

AC-825IP

Networked Controller

Installation & User Guide



1. Introduction

The AC-825IP is an advanced networked access controller and is the backbone of a medium-scale to high-scale security system that can handle up to 100,000 users and 500,000 events.

Each AC-825IP access control unit supports up to 6 doors (In/Out), each with 2 inputs and 1 output, and includes four additional auxiliary inputs and two auxiliary outputs.

The number of supported doors, inputs, and outputs can be increased by using the onboard 10-pin expansion slot to connect any of the following expansion boards:

- R-805 – 16 outputs
- S-805 – 16 inputs
- D-805 – 4-door expansion
- P-805 – 16 inputs and 8 outputs

The system currently supports 12 extension boards via RS-485 with Open Supervised Device Protocol (OSDP), of any kind, in addition to the expansion board mounted on top of the AC-825IP panel. Four additional auxiliary inputs and two auxiliary outputs are also on board.



AxTraxNG supports 4 Wiegand and 2 OSDP V1 plus up to 12 expansions.

AxTraxPro supports 4 Wiegand and 2 OSDP V2 plus up to 12 expansions or 6 OSDP V2 devices.

Driven by Rosslare's powerful, flexible, and easy to use AxTraxNG™ or AxTraxPro™ Access Control Management software, the system provides an ideal, modular, and expandable solution for commercial and institutional needs. It provides seamless integration with Rosslare's UL Listed range of RFID proximity, PIN, Proximity & PIN, smart card, and biometric readers with Rosslare's selection of RFID credentials.

The AC-825IP is ready for installation with a mountable and lockable metal enclosure (ME-1515) integrated with a switch, power management board/charger, sounder, and control panel.

Using an onboard Ethernet TCP/IP, multiple local or remote site door subnetworks can connect to the AxTraxNG/AxTraxPro Access Control Management Software.

The communication between AxTraxPro and the AC-825IP control panel uses AES 256-bit symmetric data encryption to make sure the data is secure.



The onboard Ethernet TCP/IP was evaluated by UL as a standalone unit and is used for programming use only.

The AC-825IP platform consists of the following components:

- AC-825IP networked access controller
- ME-1515 metal enclosure with a detachable illumination bar
- Up to 4 A power management board
- VAC/VDC power switch
- Terminal block removal tool
- 12 x 2.2 kΩ and 12 x 8.2 kΩ resistors for the supervised inputs

1.1. Open Supervised Device Protocol

OSDP allows connecting control panels with various peripheral devices (card readers, control panels, and other security management systems) while unlocking the potential of the onboard computing resources within the system.



Any device that is connected to the AC-825IP panel via RS-485 must have a unique serial address.

1.1.1. OSDP-SC

The AC-825IP supports SIA Open Supervised Device Protocol (OSDP V2) including OSDP-SC (secure channel). OSDP-SC is configured with the AxTraxPro Access Control Management Software.



AxTraxPro only supports the AC-825IP controller with VG MCU.

1.2. Compatible Readers

The AC-825IP access control unit provides support for most of the Wiegand formats, such as 26-bit, 30-bit, 32-bit, 35-bit, and 36-bit, as well as any OSDP readers that may be connected serially to the AC-825IP via RS-485 interface.



Supports UL Listed Rosslare readers. UL Listed OSDP readers should be used with the OSDP port of the AC-825IP.

1.3. Compatible Peripheral Devices

The AC-825IP is compatible with peripheral devices that support SIA standard OSDP V1, OSDP V2 (including secure channel).

2. Technical Specifications

2.1. ME-1515 Enclosure

ELECTRICAL SPECIFICATIONS	
Enclosure SMPS	Input: 100 to 240 VAC, 1.6 A, 50–60 Hz, switch mode power management board C13 power cord
	Output: 12 VDC, 4 A
PCBA Input Power	15 VDC, 2 A, regulated power management board
Backup Battery (sold separately)	12 V sealed lead acid (SLA) up to 7 Ah, IEC62133
Relay Outputs	5 A DC, 150 W maximum
Auxiliary Outputs	12 VDC, 1.2 A typical (1.5 A max.)
Fuse	250 V, 2.5 A
OPERATIONAL SPECIFICATIONS	
Relays 5 A, Form-C	6
Supervised Inputs	12
Readers (Wiegand Format)*	4
Readers (OSDP Format)*	2
Expansion Ports	1
Connectivity	TCP/IP, OSDP
OPERATIONAL SPECIFICATIONS (AC-825IP Only)	
Capacity	Up to 100,000 users
History Event Log Size	Up to 500,000 entries
Time Zones and Groups	256 multi-segment time zones, 64 holidays – each holiday can be multiple days Practically unlimited amount of access groups
Special Features with AxTraxNG/AxTraxPro Control Management Software	Interlock, first-person delay, auto-relock, scheduled outputs operation, 4 programmable site codes, extended unlocked time, fully interconnectedness, car parking management, antipassback (per reader, between readers)
Security Modes	Normal and Secure
* AxTraxNG supports 4 Wiegand and 2 OSDP V1 plus up to 12 expansions.	
* AxTraxPro supports 4 Wiegand and 2 OSDP V2 plus up to 12 expansions or 6 OSDP V2 devices.	
ENVIRONMENTAL SPECIFICATIONS	
Operating Temp. Range	-5°C to 50°C (23°F to 122°F)
Storage Temp. Range	-25°C to 50°C (-13°F to 122°F)
Operating Humidity Range	0 to 85% (non-condensing)

2.2. ME-1515 Enclosure

MECHANICAL SPECIFICATIONS	
Enclosure Dimensions (H x W x D)	346 x 404 x 101 mm (13.6 x 15.9 x 4.0 in.)
Enclosure Weight*	4.6 kg (10.1 lb)
PCBA Dimensions (H x W)	224 x 164 mm (8.8 x 6.46 in.)
PCBA Weight	400 g (14.1 oz)
Backup Battery Dimensions (H x W x D)	95 x 150 x 65 mm (3.7 x 5.9 x 2.6 in.)
Fuse Dimensions (H x W)	20 x 5 mm (0.8 x 0.2 in.)

* For weight purposes, the ME-1515 enclosure includes the metal box, AC input, DC output and LED bar.

2.3. Expansions for AC-825IP

Specification	R-805	S-805	D-805	P-805
Relays 5 A, Form-C	16	N/A	4	8
Supervised Inputs	N/A	16	8	16
Readers (Wiegand format)	N/A	N/A	4	N/A
Connectivity	OSDP*			

ENVIRONMENTAL SPECIFICATIONS	
Operating Temperature Range	-5°C to 50°C (23°F to 122°F)
Storage Temperature Range	-25°C to 50°C (-13°F to 122°F)
Operating Humidity Range	0 to 85% (non-condensing)

MECHANICAL SPECIFICATIONS			
Weight	230 g (8.1 oz)	150 g (5.3 oz)	200 g (7.1 oz)
Dimensions (H x W x D)	178 x 87 x 30 mm (7.0 x 3.4 x 1.2 in.)		

* AxTraxNG supports 4 Wiegand and 2 OSDP V1 plus up to 12 expansions.

* AxTraxPro supports 4 Wiegand and 2 OSDP V2 plus up to 12 expansions or 6 OSDP V2 devices.

3. AC-825IP Panel Setup

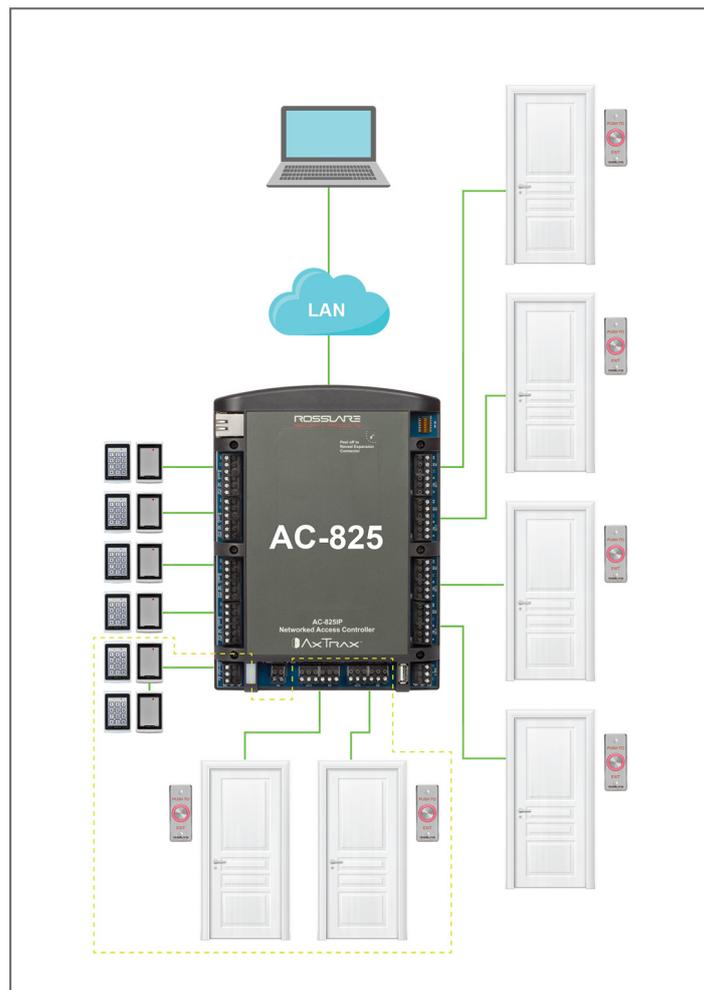


The unit should only be installed by a professional service person.

Each AC-825IP panel controls 6 or 10 doors (with the D-805) (3 or 5 doors in double reader per door mode). The panels connect in a network and are controlled by a central server computer, running the AxTraxNG/AxTraxPro Access Control Management Software.

[Figure 1: Sample AC-825IP Configuration](#) shows an example setup for a network of AC-825IP access control panels.

Figure 1: Sample AC-825IP Configuration



The highlighted area indicates the use of OSDP readers and their I/O connectivity.

Bushings are needed for any conductors leaving the enclosure through the provided openings.

3.1. Mounting

The AC-825IP control panel either comes pre-mounted within the ME-1515 enclosure, which then needs to be wall mounted, or you can mount the control panel directly onto a wall using the DIN rail enclosure.

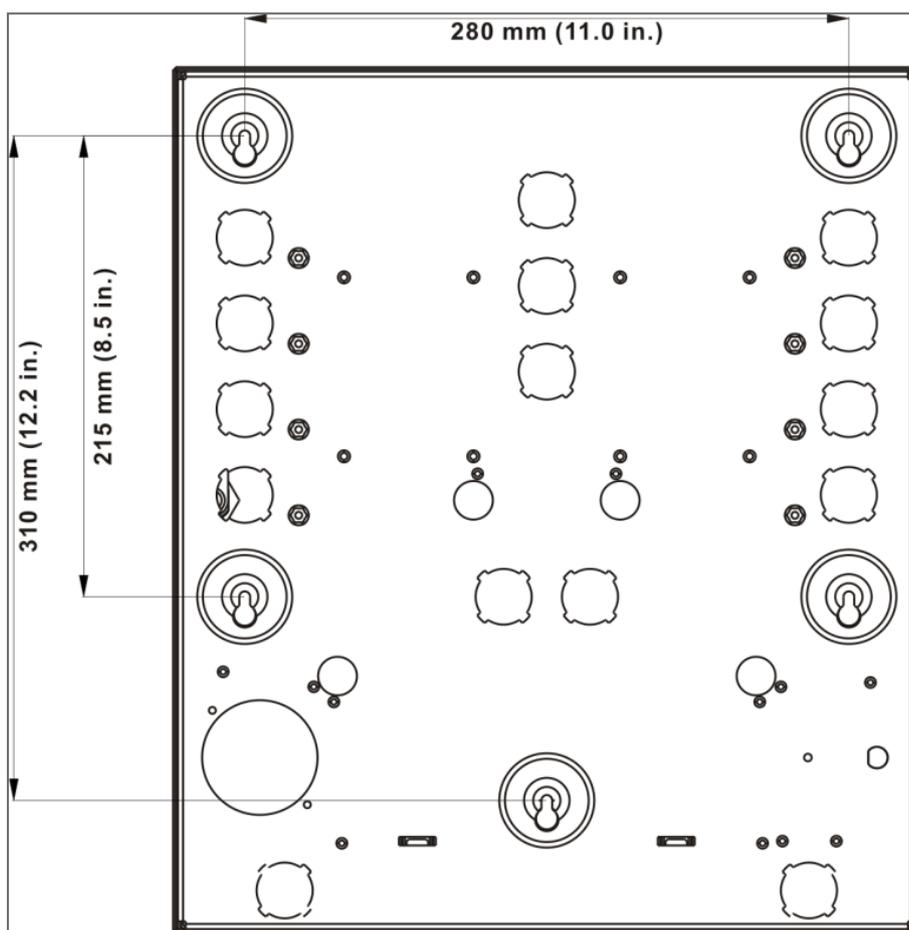
3.1.1. Mounting the ME-1515 Enclosure

When selecting an area for mounting, ensure the location is flat.

To mount the ME-1515:

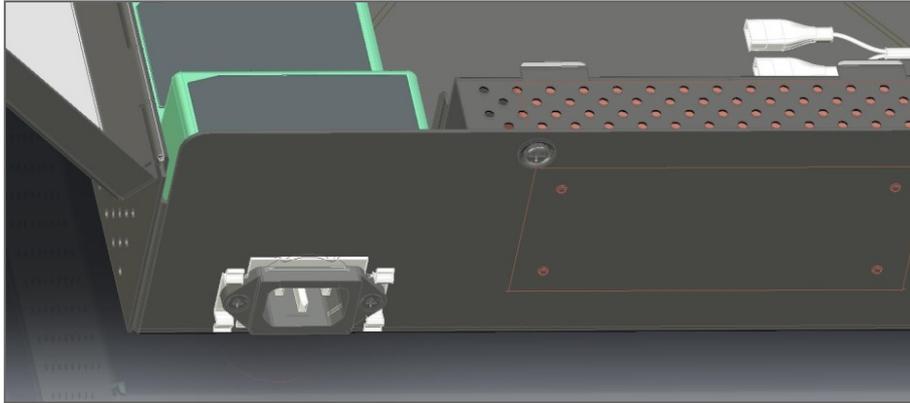
1. Using the locations shown in [Figure 2: ME-1515 Drill Holes](#), drill holes in the wall.

Figure 2: ME-1515 Drill Holes



2. Insert masonry anchors into the drilled holes.
3. Mount the enclosure onto the wall.
4. Plug in a C13 power cord (female) into the C14 (male) slot located on the bottom left of the ME-1515 casing.

Figure 3: C14 Socket



Optionally, you can add Pull-Safe™ cable locks to secure the C13 power cord (see Section [AC-825IP Panel Setup](#)).

The maximum power rating and input allowed is indicated on the cover of the AC terminal inside the enclosure.

Figure 4: Location of the Maximum Power Rating Sticker



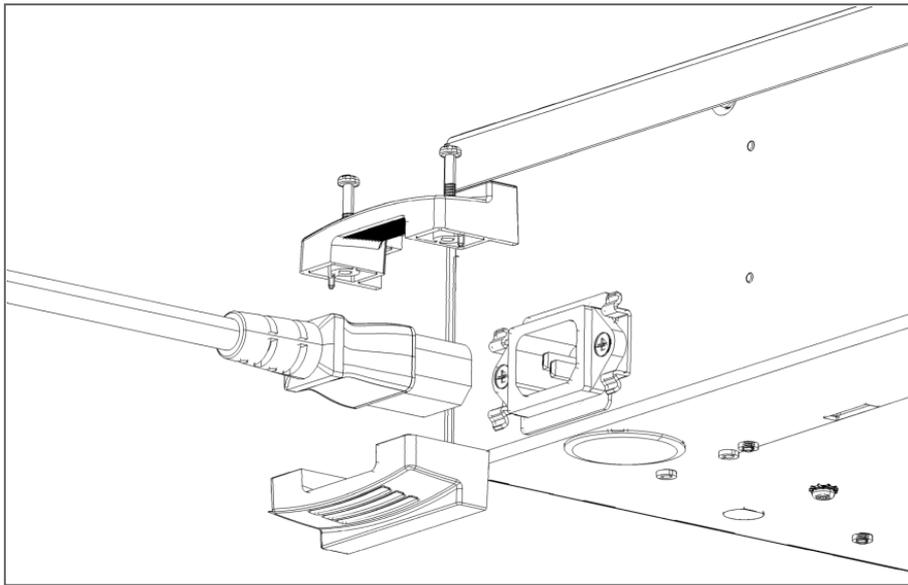
3.1.2. Connecting the Pull-Safe™ Cable Locks

If you want to add the Pull-Safe™ cable locks, you must do so prior to mounting the enclosure onto the wall.

To install the Pull-Safe cable locks:

1. With the C13 power cord plugged in to the C14 slot on the back cover of the ME-1515 enclosure, place the cable holders on either side of the power cord.

Figure 5: Attaching the Pull-Safe Cable Locks



2. Insert the screws into their designated areas and screw them in tightly.
3. Pull on the cord to check that the cord is secured.

3.1.3. Mounting using the DIN Rail

The AC-825IP control panel and its extensions can also be installed directly on a wall (without the ME-1515 enclosure) using a DIN rail and the accompanying casing for the AC-825IP panel or extension(s).

To mount using a DIN rail:

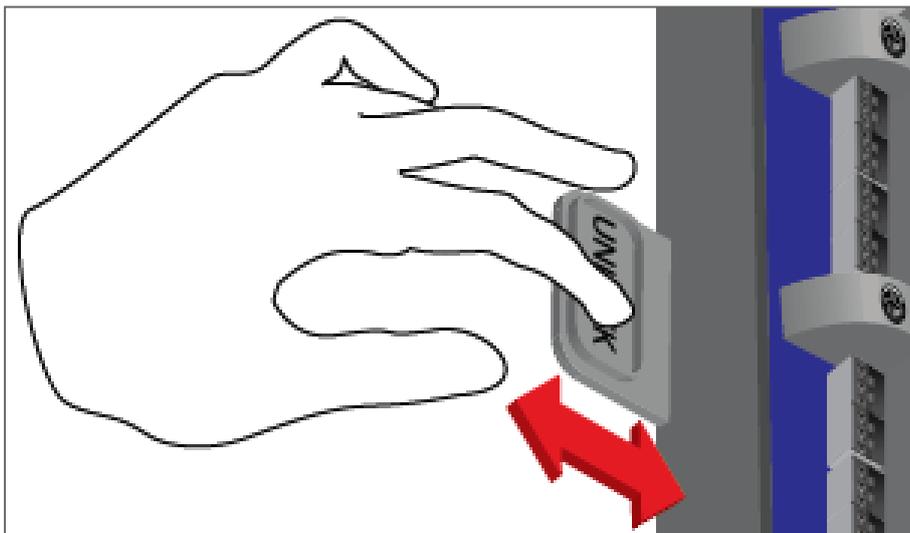
1. Attach the DIN rail to a wall in the designated area.

Figure 6: DIN Rail



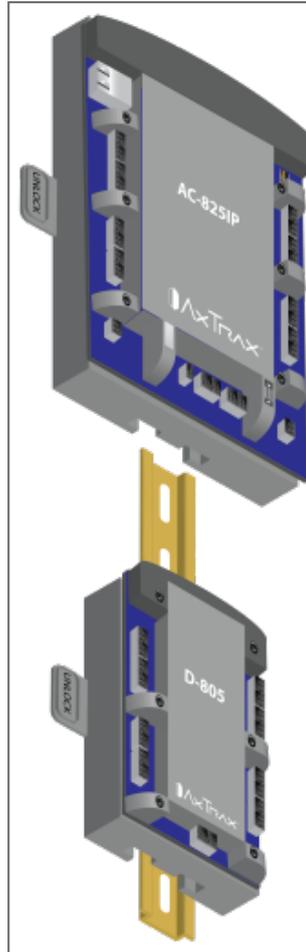
2. Once the AC-825IP panel or extension is positioned inside the casing, pull the '**UNLOCK**' handle on the left side of the casing to the left.

Figure 7: Unlocking the DIN Rail Handle



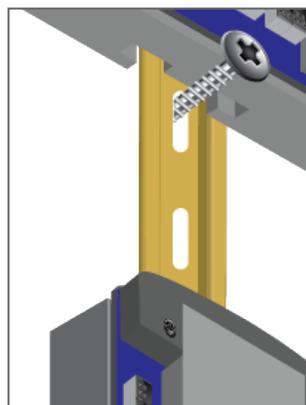
3. Position the panels and/or extensions on the DIN rail with its title facing you.

Figure 8: Positioning the Panels



4. Release the handle. The unit is secured horizontally on the DIN rail.
5. Add a kind of stopper or screw underneath each unit so the unit does not slide down the DIN rail.

Figure 9: Adding a Screw as a Stopper

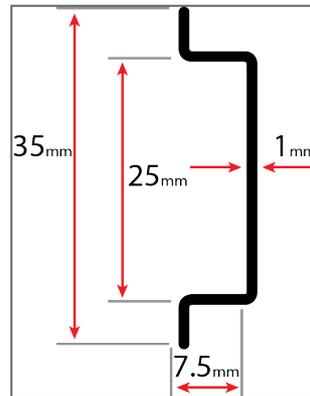




If you have multiple units along a DIN rail, we suggest having a 2-cm gap between each unit.

We suggest installing the DIN rail inside an electrical cupboard. We recommend using the EN 50022 standard with the following dimensions as shown in [Figure 10: DIN Rail Dimensions \(Top View\)](#).

Figure 10: DIN Rail Dimensions (Top View)



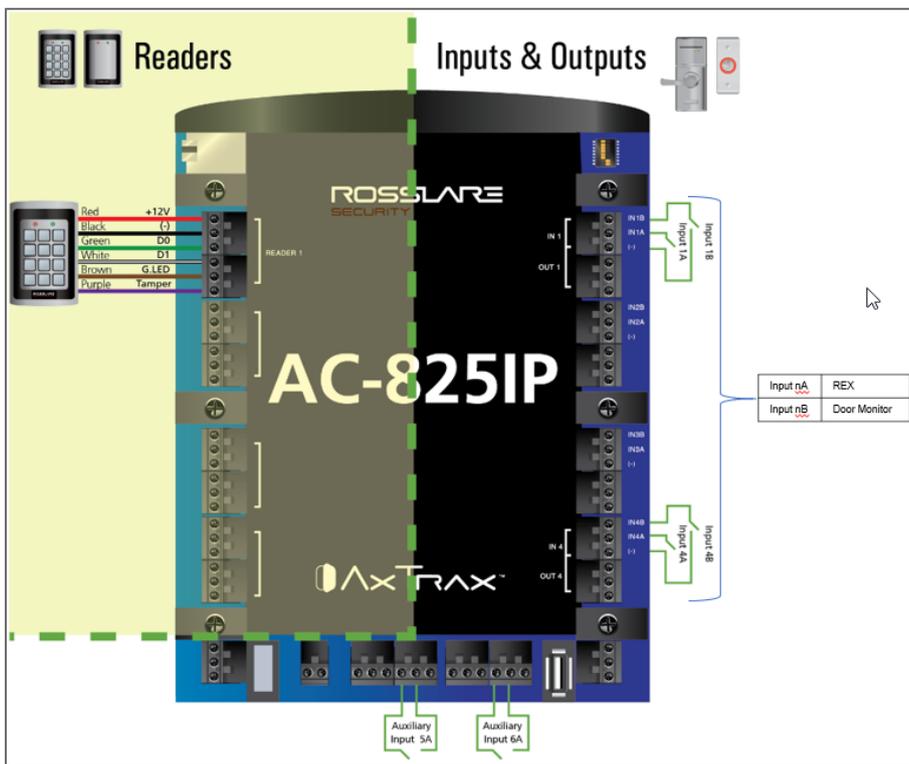
Each unit needs to be connected to a power supply. For further information, please refer to the electrical specifications (Chapter [Technical Specifications](#)).

3.2. Input Wiring – Supervised Inputs

When wiring the AC-825IP for supervised inputs, resistors should be placed on the input switch and not on the terminal block.

Figure 11: Input Wiring – Supervised Inputs presents a view of the inputs and their connection options.

Figure 11: Input Wiring – Supervised Inputs



For more details on reader connectivity, refer to [Figure 16: Reader's Connectivity Mode - Standard](#) and [Figure 17: Reader's Connectivity Mode - OSDP Only Mode](#).

3.3. Output Wiring

The following figures illustrate wiring for two main types of 12 VDC electrical release mechanisms. Other electrical devices can be switched using the voltage free relay contacts:

Figure 12: Door Lock – Failed Close

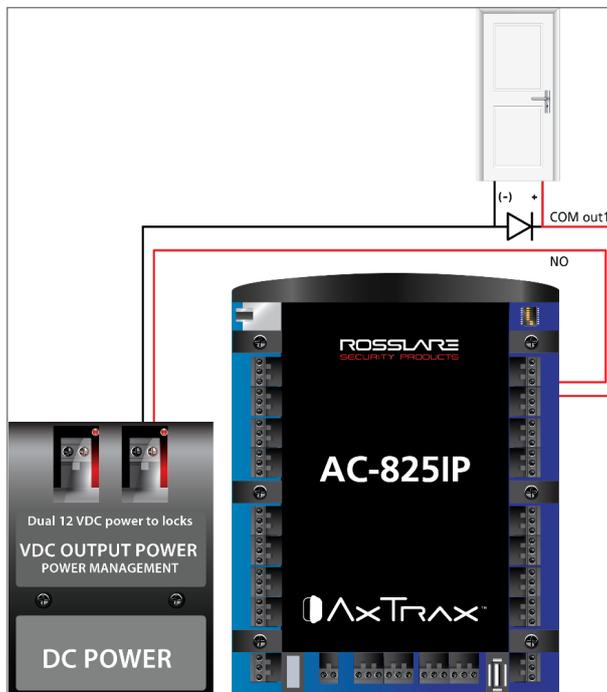
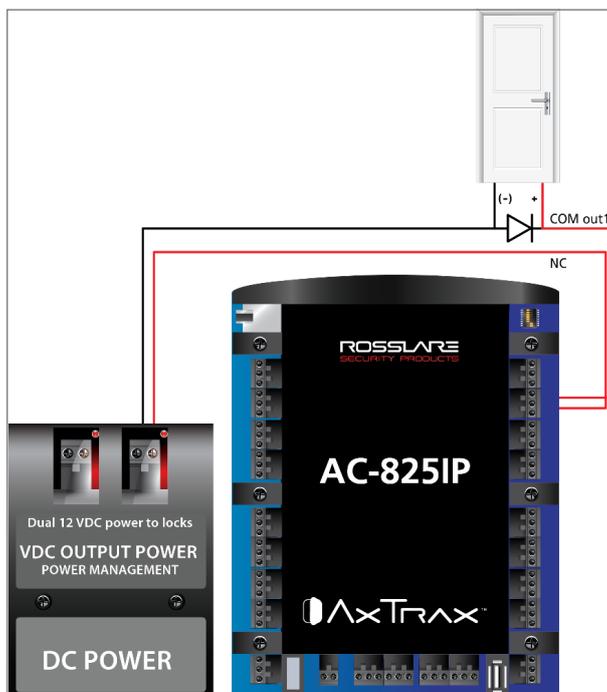


Figure 13: Door Lock – Failed Open



3.4. Power Management

Figure 14: AC-825IP in the ME-1515 Enclosure illustrates the AC-825IP ACU within the ME-1515 enclosure. For power back up add a 12 VDC 7AH lead acid backup battery in case the power management board fails (see [Technical Specifications](#)). If the main input is 12 VDC, wire it to the power management board, which has a load rating of up to 4 A for lock connectivity (for battery installation instructions, please refer to [Mounting](#)). If 4 A is not sufficient, an external power supply should be added according to the electrical requirements. For more information, refer to [Input and Output Connections](#).

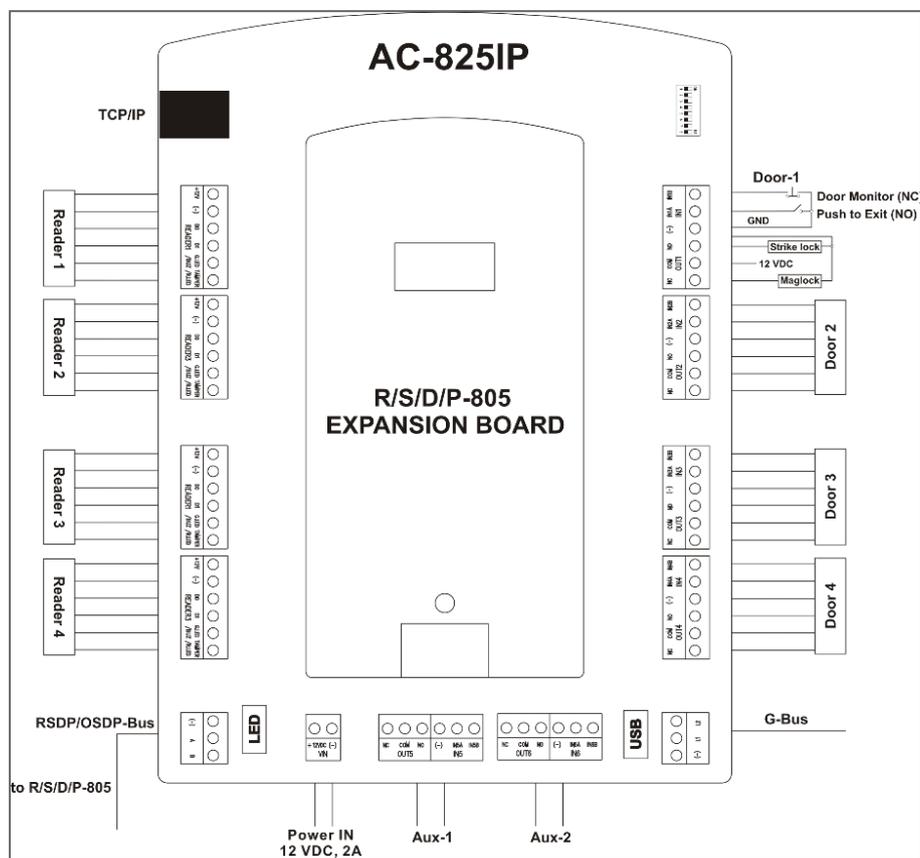
Figure 14: AC-825IP in the ME-1515 Enclosure



3.5. AC-825IP Wiring Ports

The following figure presents a detailed view of the access control panel with all its wiring communications.

Figure 15: AC-825IP Wiring Communications

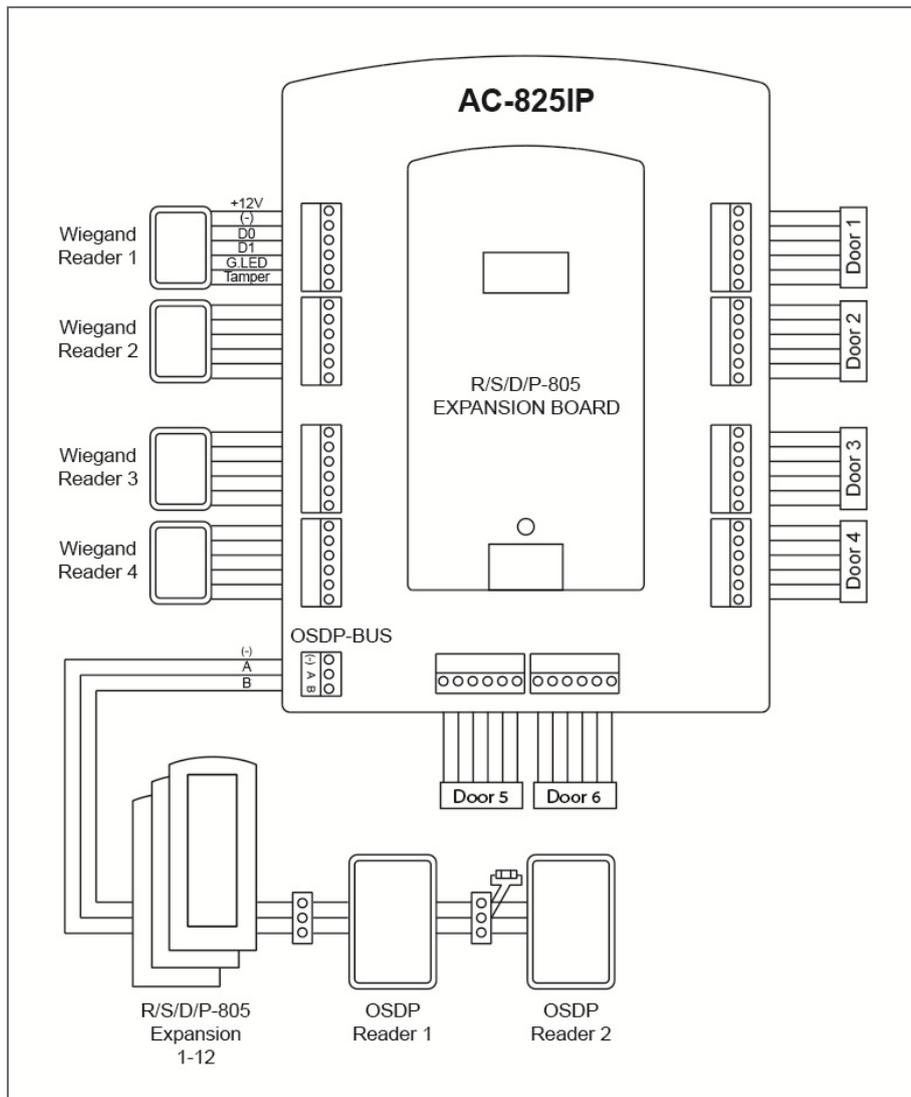


The AC-825IP can work with the AxTraxPro access control management system in two peripheral connectivity modes:

1. Standard mode - each AC-825IP controller can be connected with up to 4 Wiegand readers, 2 OSDP readers, and 12 R/S/D/P-805 expansion boards.
2. OSDP only mode - each AC-825IP controller can be connected with up to 6 OSDP readers

3.5.1. Peripheral Connectivity – Standard Mode

Figure 16: Reader's Connectivity Mode - Standard



If OSDP readers are not in use, the AUX1 and AUX 2 are additional auxiliary inputs and auxiliary outputs. Refer to [Technical Specifications](#) for maximum power ratings and further information.



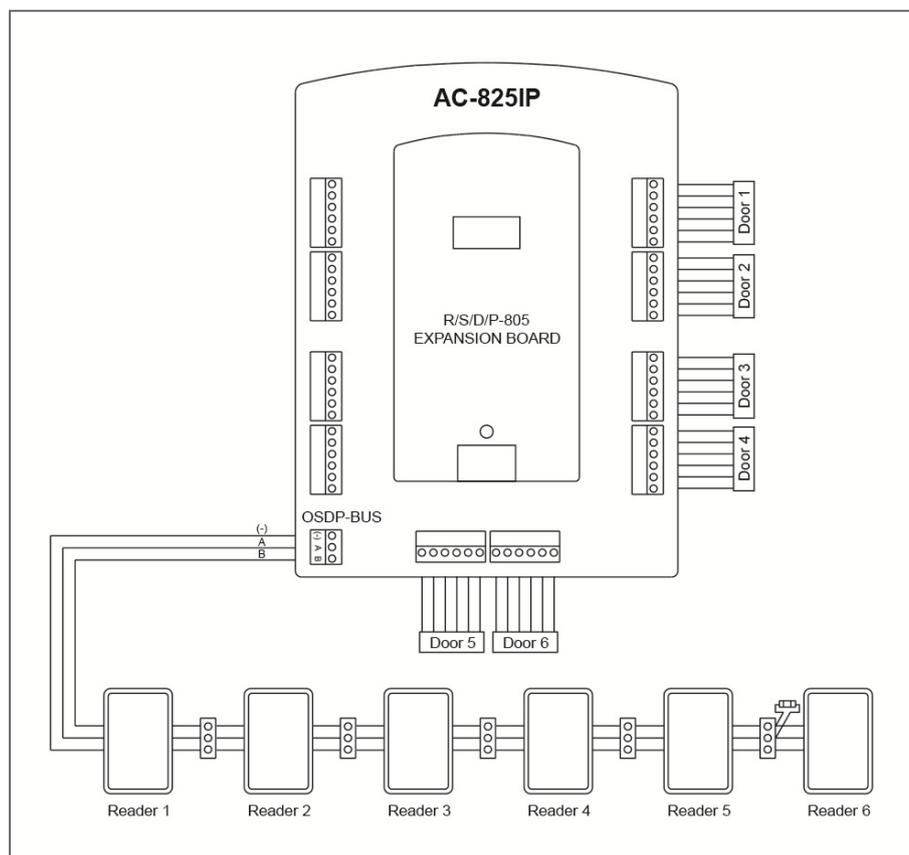
The USB G-bus port currently does not operate.

Scenario	Setting
One Reader per Door	Reader 1 - Door 1
	Reader 2 - Door 2
	Reader 3 - Door 3
	Reader 4 - Door 4

Scenario	Setting
Two Readers per Door	Reader 1 and Reader 2 - Door 1
	Reader 3 and Reader 4 - Door 2

3.5.2. Peripheral Connectivity – OSDP Only Mode

Figure 17: Reader's Connectivity Mode - OSDP Only Mode



The system can support up to 6 OSDP connections using the OSDP serial bus (RS-485), see [Figure 17: Reader's Connectivity Mode - OSDP Only Mode](#). With this option, the peripheral devices are connected using a daisy chain connection.

Before connecting the peripheral devices, the AxTraxPro Access Control Management Software must configure the AC-825IP panel as given below. It is also necessary to set the addresses in the reader.

To define the OSDP mode:

1. On the list of Methods, select OSDP only, using the AxTraxPro Access Control Management Software, see the *AxTraxPro Desktop Client User Guide* for further details.

To configure the reader addresses:

1. Set the DIP switches or use a mobile app for the correct number of OSDP peripheral devices as given below.

Scenario	Address	Output
One Reader per Door	1	1
	2	2
	3	3
	4	4
	5	5
	6	6
Two Readers per Door	1+2	1
	3+4	3
	5+6	5

3.6. R/S/D/P-825 Extension Board Setup

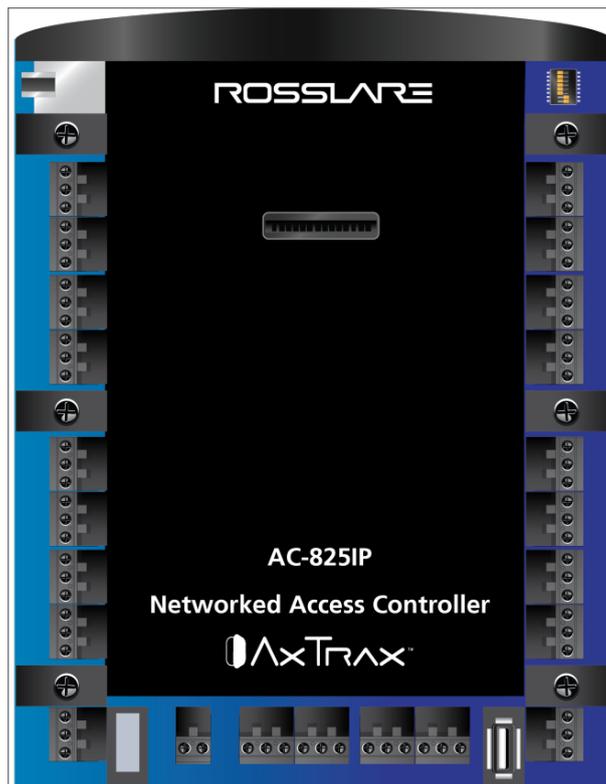
There are four types of expansion boards as follows:

- R-805 – The R-805 is an optional expansion board that adds 16 outputs to the access control panel.
- S-805 – The S-805 is an optional expansion board that adds 16 supervised inputs to the access control panel.
- D-805 – The D-805 is an optional door expansion board that adds 4 reader inputs, 4 outputs (Form C, 5 A), and 8 supervised inputs to the access control panel.
- P-805 – The P-805 is an optional expansion board that adds 16 supervised inputs and 8 outputs to the access control panel.

Each extension board can be either located inside an ME-1515 enclosure or can be installed directly on a wall using the included DIN rail attachment. Each ME-1515 can contain up to two extension boards of different types.

One extension board can also be connected to the AC-825IP control panel using the expansion slot.

Figure 18: Slot for Expansion Board Attachment



When adding an expansion board to the expansion slot of the AC-825IP panel, make sure the power to the control panel is off.

The system can support up to 12 expansion boards via OSDP.

Each ME-1515 is self-powered.

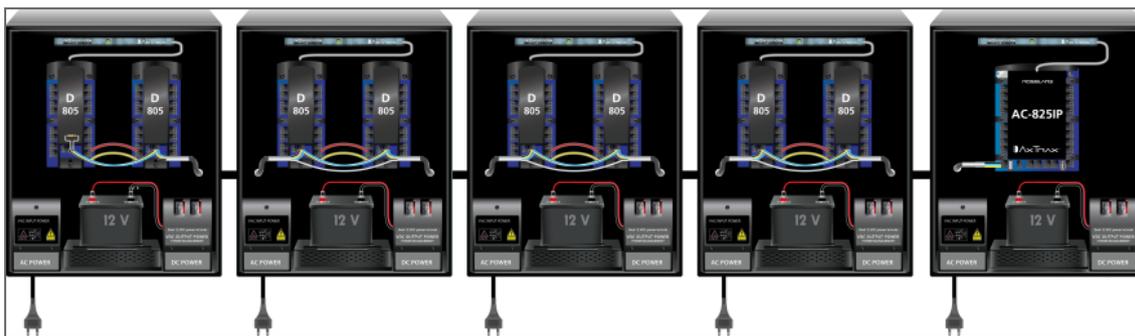
Use a daisy chain connection when multiple expansions are needed.

3.6.1. Daisy Chain System

OSDP peripheral devices such as expansion boards and readers must be connected to the AC-825IP in a daisy chain wiring scheme in which multiple devices are wired together in sequence or in a ring.

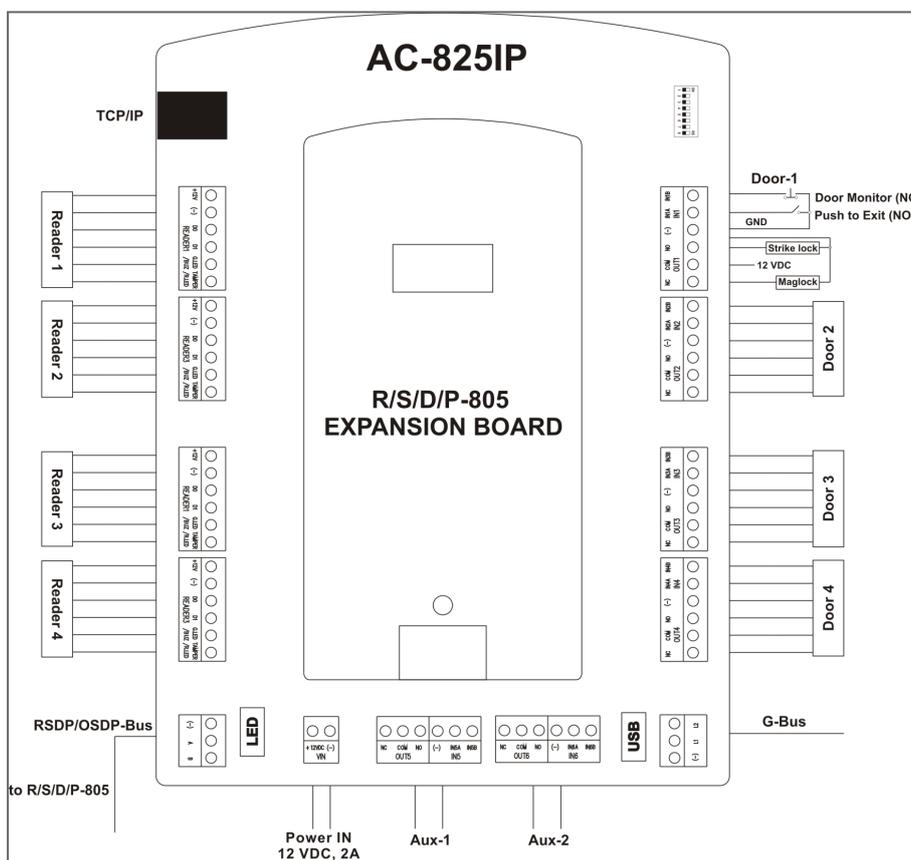
[Figure 19: Daisy Chain Setup](#) shows an example daisy chain setup for a network of one AC-825IP access control panel plus 6 expansion boards using four ME-1515 enclosures. The same connectivity is applicable also for OSDP readers.

Figure 19: Daisy Chain Setup



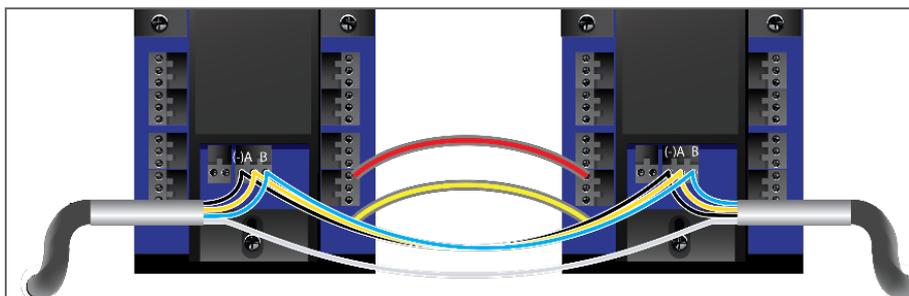
The first expansion board is connected to the AC-825IP panel using the OSDP/RSDP bus (serial bus) at the bottom left of the panel.

Figure 20: OSDP/RSDP Bus on AC-825IP Panel



Any subsequent expansions are connected to each other using the RSDP bus located the bottom center of the expansion.

Figure 21: RSDP Bus on Expansion Board



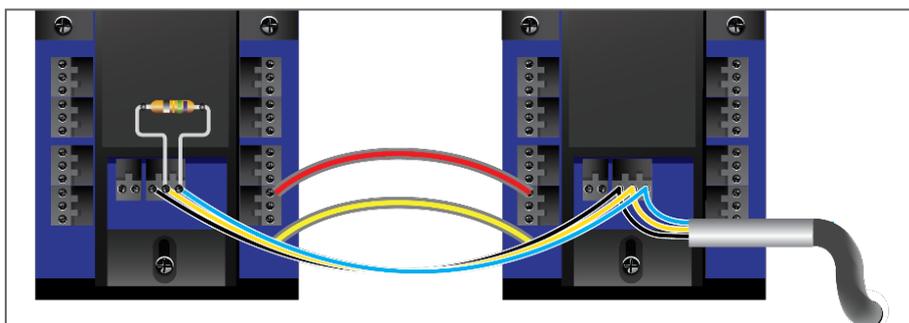
Each serial connector (A, B, and -) must be connected with its equivalent.



To connect an expansion to a panel or another expansion, you have to slide the plastic covering at the bottom of the expansion board to expose the connectors.

The RS-485 bus must be terminated at both ends of the cable with a 100-120 Ω resistor.

Figure 22: Termination with Resistor



If multi-pair twisted pair cable is used, one pair shall be used for A+ and B- signals (blue and white/blue) and one pair for GND (orange + white/orange). Unused wires should be terminated with 100 Ω resistors to ground at both ends of the cable.



The maximum distance between AC-825 to the first OSDP peripheral device is 1K. Similarly, the maximum distance between any two OSDP peripheral device units is 1 km.



The recommended cable type to be used is STP cat5 (shielded twisted pair category 5). We recommend using a 20-24-AWG cable.

3.6.2. DIP Switching



A piggybacked expansion does not have a DIP switch address.

Each expansion board has 4 switches to determine its ID in the system. Each switch can be set either up or down thus creating up to 16 combinations. However, an AC-825IP panel supports up to 12 expansions plus 2 readers unique serial addresses (readers) per panel, so only a maximum of 12 expansions plus 2 readers of the 16 serial addresses can be used at any given time.

[Table 1: Serial Address and DIP Switch Combinations](#) shows the serial address of each of these 16 combinations.

Table 1: Serial Address and DIP Switch Combinations

Serial Address	DIP Switch Setting
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	

Serial Address	DIP Switch Setting
	
	
	
	

Rosslare readers that support OSDP operation are compatible with most OSDP commands. The reader address is set using DIP switches on the back of the reader.

The DIP switch settings are as follows:

3.6.2.1. DIP Switches 1 to 4

These switches set the address of the reader for OSDP protocol.

DIP Switch 1 is MSB and DIP switch 4 is LSB. The address is the DIP switch state +1.

Examples:

- All the DIP switches in Off position, state is = 0 => address = 2 (in AxTraxNG/AxTraxPro Access Control Management Software)
- DIP switches 1, 3, 4 in On position and 2 in Off position, state is = 0x0B => address = 0x0C = 13



In every system, each board's ID must be unique.



The ID is set only in the initialization phase. The system does not synchronize if an existing board's ID is changed or if a board is added or removed. The system must be initialized to synchronize the IDs.

3.7. Readers and Cable Length

Readers are supplied with cables having a limited length. The color of the cable cover represents the cable's functionality according to the Wiegand and OSDP standards.

If you wish to extend the cable distance, make sure you use the correct cable according to the cable color.

Power to the OSDP readers is to be taken from the reader +12 V outputs.



Do not connect more than two readers per each +12 V output.



Some readers are not supplied with a cable. Please refer to the reader's manual for connecting it to the relevant reader port.



When the AC-825IP is set to Standard mode the address for the reader must be set to 13 and 14. When the AC-825IP is set to OSDP only the valid addresses can be 1-6.

The OSDP only mode is supported by AxTraxPro only.



Peripheral devices must be powered up before the AC-825IP.

Refer to the reader specifications for the maximum cable length, typically 150 m (492 ft) with an 18 AWG cable.

4. Input and Output Connections

This chapter describes the AC-825IP access control panel's input and output connections.

4.1. Input Types

There are four input types:

- Normally Closed (N.C.)
- Normally Open (N.O.)
- Single EOL resistor
- Double EOL resistor

Supervised inputs have three states:

- Normal
- Abnormal
- Trouble

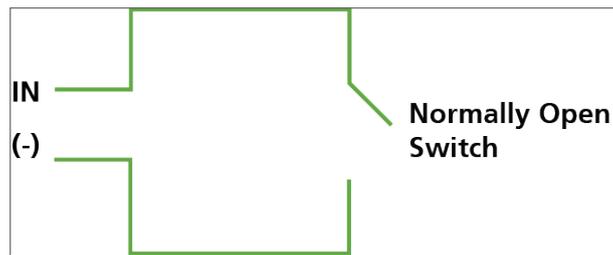
The Trouble state is caused by either tampering with the input circuit or by a faulty hardware installation. Once an input is configured as a supervised input, add a resistor of 2.2 k Ω , 8.2 k Ω , or both on the input circuit. See the following diagrams.

4.1.1. Normally Open Input Connection

A Normally Open Input has 2 states:

- Switch Open – Normal State:
Loop resistance = Infinite (open circuit)
- Switch Closed – Abnormal State:
Loop resistance = 0 (short circuit)

Figure 23: Normally Open Input Connection

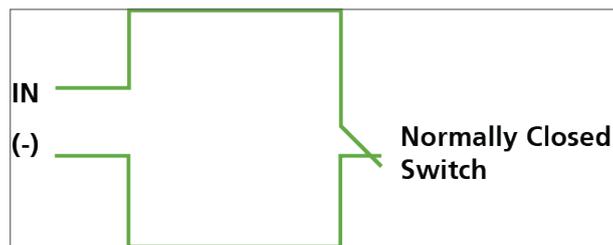


4.1.2. Normally Closed Input Connection

A Normally Closed Input has two states:

- Switch Closed – Normal State:
Loop resistance = 0 (short circuit)
- Switch Open – Abnormal State:
Loop resistance = Infinite (open circuit)

Figure 24: Normally Closed Input Connection



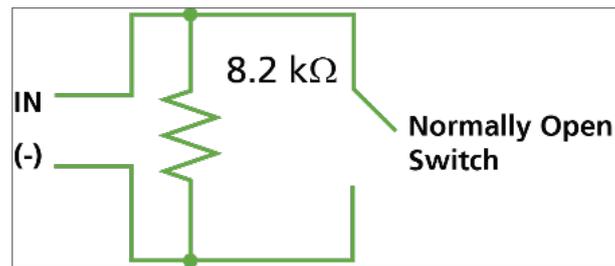
4.1.3. Normally Open Supervised Single EOL Resistor Input Connection

Connect an 8.2 kΩ resistor in parallel to the input switch contacts.

A Normally Open Supervised Input has 3 states:

- Switch Open – Normal State:
Loop resistance = 8.2 kΩ
- Switch Closed – Abnormal State:
Loop resistance = 0 (short circuit)
- Open circuit across input terminals – Trouble State:
Loop resistance = Infinite (open circuit).

Figure 25: Normally Open Supervised Input (Single Resistor)



4.1.4. Normally Open Supervised Double EOL Resistor Input Connection

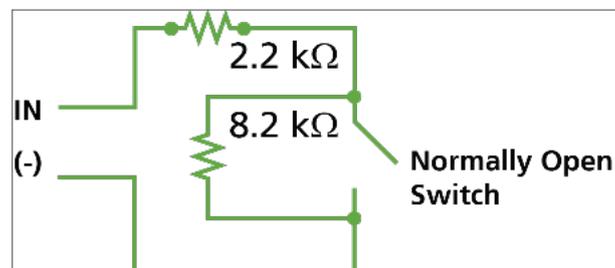
Connect a 2.2 kΩ resistor in series to the input switch contacts.

Connect an 8.2 kΩ resistor parallel to the input switch contacts.

A Normally Open Supervised Input has 3 states:

- Switch Open – Normal State:
Loop resistance = 10.4 kΩ
- Switch Closed – Abnormal State:
Loop resistance = 2.2 kΩ
- Open circuit (infinite loop resistance) or short circuit (0 resistance) across input terminals – Trouble State

Figure 26: Normally Open Supervised Input (Double Resistor)



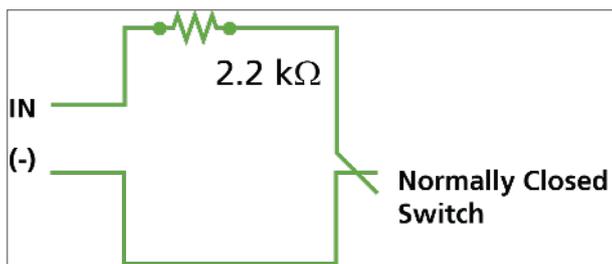
4.1.5. Normally Closed Supervised Single EOL Resistor Input Connection

Connect a 2.2 kΩ resistor in series to the input switch contacts.

A Normally Closed Supervised Input has 3 states:

- Switch Closed – Normal State:
Loop resistance = 2.2 kΩ
- Switch Open – Abnormal State:
Loop resistance = Infinite (open circuit)
- Short circuit across input terminals – Trouble State:
Loop resistance = 0 (short circuit)

Figure 27: Normally Closed Supervised Input (Single Resistor)



4.1.6. Normally Closed Supervised Double EOL Resistor Input Connection

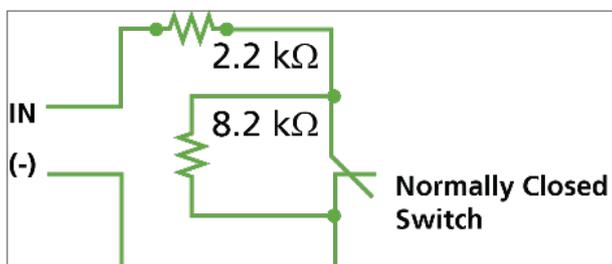
Connect a 2.2 kΩ resistor in series to the input switch contacts.

Connect an 8.2 kΩ resistor parallel to the input switch contacts.

A Normally Closed Supervised Input has 3 states:

- Switch Closed – Normal State:
Loop resistance = 2.2K
- Switch Open – Abnormal State:
Loop resistance = 10.4 kΩ
- Open circuit (infinite loop resistance) or short circuit (0 resistance) across input terminals – Trouble State

Figure 28: Normally Closed Supervised Input (Double Resistor)



4.2. Inputs Description

4.2.1. Request-to-Exit Button (REX) Input

Use the REX Input to open a door directly. Typically, the REX input is connected to a Normally Open push button that is located inside the premises. The push button is generally located in an easy-to-access position and opens a door without reading any credential.

Scenario	Setting
Two Readers per Door	Door 1 – IN 1A
	Door 2 – IN 3A
	Door 3 – IN 5A

Scenario	Setting
One Reader per Door	Door 1 – IN 1A
	Door 2 – IN 2A
	Door 3 – IN 3A
	Door 4 – IN 4A
	Door 5 – IN 5A
	Door 6 – IN 6A

REX Inputs functions when using D-805:

Scenario	Setting
Two Readers per Door	Door 4 – IN 1C
	Door 5 – IN 3C
One Reader per Door	Door 7 – IN 1C
	Door 8 – IN 2C
	Door 9 – IN 3C
	Door 10 – IN 4C

4.2.2. Door Monitor Input

The Door Monitor Input typically connects to a Normally Closed door sensing micro-switch for door status monitoring. Using Door Monitor enables many advanced options such as door forced alarm, door held open warnings, interlocking doors and more.

Scenario	Setting
Two Readers per Door	Door 1 – IN 1B
	Door 2 – IN 3B
	Door 3 – IN 5B
One Reader per Door	Door 1 – IN 1B
	Door 2 – IN 2B
	Door 3 – IN 3B
	Door 4 – IN 4B
	Door 5 – IN 5B
	Door 6 – IN 6B

REX Inputs functions when using D-805:

Scenario	Setting
Two Readers per Door	Door 4 – IN 1D
	Door 5 – IN 3D
One Reader per Door	Door 7 – IN 1D
	Door 8 – IN 2D
	Door 9 – IN 3D
	Door 10 – IN 4D

4.2.3. General Purpose Inputs

These are free inputs that can be used for various functions. The following should be defined:

Scenario	Setting
Two Readers per Door	IN 2A
	IN 2B
	IN 4A
	IN 4B
	IN 6A
	IN 6B
One Reader per Door	(no general-purpose inputs available)

General purpose inputs are suitable for most uses. For example, they might be used to detect tampering, to activate trouble signals, or to monitor a power management board failure.

General purpose inputs functions when using S-805 or D-805:

Unit	Expansions
S-805	IN 1S to IN 16S
P-805	IN 1P to IN 16P
D-805	IN 2C
	IN 2D
	IN 4C
	IN 4D

4.3. Outputs

Rosslare Security recommends the use of suppression diodes for all outputs that activate an inductive load.

4.3.1. Door Lock

There are two types of door locking devices:

- Fail open (fail secure)
- Fail close (fail safe)

The following should be defined:

Scenario	Setting
Two readers per door	Door 1 – OUT 1
	Door 2 – OUT 3
	Door 3 – OUT 5

Scenario	Setting
One reader per door	Door 1 – OUT 1
	Door 2 – OUT 2
	Door 3 – OUT 3
	Door 4 – OUT 4
	Door 5 – OUT 4
	Door 6 – OUT 6

Door outputs when using D-805:

Scenario	Setting
Two Readers per Door	Door 1 – OUT 1
	Door 2 – OUT 3
	Door 3 – OUT 5
	Door 4 – OUT 1D
	Door 5 – OUT 3D
One Reader per Door	Door 1 – OUT 1
	Door 2 – OUT 2
	Door 3 – OUT 3
	Door 4 – OUT 4
	Door 5 – OUT 5
	Door 6 – OUT 6
	Door 7 – OUT 1D
	Door 8 – OUT 2D
	Door 9 – OUT 3D
	Door 10 – OUT 4D

The output can sink current from any power management board (see [AC-825IP Panel Setup](#)).



For UL installations, the installer must configure the system as fail-safe to comply with NFPA (National Fire Protection Association) regulations.

4.4. Card Readers and Keypads

Each access control panel can be connected to a maximum of 6 readers (or 10 readers when using D-805).

A keypad is required for any reader mode that requires PIN code entries, such as "Card or PIN", "PIN Only" or "Card and PIN (Secured mode)".

When connecting a reader, the following should be defined:

Scenario	Setting
Two Readers per Door	Door 1 – Reader 1 IN/OUT
	Door 1 – Reader 2 IN/OUT
	Door 2 – Reader 3 IN/OUT
	Door 2 – Reader 4 IN/OUT
	Door 3 – Reader 5 (OSDP) IN/OUT
	Door 3 – Reader 6 (OSDP) IN/OUT
One Readers per Door	Door 1 – Reader 1 IN/OUT
	Door 2 – Reader 2 IN/OUT
	Door 3 – Reader 3 IN/OUT
	Door 4 – Reader 4 IN/OUT
	Door 5 – Reader 5 (OSDP) IN/OUT
	Door 6 – Reader 6 (OSDP) IN/OUT

When using the D-805, the following should be defined:

Scenario	Setting
Two readers per door:	Door 1 – Reader 1 IN/OUT
	Door 1 – Reader 2 IN/OUT
	Door 2 – Reader 3 IN/OUT
	Door 2 – Reader 4 IN/OUT
	Door 3 – Reader 5 (OSDP) IN/OUT
	Door 3 – Reader 6 (OSDP) IN/OUT
	Door 4 – Reader 1D IN/OUT
	Door 4 – Reader 2D IN/OUT
	Door 5 - Reader 3D IN/OUT
	Door 5 - Reader 4D IN/OUT
One reader per door:	Door 1 – Reader 1 IN/OUT
	Door 2 – Reader 2 IN/OUT
	Door 3 – Reader 3 IN/OUT
	Door 4 – Reader 4 IN/OUT
	Door 5 – Reader 5 (OSDP) IN/OUT
	Door 6 – Reader 6 (OSDP) IN/OUT
	Door 7 – Reader 1D IN/OUT
	Door 8 – Reader 2D IN/OUT
	Door 9 – Reader 3D IN/OUT
	Door 10 – Reader 4D IN/OUT

Use the AxTraxNG/AxTraxPro Access Control Management Software to set the readers for IN or OUT use and to set the data transmission format for each reader.

The reader's tamper output connects to the access control panel's Reader-Tamper input. If the reader is interfered with, a trouble signal can be generated.

The controller activates the LED control for the time the door is open.

5. AC-825IP Hardware Settings

Access control panels, configured as either single reader door or double reader door controllers, have two readers, IN or OUT.

Expansion boards attached to the expansion slot of the panel must be configured the same as the panel (single or double door).

Expansion boards connected via RS-485 standard can be configured independently of the panel.



When configuring two readers per door, the two readers connected to a door must be using the same format (OSDP or Wiegand).

Table 2: Possible Hardware Settings

Connectors	Description	Setup
Two Readers Per Door		
Outputs	Door 1 Lock output	(OUT 1)
	Door 2 Lock output	(OUT 3)
	Door 3 Lock output	(OUT 5)
	General purpose output	(OUT 2)
	General purpose output	(OUT 4)
	General purpose output	(OUT6)
Inputs	Door 1: Request-to-Exit	(IN 1A)
	Door monitor input	(IN 1B)
	Door 2: Request-to-Exit	(IN 3A)
	Door monitor input	(IN 3B)
	Door 3: Request-to-Exit	(IN5A)
	Door monitor input	(IN5B)
Readers	Reader1 – Door1	Door Entry or Exit
	Reader2 – Door1	Door Exit or Entry
	Reader3 – Door2	Door Entry or Exit
	Reader4 – Door2	Door Exit or Entry
	Reader5 (OSDP) – Door3	Door Exit or Entry
	Reader6 (OSDP) – Door3	Door Exit or Entry

Connectors		Description	Setup
One Reader Per Door			
Outputs	Door1 Lock output		(OUT 1)
	Door2 Lock output		(OUT 2)
	Door3 Lock output		(OUT 3)
	Door4 Lock output		(OUT 4)
	Door5 Lock output		(OUT 5)
	Door6 Lock output		(OUT 6)
Inputs	Door1 Request-to-Exit		(IN 1A)
	Door monitor input		(IN 1B)
	Door2 Request-to-Exit		(IN 2A)
	Door monitor input		(IN 2B)
	Door3 Request-to-Exit		(IN 3A)
	Door monitor input		(IN 3B)
	Door4 Request-to-Exit		(IN 4A)
	Door monitor input		(IN 4B)
	Door5 Request-to-Exit		(IN 5A)
	Door monitor input		(IN 5B)
	Door6 Request-to-Exit		(IN 6A)
	Door monitor input		(IN 6B)
Readers	Reader1		(Door1 IN/OUT)
	Reader2		(Door2 IN/OUT)
	Reader3		(Door3 IN/OUT)
	Reader4		(Door4 IN/OUT)
	Reader5		(Door5 IN/OUT)
	Reader6		(Door6 IN/OUT)
Two Readers Per Door With 10 Readers (D-805)			
Outputs	Door1 Lock output		(OUT 1)
	Door2 Lock output		(OUT 3)
	Door3 Lock output		(OUT 5)
	Door4 Lock output		(OUT 1D)
	Door5 Lock output		(OUT 3D)

Connectors	Description	Setup
Inputs	Door1 Request-to-Exit	(IN 1A)
	Door1 monitor input	(IN 1B)
	Door2 Request-to-Exit	(IN 3A)
	Door2 monitor input	(IN 3B)
	Door3 Request-to-Exit	(IN 5A)
	Door3 monitor input	(IN 5B)
	Door4 Request-to-Exit	(IN 1C)
	Door4 monitor input	(IN 1D)
	Door5 Request-to-Exit	(IN3C)
	Door5 monitor input	(IN3D)
Readers	Reader1	(Door1 IN/OUT)
	Reader2	(Door1 OUT/IN)
	Reader3	(Door2 IN/OUT)
	Reader4	(Door2 OUT/IN)
	Reader5 (OSDP)	(Door3 IN/OUT)
	Reader6 (OSDP)	(Door3 OUT/IN)
	Reader1D	(Door4 IN/OUT)
	Reader2D	(Door4 OUT/IN)
	Reader3D	(Door5 OUT/IN)
	Reader4D	(Door5 OUT/IN)
One Reader Per Door With 10 Readers (D-805)		
Outputs	Door1 Lock output	(OUT 1)
	Door2 Lock output	(OUT 2)
	Door3 Lock output	(OUT 3)
	Door4 Lock output	(OUT 4)
	Door5 Lock output	(OUT 5)
	Door6 Lock output	(OUT 6)
	Door7 Lock output	(OUT 1D)
	Door8 Lock output	(OUT 2D)
	Door9 Lock output	(OUT 3D)
	Door10 Lock output	(OUT 4D)

Connectors	Description	Setup
Inputs	Door1 Request-to-Exit	(IN 1A)
	Door2 Request-to-Exit	(IN 2A)
	Door3 Request-to-Exit	(IN 3A)
	Door4 Request-to-Exit	(IN 4A)
	Door5 Request-to-Exit	(IN 5A)
	Door6 Request-to-Exit	(IN 6A)
	Door7 Request-to-Exit	(IN 1C)
	Door8 Request-to-Exit	(IN 2C)
	Door9 Request-to-Exit	(IN 3C)
	Door10 Request-to-Exit	(IN 4C)
Readers	Reader1	(Door1 IN/OUT)
	Reader2	(Door2 OUT /IN)
	Reader3	(Door3 IN/OUT)
	Reader4	(Door4 OUT /IN)
	Reader5 (OSDP)	(Door5 IN/OUT)
	Reader6 (OSDP)	(Door6 OUT /IN)
	Reader1D	(Door7 IN/OUT)
	Reader2D	(Door8 OUT /IN)
	Reader3D	(Door9 OUT /IN)
	Reader4D	(Door10 OUT /IN)

5.1. R/S/D/P-825 Extension Board DIP Switch Settings

The DIP switches are used when it is necessary to restore the reader to the factory defaults, see [Restore to factory defaults](#).

5.2. Setting AC-825IP Panel Type in the AxTraxNG/AxTraxPro Access Control Management Software

The AC-825IP panel type is defined in the AxTraxNG/AxTraxPro Access Control Management Software. Please refer to the AxTraxNG User Guide or the AxTraxPro Desktop Client User Guide for further details.

5.3. Configuring OSDP-SC in the AxTraxPro Access Control Management Software

The procedure to configure an AC-825IP for OSDP is given in the AxTraxPro Desktop Client User Guide.

5.4. Restore to factory defaults

1. Turn off power to the controller.
2. Set all the DIP switches to **ON**.
3. Turn on power to the controller.
4. Wait for three seconds.

5. In seven seconds or less, set all the DIP switches to **OFF**.



As the restore to factory defaults process continues, the red LED of the G bus flashes quickly.

6. Wait 90 seconds for the restore to factory defaults process to be fully completed.



- When the restore to default process is complete, the red LED of the G bus flashes slowly for 5 seconds.
- Then the panel will start the initialization process (at this time the panel is not available to operate).
- When the initialization process is complete, the red LED of the G bus will continuously flash slowly.

6. Communications

Communication lines are used to upload and download information between the AC-825IP panel and the AxTraxNG/AxTraxPro server using an IP network.

6.1. TCP/IP Network Connection

The computer running the AxTraxNG/AxTraxPro server can communicate with the access control panels via an IP network. The connection settings are controlled within the AxTraxNG/AxTraxPro Access Control Management Software.

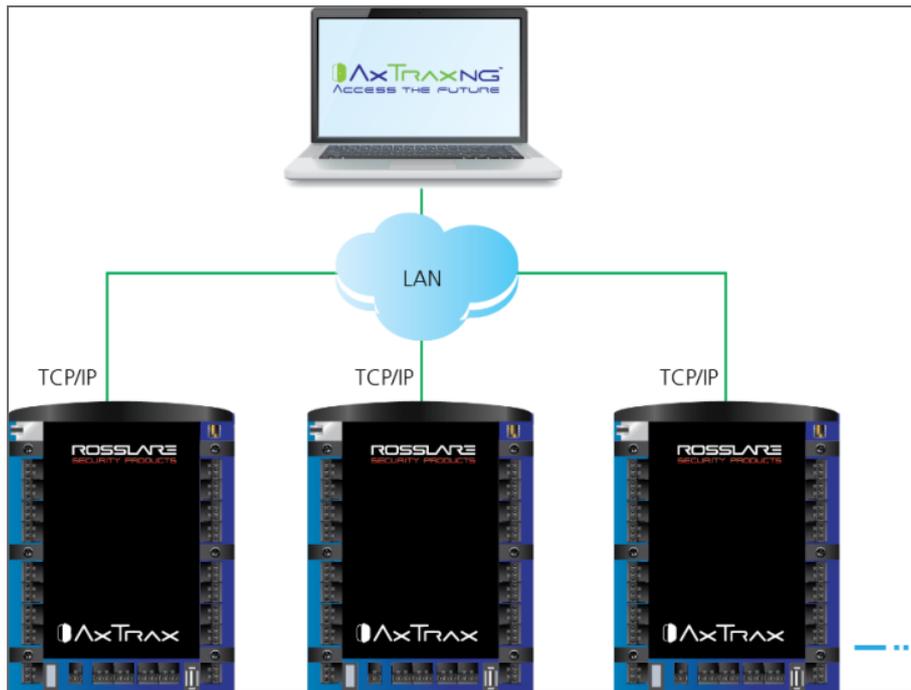
AC-825IP panels connect to the IP network using an onboard network module.

6.1.1. LAN and WAN Requirements

The devices can be connected to an IP network using any valid network address.

[Figure 29: Connecting Multiple AC-825IP Panels to the AxTraxNG/AxTraxPro Server](#) illustrates the connection of a single AC-825IP to a computer via a LAN network.

Figure 29: Connecting Multiple AC-825IP Panels to the AxTraxNG/AxTraxPro Server



The maximum distance from the Ethernet port of the panel to the LAN connection is 99.97 m (328 ft).

When the IP connection is implemented over a WAN, it is then possible to communicate with the panel via the Internet with an AxTraxNG/AxTraxPro client, allowing multiple access controllers worldwide to be reached.

Before connecting a panel by an IP connection for the first time, the AxTrax Access Control Management Software must configure the device. Settings are then stored in the device (see the AxTraxNG User Guide or the AxTraxPro Desktop Client User Guide for further details).

7. UL 294 7th Edition

The AC-825IP is UL listed to UL 294 7th Edition Standard for Access Control System Units. It has the following Access Control Performance Ratings:

Table 3: Access Control Performance Ratings

Destructive Attack	Level I
Endurance	Level IV
Line Security	Level I
Standby Power	Level II

8. Limited Warranty

The full ROSSLARE Limited Warranty Statement is available in the Quick Links section on the ROSSLARE website at www.rosslaresecurity.com.

Rosslare considers any use of this product as agreement to the Warranty Terms even if you do not review them.



All product names, logos, and brands are property of their respective owners.

DISCLAIMER: The data contained within Rosslare’s materials or documentation is intended to provide only general information about products available for purchase from Rosslare Enterprises Ltd. and its associated companies (“Rosslare”). Reasonable efforts have been made to ensure the accuracy of this information. However, it might contain typographic errors, inaccuracies, or omissions that may relate to product descriptions, visual pictures, specifications, and other details. All technical specifications weights, measures and colors shown, are best approximations. Rosslare can not be held responsible and assumes no legal liability for the accuracy or completeness of the information provided. Rosslare reserves the right to change, delete, or otherwise modify the information, which is represented, at any time, without any prior notice.

© 2023 Rosslare Enterprises Ltd. All rights reserved.

For more information regarding support, visit <https://support.rosslaresecurity.com>.