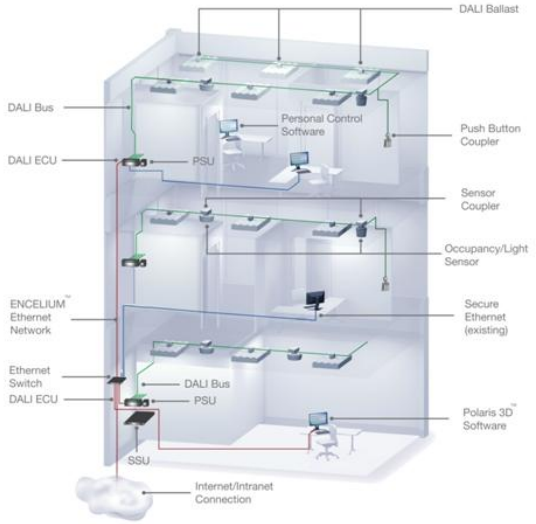
Technical Infos
ENCELIUM ECU DALI

ENCELIUM Energy Management System Architecture

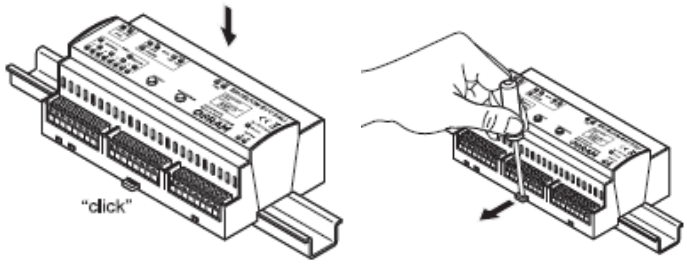


System Architecture
This illustration shows how each component is easily integrated into the ENCELIUM Energy Management System (EMS). DALI is a daisy chain communication topology that supply data and power to the system components. Each light fixture, sensor, and wall controller is daisy-chained back to the Energy Control Unit (ECU). ECUs typically control individual floors and are linked via an Ethernet Network.
Internet or LAN connection allows control software to be operated anywhere on the network.

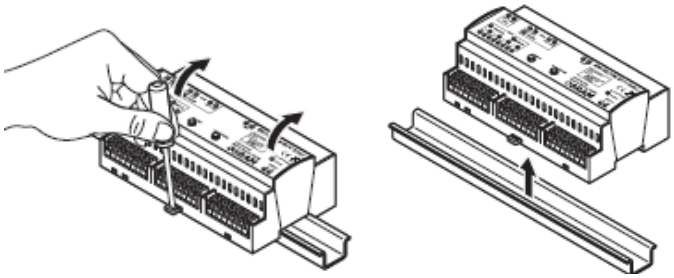
The Energy Control Unit is control device that collects, processes, and distributes lighting control information to the inputs and outputs over the DALI network.
Each ECU features 4 DALI channels and typically controls up to 64 inputs + 64 outputs per channel accordingly to the current consumption of the devices used.
The ECU is the central intelligence point in the system. It collects signal information from photo sensors (light levels), occupancy sensors (occupancy status) and push buttons. It then determines appropriate brightness levels or ON/OFF status for each fixture and zone. Photo sensors do not directly control light levels but rather are connected to the DALI network and provide light level information to the ECU. The ECU then determines what action to take based on the status signals from the sensors.
Each ECU has two Ethernet connections for communication with other ECUs and the SSU on the ENCELIUM Network and with a facility's or tenant LAN to allow secure communication to ENCELIUM equipment for access to the ENCELIUM Polaris 3D™ or Personal Control Software (PCS) applications. ECUs are typically located in the electrical room or into electrical boxes on each floor of a building and are connected to a network switch using standard Ethernet connections.

Installation Notes

Mounting:



Demounting:



The control unit must be installed and put into operation by a qualified electrician. The applicable safety regulations and accident prevention regulations must be observed.

The Ethernet network installation must comply to relevant regulation and cables conform to minimum CAT5.

It must be ensured that the terminal connection areas are properly covered and not accessible.

Cables must be fixed in such a way that they will not reach other contacts or metal parts.

Do not connect DALI lines to mains or any mains referred voltage.

Ensure that the "AUX" serial port and Ethernet ports are properly isolated from mains and DALI voltage.

All "-" lines of DALI channels are connected togheter internally to the control unit. Make sure to consider this characteristic in your installation.

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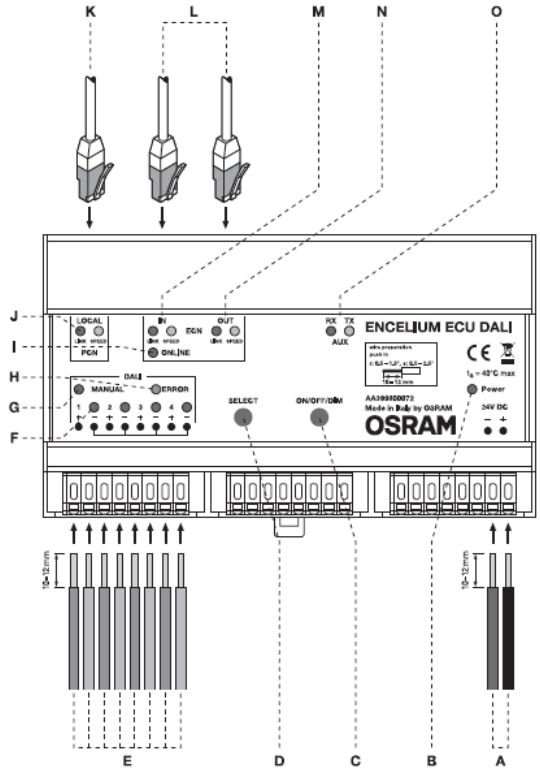
ENCELIUM ECU DALI

ECU DALI Overview



Connections:
Power Supply connection: -, + (24VDC) (**A**)
4x DALI output (2-pole): lines 1, 2, 3, 4 (**E**)
2x Ethernet RJ45 Connections (Encelium Backbone) (**L**)
1x Ethernet RJ45 Connection (Encelium Tenant) (**K**) (not used)
1x Serial RJ11 Connection (not used)

LED displays:
POWER (**B**)
4x DALI line status LED (**F**)
MANUAL (**G**)
ERROR (**H**)
ONLINE (**I**)
LOCAL PCN (**J**), IN ECN (**M**), OUT ECN (**N**):
AUX (**O**):

Pushbuttons:
Select Pushbutton (**D**): It allow to select manually the DALI channel. By pressing it the user will select 1→2→3→4→Normal Mode.
On/off/dimming pushbutton (**C**): In Installation mode it will cycle between 100% ON, OFF and 25% ON the DALI channel selected by Select Pushbutton (**D**).

ECU ordering info

Ordering Code - EAN	Ordering text	Description
4052899016842	DALI ECU ENCEL	Encelium DALI Energy Control Unit

Data Specification

Supply voltage	24 VDC +/- 5%
Power consumption	Max. 22W
Ambient temperature	0 °C … + 40 °C
Protection type	IP20 (if installed properly on electrical box) (IP00 at connectors)
Protection class	II
DALI current supply	4x 200 mA
Number of DALI ECG	4x64 gear addresses; current limit per Dali line must not be exceeded
Number of DALI inputs	4x64 input addresses; current limit per Dali line must not be exceeded
Ethernet ports	1 x Tenant Port Ethernet 2 x ENCELIUM Energy Control Port
DALI Standard	IEC 62386
Safety	EN 60950
EMV Emission	CISPR 22, IEC/EN 55022
EMV Sensitivity	IEC/EN 55024, IEC/EN 61000
Weight	350 g
Dimensions	160 x 91 x 62 mm (w x d x h) equivalent to 9TE