Access control

SiPass readers and cards

Built to stand the test of time

Answers for infrastructure.
SiPass readers and cards – robust, reliable and easy to use

Siemens provides a wide range of readers and cards to satisfy the access control requirements of most environments. Our readers and cards can work with virtually any access control system on the market, but they are specifically tested and qualified for use with SiPass systems.

Designed for easy installation and use, the SiPass reader portfolio includes technologies ranging from magnetic stripe to 125 kHz proximity, multi-purpose smart card technology, and Cotag technology, which offers the convenience of hands-free functionality. Each technology type includes at least one model with an integrated keypad to enable card-plus-PIN functionality, which is ideal for higher security applications.

The majority of SiPass readers supports Siemens advanced reader protocols – BC-Link or CerPass/UCI (RS485). The advantages of using these protocols include the ability to connect two readers to a single door controller, which simplifies the installation and reduces costs, and active monitoring of reader status, which enhances security.

Whichever type of SiPass readers and cards you choose, you can be confident that they will significantly enhance security at your site(s).
Which technology suits your needs?

**Reading technologies**
SiPass readers and cards operate via four different types of reading technology: magnetic stripe, 125 kHz proximity, Cotag and Smart Card.

**Magnetic stripe**
The user swipes a magnetic stripe card in the slot on the reader. The advantage of magnetic stripe cards is that they are fairly inexpensive. They are mainly used today when expanding an existing access control system that uses magnetic stripe technology.

**125 kHz proximity**
The information stored within a 125 kHz proximity card or tag is sent to the reader when the card or tag is held in front of it. This reduces the wear and tear on the cards and readers which results in a lower total cost of ownership over time. Some of our 125 kHz proximity readers support the SiPass algorithm, which offers a higher level of security than conventional 125 kHz.

**Cotag**
The main advantage of Cotag technology is that it provides both proximity and hands-free card reading. It operates on the 132 kHz band, which is similar to 125 kHz. All Cotag readers can read both active (long-range) and passive (proximity) Cotag cards and tags. Both types of cards can be mixed in the same system to provide ultimate convenience and cost-efficiency.

Cotag active cards contain a battery, which enables these cards to transmit information with a higher output power than passive cards and thereby results in a longer reading distance. When Cotag hands-free readers are used together with active cards and tags it is possible to create a truly hands-free access control environment. This is useful in cases where some cardholders are disabled or where hands are often occupied, such as in a hospital or a warehouse.

Cotag is more secure than standard 125 kHz technology because the content on the card is protected and there is no equipment available outside Siemens to read or copy the cards.

**Smart card**
Smart cards can be used for additional purposes beyond that of access control. They function as proximity access cards, but since they can store much more information they can also be used as cash cards at company restaurants or vending machines, for example. It is also possible to store biometric data such as fingerprint templates. Smart cards offer the highest degree of security in our card range.

**Communication protocols**
SiPass readers communicate with the door controllers in the system either via standard reader protocols such as Wiegand and Clock&Data, or via Siemens’ advanced reader protocols, BC-Link and CerPass (RS485).

**Advantages of BC-Link and CerPass (RS485) protocols:**
- Since they are bi-directional they can be used for buzzer control, LED feedback and arming/disarming of an intrusion area
- Installation is faster since less wiring is required
- Higher level of security compared to using Wiegand or Clock&Data
- Constant monitoring of reader status

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**Highlights**
- Hands-free access with Cotag technology
- Easy to install and use
- Robust and reliable
- Fully tested with SiPass systems
- Enhanced security with advanced reader protocols
### Readers

<table>
<thead>
<tr>
<th>PIN-only</th>
<th>Magnetic Stripe</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M43</td>
<td>BC18</td>
<td>PIN-only reader. Used for group codes or to add PIN functionality to an existing card-only reader. Tamper switch.</td>
</tr>
<tr>
<td>BC43</td>
<td>BC43</td>
<td>Compact card-only reader. Supplied with 3 meter cable.</td>
</tr>
<tr>
<td>AR6181-RX</td>
<td>AR6182-RX</td>
<td>Card-only reader. Square design. Smart two-part construction makes it very easy to mount. Also includes a surface mounting frame.</td>
</tr>
<tr>
<td>AR56311-RX</td>
<td>EM102</td>
<td>Card and PIN reader. Square design. Smart two-part construction makes it very easy to mount. Also includes surface mounting frame.</td>
</tr>
</tbody>
</table>

#### Card Technology

- None (keypad only)
- Magstripe (track 2)
- Magstripe (track 2)
- EM4102 (also known as Miro or UNIQUE 125 kHz, SiPass algorithm, Hitag 1 and Hitag 2)
- EM4102 (also known as Miro or UNIQUE 125 kHz, CerPass, SiPass algorithm)

#### Card Read Distance

- 7 cm (approx.)
- 7 cm (approx.)
- 12 cm (approx.)
- 7 cm

#### Interface to Controller

- BC-Link
- Clock&Data
- BC-Link
- RS485 monitored CerPass/UIC protocol
- RS485 monitored CerPass/UIC protocol
- Clock&Data (ABA Track II) and Wiegand (26/34/42 bit)
- RS485 CerPass protocol

#### Operating Voltage

- 12 to 24 VDC
- 5 VDC
- 12 to 24 VDC
- 12 to 24 VDC
- 12 to 24 VDC
- 12 to 24 VDC
- 12 V

#### Average Current Consumption

- 27 mA @ 12 VDC
- 5 mA @ 5 VDC
- 30 mA @ 12 VDC
- 145 mA @ 12 VDC
- 145 mA @ 12 VDC
- 32 mA @ 12 VDC
- 35 mA @ 12 VDC

#### Indicators

- 3 x LED (red/yellow/green)
- 2 x LED (red/green)
- 3 x LED (red/yellow/green)
- 2 x LED (red/yellow/green), 1 x buzzer
- 1 x LED (red/yellow/green), 1 x buzzer
- 1 x LED (red/yellow/green)

#### Environment

- Indoor and outdoor use
- Indoor and outdoor use
- Indoor and outdoor use
- Indoor and outdoor use
- Indoor and outdoor use
- Indoor and outdoor use

#### Operating Temperature

- –35 to +50 °C
- –10 to +55 °C
- –35 to +50 °C
- –25 to +70 °C
- –25 to +70 °C
- –25 to +60 °C
- –10 to +40 °C

#### IP Rating

- IP54
- IP55
- IP44
- IP65
- IP65
- IP65

#### Housing

- Cast metal with security lock
- Cast metal
- Cast metal with stainless steel keys and security lock
- Cast metal
- Cast metal
- Cast metal
- Cast metal

#### Color

- Grey
- Brushed aluminium
- Grey
- Grey
- Grey
- Silver (RAL9006)
- Silver (RAL9006)
- Silver (RAL9006)

#### Dimensions (W x H x D)

- 80 x 140 x 40 mm
- 29 x 124 x 28 mm
- 110 x 160 x 47 mm
- 85.5 x 91 x 23 mm
- 85.5 x 91 x 23 mm
- 100 x 40 x 25 mm
- 40 x 100 x 25 mm
- 48 x 24 x 48 mm

#### Keypad

- Stainless steel keys
- No
- Stainless steel keys
- No
- Stainless steel keys
- No
- Membrane keys
- No
- No

#### Approval

- CE
- CE
- CE
- CE
- CE
- CE
- CE

#### Accessories

- SH2 rain cover
- SH1 universal rain cover
- SH4 rain cover
- SH4 rain cover
- SH1 universal rain cover
- SH4 rain cover
- SH1 universal rain cover
- SH4 rain cover
- SH1 universal rain cover
- SH1 universal rain cover
- SH1 universal rain cover

#### Compatible cards/tags

- None
- IB1
- IB1

#### Order no.

- S24246-F8400-A1
- S24246-F4100-A1
- S24246-D5000-A1
- S24246-F4101-A1
- S24246-Z3900-A1
- S24246-D4904-A1
- S24246-Z3901-A1
- S24246-D4904-A1
- S2426-D5000-A1

### Cards

#### Magnetic Stripe

- IB1
- Pre-printed ISO cards compliant with the SiPass algorithm. Can be used with the readers ARS6311-RX, AR6331-CP, AR6332-CP, AR6181-RX and AR6182-RX. Card number on back.

#### Order no.

- 54 x 86 x 0.76 mm
- 54 x 86 x 0.76 mm
- 54 x 86 x 0.76 mm
- 54 x 86 x 0.76 mm
- 54 x 86 x 0.76 mm
- 54 x 86 x 0.76 mm
- 54 x 86 x 0.76 mm

*All reading distances provided here have been measured in lab conditions and may vary according to environmental conditions.*
Proximity 125 kHz

IB41-EM
IB42-EM
IB44-EM
IB45-EM

IB41-EM
IB42-EM
IB44-EM
IB45-EM

IB928
IB911
IB976

Active Cotag clamshell card including lithium battery. Suitable for use with all Cotag readers in this brochure. Card number on back.

Active Cotag keying tag including lithium battery. Suitable for use with all Cotag readers in this brochure. Card number on back.

Active Cotag V-tag. Suitable for use with BC5516-loop reader. Card number on back.

Standard ISO cards compliant with EM4102 reading technology. Can be used with the readers 85x50-EM, PDC3-EM and PD00-EM. Cards also include magnetic stripe and card number on back.

Blind printable ISO card compliant with EM4102 reading technology. Can be used with the readers 85x50-EM, PD30-EM and PD04-EM. Cards also include magnetic stripe and card number on front.

Keying tag with Siemens logo, compliant with EM4102 reading technology. Can be used with the readers 85x50-EM, PD30-EM and PD04-EM. Card number on front.

Adhesive tag with Siemens logo, compliant with EM4102 reading technology. Can be attached to existing magnetic stripe cards when adding EM4102 readers to an existing magstripe installation. Card number on back.

-BS plastic
-PC/ABS plastic
-CerPass protocol
-SiPass algorithm
-Cotag

Mullion design. Smart two-part construction makes it easy to mount. Tamper switch.

Card and PIN reader. Heavy-duty card and PIN reader. Position indicator light and illuminated keypad make it easy to use in dark places. Tamper switch.

Heavy-duty card-only reader. Vandal-proof, impact and fire resistant. Popular both in vulnerable locations and modern office environments.

Card-only reader. Slim and compact. Design for mounting in single-gang back boxes.

Card-only reader. Compact design. Suitable for most remote call point locations.

All-in-one reader and door controller. Fits directly on a standard Scandinavian lock case. Supplied with drop box and five meter cable.

All-in-one reader and door controller directly on Euro lock cases that low the DIN 18251 standard. Supplied with drop box a meter cable.

Card number on back.

Card number on back.
**Proximity 125 kHz**

**IB44-EM, IB45-EM**

**None**

**70 x 250 x 60 mm**

**Stainless steel housing**

**0 to + 50 °C**

**Indoor use only**

**8 to 40 VDC**

**BC-Link**

**3 cm**

**with drop box and five standard lock cases that follow.**

**125 kHz (as Miro or UNIQUE EM4102 (also known as BB3 flush mounting kit))**

**S24246-D5200-A1**

**100.45 x 51.67 x 40 mm**

**Suitable for use with all Cotag readers in this brochure except BC5516 Cotag. Card number on back.**

**Card number on back.**

**Card only-reader.**

**Compact design. Designed for mounting in single-gang back boxes.**

**Card-only reader. Designed for panel mounting. Suitable for most remote call-point locations.**

**Hands-free reader.**

**Able to read through wood, concrete, glass, and most other materials, but not metal.**

**Hands-free reader.**

**Designed for split-mounted applications. Provides a higher level of security, particularly for outdoor use.**

**Loop reader kit. Consists of a BC270 loop coupler and a BC5311 reader interface. Used for applications such as “invisible” hands-free access control and Automatic Vehicle Identification (AVI).**

**Passive Cotag clamshell card. Suitable for use with all Cotag readers in this brochure except BC5516 Cotag. Card number on back.**

**Passive Cotag keyring tag. Suitable for use with all Cotag readers in this brochure except BC5516 Cotag. Card number on back.**

**Passive Cotag print-able ISO card. Suitable for use with all Cotag readers in this brochure except BC5516 Cotag. Includes a magnetic stripe with EM6 ISO format (track 2) for use in magstripe readers. Card number on back.**

**Pre-printed Mifare Classic 1k ISO card. Suitable for use with all the Smart Card readers in this brochure.**

**Blank printable Mifare Classic 1k ISO card. Suitable for use with all the Smart Card readers in this brochure.**

**Order no.**

**Quantity in order. Dimensions (W x H x D).**

**Description**

**Active card: 12 cm Passive card: 3 cm**

**IBC-Link, Clock&Data or Wiegand**

**12 to 24 VDC**

**–30 to +50 °C**

**Cast metal with security lock**

**Polycarbonate case, fully encapsulated electronics with stainless steel frame**

**ABS base with clip on ABS front cover**

**ABS base with fully encapsulated electronics and clip on ABS front cover**

**High impact polycarbonate outer casing, with encapsulated electronics**

**UV-resistant ABS plastic**

**UV-resistant ABS plastic**

**UV-resistant ABS plastic**

**Grey**

**Black and stainless steel**

**White**

**Black**

**Light grey**

**Light grey**

**Light grey**

**Stainless steel keys**

**No**

**No**

**No**

**No**

**No**

**CE**

**CE**

**CE**

**CE**

**CE**

**CE**

**SH2 rain cover IS391 spy-proof cover B83 flush mounting kit**

**IB928, IB911, IB968, IB961, IB958M**

**IB928, IB911, IB968, IB961, IB958**

**IB928, IB911, IB968, IB961, IB958M**

**IB928, IB911, IB968, IB961, IB958**

**IB928, IB911, IB970**

**IB928, IB911, IB968, IB961, IB958M**

**IB928, IB911, IB970**

**IB928, IB911, IB970**

**S54501-F1-A2**

**24246-F4703-A1**

**24246-F4706-A1**

**24246-F4704-A1**

**24246-F4705-A1**

**24246-F4016-A1**

**24246-F4701-A1**

**24246-F4702-A1**

**ABP5100-PR**

**ABP5100-BL**

**Pre-printed Mifare Classic 1k ISO card.**

**Blank printable Mifare Classic 1k ISO card.**

**Quantity in order. Dimensions (W x H x D).**

**Order no.**
Card-only reader. Square design. Smart two-part construction makes it very easy to mount. Supplied with surface mounting frame.

Card and PIN reader. Square design. Smart two-part construction makes it very easy to mount. Supplied with surface mounting frame.

Card-only reader. Designed to fit most standard square flush mounting boxes. Supplied with surface mounting frame.

Card and PIN reader. Designed to fit most standard square flush mounting boxes. Supplied with surface mounting frame.

Card-only reader. Mullion design.

Card-only reader. Mullion design.

Card-only reader. Rectangular design. Economical. Configuration can be changed with a configuration card. Supplied with surface mounting frame.

Enrollment reader. Designed to read and write cards. Can be connected to a PC. Includes external power supply.

7 cm 7 cm 4 cm 4 cm 4 cm 4 cm 7 cm 7 cm

165 mA @ 12 VDC 165 mA @ 12 VDC 64 mA @ 12 VDC 64 mA @ 12 VDC 127 mA @ 12 VDC 127 mA @ 12 VDC 80 mA @ 12 VDC –

3 x LED (red/yellow/green), 1 x buzzer 3 x LED (red/yellow/green), 1 x buzzer 3 x LED (red/yellow/green), 1 x buzzer 3 x LED (red/yellow/green), 1 x buzzer 3 x LED (red/yellow/green), 1 x buzzer 2 x LED (red/green), 1 x buzzer 1 x LED (red/yellow/green), 1 x buzzer –

117 x 200 (external) 85 x 175 x 33 (recess) 145 x 255 (external) 140 x 147 x 30 mm 48 x 147 x 30 mm 48 x 147 x 30 mm 76 x 120 x 17 mm 85.5 x 91 x 40 mm

PC/ABS plastic PC/ABS plastic PC/ABS plastic PC/ABS plastic PC/ABS plastic Synthetic ABS/PC/ABS plastic

Silver (RAL 9006) Silver (RAL 9006) Silver (RAL 9006) Silver (RAL 9006) Silver (RAL 9006) Silver (RAL 9006) Silver (RAL 9006) Silver (RAL 9006)

With mounting frame 85.5 x 91 x 23 mm With mounting frame 85.5 x 91 x 23 mm With mounting frame 85.5 x 91 x 23 mm With mounting frame 85.5 x 91 x 23 mm With mounting frame 85.5 x 91 x 23 mm With mounting frame 85.5 x 91 x 23 mm With mounting frame 85.5 x 91 x 23 mm With mounting frame 85.5 x 91 x 23 mm

No Membrane keys No Membrane keys None

CE, FCC, UL CE, FCC, UL CE CE CE CE, FCC, UL CE, FCC

SH1 universal rain cover SH1 universal rain cover SH1 universal rain cover SH1 universal rain cover SH1 universal rain cover None

ABP5100-PR ABP5100-PR ABP5100-PR ABP5100-PR ABP5100-PR ABP5100-PR ABP5100-PR ABP5100-PR

6FL170-8BK 6FL170-8BL 6FL170-8AH 6FL170-8AJ 6FL171-8AK 6FL171-8AL 6FL170-8DK 6FL170-8CK

SH1, SH2, SH4, IS391, BB3, BB4, BB6

SH1 is a universal protective cover for card readers. It is recommended for outdoor installations.

SH2 is a protective cover for the PP500-EM, PP500-Cotag and M43. It can be used for both new and existing installations. There are cuttings for cables.

SH4 is a protective cover for the BC43. There are cuttings for cables to simplify the process of adding it to an existing installation.

IS391 is a spy-proof cover designed for use with the PP500-EM, PP500-Cotag and M43 when a higher level of security is required.

BB3 is a flush mounting kit designed to provide an unobstructive and aesthetically appealing installation of the PP500-EM, PP500-Cotag and M43.

BB4 is a flush mounting kit designed to provide a discreet and secure installation of PP500-EM and PP500-Cotag. It hides the reader.

-20 to +60 °C -20 to +60 °C -20 to +60 °C -20 to +60 °C -20 to +60 °C -20 to +60 °C -20 to +60 °C -20 to +60 °C

1 x LED (red/yellow/green), 1 x buzzer 1 x LED (red/yellow/green), 1 x buzzer 1 x LED (red/yellow/green), 1 x buzzer 1 x LED (red/yellow/green), 1 x buzzer 1 x LED (red/yellow/green), 1 x buzzer 2 x LED (red/green), 1 x buzzer 1 x LED (red/yellow/green), 1 x buzzer –

12 to 24 VDC 12 to 24 VDC 7 to 12.25 VDC 7 to 12.25 VDC 9 to 15 VDC –

9 to 12 VDC 9 to 12 VDC 7 to 10 VDC 7 to 10 VDC 7 to 10 VDC –

98.5 x 90 x 33mm 98.5 x 90 x 33mm 98.5 x 90 x 33mm 98.5 x 90 x 33mm 98.5 x 90 x 33mm 98.5 x 90 x 33mm 98.5 x 90 x 33mm 98.5 x 90 x 33mm

-25 to +70 °C –25 to +70 °C –25 to +70 °C –25 to +70 °C –25 to +70 °C –25 to +70 °C –25 to +70 °C –25 to +70 °C

Accessories

SH1 SH2 SH4 IS391 BB3 BB4 BB6

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117 x 200 (external) 85 x 175 x 33 (recess) 145 x 255 (external) 115 x 230 x 43 (recess) 117 x 200 (external) 85 x 175 x 33 (recess) 117 x 200 (external) 85 x 175 x 33 (recess)
Megatrends driving the future
The megatrends – demographic change, urbanization, climate change and globalization – are shaping the world today. These have an unprecedented impact on our lives and on vital sectors of our economy.

Innovative technologies to answer the associated toughest questions
Throughout a 160-year history of proven research and engineering talent, with more than 50,000 active patents, Siemens has continuously provided its customers with innovations in the areas of healthcare, energy, industry and infrastructure – globally and locally.

Increase productivity and efficiency through complete building life cycle management
Building Technologies offers intelligent integrated solutions for industry, commercial and residential buildings and public infrastructure. Over the entire facility’s life cycle, our comprehensive and environmentally conscious portfolio of products, systems, solutions and services in the fields of electrical installation technology, building automation, fire safety and electronic security, ensures the:
– optimum comfort and highest energy efficiency in buildings,
– safety and security for people, processes and assets,
– increased business productivity.

The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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