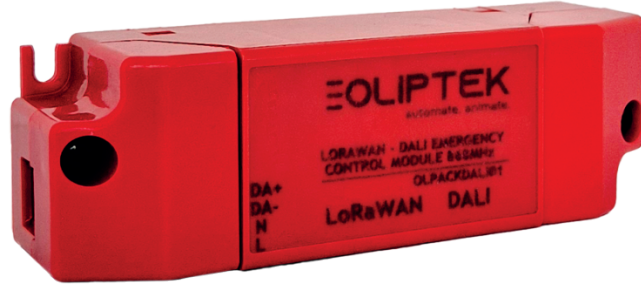


OLPACKDALI

DATASHEET



■ What is the OLPACKDALI ?

OLPACKDALI is an advanced solution that opens up the existing emergency escape system to wireless access. This module, DALI compatible with emergency escape kits with LoRaWAN communication and thanks to LoRaWAN communication areas, offering wireless communication, remote control, fault detection, reporting; remote monitoring and management.

■ Fields of use

Compliant with emergency lighting regulations, these control modules are for use in skyscrapers, airports, factories and organized industrial zones.

New Facilities: Wireless emergency lighting systems, thanks to their energy efficiency and flexible design, can be installed in new installations without pulling control cables. The Lorawan dali ack module used with the Dali emergency kit makes the system wirelessly accessible.

Transformation of Existing Buildings: In older buildings, wireless systems can be easily integrated into the existing infrastructure without additional cabling. It is sufficient to energize the lorawan dali emergency lighting module and dali emergency kit with the power line coming to the luminaire.

■ Technical Specifications

Mains Voltage :	220-240V
Mains Frequency :	50/60 Hz
Input-Output Signal:	DALI
Surge Protection (between L-N):	1 kV
Instantaneous Voltage Withstand(L/N-PE):	2 kV
Operating Temperature:	-20 to +50 °C
Wireless Technology:	LoRaWAN 868 Mhz

IP Rating:	IP20
Protection Class:	Class II
Mounting Type:	Surface Mounted
Lifetime:	50,000 h
Body Color:	RED (RAL 3013)
Dimensions L x W x H:	114 x 36 x 34 mm

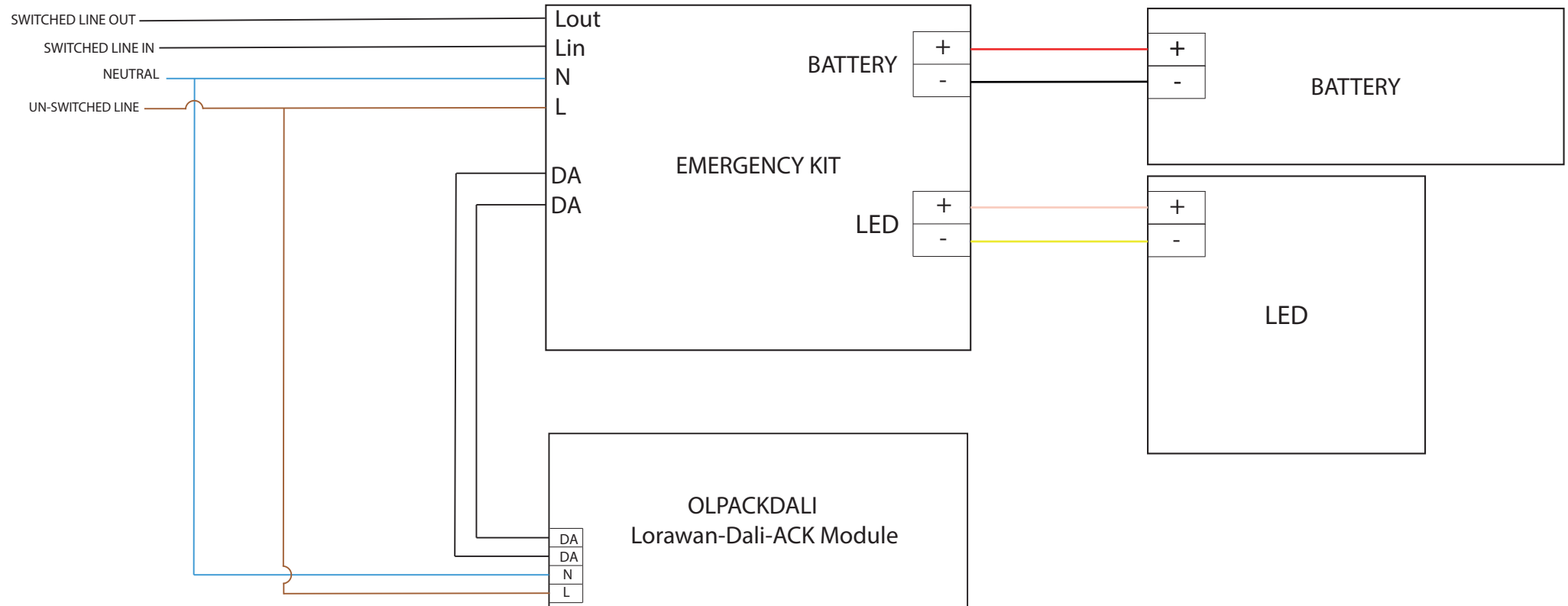
Integration of LoRaWAN Gateways

ABP MODE (Default Mod)		
Parameter	Sample Value	Explanation
DevEUI	2CF7F12060204B2A	ID indicated by QRcode on Lorawan module
DevAddr	60204B2A	Last 8 digits of the device EUI value
AppSKey	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Application Password Key
NwkSKey	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Network Password Key
Class	C	Always-on listening mode
DR	DR3 (SF9, BW125KHz)	EU868 LoRa data rate
Freqeucy Plan	EU868	Regional band setting
Port	85	Application message port
MC (Multicast)	00000001	Multiple broadcast identity
Multicast Application Session Key	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Multicast Application Password Key
Multicast Network Session Key	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Multicast Network Password Key
ADR	ON	
LoRawan Version	LoRaWAN 1.0.3	

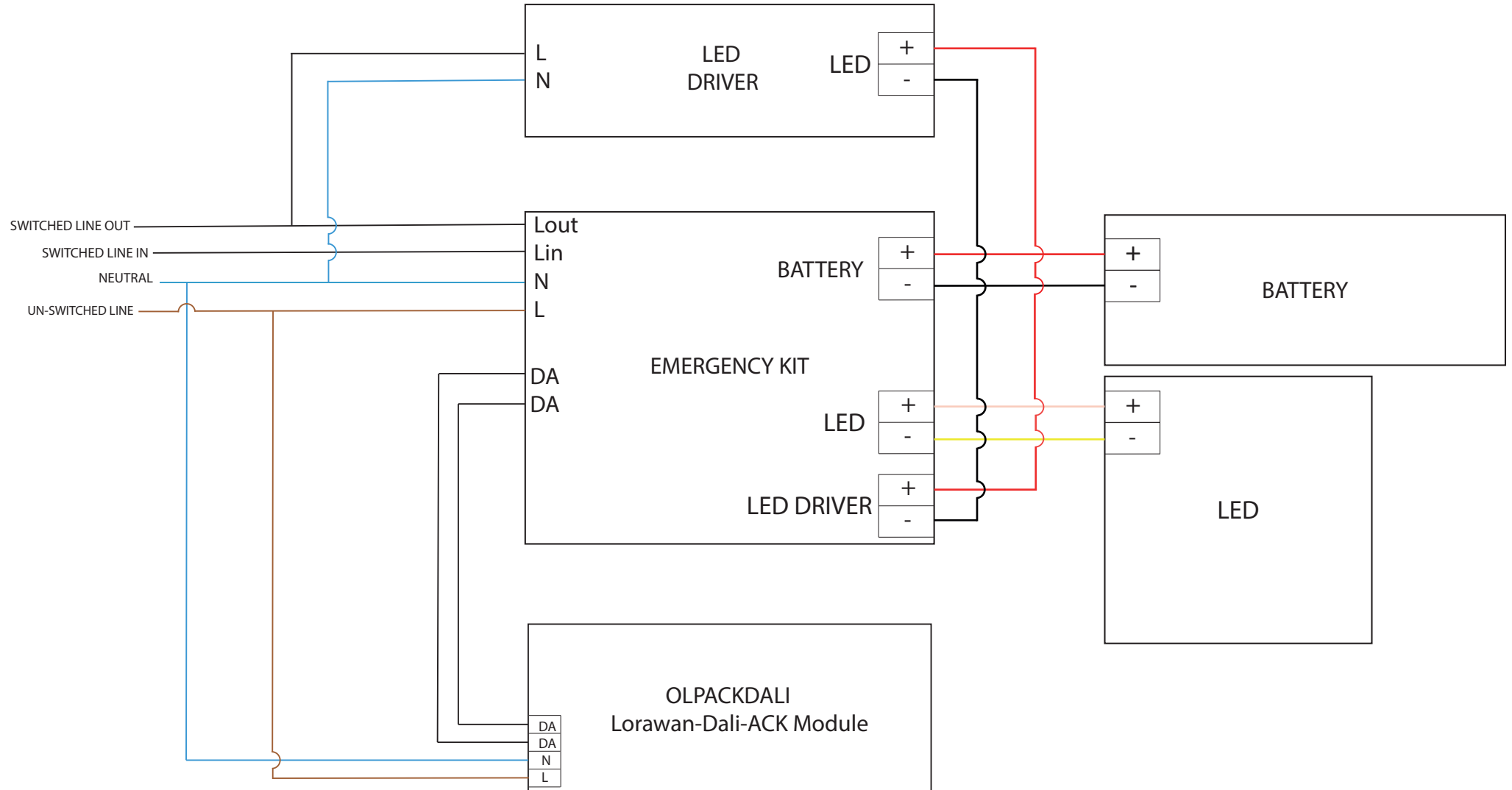
OTAA MODE(Default Mod)		
Parameter	Sample Value	Explanation
DevEUI	2CF7F12060204B2A	64-bit device ID
JoinEUI (AppEUI)	526973696E674846	Application ID
AppKey	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Application Password Key
Class	C	Continuous listening mode
Freqeucy Plan	EU868	Regional band setting
DR	DR3 (SF9, BW125KHz)	LoRa data rate
Port	85	Application message port
MC (Multicast)	00000001	Multicast ID
Multicast Application Session Key	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Multicast Application Password Key
Multicast Network Session Key	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Multicast Network Password Key
ADR	ON	
LoRawan Version	LoRaWAN 1.0.3	

■ Wiring & Connection Details

■ Non-Maintained

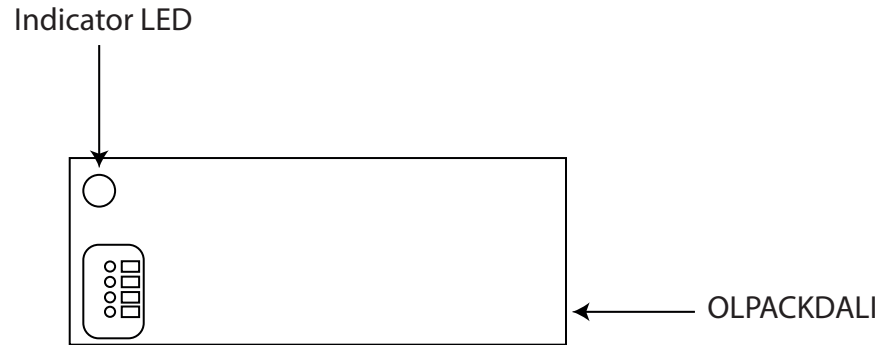


■ **Maintained**



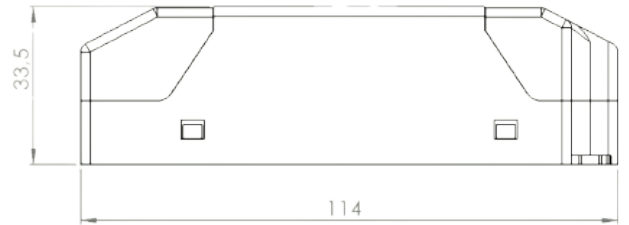
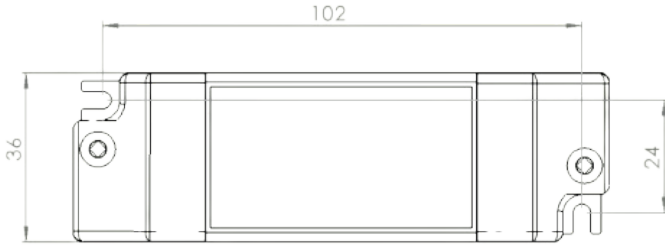
Module Status Information

The module status information shows in which color the OLPACKDALI is in which states.



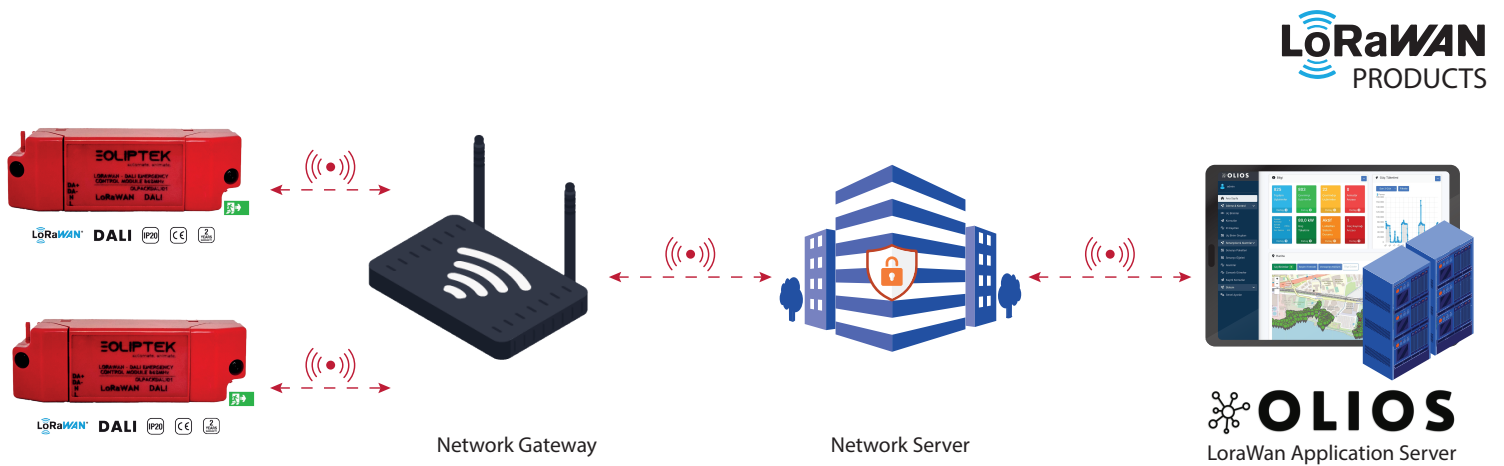
LED INDICATOR	STATUS	DESCRIPTION
Red	Stable	Communication module failure
Purple	Flashing	Test mode, awaiting data. The manufacturer used mode 40 during the test phase. If no test data is received within seconds (approximately 40 flashes), normal operation mode.
Turquoise	Stable	Test mode active. The mode used by the manufacturer during the testing phase.
	Flashing	Delayed data transmission in test mode. Delay and device address ratio flashes until it stops.
Yellow	Stable	Attempting to connect / pair with Lorawan Gateway via ABP or OTA Mode but the result was unsuccessful.
	Flashing	Attempting to connect / pair with Lorawan Gateway via ABP or OTA Mode is doing it. According to the value set in the device software, this trial period repeats.
Green	Stable	Link communication with Lorawan Gateway is active.
	Flashing	Normal mode, data transmission with delay. Delay and device address ratio flashes until it stops.
OFF	OFF	Operation time when the device is sending data or changing mode until the led indicator turns off.

■ Dimensions



■ Emergency Lighting Control Module Working Principle

OLPACKDALI products are controlled by the Olios application server via a gateway.



Read Commands

All responses begin with "RF+," the initial data, and end with a 3-byte checksum.

Action	Command	Min-MAX	Parameter	Example	Return	Explanation
General situation reading	RRX	3byte	-	GW+AFFFFFFFFRRX054	RF+A,ACK1C0028C00000005A00214	Sends general status data. The response varies depending on the device features.
LoRa ID reading	RLRID	5byte	Product ID read 16 bytes	GW+AFFFFFFFFRLRID183	RF+,LRID2CF7F12042001C60133	LoRa displays the unique communication address.
Application Key / Application Session Key Reading	RLRKY	5byte	Application Key read 32 bytes	GW+AFFFFFFFFRLRKY206	RF+,LRKY5448591628AED2A6ABF7158809CF4F3C112	Displays the application key data.
Reading Network Session Keys	RLRK2	5byte	Read the last 8 bytes of the Network Session Key	GW+AFFFFFFFFRLRK2167	RF+,LRK209CF4F3C236	Due to password security, the incoming data is sent as the last 8 bytes instead of 32 bytes.
Reading Multicast Application Session Key	RLRK3	5byte	Read the last 8 bytes of the Multicast Application Session Key	GW+AFFFFFFFFRLRK3168	RF+,LRK309CF4F3C237	Due to password security, the incoming data is sent as the last 8 bytes instead of 32 bytes.
Multicast Network Session Key reading	RLRK4	5byte	Read the last 8 bytes of the Multicast Network Session Key	GW+AFFFFFFFFRLRK4169	RF+,LRK409CF4F3C238	Due to password security, the incoming data is sent as the last 8 bytes instead of 32 bytes.
Reading periodic connection and periodic status settings	RPR	3byte	Connection period 3 bytes / status transmission intervals 3 bytes	GW+AFFFFFFFFRPR046	RF+,PRO20000097	The first 3 bytes indicate the reconnection period in minutes between 010 and 030; the last 3 bytes indicate the status transmission period in minutes between 010 and 255. NOTE: When the values are 000, periodic timing does not work.
Reading Multicast ID	RLRMC	00000000 - 99999999	Read multicast ID 8 bytes	GW+AFFFFFFFFRLRMC186	RF+,LRMC00000001158	Displays the multi-communication group number.
Dali Data Reading Example 1	RDA	3 bytes + Dali command value	Query the current level	GW+AFFFFFFFFRDAFFA0014	RF+,DADC251	The response received is DC in hex. The current level is shown as 220 in decimal.
Dali Data Reading Example 2	RDA	3 bytes + Dali command value	Query current level and query maximum level	GW+AFFFFFFFFRDAFFA0,FFA1056	RF+,DADC,FE178	The response received is DC, FE in hex. The current level is 220 in decimal, and the maximum level is 254 in decimal. Multiple responses can be obtained with a single query by inserting commas between the read data to be sent in this manner.
Dali Data Reading Example 3	RDA	3 bytes + Dali command value	Check current level, check maximum level, and check emergency lighting kit battery charge level	GW+AFFFFFFFFRDAFFA0,FFA1,C101FFF1060	RF+,DADC,FE,FE105	The response received is DC, FE, FE in hexadecimal. The current level is 220 in decimal; the maximum level is 254 in decimal, and the emergency lighting kit battery charge level is 254 in decimal, indicating that it is 100% full. Multiple responses can be obtained with a single query by inserting commas between the reading data to be sent in this manner.

Emergency DALI writing commands

All commands will have GW+AFFFFFFF start data added to the beginning and a 3-byte checksum added to the end.

The checksum is obtained by summing all the ASCII characters in the packet as bytes and then sending this as 3 bytes of ASCII. Example: ABC =>65+66+67=198

Action	Command	Parameter	Example Command to	Return	Description
Start Rest Mode	TDA	C101FFE0FFE0	GW+AFFFFFFFTDAC1 01FFE0FFE0234	-	The command in the example starts the rest mode of the emergency lighting kit.
Start Inhibit Mode	TDA	C101FFE1FFE1	GW+AFFFFFFFTDAC1 01FFE1FFE1236	-	The command in the example starts the Inhibit mode of the emergency lighting kit.
Reset in Rest Mode / Start Re-illumination in Inhibit Mode	TDA	C101FFE2FFE2	GW+AFFFFFFFTDAC1 01FFE2FFE2238	-	The command in the example starts reset in rest mode, re-illumination in inhibit mode of the emergency lighting kit.
Start Identification	TDA	C101FFF0FFF0	GW+AFFFFFFFTDAC1 01FFF0FFF0236	-	The command in the example starts the identification mode of the emergency lighting kit.
Perform DTR operation for selected "0" function	TDA	A300C101FFFEFFFE	GW+AFFFFFFFTDAA3 00C101FFFEFFFE234	-	The command in the example performs DTR operation for selected "0" function of the emergency lighting kit.
Emergency Light Level Maximum On	TDA	A3FFC101FFE9FFE9	GW+AFFFFFFFTDAA3 FFC101FFE9FFE9252	-	The command in the example turns on the emergency light level of the emergency lighting kit to maximum.
Duration Test Interval Schedule 1 Week	TDA	A301C101FFEDFFED	GW+AFFFFFFFTDAA3 01C101FFEDFFED231	-	The command in the example schedules the duration test of the emergency lighting kit periodically as 1 week.
Duration Test Interval Schedule 4 Weeks	TDA	A304C101FFEDFFED	GW+AFFFFFFFTDAA3 04C101FFEDFFED234	-	The command in the example schedules the duration test of the emergency lighting kit periodically as 4 weeks.
Duration Test Interval Schedule 52 Weeks	TDA	A334C101FFEDFFED	GW+AFFFFFFFTDAA3 34C101FFEDFFED237	-	The command in the example schedules the duration test of the emergency lighting kit periodically as 52 weeks.
Start Duration Test	TDA	C101FFE3FFE3	GW+AFFFFFFFTDAC1 01FFE4FFE4242	-	The command in the example starts the duration test of the emergency lighting kit.

Reset Duration Test Completed Flag	TDA	C101FFE7FFE7	GW+AFFFFFFFFTDAC101FFE7FFE7248	-	The command in the example resets the duration test completed flag of the emergency lighting kit.
Function Test Interval Schedule 7 Days	TDA	A307C101FFECFFEC	GW+AFFFFFFFFTDAA307C101FFECFFEC235	-	The command in the example schedules the function test of the emergency lighting kit periodically as 7 days.
Function Test Interval Schedule 30 Days	TDA	A31EC101FFECFFEC	GW+AFFFFFFFFTDAA31EC101FFECFFEC250	-	The command in the example schedules the function test of the emergency lighting kit periodically as 30 days.
Start Function Test	TDA	C101FFE3FFE3	GW+AFFFFFFFFTDAC101FFE3FFE3240	-	The command in the example starts the function test of the emergency lighting kit.
Reset Function Test Completed Flag	TDA	C101FFE6FFE6	GW+AFFFFFFFFTDAC101FFE6FFE6246	-	The command in the example resets the function test completed flag of the emergency lighting kit.
Set Test Execution Timeout 7 Days	TDA	A307C101FFEEFFEE	GW+AFFFFFFFFTDAA307C101FFEEFFEE239	-	The command in the example changes the test execution timeout day of the emergency lighting kit to 7 days.
Set Prolong Time 1 Minute	TDA	A302C101FFEFFFFE	GW+AFFFFFFFFTDAA302C101FFEFFFFE236	-	The command in the example sets the prolong time of the emergency lighting kit to 1 minute.
Set Prolong Time 5 Minutes	TDA	A30AC101FFEFFFFE	GW+AFFFFFFFFTDAA30AC101FFEFFFFE251	-	The command in the example sets the prolong time of the emergency lighting kit to 5 minutes.
Stop Test	TDA	C101FFE5FFE5	GW+AFFFFFFFFTDAC101FFE5FFE5244	-	The command in the example stops the active tests of the emergency lighting kit.
Reset Lamp Time	TDA	C101FFE8	GW+AFFFFFFFFTDAC101FFE8241	-	The command in the example resets the lamp time of the emergency lighting kit.

Action	Command	Parameter	Example Command	Return	Description
Write Power On Level (Value=90%)	TDA	A3FAFF2DFF2D	GW+AFFFFFFFFFTDA A3FAFF2DFF2D018	-	The command in the example sets the power on level of the emergency lighting kit. The 90% level corresponds to the FA value in hex format according to the DALI dimming level.
Write System Failure Level (Value=50%)	TDA	A3E5FF2CFF2C	GW+AFFFFFFFFFTDA A3E5FF2CFF2C003	-	The command in the example sets the system failure level of the emergency lighting kit. The 50% level corresponds to the E5 value in hex format according to the DALI dimming level.
Lamp Maximum Level On	TDA	FF05	GW+AFFFFFFFFFTDA FF05004	-	The command in the example brings the lamp level of the emergency lighting kit to the maximum level.
Lamp Minimum Level Off	TDA	FF06	GW+AFFFFFFFFFTDA FF06005	-	The command in the example brings the lamp level of the emergency lighting kit to the minimum level.
Lamp Off	TDA	FF00	GW+AFFFFFFFFFTDA FF00255	-	The command in the example brings the lamp level of the emergency lighting kit to the off level.
Lamp On / Step Up	TDA	FF08	GW+AFFFFFFFFFTDA FF08007	-	The command in the example increases the lamp level of the emergency lighting kit.
Lamp Step Down	TDA	FF04	GW+AFFFFFFFFFTDA FF04003	-	The command in the example decreases the lamp level of the emergency lighting kit.

Emergency DALI read commands

All responses begin with "RF+," the initial data, and end with a 3-byte checksum.

Action	Command	Parameter	Example Command to Send	Return	Description
Read Emergency Light Level	RDA	C101FFF6	GW+AFFFFFFFFRDAC101FFF6238	RF+,DAFF000	The incoming response is FF in hex. The emergency light level shows the level 255 in decimal.
Read Minimum Emergency Light Level	RDA	C101FFF7	GW+AFFFFFFFFRDAC101FFF7239	RF+,DAFF000	The incoming response is FF in hex. The minimum emergency light level shows the level 255 in decimal.
Read Maximum Emergency Light Level	RDA	C101FFF8	GW+AFFFFFFFFRDAC101FFF8240	RF+,DAFF000	The incoming response is FF in hex. The maximum emergency light level shows the level 255 in decimal.
Read Duration Test Scheduled Week Period	RDA	A305C101FFF2	GW+AFFFFFFFFRDAA305C101FFF2195	RF+,DA34219	The incoming response is 34 in hex. The duration test scheduled week period shows 52 weeks in decimal.
Read Function Test Scheduled Day Period	RDA	A304C101FFF2	GW+AFFFFFFFFRDAA304C101FFF2194	RF+,DA07219	The incoming response is 07 in hex. The function test scheduled day period shows 7 days in decimal.
Read Test Execution Timeout Day	RDA	A306C101FFF2	GW+AFFFFFFFFRDAA306C101FFF2196	RF+,DA07219	The incoming response is 07 in hex. The test execution timeout day period shows 7 days in decimal.
Read Prolong Time Minute	RDA	A307C101FFF2	GW+AFFFFFFFFRDAA307C101FFF2197	RF+,DA00212	The incoming response is 00 in hex. The prolong time minute shows 0 minutes in decimal.
Read Emergency Status	RDA	C101FFFD	GW+AFFFFFFFFRDAC101FFFD252	RF+,DA02214	The incoming response is 02 in hex. This value indicates that the function test has been performed and the result is valid. NOTE: The 02 hex response from the system corresponds to the value '0000 0010' in binary format. In this data structure, each bit represents a different flag in the emergency status. The second bit from the right (Bit 1) being '1' activates the indicator 'Function test completed and result is valid' that this bit defines. See General Flag Bit Table*

Read Failure Status	RDA	C101FFFC	GW+AFFFFFFF RDAC101FFFC251	RF+,DA04216	<p>The incoming response is 04 in hex. This value indicates that there is a Battery Failure in the failure status reading. NOTE: The 04 hex response from the system corresponds to the value '0000 0100' in binary format. In this data structure, each bit represents a different flag in the emergency failure status. The third bit from the right (Bit 2) being '1' activates the 'Battery failure' indicator that this bit defines. See General Flag Bit Table*</p>
Read Features	RDA	C101FFFB	GW+AFFFFFFF RDAC101FFFB250	RF+,DA8C239	<p>The incoming response is 8C in hex. This value indicates that the flags "Switched maintained control equipment", "Automatic test capability" and "Re-ignition support in rest mode" are active simultaneously in the device's features. NOTE: The 8C hex response from the system corresponds to the value '1000 1100' in binary format. In this data structure, each bit represents a different hardware feature supported by the device. The third bit from the right (Bit 2) being '1' activates the 'Switched maintained control equipment' indicator, The fourth bit from the right (Bit 3) being '1' activates the 'Automatic test capability' indicator, The eighth bit from the right (Bit 7) being '1' activates the 'Re-ignition support in rest mode' indicator. This is the technical equivalent of the data 8C (80 + 08 + 04) formed from the sum of these bits. See General Flag Bit Table*</p>

Query Duration Test Result	RDA	C101FFF3	GW+AFFFFFFFFRDAC101FFF32 35	RF+,DA5A234	The incoming response is 5A in hex. In decimal it means 90. This value is the scaled code of the estimated time measured by performing the duration test. Since the estimated time is 3 hours for the tested device, it means 100% performance. 5A is not a duration value, it is a performance level / scaled result code, Software correctly maps with Estimated Time.
Query Rated Duration	RDA	C101FFF9	GW+AFFFFFFFFRDAC101FFF92 41	RF+,DA5A234	The incoming response is 5A in hex. In decimal it means 90. This value is the scaled code of the Rated Duration. Since the rated duration is 3 hours, it means 100% performance. 5A is not a duration value, it is a performance level / scaled result code, Software correctly maps with Rated Duration.
Read Emergency Mode	RDA	C101FFFA	GW+AFFFFFFFFRDAC101FFFA2 49	RF+,DA02214	The incoming response is 02 in hex. This value indicates that emergency normal mode is active. NOTE: The 02 hex response from the system corresponds to the value '0000 0010' in binary format. In this data structure, each bit represents a different flag in the emergency status. The second bit from the right (Bit 1) being '1' activates the 'Normal Mode Active' indicator that this bit defines. See General Flag Bit Table*

Query Battery Charge Status	RDA	C101FFF1	GW+AAAAAAAAFRDAC101FFF1233	RF+,DAFE255	The incoming response is FE in hex. Battery charge status in decimal 254 = 100% full means.
Query Lamp Emergency Time	RDA	C101FFF4	GW+AAAAAAAAFRDAC101FFF4236	RF+,DA07219	The incoming response is 07 in hex. Lamp emergency time in decimal is 7, meaning 7 hours.
Query Lamp Total Operation Time	RDA	C101FFF5	GW+AAAAAAAAFRDAC101FFF5237	RF+,DA08220	The incoming response is 08 in hex. It shows the lamp total operation time in decimal as 8, meaning 8 hours.
Query Next Function Test	RDA	A300C101FFF2,A301C101FFF2	GW+AAAAAAAAFRDAA300C101FFF2,A301C101FFF2152	RF+,DA01,C4120	The incoming response is 01 and C4 in hex format. These values correspond to 1 and 196 respectively in decimal. When the next function test time of the emergency lighting kit is calculated based on these set parameters, the date of the next function test is obtained as 20.01.2026 07:00.
Query Next Duration Test	RDA	A302C101FFF2,A303C101FFF2	GW+AAAAAAAAFRDAA302C101FFF2,A303C101FFF2156	RF+,DA65,83118	The incoming response is 65 and 83 in hex format. These values correspond to 101 and 131 respectively in decimal. When the next duration test time of the emergency lighting kit is calculated based on these set parameters, the date of the next duration test is obtained as 13.10.2026 07:00.
Extended DALI Version Number	RDA	C101FFFF	GW+AAAAAAAAFRDAC101FFFF254	RF+,DA08220	The incoming response is 08 in hex. The extended DALI version number shows the value 8 in decimal.
Power On Level Reading	RDA	FFA3	GW+AAAAAAAAFRDAFFA3017	RF+,DAFE255	The received response is FE in hex. The set value of the power on level is 254 = 100%.
System Failure Level Reading	RDA	FFA4	GW+AAAAAAAAFRDAFFA4018	RF+,DAC3234	The received response is C3 in hex. The set value of the system failure level is 195 = 20%.

■ General Flag Bit Table

General Flag Bit Table						
Emergency Status				Emergency Mode		
Bit No	Hex Value	Description		Bit No	Hex Value	Description
Bit 0	01	Inhibit mode		Bit 0	01	Rest mode active
Bit 1	02	Function test done and result valid		Bit 1	02	Normal mode active
Bit 2	04	Duration test done and result valid		Bit 2	04	Emergency mode active
Bit 3	08	Battery fully charged		Bit 3	08	Extended emergency mode active
Bit 4	10	Function test request pending		Bit 4	10	Function test is in progress
Bit 5	20	Duration test request pending		Bit 5	20	Duration test is in progress
Bit 6	40	Identification active		Bit 6	40	Hardwired inhibit is active
Bit 7	80	Physically selected		Bit 7	80	Hardwired switch is on
Failure Status				Features		
Bit No	Hex Value	Description		Bit No	Hex Value	Description
Bit 0	01	Circuit failure		Bit 0	01	Physical selection supported
Bit 1	02	Battery duration failure		Bit 1	02	Maintained control gear
Bit 2	04	Battery failure		Bit 2	04	Switched maintained control gear
Bit 3	08	Emergency lamp failure		Bit 3	08	Auto test capability
Bit 4	10	Function test max. delay exceeded		Bit 4	10	Adjustable emergency level
Bit 5	20	Duration test max. delay exceeded		Bit 5	20	Hardwired inhibit supported
Bit 6	40	Function test failed		Bit 6	40	Physical selection supported
Bit 7	80	Duration test failed		Bit 7	80	Re-light in rest mode supported

■ Building Scenarios

Commands for controlling dimming and relay activation and deactivation, which can be scheduled to run at a specific hour and minute between the start and end dates of the week for lighting control devices

TABLE 1

	Scenario ID	Random Unique ID	Starting Date	End date	Day of The Week	Scenario Type	Time (HH:mm)		Command	Port	Value
			dd/MM	dd/MM	TABLE 1-1	TABLE 1-2	HH	mm	TABLE 1-3	0000	TABLE 4 or 4-1
EXAMPLE 01	AAA110123112FF001830000000FF	AAA1	1012	3112	FF	00	18	30	00	0000	FF
EXAMPLE 02	F9DD01013112FF001200000000FF	F9DD	0101	3112	FF	00	12	00	00	0000	FF
EXAMPLE 03	CDF20106010704002100000000E5	CDF2	0106	0107	04	00	21	00	00	0000	E6
EXAMPLE 04	45F201013112FF00040000000000	45F2	0101	3112	FF	00	04	00	00	0000	00
EXAMPLE 05	316C0110011180002000000000FF	316C	0110	0111	80	00	20	00	00	0000	FF
EXAMPLE 06	44CA2205220720002330000000C3	44CA	2205	2207	20	00	23	30	00	0000	C3
EXAMPLE 01	Start from 10 December to 31 December ,all week at 18:30 dim the light HEX 255 (%100)										
EXAMPLE 02	Start from 01 January to 31 December ,all week at 12:00 dim the light HEX 255 (%100)										
EXAMPLE 03	Start from 01 June to 01 July ,every tuesday at 21:00 dim the light HEX 229 (%50)										
EXAMPLE 04	Start from 01 January to 31 December ,all week at 04:00 dim the light HEX 0 (%0)										
EXAMPLE 05	Start from 01 October to 01 November ,every sunday at 20:00 dim the light HEX 255 (%100)										
EXAMPLE 06	Start from 22 May to 22 July ,every friday at 23:30 dim the light HEX 195 (%20)										

TABLE 1-1

DAY OF THE WEEK	
02	MONDAY
04	TUESDAY
08	WEDNESDAY
10	THURSDAY
20	FRIDAY
40	SATURDAY
80	SUNDAY
FF	ALL WEEK

TABLE 1-2

TYPE	VALUE
Normal	00
Sunrise	01
Sunset	02

TABLE 1-3

COMMAND	VALUE
DIM	00
RELAY	01
RELAY	02
RELAY	03
ANALOG OUT	04
DISPLAY	05

TABLE 4-1

%	HEX
0	00
10	AA
20	C3
30	D2
40	DE
50	E6
60	EB
70	F2
80	F6
90	FA
100	FF

Dimming commands that can be scheduled between the start and end dates of the week, taking into account the days determined and considering the times of sunrise and sunset, with the ability to adjust forward or backward by a few minutes to these times for lighting control devices

TABLE 2

	Scenario ID	Random Unique ID	Starting Date	End date	Day of The Week	Scenario Type	Time Offset		Command	Port	Value
			dd/MM	dd/MM	TABLE 2-1	TABLE 2-2	TABLE 2-4	mm	N/A	N/A	TABLE 4 or 4-1
EXAMPLE 01	AAA110123112FF0100000000000	AAA1	1012	3112	FF	01	00	00	00	0000	00
EXAMPLE 02	F9DD01013112FF01102300000000	F9DD	0101	3112	FF	01	10	23	00	0000	00
EXAMPLE 03	CDF20106010704012018000000E5	CDF2	0106	0107	04	01	20	18	00	0000	E6
EXAMPLE 04	45F201013112FF020000000000FF	45F2	0101	3112	FF	02	00	00	00	0000	FF
EXAMPLE 05	316C0110011180021042000000FF	316C	0110	0111	80	02	10	42	00	0000	FF
EXAMPLE 06	44CA2205220720022016000000C3	44CA	2205	2207	20	02	20	16	00	0000	C3
EXAMPLE 01	Start from 10 December to 31 December ,all week at sunrise dim the light HEX 0 (%0)										
EXAMPLE 02	Start from 01 January to 31 December ,all week 23 minutes after sunrise dim the light HEX 0 (%0)										
EXAMPLE 03	Start from 01 June to 01 July ,every tuesday 18 minutes before sunrise dim the light HEX 229 (%50)										
EXAMPLE 04	Start from 01 January to 31 December ,all week at sunset dim the light HEX 255 (%100)										
EXAMPLE 05	Start from 01 October to 01 November ,every sunday 42 minutes after sunset dim the light HEX 255 (%100)										
EXAMPLE 06	Start from 22 May to 22 July ,every sunday 16 minutes before sunset dim the light HEX 195 (%20)										

TABLE 2-1

DAY OF THE WEEK	
02	MONDAY
04	TUESDAY
08	WEDNESDAY
10	THURSDAY
20	FRIDAY
40	SATURDAY
80	SUNDAY
FF	ALL WEEK

TABLE 2-2

TYPE	VALUE
Normal	00
Sunrise	01
Sunset	02

TABLE 2-4

OFFSET	VALUE
ON TIME	00
AFTER	10
BEFORE	20

TABLE 4-1

%	HEX
0	00
10	AA
20	C3
30	D2
40	DE
50	E6
60	EB
70	F2
80	F6
90	FA
100	FF

■ Definitions of The Commands

TABLE 3

SHORTENED TERM	DESCRIPTION	UNIT
GW+AFFFFFFF	DATA SENT FROM GATEWAY	DATA
RF+	RESPONSE FROM NODE	DATA
LE	LED BRIGHTNESS	0-255
WA	POWER	WATT
CU	CURRENT	AMPER
VO	VOLTAGE	VOLT
PF	POWER FACTOR	%
HZ	FREQUENCY	HERTZ
T2	TEMPERATURE	CELCIUS
TE	TEMPERATURE	CELCIUS
ED	D4i STATE	00: NORMAL 01:POWER SUPPLY FAILURE 10:LUMINAIRE FAILURE
LO	GNSS LOCATION	TEXT
VS	VERSION	TEXT
TY	TYPE	TEXT
LRID	LORAWAN ID	16 Byte
LRKY	LORAWAN APPKEY	32 Byte
LRMC	LORAWAN MULTICAST ID	8 Byte