamps 41. For each input one Status LED shows the status.

The input resistance amounts to approx. 5.7 KOhm.

Input circuit:



6. Technical data

Indication	24 gren LED for each output. 16 yellow LED for each input. 2 red LED for fault indication. 1 yellow LED for power supply.
Number of outputs	24
Number of inputs	16
Length of the connecting cable between CamCon and CamCon DC91/IO	max. 300 m. (optionally up to 1000meters)
Supply voltage	24VDC ±20 %
Current consumption	approx. 150mA without load.
Output voltage	24VDC, positively connecting
Output current	500mA per output, short-circuit-proof
Connections for:	
Voltage supply	via plug-in screw clamps IP20
outputs	via plug-in screw clamps IP20
Inputs	via plug-in screw clamps IP20
Assembly	convenient snap-on assembly; carrier bar according to EN 50 022.
Dismantling	by pulling back the snap lock.
Dimensions	Please, refer to chapter 4. Dimensions at page 4.
International protection	The housing fulfils IP20.
Operation temperature	0°C ... + 50° C
Weight	approx. 500 g

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