

Additional Technical Manual

Control Board for Switching Times
7131



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1 Control Board for Switching Times 7131

The control board for switching times enables the programming and control of max. 64 switching channels.

There are 15 programming lines per each channel possible expendable by connecting the channels in parallel or serial.

The switching times are performed via different modes that are hierarchically structured. A high-order mode covers all low-order ones.

1.1 Operation Modes

The operation modes have the following meanings

Mode X1

- 01 = Switching time daily every week
- 11 = Switching time daily every week with odd numbers
- 21 = Switching time daily every week with even numbers

Mode X2

- 02 = Switching time Monday - Friday every week
- 12 = Switching time Monday - Friday every week with odd numbers
- 22 = Switching time Monday - Friday every week with even numbers

Mode X3

- 03 = Switching time Saturday/Sunday every week
- 13 = Switching time Saturday/Sunday every week with odd numbers
- 23 = Switching time Saturday/Sunday every week with even numbers

Modus X4

- 04 = Switching time single day every week
- 14 = Switching time single day every week with odd numbers
- 24 = Switching time single day every week with even numbers

Mode X5

- 05 = Switching time gating single day every week
- 15 = Switching time gating single day every week with odd numbers
- 25 = Switching time gating single day every week with even numbers

Mode 6

- 06 = Cyclic pulses

The calendar weeks are calculated according to the DIN standard. Attention should be paid to the fact that some years include the 53rd week resulting in the fact that two weeks with odd numbers are followed on each other.

For programming the switching times connect the programming cable to the PC (COM2) or computer and access the switching time editor. This program enables the entry, cancellation, display, and processing of switching times. The operation mode of the editor can be requested under "Help" after the start of program.

The different functions can be accessed after selection of the channel.

By setting a new switching time, the several input fields are touched and the respective values entered. The abbreviations of the priorities or rather the functions of the entry fields are stated underneath those fields.

The abbreviations have the following meanings:

Mod Mode – Entry of one of the above modes. The entry is always binary, e.g. 01 for daily
Etg Day of the week – Entry of the day of the week, e.g.
(1 - 7 for Monday - Sunday)
Ref. to modes that require no single day, enter 1

Tag Mon - Tag Mon (day month to day month)

Entry of the time period valid for the switching time
(e.g. 01 01 - 31 12 ⇒ 1 Jan. - 31 Dec., briefly for the entire year)

Stu Min Sek – Stu Min Sek (hour minute second switching point to hour minute second tripping point) (e.g. 07 00 00 - 07 00 05 ⇒ switch on of the channel at 7.00h; switch off of the channel after 5 seconds)

1.2 Cyclic Switching Times

Mode 6 allows the output of pulses via the respective channel.

The first "Mode 6 Input" switches off all other modes and further "Mode 6 Inputs". The output is calculated back to the start of the day. Hence it is reasonable to set pulse width that are within an integer daily period (86400 divided by pulse without balance).

A logical value is entered in the fields up to the time.

The pulse duration is stated in the turn-on time and the pulse width in the turn-off time, e.g. pulse every 200 seconds (03 min 20 sec) for a duration of 17 seconds.

06 01 01 01 - 31 12 00 03 20 - 00 00 17

1.3 Special Cases

Switching times during the day change over:

For this two or rather three switching time needed to be entered

e.g. Switch-on daily at 23:50:00

Switch-off daily at 00:15:00

Switch-on between May, 1st and June, 15th

Input Time Intervall

01 01 01 05 - 15 06 23 50 00 - 24 00 00

01 01 01 05 - 15 06 00 00 00 - 00 15 00

The balance turn-on time for June, 15th is entered as follows

01 01 16 06 - 16 06 00 00 00 - 00 15 00

Switching times during the turn of the year:

For this two switching times needed to be entered

e.g. switching time valid from Oct, 1st until March, 31st

every Friday from 20:00:00 - 22:00:00h

Entry Lines

04 05 01 10 - 31 12 20 00 00 - 22 00 00

04 05 01 01 - 31 03 20 00 00 - 20 00 00

1.4 Connecting Cable

7131	PC
25 pole SUB-D Connector, female	9 pole SUB-D Connector, female
2	2
3	3
7	5

1.5 Supported Operating Systems

The 7131 switching time editor runs under Windows 3.x, Windows 95/98, Windows NT and Windows 2000.

2 Relay Board 7140

The output of channels is performed via the relay board 7140. Eight channels are put out via one board. The channel range is addressed via the address decoder.

Jumper	Position	1	Channel	01 - 08
"	"	2	"	09 - 16
"	"	3	"	17 - 24
"	"	4	"	25 - 32
"	"	5	"	33 - 40
"	"	6	"	41 - 48
"	"	7	"	49 - 56
"	"	8	"	57 - 64

Jumper settings please see the block diagram 7140.

The relay contacts are tapped via the screwing terminals.

Channel								Connection	
01	09	17	25	33	41	49	57	1	11
02	10	18	26	34	42	50	58	2	12
03	11	19	27	35	43	51	59	3	13
04	12	20	28	36	44	52	60	4	14
05	13	21	29	37	45	53	61	5	15
06	14	22	30	38	46	54	62	6	16
07	15	23	31	39	47	55	63	7	17
08	16	24	32	40	48	56	64	8	18

The load of the relay is 24 V DC / 0.5 A.

The switching state of each relay is displayed by the appropriate LED in the front panel.
LED on ⇒ relay activated.

2.1 Assignment of the VG Ledge - Board 7140

	a	c		a	c
01	D0	D0	17	CS 2	CS 2
02	D1	D1	18		
03	D2	D2	19		
04	D3	D3	20		
05	D4	D4	21	PWFAIL	RESET
06	D5	D5	22	DCF Pulse	sim. DCF Pulse
07	D6	D6	23	ser. Pulse	ser. Data
08	D7	D7	24	1 Hz	1 kHz
09	A5	A5	25	Release IN ⇨	Release OUT ⇨
10	A4	A4	26		
11	R / W	R / W	27	AURES IN ⇨	AURES OUT ⇨
12	E	E	28		
13	A0	A0	29	- 12 V	- 12 V
14	A1	A1	30	+ 12 V	+ 12 V
15	A2	A2	31	GND	GND
16	A3	A3	32	+ 5 V	+ 5 V

2.2 Block Diagram 7140

