dormakaba

MotionIQ
Intelligent door control

Technical Product Brochure
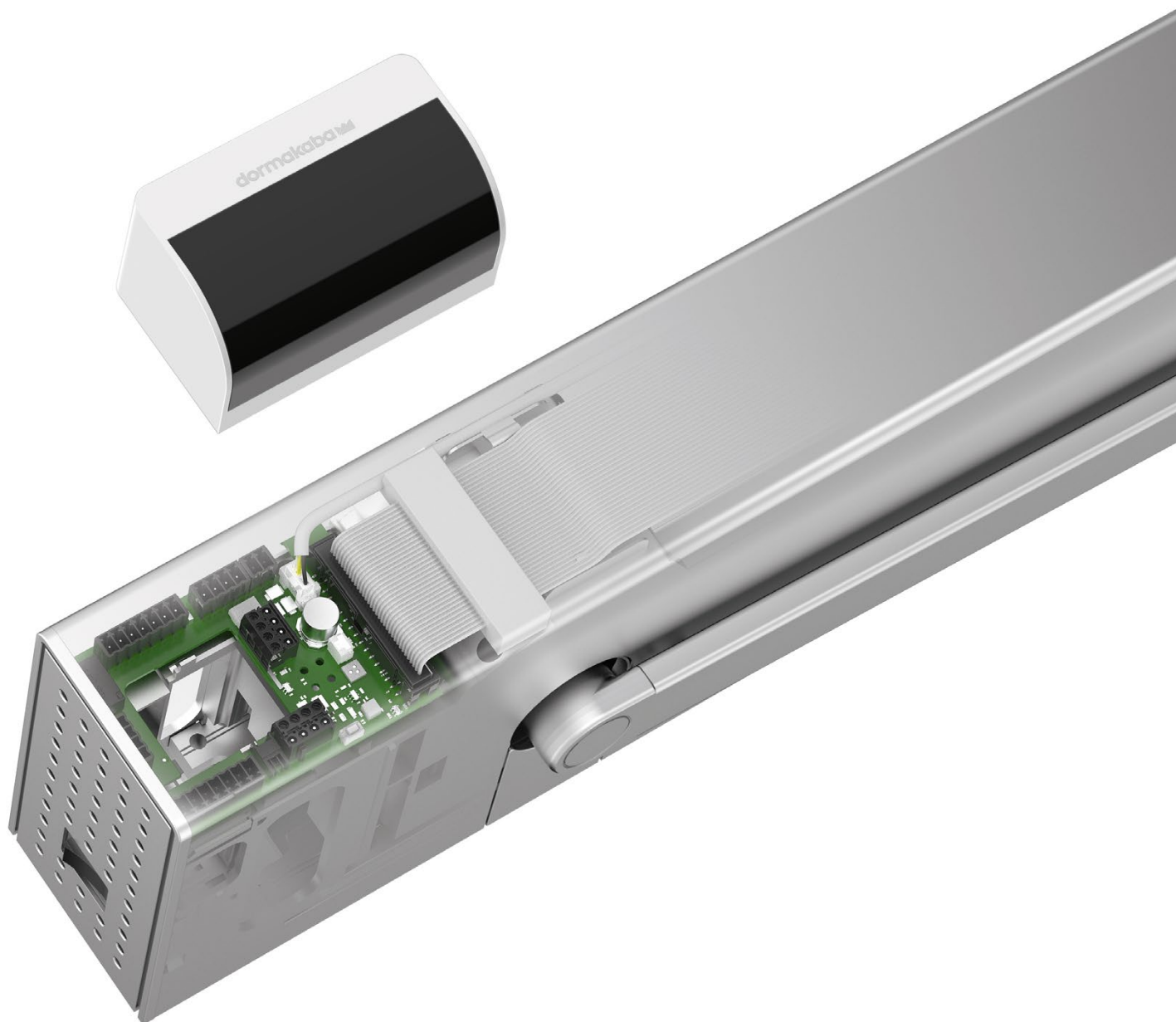
MotionIQ. Advanced sensor technology combined with high performance MotionIQ controller for efficient automatic door systems. For new installations and retrofitting.

Automatic doors should only open when a person actually wishes to access and should quickly close again as soon as the person has safely passed through. MotionIQ is the first system that makes this possible, as the automatic door is controlled individually based on the user's movements.

This significantly reduces the time that doors are left open unnecessarily and reduces energy losses. False openings caused by people standing in front of the door are avoided. dormakaba MotionIQ optimises the control of automatic swing doors with ED 100 and ED 250 and can be used for new as well as existing systems.

Movements within a large area in front of the door are recorded and permanently evaluated. If a person's intention to access is detected, the door opens. Ideally, it opens early enough for the person to pass smoothly through the door and closes precisely after the person has passed completely through.

01

Motionsensor M A01 with dynamic object measurement

The Motionsensor M A01 detects the movements in front of the door and provides the movement data for the detected objects. Distance, speed and angle of up to 2 objects in the detection range are reliably detected and transmitted to the MotionIQ Controller.

- Large detection range of up to 10 metres
- Detects distance, speed and angle of up to 2 objects at the same time.
- For 1-leaf and 2-leaf systems
- Easy installation via CAN bus technology
- Suitable for outdoor use without weather protection cap
- Easy installation – Align. Connect. Done.
- No readjustment required – not even when in operation

02

ED connection board CAN with MotionIQ controller

The ED connection board CAN is required for using MotionIQ with the ED swing door operators. This connection unit provides the necessary CAN bus connection for the sensors and contains the MotionIQ controller – the heart of the system.
The MotionIQ controller analyses the movement data transmitted by the M A01 radar sensor, checks whether there is an intention to access and calculates the travel parameters for the motion operator. Opening time and hold-open time are based on expected movement patterns and are recalculated on every single activation. Manual setting is not required.

- Analyses the movement data
- Identifies the intention to access
- Opening time and hold-open time are calculated
- Additional connection options for locks, smoke detectors, emergency-off function, impulse and access control

MotionIQ
Intelligent door operation

Short hold-open time with fast passage. Door closes immediately after the person has passed through.

Long hold-open time with slow passage. The door remains open sufficiently long for the persons to pass through.

Intention to access is crucial!

While in conventional systems every movement in the sensor's detection range triggers a door opening, with MotionIQ this only happens when a person's intention to access is detected. The M A01 radar sensor detects the movements in front of the door and provides the movement data for the detected objects.

Distance, speed and angle of up to 2 objects in the detection range are reliably detected and transmitted to the MotionIQ Controller. If persons only linger in front of the door and the intention to access is not likely, the automatic door remains closed. Only if the controller detects a person with the highly likely intent to access, the door will open. The door control is always individually adapted to the user's access vector.

## The hold-open times are calculated individually

At what speed do the persons in the vicinity move? When and how long should the door be open? MotionIQ independently controls the automatic door based on the users' measured movement data. Manual intervention is not required. Ideally, the hold-open times are set to as late as possible and as short as necessary and are recalculated for every object detected.

Avoidance of false openings.
The door remains closed if no intention to access is detected.

Avoiding false activations

With conventional sensors, every movement within the detection range triggers a door opening, which often results in openings even though no one wants to pass through. MotionIQ also works with a detection range, however, the object movement data is measured and the door is only opened automatically if the measurement indicates that there is an intention to access.
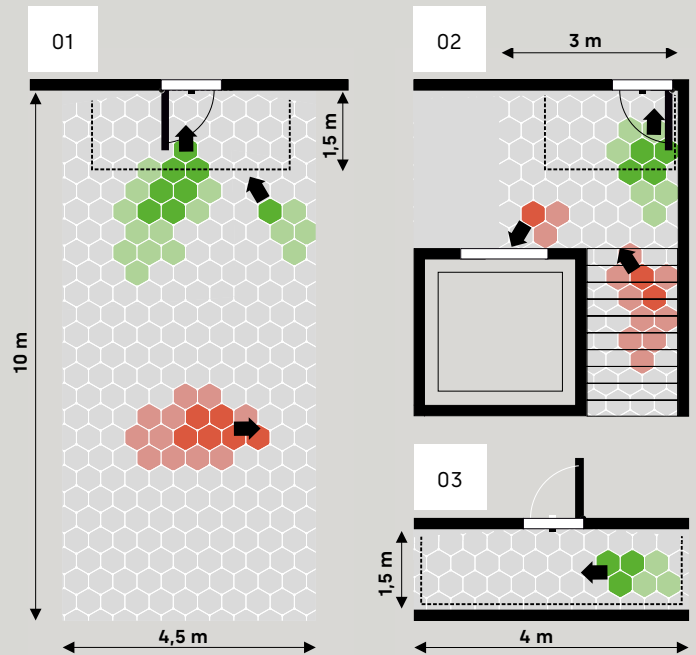
⬚ Close range

⬤ Detection range

🟢 Person's intention to access detected, door opens automatically

🔴 Intention to access not likely, door remains closed

Application examples

01

MotionIQ evaluates the movements in the vicinity of the door within a range of approx. 4.5 m x 10 m. The longer the objects are detected within this range, the more precise can MotionIQ adjust the automatic door opening to the behaviour of the users. Movement at close range (approx. 1.5 m) always triggers an opening for security reasons.

02

MotionIQ can also help improve the function of the automatic door in difficult installation situations. While conventional sensors always require a compromise by adjusting the detection range and rotating the antenna, and the detection is often insufficient, MotionIQ detects all movements in difficult environments. Even in such a case, MotionIQ only controls the automatic door if there is an intention to access.

03

At close range, approx. 1.5 m and less from the door, exact detection of movement data is not possible. MotionIQ can generally be used in highly constricted spaces such as corridors to avoid having to make adjustments or the need for identical systems on both sides. No adjustment of the motion parameters takes place at close range.

MotionIQ
Quick installation and easy commissioning


0,2 – 0,5 m

2 – 4 m

OKFF

Replacing connection unit and connecting sensors

The conventional connection unit included in the ED is replaced with the ED connection board CAN.
Data connection to the ED motor control is made via a supplied communication cable, which is routed internally. The routers communicate via CAN bus with the ED connection board CAN. Connection is made via the supplied connection cables.

Setting the system via the ED control unit's user interface

After installation of the ED connection board CAN, additional parameters are available at the ED interface, which can be used to set the function of MotionIQ.
The function of MotionIQ at the ED control unit requires firmware V3.0 or higher.
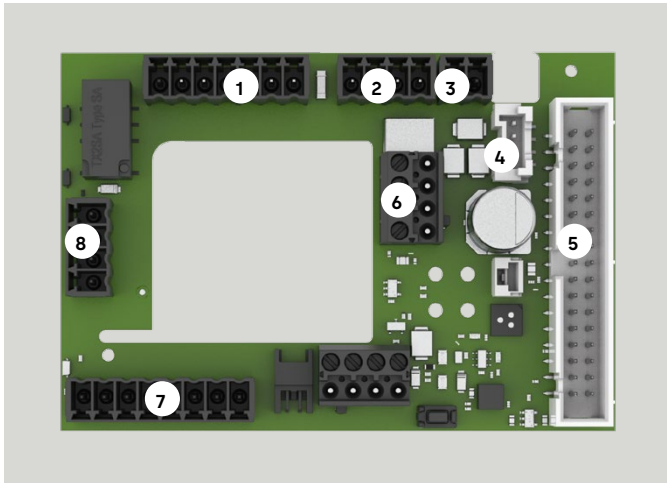
ED connection board CAN

The ED connection board CAN includes the Motion IQ Controller and provides CAN connection for the M A01 sensors. An RGB LED function display shows the current operating status and any faults.
Parametrisation is via the interface of the ED operator. Additional connections are available apart from CAN connection for the M A01 motion sensors.

Connections
1 Lock, e.g. SVP
2 Smoke detector, e.g. RM-ED
3 Emergency-off function, cut-off operator function
4 RS232 connection socket (connection ED control)
5 Connection flat ribbon cable for ED control
6 Connection terminal CAN connection cable for radar sensors
7 Safety sensors hinge side and opposite hinge side
8 Signal input for access control, impulse outside and impulse inside

Technical data
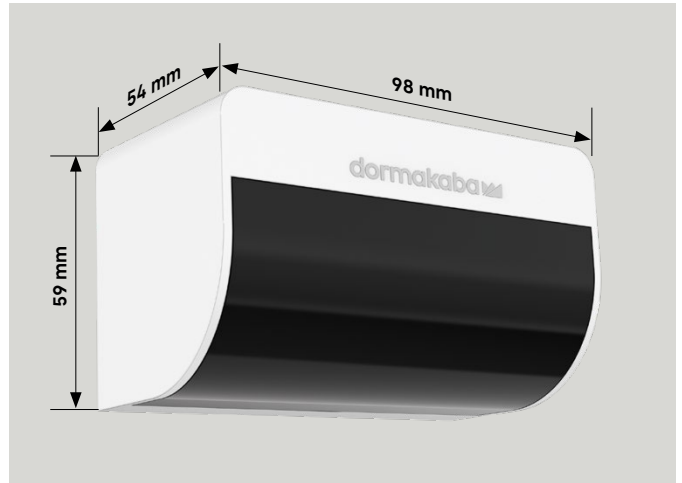|	
Supply voltage	24 V DC +/15 %
Power input	approx. 20 mA
Temperature range	-15 °C to +50 °C
Humidity	up to 93 % non-condensing
Protection class	IP20

Scope of delivery
	Article number
ED CAN connection unit	29256002

Motionsensor M A01

The Motionsensor M A01 can be used for 1-leaf and 2-leaf door systems indoors and outdoors. An additional weather protection cap is not required. The installation position is centrally above the door system.

Technical data
Supply voltage	24 V DC +/-15 %
Power input	< 2.5 W
Temperature range	-20 °C to +55 °C
Humidity	0 % to 95 % non-condensing
Protection class	IP54
Detection range	approx. 10 m x 4,5 m at 2.2 m installation height and a 30° angle
Installation height	2 m to 4 m
Data interface	CAN dormakaba

Scope of delivery
- Motionsensor M A01
- CAN connection cable
- Mounting kit for radar sensor

Design	Article number
Motionsensor M A01, black	86891900
Motionsensor M A01, white	86893900
Motionsensor M A01, silver	86892900

Installation Instructions

Installation Instructions

Our Sustainability Commitment

We are committed to foster a sustainable development along our entire value chain in line with our economic, environmental and social responsibilities toward current and future generations. Sustainability at product level is an important, future-oriented approach in the field of construction. In order to give quantified disclosures of a product's environmental impact through its entire life cycle, dormakaba provides Environmental Product Declarations (EPD), based on holistic life cycle assessments.

www.dormakaba.com/sustainability

Our offering

Access Automation Solutions

Entrance Automation
Entrance Security

Access Control Solutions

Electronic Access & Data
Escape and Rescue Systems
Lodging Systems

Access Hardware Solutions

Door Closers
Architectural Hardware
Mechanical Key Systems

Services

Technical Support
Installation and commissioning
Maintenance and Repair

Key & Wall Solutions

Key Systems
Movable / Sliding Walls

Safe Locks

Electronic Safe Locks
Mechanical Safe Locks
Boltworks and Accessories

Glass systems

Manual door systems
Glass fittings
Horizontal Sliding Walls

dormakaba.com

dormakaba
International Holding AG
Hofwisenstrasse 24
CH-8153 Rümlang
T +41 44 818 90 11
info@dormakaba.com
dormakaba.com