

Intelligent street light feeder Pillar SLC – 03 – 11 to 40 KVA (3 Phase Advance)



Insu Intelligent street light controller specially designed for energy Saving in conventional street light systems. Unit is consist of Intelligent streetlight controller model SLC – 03 with power output device with output driving capacity of 16 Amps to max 60 Amps / phase. Which can also support all High Mast application. By using this systems you can save up to average 33% energy by staggering the unwanted lights by midnight (Considering 50 % staggering time). Day light power saving scheme can also save some more energy. Apart from energy saving this can also save manpower, operating cost and can reduce manual-operating errors. This controller is programmed on longitude & latitude base for the whole year for sunrise and sunset timings. Because sunrise and sunset time changes on day to day basis and in one

month there is a time change of about 30 minutes. For entire year, sunrise and sunset time changes by about 190 minutes. With these much change of time a conventional timer will not serve the purpose. It can save energy up to 8 % against manual operation, Photo sensors or conventional timers. Controller incorporates a real time clock with in built battery backup for minimum 8 years. There is no need to reprogram the controller even if supply fails for long duration.

General Specification

- + Advance Microcontroller and real-time clock base systems.
- + Controller generate Streetlight ON and OFF for 365 days on real-time based clock with reference to **longitude and latitude** of the geographic location.
- + Civil twilight time adjustment for each month to cater all seasonal need.
- + Scrolling display of events which helps to monitoring the systems.
- + Very easy key board operation.
- + Auto / Manual facility by way of relay operation for faster service mode.
- + User settable On Delay up to 99 minutes between R Y & Y B
- + Manual stagger off facility for special requirement.

Systems Reliability

- + Real time clock with inbuilt battery with life of more then 8 years (Manufacturer provided 10 years life for the real time clock battery with the accuracy of +/- 60 second per month
- + High accurate operation of streetlight as per preset time table of entire range with in +/- 1 second of preset time.
- + Data protection of user parameter by specially RAM which hold the parameters for more then 10 years with out any power
- + Inbuilt auto recovery systems for power failure which helps in streetlight operation.

- ✚ Power wiring of feeder pillar with ISI mark fire retardant cable.

Power saving systems

- ✚ Astronomical timer 365 days time zone with month wise civil twilight setting for seasonal variation compensation. Energy saving in range of 4 to 8 %
- ✚ Settable Individual lines Staggering facility to switch OFF and switch ON lights by late night can save energy when there is no traffics. (Can switch off one phase at 10 P.M. and another phase at 1A.M.) Staggering systems change alternate days for providing equal lamp life. (Option) Staggering Facility for energy saving during late night time or low traffic hour in range of 25 to 35 % depends on stager Timing
- ✚ Eight Date range programming facility to disable staggering mode for festival and special occasion.



Protection

- ✚ Master and user Password Protection. (As the systems installed at remote location and in open conditions any body can fingered which create problem for street lighting operation)
- ✚ Power redundancy for controller even 1 phase 170 Vac controller can work.
- ✚ Controller with inbuilt spikes and surge protections.
- ✚ Incorporated with over current and short circuit protection by using MCB.
- ✚ Considering double inrush current of streetlight lamp load for internal wiring and contacts. Panel wiring with copper fire retardant cable 6 mm sq to 12 mm sq.
- ✚ Outdoor model IP 54 with Classic RAL 7035 exterior PP exterior finished, Powder coated with 7 tank process with 16/18 Gauge cabinet.

Input output Termination

- ✚ Input and out put Termination 35 MM Sq

Panel Capacity

- ✚ Starts Form 11 KVA to 40 KVA with 16/25/32/63 Amps

Electrical Parts

- ✚ All electrical parts used in panel are ISI mark only like Cable, Contactor, MCB, Isolator, Terminals. Power wiring of feeder pillar with ISI mark fire retardant cable. Systems with inbuilt spikes and surge protections

Certifications

- ✚ Since 2008 we are an ISO 9001/2008 Company. We have taken ISO specially for energy saving and automation in streetlight.

Disclaimer: Due to continuous efforts in developing products, improvement – Instruments Universal reserves the right to make changes in the design and data without any prior notice. Products shown are indicative only

ISO 9001: 2008 certified

Web : www.insuenergyconservation.com, www.insuindia.com, www.insuindia.co.in

Energy conserved is Energy produced



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Technical Specification

Supply	: 3 Phase 230 V AC + 20 % to – 25 %, R Y B N 4 Wire supply Systems. 50 Hz +/- 10 %
Power Consumption	: 3W (Stand by) 5W (on full load)
Controller	: 8 Bit micro controller
Programming function	: Switching on Longitude Latitude base
Real Time Clock	: Inbuilt battery, with battery life of more then 8 years
Parameter data protection	: With special device which hold the data for more then 10 years without any power and Password protected.
Display	: 16 character and two lines LCD display with backlight.
Key board	: 4 Keys user friendly keyboard, for easy operation.
Power Redundancy	: SLC operates on any one phase and up to 170 V Ac
Staggering	: Two phase alternate staggered with respect to odd Even date
Feeder Pillar Capacity	: 11 to 40 KVA
Power Output	: Max 16/25/32/60 Amp/phase.
Contactor	: 40 / 63 Amps 4 Pole contactor x 3 Nos.
Protection MCB	: 16/25/32/63 phase x 3 .
Input Isolator	: 63/100/125 Amp Standard ISI Make for isolator Provision
Power wiring	: With fire retardant cable of 6 to 12 Sq mm Copper.
By pass	: Provision for bypass and for faster service by way Auto / manual switch through o/p relay
Operating Temperature	: 2 to 55' centigrade and humidity 90 % non-condensing
Installation	: Out door type can be installed on pole with clamps. (Provided with clamps & nut bolt) or wall or Floor
Enclosure Lock	: Three locking systems flush type internal panel lock, External pad Lock and internal U clamp locking systems for against theft of Panel.
Weight	: 17 to 35 Kg Approximate.
Dimension	: 580 h X 500 w X 220 d mm (180 + 40 projectible Canope) Approx.
Material of construction	: 16/18 gauge M S with industrial exterior powder coated PP. with seven tank process RAL 7035.

ISO 9001: 2008 certified

Web : www.insuenergyconservation.com, www.insuindia.com, www.insuindia.co.in

Energy conserved is Energy produced

Payback Time period for SLC – 03 – 17 KVA

For calculating the payback time period of the system described, we can go through the following calculations. Say considering 10 KW load Total Investment of Unit cost will be Rs.35,000/-

Total unit consumption

@ 12 hours/day will be $10 \times 12 = 120$ Units a day

@ 365 Days will be 365×120 units = 43800 Units/annum

@ Rs. 4 per Unit rate total billing will be $4 \times 43800 =$ Rs. 175200/- annum.

Staggering One phase.

If we switch OFF only one phase @ 12 AM say for 6 hours a day then total working hours of three phase are 36 hours out of we can save 6 hours will be around 16 % + minimum longitude can save 4 % Total 20 % saving can be achieve entire operation.

@ 20 % of 175200 will be Rs.35040/-

@ Max the unit cost will be recovered in 12 months.

Staggering two phase.

If we switch OFF only one phase @ 12 AM and another phase @ 2AM say for 4 hours a day then total working hours of three phase are 36 hours out of we can save 10 hours will be around 27 % + minimum longitude can save 4 % Total 31 % saving can be achieve entire operation.

@ 31 % of 175200 will be Rs.54312/-

@ Max the unit cost will be recovered in 8 months.

Staggering alternate phase.

If we operate on only two phase and used alternate systems then switch OFF only one phase @ 12 AM for 6 hours a day then total working hours of two phase are 24 hours out of we can save 6 hours will be around 25 % + minimum longitude can save 4 % Total 29 % saving can be achieve of entire operation.

@ 29 % of 175200 will be Rs.50808/-

@ Max the unit cost will be recovered in 9 months.

Advantages

- 1) No frequent time to be change according to season.
- 2) Redundant Power supply to controller. Any phase up to 150 Volt controller will work and contactor will be operated up to 170 VAC
- 3) Real-Time Clock with very high life of more then 5 years. No Battery.
- 4) Individual phase output with MCB for protection.
- 5) Input out put terminal of 35 MM sq.