# "Elfin"-MM fast index

## Function description:

**"Elfin"-MM "Elfin" is integrated with time recorder, PWD door controller, single-door controller, reader with Chinese character display and double door controller.**

- One build-in card reader, two sets of W26 interface, two sets of sensor input, two sets of open button input, two sets of relay output, one set of bell port   and one set of RS485 communication interface.
- Chinese-English Menu port   with backlight; display the owner's name and work number, send public short message and personal short message; the alarm supporting working day setting, set equipment parameter by keyboard, off-line operation, support 2500 card holders, store 25000 pieces of card reading information and alarm event and network with 255 machines.
- Flexible application can re-define the IO interface. For example, W26 port   will be defined as W26 standard output or input, the relay can be defined as door controller, bell or alarm output, the sensor can be defined as fire ALMsignal.
- Professional door controller functions: 32 time periods/64 time sets/16 application groups/8 types of holidays/validity period for card; when the hard is off-line, there are two layers of A.P.B protection; Only PIN, only card and card & PIN are available; soft control of any door, various alarm incidents functions: open time-out, close time-out, intrude alarm, force alarm, burglar alarm and fire ALM etc.

```
Menu_Main
|─Clock
|   |─Set time
|   |─Adj time
|   |   |─⊙ Adj not
|   |   |─○ Adj fast
|   |   |─○ Adj slow
|   |─Alarm clock
|   |   |─☑CLK 01->
|   |   |   |─☑Enable
|   |   |   |─Alarm
|   |   |   |─Delay
|   |   |   |─WeekSet ☑ Sunnday☑ Monday…☑ Saturday
|   |   |   °°°
|   |   |─☑ CLK 16-> (Ditto)
|─Card
|   |─Add card
|   |─Update card
|   |─Del card
|─System
|   |─Model ID
|   |─Llight mode─○NC.、⊙NO.、○AUTO、○SetTime
|   |─Beep hint─☑Keys、☑ Clock、☑ Hints,
|   |─Baud rate─○2400bps、○4800bps、⊙9600bps、○19200bps
|   |─Rec. option─○ In rec.、☑ Out rec.、☑ Events、☑Cycle、
|   |              ○ Sameness、☑ Tol. alarm、□5 Digit
|   |─Menu PWD
|   |─Sys info
|   |─Clear…
|   |─Updata…
|─Door
|   |─Door1
|   |   |─Authority
|   |   |   |─Timer─(0-31)
|   |   |   |─TimeZone─(0-63)
|   |   |   |─Holiday
|   |   |   |─APPSet─( 0-15)
|   |   |─Control mode─⊙In & Out、○ Only in、○ Any out 、○A.P.B.
|   |   |─Entry type ─⊙ Only card、○ Only PIN、○ Card &PIN
|   |   |─Sensor type ─⊙ Sensor NO、○ Sensor NC、○Fire NO、○Fire NC、○NULL
|   |   |─Button type─⊙NO.、○NC.、○NULL
|   |   |─OpenTime
|   |   |─CloseTime
|   |   |─First NO.─⊙ ON、○ OFF
|   |   |─Duress PIN
|   |   |─Access PIN
|   |─Door2
|   |    (Ditto)
|   |─ Door1->2
|   |─ Door2->1
|─IO port
|   |─Relay 1─⊙Lock 1、○ Lock 2、○ Bell、○ Alarm 、○ NULL
|   |─Relay 2─○Lock 1、⊙ Lock 2、○ Bell、○ Alarm 、○ NULL
|   |─W26 Port1─⊙ In 1、○ Out 1、○ In 2、○ Out 2、○ W26 out 、○ NULL
|   |─W26 Port2─○ In 1、○ Out 1、○ In 2、○ Out 2、○ W26 out 、○ NULL
|   |─Self Reader─○ In 1、○ Out 1、○ In 2、○ Out 2、○ NULL
|─Language─⊙ Chinese、○English
```

## Technical parameters

| | |
|---|---|
| Data saving | Ten years (after power failure) |
| Off-line capacity | 25000 pieces (adjustable) |
| Card control | 2500 pieces (adjustable) |
| Card type | EM card (MIFARE is optional) |
| Working voltage | 8～25VDC |
| Power consumption | <3W |
| Induction distance | 6～15cm |
| Reading speed | 0.15 second |
| Communication mode | RS485 |
| Networking capacity | 255 sets |
| Working temperature | -20℃～70℃ |
| Working humidity | 20%—90% |
| Storage temperature | -25℃—85℃ |
| LCD display | 122×32DOTS |
| Dimension | L120×W88×H 18mm |
| Weight | 160g |

## Keyboard operation description:

**menu operation guide:**

Go menu: press <*> and <#> (<*> first, then <#> soon after) at the initial state to enter into the menu state (press valid PWD if it is set password). If you don't press the button within 3 minutes, the system will automatically escape from the menu and restore the initial interface. When the system is in the menu state, it will give no response to the door controller and RS485 communication.

Menu browse: the menu is in tree structure. In some submenu, <7> and <9> are used to choose the items up and down. The chosen item will be in white display. Press <#> key to fix the item setting, press <*> to cancel the item setting and return to the high-authority menu.

Multiple choice and single choice: <7> key is to review upward, <9> key is to review downward; <#> key is to choose multiple choices or single choice; < * > key is to escape the multiple choice or single choice and save the choice result.

**Operation guide for PWD entry:**

Press <#> at the initial state and the screen displays the prompt to enter the password. Enter the PWD (from <0> to <9>) (Access PIN or Duress PIN), and press <#> key to confirm.

PWD modification: read card and press the valid password, then press <*> and <#>, stamp card again at the sight of the prompt quickly. Enter the new PWD two times. The personal PIN modification is successful. (Default PWD is: 888888)

### 1、Display icon index

| Icon | Meaning |
|---|---|
| ☞ | Current option |
| ↓ | There is some information following, press < 9 > to review. |
| ↑ | There is some information above, press < 7 > to review. |
| □ | There is no chosen item in the check box. |
| ☑ | There is chosen item in the check box. |
| ○ | There is no chosen item in the radio button. |
| ⊙ | There is chosen item in the radio button. |

### 2、keyboard function index

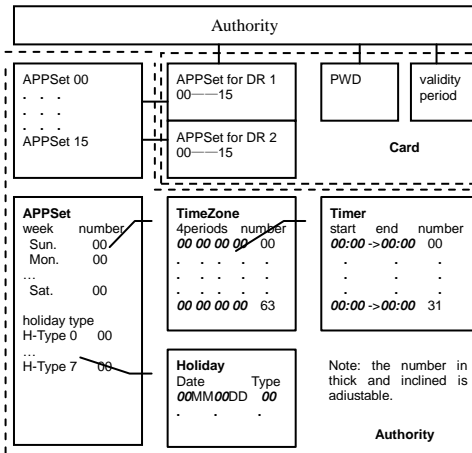| Key | Function |
|---|---|
| < 0 >< 1 >< 2 ><br>< 3 >< 4 >< 5 ><br>< 6 >< 8 > | Number input |
| < 7 > | Number 7 input<br>Up |
| < 9 > | Number 9 input<br>Down |
| <*> | Cancel the operation<br>Return to the high-authority menu<br>Escape multiple choice or single choice and save the choice. |
| <#> | Confirm the operation<br>Enter into the submenu<br>Choose multiple choices or single choice. |

## Authority and card management

Setting steps
1. Set time period list>> set SetTimelist>> set holidays>> set application groups 00-15
2. Card management-> add card or modify card, set the validity period of the card and.

```
                 Authority
     ┌──────────┬──────────┬──────────┐
 APPSet 00    APPSet for DR 1   PWD   validity
  . . .        00——15                 period
  . . .
 APPSet 15    APPSet for DR 2
              00——15          Card
```

| APPSet | | TimeZone | | Timer | |
|---|---|---|---|---|---|
| week | number | 4periods | number | start end | number |
| Sun. | 00 | *00 00 00 00* | 00 | *00:00->00:00* | 00 |
| Mon. | 00 | | 01 | | |
| … | | | | | |
| Sat. | 00 | | | | |
| | | *00 00 00 00* | 63 | *00:00->00:00* | 31 |
| holiday type | | | | | |
| H-Type 0 | 00 | | | | |
| … | | Holiday | | | |
| H-Type 7 | 00 | Date    Type | | Note: the number in | |
| | | *00MM00DD   00* | | thick and inclined is | |
| | | | | adiustable. | |

**Authority**

### APPSet case

case 1
pass for 24 hours

| APPSet | TimeZone | Timer |
|---|---|---|
| *all set as 00* | *00 00 00 00*  00 | *00:00->23:59*  00 |

case 2
Mon–Friday: 8:00——12:00, 14:00——17:00 and 20:00——23:30 are the entrance time period.
Saturday: 8:00——12:00 entrance time
Sunand holiday (such as the National Day): no entrance for whole day

| APPSet | | TimeZone | | Timer | |
|---|---|---|---|---|---|
| *Sun* | *00* | *00 00 00 00*  00 | | *00:00->00:00*  00 | |
| *Mon* | *01* | *01 02 03 00*  01 | | *08:00->12:00*  01 | |
| *Tues* | *01* | *01 00 00 00*  02 | | *14:00->17:00*  02 | |
| *Wed* | *01* | | | *20:00->23:30*  03 | |
| *Thur* | *01* | | | | |
| *Fri* | *01* | | | | |
| *Sat* | *02* | Holiday | | | |
| *H-Type 0* | *00* | Date    Type | | | |
| | | *10MM01DD*  *00* | | | |

distribute corresponding APPto the two doors

## Examples for common use setting:

Note: the following setting is based on the default setting.

**1.PWD door controller**
1) Door->Door1-> Entry type (set as   **Only PIN**)
      ->Door1 (*set as* **Duress PIN**, **Access PIN** and **OpenTtime** respectively)
2) IO port ->Relay 1(*set as* **Lock 1**)
      ->Self reader (*set as* **In1**)

**2. Standard wiegand chuck**
1) IO port -> W26 port1(2) (*set as* **W26 out**)
After setting and reading card, the port JP2(3) outputs the "card" of W26 standard format. What's more, the key is compatible with the chuck of Motorola and HID.
The key output codes are shown as follow:

| Key | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | * | # |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code output (binary) | 0000 | 0001 | 0010 | 0011 | 0100 | 0101 | 0110 | 0111 | 1000 | 1001 | 1010 | 1011 |

See the order for signal in the right picture.

**3. Control two doors and press PWD after reading card (connecting w26 reading head with two passwords)**
1) IO port -> W26 port1 (*set as* **In 1**)
      ->W26 port2 (*set as* **In 2**)
      ->Relay1 (*set as* **Lock1**)
      ->Relay2 (*set as* **Lock 2**)
2) Door ->Door1-> Entry type (*set as* **Card & PIN**)



**4. The one who enters by reading card is permitted be out by reading card and the alarm for going to and off work is needed.**
1) IO port ->W26 port1 (*set as* **In 1**)
      ->W26 port2 (*set as* **Out 1**)
      ->Relay1 (*set as* **Lock1**)
      ->Relay2 (*set as* **Bell**)
2) Door->Door1->Control mode(*set as* **A.P.B.**)
3) Clock -> Alarm clock (set as you desire)

**5. There is one entry and one exit in one parking lot. The card reading is necessary when entering and going out the lot. But the vehicle that isn't registered by card reading in the entry is forbidden to park in the lot.**
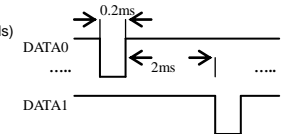1) IO port -> W26 port1 (*set as* **In 1**)
      ->W26 port2 (*set as* **In 2**)
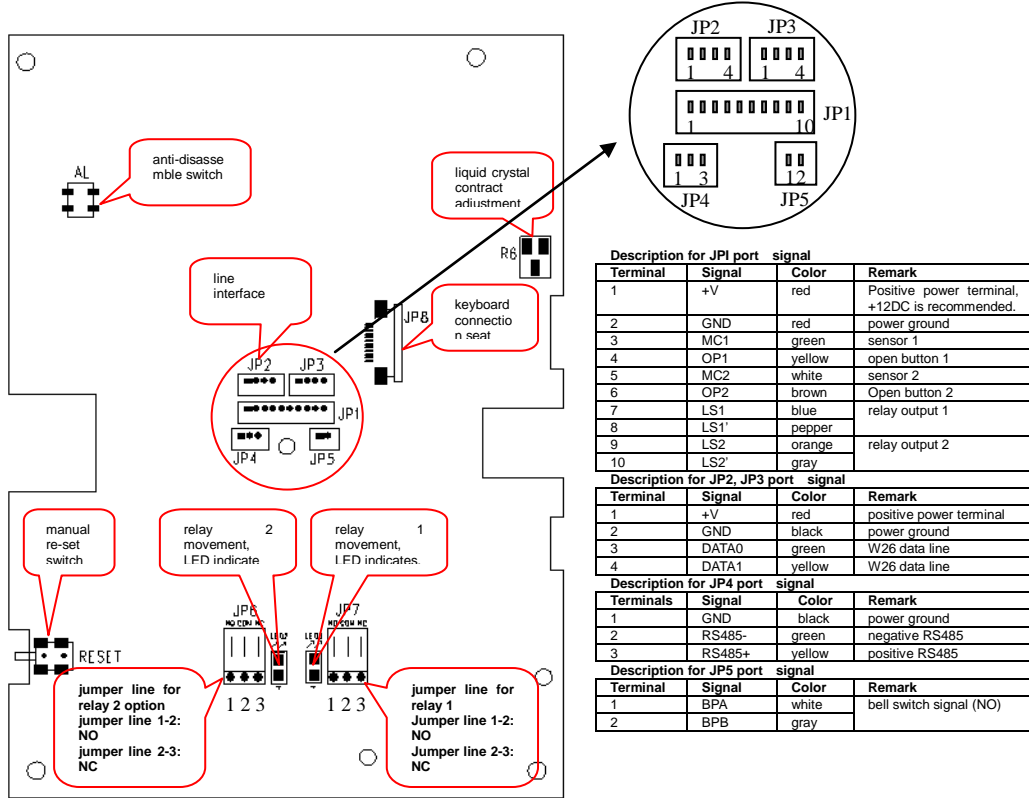      ->Relay1 (*set as* **Lock1**)
      ->Relay2 (*set as* **Lock 2**)
2) Door->Door1->Control mode(*set as* **A.P.B**)
3) Door->Door2->Control mode(*set as* **A.P.B**)

# "Elfin" connection description



### Description for JPI port signal

| Terminal | Signal | Color | Remark |
|---|---|---|---|
| 1 | +V | red | Positive power terminal, +12DC is recommended. |
| 2 | GND | red | power ground |
| 3 | MC1 | green | sensor 1 |
| 4 | OP1 | yellow | open button 1 |
| 5 | MC2 | white | sensor 2 |
| 6 | OP2 | brown | Open button 2 |
| 7 | LS1 | blue | relay output 1 |
| 8 | LS1' | pepper | |
| 9 | LS2 | orange | relay output 2 |
| 10 | LS2' | gray | |

### Description for JP2, JP3 port signal

| Terminal | Signal | Color | Remark |
|---|---|---|---|
| 1 | +V | red | positive power terminal |
| 2 | GND | black | power ground |
| 3 | DATA0 | green | W26 data line |
| 4 | DATA1 | yellow | W26 data line |

### Description for JP4 port signal

| Terminals | Signal | Color | Remark |
|---|---|---|---|
| 1 | GND | black | power ground |
| 2 | RS485- | green | negative RS485 |
| 3 | RS485+ | yellow | positive RS485 |

### Description for JP5 port signal

| Terminal | Signal | Color | Remark |
|---|---|---|---|
| 1 | BPA | white | bell switch signal (NO) |
| 2 | BPB | gray | |

JP5 is bell interface: BPA and BPB is in open circuit. When pressing the round bell in the low left corner of "Elfin" panel, the BPA and BPB is circulating. Then BPA and BPB can connect with radio or wireless bell. JP4 is RS485 communication interface: the computer can control many "Elfin" (255 sets at most) by RS485 converter. Therefore, It is necessary to set an unique machine number for the "Elfin" in the network.

JP2, JP3 are the W26 interfaces: the port is a multi-functional port and can be W26 input or W26 output. When set as input, it can connect with standard W26 card reader (support read head with keyboard). When set as output, it can be used by the standard W26 card reader for other purposes.
The specific menu setting: IO port -> W26 port1(2)-> W26 out

**System connection picture**

**Note:** The power terminals (+V) of JP2 and JP3 are the same as that of JP1. When the terminal supplies power to the exterior chuck, the +V voltage should not be over the rated working voltage of the exterior chuck. In this case, it is necessary to supply power separately and then connect the ground lines of the two powers.
JP1 is the main interface: including power, open button, sensor and relay output. Among them, sensor and relay output is all-purpose interface. The sensor can set as fire ALMlink, in another word, the port receives the fire ALMsignal, "Elfin" controller will open all doors of its controller doors.
The relay can be set as lock control output, alarm output and alarm output. The NCand close of relay are optional of Jumper cable JP6 and JP7. See the picture above.
Name and work number of card holder; issue of short message and change of title should network with computer to manage it by "Elfin" applied software.

**Hardware updata**
"Elfin" support hardware updata on-line.
1. "Elfin" communication port connects with computer through RS232/RS485 converter.
2. When "Elfin" in the updata standby state, the menu operation is shown as follow: system -> software updata
3. Install "Updata tool for hardware" in the computer. Operate Updata.exe, communication port should choose correct interface, the baud rate is 19200, the updata file should be the xxxxx.upd updata file provided by the manufacturer. When the updata starts, progress bar indicates the course of updata. Please do not interrupt the course. After the updata, terminal computer will reboot.

## System connection figure
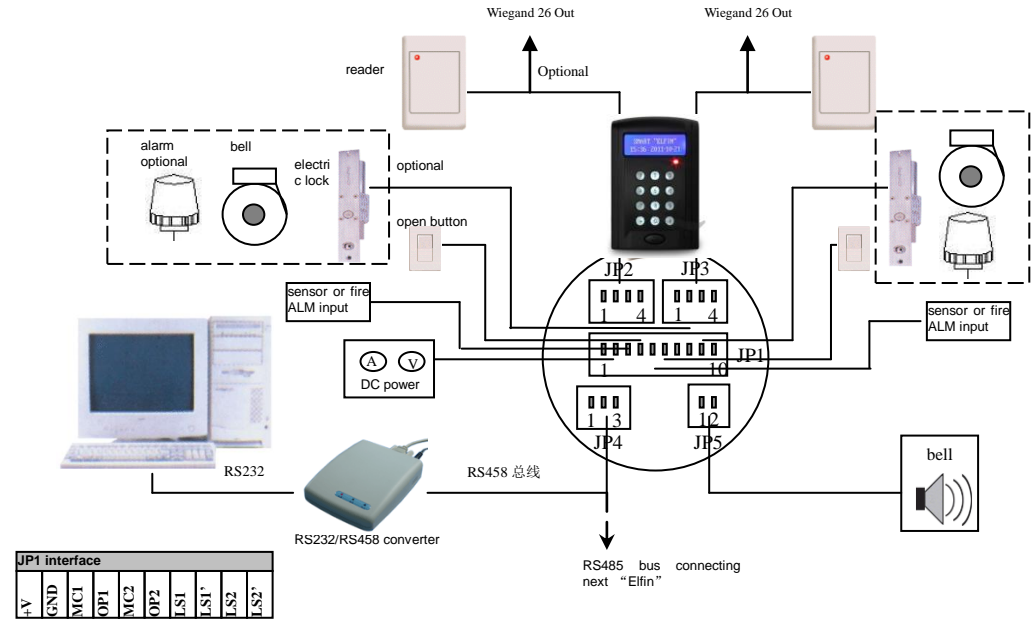


## Example for connection picture