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.

**Feature Highlights**

- 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
- 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
- Designed for use with industry standard DIN Rail mounting
Integrated Access Control

Providing a highly sophisticated access control solution with large user capacity and extensive features:

> Utilize multiple access levels to manage users over scheduled periods across multiple time zones.
> Assign door groups, menu groups, area groups, floor groups and elevator groups to an access level for flexible user management. Each user can be assigned multiple groups in multiple access levels.
> Monitor and control users’ area status throughout the entire system with hard and soft anti-passback configuration options.
> Multiple card presentation options allow the use of access control cards, tags, mobile or other credentials to arm and disarm areas associated with doors.
> Count users entering an area and arm the area when the count reaches zero or deny access to users based on a maximum user count.

Connectivity and System Expansion

Extending the Protege system with onboard local inputs and outputs allows convenient and cost effective expansion without the increased cost of modules for simple system functions:

> 8 monitored onboard inputs can each be configured for EOL (End Of Line), dual EOL, or direct contact.
> 2 high current Form C relays onboard.
> 2 integrated reader ports, independently configurable for Wiegand or RS-485 reader operation.
> RS-485 connections support configuration for OSDP protocol.
> Bell/Siren output onboard with fully monitored operation.
> System expansion is achieved seamlessly by connecting additional expander modules.

Output Follows Input Programming

The Protege GX system’s advanced programming features provide endless opportunities for customized automation. Output follows input programming allows any output or output group in the system to be intelligently controlled by any input or input type. This has a wide variety of applications: from turning on lights and climate control when motion is detected, to unlocking a specific door with a key switch, or auto arming an area after a period of inactivity.

Programmable Functions

Programmable functions are special applications that implement logical control of outputs, doors, areas and other devices.

> Perform actions when a particular event or operation occurs, such as setting the room temperature based on the number of people in an area, adjusting internal lighting levels based on a sensor reading, or unlocking doors in the event of a fire alarm.
> Process logic functions to allow complex equations to be evaluated using internal memory data values and output status.
> Control of doors, areas, elevators and outputs can be easily programmed and managed.

Integrations

The Protege controller offers integration with a wide range of third party systems:

> Link the Protege system with intelligent locking solutions through comprehensive world class solution partners Salto, Aperio, and Cencon.
> High level interface for control of modern elevator systems.
> Integrated biometric identification systems provide superior user identification options.
> Other third party integrations such as building and lighting control systems.
**Integrated Arming/Disarming**

Featuring advanced integration of arming and disarming solutions for control of hundreds of alarm areas:

- Deny access to a user based on the status of the area and allow the user to control the area they are entering, in turn reducing false alarms.
- Implement vault control areas to manage time delayed access and unlocking of vault areas in banking facilities without the need for additional hardware control devices.
- Control access to a keypad using a card and PIN function, or allow card presentation to automatically log the user in at the associated keypad.
- Disarm an area associated with an elevator floor on access, or prevent the user from gaining access to the floor based on the area status associated with the floor.
- Arm large numbers of areas using area groups.

**Communication**

RS-485 communication interface, onboard 2400bps modem, and a 10/100 Ethernet communications port provide a complete solution for system expansion, offsite monitoring, system communication and integration.

**Multifunction Reporting Services**

The controller incorporates a host of offsite reporting options.

- Implement IP based reporting using onboard Ethernet and the ArmorIP protocol.
- Report alarms using Contact ID, SIA Level 2.
- Communicate with third party applications using ASCII or HEX directly from the controller.

**Ethernet 10/100 Connection**

Onboard Ethernet communication allowing direct connection from a local PC or interconnection to an existing LAN/WAN:

- Directly connect the Protege system across a LAN or WAN interface for high speed upload and download.
- IP reporting functionality using the ArmorIP protocol, Contact ID over IP, SIA over IP and full text reporting methods.
- Full 10/100 compliant network interface allows connection of the controller to all networks at the maximum capable signaling rate.

**Flexible Reader Support**

Provides 2 reader ports that can be independently configured for either Wiegand or RS-485 reader operation, allowing the connection of up to 4 readers controlling 2 doors.

Choose Wiegand readers for compatibility with all standard access control systems, or RS-485 for fast, secure communication.

RS-485 readers provide the added benefits of being easier and more cost effective to wire and deploy, and allow for direct integration with Protege systems, enabling you to make changes on the fly once readers are installed. RS-485 also allows for longer cable runs and offers a simpler firmware update process.

OSDP protocol configuration in RS-485 offers additional security and adds scalability, flexibility and ease of implementation.*

* The ICT implementation of OSDP conforms to a subset of the OSDP functionality. For specifications and reader configuration, refer to AN-254 Configuring OSDP Readers, available from the Integrated Control Technology website.

**Upgradable Firmware**

Firmware can be upgraded directly from the Protege GX software.
## Technical Specifications

### Ordering Information

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

### Power Supply

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>11-14V DC</td>
</tr>
<tr>
<td>Operating Current</td>
<td>120mA (typical)</td>
</tr>
<tr>
<td>DC Output (Auxiliary)</td>
<td>10.45-13.85VDC 0.7A (typical) electronic shutdown at 1.1A</td>
</tr>
<tr>
<td>Bell DC Output (Continuous)</td>
<td>10.4-13.45VDC 8 Ohm 30W Siren or 1.1A (Typical) Electronic Shutdown at 1.6A</td>
</tr>
<tr>
<td>Bell DC Output (Inrush)</td>
<td>1500mA</td>
</tr>
<tr>
<td>Total Combined Current*</td>
<td>3.4A (max)</td>
</tr>
<tr>
<td>Electronic Disconnection</td>
<td>9.0VDC</td>
</tr>
</tbody>
</table>

### Communication

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication (Ethernet)</td>
<td>10/100Mbps Ethernet communication link</td>
</tr>
<tr>
<td>Communication (RS-485)</td>
<td>3 RS-485 communication interface ports, 1 for module communication and 2 for reader communication</td>
</tr>
<tr>
<td>Communication (Modem)</td>
<td>2400bps modem communication</td>
</tr>
</tbody>
</table>

### Readers

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readers</td>
<td>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 **</td>
</tr>
<tr>
<td></td>
<td>RS-485 reader port connections support configuration for OSDP protocol</td>
</tr>
</tbody>
</table>

### Inputs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs (System Inputs)</td>
<td>8 high security monitored inputs</td>
</tr>
<tr>
<td>Outputs</td>
<td>4 50mA (max) open collector outputs for reader LED and beeper or general functions</td>
</tr>
</tbody>
</table>

### Outputs

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay Outputs</td>
<td>2 Form C relays - 7A N.O/N.C. at 30 VAC/DC resistive/inductive</td>
</tr>
</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (L x W x H)</td>
<td>156 x 90 x 60mm (6.14 x 3.54 x 2.36&quot;)</td>
</tr>
<tr>
<td>Weight</td>
<td>330g (11.64oz)</td>
</tr>
</tbody>
</table>

### Operating Conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>UL/ULC 0° to 49°C (32° to 120°F): EU EN -10° to 55°C (14° to 131°F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-10° to 85°C (14° to 185°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0%-93% non-condensing, indoor use only (relative humidity)</td>
</tr>
<tr>
<td>Mean Time Between Failures (MTBF)</td>
<td>560,421 hours (calculated using RFD 2000 (UTE C 80-810) Standard)</td>
</tr>
</tbody>
</table>

* The Total Combined Current refers to the current that will be drawn from the external power supply to supply the expander and any devices connected to its outputs. The Auxiliary outputs are directly connected via thermal resettable fuses to the N+ N- input terminals, and the maximum current is governed by the trip level of these fuses. The Bell output is connected in the same way.

** Each reader port supports either Wiegand or RS-485 reader operation, but not both at the same time. If combining reader technologies, they must be connected on separate ports.

The ICT implementation of OSDP conforms to a subset of the OSDP functionality. For specifications and reader configuration, refer to AN-254 Configuring OSDP Readers, available from the Integrated Control Technology website.
Regulatory Notices

RCM (Australian Communications and Media Authority (ACMA))
This equipment carries the RCM label and complies with EMC and radio communications regulations of the Australian Communications and Media Authority (ACMA) governing the Australian and New Zealand (AS/NZ) communities.

CE – Compliance with European Union (EU)
This equipment complies with the rules, of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directives.

UL/ULC (Underwriters Laboratories)
> UL 294 for Access Control System Units
> CAN/ULC S319 for Electronic Access Control Systems

UL/ULC (Underwriters Laboratories)
> UL1076 for Proprietary Burglar Alarm Units and Systems
> UL1610 for Central-Station Burglar-Alarm Units
> CAN/ULC S304 for Signal Receiving Centre and Premise Burglar Alarm Control Units
> CAN/ULC S559 for Fire Signal Receiving Centres and Systems

Industry Canada
ICES-003
This is a Class A digital device that meets all requirements of the Canadian Interference-Causing Equipment Regulations.

CAN ICES-3 (A)/NMB-3(A)

Federal Communications Commission (FCC)
FCC Rules and Regulations CFR 47, Part 15, Class A.
This equipment complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) This device must accept any interference received, including interference that may cause undesired operation.
> For a full regulatory and approval list please visit the ICT website.
Designers & manufacturers of integrated electronic access control, security and automation products.

Designed & manufactured by Integrated Control Technology Ltd.

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