# AN204 – Axiomatic AX0318xx Relay Functionality

Introduction

This application note provides information intended to assist in the setup of Axiomatic AX0318xx units which support relay outputs.

Wiring Example

An example of typical AX031850 wiring is found below. This wiring uses the Normally Open (NO) contact to switch power to a load when the relay is energized. The relay can be configured to be energized on the reception of a CAN signal, a digital input, or some more complex logic.
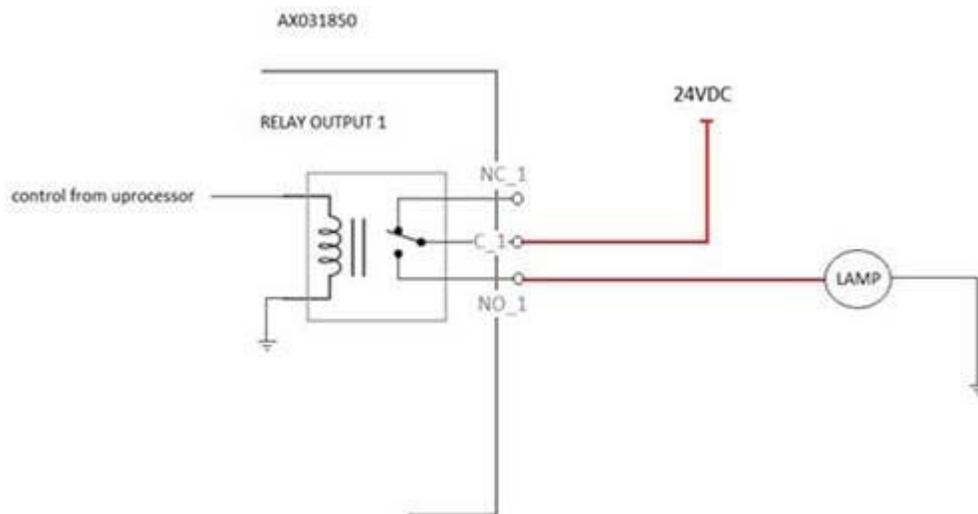
Outputs

Axiomatic's relay outputs do not have any connection to power internal to the unit. The outputs are simply contacts that can be used as switches in the system.

Contacts

The contacts have a power rating of 60W. To stay within this power rating, a signal with a maximum voltage of 24VDC should have a current of no more than 2.5A. The unit can be configured to trigger a relay with a High- or Low-level input signal using the Electronic Assistant (P/N AX070500).

Input Levels

- The Low-Level input voltage range is from 0 to 0.8 V.
- The High-Level input voltage range is from 3.75 to +BAT (32Vdc Max).
- The minimum switching voltage is 100µV.
- Initial contact resistance is <50mΩ at 10mA/30mV and < 100mΩ at I rated.
- There is no specified minimum current for the relays.

Relay Output

- When the relay output is turned "OFF," the Common Pin is connected to the Normally Closed Pin.
- When the relay output is turned "ON" the Common Pin is connected to the Normally Open Pin.

Receive Message Time out

Once a message has been enabled, a Lost Communication fault will be flagged if that message is not received within the Receive Message Timeout period. This fault is only flagged if the receive message timeout period is set to 10ms or higher. This fault will trigger a Lost Communication event, and the output data of the CAN Receive message will be set to 0. To avoid timeouts (if set to 10ms or higher) on a heavily saturated network, setting the period to be at least three times (3x) longer than the expected update rate is recommended. To disable the timeout feature, simply set this value to 0; doing so will never cause the received message to timeout and will never trigger a Lost Communication event.

Version	Date	Author	Comments
1.00	July 23, 2021	Greg LaRonde / Sue Thomas / Kiril Mojsov	Initial release