

OPERATING INSTRUCTIONS

XT5042



48 x 48

Please maintain these instructions and review them prior to using the unit:

Warning:

1. This unit is panel mounted type with its output terminals getting connected to the host equipment. Such equipment shall also comply with basic EMI/EMC and safety requirements like BS EN 61326-1 and BS EN 61010 respectively.
2. To avoid electric shock, power supply of the unit should be kept off while wiring. Wiring should be done strictly as per the terminal layout, given in the manual.
3. Use lugged terminals to meet M3.5 screws.
4. The unit does not have a built-in fuse. External fuse with a rating of 275VAC/1A is recommended.

Caution:

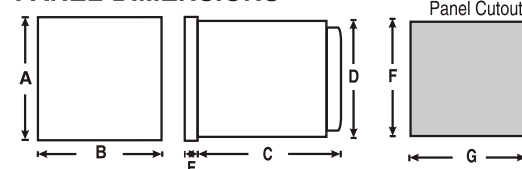
1. This unit is not intended for outdoor use.
2. The power connection cable must have a cross-section of at least 1mm² and insulation capacity of at least 1.5kV.
3. The output connections must not be loaded beyond the specified values/range.
4. Avoid inflow of dust and contact of conductive material with the internal circuitry of the unit.
5. The unit must not operate in presence of heating sources, caustic vapors, oil, steam, vibration or impact etc.
6. Clean the equipment with a clean, soft cloth. Do not use any organic cleaning agent.

SPECIFICATIONS

1	Supply Voltage (Factory set)	90 to 270VAC/DC, 50/60 Hz. 24V AC/DC
2	Display	Dual 4 digit 7 segment LED. Upper Display (current value): 10mm height, red colour. Lower display (selectable): 7mm height, green colour.

3	Operating modes	Timer: Relay1: On delay, Interval, Cyclic On first, Cyclic Off first, Instantaneous + Delayed at start pulse, Instantaneous + Delayed at power on, Motor reverse. Relay 2: On delay, Interval, Cyclic On first, Cyclic Off first, Batch, NC.
4	Time ranges	Timer: 99.99 / 999.9 / 9999 sec, 99:59 min:sec, 999.9 / 9999 min, 99:59 hr:min 999.9 / 9999 hr.
5	Direction	Up / Down.
6	Led indications	Relay 1 status, Relay 2 status, sec, min, hr.
7	Set points	Dual.
8	Start input	Pulse start, Gate start.
9	Sensor supply	12VDC, 30mA (Short circuit protected).
10	Reset	On power interruption, Front panel reset, Terminal reset.
11	Output	2 NO
12	Relay rating	5A @ 230VAC.
13	Memory retention	10 years.
14	Accuracy	Timer: ± 0.05% of setting or 50msec whichever is greater.
15	Mounting	Panel mounting.
16	Temperature	Operating: 0 - 50 ° C. Storage: -20 - 75 ° C.
17	Humidity	95% RH.
18	Housing	Flame retardant engineering plastic.
19	Weight	175 grams (approx).

PANEL DIMENSIONS



MODELS	DIM	A	B	C	D	E	F	G
XT5042		48	48	100	45	7	46	46

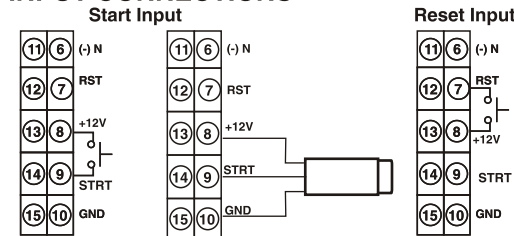
TERMINAL CONNECTIONS

DESCRIPTION	TERMINAL
L (Live)	1
NO 1	2
COM 1	3
NO 2	4
COM 2	5
N (Neutral)	6
RESET input	7
+12V	8
START input	9
COM (Gnd)	10

JUMPER SELECTION FOR START INPUT THROUGH PROXIMITY SWITCH:-

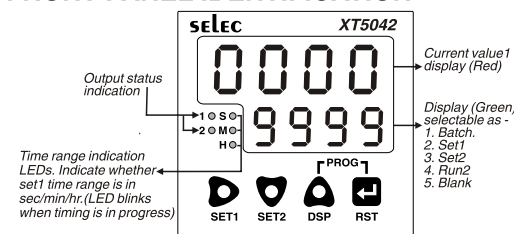
INPUT SENSOR	JUMPER SELECTION
PNP	Top view of jumpers with housing removed and display on the right side
NPN	

INPUT CONNECTIONS



Note: Color codes for proximity sensors-
Brown / Red --> +12V, Black / Green --> CNT, Blue / Black --> GND.

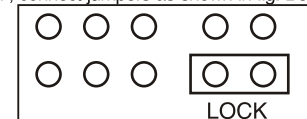
FRONT PANEL IDENTIFICATION



KEYS	FUNCTIONS
⏏ + ⏏	Enter / Exit configuration mode
⏏	1. Selects the digit to be altered. Selected digit blinks. With every press of key, next digit towards the right starts blinking. 2. Programming for Set1.
⏏	1. Decrements value of blinking digit. 2. Scrolls down to previous option for configuration parameter. 3. Programming for Set 2.
⏏	1. Increments value of blinking digit. 2. Scrolls up to next option for configure parameter. 3. Programming lower display options 4. Display Batch value.
⏏	1. Scrolls to next config. parameter and stores for previous parameter setting. 2. Front panel RST.

JUMPER SELECTION TO DISABLE LOCK

In case, the lock password is forgotten or Lock function is not required, connect jumpers as shown in fig. Below to disable lock.



(Top view of jumpers with housing removed and display on the right side.)

CONFIGURATION SCHEME:

Note: Press after every programming change for EEPROM storage. If no key is pressed for 1min, the unit will auto exit from configuration.

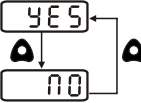
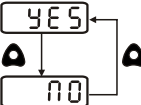
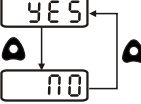
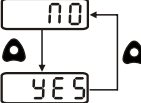
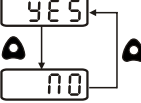
Upper display	Lower display	Description
Press + keys to enter configuration		
Note: Valid only if lock is enabled in configuration.		
Configuration Lock	Default : 0000.	
LOCY	0000	Enter a valid lock ID to enter configuration. Press to select the digit and / to change value of the selected digit
	* NOTE: The selected digit blinks.	
Press key to enter programming for Relay1 operating mode		
Relay1 operating mode.	Default : ON Delay	
PLI.n	0n	Relay1 operating mode: ON Delay / Interval / Cyclic ON first / Cyclic OFF first / Instantaneous + delayed at start pulse / Instantaneous + delayed at power on / Motor reverse.
	1nE	
	CYOn	
	CYOF	
	Id-S	
	Id-P	
	nP	NOTE: Refer waveforms for details.
Press key to enter programming for Start Time range.		
Note: Start time not valid for motor reverse mode.		
Time range for Start time.	Default : 999.9 sec	
St-S	99.99	Time ranges: 99.99sec, 999.9sec, 9999sec,
	999.9	
	9999	
	99.59	99:59min:sec , 999.9min, 9999min,
St-n	99.99	
	999.9	
	9999	
	99.59	
St-H	99.99	99:59hr:min, 999.9hr, 9999hr.
	999.9	
	9999	

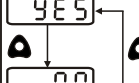
Upper display	Lower display	Description		
Press key to enter programming for Pause Time range.				
Note: Pause time range valid only for motor reverse mode.				
Time range for Pause time		Default : 999.9 sec		
PS-S PS-n PS-H	9999 9999 9999 9959 9999 9999 9959 9999 9999	Time ranges: 99.99sec, 999.9sec, 9999sec, 99:59min:sec , 999.9min, 9999min, 99:59hr:min, 999.9hr, 9999hr.		
	Press key to enter programming for ON Time range.			
	Time range for ON time			
	Default : 999.9 sec			
	ON-S ON-n ON-H		9999 9999 9999 9959 9999 9999 9959 9999 9999	Time ranges: 99.99sec, 999.9sec, 9999sec, 99:59min:sec , 999.9min, 9999min, 99:59hr:min, 999.9hr, 9999hr.

Upper display	Lower display	Description	
Press key to enter programming for OFF Time range.			
Note: Off time range valid only for Cyclic modes.			
Time range for OFF time		Default : 999.9 sec	
OF-S OF-n OF-H	9999 999.9 9999 99.59 999.9 9999 99.59 999.9 9999	Time ranges: 99.99sec, 999.9sec, 9999sec, 99:59min:sec , 999.9min, 9999min, 99:59hr:min, 999.9hr, 9999hr.	
	Press key to enter programming for No. of cycles.		
	Note: Valid only for Cyclic modes.		
	No. of cycles		Default : 0000.
	CYCL	0000 *	No. of cycles: 0000 to 9999. Set the no. of On - Off operations in cyclic mode Press to select the digit and to change value of the selected digit
	Press key to enter programming for Relay 2 function.		
	Note: Not valid for Instantaneous + delayed & motor reverse modes		
	Relay 2 function		Default : Timer 2.
	RLY2	TRP2 NC BTCH	Relay 2 function: Relay 2 will function as: Timer / NC contact for relay1 / Batch. Note: When using relay2 as NC short COM1 and COM2.
	Press key to enter programming for Relay 2 mode		
	Note: Valid only if relay 2 is functioning as Timer.		
	Relay 2 mode		Default : On delay.
RLY2-n	ON INT CYON CYOF	Relay2 operating mode: On delay / Interval / Cyclic On first / Cyclic Off first.	

Upper display	Lower display	Description	
Press key to enter programming for Start Time range.			
Time range for Start time. <i>Default : 999.9 sec</i>			
St - S St - n St - H	99.99 999.9 9999 99.59 999.9 9999 99.59 999.9 9999	Time ranges: 99.99sec, 999.9sec, 9999sec, 99:59min:sec , 999.9min, 9999min, 99:59hr:min, 999.9hr, 9999hr.	
	Press key to enter programming for ON Time range.		
	Time range for ON time <i>Default : 999.9 sec</i>		
	On - S On - n On - H	99.99 999.9 9999 99.59 999.9 9999 99.59 999.9 9999	Time ranges: 99.99sec, 999.9sec, 9999sec, 99:59min:sec , 999.9min, 9999min, 99:59hr:min, 999.9hr, 9999hr.

Upper display	Lower display	Description
Press key to enter programming for OFF Time range.		
Note: Valid only for Cyclic modes.		
Time range for OFF time Default : 999.9 sec		
OF - S	99.99 ↓ 999.9 ↓ 999.9 ↓ 99.59 ↓ 999.9 ↓ 999.9 ↓ 999.9 ↓ 99.59 ↓ 999.9 ↓ 999.9 ↓ 99.59 ↓ 999.9 ↓ 999.9	Time ranges: 99.99sec, 999.9sec, 9999sec, 99:59min:sec , 999.9min, 9999min, 99:59hr:min, 999.9hr, 9999hr.
Press key to enter programming for No. of cycles.		
No. of cycles Default : 0000.		
Note: Valid only for Cyclic modes.		
CYCL	0000 ★	No. of cycles: 0000 to 9999. To set the no. of On - Off operations in cyclic mode. Press to select the digit and to change value of the selected digit
Press key to enter programming for Direction		
Counting Direction Default : Down		
DIRN	DOWN ↓ UP	Direction: Up and Down Up: Counting starts from 0 and proceeds towards set point. Down: Counting starts from set point and proceeds down to 0.
Press key to enter programming for Start.		
Start Default : Pulse		
SETE	PULSE ↓ GATE	Start: Pulse / Gate. Pulse: Timing starts on momentary closure of switch connected between terminals 8 & 9. Gate: Timing starts at power on. When the switch between terminals 8 & 9 is closed, the timing freezes and resumes only after the switch is released.

Upper display	Lower display	Description
Press  key to enter programming for Front panel batch reset		
Front panel batch reset.		Default : Yes
		Front panel batch reset : Yes / No. Yes: Batch value can be reset from front panel. No: Batch value cannot be reset from front panel
Press  key to enter programming for Batch reset		
Batch reset		Default : No
NOTE: Prompted only if Front panel batch reset is No.		
		Batch reset : Yes / No. Yes: Batch value is reset immediately. No: Batch value is not reset.
Press  key to enter programming for Front panel reset		
Front panel reset.		Default : Yes
		Front panel reset : Yes / No. Yes: Unit can be reset from the front panel. No: Unit cannot be reset from the front panel
Press  key to enter programming for Power on reset		
Power on reset.		Default : No
		Power on reset ranges: Yes / No. Yes: Unit is reset on power interruption. No: Unit is not reset on power interruption.
Press  key to enter programming for Lock		
Lock		Default : No
		Configuration lock: Yes / No. Yes: Configuration lock is enabled. No: Configuration lock is disabled.
Press  key to enter programming for Lock ID		
Note: Valid only if Lock = Yes.		
Lock ID		Default : 0000.
	 	Lock ID: 0000 to 9999. Press  to select the digit and  to change value of the selected digit

Upper display	Lower display	Description
Press	key to enter programming for Reset all.	
Reset all parameters to default	<i>Default : No</i>	
		Reset all parameters to default :Yes / No Yes: All parameters are set to factory set values All set points are set to 0.

PROGRAMMING - TIMER

 → **Temporary display:** Lower display shows parameter name for 1sec and then its value.

Enter programming as per the given procedure.

To program set points: Press **▶** to select the digit. The selected digit blinks. Press **▲/▼** key to change its value. Press **■** key to go to the next parameter (if applicable). If the edited parameter is the last parameter, the unit will quit programming.

To select lower display options: Press  /  key to select particular option and then press  key to quit programming.

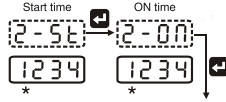
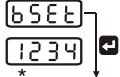
To select reset option: Press  /  key to select particular option and then press  key for 1.5 sec to quit programming

Press Key	Lower Display
	Applicable when Relay1 is in On delay / Interval / I + D modes. Start time → ON time → Exit Set point1 programming
	Applicable when Relay1 is in Cyclic mode. Start time → ON time → OFF time → Exit Set point1 programming
▶ for 1.5 sec to Enter Set1 programming. (Auto program out after 1min)	Applicable when Relay1 in Motor reverse mode Pause time → ON time1 → ON time2 → Exit Set point1 programming

Note: * sign indicates that the digit blinks.

2. Programming for Set point2:

Note: Not valid when relay 2 is functioning as NC.

Press Key	Lower Display
♥ for 1.5 sec to Enter Set2 programming. (Auto program out after 1min)	Applicable when Relay2 is working as Timer2 in On delay / Interval mode. 
♥ for 1.5 sec to Enter Set2 programming. (Auto program out after 1min)	Applicable when Relay2 is working as timer2 in Cyclic mode. 
♥ for 1.5 sec to Enter Set2 programming. (Auto program out after 1min)	Applicable when Relay2 is in Batch mode 

Note: * sign indicates that the digit blinks.

3. Programming for Lower display options:

Press Key	Lower Display
▲ for 1.5 sec to Enter programming for Lower display options. (Auto program out after 1min).	<pre> graph LR Batch[b t c H] --> Set1[S E E 1] Set1 --> Set2[S E E 2] Set2 --> Blank[b l a n e] Blank --> Curr2[C u r n 2] Curr2 --> Exit1[Exit] Curr2 --> Exit2[Exit] </pre>

Note 1: * sign indicates that the display blinks.

Note 2: Set 1 and Run 2 not displayed when relay 1 is in Instantaneous + Delayed / Motor reverse mode or when relay2 is in Batch / NC mode.

4. Programming for Reset.

Press Key	Lower Display
for 1.5 sec to Enter / Exit programming for reset.	

Note: * sign indicates that the display blinks.

Read Function

 → **Temporary display:** Lower display shows parameter name for 1sec and then its value

1. Reading of Set 1 parameters:

Press Key	Lower Display
	Applicable when Relay1 is in On delay / Interval / I + D modes.
▶ for 1.5 sec to Enter Set1 programming. (Auto program out after 1min)	Applicable when Relay1 is in Cyclic mode.
	Applicable when Relay1 in Motor reverse mode

2. Reading of Set 2 parameters:

Press Key	Lower Display
	Applicable when Relay2 is working as Timer2 in On delay / Interval mode.
♥ for 1.5 sec to Enter Set2 programming. (Auto program out after 1min)	Applicable when Relay2 is working as timer2 in Cyclic mode.
	Applicable when Relay2 is in Batch mode.

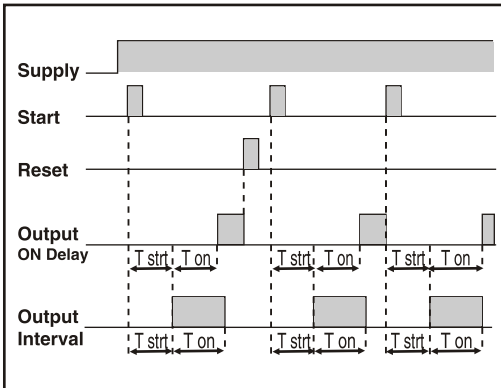
3. Reading Batch.

Press Key	Lower Display
momentarily to read batch value. Auto exit from Read function if key is not pressed within 3 sec.	4 digit Batch 1234 6 digit Batch 12 3456 Upper Display 12 Lower Display
	6 digit batch can be read with 2MSDs on the upper display.

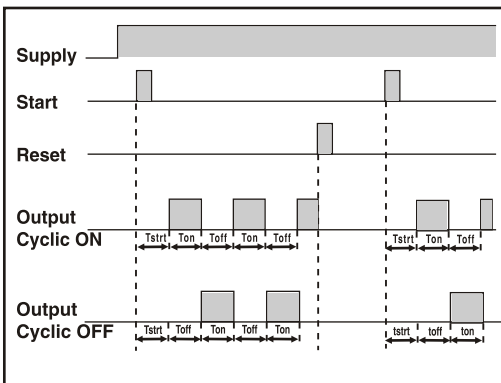
Note: When viewing 6 digit batch value, lower display LSD dp blinks and batch value is displayed for 3 sec. If lower display is selected as batch, and batch value exceeds 4 digits, the lower display LSD dp is on continuously indicating that the batch value has exceeded 4 digits.

MODE OF OPERATION

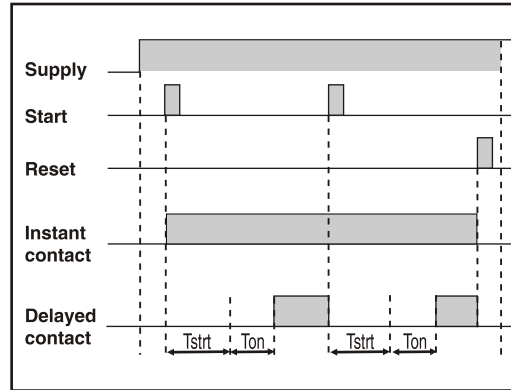
1. On delay, Interval modes:



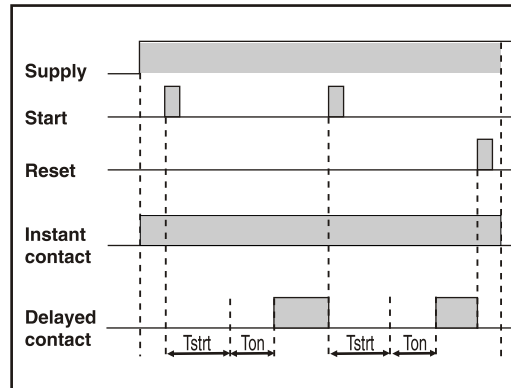
2. Cyclic ON first, Cyclic OFF first modes:



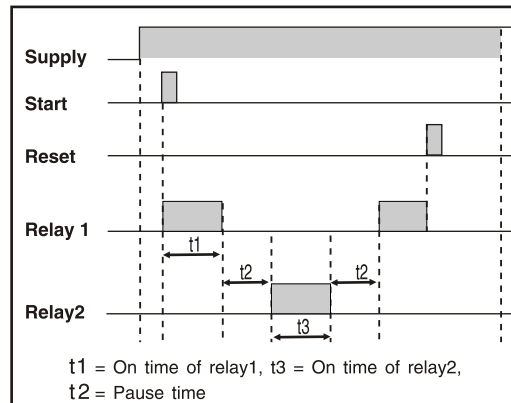
3. Instantaneous + Delayed at start pulse:



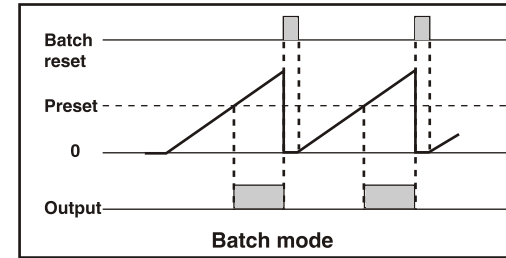
4. Instantaneous + Delayed at power on:



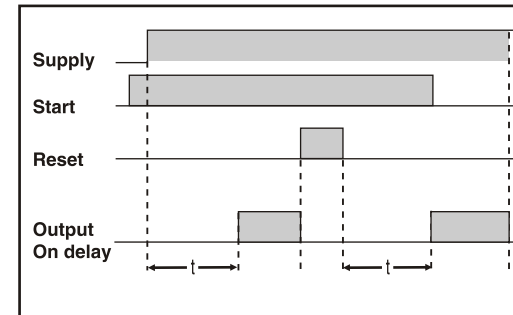
5. Motor reverse mode:



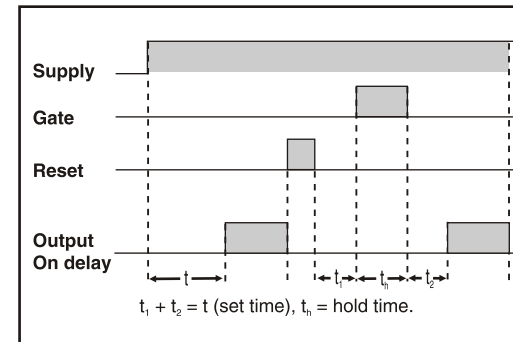
6. Batch mode



Typical application of Continuous start and reset in On delay mode:



Typical application of Gate start in On delay mode:



(Specifications subject to change as development is a continuous process).

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