



Pocket Portal USER MANUAL



Manual Number: SE-PB100-USER-M

⚡ WARNING ⚡

Thank you for purchasing automation equipment from AutomationDirect.com®, doing business as, AutomationDirect. We want your new automation equipment to operate safely. Anyone who installs or uses this equipment should read this publication (and any other relevant publications) before installing or operating the equipment.

To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and usually change with time. It is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation is in compliance with the latest revision of these codes.

At a minimum, you should follow all applicable sections of the National Fire Code, National Electrical Code, and the codes of the National Electrical Manufacturer's Association (NEMA). There may be local regulatory or government offices that can also help determine which codes and standards are necessary for safe installation and operation.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

Our products are not fault-tolerant and are not designed, manufactured or intended for use or resale as on-line control equipment in hazardous environments requiring fail-safe performance, such as in the operation of nuclear facilities, aircraft navigation or communication systems, air traffic control, direct life support machines, or weapons systems, in which the failure of the product could lead directly to death, personal injury, or severe physical or environmental damage ("High Risk Activities"). AutomationDirect specifically disclaims any expressed or implied warranty of fitness for High Risk Activities.

For additional warranty and safety information, see the Terms and Conditions section on our website. If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call us at 770-844-4200.

This publication is based on information that was available at the time it was published. At AutomationDirect we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

Trademarks

This publication may contain references to products produced and/or offered by other companies. The product and company names may be trademarked and are the sole property of their respective owners. AutomationDirect disclaims any proprietary interest in the marks and names of others.

**Copyright 2019–2023, AutomationDirect.com® Incorporated
All Rights Reserved**

No part of this manual shall be copied, reproduced, or transmitted in any way without the prior, written consent of AutomationDirect.com® Incorporated. AutomationDirect retains the exclusive rights to all information included in this document.

⚡ ADVERTENCIA ⚡

Gracias por comprar equipo de automatización de **AutomationDirect.com**[®]. Deseamos que su nuevo equipo de automatización opere de manera segura. Cualquier persona que instale o use este equipo debe leer esta publicación (y cualquier otra publicación pertinente) antes de instalar u operar el equipo.

Para reducir al mínimo el riesgo debido a problemas de seguridad, debe seguir todos los códigos de seguridad locales o nacionales aplicables que regulan la instalación y operación de su equipo. Estos códigos varían de área en área y usualmente cambian con el tiempo. Es su responsabilidad determinar cuales códigos deben ser seguidos y verificar que el equipo, instalación y operación estén en cumplimiento con la revisión mas reciente de estos códigos.

Como mínimo, debe seguir las secciones aplicables del Código Nacional de Incendio, Código Nacional Eléctrico, y los códigos de (NEMA) la Asociación Nacional de Fabricantes Eléctricos de USA. Puede haber oficinas de normas locales o del gobierno que pueden ayudar a determinar cuales códigos y normas son necesarios para una instalación y operación segura.

Si no se siguen todos los códigos y normas aplicables, puede resultar en daños al equipo o lesiones serias a personas. No garantizamos los productos descritos en esta publicación para ser adecuados para su aplicación en particular, ni asumimos ninguna responsabilidad por el diseño de su producto, la instalación u operación.

Nuestros productos no son tolerantes a fallas y no han sido diseñados, fabricados o intencionados para uso o reventa como equipo de control en línea en ambientes peligrosos que requieren una ejecución sin fallas, tales como operación en instalaciones nucleares, sistemas de navegación aérea, o de comunicación, control de tráfico aéreo, máquinas de soporte de vida o sistemas de armamentos en las cuales la falla del producto puede resultar directamente en muerte, heridas personales, o daños físicos o ambientales severos (“Actividades de Alto Riesgo”). **AutomationDirect.com** específicamente rechaza cualquier garantía ya sea expresada o implicada para actividades de alto riesgo.

Para información adicional acerca de garantía e información de seguridad, vea la sección de Términos y Condiciones. Si tiene alguna pregunta sobre instalación u operación de este equipo, o si necesita información adicional, por favor llámenos al número 770-844-4200 en Estados Unidos.

Esta publicación está basada en la información disponible al momento de impresión. En **AutomationDirect.com** nos esforzamos constantemente para mejorar nuestros productos y servicios, así que nos reservamos el derecho de hacer cambios al producto y/o a las publicaciones en cualquier momento sin notificación y sin ninguna obligación. Esta publicación también puede discutir características que no estén disponibles en ciertas revisiones del producto.

Marcas Registradas

Esta publicación puede contener referencias a productos producidos y/u ofrecidos por otras compañías. Los nombres de las compañías y productos pueden tener marcas registradas y son propiedad única de sus respectivos dueños. **Automationdirect.com**, renuncia cualquier interés propietario en las marcas y nombres de otros.

PROPIEDAD LITERARIA 2019–2023, AUTOMATIONDIRECT.COM[®] INCORPORATED
Todos los derechos reservados

No se permite copiar, reproducir, o transmitir de ninguna forma ninguna parte de este manual sin previo consentimiento por escrito de **AutomationDirect.com[®] Incorporated**. **AutomationDirect.com** retiene los derechos exclusivos a toda la información incluida en este documento. Los usuarios de este equipo pueden copiar este documento solamente para instalar, configurar y mantener el equipo correspondiente. También las instituciones de enseñanza pueden usar este manual para propósitos educativos.

⚡ AVERTISSEMENT ⚡

Nous vous remercions d'avoir acheté l'équipement d'automatisation de **AutomationDirect.com**®, en faisant des affaires comme, **AutomationDirect**. Nous tenons à ce que votre nouvel équipement d'automatisation fonctionne en toute sécurité. Toute personne qui installe ou utilise cet équipement doit lire la présente publication (et toutes les autres publications pertinentes) avant de l'installer ou de l'utiliser.

Afin de réduire au minimum le risque d'éventuels problèmes de sécurité, vous devez respecter tous les codes locaux et nationaux applicables régissant l'installation et le fonctionnement de votre équipement. Ces codes diffèrent d'une région à l'autre et, habituellement, évoluent au fil du temps. Il vous incombe de déterminer les codes à respecter et de vous assurer que l'équipement, l'installation et le fonctionnement sont conformes aux exigences de la version la plus récente de ces codes.

Vous devez, à tout le moins, respecter toutes les sections applicables du Code national de prévention des incendies, du Code national de l'électricité et des codes de la National Electrical Manufacturer's Association (NEMA). Des organismes de réglementation ou des services gouvernementaux locaux peuvent également vous aider à déterminer les codes ainsi que les normes à respecter pour assurer une installation et un fonctionnement sûrs.

L'omission de respecter la totalité des codes et des normes applicables peut entraîner des dommages à l'équipement ou causer de graves blessures au personnel. Nous ne garantissons pas que les produits décrits dans cette publication conviennent à votre application particulière et nous n'assumons aucune responsabilité à l'égard de la conception, de l'installation ou du fonctionnement de votre produit.

Nos produits ne sont pas insensibles aux défaillances et ne sont ni conçus ni fabriqués pour l'utilisation ou la revente en tant qu'équipement de commande en ligne dans des environnements dangereux nécessitant une sécurité absolue, par exemple, l'exploitation d'installations nucléaires, les systèmes de navigation aérienne ou de communication, le contrôle de la circulation aérienne, les équipements de survie ou les systèmes d'armes, pour lesquels la défaillance du produit peut provoquer la mort, des blessures corporelles ou de graves dommages matériels ou environnementaux («activités à risque élevé»). La société **AutomationDirect** nie toute garantie expresse ou implicite d'aptitude à l'emploi en ce qui a trait aux activités à risque élevé.

Pour des renseignements additionnels touchant la garantie et la sécurité, veuillez consulter la section Modalités et conditions de notre documentation. Si vous avez des questions au sujet de l'installation ou du fonctionnement de cet équipement, ou encore si vous avez besoin de renseignements supplémentaires, n'hésitez pas à nous téléphoner au 770-844-4200.

Cette publication s'appuie sur l'information qui était disponible au moment de l'impression. À la société **AutomationDirect**, nous nous efforçons constamment d'améliorer nos produits et services. C'est pourquoi nous nous réservons le droit d'apporter des modifications aux produits ou aux publications en tout temps, sans préavis ni quelque obligation que ce soit. La présente publication peut aussi porter sur des caractéristiques susceptibles de ne pas être offertes dans certaines versions révisées du produit.

Marques de commerce

La présente publication peut contenir des références à des produits fabriqués ou offerts par d'autres entreprises. Les désignations des produits et des entreprises peuvent être des marques de commerce et appartiennent exclusivement à leurs propriétaires respectifs. **AutomationDirect** nie tout intérêt dans les autres marques et désignations.

Copyright 2019–2023, AutomationDirect.com® Incorporated
Tous droits réservés

Nulle partie de ce manuel ne doit être copiée, reproduite ou transmise de quelque façon que ce soit sans le consentement préalable écrit de la société **AutomationDirect.com® Incorporated**. **AutomationDirect** conserve les droits exclusifs à l'égard de tous les renseignements contenus dans le présent document.



Pocket Portal IIoT Bridge USER MANUAL



Please include the Manual Number and the Manual Issue, both shown below, when communicating with Technical Support regarding this publication.

Manual Number: SE-PB100-USER-M
Issue: 1st Edition, Rev. H
Issue Date: 05/2023

Publication History		
Issue	Date	Description of Changes
1st Edition	07/19	Original Issue
1st Edition, Rev. A	07/19	Corrections to Data Plan Subscription details, screenshot updates
1st Edition, Rev. B	09/19	Clarification of Digital Output wiring.
1st Edition, Rev. C	11/19	Clarification of live Data tab versus Data log features, and Digital Output wiring.
1st Edition, Rev. D	01/20	Updated Subscription Plans, updated local I/O voltage ranges, updated app features.
1st Edition, Rev. E	06/20	Clarification of time stamp display options.
1st Edition, Rev. F	08/20	Updated Subscription Plans.
1st Edition, Rev. G	07/21	Clarified that users can't be deleted from an account.
1st Edition, Rev. H	05/23	Corrected note on timing of repeat email notifications. Removed Type 1 fonts.



TABLE OF CONTENTS

Chapter 1: Hardware

Introduction	1-2
The Purpose of This User’s Manual.....	1-2
Technical Support.....	1-2
Conventions Used	1-2
STRIDE Pocket Portal Product Overview	1-3
Hardware Overview.....	1-3
Specifications.....	1-4
Dimensions.....	1-6
Installation	1-7
Installation and Removal Procedures.....	1-7
Wiring.....	1-8
Operation	1-14
LED Status Indicators.....	1-14
Bluetooth Control.....	1-14
Reset to Factory Default.....	1-14
Agency Approvals	1-15
Applicable Safety Standards.....	1-15
FCC Compliance.....	1-15
Certifications.....	1-15

Chapter 2: STRIDE Pocket Portal Platform

Overview	2-2
Terms of Use.....	2-2
Getting started	2-3
Setting up the Pocket Portal account	2-3
Create a new Stride Pocket Portal cloud account.....	2-3
Setting up the Pocket Portal device	2-4

Table of Contents

Installing Pocket Portal App on a mobile device	2-4
Add a new Pocket Portal device	2-5
Using the STRIDE Pocket Portal Web App	2-9
Main Web app interface	2-9
Device page—viewing live data and editing device settings.....	2-9
Device Profile page—configuring connections to Modbus and local I/O.....	2-14
Rules page—set email notifications triggered by data values.....	2-24
Settings page—updating account, user, organization, and subscriptions	2-26
Data Logs page—viewing recent data online	2-32
Export logs page—downloading historical log data to your PC.....	2-33
Firmware page—updating device firmware.....	2-34
Device Diagnostics page—information for technical support	2-35
Help page—accessing online documentation	2-35
Notifications.....	2-36
Using STRIDE Pocket Portal on Your Mobile Device	2-37
Installing Pocket Portal App on a mobile device	2-37
View Device List in mobile app.....	2-38
View and edit live data	2-38
Change device settings, profile, and Wi-Fi network.....	2-38
View Notifications.....	2-39
Change or Create Organization.....	2-39
Help	2-40
Report Issue.....	2-40
Other Settings.....	2-40
View or Export Data Logs.....	2-40

Appendix A: Troubleshooting

Initial Setup Issues	A-2
I can't see the Pocket Portal device from my mobile app.....	A-2
My Pocket Portal unit doesn't show up in my dashboard.....	A-3
Not receiving data from my Modbus device	A-4

Appendix B: Safety and Security Considerations

Security Considerations for Control Systems Networks.....	B-2
Safety Guidelines.....	B-3

Appendix C: Data Logging Address Notation – AutomationDirect Devices

Pocket Portal Modbus to AutomationDirect PLC Address Maps	C-2
CLICK PLCs.....	C-2
DirectLogic PLCs	C-5
Do-more PLCs.....	C-7
Productivity Series PLCs	C-9

HARDWARE



CHAPTER 1

In this Chapter...

Introduction	1-2
The Purpose of This User's Manual	1-2
Technical Support	1-2
Conventions Used	1-2
STRIDE Pocket Portal Product Overview	1-3
Hardware Overview	1-3
Specifications	1-4
Dimensions	1-6
Installation	1-7
Installation and Removal Procedures	1-7
Wiring	1-8
Operation	1-14
LED Status Indicators	1-14
Bluetooth Control	1-14
Reset to Factory Default	1-14
Agency Approvals	1-15
Applicable Safety Standards	1-15
FCC Compliance	1-15
Certifications	1-15

Introduction

The Purpose of This User's Manual

Thank you for purchasing our *STRIDE*[®] Pocket Portal series Industrial Internet of Things (IIoT) Bridge for data logging. This manual describes our Pocket Portal bridge and service, its specifications and included components, and provides you with important information for installation, connectivity and setup.

Technical Support

We strive to make our manuals the best in the industry. We rely on your feedback to let us know if we are reaching our goal. If you cannot find the solution to your particular application, or, if for any reason you need technical assistance, please call us at:

770-844-4200

Our technical support group will work with you to answer your questions. They are available Monday through Friday from 9:00 a.m. to 6:00 p.m. Eastern Time. We also encourage you to visit our web site where you can find technical and non-technical information about our products and our company.

<https://www.AutomationDirect.com>

If you have a comment, question or suggestion about any of our products, services, or manuals, please let us know.

Conventions Used



When you see the "notepad" icon in the left-hand margin, the paragraph to its immediate right will be a special note. The word **NOTE**: in boldface will mark the beginning of the text.



When you see the "exclamation mark" icon in the left-hand margin, the paragraph to its immediate right will be a warning or a caution. This information could prevent injury, loss of property, or even death (in extreme cases). The words **WARNING** or **CAUTION**: in boldface will mark the beginning of the text.

STRIDE Pocket Portal Product Overview

The *STRIDE* Pocket Portal connects your legacy devices to the cloud in the most value conscious and easy to use solution available.

This includes the *STRIDE* Pocket Portal bridge hardware and a data use subscription sized for your application.

The solution supports a Modbus device on an RS-485 network, up to four Digital I/O and up to two Analog inputs.

Hardware Overview

The *STRIDE* Pocket Portal is created with performance and a multitude of hardware capabilities in mind.

The device collects data from your Modbus slave and local digital and analog inputs, and uploads it to the cloud platform for data logging at a rate you decide. It contains a 512kB data cache (system and I/O data total) to handle any interruptions in Internet connectivity. It can be directly panel mounted, or DIN rail mounted with an optional adapter.



SAFETY NOTICE: The *STRIDE* Pocket Portal allows the user to connect to remote industrial controls equipment. The remote user may operate and monitor the local control system and affect the function and control of the application just as the local operator controls it. Proper Control, Security and Safety Procedures should be considered and implemented when writing data to a remote device or system.

Specifications

Modbus Serial Interface	
Port Connector	4-pin pigtail connector (shared with power)
Interface Mode	RS-485
Supported Baud Rates	2400bps-115.2 kbps
Parity	Odd, Even or None
Data Bits	8 bits
Stop Bits	1 or 2
Flow Control	None
Termination	Internal 130 ohm
ESD Protection	8kV
Isolation Protection	NA
Serial Devices Supported	1 Modbus Slave
Protocols Supported	Modbus RTU Master

Local Input/Output Connections	
Power Output (5V/0.5A Out)	5VDC +/- 5% 500mA Maximum
Digital Input/Output	4 Pins configured as Input/Output
Digital Input/Output Type	Sinking/Sinking
Pullup Reference (DI Ref)	-0.7V – 26V
DIO 1 – DIO 4 Input Mode	+0.7V to Pullup Ref + 0.7V
DIO 1 – DIO 4 Output High Mode	3.3-24 VDC, 10mA max source
DIO 1 – DIO 4 Output Low Mode	0VDC, 10mA max sink
Analog Input	2 Analog Inputs (0-10 VDC/4-20 mA)
Analog Input Resolution	16-bit
AI 1 and AI 2 Absolute Maximum Voltage	11V maximum
AI 1 and AI 2 Max Continuous Current	22mA

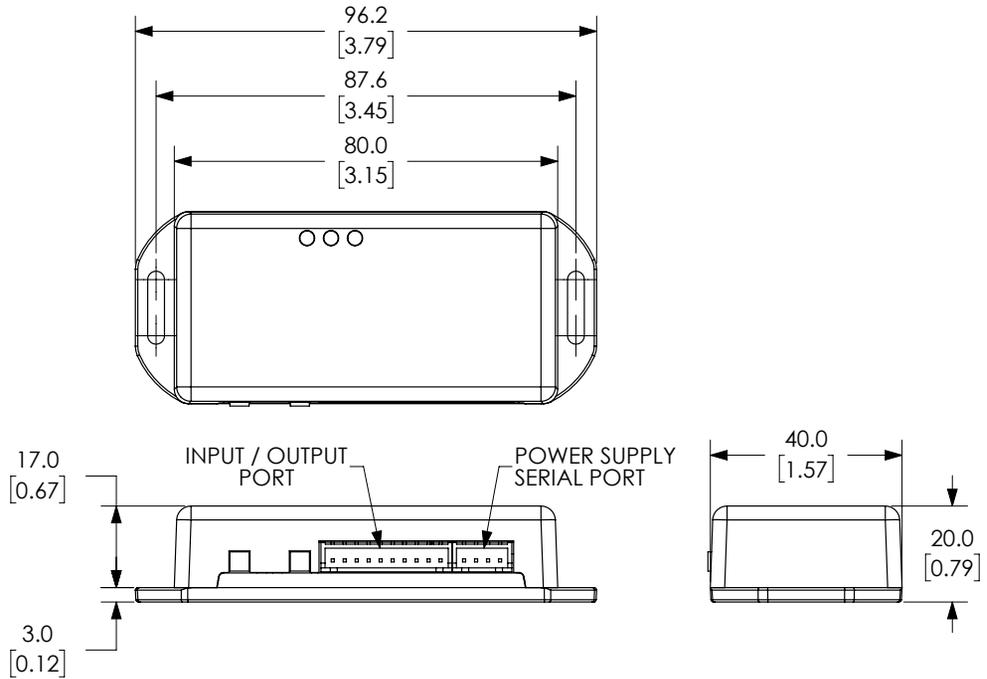
Wi-Fi Interface for Cloud Connectivity	
IEEE Wi-Fi Standard	802.11 b/g/n
Speed	Up to 72.2 Mbps
Frequency Band	2400 MHz
Antenna	Internal PCB Antenna
Network Ports Required	53 DNS 123 NTP 443 HTTPS (TLS) 8883 MQTT

Power Details	
Input Voltage	12–24 VDC
Max. Input Voltage Range	10–26 VDC
Power Consumption	Max 10W
Appliance Class	NA
Reverse Power Protection	Yes
Overload Protection	NA

Environmental	
Operating Temperature Range	-20°C to +70°C [-4°F to 158°F]
Storage Temperature Range	-40°C to +85°C [-40°F to +185°F]
Humidity	5 to 85% RH (non-condensing)
Protection Level	Plastic case, IP40
EMI	EN 55032 Class A
	FCC Part 15 Subpart C (15.247)
EMS	IEC61000-4-2 (ESD): ±4kV (contact), ±8kV (air discharge)
	IEC 61000-4-3 (RS): 10V/m (80MHz–6GHz)
	IEC 61000-4-6 (CS): 10V (150KHz–80MHz)
Mechanical Standards	IEC60068-2-64 (Random Vibration)
	IEC60068-2-32 (Drop Test / Free Fall)
Agency Approvals	CE, FCC

Dimensions

units: mm [in]



STRIDE Pocket Portal dimensions



NOTE: Maintain 20mm [0.79 inches] clearance around device.

Installation

Installation and Removal Procedures

The *STRIDE* Pocket Portal may be used indoors only. It is designed to be cooled using natural convection. For proper cooling, you must provide a clearance of at least 20mm [0.79 inches] above and below the device. Also, allow at least 20mm [0.79 inches] of depth between the front of the device and the inside of the enclosure. There are no restrictions on mounting orientation.

The device can be directly mounted to a panel using #5 or smaller screws, or can be optionally mounted to DIN rail.

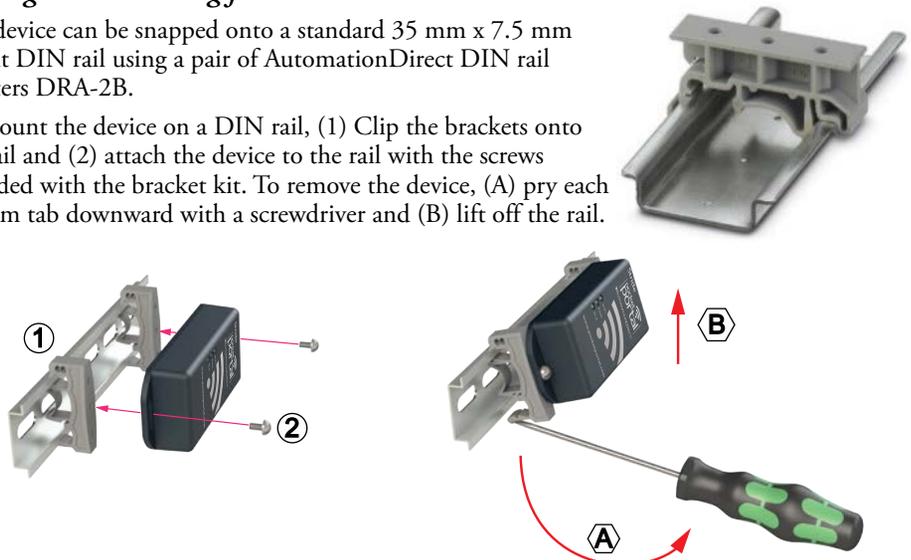


NOTE: Installation in a metal cabinet is not recommended, as the cabinet may block the Wi-Fi signal.

Installing and Removing from DIN rail

The device can be snapped onto a standard 35 mm x 7.5 mm height DIN rail using a pair of AutomationDirect DIN rail adapters DRA-2B.

To mount the device on a DIN rail, (1) Clip the brackets onto the rail and (2) attach the device to the rail with the screws included with the bracket kit. To remove the device, (A) pry each bottom tab downward with a screwdriver and (B) lift off the rail.



Guidelines for Installing the *STRIDE* Pocket Portal

When designing the layout of your system, always separate the devices that generate high voltage and high electrical noise from the low-voltage, logic-type devices such as the Pocket Portal. Also consider the heat-generating devices and locate the electronic-type devices in the cooler areas of your cabinet. Reducing the exposure to a high-temperature environment will extend the operating life of the Pocket Portal.

Route wires to avoid placing low-voltage signal wires and communications cables in the same tray with AC power wiring and high-energy, rapidly-switched DC wiring.

Wiring

Wiring Guidelines



WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call technical support at 1-800-633-0405 or 770-844-4200.

This publication is based on information that was available at the time it was written. At Automationdirect.com[®] we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without obligation. This publication may also discuss features that may not be available in certain revisions of the product.

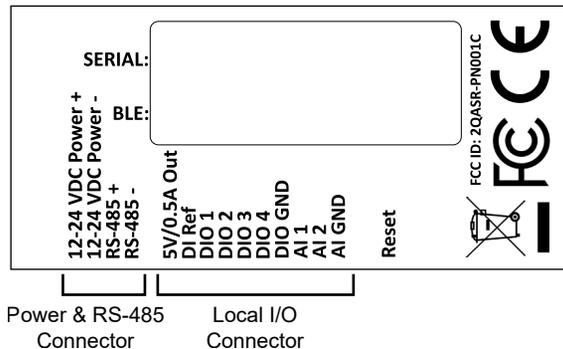
Proper grounding and wiring of all electrical equipment is important to help ensure the optimum operation of the Pocket Portal IIoT Bridge and to provide additional electrical noise protection for your application.



WARNING: Do not terminate communication leads while the plug-in connector is connected to a powered device.

Wiring Connections

The Pocket Portal comes with a female 4-pin plug-in connector for its power and RS-485 connection, and a female 10-pin plug-in connector for its digital I/O and analog inputs. Both connectors include a 24-inch pigtail with tinned leads.



Power Supply and Serial Port

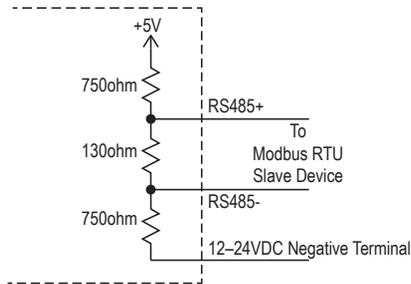
The *STRIDE* Pocket Portal can be powered from the same 12 to 24 VDC source that is used to power your other devices. Recommended DC power supplies are AutomationDirect.com part number PSL-12-010 or PSL-24-010.

The device uses a 2-wire RS-485 interface, with an internal terminating resistor.



Power Supply and RS-485 Port	
Input Voltage	12-24 VDC
Max. Input Voltage Range	10-26 VDC
Power Consumption	Max 10W
RS-485 Voltage Range	-7.0 V to 9.6 V

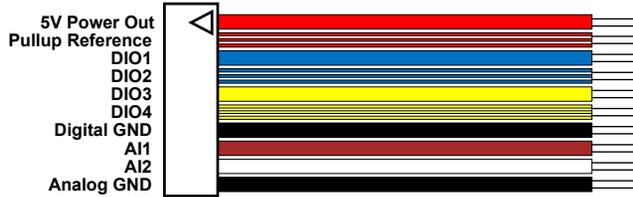
The RS-485 connection has internal termination and pullup/pulldown resistors.



The external Modbus RTU device should share the same power supply reference (12-24 VDC negative terminal) as this device, or it must have an isolated RS-485 communications port.

Digital I/O and Analog Inputs

The *STRIDE* Pocket Portal provides four digital input/outputs and two analog inputs, with pinouts as defined below.



Local Input/Output Connections	
Output Power	5VDC +/- 5%
Output Current	500mA maximum
Pullup Ref	-0.7V - 26V
DIO 1 – DIO 4 Input Mode	+0.7V – Pullup Ref + 0.7V
DIO 1 – DIO 4 Output High Mode	3.3 VDC to 24 VDC, 10mA max source
DIO 1 – DIO 4 Output Low Mode	0VDC, 10mA max sink
AI 1 and AI2 Absolute Maximum	11V
AI 1 and AI 2 Max Continuous Overload	22mA

*Note: Digital inputs are sinking and need a dry contact to drive them.
Digital Outputs are 10mA maximum sink/source.*

Digital Input Wiring

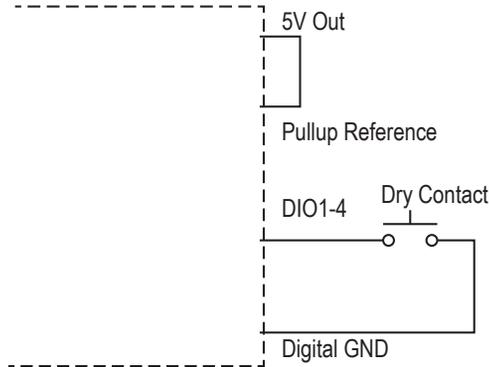
Digital inputs are sinking type, meaning the external circuit must drive the input low. I/O are configured as inputs by default.

Ensure unused leads are protected and secured to prevent unintentional short.



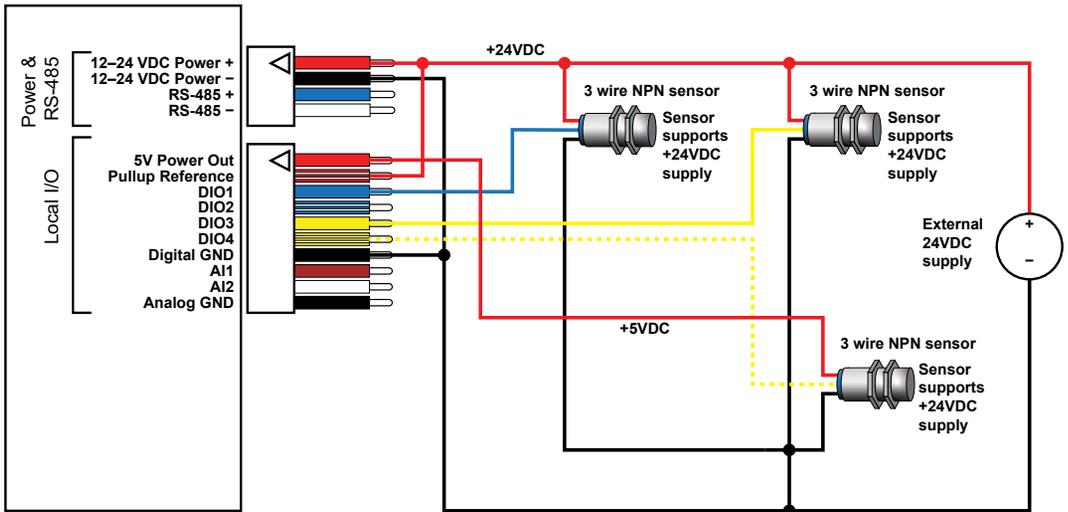
WARNING: Configuring DIO as an output when an external driver is connected may damage the DIO. Also note that all device I/O are non-isolated. Dry contact drivers are recommended.

Inputs driven using sinking driver, including dry contact such as pushbuttons or relays, should drive the Pullup Reference. The 5V output is available as a convenient source:



Sinking Digital Input Example

The Pocket Portal can accommodate a combination of both 24VDC digital inputs and 5VDC digital inputs by using the 5V Power Out terminal to power the 5VDC sensors, as shown below.



Digital Output Wiring

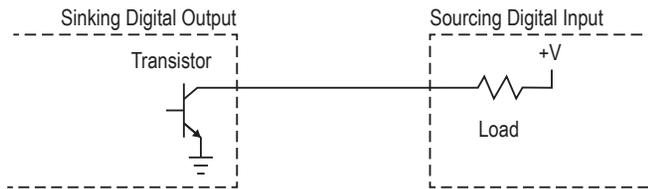
Digital outputs are primarily sinking type and capable of sinking about 10mA of current. The outputs have a limited drive capability of 3.3–24 VDC@10mA.

When connecting to external inputs that require higher voltages, use the Pullup Reference to pull the output up to the target voltage.

Ensure your circuit design limits output current to less than 10mA. A current limiting resistor may be required.



WARNING: All device I/O are non-isolated. When using external device to drive Pullup Reference, make certain the external device GND and Digital GND signals are connected together. Ideally both this device and the external device should be using the same DC power supply.



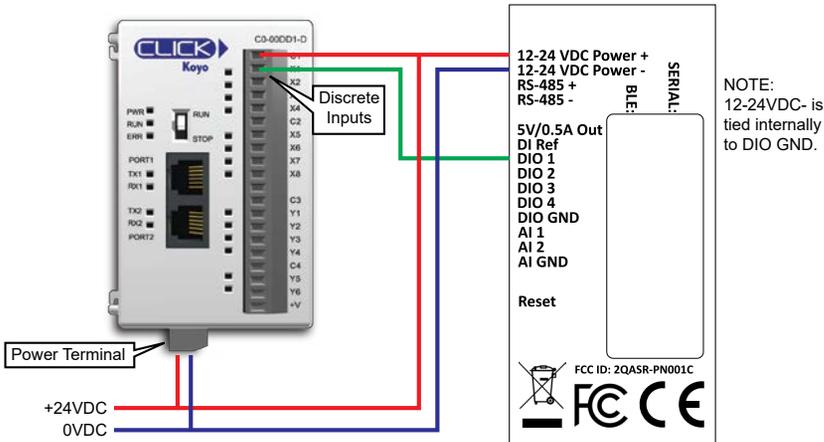
Sinking Digital Output Circuit

With the right external driver (relay, etc) attached to the digital output, the digital output may be used to drive stack indicator lamps. These outputs are not intended for process critical applications. The digital output is suitable for non-critical signaling such as indicator lamps on panels or stack indicator lights. Using them to enable/disable motors is not recommended.



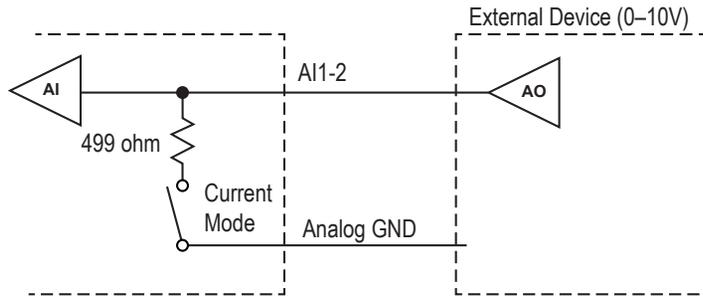
NOTE: When the graphic of the slide controlling a digital output is in the left position, the voltage will be high from the DIO terminal to the COM/Power+ terminal.

Although it seems obvious to use the RS485 Modbus RTU connection to a CLICK controller, a digital output would be wired as an input into CLICK as shown below:



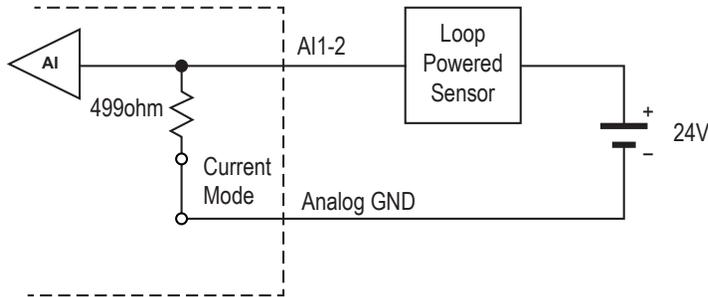
Analog Input Wiring

Analog inputs support either 0–10 VDC or 4–20 mA input modes. The input mode for each input is individually software selectable. Sensors connected to the analog input must be sourcing type.



Example 0–10V Sensor

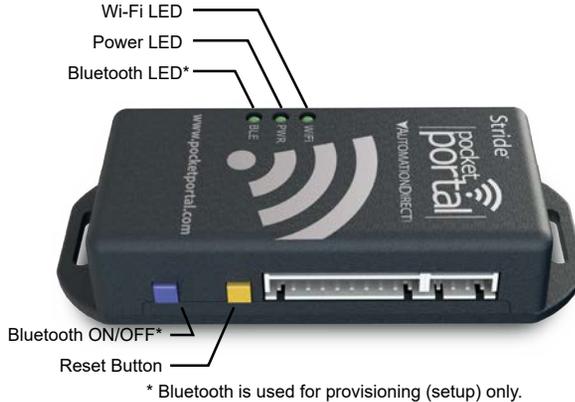
For a 4–20mA loop powered sensor, a 24VDC is necessary. The device is non isolated, so the sensor and the Pocket Portal must be powered from the same 24V DC power supply. The onboard resistor value is 499 Ω.



Example 4–20mA Sensor

Operation

Configuration and operation of the Pocket Portal is primarily conducted using the platform’s web app and mobile app, as discussed in Chapter 2. The hardware indicators and controls are described here.



* Bluetooth is used for provisioning (setup) only.

LED Status Indicators

The *STRIDE* Pocket Portal has three status LEDs, as shown below.

LED Indicators	
Wi-Fi LED	LED OFF – Wi-Fi not provisioned SLOW BLINK – Connecting to Wireless Access Point FAST BLINK – Connecting to Pocket Portal Cloud Service LED ON – Connected to Pocket Portal Cloud Service
Power LED	LED OFF – Power OFF LED ON – Power ON
BLE LED (Bluetooth Low Energy, used to provision Pocket Portal)	LED OFF – BLE off or not advertising SLOW BLINK – BLE advertising LED ON – Connected to mobile app

Bluetooth Control

The blue Bluetooth button is used to activate Bluetooth for initial setup of the device. Bluetooth is not used other than for initial configuration.

Reset to Factory Default

The *STRIDE* Pocket Portal can be reset to the factory default settings by pressing and holding the yellow reset button for 10 seconds.



WARNING: This action cannot be undone. You'll have to re-register your device on the *STRIDE* Pocket Portal platform and complete the configuration steps again.

Agency Approvals

Applicable Safety Standards

The *STRIDE* Pocket Portal was tested and passed the following standards.

Applicable Safety Standards	
Standards	Description
EN 55032 Class A	Electromagnetic Compatibility of Multimedia Equipment
EN 61000-4-2	Electrostatic discharge immunity test
EN 61000-4-3	Radiated, Radio-frequency, Electromagnetic Field Immunity Test 80-1000 MHz
EN 61000-4-6	Immunity to Conducted Disturbances, Induced by Radio-frequency Fields

FCC Compliance

The product described in this User Manual complies with Part 15 of the FCC Rules. The *STRIDE* Pocket Portal is a class B Information Technology Equipment (ITE) device.

Operating is subject to the following conditions:

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



WARNING: This antenna and transmitter must be installed with a separation distance of at least 20cm from all persons and must not be co-located or operated in conjunction with any other antennas or transmitters.

Certifications

The *STRIDE* Pocket Portal has been tested and certified for:

- CE certification
- FCC verification



STRIDE POCKET PORTAL PLATFORM



CHAPTER 2

In this Chapter...

Overview	2-2
Terms of Use	2-2
Getting started	2-3
Setting up the Pocket Portal account	2-3
Create a new <i>STRIDE</i> Pocket Portal cloud account.....	2-3
Setting up the Pocket Portal device	2-4
Installing Pocket Portal App on a mobile device	2-4
Add a new Pocket Portal device.....	2-5
Using the <i>STRIDE</i> Pocket Portal Web App	2-9
Main Web app interface	2-9
Device page—viewing live data and editing device settings	2-9
Device Profile page—configuring connections to Modbus and local I/O	2-14
Rules page—set email notifications triggered by data values	2-24
Settings page—updating account, user, organization, and subscriptions	2-26
Data Logs page—viewing recent data online.....	2-32
Export logs page—downloading historical log data to your PC	2-33
Firmware page—updating device firmware	2-34
Device Diagnostics page—information for technical support	2-35
Help page—accessing online documentation.....	2-35
Notifications.....	2-36
Using <i>STRIDE</i> Pocket Portal on Your Mobile Device	2-37
Installing Pocket Portal App on a mobile device	2-37
View Device List in mobile app.....	2-38
View and edit live data	2-38
Change device settings, profile, and Wi-Fi network	2-38
View Notifications.....	2-39
Change or Create Organization	2-39
Help	2-40
Report Issue.....	2-40
Other Settings.....	2-40
View or Export Data Logs.....	2-40

Overview

The *STRIDE* Pocket Portal Platform is a secure and powerful platform based on a worldwide network of servers. It is focused on delivering and enhancing innovative remote service.

The *STRIDE* Pocket Portal device and platform provide a total end-to-end solution for remote asset monitoring and predictive maintenance of legacy industrial/commercial assets and sensors. The system is cost-effective and simple to set up.

The Pocket Portal records data from legacy industrial equipment & sensors and performs protocol translations, data filtering, aggregation & buffering of data, local rules processing, device provisioning and secure registration with the cloud-based *STRIDE* Pocket Portal platform. The cloud platform includes monitoring dashboards, notifications & alerts, user management, device management, sensor profile management and over-the-air (OTA) firmware updates.

The following example illustrates how a typical *STRIDE* Pocket Portal setup might be configured.



As shown in the example above the *STRIDE* Pocket Portal will connect a Modbus RTU slave device, digital I/O or analog inputs to the cloud-based Pocket Portal platform to allow remote data monitoring and data logging. The Pocket Portal connects to its cloud platform via the Internet using a locally-provided Wi-Fi access point, so no network wiring to the machine is necessary.

Terms of Use

The *STRIDE* Pocket Portal platform is powered by Shoreline IoT, and use of the service requires acceptance of Shoreline's Terms of Use. The Terms of Use can be found in your PocketPortal.com account.

Getting started

Getting started with the Pocket Portal Platform is quick and easy. A few prerequisites are needed:

- A Pocket Portal device, wired and mounted as described in Chapter 1
- An available Wi-Fi access point with connection to the Internet
- A Modbus RTU slave device, digital I/O or analog inputs to be monitored
- An iOS or Android device with Bluetooth for the initial setup. iOS versions 11.x and later are supported. Android versions 7.x and later are supported.

A PC to access the Pocket Portal web app may be more convenient than a mobile device for setup of the data profile after initial configuration. The current versions of Chrome, Edge, Firefox and Safari are supported.

The *STRIDE* Pocket Portal also requires maintaining a cloud data subscription. Subscription options may be reviewed and purchased on the Pocket Portal platform at <https://www.pocketportal.com>.

The subsequent sections will walk you through setting up the device and using it to log data to the cloud platform and monitor data on a PC or mobile device.



NOTE: Screen captures are intended to be as accurate as possible and provide a helpful image to supplement the text. Details shown in the images are for reference only and may be revised in the current browser app.

Setting up the Pocket Portal account

Create a new *STRIDE* Pocket Portal cloud account

A Pocket Portal cloud account needs to be created before any Pocket Portal device can be registered or provisioned to the cloud. The cloud account can be created from the Pocket Portal cloud web site (<https://www.pocketportal.com/>), or from the Pocket Portal mobile app if it is already installed on your iOS or Android device.

Click the Sign-up link, then select a default data plan subscription. Each Pocket Portal device used on your account needs a data plan subscription. The data plan for the first device and account default plan need to be selected when you create the account. If you select one of the paid plans, you will need to enter a credit card for billing. The Terms and Conditions for the data plans are available via a hyperlink at the bottom of the plan selection page.

After selecting a plan, enter the account details (email address, full name, password and organization) for the new account, accept the Terms and Conditions and click the “Sign Up” button to create the account. The organization name will be used in emails you initiate from the platform to invite additional users to have access to the data available on this device. Note that users can’t be deleted from an account.

A verification link will be sent to the email used to create the account. Please click the Verify Me link in the email to continue.

After the account email has been verified, you can log in to your account.

Setting up the Pocket Portal device

Initial setup and provisioning of the Pocket Portal device is conducted using a Bluetooth-connected iOS or Android device running the Pocket Portal App.

Installing Pocket Portal App on a mobile device

Installing the Pocket Portal App on an iOS device

The Pocket Portal App for iOS devices is available in the iOS App Store at <https://itunes.apple.com/us/app/stride-pocket-portal/id1456616358?mt=8> or by scanning the QR code to the right. iOS versions 11.x and later are supported.

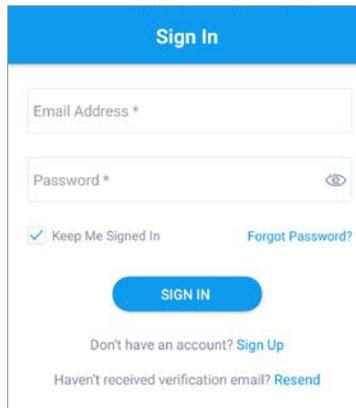


Installing the Pocket Portal App on an Android device

The Pocket Portal App for Android devices is available in the Google Play Store at <https://play.google.com/store/apps/details?id=com.shorelineiot.stridepocketportal> or by scanning the QR code to the right. Android versions 7.x and later are supported.



After the cloud app is installed on either mobile platform, the following screen will be displayed when the app is launched.

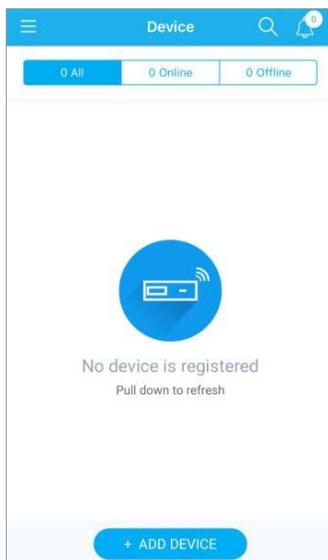


Sign in to your account with the login credentials created in the previous subsection.

Add a new Pocket Portal device

When logged in with no Pocket Portal devices associated with the account, the following screen is displayed.

If identifying the location of your Pocket Portal device is important, please allow your mobile app to access location services. The Pocket Portal device will use the location of the mobile device at the time of provisioning to establish its location.



Power on the Pocket Portal

Wire the Pocket Portal as described in Chapter 1, and apply 12–24VDC power. Verify that the Power (PWR) LED is on solid green.



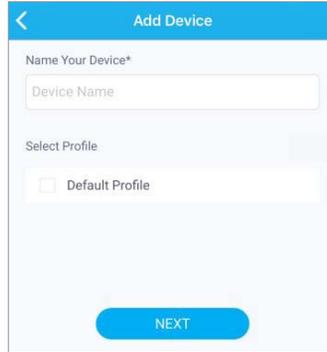
WARNING: Do not terminate communication leads while the plug-in connector is connected to a powered device.

Enter device details

From the mobile app Device screen, click the ADD DEVICE button as shown above. On the subsequent screen, enter a name for the device and select a device profile. Tap NEXT to continue.



NOTE: Each account includes a sample profile which can be used to register a new device. Selecting a profile is mandatory during device registration, but can be changed later. If a custom profile is already defined on the cloud platform, it can be selected during the initial device registration.



Select the Pocket Portal device to be provisioned

To provision a Pocket Portal device, it must be deleted from any account to which it's been associated and must be in its factory default state. If the device has been used previously, reset to the factory default settings by pressing and holding the yellow reset button for 10 seconds. A device ready to be provisioned will have a Power light on steady and the WiFi light will be blinking slowly.

A device may be deleted from the bottom of the Device Info > Settings page of the smart phone app or the browser account access.

Once the device details have been entered, make sure Bluetooth is active on your mobile device then turn on Bluetooth on the new Pocket Portal by pressing the blue button on the Pocket Portal.



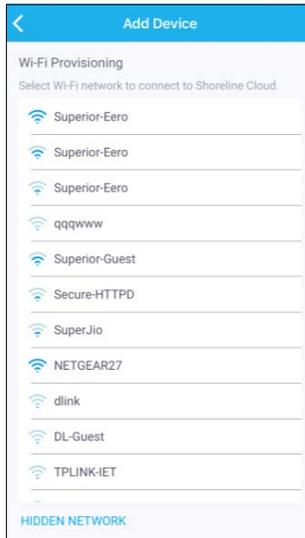
The BLE (Bluetooth Low Energy) LED on the Pocket Portal will blink to indicate that the device is in advertising mode and ready to accept connections.

When a connection is established between the Pocket Portal and your mobile device, the BLE LED will change to solid ON and “Device connected successfully” will be displayed in the app.

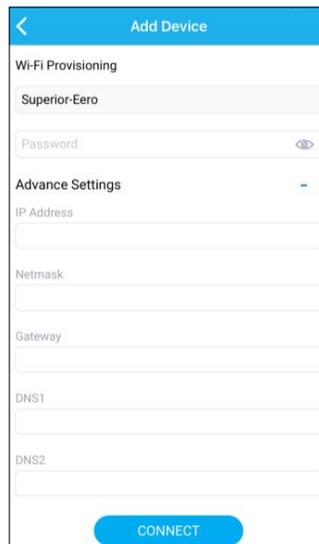
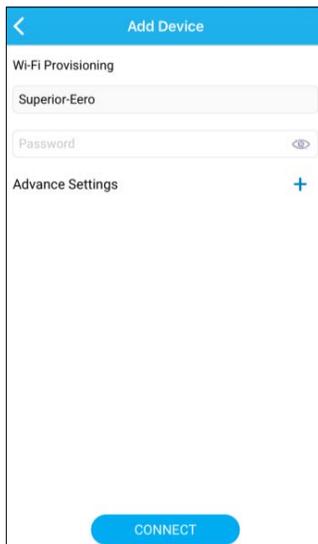
The provisioning process will include updating firmware to the current version, and may take several minutes. Progress will be shown on the mobile app.

Select the Wi-Fi network and connect to the Pocket Portal cloud platform

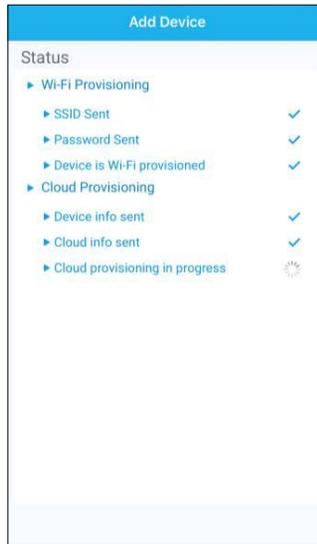
Once the Bluetooth connection is established, a list of Wi-Fi access points visible to the Pocket Portal will be displayed as shown below. Please select the Wi-Fi access point over which the Pocket Portal needs to connect to the cloud-based service.



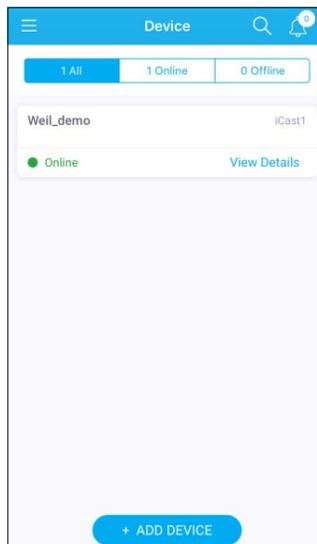
After selecting the Wi-Fi access point, enter the Wi-Fi password on the next screen. Network parameters can be manually configured by tapping on the “+” icon beside Advanced Settings. Click CONNECT to start the provisioning process.



During provisioning, the device will establish a Wi-Fi connection, then will be linked to your account on the Pocket Portal cloud platform. The mobile app displays the current status through the provisioning process as shown below.



After successful provisioning, the mobile app will display the Device screen with the newly added device as shown below.



To complete the setup and start using the device, see the next section on using the Web app.

Using the *STRIDE* Pocket Portal Web App

Main Web app interface

The Pocket Portal devices can be accessed via the Pocket Portal web app at <https://www.pocketportal.com>. From the web app dashboard, you can:

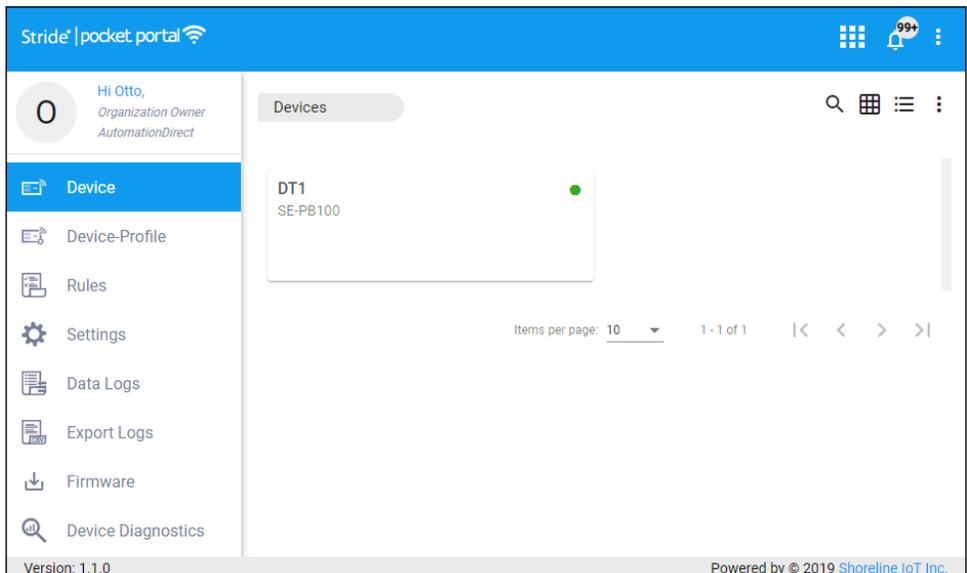
- View device details and monitor live data
- Define configuration profiles and assign them to devices
- View data logs & export data
- Upgrade device firmware
- Modify user settings

Supported browsers are the current versions of Chrome, Edge, Firefox and Safari.

Device page—viewing live data and editing device settings

The Device page is the default view of the web app, and displays the Pocket Portal devices configured on your account. Whether in a Grid or List view, the screen will display all devices, or only those currently online or offline.

For each device, the Device Name, model, and Online/Offline Status are shown. Clicking the device name will display Data and Settings tabs for the selected Device.



Data tab

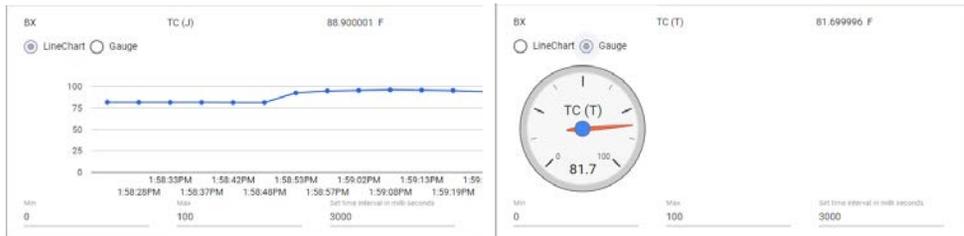
The Data tab displays the most recent value of all data points monitored by the current device and profile. It also allows you to write new values to Modbus registers, discrete bits/coils, and Digital I/O configured as outputs.

Writable variables can be edited by clicking the pencil icon adjacent to the current value, or clicking the toggle switch for boolean values.

The Data tab is accessed similarly from the user interface in the PC browser and from the user interface in the mobile apps.

Peripheral Name	Sensor Name	Value	Timestamp	Actions
BX	TC (J)	80.199996 F	a minute ago	
BX	TC (K)	78.5 F	a minute ago	
BX	ALGIN1	26	2 minutes ago	
BX	ALGOUT1	-	-	
BX	RELAY1		an hour ago	
BX	RELAY2		an hour ago	
BX	SWITCH1		an hour ago	

Data is logged with respect to UTC. On this tab, however, the screen may be toggled between Relative, Viewer Local and UTC time stamp display options. Data from one or more sensors can be visualized with a line chart or gauge by clicking the chart icon to the right of each data row.



NOTE: The Data Logs menu option will display up to 24 hours of recently logged data. See the description of the Data Logs screen on page 2-32.

Device Settings tab

The Settings tab allows you to edit the Device Name, Device Description, and Attached Profile. To change the Device Name or Device Description, click in the text box and edit the string. After editing either of these fields, click Save.

The attached device profile determines the equipment with which the Pocket Portal device will communicate, and the variables to be monitored. To attach a different device profile, click the Edit icon (✎) and select a Device Profile to attach to the Device. The new Device Profile will be downloaded to the device and it will reboot and reconnect to the platform.

The screenshot shows the 'Settings' tab for a device named 'DT1'. The interface is divided into a left-hand navigation menu and a main content area. The navigation menu includes options for 'Device', 'Device-Profile', 'Rules', 'Settings', 'Data Logs', 'Export Logs', 'Firmware', and 'Device Diagnostics'. The main content area is titled 'Device Update' and shows various settings for the device 'DT1'. These settings include: Device Name (DT1), Device Description (BX_MBIQ_1), Attached Profile (BX_MBIQ_1), Controller Processor Firmware Version (2.02.011), Peripheral Processor Firmware Version (1.03.006), Network (OttoMe), Device Type (SE-PB100), Serial Number (1904241097M00), WiFi MAC ID (DC:F5:05:39:AB:0E), BLE MAC (DA:4F:36:53:BA:BF), and Location (34.18, -84.1). There are also buttons for 'Change Device Plan' and 'Delete Device'.

The Settings tab includes links to change the data subscription plan assigned to the present device, and to delete the device from your account. It also displays other read-only settings for the device:

- Wi-Fi Network (SSID)
- Wi-Fi IP address, gateway, netmask, and DNS servers (in dropdown menu beside Network)
- Device Type (SE PB100)
- Serial Number
- Firmware Version
- Wi-Fi MAC ID
- Controller Processor Firmware Version
- Device location (Lat/Lon, established by mobile device during provisioning)

Usage Monitor tab

The Usage Monitor tab allows you to keep track of your monthly usage of data point storage, emails sent, and data point retrieval. This information can be useful in both optimizing the data usage and selecting an appropriate data subscription plan. The screen includes a reminder of the current data subscription plan for the device and some key terms of the plan.



NOTE: Subscription details shown are representative. Current details and pricing can be found on the Pocket Portal platform.

Device Rules tab

The Device Rules tab shows a list of the notification rules that have been assigned to this device. Clicking the pencil icon will open the rule for editing in the top-level Rules tab, as will be discussed later in this chapter. A rule can be deleted by clicking the trashcan icon.

The screenshot displays the Stride Pocket Portal interface. The header shows the user 'Hi Otto, Organization Owner, AutomationDirect'. The left navigation menu includes 'Device', 'Device-Profile', 'Rules', 'Settings', 'Data Logs', 'Export Logs', 'Firmware', and 'Device Diagnostics'. The main content area is titled 'Device Update' for device 'DT1'. Below this, there are icons for database, settings, refresh, and a document icon. A table lists the rules for the device:

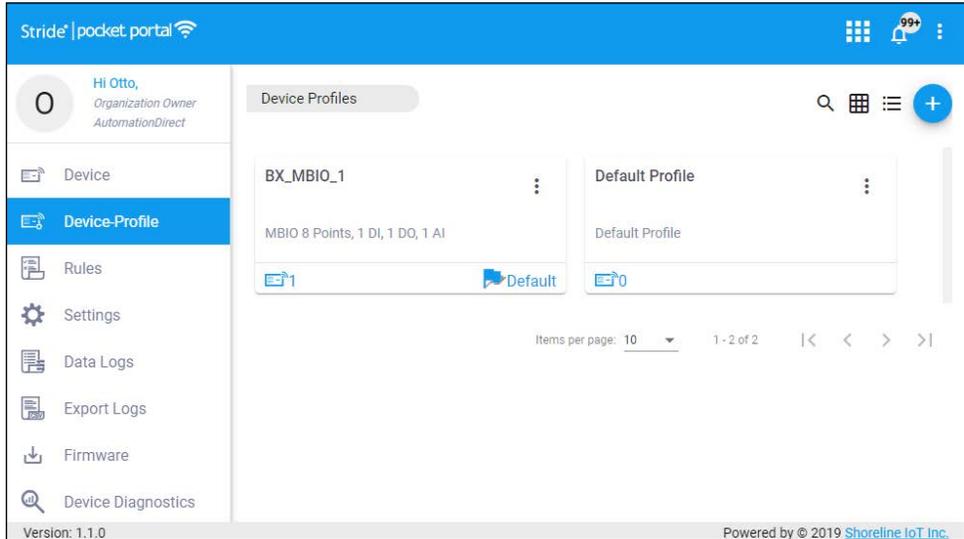
Rule Name	Device Name	Sensor Name	Rule	Value	Actions
Tank1 Level High	DT1	ALGIN1	>=	17000	
Switch 1	DT1	SWITCH1	==	1	

At the bottom of the table, there is a pagination control showing 'Items per page: 10' and '1 - 2 of 2' with navigation arrows. The footer of the interface indicates 'Version: 1.1.0' and 'Powered by © 2019 Shoreline IoT Inc.'.

Device Profile page—configuring connections to Modbus and local I/O

The Device Profile defines the operation of the Pocket Portal, including to what Modbus RTU device it connects, what data variables are read from or written to the Modbus slave, and the configuration of the discrete I/O and analog inputs.

The Device Profile tab displays all device profiles stored on the account, including their name, description, and the number of devices currently configured to use the profile.



Under the More Options (⋮) menu on each profile, you can download the profile to your PC, edit the profile or set it as the default profile for new devices. Any profile that is not currently attached to a device or set as default can be deleted.

The downloaded file is in JSON text format. It can be uploaded again to a different account, or uploaded to the same account and edited to create a new profile.

Create or edit a profile

To create a new profile, click the “+” icon on the Device Profiles screen. Select “New Profile” to create a new profile from scratch, or select “Import Profile” to load a saved profile from your local PC and use it as a template for the new profile.

To edit an existing profile, open the More Options (⋮) menu for the profile and click Edit.

The steps to create or edit a profile are outlined in the following subsections. The profile screens are divided into four cards for Common Settings, Analog Input, Digital I/O and Modbus settings. Click Save in each section after all required fields are entered, and make sure to click Save Profile after all sections are completed.

Common Details

Profile Name: Name of the device profile. Must be unique, must include only letters, numbers, underscores, hyphens, periods, spaces and hashes, and cannot exceed 64 characters.

Cloud Update Interval: The time interval at which the Pocket Portal device will upload logged data to the cloud platform. 1 second is the default. This is independent of the rate at which data is collected for each variable. **The Cloud Update Interval impacts the maximum number of data points logged per month.**

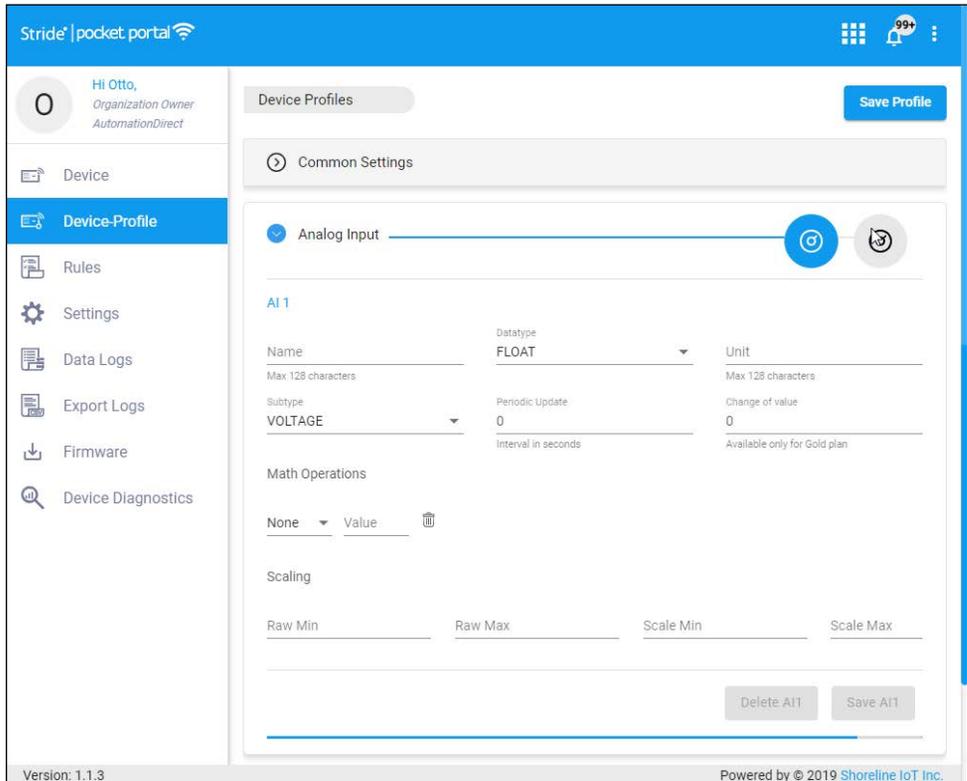
Product Category, Product Make and Product Model: These fields are required, and assist with documentation and organization of your device profiles. Fill them in with appropriate values for your devices.

Profile Description: A short description of the profile (150 characters max)

Additional Information: Up to 150 characters of additional text information may be added. Click Save to save the Common Settings and enable editing of the remaining parameters.

Analog Inputs

Open the Analog Input section, then select an Analog Input channel (AI1 or AI2) with the icons in the upper right of the section.



Name: Enter a unique name for the analog input.

Datatype: Select a data type for the variable. Valid types are INT, FLOAT (default) or BOOLEAN.

Unit: Enter a display unit for the variable, if desired.

Subtype: Select VOLTAGE or CURRENT.

Periodic Update: The time interval in seconds for periodic update to the variable.

Change of Value: The change of value after which the point value will be updated on the cloud irrespective of periodic update. 0 is disabled (default). This option is only available for devices subscribed to the Gold plan.

Math Operations: Basic math functions can be entered to manipulate the raw data values. Select an operation and enter a value if necessary. Click Add another operation if needed. Click the trash can icon beside any operation to remove it. Maximum of 4 math operations are allowed.

Scaling: Scaling is applied to the point value after the point is read/written to (optional). Enter Raw and Scaled minimum and maximum values.

Click Save when you are finished, then select and edit the other analog input if desired.

Digital I/O

Select the Digital I/O tab, then select a Digital I/O channel tab (DIO1–DIO4).

The screenshot shows the Stride Pocket Portal web interface. The top navigation bar is blue with the logo and a notification bell. The left sidebar contains a menu with options: Device, Device-Profile (selected), Rules, Settings, Data Logs, Export Logs, Firmware, and Device Diagnostics. The main content area is titled 'Device Profiles' and has a 'Save Profile' button. Below this are sections for 'Common Settings' and 'Analog Input'. The 'Digital IO' section is active, showing four channel icons, with the first one selected. The configuration for 'DIO1' is displayed in a form with the following fields:

Name	Type	Unit	Periodic Update
Max 128 characters	digital_input	Max 128 characters	0
Datatype	Active	Edge	Interval in seconds
BOOLEAN	HIGH	RISING	Function
Display label for value 0	Display label for value 1		

At the bottom of the form are 'Delete DIO1' and 'Save DIO1' buttons. The footer of the page indicates 'Version: 1.1.0' and 'Powered by © 2019 Shoreline IoT Inc.'

Name: Enter a unique name for the digital input or output.

Type: Select digital input or digital output.

Unit: Enter a display unit for the variable, if desired.

Periodic Update: The time interval in seconds for periodic update to the variable.

Display Labels: Labels for display of sensor raw values of 0 and 1 (e.g., OFF, ON).

For digital inputs, the following additional fields are needed.

Datatype: Must be set to BOOLEAN.

Active: Select whether the output is high or low when active.

Edge: Select whether the output is triggered on the rising edge, falling edge, or both.

Function: Must be set to RAW.

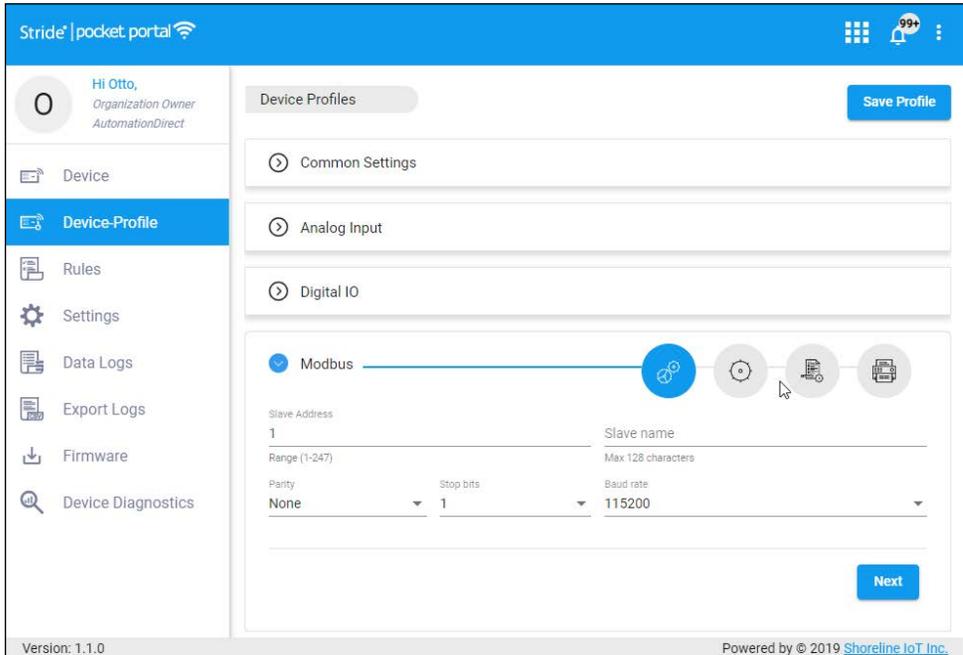
Click Save when you are finished, then select another digital I/O to configure if desired.

Modbus Settings

The Modbus settings are divided into four steps. Progress through the Modbus configuration is indicated by the icons in the upper right corner of the Modbus section.

Device Connection

Configure the Device Profile to communicate with one Modbus RTU Slave.



Slave Address: Address of the Modbus slave, in the range of 1–247.

Slave Name: Unique name of the Modbus slave. Must include only letters, numbers, underscores, hyphens, periods, spaces and hashes.

Parity, Stop Bits, Baud Rate: Set to match your Modbus RTU RS-485 port settings. Defaults to 115200 bps, No Parity, One Stop bit.

Click Next to continue.

Point Configuration

In the next step, data points are defined. If data points were imported, the next screen will be skipped. In that case you can add new data points by clicking “Add Point” on the Point Summary screen.

Point Name: Name of the Modbus point. Must include only letters, numbers, underscores, hyphens, periods, spaces and hashes. Must be unique.

Display Datatype: Data type into which the Modbus value is converted. FLOAT(default) or BOOL.

Point Address: Modbus data point address. Decimal value 0–65535.

Unit: Units assigned to the displayed value.

Modbus Data Type: Data type used by the Modbus slave. Defaults to BIT.

Bit Offset/Bit Length: If the Modbus datatype is BIT or UINT8, the bit offset will contain the range where the point value will be read from and the bit length will contain the number of bits which will be read from the offset.

Change of Value: The change of value after which the point value will be updated on the cloud irrespective of periodic update. 0 is disabled (default). This option is only available for devices subscribed to the Gold plan.

Scaling: Scaling is applied to the point value after the point is read/written to (optional). Enter Raw and Scaled minimum and maximum values.

Periodic Update: The interval at which the point value will be updated on the cloud irrespective of change of value. 0 is disabled (default).

Read Function Code: Values can be FC01–FC04 where FC01 and FC03 are writable registers.

Is Writable: Yes/No.

Periodic Write Update: The interval at which the point value will be written to the Modbus slave irrespective of change of value. 0 is disabled (default).

Periodic Write Value: Value to be written periodically to Modbus slave.

Write Function Code: Values can be FC05, FC06, FC15 and FC16. If the Modbus datatype is 4 bytes, the write function code can only have FC16 in case of FC03 and FC15 in case of FC01.

Math Operations: Basic math functions can be entered to manipulate the raw data values. Select an operation and enter a value if necessary. Click Add another operation if needed. Click the trash can icon beside any operation to remove it. Maximum of 4 math operations are allowed.

Click Add Point when finished to add the data point to the profile. Enter parameters for another data point and repeat as needed. Click Next when finished adding data points.

Point Summary

The Point Summary presents a list of the entered data points. If any data point configuration needs to be edited, click the pencil icon to the right of the data point. After editing the data point configuration, click Save Point to return to the Point Summary screen. If the list of data points is correct, click Next to continue.

Hi Otto,
Organization Owner
AutomationDirect

Device Profile Update Save Profile

- Common Settings
- Analog Input
- Digital IO
- Modbus**

Point Name	Read FC	Write FC	Point Address	Modbus Datatype	Periodic Update	COV	Unit	Actions
TC (J)	FC04		0	UINT16	15	0	F	
TC (K)	FC04		1	UINT16	15	0	F	
ALGIN1	FC04		4	UINT16	0	20		
ALGOUT1	FC03	FC06	0	UINT16	0	20		
RELAY1	FC01	FC05	0	BIT	0	1		
RELAY2	FC01	FC05	1	BIT	0	1		
SWITCH1	FC02		72	BIT	0	1		
SWITCH2	FC02		73	BIT	0	1		

Add Point Next

Version: 1.1.0 Powered by © 2019 Shoreline IoT Inc.

Scan List

The web app will create a scan list that consolidates the data points you have defined down to an optimized list of read and write operations. You can manually modify this scan list here if necessary. Click Save Modbus when finished with the Modbus configuration.

The screenshot shows the 'Device Profile Update' page in the Stride Pocket Portal. The left sidebar contains navigation options: Device, Device-Profile (selected), Rules, Settings, Data Logs, Export Logs, Firmware, and Device Diagnostics. The main content area is titled 'Device Profile Update' and includes a 'Save Profile' button. Below this are sections for 'Common Settings', 'Analog Input', and 'Digital IO'. The 'Modbus' section is active, showing a progress indicator with four steps: Modbus (checked), Analog Input, Digital IO, and Common Settings. Below the progress indicator is a table of Modbus configurations:

No.	Read FC	Write FC	Address	Modbus Datatype	Periodic Write Update	Periodic Write Value	Length	Actions
1	FC01	FC05	0	BIT	0	0	2	
2	FC02		72	BIT	0	0	2	
3	FC03	FC06	0	UINT16	0	0	1	
4	FC04		0	UINT16	0	0	2	
5	FC04		4	UINT16	0	0	1	

At the bottom of the Modbus section are two buttons: 'Add To Scan List' and 'Save Modbus'. The footer of the page indicates 'Version: 1.1.0' and 'Powered by © 2019 Shoreline IoT Inc.'.

You may navigate back to any section of the device profile by clicking the name of the subsection to open it. Remember to save that subsection again if changes are made.

When the device profile is complete, click Save Profile to continue to the Profile Summary.

Profile Summary

The Profile Summary screen presents an overview of the estimated data usage for the profile compared to the limits of the presently selected data plan. If the device profile will generate data exceeding your data plan limit, you can click Edit Profile to modify the profile. Keep in mind that the Cloud Update Interval under Common Settings affects the maximum allowed data points per month, and the Periodic Update interval for each data point affects the total number of points generated per month.

Click Commit Changes to finalize the profile and store it in your cloud account. You can commit the changes even if the data points exceed the limit of you current data plan. In that case, you should consider upgrading your data plan for any devices that will use this device profile.

Stride | pocket.portal

Hi Otto,
Organization Owner
AutomationDirect

Profile Summary

Profile Name: BX_MBIO_1

Description: MBIO 8 Points, 1 DI, 1 DO, 1 AI

Update Interval: 15 second(s)

Maximum allowed points according to plan: 1,500,000

No. of points generated per month: 552,960

	Analog	Digital	Modbus
Points Configured	1	2	8
Periodic Updates Configured	1	1	8

Percentage plan usage by profile

- Calculations are based on the assumption that the device is continuously online for the span of 30 days
- Calculations don't consider COV
- Number of points configured for COV are: 8

36.9%

Awesome!
You are well within your plan limit.

[Edit Profile](#) [Commit Changes](#)

Version: 1.1.3 Powered by © 2019 Shoreline IoT Inc.

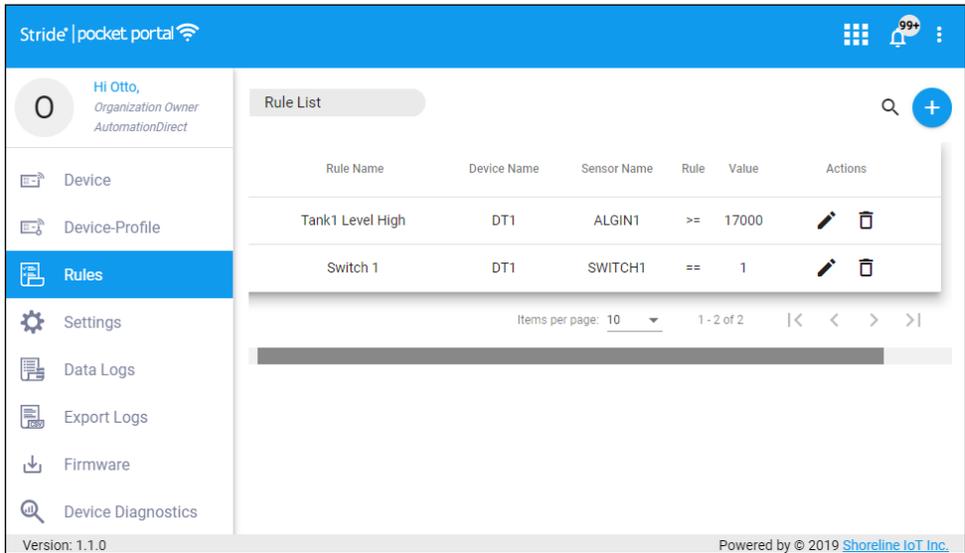


NOTE: Subscription details shown are representative. Current details and pricing can be found on the Pocket Portal platform.

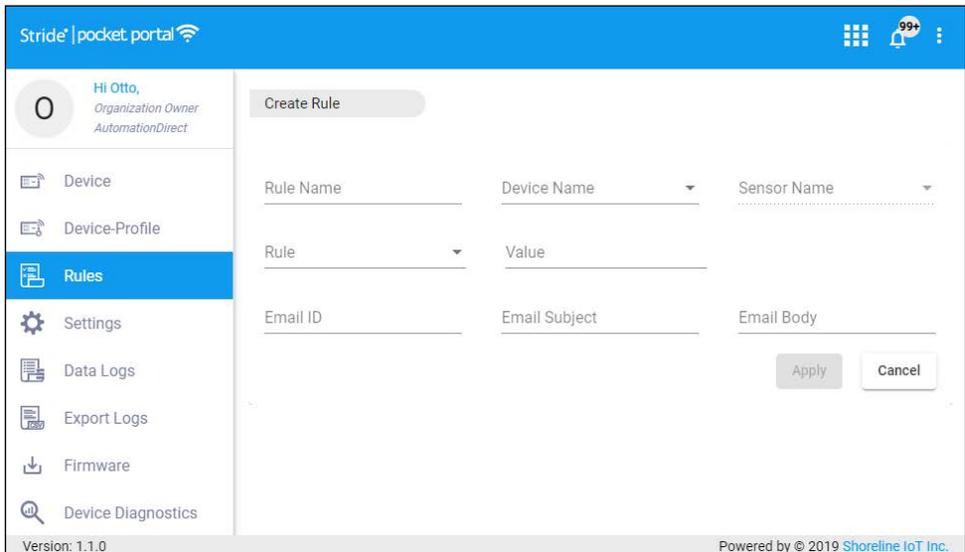
Profiles must be attached to a Device from the Device screen. Go to Device > Settings, click the Edit icon (✎) near the “Attached Profile Name” field and select a Device Profile to attach to the device. The device will download the new profile and reboot. A counter at the bottom of each profile in grid view, or at the right of the table in list view, indicates the number of devices on the account currently using the profile.

Rules page—set email notifications triggered by data values

The Rules page lets you set up notifications to be emailed based on the current value of monitored variables. By default the page will display a list of the currently configured rules.



To create a new rule, click the “+” icon and fill in all fields on the Create Rule dialog.



Rule Name: Enter a unique name for the rule.

Device Name: Select the Pocket Portal device from the dropdown list.

Sensor Name: Select the data point, as defined in the current device profile, from the dropdown list.

Rule: Select the comparator (=, ≠, ≤, ≥).

Value: Enter the value to be compared.

Email ID: Enter the email address or addresses to which the notification should be sent.

Email Subject: Enter the email subject line.

Email Body: Enter the body text of the notification email.

After all fields are entered, click Apply to create the rule.



NOTE: An email notification will be sent when the value of a data point is uploaded to the cloud that matches the criteria of a rule you have established. Thus, the time delay from when a value matches your defined criteria to when a notification is sent is affected by the update interval set for your device.



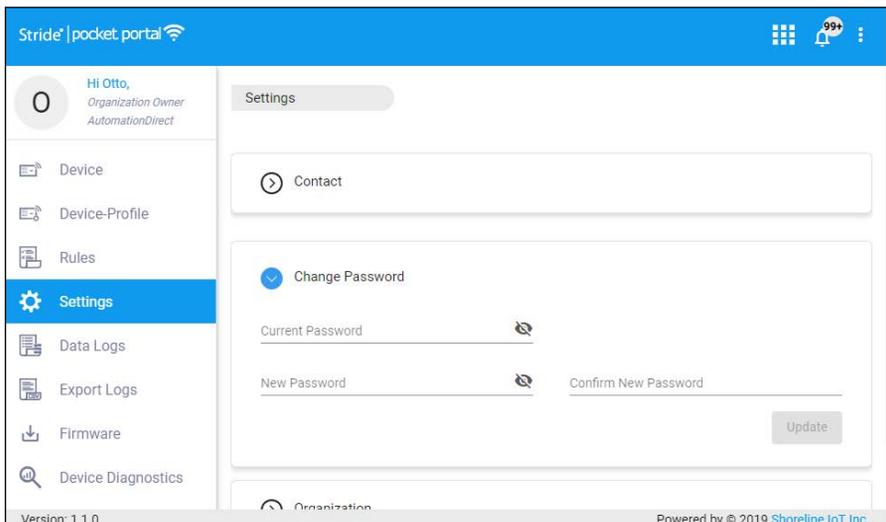
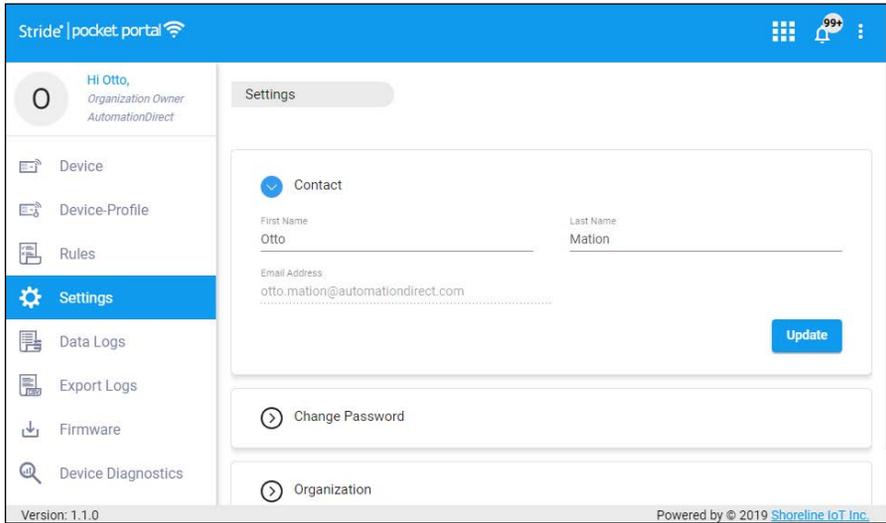
NOTE: One email notification is sent to each address when the Pocket Portal platform detects that a rule is matched. After a rule is triggered, the rule will be evaluated approximately every 5 minutes and a new email notification will be sent each time the rule is evaluated to be true. Email notifications will continue to be sent until the rule is evaluated as false.

Settings page—updating account, user, organization, and subscriptions

The Settings page allows you to update the contact name and organization name, change the login password, and give access to the account to new users.

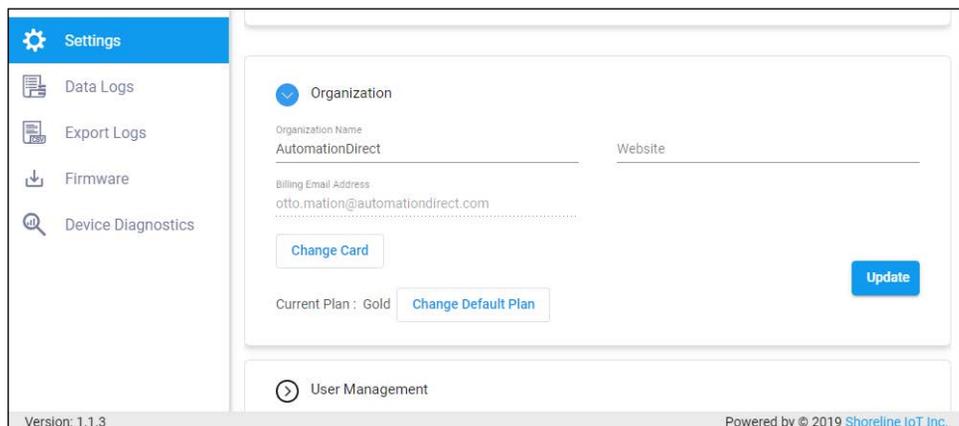
Contact information and password

The user's name and password can be updated on the first two sections, respectively. Note that the email address is tied to the account, and is not editable. A new email address can be added by adding a new user under User Management.



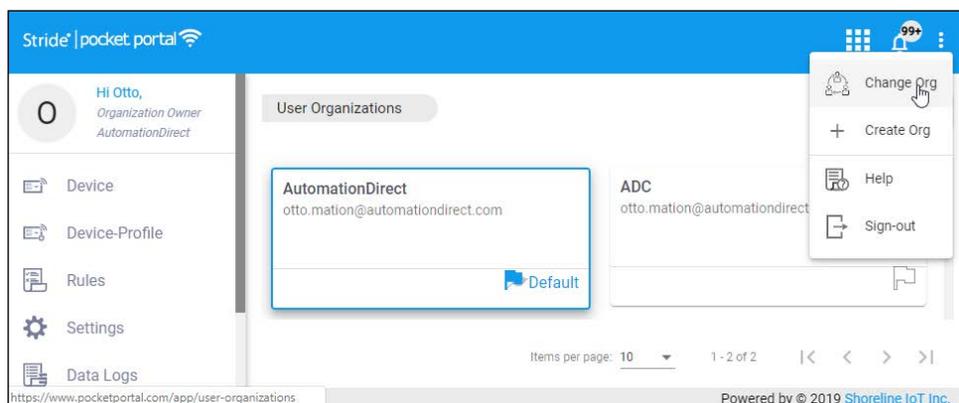
Organization

The organization name and website for the current organization can be updated in the Organization subsection. The current organization is shown in the upper left corner of the web site.



From this subsection, you can update the credit card to which your invoices are billed, and can change the default data plan subscription for new devices added to the account. Note that data plans for current devices must be changed within the device settings.

The current organization can be changed and new organizations can be created by clicking the More Options menu in the upper right corner of the web interface. To change the current organization, click Change Org, click the desired organization, and click the Change button.



To create a new organization, click the Create Org option. On the Create Organization screen, enter a new organization name and select a default data plan

Choose default plan

SILVER

MONTHLY YEARLY

Billed Monthly \$8/month Billed Yearly \$75 (\$6.25/month)

Select

GOLD

MONTHLY YEARLY

Billed Monthly \$15/month Billed Yearly \$139 (\$11.6/month)

Select

<p>Data points per month (Based on Cloud update)</p> <p>Data Storage</p> <p>Read Data Points</p> <p>Users per account</p> <p>Devices Per User</p> <p>Device Profile Sharing</p> <p>Device Management</p> <p>User Management</p> <p>Asset Monitoring/ Charts</p> <p>Email Alerts & Notification</p> <p>Multiple Organizations</p> <p>Rules and Action</p> <p>Export Data</p> <p>No Ads</p>	<p>Up to 200K*</p> <hr/> <p>3 months</p> <hr/> <p>Unlimited**</p> <hr/> <p>Unlimited</p> <hr/> <p>Unlimited</p> <hr/> <p>Optional***</p> <hr/> <p>✓</p> <hr/> <p>✓</p> <hr/> <p>✓</p> <hr/> <p>1K</p> <hr/> <p>4K**</p> <hr/> <p>✓</p> <hr/> <p>✓</p> <hr/> <p>✓</p> <hr/> <p>✓***</p>	<p>Up to 1M*</p> <hr/> <p>6 months</p> <hr/> <p>Unlimited**</p> <hr/> <p>Unlimited</p> <hr/> <p>Unlimited</p> <hr/> <p>Optional***</p> <hr/> <p>✓</p> <hr/> <p>✓</p> <hr/> <p>✓</p> <hr/> <p>4K**</p> <hr/> <p>✓</p> <hr/> <p>✓</p> <hr/> <p>✓***</p>
---	--	---

*Cloud update interval	Data points - Silver	Data points - Gold
10 min or higher	Up to 200K	Up to 1000K
10 sec or higher	Up to 100K	Up to 500K
1 sec or higher	Up to 50K	Up to 250K

*Data point is max 4 bytes data from MODBUS or Analog or Digital port — This selected plan can be changed later from Organization Settings page

** Read Data Points Unlimited subject to Fair Usage Policy mentioned in Terms & Conditions

++ Emails will be throttled to maximum 30 emails per day after exceeding Gold plan limit

*** No Ads: Organizations containing only free plan devices are supported by advertisements on the web and mobile dashboards

+++ Profile sharing refers to device profiles which configure MODBUS device registers, sensor parameters, and more. Sharing device profiles benefits users by building a community supported library of common MODBUS device and sensor profiles to save time when provisioning new devices



NOTE: Subscription details shown are representative. Current details and pricing can be found on the Pocket Portal platform.

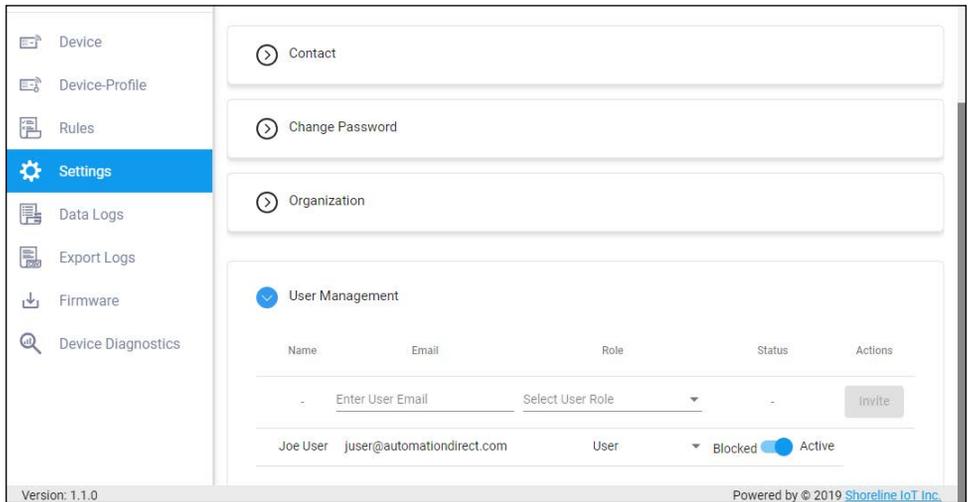
Click the desired default data plan and click the Proceed button that will appear. Note that at this dialog, the default data plan is set. The data plan may be changed for individual devices at the Device > Settings page.

Enter the billing information for this organization in the subsequent screen.

You will receive a confirmation email with a link to activate the account.

User Management

Multiple users can be invited to join the account from the User Management tab. From here, you can manage to access rights of each user or can disable a user's access.



The access rights of each user on the account is managed through role-based access control. Each user is assigned one of the following roles:

- Organization Owner
- Admin / Finance Administrator
- User
- Site Manager

The actions allowed by each role are delineated in the table on the next page.

Role-Based Access Control User Rights Management					
Role		Org. Owner	Admin	Site Manager	User
Number of Allowed Users with this Role		1	0+	0+	0+
Resource	Action				
Organization	Create	✓	✓	✓	✓
	View	✓	✓	✓	✓
	View_details	✓	✓	✗	✓
	Update, Delete	✓	✗	✗	✗
Device	Add, Update, Delete	✓	✓	✓	✗
	View, View_details	✓	✓	✓	✓
	View_data, Live_data	✓	✓	✓	✓
	Reprovision	✓	✓	✓	✗
	Actions	✓	✓	✓	✗
	Add_rule, Update_rule	✓	✓	✓	✗
	View_device_debug_log	✓	✓	✓	✓
Firmware	View	✓	✓	✓	✗
	Apply	✓	✗	✓	✗
Device Profile	Create	✓	✓	✓	✗
	View, View_details	✓	✓	✓	✓
	Update	✓	✓	✓	✗
	Attach	✓	✓	✓	✗
	Delete	✓	✓	✓	✗
User	View	✓	✓	✗	✓
	Invite, Remove, Block	✓	✓	✗	✗
User Organization	View, View_details	✓	✓	✓	✓
	Update	✓	✓	✗	✗
Role	View, Update	✓	✓	✗	✗
Rule	Create, View, View_details	✓	✓	✓	✗
	Update, Delete	✓	✓	✓	✗

Subscriptions

The Subscriptions tab displays all current data plan subscriptions, and allows deletion of any paid subscription plan that is not currently attached to a device.

Hi Otto,
Organization Owner
Automation@direct

- Device
- Device-Profile
- Rules
- Settings**
- Data Logs
- Export Logs
- Firmware
- Device Diagnostics

- Change Password
- Organization
- User Management

Subscriptions Delete Available Subscriptions

Pricing Plan	Frequency	Device Name	Start Date	Next Billing Date
Free	Monthly		Jan 14, 2020	-
Free	Monthly		Jan 14, 2020	-
Free	Monthly		Jan 14, 2020	-
Free	Monthly		Jan 14, 2020	-
Free	Monthly		Jan 14, 2020	-
Gold_2019	Monthly	DT1	Aug 8, 2019	Aug 8, 2019

Version: 2.4 | Powered by © 2020 Shoreline IoT Inc. [Tech Support](#) | [FAQs](#)

Data Logs page—viewing recent data online

The Data Logs page lets you view up to the last 24 hours of historical logged data. To retrieve a set of logged data, select a time frame, a device and either All Sensors or an individual sensor from the three dropdown boxes, and click Get Data. If an individual sensor is selected, the data can optionally be graphed by clicking the graph icon to the right of the Get Data button.



NOTE: The data logs contain historical data only. To view the latest data, or to write to Modbus registers, Modbus bits/coils, and discrete I/O, use the Data tab on the Device page, as discussed on page 2-10.



NOTE: Viewing data on the Data Log screen counts toward your monthly data retrieval limit. Viewing current data from the Device screen does not.

The screenshot shows the 'Data Logs' page in the Stride Pocket Portal. The user is 'Hi Otto, Organization Owner AutomationDirect'. The page has a sidebar with navigation options: Device, Device-Profile, Rules, Settings, Data Logs (selected), Export Logs, Firmware, and Device Diagnostics. The main content area shows filters for 'Time span' (Last 1 hr), 'Select Device' (DT1), and 'All Sensors'. A 'Get Data' button is present. Below the filters is a table with the following data:

Sensor Name	Value	Timestamp
AI1	9.294376	Jun 26, 2019, 3:05:48 PM
DIO1	1	Jun 26, 2019, 3:05:29 PM
DIO1	1	Jun 26, 2019, 3:05:19 PM
AI1	9.295901	Jun 26, 2019, 3:05:18 PM
AI1	9.296206	Jun 26, 2019, 3:04:48 PM
AI1	9.298646	Jun 26, 2019, 3:03:38 PM

The screenshot shows the 'Data Logs' page with a line graph. The filters are 'Time span' (Last 24 hrs), 'Select Device' (DT1), and 'TC_K'. A 'Get Data' button and a graph icon are visible. The graph shows data points over a 24-hour period from 9:00 PM to 12:00 PM. The y-axis ranges from 76 to 80. The data points are approximately: (9:00 PM, 76.5), (10:00 PM, 76.8), (11:00 PM, 77.0), (12:00 AM, 77.0), (1:00 AM, 76.8), (2:00 AM, 77.0), (3:00 AM, 76.8), (4:00 AM, 76.5), (5:00 AM, 76.8), (6:00 AM, 76.5), (7:00 AM, 76.8), (8:00 AM, 76.5), (9:00 AM, 76.8), (10:00 AM, 79.5), (11:00 AM, 77.5), (12:00 PM, 77.0).

Export logs page—downloading historical log data to your PC

The Export logs page lets you export logged data manually or on a schedule. To retrieve a set of logged data manually, select a starting date, ending date and device from the three dropdown boxes, and click Export. The request to export data is submitted to the cloud platform, and a comma-delimited text file containing the data set should be sent to the email address associated with your account within about 20 minutes.

To schedule regular data exports, select the device, time period to export, the frequency of reports, and when to send them. Reports can be sent daily, weekly, or monthly, at specific time, day of week, or day of month.



NOTE: Exporting data counts toward your monthly data retrieval limit. For optimum data efficiency, plan the time period and frequency to avoid retrieving duplicate data.

The screenshot shows the 'Export Data' page in the Stride Pocket Portal. The user is logged in as 'Hi Otto, Organization Owner AutomationDirect'. The left sidebar contains navigation options: Device, Device-Profile, Rules, Settings, Data Logs, and Export Logs (highlighted). The main content area is titled 'Export Data' and has two sections: 'Manual Exports' (selected with a blue checkmark) and 'Scheduled Exports'. The 'Manual Exports' section includes input fields for 'Start Date', 'End Date', and a 'Select Device' dropdown menu, followed by an 'Export' button.

The screenshot shows the 'Export Data' page with the 'Scheduled Exports' section selected. The left sidebar now includes 'Export Logs', 'Firmware', and 'Device Diagnostics'. The 'Scheduled Exports' section features a table of existing reports and a blue '+' button to add a new one. The table has columns for Report Name, Date, Email Frequency, Device Name, and Edit/Delete. A sample row shows a 'Daily' report for 'DT1' with a frequency of 'Every 1 day(s) | 7:0'. The footer indicates 'Version: 1.1.0' and 'Powered by © 2019 Shoreline IoT Inc.'.

Report Name	Date	Email Frequency	Device Name	Edit / Delete
Daily	Last 1 day(s)	Every 1 day(s) 7:0	DT1	

Firmware page—updating device firmware

The Firmware page allows you to push firmware and other updates to Pocket Portal devices. To update a device, click on the firmware update to be installed, select the devices to be updated, then click View Summary and Apply.

The screenshot shows the 'Firmwares' page in the Stride Pocket Portal. The left sidebar contains navigation options: Device, Device-Profile, Rules, Settings, Data Logs, Export Logs, Firmware (highlighted), and Device Diagnostics. The main content area displays a table of firmware updates:

	Firmware Version	Firmware Description	Created On	Release Notes
<input checked="" type="radio"/>	2.02.012	Firmware with SB54 - 2.02.012	Jul 5, 2019, 5:22:37 AM	
<input type="radio"/>	2.02.008	Firmware with SB54 - 2.02.008	Jul 5, 2019, 9:39:12 AM	
<input type="radio"/>	2.02.011	Firmware with SB54 - 2.02.011	Jul 5, 2019, 9:47:21 AM	

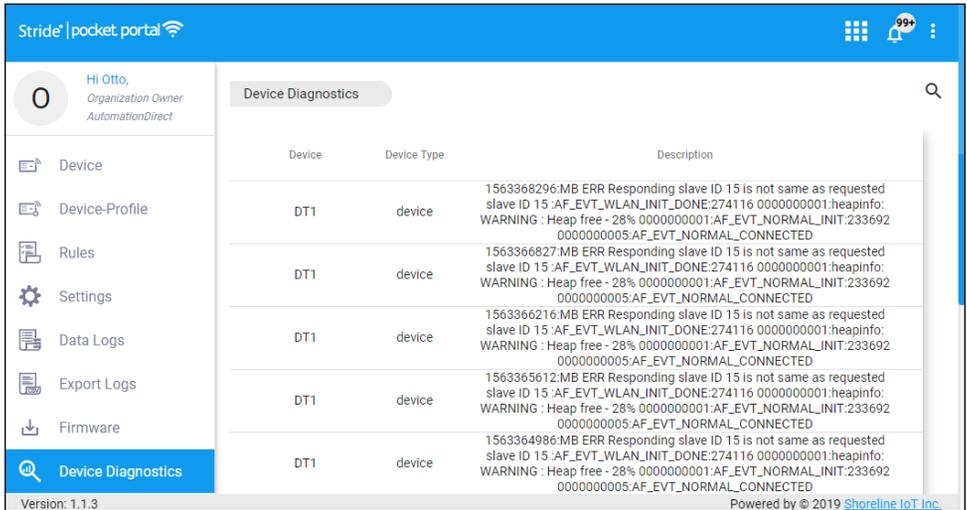
At the bottom of the table, it shows 'Items per page: 10' and '1 - 3 of 3'. A 'View Devices' button is located in the top right corner of the main content area.

The screenshot shows the 'Firmwares' page with a modal window open for selecting devices compatible with a specific firmware version. The modal title is 'Devices compatible with Firmware 2.02.012'. It includes a 'Cancel' button and a 'View Summary' button. The modal contains a table with the following data:

<input checked="" type="checkbox"/>	Device Name	Description	Type	Current Firmware
<input checked="" type="checkbox"/>	DT1		SE-PB100	2.02.012

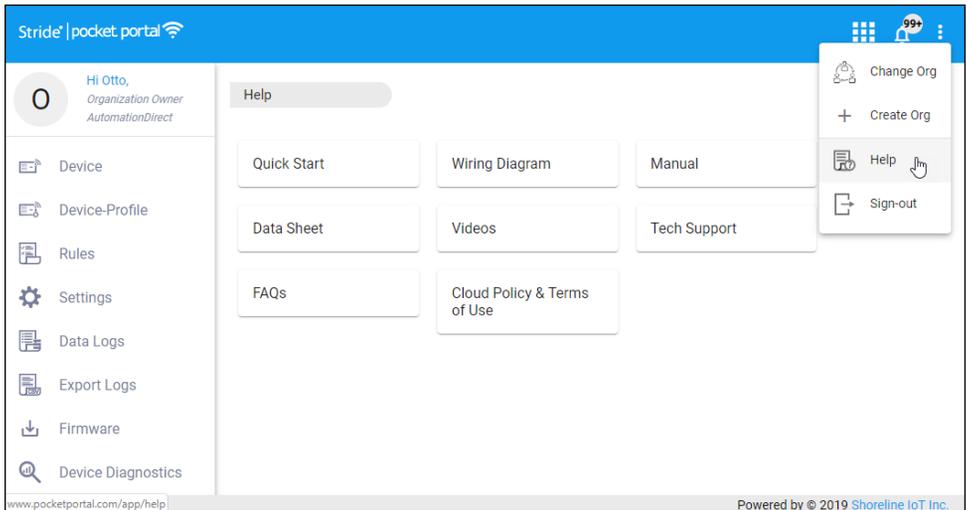
Device Diagnostics page—information for technical support

The Device Diagnostics page displays status information from the devices. If you are working with our technical support staff on a support issue, they may ask for a portion of the information displayed in this screen as a part of troubleshooting.



Help page—accessing online documentation

The Help page provides links to online documentation from within the web app.



Notifications

The bell icon in the upper right of the web app shows a counter of the number of current notifications. Click the icon to view the notifications.

The screenshot shows the Stride Pocket Portal interface. At the top right, a bell icon with a '99+' notification counter is highlighted. The main content area displays a 'Notifications' table with the following data:

Level	Content	Description	Type	Timestamp
!	DT1: Modbus Error	Timeout: No respons...	MODBUS	7 days ago
!	DT1: Modbus Error	Timeout: No respons...	MODBUS	7 days ago
!	DT1: Modbus Error	Timeout: No respons...	MODBUS	7 days ago
i	DT1: Profile download complete	Profile download co...	PROFILE	7 days ago
i	DT1: Profile download started	Profile download star...	PROFILE	7 days ago
i	DT1: Profile download complete	Profile download co...	PROFILE	7 days ago
i	DT1: Profile download started	Profile download star...	PROFILE	7 days ago

The left sidebar contains navigation options: Device, Device-Profile, Rules, Settings, Data Logs, Export Logs, Firmware, and Device Diagnostics. The user profile 'Hi Otto, Organization Owner AutomationDirect' is visible at the top left. The footer shows the URL 'www.pocketportal.com/app/notifications' and 'Powered by © 2019 Shoreline IoT, Inc.'.

Using **STRIDE** Pocket Portal on Your Mobile Device

Mobile Apps for the Pocket Portal are available on the iTunes App Store and the Google Play Store. A mobile device with the Pocket Portal App is necessary for initial setup and provisioning of the Pocket Portal device, and can also be used to manage the devices and monitor the data collection. Bluetooth is necessary only for the initial setup. After configuration, the mobile device connects to the cloud platform, not directly to the device.

The mobile apps allow you to:

- Add a new device
- View device details, and monitor and control live data
- Assign device profiles to devices
- Modify user settings

Installing Pocket Portal App on a mobile device

Installing the Pocket Portal App on an iOS device

The Pocket Portal App for iOS devices is available in the iOS App Store at <https://itunes.apple.com/us/app/stride-pocket-portal/id1456616358?mt=8> or by scanning the QR code to the right. Versions 11.x and later are supported.



Installing the Pocket Portal App on an Android device

The Pocket Portal App for Android devices is available in the Google Play Store at <https://play.google.com/store/apps/details?id=com.shorelineiot.stridepocketportal> or by scanning the QR code to the right. Versions 7.x and later are supported.



Adding a new Pocket Portal device to your account using the mobile app is covered in “Setting up the Pocket Portal device” on page 2-4. Other features of the mobile app are discussed here.

View Device List in mobile app

The list of Pocket Portal devices linked to your account can be viewed from the Device screen in the mobile app as shown below. The Device screen also displays counts of Online devices (devices connected to the cloud), Offline devices (devices not reachable or that have lost connectivity to the cloud) and All devices on the account.

View and edit live data

Tap the device name to bring up the Data tab, which displays the most recent value of all data points monitored by the current device and profile. Writable variables can be edited by clicking the pencil icon adjacent to the current value, or clicking the toggle switch for boolean values.

Change device settings, profile, and Wi-Fi network

From the Device view, tap the Settings header to access device settings. The device name, attached profile, Wi-Fi network and device data plan can be changed from the mobile app. All other information is read only.

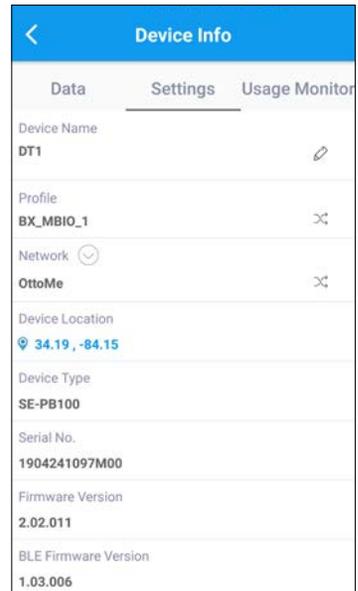
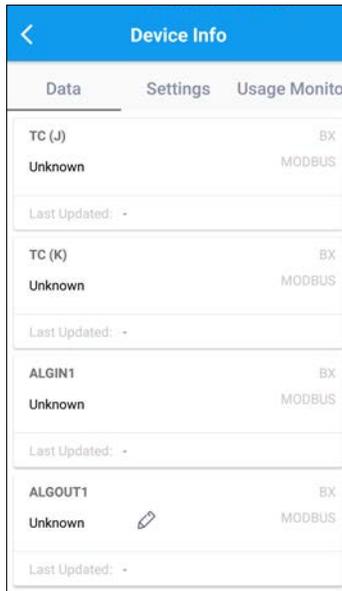
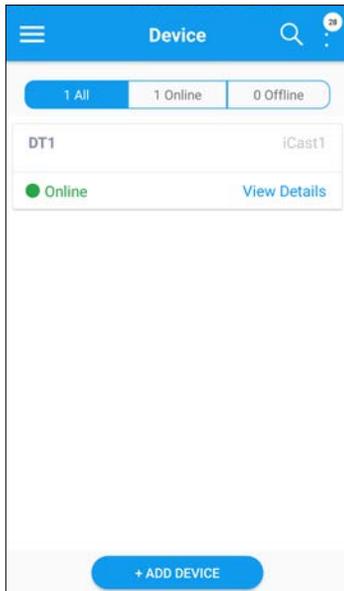
To edit the Device Name, tap the pencil icon and enter a new name. Note that the name must be unique on the account.

To change the attached Device Profile, tap the icon to the right of the current profile name, then select a new device profile from the list.

Note that creation of a new Device Profile must be done on the web app.



NOTE: Screen caps are representative. There may be differences in the current App version, including format and pricing of the subscription details.



To change the Wi-Fi network used by the device, you must be close enough to it to establish a Bluetooth connection. Tap the icon to the right of the Wi-Fi network name, and follow the onscreen prompts to connect to the device via Bluetooth.

Then, select a Wi-Fi network and fill in the password. If you need to manually specify connection details for your network, tap Advanced Settings and enter the IP address, subnet mask, gateway, and DNS servers.

After you tap Connect, the device will update its network connection and reconnect to the Pocket Portal cloud.

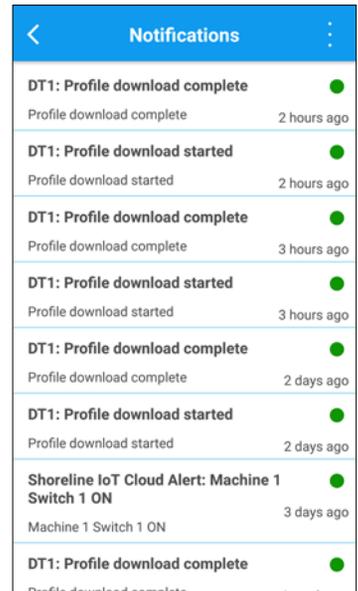
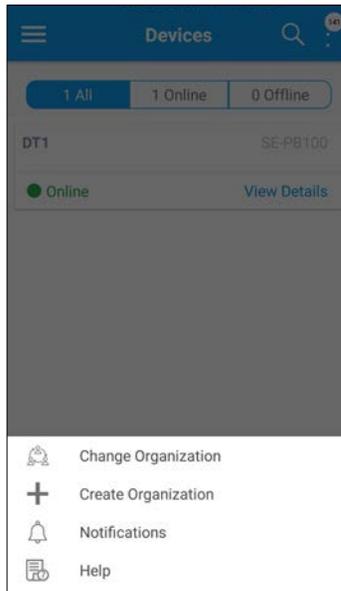
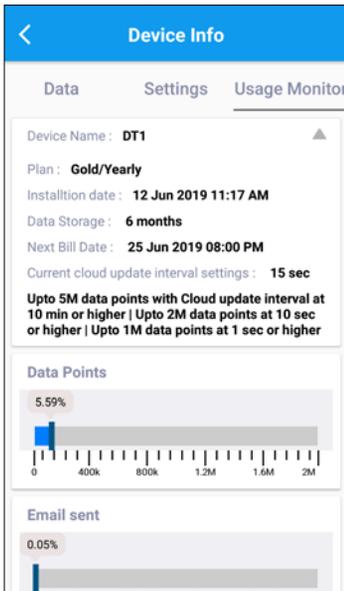
To change the data plan for a device, select Change Data Plan at the bottom of the settings screen. Select the new plan and click Proceed.

View Notifications

The More Options icon in the upper right of the mobile app shows a counter of the number of current notifications. Tap the icon then tap the bell icon to view the notifications. While viewing notifications, tapping the More Options icon will allow you to filter the list of notifications to include only Info, Warning, Error, or All types.

Change or Create Organization

The More Options icon also allows you to switch your currently active organization or create a new organization. In the case of a new organization, you will need to select a default data plan and enter billing information.



Help

Help resources are found under the More Options menu. The help screen provides access to product documentation, videos, and tech support.

Report Issue

To report a problem with the device or service, select “Report Logs” (“Report Issue” on iOS devices) from the Help menu. Briefly describe what went wrong, then click Send to email our technical support team.

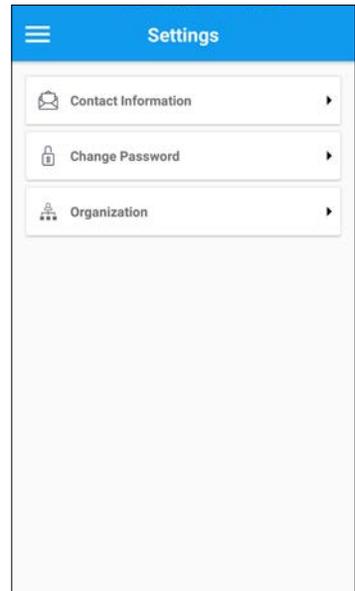
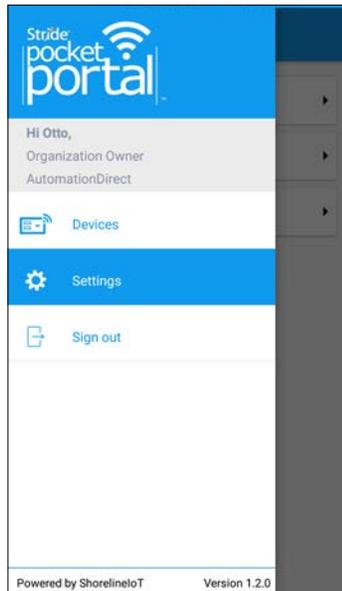
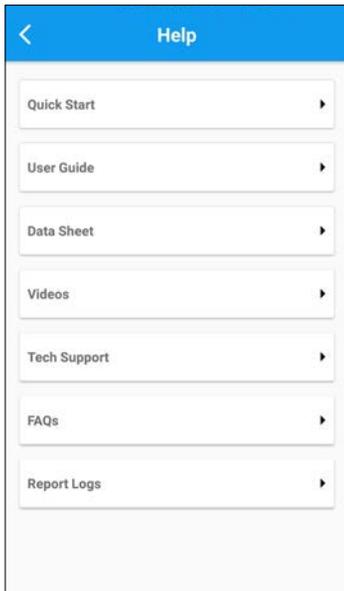
Other Settings

The Settings menu, accessible from the ‘hamburger’ menu icon in the upper left corner of the screen, contains options to edit your contact information, password, and organization details. These options are essentially the same as those available on the web platform, as discussed earlier.

View or Export Data Logs

The Data Logs menu, accessible from the ‘hamburger’ menu icon in the upper left corner of the screen, will display all logged values for a one selected sensor over a selected time period.

The Export Logs menu, accessible from the ‘hamburger’ menu icon in the upper left corner of the screen, will generate a csv file containing all logged values for all sensors on a selected device over a selected time period. A link to the log file will be emailed to the addresses you enter at the time the log is exported.





APPENDIX A

TROUBLESHOOTING

In this Appendix...

- Initial Setup IssuesA-2**
 - I can't see the Pocket Portal device from my mobile app.A-2
 - My Pocket Portal unit doesn't show up in my dashboard.....A-3
- Not receiving data from my Modbus deviceA-4**

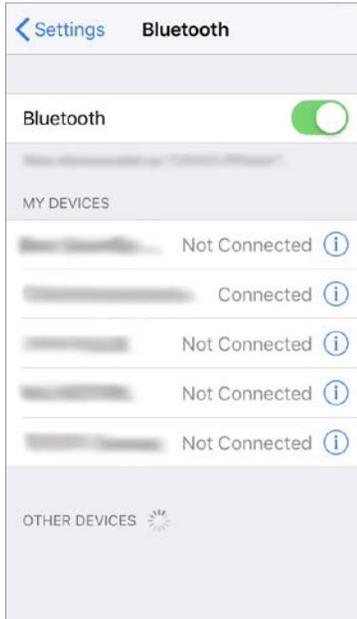
Initial Setup Issues



NOTE: The Wi-Fi, PWR and BLE LEDs always display the active status of the device. See the LED Status Indicators section in Chapter 1 to review the status descriptions and help identify the problem.

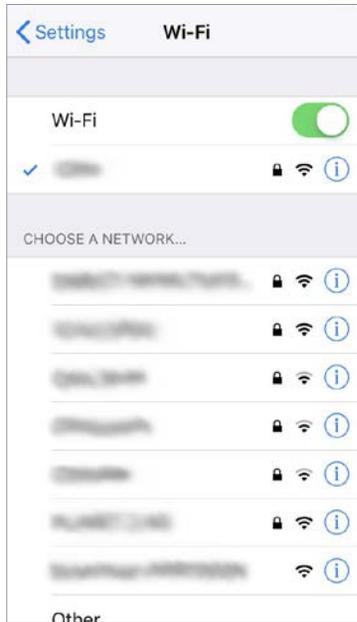
I can't see the Pocket Portal device from my mobile app.

- Make sure Bluetooth is enabled on your device.
- Press the blue button on the side of the Pocket Portal unit while the mobile app is scanning for devices.



My Pocket Portal unit doesn't show up in my dashboard.

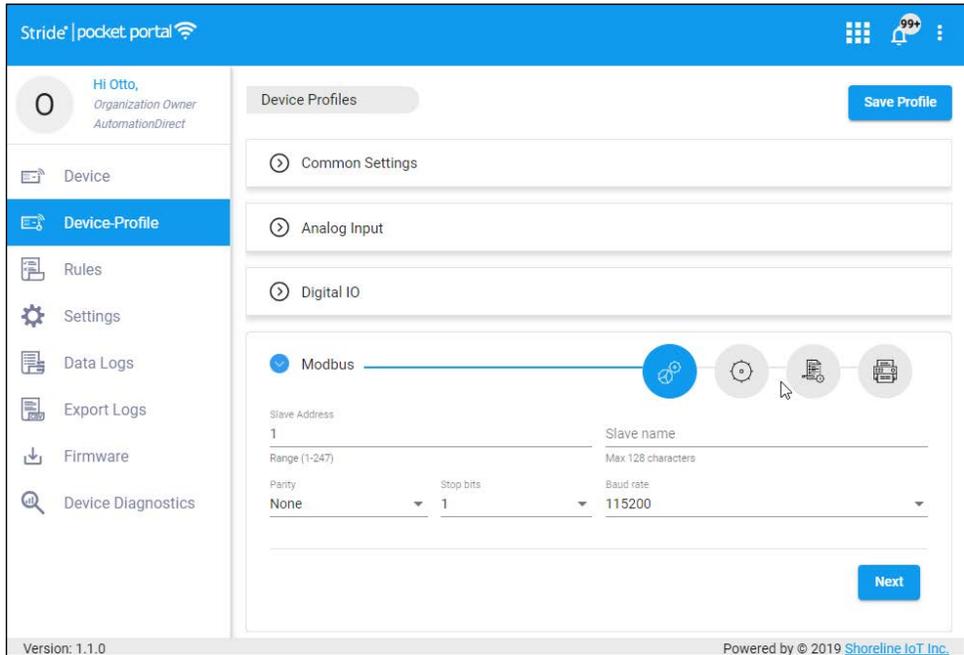
- Make sure Wi-Fi is enabled on your device.



- Is the router discoverable? If not, enable this setting on the router. If this is not possible, choose the “Hidden Network” option. To use this option, you must know the SSID of the router, the password and the encryption method used by this router. Consult your IT representative for more details and info on this.
- The router needs to have DHCP server enabled. The DHCP server settings must serve out the correct default gateway for this network and reachable DNS server addresses.

Not receiving data from my Modbus device

From the Pocket Portal web platform, open the Device Profile for the Pocket Portal device. On the Modbus settings page:



- **Slave address:** This is the address of the device that Pocket Portal is requesting information from. This address must be unique on the network.
- **Baud rate, Parity and Stop bits:** All three of these settings must match the slave device. If the cable quality is poor, the environment is subject to high amounts of electrical noise or the distance is very long, the baud rate may need to be reduced.
- **Cloud update interval:** The time period that data is updated to the cloud from the Pocket Portal hardware is configured in the Common Settings section of Device Profile. Updating too quickly will consume your monthly data allotment. Note that the Cloud Update Interval will affect the amount of time you must wait to see data refresh on your dashboard.

On the Point Configuration page:

Stride | pocket.portal

Hi Otto,
Organization Owner
AutomationDirect

Device Profiles Save Profile

Common Settings

Analog Input

Digital IO

Modbus

Point Name Display datatype: **FLOAT** Point Address Unit

Max 128 characters allowed

Modbus Data Type: **BIT** Bit Offset Bit Length Change Of Value

Available only for Gold plan

Scaling

Raw Min Raw Max Scale Min Scale Max Periodic Update: Read Function Code: **FC01**

Interval in seconds

Is Writable: **No**

Math Operations

None Value

Add Point Next

Version: 1.1.3 Powered by © 2019 Shoreline IoT Inc.

- Display data type should be FLOAT for all non-Boolean values and BOOL for Boolean values.
- Point Address is the reference value from 0 for that associated Function Code. This is NOT Modicon style PLC addressing. For example: In Modicon Style Addressing, 400001 is the first Holding Register. In the Point Configuration it would be 0 for Point Address and FC03 function code.
- The Modbus Data type should match the slave device, the request may be incorrect and/or the values won't look correct.
- Data will not be requested from the Slave device unless the Change of Value or Periodic Update fields are non-zero values.
- The Function Code field needs to match the correct setting for the slave device

SAFETY AND SECURITY CONSIDERATIONS



In this Appendix...

Security Considerations for Control Systems Networks.....	B-2
Safety Guidelines.....	B-3

Security Considerations for Control Systems Networks

Manufacturers are realizing that to stay competitive, their Automation and Control Systems need to be more integrated within their plant. The systems often need to be integrated with upstream Enterprise Data Systems, and even further integrated to allow information to be accessible across multiple plants, or even through the Internet. This convergence of the IT world with the Automation World creates challenges in maintaining secure systems and protecting your investments in processes, personnel, data and intellectual property.

While Automation Networks and Systems have built-in password protection schemes, this is only one very small step in securing your systems. Automation Control System Networks need to incorporate data protection and security measures that are at least as robust as a typical business computer system. We recommend that users of PLCs, HMI products and SCADA systems perform your own network security analysis to determine the proper level of security required for your application. However, the National Security Agency has provided direction related to network security and safety under an approach described as “Defense in Depth”, which is published at <http://www.nsa.gov/ia/files/support/defenseindepth.pdf>.

This comprehensive security strategy involves physical protection methods, as well as process and policy methods. This approach creates multiple layers and levels of security for industrial automation systems. Such safeguards include the location of control system networks behind firewalls, their isolation from business networks, the use of intrusion detection systems, and the use of secure methods for remote access such as Virtual Private Networks (VPNs).

Further, users should minimize network exposure for all control system devices and such control systems and these systems should not directly face the internet. Following these procedures should significantly reduce your risks both from external sources as well as internal sources, and provide a more secure system.

It is the user’s responsibility to protect such systems, just as you would protect your computer and business systems. AutomationDirect recommends using one or more of these resources in putting together a secure system:

- US-CERT’s Control Systems Security Program at the following web address: www.us-cert.gov/control_systems/
- Special Publication 800-82 of the National Institute of Standards and Technology – Guide to Industrial Control Systems (ICS) Security http://csrc.nist.gov/groups/SMA/fisma/ics/documents/oct23-2009-workshop/nist-ics3_10-23-2009.pdf
- ISA99, Industrial Automation and Control Systems Security <http://www.isa.org/MSTemplate.cfm?MicrositeID=988&CommitteeID=6821> (please note this is a summary and these standards have to be purchased from ISA)

This set of resources provides a comprehensive approach to securing a control system network and reducing risk and exposure from security breaches. Given the nature of any system that accesses the internet, it is incumbent upon each user to assess the needs and requirements of their application, and take steps to mitigate the particular security risks inherent in their control system

Safety Guidelines



NOTE: Products with CE marks perform their required functions safely and adhere to relevant standards as specified by CE directives provided they are used according to their intended purpose and that the instructions in this manual are adhered to. The protection provided by the equipment may be impaired if this equipment is used in a manner not specified in this manual. A listing of our international affiliates is available on our Web site: <https://www.AutomationDirect.com>



WARNING: Providing a safe operating environment for personnel and equipment is your responsibility and should be your primary goal during system planning and installation. Automation systems can fail and may result in situations that can cause serious injury to personnel or damage to equipment. Do not rely on the automation system alone to provide a safe operating environment. You should use external electromechanical devices, such as relays or limit switches, that are independent of the PLC application to provide protection for any part of the system that may cause personal injury or damage. Every automation application is different, so there may be special requirements for your particular application. Make sure you follow all national, state, and local government requirements for the proper installation and use of your equipment.

The best way to provide a safe operating environment is to make personnel and equipment safety part of the planning process. You should examine every aspect of the system to determine which areas are critical to operator or machine safety. If you are not familiar with control system installation practices, or your company does not have established installation guidelines, you should obtain additional information from the following sources.

- NEMA — The National Electrical Manufacturers Association, located in Washington, D.C. publishes many different documents that discuss standards for industrial control systems. You can order these publications directly from NEMA. Some of these include:
 - ICS 1, General Standards for Industrial Control and Systems*
 - ICS 3, Industrial Systems*
 - ICS 6, Enclosures for Industrial Control Systems*
- NEC — The National Electrical Code provides regulations concerning the installation and use of various types of electrical equipment. Copies of the NEC Handbook can often be obtained from your local electrical equipment distributor or your local library.
- Local and State Agencies — many local governments and state governments have additional requirements above and beyond those described in the NEC Handbook. Check with your local Electrical Inspector or Fire Marshall office for information.



DATA LOGGING ADDRESS NOTATION – AUTOMATIONDIRECT DEVICES



In this Appendix...

Pocket Portal Modbus to AutomationDirect PLC Address Maps.....	C-2
CLICK PLCs.....	C-2
DirectLogic PLCs.....	C-5
Do-more PLCs	C-7
Productivity Series PLCs	C-9

Pocket Portal Modbus to AutomationDirect PLC Address Maps

The following tables provide mapping between Pocket Portal Modbus addresses and specific AutomationDirect PLC product line addresses.

CLICK PLCs

Reading Coils (Function Code 1)			
Function Code	Pocket Portal Modbus Address	Data Type	CLICK Address
1	8192	BOOL	Y1
1	8207		Y16
1	8224		Y101
1	8239		Y116
1	8256		Y201
1	8273		Y216
1	8287		Y301
1	8302		Y316
1	8320		Y401
1	8335		Y416
1	8352		Y501
1	8367		Y516
1	8384		Y601
1	8399		Y616
1	8416		Y701
1	8431		Y716
1	8448		Y801
1	8463		Y816
1	16384		C1
1	18383		C2000

Reading Input Bits (Function Code 2)			
Function Code	Pocket Portal Modbus Address	Data Type	CLICK Address
2	0	BOOL	X1
2	15		X16
2	32		X101
2	47		X116
2	64		X201
2	79		X216
2	96		X301
2	111		X316
2	128		X401
2	143		X416
2	160		X501
2	175		X516
2	192		X601
2	207		X616
2	224		X701
2	239		X716
2	256		X801
2	271		X816
2	45056		T1
2	45555		T500
2	49152		CT1
2	49401		CT250
2	61440		SC1
2	62439		SC1000

Reading Input Registers (Function Code 4)			
Function Code	Pocket Portal Modbus Address	Data Type	CLICK Address
4	61440	INT16, UINT16 or BOOL*	SD0
4	62439		SD1000
4	57344/57345	INT32 or UINT32	XD0
4	57360/57361		XD8

* **BOOL:** When using **BOOL** with Input and Holding Registers, a zero value in the register indicates False in the data logger. Any non-zero value indicates True in the data logger.

Reading Holding Registers (Function Code 3)			
Function Code	Pocket Portal Modbus Address	Data Type	CLICK Address
3	0	INT16, UINT16 or BOOL**	DS1
3	4499		DS4500
3	24576		DH1
3	25075		DH500
3	45056		TD1
3	45555		TD500
3	16384/16385	UINT32_SWAP or SINT32_SWAP	DD1
3	18382/18383		DD1000
3	49152/49153		CTD1
3	49650/49651		CTD250
3	57856/57857		YD0
3	57872/87873		YD8
3	28672/28673	FLOAT_SWAP	DF1
3	29670/29671		DF500

* **BOOL:** When using **BOOL** with **Input and Holding Registers**, a zero value in the register indicates **False** in the data logger. Any non-zero value indicates **True** in the data logger.

DirectLogic PLCs

Reading Coils (Function Code 1)			
<i>Function Code</i>	<i>Pocket Portal Modbus Address</i>	<i>Data Type</i>	<i>DirectLogic Address</i>
1	0	BOOL	GY0
1	2047		GY3777
1	2048		Y0
1	3071		Y1777
1	3072		C0
1	5119		C3777
1	5120		S0
1	6143		S1777
1	6144		T0
1	6399		T377
1	6400		CT0
1	6655		CT377

Reading Input Bits (Function Code 2)			
<i>Function Code</i>	<i>Pocket Portal Modbus Address</i>	<i>Data Type</i>	<i>DirectLogic Address</i>
2	0	BOOL	GX0
2	2047		GX3777
2	2048		X0
2	3071		X1777
2	3072		SP0
2	3583		SP777

Reading Input Registers (Function Code 4)			
Function Code	Pocket Portal Modbus Address	Data Type	DirectLogic Address
4	0	INT16, UINT16 or BOOL*	V0
4	17055		V41237
4	0/1	INT32 or UINT32	V0/V1
4	1/2		V1/V2
4	17054/17055		V41236/V41237
4	0/1	FLOAT32	V0/V1
4	1/2		V1/V2
4	17054/17055		V41236/V41237

* **BOOL:** When using **BOOL** with Input and Holding Registers, a zero value in the register indicates **False** in the data logger. Any non-zero value indicates **True** in the data logger.

Reading Holding Registers (Function Code 3)			
Function Code	Pocket Portal Modbus Address	Data Type	DirectLogic Address
3	0	INT16, UINT16 or BOOL*	V0
3	17055		V41237
3	0/1	INT32 or UINT32	V0/V1
3	1/2		V1/V2
3	17054/17055		V41236/V41237
3	0/1	FLOAT32	V0/V1
3	1/2		V1/V2
3	17054/17055		V41236/V41237

* **BOOL:** When using **BOOL** with Input and Holding Registers, a zero value in the register indicates **False** in the data logger. Any non-zero value indicates **True** in the data logger.

Do-more PLCs

Reading Coils (Function Code 1)			
Function Code	Pocket Portal Modbus Address	Data Type	Do-more! Address
1	0	BOOL	MC1
1	1		MC2
1	65534		MC65535

Reading Input Bits (Function Code 2)			
Function Code	Pocket Portal Modbus Address	Data Type	Do-more! Address
2	0	BOOL	MI1
2	1		MI2
2	65534		M165535

Reading Input Registers (Function Code 4)			
Function Code	Pocket Portal Modbus Address	Data Type	Do-more! Address**
4	0	INT16, UINT16 or BOOL*	MIR1
4	1		MIR2
4	65534		MIR65535
4	0	INT32 or UINT32	-
4	1/2		MIR2:D
4	65533/65534		MIR65534:D
4	0	FLOAT32	-
4	1		MIR2:RD
4	65533/65534		MIR65534:RD

* *BOOL*: When using *BOOL* with Input and Holding Registers, a zero value in the register indicates False in the data logger. Any non-zero value indicates True in the data logger.

** *Double integers (32 bit)* can only be used on even number addresses in *Do-more!* (*MIR2*, *MIR4*, etc...).

Reading Holding Registers (Function Code 3)			
Function Code	Pocket Portal Modbus Address	Data Type	Do-more! Address**
3	0	INT16, UINT16 or BOOL*	MHR1
3	1		MHR2
3	65534		MHR65535
3	0	INT32 or UINT32	-
3	1/2		MHR2:D
3	65533/65534		MHR65534:D
3	0	FLOAT32	-
3	1/2		MHR2:RD
3	65533/65534		MHR65534:RD

* *BOOL*: When using *BOOL* with Input and Holding Registers, a zero value in the register indicates False in the data logger. Any non-zero value indicates True in the data logger.

** *Double integers (32 bit)* can only be used on even number addresses in *Do-more!* (*MIR2, MIR4, etc...*).

Productivity Series PLCs

Reading Coils (Function Code 1)			
Function Code	Pocket Portal Modbus Address	Data Type	Productivity Address*
1	0	BOOL	000001
1	1		000002
1	65534		065535

* Modbus addresses must be assigned to the tags in the "Tag Database" area of the Productivity Suite Programming Software.

Reading Input Bits (Function Code 2)			
Function Code	Pocket Portal Modbus Address	Data Type	Productivity Address*
2	0	BOOL	100001
2	1		100002
2	65534		165535

* Modbus addresses must be assigned to the tags in the "Tag Database" area of the Productivity Suite Programming Software.

Reading Input Registers (Function Code 4)			
Function Code	Pocket Portal Modbus Address	Data Type	Productivity Address**
4	0	INT16, UINT16 or BOOL*	300001
4	1		300002
4	65534		365535
4	0	INT32 or UINT32	300001/300002
4	1		300002/300003
4	65534		365535/365536
4	0	FLOAT32	300001/300002
4	1		300002/300003
4	65534		365535/365536

* **BOOL**: When using **BOOL** with Input and Holding Registers, a zero value in the register indicates False in the data logger. Any non-zero value indicates True in the data logger.

** Modbus addresses must be assigned to the tags in the "Tag Database" area of the Productivity Suite Programming Software.

Reading Holding Registers (Function Code 3)			
Function Code	Pocket Portal Modbus Address	Data Type	Productivity Address**
3	0	INT16, UINT16 or BOOL*	400001
3	1		400002
3	65534		465535
3	0	INT32 or UINT32	400001/400002
3	1		400002/400003
3	65534		465535/465536
3	0	FLOAT32	400001/400002
3	1		400002/400003
3	65534		465535/465536

* *BOOL*: When using *BOOL* with Input and Holding Registers, a zero value in the register indicates False in the data logger. Any non-zero value indicates True in the data logger.

** *Modbus addresses must be assigned to the tags in the "Tag Database" area of the Productivity Suite Programming Software*

