

# Installation and Operating Instructions

## Addressable Input/Output devices

M9000A IO (3/0) - 3 inputs

M9000A IO (0/4) – 4 outputs

M9000A IO (2/2) - 2 inputs/2 outputs

M9000A IO (3/5) – 3 inputs/5 outputs



### 1. Description

The **M9000A IO (x/x) Addressable Input-Output Modules** are integration units designed for the **FP9000A** addressable fire alarm control panels. They are engineered to control and monitor external devices and systems within fire protection automation frameworks. Depending on the specific configuration, these modules provide **independent inputs** for monitoring external contacts and/or **galvanically isolated relay outputs** for driving actuators, featuring a built-in short-circuit isolator for the power loop. The devices function as addressable elements within the system, ensuring bidirectional communication with the control panel. Each input and output is reported separately, allowing for flexible programming and individual logical control. Communication between the **FP9000A** control panel and the I/O device is conducted via the addressable loop using the specialized **DMTech** data exchange protocol. The device's PCB features integrated LED indicators (Green, Yellow, and Red) that provide real-time status information. The housing is versatile, supporting either **DIN rail mounting** or wall mounting. All modules are also available pre-installed in a box with a transparent cover, meeting **IP66** protection ratings. The device is certified according to the following standards: **EN 54-18:2005/AC:2007, EN 54-17:2005 & EN 54-17:2005/AC:2007**

### 2. Input/Output configuration:

Module	Inputs	Outputs	Figure
M9000A IO (3/5)	3	0	1
M9000A IO (2/2)	2	2	2
M9000A IO (3/0)	3	0	3
M9000A IO (0/4)	0	4	4

Table 1.

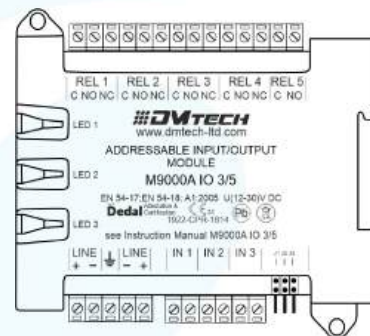


Fig.1

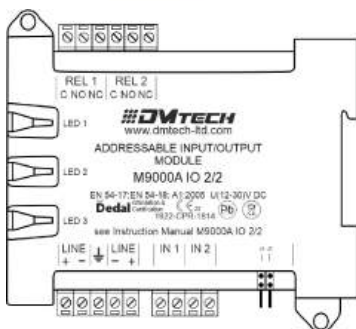


Fig.2

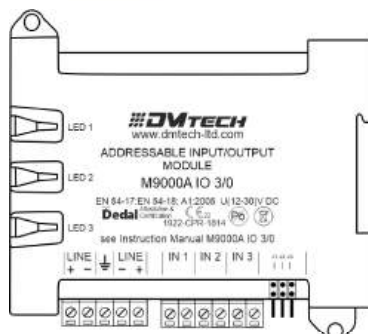


Fig.3

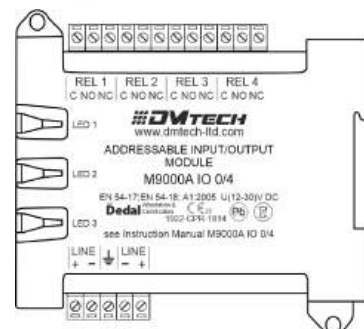


Fig.4

### 3. Technical Data

- **Addressable loop:**

- Supply voltage: (15÷30)V DC
- Current consumption in standby mode: < 500 μA
- Current consumption in „Alarm“ mode: (2±1) mA
- Built-in short circuit isolator

- **Inputs:**

- Quantity: depends on configuration (see Table 1)
- "Fault" state – open circuit (with line monitoring):  $R_{input} > 10k\Omega$
- "Fault" state – short circuit (with line monitoring):  $R_{input} \leq 100\Omega$
- Standby mode range (with line monitoring):  $8k\Omega > R_{input} > 2k\Omega$
- "Activated Input" range (with line monitoring):  $1.3k\Omega > R_{input} > 800\Omega$
- "Activated Input" (without short-circuit monitoring):  $1.3k\Omega > R_{input} > 0\Omega$

- **Outputs:**

- Quantity: depends on configuration (see Table 1)
- Potential-free, switching functions

- Electrical specifications:

30V DC /1A, 125V AC/0,5A

- **Degree of protection:**

- **Operating temperature:**

- **Relative humidity (non-condensing):**

- **Dimensions**

- **Weight**

IP 30/IP 66 mounted in a box.

- 5°C to 60°C

(95±3) % at 40°C

(105x85x23) mm/ (170x120x55)mm/ IP 66

0.085 kg

### 4. Indicators:

The LED indicators provide information regarding the status of the device as follows:

- Standby mode – Red and yellow light every 16 seconds;
- Activated output – Solid red light;
- Activated input – Red light flashes every 2 seconds;
- "Fault" state (short circuit on input) – Yellow LED turns off briefly;
- "Fault" state (activated isolator) – Yellow LED lights up every second;
- "Fault" state (open circuit on input) – Yellow LED flashes every 2 seconds.

### 5. Electrical Installation

Cables are connected to the terminals marked on the housing, as shown in the device drawing (Fig. 1).

#### 3.1. Addressable Loop

The module has two sets of terminals for the addressable loop input/output, intended for loop connection:

- **LINE “+”** – positive input/output (+)
- **LINE “-”** – negative input/output (-)
- **ERT** – addressable loop shield
- **LINE “+”** – positive input/output (+)
- **LINE “-”** – negative input/output (-)

#### 3.2. Programmable Inputs

Depending on whether the module has inputs and their quantity according to the type (see Table 1), they are marked as **IN1, IN2, IN3**.

#### 3.3. Relay Outputs

Depending on whether the module has outputs and their quantity according to the type (see Table 1), they are marked as **REL1, REL2, REL3, REL4, REL5**.

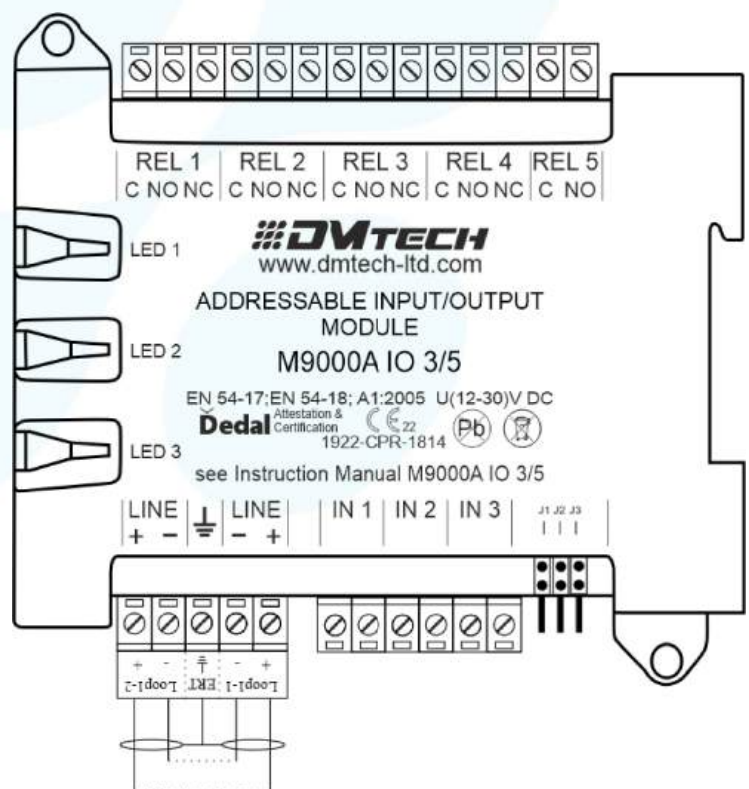
Relays 1 through 4 have three terminals:

- **C** – common contact
- **NO** – normally open
- **NC** – normally closed

Relay 5 has 2 terminals:

- **C** – common contact
- **NO** – normally open

The outputs are galvanically isolated and can control external devices such as dampers, fans, locks, relays, etc  
The marking depends on the number of outputs for the specific module type.



## 6. Inputs and Wiring Diagrams

All devices with configured inputs can operate in one of two modes:

1. **Supervised Input (Balanced with open-circuit and short-circuit monitoring)**
2. **Open-Circuit Supervised Input (Monitors only for open circuits; a short circuit activates the input)**

The operating mode for each input is selected individually via a **jumper** (one jumper for each input: J1, J2, and J3).

### 5.1. Supervised Mode

*(Jumper is installed for the respective input)*

In this mode, the input operates with a monitoring circuit (4.7k EOL resistor) and provides constant surveillance for:

- **Open circuit**
- **Short circuit**
- **Input activation** (closing of the contact through a 1k resistor)

This mode is suitable for connections where monitoring line integrity and short circuits is critical.

**Suitable for:**

- Fire door limit switches
- Sensors from external systems with EOL resistors
- Damper/hatch status (feedback)
- Emergency mode switches

**Advantages:**

- Full diagnostics of the cable line
- Reporting of "Fault", "Normal", and "Active" states

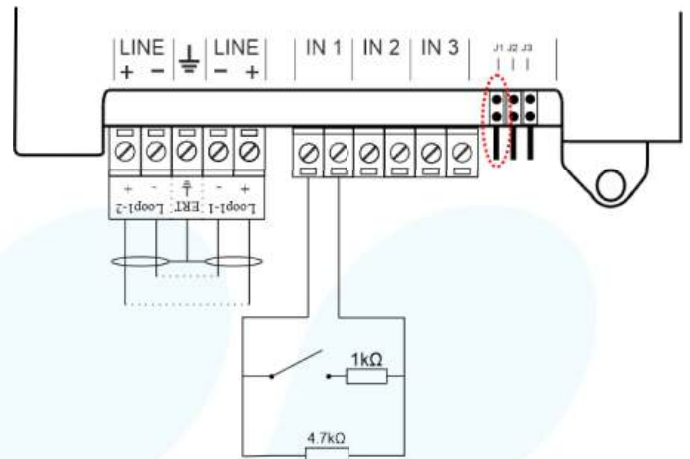


Fig.6

### 5.2. Open-Circuit Supervised Input.

*(Jumper is NOT installed for the respective input)*

In this mode, the input monitors for an open circuit using a 4.7k EOL resistor, but circuit closure (short circuit) activates the input. It monitors for breaks in the circuit controlling the input and is convenient for devices with contact outputs that can be used directly without installing a balancing resistor.

- Open-circuit monitoring is active
- No short-circuit monitoring
- Registers an "Active" state upon shorting/closing the input

**Suitable for:**

- "Fire" or "Emergency" buttons where there is no EOL
- Signal contacts from devices without monitoring
- Integration with systems that have their own diagnostics

**Advantages:**

- Easy connection
- Does not require ballast resistors

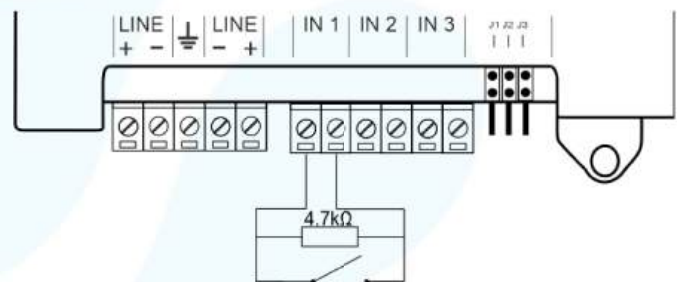


Fig.7

## 7. Outputs

Devices can have up to 5 Relay Outputs with the following parameters:

- Independent, galvanically isolated relay contacts.
- Configurable for Normally Open (NO) or Normally Closed (NC). Relay 5 has only Normally Open (NO) (Fig. 8).
- Electrical contact ratings: **30V DC / 1A, 125V AC / 0.5A**
- **Used for controlling:**
  - Smoke dampers and hatches
  - Smoke extraction fans
  - Relays for shutting down HVAC/power supply
  - Magnetic lock control
  - Other actuators

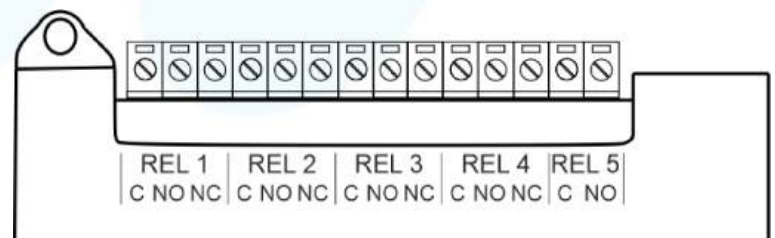


Fig.8

## 8. Package contents.

- 8.1. Input-Output Device M9000A I/O (X/X) – 1 pc.
- 8.2. Installation and Operating Instructions – 1 pc.
- 8.3. Resistors and Jumpers according to Table 2.

Module	Resistor 4,7 k $\Omega$ /0,6W	Resistor 1 k $\Omega$ / 0.6W	Jumpers
M9000A IO (3/0)	3	3	3
M9000A IO (0/4)	0	0	0
M9000A IO (2/2)	2	2	2
M9000A IO (3/5)	3	3	3

Table 2.

## 9. Warranty

The warranty period is 36 months from the date of sale, provided that the installation requirements have been met.

The manufacturer bears no warranty responsibility for damages caused by accidental mechanical damage, improper use, adaptation, or modification after production.

1922 – CPR – 1814



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