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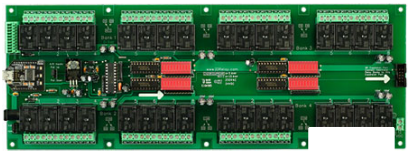
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Find the *National Control Devices ZADSR3210PROXR* at our website: *Click HERE*

National Control Devices, LLC

# USB Relay 32-Channel 5 Amp SPDT + 8-Channel 8/10-Bit A/D

Submitted by Trey on Sun, 2014-10-12 20:32



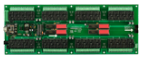
- **Analog to Digital Conversion allows you to read voltage levels from 0-5 volts**
- **Expandable to control up to 256 Relays using the XR Expansion Port**
- **16 Background Timers Can be Assigned to Any of the Relays while Processing your Serial Byte Commands**
- **Server Reboot, Watchdog, & Keep Alive Duration/Pulse Timing Command Set**
- **High Speed USB Connection for Easy Switching**
- **Control One Relay at a Time or All 256 Relays at Once with Manual and Automatic Refreshing ProXR Command Set**



***ZADSR325PROXR_USB***

| Ratings | AC | DC |
|---|---|---|
| Voltage | 120 | 12 |
| Amperage | 5 | 5 |





USB Relay 32-Channel 5 Amp SPDT + 8-Channel 8/10-Bit A/D

Stock#: ZADSR325PROXR_USB

## Induction Capacitors



Perhaps the most overlooked aspect of relay control is proper handling of inductive loads. Inductive loads can best be defined as anything with a magnetic coil, such as a motor, solenoid, or a transformer. Controlling a inductive load using this relay controller requires the use of induction suppression capacitors. The purpose of this capacitor is to absorb the high voltages generated by inductive loads, blocking them from the contacts of the relay. Without this capacitor, the lifespan of the relay will be greatly reduced. Induction can be so severe that it electrically interferes with the microprocessor logic of our controllers, causing relay banks to shut themselves down unexpectedly. In the case of USB devices, customers may experience loss of communications until the device is reconnected to the USB port. Capacitors that we offer are available at checkout, for more information view our Induction Suppression Video.



## Induction Solutions

Even with capacitors in place, the possibility does exist that capacitors will not suppress enough induction to prevent periodic communications loss. Testing is required in these applications. If problems persist, other communications mechanisms must be considered. If USB is required, an RS-232 communications module will allow RS-232 communications between your PC and controller with no complications. A USB to RS-232 adapter can be used in combination with the RS-232 controller. The RS-232 communications format effectively blocks induction to safe levels for a USB to RS-232 adapter to function without errors (look for "RS232 Relays" under Shop by Interface on the left navigation). If the problem persists after you purchase a USB board you can change out the USB module for an RS-232 or wireless module easily.



## SPDT Relay Controller




This device has SPDT relays installed. SPDT Single Pole Double Throw Relays have three connections - Common, Normally Open, and Normally Closed. When the relay is off, the common is connected to the normally closed connection of the relay. When the relay coil is energized, the Common swings over to the Normally Open Connection of the Relay. You can wire the device you are switching to either the Normally Open or the Normally Closed position. For more information on selecting the correct relay for your application see Choosing a Proper Amperage.

## Easy Software Development

Most of our customers write their own program for controlling these devices. Since you can use almost any programming language, you can use one that is most familiar to you so you don't have to learn a new language. These boards support the Serial Port Profile, meaning they will mount to the computer as a virtual com port. This makes it very easy to send commands to the device.

## Plug-In for Visual Studio

The NCD Component Library is a plug-in for the Visual Studio 2005/2008 that greatly simplifies the communications to the NCD product line. The samples can be run in Visual Studio and fully customizable to your needs. Over 40 samples included with this free download! Component Library.

## Base Station Software



Base Station will assist you in learning how this device functions and is the ultimate reference tool for setting up, testing and controlling this device. Base Station software supports every feature of this device - no other controller manufacturer even comes close to offering this type of software. Base Station works by communicating with your controller to identify the model and provides the appropriate graphical user interface for setting up and testing the identified device. To help you get started and learn this controller Quick Start Guides are available for just about every feature. As you discover a feature in Base Station a link is provided where you can easily download the Quick Start Guide.

## ProXR Relay

We've looked at the interface and the programming now let's take a look at the board design itself. The ProXR series controllers are manufactured by hand for a highly accurate and reliable design. Equipped with the XR Expansion Port additional relays can be easily added. Fully tested before they leave the production facility each ProXR controller is ready to stand up to rigorous demands from heat, cold or vibration. The best test of all is the numerous boards in the field from customers all over the world in all sorts of conditions. Take it from us, these controllers will hold up!

## Add Relays as Your Needs Grow

The ProXR series controllers are expandable up to 256 total relays. The controller is fitted with an XR Expansion Port where you can add expansion boards to this relay. Expansion boards can be added until you reach 256 total relays. The Expansion Boards get their logic from the main board and will require 12 VDC power. Expansion boards do not need to be the same relay amperage as the main board or other expansion boards. XR Expansion

## 16 User-Programmable Timers

The ProXR Series controllers have 16 user-programmable timers. Each independent timer can be assigned to any relay, and can be programmed to hold the relay in the On state, or to pulse the relay at the end of the timer. The ProXR timing features are ideally suited for Watchdog, Keep Alive, and Server Reboot applications, as well as sprinkler systems, gate openers, and lighting applications. Relay Timing Features support two modes of operation: Duration and Pulse. Duration timing is ideally suited where a device should be activated for a period of time. Pulse timing mode is designed specifically for server reboot applications, whereby, if the timer is not reset periodically by your software, the timer will run out and reboot your computer.

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### Read Analog Sensors
This ProXR controller offers a 8-Channel 8/10-Bit Analog to Digital Converter in addition to relay control.  Read and control from 8 sensors per board from 0 to 5 volts!

### ProXR Enhanced Firmware Installed
This board has ProXR Firmware installed that responds to the full ProXR Command Set.  The ProXR Firmware is the industry leading firmware for controlling relays with more commands and functionality than any other board on the market.  The list of commands and perameters this board is capable of is extensive.  ProXR Enhanced is the newly released enhanced version of the ProXR Firmware with more commands, more functionality and better control than ever before!  For a detailed list of all the commands with descriptions see our ProXR Enhanced Command Set.

### RoHS Compliant
This board is led free and RoHS Compliant.  If your requirements are for RoHS compliant parts this board is manufactured with RoHS compliant led free parts and solder.

### 5-Year Warranty/Money Back Guarantee
ProXR series controllers are guaranteed against manufacturing and functionality defects for a full 5 years!  Not to mention a 30-day money back guarantee!  If for any reason you are not happy with a relay purchased from National Control Devices, simply return it within 30 days and we will give you your money back!  Controllers that are damaged by our customers will not of course be warranted under any circumstances.

### Thousands of Relay Cycles
ProXR series controllers are designed for long life, you should expect to get years of service from your controller and literally thousands of cycles from the relays onboard.  With a 5-year warranty and a money back guarantee you have nothing to loose!  Place your order now, while everything is in front of you.

### Shipping
The boards sold are brand new units shipped from our office conveniently located in Missouri.  These boards are completely tested before they are released for shipping With so many boards on our site it is impossible to stock boards, please allow two to three days production time for your order to ship.

A more streamlined manufacturing process brings a more durable, reliable and better relay board to the market.  Here's a lists of great features:

- **User Friendly Board Design**
- "Wall Wart" or direct power capability
- Relay status light bar
- XR Expansion Port
- Screw terminal or direct relay connections make connecting to the board easy

- **ProXR Features**
- Works with the full ProXR Enhanced Command Set
- 8-Channel 8/10-Bit Analog to Digital Converter
- Highly reliable relay with industry leading command set
- 16 programmable timers available

### Analog to Digital Conversion
Analog Inputs are very special in that they are sensitive to voltage changes.  Analog to Digital (A/D) conversion is the process of converting a voltage in the range of 0 to 5VDC into a number that can be processed by custom software that you develop.  The ProXR Command Set will allow you to send a command to the board and read voltage levels from 0-5 volts using 8-bit resolution.  8-Bit resolution will read the voltage input (from 0 to 5VDC) and then is interpreted as a value from 0 to 255.  Zero being a contact closure input.

**For Example**
- A voltage input of 0 Volts is interpreted as a value of 0
- A voltage input of 2.5 Volts is interpreted as a value of 127
- A voltage input of 5 Volts is interpreted as a value of 255

So if you divide 5 Volts by 255 possible steps (0-255 for 8-Bit resolution), the board is sensitive to voltage changes as small as 0.019 Volts.  This controller has eight A/D inputs, each input is capable of reading a separate voltage from 0 to 5 VDC, provided all voltages can share a common ground.  This is particularly useful for reading temperature sensors (one temperature sensor is built into select boards mostly 4 & 8 channel, shared with analog input number 8).  A/D Inputs are also useful for reading light level sensors, thermocouples, switch closures, or just about any other kind of sensor you can think of.

### A/D Sample Programs Available
Eight Different A/D Sample programs are available in the Component Library.  These samples are available as a free download and are compatible with Visual Studio.

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