

# Features

- Built-in relay to turn ON/OFF drive completely (zero standby current)
- IEC-62386 part 206 compliant
- Over voltage and short circuit protection
- Selectable output for PWM / DC 0-10V / DC 1-10
- Screw-less connectors, easy to install

# DALI Converter

## RELI-DA01/R

# 1.6W DALI Converter



### Description

The RELI-DA01/R is a DALI to analog control signal interface which is compliant with the DALI IEC62386 standard. The output is selectable between 0-10V and 1-10V or PWM (1) and is compatible with all RECOM dimmable LED drivers as well as other manufacturer's products. The output can control several LED drivers, allowing the lighting in a whole room or office to be dimmed with just one DALI address. A built-in relay can be used to switch off the LED drivers under software control to give zero no-load consumption. The interface is universal AC powered (110VAC, 230VAC or 277VAC).

### Selection Guide

Part Number	Input Voltage Range [VAC]	typ. Power Consumption [W]	max. DALI Bus Power Consumption [mA]	Dimming Output	DALI Standard IEC62386
RELI-DA01/R	90-290	1.6	2	PWM <sup>(1)</sup> DC 0-10V DC 1-10V	Part-206

#### Notes:

Note1: PWM is not included in the IEC62386 standard

### Specifications (measured @ ta= 25°C and nominal input voltage)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range		90VAC	230VAC	290VAC
Input Frequency Range		50Hz		60Hz
Power Consumption			1.6W	3W
Dali Bus Current Consumption				2mA
Relay Switch	1 Channel	2A cont.		70A inrush

REGULATIONS	
Parameter	Value
DC 0/1-10V Output Accuracy	±3% max.

PROTECTION		
Parameter	Condition	Value
Short Circuit Protection (SCP)	Dimming output	continuous, current limited to 240mA
Over Voltage Protection (OVP)	Dali connector, Zener Diode clamp	24VDC

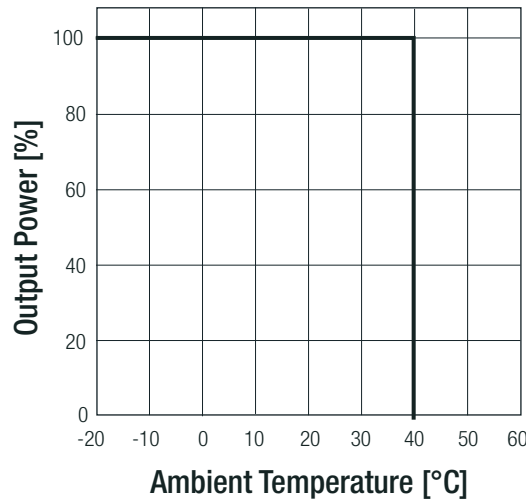
EN61547 certified  
EN61347-1 certified  
EN61347-2-11 certified  
IEC62386-206 compliant  
EN55015 compliant

**Specifications** (measured @ Ta= 25°C and nominal input voltage)

**ENVIRONMENTAL**

Parameter	Condition	Value
Operating Temperature Range	free air convection	-20°C to +40°C
Maximum Case Temperature		+46°C
Operating Humidity	non-condensing	20% to 90% RH
IP Rating		IP20
MTBF	MIL-HDBK-217F, G.B.	200 x 10 <sup>3</sup> hours

**Derating Graph**



**SAFETY AND CERTIFICATIONS**

Certificate Type (Safety)	File Number	Standard
Lamp Controlgear - Part 1: General and safety requirements		EN61347-1:2015
Lamp Controlgear - Part 2-11: Particular requirements for miscellaneous electronic circuits used with luminaires		IEC61347-2-11:2001, 1st Edition EN61347-2-11:2001
Digital addressable lighting interface - Part 206: Particular requirements for control gear		IEC62386-206:2009
RoHS 2+		RoHS 2011/65/EU + AM2015/863

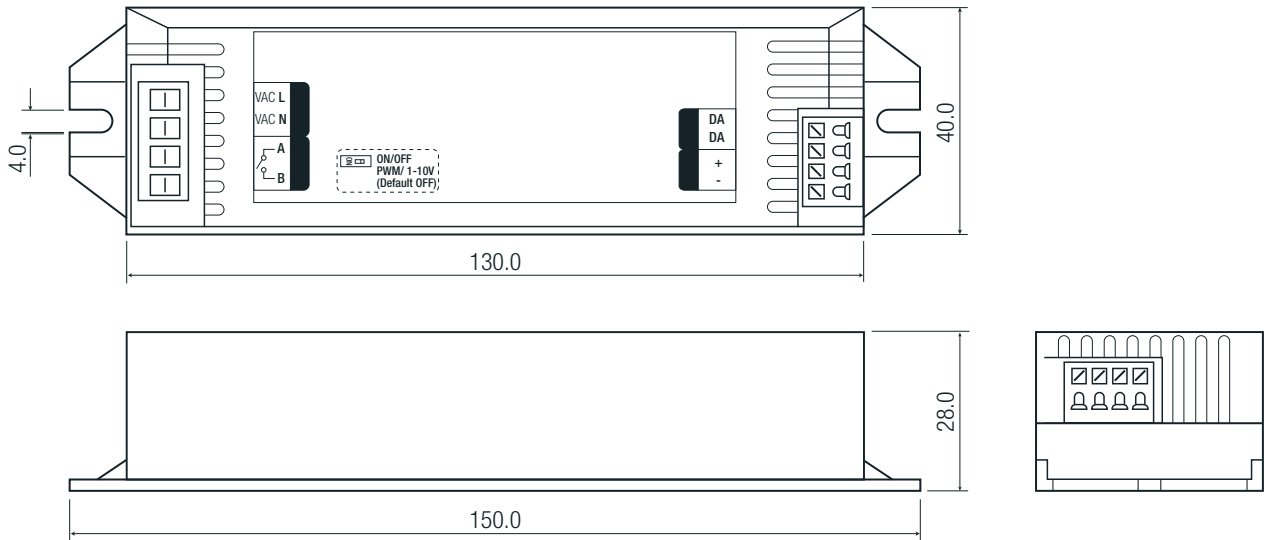
EMC Compliance	Conditions	Standard / Criterion
Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment		EN55015:2013 + A1:2015
Equipment for general Lighting Purpose EMC Immunity Requirements		EN61547:2009
ESD Electrostatic discharge immunity test	Air ±2, ±4, ±8kV, Contact ±2, ±4kV	IEC61000-4-2:2008, Criteria A
Radiated, radio-frequency, electromagnetic field immunity test	3V/m (80-1000MHz)	IEC61000-4-3:2006, Criteria A
Fast Transient and Burst Immunity	AC Power Port: ±1.0kV	IEC61000-4-4:2012, Criteria A
Surge Immunity	AC Power Port: L-N ±0.5kV	IEC61000-4-5:2005, Criteria A
Immunity to conducted disturbances, induced by radio-frequency fields	AC Power Port: 3V	IEC61000-4-6:2008, Criteria A
Power Magnetic Field Immunity	50Hz, 3A/m	IEC61000-4-8:2009, Criteria A
Voltage Dips and Interruptions	Voltage Dips 30%	IEC61000-4-11:2004, Criteria B
Voltage Dips and Interruptions	Voltage Interruptions >95%	IEC61000-4-11:2004, Criteria B
Limits of Harmonic Current Emissions		EN61000-3-2:2014
Limits of Voltage Fluctuations & Flicker		EN61000-3-3:2013

**Specifications** (measured @ Ta= 25°C and nominal input voltage)

**DIMENSION and PHYSICAL CHARACTERISTICS**

Parameter	Type	Value
Material	PCB case	plastic resin with fibreglass, (UL94 V-0) plastic, (UL94 V-2)
Dimension (LxWxH)		150.0 x 40.0 x 28.0mm
Weight		100g ±10%

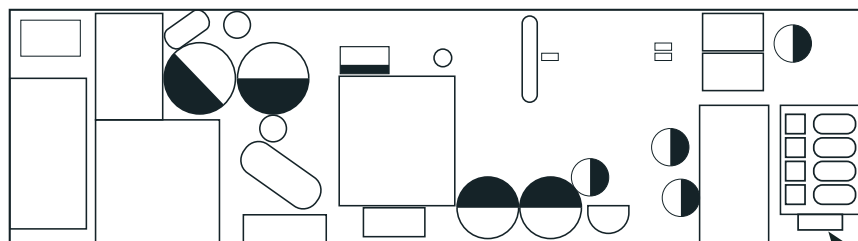
**Dimension Drawing (mm)**



**Connection via Screw Terminal**

#	Function	Solid Wire	Stranded Wire	AWG
1	VAC in (N)	0.75-1.5mm <sup>2</sup>	0.75-1.5mm <sup>2</sup>	18-16
2	VAC in (L)	0.75-1.5mm <sup>2</sup>	0.75-1.5mm <sup>2</sup>	18-16
3	A	0.75-1.5mm <sup>2</sup>	0.75-1.5mm <sup>2</sup>	18-16
4	B	0.75-1.5mm <sup>2</sup>	0.75-1.5mm <sup>2</sup>	18-16
5	DA+	0.75-1.5mm <sup>2</sup>	0.5-1.5mm <sup>2</sup>	21-16
6	DA-	0.75-1.5mm <sup>2</sup>	0.5-1.5mm <sup>2</sup>	21-16
7	+	0.75-1.5mm <sup>2</sup>	0.5-1.5mm <sup>2</sup>	21-16
8	-	0.75-1.5mm <sup>2</sup>	0.5-1.5mm <sup>2</sup>	21-16

wire stripping length: 5mm  
FC= fixing centers  
Tolerance: xx.x= ±1.0mm  
xx.xx= ±0.5mm



ON: PWM 10V (Default active high)  
OFF: DC 1-10V (Default DC)  
DC0-10V (software control)

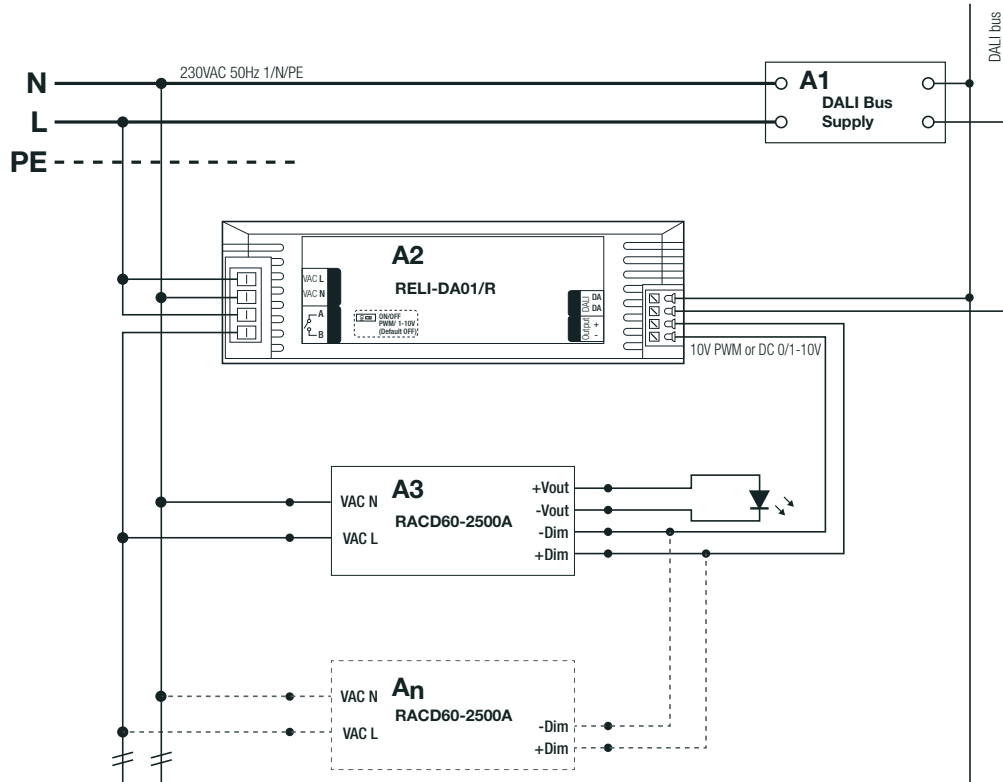
Delivery setting:  
Output Signal: DC 1-10V  
Dimming Curve: Logarithmic PWM active high

Indicator LED  
flashes with DALI  
Signal

Specifications (measured @ Ta= 25°C and nominal input voltage)

**INSTALLATION and APPLICATION**

**DALI Connection**



**DALI Declaration for Factory Variables (for Part 206)**

Variable	Default Value	Reset Value	Received Command	Range of Validity
Dimming Curve	0	no change	0	0-1; (2-255 reserved)
Converter Features	0011 a101	no change	0011 a101	53; 61
Failure Status	0000 0000	no change	0000 0000	0 - 255
Converter Status	0000 0000	no change	0000 0000	0 - 255
Extended Version Number	1	no change	1	factory-defined
Device Type	5	no change	5	factory-defined
Physical min Level	1	no change	1	1 - 253

a = 0 Relay function disabled; a = 1 Relay function enabled

**DALI Command Set**

The RELI-DA01/R has been accepted by agDALI as conforming to the DALI standard for Device Type 5 (IEC 62386-206). It supports all relevant commands of the defined command set.

Command Number	Command Name	Function
-	DIRECT ARC POWER	set directly the light level
0	OFF	switch OFF the light
1	UP	dim up the light
2	DOWN	dim down the light
5	RECALL MAX	recall the maximum light level
6	RECALL MIN	recall the minimum light level

Not supported commands include the "QUERY LAMP FAILURE" and the "QUERY LAMP POWER ON". Additionally the features to disable the Relay Switch, set the output to PWM, change the PWM from active-high to active-low are additional and not tested by DALI (refer to the RELI-DA01/R instruction manual).

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**Specifications** (measured @ Ta= 25°C and nominal input voltage)

**Recommended LED Drivers, DAL-Bus Power Supplies and DALI Master**

**AC/DC LED Driver**

RACD20-xxxD  
RACD60-xxxxA  
RACD45-xxxxA  
RACD100-xxxxA  
RACD150-xxxxA

**DC/DC LED Driver**

RCD24-xxx  
RCD48-xxx  
RBD12-xxx

**DALI Master**

custom commands tested with DALI-USB  
Tridonic Osram (IEC62386 compatibility  
confirmed by DIAL ag using Prohibit Tester)

\*Software masterCONFIGURATOR V2.6.8.1005 Tridonic

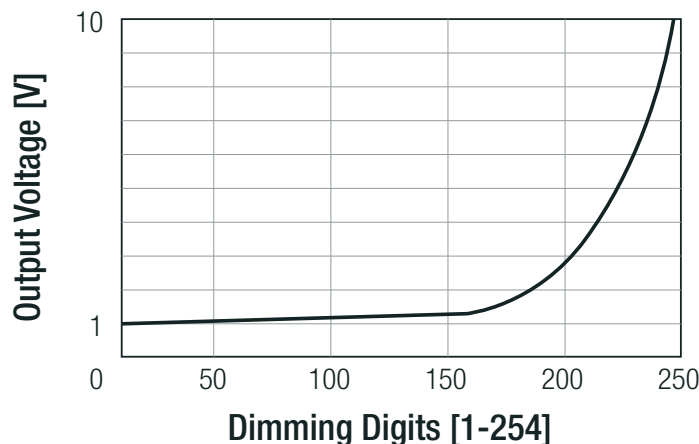
**Notes:**

Note2: For one DALI Converter (RELI-DA01/R) up to 6pcs of RECOM AC/DC LED-Drivers with 3in1 dimming can be connected

**DIMMING**

Parameter	Condition	Min.	Typ.	Max.
PWM Frequency			500Hz	
PWM Level	High Voltage Low Voltage	9.5VDC	10VDC 0VDC	10.5VDC
PWM and DC Output Current Sourcing		-5mA		60mA

**Default-Setting Log. 1-10V Dimming**



**DALI-Command**

Logarithmic Dimming: 1-10V

6 Recall MIN Level  
257 DATA Transfer Register (DTR) / Value: 0 dec  
272 Enable Device Type X / Value: 5 dec  
224 Query APP EXT Cmd224  
224 Query APP EXT Cmd224  
272 Enable Device Type X / Value: 5 dec  
229 Query APP EXT Cmd229  
229 Query APP EXT Cmd229

Internal switch: OFF

**PACKAGING INFORMATION**

Parameter	Type	Value
Packaging Dimension (LxWxH)	cardboard Box	248.0 x 161.0 x 88.0mm
Packaging Quantity		10pcs
Storage Temperature Range		-40°C to +80°C
Storage Humidity	non-condensing	10% - 90% RH

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