

3I-DS

INNOVATION
INTEGRATION
ENGINEERING
DIGITAL SOLUTIONS

SMART BUILDING

DESIGNER · INTEGRATOR · DISTRIBUTOR

Intelligent buildings. Systems that talk to each other. A controlled experience.

3I-DS

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3I-DS

WHO ARE WE?

We turn technological complexity into a simple experience.



3I-DS is a solution designer, integrator and distributor, specialized in smart buildings.

We design the solution, select and supply the equipment, then integrate and supervise the systems that make a building work: lighting, HVAC, energy, security, audio / video, interfaces and BMS.

Our mission: turn a multitude of technical solutions into a single, controllable and scalable system.

An architecture designed for today.
An infrastructure ready for tomorrow.

Les Berges du Lac, Tunis · Working throughout Tunisia and abroad

3I-DS

OUR NAME

What does 3I-DS stand for?

THE THREE “I”S

I

Innovation

Open architectures, built to last.

- Open protocols, no dependence on a single manufacturer
- Solutions and equipment chosen by 3I-DS, adapted to each project
- Installations that evolve over time

I

Integration

Making every system talk to the others.

- Systems from different brands and protocols
- Gateways and interfaces between protocols
- One single user experience

I

Engineering

From study to commissioning.

- Needs, uses and architecture
- Programming, testing and fine-tuning
- Documentation and training

DS

DS

Digital Solutions

Control and supervise in real time.

- BMS supervision and dashboards
- Touch interfaces and apps
- Remote access, support and maintenance

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KEY FIGURES

3I-DS in numbers

10+

YEARS OF EXPERIENCE

Expertise built in the field for more than 10 years.

132+

PROJECTS COMPLETED

Residential, hospitality, commercial and professional projects.

400+

DEVICES INTEGRATED

Actuators, sensors, interfaces and smart devices.

500+

LUMINAIRES CONTROLLED

On a single installation, with intelligent lighting management.

100+

ENERGY METERS

Integrated for monitoring and supervising overall consumption.

200+

SUB-METERING POINTS

To track consumption by zone, use or equipment.

Years of experience. Over a hundred projects. Hundreds of integrated devices. Energy data turned into decisions.

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BACS — BUILDING AUTOMATION & CONTROL SYSTEMS

The intelligent building is becoming a necessity.

A building's energy performance no longer depends only on the performance of its equipment. It also depends on its ability to measure, communicate, automate and adapt its operation to real needs.

BACS / BMS systems centralize data, automate technical equipment and optimize how it runs, with a global view of the building's performance.

EVOLVING REQUIREMENTS

Standards and frameworks dedicated to energy performance and building automation reinforce the role of control and technical management.

NF EN ISO 52120-1
Classifies automation systems from D to A according to their impact on energy efficiency. Class A corresponds to high energy performance.

European EPBD Directive
Its recast, Directive (EU) 2024/1275, strengthens requirements for building automation and control.

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REGULATORY FRAMEWORK · TUNISIA

Energy management in Tunisia.

THE TEXTS

2 August 2004
Law No. 2004-72 on energy management: mandatory periodic energy audit, prior consultation for energy-consuming projects, thermal regulation for new buildings.

Since 2008
Thermal regulation applied to new office and residential buildings.

9 February 2009
Law No. 2009-7: amends and supplements the 2004 law.

MANDATORY ENERGY AUDIT

- Commercial, transport and residential establishments consuming 500 toe (tonnes of oil equivalent) or more per year; 800 toe for industry
- Periodic audit, carried out by an approved auditor-expert
- Report sent to ANME (National Agency for Energy Management), which validates the action plan
- Financial and tax incentives provided for by the regulations

3I-DS: metering, supervision and control to measure, monitor and reduce energy consumption.

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REGULATORY FRAMEWORK · FRANCE

The BACS decree: context and obligations.

CONTEXT

1 October 2019
Éco-Énergie Tertiaire decree: 60% reduction in energy consumption by 2050 (compared with a reference year between 2010 and 2022), with data reported on the OPERAT platform.

20 July 2020
BACS decree: the automation and control system becomes a lever for achieving these targets.

7 April 2023
Amending decree: the power threshold drops from 290 kW to 70 kW, which greatly widens the scope.

REQUIRED SYSTEM FUNCTIONS

- Continuously monitor, record (5 years) and analyze energy production and consumption data
- Benchmark the building's energy efficiency against reference values and alert the operator when efficiency drops
- Be interoperable with the building's technical systems
- Allow manual override and autonomous management of systems

BMS vs. single-trade control: a BMS controls all building functions; single-trade control covers one trade only (heating or lighting). An existing BMS may need upgrading.

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REGULATORY FRAMEWORK · FRANCE

Buildings concerned and deadlines.

BUILDINGS CONCERNED

- Commercial and institutional activities, for profit or not
- Heating or air conditioning, with or without ventilation
- Effective rated output above 70 kW
- New and existing buildings
- The obligation rests with the owner of the systems

EXCEPTION
Exemption possible if a study shows that the return on investment exceeds 10 years (6 years before April 2023).

3I-DS designs BMS that monitor, record and supervise consumption.

DEADLINES

8 April 2024
New buildings equipped with a system above 70 kW

1 January 2025
Existing buildings equipped with a system above 290 kW

1 January 2030
Existing buildings equipped with a system above 70 kW

2030 deadline extended by the decree of 26 December 2025 (originally 2027).

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BACS · FOUR KEY FUNCTIONS

Measure. Control. Optimize. Supervise.

MEASURE

- Overall metering
- Sub-metering
- Consumption monitoring
- Real-time data

CONTROL

- HVAC: heating, air conditioning, ventilation
- Lighting
- Technical equipment

OPTIMIZE

- Intelligent control
- Scheduling
- Scenes
- Adapting to real needs

SUPERVISE

- BMS
- Dashboards
- Alarms and history
- Performance analysis

A GLOBAL APPROACH TO ENERGY

Electricity	HVAC	Lighting	Water	Photovoltaics	Storage	Electric mobility

3I-DS designs open architectures that take the building from simply measuring consumption to genuinely active energy management.

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OUR INTEGRATION APPROACH

One point of contact. Several systems. One experience.

A single, open and scalable architecture so that all building systems work together.



CONNECTED OPEN EFFICIENT DURABLE

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OUR METHOD

From need to commissioning.

A five-step process, coordinated with everyone involved in the project.

01

FRAME

Needs and uses

Workshops, analysis of uses and site constraints.

02

DESIGN

Architecture

Solution design, selection of equipment and protocols, integration diagrams.

03

INTEGRATE

Programming

Programming and configuration of devices and gateways.

04

TEST

Fine-tuning

Testing, acceptance and adjustments with all parties.

05

HAND OVER

Training and documentation

Documentation, operator training, commissioning.

3I-DS

SUPPORT, MAINTENANCE & EVOLUTION

Present before, during and after commissioning.

Technical support, diagnostics, maintenance and optimization. Remotely or on site, we support the installation over the long term.



ASSIST

Support

Technical assistance and onboarding of your teams.



DIAGNOSE

Troubleshooting

Analysis and intervention, remotely or on site.



EVOLVE

Optimization

Additions, adjustments and continuous improvement of the installation.



3I-DS

LIGHTING & AMBIANCE

Light that serves how the space is used.

Light designed for every space, every moment and every mood.

- ON/OFF
- Dimming
- DALI / DALI-2
- Presence
- Daylight
- RGB / RGBW
- Scenes

500+

luminaires controlled on a single installation

3I-DS

HVAC & AIR QUALITY

The right climate. In the right place.

We integrate HVAC systems to coordinate comfort, air quality and energy performance, zone by zone.

- Zone-by-zone thermal control, based on setpoints and presence
- Alarms and history in the BMS supervision

CO_2 | VOC | Particles | Humidity



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INDOOR AIR QUALITY

Measure, understand and control the air we breathe.

PARAMETER	BENCHMARK	ACTION
CO_2	Below 1,000 ppm · 800 ppm recommended in public places	Demand-controlled ventilation
Relative humidity	40 to 60%	Humidification, dehumidification, ventilation
VOCs and formaldehyde	Continuous measurement, alert when exceeded	Increased air renewal
Particles PM2.5 · PM10	PM2.5: 10 µg/m³ · PM10: 30 µg/m³ annual average (quality objectives)	Filtration and alert
Temperature	Setpoint per zone, adapted to presence	Zone control
Carbon monoxide (CO)	10 mg/m³ over 8 h (WHO) · alert thresholds	Immediate alarm

CONTROL CHAIN

1. **Sensors**
   CO_2, VOC, particles, temperature, humidity
2. **KNX controller**
   Thresholds, scenes, presence
3. **Ventilation and HVAC**
   Continuously adjusted airflow
4. **BMS supervision**
   Alarms and history

Confinement | **Air renewal** | **Demand-controlled ventilation** | **Filtration** | **Hygrometry**

Indicative benchmarks: NF EN 16798-1, French High Council for Public Health (HCSP), French air quality objectives, WHO guidelines.

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ENERGY & WATER

Measure. Understand. Control.

Advanced energy management, from real-time measurement to automatic action.

MEASURE

Real-time measurement by circuit, for energy and water alike.

UNDERSTAND

Analysis of consumption and costs, history and trends.

CONTROL

Thresholds, alarms and automatic actions. Load optimization and flow control.

100+ energy meters **200+** sub-metering points

Open integration with Modbus, M-Bus and BMS



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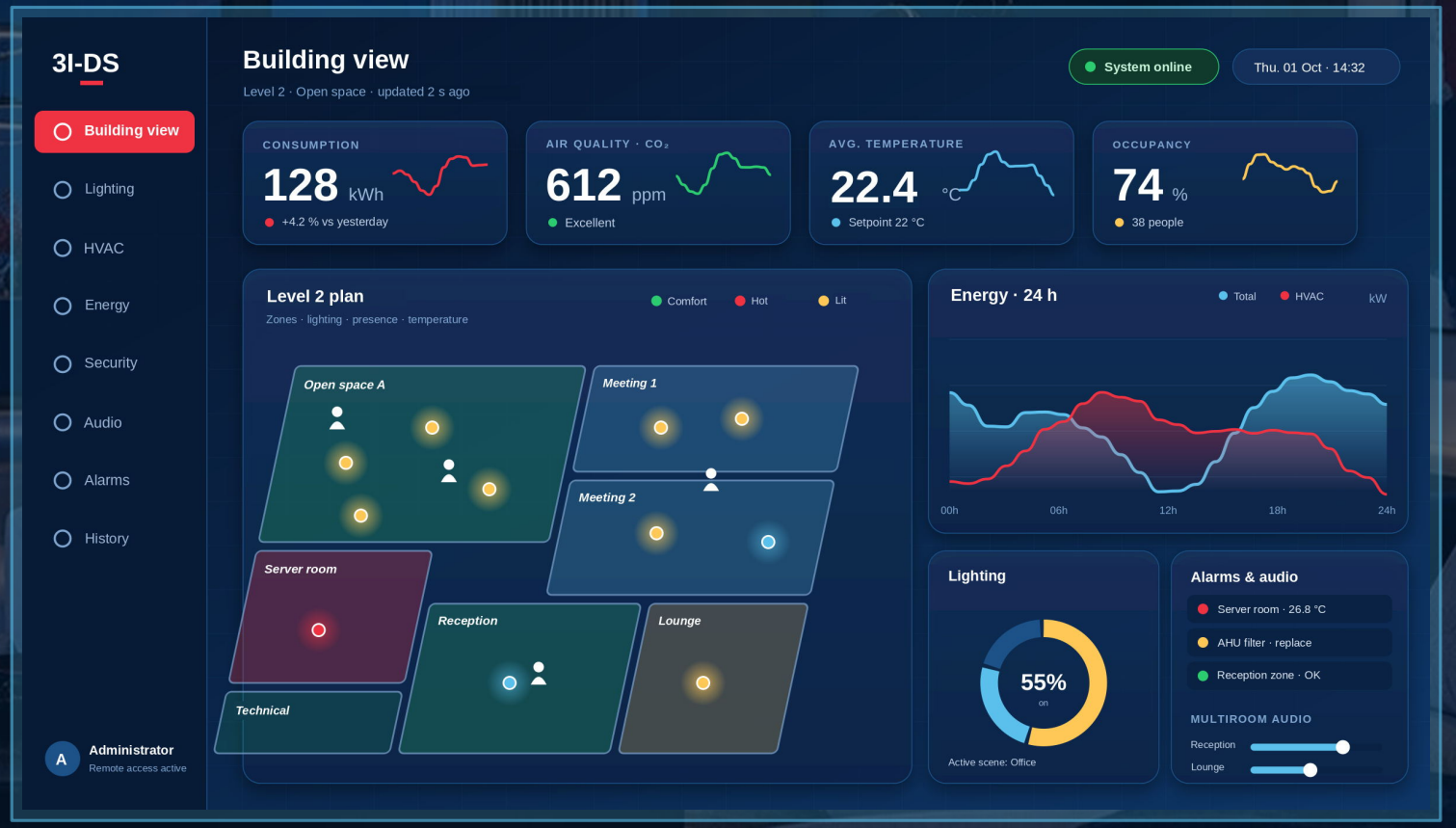
SUPERVISION & BMS

The whole building. One single interface.

View, control and supervise equipment according to the project architecture, on site or remotely.

- **Status and alarms**
- **Scenes**
- **Energy and history**
- **Remote access**



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SECTORS WE SERVE

Architectures adapted to every use.

From residential to commercial, hospitality and special projects.

01

RESIDENTIAL & VILLAS

Comfort, ambiance, security

02

HOTELS & HOSPITALITY

Guest experience, controlled operation

03

OFFICES & FINANCE

Comfort, productivity, energy

04

RETAIL & RESTAURANTS

Ambiances and centralized control

05

EDUCATION & HEALTHCARE

Healthy air, safety, measurement

06

COMMERCIAL, REAL ESTATE & SPECIAL PROJECTS

Open multi-system architectures

SECTOR 01 / 06

RESIDENTIAL & VILLAS

Tailor-made intelligence, designed around comfort, use and architecture.

- Intelligent lighting
- HVAC comfort
- Blinds and shading
- Multiroom audio
- Integrated security
- Optimized energy
- Centralized supervision

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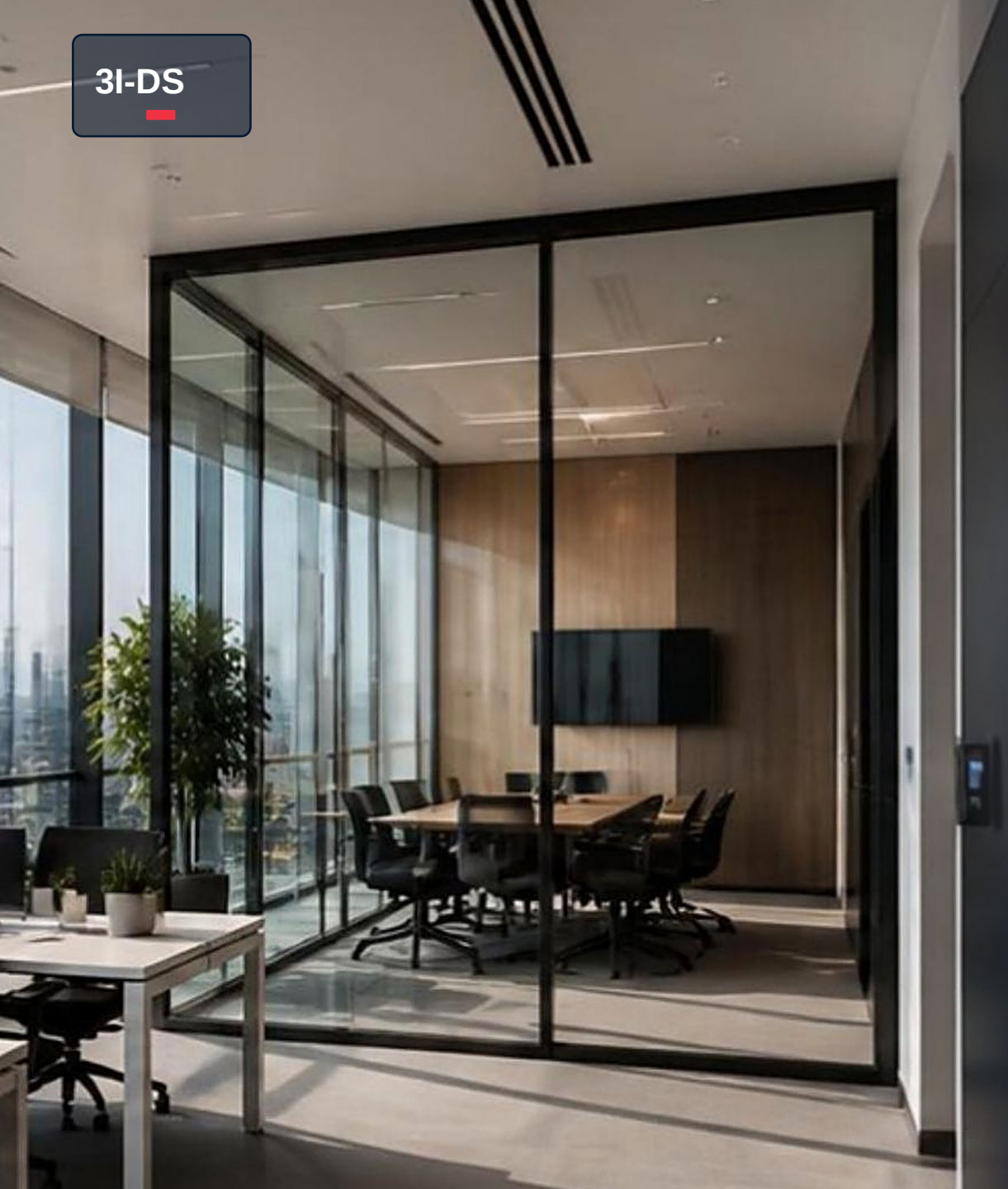
SECTOR 02 / 06

HOTELS & HOSPITALITY

A seamless guest experience and well-controlled day-to-day operation.

- Architectural lighting
- HVAC comfort
- Air quality
- Access and security
- Audio / video
- Supervision and operations





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SECTOR 03 / 06

OFFICES & FINANCE

Comfortable, productive and energy-efficient workspaces.

- Daylight
- Zoned HVAC
- Meeting rooms
- Access control
- Energy monitoring and BMS

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SECTOR 04 / 06

RETAIL & RESTAURANTS

Ambiances that bring the place to life, controlled from a single interface.

- Lighting scenes
- Presence detection and schedules
- Climate comfort
- Multiroom audio
- Centralized control
- Energy optimization





SECTOR 05 / 06

EDUCATION & HEALTHCARE

Healthy, safe and well-controlled environments, with measured consumption.

- Intelligent lighting
- Air quality
- High-performance HVAC
- Safety and alarms
- Technical supervision
- Consumption measurement

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SECTOR 06 / 06

COMMERCIAL · REAL ESTATE & SPECIAL PROJECTS

An integrated, open multi-system architecture, from events to large developments.

- **Open multi-system architecture**
- **KNX · DALI · BACnet · Modbus · M-Bus**
- **Centralized BMS**
- **Maintenance and evolution**



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REFERENCES & PROJECTS

Real integrations. Real uses.



ABC BANK
Intelligent building · KNX



VILLA M.N.J
Smart home · Sokra, Tunis



COFICAB
Intelligent building · KNX · DALI · HVAC



VILLA LES AMANDARINE
Smart home · Hammamet



SMART LOUNGE TORETTA
Audio and lighting · Sfax



BUSINESS HOTEL B2B
Restaurant and lounge · Sfax

INTELLIGENT BUILDING & BMS · TUNISIA

ABC BANK

Design and integration of an intelligent solution based on the KNX protocol, for centralized management of technical equipment, comfort, energy efficiency and building operation.

INTEGRATED SOLUTIONS

- Intelligent lighting management
- Presence and occupancy detection
- HVAC management with Samsung equipment integrated through an Intesis gateway
- Energy measurement and monitoring via Modbus
- Air quality and CO_2 monitoring
- Temperature and humidity management
- Intelligent scenes and automation
- Centralized building supervision

KEY STRENGTHS Open, scalable KNX · Interconnected multi-systems · Automation based on actual occupancy · Consumption monitoring · Centralized operation

3I-DS · Study · Design · Supply · Integration · Programming · Commissioning

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SMART HOME & KNX AUTOMATION · SOKRA – TUNIS

VILLA M.N.J

Design and integration of a KNX-based smart home solution, for intelligent, intuitive and centralized control of the villa's equipment.

INTEGRATED SOLUTIONS

- Intelligent lighting control
- Custom ambiance scenes
- Shutter and blind control
- Climate comfort management
- Presence detection
- Centralized equipment control
- KNX control interfaces
- Home supervision and control

USER EXPERIENCE Automation designed around everyday use: comfort · ambiance · security · simplicity · energy efficiency

3I-DS · Study · Design · Supply · KNX integration · Programming · Commissioning



3I-DS

INTELLIGENT BUILDING · KNX · DALI · HVAC · SUPERVISION

COFICAB

Design and integration of an intelligent solution to control, automate and supervise lighting and climate comfort by zone, through a centralized KNX and DALI architecture. Operation adapts to actual occupancy, light levels and use of the spaces.

INTELLIGENT LIGHTING

- Presence detection and occupancy management
- Automatic control based on daylight
- Dynamic dimming by zone
- Centralized management of luminaires and circuits
- Scenes and automation by use
- Visual comfort and controlled consumption

ZONED AIR CONDITIONING

- Air-conditioning control by zone
- Adaptation to presence / occupancy
- Comfort control for each space
- Independent management of building zones
- Automatic adaptation of equipment to occupancy
- Centralized control and supervision

A SELF-ADAPTING INSTALLATION Presence, daylight, DALI dimming and zoned air conditioning adapt the building to its actual use.

3I-DS · Study · KNX / DALI integration · HVAC management · Programming · Supervision · Commissioning · Technical diagnostics

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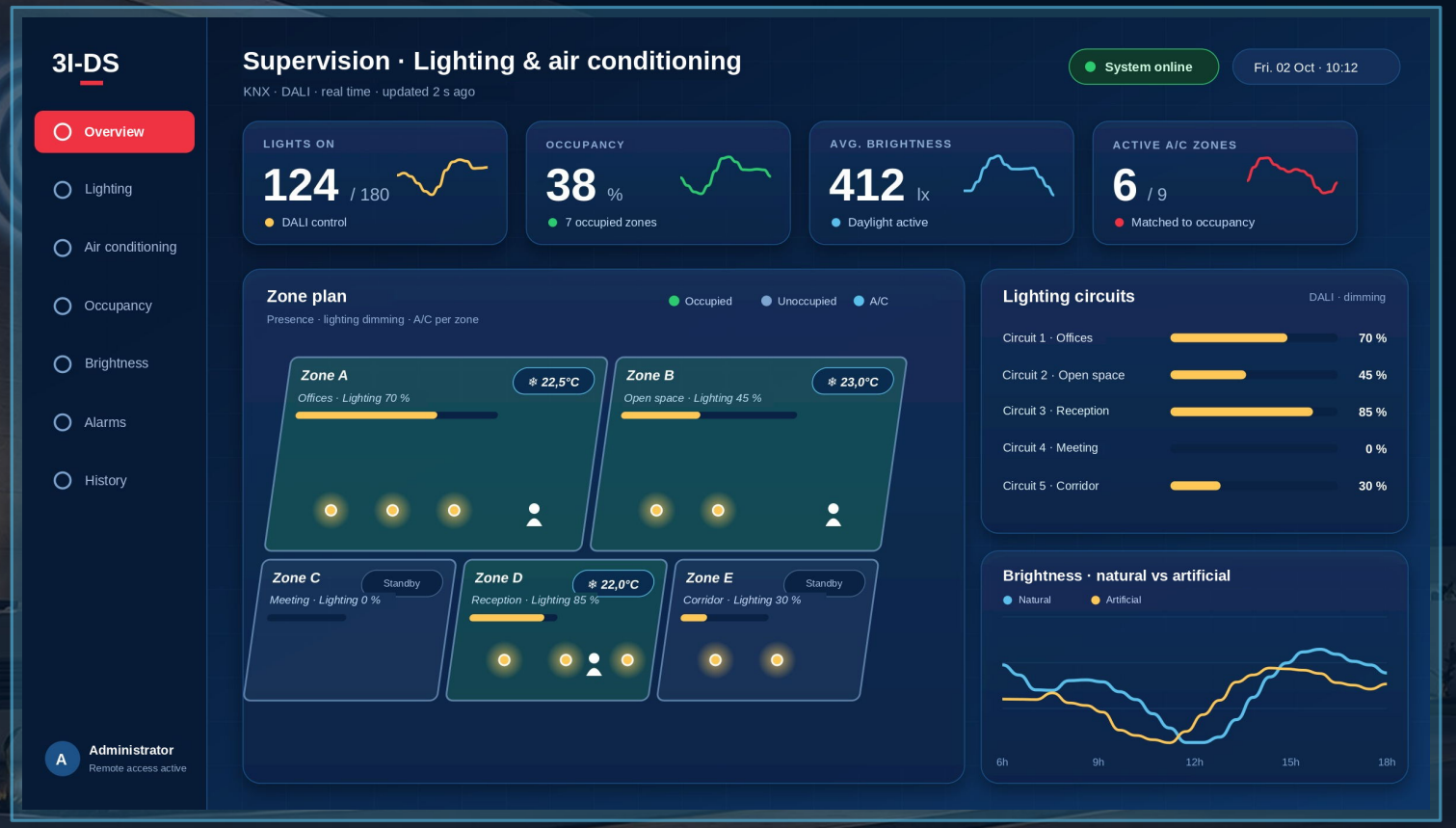
COFICAB · SUPERVISION & DASHBOARD

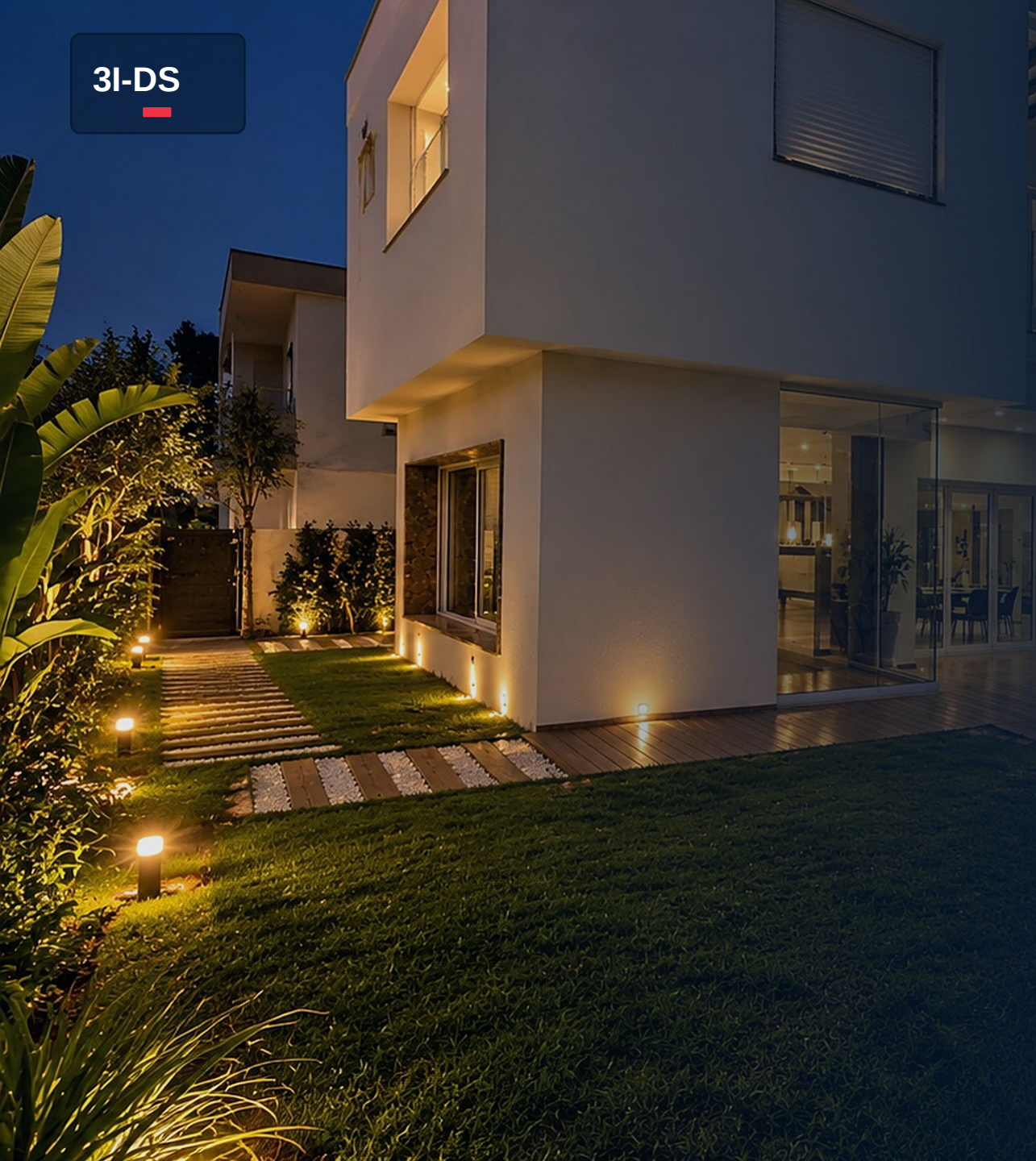
A global, real-time view.

A supervision interface provides a global, real-time view of the installation:

- Luminaire status
- Lighting circuit status
- Light level
- Occupancy / presence status
- Lighting dimming level
- Air-conditioning zone status
- HVAC equipment status and operation
- Centralized equipment control



COMFORT · AUTOMATION · SUPERVISION · ENERGY EFFICIENCY



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SMART HOME · KNX · LIGHTING & COMFORT · HAMMAMET

VILLA HAMMAMET LES AMANDARINE

Design and integration of a KNX-based smart home solution, adapted to a contemporary villa and its indoor and outdoor spaces.

INTEGRATED SOLUTIONS

- Intelligent indoor and outdoor lighting
- Lighting scenes
- Shutter and blind control
- Centralized equipment control
- Climate comfort management
- Automation of outdoor spaces
- KNX control interfaces

A TAILOR-MADE LIGHTING EXPERIENCE Welcome · Relaxation · Evening · Outdoors · Away — the villa's functions centralized, preserving its architecture and aesthetics.

3I-DS · Study · Design · Supply · KNX integration · Programming · Commissioning

3I-DS

SMART BUILDING · KNX · AUDIO & LIGHTING · SFAX

SMART LOUNGE TORETTA

Design and integration of a KNX-based intelligent building solution, for an immersive and intelligent experience within the Toretta space.



INTEGRATED SOLUTIONS

- Intelligent lighting management
- Ambiance scenes
- Intuitive KNX controls
- Centralized equipment management
- Multiroom audio integration
- Lighting and sound ambiances
- Space automation

IMMERSIVE EXPERIENCE An intelligent orchestration of light, sound and ambiances, adapted to the different uses of the space.

3I-DS · Study · Design · Supply · Integration · Programming · Commissioning

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SMART HOSPITALITY · KNX · LIGHTING · AUDIO · SFAX

BUSINESS HOTEL B2B
RESTAURANT & LOUNGE

KNX integration to control and automate the Restaurant & Lounge equipment, and create a comfortable, immersive and intelligent experience.

INTEGRATED SOLUTIONS

- Intelligent lighting management
- RGB lighting and ambiance scenes
- Sound system and audio management
- Centralized management of spaces
- CO_2 level measurement
- Air quality monitoring
- Climate comfort management
- Presence and occupancy detection
- Automated scenes according to use
- KNX control and supervision interfaces

AN IMMERSIVE EXPERIENCE Welcome · Dining · Lounge · Evening · Events — light, sound, comfort and air quality adapted to every moment.

3I-DS · Study · Design · Supply · Integration · Programming · Commissioning

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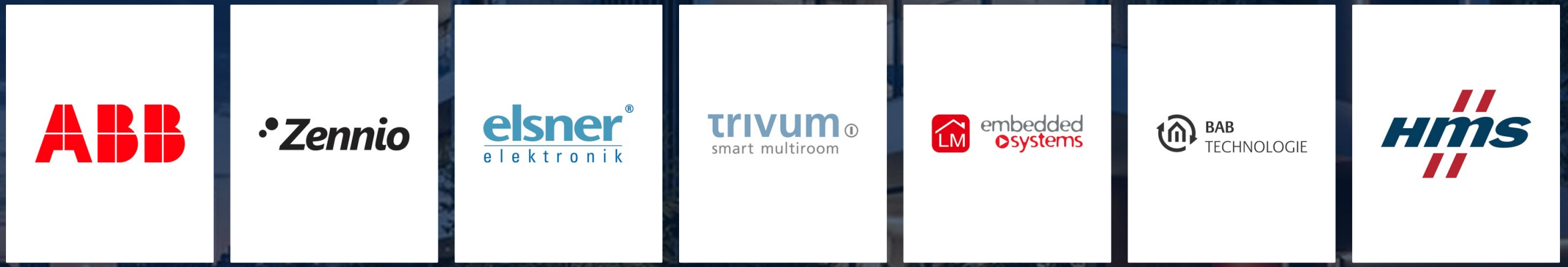
TECHNOLOGIES & PARTNERS

An open ecosystem, leading brands.

We select, supply and integrate open, scalable solutions, according to the project's needs, uses, architecture and long-term sustainability goals.



Non-exhaustive list: we choose equipment project by project.

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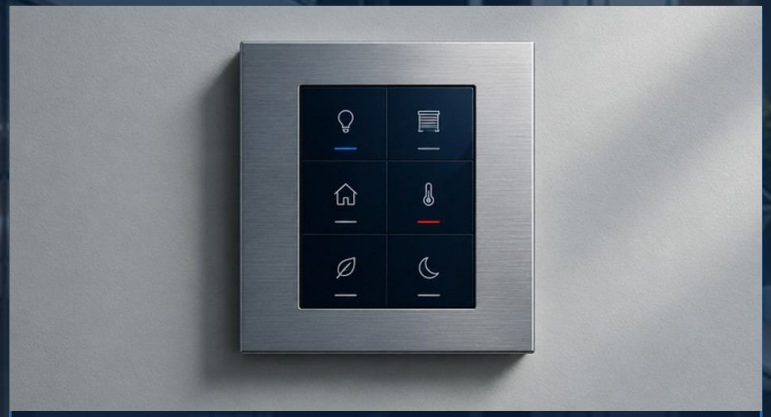
CONTROLS & INTERFACES

The right gesture. The essential interface.

From a simple touch to full supervision: we choose each interface according to the use and the project architecture.



TOUCH KEYPADS

- Lighting, blinds and scenes at a touch
- Illuminated status feedback
- Flush mounting, discreet design



SCREENS AND DASHBOARDS

- Remote access by app or browser
- Dashboards, alarms and history
- Voice control depending on the product



WALL PANELS

- Room screens from 4″ to 10″
- Customizable pages: lighting, climate, scenes
- Built-in thermostat and sensors

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ABB · TREVION

Discreet controls, precise control.

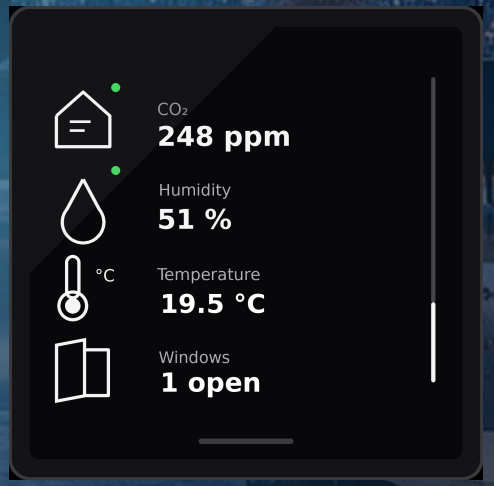
Touch switches, with or without a display, that blend into the room's architecture and control lighting, blinds, scenes and climate.



- Touch control in a switch format, with or without a display
- 2.4″ black display: 12 control functions, haptic feedback, light and dark modes
- Capacitive keypads with 1 to 4 buttons, animated light guide
- Proximity and brightness sensor, temperature controller

KNX | 2.4″ display | Keypads with 1 to 4 buttons





Ambiance page: CO_2, humidity, temperature, windows

ABB · ROOMTOUCH 4″ (RT/U12)

Room control, within reach.

4″
IPS DISPLAY · 480 × 480

12
CONTROL ELEMENTS

10
SCENES

- Organized in pages (up to 12) · maximum of 4 touch areas per page
- Switching, dimming, slider, blinds, RGBW, scenes, audio
- Built-in temperature controller, with internal sensor · binary input or external sensor
- 10 scenes · 10 logic functions · 10 timers · 12 fault and alarm messages
- Haptic feedback · proximity and brightness sensors · presence simulation

KNX | Data Secure | 86 × 86 mm

3I-DS

ABB · IQTOUCH 10" (TP/U10)

A large room display to control the whole building.

10.1"
IPS DISPLAY · 1280 × 800

240
CONTROL ELEMENTS

64
SCENES

- Up to 240 elements on 12 pages · 50 touch areas per page
- Switching, dimming, blinds, RGBW, scenes, audio, energy and air-quality display
- 8 logic functions · 16 timers · 24 fault and alarm messages · 30 floor plans
- Door intercom: Welcome IP (SmartAP) and SIP client · RTSP cameras
- External power supply 20–32 VDC · 240 × 154.6 × 36 mm



Floor plans

KNX

SIP · Welcome IP

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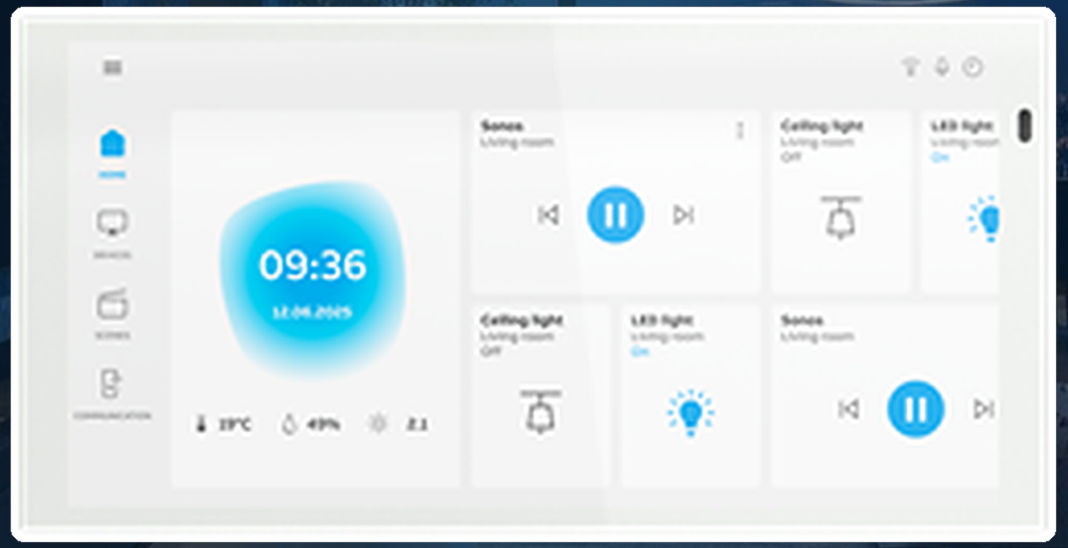

ABB · IQTOUCH 7″ (TP/U7)

The full IQTouch, in a compact format.

7″
IPS DISPLAY · 1440 × 720

120
CONTROL ELEMENTS

64
SCENES

- Up to 120 elements on 12 pages · 50 touch areas per page
- Switching, dimming, blinds, RGBW, scenes, audio, energy and air-quality display
- Same functions as the TP/U10: logic, timers, floor plans, Welcome IP / SIP door intercom, RTSP cameras
- External power supply 12–30 VDC · 172 × 86 × 36 mm

KNX | SIP · Welcome IP | 172 × 86 mm

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ZENNIO · 7″ SCREEN

A 7″ screen for complete room control.



7″
DISPLAY · 1280 × 800

144
CONTROLS AND INDICATORS

12
CUSTOMIZABLE PAGES

- Capacitive LCD, 16 million colors · minimalist design
- Light sensor (automatic backlight) · proximity detector and screensaver
- 2 thermostats · 4 analog/digital inputs · built-in temperature sensor
- External power supply 24–29 VDC · 189 × 137 × 37 mm · double flush-mounting box
- Licensed options: remote control, video intercom and internal calls

KNX | Ethernet · USB | 189 × 137 mm

3I-DS



ZENNIO · 10″ SCREEN

A 10″ screen for complete room control.

10″
DISPLAY · 1280 × 800

180
CONTROLS AND INDICATORS

12
CUSTOMIZABLE PAGES

- Capacitive LCD, 16 million colors · minimalist design
- Light sensor (automatic backlight) · proximity detector and screensaver
- 2 thermostats · 4 analog/digital inputs · speakers and microphone
- External power supply 24–29 VDC · 248.9 × 174 × 39.2 mm · double flush-mounting box
- Licensed options: remote control, voice control, video intercom and internal calls

KNX | Ethernet · USB | 249 × 174 mm

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ZENNIO · KNX AND IP TOUCH SCREENS

A screen for every use.

Screens from 4″ to 10″ · light and dark themes · analog/digital inputs · KNX Secure



4″ screen

Up to 54 functions

Temperature and humidity



5″ screen

Up to 96 functions

Horizontal or vertical mounting



7″ screen

144 controls · 12 pages

2 thermostats · 4 inputs



10″ screen

180 controls · 12 pages

2 thermostats · 4 inputs



MULTIROOM AUDIO · TRIVUM

The technology fades behind the experience.

- 4 zones expandable up to 64 · 4 built-in streamers
- 8 × 30 W amplifier · 4 DAB+/FM tuners · 4 line inputs and 4 line outputs
- Native KNX integration, Control4, RTI, API · announcements and timers
- AirPlay 2, Spotify Connect, Qobuz, Tidal, TuneIn, Deezer



Trivum
Expandable 4-zone multiroom system



Speakers
Flush-mounted



App
Control

WHY 3I-DS?

Three reasons to trust 3I-DS.

Open, multi-brand

ABB, Zennio, Trivum, Intesis...: different brands and protocols, brought together in a single architecture. Design, supply and integration by a single point of contact.

Proven references

Villas, hospitality, restaurants, banking and commercial buildings, across Tunisia and abroad.

Support for the long term

A partner after commissioning, to evolve and optimize your installation.

10+ years of experience · **132+** projects completed

3I-DS

LET’S TALK ABOUT YOUR PROJECT

LET’S BUILD THE INTELLIGENT BUILDING.

Innovation · Integration · Engineering · Digital Solutions

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