DUAL DIGIT COUNTDOWN TIMER MANUAL

Drawing Nos 9873 Rev 0 19-07-04

Topline Electronics Ltd Introduction

Topline were established in 1986 to provide high quality equipment. Topline now provide integrated dosing equipment packages with a comprehensive service backup. We believe that our after sales service is an integral part of the company's success, and wish to assure existing and new customers that we will continually review product and service performance with the aim of improving both.

If you are experiencing any problems with your control system or general water quality, please do not hesitate to contact a Topline engineer on 01323-440760.

Topline are always willing to develop new products and services with clients, so if you have an idea on how to improve any of Topline's products or wish to develop a product for your own use, please contact Andrew Hunt on 01323 440760.

Technical Data Display

Dimension	122mm wide * 122mm high * 50mm tall.
Power Requirement	12 VDC.
Power Consumption	0.5amps.
Operating Temperature	0 - 50 degrees centigrade.
Enclosure	Plastic IP65
Inputs	4 wire from control unit.
Display	Bi Colour 38mm LED

Technical Data Control

Dimension	122mm wide * 122mm high * 50mm tall.
Power Requirement	240v ac 50 Hz Single phase
Power Consumption	6 amps.
Operating Temperature	0 - 50 degrees centigrade.
Enclosure	Plastic IP65
Outputs	4 wire to display unit

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CE Certificate Declaration of conformance

Manufacturer's Name	Topline Electronics Ltd
Manufacturer's Address	A8 Ropemaker Park Hailsham, E.Sussex England, BN27 3GU

Declares that the above product conforms to the following product specifications:

Low Voltage Directive 72/73 EEC

Electromagnetic Compatibility Directive 2004/108/EC

Restriction of Hazardous Substances (RoSH)
Directive 2002/96/EC

Waste Electrical and Electronic Equipment (WEEE)
Directive 2002/95/EC

CE marking.
I the undersigned, declare that the equipment above conforms to the above directives and carries the CE marking.

Manufacturer Topline Electronics Ltd

Signature on behalf of Topline Electronics Ltd A. Hunt

Date Feb.10th 2007

Health and Safety Warning

This equipment controls the operation of the feature pumps. If the incorrect on period is set then chemical control of the water can be difficult.

Remember, if something is wrong with any of the swimming pool systems,

TAKE THE APPROPRIATE ACTION!

Even if this is only to alert your manager. Do not just record a fault and walk away - bad pool management can affect bathers health.

Risk Assessment

If the equipment is not operated by persons who are not proficient in the operation of swimming pool plant, then there is a risk of:

1. Operation of the receiver with covers removed may result in electrocution.

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Installation.

The Spa count down timer comes as two separate boxes. One of which is a dual digit LED display, the other is the control unit.

Access to the mounting holes is by removing the screws that hold the lid in place.

All cables must be routed using 20mm conduit fittings. The 4-core burglar cable can be up to 500 meters in length. The mains supply must be fitted with a 3 or 6 amp miniature circuit breaker.

The blower trigger is a volts free relay output that MUST operate a SEPARATE contactor that supplies power to the blower. This relay can switch 240vAC at 1 amp maximum or it can be used to switch 24v AC or DC at 2 amp maximum. On NO account can this relay switch mains directly to the blower.

The control unit can be triggered by a mains voltage or by a low voltage. It is recommended that the low voltage trigger be used on new installations.

The low voltage input can be triggered by connecting the trigger input either to GND or to +24v. The quiescent condition being a disconnection.

The control unit can be programmed to various on and off times. See the section entitled ‘Changing the blower on and off times‘.

Testing the control unit is a simple matter of applying power and checking that the ‘Power on self test’ procedure on the display end is performed completely. This is followed by two green zeros (00) and a flashing decimal point to indicate that the unit is idle and ready. Press the puffer switch and the air blower should start.

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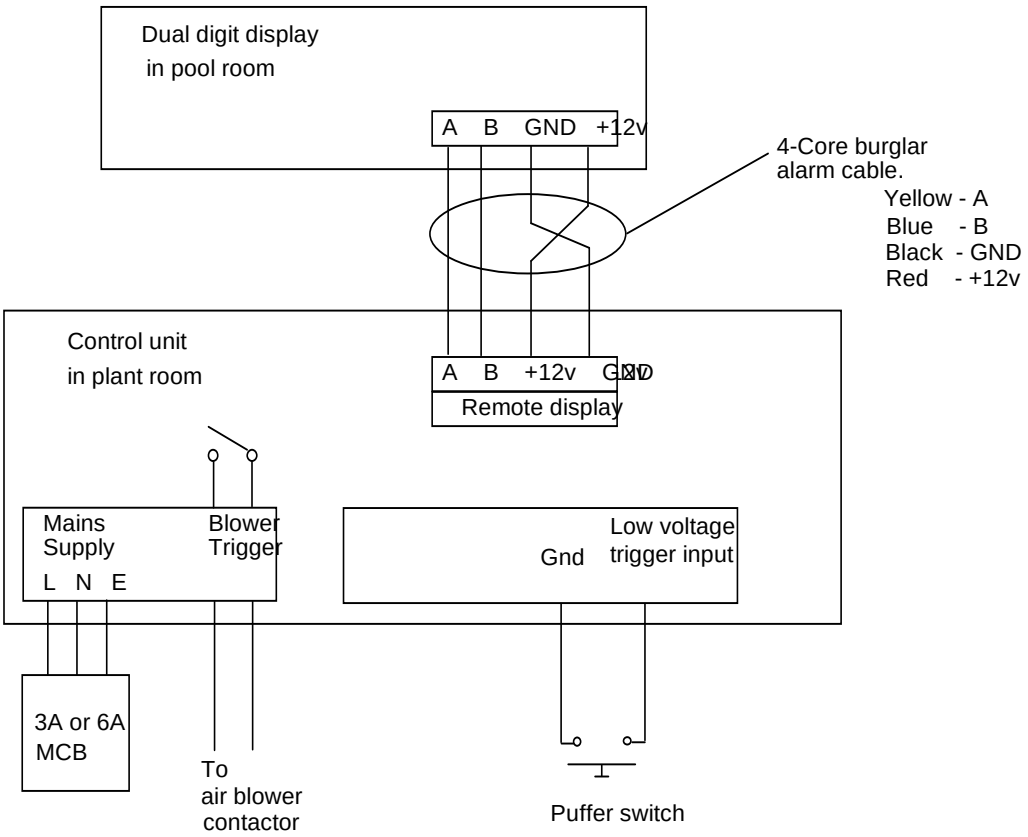
Connections



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Dual Digit Spa Count Down Timer.

Purpose.
The unit is designed to allow a Spa feature to run for a preset time when triggered by a switch and then to prevent the feature from being run again for a preset resting time.

Operation.
The seven segment display has four operating modes. Power on self test, idle time, run time and disable time.

Power on self test.
The display will cycle through a self test when power is first applied. This consists of displaying two red dashes (--) followed by two red sixes (66) with a decimal point. The display will then count up as follows: green 00-09, red 00-09, green 00-90, red 00-90.

Idle time.
Two green zeros (00) and a flashing decimal point indicate that the unit is idle and ready for the user to turn the air blower on using the puffer switch.

Run time.
When the puffer switch is pressed the air blower is operated and the display will show the duration time in minutes in green that the air blower will run for.

Disable time.
When the air blower has completed its run cycle it will be turned off and disabled. The display will show the duration in minutes in red that the blower is disabled for.

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Changing the blower on and off times.

The on and off durations can be altered by the rotary switches located in the control unit in the plant room.

WARNING :- DISCONNECT THE MAINS POWER WHEN WORKING INSIDE THE CONTROL UNIT.

Unscrew the four screws in the box corners. Inside there will be a set of rotary switches with red and green knobs on. There are three types, one with just one red and one green knob, one with two red and two green knobs and the other with two grey knobs..

The switches have a click style feel to them. If not then the switch is faulty because the cut out has been sandwiched between two numbers. It is important for the notch on the switches to clearly show only one number.

Use a small screwdriver to rotate the knob to the required position.

Units with two red and two green knobs.

The red knob sets the blower disable time. The green knob sets the blower run time. Both times are measured in minutes.

These switches have ten positions. 0 - 9. The time shown on the switches corresponds directly to the run time and disable time with the caveat that 00 is forced to become 1 minute.

Units with one red and one green knob.

These single switches have sixteen positions. 0 - 9 and A - F.

Switch position	Blower run time	Blower rest time
0	5 mins	2 mins
1	6	3
2	7	4
3	8	5
4	9	6
5	10	7
6	11	8
7	12	9
8	13	10
9	14	11
A	15	12
B	16	13
C	17	14
D	18	15
E	19	16
F	20	17

Changing the blower on and off times continued.

Units with two grey knobs.

These single switches have ten positions. 0 - 9.

SW1 controls the blower running time.
SW2 controls the blower rest time.

Switch position	Blower run time	Blower rest time
0	6 mins	2 mins
1	8	3
2	10	4
3	12	5
4	14	6
5	16	7
6	18	8
7	20	9
8	22	10
9	24	11