SECURE
T E C H

ST4 Elevator Keyless Access System
Installation Manual

Keyless Access System Solutions

ST4 Elevator Keyless Access System

Main Features:

ST4 utlizes the latest technology in keyless entry systems, it is reliable, scalable and offers specific software management solutions.

The ST4 motherboard controller controls up to eight floors, supporting four expansion modules that can increase the capacity up to forty floors.

ST4 panles can be connected on a network allowing controlling and monitoring access to twenty elevator cabs.

Communications:
RS485 communications allows the interconnection of twenty motherboard controllers on the same network.

Memory and Autonomy:
The ST4 system keeps all information regarding cards, access schedules, and floor unlocking schedules and can verify access requests even when it is disconnected from the network. All data is stored in an onboard non-volatile memory that keeps the data under power loss. Date and time are maintained by an on-board battery.

Monitoring features:
The ST4 system allows to monitor over the software floor status and can report users access or unauthorized access attemps in real time.

Specific Management software/Remote Access:
Software version for companies and institutions, commercial buildings, health clubs, hotels and commercial buildings. All versions unclude a setup wizard that allows to set up the system in few minutes. Remote management over Internet via remote desktop solution.
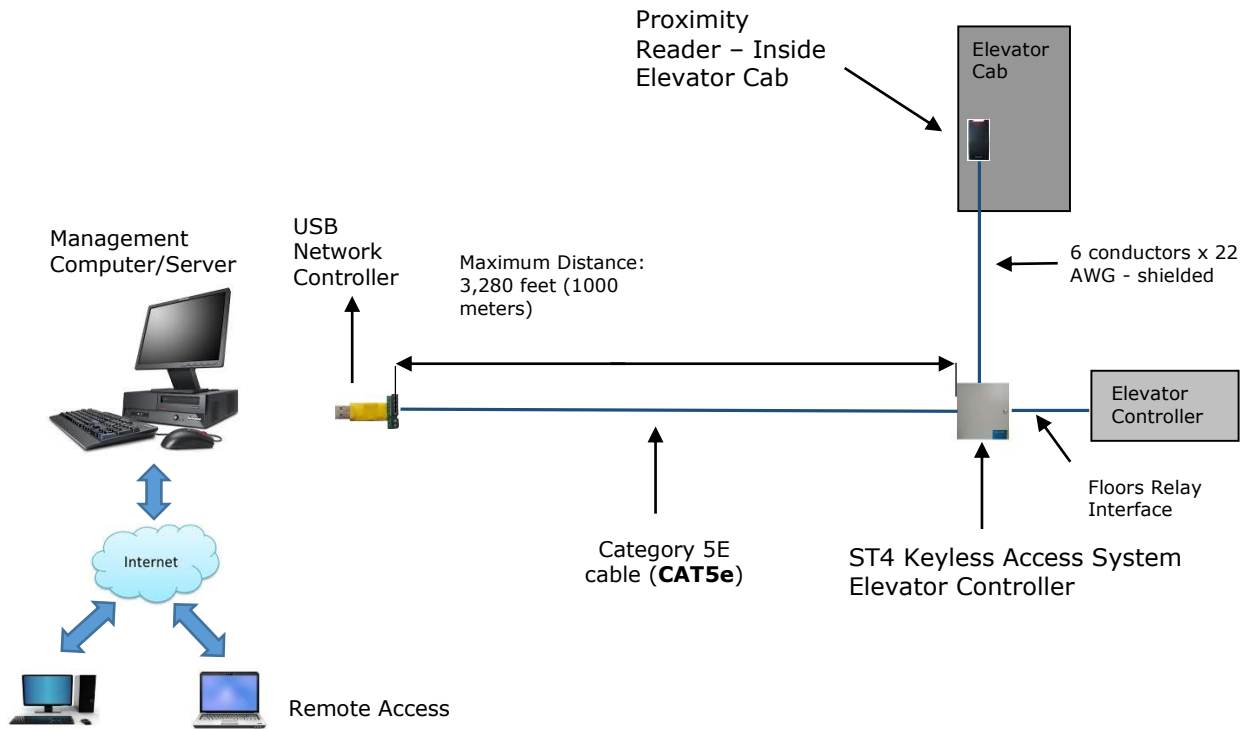
Door Control Integration:
Full integration with ST3 door access controller. ST3 controller panels can be integrated to the rs485 network allowing management from the same software solution.
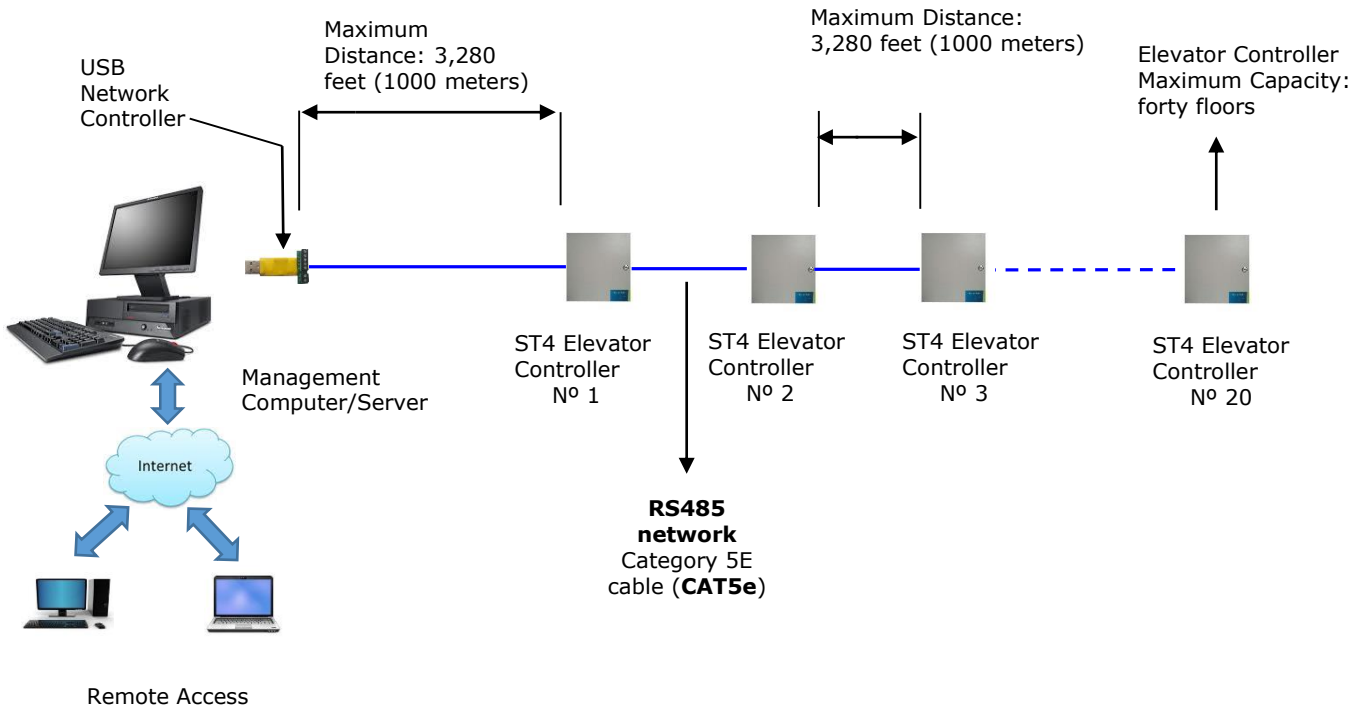
ST4 Technical Specifications

Operating Voltage	12VDC to 14VDC
Current Consumption	70 mA
Proximity Reader Interface	Wiegand 26 bits
Number of Proximity Readers	1
Max Number of Expansion modules – 8 Floors capacity	4
Max credentials capacity	60,000
Max number of ST4 motherboard on network	20
Relay Max operating current and voltage	250 VAC, 10A
Non-Volatile Memory Type	Eeprom
On- Board Battery	CR2032
Communication Interface	RS485

Leds status on-board	Power, floor unlock
Operative system supported	Win xp, Win7, Win vista, Win 8
Integration with ST3 Door Controller	Yes
Specific Software Versions	Companies, Residential Buildings, Commercial buildings, Hotels, Health clubs

Elevator Installation Diagram

Proximity Reader – Inside Elevator Cab

Elevator Cab

Management Computer/Server

USB Network Controller

Maximum Distance: 3,280 feet (1000 meters)

6 conductors x 22 AWG - shielded

Elevator Controller

Floors Relay Interface

Internet

Category 5E cable (**CAT5e**)

ST4 Keyless Access System Elevator Controller

Remote Access

Elevator Controllers Network Diagram

USB Network Controller

Maximum Distance: 3,280 feet (1000 meters)

Maximum Distance: 3,280 feet (1000 meters)

Elevator Controller Maximum Capacity: forty floors

Management Computer/Server

ST4 Elevator Controller Nº 1

ST4 Elevator Controller Nº 2

ST4 Elevator Controller Nº 3

ST4 Elevator Controller Nº 20

Internet

RS485 network Category 5E cable (**CAT5e**)

Remote Access

3

Elevator Controller Motherboard: Eight floors capacity, expandable to up to forty floors.

RS485 serial connector
to USB network controller

RS485 serial connector

C   N A B C D   D C B A N   D

Controller
address
selection

8
7
6
5
4
3
2
1

E

Power
Supply
Socket
connector

A

1   +12V
2   GND

B

5

Led
D1
DO
Gnd
+Vcd

Proximity Reader

1

N.O
C   F1
N.C

N.O
C   F2
N.C

N.O
C   F3
N.C

N.O
C   F4
N.C

N.O
C   F5
N.C

N.O
C   F6
N.C

N.O
C   F7
N.C

F8
N.O
C
N.C

F

Expansion Module
socket connector
Nº1

G

Expansion Module
socket connector
Nº2

H

Expansion Module
socket connector
Nº3

Expansion Module
socket connector
Nº4

I

**Controller Motherboard
Connector Description**

A: Power
1- 12 VDC to +14 VDC
2- Ground

**B: Proximity Reader Socket
Connector**
1- Prox. Reader/+VDC (Red)
2- Prox. Reader/ Ground (Black)
3- Prox. Reader/ Data 0(Green)
4- Prox. Reader/ Data 1(White)
5- Prox. Reader/ Led (Blue)

**C: RS485 Serial Connector -
From previous controller or USB
network controller (controller
motherboard N1)**
1- To USB network controller pin
N or to previous motherboard
controller pin N
2- To USB network controller pin
A or to previous motherboard
controller pin
3- To USB network controller pin
B or to previous motherboard
controller pin B
4- To USB network controller pin
C or to previous motherboard
controller pin C
5- To USB network controller pin
D or to previous motherboard
controller pin D

E: Serial Connector
1- To Next controller
motherboard pin D
2- To Next controller
motherboard pin C
3- To Next controller
motherboard pin B
4- To Next controller
motherboard pin A
5- To Next controller
motherboard pin N

**F, G, H, I: 8 Floor Expansion
Module**

F1- F8: Floor relay output

**G: Controller Module
Address selection (1 to 255)**

4

Elevator controller power supply

The ST4 elevator controller can be powered from two types of plugging transformers:
12VDC, 1A:
If the system doesn't require battery power back up system, or if the 12vdc transformer will be plugged into an UPS (uninterrupted power supply) system.
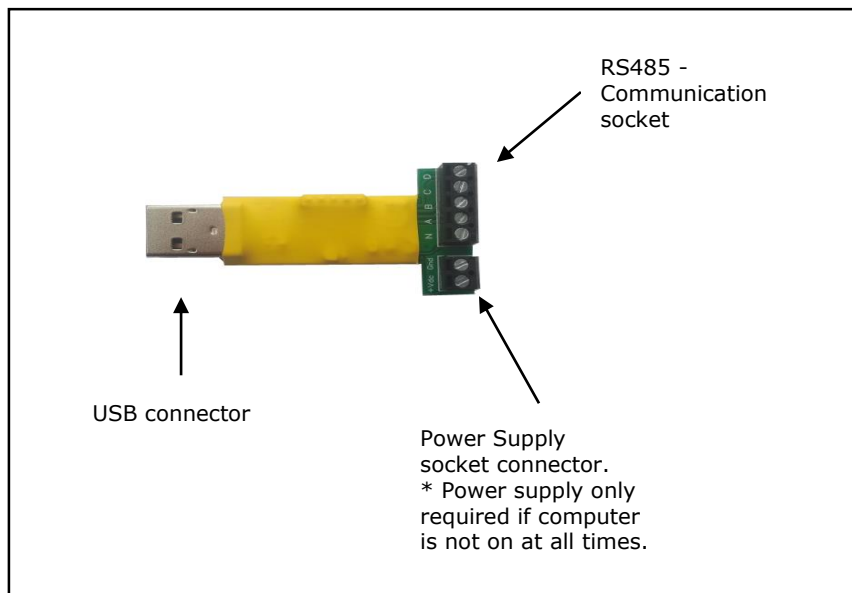

110VAC to 220 VAC socket
outlet or UPS output

16VAC, 40VA:
If it is required a battery power back up system, 16VAC transformer, battery charger board (access system accessory) and battery should be incorporated to the ST3 panel.

USB - Network Controller

The USB net controller is the interface between the RS485 network and the management computer.
It polls the elevator motherboard controllers for data and transfers it to the management computer.
Automatically detects when the management computer is on to transfer the data collected.
It provides led communication status.

RS485 -
Communication
socket

USB connector

Power Supply
socket connector.
* Power supply only
required if computer
is not on at all times.

Net Controller Connector Description

Power
+Vdc - 9 VDC to +14 VDC
  Gnd - Ground
*Required if computer/server is not powered at all times

Communication Socket Connector
A- To motherboard pin A
      (Cat5 - green/white)
B- To motherboard pin B
        (Cat5 - green)
C- To motherboard pin C
        (Cat5 – blue/white)
D- To motherboard pin D
        (Cat5 – blue)
N- To motherboard pin N
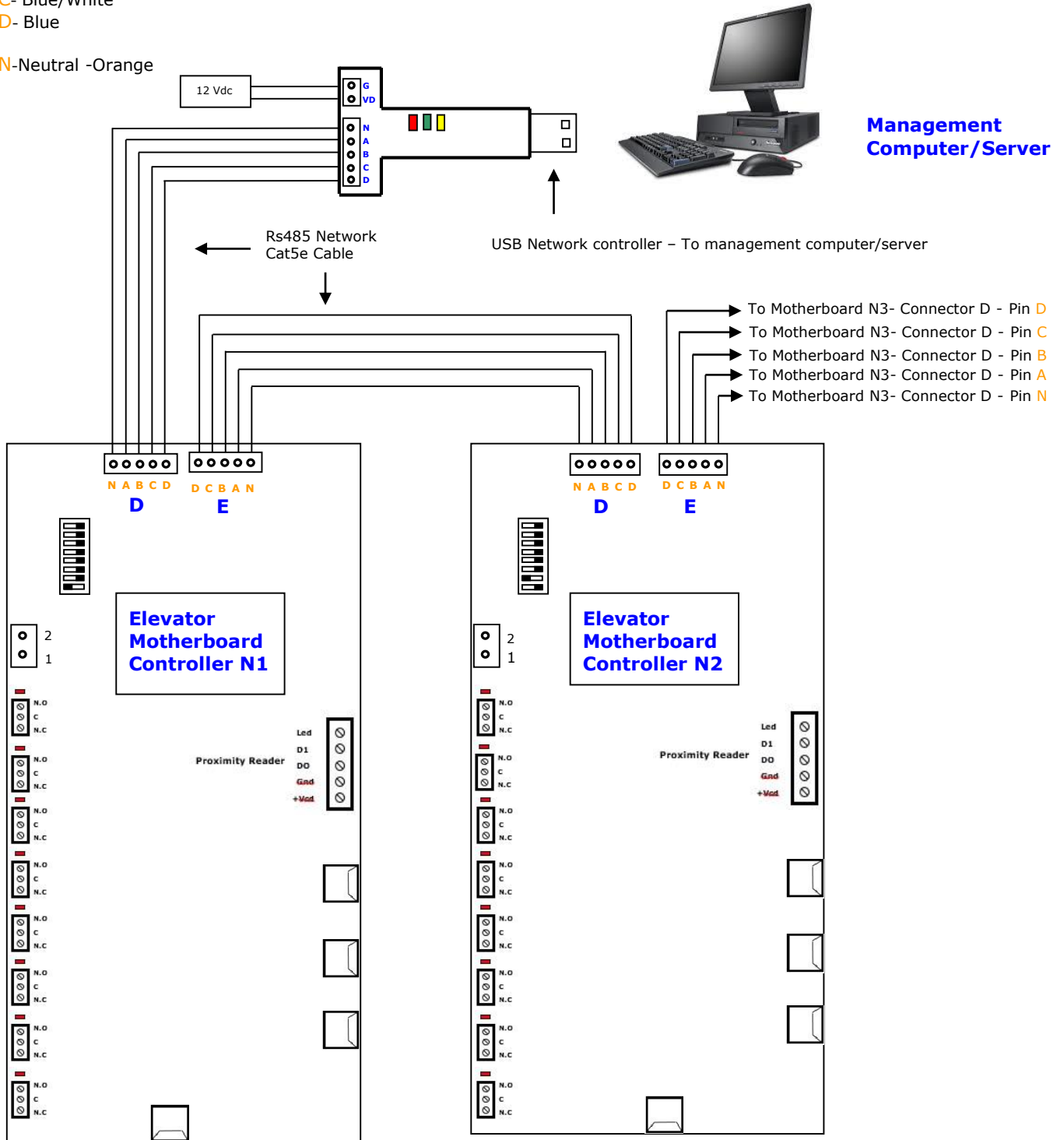   (Cat5 –Orange)

Led indicators
Red: Power
Yellow: Communication error
Green: Communication successful

USB Net Controller - Connection Diagram

Cat 5e Connections
A-B - First pair
A- Green/White
B- Green
C-D - Second Pair
C- Blue/White
D- Blue

N-Neutral -Orange

12 Vdc

G
VD

N
A
B
C
D

**Management
Computer/Server**

Rs485 Network
Cat5e Cable

USB Network controller – To management computer/server

To Motherboard N3- Connector D - Pin D
To Motherboard N3- Connector D - Pin C
To Motherboard N3- Connector D - Pin B
To Motherboard N3- Connector D - Pin A
To Motherboard N3- Connector D - Pin N

N A B C D　　D C B A N
D　　　　　**E**

N A B C D　　D C B A N
D　　　　　**E**

2
1

2
1

**Elevator
Motherboard
Controller N1**

**Elevator
Motherboard
Controller N2**

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

Led
D1
DO
Gnd
+Vcd

Proximity Reader

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

N.O
C
N.C

Led
D1
DO
Gnd
+Vcd

Proximity Reader

Recommended Cables Specifications

Proximity Reader: 6 Conductors - 22 AWG – Shielded /max distance: 300 feet
*optional for low noise environment and distance < 200 feet: alarm quad cable (4x 22awg)
1) Board bridge between board connector **4**- Prox. Reader/ Data 1(White) and **5**- Prox. Reader/Led (Blue)
2) Resistor 220ohms on the reader end between Led line (blue) and D1 line (white)

Motherboard to USB network controller: CAT5E
RS485 network: Interconnection between motherboard controllers: CAT5E

Software Download:

Specific software solutions for companies and institutions, commercial buildings, health clubs, hotels and residential buildings. Management software available for download at www.setech.ca