Digiseal NFC Module

Tap-to-unlock BLE + NFC access with continuous seal monitoring

The Digiseal NFC Module combines smart access control with continuous seal monitoring in a single unit. Mount the module on one side of a door, cabinet, manhole, or equipment enclosure and place a certified Digiseal NFC tag on the opposing surface — the module scans continuously and raises an instant alarm if the seal is broken without an authorised key. For maximum security, two modules can be paired as active NFC devices, eliminating any passive component entirely. When access is granted with a valid key, the module simply logs the opening and closing event without alarm. Every key is cryptographically hardware-bound, all events are logged, and the unit operates fully offline. The module is available with or without the built-in relay — where only seal monitoring is needed (e.g. doors and cabinets with existing mechanical locks), the relay-free variant offers a simpler and more compact installation.

Technical Specifications	
PCB Dimensions	20.4 × 60.0 mm
Power Supply	Wired (external) or battery-powered (configuration dependent)
Relay	Hongfa HFD4-I · DPDT · 2 × (COM / NO / NC) Rated switching (inductive): 2 A · 30 V DC | 1 A · 125 V AC Surge current: 3.5 A · IEC 60335-1 rated · suitable for solenoid/mag-lock loads ⚠ Install flyback diode (e.g. 1N4007) across solenoid coil — cathode to + terminal — to prevent relay damage
Connectivity	Bluetooth 5.1 (BLE) + NFC (tap-to-unlock)
Access Range	NFC: tap contact; BLE: 6–12 m indoors, up to 50 m outdoors
Connectors	7-pin screw terminal (2.54 mm): COM · NO · NC · COM · NO · VIN · GND Pole 1 (COM/NO/NC) · Pole 2 (COM/NO): each independently configurable as dry-contact or power pass-through Both poles switch simultaneously — connect two independent actuators to activate with a single relay trigger
Encryption	ECC secp256r1 hardware-bound keys; AES-256 CBC communication
Casing / IP Rating	Determined by customer-selected enclosure; IP65, IP67, IP68 and explosion-proof options available
Operating Temp.	−40 °C to +85 °C
Electrical Consumption	Standby ~0.35 mA; NFC active ~110 mA; relay actuation +47 mA; peak ~160 mA
Certifications	Available on request; additional certifications at customer cost

Key Features

- Continuous seal monitoring — module scans for paired NFC tag or second module and raises alarm on unauthorised opening
- Two deployment modes: passive certified Digiseal NFC tag + module, or two active modules for highest tamper resistance
- NFC tap-to-unlock — phone as the key, no card reader needed
- Authorised access logged silently; forced or unexpected opening triggers instant alarm
- Installs on any existing mechanical lock without rewiring
- Wired or battery-powered to suit any installation
- Hardware-bound private key, never exported from chip
- Available with or without built-in relay — relay-free variant for installations with existing mechanical locks
- Complete offline operation — no internet required
- Optional NB-IoT Gateway for real-time cloud alarms and audit logs

Applications

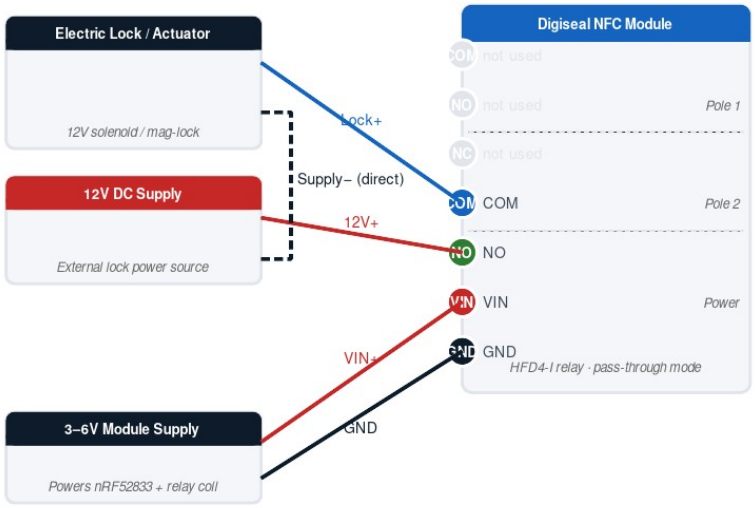
- Telecom and electrical infrastructure cabinets
- Manholes and underground access covers
- Safes and secure document enclosures
- Utility metering panels
- Industrial equipment and site access points

Connection Diagram — Signal Contact (Dry Contact)

Connection Diagram — Power Pass-Through

Digiseal NFC Module — Power Pass-Through Wiring

Pole 2: NO (12V+ in) → relay contact → COM (Lock+) · Lock– returns direct to supply



How it works

12V+ enters via Pole 2 NO.
On valid BLE key: relay fires,
NO connects to COM,
12V+ reaches lock via COM.
Lock– returns directly to
supply– (not via module).

Pole 1 (COM/NO/NC) not used
in this wiring configuration.

REQUIRED: fit flyback diode
(e.g. 1N4007) across lock
coil, cathode to + terminal
— prevents relay damage.

Relay — HFD4-I (per pole)

Inductive: 2 A · 30 V DC
1 A · 125 V AC
Surge current: 3.5 A
IEC 60335-1 rated

Legend

- 12V+ supply input
- COM — switched 12V+ output to lock
- Supply– / GND (dashed = direct bypass)

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