



48 x 48

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

## /\ Warning:

(E 711)

- 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 275V AC/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 1mm<sup>2</sup> 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
- 6. Use clean moist cloth soaked in water for cleaning. Care must be taken to avoid entry of water into the circuitry through the ventilation holes.

## **SPECIFICATIONS**

## DISPLAY

Dual 4 digit 7 segment LED.

Upper Display(current value): 0.5" height, Red color Lower display(selectable): 0.3" height, Green color

## SUPPLY VOLTAGE (Factory Set)

90 to 270V AC/DC, 50/60Hz. 24V AC/DC

#### **OPERATING MODES**

: Relay 1 : On delay, Interval, Cyclic On

first, Cyclic Off first.

Relay 2: On delay, Interval, Cyclic On first, Cyclic Off first, Batch.

Counter: Relay 1: On delay, Interval, Auto reset,

Time pulse repeat.

Relay 2: On delay, Interval, Auto reset, Time pulse repeat, Batch.

#### TIME RANGES

Timer : 99.99 / 999.9 / 9999sec,

> 99:59min: sec. 999.9 / 9999min,

99:59hr: min 999.9 / 9999hr.

Counter: -999 to 9999 counts.

## RESOLUTION

0.001, 0.01, 0.1, 1.

#### DIRECTION

Timer - Down.

Counter - Up / Down.

#### LED INDICATIONS

Output status, sec, min, hr.

#### SET POINTS

Dual.

#### START INPUT

Pulse start

## **SENSOR INPUTS**

3 to 30V DC from Proximity switches, Encoders, Potential free contacts.

#### SENSOR SUPPLY

12V DC, 30mA (Short circuit protected).

#### INPUT SPEED

3 Hz, 30 Hz, 5 kHz.

#### SCALE FACTOR

0.001 to 9.999 x 10<sup>n</sup>

Where n = -3, -2, -1, 0, 1, 2.

#### RESET

On power interruption, Front panel reset, Terminal reset.

#### OUTPUT

2 NO

#### **RELAY RATING**

5A@230V AC

## MEMORY RETENTION

#### 10 years. ACCURACY

: ±0.05% of setting or

50msec whichever is greater.

#### MOUNTING

Panel Mounting

## TEMPERATURE

Operating: 0°C to 50°C Storage : -20°C to 75°C Humidity: 95% max.

## HOUSING

Flame retardant plastic.

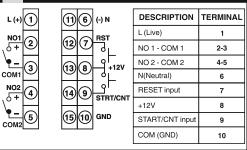
#### WEIGHT

175 grams (approx).

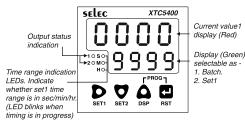
## MECHANICAL INSTALLATION

OUTLINE	PANEL CUTOUT
Dimensions (in mm)	Dimensions (in mm)
↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑	97 → 46 →

## TERMINAL CONNECTIONS



## FRONT PANEL DESCRIPTION



KEYS	FUNCTIONS
<b>A</b> + <b>C</b>	Enter / Exit configuration mode
Þ	Selects the digit to be altered. Selected digit blinks. With every press of key, next digit towards the right starts blinking.     Programming for Set1.
•	Decrements value of blinking digit.     Scrolls down to previous option for configuration parameter.     Programming for set 2.
۵	Increments value of blinking digit.     Scrolls up to next option for configuration parameter.     Programming lower display options     Display Batch value.
	Scrolls to next config. parameter and stores for previous parameter setting.     Front panel RST.

#### JUMPER SELECTION FOR INPUT SENSOR:

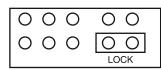
INPUT SENSOR	JUMPER SELECTION Jumpers are located on the top side of the unit. Top view of jumpers with housing removed and display towards the right.
PNP / Potential free contact	**
NPN	***

NOTE: Same jumper selections remain valid for giving start pulse when using XTC5400 in Timer function.

## JUMPER SELECTION TO DISABLE LOCK:

If the lock password is forgotten / lock feature is not required, connect jumpers as in fig. below to disable lock function. These Jumpers are located towards the right of the jumpers for sensor selection.

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



## INPUT CONNECTIONS **Proximity switch** Potential free Reset contact (11)(6) (-) N (12) (7) RST 13 8 STRT/ CNT 14)(9) 14(9) (15)(10) GND

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

#### SCALE FACTOR

Programmable scale factor facilitates display in desired engineering unit. The number of count pulses received are multiplied with the scale factor and the result is displayed as shown:

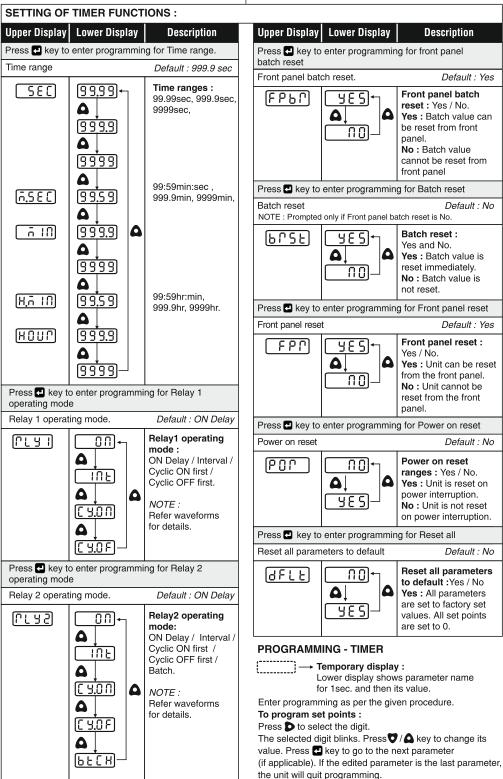
Display = Number of pulses received x scale factor Scale factor consists of two parts - mantissa & exponent. Mantissa can be set from 0.001 to 9.999 and exponent from -3 to +2. The scale factor value is arrived at as:

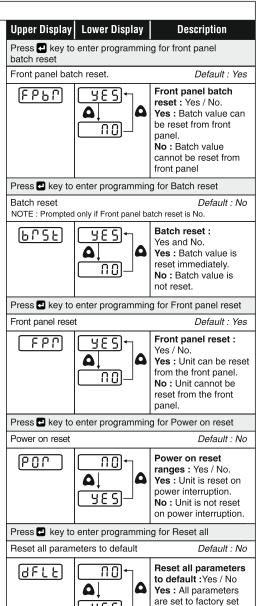
Scale factor = Mantissa x 10<sup>Exponent</sup>

## **CONFIGURATION SCHEME:**

**NOTE**: 1. Press to go to the next programming step and store the current programmed value in EEPROM. 2. If no key is pressed for 2min, the unit will auto-exit from configuration

nom comgurat	1011.	
Upper Display	Lower Display	Description
Press + - ke	eys to enter config	uration
Configuration L	ock	Default : 0000.
רסנה	* NOTE: The selected digit blinks. LOCK ID - 2727.	The configuration cannot be changed unless a valid lock ID is entered. Press D to select the digit and 7 / to change value of the selected digit
Press <b>△</b> + <b>4</b> ke	eys to enter configi	uration
Function		
FUNC	<b>₩</b>	Function - Timer / Counter Timer : Unit functions as a timer Counter : Unit functions as a counter





## To select lower display options :

Press 7 / A key to select particular option and then press kev to guit programming.

## To select reset option :

Press 7 / A key to select particular option and then press A key for 1.5 sec to guit programming.

## 1. Programming for Set point1:

11.1 Togramming for oot points :		
Press Key	Lower Display	
for 1.5 sec to Enter Set1	Applicable when Relay1 in On delay / Interval mode.	
programming. (Auto program out after 2min)	Set point 1 [5 E L ] [1 2 3 4] *	
Default :	Applicable when Relay1 in Cyclic mode.	
10sec.	Start Time ON Time OFF Time 1-5E 1-0 N Time 1-0F Time 1-	

## 2. Programming for Set point2:

Press Key	Lower Display
for 1.5 sec to Enter Set2	Applicable when Relay2 in On delay / Interval mode.
programming. (Auto program out after 2min)	Set point 2 <u>  5 E L 2  </u> <u>  1 2 3 4  </u> *
Default : 9sec.	Applicable when Set2 in Cyclic mode.
	Start Time ON Time OFF Time 2 - 0F Time 2
	Applicable when Set2 in Batch mode.
	Set point 2   <u>5 E L 2  </u>   <u>1 2 3 4</u>   *
3. Programming for Lower display options :	

#### 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 2min)	Batch Set point 1  * * * *  Exit programming Exit programming

## 4. Programming for Reset:

Press Key	Lower Display
for 1.5sec. to Enter / Exit programming for reset	Reset Batch 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 set1 parameters

Press Key	Lower Display
D	Applicable when Set1 in On delay / Interval mode.
momentarily each time to read set 1 value. Auto exit	Set point 1 5 E E 1 1 2 3 4
from Read function if	Applicable when Set1 in Cyclic mode.
key is not pressed within 3 sec.	Start time ON time OFF time    1-5E

#### 2. Reading of set2 parameters

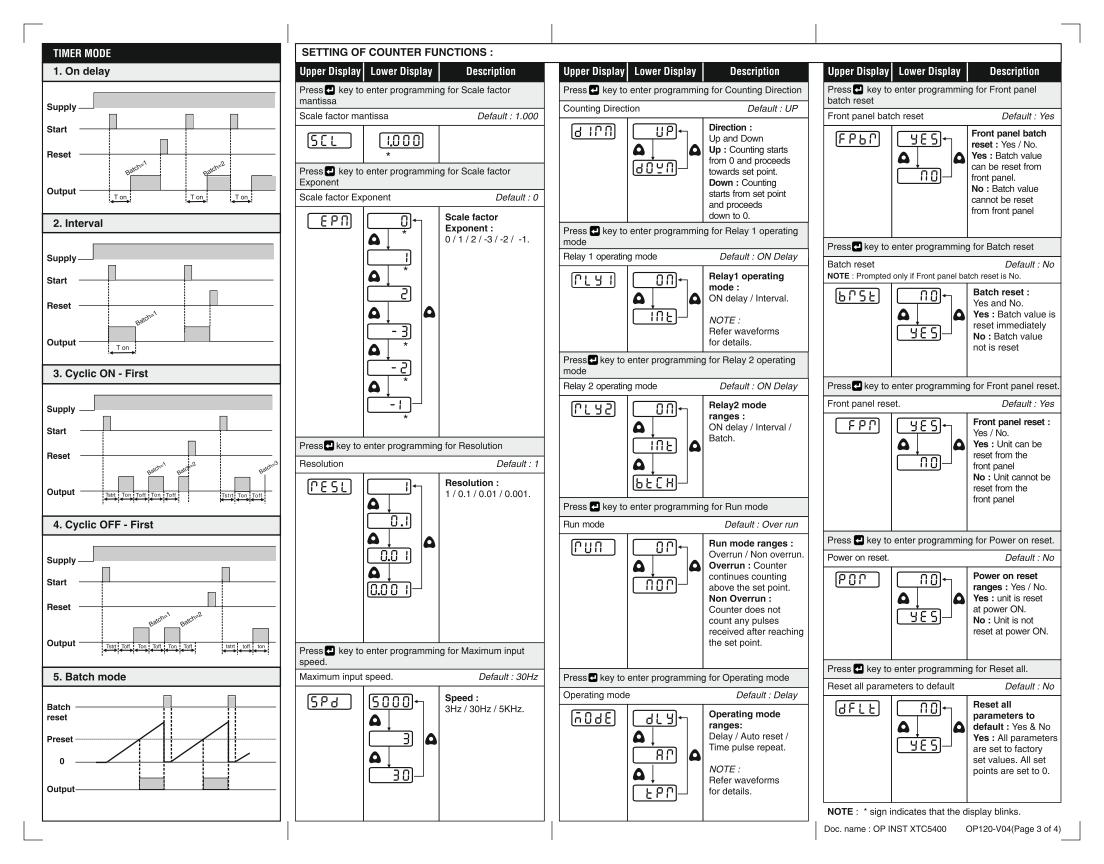
Press Key	Lower Display
momentarily	Applicable when Set2 in On delay / Interval mode.
each time to read set 2 value. Auto exit	Set point 2 (56 E 2) (12 3 Y)
from Read function	Applicable when Set2 in Cyclic mode.
if key is not pressed within 3 sec.	Start time ON time OFF time    2 - 5
	Applicable when Set2 in Batch mode.
	Set point 2   <u>5 E E C</u>     1 C 3 H

#### 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 12 3 4  12 Upper Display 3 4 5 b 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.



## **PROGRAMMING - COUNTER**

#### → 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. 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 A key to quit programming.

## To select reset option:

Press / A key to select particular option and then press A key for 1.5 sec to quit programming.

## 1. Programming for Set point 1:

Press Key	Lower Display
for 1.5 sec to Enter / Exit	Applicable when Set1 in On delay / Interval mode.
online programming	Set point 1
for Set1. (Auto program	1234
out after 2min)	Applicable when Set1 in On delay / Interval mode + Auto reset mode.
	Set point 1  Auto reset time  SEL 1  AUTO  AUTO
Default : 100 AR / TPR time = 10sec	Applicable when Set1 in On delay / Interval mode + Time Pulse Repeat.
ume = rosec	Set point 1 Time pulse repeat    SEE     EPT
	* * Exit Set point1 TPR time range : 0 to 999.9 sec. programming

## 2. Programming for Set point 2:

Note: Set2 should always be less than Set1, except when Set 2 is in Batch mode.

Brees Key Lewer Diemley	
Press Key	Lower Display
en fou d E coo	Applicable when Set2 in
	On delay / Interval mode.
for 1.5 sec to Enter / Exit	Set point 2
online	
programming	
for Set2.	[1534]
(Auto program	* Applicable when Set2
out after 2min)	in Batch mode.
,	Set point 2
Default : 90.	
	( <u>5882)</u>
	(:234)
	*

## 3. Programming for Lower display options.

Press Key	Lower Display
for 1.5sec to Enter programming for lower display. (Auto program out after 2min)	Batch Set point 1  * Exit programming programming

## 4. Programming for Reset.

Press Key	Lower Display
for 1.5sec to Enter / Exit online programming for reset	Reset Batch Reset

#### **Read Function**



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

## of cott novemeters

1. Reading of set1 parameters		
Press Key	Lower Display	
momentarily each time to read Set1 value.	Applicable when Set1 in On delay / Interval mode.	
	Set point 1	
	1234	
Auto exit from Read function if key is not pressed within 3 sec.	Applicable when Set1 in On delay / Interval mode + Autoreset mode.	
	Set point 1 Autoreset time  SE E 1 AUTORET TIME  1234	
	Applicable when Set1 in On delay / Interval mode + Time Pulse Repeat.	
	Set point 1 D Time pulse repeat	

## 2. Reading of set2 parameters

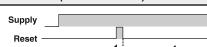
Press Key	Lower Display
momentarily each time to	Applicable when Set2 in On delay / Interval mode.
read Set 2 value. Auto exit from Read function if key is not pressed within 3 sec.	Set point 2 (5 E E C) (12 3 Y)

## 3. Reading Batch

Press Key	Lower Display
momentarily each time read Set 2 value. Auto exit from Read function if key is not pressed within 3 sec.	4 digit Batch 6 digit Batch 12 Display  12 Display  3 4 5 b Lower Display  6 digit batch can be read with 2MSDs on the upper display.

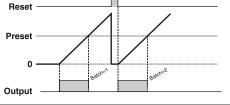
NOTE: When viewing 6 digit batch value, lower display LSD dp blinks and batch value is displayed for 3 sec. If lower display is selected as batch, and batch value exceeds 4 digits, the lower display LSD dp is on continuously indicating that the batch value has exceeded 4 digits.

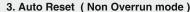
# **COUNTER MODE** 1. ON Delay (Overrun mode) Supply Reset Preset

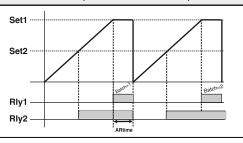


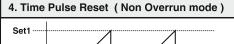
2. Interval (Overrun mode)

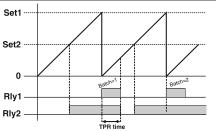
Output



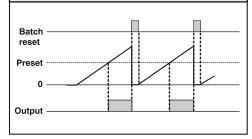








## 5. Batch mode



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

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