

Technical Guide for USB Dry Contact Accessory for NMC (AP9811)

Overview

The USB to Dry Contact Accessory for NMC provides a hardware interface for connecting the host device of a Network Management Card 3 with peripheral devices. The USB to Dry Contact Accessory includes:

- Input:** One input (labeled Contact Input) for one dry contact device, either normally open (“NO”) or normally closed (“NC”).
- Outputs:** Two Form C (SPDT) relays (labeled Relay Output 1 & 2).

The USB to Dry Contact Accessory for your Network Management Card connects to the USB port on your NMC. Through the NMC Web UI, you can specify which alarms will cause a change in the state of each relay output. You also set the actions that will occur at the host due to a change in state of your input device.

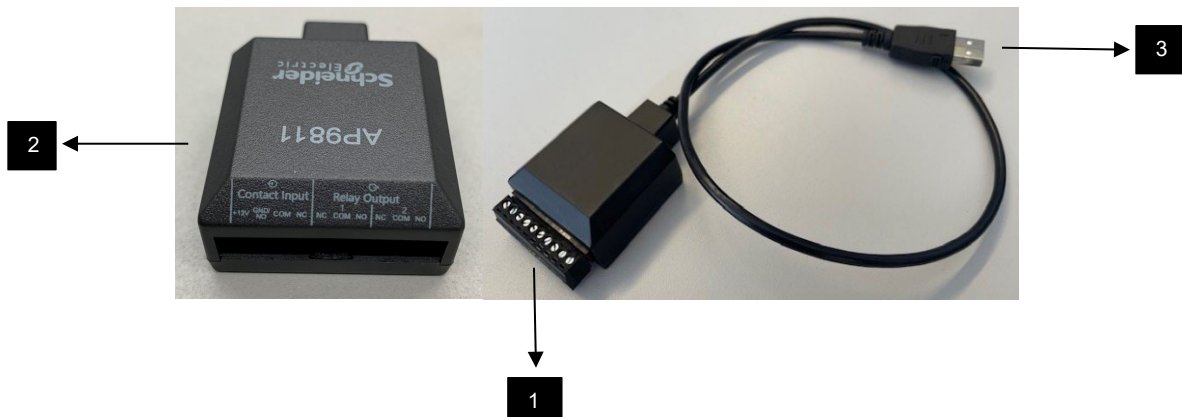
Supported Devices

The USB to Dry Contact Accessory for NMC (AP9811) is compatible with:

The Network Management Card 3 for Easy UPS On-Line (AP9544). The application firmware of AP9544 must be v3.2.0.6 or higher. For details on upgrading the NMC application firmware, refer to the AP9544 [User Guide](#).

Installation

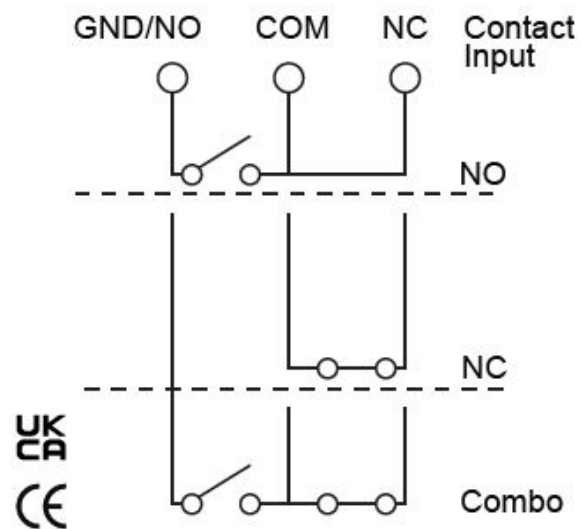
Install the USB to Dry Contact Accessory for NMC using the details below. Connect devices to the screw terminal block using the following subsections.



Item	Description
1	Screw terminal block; accepts 16 AWG to 28 AWG wires
2	USB to Dry Contact Accessory
3	USB connector

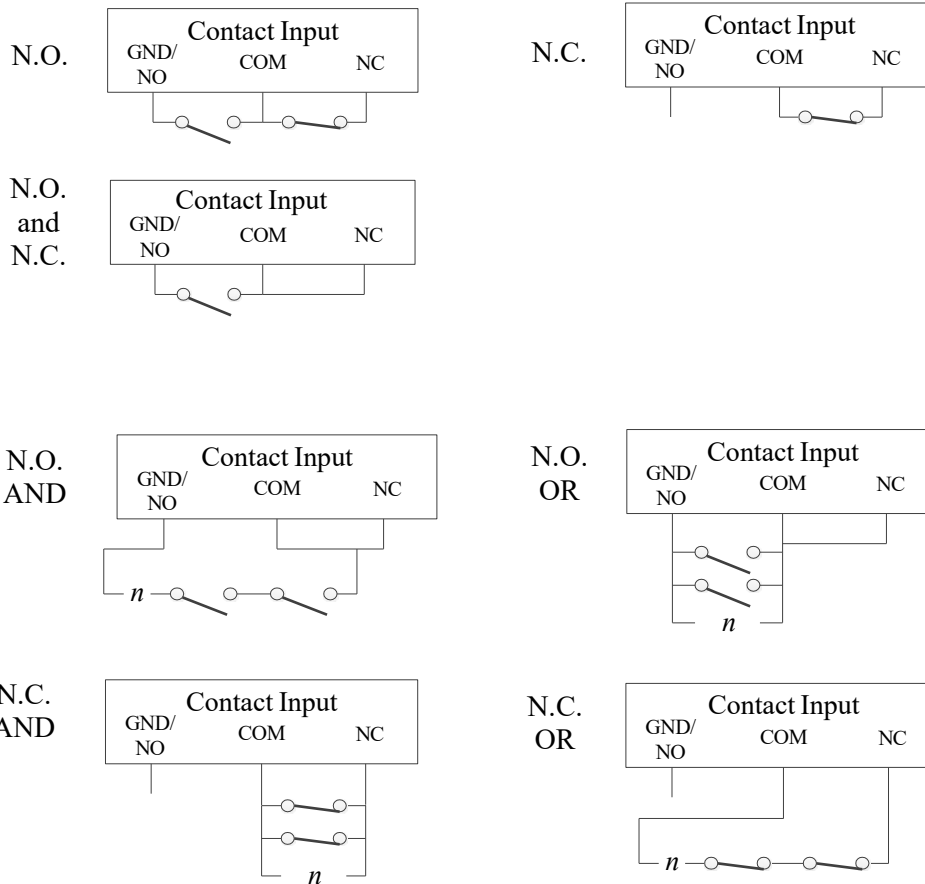
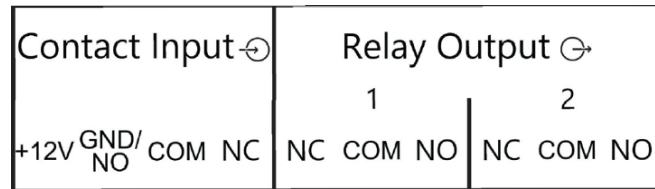
Connecting a single N.O. or N.C. dry contact device to the input terminals on the screw terminal block

The sensing voltage available on the COM input pin of the USB to Dry Contact Accessory for NMC is nominally 5 Vdc at less than 1 mA, referenced to system ground.



Connecting multiple N.O. or N.C. dry contact devices to the input terminals on the screw terminal block

The combinatorial logic (e.g., 'AND' or 'OR' functions) can be accomplished by wiring the contacts as shown below.



Connecting a device to the +12VDC power output terminal on the screw terminal block

This 12VDC output (35mA max) can be used to power sensing devices such as motion detectors. Use the GND/NO terminal on the screw terminal block and the +12V terminal to power the load. The +12V output can also be wired together with a relay contact to drive a low power device.

Connecting a device to the Output terminals on the screw terminal block

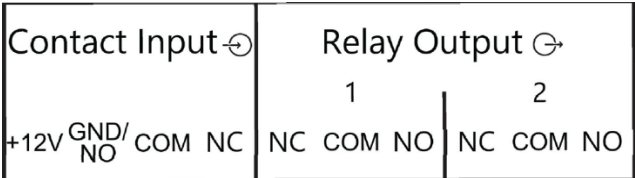


NOTE: The Form C relay is not intended to switch AC loads directly (see the ratings below).

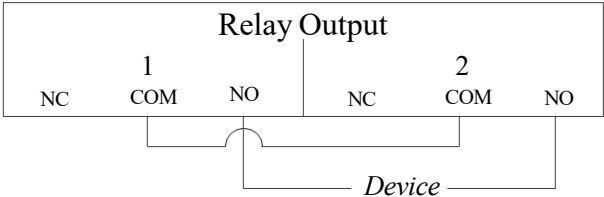
Form C relay ratings	
Normal switching capacity	1 A at 30 VDC
Maximum switching power	30 W
Maximum switching voltage	60 VDC
Maximum switching current	2 Adc
Maximum carrying current	2 Adc
Surge ratings	Surge voltage between contact and coil: 2.5kV (2/10µs) meets the Telcordia Requirement GR-1089, 1.5kV (10/160µs) meets FCC Part 68

If you are detecting the combinations of events or states, you can wire the two relay outputs to implement AND or OR logic (see the diagram below).

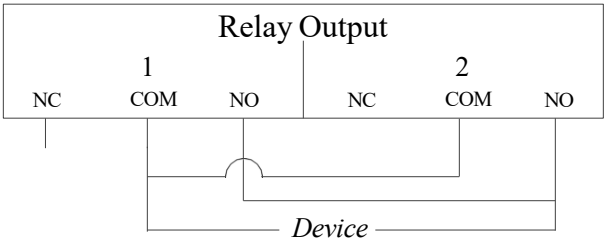
For example, if one Output changes state when the host reports a Replace Battery alarm and the other Output changes state when the host reports a Fault alarm, you can connect the Dry Contact I/O Accessories so that the device detects a change in state when only one alarm occurs (OR logic) or when both alarms occur simultaneously (AND logic).



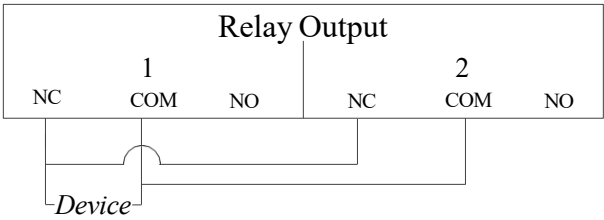
N.O.
AND



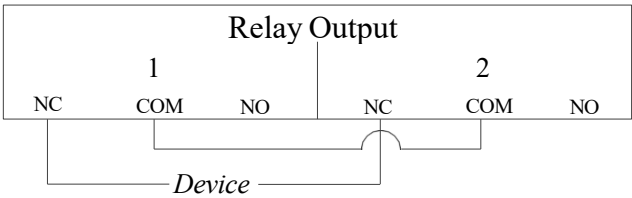
N.O.
OR



N.C.
AND



N.C.
OR



Specifications

Electrical	
Input voltage	5 VDC
Current draw	200mA mA DC
Output	12 VDC, 35 mA
Physical	
Size (Height x Width x Depth)	64.5 x 41.6 x 21.5 mm (2.54 x 1.64 x 0.85 in)
Weight	48.1g (1.7oz.)
Environmental	
Temperature	
Operating	0 to 40°C (32 to 104°F)
Storage	-15 to 65°C (5 to 149°F)
Relative Humidity	
Operating	0 to 95%
Storage	0 to 95%
Elevation	
Operating	0 to 3 000 m (0 to 10,000 ft)
Storage	0 to 15 000 m (0 to 50,000 ft)