Ethernet/DALI-2 Interface – 2 DALI Lines

Product summary and capabilities

This interface can be used to link TCP/IP network software to the Digital Addressable Lighting Interface (DALI) open standard protocol for lighting.

This interface device provides an isolated communication path between an Ethernet network and two DALI lines. Control, and monitoring of DALI enabled luminaires and emergency lighting items can be performed by a PC or similar at any location with wired ethernet LAN connectivity.

Current draw by the interface device for each DALI line is 2 mA nominal.

When used with higher level software such as RAPIX Zone Controllers or RAPIX Emergency, multiple Ethernet/DALI Interface devices may be installed and operate as a single system. For such an installation, appropriate IP network address and subnet configuration must be considered.

This product can be used with RAPIX Emergency software or can be used with the RAPIX Lighting Control System to add additional lines to a RAPIX Zone Controller. It is also suitable for general purpose DALI interfacing by software developers and can be used in other systems with appropriate software. A software developers kit is also available to support product developers using this interface.

Important notes and safety information

STOP

WARNING – Electric shock may result in serious injury or death. Follow all warnings in this guide and on the product. Work in accordance with the latest electrical safety practices.

- The Ethernet/DALI Interface does not have a mains supply connection.
- The installer must be suitably qualified and should work in accordance with standard safety procedures for mains-powered electrical equipment.
- DALI system wiring is only single insulated from mains. **Treat DALI wiring the same as mains wiring**.
- Appropriate segregation must be maintained between the Ethernet cabling and mains/DALI line cabling in accordance with local regulations.
- There are **no user serviceable parts** inside the Ethernet /DALI Interface. Do not attempt to disassemble or operate the device with any covers removed.
- The Ethernet/DALI Interface is for **indoor use only**.

Installation and Wiring

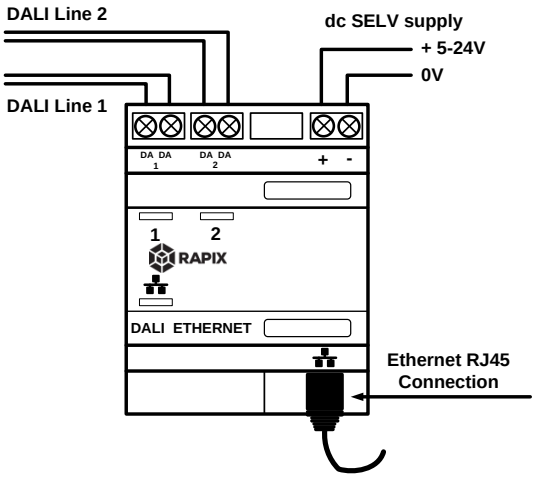
The Ethernet/DALI Interface is mounted on DIN rail which **must** be installed horizontally in a suitable switchboard enclosure. Multiple Ethernet / DALI interfaces, power supplies, controllers or other devices can be mounted on the same DIN rail.

Due to the single insulation nature of DALI, all DALI lines must be treated as "live mains".

The installer is responsible for ensuring the interface device, associated power supply, DALI and ethernet wiring meets local wiring regulations including segregation.

SELV Power supply terminals and DALI line terminals allow 3 x 1.5 mm^2 or 2 x 2. 5 mm^2 (solid or stranded) wire to be terminated.

The RJ45 Ethernet cable must maintain the required segregation from mains wiring and DALI wiring in accordance with local regulations.



Power Source

The Ethernet/DALI Interface is powered by an external SELV power supply. This can be DIN mounted or plug pack and must supply 5 – 24 V dc. Multiple DALI Interface devices can be powered from a common power supply with the necessary capacity. Each interface device requires an allowance of 2.5 VA when calculating power supply capacity.

We recommended connecting the 5-24 V dc SELV power supply and DALI power supply to a dedicated control circuit rather than a lighting circuit.

For continued operation of lighting circuits that have back-up power in the event of mains failure, the 5-24 V dc SELV power supply and DALI power supply should also be connected to the back-up power system (UPS and/or generator).

Configuration and Serial Numbers

For robust operation, each Ethernet/DALI Interface should be configured with a static IP address. An appropriate IT and building services plan should be made to allocate and manage a suitable range of IP addresses.

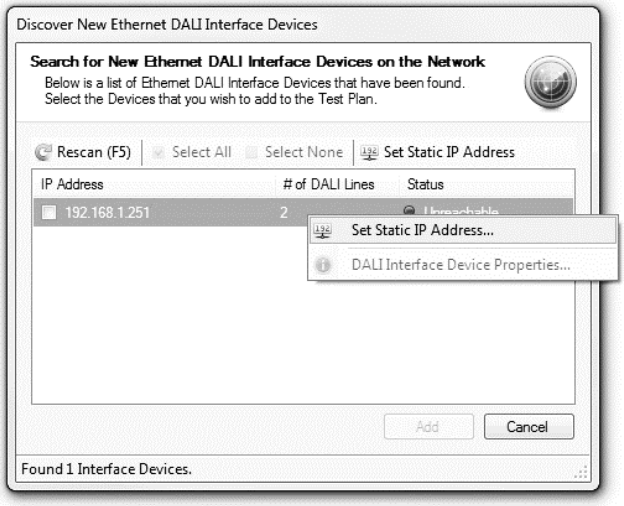
A new interface with factory settings requires an initial IP address so that the device can be found on a LAN and to set the nominated static IP address.

The initial IP address can be achieved in two ways:

- Connect the interface device on a network which used a DHCP server; the device will obtain an IP address automatically; or
- Connect the interface device to a PC with an RJ45 patch lead; the device will set an IP address.

A static IP address can be set using RAPIX Addressing, RAPIX Integrator or RAPIX Emergency software. For IP address assignment using other software methods, please contact Ozuno.

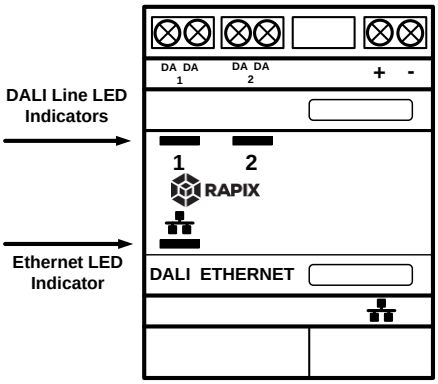
Site installation can be simplified by pre-configuring the interface device with its static IP address prior to installing the device in an enclosure.



The Ethernet/DALI Interface front screen has hidden tabs that contain the unique serial number in bar code form, IP MAC address, and the manufacture date for the device. The top tab on the right side is blank and can be used to record the static IP address or identify the location of the DALI lines as shown below.

Operation and Indicators

When the interface device is powered and functional, the indicators will be active and display the status of the DALI lines and Ethernet connection. The diagram on the right shows the location of the DALI line and Ethernet indicators.



Ethernet Indicator

Indicator Operation	Meaning
On and blinking to off	Ethernet connected and traffic being seen
Off	Ethernet connection not present – check switch/hub for power and correct patch lead connections

DALI Line Indicators

Indicator Operation	Meaning
On with brief flash off every 2-3 seconds	Correct operation and DALI power supply present
Off with a brief flash on every 2-3 seconds*	DALI line is not functioning correctly. Check: 1. DALI power supply is connected and delivering the correct voltage/current. 2. DALI line does not have short circuit condition. 3. DALI line does not have mains power present.
Off*	No SELV dc power to the interface device

* The interface device has been connected to both dc power and DALI line power for a minimum period of 30 seconds.

Power Surges

The Ethernet/DALI Interface has no mains connection. However induced voltages or surges may occur on electrical circuits and communication cabling in an installation as a result of excessive voltages from external influences. These excessive voltages can damage electronic equipment. It is strongly recommended that the electrical and data installation be fitted with suitable over-voltage protection at the electrical switchboard and IT cabinets to avoid these situations.

Insulation Resistance Testing

Insulation Resistance testing is generally not required on DALI lines. In the event it is performed, the DALI line must be disconnected from the power supply to conduct the test, and then reconnected after.

Standards and compliance

The product is designed to meet/exceed the following Australian and International standards:

EMC and Electrical Safety Frameworks and Standards
AS/NZS CISPR 22
AS/NZS 60950-1

DALI Standards and Compliance
IEC 62386-101 Ed 2 (DALI-2)
IEC 62386-102 Ed 2 (DALI-2) (Single Master Application Controller)

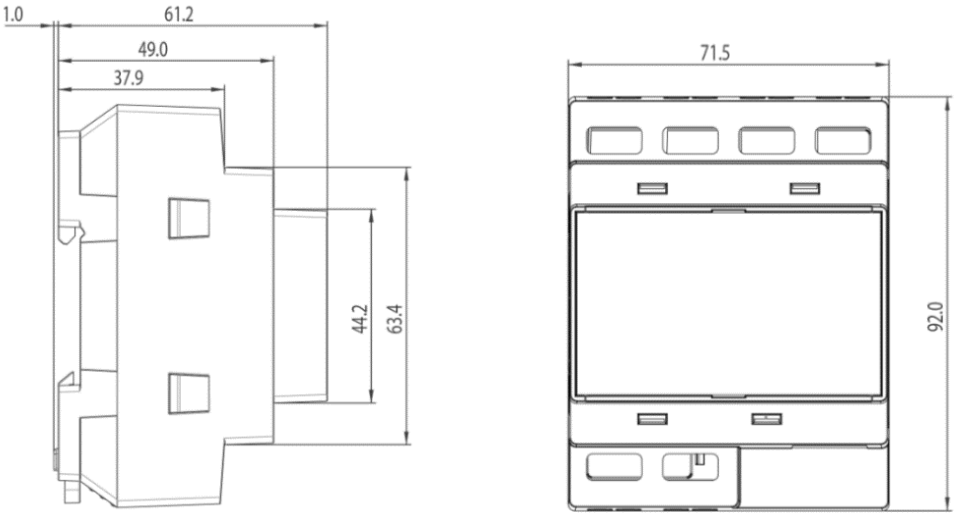
EU Directives

2014/35/EU	Low Voltage
2014/30/EU	Electromagnetic Compatibility (EMC)
2015/863	Restriction of Hazardous Substances (RoHS) in Electrical and Electronic Equipment

Specifications

Input Voltage	5 to 24 V dc
Input Power	1.2 VA (active) / 2.5 VA (start-up)
DALI Compatibility	DALI and DALI-2
DALI Line Capacity	2
DALI Line Operating Voltage	18 V dc (nominal) on each line supplied by external DALI power supply
DALI Line Current Draw	2 mA per line
Frequency	50 / 60 Hz
Isolation	≥ 3.75 kV ac Ethernet RJ45 to DALI line terminals
	≥ 1.5 kV ac Ethernet RJ45 to SELV (5-24V dc) terminals
Start-up Time	30 sec
Ethernet	10/100/1000 Mbits/sec twisted pair network types
	DHCP support
Ambient Operating Temperature	0 - 50°C
Ambient Storage Temperature	-10 - 70°C
Humidity	0% to 95% RH non-condensing
Ethernet Connection	RJ45 8-pin plug (T568A termination)
DALI Line Terminals	Screwed – 3 x 1.5mm^2 or 2 x 2.5 mm^2 solid/stranded
dc Supply Terminals	Screwed – 3 x 1.5mm^2 or 2 x 2.5 mm^2 solid/stranded
Ingress protection	IP20
Materials	Enclosure/fascia – flame resistant polycarbonate DIN rail clip – ABS
Weight	160 g
Approvals	

Dimensions



Warranty

This product has a TWO YEAR warranty against manufacturing defects. The warranty applies from the date of purchase.

Refer to ozuno.com for the full conditions for warranty and returns process. A summary of the process:

1. Contact the seller of the goods, or in their absence contact Ozuno to request a return goods authorisation.
2. When a return is authorised, the goods must be returned to Ozuno at the owner's expense for technical evaluation.
3. The warranty claim will be evaluated by Ozuno and accepted if the goods are found to be faulty, or rejected if the fault was caused by conditions beyond the responsibility of Ozuno. Considerations of installation, removal, return, freight and testing are not the responsibility of Ozuno.

The Australian Consumer Law requires the inclusion of the following statement with this Warranty:

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

RAPIX LIGHTING CONTROL SYSTEM

Sales: Ozuno Trading Pty Ltd, ABN 96 621 194 483

Contact

Technical Support: support@ozuno.com

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