



Installation Guide





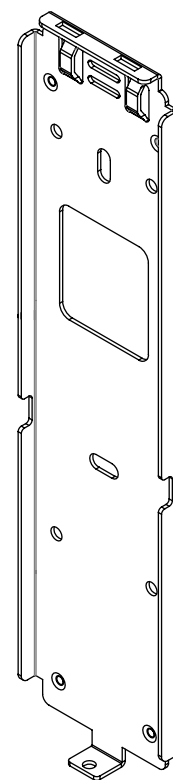
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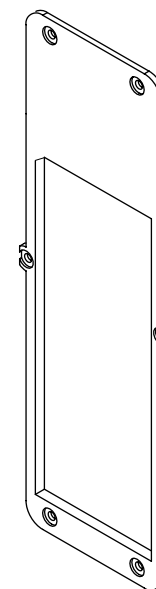


Glossary

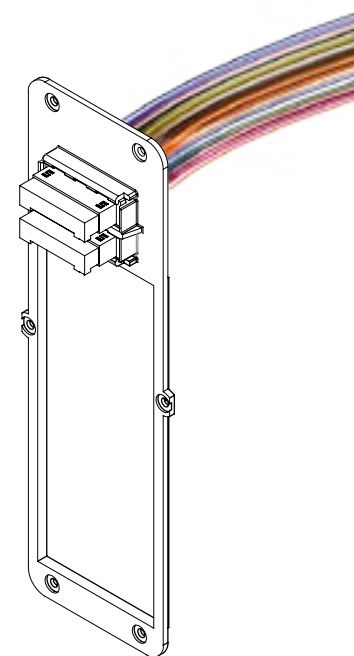
ACP	Access Control Panel
COM	Common
DAC	Door Access Control
DOS	Door Open Schedule
EGND	Earth Ground
ESD	Electrostatic Discharge
GND	Ground
IXM	INVIXIUM
LED	Light Emitting Diode
NC	Normally Closed
NO	Normally Open
OTG	On-the-Go
RLY	Relay
RX	Receive
SGND	Signal Ground
SPI	Specific Purpose Input
SPO	Specific Purpose Output
TX	Transmit
USB	Universal Serial Bus
WDATA	Wiegand Data
WGND	Wiegand Ground
VDC	Volts Direct Current
VIN+	Power Positive (12-24 VDC)
VIN-	Power Return



Metal Mounting
Plate



Temporary Back
Cover



Wired Back
Cover

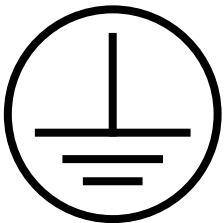


Earth Ground

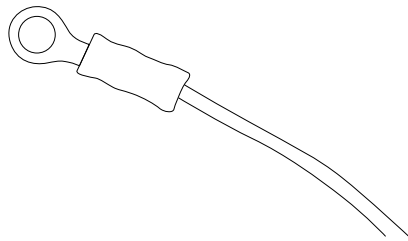
For protection against ESD, which may cause damage or malfunction to the **IXM** device, **INVIXIUM** recommends the use of the ground connections between each **IXM** device and a high quality Earth Ground available at the install site. Please note that installation of any **IXM** device should be performed by licensed electricians.

An Earth Ground wire with lug is provided in the **IXM INSTALL KIT**. The lug of the Earth Ground wire should be fastened with a screw to the front of the mounting plate. The other end of the Earth Ground wire should be connected to the high quality Earth Ground connection on site. When the **IXM** device is installed onto the mounting plate, this Earth Ground lug will make direct contact with the Metal Back plate of the **IXM** device, thus allowing for proper grounding.

Please refer to page 15 for step-by-step instructions for mounting plate, device and Earth Ground wire installation.



Earth Ground



Earth Ground Wire



Device Handling Do's

- Handle with care, ensure not to drop or step on the device.
- Perform occasional cleaning to eliminate a build-up of dust, dirt, oil and residual grime.

Device Handling Don'ts

- Do not install in areas with direct sunlight, high levels of humidity, extreme dust or flammable vapours.
- Do not allow magnetic objects to come in close contact to any device.
- Do not install near any heating elements or equipment.
- Do not attempt to open or disassemble the device, as this will void the product warranty.
- Do not deploy for any use other than its intended purpose.
- Do not insert anything other than the correct fitting USB plug into the USB port, located at the bottom of the device.

Device Cleaning

The component that will require most frequent cleaning is the sensor, as it experiences the most contact. The cleaning should be performed with care and attention, as improper cleaning may damage the sensor or surrounding components.

Follow the steps below for proper sensor cleaning procedure:

1. Lightly moisten a new cotton swab or lint free polishing cloth with water or isopropyl alcohol.
2. Gently wipe the surface of the sensor with the moistened cotton swab or cloth.
3. Finish the wiping the sensor again with a dry cotton swab or cloth.



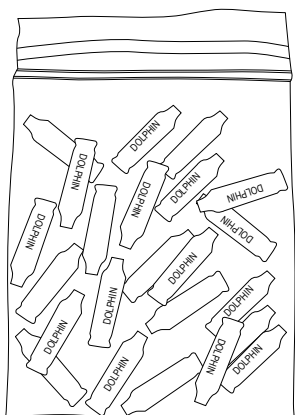
WARNING

Do not use harsh or abrasive chemicals to clean the surface of the sensor, as this may cause permanent damage to the device.
Do not use sandpaper, steel wool, scouring pads, chlorine, ammonia, bleach, or any inappropriate products for cleaning.

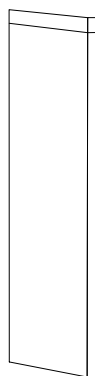


The **IXM INSTALL KIT** includes:

IXM INSTALL KIT



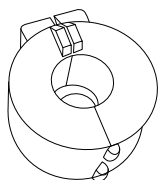
Dolphin Crimps
(qty 24)



Lithium Battery
(IXM TOUCH only)



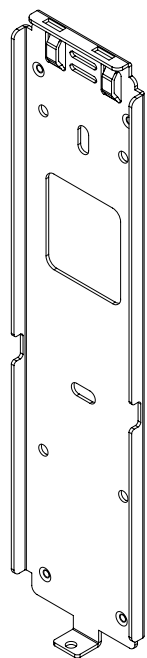
Earth Ground Wire



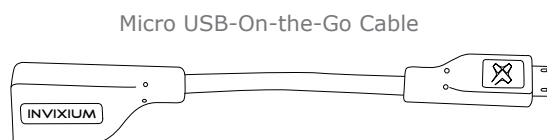
Ferrite Core



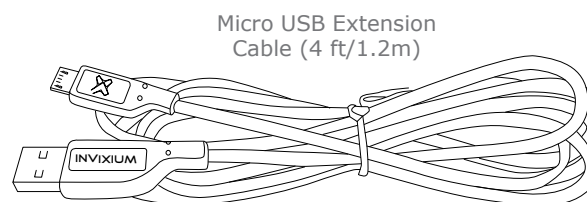
Hex Key



Metal Mounting
Plate



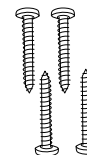
Micro USB-On-the-Go Cable



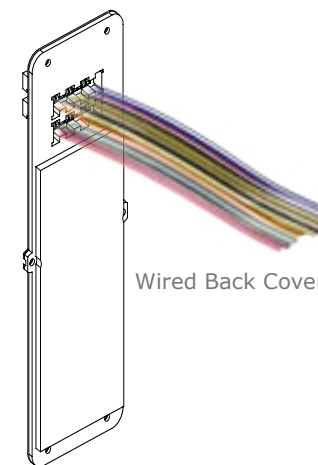
Micro USB Extension
Cable (4 ft/1.2m)



Metal Mounting
Plate Screw
(qty 1)



Wall Mounting Screws
(qty 4)

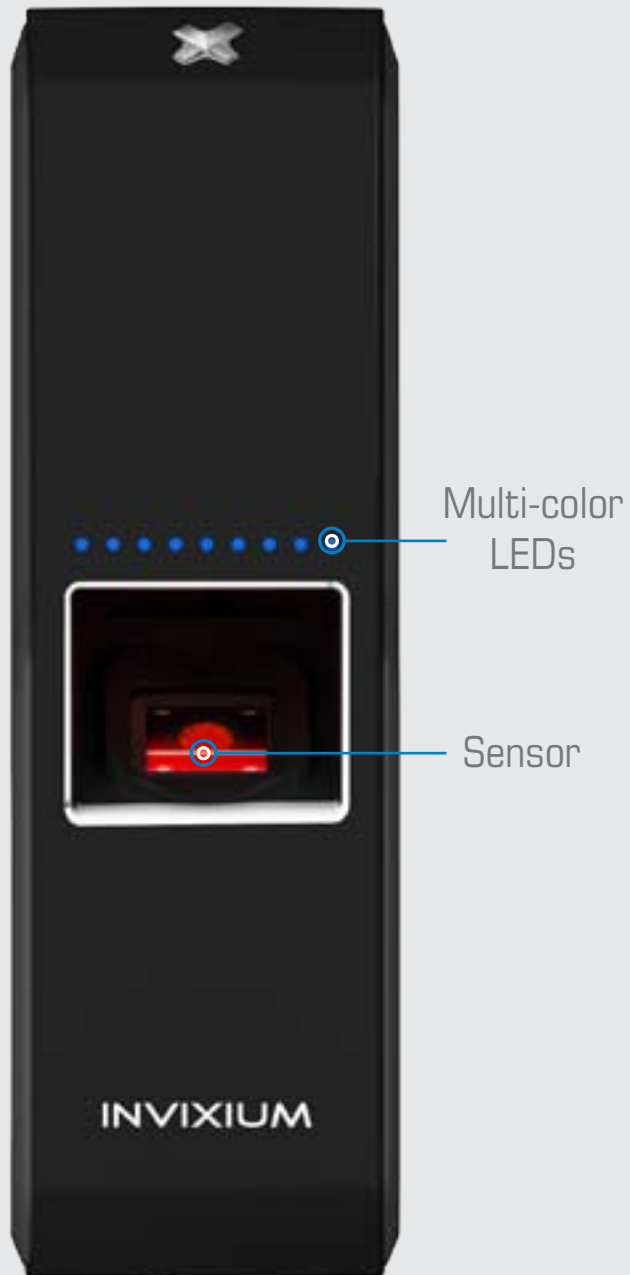


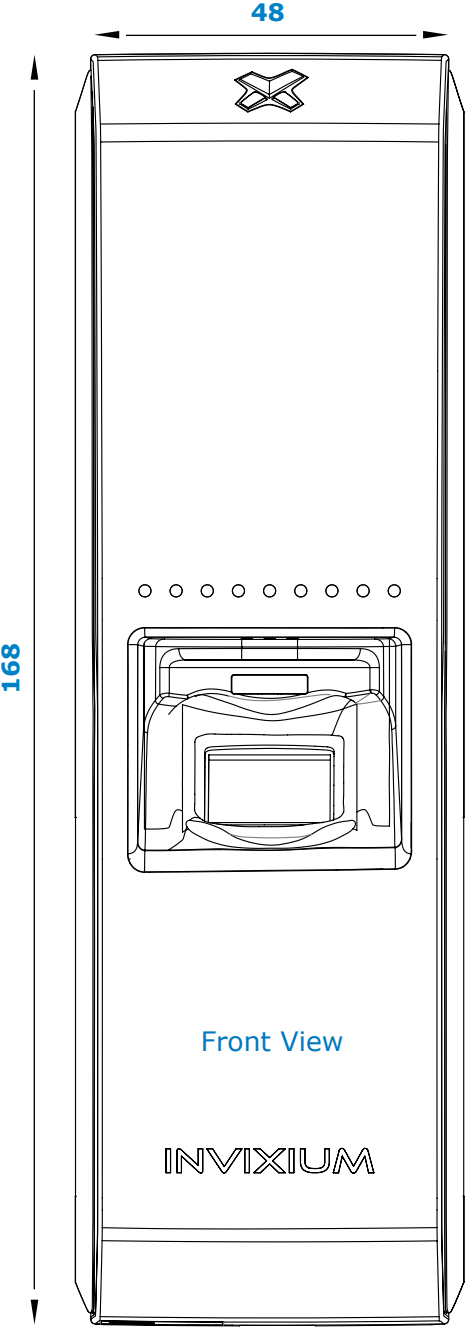
Wired Back Cover



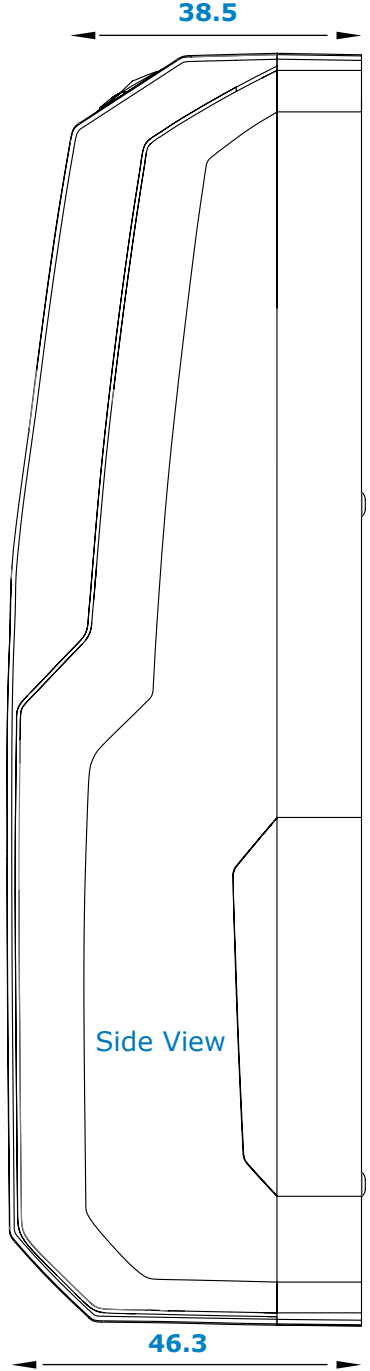
USB Flash Drive

IXM MYCRO

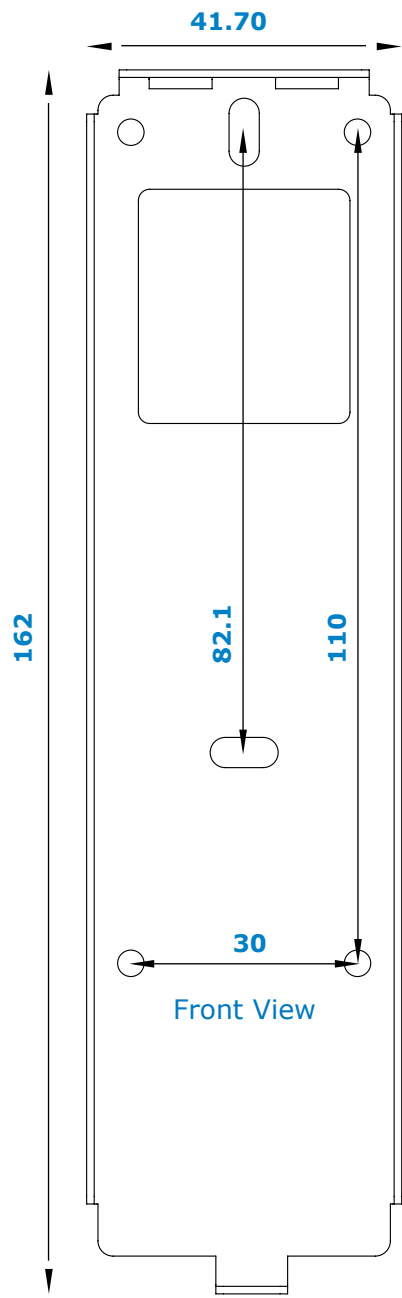




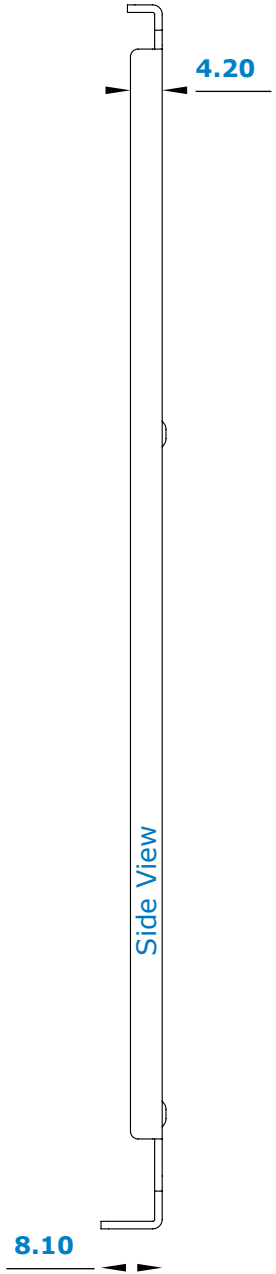
Front View



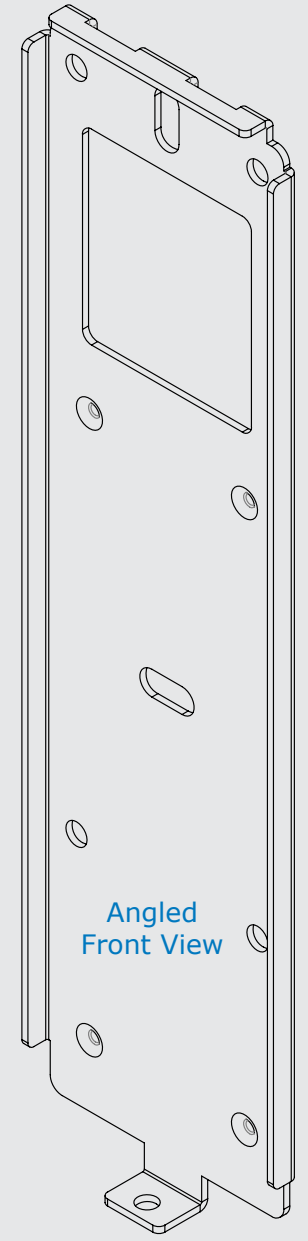
Side View



Front View



Side View



Angled Front View



Multi-color
LEDs

Lumidigm
Sensor

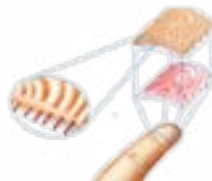
IXM SENSE



Rugged Front Shell



More than IP65



Multispectral
Fingerprint Imaging
Sensor



Surge Protection as per
EN55024



Industrial Grade
Connectors



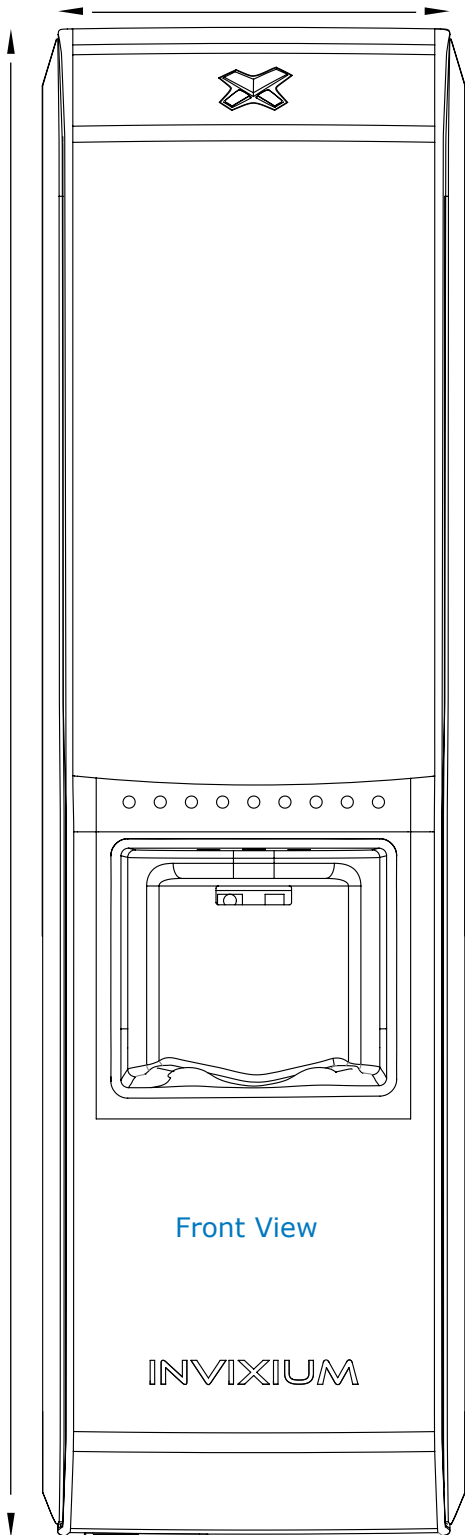
Solid Metal
Back Plate



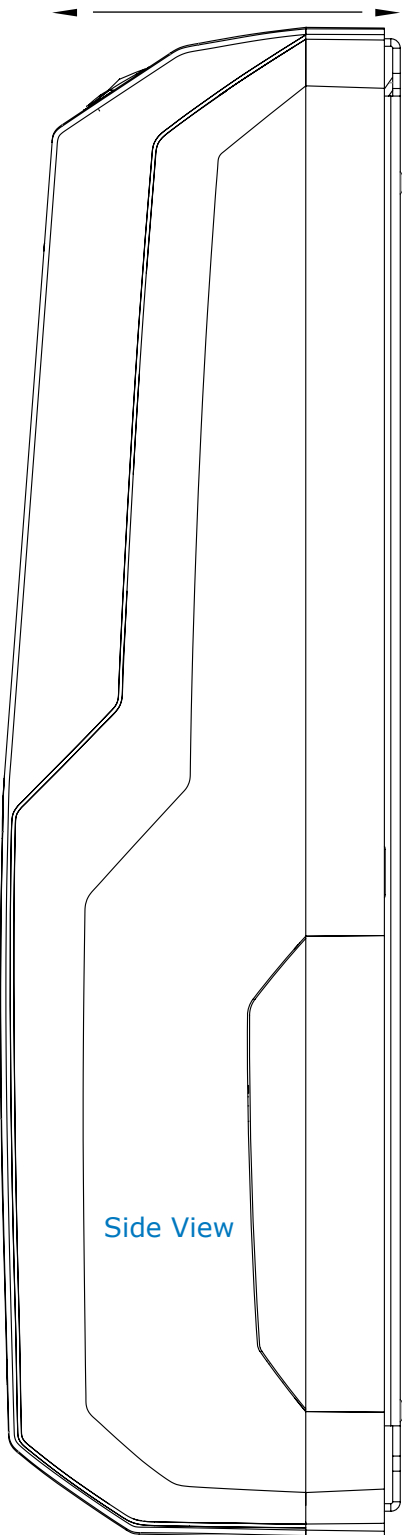
Made in Canada

199.7

49

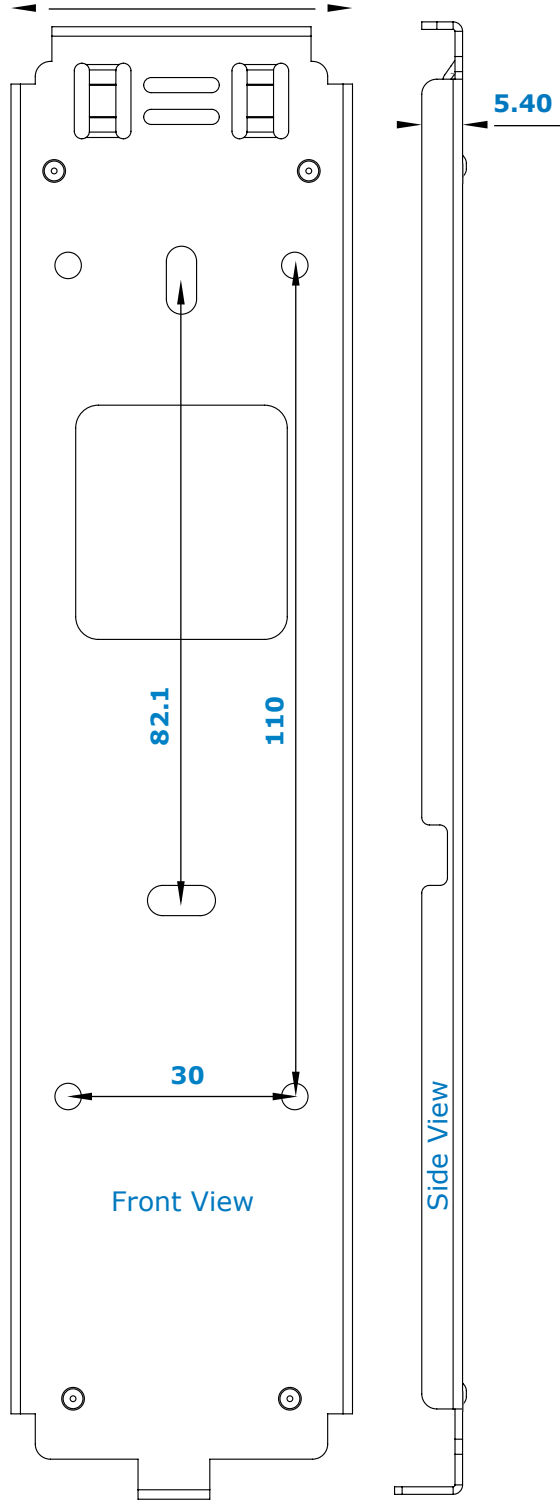


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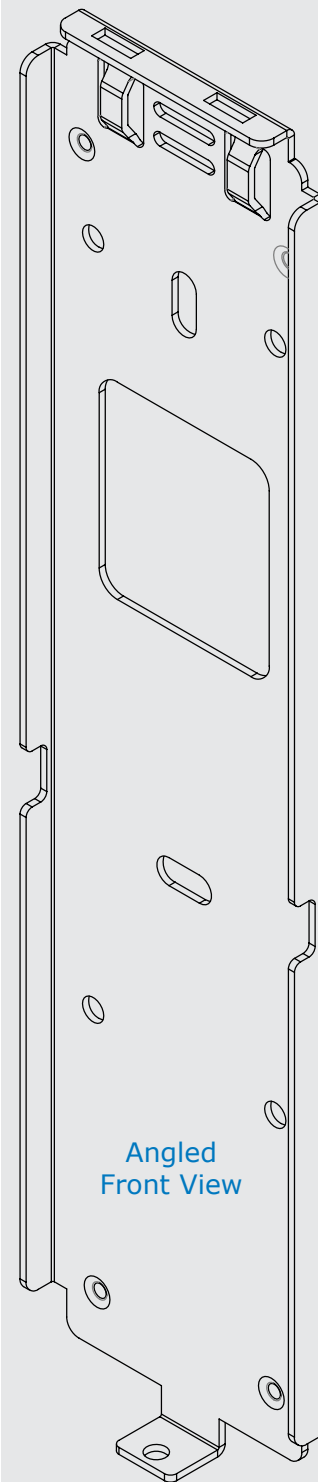


45.20

194.9



Angled
Front View





Multi-color
LEDs

Sensor

IXM TOUCH


CORNING
Super Strong
Protective Glass


Optically Bonded
Capacitive Touch Screen


More than IP65


Surge Protection as per
EN55024




Rugged
Front Shell

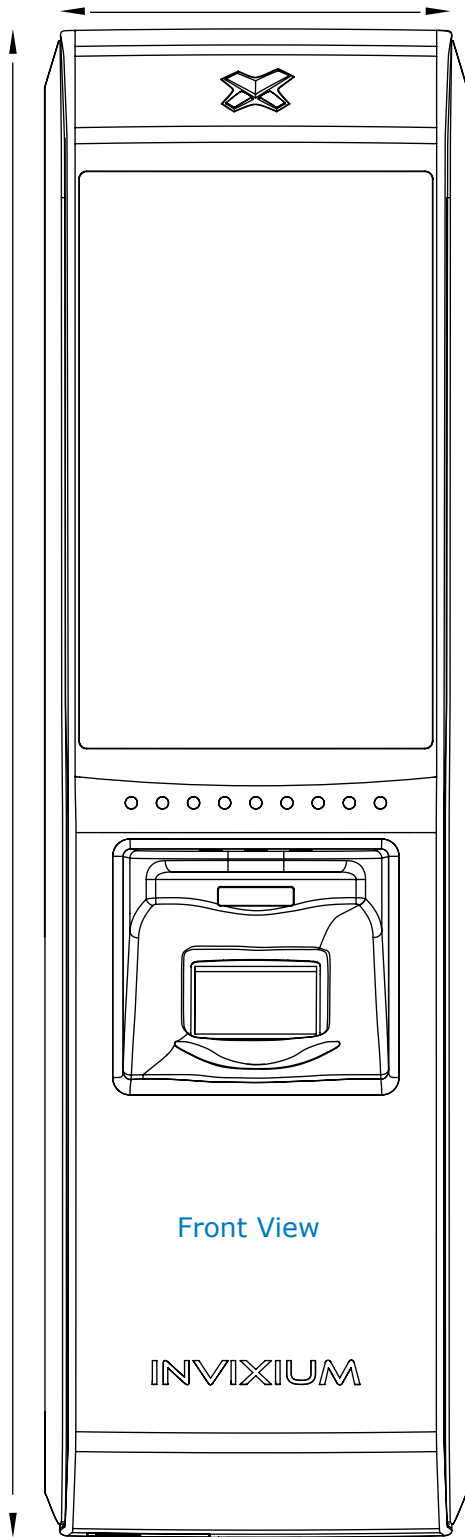

Industrial Grade
Connectors


Solid Metal
Back Plate

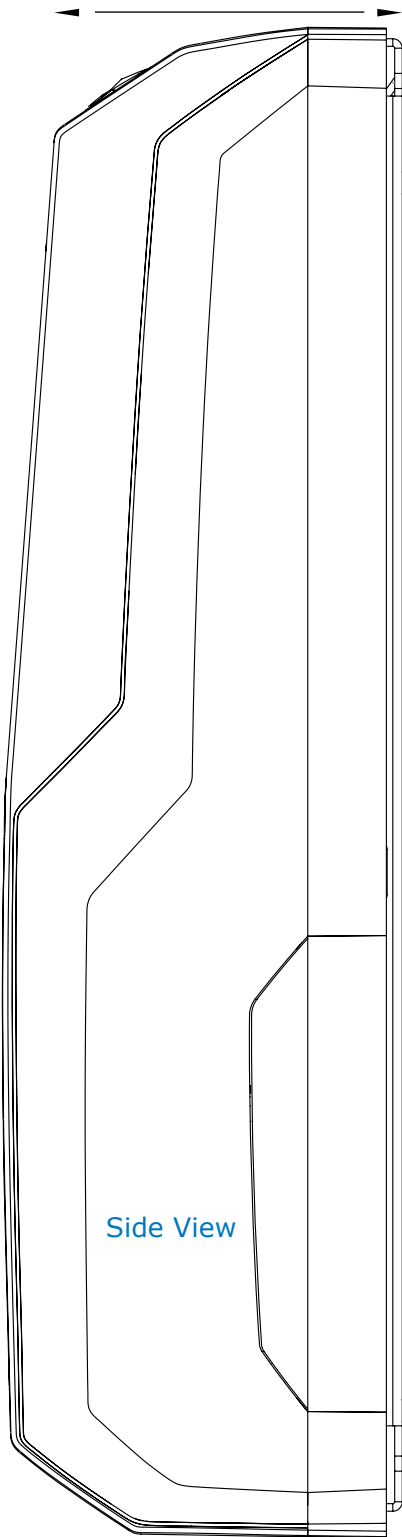

Made in Canada

199.7

49

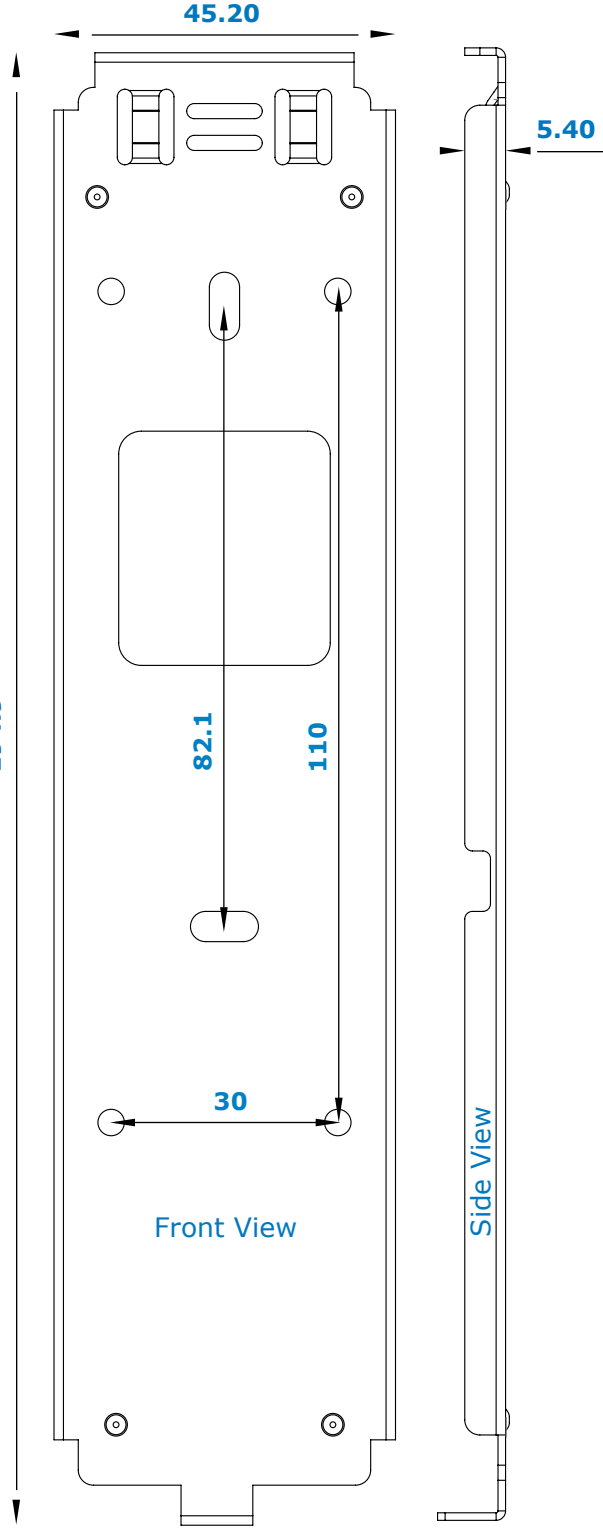


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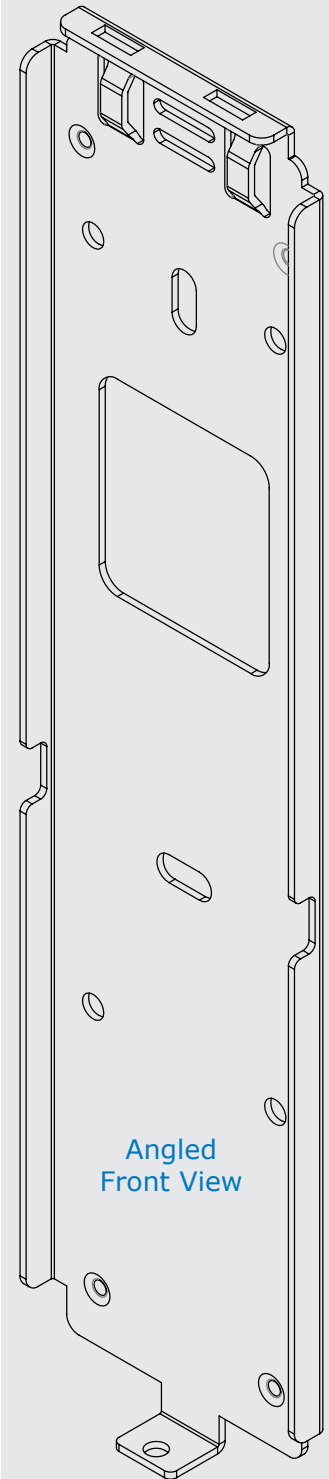


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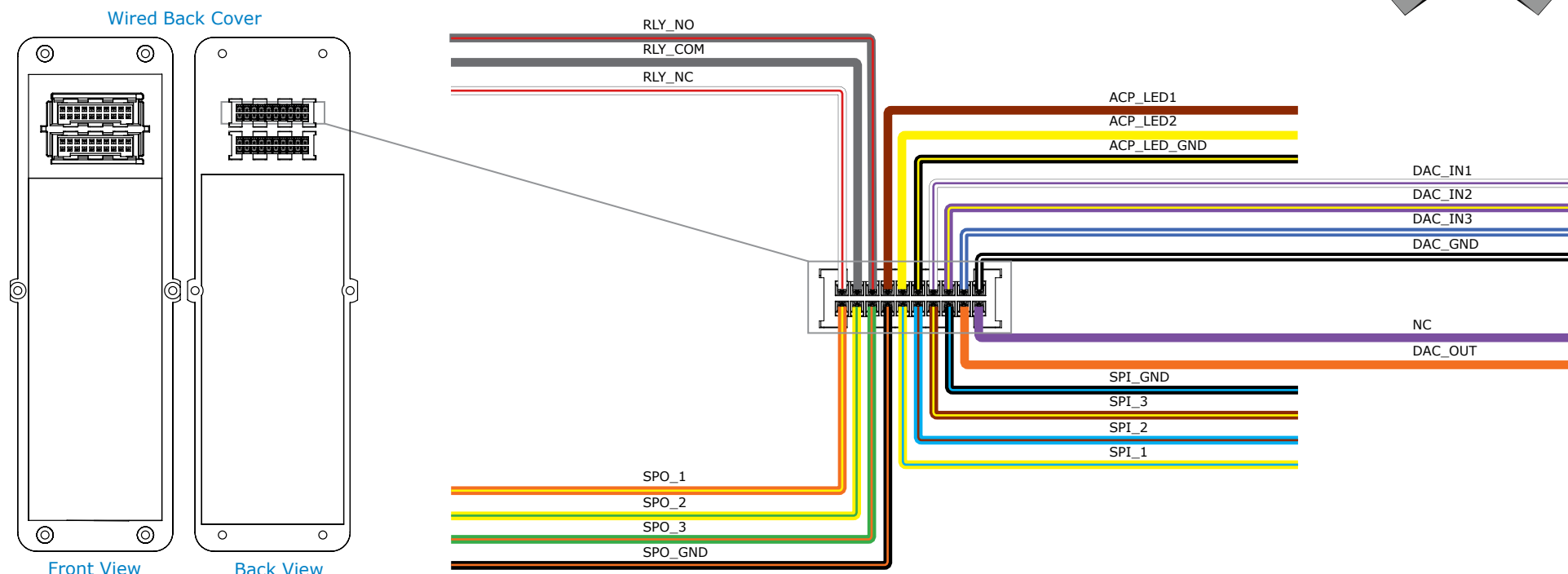
Angled
Front View



IXM TOUCH Product & Mounting Plate Actual Dimensions in mm
NVIXIUM recommends printing this page in Actual Size



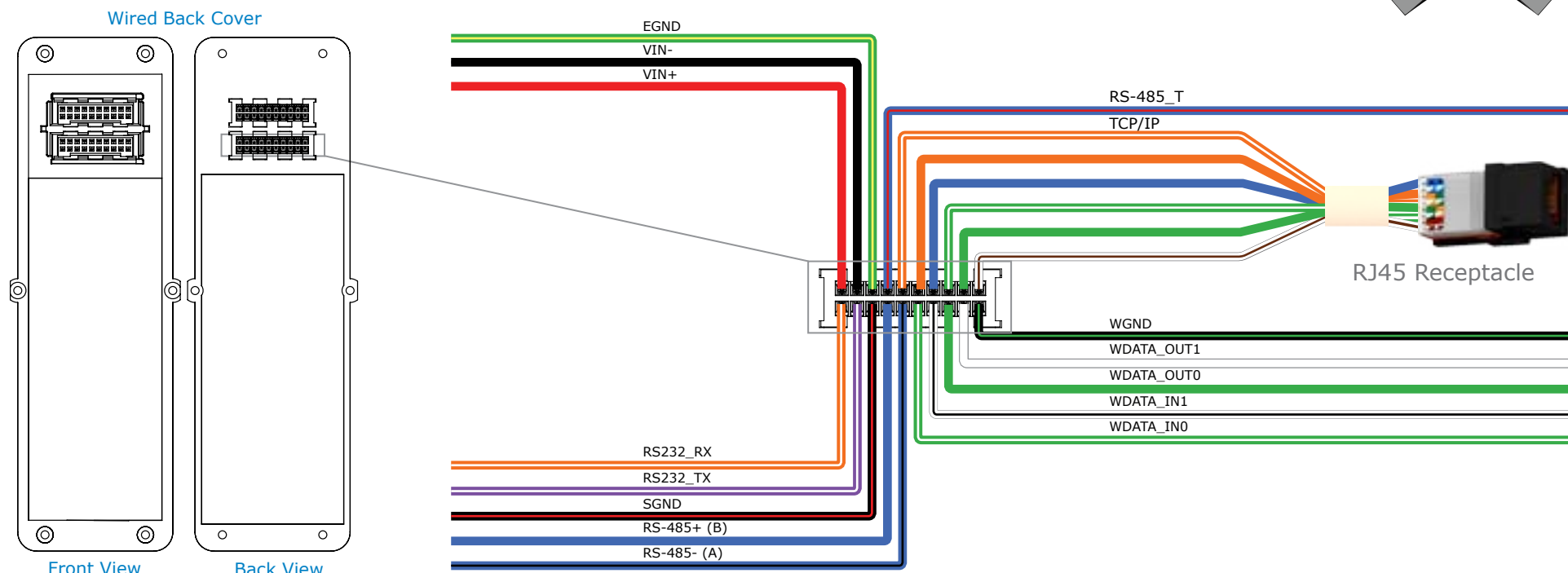
I/O Cable: Top Connector Pin Out



Wire Color	Application	Label	Pin	Wire Color	Application	Label	Pin
	Relay Normally Closed	RLY_NC	1		Specific Purpose Output Line 1	SPO_1	2
	Relay Common	RLY_COM	3		Specific Purpose Output Line 2	SPO_2	4
	Relay Normally Open	RLY_NO	5		Specific Purpose Output Line 3	SPO_3	6
	Access Control Panel LED 1 Feedback	ACP_LED1	7		Ground for Specific Purpose Outputs	SPO_GND	8
	Access Control Panel LED 2 Feedback	ACP_LED2	9		Specific Purpose Input Line 1	SPI_1	10
	Ground for Access Control Panel LED Feedback	ACP_LED_GND	11		Specific Purpose Input Line 2	SPI_2	12
	Door Access Control Input 1	DAC_IN1	13		Specific Purpose Input Line 3	SPI_3	14
	Door Access Control Input 2	DAC_IN2	15		Ground for Specific Purpose Inputs	SPI_GND	16
	Door Access Control Input 3	DAC_IN3	17		Door Access Control Output	DAC_OUT	18
	Ground for Door Access Control Inputs	DAC_GND	19		Reserved for Future (No Connect)	N/C	20



I/O Cable: Bottom Connector Pin Out



Wire Color Application

Red	Power (+12-24 VDC)
Black	Power Ground
Green	Earth Ground
Blue	RS-485 Terminated (Optional)*



Ethernet or PoE†



*This pin is optional and should be used in place of the RS-485+ terminal if 120Ω termination is required.

NOTE

†PoE only available for **IXM SENSE** and **IXM TOUCH**

Label

VIN+	1
VIN-	3
EGND	5
RS-485_T	7
TCP/IP	9,11,13, 15,17,19

Pin

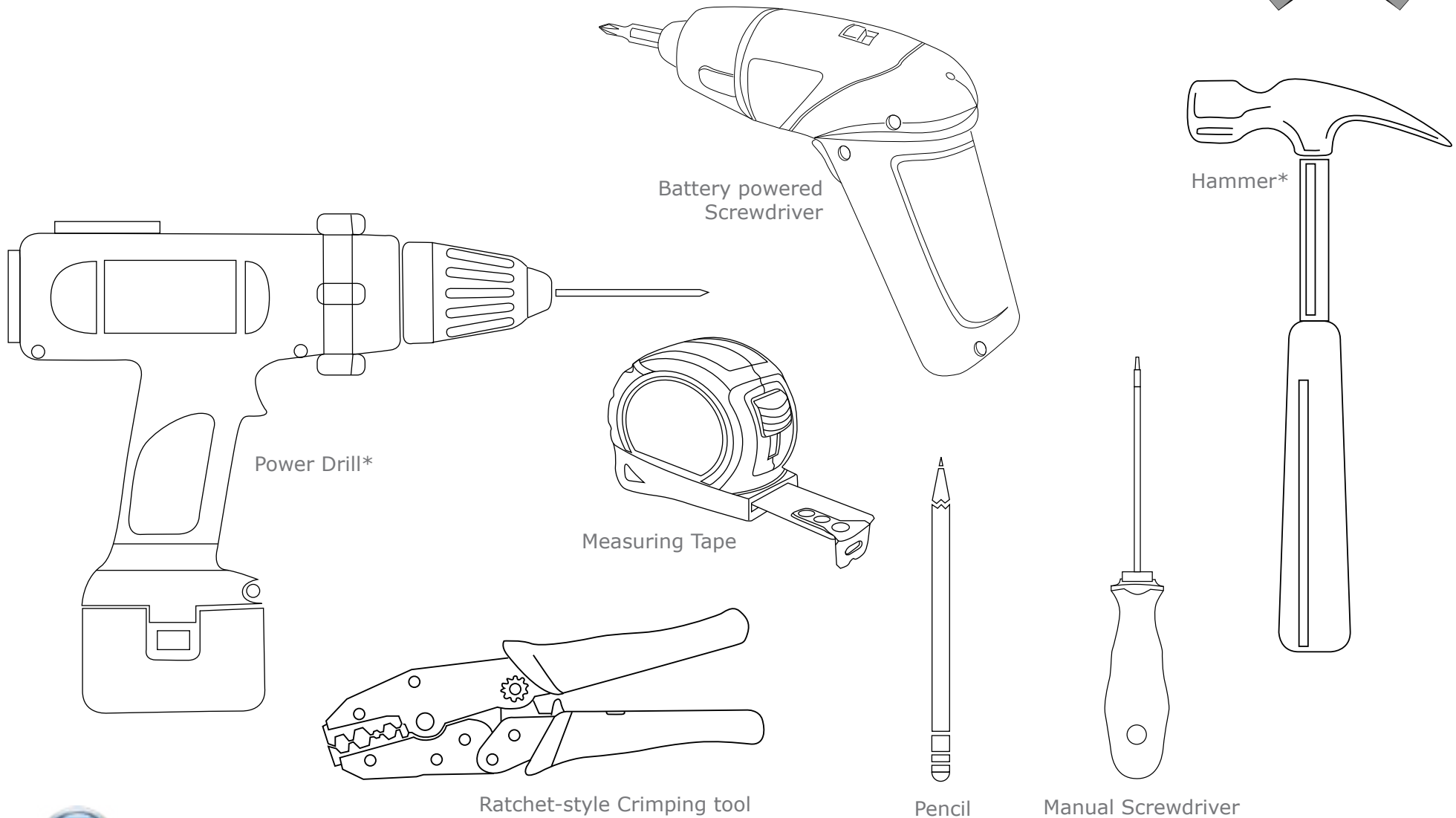
Wire Color	Application
Orange	RS-232 Data Receive
Purple	RS-232 Data Transmit
Black	Signal Ground
Blue	RS-485 Non-Inverting Line
Blue	RS-485 Inverting Line
Green	Wiegand Data Input Line 0
Green	Wiegand Data Input Line 1
Green	Wiegand Data Output Line 0
Green	Wiegand Data Output Line 1
Green	Ground for Wiegand

Label

RS-232_RX	2
RS-232_TX	4
SGND	6
RS-485+ (B)	8
RS-485- (A)	10
WDATA_IN0	12
WDATA_IN1	14
WDATA_OUT0	16
WDATA_OUT1	18
WGND	20



Hardware Tools Required For Installation



Installation of any **IXM** device should be performed by licensed electricians.

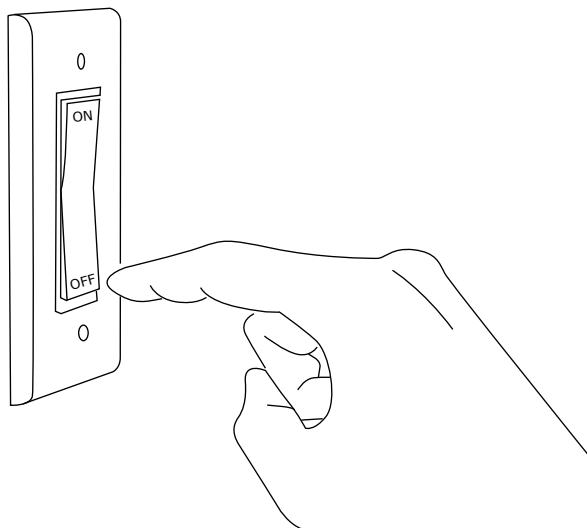
NOTE

*Depending on the mounting surface, the Power Drill and Hammer may not be required.



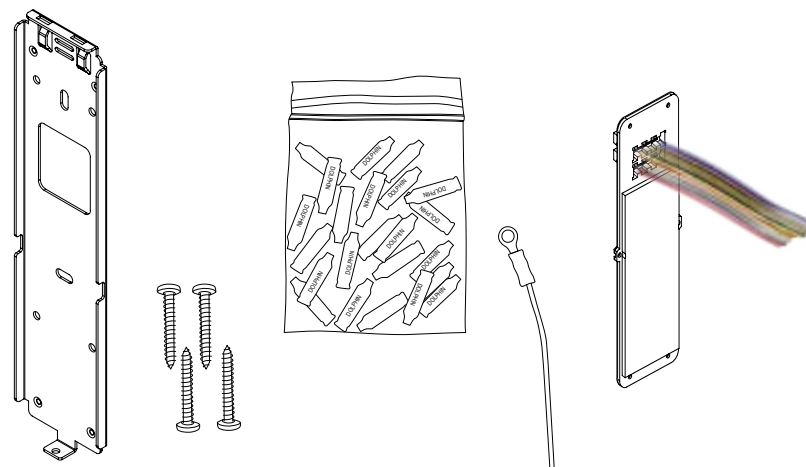
1 Ensure Power is Off

This protects the device being installed.



2 IXM INSTALL KIT

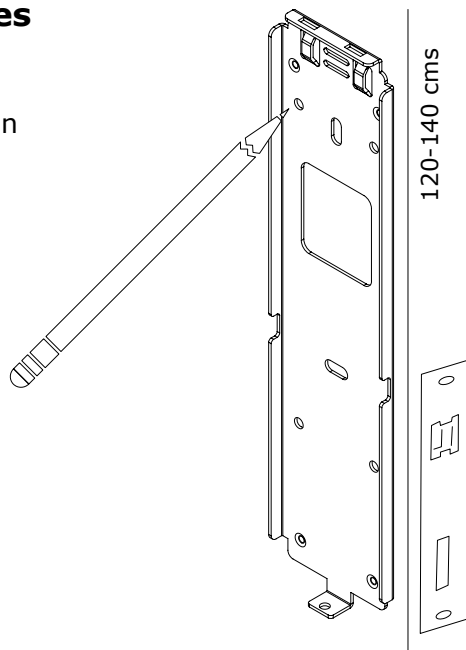
Remove the following items from the kit:



3 Mark the Screws Holes

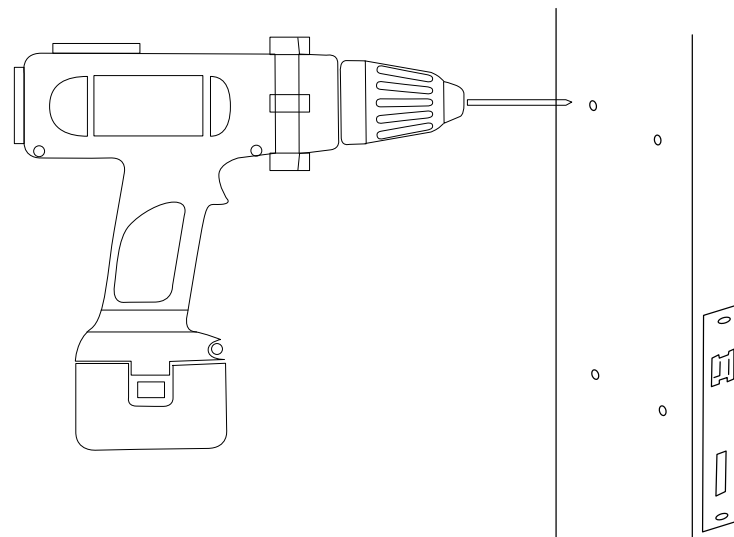
INVIXIUM recommends the use of the 4 circular holes for mounting. Refer to diagrams on page 8, 10 or 12 for actual dimensions.

Ideal mounting height is 120 - 140 cm from the ground to the top of the device. But also be sure to align the device in case of multiple installations.



4 Drill Holes

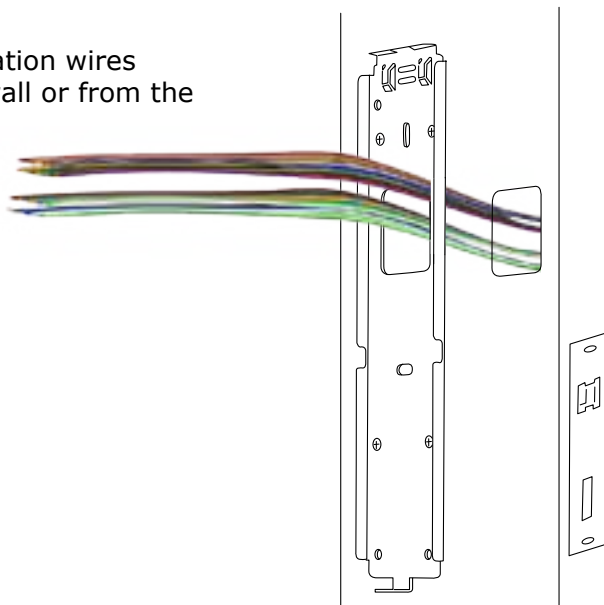
If required, drill holes where marked and install the appropriate wall anchors (not included) using the hammer.





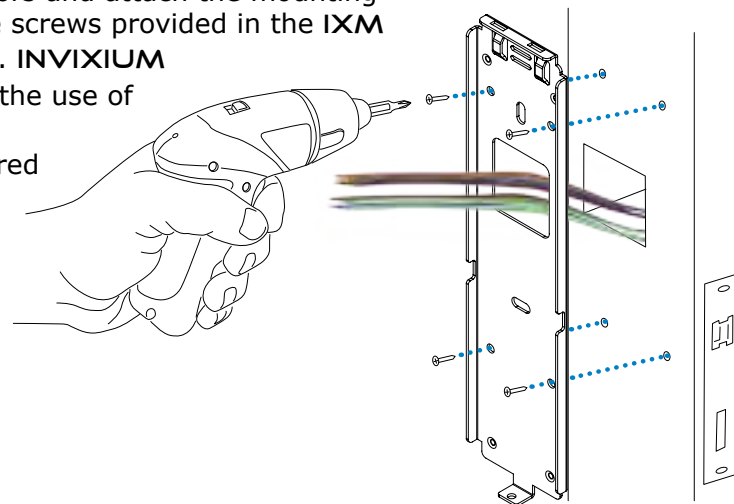
5 Get Wires

Get access to the installation wires either from behind the wall or from the wiring conduit. Feed wires through the square hole of the mounting plate.



6 Insert Screws

Align the holes of the mounting plate with the wall anchors and attach the mounting plate with the screws provided in the **IXM INSTALL KIT**. **INVIXIUM** recommends the use of an electric or battery-powered screwdriver for this step.



7 Identify the Connections:

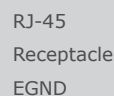
1 Power & Grounding

DC Power



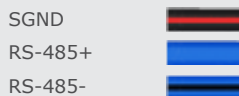
OR

PoE



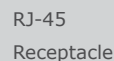
2 Communications

RS-485



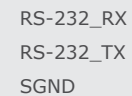
OR

Ethernet



OR

RS-232



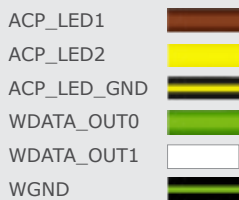
OR

USB



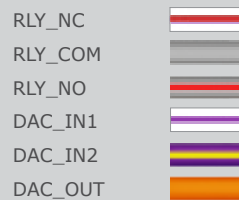
3 Operations

ACP



OR

DAC

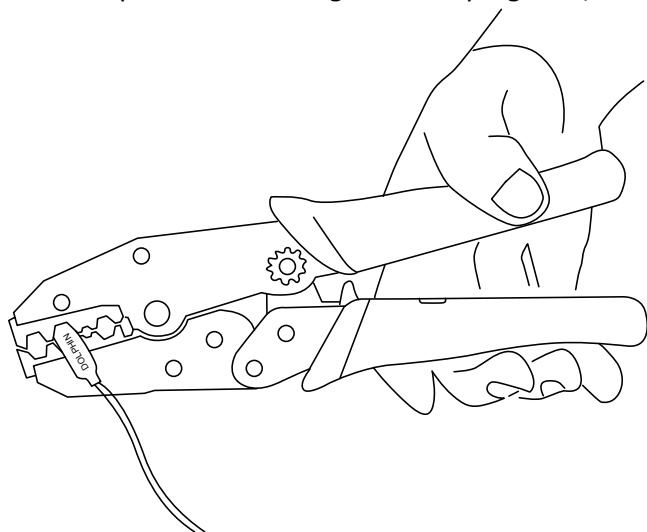


Refer to pages 20 & 21 for Power connections, pages 22-25 for Network or Serial Communication connections and pages 26 & 27 for Operation connections.



8A Make the Connections

Connect the required wires using the Dolphin® crimps provided in the **IXM INSTALL KIT** (or any similar crimps) and a ratchet style crimping tool. Insert the two wires (no stripping required) into the open end of the crimp and then using the crimping tool, clamp down on the middle of the crimp.

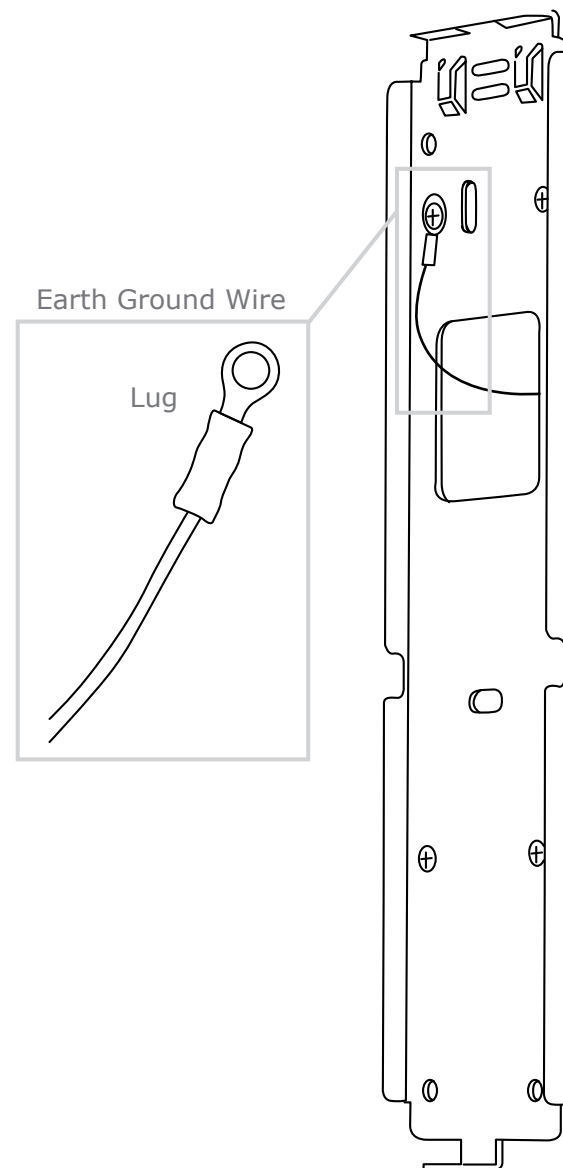


8B Connect Earth Ground

Connect the lug of the Earth Ground wire directly to the front of the mounting plate using one of the Wall mounting screws. Ensure that the lug is secured tightly as to make the necessary contact between the device and the mounting plate. Connect the other end of the Earth Ground wire to the Earth Ground connection of the install site with a crimp.

Ensure all required connections are made to each device in the setup prior to turning on the power.

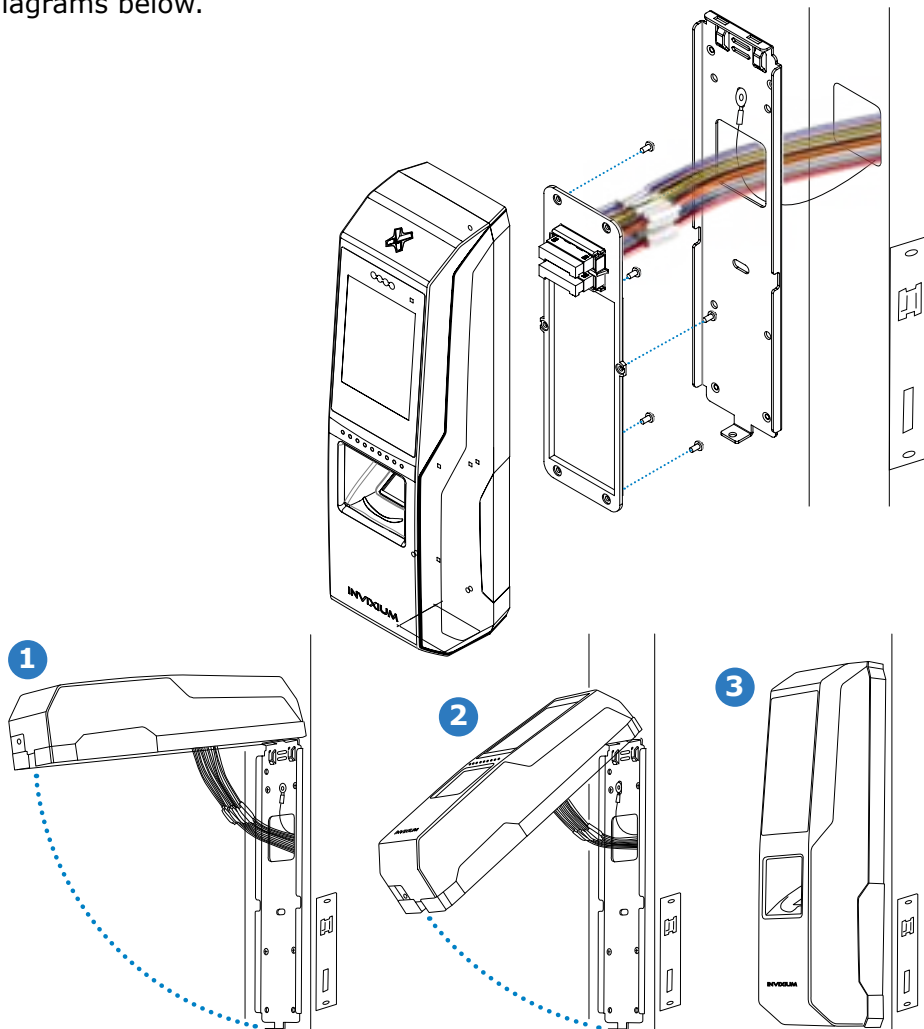
- Checklist:
- ☐ Connections for Power & Grounds (DC or PoE)
 - ☐ Connections for Communications (Ethernet, RS-485 or RS-232)
 - ☐ Connections for Operation (ACP or DAC)





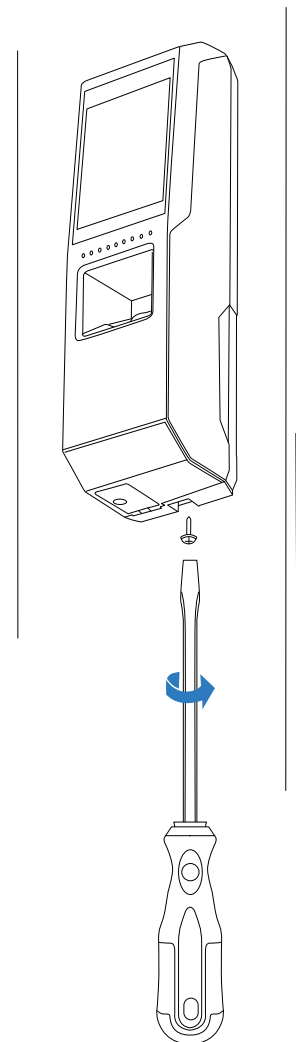
9 Attach the Device

Take the **IXM** device and unscrew the Temporary Back Cover, keeping the screws handy. Connect the Wired Back Cover to the back of the device by lining up the connectors. Secure the Wired Back Cover with the same screws. Next, hang the **IXM** device onto the mounting plate as shown in the series of diagrams below.



10 Secure the Device

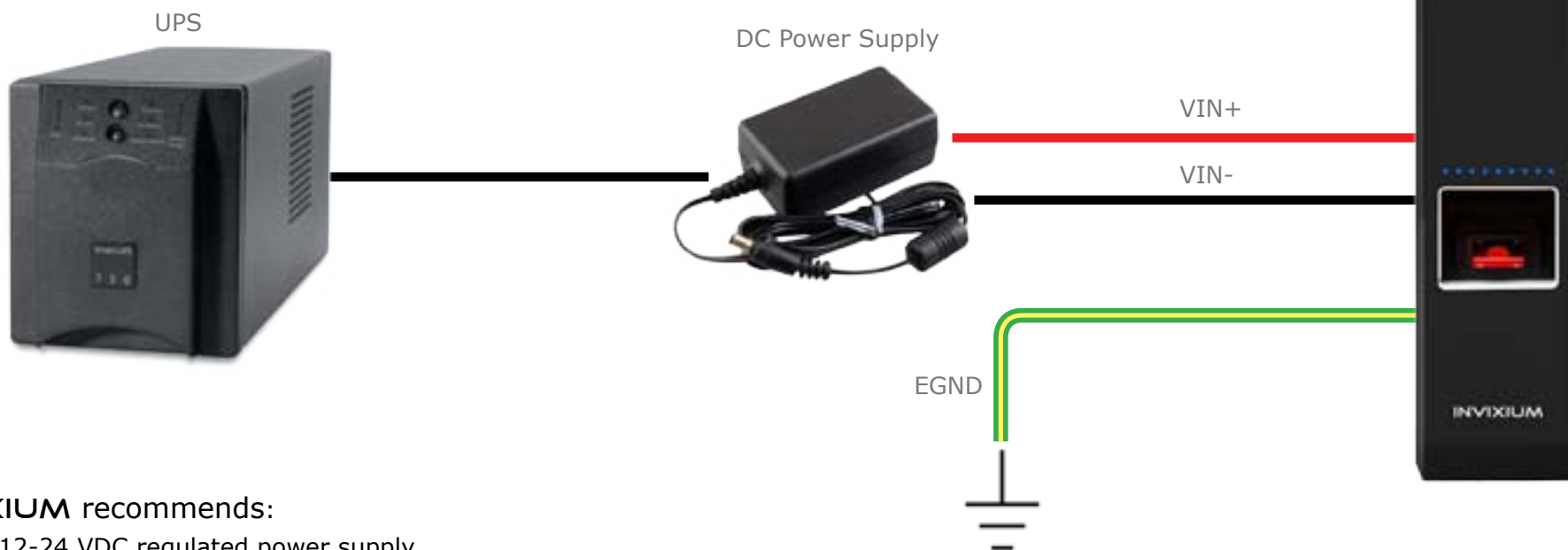
Finally, secure the device on the bottom to the mounting plate with the Metal Mounting Plate screw provided in the **IXM INSTALL KIT**.





IXM MYCRO

Connections for Power



INVIXIUM recommends:

- 12-24 VDC regulated power supply
- Dedicated Power Supply for each **IXM** device (minimum 1 A)
- Use of a battery back-up or UPS with built-in surge protection
- If sharing power supplies, ensure that each device is supplied with minimum 1 A per device (ie. Powering two devices will require an supply with output current of 2 A)



WARNING

Product Warranty is void if improper power (under or over) is supplied to the device.

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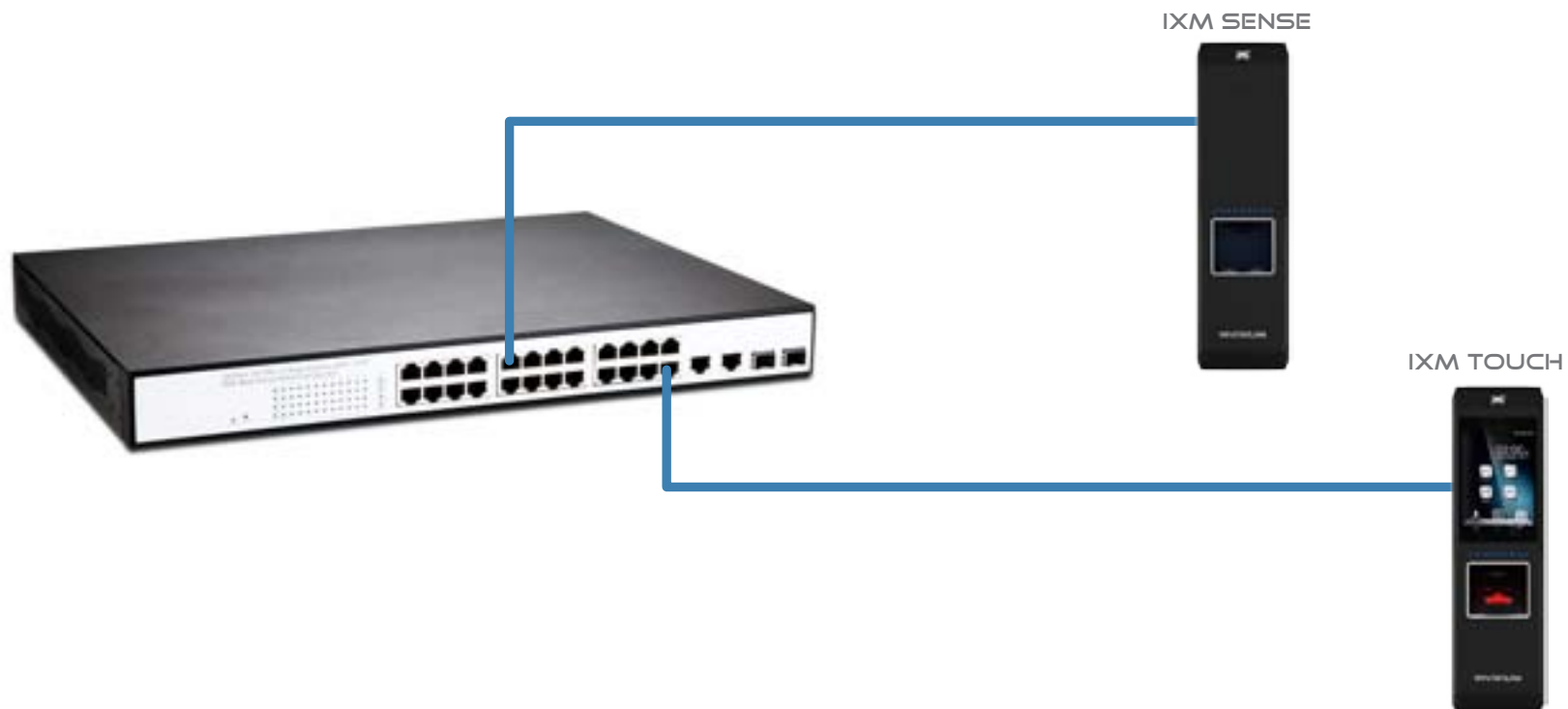
Bottom Connector Power

VIN+	(1)	
VIN-	(3)	
EGND	(5)	



Connections for Power Over Ethernet (PoE)

Only available on **IXM SENSE** and **IXM TOUCH**



INVIXIUM recommends:

- A centralized Power Sourcing Equipment (PSE) for full PoE deployments (not included)
- Use of a battery back-up or UPS with built-in surge protection



Both IEEE 802.3af power transmission modes (A and B) are supported.

NOTE

INVIXIUM

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Bottom Connector PoE

TX+	(9)	
TX-	(11)	
RJ45_PIN4	(13)	
RX+	(15)	
RX-	(17)	
RJ45_PIN7	(19)	



Ethernet and Wi-Fi Communication

Ethernet:

- Switch/Router required
- CAT 5 cabling or better

WiFi:

- Wireless router to LAN/WAN
- 802.11b/g/n protocol
- WEP, WPA and WPA2 encryptions supported
- DHCP enabled by default

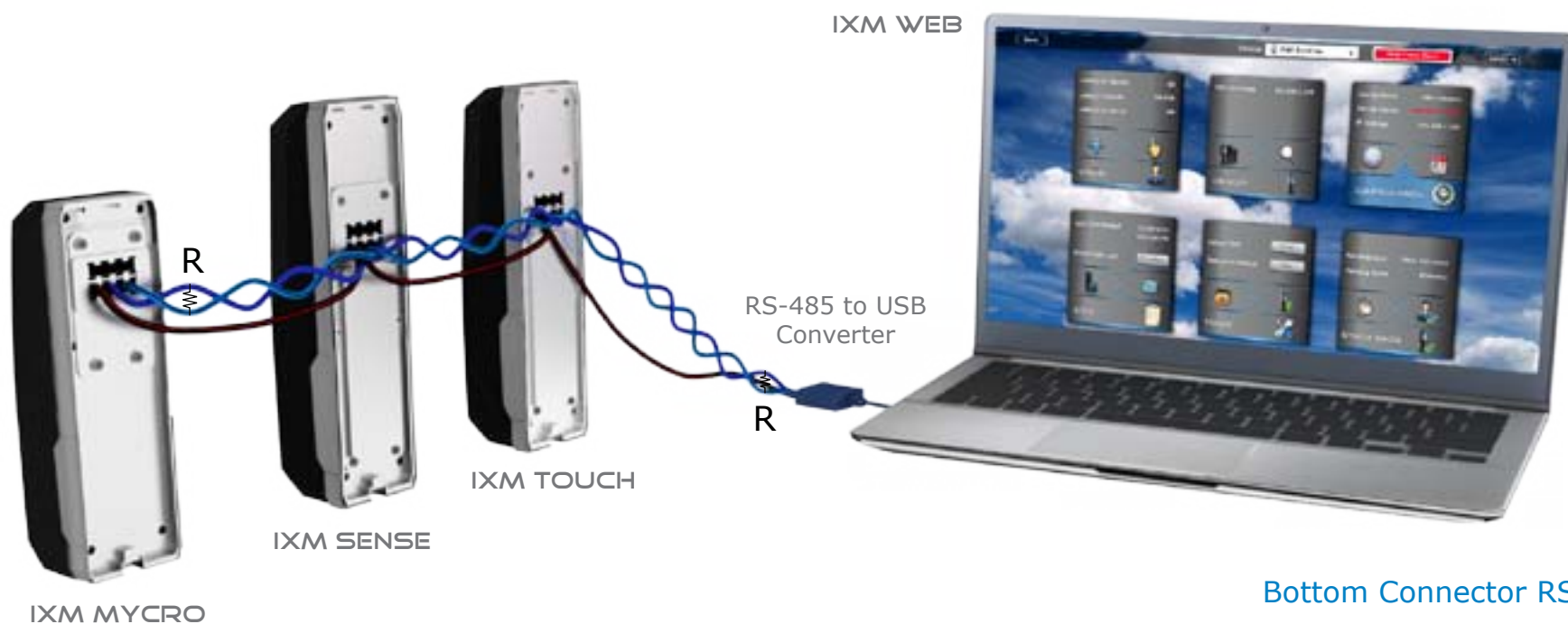




RS-485 Network Communication

INVIXIUM recommends:

- Daisy chain configuration
- Maximum 31 devices in the network
- Both RS-485 converter and the last device in the chain should be terminated (not included, refer to NOTE below for correct Resistor values)
- Connect the **IXM** device to PC via RS-485-to-Serial (RS-232 or USB) Converter
- Maximum cable length of 1200 m (4000 ft.) at 9600 bps baud rate



NOTE

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R = 120 ohms for Standard RS-485 Cabling

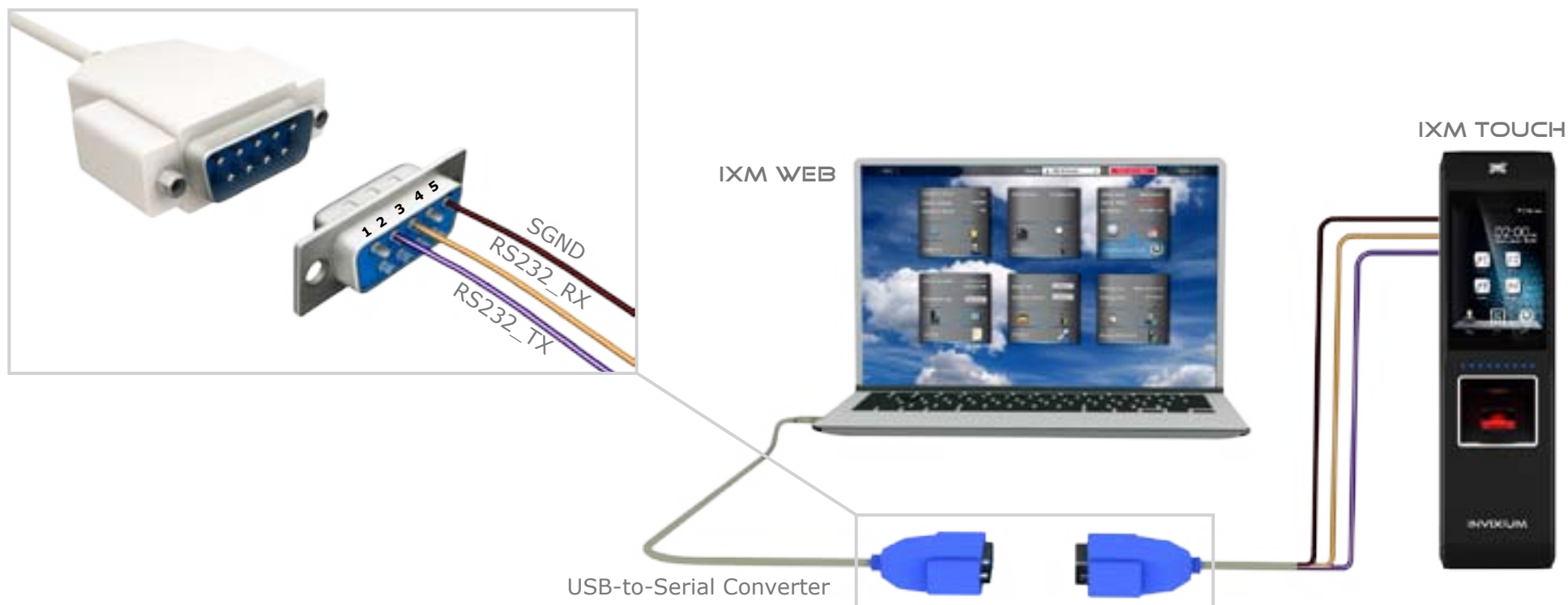
R = 100 ohms for CAT5/6 Cabling

Bottom Connector RS-485

SGND	(6)	
RS-485+	(8)	
RS-485-	(10)	



Serial Communication



RS-232:

- Connect IXM device directly to the DB9 Serial port of the PC (if available)
- DB9 connectors and cables are not included

Bottom Connector RS-232

RS-232_RX	(2)	
RS-232_TX	(4)	
SGND	(6)	



USB Communication



USB:

- Connect a Flash Drive via Micro USB OTG cable and perform functions like upgrading firmware and downloading transaction logs
- USB port can also be used to connect to a PC running **IXM WEB** via Micro USB cable
- Driver installation is required and will automatically initiate once the device is connected



Access Control Panel Connections



Top Connector LED

ACP_LED1	(7)	
ACP_LED2	(9)	
ACP_LED_GND	(11)	

Bottom Connector Wiegand

WDATA_OUT0	(16)	
WDATA_OUT1	(18)	
WGND	(20)	

ACP:

- LED and Wiegand connections available for ACP operation
- INVIXIUM recommends the use of Wiegand Output Data 0, 1 and GND connection

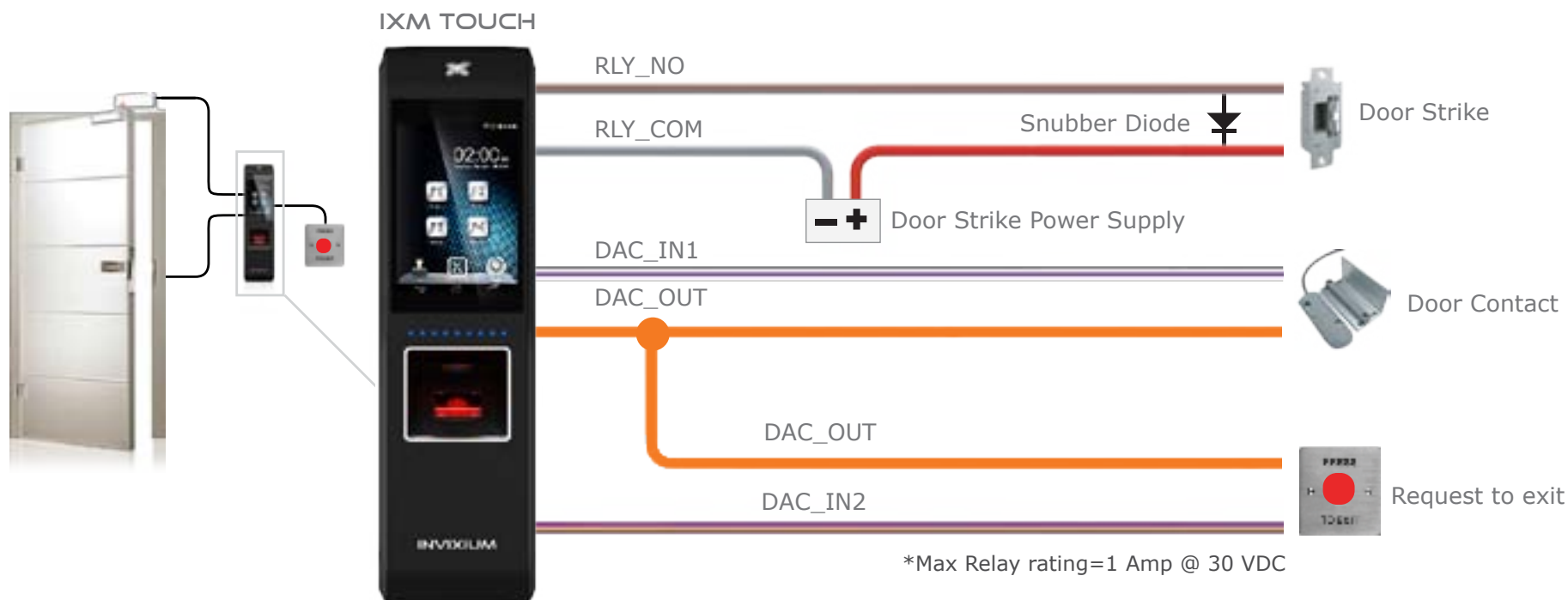


NOTE

ACP_LED signals can be used if available on the Access Control Panel.
IXM devices support up to 2 wires + GND for LED status.



Door Access Control Connections



DAC:

- **INVIXIUM** recommends a separate power supply for Door Strike (not included)
- Snubber Diode required for Door Strike (not included)
- Example above shows use of RLY_NO, but RLY_NC may be used instead if required by the Door Strike
- Internal Relay rated upto max of 1 A @ 30 VDC, external relay required if Door Strike draws more than 1A
- For motion detector instead of Request-to-Exit-button, connect the following signals:
(1) DAC_OUT to the COM and (2) DAC_IN2 to the Relay NO of the motion detector

Top Connector DAC

RLY_NC	(1)	
RLY_COM	(3)	
RLY_NO	(5)	
DAC_IN1	(13)	
DAC_IN2	(15)	
DAC_OUT	(18)	



Electrical Information

	Min. Value	Recommended	Max. Value	Additional Comments
Power				
Voltage (V)	9.6	12	24	INVIXIUM recommends using a regulated DC power supply
Current (A)	-	1	-	
Specific Purpose Inputs				
V _{IN_H} (V)	4	-	-	
V _{IN_L} (V)	-	-	1	
Pull-down Resistance (Ω)	-	10K	-	Internal 10K Ω pull-down resistor is present on SPI1, SPI2 and SPI3 lines
Wiegand Inputs				
V _{IN_H} (V)	2	-	-	
V _{IN_L} (V)	-	-	0.8	
Pull-up Resistance (Ω)	-	10K	-	Internal 10K Ω pull-up is present on Wiegand input lines
Specific Purpose Outputs				
V _{OUT_H} (V)	4.2	-	-	@IOH = -24mA
V _{OUT_L} (V)	-	-	0.44	@IOL = +24mA
Wiegand Outputs				
V _{OUT_H} (V)	4.5	-	-	
V _{OUT_L} (V)	-	-	0.8	
Pull-down Resistance (Ω)	-	4.7K	-	Wiegand Output is an open drain output. Internal 4.7K Ω pull-up is present on these lines
Internal Relay				
Current Rating (A)	-	-	1 0.3	@ 30 VDC @ 125 VAC
Switching Power (R)	-	-	30 Watt 30 VA	DC AC
Switching Voltage (V)	-	-	110 125	DC AC



Software Installation System Requirements

To successfully install and run **INVIXIUM** software, the system must meet the following minimum requirements:

PC Workstation:

- 1 GHz Intel® Pentium® 4 or equivalent
(**INVIXIUM** recommends 2.0 GHz or higher)
- 1 GB RAM (**INVIXIUM** recommends 2 GB RAM or higher)
- 50 MB Free Hard Disk Space for **IXM WEB**
- 850 MB Hard Disk for x86 systems or
2 GB Hard Disk for x64 systems for Microsoft®.NET Version 4.0
- 500 MB Hard Disk Space for Microsoft®.NET Version 2.0
(Windows® XP & Windows® 2003 R2)
- 1 GB Hard Disk (**INVIXIUM** recommends) for SQL Server™ 2008
Express Edition SP1
- Available COM or USB port
- Ethernet Card (10/100 Mb Ethernet connections)
- Monitor capable of displaying at least 1024 x 786 high colour
resolution

IXM WEB will install the following:

Microsoft®.NET Framework (version 4.0)

SQL Server™ 2008 Express Edition Service Pack 1

Microsoft® Internet Information Services (version 7.5)

Windows® Installer (version 4.5)

One of the following Operating Systems†:

- Windows® 8 and 7 both 32-Bit and 64-Bit versions
- Windows® XP Service Pack 3 or higher
- Windows® Server 2012
- Windows® 2008 R2
- Windows® 2008
- Windows® 2003 R2

One of the following Web Browsers (Client):

- Internet Explorer® version 8.0 or higher
- Google Chrome™ version 26.0 or higher
- Mozilla Firefox® version 20.0 or higher
- Apple Safari® version 5.1.7 or higher



†Windows Professional or Enterprise versions only

NOTE



Software Installation Steps

Step 1 Plug the USB drive (found in IXM INSTALL KIT) into an available port on PC.

Step 2 Open the USB drive folder. Run IXMWEB.exe file. The IXM WEB Install Menu will initiate.



Step 3 There are two installation options: **INSTALL** or **ADVANCED**. INVIXIUM recommends selecting **INSTALL** option for rapid installation.

The **ADVANCED** process allows for:

- entering a different install path
- entering a specific Port number
- checkbox for installing SQL Server database
- checkbox for installing Certificates



A Windows dialog may pop up to provide a warning about installing from an unreliable source. Click "Yes" to proceed with the install.

NOTE

Step 4 During the installation process, the status of the install will be shown.



Step 5 When the installation is complete, click **EXIT**. **IXM WEB** icon is now on the desktop.



Step 6 Run **IXM WEB** to launch the application in the default web browser to setup the Database and Admin credentials.



FCC Information to Users (English)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation.



Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Informations de la FCC aux Utilisateurs (en Français)

Cet appareil est conforme à la partie 15 des règles de la FCC. Son fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne doit pas provoquer d'interférences nuisibles
2. Cet appareil doit accepter toute interférence reçue, incluant toute interférence pouvant causer un fonctionnement indésirable



	Notification
	Cet équipement a été testé et s'est avéré conforme aux limites pour un appareil numérique de Classe B, conformément à la partie 15 des règles de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre des fréquences radio et, s'il n'est pas installé et utilisé conformément aux instructions, il peut causer des interférences nuisibles pour les communications radio. Cependant, il n'existe aucune garantie que des interférences ne se produiront pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à la réception radio ou de télévision, ce qui peut être déterminé en l'éteignant et rallumant, l'utilisateur est encouragé à essayer de corriger l'interférence par une ou plusieurs des mesures suivantes: • Réorienter ou déplacer l'antenne de réception • Augmentez la distance entre l'équipement et le récepteur • Connecter l'équipement à une sortie sur un circuit différent de celui sur lequel le récepteur est branché • Pour obtenir de l'aide, consulter le revendeur ou un technicien radio / TV expérimenté

FCC RF Radiation Exposure Statement (English)

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

Industry Canada RF Radiation Exposure (English)

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

Industrie Canada exposition aux radiations RF (en Français)

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.



CE Information to Users (English)

All **INVIXIUM** devices have the CE mark for conformance with EMC Directive 89/336/EEC, and Low Voltage Safety Directive 73/23/EEC. Device with RFID components are compliant with R&TTE Directive 1999/5/EC, and are Class 1 Devices.

Informations de la CE aux Utilisateurs (en Français)

Tous les dispositifs de **INVIXIUM** ont le marquage CE de conformité à la directive CEM 89/336/CEE et basse tension de sécurité Directive 73/23/CEE. Les appareils avec composants RFID sont conformes aux Directive R & TTE 1999/5/CE. et sont des appareils de classe 1.

Industry Canada Information to Users (English)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference
2. This device must accept any interference, including interference that may cause undesired operation of the device

Industrie Canada Information pour les Utilisateurs (en Français)

Cet appareil est conforme avec Industrie Canada exempts de licence standard RSS (s). Son fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne doit pas provoquer d'interférences
2. Cet appareil doit accepter toute interférence, y compris celles pouvant causer un mauvais fonctionnement de l'appareil



Warning to Users (English)



Warning

Changes or modifications not expressly approved by **INVIXIUM** could void the user's authority to operate the equipment.

Avertissement aux Utilisateurs (en Français)



Avertissement

Les changements ou modifications non expressément approuvés par **INVIXIUM** pourraient annuler l'autorité de l'utilisateur à utiliser l'équipement.

For Technical or Customer Support issues,
please contact your Local Authorized Reseller.

For all other inquiries, please contact us at
experience@invixium.com

For detailed information, please visit our website:



[Enjoy the Experience.](#)

Some features may vary based on device models.
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INSTALLATION GUIDE



INGUIDE

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