UNILIGHT MATRIX SIGNAL

Description

Using a durable 244 LEDs matrix, the UNILIGHT MATRIX SIGNAL is able to display most of the common signal aspects used in railways.

The signal is operated in conjunction with a controller (PLC) which controls the selected signal aspect via a 10-pin cable. Of course, it is also possible to use a customerspecific set of signal aspects.

The brightness of the signal is adapted automatically to the light intensity of the environment. During dusk and night, the signal is dimmed significantly.

The connection of the signal to the power supply is protected against reverse polarity and against surge volt-age up to 1000V. The rugged construction and the choice of high quality components ensure a very high availability rate.

System advantages

- The UNILIGHT MATRIX SIGNAL is almost maintenance-free
- Possible areas of application for the signal are local traffic railways, trams, suburban and underground trains
- Automatic brightness control
- The power supply is protected against reverse polarity and voltage peaks of up to 1000 V
- The UNILIGHT MATRIX SIGNAL with standard software is offered in different versions
- Almost every signal aspect can be displayed

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FEATURES UNILIGHT MATRIX:

Technical Data

Item	Value
Nominal operating voltage	24 V DC (+-10%) (Other voltage ranges on request)
Maximal operating voltage	36 V DC
Minimal operating voltage	9 V DC
Environmental temperature	-20°C until +70°C
Environmental air humidity	0 % until 95 % (rel)
Maximal current consumption	500 mA (at 24 V DC)
Nominal power	10 W
Reverse polarity protection	Yes
Surge voltage protection	1000 V
Diameter of lens	200 mm
External dimensions (W x H x D)	280 mm x 280 mm x 160 mm
Recommended maintenance interval	2 years

UNILIGHT SMART 2 SIGNAL

Description

The UNILIGHT SMART 2 SIGNAL displays – depending on the installation of the circuit board in the housing – the signal aspects F0, F1, F2 or F3.
Since the new UNILIGHT SMART 2 SIGNAL is equipped with an internal current monitoring system, external current monitoring devices are no longer necessary. The self-diagnostic system on the signal circuit board monitors the function of each single LED and generates output signals for the controller / PLC.
The brightness of the signal is adapted automatically to the light intensity of the environment. During dusk and night, the signal is dimmed significantly. The brightness compensation is for ease of use only and not safety relevant.
This means that a failure of this function does not lead to a hazard. The signal is available in 24VDC and 48VDC versions. With the optional Unilight transformer add-on board, voltages between 85VAC/DC to 230 VAC/DC are feasible, too.

System advantages

- The UNILIGHT SMART 2 travel signal is almost maintenance-free
- Possible areas of application for the signal are local traffic railways, trams and metros
- Also available as single signal aspect
- Rugged construction
- High quality components

EIGENSCHAFTEN UNILIGHT SMART 2:

Additional description

The connection of the signal to the power supply is protected against reverse polarity and against surge voltage up to 1500V. The rugged construction and the choice of high quality components ensure an availability of almost 100 per cent. Running the signal in connection with a secure controller (PLC) is possible without any difficulties. The internal electronic precludes the flickering of the signal light whenever the PLC checks its outputs periodically. The UNILIGHT SMART SIGNAL was certified according SIL 3 and fulfills all necessary demands for this certification.

Technical Data

Item	Value
Environmental temperature	-40°C to +75°C
Environmental air humidity	0 % to 95 % (rel)
IP protection class	IP 54
Climate classification (EN 50123-3)	A2 / T2
MTBF	1154506 h at 25°C
Lightning standards	DIN 6163-4 and EN 12368
Maximal current consumption	ca. 500 mA / 250 mA (24 V / 48 V Versions)
Reverse polarity protection	Yes
Surge voltage protection	1500 V
Diameter of lens	200 mm
External dimensions	280 mm x 280 mm x 160 mm
Time feedback channel	<30 ms
Maximum output voltage	10 mA
Nominal operating voltage	24 V DC (18-36 V DC) or 48 V DC (36-60 V DC) 85 – 230 V AC/DC possible

Circuit Board

The signal circuit board can be mounted in the housing at various angles (multiples of 45°). For example, a right turn / left turn with a 45° counterclockwise rotation is displayed if the rotation was started from the stop / drive straight ahead position (0°). The following table shows the possible signal terms:


F0 and F1


Stop and Proceed tangent


F2 and F3


Proceed Right and Proceed Left

The UNILIGHT SMART 2 consists of the following components:

- Housing
- Glare protection hood
- Cover plate
- Lens (UV-resistant)
- Mounting device
- Assembled and checked circuit board