

Changzhou Xionghua Tongtai Automation Equipment Co., Ltd

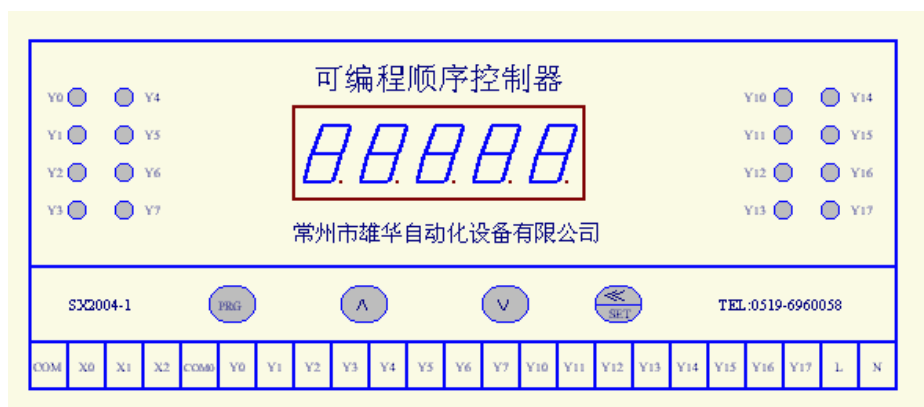


User's Guide Programmable Timer Switch SX2004-1(8MR/16MR)

Features

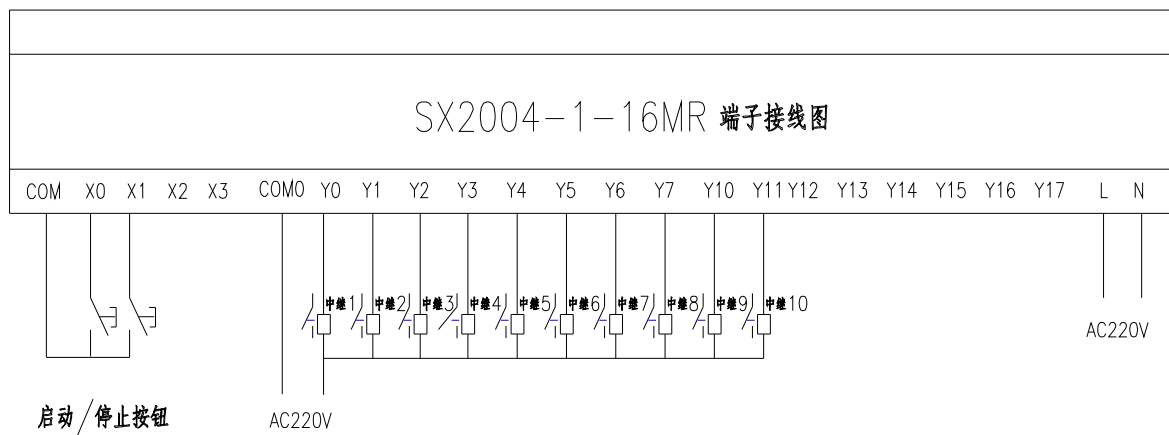
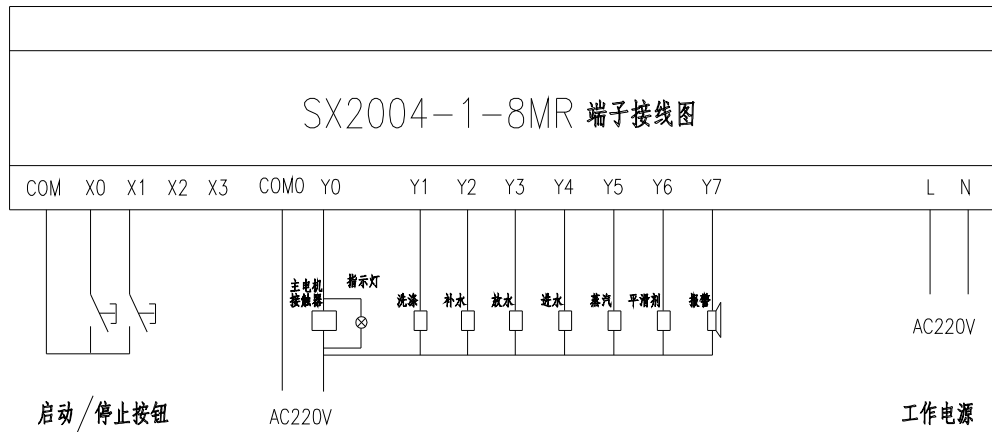
- | New high-speed MCU chip with great speed
- | Big capacity of program and stable and reliable operation
- | Accomplishes the control of time-segment, sequential-segment and the program
- | Built-in 100 time relays
- | Be used in programmable fountain, programmable lights, sewerage, water supply, irrigation, bag pulse dust, electric boiler heating, street lights, neon light, water purifier, electric valve (solenoid valve) timing mud, grit removal control and so on.
- | The 220V/1A DC or AC load.
- | 16/8-channel output
 - SX2004-1(8MR) 8-channel output
 - SX2004-1(16MR) 16-channel output

Structure and Specifications



Operation panel

- a、5-digital display : show the time ,output,function code
- b、Y0——Y17 indicator light: : Output indication
- c、PRG : Select set modes
 - press and hold PRG for 3 seconds : step through or exit program mode。
 - Press PRG to switch function code
 - press it to select “stepping time”or”stepping output”
- d、Increment ^ and decrement V
 - Press ^/ V to set the function code or digit
 - press and hold ^/ V to continuously increase or decrease the number.
- e、SHIFT: SET/ 《
 - press and hold the button for 1.5 seconds : Confirm the date or exit the date settings mode
 - press it : move adjustment to next digit



Terminal function

- a、COM : input circuit common
- b、X0 : start X1: stop
- COM0、Y0、Y1、Y2.....Y17: output points (relay output /3A)
- c、L、N : supply power AC220V, 50Hz

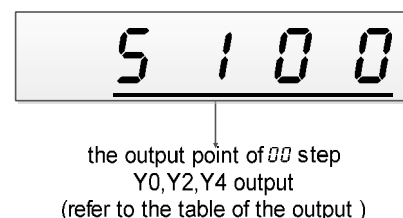
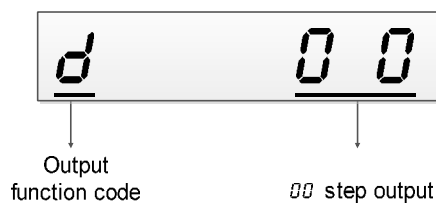
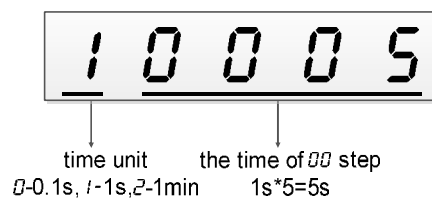
The Description of Function Setting And Display

- The display will show '00000' when the controller stops working
The display will show the stepping time when the controller is working
- Press PRG and hold for 3 seconds to enter into the program mode. The display will show the function code ("T000" or "d000"). Press PRG again for 3s to exit the program mode.
- When the display shows "T000" or "d000", press $\wedge$ 、 $\vee$ to set the stepping time and stepping output (the stepping time allowance ≤ 30 , the stepping output allowance ≤ 30)
- Press SET for 1.5s to enter the set mode.
Press $\wedge$ 、 $\vee$ to increase or decrease a parameter value in set mode. After setting, press SET for 1.5s to save the parameter and return to the status of function code selection.

Work Status



Set Status



Description of Panel Setting

display	function				remark\range	
t <u>XX</u>	Time setting ,in total 100 steps time setting				t00-t99	
d <u>XX</u>	Output setting Y0-Y17 point				0000-FFFF (details please refer to the table of output)	
<u>0</u> XXXX	‘ <u>0</u> ’=0.1s as a unit				0-999.9s	
	Example : ”0359”=35.9s “0999”=99.9				359*0.1sec=35.9s 999*0.1s=99.9s	
<u>1</u> XXXX	’ <u>1</u> ’=1s as a unit				0-9999s	
<u>2</u> XXXX	‘ <u>2</u> ’=1minute as a unit				0-9999min	
3XXXX Jump instruction	txx	<u>3</u>	<u>XX</u>	<u>X</u> <u>X</u>	dxx	X X X X
	Function code		00-99 jumping times (total 100 times)	00-99 Jump to (00 -99th) step	function code	(Decimal system) Number of cycle, <u>0000</u> is infinite loop
	Example 1		Txx 3 0000 dxx 0000 return to the “00” step,and loop infinitely			
	Example 2		txx 3 0104 ‘01’:first time jumping,’04’:jump to 04 step dxx 0016 ‘0016’:loop 16 times			
4XXXX	end instruction			The programs will end when execute the instruction.		
5XXXX	hold instruction			The programs will maintain the status quo when execute the instruction.		

The Table of The Output

○--without output

●--output

	Y 0	Y 1	Y 2	Y 3
0XXX	○	○	○	○
1XXX	●	○	○	○
2XXX	○	●	○	○
3XXX	●	●	○	○
4XXX	○	○	●	○
5XXX	●	○	●	○
6XXX	○	●	●	○
7XXX	●	●	●	○
8XXX	○	○	○	●
9XXX	●	○	○	●
AXXX	○	●	○	●
BXXX	●	●	○	●
CXXX	○	○	●	●
DXXX	●	○	●	●
EXXX	○	●	●	●
FXXX	●	●	●	●

	Y4	Y5	Y6	Y7
X0XX	○	○	○	○
X1XX	●	○	○	○
X2XX	○	●	○	○
X3XX	●	●	○	○
X4XX	○	○	●	○
X5XX	●	○	●	○
X6XX	○	●	●	○
X7XX	●	●	●	○
X8XX	○	○	○	●
X9XX	●	○	○	●
XAXX	○	●	○	●
XBXX	●	●	○	●
XCXX	○	○	●	●
XDXX	●	○	●	●
XEXX	○	●	●	●
XFXX	●	●	●	●

	Y10	Y11	Y12	Y13
XX0X	○	○	○	○
XX1X	●	○	○	○
XX2X	○	●	○	○
XX3X	●	●	○	○
XX4X	○	○	●	○
XX5X	●	○	●	○
XX6X	○	●	●	○
XX7X	●	●	●	○
XX8X	○	○	○	●
XX9X	●	○	○	●
XXAX	○	●	○	●
XXBX	●	●	○	●
XXCX	○	○	●	●
XXDX	●	○	●	●
XXEX	○	●	●	●
XXFX	●	●	●	●

	Y14	Y15	Y16	Y17
XXX0	○	○	○	○
XXX1	●	○	○	○
XXX2	○	●	○	○
XXX3	●	●	○	○
XXX4	○	○	●	○
XXX5	●	○	●	○
XXX6	○	●	●	○
XXX7	●	●	●	○
XXX8	○	○	○	●
XXX9	●	○	○	●
XXXA	○	●	○	●
XXXB	●	●	○	●
XXXC	○	○	●	●
XXXD	●	○	●	●
XXXE	○	●	●	●
XXXF	●	●	●	●

Example: control 1#~16# solenoid valves , the steps are as follows

1. 1 #,3#,5# work for 5 seconds, after 5 seconds, then stop
2. 1#~16# stop for 3 seconds, (without output)
3. 2#,5#,8#,15# work for 2 minutes, then stop
4. 1#~16# stop for 8 seconds ,(without output)
5. 4#, 6#, 7#, 10#, 13#, 14# work for 0.3 seconds, then stop
6. 1#~16# stop for 7 seconds,(without output)
7. 2#,12# work for 8 seconds, then stop
8. 4#,10# work for 5s
9. Jump to the 3th step, loop 5 times from the 3th step

Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
1#	2#	3#	4#	5#	6#	7#	8#	9#	10#	11#	12#	13#	14#	15#	16#

Program group	Step	step time	step output	remark	
1	t 0 0	10005		't':time, '00':1st step 10005:'1'-1second(timeunit) [2-minute,0-0.1seconds] 10005:1second*5=5seconds	(1#,3#,5# work for 5 seconds) Y0,Y2,Y4 output for 5s
	d00		5100	'd':output, '00':1st step 5100: (refer to above output table) Y0,Y2,Y4 output	
2	t 01	10003		'01':2nd step 10003:1s*3=3s	(1#~16# stop for 3 seconds) Y0~Y17 without output for 3s
	d 01		0000	'01':2nd step '0000':no output	
3	t 02	20002		'02':3rd step '20003':1min*2=2mins	(2#,5#,8#,15# work for 2 minutes) Y1,Y4,Y7,Y16 output for 2mins
	d 02		2904	'02':3rd step '2904':Y1,Y4,Y7,Y16 output	
4	t 03	10008		'03':4th step '10008':1s*8=8s	(1#~16# stop for 8 seconds) Y0~Y17 without output for 8s
	d 03		0000	'03':4th step '0000':no output	
5	t 04	00003		'04':5th step '00003':0.1s*3=0.3s	(4#, 6#, 7#, 10#, 13#, 14# work for 0.3 seconds) Y3,Y5,Y6,Y11,Y14,Y15 output for 0.3s
	d 04		8623	'04':5th step '8623':Y3,Y5,Y6,Y11,Y14,Y15 output	
6	t 05	10007		'05':6th step '10007':1s*7=7s	(1#~16# stop for 7 seconds) Yo~Y17 without output for 7 seconds
	d 05		0000	'05':6th step '0000':no output	
7	t 06	10008		'06':7th step '10008':1s*8=8s	(2#,12# work for 8 seconds) Y1,Y13 output
	d 06		2080	'06':7th step '2080': Y1,Y13 output	

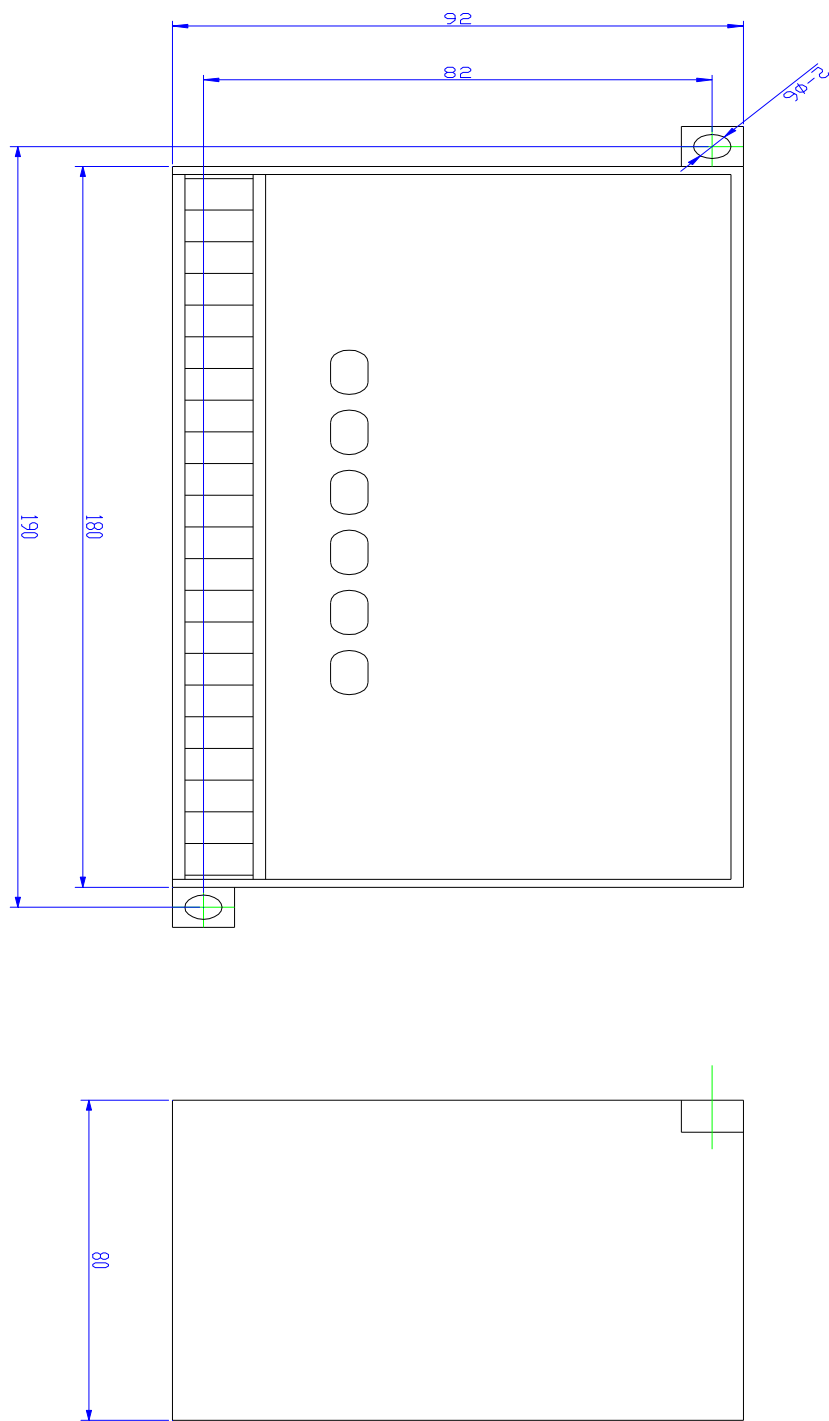
8	t 07	10005		'07':8th step '10005':1s*5=5s	(4#,10# work for 5s) Y3,Y11 output
	d 07		8020	'07':8th step '8020':Y3,Y11	
9	t 08	30102		'3':jump instruction '01':first time to jump '02': jump to t02(3rd step)	10.Jump to the 3th step, cycle 5 times from the 3th step
	d 08		0005	'0005': loop 5 times	

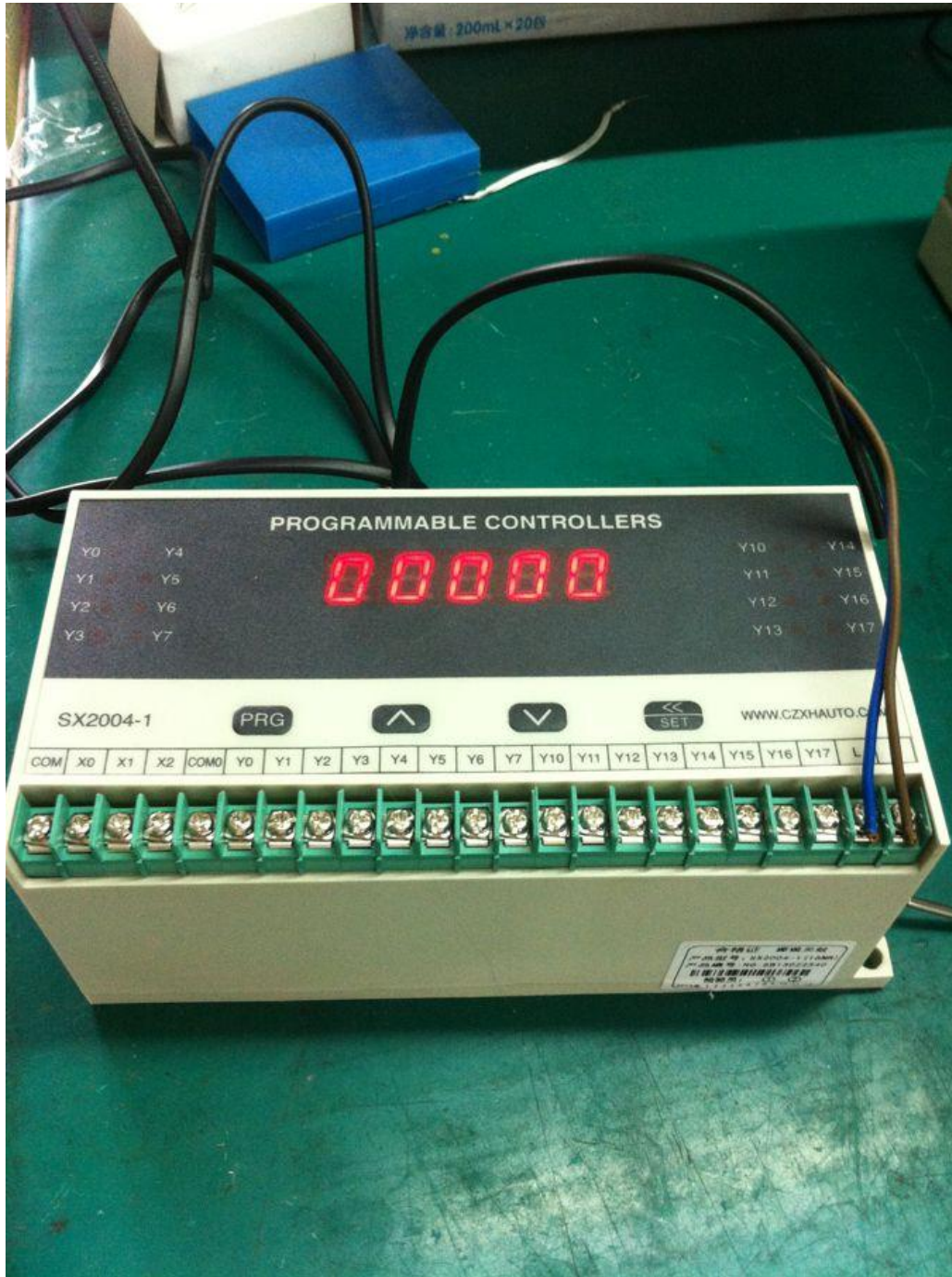
the table of function setting

Function code	range	Value time	Function code	range	Value output
T0	0-49999		D0	0-FFFF	
T1	0-49999		D1	0-FFFF	
T2	0-49999		D2	0-FFFF	
T3	0-49999		D3	0-FFFF	
T4	0-49999		D4	0-FFFF	

T98	0-49999		D98	0-FFFF	
T99	0-49999		D99	0-FFFF	

The Dimensions



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