Helvar
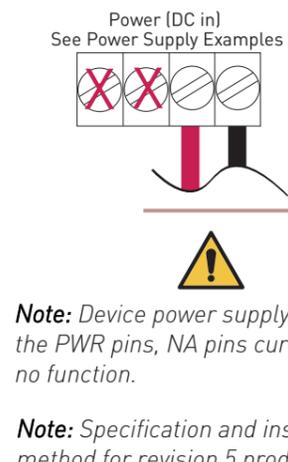
3901 ENVIRONMENTAL SENSOR

Installation Guide
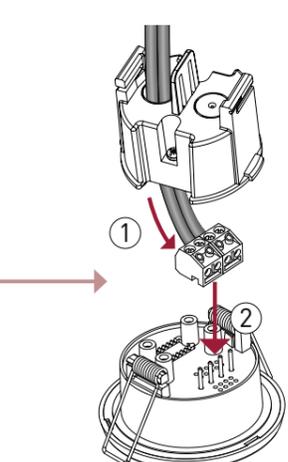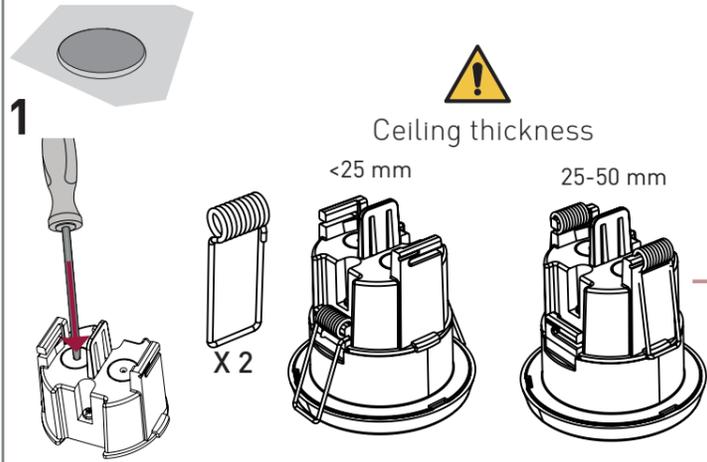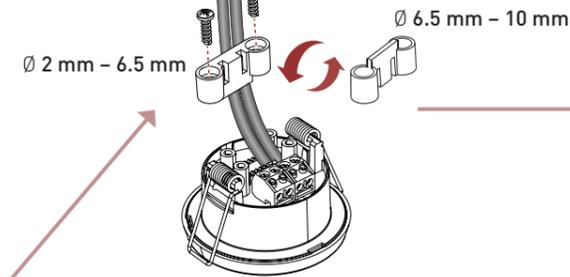
Installation notes:

- Do not install near an air conditioning unit, a heating unit or in a dusty environment.
- Nearest ActiveAhead device has to be within a 5 m range.
- A minimum of ten ActiveAhead nodes are required for a mesh network.
- Maximum radius of coverage to furthest luminaire is 30 m (via several luminaire hops)

For Insights - All nodes must be within a 20 m radius of the ActiveAhead Controller. The closest three nodes must be within 5 m.
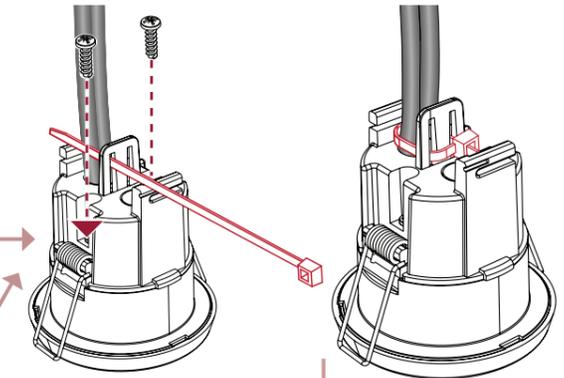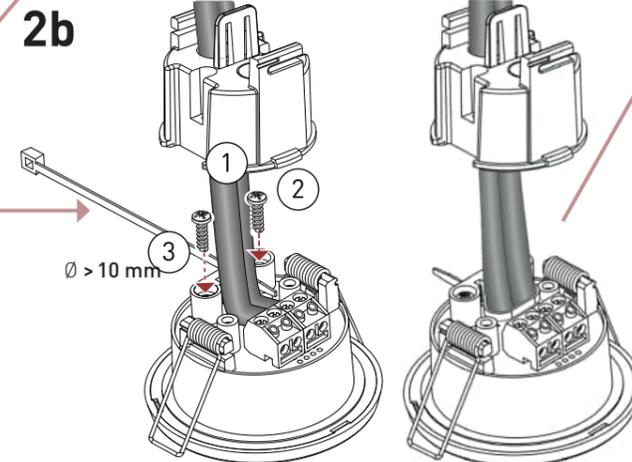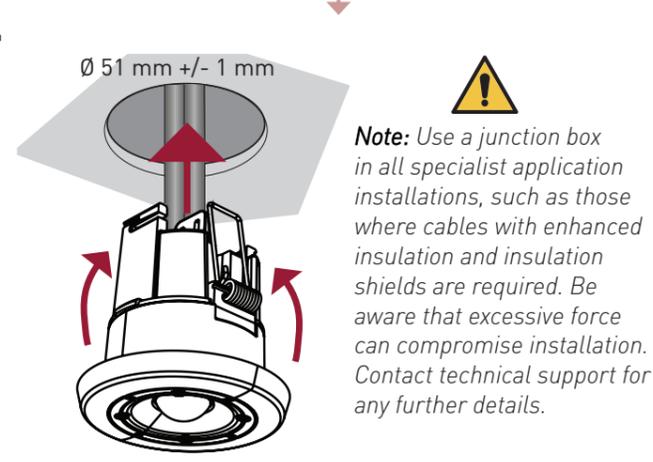
1

Ceiling thickness

<25 mm   25-50 mm

X 2

Power (DC in)
See Power Supply Examples

Note: Device power supply is through the PWR pins, NA pins currently have no function.

Note: Specification and installation method for revision 5 product and above.

2a

Ø 2 mm – 6.5 mm   Ø 6.5 mm – 10 mm

3

2b

Ø > 10 mm

4

Ø 51 mm +/- 1 mm

Note: Use a junction box in all specialist application installations, such as those where cables with enhanced insulation and insulation shields are required. Be aware that excessive force can compromise installation. Contact technical support for any further details.

If the sensor is being fitted using an SBB-E Mounting Box, scan the QR code for installation details

7860474 Iss 05
2025-12-04

Power Supply Examples

Note: Refer to power supply of the product in the Technical data of the installation guide or datasheet to determine max 3901 connectivity and connection options. 3901 consumes 60 mA max.

With 5609

Helvar
ActiveAhead Node Advanced
5609
(100-240) V
(50/60) Hz
70 mA max.
tᶜ: -20°C ...+50°C
Keilaranta 5
FI-02150 Espoo
Finland
helvar.com
Load maximum 2 A
(0.5 - 2.5) mm²
(10 - 15) mm
DALI-Out current: 100 mA

POWER
+ –

With 402

digidim
402
Power Supply
250mA

DA+ DA–

POWER
+ –

With 407

Helvar
407 DALI Power
Supply 64 mA
1.7V 1.7V
(200-240) VAC
50/60 Hz
(50-60) Hz
G+ (BLACK)
G+ (RED)
N (BLUE)
L (BROWN)
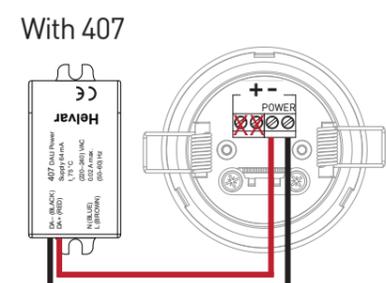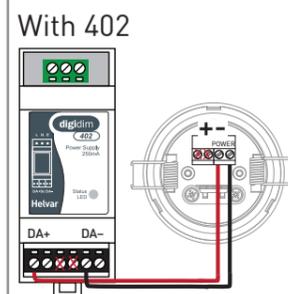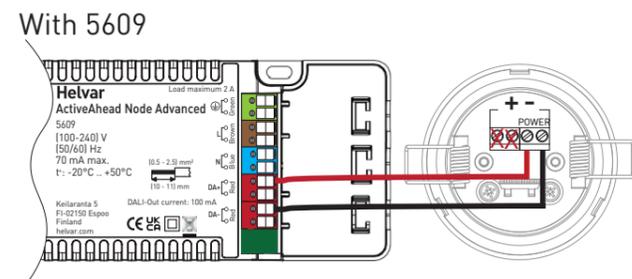
POWER
+ –

Application Example

Insights

5670 AA Controller

Key

AA - ActiveAhead
– – – - Internet connection
.... - Bluetooth connection
——— - DALI power / connection
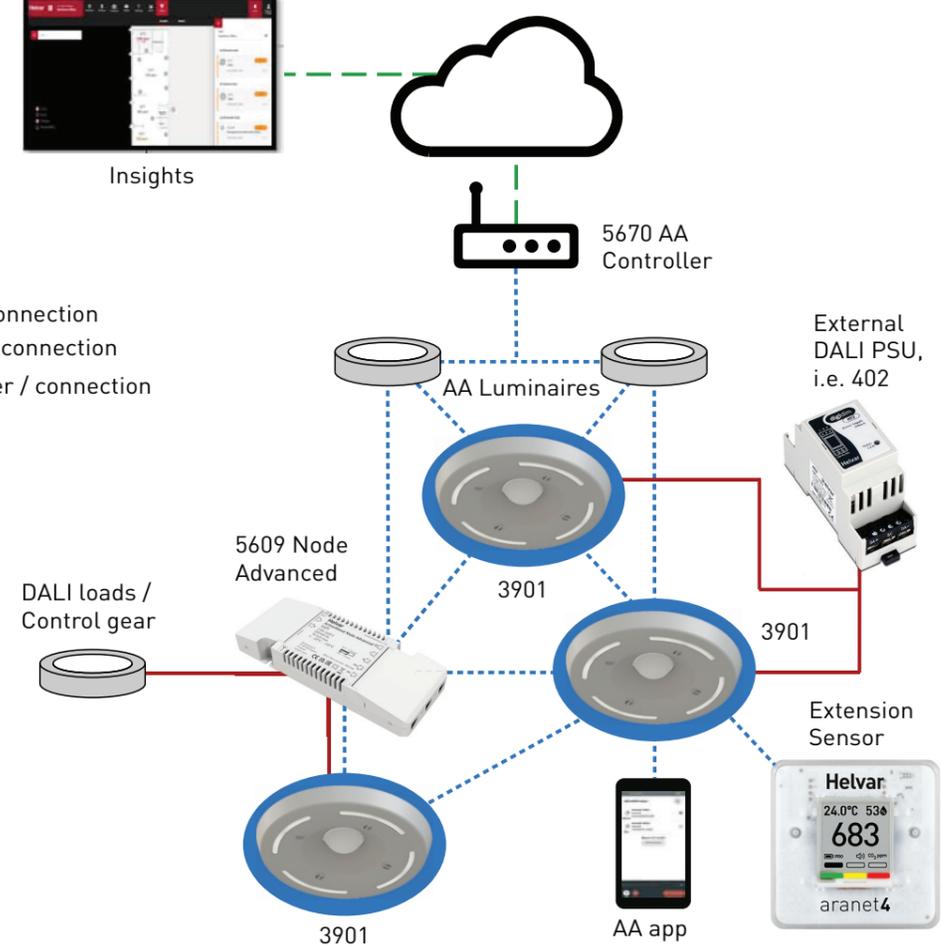
AA Luminaires

External DALI PSU, i.e. 402

5609 Node Advanced

3901

3901

DALI loads / Control gear

Extension Sensor

Helvar
24.0°C 53%
683
aranet4

AA app

Technical Data

Connections

DALI: Removable connector block, DALI communication not yet supported.

Wire section: 0.5 – 1.5 mm² solid or stranded.

Cable rating: All cables must be mains rated.

Note: Power and DALI pins are not internally connected together.

Electrical data

DC supply input: 9-22.5 V (Pins marked PWR)

Max current: 60 mA. Only use DALI power supply.

⚠️ *Do not connect a power supply other than a current limited max 250 mA DALI PSU*

Sensors

Light: Photocell, light level measurement

Occupancy detection: Passive infrared (PIR)

Enhanced occupancy detection: This feature extends occupancy timeout to a fixed period when PIR is not detecting any movement any more but speech is detected. PIR trigger is required to turn on lighting first.

Note: Recommended for using enclosed, quieter spaces e.g. meeting rooms, cell offices. Avoid using feature in open plan, or louder spaces as this may generate false noise occupancy triggers. Disable/enable feature via App, if required.

Sound level (Ambient noise): Microphone

Note: General Data Protection Regulation (GDPR) compliant.

Climate: Ambient temperature and Relative Humidity

Air quality: eCO2 and TVOC

Note: Air quality measurements typically require two days to calibrate upon each power up. Up to seven days in environments with a lack of fresh air.

⚠️ *eCO2 and TVOC measurements are indicative estimations only and cannot be taken as exact values.*

Wireless connectivity

Operating frequency range: 2402-2480 MHz

Transmission power: Max. 0 dBm

Technology Bluetooth® Mesh

Antenna pattern: Omnidirectional

Operation

Start-up time   <5 seconds

Note: Allow up to 5 minutes for the TVOC / eCO2 sensor to start measurements.

Operating and storage conditions

Ambient temperature: 0 °C to +40 °C

Relative humidity: Max. 90 %, non-condensing.

Storage temperature: 0 °C to +70 °C

Note: The temperature difference between the PIR detection target and the background must be at least 4 °C.

Compatibility

ActiveAhead

Mechanical data

Max. recommended mounting height: 4 m

Presence detection coverage area: 46 m² @ 2.5 m mounting height

Mounting hole diameter: 51 mm +/- 1 mm

Ceiling thickness: <25mm / 25-50 mm

Bezel diameter: 66 mm

Recommended clearance depth: 10 cm (with cable cover, incl. 5 cm for cabling)

Material (casing): Flame retardant PC/ABS (UL94–V0)

Finish/Colour: Semi-matt / White RAL 9003

Weight: 60 g

IP rating: IP20

Conformity and standards

Conformity: CE UKCA

RED: EN 301 489-1, EN 301 498-17, EN 300 328

EMC emission: EN 55015

EMC immunity: EN 61547

Safety: EN 61347-2-11

Environment: Complies with WEEE, RoHS and REACH directives.

Hereby, Helvar Oy Ab declares that the radio equipment type 3901 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: https://helvar.com/doc/3901

FI:
Helvar Oy Ab vakuuttaa, että radiolaitetyyppi 3901 on direktiivin 2014/53/EU mukainen. EU-vaatimustenmukaisuusvakuutuksen täysimittainen teksti on saatavilla seuraavassa internetosoitteessa: https://helvar.com/doc/3901

SV:
Härmed försäkrar Helvar Oy Ab att denna typ av radioutrustning 3901 överensstämmer med direktiv 2014/53/EU. Den fullständiga texten till EU-försäkran om överensstämmelse finns på följande webbadress: https://helvar.com/doc/3901

IT:
Helvar Oy Ab dichiara che la tipologia di apparecchiatura radio 3901 è conforme alla Direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: https://helvar.com/doc/3901

FR:
Le soussigné, Helvar Oy Ab, déclare que l'équipement radioélectrique du type 3901 est conformeà la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: https://helvar.com/doc/3901

DE:
Hiermit erklärt Helvar Oy Ab, dass der Funkanlagentyp 3901 der Richtlinie 2014/53/EU entspricht. Der vollständige Text der EU-Konformitätserklärung ist unter der folgenden Internetadresse verfügbar: https://helvar.com/doc/3901

PL:
Helvar Oy Ab niniejszym oświadcza, że typ urządzenia radiowego 3901 jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: https://helvar.com/doc/3901

Connecting to an Extension Sensor (to be carried out by a Helvar trained engineer)

Recommended distance <5 m. Max 10 m (open space)

Extension Sensor can be freestanding or wall mounted.

Download the Helvar ActiveAhead app.
Note: Pairing with Extension Sensors only supported via Android App.

With the phone next to the Extension Sensor, open the app and select Connect > Select the Environmental Sensor to be paired > wait for connection confirmation > Devices Tab > + Add Sensors.