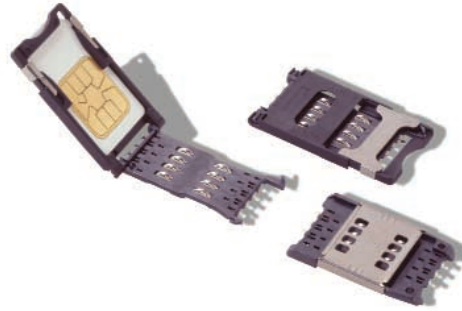




A new range of CCM03 connectors have been developed to interface with SIM/SAM cards as defined by GSM11-11 and ENV1375-1. The connectors are available with either hinged covers or fixed covers and have been designed to minimize the amount of space needed for PCB mounting.

Features

Hinged Cover

- Available with 6 or 8 contacts, with or without PCB locating pegs.
- Available with insulated card presence switch.
- The cover springs open when unlocked while the card is in place.
- The molding is polarized so that the cover can only be closed if the card is correctly inserted.
- The cover can be replaced without removing the connector from the PCB.
- Inspection slots allow an electrical test to be made without opening the cover.
- The overall height of the connector is only 2,5 mm. The amount of space needed to mount the connector is just 29,65 mm x 17,2 mm.

Fixed Cover

- Available with 6 or 8 contacts.
- The overall height of the connector is 2,85 mm max. Only 25,5 mm x 17,2 mm of board space is required to mount the connector.

General

- With tape and reel packaging as standard, the connectors are designed to be automatically pick-and-placed.
- The high temperature thermoplastic moldings are suited for infrared and convection soldering processes.
- By using an inlay finish in the contact area the life of the precious metal is extended by over 10 times that of standard gold plating.
- Robustly formed printed circuit tails allow a co-planarity of $\pm 0,05$ mm to be maintained.

Construction	
Contacts	Copper alloy
Plating	Contact area : Gold alloy inlay or gold over nickel Terminals : Tin lead (2 μ min)
Moldings	High temp. thermoplastic UL 94V-0 rated
Slide lock/metal cover	Stainless steel

Mechanical Data	
Number of Contacts	6 or 8
Mechanical life, hinged cover	10,000 cycles min
Mechanical life, fixed cover	50,000 cycles
Card insertion force	Hinged cover: 1 N max Fixed cover: 3 N max
Card extraction force	Hinged cover: 1 N max Fixed cover: 0.80 N min / 3 N max
Contact force	0.25 N min / 0.50 N max
Slide locking force	2 N min / 6 N max
Vibration	Frequency 10 to 500 Hz. Acceleration 50m/s ² Duration 6 hours - amplitude 0,35 mm Max electrical discontinuity 1 μ s
Shock	Peak value 500 m/s ² – Duration 11 ms 3 shocks in each direction of each axis Max electrical discontinuity 1 μ s

Contact Electrical Data	
Insulation resistance	1,000 M Ω min
Resistance	100 m Ω max
Current rating	10 μ A min / 1 A max
Dielectric strength	750 Vrms min

Switch Electrical Data	
Card detection switch	Normally open
Contact resistance	100 m Ω max
Dielectric strength	250 Vrms min
Current rating	1 mA min / 10mA max
Maximum power	0.2 VA

Environmental Data	
Operating temperature	-40°C to +85°C
Soldering temperature	Temperature/time profile acc. to CECC00802 para. 6.1, Fig. 3 with peak temperature 250°C
Damp heat	IEC 512 test number 11c (10 days)
Salt mist	IEC 512 test number 11f (96 hours)

Packaging	
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Quantity per reel, see table next page.

CCM03 MK II

Ordering Code

Part Number	Number of Contacts	Cover	PCB Locating Pegs	Quantity per reel	Contact Finish	Switch lock	Card Presence switch
CCM03-3001 R102	6	Hinged	No	1000	Inlay	No	No
CCM03-3002 R102	6	Hinged	Yes	1000	Inlay	No	No
CCM03-3003 R102	8	Hinged	No	1000	Inlay	No	No
CCM03-3004 R102	8	Hinged	Yes	1000	Inlay	No	No
CCM03-3009 R102	6	Hinged	No	1000	Gold	No	No
CCM03-3010 R102	6	Hinged	Yes	1000	Gold	No	No
CCM03-3011 R102	8	Hinged	No	1000	Gold	No	No
CCM03-3012 R102	8	Hinged	Yes	1000	Gold	No	No
CCM03-3013 R102	6	Hinged	No	1000	Gold	No	Yes (insulated)
CCM03-3514 R122	6	Hinged	No	1200	Inlay	Yes	No
CCM03-3504 R122	8	Fixed	No	1200	Inlay	No	No
CCM03-3505 R122	6	Fixed	No	1200	Inlay	No	No



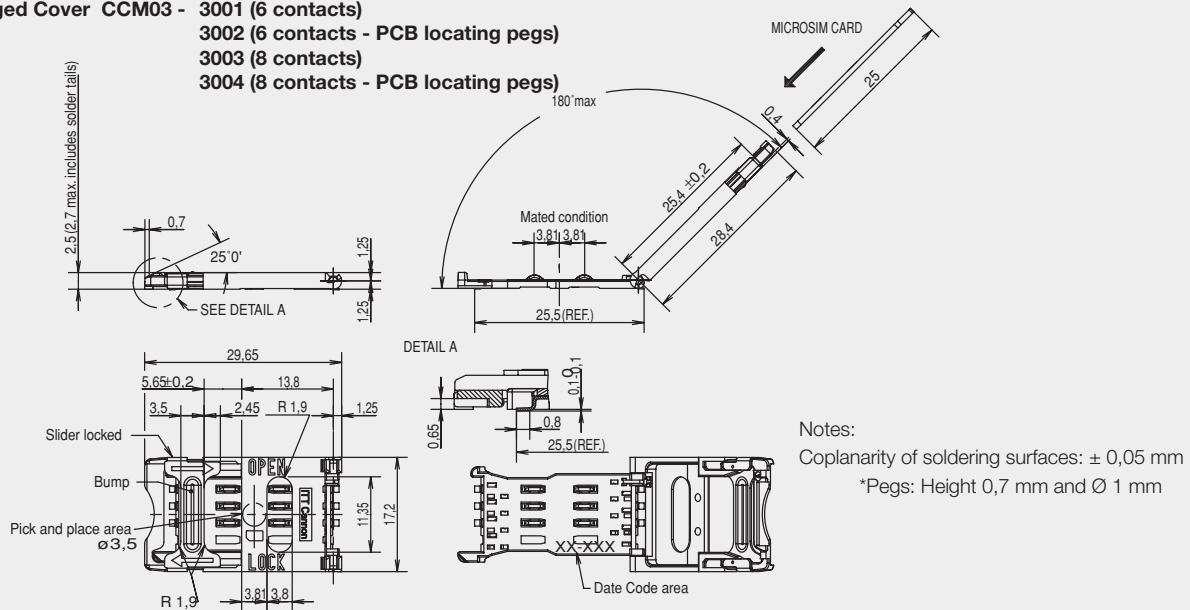
Dimensional Drawings

Hinged Cover CCM03 - 3001 (6 contacts)

3002 (6 contacts - PCB locating pegs)

3003 (8 contacts)

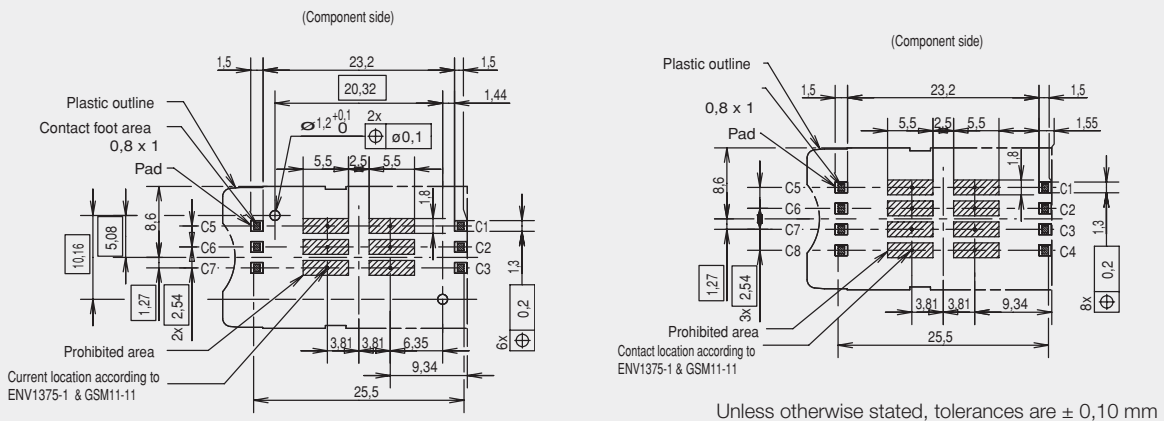
3004 (8 contacts - PCB locating pegs)



PCB Layout

CCM03-3001 / 3002

CCM03-3003 / 3004

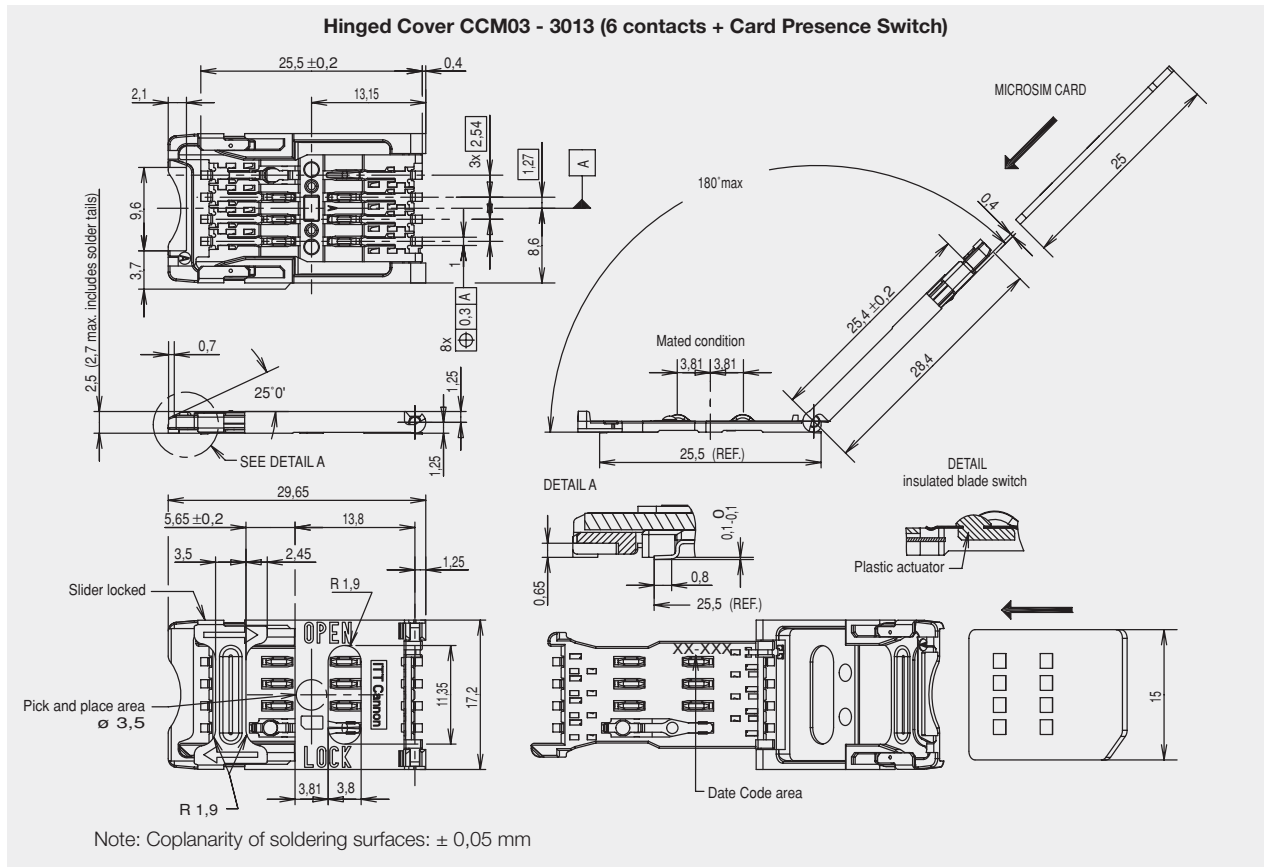


CCM03 MK II Hinged Cover

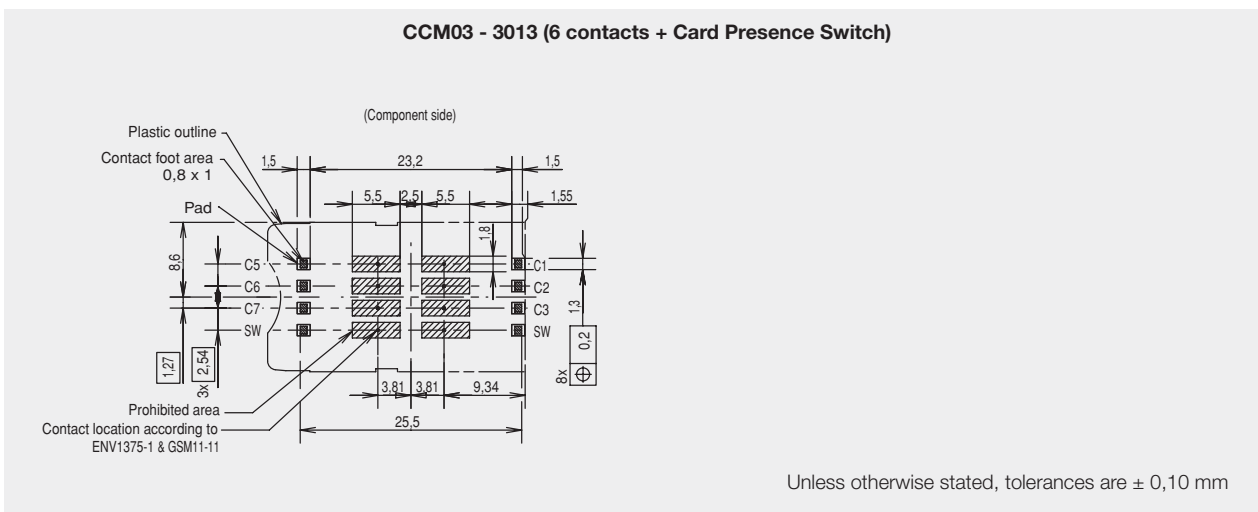


Insulated Card Presence Switch

Dimensional Drawings

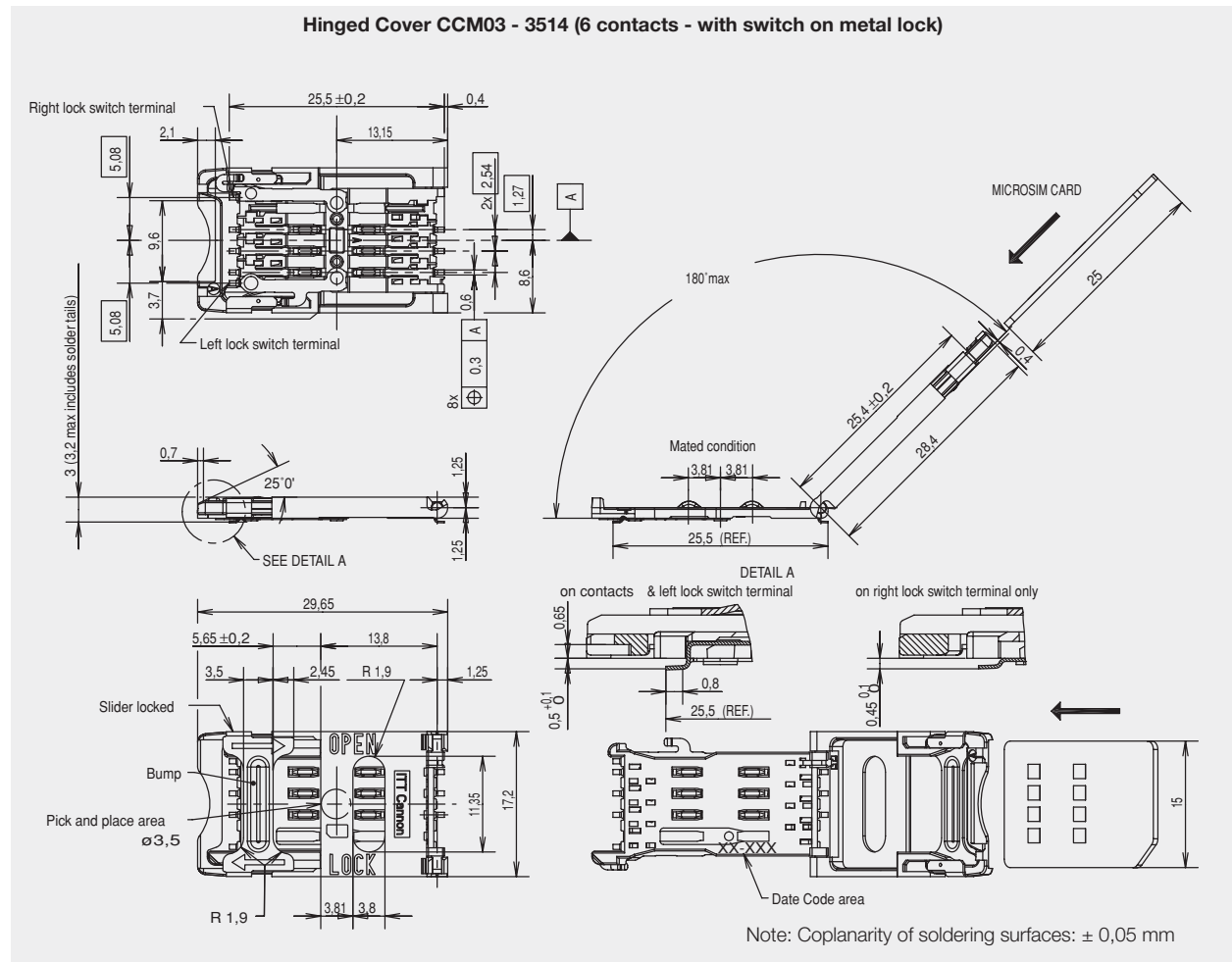


PCB Layout

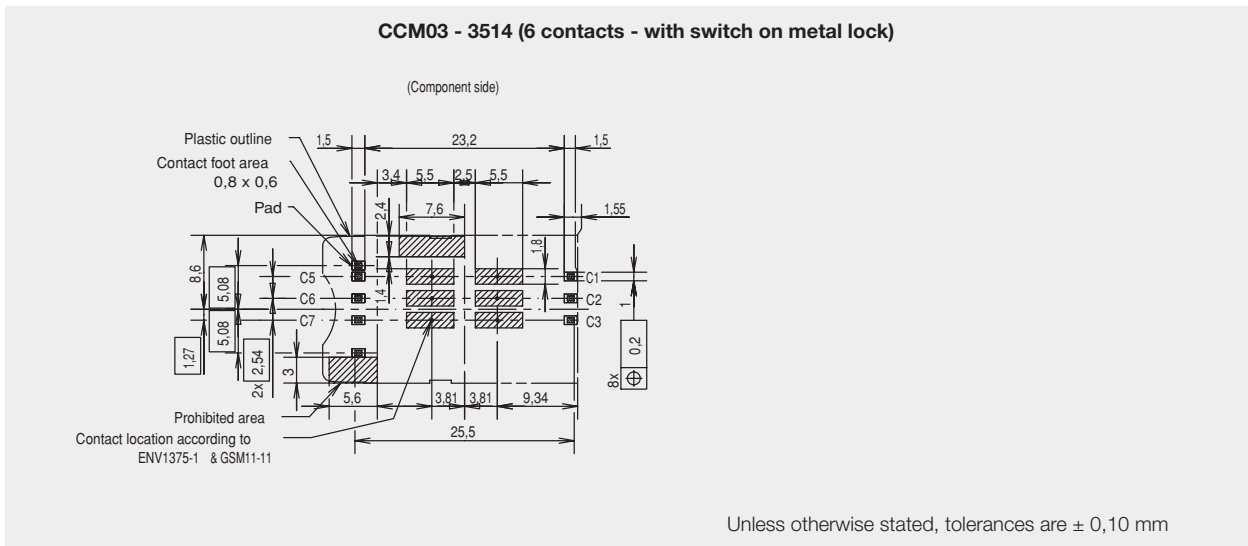


CCM03 MK II Hinged Cover

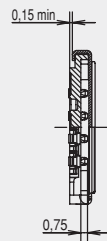
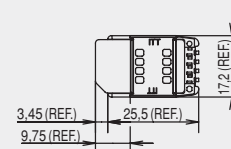
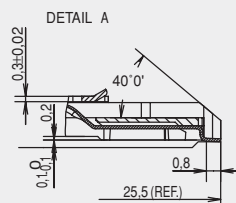
Dimensional Drawings



PCB Layout



Dimensional Drawings

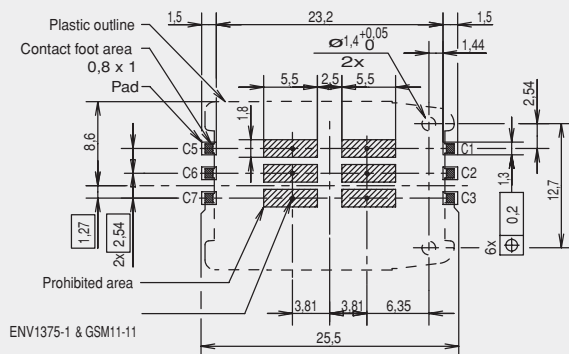
[illegible]

Note: Coplanarity of soldering surfaces: $\pm 0,05$ mm

PCB Layout

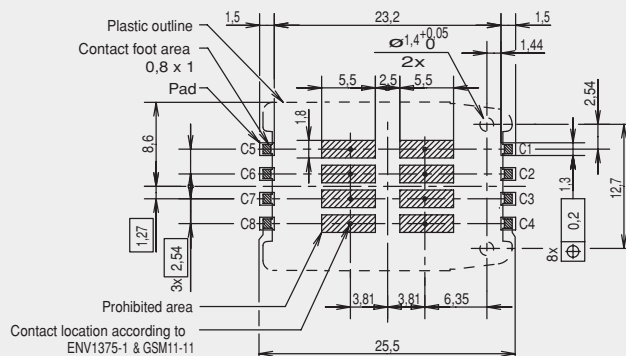
CCM03 - 3505

(Component side)



CCM03 - 3504

(Component side)



Unless otherwise stated, tolerances are $\pm 0,10$ mm

CCM03 MK II with Auto Lock cover



A new range of CCM03 connectors have been developed to interface with SIM/SAM cards as defined by GSM11-11 and ENV1375-1. The connectors are available with a hinged metallic cover and have been designed to provide an easier open/lock function and side card entry.

Features

- Available with 6 cross contacts which are designed to give a consistently reliable normal force over the life of the connector.
- The hinged metallic cover can automatically lock by pressure.
- Side entry of the card ensures easier positioning of the card into the connector.
- Insulated blade switch version available for detection card when cover is closed.
- The molding is polarized so that the cover can only be closed if the card is correctly inserted.
- Inspection slots allow an electrical test to be made without opening the cover.
- With tape and reel packaging as standard, the connectors are designed to be automatically pick-and-place.
- The moldings are made from high-temperature thermoplastics suited to infrared and convection soldering processes.
- Robustly formed printed circuit tails allow a coplanarity of $\pm 0,05$ mm to be maintained.

Construction

Contacts	Copper alloy
Contacts finish	Gold over nickel
PC tail plating	Tin lead (2 μ min)
Molding	High temp. thermoplastic, UL94V-0
Cover	Stainless steel

Mechanical Data

Number of Contacts	6
Mechanical life	10,000 cycles min
Contact force	0.35 N min / 0.50 N max
Vibration	Frequency 10 to 500 Hz. Acceleration 50m/s ² Duration 6 hours - amplitude 0.35 mm (0.014) Max electrical discontinuity 1 μ s

Contact Electrical Data

Insulation resistance	1,000 M Ω min
Resistance	100 m Ω max
Current rating	10 μ A min / 1 A max
Dielectric strength	750 Vrms min

Switch Electrical Data

Card detection switch	Normally open
Contact resistance	100 m Ω max
Dielectric strength	250 Vrms min
Current rating	1mA min / 10mA max
Maximum power	0.2 VA

Environmental Data

Operating temperature	-40°C to +85°C
Soldering temperature	Temperature/time profile acc. to CECC00802 para. 6.1, Fig. 3 with peak temperature 250°C
Damp heat	IEC 512 test number 11c (10 days)
Salt mist	IEC 512 test number 11f (96 hours)

Ordering Code

Part Number	Number of Contacts	Cover	Card Presence Switch	Quantity per reel
CCM03-3517	6	Side Hinged	No	1300
CCM03-3518	6	Front Hinged	Yes (insulated)	1300
CCM03-3529	6	Front Hinged	No	1300

Packaging

5 reels per box.

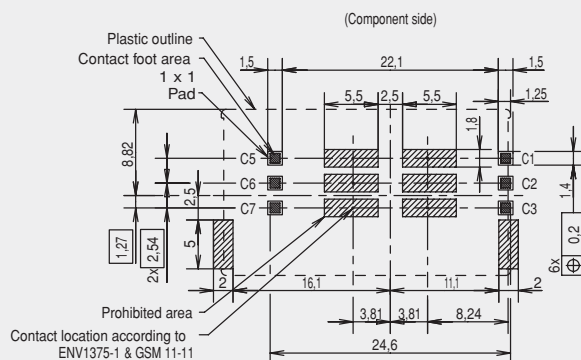
Dimensional Drawings

The technical drawings of the M246 card reader include the following views and dimensions:

- Top View:** Shows the overall dimensions of the device. Key dimensions include a total width of 24.6 ± 0.2 , a central slot width of 12.05 , and a depth of 8.64 . There are two sets of contacts, each with a width of 2×2.54 and a spacing of 1.27 . A small detail 'A' is indicated on the right side.
- Side View:** Shows the profile of the device. Key dimensions include a total height of 2.5 max , a base width of 4.9 , and a depth of $6 \times$. A detail 'A' is indicated on the right side.
- Detail A:** A close-up view of the card insertion slot. It shows a width of 1.3 , a depth of 1.85 , and a maximum height of 2 max . The device is shown in both 'LOCKED' and 'UNLOCKED' states.
- Detail B:** A close-up view of the card insertion slot. It shows a width of 2.2 , a depth of 1.8 , and a maximum height of 2 max . The device is shown in both 'LOCKED' and 'UNLOCKED' states.
- Detail C:** A close-up view of the card insertion slot. It shows a width of 0.1 ± 0.05 and a depth of 1 . The device is shown in both 'LOCKED' and 'UNLOCKED' states.
- Front View:** Shows the front of the device. Key dimensions include a total width of 29.6 , a central slot width of 17 , and a depth of 29.1 . There are two sets of contacts, each with a width of 2×11.61 and a spacing of 0.9 . A detail 'A' is indicated on the right side.
- Operational Diagrams:**
 - CARD WITHDRAWAL:** Shows the card being withdrawn from the base. The card is shown in the 'OPEN' position. The diagram includes a 'Manual opening' step (1) and a 'Card withdrawal from the base' step (2).
 - CARD INSERTION:** Shows the card being inserted into the base. The card is shown in the 'OPEN' position. The diagram includes a 'Card insertion onto the base' step (1) and a 'Manual closing' step (2).

Note: Coplanarity of soldering surfaces: $\pm 0,05$ mm

CCM03 - 3517 (6 contacts)



Unless otherwise stated, tolerances are $\pm 0,10$ mm

Dimensional Drawings

The technical drawings illustrate the ITT LIFT card reader's dimensions and operation. The top view shows a rectangular unit with a total width of 24.6 ± 0.2 and a height of 11.7 . It features a central card slot with a width of 5.1 and a height of 11.8 . The bottom view shows the internal components, including the card slot and the base. The side view shows the unit's profile with a height of 2.86 and a width of 2.1 max (on insulator) and 2.2 max (on metal cover). The detail view A shows the internal components, including the card slot and the base. The assembly and operation instructions show the card being inserted into the slot, the unit being locked, and the card being withdrawn from the base.

Top View Dimensions:

- Total width: 24.6 ± 0.2
- Slot width: 5.1
- Slot height: 11.8
- Slot offset: 11.8
- Slot width offset: 0.5
- Slot height offset: 3×2.54
- Slot width offset: 1.27
- Slot height offset: 8.45
- Slot width offset: 0.3
- Slot height offset: 8×0.3

Side View Dimensions:

- Total height: 2.86
- Slot height: 2.1 max (on insulator) and 2.2 max (on metal cover)

Bottom View Dimensions:

- Total width: 29.65
- Slot width: 5.1
- Slot height: 11.8
- Slot offset: 11.8
- Slot width offset: 0.5
- Slot height offset: 3×2.54
- Slot width offset: 1.27
- Slot height offset: 8.45
- Slot width offset: 0.3
- Slot height offset: 8×0.3

Detail A Dimensions:

- Slot width: 5.1
- Slot height: 11.8
- Slot offset: 11.8
- Slot width offset: 0.5
- Slot height offset: 3×2.54
- Slot width offset: 1.27
- Slot height offset: 8.45
- Slot width offset: 0.3
- Slot height offset: 8×0.3

Assembly and Operation Instructions:

- Manual opening
- Card withdrawal from the base
- Manual closing
- Card insertion onto the base

PCB Layout

Figure 1: Dimensions of the connector. The diagram shows the mechanical layout of a connector with dimensions in millimeters. Key features include the 'CARD WITHDRAWAL' and 'CARD INSERTION' directions, a 'Plastic outline', 'Contact foot area 1 x 1', 'Pad', and various contact points labeled C5, C6, C7, SW, C1, C2, C3, and SW. Dimensions include 1.5, 5, 22.1, 1.5, 1.7, 5.5, 2.5, 5.5, 1.8, 19.1, 8.45, 1.05, 1.27, 2.54, 3x, 2, 2x, 3.81, 3.81, 7.24, 24.6, 0.2, and 8x. A note at the bottom states 'Contact location according to ENV1375-1 & GSM 11-11 Prohibited area'.



Dimensions are shown in mm
Dimensions subject to change

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