Dok-Tek Systems Ltd.

Tel: [+44] 01 179 145 510

D7D Avondale Works, Woodland Way, Bristol. England. UK. BS15 1PA
Fax: [+44] 01 179 145 103
www.dok-tek.co.uk - main.doktek@gmail.com

UK CA

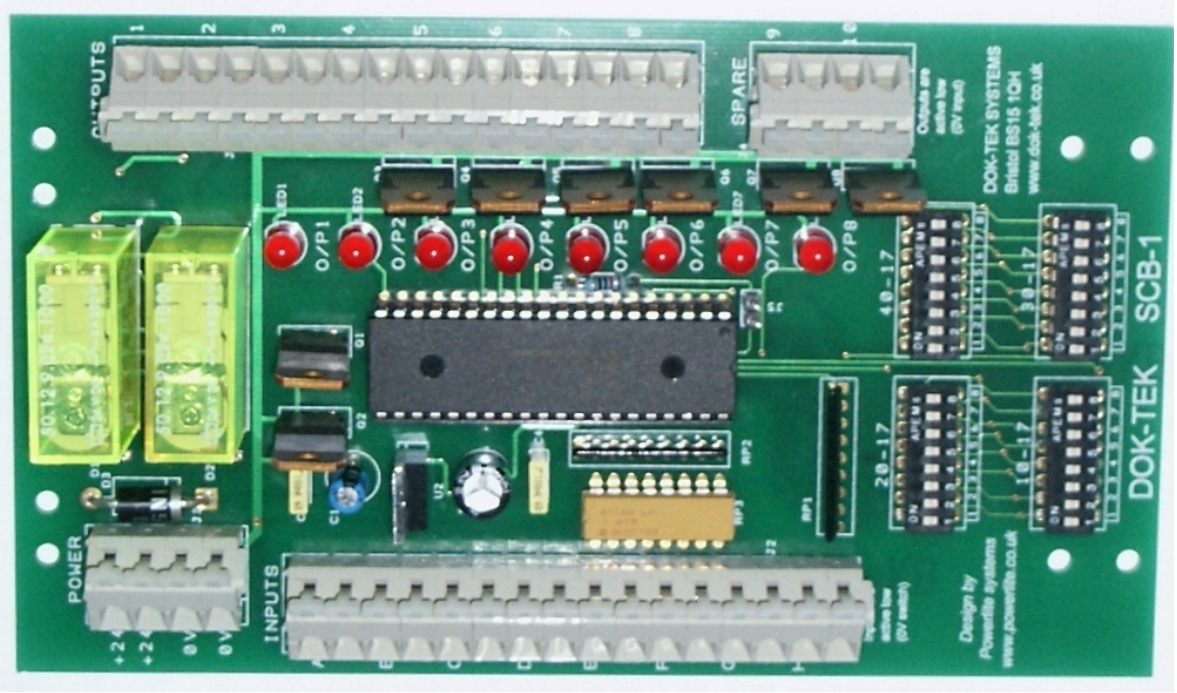
SCB1

PCB controller with 2 preset operating modes.

WTO – HS Commodity Code: 85300000

Control PCB controller with 2 preset operating modes incorpoating safety positive break interlocked relay outputs.

SCB1-1-U24vDC	SCB1-2-U24vDC
Mode 1: Traffic Signal Control System for Two Way Vehicle Operation of a Single Track Road.	**Mode 2: Traffic Signal Control System for A Factory Pedestrian Road Crossing.**



The Software for each mode of operation is contained within the programme PIC controller (The long black rectular item towards the centre of the PCB).

The operation is determined by Inserting or removal of a link on the 2 header pins, maked **J5**, below the PIC chip (RHS on the picture above).

Link out = Mode 1 - Single Carriageway / Link in = Mode 2 – Pedestrian Road Crossing.
You can add or remove the link to change the mode .

SCB1-1-U24vDC - Mode 1 - Operation

Traffic Signal Control System for Two Way Vehicle Operation of a Single Track Road

	Step	Function	Direction 1	Direction 2	Demand Indicators
Basic Operating Sequence:	1	Direction 1 Go	Green	Red	
	2	Direction 2 Demand or Timer	Green	Red	Direction 2 = On
	3	Direction 1 Off Clearance	Red	Red	
	4	Direction 2 Go	Red	Green	
	5	Direction 1 Demand or Timer	Red	Green	Direction 1 = On
	6	Direction 2 Off Clearance	Red	Red	
	7	Return to Step 1			

SCB1-1-U24vDC - Mode 1 - Inputs & Functions - *Note: Ensure Link J5 is removed*

Input	Description	Function Control - Inputs A to H
In A	Direction 1 Traffic detector.	A closed circuit is used for initiation. This will interrupt (hold) the timer sequence when it is on direction 1 GO. - An open contact or no link will permit the timer sequence to resume.
In B	Direction 1 Force.	An open circuit is used for initiation. An open contact or no link will suspend all other logic operation. Direction 1 will be Green, Direction 2 will be Red. ***Input D must not be activated during this function.*** - A closed contact or link will permit the timer sequence to resume.
In C	Direction 2 Traffic detector.	A closed circuit is used for initiation. This will interrupt (hold) the timer sequence when it is on direction 2 GO. - An open contact or no link will permit the timer sequence to resume.
In D	Direction 1 Force.	An open circuit is used for initiation. An open contact or no link will suspend all other logic operation. Direction 2 will be Green, Direction 1 will be Red. ***Input D must not be activated during this function.*** - A closed contact or link will permit the timer sequence to resume.
In E	STOP Force (Emergency!)	An open circuit is used for initiation. An open contact or no link will suspend all other logic operation. Both directions will be Red. (This function can be used for maintenance etc.) A closed contact or link will permit the timer sequence to resume.

SCB1-1-U24vDC - Mode 1 - Outouts

IMPORTANT !
THE OUTPUTS ARE ACTIVE LOW [SINK OPERATION].

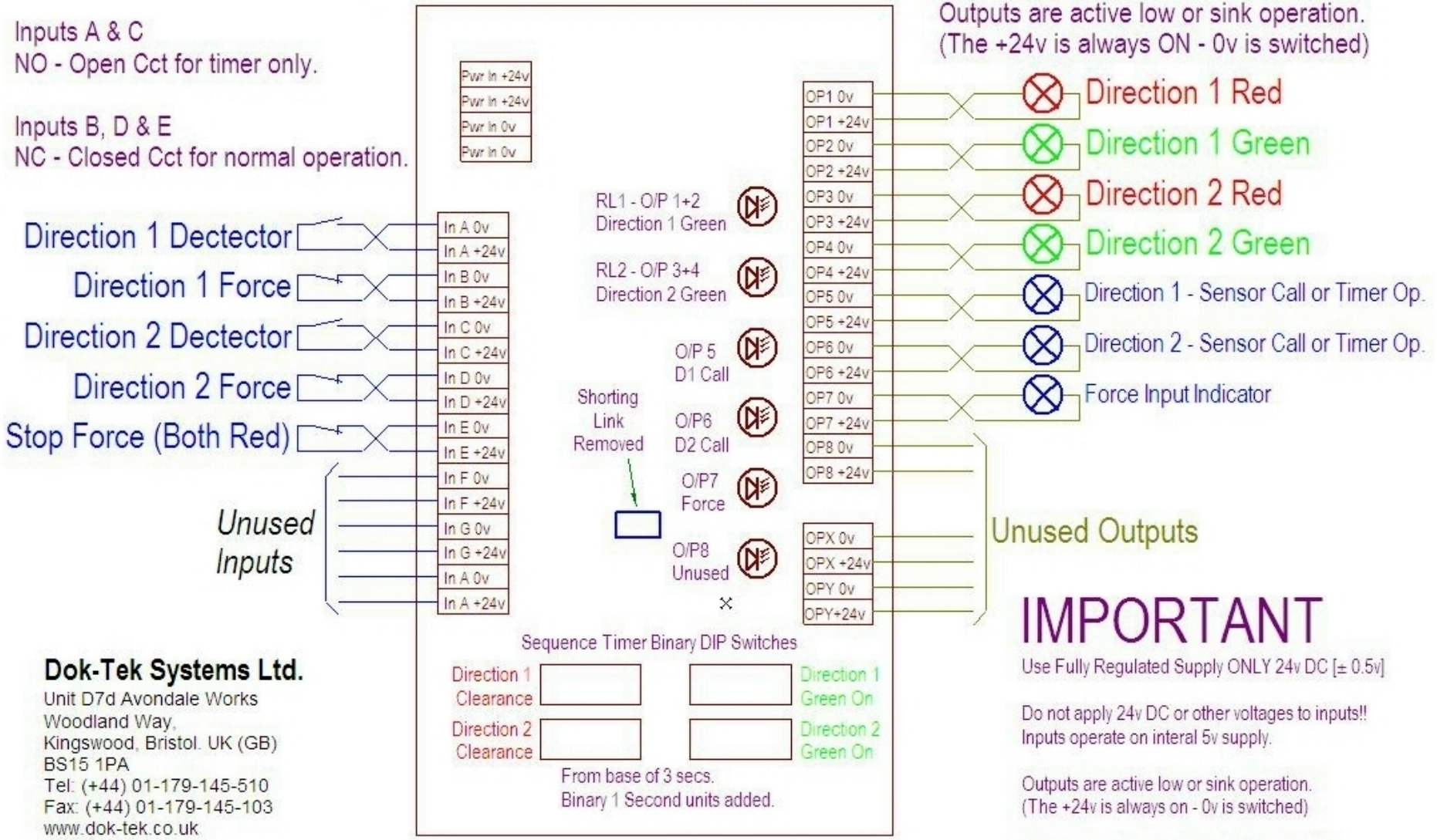
(The +24v is always on & the - 0v is switched).

O/P1	Direction 1 Red
O/P2	Direction 1 Green
O/P3	Direction 2 Red
O/P4	Direction 2 Green
O/P5	Direction 1 Sensed or Timer
O/P6	Direction 2 Sensed or Timed
O/P7	Stop Force On = All Red
O/P8	Not Used
O/PX	Not Used
O/PY	Not Used

SCB1-1-U24vDC - Mode 1 - Commissioning

1-1)	Do not connect inputs or outputs.
1-2)	Insert shorting links on inputs B, D and E
1-3)	Set the DIP switches for a short time period (2 secs).
1-4)	Connect and turn on 24v DC power.
1-5)	Timer sequence should now run.
1-6)	The LED's O/P1 & O/P2 should alternate with an off period between LED's on.
1-7)	Turn off & Connect Outputs.
1-8)	Turn on and ensure Red & Green traffic signals are illuminating in sequence.
1-9)	Remove shorting link from input B – Ensure Direction 1 is Green.
1-10)	Replace shorting link in input B.
1-12)	Replace shorting link in input D
1-13)	Remove shorting link from input E - Ensure both Directions are Red.
1-14)	Configure inputs and links as required for operation. Check functions of your input devices & shorting links.

SCB1- MODE1 - Single Carriageway 2 Way Traffic Lights



Dok-Tek Systems Ltd.
Unit D7d Avondale Works
Woodland Way,
Kingswood, Bristol. UK (GB)
BS15 1PA
Tel: (+44) 01-179-145-510
Fax: (+44) 01-179-145-103
www.dok-tek.co.uk

IMPORTANT

Use Fully Regulated Supply ONLY 24v DC [± 0.5v]

Do not apply 24v DC or other voltages to inputs!!
Inputs operate on interal 5v supply.

Outputs are active low or sink operation.
(The +24v is always on - 0v is switched)

We recomend use of TWISTED pair cables.
(Essential for cable lengths over 10M)

SCB1-2-U24vDC - Mode 2 - Operation

Traffic Signal Control System for A Factory Pedestrian Road Crossing.

Traffic Red / Green Lights

(No Amber)

Basic Operating Sequence:

Step	*Function*	*Traffic Signal*	*Pedestrians Signal*	*Pedestrian Demand*
1	Traffic Go	Green	Red Man	OFF
2	Pedestrian Call	Green	Red	ON
3	Traffic Clearance	Red	Red Man	ON
4	Pedestrian Go	Red	Green Man	OFF
5	Pedestrian Go End	Red	Green Man Flash	OFF
6	Pedestrian Clear	Red	Red	OFF
7	Return to Step 1			

SCB1-2-U24vDC - Mode 2 - Inputs & Functions - *Note: Ensure Link J5 is fitted.*

Input	Description	Function Control - Inputs A to H
In A	Normal or Step mode	A closed circuit is used for initiation. This will place thr programme into step mode. An open contact or no link will permit the timer sequence to resume.
In B	Step	An open circuit is used for initiation. Only active when Input A has been initiated. Each pulse with move the sequence on 1 Step. A closed contact or link will permit the timer sequence to resume.
In C	Pedestrian detector.	A closed circuit is used for initiation. This will interrupt (hold) the timer sequence when it is on direction 1 GO. An open (no link) contact will permit the timer sequence to resume.
In D	Pedestrian Force.	An open circuit is used for initiation. This will suspend all other logic operation. Direction 1 will be Red, Direction 2 will be Green. Input B must not be activated during this function. A closed contact or link will permit the timer sequence to resume.
In E	STOP Force (Emergency!)	An open circuit is used for initiation. An open contact or no link will suspend all other logic operation. Both directions will be Red. (This function can be used for maintenance etc.) A closed contact or link will permit the timer sequence to resume.

SCB1-2-U24vDC - Mode 2 – Outputs Functions

IMPORTANT !

THE OUTPUTS ARE ACTIVE LOW [SINK OP.].

(The +24v is always on & the - 0v is switched).

O/P1	Traffic Red
O/P2	Traffic Green
O/P3	Pedestrian Red
O/P4	Pedestrian Green
O/P5	Not Used
O/P6	Pedestrian Call On
O/P7	Stop Force On = All Red
O/P8	Not Used
O/PX	Not Used
O/PY	Not Used

SCB1-2-U24vDC - Mode 2 - Commissioning

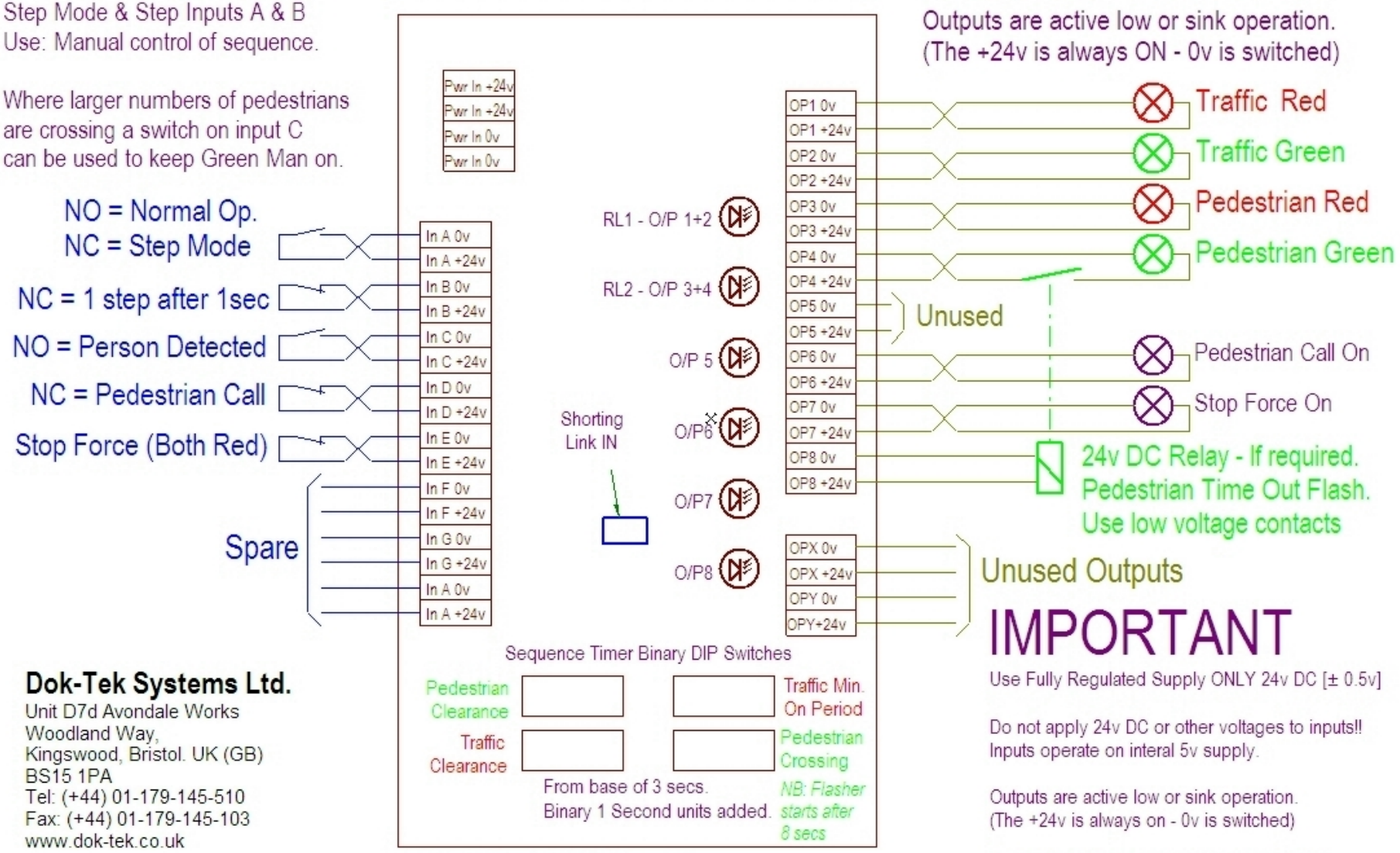
2-1)	Do not connect inputs or outputs.
2-2)	Insert shorting links on inputs B, and E
2-3)	Connect a No Pushbutton on input D, (or simulate)
2-4)	Set the pedestrian cleance DIP switches for 12 secs. Set the other DIP switches for 5 secs.
2-5)	Connect and turn on 24v DC power.
2-6)	LED for OP1 should be on (Sequence time delay!)
2-7)	Operate input D pushbutton (or simulate). LED O/P6 should illuminate. O/P 1+2 LED off - after a delay O/P 3+4 LED on.
2-8)	After 8 secs LED O/P8 should pulse.
2-9)	After a short delay O/P 3+4 should extinguish.
2-10)	After a further delay O/P 1+2 should illuminate.
2-11)	Connect Outputs
2-12)	Check Traffic Green is ON and Red Man is ON.
2-13)	Operate input D pushbutton (or simulate). Check Traffic Red is ON, and Pedestrian Red is ON.
2-14)	After delay check: Traffic Red is ON, and Pedestrian Green is ON.
2-15)	After 8 secs LED O/P8 should pulse.
2-16)	After a delay check: Traffic Red is ON, and Pedestrian Red is ON.
2-15)	After a further delay (return to start) check: Traffic Green is ON, and Pedestrian Red is ON.

Configure inputs and links as required for operation. Check functions of your inputs.

SCB1- MODE2 - Factory Pedestrian Crossing

Step Mode & Step Inputs A & B
Use: Manual control of sequence.

Where larger numbers of pedestrians are crossing a switch on input C can be used to keep Green Man on.



Outputs are active low or sink operation.
(The +24v is always ON - 0v is switched)

Traffic Red
Traffic Green
Pedestrian Red
Pedestrian Green
Unused
Pedestrian Call On
Stop Force On
24v DC Relay - If required.
Pedestrian Time Out Flash.
Use low voltage contacts
Unused Outputs

IMPORTANT

Use Fully Regulated Supply ONLY 24v DC [± 0.5v]

Do not apply 24v DC or other voltages to inputs!!
Inputs operate on interal 5v supply.

Outputs are active low or sink operation.
(The +24v is always on - 0v is switched)

We recomend use of TWISTED pair cables.
(Essential for cable lengths over 10M)

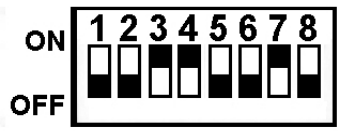
Dok-Tek Systems Ltd.
Unit D7d Avondale Works
Woodland Way,
Kingswood, Bristol. UK (GB)
BS15 1PA
Tel: (+44) 01-179-145-510
Fax: (+44) 01-179-145-103
www.dok-tek.co.uk

Time Controls – Both Modes

Time periods are set on the 4 DIP switch blocks at the bottom of the PCB board. The blocks work in binary addition in with 1 sec base unit.

Switch On	Sw 1	Sw 2	Sw 3	Sw 4	Sw 5	Sw 6	Sw 7	Sw 8
Seconds Value	1s	2s	4s	8s	16s	32s	64s	128s

To set the required time: Add "ON" values of switches as shown in table above.



00110010 = 76 Secs Binary

Overall time period = ± 1 sec.

UK Legislation:

T1 Singles, T2 Twins & L1 Twins products comply with the following legislation:

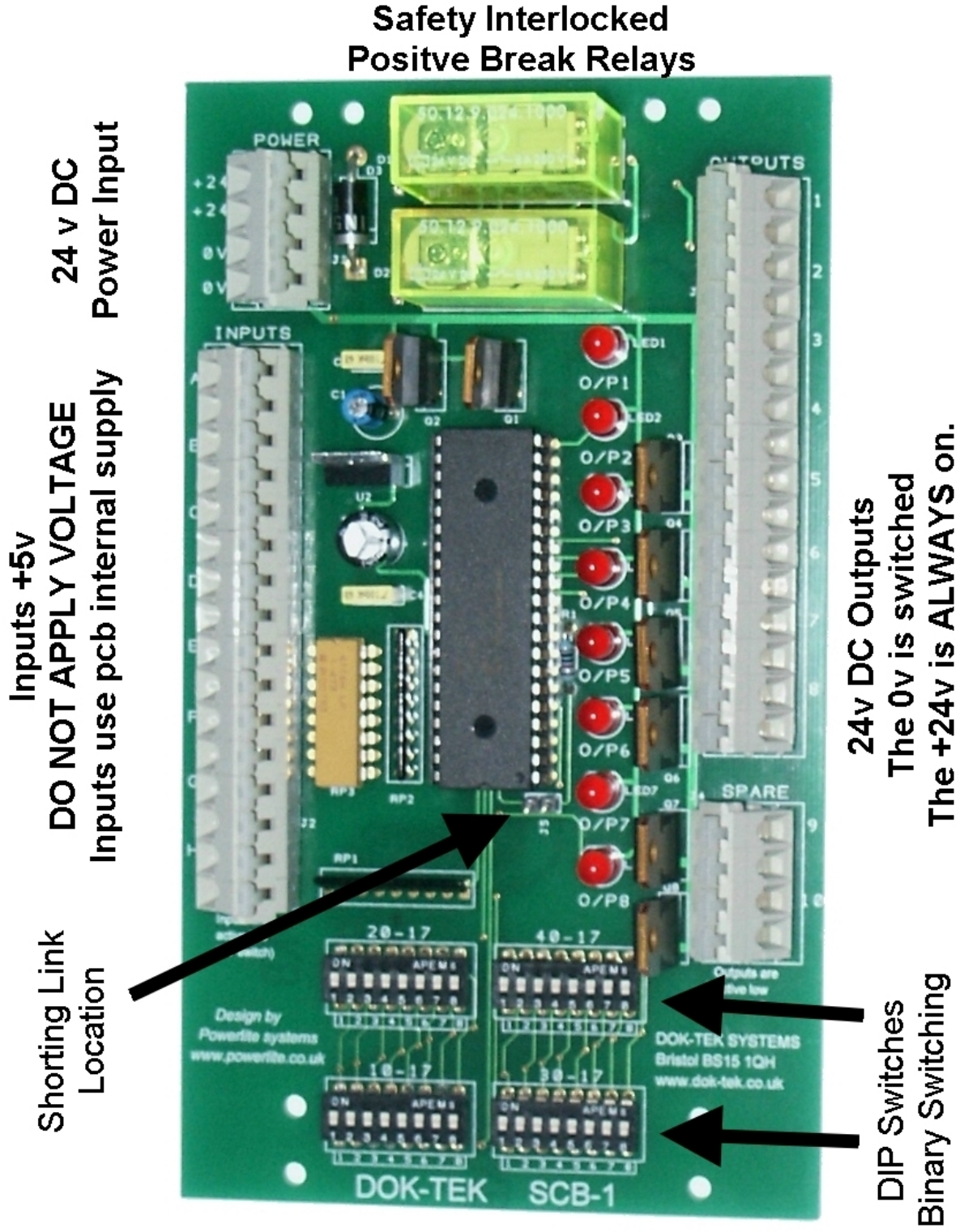
Electromagnetic Compatibility Regulations 2016		
	EN 61000-6-3 - Emission standard for commercial & light-industrial environments. Emissions = Benign.	
	EN 61000-6-1 - Immunity standard for commercial and light-industrial environments	
	RFI Conducted Transmissions: Voltage type: U**vDC = Vulnerable. No Protecion. Voltage type: CR**vDC = Protected (≥ 5KHz).	RFI Radiated Transmissions: All types = Vulnerable. No protection

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (UKSI 2012 # 3032)	
	Restriction Of Hazardous Substances - Not Applicable – Does not contain: Lead (Pb). Mercury (Hg). Cadmium (Cd). Hexavalent chromium (Cr6+). Polybrominated biphenyls (PBB). Butyl benzyl phthalate (BBP). Polybrominated diphenyl ether (PBDE). Bis(2-ethylhexyl) phthalate (DEHP). Dibutyl phthalate (DBP). Diisobutyl phthalate (DIBP)

The Waste Electrical and Electronic Equipment Regulations 2013 (UKSI 2013 # 3113)			
			Category 9: Monitoring & control equipment Registered WEEE producer under Vaplack Membership RM10296 Seperate, recover & recycle. Potting compond inert.

The Packaging (Essential Requirements) Regulations 2015 (SI 2015/1640)		
		Product Packaging meets BS EN 13432:2000 & is home compostable.

SCB1 Layout



Dok-Tek Systems Ltd.

Tel: [+44] 01 179 145 510

D7D Avondale Works, Woodland Way, Bristol. England.
UK (GB). BS15 1PA

Fax: [+44] 01 179 145 103
–
Web: www.dok-tek.co.uk
-
e-mail: main.doktek@gmail.com
–

Document Issue – 03 June 2021 mdl