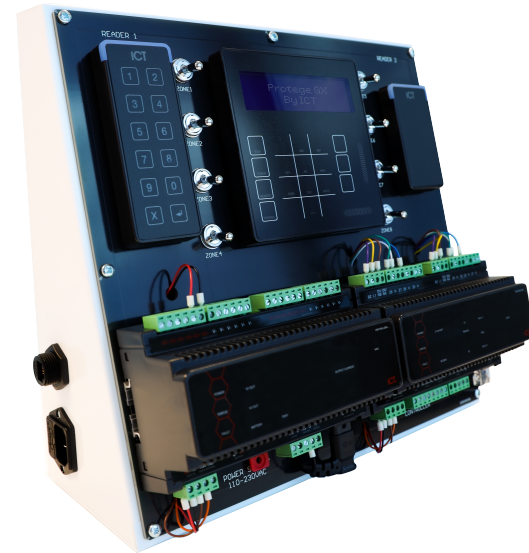# Protege GX Training Kit

The Protege GX Training Kit includes everything you need to run through a facilitated training course, conduct a demonstration, or set up controlled testing.

All modules are mounted on a compact self-contained desktop console, providing clear visibility and access. The sturdy steel frame keeps wiring contained within the base while allowing convenient access to module connections, and integrated switches provide effortless control over the closing and opening of inputs.

Feature Highlights

> Simple and intuitive to use

> Facilitates intruder detection (keypad, inputs) and access control functions (card readers)

> Front panel LEDs are easily viewable with the modules mounted on the console

> Power and ethernet ports are located on the side of the base for effortless connection

> All wiring is kept hidden and organized

> Modules and switches are clearly labeled for easy identification

> Convenient keypad access

> Program and activate advanced features such as programmable functions and function codes

> The controller's RS-485 connection allows easy expansion with Protege expander modules

> Easily switch between Protege GX and Protege WX by simply swapping out the controller

Steel Desktop Console Unit

The upright design of the desktop training console allows for full visibility of all status LEDs at eye level, and provides easy access to the tSec Readers and Touch Sense LCD Keypad. The solid steel frame provides strength and stability, while switches are mounted for convenient access and all wiring is hidden and out of the way.

What's Included?

> PRT-CTRL-DIN Protege GX DIN Rail Integrated System Controller

> PRT-PSU-DIN-4A Protege DIN Rail 4A Intelligent Power Supply

> PRT-KLCS Protege Touch Sense LCD Keypad

> DESFire tSec Mini Reader

> DESFire tSec Standard Reader with Keypad and NFC/Bluetooth

> 5 x DESFire EV1/2K ISO Proximity Cards

> 5 x MIFARE S50/1K ISO Proximity Cards

Default Configuration

Each reader port is connected with an entry reader and a REX button for convenient access control operation. The tSec Readers are wired in RS-485 configuration, giving you access to advanced RGB color features such as function codes and area status LEDs.

Ethernet 10/100 Connection

Onboard ethernet communication allows direct connection from a local PC or laptop, or interconnection to an existing LAN/WAN.

Protege GX DIN Rail Controller

The Protege GX DIN Rail Integrated System Controller is the central processing unit responsible for the control of security, access control and building automation in the Protege GX system.

It communicates with all system modules, stores all configuration and transaction information, processes all system communication, and reports alarms and system activity to a monitoring station or remote computer.

Key features include:

> Internal industry standard 10/100 ethernet connection

> 32 Bit advanced RISC processor with 2Gb total memory

> Encrypted module network using RS-485 communication

> NIST Certified AES 128, 192 and 256 Bit Encryption

> Factory loaded HTTPS certificate

> Built-in offsite communications dialer (ContactID or SIA)

> 2 reader ports, independently configurable for either Wiegand or RS-485 reader operation

> OSDP configurable RS-485

> 8 high security monitored inputs

> 2 high current Form C relay outputs

> 1 high current monitored bell output

Flexible Reader Support

The controller has 2 reader ports that can be independently configured for either Wiegand or RS-485 reader operation, with OSDP protocol configuration supported in RS-485. The reader ports support connection of up to 4 readers controlling 2 doors. This additional flexibility can be very useful for testing scenarios.

Reader Expander Flexibility

The Protege controller offers unlimited flexibility and convenience for programming and testing alternative configurations. You can program multiple reader expander records with different scenarios, and instantly switch the onboard reader expander programming by simply changing its registered address.

Protege DIN Rail 4A Intelligent Power Supply

The Protege DIN Rail 4A Intelligent Power Supply provides the Protege system with 12VDC power, ideal for running security, access control or automation devices.

The power supply includes intelligent charging for optimum performance and allows for simple and powerful monitoring of supply currents and voltages.

Key features include:

> High performance 32 Bit processor
> 2 Form B relay outputs can be used as programmable outputs or as additional status outputs
> The power supply can monitor up to 8 trouble inputs
> Comprehensive diagnostic LED indicators
> Secure encrypted RS-485 module network communications and intelligent monitoring
> Battery backup connection for uninterrupted power delivery
> Processor controlled battery level testing and indication
> Intelligent charging algorithm monitors battery and AC supply ensuring optimum performance

Power Supply Outputs

The power supply has two 50mA outputs that can operate as either programmable outputs or predefined status outputs.

While in online mode the two outputs function as programmable outputs and can be used to activate bell sirens, lighting circuits, door locks, relay accessory products and other automation points.

While in offline mode the two outputs function as status outputs, providing additional diagnostic information.

LED Indicators

The power supply features the following comprehensive diagnostic indicators to aid in diagnosing faults and conditions:

> Status indicator
> Fault indicator
> Power indicator
> V1 output/V2 output indicators
> Battery indicator
> Temp indicator
> Output current indicator

Protege Touch Sense LCD Keypad

The Protege Touch Sense LCD Keypad provides a sleek, user friendly human interface to the Protege integrated system, providing seamless and powerful integration of access control, security and building automation.

In addition to sophisticated access features the keypad incorporates system monitoring and control. Authorized users are able to perform arming and disarming, monitor inputs, control outputs and manage user access, all from the convenience of the keypad.

Key features include:

> Securely log in with customizable user codes
> Support for dual credential authentication with ID and PIN or card reader and PIN
> Customizable display options
> Users conveniently update PIN codes at the keypad
> Advanced users can add, modify and delete users to quickly provide or withdraw access
> Time and attendance display option
> Intuitive menu provides scrollable options according to user security level, with quick access keys for the power user
> Dual code and master code provider functions for secure ATM and banking vault area access with automatic timeout and delayed opening functions
> Individual reportable duress code for each LCD Keypad
> Activation of a reportable panic event

Arming/Disarming

The keypad allows a user to arm and disarm an area or group of areas:

> Area progress is shown on the LCD display, which guides the user through the arming or disarming procedure with user friendly plain text messages
> Easily view open system inputs during the pre-arming phase
> Local display of user area for quick confirmation of arming and disarming
> Direct input bypass option

System Object Control and Monitoring

Monitoring of all objects within the system can be achieved from the keypad:

> Monitor the status of any door, user (antipassback), input or output directly

> Offline functions allow quick key menu functions to be performed on objects used for automation (lights, HVAC, gates, doors)

> Single automation quick key for REX (Door Request to Exit) or output activation

User PIN Management

Users can change their PIN code at the keypad at any time.

Dual Credential Security

To provide an increased level of security, a site can be configured to require dual credential authentication for user access to keypads.

A reader can be added to require both card and PIN validation, or the keypad can be configured to require both user ID and PIN.

The site can also specify PIN complexity rules and enforce automatic periodic PIN expiry to ensure regular changing of PIN codes.

tSec Multi-Technology Card Readers

The tSec Multi-Technology Card Readers provide a complete multi-technology smart card RFID solution.

Key features include:

> Encrypted RS-485 or standard Wiegand connection

> **Bluetooth®** / NFC credential reading

> Supports OSDP communication protocol with Secure Channel

> Configurable LED strip: 2 color control (blue and green) via external LED wiring, 16 color selectable for Protege function codes (RS-485 connection only)

Bluetooth® / NFC Credential Reading

Bluetooth® / NFC capability enables you to use your smartphone as your access credential for maximum convenience.

Equipped with support for most modern iOS and Android devices, you can unlock the door using a unique access credential that is entered against your user record in Protege, and authenticated by a secure cloud based server.

Configurable LED Strip

The tSec Reader provides the ability to change the color of the LED strip (16 colors available) to show when a function has started, succeeded or failed. For example, for a function that is used to arm an area you might set the LED to change to orange to show that the function has started, yellow to show that the area has armed successfully, and red to indicate when the function has failed.

*This feature is only supported when wired using RS-485.

Technical Specifications

Ordering Information	
PRT-TRN-GX	Protege GX Training Kit
PSU Power Supply	
Mains Input Voltage	120VAC (90-264VAC, 47-63Hz)
Mains Input Operating Current	120VAC 1.5A (Full Load)
DC Output (Combined)	12.64VDC 4.0A Max (V1 Out + V2 Out Total)
DC Output (Single)	12.2VDC 3A Max
Battery Charging	500mA (Typical) *Additional to the 4A Combined DC Output
Battery Low	11.75VDC
Battery Restore	12.5VDC
Controller Power Supply	
Operating Voltage	11-14V DC
Operating Current	120mA (Typical)
DC Output (Auxiliary)	10.45-13.85VDC 0.7A (Typical) electronic shutdown at 1.1A
Bell DC Output (Continuous)	10.4-13.45VDC 8 ohm 30W Siren or 1.1A (Typical) Electronic Shutdown at 1.6A
Bell DC Output (Inrush)	1500mA
Total Combined Current	3.4A (max)
Electronic Disconnection	9.0VDC
Keypad Power Supply	
Operating Voltage	11.0VDC to 14VDC
Operating Current	60mA (95mA Max)
tSec Reader Power Supply	
Operating Voltage	12VDC (9.5 to 14VDC)
Operating Current	tSec Standard Reader: 254mA (Peak, Reading) tSec Mini Reader: 203mA (Peak, Reading)
Controller Communication	
Ethernet	10/100Mbps Ethernet communication link
RS-485	3 RS-485 communication interface ports - 1 for module communication, 2 for reader communication
Modem	2400bps modem communication
Controller Reader Ports	
Readers	2 reader ports that can be independently configured for either Wiegand (up to 1024 bits configurable) or RS-485, allowing connection of up to 4 readers providing entry/exit control for two doors
	RS-485 reader port connections support configuration for OSDP protocol
Inputs	
Controller (System) Inputs	8 high security monitored inputs
PSU Inputs	Dedicated Hardware Tamper Input 8 Trouble Inputs (internal)
Keypad Inputs	2 standard or 4 using Input Duplex mode
Outputs	

Controller Outputs	4 50mA (max) open collector outputs for reader LED and beeper or general functions
	2 Form C relays - 7A N.O/N.C. at 30 VAC/DC resistive/inductive
PSU Outputs	2 Solid-State Relay Outputs, 50mA 12V Max each
Keypad Outputs	1 open collector (50mA Max) output. Programmable for all output functions
	3 system status LEDs
	1 system beeper

Keypad User Interface

User Interface Display	Energy smart backlit LCD 16 x 2 alphanumeric display with enhanced viewing angle
User Interface Keypad	Combined 23 key capacitive touch keypad with 3 system status LEDs

tSec Reader Communications

Card Read Range	DESFire EV1 ISO 15mm (0.6")
Tag Read Range	DESFire EV1 6mm (0.23")
Wiegand Interface	Multiple format 26 or 34 Bit data 0 and data 1, card defined
Frequency	13.56 MHz ISO/IEC 14443 Type A
Multi Conductor Cable	Wiegand: 22Awg alpha 5196, 5198, 18Awg alpha 5386, 5388. Max Distance 150m (492ft)
	Module comms/RS485: Belden 9842 or equivalent. Max distance 900m (3000ft)
OSDP Communication	OSDP standard 2.1.5 with Secure Channel Protocol

Bluetooth® Wireless Technology

Bluetooth® Read Range	Proximity mode: up to 0.5m (1.6ft) Configurable
	Action unlock (shake): up to 5m (16.4ft) Configurable
Bluetooth® Electronic Credential Transmission Technology	NRF8001 Bluetooth® version 4.0 compliant
	Proprietary data exchange protocol. AES128 Encrypted
	Reader App Version: 1.04.175 and above
	Credentials can be distinguished by unique site code and card number
Bluetooth® Wireless Device	Protege Mobile 1.0.x

NFC

NFC Read Range	Up to 60mm
NFC (Near-field communication) electronic credential transmission technology	Android 4.4 or above, with phones which support ISO7816-4
	Proprietary Secured DESFire credential
	Credential is AES-256 (NIST certified AES algorithm)
	Reader App Version: 1.04.175 and above
	Credentials can be distinguished by unique site code and card number
NFC Wireless Device	Protege Mobile 1.0.x

Dimensions

Dimensions (L x W x H)	330 x 180 x 300mm (13 x 7.1 x 11.8")
Net Weight	4.4kg (9.7lb)
Gross Weight	5.9kg (13lb)

Operating Conditions

Operating Temperature	-10° to 55°C (14° to 131°F)
Storage Temperature	-10˚ to 85˚C (14˚ to 185˚F)
Humidity	0%-93% non-condensing, indoor use only (relative humidity)