

# Amphenol

## Card Readers

### C702A Landing Contact Full Smart Card Connectors

The Landing Contacts ensure a rugged construction that will not scratch the card surface simultaneously offering high durability.

#### Electrical

Contact resistance - < 100 mΩ  
 Switch resistance - < 200 mΩ  
 Insulation - > 10<sup>9</sup> Ω  
 High Voltage resistance - 500VAC 1 min  
 Unlock Solenoid PUSHMATIC Only  
 Rated Voltage/Current Use - 5V/2.5A ± 10%  
 - 12V/1.1A ± 10%  
 - 24V/0.55A ± 10%  
 Current pulse length - 10... 25ms  
 Pulse break - > 0.5s

#### Environmental

Temperature - -25°C thru 85°C  
 Vibration - IEC 60512-4, Test 6d  
 Shock - IEC 60512-4, Test 6c  
 PUSHMATIC with Shutter  
 Degree of Protection - IP 30 (no card)  
 - IP 20 (card inserted)

#### Switch

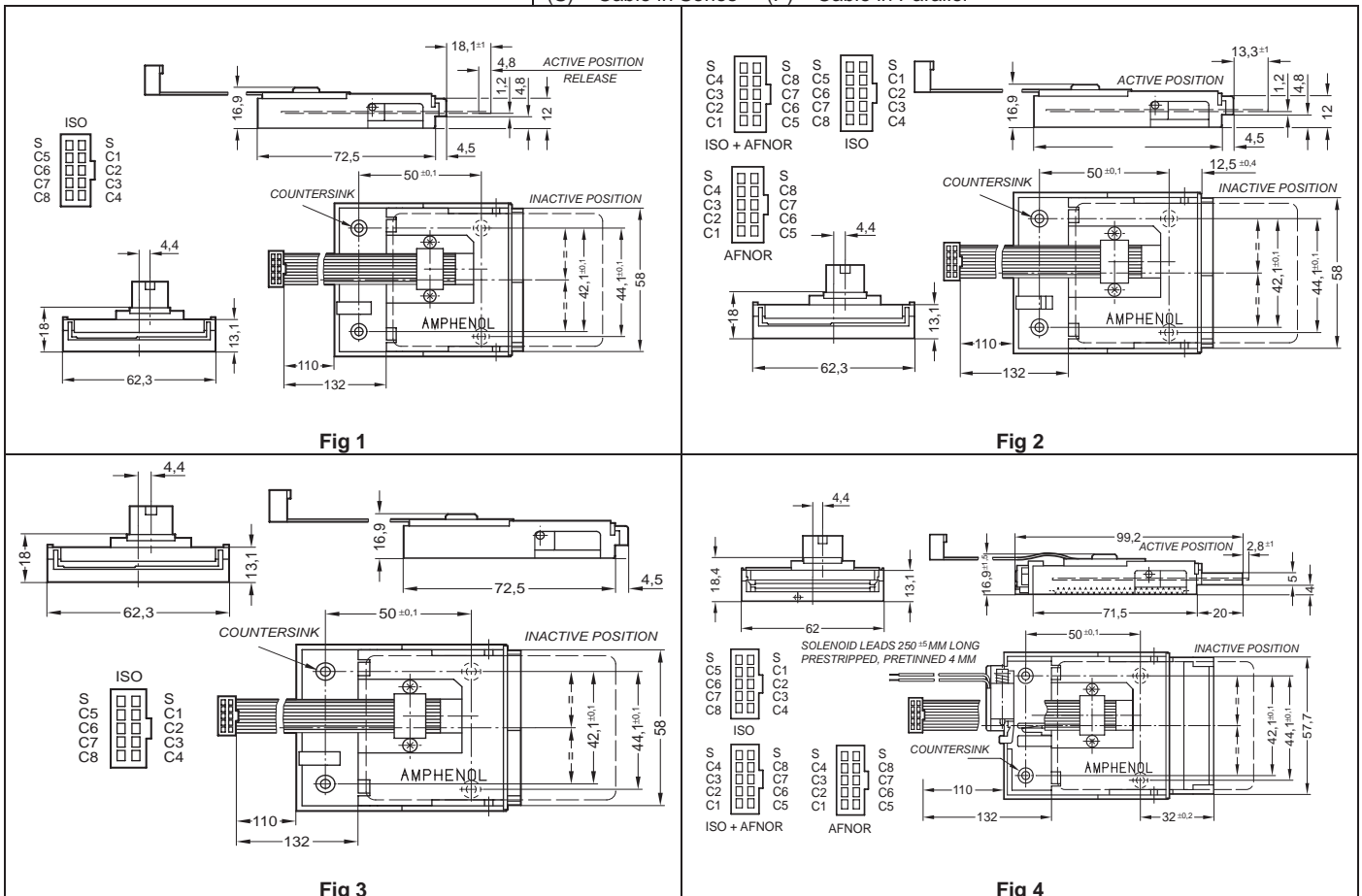
Normally open.  
 Switch activates after data contacts mate.  
 Chatter time - < 5 ms

#### Durability

Push Only - 5 x 10<sup>5</sup> Cycles  
 Push-Push - 5 x 10<sup>5</sup> Cycles  
 Push-Pull - 5 x 10<sup>5</sup> Cycles  
 PUSHMATIC - 3 x 10<sup>5</sup> Cycles

Part Number:	Description	Chip	Diagram
C702 10M008 018 2	Push Only	ISO	Fig 1
C702 10M008 015 2	Push-Push	ISO	Fig 3
C702 10M008 514 2	Push-Pull	ISO Std	Fig 2
C702 10M008 522 2	Push-Pull	AFNOR	Fig 2
C702 10M008 521 2	Push-Pull	ISO+AFNOR (S)	Fig 2
C702 10M008 523 2	Push-Pull	ISO+AFNOR (P)	Fig 2
C702 10M008 701 2	PUSHMATIC 5V	ISO Std	Fig 4 (Typical)
C702 10M008 700 2	PUSHMATIC 12V	ISO Std	Fig 4 (Typical)
C702 10M008 702 2	PUSHMATIC 24V	ISO Std	Fig 4 (Typical)
C702 10M008 703 2	PUSHMATIC 5V	ISO+AFNOR (S)	Fig 4 (Typical)
C702 10M008 704 2	PUSHMATIC 12V	ISO+AFNOR (S)	Fig 4 (Typical)
C702 10M008 705 2	PUSHMATIC 24V	ISO+AFNOR (S)	Fig 4 (Typical)
C702 10M008 706 2	PUSHMATIC 5V	ISO+AFNOR (P)	Fig 4 (Typical)
C702 10M008 707 2	PUSHMATIC 12V	ISO+AFNOR (P)	Fig 4 (Typical)
C702 10M008 708 2	PUSHMATIC 24V	ISO+AFNOR (P)	Fig 4 (Typical)
C702 10M008 732 2	PUSHMATIC* 5V	ISO	Fig 4 (Typical)
C702 10M008 716 2	PUSHMATIC* 12V	ISO	Fig 4 (Typical)
C702 10M008 727 2	PUSHMATIC* 24V	ISO	Fig 4 (Typical)
C702 20M008 701 2	PUSHMATIC** 5V	ISO	Fig 4 (Typical)
C702 20M008 700 2	PUSHMATIC** 12V	ISO	Fig 4 (Typical)
C702 20M008 702 2	PUSHMATIC** 24V	ISO	Fig 4 (Typical)

**Push Only** – Manual insertion, held in position by hand. Ideal for short cycle transactions.  
**Push-Push** – Manual insertion, card held by reader, second push releases card.  
**Push-Pull** – Manual insertion, card held by reader, card manually extracted.  
**PUSHMATIC** – Manual insertion, card automatically ejected on completion of transaction.  
**\*PUSHMATIC with Locking Detector** – Senses complete insertion of card. Card is still visible but not accessible. Automatic card release on completion of transaction.  
**\*\*PUSHMATIC with Shutter** (additional Bezel is NOT required) – The Shutter protects the card slot when no card is present. The Shutter will only open upon insertion of a standard sized card.  
 (S) – Cable in Series (P) – Cable in Parallel





### C702E Wiping Contact Full Smart Card Connectors

Ideal for limited mating cycle application such as set top boxes.

#### Electrical

Contact resistance	- < 30 mΩ
Switch contacts	- < 50 mΩ
Insulation	- > 10 <sup>9</sup> Ω
High Voltage resistance	- 500VAC 1 min

#### Environmental

Temperature	- -25°C thru 70°C
Vibration	- IEC 60512-4, Test 6d
Shock	- IEC 60512-4, Test 6c

#### Switch

Normally closed.	
Switch activates after data contacts mate.	
Chatter time	- < 5 ms

#### Mechanical

Durability	- 10 <sup>5</sup> Cycles
Mounting is Dip Solder Pin unless otherwise indicated	

#### Soldering conditions

Wave Soldering	- 260°C, 10s max
Infrared Reflow	- 230°C, 30s max

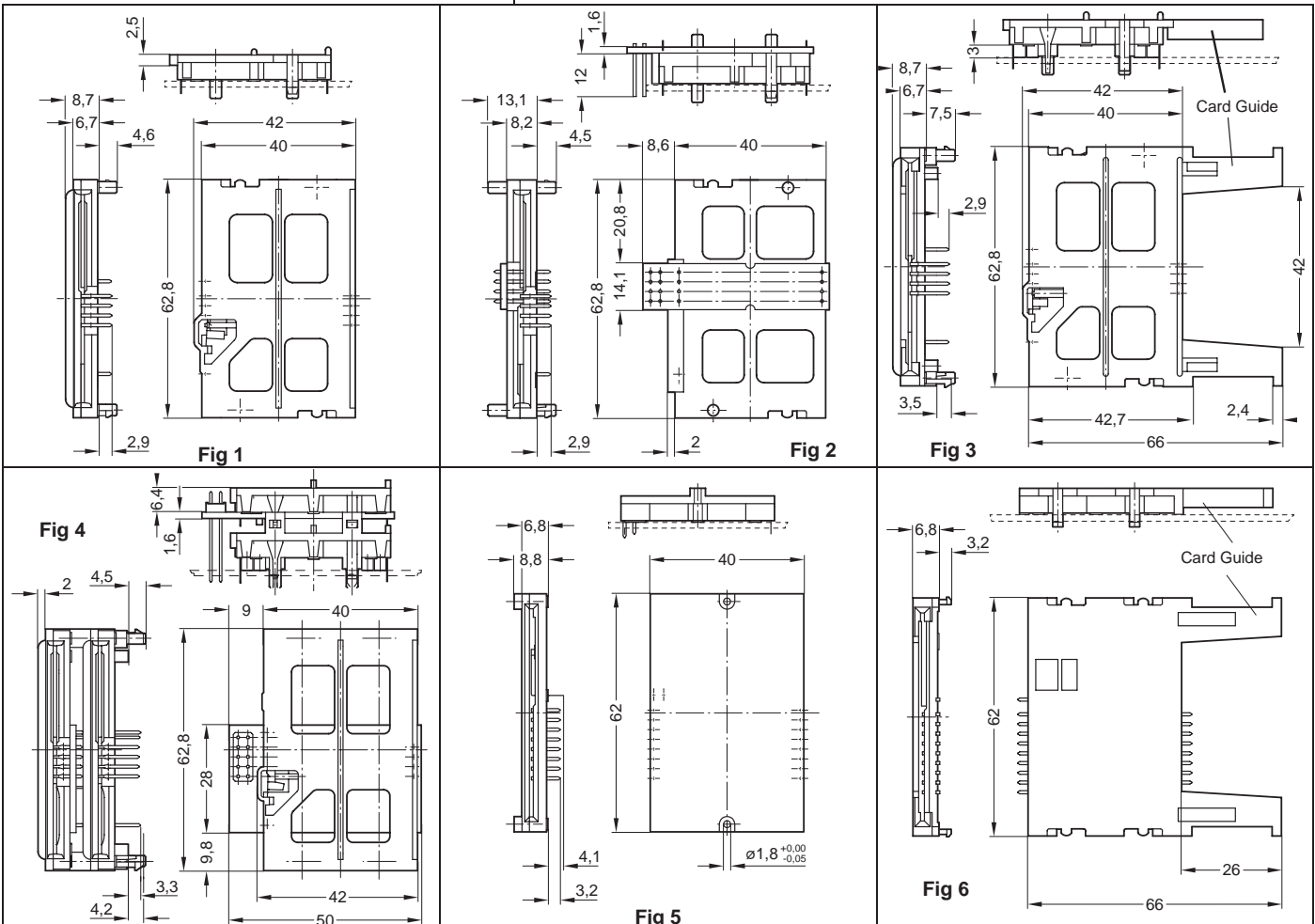
#### Features

- DIP solder or SMT
- Self cleaning switch
- Special contact to minimize card scratching
- Indicated connectors according to EMV

Part Number:	Description	Chip	Diagram
C702 10M008 272 4	B/L, EMV, SC	ISO	Fig 1
C702 10M008 255 4	B/L, EMV, SC, 3mm	ISO	Like Fig 1
C702 10M008 271 4	B/L, EMV, SC, DP	ISO	Fig 2
C702 10M008 283 4	B/L, EMV, SC, 3mm, CG	ISO	Fig 3
C702 10M008 286 4	B/L, EMV, SC, CG	ISO	Like Fig 3
C702 10M008 278 4	B/L, SC, DD	ISO	Fig 4
C702 10M008 279 4	B/L, SC, DD, 3mm	ISO	Fig 4
C702 10M008 295 4	B/L, SC, DD	ISO	Fig 4
C702 10M008 290 4	B/L, SC, DD, DT, DP	ISO	
C702 10M008 294 4	B/L, SC, DD, DT, DP	ISO	
C702 10M008 201 4	SM	ISO	Fig 5
C702 10M008 202 4	SM	AFNOR	Fig 5
C702 10M008 203 4	SM	ISO+AFNOR	Fig 5
C702 10M008 206 4	B/L	ISO	Like Fig 5
C702 10M008 207 4	B/L	AFNOR	Like Fig 5
C702 10M008 205 4	B/L	ISO+AFNOR	Like Fig 5
C702 10M008 244 4	B/L, SC, SMT	ISO	Like Fig 6
C702 10M008 230 4	B/L, SC, CG, SMT	ISO	Fig 6
C702 20M008 224 4	B/L, SC, CG, SMT	ISO+AFNOR	Fig 6
C702 20M008 226 4	B/L SC, CG	ISO	Like Fig 6
C702 20M008 235 4	B/L SC, CG	ISO+AFNOR	Like Fig 6

#### Terminology

B/L	- Board Locks	EMV	- Europay Mastercard Visa
3mm	- 3mm stand-offs	DD	- Double Decker Reader
SC	- Self-Cleaning Switch (N/C)	DP	- Dual Plane Contacts
CG	- Card Guide	DT	- Double Thickness Card
SM	- Screw/Rivot Mount	SMT	- Surface Mount



### C702D Landing Contact Super-flat Full Smart Card Connectors

Second generation Push-Pull connectors with a high degree of miniaturization.

#### Electrical

Contact resistance - < 30 mΩ  
 Switch contacts - < 40 mΩ  
 Insulation - > 10<sup>9</sup> Ω  
 High Voltage resistance - 500VAC 1 min

#### Environmental

Temperature - -25°C thru 65°C  
 Vibration - IEC 60512-4, Test 6d  
 Shock - IEC 60512-4, Test 6c

#### Switch

Normally open. Switch activates after data contacts mate. Chatter time - < 5 ms

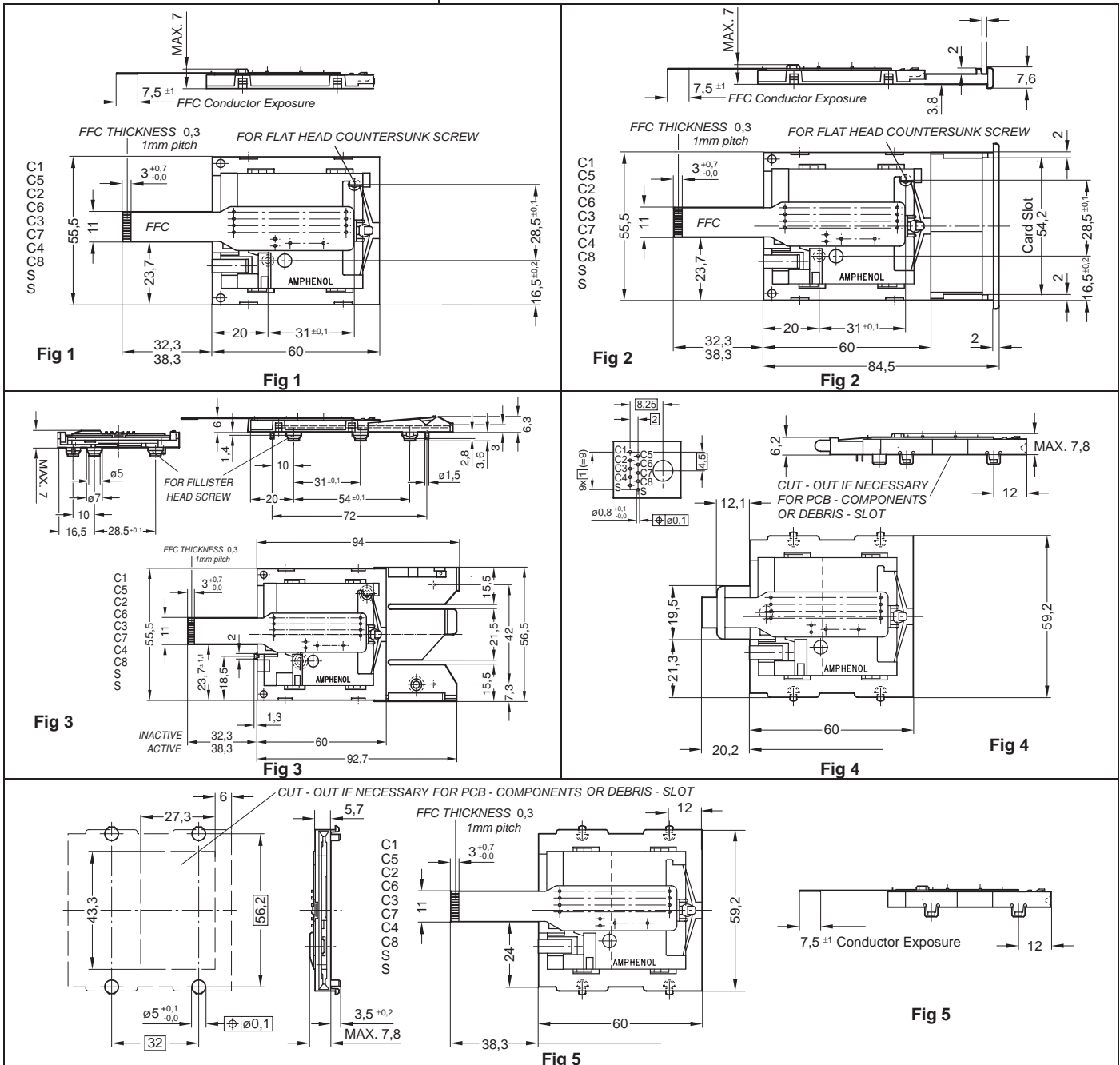
#### Durability

- 3 x 10<sup>5</sup> Cycles

Part Number:	Description	Chip	Diagram
C702 10M008 001 4	Standard	ISO	Fig 1
C702 10M008 065 4	Standard, EMV	ISO	Fig 1
C702 10M008 023 4	With Card Guide	ISO	Fig 2
C702 10M008 040 4	Push-Lift, EMV	ISO	Fig 3
C702 10M008 060 4	Board Lock, Dip Solder	ISO	Fig 4
C702 10M008 063 4	Board Lock, Dip Solder, EMV	ISO	Fig 4
C702 10M008 061 4	Board Lock, FFC	ISO	Fig 5
C702 10M008 066 4	Board Lock, FFC, EMV	ISO	Fig 5

#### Features

- According to EMV available
- Snap-in (Board Locks) versions available
- Additional saving option by integrating base into customer's housing
- Chip side up insertion allows for debris egress
- Dip Solder or Flat Flex termination available





# Amphenol

## Card Readers

### C702B PUSHMATIC® II Auto-Eject Landing Contact Full Smart Card Reader

The PUSHMATIC II is smaller than the PUSHMATIC and provides additional performance and anti-vandal features.

#### Electrical

Contact resistance - < 100 mΩ  
 Switch resistance - < 200 mΩ  
 Insulation - > 10<sup>9</sup> Ω  
 High Voltage resistance - 500VAC 1 min  
 Rated Voltage/Current Use - 5V/<10mA ± 10%  
Unlocking Solenoid  
 Rated Voltage/Current Use - 5V/5.3A ± 10%  
 - 12V/2.2A ± 10%  
 - 24V/1.1A ± 10%

Current pulse length - 10... 25ms  
 Pulse break - ≥ 1s  
 Interface Connector - 2x8 contact 2mm pitch

#### Environmental

Temperature - -25°C thru 70°C  
 Vibration - IEC 60512-4, Test 6d  
 Shock - IEC 60512-4, Test 6c  
 Chatter time switch - ≤ 5 ms

#### Mechanical

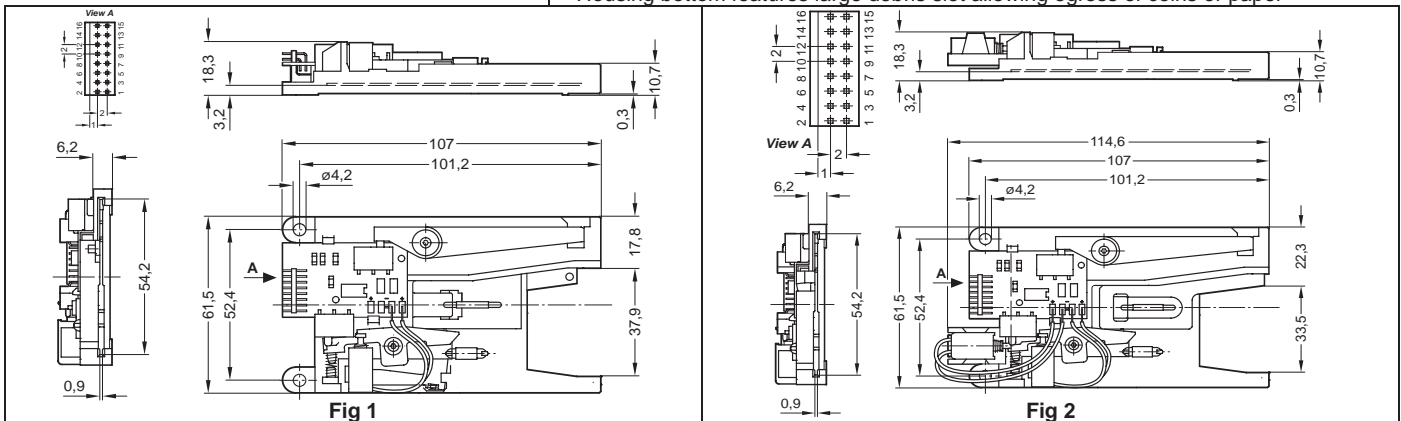
Durability - 3 x 10<sup>5</sup> Cycles  
 Card Insertion Force - ≤ 12N

Part Number:	Description	Chip	Diagram
C702 10M008 906 2	5V without card lock	ISO	Fig 1
C702 10M008 904 2	12V without card lock	ISO	Fig 1
C702 10M008 909 2	24V without card lock	ISO	Fig 1
C702 10M008 907 2	5V with card lock	ISO	Fig 2
C702 10M008 905 2	12V with card lock	ISO	Fig 2
C702 10M008 910 2	24V with card lock	ISO	Fig 2

Contact Assignment								
Pin #	1	2	3	4	5	6	7	8
Contact	M1+	M1-, M2-	M2+	S1	+5V	S1	C8	C4
Remark	+V Solenoid Unlock	-V Solenoid Supply	+V Solenoid Failure	Card Present	Reader Supply	Card Present	Reserve IEC 7816	Reserve IEC 7816
Pin #	9	10	11	12	13	14	15	16
Contact	C7	C3	C6	C2	C5	C1	S2	S3
Remark	I/O Smart Card	Clk Smart Card	Vpp Smart Card	RST Smart Card	GND Smart Card	+5V Smart Card	Card Seated High	EMV High Active

#### Features

- ISO Chip Position
- Card accessible during power failure
- Card presence switch can be used as system wake up
- Card end position switch can be used as lock sensor
- Additional sensor detects abnormal transaction termination
- Self cleaning retracting contacts
- Card presence switch according to EMV
- Housing bottom features large debris slot allowing egress of coins or paper



### C702C LP PUSHMATIC® Auto-Eject Landing Contact Full Smart Card Reader

Low Profile Reader designed for restricted spaces. With removable housing bottom to act a debris slot.

#### Electrical

Contact resistance - < 100 mΩ  
 Switch resistance - < 200 mΩ  
 Insulation - > 10<sup>9</sup> Ω  
 High Voltage resistance - 500VAC 1 min  
 Rated Voltage/Current Use - 5V/<10mA ± 10%  
Unlocking Solenoid  
 Rated Voltage/Current Use - 5V/2.6A ± 10%  
 - 12V/1.5A ± 10%  
 - 24V/1A ± 10%

Current pulse length - 10... 30ms  
 Pulse break - ≥ 1s  
 Interface Connector - 10 Contact 1mm FFC

#### Environmental

Temperature - -25°C thru 70°C  
 Vibration - IEC 60512-4, Test 6d  
 Shock - IEC 60512-4, Test 6c  
 Chatter time switch - ≤ 5 ms

#### Mechanical

Durability - 3 x 10<sup>5</sup> Cycles  
 Card Insertion Force - ≤ 10N

Part Number:	Description	Chip	Diagram
C702 10M008 901 4	5V with card lock	ISO	Fig 3
C702 10M008 902 4	12V with card lock	ISO	Fig 3
C702 10M008 903 4	24V with card lock	ISO	Fig 3

#### Features

- Landing self cleaning contacts
- Micro Switch as locking sensor
- Card present switch acc. To EMV
- Manual card unlock on power failure

