

Title (en)
LED signal lamp with constant current operation

Title (de)
LED-Signallampe mit Konstantstrombetrieb

Title (fr)
Lampe de signalisation DEL avec fonctionnement constant du courant

Publication
EP 2445318 A1 20120425 (EN)

Appication
EP 10187788 A 20101015

Priority
EP 10187788 A 20101015

Abstract (en)
An electrical circuit (1) for an LED signal lamp, comprising means for switching between a low level brightness, in particular a night time operation level brightness, and a high level brightness, in particular a daylight operation level brightness, of the LED signal lamp in dependence of an AC voltage at a voltage input (2) of the electrical circuit (1), is characterized in that the electrical circuit (1) comprises - a full wave rectifier (3) for rectifying the AC voltage supplied at the voltage input (2) of the electrical circuit (1), thus providing a rectified AC voltage at two poles (4a, 4b), and - at least one LED block circuit (5) connected to the poles (4a, 4b), and that the LED block circuit (5) comprises - an LED arrangement (6) comprising at least one light emitting diode, - a comparator circuit (9) switching a signal voltage at a signal output (SO) of the comparator circuit (9) if the rectified AC voltage crosses a critical level (V_{crit}), - a switchable constant current source (7), with its switching input (SI1) connected to the signal output (SO) of the comparator circuit (9), wherein the switchable constant current source (7) is connected in series with the LED arrangement (6), - and a switchable resistance (13), with its switching input (SI2) connected to the signal output (SO) of the comparator circuit (9), wherein the comparator circuit (9), the switchable resistance (13) and the switchable constant current source (7) together with the LED arrangement (6) are connected in parallel at the poles (4a, 4b). The invention provides an electrical circuit for an LED signal lamp, suitable for control with a conventional railway control center, which is less susceptible to tolerances and temperature fluctuations and allows a better control over the LED brightness.

IPC 8 full level
H05B 37/00 (2006.01); **H05B 44/00** (2022.01)

CPC (source: EP US)
H05B 45/10 (2020.01 - EP US); **H05B 47/105** (2020.01 - EP US); **H05B 45/3577** (2020.01 - EP US); **H05B 47/17** (2020.01 - EP US)

Citation (applicant)
EP 1787886 B1 20080102 - ALCATEL TRANSP SOLUTION D GMBH [DE]

Citation (search report)
• [A] EP 1787886 A1 20070523 - ALCATEL TRANSP SOLUTION D GMBH [DE]
• [A] CN 101316467 A 20081203 - SHANGHAI RAILWAYS RES INST OF [CN]
• [A] US 2005231133 A1 20051020 - LYS IHOR A [US]
• [A] US 2005029961 A1 20050210 - POPFLOW NORBERT [DE], et al

Cited by
DE102013108689B3; CN107734784A

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2445318 A1 20120425; **EP 2445318 B1 20130529**; DK 2445318 T3 20130729; ES 2426033 T3 20131018; ES 2426033 T8 20131115; RS 52884 B 20140228; SI 2445318 T1 20131030

DOCDB simple family (application)
EP 10187788 A 20101015; DK 10187788 T 20101015; ES 10187788 T 20101015; RS P20130330 A 20101015; SI 201030308 T 20101015