

# **TEST REPORT**

Test Report No.: 67627 - 3279 / 2012 - 2013

Programmable Street Light Control Switch 3 Phase



## NABL ACCREDITED LABORATORY



## **CENTRAL ELECTRICAL TESTING LABORATORY**

DEPARTMENT OF INDUSTRIES AND COMMERCE GOVERNMENT OF TAMILNADU

KAKKALUR-602 003, TIRUVALLUR DISTRICT, TAMILNADU

 ⊕ ( 044) 27660384 / 27660302 (Telefax) Website: www.cetl.co.in e-mail: cetlonline@yahoo.co.in



DEPARTMENT OF INDUSTRIES AND COMMERCE
GOVERNMENT OF TAMILNADU
KAKKALUR-602 003, TIRUVALLUR DISTRICT, TAMILNADU
(044) 27660384/27660302



Dated: 02.03.2013

Website : www.cetl.co.in e-mail : cetlonline@yahoo.co.in



Thiru. C. Selvam, Deputy Director (E & E).

To
M/s. Synergic Systems,
PLot No.: 6/6, Ist & IInd Floor, Katori Mill,
Near Telephone Exchange,
Rajendar nagar Industrial Area,
Mohan Nagar, Ghaziabad (U.P).- 201 007

Rc. No.: 321 / A2 / 2013, dated: 02.03.2013

Sir,

Sub.: Central Electrical Testing Laboratory, Kakkalur - Electrical

Accessories - Despatch of Test Report and Return of samples -

Regarding

Ref.: Your Letter No.: SS / TT / 003, dt : 16.02.2013.

\*\*\*\*

I am sending herewith the Test Report bearing the No.: 67627 - 3279 / 2012 2013 for your sample sent for testing on 25.02.2013.

The remnants shall be taken delivery either by you or by the firm as applicable on or before 31.05.2013, with an authorisation letter without fail. Otherwise, the remnants will be disposed off at our end as per Government rules and you will have no claim over this.

Deputy Director (E & E).

Encl.: One Test Report



DEPARTMENT OF INDUSTRIES AND COMMERCE
GOVERNMENT OF TAMILNADU
KAKKALUR-602 003, TIRUVALLUR DISTRICT, TAMILNADU
(044) 27660384 / 27660302

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### TEST REPORT

TEST REPORT No.	TOTAL No. OF PAGES	PAGE	
67627 - 3279 / 2012 - 2013	11	1 of 11	

#### **CUSTOMER DETAILS**

M/s. Synergic Systems,

PLot No.: 6/6, Ist & IInd Floor, Katori Mill,

Near Telephone Exchange, Rajendar nagar Industrial Area,

Mohan Nagar, Ghaziabad (U.P).-201 007

Ref. No. & Date : SS / TT/003

dt: 16.02.2013.

Code No. : ---Seal : ---

Date of Receipt : 25.02.2013

Period of testing : 25.02.2013 to 02.03.2013

REFERENCE : DGS&D's specification.

<u>TEST CHARACTERISTICS</u>: Customer's request Number of Samples required

as per sampling procedure : Does not arise

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<u>GENERAL REMARKS</u>: The Sample, in so far as it has been examined and tested, test results are noted against each.

ISSUING AUTHORITY
DEPUTY DIRECTOR

SAMPLE DETAILS

Switch 3 Phase

Condition when : Physically

received

Brand:

Rating

Quantity

Voltage Range

Rated voltage

Item: Programmable Street Light Control

satisfactory

: 160 to 260 V

: 230 V, AC, 50 Hz

: 30 kW, p.f. 0.6 lagging,

:SYNER

IP 54

: 1 No.

of Industries & Commerce (E & E)
CENTRAL ELECTRICAL TESTING LABORATORY,
tooting KAKKALUR - 602 003.

#### Note:

1. This test report relates only to the products tendered for testing.

- 2. This test report shall not be reproduced, except in full without the written approval of the issuing authority.
- 3. In case any clarification on the issued test report, it has to be raised within one month from the date of receipt of the test report.
- 4. In case any dispute, the decision of The Deputy Director (E&E), Central Electrical Testing Laboratory, Kakkalur 602 003 shall be final and binding.
- 5. The specified ambient condiitions were maintained during the test.
- 6. The tests decribed in Sl.No...... was/were sub-contracted according to the established procedure of this laboratory.

Test Report No. 67627 - 3279 / 2012 - 2013 Page 2 of 11 Test Report on Programmable Street Light Control Switch 3 Phase (Customer's request) Sl.No. Test and Requirements Clause Results Remarks 1(a) **Visual Examination** Passes The sample (Programmable Street Light Control Switch) shall be suitable to be Function satisfactorily operated on Three phase supply, with each phase 160V to 260V,  $50 \pm 3$ Hz and have programming feature to switch ON/OFF the load (street lights) 1(b) Construction Conforms Provided The sample shall be housed in a sheet metal duly powder coated enclosure. Real Time Clock Passes The sample shall have inbuilt real time clock (RTC) with battery backup. It shall display RTC provided with LCD the time on LCD / LED, the timing Display accuracy shall be ±1.0 Seconds over Function satisfactorily entire range of environmental operating conditions i.e. 0 to 55°C & 45°C at 95% RH. Passes **Programming Features** i) It shall be able to switch ON/OFF the rated load (street lights) at rated power Function satisfactorily factor at pre-defined time (104.2 A, AC per phase) (Current Calculated @ 160 V) ii) All the three phases shall have the Provided facility to default setting single (company programmed) and define (user programmable) to pre-program the switch, ON/OFF time for one year with minimum 12 programmes spread over a year independently.

Place:

Date:

DEPT. OF INDUSTRIES & COMMERCE GOVI. OF TABLEAD 02.03.2012

ISSUING AUTHORITY

of Industries & Commerce (E & F) CENTRAL ELECTRICAL TESTING LABORATORS, KAKKALUR - 602 003,

Test Report No. 67627 - 3279 / 2012 - 2013			Page 3 of 11		
Test R	eport on Programmable Street Light Cont	rol Swit	ch 3 Phase (Customer's rec	quest)	
Sl.No.	Test and Requirements	Clause	Results	Remarks	
	iii) It shall have the provision of intermediate switching so that any phase can be switched OFF and ON before final OFF either default or define program.		Provided		
	iv) The accuracy of the set time of switching ON/OFF the load shall be $\pm60$ Seconds		Complied		
	v) It shall have the provisions to switch ON/ OFF the rated load (streetlights) manually, by by-passing the program circuit.		Provided		
	vi) It shall work even one or two phase fails.		Function satisfactorily		
4.	The sample shall have the provision to switch ON the load (street lights) when ambient light level falls to 40±10Lux and switch OFF when ambient level goes to 80±10Lux.		Light ON: 39 Lux Light OFF: 79 Lux	Passes	
5.	Auto Recovery The sample shall have an auto recovery relay (ARR) that can facilitate automatic switching ON/OFF of load on recovery of mains supply after power failure.	3	Provided	Conforms	
6.	Electrical Protection Following electrical protections shall be provided for load	•		Passes	
a)	i. Over voltage: Ø 1 Input voltage crosses 260 ± 5V		264 V		
	ii. Auto restart for over voltage Ø 1		258 V		
	iii. Over voltage: Ø 2 Input voltage crosses 260 ± 5V		263 V		
	iv. Auto restart for over voltage Ø 2		257 V		
	v. Over voltage: Ø 3 Input voltage crosses 260 ± 5V		263 V		
	vi. Auto restart for over voltage Ø 3		258 V	11.0	

Place:

Date:



Test Report No. 67627 - 3279 / 2012 - 2013			Page 4 of 11		
Test R	Report on Programmable Street Light Conf	trol Swi	tch 3 Phase (Customer's requ	uest)	
Sl.No.	Test and Requirements	Clause	Results	Remarks	
b)	i. Under voltage: Ø 1 Input voltage crosses 160 ± 5V		159 V		
	ii. Auto restart for under voltage Ø 1		163 V		
	iii. Under voltage: Ø 2 Input voltage crosses 160 ± 5V		158 V		
	iv. Auto restart for under voltage Ø 2		164 V		
	v. Under voltage: Ø 3 Input voltage crosses 160 ± 5V		157 V		
	vi. Auto restart for under voltage Ø 3		163 V		
c)	i. Over Load protection 10 KW: Ø1		107 Amps		
	ii. Over Load protection 10 KW: Ø2		106 Amps		
	iii. Over Load protection 10 KW: Ø3		106 Amps		
d	) Spikes and surges protection at input for the sample.		Provided		
	) The insulation resistance between live parts and earth terminal at 500V (DC) shall be 50Meg Ohms (minimum).		Above 100 Megohms		
f	f) HV 1.5 kV (AC) for one minute between live parts (current carrying parts) and earth terminal. Without breakdown of insulation		Withstood		
g	) Earthing leakage resistance shall not be more than 0.1 Ohms		Less than 0.1 ohms		
7. 7.a.	Environmental Test Burn-in test			Passes	
	Temp.: 55°C ±2°C Duration: 48 Hours With power ON at rated Load (104.2 A,				
	AC) (Current Calculated @ 160 V) During the burn in test, the sample shall be functional with duty cycle of 5 minutes ON,		During the test the sample fi	unction with load	

Place:

Date:

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ISSUING AUTHORITY

DEPUTY DIRECTOR

of Industries & Commerce (F & CENTRAL ELECTRICAL TESTING LABORATOR)

KAKKALUR - 602 003.

Test F	Report No. 67627 - 3279 / 2012 - 2013		Page 5	of 11		
Test Report on Programmable Street Light Control Switch 3 Phase (Customer's request)						
Sl.No.	Test and Requirements	Clause	Results	Remarks		
	5 minutes OFF, The switching accuracy shall be within $\pm$ 60S from the pre-programmed time					
	After recovery of 1Hr. The following tests shall be conducted.					
7.a.1	Visual Examination There shall be no charred / smoked / cracks or deformation.	eg 6	No visual defects observed			
7.a.2	Real Time Clock As specified at test Sl. No. 2		Function satisfactorily			
7.a.3	Programming Feature As specified at test Sl. No. 3 (i to vi)		Function satisfactorily			
7.a.4	<u>Light Level Test</u> As specified at test Sl. No. 4		Light ON:38 Lux Light OFF:81 Lux			
7.a.5	Auto Recovery As specified at test Sl. No. 5		Provided			
7.a.6	Electrical Protection As specified at test Sl. No.6 (a to g)		a) i. 263 V ii. 257 V iii. 262 V			
			iv. 256 V v. 264 V vi. 258 V			
			b) i. 158 V ii. 163 V			
			iii. 157 V iv. 162 V v. 158 V vi. 162 V			

Place:

Date:



ISSUING AUTHORITY

Test Repo	ort No. 67627 - 3279 / 2012 - 201	Page 6 of 11		
Test Repo	rt on Programmable Street Light	Control Switch	3 Phase (Customer's	request)
Sl.No.	Test and Requirements	Clause	Results	Remarks

c) i. 106 Amps.

ii. 107 Amps.

iii.106 Amps.

- d) Provided
- e) Above 100 Megohms
- f) Withstood
- g) Less than 0.1 Ohms.

7.b Dry Heat Test

IS:9000

(P3/sec5) -1977

Passes

Temp.:55°  $C \pm 2$ °C, Duration: 16 Hrs.

During the Dry Heat Test, the sample shall be functional with a duty cycle of 5 minutes ON,5 minutes OFF. The switching accuracy shall be within  $\pm 60$ S from the pre-programmed time. After recovery of 1 Hr. The following tests shall be conducted:

During the test the sample function satisfactorily

7.b.1 Visual Examination

There shall be no charred / smoked / cracks or deformation.

No visual defects observed

7.b.2 Real Time Clock

As specified at test Sl. No. 2

Function satisfactorily

7.b.3 Programming Feature

As specified at test Sl.No. 3 (i to vi)

Function satisfactorily

7.b.4 Light Level Test

As specified at test Sl. No. 4

Light ON: 39 Lux Light OFF: 82 Lux

7.b.5 Auto Recovery

As specified at test Sl.No. 5

Provided

Place:

As specified at test Sili to.

Provided

Date :

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Date. O.A.: 0.2: A.0.13

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Test	Report No. 67627 - 3279 / 2012 - 2013		Page 7 of 11		
Test 1	Report on Programmable Street Light Con	trol Swi	tch 3 Phase (Custo	omer's request	)
Sl.No	Test and Requirements	Clause	Results		Remarks
	Electrical Protection As specified at test Sl. No.6 (a to g)	c c c e f	ii. 264 V iii. 259 V iii. 263 V iv. 257 V v. 263 V vi. 258 V ) i. 159 V iii. 164 V iii. 158 V iv. 163 V v. 163 V v. 163 V vi. 164 V iii. 107 Amps. iii. 107 Amps. iii. 107 Amps. iii. 107 Amps. iii. 108 Amps. iii. 108 Amps. iii. 109 Amps. iii. 107 Amps. iii. 108 Amps. iii. 108 Amps. iii. 109 Amps.		
7.c	Damp Heat (Cyclic) Test  Temp.: 45°c±2°C Humidity (RH):95%±3% duration: Two cycles (24Hrs. each)  During the Damp Heat Test, the sample shall be functional with a duty cycle of 5 minutes ON, 5 minutes OFF. The switching accuracy shall be within ±60S from the pre-programmed time.  After recovery of 1 Hr. The following tests shall be conducted				Passes le function

Date:

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DEPUTY DIRECTOR of Industries & Commerce (E & E) CENTRAL ELECTRICAL TESTING LABORATORY, KAKKALUR - 602 003.

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Test Report No. 67627 - 3279 / 2012 - 2013		Page 8 of 11		
ntrol Swi	tch 3 Phase (Customer's reques	st)		
Clause	Results	Remarks		
	No visual defects observed			
	Function satisfactorily			
	Function satisfactorily			
	Provided			
a	) i. 264 V ii. 257 V iii. 263 V			
	iv. 258 V v. 262 V			
	ii. 162 V			
	iii.159 V iv. 163 V v. 157 V			
	i. 107 Amps.			
	•			
d	) Provided			
	Clause  c)  i  d  e;	Function satisfactorily  Function satisfactorily  Light ON: 41 Lux Light OFF: 83 Lux Provided  a) i. 264 V ii. 257 V iii. 263 V iv. 258 V v. 262 V vi. 256 V b) i. 158 V ii. 162 V iii. 159 V iv. 163 V		

Place:

Date:



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DEPUTY DIRECTOR

OF Industries & Commerce (E & F)
CENTRAL ELECTRICAL PESTING LABORATURAL
KAKKALUR - 602 003.

Test Report No. 67627 - 3279 / 2012 - 2013			Page 9 of 11		
Test Repo	ort on Programmable Street Light Con	ntrol Swi	tch 3 Phase (Customer's rec	quest)	
Sl.No.	Test and Requirements	Clause	Results	Remarks	
Dur be s min accu pre- Afte shal	d Test  ap.: $0^{\circ}$ C ± $1^{\circ}$ C, Duration: 4 Hours in the Cold Test, the sample shall functional with a duty cycle of 5 utes ON, 5 minutes OFF. The switching tracy shall be within ±60S from the programmed time.  For recovery of 1 Hr. The following tests 1 be conducted:  For recovery of 1 Hr. The following tests 1 be conducted:		-1977  During the test the satisfactorily	Passes	
7.d.2 <u><b>Re</b></u>	re shall be no charred / smoked / sks or deformation.  al Time Clock specified at test Sl. No. 2		No visual defects observed  Function satisfactorily		
Ass	ogramming Feature specified at test Sl. No. 3 (i to vi)	1	Function satisfactorily		
As: 7.d.5 <u>Au</u>	ht Level Test specified at test Sl. No. 4 to Recovery specified at test Sl. No. 5	1	Light ON: 40 Lux Light OFF: 79 Lux Provided		
	ectrical Protection specified at test Sl. No.6 (a to g)		a) i. 263 V ii. 258 V iii. 264 V iv. 259 V v. 262 V vi. 257 V b) i. 158 V ii. 164 V iii. 157 V		

Place:

Date:



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Test Report on Programmable Street Light Control Switch 3 Phase (Customer's request)

Sl.No.

Test and Requirements

Clause

Results

Remarks

iv.163 V v. 158 V

vi.163 V

c) i. 107 Amps.

ii. 106 Amps. iii. 106 Amps.

- d) Provided
- e) Above 100 Megohms
- f) Withstood
- g) Less than 0.1 Ohms.

#### 8 Enclosure

#### 8.1 Protection against Dust Test (IP-54)

The dust test shall be conducted as specified in clause 7.5 of IS:12063 for 2 Hours.

Ingress of dust is not totally prevented. But it shall not enter in sufficient quantity to interfere with the satisfactory operation of the sample.

### 8.2 <u>Protection against splashing of</u> water Test (IP-54)

The splashing of water test shall be conducted as specified in clause 8.4 of IS:12063 for 10 min.

The sample shall have such a protection that splashing of water from any direction for 10 minutes shall have no harmful effect on its functioning.

Passes

No ingress of dust inside the sample. After the test, sample function satisfactorily.

No ingress of water inside the sample. After the test, sample function satisfactorily.

Place:

Date :



Test Repo	Page 11 of 11			
Test Repo	rt on Programmable Street Light	Control Switch	3 Phase (Customer's	request)
Sl.No.	Test and Requirements	Clause	Results	Remarks

### 8.3 Pad lock arrangement

Enclosure shall have arrangement to lock using pad lock.

Provided

### 8.4 Mounting arrangement

Enclosure shall have mounting arrangement so that it can be mounted on any type of poles.

Provided

Place:

Date:

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DEPUTY DIRECTOR
of Industries & Commerce (E & E)

CENTRAL ELECTRICAL TESTING LABORATORY,
KAKKALUR - 602 003.

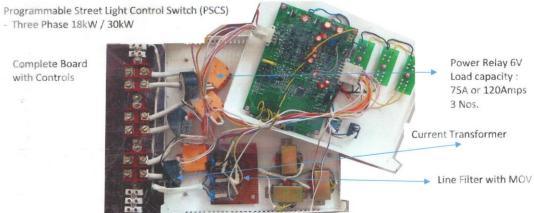
6/6, I<sup>st</sup> &2<sup>nd</sup> Floor, Katori Mill, Rajender Nagar Ind. Area, Mohan Nagar, Ghaziabad - 201007

Tel.: 0120 4553120 Web.: www.syner.in





with Controls







Control Circuit Board - Front End

Control Circuit Board - Component End





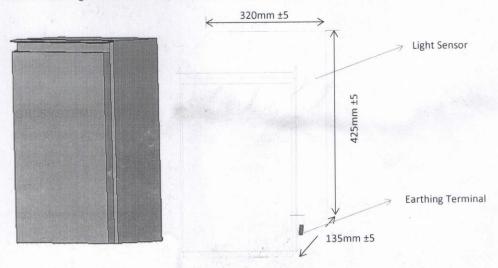
Power Relay SE-PR-75 : 6V / 75Amp. for 18kW Power Relay SE-PR-120 : 6V / 120Amp. for 30kW



6/6, I<sup>st</sup> &2<sup>nd</sup> Floor, Katori Mill, Rajender Nagar Ind. Area, Mohan Nagar, Ghaziabad – 201007 Tel.: 0120 4553120 Web.: www.syner.in E-mail: syner07@gmail.com

Test Report No. 10 - 67605-3257/2012-13 4 67627-3279 (2012-13

Programmable Street Light Control Switch (PSCS)- Outer Box dimensions



Dimensions: 320mm x 425mm x 135mm general tolerance ± 10mm, Sheet thickness 1.2 mm

### Programmable Street Light Control Switch for 3 Phase Control

Rating

18kW - (6kW on each Phase) Model No.: PSCS 3Ø 18

2. 30kW – (10kW on each Phase) Model No.: PSCS 3Ø 30

Subjected drawing can be amended as per consignee specification, if required.

For Synergic Systems,

Proprietor

CETL
OF HOUSINGS

DESCRIPTION

6/6, Ist &2<sup>nd</sup> Floor, Katori Mill, Rajender Nagar Ind. Area, Mohan Nagar, Ghaziabad - 201007

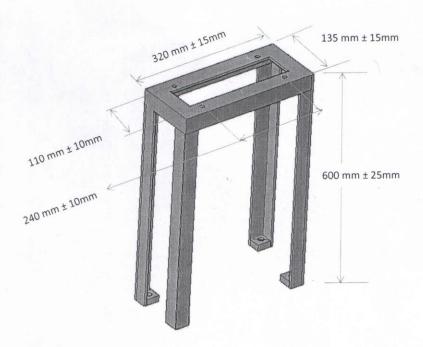
Tel.: 0120 4553120 Web.: www.syner.in

Test Report No.

Test ogni-No. 67605 - 3257/2012-13 467627-3279/2012-13

Programmable Street Light Control Switch (PSCS), Mounting Arrangement (Rectangular - Shape) - Three Phase 18kW / 30kW

#### **Product Drawing**



Material: MS Angle, Thickness = 5mm, Angle : 40 x 40 x 5mm, Hole Ø 10mm - 6 Nos.

Subjected Drawing can be amended to user requirement, if required.

For Synergic Systems,

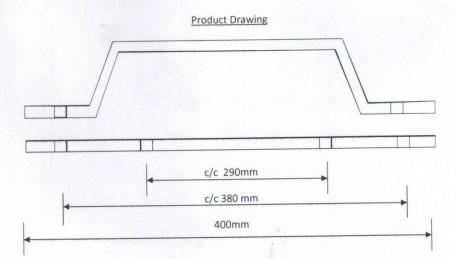
Proprietor

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6/6, Ist &2<sup>nd</sup> Floor, Katori Mill, Rajender Nagar Ind. Area, Mohan Nagar, Ghaziabad – 201007 Tel.: 0120 4553120 Web.: www.syner.in E-mail: syner07@gmail.com

Test Report No. 67605 -3259 / 2012-13 467627 - 3279/2012-13

Programmable Street Light Control Switch (PSCS)- Mounting Arrangement Clamp-Rectangular



Material: MS Flat, Thickness = 2.5mm, Width = 20mm, Hole Ø 10mm - 6 Nos.

Subjected drawing can be amended as per consignee specification, if required.

For Synergic Systems,

Proprietor

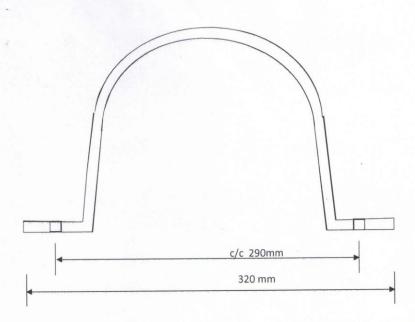


6/6, Jat &2<sup>nd</sup> Floor, Katori Mill, Rajender Nagar Ind. Area, Mohan Nagar, Ghaziabad – 201007 Tel.: 0120 4553120 Web.: www.syner.in E-mail: syner07@gmail.com

Test Report No. 67605-3257 /2012-13 & 67627-3279 /2012-13

Programmable Street Light Control Switch (PSCS)- Mounting Arrangement Clamp- circular

#### **Product Drawing**



Material: MS Flat, Thickness = 2.5mm, Width = 20mm, Hole Ø 10mm - 2 Nos.

Subjected drawing can be amended as per consignee specification, if required.

For Synergic Systems,

Proprietor



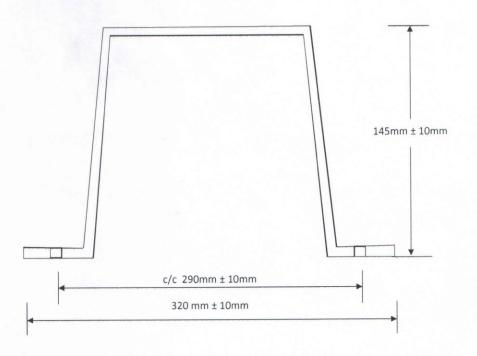
SYNERGIC SYSTEMS, 6/6, I<sup>st</sup> &2<sup>nd</sup> Floor, Katori Mill, Rajender Nagar Ind. Area, Mohan Nagar, Ghaziabad – 201007

Tel.: 0120 4553120 Web.: www.syner.in E-mail: syner07@gmail.com

Test Report No. 67605 - 3259/2012-13 & 67627-3279/2012-13

Programmable Street Light Control Switch (PSCS)- Mounting Arrangement Clamp- I - Shape

#### **Product Drawing**



Material: MS Flat, Thickness = 2.5mm, Width = 20mm, Hole Ø 10mm - 2 Nos.

Subjected drawing can be amended as per consignee specification, if required.

For Synergic Systems,

Proprietor