ipassan

Installation guide

FDi
URMET GROUP

Getting started

- Install and connect the iPassan controllers and readers – See pages 13 to 22

- Move the **MAINT** jumper to the 'maintenance' position – See page 7

- Using an iPassan keyfob, test the operation of the readers and any electric releases, maglocks, exit switches, break glass units etc.

- Move the **MAINT** jumper to the 'normal' position – See page 7

- Decide whether the software will be installed on a local PC or if the software will be run from www.ipassan.com – See the iPassan software management explanation below.

- Follow the online 'Help' manual
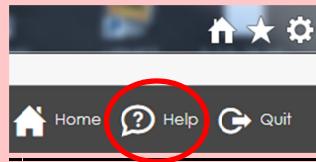
iPassan software management

The iPassan software can either be running on the local PC used to administor the system, or the PC used to administor the system can access the software at www.ipassan.com

In other words, if the iPassan PC *does not have internet access* then the software must be installed locally. If the iPassan PC does have internet access then there is the choice to install the software locally or run the software via www.ipassan.com

A copy of the software is provided on a USB flash drive with the iPassan equipment.

Connecting the PC to the iPassan site

USB connection – single PC

USB cable – generally 50M maximum

Door Controller

Used when a single PC is directly connected to the first controller to administer the site

Ethernet connection – single PC

TCP/IP network
LAN/WAN

Door Controller

Software can be running
locally or at www.ipassan.com
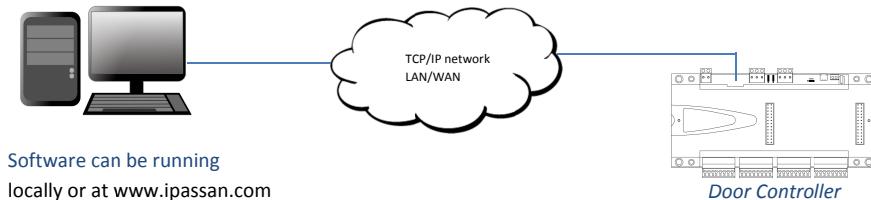
Used when a single PC is used to administer the site over a network

Ethernet connection – client/server

TCP/IP network
LAN/WAN

Server + client

Door Controller

Client

Client
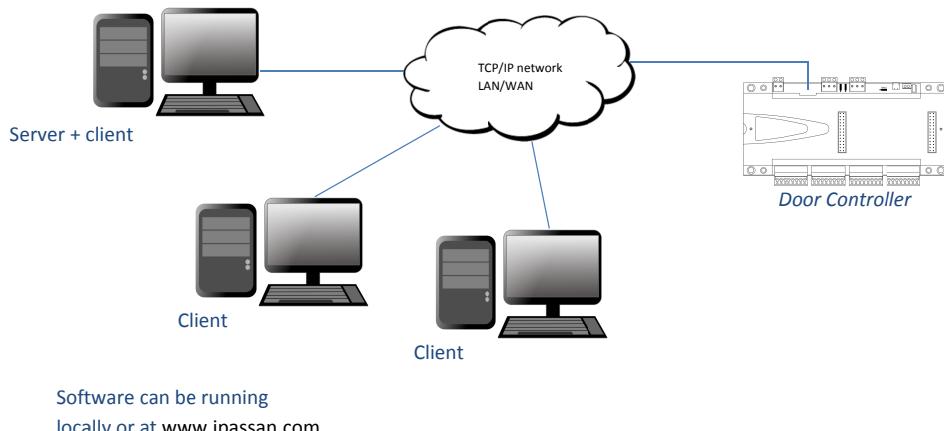
Used when multiple PCs are used to administer the site over a network

Software can be running
locally or at www.ipassan.com

iPassan architecture

iPassan can be installed in one of three ways -

i.   Full IP installation

In full IP installations, the maximum number of Door Controllers is 64

Door Controller

TCP/IP network LAN/WAN

Connection from the PC to the iPassan system can also be via USB

Door Controller

Door Controller

Door Controller

Output Module

In systems where the Door Controllers are connected via Ethernet, the connection between the Door Controller and any Input/Output Modules is by RS485

Input Module

ii   RS485 installation

In RS485 installations, the maximum number of Door Controllers is 32

Connection from the PC to the iPassan system can be via USB or Ethernet

Door Controller

Door Controller

Door Controller

Output Module

EACH Door Controller has an **AUX** RS485 bus where up to 10 Input/Output Modules can be connected

Input Module

iii Hybrid installation

RS485 bus

In hybrid installations, the maximum number of Door Controllers is 64

Door Controller   *Door Controller*   *Door Controller*

Connection from the PC to the iPassan system can be via USB or Ethernet

TCP/IP network
LAN/WAN

Door Controller

Door Controller   *Door Controller*

Some Door Controllers are connected to the Ethernet network and some Door Controllers are connected to a RS485 bus

Output Module

Input Module

iPassan hardware combinations

iPassan hardware can be configured in the following combinations –
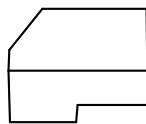
1104/921 – Door Controller (4 readers)
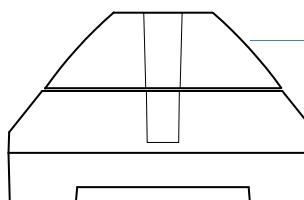
1104/926 – 2 Reader Expansion Card
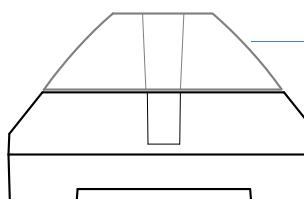
1104/921 – Door Controller (4 readers)

1104/912 – 12 Input Expansion Card
1104/914 – 12 Output Expansion Card

1104/921 – Door Controller (4 readers)
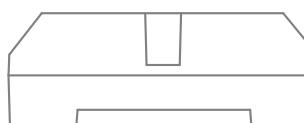
1104/910 – 10 Input Base Module
1104/913 – 10 Output Base Module
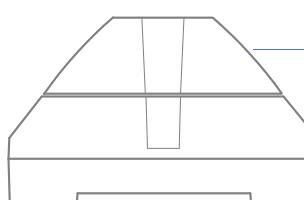
1104/912 – 12 Input Expansion Card
1104/914 – 12 Output Expansion Card

1104/910 – 10 Input Base Module
1104/913 – 10 Output Base Module

1104/921 (FD-125-002) Controller

Auxiliary RS485 bus connection
Auxiliary RS485 bus termination jumper
Main RS485 bus termination jumper
Main RS485 bus connection
Ethernet connection
12V DC supply

Maintenance jumper
Micro USB OTG connector
Cabinet tamper switch
Built in tamper switch
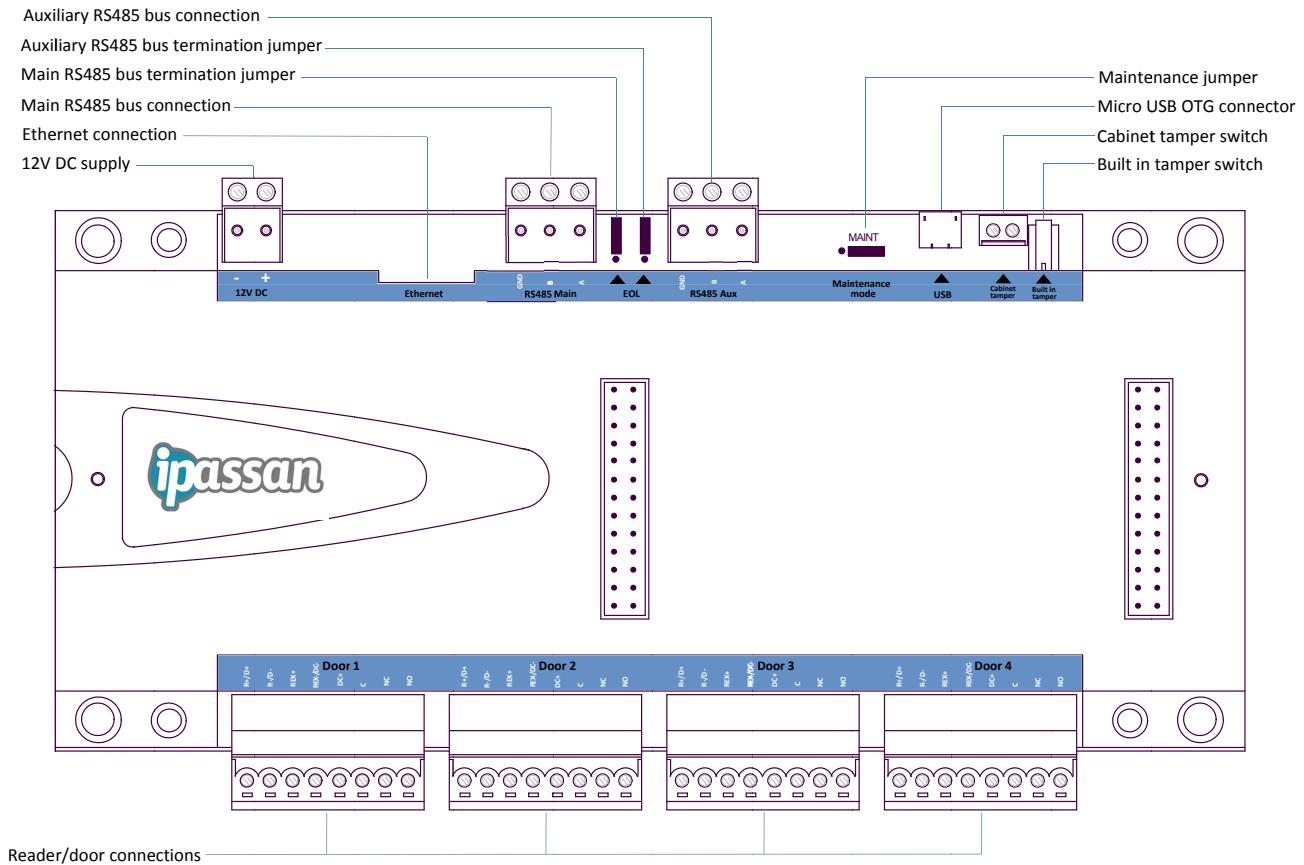
12V DC supply

12V DC @ 1.0A is required for the controller, plug in 2-door card and six readers.

Ethernet

RJ45 connector for Ethernet interface

RS485 Main

Used for the bus connection between controllers. A maximum of 32 controllers can be connected to the **RS485 Main** bus. The maximum cable distance for the **RS485 Main** bus is 1000M – See page 19

RS485 Aux

Used to connect to Input/Output modules. A maximum of 10 Input/Output base units can be connected to the **RS485 Aux** bus. The maximum cable distance for the **RS485 Aux** bus is 1000M – See page 19

Maintenance jumper

In this position the behaviour of the controller is normal –
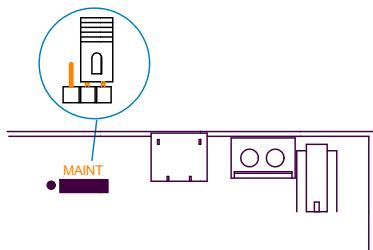
When the Maintenance jumper is moved to this position any 13.56Mhz FDI key will operate the relay corresponding to the reader where the key has been used –
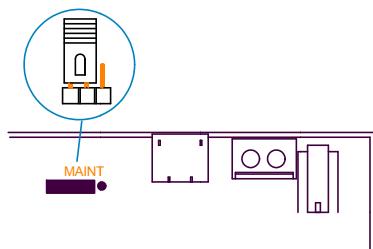
This feature is used to test the controller connections before programming is started.

Micro USB connector

Used to connect the PC to the iPassan network

Cabinet tamper

Input for a normally open third party contact, used for example when the controller is mounted in an enclosure.

Built in tamper switch

Activated when the iPassan controller cover is removed. Normally open contact.

Door 1 – Door 4

Reader, exit switch, door contact and lock relay connections.

LED indicators
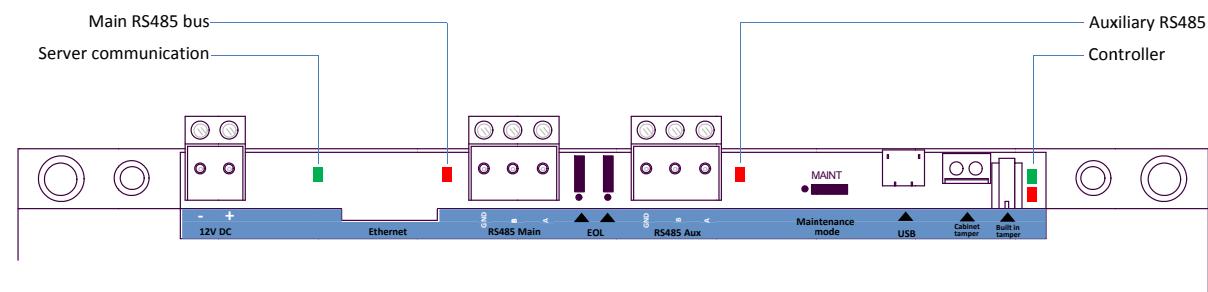
Server communication	The LED is green when the controller is connected to the server
Main RS485 bus	On the main controller (the controller connected to the server) the red LED is on all the time. On slave controllers it flashes once every three seconds. If there is no communication on the RS485 bus the LED is off.
Auxiliary RS485 bus	The red LED is on when the controller communicates with the input/output expansion modules. When there is no communication on the auxiliary bus the LED is off.
Controller status	The green LED is on when the controller supply voltage is correct. The red LED flashes once per second to indicate the controller is healthy. If the LED is permanently on or permanently off then re-boot the controller.
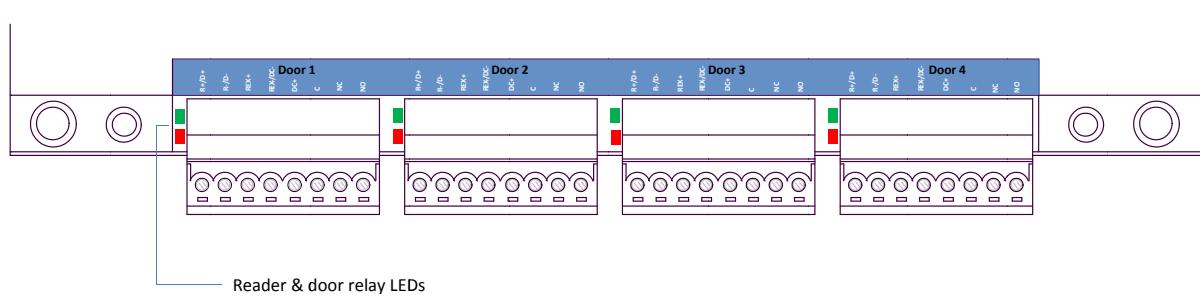
Reader & door relay LEDs

Red LED	Flashes once every three seconds when the reader is operating correctly. Flashes three times a second if the reader is not connected, or not communicating with the controller.
Green LED	On all the time that the relay is activated.

1104/926 (FD-125-010) 2 Reader Expansion Card
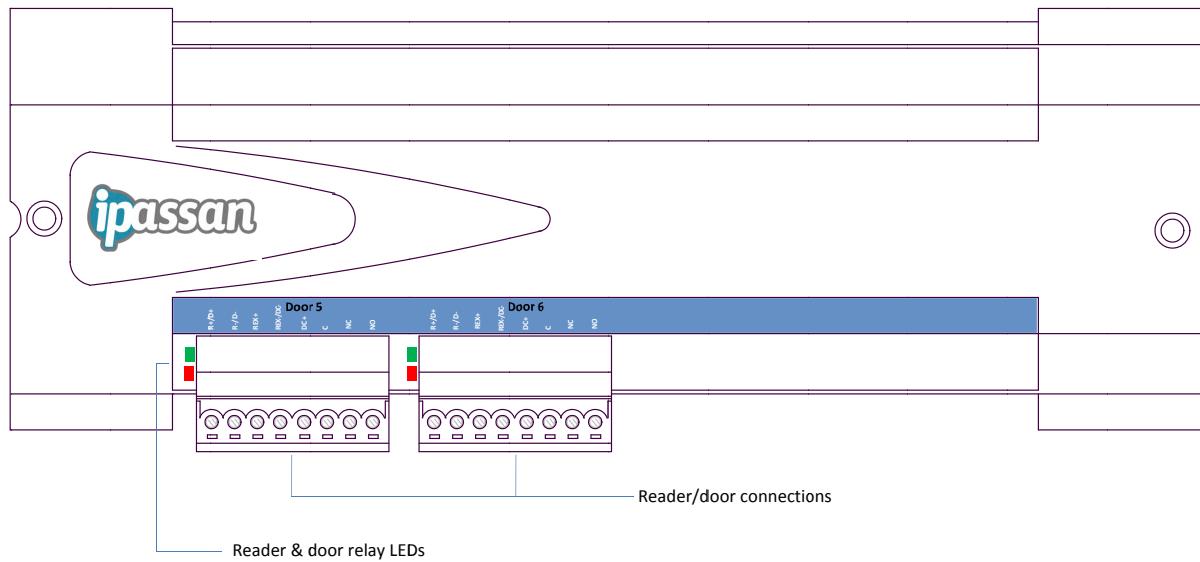
Reader/door connections

Reader & door relay LEDs

Red LED	Flashes once every three seconds when the reader is operating correctly. Flashes three times a second if the reader is not connected, or not communicating with the controller.
Green LED	On all the time that the relay is activated.

1104/910 (FD-125-015) 10-Input Base Module

RS485 bus connection

12V DC supply connection

Inputs 8, 9 and 10

~12V IN~
AC/DC

GND
RS485
B
A

- +
IN 10

- +
IN 9

- +
IN 8

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+12V OUT

IN 1
+ -

IN 2
+ -

IN 3
+ -

IN 4
+ -

IN 5
+ -

IN 6
+ -

IN 7
+ -

12V DC 200mA output

Inputs 1 to 7
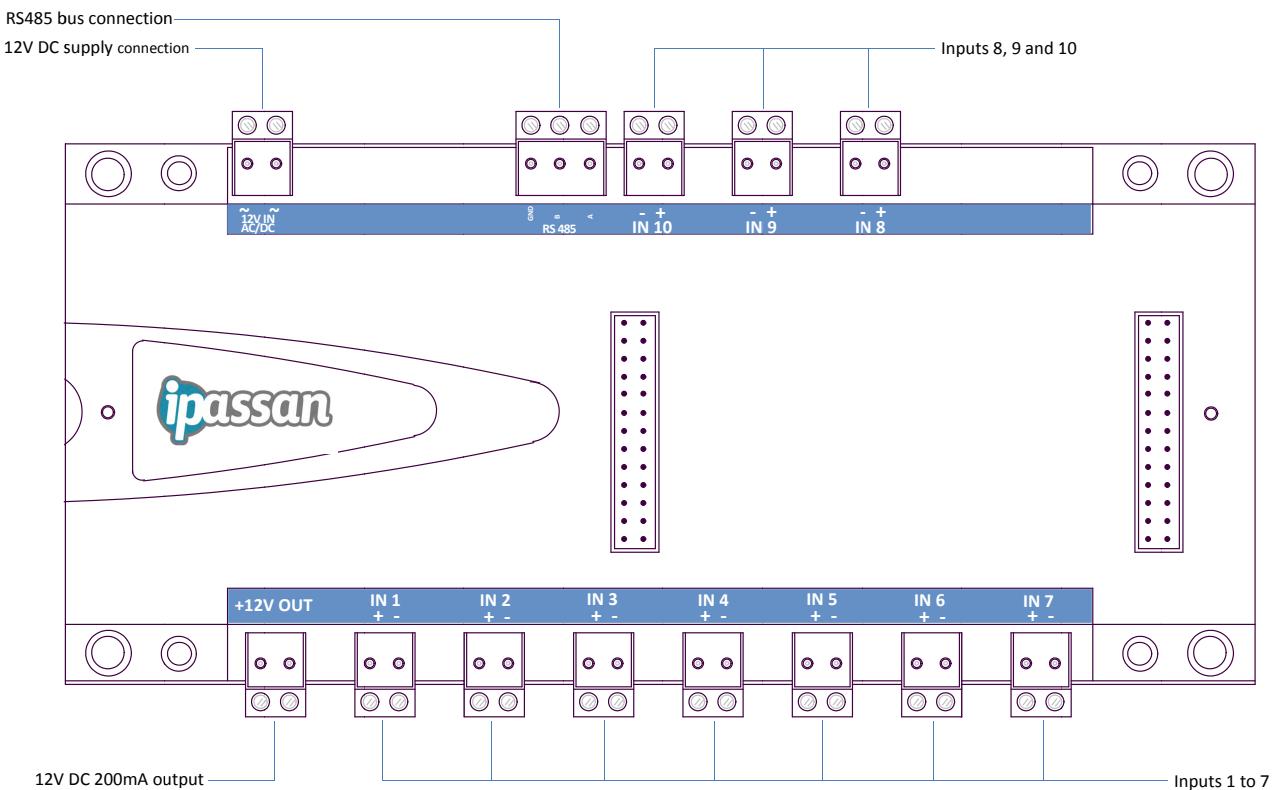
12V DC supply

12V DC @ 1.0A is required for the 10-Input Base Module

RS485

Used for the bus connection between input/output Base Modules. A maximum of 10 Base Modules can be connected to the **RS485** bus. The maximum cable distance for the **RS485** bus is 1000M – See PAGE 19

IN1 – IN10

Inputs can be via normally open or normally closed clean volt free contacts

+12V OUT

An auxilliary output rated at 200mA

1104/913 (FD-125-016) 10-Output Base Module

RS485 bus connection

12V DC supply connection

Outputs 8, 9 and 10

12V DC 200mA output

Outputs 1 to 7
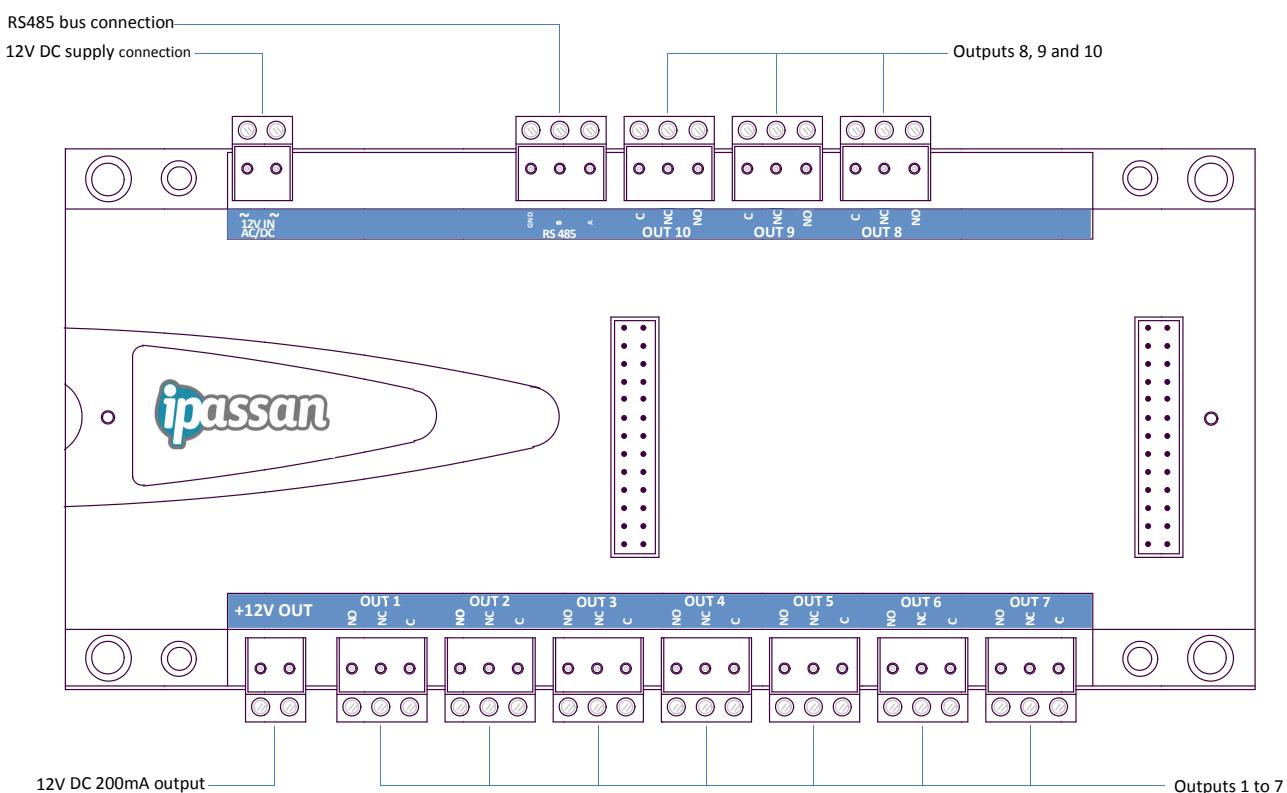
12V DC supply

12V DC @ 1.0A is required for the 10-Output Base Module

RS485

Used for the bus connection between input/output Base Modules. A maximum of 10 Base Modules can be connected to the **RS485** bus. The maximum cable distance for the **RS485** bus is 1000M – See Page 19

OUT1 – OUT10

Relays are rated at 48V @ 2A

+12V OUT

An auxilliary output rated at 200mA

1104/912 (FD-125-020) 12-Input Expansion Card

Inputs 7 to 12 (or 17 to 22)

- +	- +	- +	- +	- +	- +
IN 12/22	IN 11/21	IN 10/20	IN 9/19	IN 8/18	IN 7/17

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IN 1/11	IN 2/12	IN 3/13	IN 4/14	IN 5/15	IN 6/16
+ -	+ -	+ -	+ -	+ -	+ -

Inputs 1 to 6 (or 11 to 16)
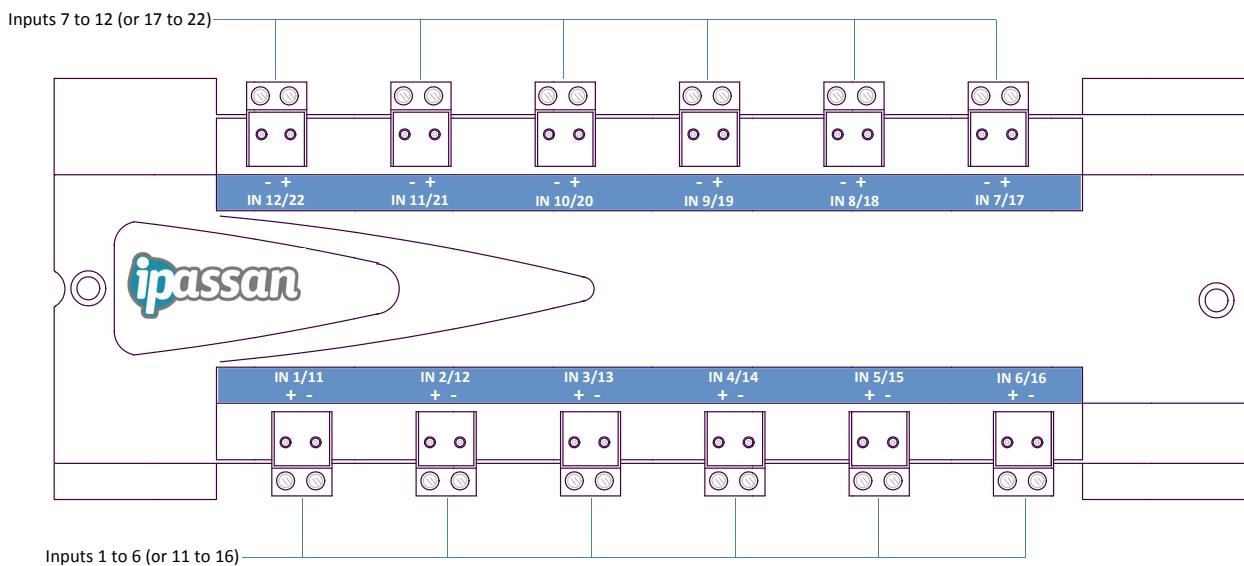
IN1 – IN11 (IN11 – IN22)

Inputs can be via normally open or normally closed clean volt free contacts

1104/914 (FD-125-021) 12-Output Expansion Card

Outputs 7 to 12 (or 17 to 22)

C NC NO	C NC NO	C NC NO	C NC NO	C NC NO	C NC NO
OUT 12/22	OUT 11/21	OUT 10/20	OUT 9/19	OUT 8/18	OUT 7/17

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OUT 1/11	OUT 2/12	OUT 3/13	OUT 4/14	OUT 5/15	OUT 6/16
NO NC C	NO NC C	NO NC C	NO NC C	NO NC C	NO NC C

Outputs 1 to 6 (or 11 to 16)
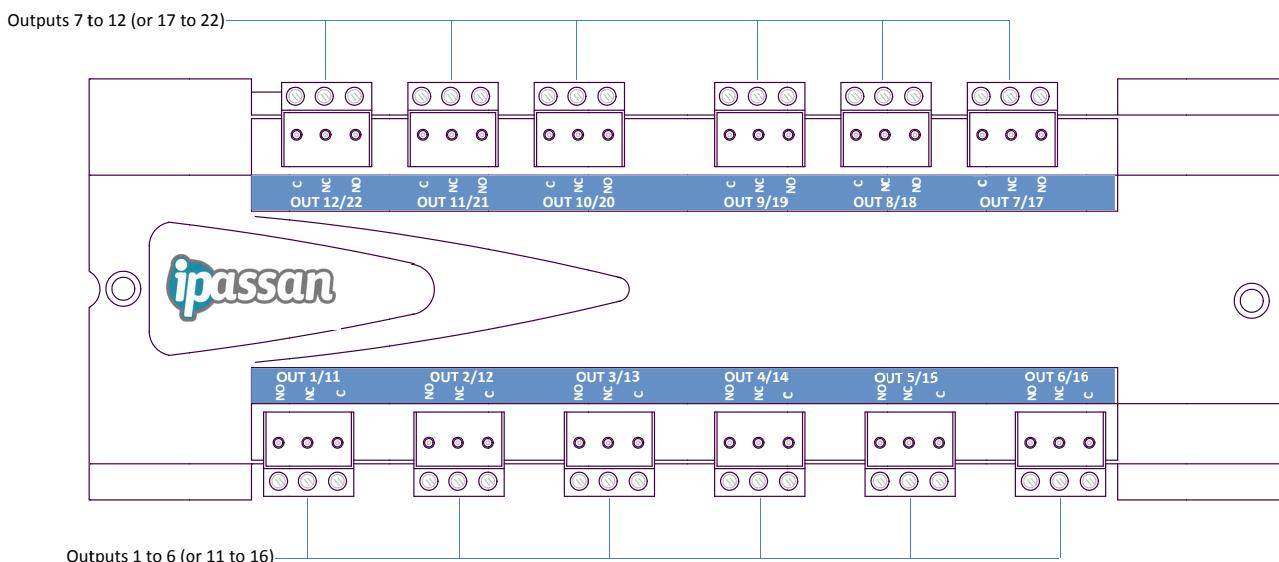
OUT1 – OUT10 (OUT11 – OUT22)

Relays are rated at 48V @ 2A

1104/931 (FD-020-081) reader connections

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO
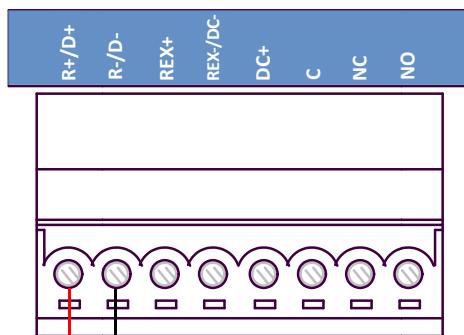
1104/921 Controller or
1104/926 2-Reader expansion card

D + D -

1104/931 (FD-020-081)

D + D -
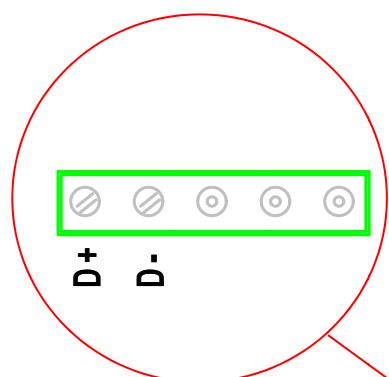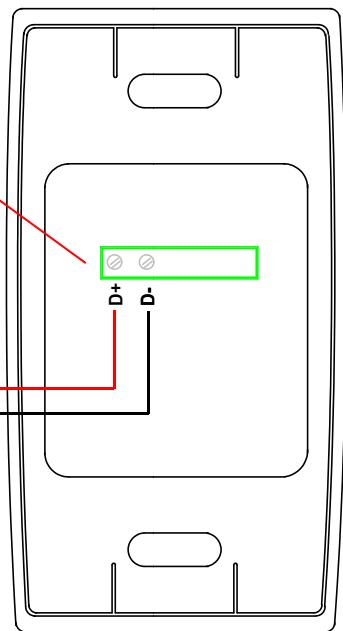
1104/932 (FD-020-086) reader connections

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO

1104/921 Controller or
1104/926 2-Reader expansion card

D + D -

1104/932 (FD-020-086)

D + D -

14
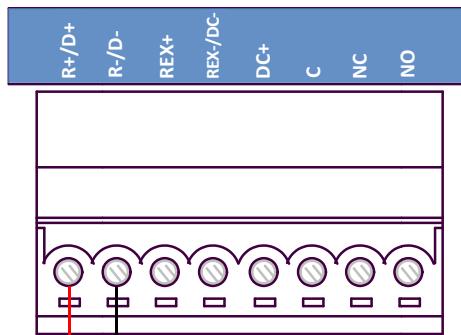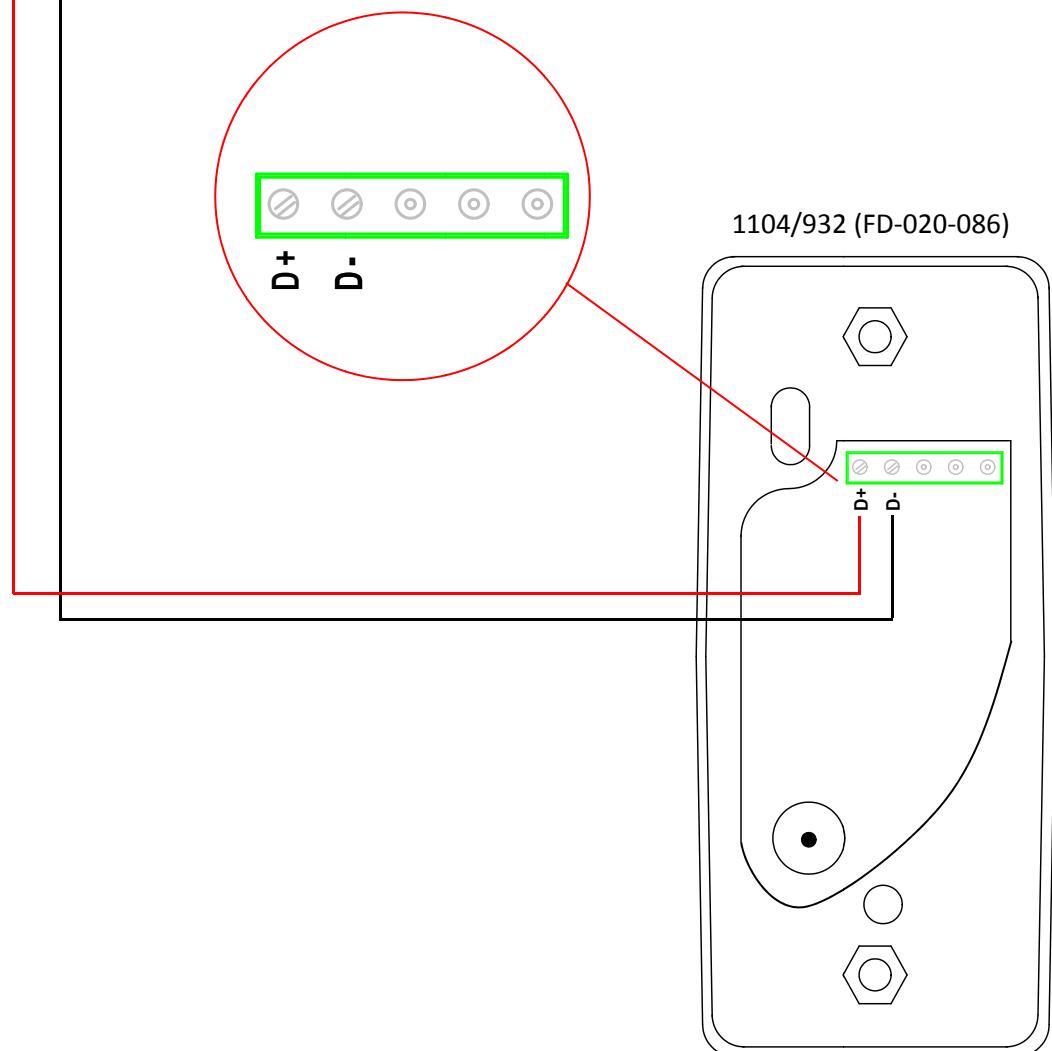
1104/941 (FD-020-191) RF Reciever connections
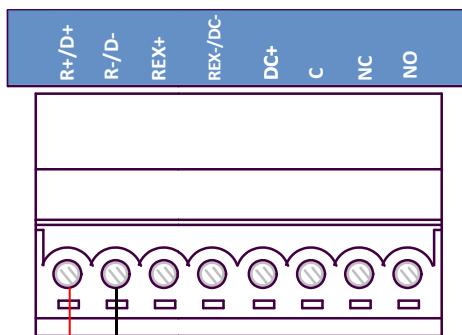
1104/921 Controller or
1104/926 2-Reader expansion card

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO

1104/941 (FD-020-191)

A- A+

+/~ -/~   B1+ 0V

+/~ -/~   B1+ 0V
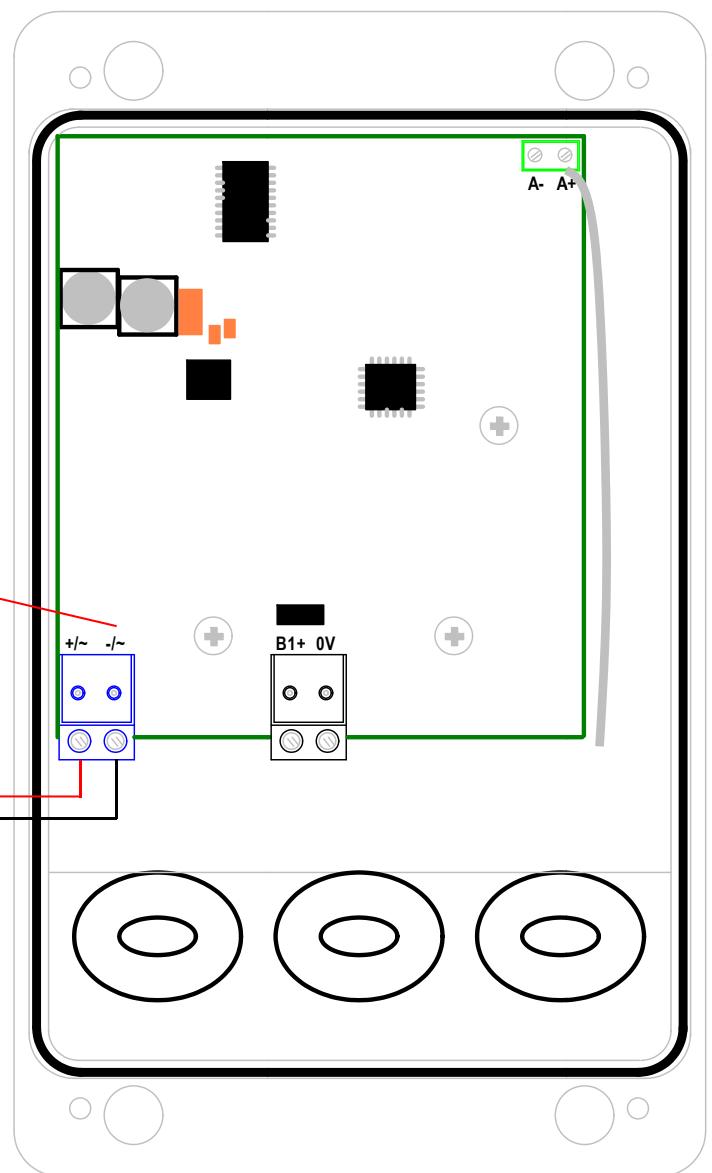
Terminals **B1+** and **0V** can be connected for example to an automation loop detector (C & NC). This means that the RF key will only work while the vehicle is over the loop. In this case remove the jumper immediately above the **B1+** and **0V** terminals. If this feature is not used then the jumper must remain in place.

1104/951 (FD-020-166) & 1104/953 (FD-020-007) & 1104/955 (FD-020-132) & 1104/956 (FD-020-176) reader connections

**1104/921 Controller or
1104/926 2-Reader expansion card**

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO

+

−

1104/951 (FD-020-166)
1104/953 (FD-020-007)
1104/955 (FD-020-132)
1104/956 (FD-020-176)

+

−
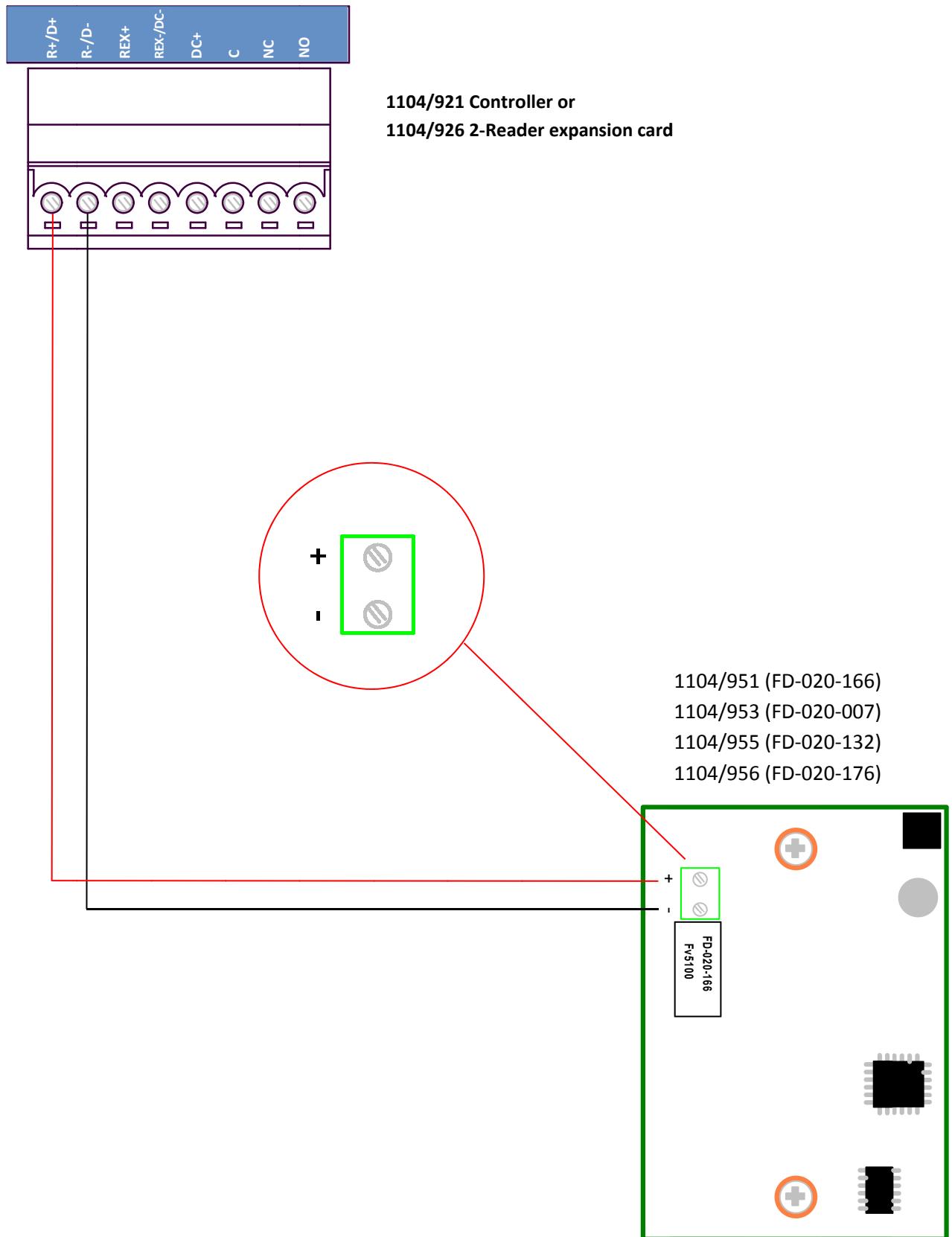
FD-020-166
Fv5100

1104/961 (FD-020-139) & 1104/962 (FD-020-156) P60 reader connections

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO
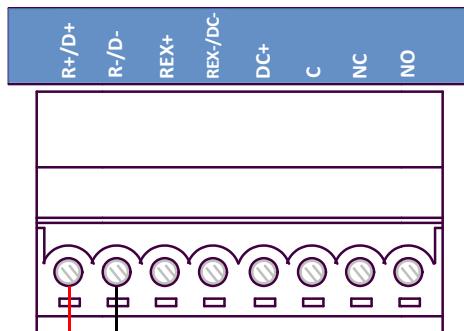
1104/921 Controller or
1104/926 2-Reader expansion card

D+
D-

1104/961 (FD-020-139)
1104/962 (FD-020-156)

D+
D-
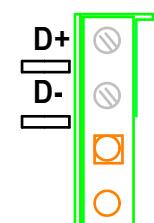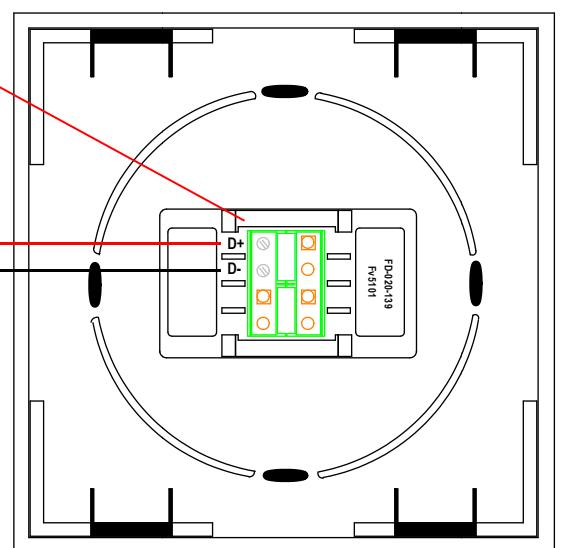
FD-020-139
Fv.51101

1104/981 (FD-020-178) Keypad connections

| R+/D+ | R-/D- | REX+ | REX-/DC- | DC+ | C | NC | NO |
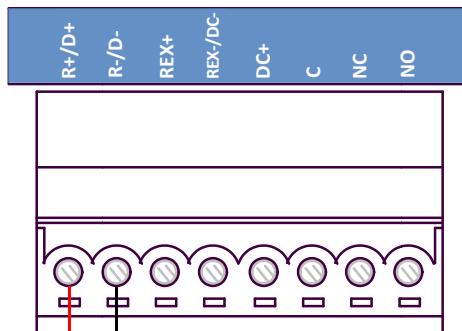
1104/921 Controller or
1104/926 2-Reader expansion card

1104/981 (FD-020-178)
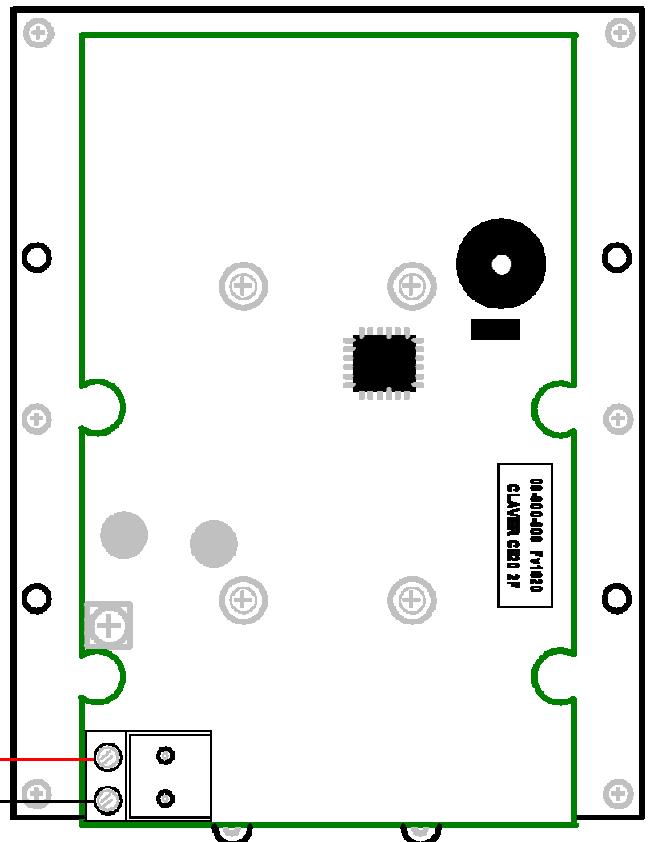
Controller connections

RS485 bus

RS485 bus using Cat5e STP – Maximum 1000M

1st controller   2nd controller   Last controller
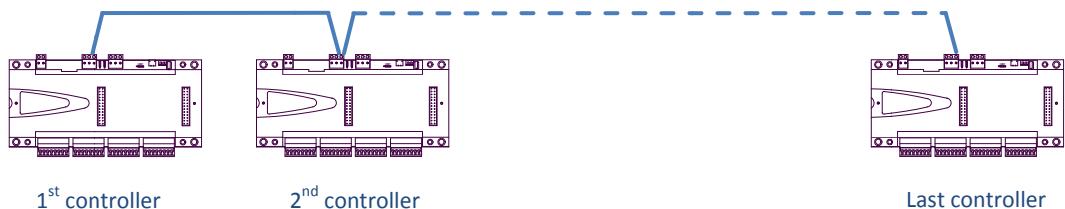
It is necessary to use a screened twisted pair cable for example Cat5e STP. The A and B connection must be made using one pair of the cable. The 120 ohm termination jumper must be inserted on the last controller and the first controller on the bus – See Fig.1

RS485 Main

Fig.1

The cable screen is connected to GND

One pair is used for connections A and B

GND B A
RS485 Main

First controller

GND B A
RS485 Main

GND B A
RS485 Main

Last controller

120 ohm termination must be ON in the controllers at either end of the bus

RS485 Aux

120 ohm termination must be ON in the first controller of the RS485 Aux bus

GND A B
RS485 Aux

First controller

First Expander (I/O Module)

Last Expander (I/O Module)

120 ohm termination resistor must be fitted in the last expander of the Aux bus

Note that expanders (I/O Modules) do not have termination jumpers, and so it is necessary to fit a 120 ohm resistor to the last expander in line.

Reader, exit switch and door contact

R+/D+   R-/D-   REX+   REX-/DC-   DC+   C   NC   NO

1104/921 Controller or
1104/926 2-Reader expansion card

Door contact

Com
N.O.

PRESS

TO EXIT

Com
N.O.
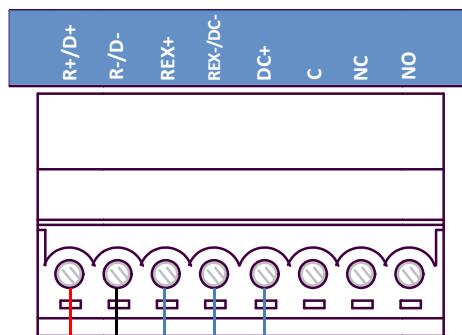
D+
D-
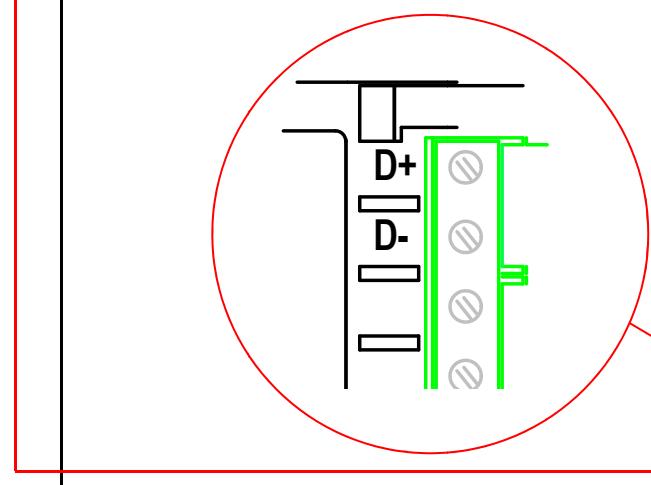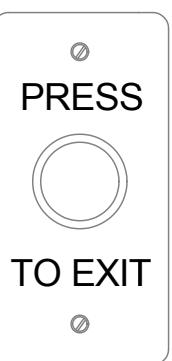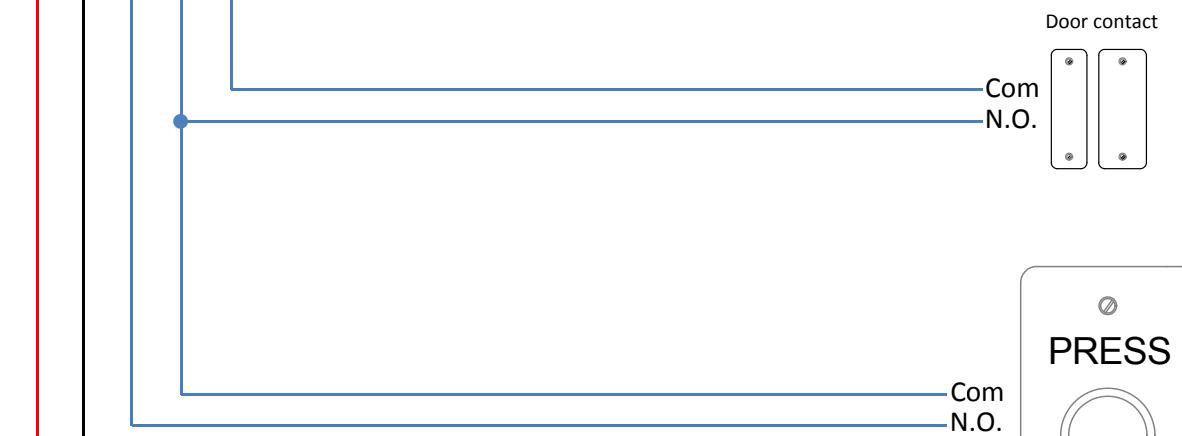
Connection example
showing 'P60' type reader
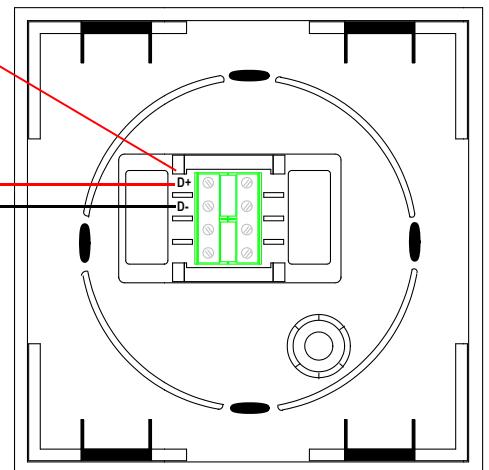
Fail safe (fail open) electric release

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO
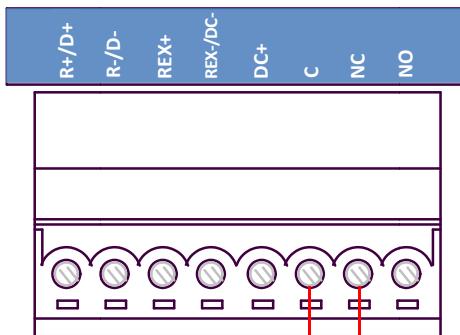
1104/921 Controller or
1104/926 2-Reader expansion card

iPassan readers are supplied with a varistor which must be installed as close as possible to the electric release or maglock connections. Failure to fit this component can damage the controller and automatically invalidates the controller warranty.

Power supply

+V

0V

Varistor

+V

0V
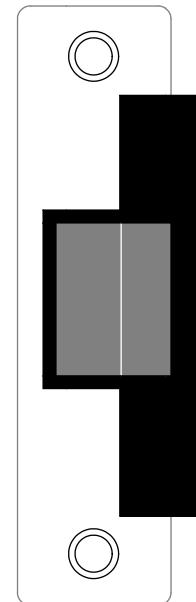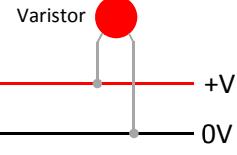
Fail secure (fail locked) electric release

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO
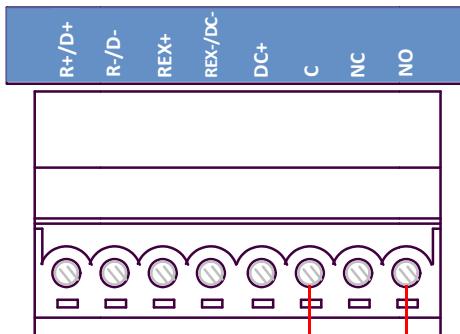
1104/921 Controller or
1104/926 2-Reader expansion card

Power supply

+V

0V

Varistor

+V

0V
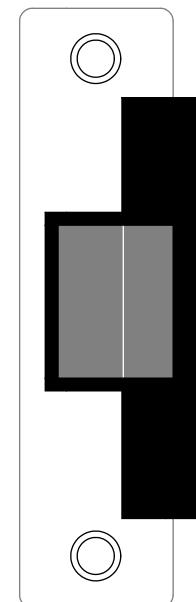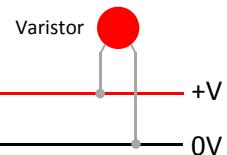
Maglock with double pole exit switch and break glass

Power supply

1104/921 Controller or
1104/926 2-Reader expansion card

R+/D+ R-/D- REX+ REX-/DC- DC+ C NC NO

Varistor

+V

0V

+V

0V

N.C.

Com

EMERGENCY
DOOR RELEASE

Com

N.O.

N.C.

Com

PRESS

Com

N.O.

TO EXIT

Notes

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