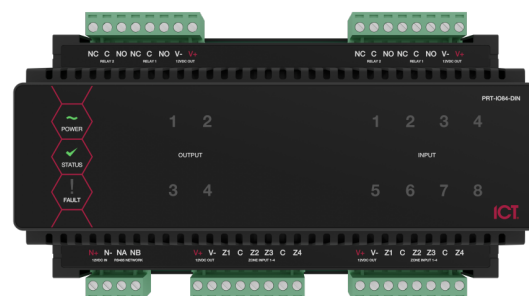# Protege DIN Rail 8 Input 4 Output Expander

The Protege DIN Rail 8 Input 4 Output Expander extends the number of inputs by 8, allowing monitoring of a wide range of EOL capable or open contact sensors; and extends the number of outputs by 4, featuring high current Form C relays for controlled automation of building systems including lighting and HVAC.

The DIN Rail 8 Input 4 Output Expander provides extensive hardware advancements that allow flexible input programming and configuration, and structured intelligent control of building and automation systems.

Feature Highlights

> 8 monitored inputs

> Connect any combination of normally closed or normally open inputs, configurable per input

> Four-state input alarm using resistors to provide short, alarm, closed and tamper conditions

> 4 Form C relays capable of switching resistive loads up to 7 amps

> High performance 32 Bit processor

> Secure encrypted RS-485 module communications

> Utilizes analog to digital processing with 5x over sampling

> Online and remote upgradable firmware

> Designed for use with industry standard DIN rail mounting

Connectivity and System Expansion

Expanding the Protege system with local inputs and outputs allows convenient, cost-effective expansion with the following additional benefits:

> 8 inputs can be assigned to any 4 areas in the system, each being processed using different options or features

> 4 multiple-function outputs available for use in any programmable output configuration

> Outputs can be configured to automatically turn on or resume their previous state upon restoration of power or communication failure

> Address configuration of the input expander is achieved using the address programming feature of the Protege system controller

Power Supply

Device power is supplied from a 12VDC input. Ultra low current requirements ensure cost-effective power distribution.

Outputs

The input/output expander has 4 programmable Form C relay outputs which can be used to activate bell sirens, lighting circuits, door locks, relay accessory products and other automation points.

Communication

A single RS-485 communication interface port used for all network communication functions and interconnection to other modules.

LED Indicators

The input/output expander features comprehensive diagnostic indicators that can aid in diagnosing faults and conditions. LED indicators on the input/output expander include:

> Status indicator

> Fault indicator

> Power indicator

> Output indicators

> Input indicators

Upgradable Firmware

Utilizing the latest flash technology and high performance communication mediums, the firmware can be updated via the Protege interface.

Technical Specifications

Ordering Information	
PRT-IO84-DIN	Protege DIN Rail 8 Input 4 Output Expander
Power Supply	
DC Input Voltage	11-14VDC
DC Output Voltage (DC IN Pass-Through)	10.45-13.85VDC 0.7A (Typical) Electronic Shutdown at 1.1A
Operating Current	80mA (Typical)
Total Combined Current*	3.05A (Max)
Low Voltage Cutout	8.7VDC
Low Voltage Restore	10.5VDC
Communication	
RS-485	Isolated Module Network
Outputs	
Outputs	4 Form C Relays - 7A N.O./N.C. at 30 VAC/DC resistive/inductive
Inputs	
Inputs	8 (10ms to 1hr Input Speed Programmable)
Trouble Inputs	16
Dimensions	
Dimensions (L x W x H)	156 x 90 x 60mm (6.14 x 3.54 x 2.36")
Net Weight	310g (10.9oz)
Gross Weight	380g (13.4oz)
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)
Mean Time Between Failures (MTBF)	587,177 hours (calculated using RFD 2000 (UTE C 80-810) Standard)

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.

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/NZS) communities.

CE – Compliance with European Union (EU)

Conforms where applicable to European Union (EU) Low Voltage Directive (LVD) 2014/35/EU, Electromagnetic Compatibility (EMC) Directive 2014/30/EU, Radio Equipment Directive (RED)2014/53/EU and RoHS Recast (RoHS2) Directive: 2011/65/EU + Amendment Directive (EU) 2015/863.

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.

Security Grade 4, Environmental Class II, EN 50131-1:2006+A2:2017, EN 50131-3:2009, EN 50131-6:2008+A1:2014, EN 50131-10:2014, EN 50136-1:2012, EN 50136-2:2013, EN 60839-11-1:2013, Power frequency magnetic field immunity tests EN 61000-4-8, Readers Environmental Class: IVA, IK07.

UK Conformity Assessment (UKCA) Mark

This equipment carries the UKCA label and complies with all applicable standards.

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.

Industry Canada

ICES-003

This is a Class A digital device that meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

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

> For a full regulatory and approval list please visit the ICT website.

www.ict.co

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