

## Digital time switch - one channel - with daily and weekly program

### Operating manual



2106;2107-02-001 Rev.0



Switchtec Ltd  
Brooms Road  
Stone Business Park  
Stone  
Staffordshire  
ST15 0SH

Tel.: 01785 818600  
Fax: 01785 811900  
<http://www.switchtec.co.uk>  
E-mail: [sales@switchtec.co.uk](mailto:sales@switchtec.co.uk)

Thank you for buying this device. As a reward for your confidence you will get high technical and functional features, which are provided by this product. We believe that this manual will help you to get familiar with this product.

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### 1. Before you start...

Before you start working and programming this time switch, read carefully the following instructions. Thus you avoid possible difficulties and you will better understand the structure of this manual.

1. Only 4 control buttons were chosen for easy and fast setting.
2. There is a difference between a short pressing and long holding of the button. Each button pressing (<1s) is indicated in the manual as **OK** + description of the actual button, holding for longer than (>1s) is indicated in the manual as **OK**.
3. The time is displayed in 24-hour or 12-hour format.
4. The time switch is backed-up by a built-in Lithium battery, which is saving data in case of power failure. Back-up of function - see the technical parameters pg. 15.
5. Fast movement - to set the volume buttons. **+** / **-** the fast movement is possible by holding the button.

#### **⚠ WARNING**

The device is made to be connected to 1-phase net of alternating / direct voltage and must be installed in accordance with rules and standards applicable in the particular country. The installation, connecting, setting and handling can be done only by a person with the adequate electromechanical qualification, who is well informed about the function of this device and the manual.

There are over-voltage protections and protections against the disturbing pulses in the supply net in this device. To get the right function of these protections there must be also appropriate protections of higher rank (A,B,C) and also, in accordance with the standards shielding of the switched devices (contactors, engines, inductive load, etc.). Before you start with installation itself, make sure that the device is not energized and that the main switch is in position "OFF"

Do not install the device to the sources of excessive electromagnetic disturbances. Assure an excellent circulation of the air by correct installation so the maximal operating temperature of the device is not surpassed even in case of permanent operation and higher temperature of the surrounding. To install and set, use a screwdriver with dimension 2 mm. Be aware of the fact that it is a fully electronic device while handling it.

Not problematic function of the device depends on the transport, storing and handling. If you find any marks of damage or missing part or if the device seems not operational, do not install this device and claim the warranty at your distributor. After the end of durability of the device it must be stored in protective waste dump.

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### 2. Features of the device

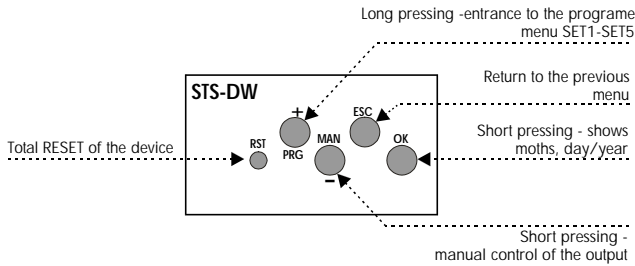
The time switch is designed and produced to be in accordance with world quality and safety standards. When comparing this device with similar products there are few important changes which lead to high operational possibilities and technical level.

#### Features of the device:

- ▶ one-channel version, 2-modul, mounting on DIN rail, terminals
- ▶ daily and weekly program in one device
- ▶ power supply AC 230 V or AC/DC 12-240 V
- ▶ is used to control different appliances in the real time, the appliances can be controlled in regular time cycles in the course of a day and week
- ▶ operational modes: according to the program/ permanently by hand/ random/holiday program
- ▶ automatically switches from summer to winter time (possible to block out)
- ▶ sealed transparent cover of the front panel
- ▶ 100 memory places, illuminated LCD display, min. step 1 s
- ▶ operational backup - up to 3 years
- ▶ pulse and cyclic output (chapter 11)

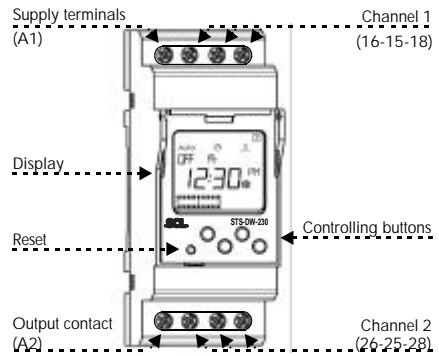
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### 3. Description of the control buttons and modes

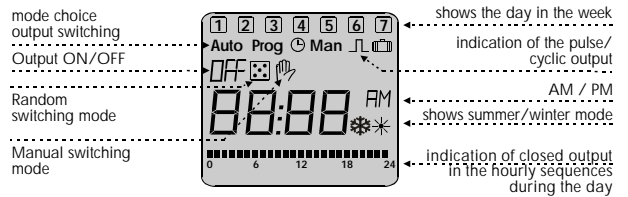


button	ORIGINAL MODE		PROGRAMING MODE	
	SHORTLY ○	LONG ●	SHORTLY ○	LONG ●
+ PRG		entrance to the program	upwards	fast upwards
- MAN	manual mode		downwards	fast downwards
ESC			one level up	leave
OK	searching date/year		confirm	

### 4. Description of the device



#### DISPLAY DESCRIPTION



### 5. How to put it into operation

The device is sold with pre-programmed real time in economical mode. If you press any button for 2 seconds (with no supply) the real pre-set time will show. It is not possible to control the relay output in economical mode.

After the supply is connected to the device, the figures are shown on the display permanently and the device functions normally.

**Illumination**  
The standard illumination of the display is set for 10 seconds from the last pressing of any button. Permanent ON/OFF can be done by long pressing of buttons together **ESC MAN OK**. After activation of permanent ON/OFF of display illumination, the display shortly flicker.

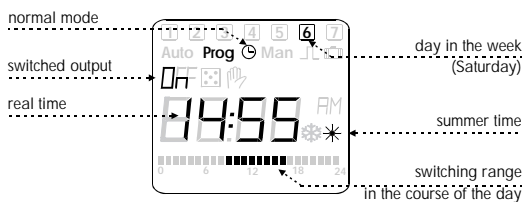
#### Reset of the device

Reset of the device is done by a hidden button **RST** using not sharp pin (for example by a pen) with the diameter not bigger than 2 mm. After a short pressing of this button, the type of the device is shown for 3 sec. (STS-DW), version firmware and then the device will switch into the starting mode. Reset will delete the real time, the set time of the pulse/cyclic mode and all the temporary functions (manually or accidentally switched output). Reset keeps the set programs..

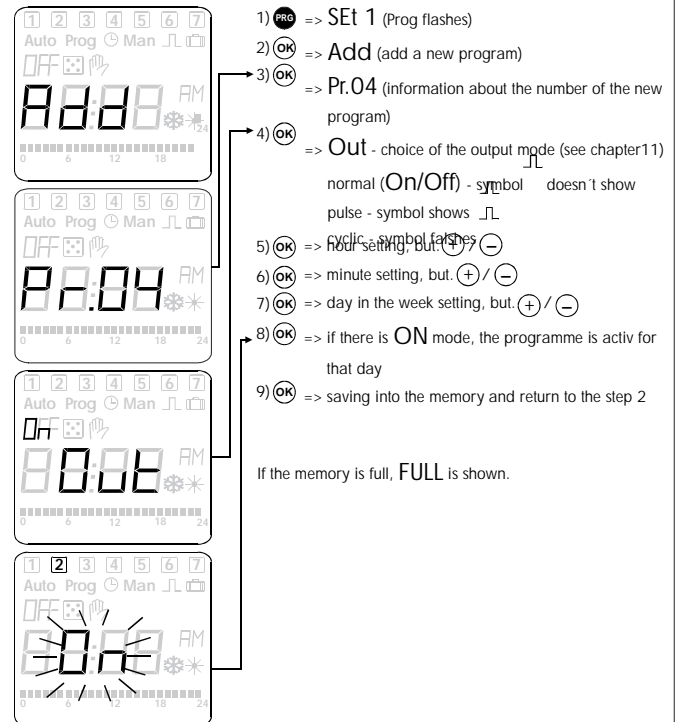
#### Switching into a programming mode

is done by a long pressing of the button **PRG**. Then by short pressing **PRG** get in menu from SET1 to SET5 (see the chapter 12). Entrance into the particular menu by the button **OK**. If the device is not operated for 20 sec, the device will switch itself into the previous menu.

#### Starting mode (example)



### 6. Program setting - Prog



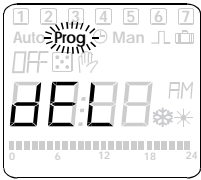
## 7. Editing / Delete of the programs

### Editing



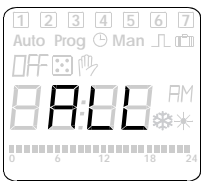
- 1) **PRG** => SET 1 (Prog flashes)
- 2) **OK** => Add
- 3) **OK** => Edit - program editing
- 4) **OK** => entrance to the program position of No. 00 but possible to move between programs
- 5) **Esc** => choice of the display: - program number - program time
- 6) **OK** => confirm the chosen program for editing  
Then continue as described in chapter 6 (Setting the program) step 4-6
- 7) **Esc** => back to **EDIT**  
If no program is stored, **FREE** is shown.

### Deleting of programs:



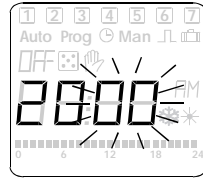
- 1) **PRG** => SET 1 (Prog is flashing)
- 2) **OK** => Add
- 3) 2x **PRG** => DEL
- 4) **OK** => entrance to the program position of No. 00 but possible to move between programs
- 5) **Esc** => choice of the display: - program number - program time
- 6) **OK** => delete the program

### Deletes all programs:

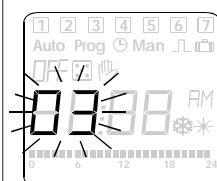


- A reset of all programmes is possible only from starting mode.  
**PRG OK** => The display shows **ALL**. Confirm by button **OK**.

## 8. Setting the date and time

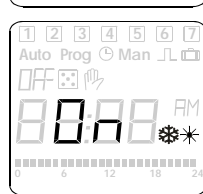


- 1) **PRG** => SET 1
- 2) **PRG** => SET 2
- 3) **OK** => year setting but. (+/-)
- 4) **OK** => day setting but. (+/-)
- 5) **OK** => month setting but. (+/-)
- 6) **OK** => setting the format of program (12h / 24h)
- 7) **OK** => hour setting but. (+/-)
- 8) **OK** => minute setting but. (+/-)
- 9) **OK** => switching from summer/winter time **ON** - (automatical switching activated)
- 10) **OK** => saves the setting and returns to mode **SET2**



Since this time the set time starts  
If you use non existing date, **ERR** is shown.

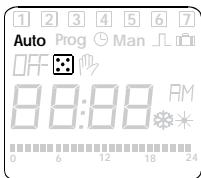
Switching summer/winter time is blocked out.



## 9. Random switching choice

Mode the CUBE - random switching of the output in the range from 10 to 120 min.  
Example of use: it is mainly for not regular switching of appliances (for ex. light), which simulates presents of people in the house.

### Random switching mode



- 1) **PRG** => SET 1
- 2) 2x **PRG** => SET3, Symbol Man flashes
- 3) **OK** => mode Prog, but. (+/-) choose
- 4) **OK** => confirmation and return to the starting

During the activation in the starting mode, the function symbol flashes.

## 10. Manual switching of the output

The output can be permanently switched on or off by short pressing of the button **MAN** in the starting mode. It is indicated on the display by **ON/OFF** a symbol.



## 11. Cyclic /pulse output setting

This choice is activated in the program setting chapter 6, step 4.

### Normal mode

The output is switched according to the set time in a program.

### Cyclic mode

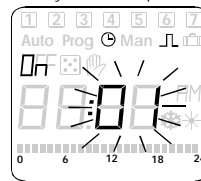
Works the same way as the "normal mode" but the output cycles in below set times.

Example of use: regular ventilation in set time and particular interval, advertisement flashing for example in the nighttime and so on.

### Pulse mode

In the moment the program starts, it switches for the time set below.

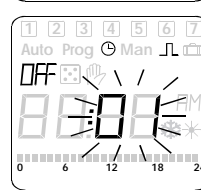
Example of use: system of integrated time (central clock), where the clock moves minute by minute by the defined pulse, schoolbell.



- 1) **PRG** => SET 1
- 2) 3x **PRG** => SET4
- 3) **OK** => setting of the switching period **ON** (pulse)
- 4) **OK** => setting of the time to switch **OFF**
- 5) **OK** => confirmation and return to menu **SET4**

The time is possible to be set 1-99s.

For the pulse output the length of the pulse is defined by parameter **ON** (step 3).



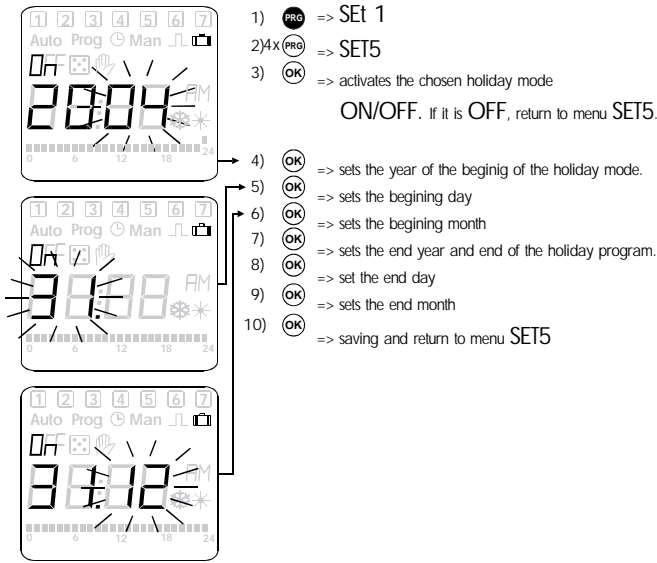
## 12. Setting the holiday mode



The holiday mode is to block the program and random mode the output will be permanently switched Off) without having to change the programs or the switch the device off.

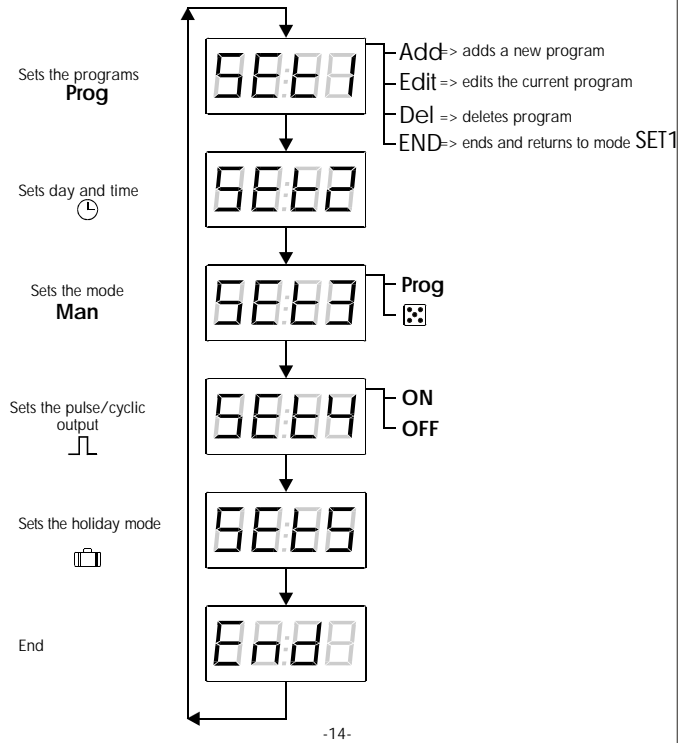
It is necessary to set the beginning and end of the period during which we require the holiday mode.

Example for use: holiday, service and so on.



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## 13. Menu layout



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## 14. Technical parameters STS-DW

Supply terminals:	A1 - A2
Supply voltage:	AC/DC 12 - 240 V (AC 50 - 60 Hz)
Consumption	AC 0.5 - 2 VA / DC 0.4 - 2 W
Supply voltage:	AC 230 V / 50 - 60 Hz
Consumption	AC max. 14 VA / 2 W
Tolerance of the supply voltage:	-15 %; +10 %
The real time saving:	yes
Transmission to summer /winter time:	automatic(possible to cancel)
<b>Output</b>	
Number of contacts:	1x changeover (AgSnO <sub>2</sub> )
Rated current:	16 A / AC1
Switching capacity:	4000 VA / AC1, 384 W / DC
Peak current:	30 A / <3 s
Switching voltage:	250 V AC1 / 24 V DC
Min. switching capacity DC:	500 mW
Mechanical durability:	>3x10 <sup>7</sup>
Electric durability (AC1):	> 0.7x10 <sup>5</sup>
<b>Time cycle</b>	
Operational backup during the power failure:	up to 3 years
Accuracy of the operating:	max. +/- 1 s day at 20 °C
Min. switching time (normal mode):	1 min
Min. pulse switching time(pulse mode):	1 s

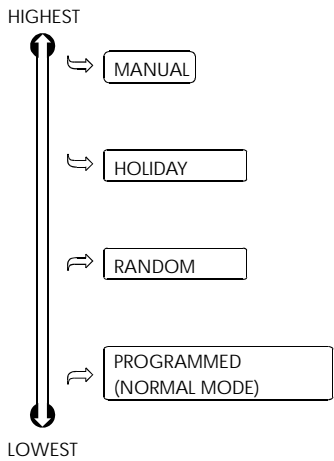
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## 14. Technical parameters of STS-DW

Min. switching time for cycle(cyc. mode):	2 s
Time of program data storing:	min. 10years
Number of memory places:	100
Program:	setting daily/weekly
information :	LCD display illuminated
<b>Other information:</b>	
Operational temperature:	-10 .. +55 °C
Storing temperature:	-30 .. +70 °C
Electric compactness:	4 kV (supply-output)
Operational position:	random
Mounting:	DIN rail EN 60715
Cover:	IP 20
Overvoltage category:	III.
Pollution level:	2
Connecting wire profile:	without cavern max. 2x1.5 mm <sup>2</sup> , 2x2.5 mm <sup>2</sup> with cavern max. 2x1.5 mm <sup>2</sup> , 1x2.5 mm <sup>2</sup>
Dimension:	90 x 35.6 x 64 mm
Weight:	UNI - 130 g, 230 - 110 g
Applying standards:	EN 61812-1, EN 61010-1

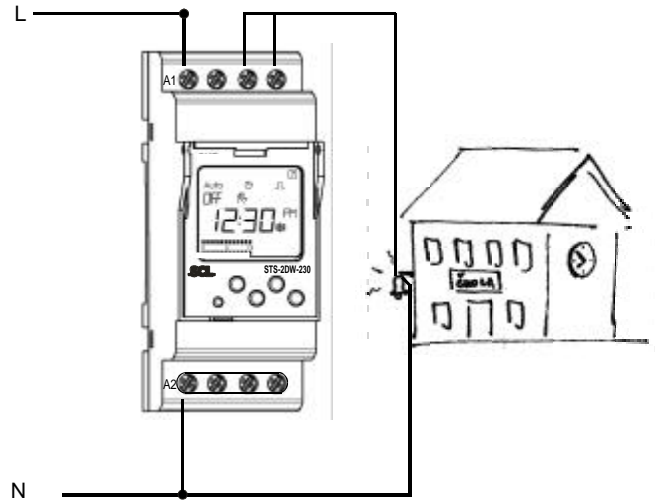
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15. Mode priorities



16. Example of use for SHT-1

- serves to control all appliances in a real time. The appliances can be controlled in certain regular time cycles or according to the set program
- in combination with other devices can be achieved combined controlling (ventilation of rooms, control of irrigation, schoolbell control, church bells...)



17. Certificate of warranty

The warranty period on this device is 24 months from purchase.  
 If there is a breakdown of the device within the warranty which is not caused by the user gives the user a right for the free of charge, properly and in time repair. To get it solved within the warranty conditions, the claim must be rightful, applied within the warranty period and the device must be complete (including documentation)

Warning:  
 For right and just execution of your claim it is necessary to provide the purchase receipt and descriptions of the fault. If your products is not operational, search for other cause too, as foe example: power failure or wrong way of using.

PRODUCT.....

PRODUCTION NUMBER.....

PURCHASE DATE.....

LEGAL STAMP AND SIGNATURE OF THE SELLER