Changzhou Xionghua Tongtai Automation Equipment Co., Ltd

User's Guide
Programmable Timer Switch
XHST-20

Feature

- Intelligent and digital LED timer
- 8 output points, the easy operation to control the industry process
- Memory storage (10years) / mechanical life
- Wide time setting range (0.01s~9999s)
- Power supply (220V AC 50/60Hz)

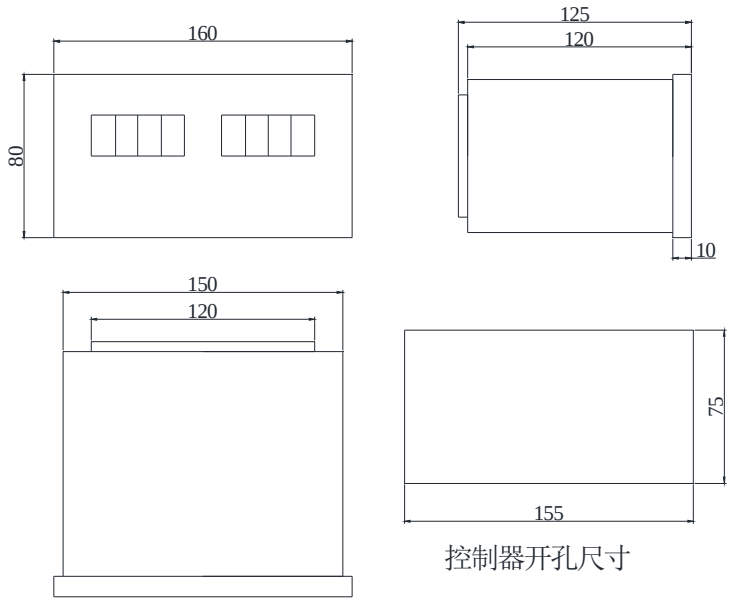
Every time point can be set separately in 24-hour system or week system and the output points are optional in every time period (stepping time period allowance≦60 steps).With the communication function, the parameters of the time point and working time can be set easily by user.

The XHST-20 controller is designed for streetlight (multichannel control, open and close in different duration of time) ; neon lamp (control the light in different time); fountain (set separately the duration of time ,the output point and the time point) etc. It is specially used for controlling the equipments ON/OFF in different time.

Selection Table

Model	XHST-20
Output Point	8 points（AC220V2A）
Input Signal	Switch contact,transistor/8 points
Function	Clock timer relay,street light controller, water fountain controller
Power	220V AC 50/60Hz 3W
Power Storage	at least 10
Withstand Voltage	2000VAC 50/60Hz 1miute
Operation Temperature	-10～+55 ℃
Anti-interference	Analog ±2000V square wave signal from interference unit (pulse width ：1us）
Weight	400g
Dimension	160×80×125/155×75

Dimension



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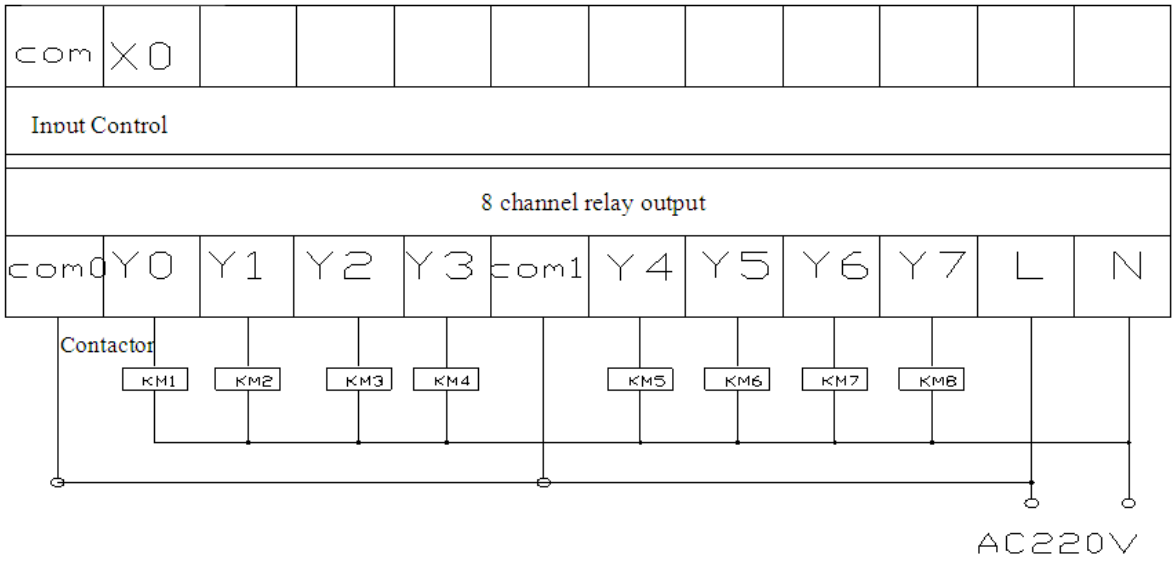
Terminal and Panel

Terminal



1. COM：input common terminal
2. X0: switch input, COM and X) should be normal close or shorted, then when the controller is power-on, the controller can work normally
3. COM0, COM:output common terminal
4. Y0--Y7：8 output points(relay output 2A)
5. L and N：AC220V，50Hz input terminal

panel

① Display (8 digitals): show the date, time,function code,step

② Y0-Y7 indicator lights: output indicator

③ PRG a :display the present working b.select the programmable mode

Press it for 3s: enter or exit programmable mode

④ ∧ and ∨: increase and decrease, set the parameter up/down '1', if press and hold, the parameter continuous increase/decrease.

At programmable mode, press the ∧/∨ to select the function mode(step time or step output)

⑤ SET: move the setting cursor/ confirm the parameter

Press and hold for 1.5s: enter the setting mode, or save the parameter and exit the setting mode.

Press short: move the setting cursor.

⑥ 时间切换: switch between date and time

Press it, time(hour,minute and second) can be switched to date(year, month and day)

⑦ 时间设定: select to set the year,month,day,hour,minute and minute.(Time Calibration Setting ）

Press it for 3s: enter or exit date and time setting mode.

Description of the instructions

Function	Display	Remark
24-hour system (set the hour and minute)	PXXH/0000	XX=stepping output (range 00-59) 0000 : “ 00” = hour “00”=minute
	PXXd/0000 （0000-00FF refer to the **output table**) PXXH/3000 End the program	XX=stepping output (range 00-59) 0000= output point 3000= stop
	Example : step1:P00H/0830 P00d/0001 step2:P01H/0930 P01d/0000 step3:P02H/1230 P02d/0011	1.the first （YO）circuit is open at 8:30 2.the circuit（YO） is closed at 9:30 3.the first（YO） and fifth（Y4） circuits are both open at 12:30
Week system (set the hour , minute and second)	PXXH/0000	XX=stepping output (range 00-59) 0000 : “ 00” = hour “00”=minute
	PXXt/0000	XX=stepping output (range 00-59) 0000 : “ 00” = week “00”=second Example a; “1700” or “0000” = from Mon. to Sun. “2500” =from Tues. to Fri. “1100” = only set Mon. “2530”=from Tues. to Fri. “30”=30s
	PXXd/0000 （0000-00FF refer to the **output table**)	XX=stepping output (range 00-59) 0000= output point F → YO，YI，Y2，Y3 F → Y4，Y5，Y6，Y7
	Example: step1:P00H/0830 P00t/0030 P00d/0001 step2:P01H/0930 P01t/0050 P01d/0000 Step3:P02H/1230 P02t/0030 P02d/0010	From Mon. To Sun., 1.the first circuit(YO) is open at eight thirty and thirty seconds, 2.the circuit (YO)is closed at nine thirty and thirty seconds, 3.the fifth circuit(Y4) is open at twelve thirty and thirty seconds

Setting process

Clock mode setting (Time Calibration Setting)

1. The display shows the present working status (week, hour, minute and second, press 时间设定 to show the step, year,month and day)

2. Press 时间设定 for 3s to enter the setting status, then press ∧/∨ to set the current date or time (Time Calibration Setting), then press 时间切换 to switch between date and time. After setting, press SET and don't release until the last digit of the display blink to save the parameter, at last press 时间设定 for 3s to exit the setting status.

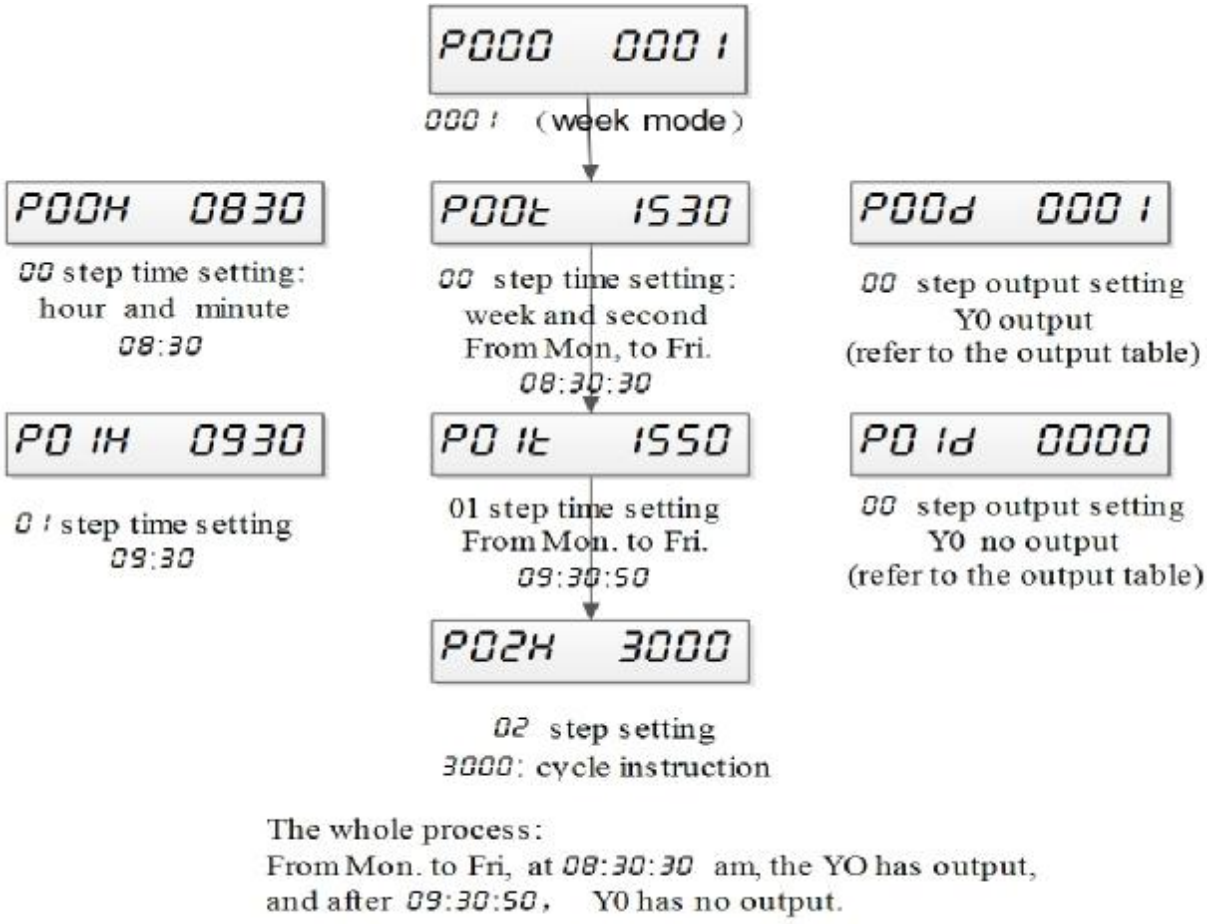
Program setting

1. Press PRG for 3s to enter the setting status, left display show the function code P000, press SET for a while to move the cursor to right display. Press ∧/∨ to select the work mode (0001 is week mode, 0000 is 24-hour mode), press SET and don't release until the last digit of left display blink to save the parameter.

2. Press ∧ , ∨ , SET , left display will show the function code (P00H/P00t/P00d…P59H/P59t/P59d) ,and this is to select the step time and step output (time steps allowance ≦ 60 steps, output steps allowance ≦ 60 steps)

3.Right display shows the parameter. Press SET and don't release until the last digit of the right display blink, now the parameter can be set. Press ∧/∨ to set the parameter of the step time or step output, and press SET to move the cursor to another digit. After setting, press SET and hold to save the parameter, now return to the function code selection and the last digit of the left display is blinking.

4. Press ∧, ∨, SET to select the function code and set next step. After all setting, press PRG for 3s to save the parameters and now exit the setting status and the display will show the present working.



Application example

1#,2#,3#,4#,5#,6#,7#,8# light ON/OFF at 24-hour mode or weel mode.

Program sheet 1 （24-hour mode）：

Step	Function code	Parameter setting		Remark
	P000	0000		Select the work mode 0000 is 24- hour mode
00	P00H	1830	1# ON	1# starts working at 18:30 Y0 has output
	P00d	0001		
01	P01H	1845	2# ON	2# starts working at 18:45,and 1# is still working, Y0 and Y1 have output
	P01d	0003		
02	P02H	1900	3#4# ON	3# and 4# start working at 17:00 and 1# 2# are still working, Y0,Y1,Y2 and Y3 have output
	P02d	000F		

03	P03H	1930	5# ON	5# starts working at 19:30 and 1#~4# are still working, Y0,Y1,Y2, Y3 and Y4 have output
	P03d	001F		
04	P04H	2000	ON all	1#~8# are all working at 20:00 Y0~Y7 have output
	P04d	00FF		
05	P05H	2100	1# OFF	1# stops working at 21:00, and 2#~8# are still working. Y0 has no output Y1~Y7 have output
	P05d	00FE		
06	P06H	2130	2# OFF	2# stops working at 21:30, 1 # is still close, 3#~8# are still working. Y0,Y1 have no output Y2~Y7 have output
	P06d	00FC		
07	P07H	2145	3#OFF	3# stops working 21:45, 1 #, 2# are still close, 4#~8# are still working. Y0,Y1,Y2 have no output Y3~Y7 have output
	P07d	00F8		
08	P08H	2200	4# OFF	4# stops working 22:00, 1 #~3# are still close, 5#~8# are still working. Y0~Y3 have no output Y4~Y7 have output
	P08d	00F0		
09	P09H	2230	5# OFF	5# stops working 22:30, 1 #~4# are still close, 6#~8# are still working. Y0~Y4 have no output Y5~Y7 have output
	P09d	00E0		
10	P10H	0600	OFF all	6#~8# stop working at 06:00, 1#~5# are still close Y0~Y7 has no output
	P10d	0000		
11	P11H	3000		Cycle work in every 24-hour

Program table 2 (week mode)

Step	Function code	Parameter setting		Remark
	P000	0001		Select the work mode 0001 is week system
00	P00H	1830	1# ON	1# starts working at 18:30:00
	P00t	1500		From Mon. To Fri
	P00d	0001		Y0 has output
01	P01H	1845	2# ON	2# starts working at 18:45:00, 1# is still working
	P01t	1500		From Mon. To Fri
	P01d	0003		Y0,Y1 have output

02	P02H	1900	3# 、 4# ON	3#, 4# start working at19:00:00, 1#,2# are still working
	P02t	1500		From Mon. to Fri.
	P02d	000F		Y0~Y3 have output
03	P03H	1930	5# ON	5# starts working at 19:30:00,1#~4# are still working
	P03t	1500		From Mon. to Fri.
	P03d	001F		Yo~Y4 have output
04	P04H	2000	1#~8# ON	1#~8# work together at 20:00:00
	P04t	1500		From Mon. to Fri.
	P04d	00FF		Y0~Y7 have output
05	P05H	2100	1# OFF	1# stops working at 21:00:00, 2#~8# are still working
	P05t	1500		From Mon. to Fri.
	P05d	00FE		Y0 has no output Y1~Y7 have output
06	P06H	2130	2# OFF	2# stops working at 21:30:00, 1# is still OFF and 3#~8# are still working
	P06t	1500		From Mon. to Fri.
	P06d	00FC		Y0,Y1 have no output Y2~Y7 have output
07	P07H	2145	3# OFF	3# stops working at 21:45:00, 1#,2# are still OFF and 4#~8# are still working
	P07t	1500		From Mon. to Fri.
	P07d	00F8		Y0~Y2 have no output Y3~Y7 have output
08	P08H	2200	4# OFF	4# stops working at 22:00:00, 1#~3# are still OFF and 5#~8# are still working
	P08t	1500		From Mon. to Fri.
	P08d	00F0		Y0~Y3 have no output Y4~Y7 have output
09	P09H	2230	5# OFF	5# stops working at 22:30:00, 1#~4# are still OFF and 6#~8# are still working
	P09t	1500		From Mon. to Fri.
	P09d	00E0		Y0~Y4 have no output Y5~Y7 have output
10	P10H	0600	1#~8# OFF	6#~8# stop working at 06:00:00, 1#~8# are all OFF
	P10t	1500		From Mon. to Fri.
	P10d	0000		Y0~Y7 have no output
11	P11H	3000		Cycle work in every week

Appendix

Output table

○-- without output ●-- output

	Y0	Y1	Y2	Y3
XXX0	○	○	○	○
XXX1	●	○	○	○
XXX2	○	●	○	○
XXX3	●	●	○	○
XXX4	○	○	●	○
XXX5	●	○	●	○
XXX6	○	●	●	○
XXX7	●	●	●	○
XXX8	○	○	○	●
XXX9	●	○	○	●
XXXA	○	●	○	●
XXXB	●	●	○	●
XXXC	○	○	●	●
XXXD	●	○	●	●
XXXE	○	●	●	●
XXXF	●	●	●	●

	Y4	Y5	Y6	Y7
XX0X	○	○	○	○
XX1X	●	○	○	○
XX2X	○	●	○	○
XX3X	●	●	○	○
XX4X	○	○	●	○
XX5X	●	○	●	○
XX6X	○	●	●	○
XX7X	●	●	●	○
XX8X	○	○	○	●
XX9X	●	○	○	●
XXAX	○	●	○	●
XXBX	●	●	○	●
XXCX	○	○	●	●
XXDX	●	○	●	●
XXEX	○	●	●	●
XXFX	●	●	●	●

Product version number

- XHST-20 version number：St11 0000

Contact information

Company name: Changzhou Xionghua Tongtai Automation Equipment Co., Ltd
Address: 13-315 QianShengLanTing, NO. 15, LanLing Road, TianNing District
Tel: 0519-86960058 86998907 86968907
Fax: 0519-86968907-832
Zip Code: 213015
E-mail: xqqqqq8@126.com
XHautomation@hotmail.com