B810 Wireless SDI2 bus interface

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Invented for life

- ▶ Dual internal antennas provide spatial and polar RF signal reception for high reliability
- ▶ Cover and wall tamper protection
- ▶ Multiple device enrollment options as well as RF diagnostics ensure efficient and effective installation
- ▶ Supports supervision of wireless points (504), keyfobs (1000), and repeaters (8)
- ▶ External status LEDs

RADION wireless from Bosch provides the range, scalability and exceptional battery life required to ensure reliable performance and superior quality. Advanced diagnostics and multiple device enrollment options make installation and maintenance simple and cost effective. With a complete line of peripherals, RADION provides the flexibility for virtually any application requirement.

System overview

The B810 is a wireless receiver that connects RADION wireless peripherals such as the motion and specialty detectors, keyfobs, panic buttons, door window contacts, repeaters, and more, to supported Bosch control panels using the SDI2 Bus connection. The receiver supports RF communication at 433.42 MHz This frequency features improved penetration, reflection, and refraction of signal for superior range, and reliability. The receiver also features dual antennas to achieve spatial and polar diversity to further improve RF communication reliability. Enclosed within the receiver housing for higher security, the receiver is equipped with tamper protection, and

detects and reports radio frequency interferences. The receiver supports supervision of wireless points (504), key fobs (1000), and repeaters (8).
The receiver can be easily accessed and configured for a compatible control panel using the address switch on the back of the receiver housing. The receiver address switch provides a single-digit setting for the receiver's address, allowing for ease of installation.

Functions

The receiver uses the RADION wireless protocol which supports:
- SDI2 bus communication
- Tamper input processing
- RF interference (jamming) detection and reporting
- Signal strength and margin reporting
- Enroll Device Database management

Address switch addressing
Use the address switch to easily assign a bus address or setup during installation.

Easy installation
The sliding self-locking enclosure has an integrated bubble level and a custom gap-free, lift gate style terminal block to make installation easier, faster, and more reliable.

LED display
The LED provides status and troubleshooting information about the receiver and its connection.

RF interference (jamming) detection and reporting
The receiver detects and reports interference jamming when the ambient noise level is above jamming thresholds for a continuous period of 20 seconds.

Communications
RF packet information is received through the use of two spatial and polar diversity antennas. The receiver then transmits a 4-bit sequence of information back to the control panel for status changes.

Wall and cover tamper switch
The receiver transmits a tamper signal when someone removes the device from it's base, or pulls it away from the wall.

Certifications and approvals

Region	Regulatory compliance/quality marks	
Australia	RCM	[B810]
USA	ANSI-SIA	CP-01-2010-Control Panel Standard - Features for False Alarm Reduction
Europe	CE	EMC, LVD, R&TTE, RoHS [B810]
USA	UL	[B810, RFRP-A]
	UL	UL 1023 - Household Burglar Alarm System Units
	UL	UL 1076 - Proprietary Burglar Alarm Units and Systems
	UL	UL 1610 - Central Station Burglar Alarm Units
	UL	UL 365 - Police Station Connected Burglar Alarm Units
	UL	UL 609 - Standard for Local Burglar Alarm Units and Systems
	UL	UL 636 - Holdup Alarm Units and Systems
	UL	UL 985 - Household Fire Warning System Units (6th edition)
	CSFM	California State Fire Marshal
	FCC	Part 15 Class B

Installation/configuration notes

Mounting considerations
You can mount the wireless receiver in residential, commercial or industrial locations in which a compatible control panel is already installed. The installation of the wireless receiver should be at a distance no greater than 243 m (800 ft) from the control panel.

Wiring considerations
The wireless receiver connects to a control panel using the SDI2 connections (PWR, A, B, COM). Use appropriate gauge wires from the receiver to the control panel when connecting the wiring to the terminal block of the receiver.

Compatibility
B9512G/B8512G
B6512/B5512/B4512/B3512
GV4 Series (D9412GV4, D7412GV4 v2.xx or higher) control panels
RFDL-11-A/RFDL-11 motion detector
RFDW-SM-A/RFDW-SM standard door/window contact
RFDW-RM-A/RRDW-RM recessed door/window contact
RFRP-A/RFRP repeater
RFPR-12-A/RFPR-12 motion detector
RFPR-C12-A/RFPR-C12 motion detector (curtain)
RFUN-A/RFUN universal transmitter
RFKF-FB-A /RFKF-FBS-A/RFKF-FB/RFKF-FBS 4-button keyfob
RFKF-TB-A /RFKF-TBS-A/RFKF-TB/RFKF-TBS 2-button keyfob
RFPB-TB-A/RFPB-TB 2-button panic
RFPB-SB-A/RFPB-SB single button panic
RFGB-A/RFGB glass break
RFSM-A/RFSM smoke detector

Parts included

Quantity	Component
1	Wireless receiver
1	Hardware pack
1	Installation guide

Technical specifications

Properties

Dimensions	139.70 mm x 209.60 mm x 31.80 mm (5.50 in x 8.25 in x 1.25 in)
Wiring distance	243 m (800 ft)
Wiring gauge	0.65 mm (22 AWG) to 2.0 mm (18 AWG)
Tamper detection	Transmits a tamper switch signal when the unit is removed from its base, or the mounting surface.

Power

Power/voltage	10-14 VDC, 12 VDC nominal
Maximum current draw	70 mA
Frequency	433.42 MHz

Environmental Considerations

Operating Environment	0° C to +49° C (+32° F to +120° F)
Relative humidity	Up to 93% non-condensing
Use	Intended for indoor use.

Ordering information

B810 Wireless SDI2 bus interface
Receives RF signals from RADION transmitters, repeaters, and glassbreaks. Operates at 433.42 MHz. For use with compatible SDI2 bus control panels.
Order number **B810**

RADION contact SM

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- ▶ Internal magnetic reed switch contact
- ▶ Supervised for low-battery, cover-tamper, and removal from mounting surface tamper conditions
- ▶ Operational up to 5 years using a single, user replaceable Lithium AAA battery

RADION wireless security solution from Bosch provides the range, scalability and exceptional battery life required to ensure reliable performance and superior quality. Advanced diagnostics and multiple device enrollment options make installation and maintenance simple and cost effective. With a complete line of peripherals, RADION provides the flexibility for virtually any application requirement.
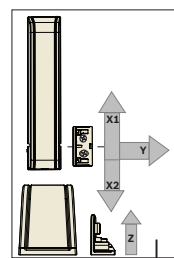
System overview

RADION contact SM provides a magnetic reed switch contact for monitoring doors and windows. The internal reed contact is activated by an external magnet assembly which can be placed on either side of the transmitter. It also has a built-in wall and cover tamper switch that transmits a tamper signal when someone removes the device from its base or pulls away from the wall.
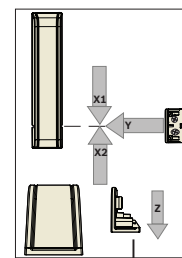
Functions

Reed Contacts

There is a reed contact on either side of the device, so the magnet assembly can be mounted within 20 mm (0.78 in) of the device on either side. When the distance between the magnet and the internal reed

switch of the contact exceeds 20 mm (0.78 in), an alarm signal is sent to the receiver, and from there, to the compatible control panel.

	Y	20.0 ± 4.0 mm (0.79 ± 0.16 in)
	X1	13.0 ± 3.0 mm (0.51 ± 0.12 in)
	X2	15.5 ± 4.5 mm (0.61 ± 0.18 in)
	Z	23.0 ± 5.0 mm (0.91 ± 0.13 in)
	Y	14.0 ± 7.0 mm (0.55 ± 0.28 in)
	X1	13.0 ± 5.0 mm (0.51 ± 0.13 in)
	X2	14.0 ± 6.0 mm (0.55 ± 0.24 in)
	Z	21.5 ± 1.5 mm (0.85 ± 0.06 in)

	Y	19.0 ± 4.0 mm (0.75 ± 0.16 in)
	X1	12.0 ± 3.0 mm (0.47 ± 0.12 in)
	X2	14.5 ± 4.5 mm (0.57 ± 0.18 in)
	Z	22.0 ± 5.0 mm (0.87 ± 0.13 in)
	Y	13.0 ± 7.0 mm (0.51 ± 0.28 in)
	X1	12.0 ± 5.0 mm (0.47 ± 0.13 in)
	X2	13.0 ± 6.0 mm (0.51 ± 0.24 in)
	Z	20.5 ± 1.5 mm (0.81 ± 0.06 in)

Certifications and approvals

Region	Certificate
US	UL 634 Connectors and Switches for use with Burglar Alarm Systems

Region	Regulatory compliance/quality marks	
Germany	VdS	H116003 [AMAX 2100/3000, RFRC-OPT, RFUN, RFDW-RM, RFDW-SM, RFPR-12, RFDL-11, RFKF-TB, RFKB-FB]
Europe	CE	EMC, LVD, R&TTE, RoHS [RFDW-SM]
	EN50131	EN-ST-000160 [RFDW-SM]
Belgium	INCERT	B-509-0072 [RADION RFDW-RM, RFDW-SM]
Russia	GOST	TC N RU Д-NL.MH09.B.00334 EAC
USA	UL	20121218-BP8028 [RFDW-SM-A, RFDW-RM-A]
	CSFM	7272-1615:0249 [RFSM-A]
	FCC	Part 15 Security/Remote Control Transmitter 433.42 MHZ
Canada	IC	1249A-RWSSFT [RFDW-SM-A, RFDW-RM-A, RFBT-A, RFUN-A, RFKF-A, RFRP-A, RFPR-12-A, RFPR-C12-A, RFSM-A, RFPB-TB-A, RFPB-SB-A, RFKF-FB-A, RFKF-TB-A, RFIN-A, RFGB-A]
France	AFNOR	2120200022A0 RFDW-SM
China	CCC	2013031901000110 [RFDW-SM-CHI]
Brazil	ANATEL	2798-13-1855 [RFDW-SM-A]

Installation/configuration notes

Mounting Considerations

Mount the transmitter on an interior door or window frame, and the magnet assembly on the interior of the moving portion of the door or window. Ensure that the transmitter is protected from weather elements such as extreme temperatures, humidity, rain or snow.

> **i** **Notice**
> Installation on metal surfaces can affect the RF propagation pattern of the radio transceiver.

Installing the plastic magnet cover flush against the door or window will prevent possible damage to the plastic magnet cover.

Technical specifications

Properties

Dimensions: Transmitter	19.5 mm x 82.55 mm x 12.8 mm (0.76 in x 3.25 in x 0.50 in)
Dimensions: Magnet	18.5 mm x 24.5 mm x 12.5 mm (0.72 in x 0.97 in x 0.49 in)
Weight:	0,073 kg (0.160 lb)

Power

Power/Voltage:	1.5 VDC
Battery type:	AAA Lithium
Battery life:	Up to 5 years Upon power-up, factory test mode lasts approximately 10 sec.

Environmental Considerations

Temperature:	Functional range: -10° C to +55° (+14° F to +131° F) UL only: 0° C to +49° C (+32° F to +120° F) EN 50130-5 Class II only: -10° C to 55° C (+14° F to +131° F IP30/IK04
Environment	Complies with EN50130-5 Class II
Relative Humidity:	Up to 93% non-condensing
Cover and Wall Tamper Switch[1]:	Transmits a tamper switch signal when the detector is removed from its base, or the unit is pulled away from the ceiling.
Frequency:	433.42 MHz
Use:	Intended for indoor use.

[1]After factory test mode, this detector is operational.

Ordering information

RFDW-SM-A Wireless surface mount contact
For use in North and South America
Order number **RFDW-SM-A**

EWE-DETCTR-IW 12mths wrty ext detector general
12 months warranty extension
Order number **EWE-DETCTR-IW**

RFDW-SM Wireless surface mount contact
For use in Europe, Africa, and Australia.
Order number **RFDW-SM**

EWE-DETCTR-IW 12mths wrty ext detector general
12 months warranty extension
Order number **EWE-DETCTR-IW**

RFDW-SM-CHI Wireless surface mount contact
For use in China only.
Order number **RFDW-SM-CHI**

EWE-DETCTR-IW 12mths wrty ext detector general
12 months warranty extension
Order number **EWE-DETCTR-IW**

Accessories

RFAC-DW-10 Spacer for RADION contact, 10pcs
Package of 10 base spacers and 10 magnet spacers for
RADION Door/Window surface mount contacts.

Order number **RFAC-DW-10**

RADION PIR and PIR C

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▶ Two models available. PIR with 12 m x 12 m (40 ft x 40 ft) coverage, PIR C with 12 m x 1.5 m (40 ft x 5 ft) coverage pattern

▶ Flexible Mounting Height

▶ Pet Immunity up to 13kg (30 lbs)

▶ Operational up to 5 years with one user replaceable CR123A battery

▶ Supervised for low-battery, cover-tamper, and removal from mounting surface tamper conditions.

RADION wireless from Bosch provides the range, scalability and exceptional battery life required to ensure reliable performance and superior quality. Advanced diagnostics and multiple device enrollment options make installation and maintenance simple and cost effective. With a complete line of peripherals, RADION provides the flexibility for virtually any application requirement.

System overview

RADION PIR and RADION PIR C are high performance, Passive infrared (PIR) based motion sensors that use advanced signal processing to provide superior catch performance and unsurpassed false alarm immunity.

Functions

PIR Signal Processing

Motion Analyzer II uses multiple thresholds and timing windows to analyze timing, amplitude, duration, and polarity of signals to make an alarm decision. The detectors tolerate extreme levels of heat and light from heaters and air conditioners, hot and cold drafts, sunlight, lightning, and moving headlights. There are three sensitivity settings.

Test Features

Externally visible, LED indicates alarm each technology independently.

Pet Immunity

The detector is able to distinguish between signals caused by humans and signals caused by pets such as a dog up to 13 kg (30 lb) or two dogs at 27 kg (60 lb) or up to ten cats. This provides immunity to false alarms while maintaining proper catch performance of human targets.

Draft and Insect Immunity

The sealed optical chamber provides immunity to drafts and insects.

Temperature Compensation

The sensor adjusts its sensitivity to maintain consistent catch performance at critical temperatures.

Battery Life Extension feature (PIR and TriTech)

In the normal operating mode, an alarm can be transmitted only after three (3) minutes have passed since the previous alarm restoral. This 3 minute lockout time reduces unnecessary RF transmissions in high traffic areas, thereby extending battery life.

Certifications and approvals

Region	Certificate
US	UL 639 – Intrusion Detection Systems FCC Part 15

Region	Certification	
Australia	RCM	[RFPR-C12]
Europe	CE	EMC, LVD, R&TTE [PIR and PIR C]
	EN50131	EN-ST-000161 RADION PIR/RFPR-12/C12
Belgium	INCERT	B-509-0070 RADION RFPR-12, RFPR-C12
USA	UL	20121217-BP1448 [RPDL-11-A, RFPR-12-A, RFPR-C12-A]
	FCC	Part 15 Security/Remote Control Transmitter 433.42 MHZ [433.42 MHZ]
Canada	IC	1249A-RWSSFT [-A model numbers]
China	CCC	2013031901000079 [RFPR-12-CHI, RFPR-C12-CHI]
Brazil	ANATEL	2618-13-1855

Installation/configuration notes
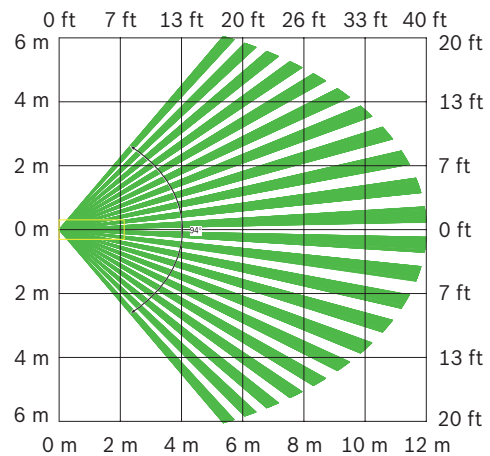
Mounting Considerations

Surface or corner mount the PIR at a height between 2.1 m (7.0 ft) and 2.7 m (9.0 ft) high when installing the PIR, and 2.1 m (7.0 ft) and 2.6 m (8.5 ft) high when installing the PIR-C. When installing the PIR, the plastics are specifically designed to allow wall tamper protection in a corner mount installation. The detector can be mounted:

- On a flat wall (surface, semi-flush), with the optional B335 Swivel-mount Bracket, or with the optional B328 Gimbal-mount Bracket.
- In a corner (the junction of two perpendicular walls).
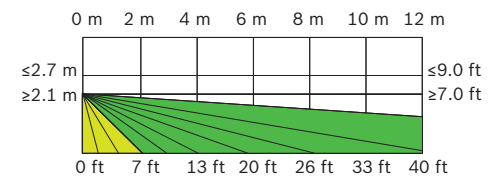- On the ceiling with the optional B338 Ceiling-mount Bracket.

Additional considerations include:

- Temporarily mount the detector using double-sided tape, and test it for both detector coverage and RF range from the desired location before mounting it permanently.
- Mount the detector where an intruder will most likely cross through the coverage pattern.
- Do not mount in areas with large metallic surfaces such as heating ducts or electrical wiring which may inhibit the sensor's RF signals from reaching the control panel receiver.
- Do not mount the detector outdoors or where direct sunlight can reach it.
- In pet immune applications, do not mount where pets can climb into the field of view of the upper zones, which are not immune to pets.
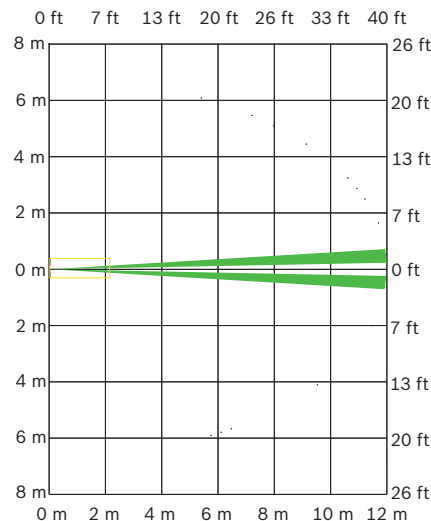
Coverage pattern for RADION PIR

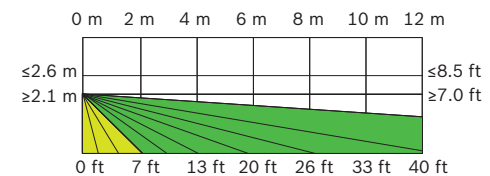*Top View Broad: 12 m x 12 m (40 ft x 40 ft)*

Side View Broad: 12 m x 12 m (40 ft x 40 ft)

Coverage pattern for RADION PIR C (curtain)

Top View Broad: 12 m x 1.5 m (40 ft x 5 ft)

side View Broad: 12 m x 1.5 m (40 ft x 5 ft)

Parts included

Quantity	Component
1	Detector
1	Lithium battery (CR123A)
1	Hardware pack
1	Installation guide

Technical specifications

Properties

Dimensions:	111 mm x 60 mm x 43 mm (4.4 in x 2.4 in x 1.7 in)

Power

Power/Voltage:	One CR123A Lithium battery, 3 VDC
Battery life:	Up to 5 years

Environmental Considerations

Temperature:	Functional range: -10°C to +49° (+14°F to +120°F) UL only: 0°C to +49°C (+32°F to +120°F) EN 50130-5 Class II only: -10°C to 40°C (+14°F to +104°F
Environment	Complies with EN50130-5 Class II
Relative Humidity:	Up to 93% non-condensing
Cover and Wall Tamper Switch:	Transmits a tamper switch signal when the detector is removed from its base, or pulled away from the wall.
Frequency:	433.42 MHz
Use:	Intended for indoor use.

Compatibility

Receivers:	B810 wireless receiver (compatible with RFPR-12-A and RFPR-C12-A only) RFRC-OPT wireless receiver (compatible with RFPR-12, and RFPR-C12 only) RFRC-OPT-CHI wireless receiver (compatible with RFPR-12-CHI, and RFPR-C12-CHI only)

Ordering information

RFPR-12-A (433.42 MHz)
For use in North and South America.
Order number **RFPR-12-A**

RFPR-12 (433.42 MHz)
For use in Europe, Africa, and Australia.
Order number **RFPR-12**

RFPR-12-CHI (433.42 MHz)
For use in China only.
Order number **RFPR-12-CHI**

RFPR-C12-A (433.42 MHz)
For use in North and South America.
Order number **RFPR-C12-A**

RFPR-C12 (433.42 MHz)
For use in Europe, Africa, and Australia.
Order number **RFPR-C12**

RFPR-C12-CHI (433.42 MHz)
For use in China only.
Order number **RFPR-C12-CHI**

Accessories

B328 Gimbal-mount Bracket
Mounts on a single-gang box and allows rotation of a detector. Wires are hidden inside.
Order number **B328**

B338 Universal Ceiling-mount Bracket
Swiveling universal bracket for ceiling mounting. The vertical swivel range is +7° to -16°, while the horizontal swivel range is ±45°.
Order number **B338**

B335-3 Swiveling low-profile mount
Swiveling, low-profile, universal bracket for wall mounting. The vertical swivel range is +10° to -20°, while the horizontal swivel range is ±25°.
Order number **B335-3**