

Scene10cas

INSTALLATION + COMMISSIONING GUIDE

Two-channel 0-10 VDC Casambi Scene Controller
Scene selection | Downward scene-level scaling

Project:
Type:
Contact:



PRODUCT ROLE Scene10cas uses Channel 1 to select a configured Casambi scene. Channel 2 is a downward-only scalar applied to that scene's stored levels; it is not an independent intensity channel.

At a glance	Verified installation value
Power	12-24 VDC, 30 mA; Class 2 supply
0-10 V interface	Two control inputs with common RETURN; compatible sinking controller required
Fixed channel roles	Channel 1 = scene selector; Channel 2 = downward-only scene-level scalar
Scene capacity	2-10 selectable scene windows; up to 10 Casambi scene assignments
Unused terminals	Positions 4 and 5: no connection; leave open

DRAFT 0.1 - ENGINEERING REVIEW COPY - NOT FOR FIELD ISSUE

1 Product overview

Scene10cas is a Bluetooth Low Energy, Casambi-enabled scene Gateway built on the 10cas electrical platform. It accepts two 0-10 V control channels with fixed functions: Channel 1 selects a scene from configured voltage windows, and Channel 2 supplies a scalar that can only reduce the selected scene's stored levels.

The required scenes must already exist in the target Casambi network. During commissioning, assign up to ten Scene10cas scene slots to those scenes, select how many scene windows will divide the Channel 1 range, and trim both analog endpoints as needed.

CHANNEL 2 IS NOT AN INTENSITY CHANNEL Unlike 10cas, the two inputs are not independently assignable Elements. Channel 2 does not set an absolute output level and cannot raise any channel above the selected scene's stored value. At 10 V it applies 100% of the stored scene; lower voltages scale that scene downward.

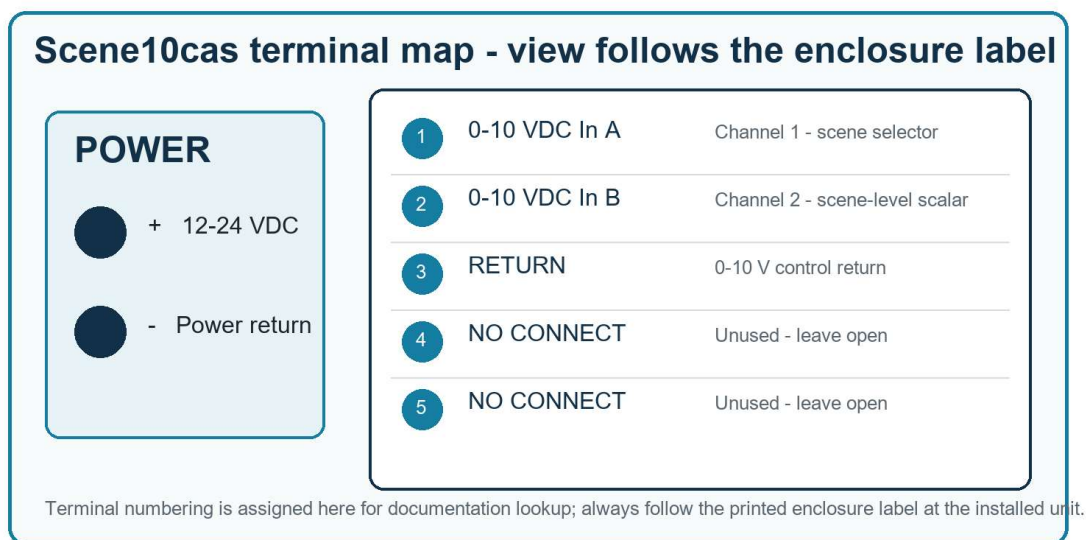
1.1 Functional behavior

- Channel 1 divides its trimmed 0-10 V range into the configured number of scene windows and translates the active window through Scene Slots 1-10.
- Channel 2 converts its trimmed 0-10 V range to an 8-bit scene-level scalar from 0 through 255.
- A scalar of 255 preserves the scene's stored channel levels; lower values reduce every affected level proportionally toward zero.
- Either qualifying input change sends one zero-duration Casambi scene-level command containing the current scene and scalar.
- Per-channel hysteresis suppresses repeated commands caused by steady input noise.
- Terminal positions 4 and 5 are unused on this product. Leave both open.

1.2 Technical data

Item	Engineering-source value
Input supply	12-24 VDC; 30 mA; Class 2
Analog controls	2 x 0-10 VDC, return-referenced; approximately 1 mA source, controller must sink
Channel 1	Scene selector; configured for 2-10 voltage windows
Channel 2	Downward-only scene-level scalar, 0-255 (0-100% of each stored scene level)
Scene assignments	Up to 10 pre-made Casambi scenes
Analog filtering	32-sample average per inspected firmware
Unused terminals	Positions 4 and 5: do not connect
Controller	Infineon/Cypress PSoc 4, CY8C4244PVI-432
Radio	Casambi CBM-003 hardware shown in Rev. D0 schematic; production variant must match unit label
Operating ambient	-25 to +45 C (-13 to +113 F); indoor use
Enclosure	72.6 x 30.0 x 18.0 mm (2.86 x 1.18 x 0.71 in), including mounting ears
Installation	Class 2 low-voltage system; maintain radio clearance from metalwork

2 Terminals and installation



2.1 Terminal functions

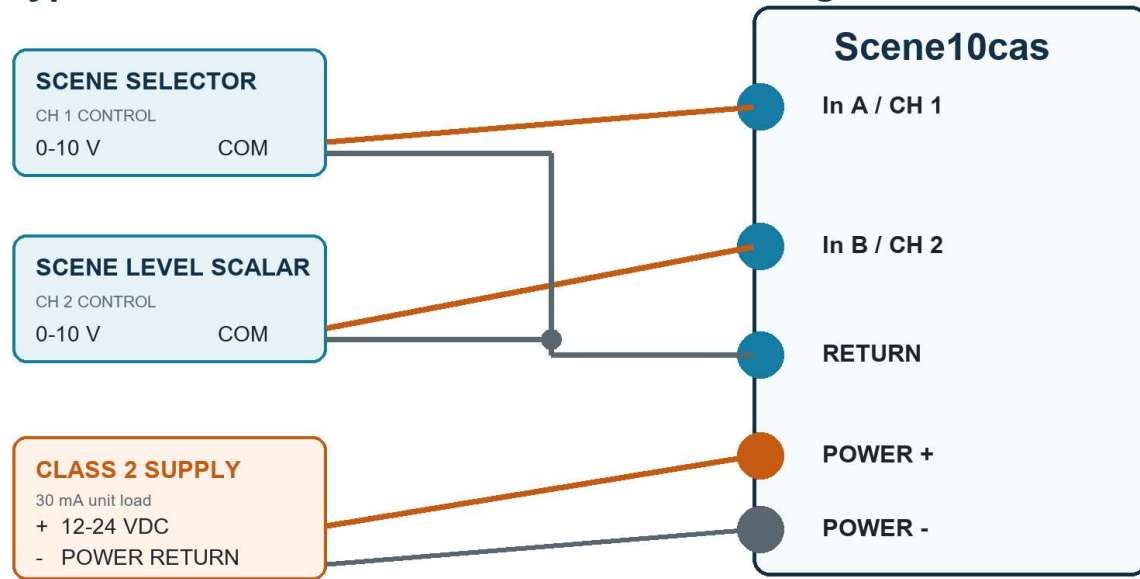
Terminal	Connect to	Function / limit
POWER +	+12 to +24 VDC	Class 2 supply positive
POWER -	Supply return	Power return
0-10 VDC In A	Controller Channel 1	Fixed scene-selector input
0-10 VDC In B	Controller Channel 2	Fixed downward-only scene-level scalar input
RETURN	Controller common	Common return for both 0-10 V channels
Position 4	Do not connect	Unused on Scene10cas; leave open
Position 5	Do not connect	Unused on Scene10cas; leave open

2.2 Installation procedure

1. **Remove power.** De-energize the Class 2 supply and verify zero voltage at the intended conductors.
2. **Mount for radio performance.** Secure the enclosure using its mounting ears. Keep the radio end clear of grounded metal, line-voltage conductors, and heat sources.
3. **Wire power and return.** Land the 12-24 VDC Class 2 supply with correct polarity. Connect the 0-10 V controller common to RETURN.
4. **Wire the fixed channels.** Land the controller's scene-select signal on In A and scene-level scalar signal on In B. Leave positions 4 and 5 open.
5. **Inspect before power.** Check supply polarity, exposed copper, return continuity, and verify that no conductor is landed on either unused position.

3 0-10 V wiring

Typical Scene10cas dual 0-10 V control wiring



Controller COM lands on RETURN; supply negative lands on POWER -. Do not apply negative control voltage.

3.1 Field-wiring rules

- Use a two-channel 0-10 V controller compatible with a current-sourcing input; the controller must sink the control current.
- Route low-voltage analog wiring away from contactors, switched-mode power conductors, and line voltage.
- Use a consistent polarity and identify both ends of every conductor. Reverse polarity or negative voltage is not a valid input condition.
- If the controller is isolated or has an unfamiliar reference scheme, verify compatibility with its manufacturer before connecting RETURN.

UNUSED TERMINALS Positions 4 and 5 have no field function on Scene10cas. Leave both terminals unconnected.

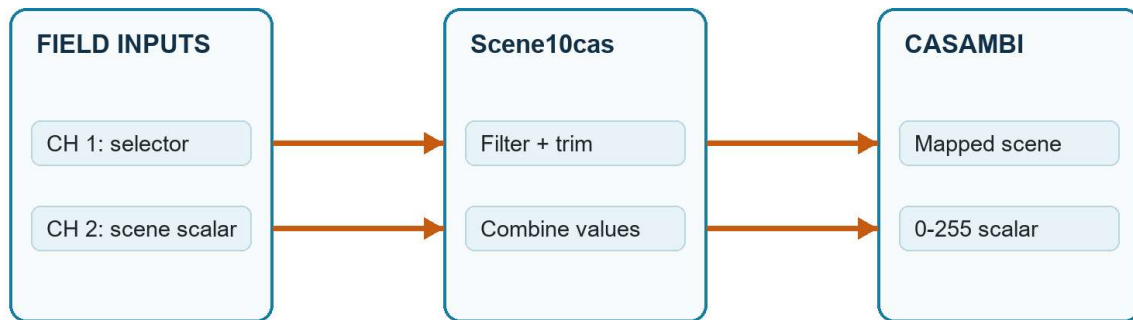
3.2 Pre-power measurements

Check	Expected result
POWER + to POWER -	12-24 VDC, correct polarity
In A to RETURN	0-10 VDC scene-select range
In B to RETURN	0-10 VDC scene-level scalar range
Positions 4 and 5	No conductors connected

4 Add Scene10cas to the Casambi app

Commission Scene10cas into the intended Casambi network using the standard Casambi workflow and the released Scene10cas Gateway profile. Create and verify the required Casambi scenes before assigning them to the Scene10cas mapping slots. App wording can vary by app and profile revision.

Fixed Scene10cas channel roles



Channel 1 chooses a scene. Channel 2 can only scale its stored levels downward; 10 V preserves them.

4.1 Pair and identify

1. **Power one unit.** For initial commissioning, energize one unpaired Scene10cas at a time and remain within Bluetooth range.
2. **Add the nearby device.** Open Nearby devices, select the Scene10cas entry, and add it to the correct network using the project credentials.
3. **Name the Gateway.** Use the project schedule identifier and location, for example SCENE10-01 | Lobby.
4. **Set the scene count.** In Vendor Parameters, select the required number of scene windows from 2 through 10.
5. **Assign the scenes.** Map Scene Slots 1 through the selected scene count to pre-made Casambi scenes. Leave unused higher slots unassigned.
6. **Trim and prove both channels.** Set Channel 1 and Channel 2 top/bottom trim and hysteresis, then test every selector window with the scalar at 0 V, midpoint, and 10 V.

4.2 Fixed two-channel behavior

Applied control	Expected Casambi result
Channel 1 moved between windows	Mapped scene changes; the current Channel 2 scalar is applied to that scene
Channel 2 at 0 V	Selected scene's affected levels are scaled to zero / off
Channel 2 near 5 V	Approximately 50% of each stored scene level, subject to trim
Channel 2 at 10 V	100% of each stored scene level; no level is raised above its scene setting
Example: scene stored at 50%	10 V commands 50%; about 5 V commands 25%; Channel 2 can only reduce it

5 Vendor parameters

The inspected Scene10cas firmware stores the number of scene windows, independent trim and hysteresis values for both analog channels, and ten Casambi scene assignments. Parameter labels and displayed ranges are controlled by the installed profile; record the app-visible values at turnover.

Parameter	Purpose	Inspected default / guidance
Number of Scenes	Divides Channel 1 range into scene-selector windows	2-10; inspected stored default 2
Channel 1 Top / Bottom Trim	Sets scene-selector endpoints	Stored defaults 100 / 0
Channel 1 Hysteresis	Minimum selector-input change before reevaluation	Stored default 2 plus firmware offset
Channel 2 Top / Bottom Trim	Sets scene-scalar endpoints	Stored defaults 100 / 0
Channel 2 Hysteresis	Minimum scalar-input change before a new command	Stored default 2 plus firmware offset
Scene 1 through Scene 10	Maps each selector slot to a pre-made Casambi scene	Default unassigned

5.1 Scene-window planning

Channel 1 divides the trimmed 0-10 V span into equal selection windows. Nominal window width is 10 V divided by the configured number of scenes. Use the center of each window as the controller's normal setpoint; avoid commanding exactly at a boundary.

Configured scenes	Nominal window width	Recommended commissioning action
2	5.00 V	Test near 2.5 V and 7.5 V
4	2.50 V	Test near 1.25, 3.75, 6.25, and 8.75 V
5	2.00 V	Test the center of all five windows
10	1.00 V	Test near 0.5, 1.5 ... 9.5 V; verify noise margin

5.2 Trim and hysteresis procedure

1. **Start from defaults.** Restore the released top/bottom trim and hysteresis values before tuning.
2. **Set Channel 1 endpoints.** Apply the selector's actual minimum and maximum commands; adjust trim only enough to make the first and last intended windows reliable.
3. **Verify every selector window.** Command the center of each window and confirm the assigned scene. Sweep slowly across each boundary and check for stable transitions.
4. **Set Channel 2 endpoints.** Apply the intended minimum and maximum scalar commands. Adjust trim so 0 V produces zero and 10 V preserves the selected scene's stored levels without attempting to exceed them.
5. **Tune hysteresis independently.** Increase only the noisy channel's hysteresis enough to prevent chatter, then retest slow intentional changes and all scene boundaries.

BOUNDARY CONTROL Do not park Channel 1 exactly on a calculated boundary. Controller tolerance, wiring drop, trim, and noise can make a boundary command ambiguous.

6 Startup and acceptance testing

Test	Pass criterion
Power	Unit powers from 12-24 VDC without supply collapse or abnormal heating.
Network	Correct Scene10cas is paired, named, and reachable in the intended Casambi network.
Profile	Scene10cas enumerates as the scene Gateway profile, not as two independent Elements.
Selector	Every configured Channel 1 window recalls only its assigned Casambi scene.
Scene scalar	Channel 2 at 0 V, midpoint, and 10 V scales downward from the selected scene's stored levels as intended.
Stability	Steady inputs and selector boundaries do not chatter or cause repeated commands.
Recovery	After power cycling, pairing, scene count, mappings, trims, and hysteresis remain correct.

6.1 Troubleshooting

Symptom	Check in this order
Unit not visible	Supply polarity/voltage; Bluetooth range; metal enclosure; whether unit is already paired to another network.
Wrong scene	Measure Channel 1 to RETURN; confirm scene count and slot assignments; test at the center of the intended voltage window.
Scene changes near a boundary	Move the controller setpoint away from the boundary; verify trim; increase Channel 1 hysteresis modestly if noise remains.
Correct scene, wrong level	Measure Channel 2; verify its return and trim; confirm the selected scene's stored levels. Remember that 10 V preserves those levels rather than commanding absolute 100%.
No scene response	Confirm the active selector slot is assigned; verify both analog channels, common return, and the released Gateway profile.
Repeated updates	Check analog noise and grounding; separate wiring from switched loads; tune hysteresis independently.

6.2 Scene mapping schedule

Complete every used row during commissioning. Mark unused slots UNUSED and confirm they do not produce an unintended recall.

Slot	Scene / selector window	Test	Slot	Scene / selector window	Test
1		Pass / Fail	6		Pass / Fail
2		Pass / Fail	7		Pass / Fail
3		Pass / Fail	8		Pass / Fail
4		Pass / Fail	9		Pass / Fail
5		Pass / Fail	10		Pass / Fail

7 Closeout, replacement, and release notes

7.1 Replacement

Use the Casambi Replace device function when replacing failed hardware with an identical Scene10cas and released scene Gateway profile. Confirm the replacement is unpaired and powered. Re-enter the scene count, Scene 1-10 assignments, trims, and hysteresis values if they are not carried through, then repeat the complete acceptance test.

7.2 Installer turnover

- Record the network, device name, scene count, all scene-slot assignments, trims, and hysteresis values.
- Provide the owner with the final issued guide and the Casambi network credentials under the project's security procedure.
- Photograph the installed terminal wiring and retain measured selector-window and scene-scalar test results.

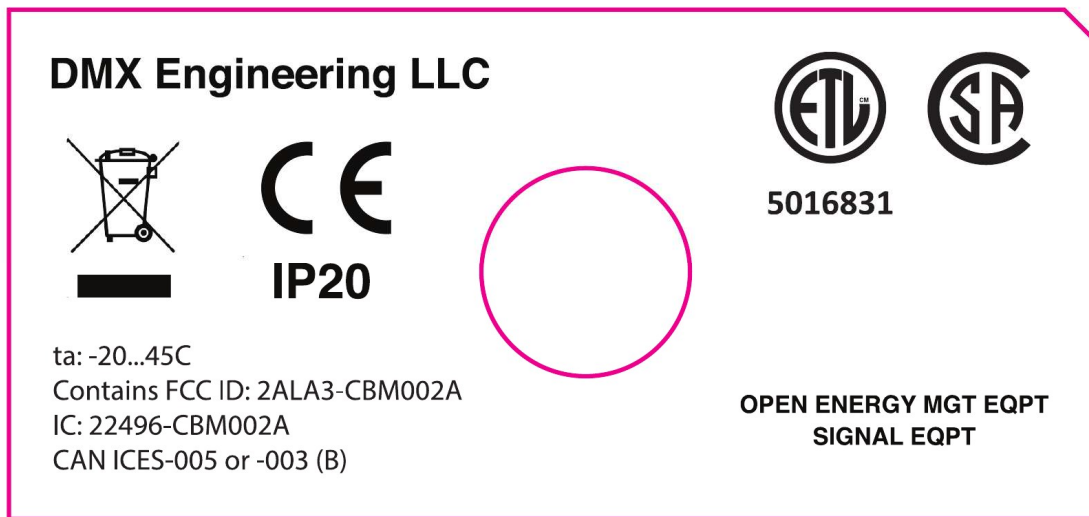
7.3 Engineering-review items before field issue

Release item	Required disposition
Mechanical data	Add released enclosure dimensions, mounting-hole centers, terminal wire range, and strip length.
Environmental data	Add rated operating temperature, humidity, enclosure/open-type classification, and indoor/outdoor statement.
Profile identity	Confirm final Casambi profile name, Nearby-device display name, Gateway type, vendor-parameter labels, and displayed ranges.
Firmware	Confirm production version and bench-validate all 2-10 scene counts, including Channel 1 at minimum and full scale.
Unused terminals	Keep positions 4 and 5 marked no-connect unless a future released requirement assigns their functions.
Regulatory	Insert applicable FCC/ISED/CE/UKCA identifiers and required radio-module statements for the shipping variant.
Support	Insert final DMX Engineering support URL, email, telephone, warranty, and document-control owner.

SOURCE CONTROL This Draft 0.1 uses the current 10cas documentation for electrical hardware and the inspected SceneTENcas3 PSoC source for fixed scene-selector and downward-only scene-scalar behavior. Reconcile the final issue against the production BOM, firmware binary, Casambi profile, and Scene10cas label artwork.

7.4 Product identification and certification label

The installed Scene10cas product label is the authority for model name, power requirements, terminal markings, and applied compliance identifiers. The enclosure label identifies In A, In B, RETURN, and the two blank no-connect positions; do not infer a function for an unlabeled terminal.



LABEL CONTROL Do not redraw, omit, reposition, or substitute certification marks or radio identifiers without engineering and compliance approval.

DRAFT STATUS Resolve the engineering review items before removing the DRAFT markings or issuing this guide to contractors.