PCRELAY8/IN8
8-bit ISA add-on Board

Preface

Packing List

This product is shipped as follows:

• Board
• User Manual
• Utility Disk
• PCbus Library Datasheet

If any of the above appear to be missing, please telephone Arcom on 01223 411 200.

Utility Disk

This product is shipped with a Utility Disk which contains:

• PCbus Library Manual
• Source Code for all PCbus I/O boards
• A test program called EXAMP-01.EXE

Handling

This board contains CMOS devices which could be damaged in the event of static electricity being discharged through them. At all times please observe anti-static precautions when handling the board and always unpack and install the board in an anti-static working area.

Please ensure that should a board need to be returned to Arcom, it is adequately packed and if a battery is fitted, that it is isolated.

Product Information

Full information about other Arcom products is available via the Fax-on-Demand System, (Telephone Numbers are listed below), or by contacting our WebSite in the UK at: www.arcom.co.uk.

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Whilst Arcom's sales team is always available to assist you in making your decision, the final choice of boards or systems is solely and wholly the responsibility of the buyer. Arcom's entire liability in respect of the boards or systems is as set out in Arcom's standard terms and conditions of sale.

If you intend to write your own low level software, you can start with the source code on the disk which is supplied. This is example code only to illustrate use on Arcom's products. It has not been commercially tested. No warranty is made in respect of this code and Arcom shall incur no liability whatsoever or howsoever arising from any use made of the code.

Arcom Control Systems Ltd operate a company-wide quality management system which has been certified by the British Standards Institution (BSI) as compliant with ISO9001:1994

Certificate No. FM 12961

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Introduction

The PCRELAY8/IN8 is an 8-bit ISA bus add-on board providing 8 changeover relays. The power switching rating is 60W (resistive load). This allows supplies upto 48v DC and switching currents 1.0A. There are also 8 opto-isolated inputs providing an input to output isolation of 1500v.

Features

- CE compliant design
- 8 changeover relays with a power switching rating of 60W (resistive load)
- Switching voltage up to 48v DC and switching currents up to 1.0A
- 8 opto-isolated inputs complete with two current limiting resistors per input
- Opto-input switching voltage: 10v to 30v
- Output status readback register
- Occupies 4 Bytes of Address Space
- Relay drivers disabled on power-up and reset
- Both normally closed and normally open relay terminals are available at the I/O connector
- Link selectable debounce option on inputs
- Link selectable, even boundary base address
- Board access LED
- Operating temperature range, +5°C to 55°C
- Power consumption +5V ±0.25V   250mA typical + 40mA per relay operating
- Relay life rating 500,000 operations minimum (DC full load)

# Getting Started

- Switch off PC
- Install board in supplied configuration
- Switch on PC
- Run EXAMP-01.EXE (supplied on the utility disk)
- An access/user LED should flash. If not check default link configuration (Page 5)

Operation

Each relay is switched by writing a '1' to the relay output register. On power-up or reset the output latches that drive the relay drivers are disabled. To enable them it is necessary to write '01' to base address +1. For system initialisation, it is recommended that the output register is written with the required relay states before the relay relay enable bit is set.

The status of the opto inputs is read form I/O address base +1. When an input channel is switched on the value read by the host will be a '0'.

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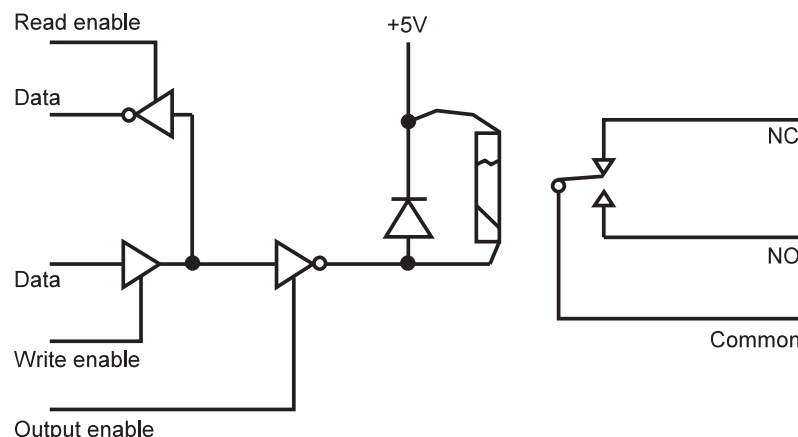
I/O Map

| Address Offset	Register name	Read/Write	Comments
00	Relay output	W	Write to relays 0/7
00	Relay status	R	Readback from relay drivers
01	Relay enable	W	Enable relay driver latches
01	Opto-inputs	R	Read Opto-inputs 0/7

	Bit function
Relay outputs	Bit 0-7 for relay 0-7 '0' = relay NC contacts closed '1' = relay NO contacts closed
Relay status	Bit 0-7 '0' = relay NC position '1' = relay NO position
Relay enable	Bit 0 '0' = all relays off (NC position) '1' = relays controlled by relay output register
Opto inputs	Bit 0-7 '0' = input ON '1' = input OFF

Links

Address Selection
LK1
The base address of this board is set using LK1; inserting a jumper selects '1'.
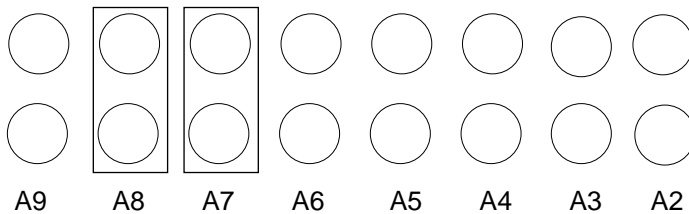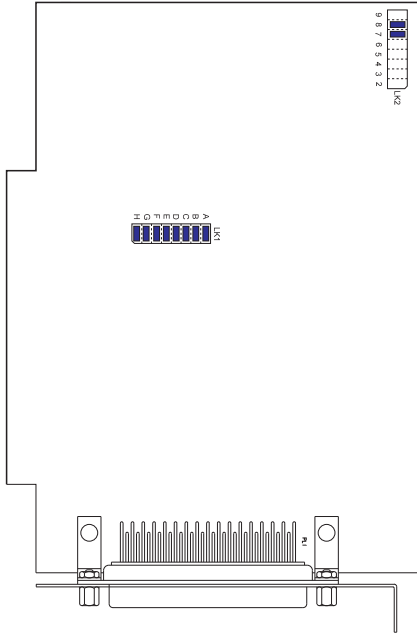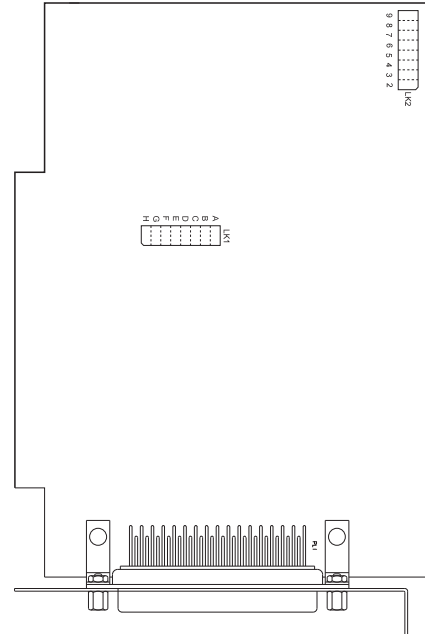

Debounce Option
LK2

Link Position	Data bit
A	0
B	1
C	2
D	3
E	4
F	5
G	6
H	7

Default Link Position [Default address 180h]

User Configuration Record

Output Connector PL1 pin assignments

DType	Ribbon Cable	Function	Ribbon Cable	Function	DType
1	1	Not connected	2	Relay 1 common	34
18	3	Relay 1 NO	4	Relay 1 NC	2
35	5	Not connected	6	Not connected	19
3	7	Relay 2 common	8	Relay 2 NO	36
20	9	Relay 2 NC	10	Not connected	4
37	11	Not connected	12	Relay 3 common	21
5	13	Relay 3 NO	14	Relay 3 NC	38
22	15	Not connected	16	Not connected	6
39	17	Relay 4 common	18	Relay 4 NO	23
7	19	Relay 4 NC	20	Not connected	40
24	21	Not connected	22	Relay 5 common	8
41	23	Relay 5 NO	24	Relay 5 NC	25
9	25	Not connected	26	Not connected	42
26	27	Relay 6 common	28	Relay 6 NO	10
43	29	Relay 6 NC	30	Not Connected	27
11	31	Not connected	32	Relay 7 common	44
28	33	Relay 7 NO	34	Relay 7 NC	12
45	35	Not connected	36	Not connected	29
13	37	Relay 8 common	38	Relay 8 NO	46
30	39	Relay 8 NC	40	Not connected	14
47	41	common -ve input (low bits)	42	+ve input bit 0	31
15	43	+ve input bit 1	44	+ve input bit 2	48
32	45	+ve input bit 3	46	+ve input bit 4	16
49	47	+ve input bit 5	48	+ve input bit 6	33
17	49	+ve input bit 7	50	common -ve input (high bits)	50

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Installation for CE Compliance

To maintain compliance with the requirements of the EMC directive (89/336/EEC), this product must be correctly installed. The PC in which the board is housed must be CE compliant as declared by the PC manufacturer. The type of external I/O cable can be chosen according to the notes below:

1. Remove the cover of the PC observing any additional instructions of the PC manufacturer.
2. Locate the board in a spare ISA slot and press gently but firmly into place.
3. Ensure that the metal bracket attached to the board is fully seated.
4. Fit the bracket clamping screw and firmly tighten this on the bracket.
Note: Good contact of the bracket to the chassis is essential.
5. Replace the cover of the PC observing any additional instructions of the PC manufacturer.

Cable

Cable length 1 Metre or less	:	Ribbon cable satisfactory
Cable 1M to 3M	:	Commercial screened cable gives the protection required
Longer cable or noisy environment	:	Use fully screened cable with metal backshells e.g. Arcom CAB50CE

The following standards have been applied to this product:

BS EN50081-1: 1992 Generic Emissions Standard, Residential, Commercial, Light Industry
BS EN50082-1: 1992 Generic Immunity Standard, Residential, Commercial, Light Industry
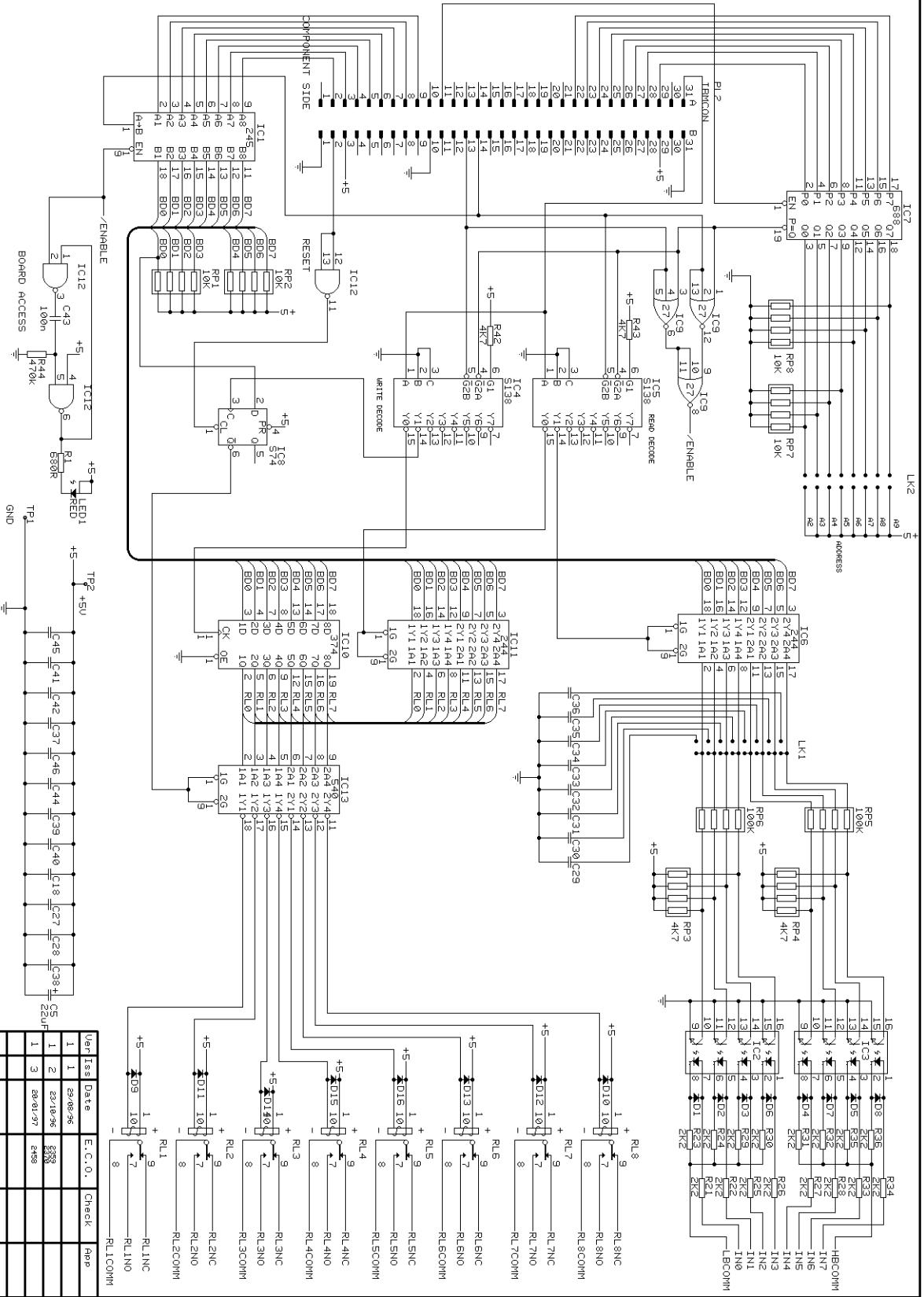BSEN55022:   1995 ITE Emissions, Class B, Limits and Methods

PCRELAY8/IN8 8 CH. RELAY OUTPUT / 8 OPTO-ISOLATED INPUT

Title

Sheet 1 of 2

Drawing No J553

ARCOM CONTROL SYSTEMS LTD
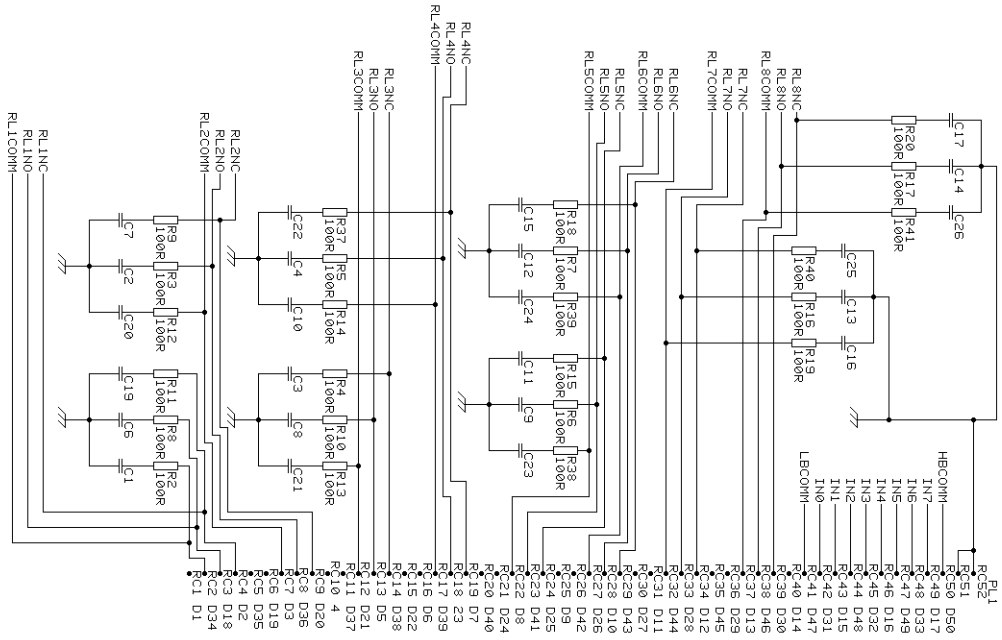
Title PCRELAY8/IN8 8 CH. RELAY OUTPUT / 8 OPTO-ISOLATED INPUT Sheet 1 of 2

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Ver	Iss	Date	E.C.O.	Check	App
1	1	29/08/96			
1	2	23/10/96	2359 2370		
1	3	20/01/97	2458		

Drawing No   J553

LAST ACCESSED 23 Jan 1997

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Microsoft
Windows NT

FREE Windows NT4.0 Drivers

Visit the 'PC(ISA)bus Boards' page on the Arcom Website,
www.arcom.co.uk/ntdrv10_AR.exe to download.

Revision History

Manual	PCB	Comments	
Issue A	V1 I1	960927	First full release of Manual.
Issue B	V1 I2	961129	[ECO2359,2370]
Issue C	V1 I3	970124	[ECO2458]
Issue D	V1 I3	970207	[ECO2465]
Issue E	V1 I3	970326	[ECO2493]
Issue F	V1 I3	980127	[ECO2684]
Issue G	V1 I3	980707	[ECO2748]

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