GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

Letter no. 2006/Elect (G)/150/9/Pt. I

New Delhi, Date: 09.09.16

Chief Electrical Engineers,
All Indian Railways

Sub: use of astrological timer switch for energy saving.

Street light, yard light, circulating area light and signage light consumes a significant amount of electrical energy. It is seen that many a times these lights are switched on prior to sun set and switched off late in the morning. This results in avoidable energy consumption. Few railways are gradually providing timers to switch off these lights preventing these lights to remain on during day time. **Conventional timers have a limitation in this regard.** For example a timer set to ON from 6:30pm to 6:30am, during winter, will switch on the lighting system at 6:30 pm and switch off them at 6:30 AM even on a summer day. It is a fact that during summer from 5:30 AM to 7:30 PM, visibility is quite good even without artificial lighting. Hence there is scope for energy saving if the timer can be re-set at least two times annually to suit the summer/winter sun set/rise times, but many times that is practically not possible in the field.

2. The astronomical time switch are advanced micro-controller based technology specifically designed for outdoor lighting applications and offer the advantage of **self resetting and accurate ON and OFF time as per sun rise and sun set times.** This can be identified on the basis of latitude and longitude of location. This data is fed into the micro processor chip and calculation of sunrise and sunset is done by programming date, time and local coordinates. It can address single phase and three phase distribution of lighting loads.

3. In view of above, Zonal Railways are advised to use of astronomical time switches for switching on and off of **street light, yard light, circulating area and signage lighting, high mast lightings** in a progressive manner. The typical circuit diagram for light control panel with astrological timer is enclosed for reference.

This issues with the approval of **Board (MTR).**

Encl: as above

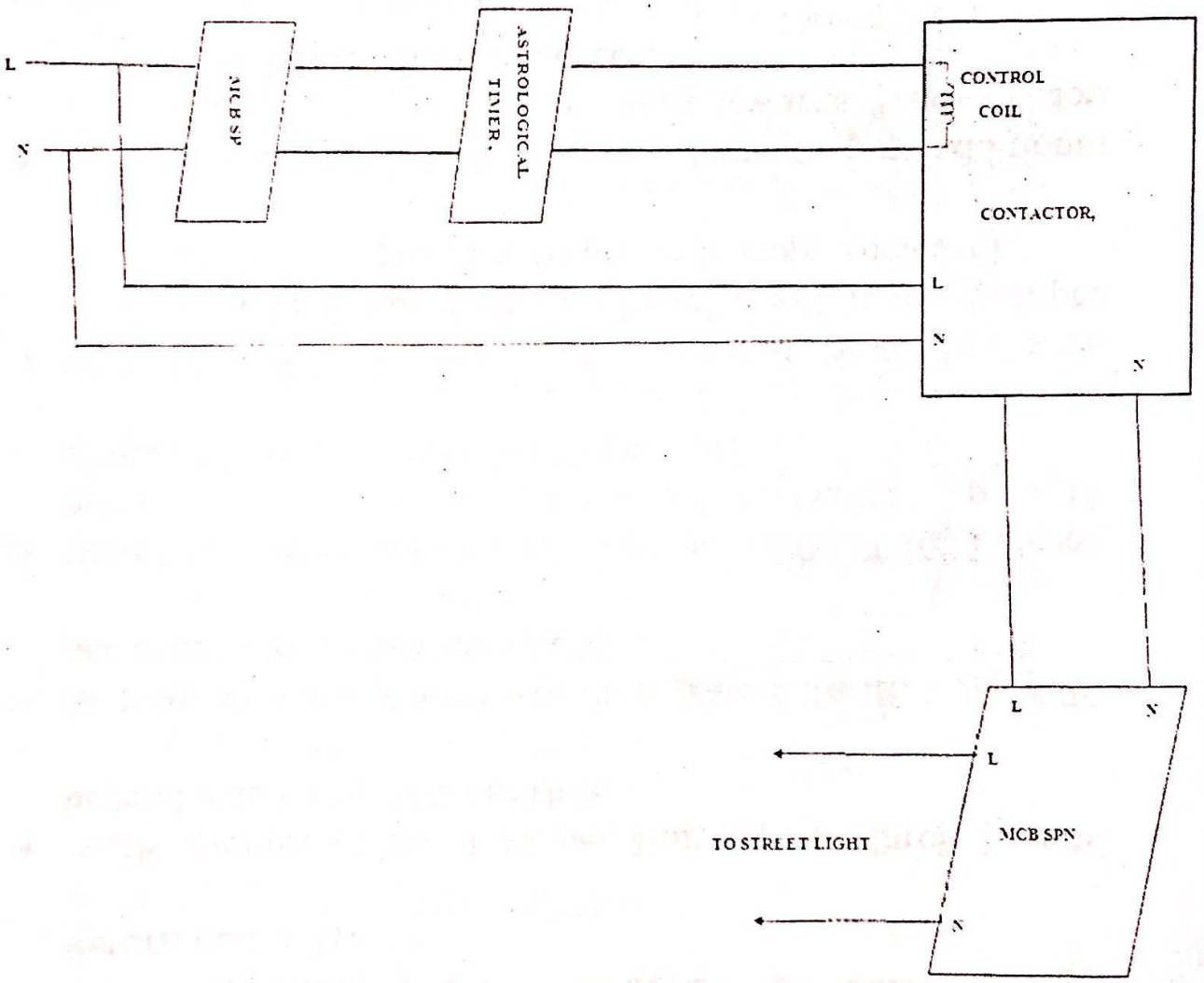
9.9.16

(Sudhir Garg)
Executive Director (EEM)
Railway Board

Copy to:- ED/EEM/RDSO/LKO

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Enclosure for letter no. .....dated.....



Wiring diagram of street light control panel with astrological timer

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