FOX LUX LIGHTING CONTROLS

FXS03D4 DALI-2 D4i MICROWAVE SENSOR

8 YEAR WARRANTY | 220-240V 50/60Hz | UKCA | CE | DALI 2 | D4i

Technical Data

Operating Voltage	220-240V AC 50-60Hz
DALI-2 output	Max.30 devices, max. 60mA
Standby Power	<1W
Sensor Technology	Microwave
Mounting Height	3-6m
Detection Radius	Max. 6m
Operating Temperature	-20°C to 70°C
IP Rating	IP20

Logistics Information

Product Dimensions	102 x 28 x 45mm
Net Weight	0.06kg
Box Dimensions	N/A
Gross Weight	0.06kg
Box Qty	120 pcs
Carton Dimensions	450 x 300 x 230mm
Carton Weight	8.00kg
Commodity Code	8536500090

Materials

Housing	Polycarbonate
Finish	Matt
Colour	White

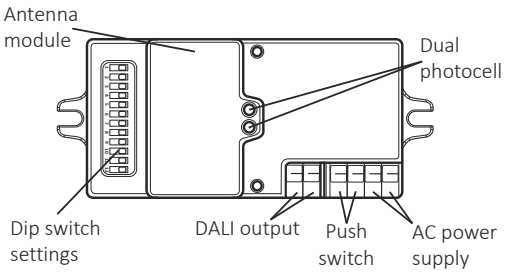
DIP SWITCHES

When used without a front end control system, the settings can be adjusted directly via dip switches.

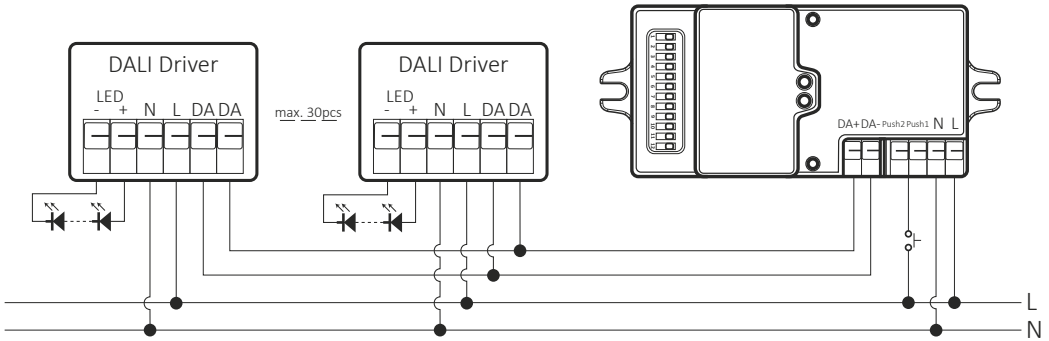
FEATURES

- Designed for built-in applications
- Daylight monitoring with dual photocell
- Settings via DALI configuration software
- Alternatively, settings via dip switches
- Sensor power supply via mains supply
- Switchable DALI-2 power supply built in
- Individual / group addressing

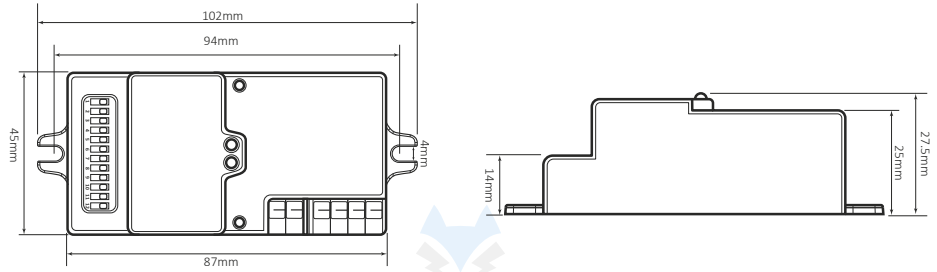
KEY ELEMENTS



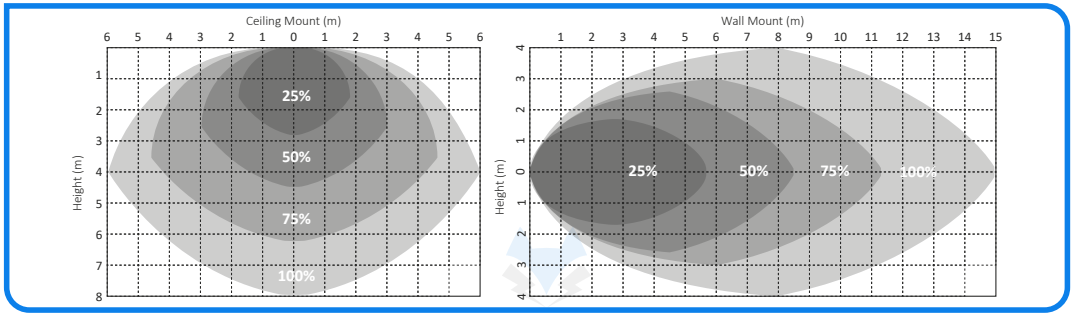
WIRING



DIMENSIONS



DETECTION



Address	Description		Factory default value	Reset Value	Range of validity		Memory Type
0x00	Address of last accessible memory location		0x1B	no change	0x1B		ROM
0x01	Indicator byte		0x8B	no change	0x8B		ROM
0x02	Memory bank 2 lock byte. Lockable bytes in the memory bank shall be read-only while the lock byte has a value different from 0x55		0xFF	0xFF			RAM
0x03	HF sensitvity	100% (0x64)	0x64 (100%)	0x64 (100%)	100% (0x64) 75% (0x4B) 50% (0x32) 25% (0x19)		NVM(lockable)
		75% (0x4B)					
		50% (0x32)					
		25% (0x19)					
0x04	T1 level		0xFE	0xFE (100%)	[0, 254]		NVM(lockable)
0x05	T2 level		0xAA	0xAA (10%)	[0, 254]		NVM(lockable)
0x06	T1 time (LSB)		0x5A	0x5A (90s)	[1, 65535(+ ∞)]		NVM(lockable)
0x07	T1 time (MSB)		0x00	0x00			NVM(lockable)
0x08	T2 time (LSB)		0x2C	0x2C (5min)	[0, 65535(+ ∞)]		NVM(lockable)
0x09	T2 time (MSB)		0x01	0x01			NVM(lockable)
0x0A	Lux level (LSB)		0xFF	0xFF (disable)	[1, 1000lux], 65535(disable)		NVM(lockable)
0x0B	Lux level (MSB)		0xFF	0xFF			NVM(lockable)
0x0C	Send data way		0x00	0x00 (default factory setting)	0x00, 0x01	0x00 (default factory setting)	NVM(lockable)
						0x01 (recall scene command)	
0x0D	Send data address method		0x00	0x00 (Broadcast)	[0, 3]	0x00 (Broadcast)	NVM(lockable)
						0x01 (Short addressing)	
						0x02 (Group addressing)	
						0x03 (Multi-groups addressing)	
						Other: 0x00(Broadcast)	
0x0E	Send data address value		0x00	0x00	Location 0x0D=1, [0, 63]; Location 0x0D=2, [0, 15]		NVM(lockable)
0x0F	T1 scene		0x00	0x00	[0, 15]		NVM(lockable)
0x10	T2 scene		0x01	0x01	[0, 15]		NVM(lockable)
0x11	Receive occupancy sensor type		0x9F	0x9F	x00x xxxxb		NVM(lockable)
0x12	Receive occupancy sensor short address		0x00	0x00	[0, 63]		NVM(lockable)
0x13	Receive occupancy sensor instance number byte0 (LSB)		0xFF	0xFF	[0, 0xFFFFFFFF]		NVM(lockable)
0x14	Receive occupancy sensor instance number byte1		0xFF	0xFF			NVM(lockable)
0x15	Receive occupancy sensor instance number byte2		0xFF	0xFF			NVM(lockable)
0x16	Receive occupancy sensor instance number byte3 (MSB)		0xFF	0xFF			NVM(lockable)
0x17	Receive occupancy sensor instance group byte0 (LSB)		0xFF	0xFF	[0, 0xFFFFFFFF]		NVM(lockable)
0x18	Receive occupancy sensor instance group byte1		0xFF	0xFF			NVM(lockable)
0x19	Receive occupancy sensor instance group byte2		0xFF	0xFF			NVM(lockable)
0x1A	Receive occupancy sensor instance group byte3 (MSB)		0xFF	0xFF			NVM(lockable)
0x1B	DALI bus power supply		0x01	no change	on=0x01, off=0x00		NVM(lockable)

LSB: Least Significant Byte.
MSB: Most Significant Byte.
Range of values: [lowest, highest]

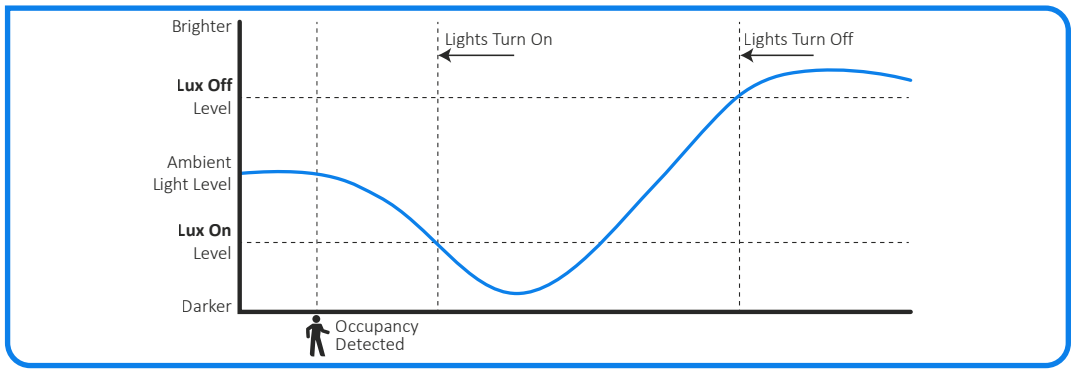
All numbers used in this document are decimal numbers unless otherwise noted. Hexadecimal numbers are given in the format 0xVV, where VV is the value. Binary numbers are given in the format XXXXXXXXb or in the format XXXX XXXX, where X is 0 or 1;“ x” in binary numbers means“ don’t care”

Detection range:
Sensitivity: 100% (0x64), 75% (0x4B), 50% (0x32), 25% (0x19).
T1 level:
This is the preset max. brightness of the fixture after motion detected. The brightness that the sensor enters into T1 by DAPC, the default factory setting is 0xFE.
T2 level:
This is the dimmed low light level you would like to have after the hold time in the absence of people. The brightness that the sensor enters into T2 by DAPC, the default factory setting is 0xFE.
T1 time:
T1 time is Hold-time that means the time period to keep the lamp on T1 level after motion detected.
T1 time=65535 (0xFFFF)[+ ∞], means bi-level dimming control, the fixture never enters into T2 level.
T2 time:
This is the time period that the lamp remains at T2 level before it is completely switched off in the long absence of people. When T2 time=65535 (0xFFFF) [+ ∞], means bi-level dimming control, the fixture never switch off.
Lux level:
Lux level means the daylight threshold to enable or disable the sensor function.
Lux level=65535 (0xFFFF)[Disable], means the sensor always, even during daylight.
Send data way:
The sensor sends the signals of control gears, and the details are as below:
0x00: DAPC (direct arc power control)- default factory setting;
0x01: Recall Scene Command- Recall scene value is T1 scene (0x0F) and scene (0x10) in memory bank;
Other: same function as 0x00
Send data address method:
This is the method of device addressing used by the transmitter, adapts different way to send DAPC command based on required value.
0x03: Multi-groups addressing, can control the groups the sensor enters into, then send the multi-group control instances one time, max. 16 groups
Send data address value:
(1) Send data address method=0x02 [0, 63], default setting is 63 when data> 63;
(2) Send data address method=0x03 [0, 15], default setting is 15 when data> 15;
T1 Scene:
The sensor sends the value of scene instance [0, 15] under T1 status, default setting is 15 when data> 15
T2 Scene:
The sensor sends the value of scene instance [0, 15] under T2 status, default setting is 15 when data> 15;
Receive occupancy sensor type:
The sensor receive the signal other sensors sent (24-bit event message frame).
(1) Bit7: event message enable
(2) Bit4: instance groups + instance types (event scheme 4)
(3) Bit3: device groups + instance types (event scheme 3)
(4) Bit2: short addresses + instance numbers (event scheme 2)
(5) Bit1: short addresses + instance types (event scheme 1)
(6) Bit0: instance types + instance numbers (event scheme 0)
(7) Other bit: reservation
Receive occupancy sensor short address:
Receive occupancy sensor type [bit2], the sensor can receive the equivalent signal of occupancy sensor short address. Range of validity [0, 63], default setting is 63 when data> 63;
Receive occupancy sensor instance number:
Bit0-Bit31: each bit corresponds to instance number, e.g. bit is 1, means that the sensor can receive the signal of the instance number (bit is 1).
For example: receive occupancy sensor instance number=0x00000003, Bit0=1 & Bit1=1, means that receives occupancy sensor signal of the sensor whose instance number is 0 and 1.
Receive occupancy sensor instance group:
Bit0-Bit31: each bit corresponds to instance group, bit is 1, means that receives occupancy sensor signal of the instance group (bit is 1).
For example: receive occupancy sensor instance group=0x00000003, Bit0=1 & Bit1=1, means that receives occupancy sensor signal of the sensor whose instance group is 0 and 1.
DALI bus power supply status:
To switch ON/OFF the integrated DALI bus power supply, 1 means ON, 0 means OFF.

For example: change the sensitivity to 50% via broadcasting as below
START QUIESCENT MODE(broadcast)
START QUIESCENT MODE(broadcast)
DTR1(0x02)
DTR0(0x02)
ENABLE WRITE MEMORY(broadcast)
ENABLE WRITE MEMORY(broadcast)
WRITE MEMORY LOCATION – NO REPLY(0x55)//Unlock Lock Byte
DTR0(0x03)
WRITE MEMORY LOCATION – NO REPLY(0x32)//Set HF Sensitivity to 50%
SAVE PERSISTENT VARIABLES(broadcast)
SAVE PERSISTENT VARIABLES(broadcast)
STOP QUIESCENT MODE(broadcast)
STOP QUIESCENT MODE(broadcast)

DATA SHEET

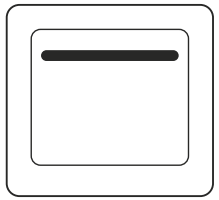
DAYLIGHT MONITORING



PUSH-DIM FUNCTION

On→Off: luminaire turns off immediately and cannot be triggered ON again by motion until the expiration of pre-set hold-time. After this period, the sensor goes back to normal sensor mode.

Off→On: the light turns on and goes to sensor mode. In some applications the user may not want to have a sensor automatically switch on the light, the sensor will be activated only on the manual Off→On press

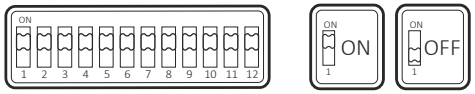


Short push (<1s)
on/off function

Long push (>1s)
adjust the target lux level by turning the light up or down.

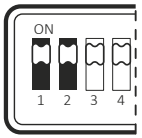
DIP SWITCH SETTINGS

This sensor can be set up with dip switches found on the sensor.
Each section controls different settings depending on the combination of switches.
Graphic to the right displays the full row of dip switches and which position indicates on or off.



Sensitivity - Switch 1 / 2

The sensitivity can be adjusted between 25% (low sensitivity) and 100% (high sensitivity)



1	2	Sensitivity
On	On	100%
On	Off	75%
Off	On	50%
Off	Off	25%

Hold Time - Switch 3 / 4 / 5

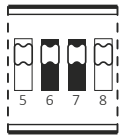
The sensor will continue to provide power for a duration of time after the last motion was detected.
If any motion is detected within the set duration time the sensor will reset the timer.
This duration can be adjusted from 30 seconds up to 30 minutes.

**Test Mode: When hold-time is set at 3s, the sensor enters test mode in order to select the desired detection range/sensitivity. In this mode the daylight sensors are disabled so when there is no motion the luminaire stays off. When there is motion detected the sensor cycles 3s on and 2s off.*

3	4	5	Hold Time
On	On	On	T3s*
On	On	Off	30s
On	Off	Off	90s
Off	On	Off	5min
Off	Off	On	10min
Off	Off	Off	30min

Lux Control - Switch 6 / 7

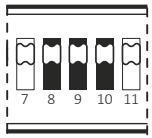
The Sensor includes a photocell which can be used to limit the operation depending on the ambient light level.
When set to 100 lux the sensor will only operate during the hours of darkness.
When set to disable the sensor will operate regardless of the ambient light levels.



6	7	Lux
On	On	Disable
On	Off	50lux
Off	On	10lux
Off	Off	2lux

Stand-by period - Switch 8 / 9 / 10

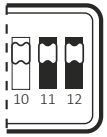
This is the time period that the luminaire remains at a low light level before it is completely switched off in the long absence of detected motion.
+ ∞= bi-level dimming control - luminaire always on.



8	9	10	Stand-by
On	On	On	10s
On	On	Off	5min
On	Off	Off	10min
Off	On	Off	30min
Off	Off	On	1h
Off	Off	Off	+ ∞

Stand-by dimming level - Switch 11 / 12

This is the desired dimmed low light level after the hold-time in the absence of detected motion.
*0% = on/off control.
10% Vdim = 1.5Vdc
30% Vdim = 3.0Vdc
50% Vdim = 5.0Vdc



11	12	Dim Level
On	On	0%
On	Off	10%
Off	On	30%
Off	Off	50%