

SY120SA Series

Operating Manual

Version 3.22



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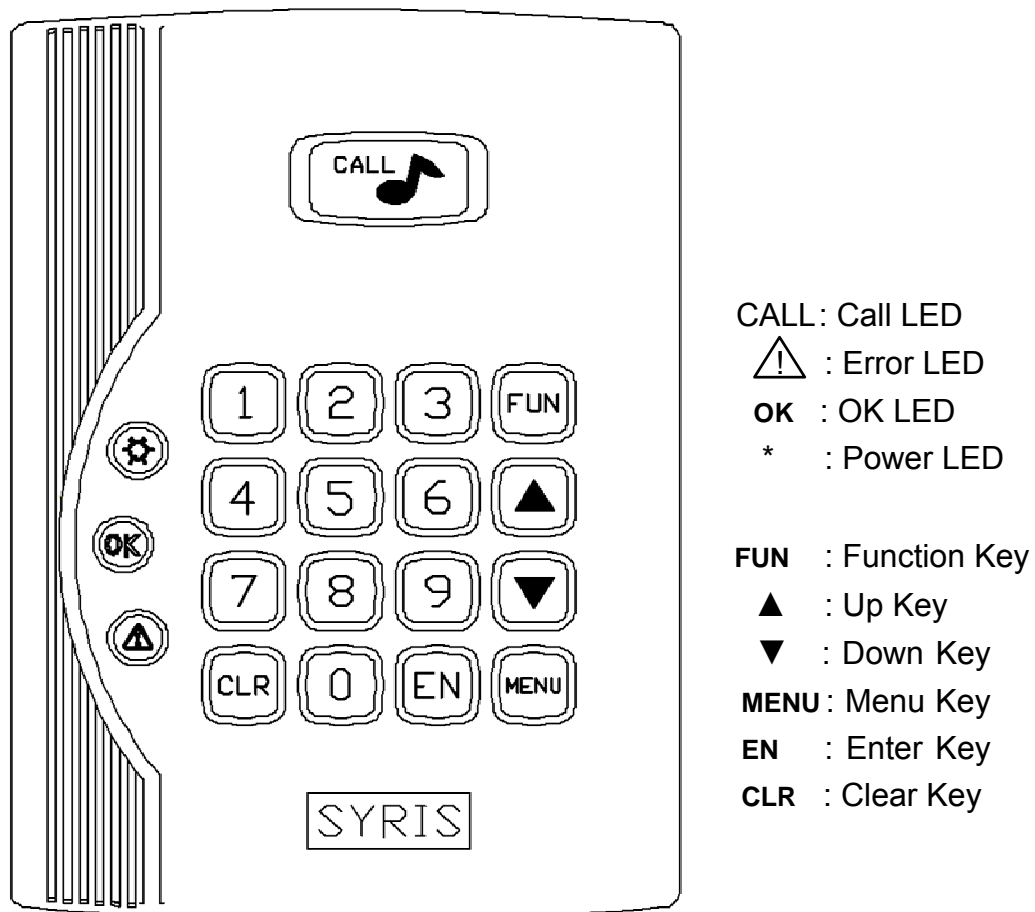
1. SY120SA system brief introduction

SY120SA is a low price & multiple function accesscontrol system, which can expand to connect one card reader and control one door unit. It also equipped with four types of inputs, two types of outputs, and two “CALL” function keys which are programable I/O access points.

SY120SA can work with SYBASE program in order to form the network connection function. With this combination, it can process the data, e-map, manual control, remote control, and emergency control. It could be used as the controller for door access, parking lot access, elevator access and many other use which could be able to apply on SY120SA. The build-in functions also includes two section's anti-theft and emergency control which can work with alarm system for arm and disarm.

In SY120SA's System Setting Function Table shows all of the functions. For more detail please check the following instructions.

User can use all of the control setting form the reader's keypad. The follow is keypad's diagram.



1.1 SY120SA system control function list

1.1.1 General use function

1. Proximity Card Open.
2. Proximity Card + Card Password.
3. Proximity Card + Anti-Anti-duress Password.
4. Card Password or Card Number+ Password.
5. Card Number + Anit-Anti-duress Password.
6. Set or modify Card Password.
7. Remove Alarm Status

1.1.2 System setting function

| Code | Function | Code | Function | Code | Function |
|-----------|------------------------------------|-----------|----------------------------------|-----------|--------------------------------|
| 0 | Remove security | 42 | Setup Master card | 58 | Setup I/O data mode |
| 1 | To deploy security | 43 | Setup Anti-duress password | 59 | Setup extern reader |
| 2 | Login / Logout | 44 | Remove Anti-duress alarm | | |
| | | 45 | Enabled or Disable Door Forced | 61 | Configure Input point setting |
| 31 | Add single card | 46 | Enabled or Disable Door Time-Out | | |
| 32 | Delete single card | 48 | Encryption Card setting | 71 | Configure Output point setting |
| 33 | Modify single card group data | 49 | Restore to Default setting | | |
| 34 | Modify single card group status | 51 | Access with password | 81 | Setup system time |
| 35 | Add multiple card | 52 | Change default password | 82 | Setup time period |
| 36 | Delete multiple card | 53 | Setup error password lockdown | 83 | Setup Group |
| 37 | Modify multiple cards group data | 54 | Setup alarm source | 84 | Setup Weekly Group schedule |
| 38 | Modify multiple cards group status | 55 | Setup alarm enabled | 85 | Setup Holiday access limit |
| | | 56 | Setup doorbell enabled | | |
| 41 | Modify Master card password | 57 | Setup extend module | 91 | Setup controller ID |

* Please see the reader display list for more particular system light description.

1.2 Reader LED status list

| code | Status description | Show light & sound | | | | Footnote |
|------|-----------------------------|---------------------|------------------------|----------------------|--------------------|----------------------------------|
| | | OK LED (SY120SA) | Power LED (SY120SA) | Error LED (error) | BEEPER (voice) | |
| 0 | Normal status | off | LED Red | LED Orange | no action | |
| 1 | Correct status | LED Green | LED Red | off | short beep(0.5sec) | Return to original status |
| 2 | Error status | off | LED Red | LED Orange | 2 short beep | Return to original status |
| 3 | Armed status | off | LED Red | twinkling | long beep(2sec) | Work until remove guard |
| 4 | Login status | off | twinkling | off | long beep(1sec) | Work until login out |
| 5 | Alarm status | off | LED Red | twinkling | keep rapid beep | Work until remove guard |
| 6 | Finishing setting status | LED Green | LED Red | off | long beep(1sec) | Return to original status |
| 7 | Activate alarm delay status | twinkling | LED Red | off | keep short beep | Work until finish guard |
| 8 | Waiting input status | twinkling | LED Red | off | short beep(0.5sec) | Work until finish guard or delay |
| 9 | Lockdown status | twinkling | LED Red | twinkling | No action | Return to original status |

*Keep waiting 30secs to response card & password, if delay or push enter and system will login out.

*After 2 mins the system will login out when login and no any keypad enter action.

2 Operating manual

2.1 Access with Prox. card

2.1.1 Prox. card enter

1. Present Prox card to reader; waiting for confirmation from controller.
2. If the card is valid, system will open the door automatically.
3. If the card is invalid, system will show error message.

2.1.2 Access with Prox. card and password

1. Present card to reader and wait for confirmation from controller.
2. If card is valid, the controller will wait for password and stop reading function until the password has inserted and push [EN]. If the password is correct the controller will show correct message, and the door will be opened automatically.; Password range: 0000 – 9999
3. If the card is invalid or error password, the system will show error message.

2.1.3 Access with Prox. Card and Anti-duress (with anti-duress output)

1. Present card to reader and wait for confirmation from controller.
2. If card is valid then reader will wait for password entered and stop reading function until password had been confirmed. After varified password is correct anti-anti-duress, on the controller will show correct LED message and will open the door automatically. If anti-druess mode had been activated, the controller will has anti-duress action at same time.
3. If invalid card or wrong password and system will response error message.

2.2 Access without Prox. card.

2.2.1 Access with card's password or card number and card password

1. Enter (pppp)[EN], system will confirm correct or error, if correct will response correct status and control open automatic.
(pppp):card password; default value :0000
* Enter password to open ⇨ please see 2.9.1 detail
2. Enter(NNNN)(pppp)[EN], and wait for confirmation from controller,
if correct will response correct message and the door will open automatically.
(NNNN):valid card number: 0001~2000
(pppp): Card's password; default: 0000

2.2.2 Access with card number and anti-duress password

1. Enter (NNNN)(pppp) [EN], and wait for confirmation from controller, if correct will back to normal sttus and anti-duress alarm will be initiated automatically.
(NNNN): valid card number are in the range between 0001~2000
(pppp): anti-duress password (The password is four digit)
* If anti-duress password & personal password are the same, the personal password will be the first priority to be checked and the alarm won't be triggered.

2.3 Modify card's password

[Access with card and password mode]

1. Present the Prox. card to controller which the one user wants to modify, wait for confirmation from controller. if the card had setup a password, the controller will wait for password entered and stop reading function until the password had been varified. If the card didn't setup any password, the controller will open the door automatically.
2. Follow the sequence of (pppp) (nnnn) (nnnn)[EN], wait for the confirmation from controller. If correct, system will show correct message and change previous password to new one.
(pppp): use old password or original system password;
(nnnn)(nnnn): new password needs to be entered twice.

[Password enter mode]

1. Follow the sequence of (NNNN)(pppp)(nnnn)(nnnn)[EN], wait for confirmation from controller ,if correct then the old password will be changed to new one and show "correct" message..
(NNNN): Valid card number. The range are in between 0001~2000.
(pppp): Previous password or system original password; Default: 0000
(nnnn)(nnnn): new password needs to be entered twice.

2.4 Method of Deactivate alarm

1. Deactivate alarm status is the same as access

2.5 Activate/Deactivate security system [needs in login mode]

2.5.1 Deactivate security system

1. Enter[FUN][0][EN], if correct the "OK" LED will twinkling.
2. Present valid card, if correct system will check the configure of the security system's setting weather needs to enter password or not.
3. If new enter password and response waiting enter password status,keypasd enter and check card password.
4. If not need enterpassword or card password correct andwill remove guard system(normal sttus)

2.5.2 Setting security system

1. Enter[FUN][1][EN]if correct and response correct status and show waiting proximity card status.
2. Response avail card,if correct and will response correct status and decide need to enter password or not.
3. If need enter password and show waiting password enterstatus,keypad enter and confirm with the card password.
4. If don't need enter password or card password to enter and system will show spread delay status.
5. Spread delay status will back to speard statusat the end of time or alram response response finished setting.

2.6 System login & logout function [Function needs to deactivate security system]

2.6.1 Login system

1. Push [FUN] ⤴ [2] ⤴ [EN] in logout status and wait for system response
2. If Master card and system into waiting response proximity card status .correct or no setting card andneed to into the next step.
3. System enter waiting password enter status,waiting to enter setting card password
4. If correct and login directly.

If use setting card and need to use card and password; default setting card password:1234

2.6.2 Logout system

1. During login status, follow the squence of [FUN][2][EN]. The “OK” LED will blink, and system will logout.

2.7 Card Management [needs to be in the login status]

2.7.1 Add single card

1. Enter[FUN][3][1](NNNN)(G)[EN],if correct and response to wait proximity card.
2. response need to add card, if card already response or error status and will back to original status.
(NNNN):set card number; Range :0001~2000
(G):set card group code; Range :1~4

2.7.2 Delete single card

1. Enter[FUN][3][2](NNNN)[EN]
(NNNN):wanna delete card number; Range :0001~2000

2.7.3 Configure single card's group setting

1. Enter[FUN][3][3](NNNN)(G)[EN]
(NNNN):amend card group number; Range : 0001~2000
(G):give card group code; Range :1~4

2.7.4 Configure single card's setting

1. Enter[FUN][3][4](NNNN)(S)[EN]
(NNNN):give card status number; Range :0001~2000
(S):S = 1 use to set card;
S = 0 use to set stop card enter.

2.7.5 Add multiple cards

1. Enter[FUN][3][5](NNNN)(G)[EN], if correct and response to wait proximity card.
 2. Keep response the add card ,if correct and continue,if card are already login or full and will response error status and continue add card.
 3. Finish all add card and press [EN]to exit
(NNNN):add card group start number; Range :0001~2000
(G):add card group code; Range :1~4
- *Add card number will be start and response step by step until 2000
*After add card and will be setting in the same group code.

2.7.6 Delete multiple cards

1. Enter[FUN][3][6](NNNN)(EEEE)[EN]
(NNNN):start delete group card number; Range :0001~2000
(EEEE):the end of delete group card number; Range :0001~2000

2.7.7 Configure multiple cards' group setting

1. Enter[FUN][3][7](NNNN)(EEEE)(G)[EN]
(NNNN):amend card group number; Range :0001~2000
(EEEE):amend card group end number; Range :0001~2000
(G):new group card code; Range :1~4

2.7.8 Configure multiple cards' setting

1. Enter[FUN][3][8](NNNN)(EEEE)(S)[EN]
(NNNN):amend card status card number; Range :0001~2000
(EEEE):amend card status end number; Range :0001~2000
(S):S = 1 for setting card;
S = 0 for setting stop card

2.8 System & password setting function[need to be in the login status]

2.8.1 Configure Master card password (needs to be in the login status)

1. Follow the sequence of [FUN] [4] [1] (nnnn) (nnnn) [EN]
(nnnn)(nnnn):new password need enter 2 times to confirm
* system default value is 1234.

2.8.2 Usage of Master card (Maximum 3 Master cards)

1. Follow the sequence of [FUN][4][2](K)(D)[EN], if correct and response normal status and see (K) to decide back to original status or waiting setting card response.
2. If K = 1 and enter proximity card mode and waiting setting card response. Correct response back to correct status and original status.
(K): K = 1 use to set card; K = 0 use to cancel card
(D): Set or cancel setting card number, Range: 1~3
* if use any setting card(1-3), the other card password need to operate with setting card password.

2.8.3 Setup anti-duress password

1. Enter [FUN][4][3](N)(pppp)[EN]
(N): anti-duress group, Range: 1~4
(pppp): enter anti-duress password
* System default value is 1~4 units, all is 5555. If personal password is the same as anti-duress password. (It can be personal password.)

2.8.4 Enabled or Disable anti-duress

1. Enter [FUN][4][4](E)[EN]
(E): E = 1 enabled anti-duress alarm;
E = 0 cancel anti-duress (default)

2.8.5 Enabled or Disable Door Forced(v2.8)

1. Enter [FUN][4][5](E)[EN]
(E): E = 1 enabled door forced alarm;
E = 0 cancel door forced (default)

2.8.6 Enabled or Disable Door Time-Out(v2.9)

1. Enter [FUN][4][6](E) (TT) [EN]
(E): E=0 cancel door time-out (default); E=1 enabled door time-out alarm
(TT): Time-Out time setting, Range: 01~99; default :20, unit: sec

2.8.7 Enabled or Disable Encryption Card (v3.0)

1. Enter [FUN][4][8](E) [EN]
(E): E=0 EM/TEMIC Card (default); E=1 Use SYRIS Encryption Card;
E=2 Use Security Encryption Card

2.8.8 Restore Default setting (including Master card, parameter, card and record)

1. Enter[FUN][4][9][EN], if correct and will response correct status.
2. Enter again[FUN][4][9][EN]↵ wait 5 seconds to clean all setting. System will restore all.

2.9 Configure System parameter [needs to be in the login status]**2.9.1 Card number with password or password only**

1. Enter[FUN][5][1](P)[EN]
(P): P = 1 use card number and password(default);
P = 0 password enter

2.9.2 Change user default password(default = 0000)

1. Enter[FUN][5][2](nnnn)(nnnn)[EN]
(nnnn)(nnnn): new password need enter 2 times to confirm.

2.9.3 Error password keylock setting

1. Enter[FUN][5][3](K)(L)(A)[EN]
(K): setting acceptable error times, range: 1~9; default :6
(L): enter lock time setting, range: 1~9, unit: min; default :3
(A): enter lock time and show alarm setting status;
A = 1 start,
A = 0 close(default)

2.9.4 Activate guard and indicate source, delay time

1. Enter[FUN][5][4](R)(TT)[EN]
(R): R = 0 set inside delay, time us TT to set. It's default
R = 1 setting inport enter, please follow: system inport setting function
(TT): Activate guard delay time setting, Range: 01~99; default :05, unit: sec

2.9.5 Setting alarm enabled

1. Enter[FUN][5][5](B)[EN]
(B): B = 0 close alarm voice output,
B = 1 allow alarm voice output(default)

2.9.6 Setting doorbell enabled

1. Enter[FUN][5][6](B)[EN]
(B): B = 0 close doorbell voice output,
B = 1 allow doorbell voice output(default)

2.9.7 Configure Extern Module(V2.0)

1. Enter[FUN][5][7](E)[EN]
(E): E = 0 no extern module(default)
E = 1 use extern module

2.9.8 Configure Input/Output Data(v2.0)

1. Enter[FUN][5][8](M)[EN]

(M):M = 0 only in out data mode

M = 1 all in out data mode(default)

2.9.9 Configure Extern Reader (v2.9)

1. Enter[FUN][5][9](S)[EN]

(S): S = 0 Keypad Reader(default)

S = 1 Standard Reader

2.10 Configure System's input points [needs to be in the login status]

1. Enter[FUN][6][1](K)(F)(J)[EN]

(K):Setting enter point number,Range: 1~8

K = 5 is SY120SA CALL pad;

K = 6 is extra connect keypad reader CALL pad;

K = 7 is extern module DI 1;

K = 8 is extern module DI 2.

(F):input point purpose code,please follow the input point function code list

(J):If '0' and set normal NO(default value),if '1' and set normal close NC

Input point function code list

| Code | Purpose | Remark |
|------|-----------------------------|--|
| 0 | Don't use | |
| 1 | Door sensor | (DI1 default) |
| 2 | Open switch | (DI2 default) |
| 3 | Emergent open switch | Start door area and send alarm, until remove |
| 4 | Detect guard setting status | Detect setting guard or not |
| 5 | Doorbell enter | (CALL keypad default) |
| 6 | Emergent help switch | Send alarm until remove |
| 7 | First area alarm detect | Send alarm until remove (spread status) |
| 8 | Second area alarm detect | Send alarm until remove(spread status) |
| 9 | Tamper switch detect | Send alarm until remove |

2.11 Setting system ouput function [needs to be in the login status]

1. Enter[FUN][7][1](K)(F)(TTT)[EN]

(K):setting ouput point code;

K = 1 is e-lock output, K = 2 is relay output, K = 3 is extern relay, K = 4 is temp

(F):ouput purpose code,please follw the purpose code list

(TTT):ouput action time setting,Range: 000~255,Unit: sec;

Default e-lock ouput point is 5 sec,relay inport point is 2 sec.

Output contact purpose code list

| Code | Purpose | Remark |
|------|----------------------------|-------------------------------------|
| 0 | Don't use | |
| 1 | open control | (E-lock output point default) |
| 2 | Doorbell contact output | (relay output point default) |
| 3 | Guard system set output | Control and remove guard |
| 4 | Alarm contact output | Use remove guard to cancel alarm |
| 5 | Anti-duress contact output | Use[FUN][4][4]to cancel anti-duress |

Action time if set 0 and will action until remove.

2.12 System group & timezone control function [needs to be in the login status]

2.12.1 Configure system time

1. Enter[FUN][8][1](YYYY)(MM)(DD)(hh)(mm)(ss)[EN]
 (YYYY):year,Range :2000~2199.(MM):month,Range 01~12.
 (DD):day,Range 01~31
 (hh):hour,Range 00~23. (mm):min,Range 00~59.
 (ss):sec,Range 00~59

2.12.2 Configure timezone

1. Enter[FUN][8][2](HHMM)(hhmm)[EN]
 (HHMM):Set start time;
 HH = hour , MM = minute; default: 0700
 (hhmm):setting timezone end ;
 hh = hour; mm = minute; default: 1900

2.12.3 Setting group timezone

1. Enter[FUN][8][3](G)(D)(N)(A)[EN]
 (G):group code(1 to 4) Timezone function code list:
 (D):on timezone (0 to 3) 0:stop enter 1:card or password
 (N):out of timezone (0 to 3) 2:card(system default) 3:card+password
 (A):pass dooe area,1 = enable [EN] (default),0 = disable [EN];

2.12.4 Group weekly schedule

1. Enter[FUN][8][4](G)(WWWWWW)(H)[EN]
 (WWWWWW):week schedule, from Sunday to saturday,
 1 = Enable enter(default),0 = Disable enter;
 (G):Group No; Range1~4
 (H):Holiday control,1 = can enter(default),0 = can't enter;

2.12.5 Holiday Setting

1. Enter[FUN][8][5](HH)(MMDD)[EN]

(HH): Holiday number, Range 01~30, Insert 00 to clean all holiday setting.

(MMDD): holiday number date; MM = month, DD = day

2.13 Configure system communication ID code [needs to be in the login status]

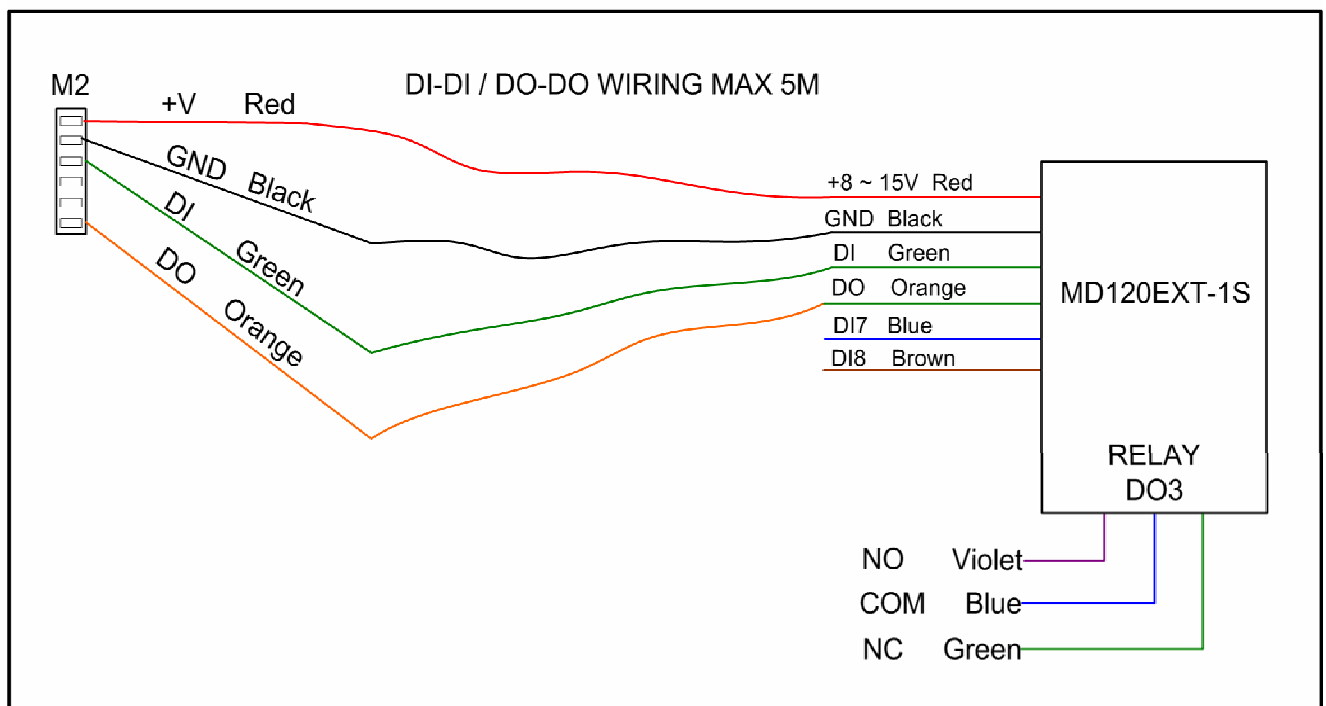
1. Enter[FUN][9][1](NNN)[EN]

(NNN):SY120SA Controller ID, Range 001~999; default :001

2.14 Notice:

1. While change Master card's password, one needs to change 3 cards at same time. if one uses Master card to login then system will make it (it's Access with Master card's password) as invalid.
2. SY120SA controller(system) and reader needs to be connected the GND. Please use parallel cable while using parallel cable with 0.75mm shield cover cable, it can connect up to 100 meter long. While using normal phone line the distance limits is within 20 meters.
3. The voltage output limits is 5A current. If one needs higher electric current, then please add another relay.
4. Relay output can only accept up to 1A current. if one needs to increase the limits, then please add another relay.

SY120SA & MD120EXT-1S WIRING DIAGRAM



SY120SA WIRING DIAGRAM

