



ST10DC PROGRAMMABLE SEQUENCER

The ST10DC is a solid state sequencer designed to provide an adjustable pulse to operate the pilot valves in reverse jet pulse dust collectors.

Up to 4 extender boards ST10DCEXT (10 outputs ea.) can be connected to the connector J2.

Two pressure switch control inputs are provided to control the operation of the timer:

- If connected to D.P.SWITCH interrupt terminal (1) the timer will remember the last solenoid energised and continue with the next output.
- If connected to the full cycle terminal (2) the timer will complete the sequence and stop at the last output.

The RUN ON (clean up) feature will run the timer for a programmed number of complete cycles (0-255) after the baghouse fan is turned off. The clean up cycle is initiated by the opening of the auxiliary contact of the fan contactor. A jumper wire must be fitted if CLEAN UP cycle is not used.

The number of outputs VALVES, ON TIME, OFF TIME and CLEAN UP cycle are programmed by the program buttons and displayed on the three digit display.



Added features to control and monitor the dust collector

This low cost controller is easily programmed and all input and output functions are indicated by LED's.

- 1) Code protection
- 2) 10 OUTPUTS (up to 50 outputs with EXT.board)
- 3) Incremental or Arbitrary SEQUENCE to energise pilot valves
- 4) ON TIME 10 ms to 990 ms
- 5) OFF TIME 1sec to 999 sec
- 6) OFF TIME 2 1sec to 999 sec
- 7) CLEAN UP up to 255 cycles

Inputs:

- 8) AUX. input
- 9) FAST CYCLE for faster cleaning (OFFTIME 2)
- 10) D.P. SWITCH (Diff. Pressure) INTERRUPT
- 11) D.P. SWITCH (Diff. Pressure) FULL CYCLE
- 12) INPUT VOLTAGE: 110 to 240VAC or 24VDC (other voltages are available)

Outputs:

- 13) Plug in Output terminals to pilot SOLENOID valves
- 14) RELAY ALARM (output) to indicate operational function of controller or running feedback
- 15) OUTPUT VOLTAGE: 24VDC (other voltages are available)

All input and output connections are made by plug-in terminals to save time and avoid wrong wiring at the maintenance level.

Programming Instructions

Note: In this Description we will refer to the RED SELECT Button as RED/B and the two BLUE UP and DOWN Buttons as BLUE/B.

INITIAL SETUP:

Power OFF

Link the AUX input terminals 1 & 2

Link the CLEAN-UP input terminals 8 & 9

Diff. Pressure input terminals 5 & 6 and 6 & 7 are open circuit

Power ON

The green led (RUN) is on, and the display reads "0"

The output leds' (RED) come on in sequence to the following factory settings

NO. OF VALVES	= 10
ON TIME	= 150 ms
OFF TIME	= 2 sec
CLEAN-UP	= 2 cycles
OFF-TIME 2	= 1 sec



To Change The Programme

1. Press the RED/B and the "CODE" led (yellow) illuminates and the display reads 001
2. Enter your code with the BLUE/B if you have been assigned a code, otherwise enter 004. Press the RED/B and the "No. of VALVES" led will illuminate
3. Press the BLUE/B to select the "No. of VALVES", up to 50 valves can be programmed (with ext. boards connected)

Press RED/B and the "SEQUENCE" led (yellow) will illuminate

4. The following sequence can be selected with the BLUE/B

Incremental sequence = 000 as 1,2,3,.....10

Arbitrary sequence = 001 as 1,3,5,7,9,2,4,6,8,10

Bypass Arbitrary sequence = 002

NOTE: to check or change the Arbitrary sequence see separate instructions:

Press the RED/B and the ON-TIME led illuminates

5. With the BLUE/B the ON-TIME can be adjusted from 10 to 990 ms in 10 ms increments

Press the RED/B and the OFF-TIME led illuminates

6. Adjust the OFF-TIME with the BLUE/B from 1 to 999 sec in 1 sec increments

Press the RED/B and the CLEAN-UP led illuminates

- 7) CLEAN-UP cycles are adjusted with the BLUE/B from 0 to 255 cycles

Terminals 8 & 9 must be linked if CLEAN-UP cycle is not used

Press the RED/B and the OFF-TIME 2 led illuminates

- 7a) If OFF-TIME 2 is not required, press RED/B until the "RUN" led (green) illuminates

The sequencer is now programmed

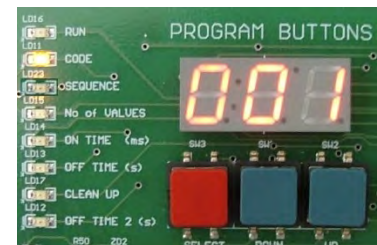
- 7b) If OFF-TIME 2 is required i.e ON DEMAND CLEANING is connected

The OFF-TIME 2 is adjustable from 1 to 999 sec with the BLUE/B

NOTE: Input terminals 3 & 4 must be connected to a N/O contact of the ON DEMAND CLEANING SYSTEM. As the pressure increases, at a set point the contact closes, the display indicates '5' and OFF-TIME 2 will override OFF-TIME 1.

Press RED/B until RUN led (green) illuminates

The sequencer is now programmed.



Programming of Arbitrary Sequence

This mode allows to pulse rows of filters in any order which will help optimise the running of the dust collector.

1. Go to STEP 3 of the Programming Instructions and select 001

Press the RED/B and the No. of valves led (red) will also illuminate

Now you are in the mode "sequence setting"

The factory settings are 1, 3, 5, 7, 9, 2, 4, 6, 8, & 10

To change the sequence, first write down the sequence required, then follow the steps listed below

2. With the BLUE/B choose the 1st valve to be energised

Press the RED/B once and enter the 2nd valve to be energised, continue until all valves have been programmed

3. Press the RED/B the ON TIME led will illuminate and you are back at step 4.

4. If there is no more programming then press the RED/B until RUN led (green) illuminates. The sequencer is now programmed

NOTE: When first selecting Arbitrary sequence '001' the first two cycles are incremental, than arbitrary mode starts (this is to facilitate maintenance)

Connections

