

**PHILIPS**

RF-DALI connector



Design-in Guide

# RF-DALI connector

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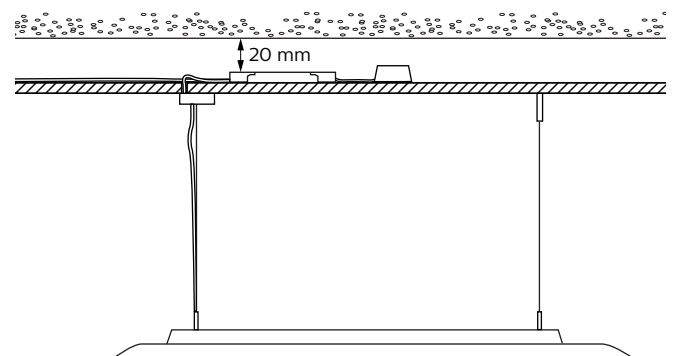
## Warnings and instructions

### Warning

- Avoid touching live parts!
- Do not use SR Bridge and connected driver(s) with damaged housing and/or connectors!
- Do not use SR Bridge and connected driver(s) with damaged wiring!

### Safety warnings and installation instructions

- Do not use damaged products
- Do not short SR Bridge output wires
- SR Bridge output wire is a live mains part when switched on
- The luminaire manufacturer is responsible for his own luminaire design and has to comply with all relevant safety standards
- The Xitanium SR Bridges are suitable for independent Class I and Class II applications; they must not be exposed to the elements such as snow, water and ice or to any other chemical agent which can be expected to have an adverse effect on the driver (e.g. Corrosive environments). It is the responsibility of both luminaire manufacturer and installer to prevent exposure.
- Do not service the SR Bridge and connected driver(s) when the mains voltage is connected, this includes connecting or disconnecting the Loads.
- SR Bridge and connected driver(s) must be installed in accordance with national and local electrical codes.
- Please provide adequate earth and/or equipotential connections whenever possible or applicable.
- It is the responsibility of both the installer to prevent ingress and exposure of the SR Bridge to, including but not limited to, water, oil, fat, acids or any other chemical agent - be it gaseous, vapor, liquid or solid form - which can be expected to have an adverse effect on the SR Bridge. Use common sense when defining the proper ingress protection of the SR Bridge for the intended application.
- Install the SR Bridge with a distance to adjacent objects of at least 20 mm, see the illustration. The distance is required to ensure sufficient thermal dissipation of the SR Bridge. Do not exceed the maximum specified ambient temperature ( $t_a$ ) stated on the SR Bridge.



## Introduction to RF-DALI connector



RF-DALI connector, kit consisting of a Xitanium LED SR Bridge, SNS441 wireless transceiver, SA0600 surface mount sensor holder and two wire cable.

### Components

#### Xitanium SR Bridge

The Xitanium SR Bridge is designed to:

- 1 Connect existing DALI driver(s) to become part of wireless connected lighting systems.
- 2 Connect to regular mains switchable luminaires with standard ON/OFF behavior.

Applications include offices, public buildings, industrial applications and retail environments. With Xitanium SR functionality, flexibility in luminaire design is assured and interfacing with the SNS441 wireless transceiver is simple.

#### SNS441 wireless transceiver

The SNS441 wireless transceiver assembled in the surface mount sensor holder enables wireless connectivity between the SR Bridge and the luminaire driver, either DALI capable or switchable.

Detailed specifications can be found in the specification sheets of the separate products, which can be downloaded at [www.philips.com/technology](http://www.philips.com/technology).

### Wiring diagram

A typical application for the Xitanium SR Bridge is to connect the SR Bridge to a single Philips Xitanium DALI driver and the SR (RF) wireless transceiver (see Figure 1).

The switching functionality of the SR Bridge also enables connection to luminaires with simple ON/OFF capability.

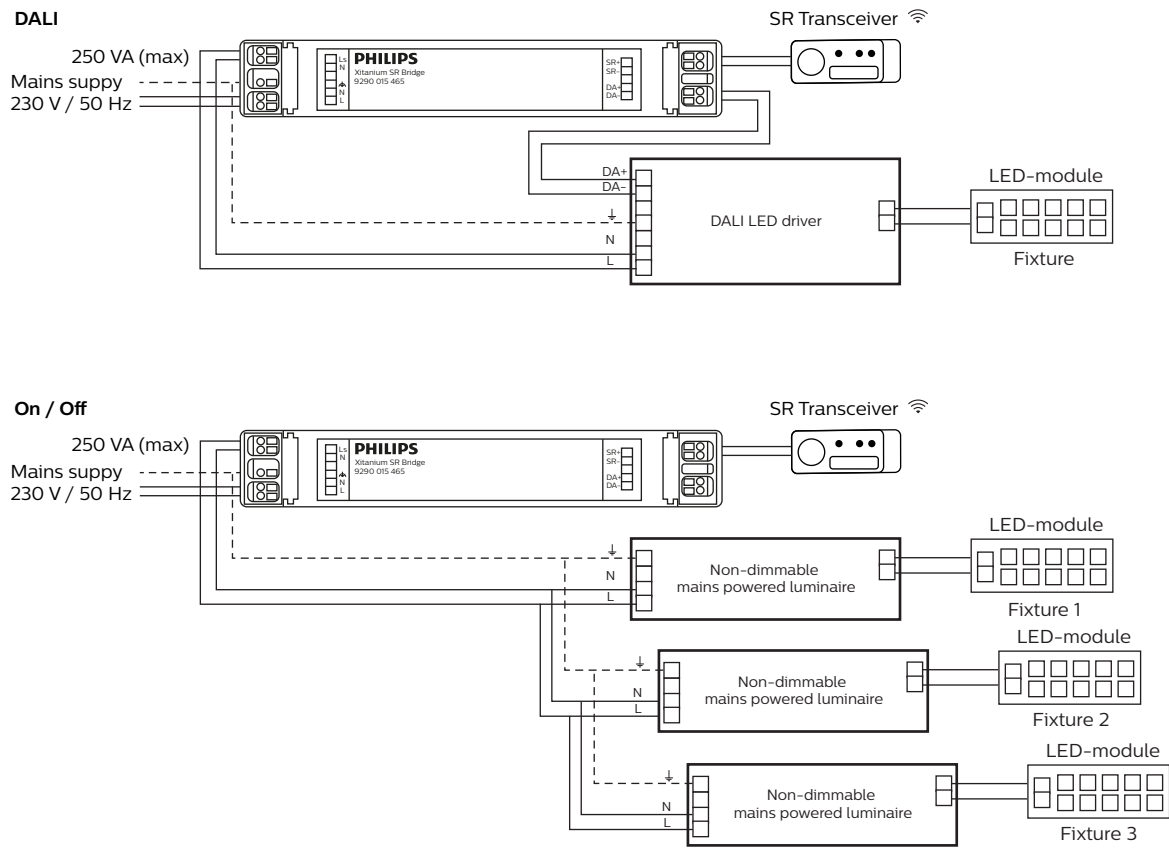


Figure 1

## Features of RF-DALI connector

### Mains input range

The Xitanium SR Bridge can operate on mains input voltages from 220Vac – 240Vac.

### Switchable Output using Zero Crossing detection

The Output of the Xitanium SR Bridge can be switched on/off using relay switching with Advanced Zero Crossing technology. This allows for higher loads to be switched on/off.

#### Note

For DALI, Identification, SET POWER ON LEVEL command cannot stop the identification blinking mechanism immediately.

### SR (Sensor Ready) interface

The Xitanium SR Bridge supplied with SNS441 wireless transceiver features a digital interface (SR interface) to enable direct connection to any suitable SR (certified) RF sensor.

### Energy metering

The Xitanium SR Bridge has built in Energy/power measurement capability.

### Multiple luminaires on a Single SR Bridge

More than one driver can be connected to a SR bridge. The details can be found in the datasheet of the SR bridge that can be downloaded at [www.Philips.com/Technology](http://www.Philips.com/Technology).

#### Note

Application specific restrictions may apply.

## Mechanical Design-in

### Form factors

Xitanium SR Bridge is designed with a strain relief for independent applications (see Figure 2). The specific dimensions can be found in the SR Bridge datasheet.

Mounting screw dimensions should be based on the specified fixing hole diameter in the SR Bridge datasheet. Oversized and undersized screws should not be used in order to prevent damage to the mounting feet or loose mounting.

The SNS441 must be assembled in the SA0600 surface mount sensor holder that also is equipped with a strain relief.

### Cable Length

The RF-DALI connector is delivered with a two-wire cable of approximately 1 m (3 ft).



Figure 2

## Electrical Design-In

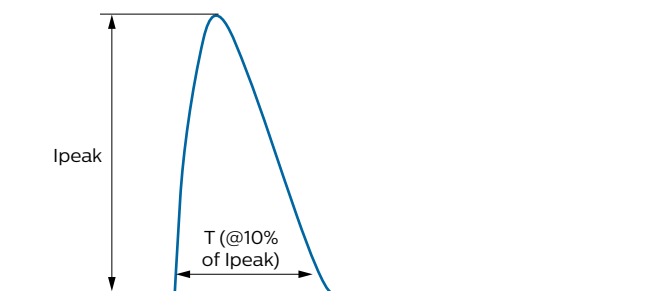
### Inrush current

Inrush current refers to the brief high input current that flows into a device during the moment of connection to mains; see Figure 12. Typically, the amplitude is much greater than the steady-state input current.

The SR Bridges are using advanced “Zero-Crossing” technology by turning on the connected load only when the mains voltage is near the zero crossing. This reduces the inrush current of the connected load(s) to a minimum.

The peak and duration values are given in the individual product datasheet. It should be noted that the inrush current measurement given in the datasheet is the absolute worst case value.

What does inrush current do? High inrush currents can cause circuit breakers or fuses to open if not designed to handle this current. It can limit how many drivers can be connected to a circuit breaker (CB) or fuse. In case of the SR Bridge, it limits how many drivers can be connected to the SR Bridge.



### Surge protection

Philips Xitanium SR Bridges have limited built-in surge protection (in accordance with IEEE/ANSIC62.41.2 Transient Surge Requirements). The datasheet gives the protection level of the SR Bridge.

### Electromagnetic compatibility (EMC)

Xitanium LED SR Bridges meet EMC requirements per CISPR 15. These tests are conducted with a reference setup.

To maintain good EMC performance at the luminaire level, the input, output and dim wires should be kept as far apart as possible. The addition of ferrite beads in series with the wires or coupling the wires through ferrite cores within the luminaire may improve the overall EMC performance. However, selection of the type and characteristics of the additional filter depends on what frequency components have to be damped and by how much.

### Electrical isolation

Philips Xitanium SR Bridges' output is isolated from the primary. Isolation is also provided between all the electronic circuits and the chassis.

Xitanium Bridges meet IEC61347-1 and the output terminals have been qualified as SELV for SR terminals and FELV for DALI master terminals.

### DC mains operation

Luminaires connected to the RF-DALI connector cannot be connected to a DC power grid (for example a central emergency system).



## Disclaimer

This document is not an official testing certificate and cannot be used or construed as a document authorizing or otherwise supporting an official release of a luminaire. The user of this document remains at all times liable and responsible for any and all required testing and approbation prior to the manufacture and sale of any luminaire.

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