



Knowledge Base Article

**Controlling External Devices with the
ISONAS Reader-Controller's
TTL Output Leads**

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Document Version
(KBA_0010_TTL_Control.Doc)

Date of Revision	Revision	Author	Description
7/20/2007	1.0	Shirl Jones	Initial Release

1: INTRODUCTION

The ISONAS Reader-controller supports two TTL output leads. These leads provide logic level signals that can be used to communicate with external systems.

These TTL leads are normally held at +5V DC, and when activated, drop to 0V DC. The ISONAS driver circuits for these TTL signal leads can source or sink 24 milliamps. This means that the external system must not draw more than 24 mA from the TTL output when it is at +5 VDC nor source more than 24mA when the TTL output is at 0 VDC.

Some external systems (example: alarms systems) will directly accept these logic signals. For other usages, these leads can drive external relay boards, which are capable of controlling larger power draws.

This document discusses how to use the ISONAS PowerNet Reader-Controller with an example external relay board

1.1: GENERAL REQUIREMENTS:

- Install the ISONAS system in accordance with the National Electrical Code NFPA 70. (Local authority has jurisdiction.)
- The example external relay board discussed in this document is manufactured by Winford Engineering (www.winfordeng.com). The board's part number is RLY102-12V

1.2: POWERNET READER-CONTROLLER CONFIGURATION

This example assumes you are powering the PowerNet reader-controller using Power Over Ethernet (PoE) thru the RJ45 connector.

If POE is used, the reader-controller can supply 12VDC to be used for the lock or other devices at the door location. This example will assume you are using this 12V output to power the external relay board. (See Figure 1)

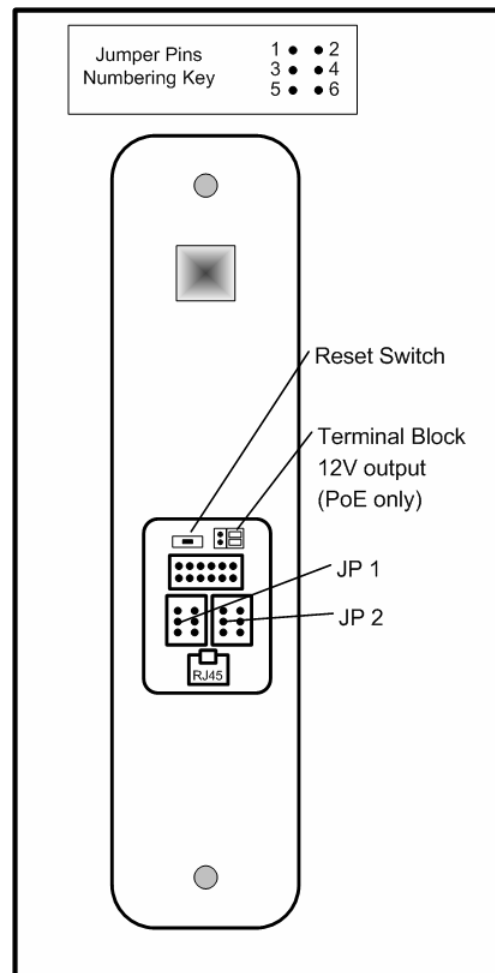


Figure 1
(View of back of PowerNet)

2: PHYSICAL CONFIGURATION

2.1: WIRING THE READER-CONTROLLER TO THE RELAY BOARD

Supplying DC power from the Reader-controller:

Connect the external relay board's DC power input terminal to the reader-controller's DC output terminal.

(See Figure 2)

Connecting the TTL Leads:

Connect TTL1 from the reader-controller (Pigtail's Purple lead) to the external relay board's input #1 terminal.

Connect TTL2 from the reader-controller (Pigtail's Brown lead) to the external relay board's input #2 terminal (See Figure 2)

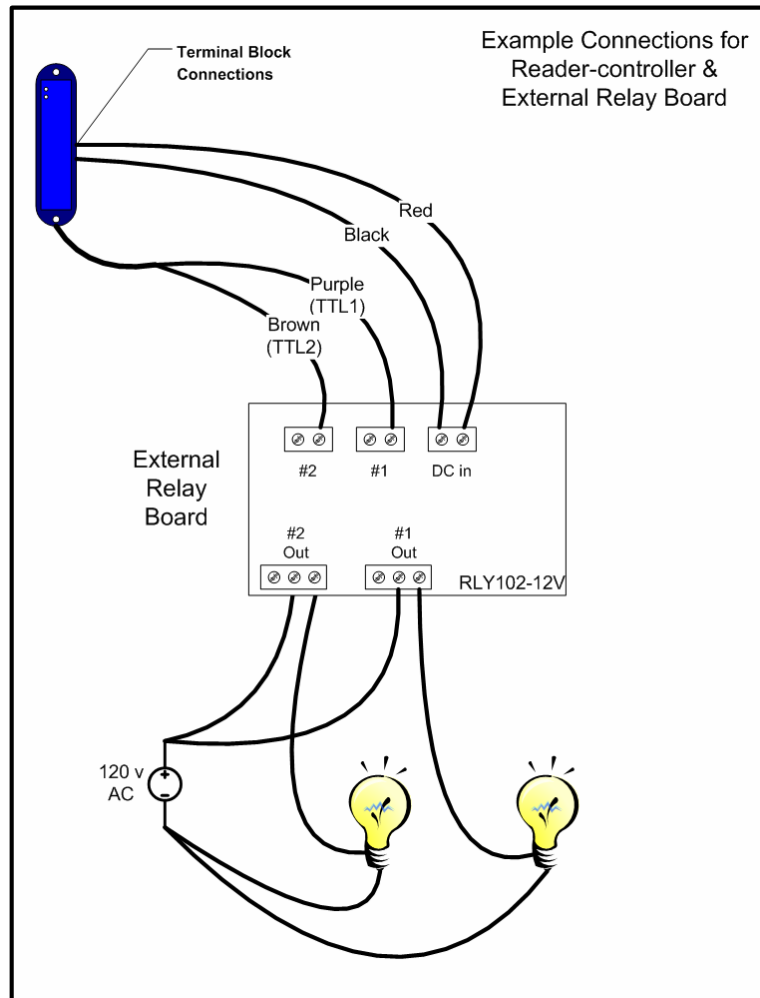


Figure 2

2.2: WIRING THE RELAY BOARD TO THE EXTERNAL DEVICES

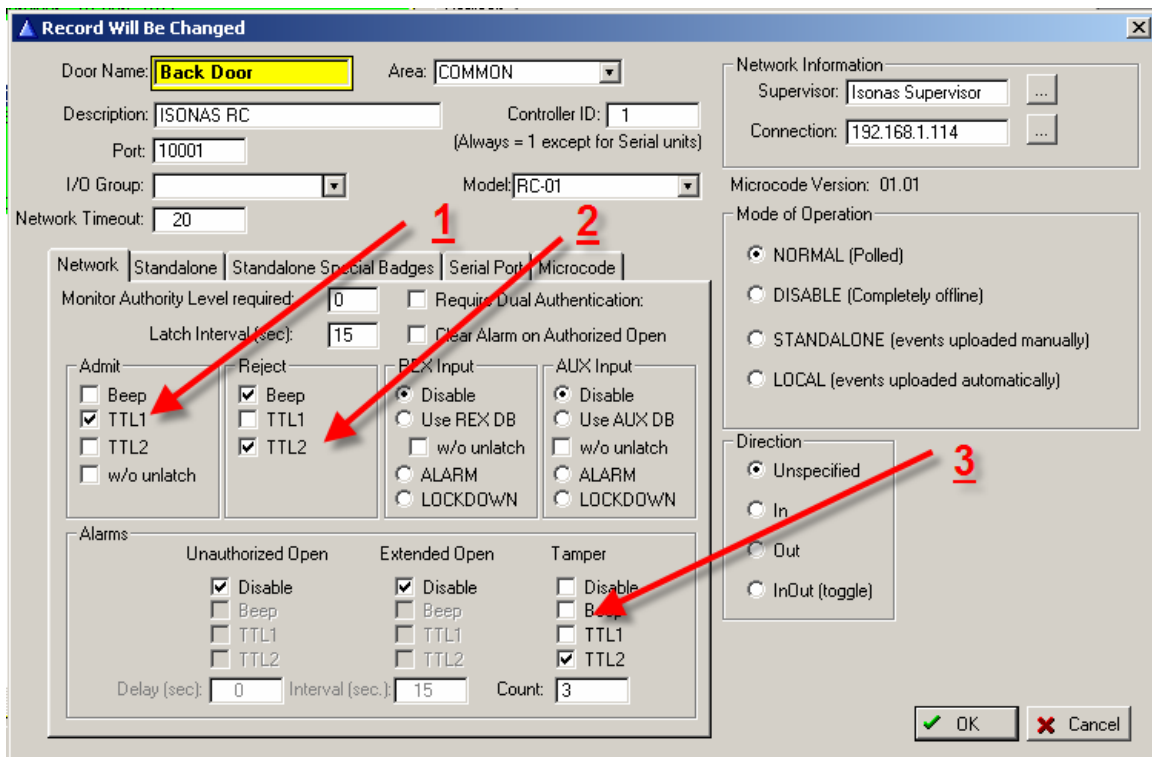
The RLY102's output relays support Normally Open and Normally Closed connections (Form C contacts). The example shows two 120V lights being connected to the two output relays. (See Figure 2)

3: SOFTWARE CONFIGURATION

3.1: TTL LEADS CONTROLLED BY GENERAL EVENTS AT THE DOOR

By configuring the “Doors” database, the TTL leads can be activated by events that occur at the door. Examples include:

1. Any badge being accepted
2. Any badge being rejected
3. Alarm conditions

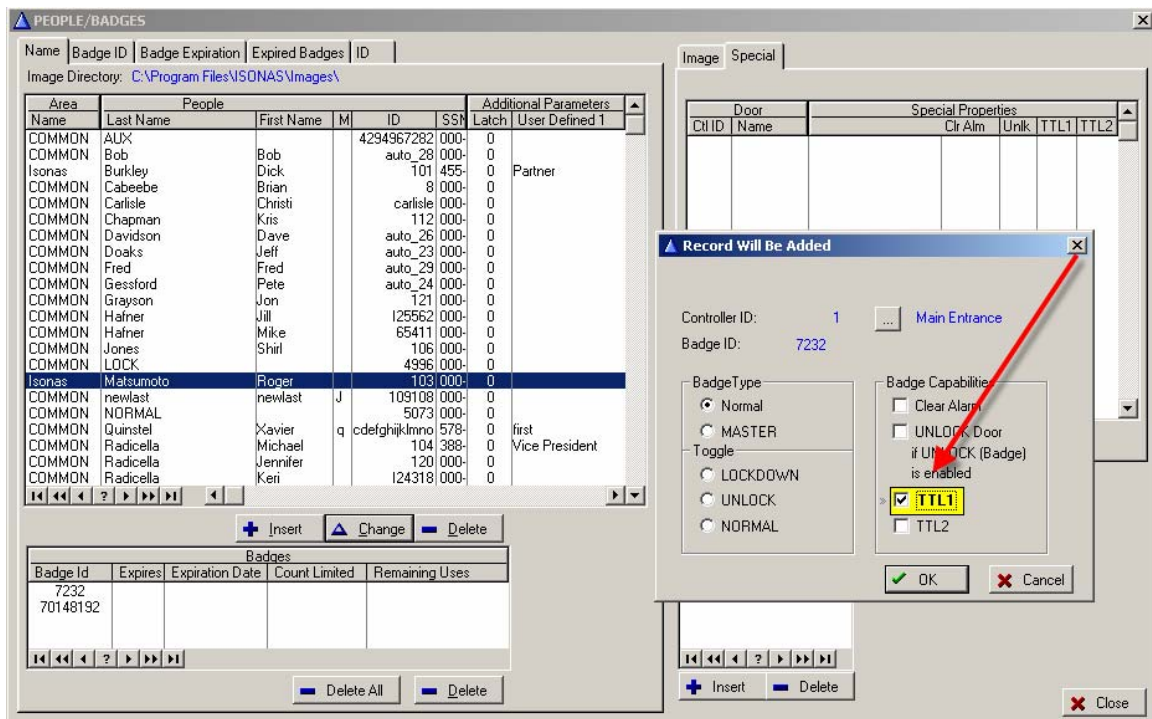


3.2: TTL LEADS CONTROLLED BY SPECIFIC BADGES

By configuring the Special Capabilities" of a specific badge, the TTL leads can be activated when that badge is accepted at the specified door.

An example where this functionality could be used would be a reader-controller that controls a normal door. Next to the normal door is a garage door. When selected badges are presented to the reader, both the normal door unlocks, and the TTL lead directs the garage door to open.

This functionality configuration is handled in the Badges area, as a Special Capability.



For more information:

Web: www.isonas.com **E-mail:** sales@isonas.com

Tel: 800-581-0083 x102 (toll-free) or 303-567-6516 x102 (CO)

Fax: 303-567-6991

ISONAS Headquarters:

6325 Gunpark Drive, Suite 101, Boulder, Colorado 80301 USA