



Certified Capability List

This Capability List is based on a certification session performed by the *TALQ Certification Tool (v2.7.1-online.5)* on 2026-10-09 17:54:47.389 +0200.

The Capability List is a consolidated list of TALQ features which are implemented in a product.

The tool has successfully performed 72 tests.

Product details

Product Name tct deployment PE Smart TALQ Gateway 2.7.1

Company Paradox Engineering S.A.

Type GATEWAY

Notes

Generated on 2026-10-09 17:54:47.389 +0200

Supported profiles

- Dali D4i Luminaire Talq Zhaga
- Lighting

API version certified: 2.7.1

Certification performed by app version: 2.7.1-online.5

Functional tests

The Functional Tests help customers understand the capabilities of a TALQ-certified product. All functional test cases are presented to provide comprehensive context, and successful completion of each test is indicated with a tick mark. Each Functional Test is related to a set of required TALQ technical test cases.

Configuring

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Connect to CMS and announce light point control capabilities ✓

The Gateway successfully connects to a CMS and transmits its capabilities (i.e. supported features) for light point configuration, control, programming and monitoring.

CONFIG-1

Connect to CMS and announce cabinet control capabilities

The Gateway successfully connects to a CMS and transmits its capabilities (i.e. supported features) for lighting cabinet controller configuration, control, programming, and monitoring. **CONFIG-2**

Connect to CMS and announce dynamic sensor-based lighting capabilities

The Gateway successfully connects to a CMS and transmits its capabilities (i.e. supported features) for dynamic lighting based on sensor. **CONFIG-3**

Announce the list of light point controllers on the network ✓

The Gateway transmits all the devices (light point controllers, cabinet controller and any other type of device) that are known on the network, to the CMS together with their configuration and asset information. **CONFIG-4**

Configure light point controllers electrical alarm thresholds from the CMS ✓

The Gateway can receive the electrical alarm thresholds from the CMS and assign them to selected light point controllers. This includes Lamp Voltage Too High/Low, Lamp Current Too High/Low, Active Power Too High/Low and Power Factor Too Low. **CONFIG-5**

Configure the cabinet controllers alarm thresholds from the CMS ✓

The Gateway can receive the electrical alarm thresholds from the CMS and assign them to selected cabinet controllers. **CONFIG-6**

Configure the light point controllers' parameters from the CMS

The Gateway can receive configuration parameters from the CMS and assign them to selected light point controllers. **CONFIG-7**

Create and change group of light point controllers from the CMS

The Gateway can handle a command from the CMS to create or to change a group of light point controllers to assign them a control program. **CONFIG-8**

Change the sampling frequency for telemetry measurements

The Gateway can change the sampling of telemetry measurements on light point controllers and cabinet controllers and properly reflected in the next data log sent to the CMS. **CONFIG-9**

Change the reporting frequency for telemetry measurements

The Gateway can change the reporting frequency, i.e. how often it sends data logs to the CMS, for telemetry measurements on light point controllers. **CONFIG-10**

Update the firmware of the physical devices

The Gateway supports data package service and accepts a data package to update firmware on a physical device such as a light point controller. **CONFIG-11**

Monitoring

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Report basic electrical values to the CMS

The Gateway measures mains voltage, current, active power, and power factor, and sends these values to the CMS via the data logging service. **MONITOR-1**

Report cumulative energy usage (kWh)

The Gateway sends the total energy used as a cumulative counter (kWh) to the CMS via the data logging service. **MONITOR-2**

Report lamp operating hours (runtime)

The Gateway reports each lamp's total hours of operation as a cumulative counter to the CMS via the data logging service. **MONITOR-3**

Report lamp switch-on count

The Gateway reports how many times each lamp has been switched on, as a cumulative counter to the CMS via the data logging service. **MONITOR-4**

Report power loss count

The Gateway reports the total number of power interruptions detected for each lamp as a cumulative counter to the CMS via the data logging service. **MONITOR-5**

Confirm dimming level after manual override command



When a manual override is sent (e.g., set dimming level to X%), the Gateway forwards the command to the device and confirms, via on-demand request and data-logging service, that the actual dimming level matches (or closely follows) the requested level. **MONITOR-6**

Report temperature values

The Gateway sends temperature measurements from connected devices or sensors to the CMS via the data logging service. **MONITOR-8**

Report presence detection

The Gateway sends presence events or values from sensors to the CMS via the data logging service.

MONITOR-9**Report ambient noise level**

The Gateway sends noise level values to the CMS via the data logging service.

MONITOR-10**Report dimming levels**

The Gateway sends dimming level values to the CMS via the data logging service.

MONITOR-11**Report firmware update status and progress**

The Gateway reports firmware update events (start, progress, completion or failure) to the CMS.

MONITOR-12**Controlling****3 of 7****Manually set a single light point**

The Gateway accepts a manual override command from the CMS (e.g., set dimming level or switch ON/OFF) and applies it to one specific light point. **CONTROL-1**

Manually set the dimming level on a group of light points

The Gateway accepts a manual override command from the CMS and applies it to a defined group of light points. **CONTROL-2**

Manually set the dimming level on a single light point with a delay

The Gateway accepts a manual override command from the CMS that includes a delay (e.g., "in 10 minutes") and applies the change to one light point at the requested time. **CONTROL-3**

Manually change dimming level with a smooth ramp

The Gateway accepts a manual override command from the CMS that includes a ramp-up/ramp-down time and adjusts the dimming level on one light point smoothly to the requested level. **CONTROL-4**

Switch a light automatically using a photocell

The Gateway runs a local control program that turns a single light point ON and OFF based on the status of a local photocell. **CONTROL-5**

Adjust dimming level on presence detection

The Gateway runs a local control program that raises or lowers the dimming level of a single light point when **CONTROL-6** a presence sensor is triggered.

Adjust dimming level on noise detection

The Gateway runs a local control program that changes the dimming level of a single point when a noise **CONTROL-7** sensor is triggered.

Alarming

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Detect and report lighting alarms ✓

The Gateway detects lighting-related issues (e.g., lamp/driver issues, high temperature) and send alarms to the **ALARM-1** CMS via the data-logging service.

Detect and report electrical alarms ✓

The Gateway detects electrical issues (e.g., over/under-voltage, over-current, power loss) and sends alarms to **ALARM-2** the CMS via the data-logging service.

Report invalid schedules or control programs

If a calendar or control program is missing, invalid, or inconsistent, the Gateway raises an alarm and sends it to **ALARM-3** the CMS via the data-logging service.

Report sensor-activity events

When activity is detected by local sensors (e.g., presence or noise), the Gateway sends an event to the CMS **ALARM-4** via the data-logging service.

Provide alarm status on request ✓

When the CMS asks for it, the Gateway returns the actual status of the alarms (e.g., active/inactive). **ALARM-5**

Programming

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Run a daily fixed time on/off and dimming schedule ✓

PROGRAM-1

The Gateway receives a schedule that turns a light point ON/OFF and sets dimming level at specific times, the same every day of the year.

Run an astro-clock on/off schedule with fixed-time dimming (daily) ✓

The Gateway switches a light point ON/OFF at sunrise/sunset with an adjustable time offset ($\pm$ minutes) and applies a time-based dimming plan during the astro-clock active period, every night. **PROGRAM-2**

Run a photocell-based on/off schedule with fixed-time dimming (daily)

The Gateway turns a light point ON when the photocell indicates darkness and OFF when it is bright and follows a time-based dimming plan during the photocell's active period, every night. **PROGRAM-3**

Combine photocell and astro-clock switching with fixed-time dimming (daily)

The Gateway turns a light point ON/OFF based on whichever trigger happens first, photocell darkness/brightness or astro sunrise/sunset with offset and follows a time-based dimming plan during the active period, every night. **PROGRAM-4**

Run an OFF period that crosses midnight (or midday) ✓

The Gateway turns lights OFF for a time window that crosses midnight (or midday). When the schedule resumes, the lights return to the last scheduled dimming level. **PROGRAM-5**

Support special date ranges (seasonal exceptions) ✓

The Gateway handles calendars with a year-round default rule plus a higher-priority rule that applies between two dates (e.g., Sept 10-Oct 16). **PROGRAM-6**

Support weekly exceptions (e.g., weekends) ✓

The Gateway handles calendars with a year-round default rule plus a higher-priority rule that applies on specific weekdays (e.g., every Saturday and Sunday). **PROGRAM-7**

Support combined weekly and seasonal exceptions with priorities ✓

The Gateway handles layered calendars: a year-round default rule; a higher-priority weekend rule (e.g., every Sat/Sun); an even higher-priority rule for a special period (Day 1-Day 2); and, within that period, a highest-priority rule for specific days (e.g., Saturdays). The most specific rule takes precedence. **PROGRAM-8**

Run a sensor-based dynamic lighting control program

The Gateway executes a control program that changes dimming level based on sensor detection (e.g., presence). **PROGRAM-9**

Capability list

Security

Enabled ✓

Functions

Basic

The Basic function describes the properties related to the physical asset to which the logical device is associated, such as identification (assetId) and location information.

Attributes

#	Attribute	Description
✓	displayName	Display name of the asset.
✓	assetId	Customer identifier of the asset. If multiple devices have the same assetId it means they belong to the same asset.
✓	serial	Serial number of the device.
✓	hwType	Hardware type of the device.
✓	hwVersion	Hardware revision of the device.
✓	swVersion	Software version installed on the device.
✓	installationDate	The installation date of Physical Device.
✓	deviceReset	The physical device containing the logical device was reset.
✓	timeZone	Time zone of the device. Time zone may be expressed in two formats. <timezone> where <timezone> is a time zone as defined in the zone.tab of the IANA timezone database [IANA]; and stdoffset[dst[offset][,start[/time],end[/time]]] as defined by the Open Group for posix systems [POSIX]. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new TimeFunction.timeZone instead.]
✓	currentTime	Current time of the device defined as local time with time zone designator. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new TimeFunction.currentTime instead.]

✓ commandConfirmation	Allows the CMS to reboot, factory reset or configuration reset of the device. Before rebooting or resetting the device this attribute has to be true. Default value = false
✓ reboot	Reboot the device. This operational attribute requires the commandConfirmation attribute value to be set to true.
✓ factoryReset	Reset the device to factory settings. This operational attribute requires the commandConfirmation attribute value to be set to true.
✓ configurationReset	Reset the device configuration settings. This operational attribute requires the commandConfirmation attribute value to be set to true.
✓ operatingHours	Number of operating hours of the device.

Events

#	Event type	Description
✓	deviceReset	The physical device containing the logical device was reset
✓	softwareUpdating	Indicates software updating is in progress
✓	hardwareUpdated	Indicates that hardware associated with this logical device has been updated

Communication

The Communication Function contains attributes related to the communication within the ODN, and between ODN devices and Gateways. Although communication within the ODN is outside the scope of the TALQ Smart City Protocol, this Function enables access to a minimum set of configuration and state information of the ODN communication interface in order to facilitate system management from the CMS.

Attributes

#	Attribute	Description
✓	communicationType	Type of communication technology implemented by the ODN (e.g. power line, wireless).
✓	physicalAddress	Physical address of the device. For example, IEEE MAC address. This attribute can be used to map between logical and physical devices. The format is specific to the ODN implementation.
✓	parentAddress	TALQ Address of the parent device, e.g. gateway. It shall point to a specific communication function.
✓	communicationQuality	Indicator of the quality of the communication with the device. 100% means good quality.
✓	communicationFailure	This attribute is updated by the ODN when the communication function is not operating as expected.

Events

#	Event type	Description
✓	communicationFailure	This event is generated by the ODN when the communication function is not operating as expected

Gateway

The Gateway function includes the necessary attributes to enable the communication between the CMS and the Gateway according to the TALQ Specification.

Attributes

#	Attribute	Description
✓	cmsUri	Base URI for TALQ communication that allows the Gateway to access the CMS. Must be an absolute URI. Other URI's for accessing CMS can be relative to this base.
✓	cmsAddress	CMS UUID address
✓	gatewayUri	Base URI for TALQ communication that allows the CMS to access the Gateway. Must be an absolute URI. Other URI's for accessing Gateway can be relative to this base.
✓	gatewayAddress	Gateway UUID address
✓	retryPeriod	Time duration before the Gateway retransmits a message for which expected response has not been received. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new GatewayFunction.gatewayRetryPeriod instead.]
✓	gatewayRetryPeriod	Time duration before the Gateway retransmits a message for which the expected response has not been received. This attribute can be used by the CMS to avoid requests overload. Although this attribute will be mandatory for Gateway in future MAJOR versions, to keep backward compatibility it is considered optional for the existing profiles.
✓	gatewayNumberOfRetries	Maximum number of retries for a failed request sent by the Gateway for which expected response has not been received. Default value shall be 3. This attribute can be used by the CMS to avoid requests overload. Although this attribute will be mandatory for Gateway in future MAJOR versions, to keep backward compatibility it is considered optional for the existing profiles.
✓	crlUrn	URI where the Gateway can obtain the Certification Revocation List (CRL).
✓	vendor	Vendor identification.

Lamp Actuator

The Lamp Actuator function includes attributes related to lighting control and it represents the smallest unit for control purposes. In practice, however, a Lamp Actuator function can control combinations of several lamps and control gear but all in the same way, as if they are all one individual unit.

Attributes

#	Attribute	Description
✓	outputPort	Identifier of the output port that is controlled by the lamp actuator.
✓	defaultLightState	Sets the default light output for the lamp actuator. This shall be applicable if no other command is active. This attribute shall be set to 100% as default value.
✓	targetLightCommand	Latest command for the lamp actuator.

✓ feedbackLightCommand	This attribute reflects the command in effect and it might deviate from the actualLightState due to propagation time or due to internal ODN specific mechanisms to handle the priority of the requests.
✓ actualLightState	This attribute should reflect the physical state of the light source as much as possible, including factors such as CLO. It may be calculated or measured, depending on the specific ODN implementation, which is outside the scope of this specification.
✓ calendarID	TALQ Address of the calendar controlling this lamp actuator. If this attribute is empty, the behavior shall be determined by the ODN. If the attribute is invalid, the ODN shall trigger a generic invalid address event and the behavior shall be determined by the ODN.
✓ lightStateChange	Light state has changed.

Events

#	Event type	Description
✓	lightStateChange	Light state has changed
✓	invalidCalendar	The lamp actuator function has been allocated a calendar that it cannot implement

Lamp Monitor

The Lamp Monitor function enables monitoring of lamp parameters. A Lamp Monitor function should be associated with a specific lamp/control gear combination. Multiple lamp monitor functions may be implemented by a single device.

Attributes

#	Attribute	Description
✓	switchOnCounter	Cumulative number of ON/OFF cycles since installation of the lamp. The wrap around value is $2e32 - 1$.
✓	operatingHours	Number of hours the lamp is on. This is the value used in CLO and may be set by the CMS.
✓	temperature	Temperature of the device implementing this function. [DEPRECATED: This attribute has been deprecated and it will be removed in the next MAJOR release. Please use the new TemperatureSensorFunction.temperature instead.]
✓	supplyVoltage	RMS supply volts when supplyType is AC, supply voltage (V) when supplyType is DC.
✓	supplyCurrent	RMS supply current (A) when supplyType is AC, supply current (A) when supplyType is DC.
✓	activePower	Active power.
✓	reactivePower	Reactive power.
✓	apparentPower	Apparent Power.
✓	powerFactor	Active power/Apparent power.
✓	activeEnergy	Cumulative active energy (since installation or counter reset).
✓	lampPowerTooHigh	Lamp power is greater than expected lamp power + lampPowerTolerance.

✓ lampPowerTooLow	Lamp power is smaller than expected lamp power - lampPowerTolerance
✓ currentTooHigh	Supply current is above the highCurrentThreshold defined in the lamp type.
✓ currentTooLow	Supply current is below the lowCurrentThreshold defined in the lamp type.
✓ powerFactorTooLow	The power factor is below powerFactorThreshold.
✓ controlGearCommFailure	Indicates failure of the control gear.
✓ supplyLoss	Indicates loss of mains power.
✓ supplyVoltageTooHigh	Level of supply voltage is above the highLampVoltageThreshold.
✓ supplyVoltageTooLow	Level of supply voltage is below the lowSupplyVoltageThreshold.
✓ highSupplyVoltageThreshold	Supply voltage above which the supplyVoltageTooHigh event is triggered.
✓ lowSupplyVoltageThreshold	Supply voltage below which the supplyVoltageTooLow event is triggered.

Events

#	Event type	Description
✓	lampPowerTooHigh	Lamp power is greater than expected lamp power + lampPowerTolerance
✓	lampPowerTooLow	Lamp power is smaller than expected lamp power - lampPowerTolerance
✓	currentTooHigh	Supply current is above the highCurrentThreshold defined in the lamp type
✓	currentTooLow	Supply current is below the lowCurrentThreshold defined in the lamp type
✓	powerFactorTooLow	The power factor is below powerFactorThreshold
✓	lampFailure	The lamp is not operating as it is supposed to (e.g. the lamp is broken). This event shall be used to detect a situation where the lamp (or LED module(s)) should be lit, but produce no light. This could be detected by the current flowing or power consumed.
✓	controlGearCommFailure	Indicates failure of the control gear
✓	supplyLoss	Indicates loss of mains power
✓	supplyVoltageTooHigh	Level of supply voltage is above the highLampVoltageThreshold.
✓	supplyVoltageTooLow	Level of supply voltage is below the lowSupplyVoltageThreshold.

Electrical Meter

The electrical meter function supports electrical metering capabilities including measurements of voltage, current, power, energy, and power factor. This function may be associated with Luminaire Controllers, Cabinet Controllers or electrical meters installed in switch boxes. ODNs may implement both single phase and three phase meters. Typically meters within a control device will be single phase and stand-alone meters. A street side cabinet may have single phase or three phase meters.

Attributes

#	Attribute	Description
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- | | |
|-------------|--|
| ✓ totalVA | Sum of the apparent power consumed on phase 1, 2 and 3, or just the apparent power for a single phase meter. |
| ✓ totalVAR | Sum of the reactive power consumed on phase 1, 2 and 3, or just the reactive power for a single phase meter. |
| ✓ frequency | Frequency on the line. |

Events

#	Event type	Description
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Temperature Sensor

The Temperature Sensor function allows a CMS to monitor the temperature in a device and send events in case the value is above/below configurable thresholds.

Attributes

#	Attribute	Description
✓	temperatureHighThreshold	Threshold above which a temperatureTooHigh event is triggered.
✓	temperatureLowThreshold	Threshold below which a temperatureTooLow event is triggered.
✓	temperature	Output temperature.

Events

#	Event type	Description
✓	temperatureTooHigh	Indicates the output temperature is above the temperatureHighThreshold.
✓	temperatureTooLow	Indicates the output temperature is below the temperatureLowThreshold.

Location Sensor*

The Location Sensor Function is used to indicate that an object has changed position attributes configurable by the CMS or based on internal setup of the vendor. For example, a specific location (latitude, longitude) of a device could be defined by the vendor. If the device is equipped with a GPS, it could send a specific event indicating that its position is different to the one defined by the CMS. We might also want to let the configuration to the vendor itself and simply define events notifying the CMS that the default configuration has changed. For example, a garbage bin could have its location defined based on a sensor placed on the floor. If the bin is not above this sensor, the vendor will trigger an event. In this last case, the CMS does not need to configure anything.

Attributes

#	Attribute	Description
✓	expectedLocation	Nominal location of the device
✓	location	Location of the device

Events

#	Event type	Description
✓	locationChanged	Triggered when the difference between location and expectedLocation is above locationChangedThreshold

Orientation*

The Orientation function is used to indicate that an object has changed orientation based on attributes configurable by the CMS or based on internal setup of the vendor. The target orientation of the object could be configured by the CMS or could be handled by the vendor. In the latter case, the configuration is let to the vendor itself and events are triggered depending on internal configuration.

Attributes

#	Attribute	Description
✓	orientationChangedThreshold	Threshold above which orientationChanged is triggered
✓	orientation	Orientation of the device
✓	orientationChanged	Triggered when orientation differs from expectedOrientation by more than orientationChangedThreshold on any angle, or when the device determines itself that its orientation has changed.

Events

#	Event type	Description
✓	orientationChanged	Triggered when orientation differs from expectedOrientation by more than orientationChangedThreshold on any angle, or when the device determines itself that its orientation has changed.

Time*

The Time function includes attributes related to generic control and it represents the smallest unit for control purposes.

Attributes

#	Attribute	Description
✓	timeZone	Time zone of the device. Time zone may be expressed in two formats. where is a time zone as defined in the zone.tab of the IANA timezone database [IANA]; and stdoffset[dst[offset][,start[/time],end[/time]]] as defined by the Open Group for posix systems [POSIX].
✓	currentTime	Current time of the device defined as local time with time zone designator.

Events

#	Event type	Description
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Luminaire Asset

This entity contains the managed and tracked attributes of a specific Luminaire, excluding the concept of Controller and Driver.

Attributes

#	Attribute	Description
✓	luminaireTypeAddress	Address of the Luminaire Type

✓ serial	Serial number of the Luminaire
✓ projectID	Name of the Project / Tender
✓ luminousFluxConfiguration	Programmed light output of the luminaire
✓ paintingColor	Painting color of the luminaire expressed as a color system-color value, (e.g: RAL-7035)
✓ installationTimestamp	Installation date and time of luminaire
✓ identification	Luminaire identification. (e.g: as per DiiA/D4i specification part 251 (MB1 extension)).
✓ identificationNumber	Luminaire identification number. (e.g: as per DiiA/D4i specification part 251 (MB1 extension))
✓ manufactureYear	Year of manufacture of the luminaire.
✓ manufactureWeek	Week of manufacture of the luminaire.

Driver Asset

This entity contains the managed and tracked attributes of a specific driver

Attributes

#	Attribute	Description
✓	driverTypeAddress	Address of the Driver Type
✓	serial	Serial number of the driver
✓	projectID	Name of the Project / Tender
✓	installationTimestamp	Installation date and time of driver
✓	manufactureYear	Year of manufacture of the driver
✓	manufactureWeek	Week of manufacture of the driver.

Controller Asset

This entity contains the managed and tracked attributes of a specific controller

Attributes

#	Attribute	Description
✓	controllerTypeAddress	Address of the Controller Type
✓	serial	Serial number of the Controller
✓	firmwareVersion	Version of the controller hardware firmware
✓	installationTimestamp	Installation date and time of OLC
✓	registrationTimestamp	Registration date and time of OLC
✓	projectID	Name of the Project / Tender
✓	connectionType	Type of the connection to the luminaire

Control Device DALI Part 103 Function

This entity contains the managed and tracked attributes of a specific control device (i.e., application controllers or sensors) compliant with the Digital Addressable Lighting Interface - Part 103: General Requirements for Control devices (IEC 62386-103:2023)

Attributes

#	Attribute	Description
✓	controlDeviceDaliPart103TypeAddress	TALQ address of the ControlDeviceDaliPart103Type
✓	identificationNumber	Identification number of the control device. Defined in DALI Part 103 Memory Bank 0.
✓	logicalControlDeviceUnitIndex	Index number of this logical control device unit. In range [0,numberOfLogicalControlGearsInBus – 1]. Defined in DALI Part 103 Memory Bank 0.
✓	oemIdentificationNumber	OEM Identification number of the control gear. Defined in DALI Part 103 Memory Bank 1.
✓	oemAdditionalControlDeviceInformation	Additional control device information defined by the manufacturer. Defined in DALI Part 103 Memory Bank 1.
✓	shortAddress	Defines the unique address (0-63) assigned to a control device on the DALI line. Required for identifying individual control devices. Defined in DALI Part 102.
✓	numberOfInstances	Indicates the total number of input device instances implemented by the control device (e.g. sensors, buttons). Each instance is addressed using an instanceNumber. Value range: 0-255. Defined in DALI Part 103.
✓	operatingMode	Defines the current operating mode of the control device. Value range is 0x00 to 0xFF. Mode 0x00 is the standard IEC 62386 mode. Values 0x01-0x7F are reserved. Values 0x80-0xFF are manufacturer-specific modes. Defined in DALI Part 103.
✓	applicationActive	Indicates whether the application controller is currently active. When false, the controller shall not send any forward frames on the DALI bus, except a power cycle notification if applicable. Defined in DALI Part 103
✓	identifyDevice	Sends an Identify Device command to the control device, causing it to visually or physically indicate its presence (e.g. by flashing an LED). Defined in DALI Part 103.
✓	applicationControllerErrorByte	Indicates instance-specific error conditions as an 8-bit value. Bit 0 = physical sensor failure. Bits 1-3 are reserved. Bits 4-7 represent manufacturer-specific errors. Value range: 0-255. Defined in DALI Part 103 as a response to the QUERY APPLICATION CONTROLLER ERROR command.
✓	applicationType	Application Type of the control device depending on the use case.

Events

#	Event type	Description
✓	applicationControllerError	Indicates whether a logical error has occurred within the application controller of the DALI control device as defined in DALI Part 103
✓	inputDeviceError	Indicates that an error has been detected in one or more of the input device instances (such as sensors or buttons) within the logical unit, according to the requirements of DALI Part 103
✓	powerCycleSeen	Indicates that the control gear has detected an external power cycle (i.e. mains supply was lost and restored) since the last reset of this flag. Defined in DALI Part 103.

Control Gear DALI Part 102 Function

This entity contains the managed and tracked attributes of a specific control gear (i.e., driver) compliant with the Digital Addressable Lighting Interface - Part 102: General Requirements for Control Gear (IEC 62386-102:2022)

Attributes

#	Attribute	Description
✓	controlGearDaliPart102TypeAddress	TALQ address of the ControlGearDaliPart102Type
✓	integratedBusPowerSupplyDaliPart250TypeAddress	TALQ address of the IntegratedBusPowerSupplyDaliPart250Type
✓	firmwareVersion	Firmware version of the control gear. Defined in DALI Part 102 Memory Bank 0.
✓	identificationNumber	Identification number of the control gear. Defined in DALI Part 102 Memory Bank 0.
✓	logicalControlGearUnitIndex	Index number of this logical control gear unit. In range [0,numberOfLogicalControlGearsInBus – 1]. Defined in DALI Part 102 Memory Bank 0.
✓	oemIdentificationNumber	OEM Identification number of the control gear. Defined in DALI Part 102 Memory Bank 1.
✓	actualLevel	The internal digital level (0-254) currently being output by the device, which maps to actual light output using the DALI-defined transfer characteristic. Defined in DALI Part 102.
✓	powerOnLevel	Defines the light level a device should go to when power is restored (i.e., after a power failure or restart of mains voltage). In range 0-254 (valid light levels), or 255 (MASK). Defined in DALI Part 102.
✓	systemFailureLevel	Defines the light level the control gear should go to if the control gear detects a system failure. In range 0-254 (valid light levels), or 255 (MASK). Defined in DALI Part 102.

✓ minLevel	Defines the minimum light level the control gear is allowed to dim to. In range 1-254. If a lower level is requested, the control gear will use minLevel instead. minLevel must not be higher than maxLevel. Defined in DALI Part 102.
✓ maxLevel	Defines the maximum light level the control gear is allowed to reach. In range 1-254. If a higher level is requested, the control gear will use maxLevel instead. maxLevel must not be lower than minLevel. Defined in DALI Part 102.
✓ fadeRate	Controls how quickly the light level changes during step-based dimming. Range: 0-15. Defined in DALI Part 102.
✓ fadeTime	Sets the duration to fade to a new level. Range: 0-15. Defined in DALI Part 102.
✓ extendedFadeTimeBase	Base value for calculating long fade times. Range: 0-254 (100 ms steps). Used with extendedFadeTimeMultiplier. Defined in DALI Part 102.
✓ extendedFadeTimeMultiplier	Multiplier for extending the fade base time. Range: 0-15. Used with extendedFadeTimeBase. Defined in DALI Part 102.
✓ shortAddress	Defines the unique address (0-63) assigned to a control gear on the DALI line. Required for identifying individual devices. Defined in DALI Part 102.
✓ operatingMode	Defines the current operating mode of the control gear. Value range is 0x00 to 0xFF. Mode 0x00 is the standard IEC 62386 mode. Values 0x01-0x7F are reserved. Values 0x80-0xFF are manufacturer-specific modes. Defined in DALI Part 102.
✓ lampOn	Indicates whether the lamp (or light source) is currently switched on (i.e. light output is active), shall be set to FALSE when the lamp is off, during startup, and in case of total lamp failure. Defined in DALI Part 102.
✓ applicationType	Application Type of the control gear depending on the use case.

Events

#	Event type	Description
✓	controlGearFailure	Indicates whether the control gear has detected a failure condition (e.g. lamp failure, internal fault). Defined in DALI Part 102.
✓	lampFailure	Indicates whether the lamp cannot be operated as intended due to (e.g. incorrect lamp connection or lamp defects). Defined in DALI Part 102.

✓	limitError	Indicates that a command tried to set a light level beyond the allowed range defined by minLevel and maxLevel, and was limited. Defined in DALI Part 102.
✓	powerCycleSeen	Indicates that the control gear has detected an external power cycle (i.e. mains supply was lost and restored) since the last reset of this flag. Defined in DALI Part 102.

Diagnostics And Maintenance Data DALI Part 253 Function

Represents the monitored attributes related to diagnostics and maintenance data of a specific DALI-compliant device as defined in the Digital Addressable Lighting Interface - Part 253: Diagnostics and Maintenance (IEC 62386-253:2023). This includes status, error reporting, and lifetime operational data.

Attributes

#	Attribute	Description
✓	diagnosticsAndMaintenanceDataDaliPart253TypeAddress	TALQ address of the DiagnosticsAndMaintenanceDataDaliPart253Type
✓	controlGearOperatingTime	Cumulative operating time of the control gear, measured in seconds. The counter increases whenever the control gear is powered, regardless of the state of the lampOn bit. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.
✓	controlGearStartCounter	Number of control gear starts detected as a result of power cycles of the external supply. A start is counted when the power-on duration exceeds 600 ms. Defined in DALI Part 253, Memory Bank 205. Implementation note: The counter increments each time the control gear experiences a valid power-on event. Roll-over handling, if any, must be managed internally by the gateway before exposing the cumulative value to TALQ. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.

✓ controlGearExternalSupplyVoltage	Root-mean-square (RMS) value of the external supply voltage applied to the control gear, expressed in volts (V). Defined in DALI Part 253, Memory Bank 205. Implementation note: The raw DALI value uses a scaling factor of 0.1 V (RMS). This scaling must be applied by the gateway before exposing the value in TALQ, so the TALQ attribute always represents the final, correctly scaled SI value. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Average aggregation method across all logical units of the luminaire.
✓ controlGearExternalSupplyVoltageFrequency	Indicates the frequency of the external supply voltage applied to the control gear, in hertz (Hz). A value of 0 Hz indicates a pure DC or rectified AC input. Defined in DALI Part 253, Memory Bank 205. Implementation note: The DALI value is an integer representation of the supply frequency (scaling factor = 1 Hz). For example, a value of 17 corresponds to ≈ 16.7 Hz, 50 to 50 Hz, and 60 to 60 Hz. The gateway shall expose the integer value as received, without additional scaling. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Average aggregation method across all logical units of the luminaire.
✓ controlGearPowerFactor	Power factor of the control gear, expressed as a dimensionless ratio between active and apparent power. A value of 1.00 indicates a unity power factor. Defined in DALI Part 253, Memory Bank 205. Implementation note: The raw DALI value ranges from 0 to 100 and uses a scaling factor of 0.01. The gateway must apply this scaling before exposing the value in TALQ, ensuring the attribute represents the final normalized ratio (e.g. DALI value 100 $\rightarrow$ TALQ value 1.00). Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Average aggregation method across all logical units of the luminaire.

✓ controlGearOverallFailureConditionCounter	Cumulative counter of overall failure occurrences reported by the control gear. The value increases each time a controlGearFailure condition is detected. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ controlGearExternalSupplyUndervoltageCounter	Cumulative counter of times the external supply voltage of the control gear has fallen below the defined undervoltage threshold. The value increases each time a controlGearExternalSupplyUndervoltage is detected. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ controlGearExternalSupplyOvervoltageCounter	Cumulative counter of times the external supply voltage of the control gear has fallen below the defined undervoltage threshold. The value increases each time a controlGearExternalSupplyUndervoltage is detected. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ controlGearOutputPowerLimitationCounter	Cumulative counter of times the output power of the control gear has exceeded the defined power limitation threshold. The value increases each time a controlGearOutputPowerLimitation condition is detected. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.

✓ controlGearThermalDeratingCounter	Cumulative counter of times the temperature of the control gear has exceeded the defined thermal derating threshold. The value increases each time a controlGearThermalDerating condition is detected. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ controlGearThermalShutdownCounter	Cumulative counter of times the temperature of the control gear has exceeded the defined thermal shutdown threshold. The value increases each time a controlGearThermalShutdown condition is detected. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ controlGearTemperature	Indicates the internal temperature of the control gear, expressed in degrees Celsius (°C). The reported value is offset by 60; a raw DALI value of 60 corresponds to 0 °C, and a value of 0 corresponds to -60 °C. The temperature refers to an internal sensor reading and may differ from the Tc (case) temperature. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.
✓ controlGearOutputCurrentPercent	Indicates the output current of the control gear, expressed as a percentage (%) of the nominal output current setting of the logical unit. The value reflects all internal reductions of output current except those caused by constant-lumen functionality. It includes reductions due to actual dimming level, external supply over/undervoltage, power limitation, and thermal conditions affecting either the control gear or the light source. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Average aggregation method across all logical units of the luminaire.

✓ lightSourceStartCounterResettable	Cumulative resettable counter of the number of times the light source has been started. The value increments with each 0 → 1 transition of the lampOn bit. The maximum valid value is 16,777,214 (corresponding to 0xFF FF FE in DALI); writing a higher value is ignored by the control gear. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.
✓ lightSourceStartCounter	Cumulative counter of the number of times the light source has been started. The value increments with each 0 → 1 transition of the lampOn bit and represents the total number of start events recorded by the control gear. Unlike LightSourceStartCounterResettable, this counter cannot be modified or reset via DALI commands. The maximum valid value is 16 777 214 (corresponding to 0xFF FF FE in DALI). Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.
✓ lightSourceOnTimeResettable	Cumulative resettable counter of the operating time of the light source, measured in seconds. The value increases while the lampOn bit equals 1. The counter can be reset through DALI commands, but any attempt to write a value greater than or equal to the internal maximum (4 294 967 294 s, corresponding to 0xFF FF FF FE in DALI) is ignored by the control gear, which behaves as if the memory location were not implemented. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.

✓ lightSourceOnTime	<p>Cumulative counter of the operating time of the light source, measured in seconds. The value increases while the lampOn bit equals 1 and represents the total accumulated operating time of the light source. Unlike LightSourceOnTimeResettable, this counter cannot be modified or reset via DALI commands. The maximum valid value is 4 294 967 294 s (corresponding to 0xFF FF FF FE in DALI). Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.</p>
✓ lightSourceVoltage	<p>Indicates the actual output voltage of the logical unit, expressed in volts (V). The value represents the measured voltage at the light source output. The DALI raw value uses a scaling factor of 0.1 V, which must be applied by the gateway so that the TALQ attribute exposes the correctly scaled SI value. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Average aggregation method across all logical units of the luminaire.</p>
✓ lightSourceCurrent	<p>Indicates the actual output current of the logical unit, expressed in amperes (A). The DALI raw value uses a scaling factor of 0.001 A, which must be applied by the gateway so that the TALQ attribute exposes the correctly scaled SI value. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Average aggregation method across all logical units of the luminaire.</p>
✓ lightSourceOverallFailureConditionCounter	<p>Cumulative counter of times the light source has reported a failure condition. The value increases each time a lightSourceOverallFailureCondition is detected. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.</p>

✓ lightSourceShortCircuitCounter	Cumulative counter of times the light source has reported a short-circuit failure condition. The value increases each time a lightSourceShortCircuit condition is detected. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ lightSourceOpenCircuitCounter	Cumulative counter of times an open-circuit lamp failure condition has been detected by the control gear. The value increases each time a lightSourceOpenCircuit condition occurs. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ lightSourceThermalDeratingCounter	Cumulative counter of times the light source temperature has exceeded the defined thermal-derating threshold. The value increases each time a lightSourceThermalDerating condition is detected. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ lightSourceThermalShutdownCounter	Cumulative counter of times the light source temperature has exceeded the defined thermal-shutdown threshold. The value increases each time a lightSourceThermalShutdown condition is detected. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.

✓ lightSourceTemperature	Indicates the temperature of the light source, expressed in degrees Celsius (°C). The value is measured by a sensor thermally coupled to the light source. In DALI, the raw value includes an offset of +60 °C (for example, a value of 60 represents 0 °C, and a value of 0 represents -60 °C); in TALQ, this offset is applied by the gateway so that the attribute is reported directly in °C. The sensor interface and configuration are manufacturer-specific. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Maximum aggregation method across all logical units of the luminaire.
✓ ratedMedianUsefulLifeOfLuminaire	Indicates the rated median useful lifetime of the luminaire, including the light source, control gear, and other components, as defined in IEC 62722-2-1:2023, 3.4. The value is based on the L80/B50 criteria at $t_q = 25\text{ °C}$, where t_q is the rated ambient temperature of the luminaire (IEC 62722-2-1:2023, 3.2). The DALI raw value uses a scaling factor of 1 000 h (for example, a value of 50 represents 50 000 h), but in TALQ this attribute is expressed directly in hours (h). Defined in DALI Part 253, Memory Bank 207. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Minimum aggregation method across all logical units of the luminaire.
✓ internalControlGearReferenceTemperature	Indicates the internal control-gear reference temperature, expressed in degrees Celsius (°C). The value represents the temperature measured by the luminaire manufacturer under reference conditions: $t_q = 25\text{ °C}$ and at rated luminaire power (100 % dimming level). In DALI, the raw value includes an offset of +60 °C (for example, a value of 60 represents 0 °C, and a value of 0 represents -60 °C); in TALQ, this offset is applied by the gateway so that the attribute is reported directly in °C. Defined in DALI Part 253, Memory Bank 207. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Identical aggregation method across all logical units of the luminaire.

✓ ratedMedianUsefulLightSourceStarts	Indicates the rated median useful number of starts of the light source within the luminaire. A start is defined by a 0 → 1 transition of the lampOn bit. The DALI raw value uses a scaling factor of 100 starts (for example, a value of 5 000 represents 500 000 starts); in TALQ, this attribute is expressed directly as the total number of starts. Defined in DALI Part 253, Memory Bank 207. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Minimum aggregation method across all logical units of the luminaire.
✓ applicationType	Application Type of the diagnostics and maintenance data depending on the use case.

Events

#	Event type	Description
✓	controlGearExternalSupplyOvervoltage	Indicates whether the external supply voltage of the control gear has exceeded the defined overvoltage threshold. A value of true means that ControlGearExternalSupplyVoltage is above this threshold; a value of false means it remains within the acceptable range. The overvoltage threshold itself is not defined by the DALI standard but is set by the driver manufacturer, typically above the upper end of the rated input-voltage range where long-term operation could affect lifetime or performance. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
✓	controlGearExternalSupplyUndervoltage	Indicates whether the external supply voltage of the control gear has fallen below the defined undervoltage threshold. A value of true means that ControlGearExternalSupplyVoltage is below this threshold; a value of false means it remains within the acceptable range. The undervoltage threshold itself is not defined by the DALI standard but is set by the driver manufacturer, typically below the lower end of the rated input-voltage range where long-term operation could affect lifetime or performance. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.

✓ controlGearOutputPowerLimitation	Indicates whether the output power of the control gear has exceeded its defined power limitation threshold. A value of true means that the control gear is limiting its output current due to internal power limitation; a value of false means the output power remains within the permitted range. The power limitation threshold itself is not defined by the DALI standard but is set by the driver manufacturer, representing the maximum allowed output power of the control gear. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
✓ controlGearOverallFailureCondition	Indicates whether the control gear reports an overall failure condition. When true, the control gear has detected a fault as defined by the controlGearFailure flag. Defined in DALI Part 253, Memory Bank 205. Implementation note: This attribute directly reflects the DALI controlGearFailure status bit. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
✓ controlGearThermalDerating	Indicates whether the temperature of the control gear has exceeded the defined thermal derating threshold. A value of true means that ControlGearTemperature is above this threshold and the control gear may be reducing its output current to protect itself; a value of false means the temperature remains within the normal operating range. The thermal derating threshold is not defined by the DALI standard but is set by the driver manufacturer, typically at a level where long-term operation above it could affect lifetime or performance. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
✓ controlGearThermalShutdown	Indicates whether the temperature of the control gear has exceeded the defined thermal shutdown threshold. A value of true means that ControlGearTemperature is above this threshold and the control gear has reduced its output current to zero to prevent damage; a value of false means the temperature is within the safe operating range. The thermal shutdown threshold is not defined by the DALI standard but is set by the driver manufacturer, and it is always higher than the thermal derating threshold. Defined in DALI Part 253, Memory Bank 205. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.

✓ lightSourceOpenCircuit	Indicates that a lamp failure condition (as defined by lampFailure at ControlGearPart102Function has been detected and identified as caused by an open-circuit condition in the light source. A value of true means an open-circuit failure is present; a value of false means the light source is operating normally. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
✓ lightSourceOverallFailureCondition	Indicates whether the light source has reported a failure condition. A value of true means that a lampFailure has been detected; a value of false means the light source is operating normally. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
✓ lightSourceShortCircuit	Indicates that a lamp failure condition (as defined by lampFailure at ControlGearPart102Function has been detected and identified as caused by an short-circuit condition in the light source. A value of true means an short-circuit failure is present; a value of false means the light source is operating normally. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
✓ lightSourceThermalDerating	Indicates whether the light source temperature has exceeded the defined thermal-derating threshold. A value of true means that LightSourceTemperature is above this threshold and the output current of the logical unit may be reduced to prevent overheating; a value of false means the temperature is within the normal operating range. The thermal-derating threshold is not defined by the DALI standard but is set by the driver manufacturer, typically at a level where long-term operation above it could affect the lifetime or performance of the light source. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.

✓ lightSourceThermalShutdown	Indicates whether the light source temperature has exceeded the defined thermal-shutdown threshold. A value of true means that LightSourceTemperature is above this threshold and the output current of the logical unit has been reduced to zero to protect the light source; a value of false means the temperature is within the safe operating range. The thermal-shutdown threshold is not defined by the DALI standard but is set by the driver manufacturer, and it is always higher than the thermal-derating threshold. Defined in DALI Part 253, Memory Bank 206. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the LogicalOr aggregation method across all logical units of the luminaire.
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Energy Data DALI Part 252 Function

Represents the managed and tracked monitored attributes related to energy consumption and electrical characteristics as reported by a DALI-compliant device per Part 252: Energy Reporting (IEC 62386-252:2023).

Attributes

#	Attribute	Description
✓	energyDataDaliPart252TypeAddress	TALQ address of the EnergyDataDaliPart252Type
✓	activeEnergy	The total cumulative active energy input consumed by the control gear over its lifetime, measured in kilowatt-hours (kWh). Defined in DALI Part 252. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Integration aggregation method across all logical units of the luminaire.
✓	activePower	Indicates the total active power input of the control gear, expressed in watts (W). Defined in DALI Part 252, Memory Bank 202. Implementation note: This value is a scaled measurement; the correct SI value is obtained by applying the scale factor defined in ScaleFactorForActivePower (0x0B) as described in Annex A. The gateway shall apply this scaling before exposing the value in TALQ, so the TALQ attribute always represents the correctly scaled power in watts. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.

✓ apparentEnergy	Indicates the total apparent energy input of the control gear, expressed in volt-ampere hours (VAh). Defined in DALI Part 252, Memory Bank 203. Implementation note: This value is a scaled cumulative measurement; the correct SI value is obtained by applying the scale factor defined in ScaleFactorForApparentEnergy (0x04) as described in Annex A. The gateway shall apply this scaling before exposing the value in TALQ, so the TALQ attribute always represents the correctly scaled energy in VAh. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Integration aggregation method across all logical units of the luminaire.
✓ apparentPower	Indicates the total apparent power input of the control gear, expressed in volt-amperes (VA). Defined in DALI Part 252, Memory Bank 203. Implementation note: This value is a scaled measurement; the correct SI value is obtained by applying the scale factor defined in ScaleFactorForApparentPower (0x0B) as described in Annex A. The gateway shall apply this scaling before exposing the value in TALQ, so the TALQ attribute always represents the correctly scaled power in volt-amperes. Aggregation note: When exposed through a DALI Part 341 Bluetooth Mesh Gateway or Part 342 Zigbee Gateway, this attribute may represent an aggregated value using the Sum aggregation method across all logical units of the luminaire.
✓ activeEnergyLoadside	Total active energy measured at the load side of the control gear, expressed in watt-hours (Wh). Defined in DALI Part 252, Memory Bank 204. Implementation note: this is a scaled cumulative value. To obtain the correct SI value, you must also read the corresponding scale factor (see ScaleFactorForActiveEnergyLoadside, defined in the same Part 252) and apply the scaling rules described in Annex A.
✓ activePowerLoadside	Total active energy measured at the load side of the control gear, expressed in watt-hours (Wh). Defined in DALI Part 252, Memory Bank 204. Implementation note: this is a scaled cumulative value. To obtain the correct SI value, you must also read the corresponding scale factor (see ScaleFactorForActiveEnergyLoadside, defined in the same Part 252) and apply the scaling rules described in Annex A.
✓ applicationType	Application Type of the energy data depending on the use case.

Luminaire Data DALI Part 251 Function

This entity contains the managed and tracked attributes of a specific luminaire compliant with the Digital Addressable Lighting Interface - Part 251: Luminaire Data (IEC 62386-251:2023). This entity includes static identification and product-related information for the luminaire asset.

Attributes

#	Attribute	Description
✓	luminaireDataDaliPart251TypeAddress	TALQ address of the LuminaireDataDaliPart251Type

✓ oemGtin	OEM Global Trade Item Number of the luminaire. Defined in DALI Part 251 Memory Bank 1.
✓ oemIdentificationNumber	OEM Identification number of the luminaire. Defined in DALI Part 251 Memory Bank 1.
✓ contentFormatId	Identifies the structure and interpretation of the content provided as defined in DALI Part 251. Acts similarly to a format version. Current known values include 3, 4, and 5, each corresponding to a specific set of content fields and encoding rules.
✓ yearOfManufacture	Luminaire year of manufacture [YY] [0, 99] = YY; [100, MASK] = unknown. Defined in DALI Part 251
✓ weekOfManufacture	Luminaire week of manufacture [WW] [1, 53] = WW; 0,[54, MASK] = unknown. Defined in DALI Part 251
✓ luminaireBodyColor	A text string describing the color of the luminaire body, stored as a string of up to 24 ASCII characters. Defined in DALI Part 251
✓ luminaireIdentification	A text string identifier/label for the luminaire, stored as a string of up to 60 ASCII characters. Defined in DALI Part 251.
✓ applicationType	Application Type of the luminaire data depending on the use case.

Luminaire Mounted Control Device DALI Part 351 Function

Represents the monitored attributes related to a specific DALI-compliant luminaire-mounted control device as defined in the Digital Addressable Lighting Interface - Part 351: Diagnostics and Maintenance (IEC 62386-351:2019).

Attributes

#	Attribute	Description
✓	luminaireMountedControlDeviceDaliPart351TypeAddress	TALQ address of the LuminaireMountedControlDeviceDaliPart351Type
✓	applicationControllerArbitration	Defines the application controller arbitration method status. Possible values: 0x00 (Arbitration disabled, AC transmit permitted); 0xFE (Arbitration enabled, AC transmit disabled); 0xFF (Arbitration enabled, AC transmit permitted). This is configurable for Type B devices with integrated application controllers (DALI 351, Table 4, 0x07; NVM-RW for Type B with integrated AC)
✓	applicationType	Application Type of the luminaire-mounted control device depending on the use case.

Services

Configuration Service

The TALQ Configuration Service enables discovery and configuration of devices and services

Options

#	Option	Value	Description
✓	commissioningSupported*		This ODN can support commissioning from the CMS side.
✓	devicesPaginationSupported*		This ODN can support pagination of devices.

Control Service

The Control service describes the mechanisms to operate the actuator functions in order to enable schedule based and override control

Options

#	Option	Value	Description
✓	supportedTypes	<ul style="list-style-type: none">AbsoluteActivePeriodAstroClockActivePeriodDynamicControl*SensorActivePeriod*FixedControlEffect*ccDate*ccDay*	Control Program and calendar options supported are defined by announcing support for the given modes
✓	dayOffset	<ul style="list-style-type: none">12	Offset of start of day
✓	ccDateSupport	<ul style="list-style-type: none">fu 	Indicates the ccDate options supported
✓	ccDaySupport	<ul style="list-style-type: none">fu 	Indicates the ccDay options supported
✓	programSecondsSupported*		Indicates whether the field of seconds is supported in programs.

Events

#	Event Type	Description
✓	invalidCalendar	An invalid calendar has been provided by the CMS to the ODN
✓	invalidProgram	A control program has been provided by the CMS, which cannot be implemented by the ODN

Data Collection Service

The TALQ Data Collection Service is a provision to configure how ODN measurements, status information and events are logged, and when or under what conditions the logged data is transferred to the CMS

Options

#	Option	Value	Description
✓	supportedModes	<ul style="list-style-type: none">VendorRecordingModeEventRecordingModeImmediateReportingMode	Recording and Reporting modes supported

Events

#	Event Type	Description
✓	invalidLoggerConfig	The CMS has provided a data logger configuration that cannot be implemented by the ODN

On Demand Data Request Service

This service provides the mechanism to access attributes in the logical devices by requesting attribute values from the ODN

Asset Management Service

The TALQ Asset Management Service provides a mechanism to transfer the types needed by the asset management functions

Test Service

This service provides a mechanism to reduce the human intervention during the certification tests, enabling the certification tests to maximise automation

DALI Protocol Service

The TALQ DALI Protocol Service provides a mechanism to transfer the types needed by the DALI D4i protocol functions

Objects

Event log data

Event log data contains a single event, with eventType and value, in each single log entry. It also includes information about whether the log denotes the start or end of the event. Furthermore additional information can be added with the info attribute.

Properties

#	Property	Description
✓	eventType	Identifier of event reported
✓	srcAddress	Address of Logical device or function within a logical device which is the source of the event or to which this event applies

Command

A command defines a type of control action that can be applied to a function. Commands can be generated by a manual override action or by a control program.

Properties

#	Property	Description
✓	state	Light state to be applied to the lamp actuator
✓	reason	Indicates the command was triggered by override, sensor or control program
✓	cmsRefId	CMS reference, which can be used for data logging. The cmsRefId in a Command is a free text to be used by the CMS for any purpose, e.g: to differentiate contexts. It is a token that allows the CMS to match client requests to the original notification.
✓	expiration	Time when the control action resulting from command shall be terminated. This attribute is used only with override commands to set a time to stop an override action. After the expiration of an override command, the system should go back to the state defined by the active control program. If not specified, there is no expiration for the override command.

Control Gear DALI Part 102 Type

Represents a set of attributes that collectively define the generic characteristics of control gear (i.e., driver) compliant with the Digital Addressable Lighting Interface - Part 102: General Requirements for Control Gear (IEC 62386-102:2022)

Properties

#	Property	Description
✓	address	TALQ address of the Type.
✓	gtin	Global Trade Item Number of the control gear. Defined in DALI Part 102 Memory Bank 0.
✓	hardwareVersion	Hardware version of the control gear. Defined in DALI Part 102 Memory Bank 0.
✓	part101VersionNumber	Version number of IEC 62386-101 standard. Defined in DALI Part 102 Memory Bank 0.
✓	part102VersionNumber	Version number of IEC 62386-102 standard. Defined in DALI Part 102 Memory Bank 0.
✓	part103VersionNumber	Version number of IEC 62386-103 standard. Defined in DALI Part 102 Memory Bank 0.
✓	numberOfLogicalControlDevicesInBus	Number of logical control device units in the bus unit. In range [0,64]. Defined in DALI Part 102 Memory Bank 0.

✓ numberOfLogicalControlGearsInBus	Number of logical control gear units in the bus unit. In range [1,64]. Defined in DALI Part 102 Memory Bank 0.
✓ currentBusUnitConfiguration	Current bus unit configuration as defined in the IEC 62386-102 standard. Defined in DALI Part 102 Memory Bank 0.
✓ additionalControlGearInformation	Additional control gear information defined by the manufacturer. Defined in DALI Part 102 Memory Bank 0.
✓ oemGtin	OEM Global Trade Item Number of the control gear. Defined in DALI Part 102 Memory Bank 1.

Control Device DALI Part 103 Type

Represents a set of attributes that collectively define the generic characteristics of control devices (i.e., application controllers or sensors) compliant with the Digital Addressable Lighting Interface - Part 103: General Requirements for Control devices (IEC 62386-103:2023)

Properties

#	Property	Description
✓	address	TALQ address of the Type.
✓	gtin	Global Trade Item Number of the control device. Defined in DALI Part 103 Memory Bank 0.
✓	firmwareVersion	Firmware version of the control device. Defined in DALI Part 103 Memory Bank 0.
✓	hardwareVersion	Hardware version of the control device. Defined in DALI Part 103 Memory Bank 0.
✓	part101VersionNumber	Version number of IEC 62386-101 standard. Defined in DALI Part 103 Memory Bank 0.
✓	part102VersionNumber	Version number of IEC 62386-102 standard. Defined in DALI Part 103 Memory Bank 0.
✓	part103VersionNumber	Version number of IEC 62386-103 standard. Defined in DALI Part 103 Memory Bank 0.
✓	numberOfLogicalControlDevicesInBus	Number of logical control device units in the bus unit. In range [0,64]. Defined in DALI Part 103 Memory Bank 0.
✓	numberOfLogicalControlGearsInBus	Number of logical control gear units in the bus unit. In range [1,64]. Defined in DALI Part 103 Memory Bank 0.
✓	currentBusUnitConfiguration	Current bus unit configuration as defined in the IEC 62386-102 standard. Defined in DALI Part 103 Memory Bank 0.
✓	additionalControlDeviceInformation	Additional control gear information defined by the manufacturer. Defined in DALI Part 103 Memory Bank 0.
✓	oemGtin	OEM Global Trade Item Number of the control gear. Defined in DALI Part 103 Memory Bank 1.
✓	applicationControllerPresent	Indicates whether the control device includes an application controller. Defined in DALI Part 103.

✓ applicationControllerAlwaysActive	Indicates whether the application controller is permanently active and cannot be deactivated. If true, the controller always operates as if applicationActive = true. Defined in DALI Part 103.
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Luminaire Data DALI Part 251 Type

Represents a set of attributes that collectively define the generic characteristics of a luminaire compliant with the Digital Addressable Lighting Interface - Part 251: Luminaire Data (IEC 62386-251:2023). This entity includes static identification and product-related information for the luminaire asset.

Properties

#	Property	Description
✓	address	TALQ address of the Type.
✓	nominalInputPower	Typical or standard wattage usage of the whole luminaire in normal operation (W). Defined in DALI Part 251.
✓	powerAtMinimumDimLevel	This is the power consumption of the control gear (driver) when it is operating at its minimum dimming level. It represents the lowest power draw the device achieves while still delivering output (light) at the minimum allowed dim level. Defined in DALI Part 251.
✓	nominalMinimumAcMainsVoltage	This is the lowest AC mains voltage at which the control gear is designed to operate within specified performance limits. It defines the minimum input voltage for guaranteed proper functionality. Defined in DALI Part 251.
✓	nominalMaximumAcMainsVoltage	This is the highest AC mains voltage at which the control gear is designed to operate safely and within specifications. It marks the upper voltage limit for normal operation. Defined in DALI Part 251.
✓	nominalLightOutput	The expected luminous flux output of the entire luminaire measured in lumens under standard nominal operating conditions. It represents the typical light output that the luminaire is designed to produce. Defined in DALI Part 251.
✓	cri	Color Rendering Index. A numerical index (usually 0-100) that indicates how accurately a light source renders colors compared to a natural or reference light source. Higher values indicate better color rendering performance. Defined in DALI Part 251
✓	cct	Correlated Color Temperature. The color temperature of the light emitted by the luminaire, expressed in kelvins (K). It indicates whether the light is warm (lower Kelvin values) or cool/blueish (higher Kelvin values). Defined in DALI Part 251

✓ lightDistributionType	Light Distribution Type. An enumerated code representing the spatial light emission pattern of the luminaire. Values 1 to 6 correspond to photometric types defined in ANSI/IES RP-8-18:2018 (Type I to Type VS). Additionally, for contentFormatId=5, values in specific ranges correspond to types defined in ANSI C136.32, which addresses dimensional, maintenance, and light distribution features for roadway luminaires to ensure physical and electrical compatibility. Values 0 means "not specified," while special codes (253 and 254) indicate emergency or other custom light distributions with further descriptive data available. Reserved values exist for future additions. Defined in DALI Part 251
✓ lightDistribution	Light distribution. A textual description of the light distribution pattern for the luminaire. This field provides a human-readable or manufacturer-specific description of the light distribution type when the Light Distribution Type code is set to special values (e.g., 253 = emergency luminaire or 254 = other light distribution). It supports up to 24 ASCII printable characters, allowing detailed characterization or custom naming for distributions beyond standard types. This field supplements the enumerated lightDistributionType by enabling precise, descriptive information to be communicated when standard codes are insufficient. Defined in DALI Part 251.
✓ oemName	The name of the Original Equipment Manufacturer (OEM) encoded as a UTF-8 string up to 32 bytes in length. Identifies the manufacturer of the luminaire or control gear. Defined in DALI Part 251.
✓ customerStockingNumber	A customer-specific stocking or part number, encoded as a UTF-8 string up to 16 bytes. Used for inventory, ordering, or tracking purposes unique to the customer. Defined in DALI Part 251.
✓ lampCurrentAtMaximumOutputLevel	The lamp current setting at full output level. This reflects the maximum lamp current last programmed by the OEM. Modifying this value does not affect the actual lamp current in operation.
✓ freeUseCharacters	A flexible field of 8 bytes UTF-8 string for use by OEMs or on-site personnel for any purpose. This can be used for custom labels, notes, or identifiers as needed.
✓ manufacturerSpecific	Reserved space or fields for manufacturer-specific information not standardized by DALI. These can contain additional proprietary data defined by the device maker.

Energy Data DALI Part 252 Type

Represents a set of attributes that collectively define the generic characteristics and configuration of energy reporting functionality as specified in the Digital Addressable Lighting Interface - Part 252: Energy Reporting (IEC 62386-252:2023).

Properties

#	Property	Description
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✓ address	TALQ address of the Type.
✓ memoryBank202Version	Version of the memory bank 202. Defined in DALI Part 252
✓ memoryBank203Version	Version of the memory bank 203. Defined in DALI Part 252
✓ memoryBank204Version	Version of the memory bank 204. Defined in DALI Part 252

Diagnostics And Maintenance Data DALI Part 253 Type

Represents a set of attributes that collectively define the generic characteristics and configuration of diagnostics and maintenance data of a DALI-compliant device as defined in the Digital Addressable Lighting Interface - Part 253: Diagnostics and Maintenance (IEC 62386-253:2023).

Properties

#	Property	Description
✓	address	TALQ address of the Type.
✓	memoryBank205Version	Version of the memory bank 205. Defined in DALI Part 253
✓	memoryBank206Version	Version of the memory bank 206. Defined in DALI Part 253
✓	memoryBank207Version	Version of the memory bank 207. Defined in DALI Part 253

Luminaire Mounted Control Device DALI Part 351 Type

Represents a set of attributes that collectively define the generic characteristics and configuration of a DALI-compliant luminaire-mounted control device as defined in the Digital Addressable Lighting Interface - Part 351: Diagnostics and Maintenance (IEC 62386-351:2019).

Properties

#	Property	Description
✓	address	TALQ address of the Type.
✓	memoryBank201Version	Version of the memory bank 201. Defined in DALI Part 351
✓	typeOfDevice	The DALI Part 351 device type ID (0=Type A, 1=Type B, etc.). This is a fixed, mandatory identification parameter (DALI 351, Table 4, 0x04; ROM)
✓	maxBusCurrentConsumption	Maximum current (in A) consumed from the DALI bus power supply. This is a fixed hardware limit defined by the manufacturer (DALI 351, Table 4, 0x05; ROM)
✓	maxAuxSupplyPower	Maximum average power (in Watts) consumed from the external AUX power supply (0.1 W resolution). This is a fixed hardware limit (DALI 351, Table 4, 0x06; ROM)

✱: The Certification Test Tool is designed to provide a high level of confidence that complementary systems can communicate successfully. As both the protocol and the test tool evolve, all mandatory and other core tests are confirmed by comparison with real-life scenarios (plug-fest or similar). Some tests of optional and more peripheral features may not yet have been confirmed in this

way; such features are identified with an asterisk (*).

This Capability List is based on a certification session performed by the TALQ Certification Tool (v2.7.1-online.5) on 2026-10-09 17:54:47.389 +0200.

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