DALI64 INTEGRATION

Information Sheet

DALI64 product range is a standalone DALI2 compliant sensor and lighting controller. BMS interface of DALI64 comes in two variants: Modbus and Sylk. These interfaces provide a high-level control and monitor interface for the entire DALI bus. Additionally, DALI64 PSU variants includes an in-built DALI power supply, providing 150mA of current to the DALI bus.

1.1 DALI64 SYLK (DALI64SYLKPSU)

The Sylk interface is compliant to Honeywell Sylk (Trend Wallbus) specification. This variant is envisaged to be used largely with the Trend IQ system and as such it follows some of the conventions used in the Tend system, in particular:

- The first digit of a PVID is used to indicate direction from device point of view. Therefore all PVIDs identified as Read are indicated as an Output with first digit set to 1 and all PVIDs indicated as Write will be an Input with first digit set to 2. Bidirectional PVIDs will have their first digit set to 6.
- The second digit is set to the device address on transmit. Therefore it is shown as 0 in the PVID table. IQ firmware internally corrects this based on Interface Module configurations and there is no need for user to change this digit.
- Trend system uses Sylk COVs and as such there is no need to create or upload send tables or proxy files to the device.

1.2 DALI64 MODBUS (DALI64MODPSU)

The supported interface is Modbus RTU.

1.2.1 Physical and Data Link Layer

PHYSICAL AND DATA LINK LAYER	
ELECTRICAL INTERFACE	EIA/TIA-485 (also known as RS485 standard) in two-wire configuration
CONNECTOR TYPE	3-wire pluggable screw terminal (C-, GND, C+)
SIGNALLING RATE	9600 bps, 19.2 Kbps (default), 38.4 Kbps, 56.7 Kbps, 115.2 Kbps; configurable using Light Touch app
TERMINATION	Disabled in the sensor by default; can be enabled using Light Touch app
ADDRESS	Between 1 and 247 (default: 1); configurable using Light Touch app
CODING	1 start bit; 8 data bits; parity bit (default: even, selectable as none, even, odd); 1 or 2 stop bits (default: 1. Must be 2 if parity is none); configurable using Light Touch app

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Ex-Or

1.2.2 Application Layer

Recommended Response Time and Turnaround Delay: xxx

Endianness: Modbus specification only supports 16-bit values and they are transmitted in Big Endian. In this specification, 32-bit values are stored in two consecutive registers and follow the same endianness where MSB is stored in the register with lower address. E.g. the 32-bit value 0x12345678 at register 0000 will be stored as: register 0000 = 0x1234; register 0001 = 0x5678

Supported function codes:

- Read Input Register (0x04)
- Read Holding Registers (0x03)
- Write Single Register (0x06)
- Write Multiple Registers (0x10)
- Read Coils (0x01)
- Write Single Coil (0x05)
- Write Multiple Coils (0x0F)
- Read Discrete Inputs (0x02)

1.2.3 File Transfer Protocol (Not Implemented Yet!)

Modbus standard defines File Record access functions, but this feature is not widely supported in 3rd party Modbus implementations or in Honeywell proprietary stacks. Therefore, a proprietary File Transfer Protocol is specified which solely relies on standard holding register access function codes which are universally supported.

In its simplest form, a block of registers are reserved and mapped to a page in memory representing a section of the file. A Modbus server needs to select the desired page and read or write its contents. This operation is repeated continuously until the entire file is transferred.

Table below shows the file transfer registers.

FILE TRANSFER REGISTERS	
REGISTER ADDRESS	**DESCRIPTION**
48990	Command
48991	Command Status
48992	File ID
48993	File Size
48994	Current Page
48995	Current Page Size
49000 ... 49999	Block of 1000 registers holding a single page of file data

Command can be one of:

- Start backup process (backs up DALI system configurations into file)
- Start restore process (restores DALI system configurations from file)
- Start firmware upgrade process
- Load page from memory
- Write page into memory
- Lock file
- Unlock file
- Stop current operation

[SEQUENCE DIAGRAMS TO BE ADDED]

Timing Example

Given 19200 baud rate, 8 bits, even parity, 1 stop bit; and reading maximum number of registers (125) per read operation; and assuming no retries or transmission errors

Reading a single page (2KiB): ~1s

Reading a 100kB file: ~56s

1.3 Register Map

Register mapping uses the conventional Modbus addressing scheme where the first digit identifies the primary table for the register as listed in the Register Mapping table. The primary table consequently defines the function codes used to access registers.

Notes:

1. There is a de facto convention to display Modbus entities is to combine the type and address of the entity. In Standard addressing, entities are shown as a 5-digit number, where the first number shows the entity type (table) and the remaining 4 digits show the address in that table with a base of 0 and between 0 and 9999. In Extended addressing, entities are shown in 6-digit format where the first digit shows the entity type (table) and the remaining 5 digits show address between 0 and 65535.

2. Entity addresses in the table are shown in a way to support both Standard and Extended modes by using an 'x' as the second digit of the address. In traditional Standard mode of addressing, simply omit 'x'; if Extended addressing is preferred, replace 'x' with '0'. For example, Device Type register is shown as 3x0000 which means it is the first register in the Input Registers table. It can be accessed by function code 4 (Read Input Registers) on address 0 which is shown as 30000 in Standard mode and 300000 in Extended mode.

3. If an entity in the read/write tables is denoted as write-only, the returned value on a read will always be -1 and must be ignored by the controller. Similarly, for an entity in the read/write tables which is marked as read-only in a read/write table, all write operations to that entity are acknowledged but ignored. This is done in order to streamline access to registers using multiple read/write operations.

REGISTER MAPPING			
PRIMARY TABLE [1,2]	TABLE DESCRIPTION	DIRECTION[3]	ACCESS FUNCTION CODES
0	Coils	Read/Write	Read Coils (1) Write Single Coil (5) Write Multiple Coils (15)
1	Discrete Input	Read-only	Read Discrete Inputs (2)
3	Input Registers	Read-only	Read Input Registers (4)
4	Holding Registers	Read/Write	Read Multiple Holding Registers (3) Write Single Holding Register (6) Write Multiple Holding Registers (16)

2.0 DALI64 INTERFACE SPECIFICATION

2.1 SYLK- V1.0

CATEGORY	SYLK PVID	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
Device	1000	Device Status	R	"Device status: 0: OK 1: internal device error"	enum	0-1		Low
DALI Bus	1001	Default Groups	R	Bitmap of 16 DALI groups where each bit represents a DALI group corresponding to bit position, set to 1 if a group is assigned as the Default Group for a location during commissioning, 0 otherwise. Default groups are controlled by their associated DALI64 lighting control application.	bitmap			Low & CoV
DALI Bus	1002	Group Live Occupancy	R	"Bitmap of 16 DALI groups, set to 1 when movements are observed in that group. Bit is kept set for a nominal time of 5s. * only applicable for Default Groups"	bitmap			Low & CoV
DALI Bus	6003	Group Occupancy State	RW	"Bitmap of 16 DALI groups, set to 1 if group is in Occupied state, 0 otherwise. On write, a live occupancy trigger is initiated in the respective group which may cause a state change to Occupied depending on the Occupancy Mode configuration of that group. * only applicable for Default Groups"	bitmap			Low & CoV
DALI Bus	2004	Monitored Groups	W	"Bitmap of 16 DALI groups where each bit represents a DALI group corresponding to bit position, if set to 1 the reporting and monitoring points for that group of are enabled, e.g. Sylk PVIDs will be updated when there is a change in that group. By default, monitoring on all configured groups is enabled on power up, however, to reduce bandwidth requirements on both DALI and Sylk, it is recommended to only enable groups that are required to be monitored."	bitmap			
DALI Bus	1005	Group Light State	R	Bitmap of 16 DALI groups to report lamp on status. Each bit is set to 1 if any lights in the corresponding group is on.	bitmap			Low & CoV
DALI Bus	2006	Group Reset Counter	W	Bitmap of 16 DALI groups to reset counters for operating hours and energy consumption. Setting a bit to 1 resets counters for the corresponding group.	bitmap			
DALI Bus	1007	Number of Errors	R	Current count of errors on any of the DALI bus, control gears, emergency gears or control devices				Low
DALI Bus	1008	Bus Status	R	"Bitmask of bus errors, each bit set to 1 when error conditions exist: bit 0 - bus overvoltage (not supported in DALI64x) bit 1 - bus undervoltage (not supported in DALI64x) bit 2 - bus short (also triggers bus undervoltage)"	bitmap			Low
DALI Bus	1009	New Gears Discovered	R	"Identifies whether new control gears have been detected on the DALI bus since commissioning: 0: no new gears 1: new unaddressed gears 2: previously unseen addressed gears"	enum	0-2		Low
DALI Bus	100A	New Devices Discovered	R	"Identifies whether new control devices have been detected on the DALI bus since commissioning: 0: no new devices 1: new unaddressed devices 2: previously unseen addressed devices"	enum	0-2		Low
DALI Bus	100B	Missing Gears (0 to 15)	R	"Bitmap for 64 gears, set to 1 if a gear which has been present at the time of commissioning is now missing N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Bus	100C	Missing Gears (16 to 31)			bitmap			Low
DALI Bus	100D	Missing Gears (32 to 47)			bitmap			Low
DALI Bus	100E	Missing Gears (48 to 63)			bitmap			Low
DALI Bus	100F	Missing Devices (0 to 15)	R	"Bitmap for 64 control devices, set to 1 if a device which has been present at the time of commissioning is now missing N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Bus	1010	Missing Devices (16 to 31)			bitmap			Low
DALI Bus	1011	Missing Devices (32 to 47)			bitmap			Low
DALI Bus	1012	Missing Devices (48 to 63)			bitmap			Low
DALI Bus	1013	Group Error Status	R	Bitmap of 16 DALI groups to report an error status in that group. Each bit is set to 1 if any errors exist in the corresponding group. This point aggregates information from the following points for all gears and devices in a group: Gear Error Status, Device Error Status, Missing Gears, Missing Devices, and Emergency Test State.	bitmap			Low
DALI Bus	2014	Update Interval	W	Determines how often output PVIDs are updated if there are no changes to the value. COV PVIDs are updated as soon as possible regardless of this setting.	s			0.2-25.5

2.1 SYLK- V1.0

CATEGORY	SYLK PVID	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
Group 0	2020	Occupied Timeout	W	"Occupied Timeout in minutes. Timer never expires when set to -1 * only applicable for Default Groups"	min	-1-42	15	
Group 0	2021	Occupancy Mode	W	"Occupancy trigger mode. Enumeration of: 0: Presence 1: Absence 2: Auto-absence * only applicable for Default Groups"	enum	0-2	0	
Group 0	1022	Light Level Estimate	R	"Light Level Estimate * only applicable for Default Groups"	lux	0-32767		Low & CoV
Group 0	2022	Light Level Setpoint	W	"Light Level Setpoint * only applicable for Default Groups"	lux	0-32767	500	
Group 0	2023	Group Dim	W	An enum of: 0=no dimming; 1=dim up; 2=dim down. Writing 1 or 2 initiates a continuous dimming operation on all lights in a DALI group. Writing 0 stops any current dimming operation.	enum	0-2		
Group 0	1024	Group Last Output Level	R	Returns the last output level applied to the group as observed on the DALI bus. Returns 255 if this cannot be determined, for example when the last command to the group was a scene recall.	%	0-100		Low & CoV
Group 0	2024	Group Output Level	W	Sets the output level of a DALI group to the specified value.	%	0-100		
Group 0	1025	Group Last Colour Temperature	R	Returns the last colour temperature applied to the group via PVID 2025.	K	1000-20000		Low
Group 0	2025	Group Colour Temperature	W	Sets the colour temperature of a DALI group to the specified value.	K	1000-20000		
Group 0	1026	Group Last Scene Number	R	Returns the last scene applied to the group as observed on the DALI bus. Returns 255 if this cannot be determined, for example when last command to the group was to set output level.		0-15		Low & CoV
Group 0	2026	Group Scene Number	W	Sets the scene of a DALI group to the specified value.		0-15		
Group 0	1027	Group Operating Hours	R	The total operating hours since last counter reset where any gear in the group has been on. Counter is paused when all gears in the group are off.	h	0-+inf		Low
Group 0	1028	Group Energy Consumption	R	"The total energy consumption for all gears in this group since last counter reset. Note: value is reported in percentage hours, e.g. a value of 100 means a single gear has been on at 100% output level for one hour. To convert to Wh, multiply this value by power rating of the gear and divide by 100. Note that the energy consumption calculated this way is an estimate assuming a linear relationship between arc power (dim level) and energy consumption."	%h	0-+inf		Low
Group 0	2029	Group Load-Limiting Level	W	Sets the maximum arc power in all gears in the group to the specified value. This needs to be written back to the initial value (typically 100%) once load-limiting is no longer required.	%	0-100		
"Groups 1 to 15"	x02A to x0BF	Refer to Groups table		Use the same set of registers as in Group 0. For each register, address can be calculated using this formula: (Group 0 address) + 50 * (group number)				
DALI Gear/ Device	10C0	Gear Error Status (0 to 15)	R	"Bitmap of 16 gears per PVID/register to report error status. Each bit is set to 1 if there are any gear or lamp failures on the corresponding control gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Gear/ Device	10C1	Gear Error Status (16 to 31)			bitmap			Low
DALI Gear/ Device	10C2	Gear Error Status (32 to 47)			bitmap			Low
DALI Gear/ Device	10C3	Gear Error Status (48 to 63)			bitmap			Low
DALI Gear/ Device	10C4	Device Error Status (0 to 15)	R	"Bitmap of 16 devices per PVID/register to report error status. Each bit is set to 1 if there are any input device or application controller errors on the corresponding control device. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Gear/ Device	10C5	Device Error Status (16 to 31)			bitmap			Low
DALI Gear/ Device	10C6	Device Error Status (32 to 47)			bitmap			Low
DALI Gear/ Device	10C7	Device Error Status (48 to 63)			bitmap			Low

2.1 SYLK- V1.0

CATEGORY	SYLK PVID	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
DALI Gear/ Device	10C8	Gear Light State (0 to 15)	R	"Bitmap of 16 gears per PVID/register to report lamp on status. Each bit is set to 1 if the corresponding control gear lamp is on. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Medium
DALI Gear/ Device	10C9	Gear Light State (16 to 31)			bitmap			Medium
DALI Gear/ Device	10CA	Gear Light State (32 to 47)			bitmap			Medium
DALI Gear/ Device	10CB	Gear Light State (48 to 63)			bitmap			Medium
DALI Gear/ Device	20CC	Gear Reset Counters (0 to 15)	W	"Bitmap of 16 gears per PVID/register to reset counters for operating hours and energy consumption. Setting a bit to 1 resets counters for the corresponding gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
DALI Gear/ Device	20CD	Gear Reset Counters (16 to 31)			bitmap			
DALI Gear/ Device	20CE	Gear Reset Counters (32 to 47)			bitmap			
DALI Gear/ Device	20CF	Gear Reset Counters (48 to 63)			bitmap			
DALI Gear/ Device	10D0	MX Gear Output Level	R	"Multiplexed value of the last output level (direct arc power) for a gear where each byte has the following meaning: Byte 2: gear short address Byte 1: Not used Byte 0: output level"	"addr + %"	"0-63 + 0-100"		High
DALI Gear/ Device	10D1	MX Gear Operating Hours	R	"Multiplexed value of the total operating hours for a gear since last counter reset where each byte has the following meaning: Byte 2: gear short address Byte 1: total operating hours (MSB) Byte 0: total operating hours (LSB) Total operating hours is capped at 65535 and is reset to 0 when the corresponding bit in Gear Reset Counters is set. Counters are reset to 0 when the corresponding bit in Gear Reset Counters is set."	"addr + h"	"0-63 + 0-65535"		High
DALI Gear/ Device	10D2	MX Gear Energy Consumption	R	"Multiplexed value of the total energy consumption for a gear since last counter reset where each byte has the following meaning: Byte 2: gear short address Byte 1: total energy (MSB) Byte 0: total energy (LSB) Total energy is capped at 65535 and is reset to 0 when the corresponding bit in Gear Reset Counters is set. Note: value is reported in percentage hours, e.g. a value of 100 means a single gear has been on at 100% output level for one hour. To convert to Wh, multiply this value by power rating of the gear and divide by 100. Note that the energy consumption calculated this way is an estimate assuming a linear relationship between arc power (dim level) and energy consumption."	"addr + %h"	"0-63 + 0-65535"		High
DALI Gear/ Device	20D3	MX Gear Address	W	"Multiplexing mode and address for Gear MX PVIDs (10D0, 10D1, 10D2): -1 (Automatic - default): Gear MX PVIDs are updated periodically in a round-robin fashion to cycle through all gear short addresses present on the bus; 0 to 63 (Addressed): Gear MX PVIDs are updated for the specified short address; Any other positive value (Stepped): Gear MX PVIDs are updated for the next short address from the list of gears present on the bus."				

2.1 SYLK- V1.0

CATEGORY	SYLK PVID	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
Emergency Test	20E0	Start Function Test (0 to 15)	W	"Bitmap of 16 gears per PVID/register to initiate function test on EM gears. Setting a bit to 1 initiates test on the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	20E1	Start Function Test (16 to 31)			bitmap			
Emergency Test	20E2	Start Function Test (32 to 47)			bitmap			
Emergency Test	20E3	Start Function Test (48 to 63)			bitmap			
Emergency Test	20E4	Start Duration Test (0 to 15)	W	"Bitmap of 16 gears per PVID/register to initiate duration test on EM gears. Setting a bit to 1 initiates test on the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	20E5	Start Duration Test (16 to 31)			bitmap			
Emergency Test	20E6	Start Duration Test (32 to 47)			bitmap			
Emergency Test	20E7	Start Duration Test (48 to 63)			bitmap			
Emergency Test	20E8	Stop Emergency Test (0 to 15)	W	"Bitmap of 16 gears per PVID/register to stop all EM tests. Setting a bit to 1 stops tests on the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	20E9	Stop Emergency Test (16 to 31)			bitmap			
Emergency Test	20EA	Stop Emergency Test (32 to 47)			bitmap			
Emergency Test	20EB	Stop Emergency Test (48 to 63)			bitmap			
Emergency Test	20EC	Reset Emergency Times (0 to 15)	W	"Bitmap of 16 gears per PVID/register to reset emergency counters. Setting a bit to 1 resets counters for the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	20ED	Reset Emergency Times (16 to 31)			bitmap			
Emergency Test	20EE	Reset Emergency Times (32 to 47)			bitmap			
Emergency Test	20EF	Reset Emergency Times (48 to 63)			bitmap			
Emergency Test	10F4	Emergency Error Status (0 to 15)	R	"Bitmap for 64 gears, set to 1 if an errors exist in the corresponding EM gear. This point aggregates information from: Emergency Test State (function and duration). N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
Emergency Test	10F5	Emergency Error Status (16 to 31)			bitmap			Low
Emergency Test	10F6	Emergency Error Status (32 to 47)			bitmap			Low
Emergency Test	10F7	Emergency Error Status (48 to 63)			bitmap			Low
Emergency Test	10F0	MX Emergency Test State	R	"Multiplexed value of emergency test state where each byte has the following meaning: Byte 2: EM gear short address Byte 1: Last duration test state Byte 0: Last function test state Test state is an enumeration of: (0 = NOT_STARTED, 1 = PENDING, 2 = PENDING_BUT_EXCEEDED_TIME, 3 = IN_PROGRESS, 4 = PASSED, 5 = FAILED, 6= FAILED_LAMP, 7 = FAILED_BATTERY, 8 = FAILED_BATTERY_DURATION, 255 = TRANSIENT) Test states are reset as soon as a new test sequence is started."	"addr + enum + enum"	"0-63 + 0-8 + 0-8"		High

2.1 SYLK- V1.0

CATEGORY	SYLK PVID	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
Emergency Test	10F1	MX Battery Charge	R	"Multiplexed value of self-contained EM gear battery charge level where each byte has the following meaning: Byte 2: EM gear short address Byte 1: Not used Byte 0: Battery charge level in percent or 255 if EM gear does not support reporting of the battery charge level"	"addr + %"	"0-63 + 0-100 or 255"		High
Emergency Test	10F2	MX Emergency Counters	R	"Multiplexed value of emergency time counters where each byte has the following meaning: Byte 2: EM gear short address Byte 1: Total battery hours (lamp emergency time) in units of 1 h Byte 0: Total Lamp operating hours in units of 4 h Total hours are always rounded up and capped at the value of 255 Counters are reset to 0 when the corresponding bit in Reset Emergency Times is set."	"addr + 1 h + 4 h"	"0-63 + 0-255 + 0-255"		High
Emergency Test	20F3	MX EM Address	W	"Multiplexing mode and address for Emergency Light MX PVIDs (10F0, 10F1, 10F2): -1 (Automatic - default): EM gear MX PVIDs are updated periodically in a round-robin fashion to cycle through all gear short addresses present on the bus; 0 to 63 (Addressed): EM gear MX PVIDs are updated for the specified short address; Any other positive value (Stepped): EM gear MX PVIDs are updated for the next short address from the list of EM gears present on the bus."			-1	

2.2 DALI64 INTERFACE SPECIFICATION

2.2 MODBUS V1.0

CATEGORY	TABLE NAME	RELATIVE ADDRESS (DECIMAL)	RELATIVE ADDRESS (HEXADECIMAL)	ABSOLUTE ADDRESS	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
Device	Input Registers	0	0000	30001	Device Type	R	"Device type: 184: DALI64MODPSU All other values: reserved"				
Device	Input Registers	1	0001	30002	Firmware Version	R	Firmware version: major.minor				
Device	Input Registers	2	0002	30003	Device Status	R	"Device status: 0: OK 1: internal device error"	enum	0-1		Low
DALI Bus	Input Registers	300	012C	30301	Default Groups	R	Bitmap of 16 DALI groups where each bit represents a DALI group corresponding to bit position, set to 1 if a group is assigned as the Default Group for a location during commissioning, 0 otherwise. Default groups are controlled by their associated DALI64 lighting control application.	bitmap			Low & CoV
DALI Bus	Input Registers	301	012D	30302	Group Live Occupancy	R	"Bitmap of 16 DALI groups, set to 1 when movements are observed in that group. Bit is kept set for a nominal time of 5s. * only applicable for Default Groups"	bitmap			Low & CoV
DALI Bus	Holding Registers	400	0190	40401	Group Occupancy State	RW	"Bitmap of 16 DALI groups, set to 1 if group is in Occupied state, 0 otherwise. On write, a live occupancy trigger is initiated in the respective group which may cause a state change to Occupied depending on the Occupancy Mode configuration of that group. * only applicable for Default Groups"	bitmap			Low & CoV
DALI Bus	Holding Registers	401	0191	40402	Monitored Groups	W	"Bitmap of 16 DALI groups where each bit represents a DALI group corresponding to bit position, if set to 1 the reporting and monitoring points for that group of are enabled, e.g. Sylk PVIDs will be updated when there is a change in that group. By default, monitoring on all configured groups is enabled on power up, however, to reduce bandwidth requirements on both DALI and Sylk, it is recommended to only enable groups that are required to be monitored."	bitmap			
DALI Bus	Input Registers	302	012E	30303	Updated Groups	R	"Bitmap of 16 DALI groups where each bit represents a DALI group corresponding to bit position. This bit is set to 1 if either last output level or last scene is updated. It is cleared by reading the corresponding registers. This mechanism is useful in a Modbus implementation as a Master device can repeatedly poll this single register in order to identify which groups have been updated before reading a larger number of registers relating to that group. * only available in MOD variants"	bitmap			
DALI Bus	Input Registers	303	012F	30304	Group Light State	R	Bitmap of 16 DALI groups to report lamp on status. Each bit is set to 1 if any lights in the corresponding group is on.	bitmap			Low & CoV
DALI Bus	Holding Registers	402	0192	40403	Group Reset Counter	W	Bitmap of 16 DALI groups to reset counters for operating hours and energy consumption. Setting a bit to 1 resets counters for the corresponding group.	bitmap			
DALI Bus	Input Registers	304	0130	30305	Number of Errors	R	Current count of errors on any of the DALI bus, control gears, emergency gears or control devices				Low
DALI Bus	Input Registers	305	0131	30306	Bus Status	R	"Bitmask of bus errors, each bit set to 1 when error conditions exist: bit 0 - bus overvoltage (not supported in DALI64x) bit 1 - bus undervoltage (not supported in DALI64x) bit 2 - bus short (also triggers bus undervoltage)"	bitmap			Low

2.2 MODBUS V1.0

CATEGORY	TABLE NAME	RELATIVE ADDRESS (DECIMAL)	RELATIVE ADDRESS (HEXADECIMAL)	ABSOLUTE ADDRESS	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
DALI Bus	Input Registers	306	0132	30307	New Gears Discovered	R	"Identifies whether new control gears have been detected on the DALI bus since commissioning: 0: no new gears 1: new unaddressed gears 2: previously unseen addressed gears"	enum	0-2		Low
DALI Bus	Input Registers	307	0133	30308	New Devices Discovered	R	"Identifies whether new control devices have been detected on the DALI bus since commissioning: 0: no new devices 1: new unaddressed devices 2: previously unseen addressed devices"	enum	0-2		Low
DALI Bus	Input Registers	308	0134	30309	Missing Gears (0 to 15)	R	"Bitmap for 64 gears, set to 1 if a gear which has been present at the time of commissioning is now missing N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Bus	Input Registers	309	0135	30310	Missing Gears (16 to 31)			bitmap			Low
DALI Bus	Input Registers	310	0136	30311	Missing Gears (32 to 47)			bitmap			Low
DALI Bus	Input Registers	311	0137	30312	Missing Gears (48 to 63)			bitmap			Low
DALI Bus	Input Registers	312	0138	30313	Missing Devices (0 to 15)	R	"Bitmap for 64 control devices, set to 1 if a device which has been present at the time of commissioning is now missing N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Bus	Input Registers	313	0139	30314	Missing Devices (16 to 31)			bitmap			Low
DALI Bus	Input Registers	314	013A	30315	Missing Devices (32 to 47)			bitmap			Low
DALI Bus	Input Registers	315	013B	30316	Missing Devices (48 to 63)			bitmap			Low
DALI Bus	Input Registers	316	013C	30317	Group Error Status	R	Bitmap of 16 DALI groups to report an error status in that group. Each bit is set to 1 if any errors exist in the corresponding group. This point aggregates information from the following points for all gears and devices in a group: Gear Error Status, Device Error Status, Missing Gears, Missing Devices, and Emergency Test State.	bitmap			Low
Group 0	Discrete Input	1010	03F2	11011	Default Group	R	set to 1 if this group is assigned as the Default Group for a location during commissioning, 0 otherwise. Default groups are controlled by their associated DALI64 lighting control application.				
Group 0	Discrete Input	1011	03F3	11012	Live Occupancy	R	"Set to 1 when movements are observed in this group. Bit is kept set for a nominal time of 5s. * only applicable for Default Groups"				
Group 0	Coils	1000	03E8	01001	Occupancy State	RW	"Set to 1 if group is in Occupied state, 0 otherwise. On write, a live occupancy trigger is initiated in the respective group which may cause a state change to Occupied depending on Occupancy Mode configuration of that group. * only applicable for Default Groups"				
Group 0	Holding Registers	1030	0406	41031	Occupied Timeout	W	"Occupied Timeout in minutes. Timer never expires when set to -1 * only applicable for Default Groups"	min	-1-42	15	
Group 0	Holding Registers	1031	0407	41032	Occupancy Mode	W	"Occupancy trigger mode. Enumeration of: 0: Presence 1: Absence 2: Auto-absence * only applicable for Default Groups"	enum	0-2	0	

2.2 MODBUS V1.0

CATEGORY	TABLE NAME	RELATIVE ADDRESS (DECIMAL)	RELATIVE ADDRESS (HEXADECIMAL)	ABSOLUTE ADDRESS	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
Group 0	Input Registers	1020	03FC	31021	Light Level Estimate	R	"Light Level Estimate * only applicable for Default Groups"	lux	0-32767		Low & CoV
Group 0	Holding Registers	1032	0408	41033	Light Level Setpoint	W	"Light Level Setpoint * only applicable for Default Groups"	lux	0-32767	500	
Group 0	Discrete Input	1012	03F4	11013	Group Light State	R	"Set to 1 if any lights in this group is on * only available in MOD variants"				
Group 0	Discrete Input	1013	03F5	11014	Group Error Status	R	Set to 1 if any errors exist in this group. This point aggregates information from the following points for all gears and devices in a group: Gear Error Status, Device Error Status, Missing Gears, Missing Devices, Emergency Test State and Battery Charge (low)				
Group 0	Holding Registers	1033	0409	41034	Group Dim	W	An enum of: 0=no dimming; 1=dim up; 2=dim down. Writing 1 or 2 initiates a continuous dimming operation on all lights in a DALI group. Writing 0 stops any current dimming operation.	enum	0-2		
Group 0	Input Registers	1021	03FD	31022	Group Last Output Level	R	Returns the last output level applied to the group as observed on the DALI bus. Returns 255 if this cannot be determined, for example when the last command to the group was a scene recall.	%	0-100		Low & CoV
Group 0	Holding Registers	1034	040A	41035	Group Output Level	W	Sets the output level of a DALI group to the specified value.	%	0-100		
Group 0	Input Registers	1022	03FE	31023	Group Last Colour Temperature	R	Returns the last colour temperature applied to the group via PVID 2025.	K	1000-20000		Low
Group 0	Holding Registers	1035	040B	41036	Group Colour Temperature	W	Sets the colour temperature of a DALI group to the specified value.	K	1000-20000		
Group 0	Input Registers	1023	03FF	31024	Group Last Scene Number	R	Returns the last scene applied to the group as observed on the DALI bus. Returns 255 if this cannot be determined, for example when last command to the group was to set output level.		0-15		Low & CoV
Group 0	Holding Registers	1036	040C	41037	Group Scene Number	W	Sets the scene of a DALI group to the specified value.		0-15		
Group 0	Coils	1001	03E9	01002	Group Reset Counter	W	Setting to 1 resets Group Operating hours and Energy Consumption counters for this group.				
Group 0	Input Registers	1024	0400	31025	Group Operating Hours	R	The total operating hours since last counter reset where any gear in the group has been on. Counter is paused when all gears in the group are off.	h	0-+inf		Low
Group 0	Input Registers	1025	0401	31026	Group Energy Consumption	R	"The total energy consumption for all gears in this group since last counter reset. Note: value is reported in percentage hours, e.g. a value of 100 means a single gear has been on at 100% output level for one hour. To convert to Wh, multiply this value by power rating of the gear and divide by 100. Note that the energy consumption calculated this way is an estimate assuming a linear relationship between arc power (dim level) and energy consumption."	%h	0-+inf		Low
Group 0	Holding Registers	1037	040D	41038	Group Load Limiting Level	W	Sets the maximum arc power in all gears in the group to the specified value. This needs to be written back to the initial value (typically 100%) once load-limiting is no longer required.	%	0-100		
"Groups 1 to 15"		See description	See description	Refer to Groups table	Refer to Groups table		Use the same set of registers as in Group 0. For each register, address can be calculated using this formula: (Group 0 address) + 50 * (group number)				

2.2 MODBUS V1.0

CATEGORY	TABLE NAME	RELATIVE ADDRESS (DECIMAL)	RELATIVE ADDRESS (HEXADECIMAL)	ABSOLUTE ADDRESS	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
DALI Gear/ Device	Input Registers	2600	0A28	32601	Gear Error Status (0 to 15)	R	"Bitmap of 16 gears per PVID/register to report error status. Each bit is set to 1 if there are any gear or lamp failures on the corresponding control gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Gear/ Device	Input Registers	2601	0A29	32602	Gear Error Status (16 to 31)			bitmap			Low
DALI Gear/ Device	Input Registers	2602	0A2A	32603	Gear Error Status (32 to 47)			bitmap			Low
DALI Gear/ Device	Input Registers	2603	0A2B	32604	Gear Error Status (48 to 63)			bitmap			Low
DALI Gear/ Device	Input Registers	2604	0A2C	32605	Device Error Status (0 to 15)	R	"Bitmap of 16 devices per PVID/register to report error status. Each bit is set to 1 if there are any input device or application controller errors on the corresponding control device. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
DALI Gear/ Device	Input Registers	2605	0A2D	32606	Device Error Status (16 to 31)			bitmap			Low
DALI Gear/ Device	Input Registers	2606	0A2E	32607	Device Error Status (32 to 47)			bitmap			Low
DALI Gear/ Device	Input Registers	2607	0A2F	32608	Device Error Status (48 to 63)			bitmap			Low
DALI Gear/ Device	Input Registers	2608	0A30	32609	Gear Light State (0 to 15)	R	"Bitmap of 16 gears per PVID/register to report lamp on status. Each bit is set to 1 if the corresponding control gear lamp is on. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Medium
DALI Gear/ Device	Input Registers	2609	0A31	32610	Gear Light State (16 to 31)			bitmap			Medium
DALI Gear/ Device	Input Registers	2610	0A32	32611	Gear Light State (32 to 47)			bitmap			Medium
DALI Gear/ Device	Input Registers	2611	0A33	32612	Gear Light State (48 to 63)			bitmap			Medium
DALI Gear/ Device	Holding Registers	3000	0BB8	43001	Gear Reset Counters (0 to 15)	W	"Bitmap of 16 gears per PVID/register to reset counters for operating hours and energy consumption. Setting a bit to 1 resets counters for the corresponding gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
DALI Gear/ Device	Holding Registers	3001	0BB9	43002	Gear Reset Counters (16 to 31)			bitmap			
DALI Gear/ Device	Holding Registers	3002	0BBA	43003	Gear Reset Counters (32 to 47)			bitmap			
DALI Gear/ Device	Holding Registers	3003	0BBB	43004	Gear Reset Counters (48 to 63)			bitmap			
DALI Gear/ Device	Input Registers	2700 to 2763	0A8C to 0ACB	32701 to 32764	Gear Output Level	R	Last output level (direct arc power) of a gear, where address for each gear can be calculated using this formula: 3x2700 + (short address)				
DALI Gear/ Device	Input Registers	2800 to 2863	0AF0 to 0B2F	32801 to 32864	Gear Operating Hours	R	"Total operating hours of a gear since last counter reset, where address for each gear can be calculated using this formula: 3x2800 + (short address) Counters are reset to 0 when the corresponding bit in Gear Reset Counters is set."				
DALI Gear/ Device	Input Registers	2900 to 2963	0B54 to 0B93	32901 to 32964	Gear Energy Consumption	R	"Total energy consumption of a gear since last counter reset, where address for each gear can be calculated using this formula: 3x2900 + (short address) Counters are reset to 0 when the corresponding bit in Gear Reset Counters is set. N.B. the energy consumption is only an estimate, currently based on a linear relationship between arc power and luminaire power and power assumed to be 1kW."				
DALI Gear/ Device	Discrete Input	2100 to 2163	0834 to 0873	12101 to 12164	Missing Gear	R	Set to 1 if the gear was present at the time of commissioning but is now missing.				
DALI Gear/ Device	Discrete Input	2200 to 2263	0898 to 08D7	12201 to 12264	Missing Device	R	Set to 1 if the device was present at the time of commissioning but is now missing.				

2.2 MODBUS V1.0

CATEGORY	TABLE NAME	RELATIVE ADDRESS (DECIMAL)	RELATIVE ADDRESS (HEXADECIMAL)	ABSOLUTE ADDRESS	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
DALI Gear/ Device	Discrete Input	2300 to 2363	08FC to 093B	12301 to 12364	Gear Error Status	R	Set to 1 if there are any gear or lamp failures on the corresponding control gear. For each gear, address can be calculated using this formula: xxx + (gear address)				
DALI Gear/ Device	Discrete Input	2400 to 2463	0960 to 099F	12401 to 12464	Device Error Status	R	Set to 1 if there are any input device or application controller errors on the corresponding control device. For each device, address can be calculated using this formula: xxx + (device address)				
DALI Gear/ Device	Discrete Input	2500 to 2563	09C4 to 0A03	12501 to 12564	Gear Light State	R	Set to 1 if the corresponding control gear lamp is on.				
DALI Gear/ Device	Coils	2000 to 2063	07D0 to 080F	02001 to 02064	Gear Reset Counters	W	Setting a bit to 1 resets counters for the corresponding gear.				
Emergency Test	Holding Registers	4900	1324	44901	Start Function Test (0 to 15)	W	"Bitmap of 16 gears per PVID/register to initiate function test on EM gears. Setting a bit to 1 initiates test on the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	Holding Registers	4901	1325	44902	Start Function Test (16 to 31)			bitmap			
Emergency Test	Holding Registers	4902	1326	44903	Start Function Test (32 to 47)			bitmap			
Emergency Test	Holding Registers	4903	1327	44904	Start Function Test (48 to 63)			bitmap			
Emergency Test	Holding Registers	4904	1328	44905	Start Duration Test (0 to 15)	W	"Bitmap of 16 gears per PVID/register to initiate duration test on EM gears. Setting a bit to 1 initiates test on the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	Holding Registers	4905	1329	44906	Start Duration Test (16 to 31)			bitmap			
Emergency Test	Holding Registers	4906	132A	44907	Start Duration Test (32 to 47)			bitmap			
Emergency Test	Holding Registers	4907	132B	44908	Start Duration Test (48 to 63)			bitmap			
Emergency Test	Holding Registers	4908	132C	44909	Stop Emergency Test (0 to 15)	W	"Bitmap of 16 gears per PVID/register to stop all EM tests. Setting a bit to 1 stops tests on the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	Holding Registers	4909	132D	44910	Stop Emergency Test (16 to 31)			bitmap			
Emergency Test	Holding Registers	4910	132E	44911	Stop Emergency Test (32 to 47)			bitmap			
Emergency Test	Holding Registers	4911	132F	44912	Stop Emergency Test (48 to 63)			bitmap			
Emergency Test	Holding Registers	4912	1330	44913	Reset Emergency Times (0 to 15)	W	"Bitmap of 16 gears per PVID/register to reset emergency counters. Setting a bit to 1 resets counters for the corresponding EM gear. N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			
Emergency Test	Holding Registers	4913	1331	44914	Reset Emergency Times (16 to 31)			bitmap			
Emergency Test	Holding Registers	4914	1332	44915	Reset Emergency Times (32 to 47)			bitmap			
Emergency Test	Holding Registers	4915	1333	44916	Reset Emergency Times (48 to 63)			bitmap			

2.2 MODBUS V1.0

CATEGORY	TABLE NAME	RELATIVE ADDRESS (DECIMAL)	RELATIVE ADDRESS (HEXADECIMAL)	ABSOLUTE ADDRESS	NAME	DIRECTION	NOTES	UNIT	RANGE (MIN-MAX)	DEFAULT	UPDATE FREQUENCY
Emergency Test	Input Registers	4800	12C0	34801	Emergency Error Status (0 to 15)	R	"Bitmap for 64 gears, set to 1 if an errors exist in the corresponding EM gear. This point aggregates information from: Emergency Test State (function and duration). N.B. first PVID/register corresponds to short addresses 0-15, second corresponds to 16-31, etc. where LSB is the smallest short address in that range."	bitmap			Low
Emergency Test	Input Registers	4801	12C1	34802	Emergency Error Status (16 to 31)			bitmap			Low
Emergency Test	Input Registers	4802	12C2	34803	Emergency Error Status (32 to 47)			bitmap			Low
Emergency Test	Input Registers	4803	12C3	34804	Emergency Error Status (48 to 63)			bitmap			Low
Emergency Test	Coils	4000 to 4063	0FA0 to 0FDF	04001 to 04064	Start Function Test	W	Setting to 1 initiates function test on the corresponding EM gear.				
Emergency Test	Coils	4100 to 4163	1004 to 1043	04101 to 04164	Start Duration Test	W	Setting to 1 initiates duration test on the corresponding EM gear.				
Emergency Test	Coils	4200 to 4263	1068 to 10A7	04201 to 04264	Stop Emergency Test	W	Setting to 1 stops tests on the corresponding EM gear.				
Emergency Test	Coils	4300 to 4363	10CC to 110B	04301 to 04364	Reset Emergency Times	W	Setting to 1 resets counters for the corresponding EM gear.				
Emergency Test	Discrete Input	4400 to 4463	1130 to 116F	04401 to 04464	Emergency Error Status	R	Set to 1 if an errors exist in the corresponding EM gear. This point aggregates information from: Emergency Test State (function and duration).				
Emergency Test	Input Registers	4500 to 4563	1194 to 11D3	34501 to 34564	Emergency Test State	R	"Emergency test state for an EM gear, where address for each gear can be calculated using this formula: 3x4500 + (short address) and each byte has the following meaning: Byte 1: Last duration test state Byte 0: Last function test state Test state is an enumeration of: (0 = NOT_STARTED, 1 = PENDING, 2 = PENDING_BUT_EXCEEDED_TIME, 3 = IN_ PROGRESS, 4 = PASSED, 5 = FAILED, 6= FAILED_LAMP, 7 = FAILED_BATTERY, 8 = FAILED_BATTERY_DURATION, 255 = TRANSIENT) Test states are reset as soon as a new test sequence is started."				
Emergency Test	Input Registers	4600 to 4663	11F8 to 1237	34601 to 34664	Battery Charge	R	Self-contained battery charge level for an EM gear, where address for each gear can be calculated using this formula: 3x4600 + (short address)				
Emergency Test	Input Registers	4700 to 4763	125C to 129B	34701 to 34764	Emergency Counters	R	"Emergency time counters for an EM gear, where address for each gear can be calculated using this formula: 3x4700 + (short address) and where each byte has the following meaning: Byte 1: Total battery hours Byte 0: Total Lamp hours Counters are reset to 0 when the corresponding bit in Reset Emergency Times is set."				

2.3 GROUPS – MODBUS

	GROUP 0	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6	GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12	GROUP 13	GROUP 14	GROUP 15
Default Group	11011	11061	11111	11161	11211	11261	11311	11361	11411	11461	11511	11561	11611	11661	11711	11761
Live Occupancy	11012	11062	11112	11162	11212	11262	11312	11362	11412	11462	11512	11562	11612	11662	11712	11762
Occupancy State	01001	01051	01101	01151	01201	01251	01301	01351	01401	01451	01501	01551	01601	01651	01701	01751
Occupied Timeout	41031	41081	41131	41181	41231	41281	41331	41381	41431	41481	41531	41581	41631	41681	41731	41781
Occupancy Mode	41032	41082	41132	41182	41232	41282	41332	41382	41432	41482	41532	41582	41632	41682	41732	41782
Light Level Estimate	31021	31071	31121	31171	31221	31271	31321	31371	31421	31471	31521	31571	31621	31671	31721	31771
Light Level Setpoint	41033	41083	41133	41183	41233	41283	41333	41383	41433	41483	41533	41583	41633	41683	41733	41783
Group Light State	11013	11063	11113	11163	11213	11263	11313	11363	11413	11463	11513	11563	11613	11663	11713	11763
Group Error Status	11014	11064	11114	11164	11214	11264	11314	11364	11414	11464	11514	11564	11614	11664	11714	11764
Group Dim	41034	41084	41134	41184	41234	41284	41334	41384	41434	41484	41534	41584	41634	41684	41734	41784
Group Last Output Level	31022	31072	31122	31172	31222	31272	31322	31372	31422	31472	31522	31572	31622	31672	31722	31772
Group Output Level	41035	41085	41135	41185	41235	41285	41335	41385	41435	41485	41535	41585	41635	41685	41735	41785
Group Last Colour Temperature	31023	31073	31123	31173	31223	31273	31323	31373	31423	31473	31523	31573	31623	31673	31723	31773
Group Colour Temperature	41036	41086	41136	41186	41236	41286	41336	41386	41436	41486	41536	41586	41636	41686	41736	41786
Group Last Scene Number	31024	31074	31124	31174	31224	31274	31324	31374	31424	31474	31524	31574	31624	31674	31724	31774
Group Scene Number	41037	41087	41137	41187	41237	41287	41337	41387	41437	41487	41537	41587	41637	41687	41737	41787
Group Reset Counter	01002	01052	01102	01152	01202	01252	01302	01352	01402	01452	01502	01552	01602	01652	01702	01752
Group Operating Hours	31025	31075	31125	31175	31225	31275	31325	31375	31425	31475	31525	31575	31625	31675	31725	31775
Group Energy Consumption	31026	31076	31126	31176	31226	31276	31326	31376	31426	31476	31526	31576	31626	31676	31726	31776
Group Load-Limiting Level	41038	41088	41138	41188	41238	41288	41338	41388	41438	41488	41538	41588	41638	41688	41738	41788

2.4 GROUPS – SYLK

	GROUP 0	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6	GROUP 7	GROUP 8	GROUP 9	GROUP 10	GROUP 11	GROUP 12	GROUP 13	GROUP 14	GROUP 15
Occupied Timeout	2020	202A	2034	203E	2048	2052	205C	2066	2070	207A	2084	208E	2098	20A2	20AC	20B6
Occupancy Mode	2021	202B	2035	203F	2049	2053	205D	2067	2071	207B	2085	208F	2099	20A3	20AD	20B7
Light Level Estimate	1022	102C	1036	1040	104A	1054	105E	1068	1072	107C	1086	1090	109A	10A4	10AE	10B8
Light Level Setpoint	2022	202C	2036	2040	204A	2054	205E	2068	2072	207C	2086	2090	209A	20A4	20AE	20B8
Group Dim	2023	202D	2037	2041	204B	2055	205F	2069	2073	207D	2087	2091	209B	20A5	20AF	20B9
Group Last Output Level	1024	102E	1038	1042	104C	1056	1060	106A	1074	107E	1088	1092	109C	10A6	10B0	10BA
Group Output Level	2024	202E	2038	2042	204C	2056	2060	206A	2074	207E	2088	2092	209C	20A6	20B0	20BA
Group Last Colour Temperature	1025	102F	1039	1043	104D	1057	1061	106B	1075	107F	1089	1093	109D	10A7	10B1	10BB
Group Colour Temperature	2025	202F	2039	2043	204D	2057	2061	206B	2075	207F	2089	2093	209D	20A7	20B1	20BB
Group Last Scene Number	1026	1030	103A	1044	104E	1058	1062	106C	1076	1080	108A	1094	109E	10A8	10B2	10BC
Group Scene Number	2026	2030	203A	2044	204E	2058	2062	206C	2076	2080	208A	2094	209E	20A8	20B2	20BC
Group Operating Hours	1027	1031	103B	1045	104F	1059	1063	106D	1077	1081	108B	1095	109F	10A9	10B3	10BD
Group Energy Consumption	1028	1032	103C	1046	1050	105A	1064	106E	1078	1082	108C	1096	10A0	10AA	10B4	10BE
Group Load-Limiting Level	2029	2033	203D	2047	2051	205B	2065	206F	2079	2083	208D	2097	20A1	20AB	20B5	20BF

2.5 HOW TO CALCULATE THE VALUE OF BITMAPS

In order to condense the data read or written by some of the points, multiple groups, gears or devices have been combined in a bitmap using binary representation. For example, Monitored Groups can be used to enable minotoring for any of the 16 DALI groups and its value should be set to 15 when user wants to monitor groups 0, 1, 2 annd 3.

This tool helps to calculate such bitmaps based on the selected groups/ gears/devices. You can either enter a bitmap value directly to see which bits it represents or select a number of groups/gears/devices and get the equivalent Bitmap value.

Select PVID/Register Target:

- (●) Groups
- ( ) Gears/Devices 0-15
- ( ) Gears/Devices 16-31
- ( ) Gears/Devices 32-47
- ( ) Gears/Devices 48-63

BITMAP VALUE	162

GROUPS	SELECTED
0	
2	X
3	
4	
5	X
6	
7	X
8	
9	
10	
11	
12	
13	
14	
15	

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