JES t/SIG-D Traffic light controller

Features

• Switching and monitoring of traffic lights
• Up to 2 traffic lights can be switched via one device
• 1-, 2- or 3-signal traffic lights configurable
• Monitoring of light bulb and LED inserts both switched on and off
• Reduced brightness at night by second supply voltage
• Freely configurable operating/fault messages for each of the two traffic lights
• Connection to and control by PLC via
  ◦ Digital inputs/outputs
  ◦ MODBUS/TCP
  ◦ MODBUS RTU
• Touch display in the front panel for signalling the traffic light status and for manual switching on site
• 35 mm DIN rail mount

System

• Traffic light controller with touch display
• Optional transformer for providing a lower supply voltage to reduce brightness at nighttime

Function

Traffic lights in tunnels are essential for influencing traffic in the event of hazards or accidents. The status of such traffic lights must be monitored to ensure tunnel safety. A traffic light in the tunnel is usually controlled by the tunnel control system. It is connected to the signal monitoring device via conventional PLC inputs and outputs. The traffic light controller switches the signals (red, yellow, green) on and off as given by the outputs of the tunnel control system and reports back the status of the traffic light. In the event of faults such as broken wires or a defective light source, an error message is issued even when the respective signal is currently in switched off state.

Advantages

• Specially designed for use in front of and in tunnels
• Mounting on DIN rail for easy installation and replacement
• Suitable for conventional lamps and LED technology
• Display for indicating signal status and faults
• One device for monitoring up to two traffic lights
• On-site control via a touch display
• Freely configurable error or operating messages via web server
• Monitoring of signals both in switched-on and switched-off state

Application

Tunnels are important infrastructure elements in road networks and facilitate the connection of regions. Environmental conditions in tunnels are influenced by fog, particles and emissions and need to be monitored to protect people on their passage through the tunnel from danger and impacts on their health. Accidents in tunnels, and particularly fires, can have dramatic consequences and can prove extremely costly in terms of human life, increased congestion, pollution and repair costs. At every time people in the tunnel need to be supplied with breathable air and sufficient visibility.
Since 1990 JES Elektrotechnik GmbH develops, installs and maintains systems to monitor air characteristics and lighting conditions in tunnels. Our systems are robust, durable and resistant against the corrosive atmosphere in a tunnel. They operate reliably and have a high accuracy in measurement.
All systems fulfil the requirements of the EC guideline 2004/54/EC (Minimum safety requirements for tunnels in the trans-European road network) and the more detailed national guidelines and provisions:
• Austria: RVS 09.02 Tunnelausrüstung
• Germany: RABT Richtlinien für die Ausstattung und den Betrieb von Straßentunneln
• Switzerland: ASTRA Richtlinien und Fachhandbuch Betriebs- und Sicherheitsausrüstungen (BSA)
Our range of products for tunnel covers systems for monitoring of
• Visibility (extractive or in-situ)
• Toxic gases like CO, NO, NO2 (extractive or in-situ)
• Air velocity, direction and temperature
• Luminance (access, threshold and interior zone)
• Illuminance

Technische Daten

Verkehrslichtsignalgeber-Steuergerät	
Bezeichnung	t/SIG-D
Betriebsspannung	24 VDC ± 10 %
Stromaufnahme	max. 150 mA (Steuerteil)
Schutzart	IP20
Schutzklasse	II (Schutzisolierung)
Schnittstellen	Digitale Ein- und Ausgänge für Breite Anbindung Ethernet für Modbus/TCP und Gerätekonfiguration RS485 für Modbus/RTU
Steuereingänge	(6) 1 x je Signal, 24 VDC, max. 2 mA 2 x Nachtabsenkung, 24 VDC, max. 2 mA
Stausausgänge	(6) 1 x je Signal bei Betrieb von zwei VLSG oder 2 x je Signal optional bei Betrieb von einem VLSG 24 VDC, max. 50 mA 2 x Betriebs-/Störmeldung, 24 VDC, max. 50 mA
Montage	DIN-Hutschiene 35 mm
Breite	45 mm
Höhe	120 mm
Tiefe	120 mm
Einbauraum	45 x 140 x 120 mm
Gewicht	300 g

Überwachung von Verkehrslichtsignalgebern mit Glühlampen oder LED-Einsätzen	
Signalgeber	Bis zu 2, gemeinsam oder getrennt ansteuerbar
Signale	1-, 2- oder 3-begriffige Signalgeber frei konfigurierbar
Blinktakt	Muss extern generiert werden
Unterstützte Leuchtmittel	0 - 230 VAC, 60 Hz, max. 100 W 0 - 60 VDC, max. 30 W
Nachtabsenkung / zweite Helligkeitsstufe	Über zweite (niedrigere) Versorgungsspannung
Arbeitsstromfehler	< 50 % des konfigurierten Nennstroms
Ruhestromfehler	> 30 mA oder > 3 V gegen N

Konformitäten

Konformitäten	
Elektrische Normen	2014/35/EU Niederspannungsrichtlinie (LVD) 2014/30/EU Elektromagnetische Verträglichkeit (EMV) EN IEC 61000-6-2:2005 Störfestigkeit für Industriebereiche EN IEC 61000-6-3:2007 + A1: 2011 Störaussendung für Wohnbereich, Geschäfts- und Gewerbebereiche sowie Kleinbetriebe