XM-2 v1.2
Input/Output Extension Module

General Description

The XM-2 Input/Output extension module is designed for operation with PRxx2 access controllers or PRT access terminals configured for autonomic mode. The XM-2 provides two NO/NC inputs and two relay outputs, each relay output offer NO/NC dry contact. The XM-2 is a addressable microprocessor device which is controlled from host through Clock and Data communication lines (*RACS protocol*). The setup of XM-2's inputs and outputs is carried out during configuration of a host device to which the module is connected to. The main function of XM-2 is to add two inputs and two outputs to access control system and to enable separation between logic device which grants access (controller or autonomic reader) and relay output which controls door lock, this function is especially important when access controller is installed in public area where unauthorized person may try to release door without proper identification. The XM-2 is delivered as PCB module without case and requires 12Vdc supply, optionally it can be equipped with plastic case (XM-2 Box).

Note: The autonomic operation of PRT series terminals is available in devices with firmware version *v70.0* or higher. When PRT terminal is configured for autonomic mode it can be used as a simple, standalone access door control device. The PRT reader configured for autonomic operation may optionally operate with the second PRT series terminal, such a configuration enables two way door control.

Features

- 10-16V dc supply
- Communication via Clock & Data lines (RACS)
- Two NO/NC inputs
- Two relay type outputs
- Relay activation indicated on LEDs
- Operating temperature -25°C...+60°C.
- CE Mark.

Optical Signals

The XM-2 is equipped with three LEDs: POWER, REL1 and REL2. The LED POWER lights steady when module has a communication link with a Host device or is flashing when communication has disappeared. The LED REL1/REL2 lights when relevant output relay is triggered.

Installation

Locate module in a installation box, all electrical connections and address jumper settings must be set up with power supply off. Once wiring is complete, power up the device. If host device and XM-2 are supplied from different power sources, short minuses of both systems. When module is installed in adequate housing which deliver sufficient protection against moisture it may be located in external locations (XM-2 offers -25/+60 °C operation). The configuration of XM-2 inputs and outputs is performed during host device setup. It is strongly suggested to install module in distant location (min. 1.5m) from inductive loads and other sources of strong electromagnetic interferences.

Connection Terminals Descriptions

DC SUPPLY INPUTS, TERMINALS: +/- 12V

The XM-2 should be supplied from 10.0 to 16.0V DC current source equipped with reserve battery. The average current consumption of module is about ~20 mA and may increase up to ~100 mA when both relay outputs are activated. Care must be taken when selecting cable diameter for supply lines, installer must calculate the maximum voltage dropout on supply wires which should not excess 1V in worst case, this is very important especially when door lock is supplied from the same supply source as XM-2 module and other electronic equipment. Generally it is preferable to use separate supply sources for electronic equipment and door locks. When both elements (a door lock and electronic equipment) are supplied from the same power source it is obligatory to supply them through separate pairs of wires.

INPUT LINES, TERMINALS: IN1, IN2 AND IN3

The IN1 and IN2 have the same electrical structure, both inputs are NO/NC type with 5,6 kΩ resistor pulled up to supply plus. The NO type input is triggered when connecting it to supply minus, the NC input must be normally shorted with supply minus, it became active when disconnected form supply minus.

RELAY OUTPUTS, TERMINALS: NO1, NC1, COM 1 AND NO2, NC2, COM 2

The relay outputs offers normally open and normally closed contacts rating for 1.5A/24V dc/ac. The relay contacts are protected with over-voltage elements (MOV) which reduce sparks during switching of inductive loads (e.g. such as an electric lock) and thus extends relay contacts life significantly.

Note: Using relay contact to switch voltages above 30V may damage relay protection elements (MOV) and lead output's failure.

CLOCK & DATA INTERFACE, TERMINALS: CLK AND DTA

Both lines are used for communication between XM-2 and host device. The XM-2 and each other device connected to those lines should have an individual address. The assignment of address depends on given host device which XM-2 is connected to. The address setting can be carried out through JP1-JP4 programming jumpers. There are no restrictions for types of cables used for CLK/DTA lines except that the maximum cable length may not exceed 150 meters (500Ft.).

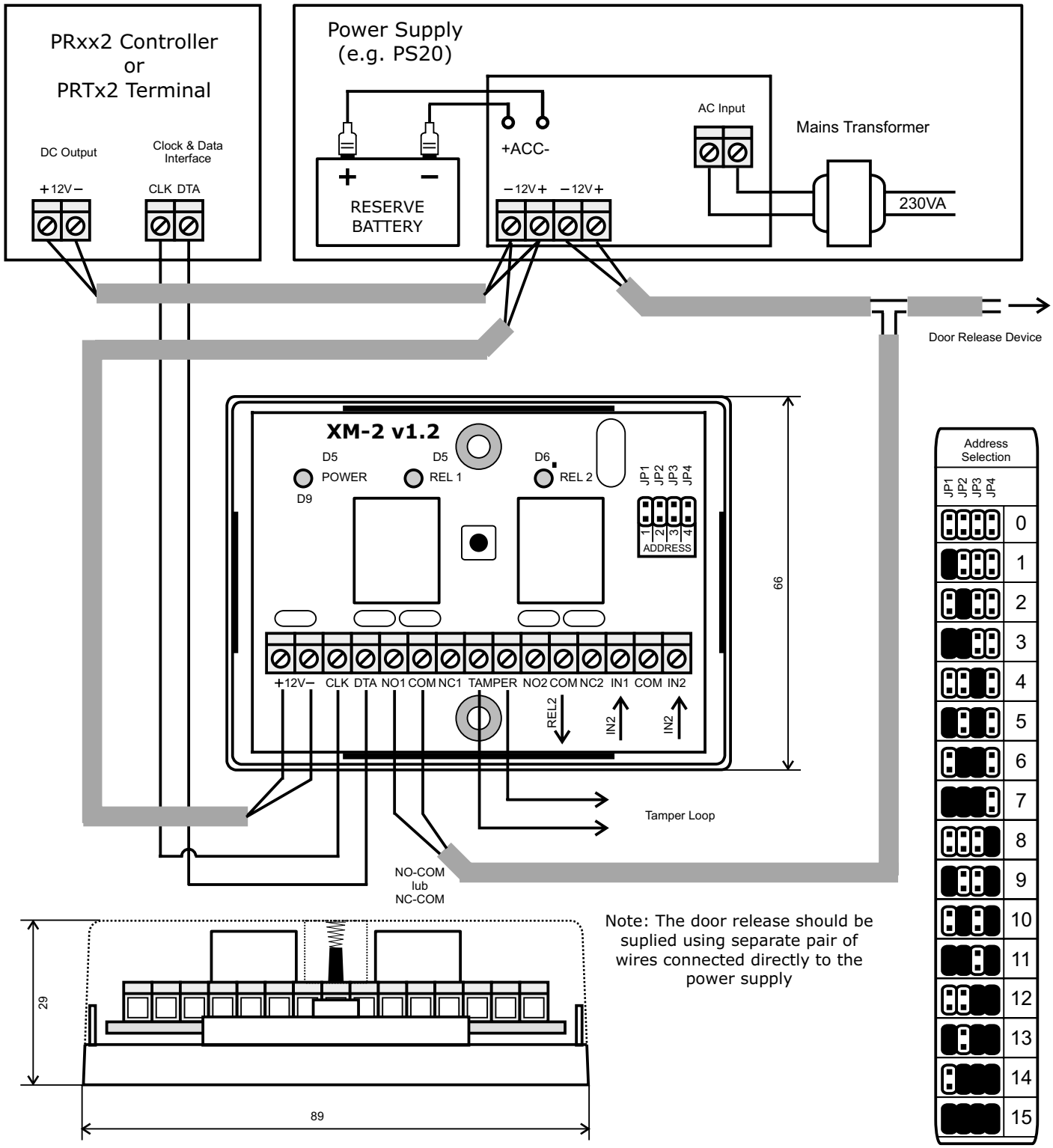
Ordering

XM-2	The XM-2 module (PCB only)
XM-2 Box	The plastic case for XM-2 module

Technical Specification

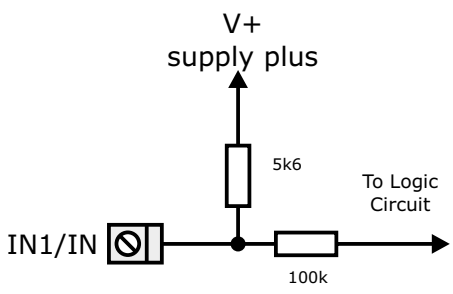
Supply	10-16V DC
Current consumption	~100mA (with both relays activated)
Inputs	Two NO/NC inputs, internally pull-up to supply plus via 5.6K resistor
Outputs	Two relay outputs, NO/NC dry contact, Form C 1.5A/24V DC/AC rated
Communication distance	150m (between host device and XM-2 module)
Operating temperature	-25°C +60°C
Relative humidity	10-95% (without condensation)
Dimensions	81 X 59 mm
Weight	~50g

XM-2 v1.2 Input/Output Extension Module
Wiring and Configuration

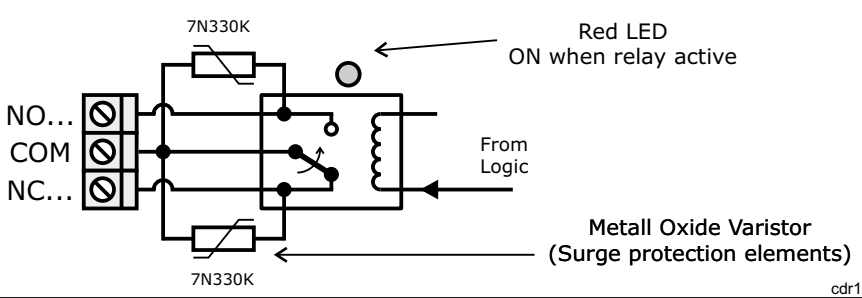


Note: The door release should be suplied using separate pair of wires connected directly to the power supply

Electrical structure of IN1/IN2 inputs



Electrical structure of REL1/REL2



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