DEFENDAS

User Manual

ST902-MEK

Date: December 2025

Doc Version: 1.0

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For further details, please visit our Company's website https://ltsecurityinc.com/.

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LT Security Inc.

Address 17333 Freedom Way, City of Industry, CA 91748

Phone 626-435-2838

Fax 626-435-2815

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About the Manual

This manual introduces the operations of **ST902-MEK**.

All figures displayed are for illustration purposes only. Figures in this manual may not be exactly consistent with the actual products.
Features and parameters with ★ are not available in all devices.

Document Conventions

Conventions used in this manual are listed below:

GUI Conventions

For Device	
Convention	**Description**
< >	Button or key names for devices. For example, press <OK>.
[ ]	Window names, menu items, data table, and field names are inside square brackets. For example, pop up the [New User] window.
/	Multi-level menus are separated by forwarding slashes. For example, [File/Create/Folder].

Symbols

Convention	Description
	This represents a note that needs to pay more attention to.
	The general information which helps in performing the operations faster.

	The information which is significant.
	Care taken to avoid danger or mistakes.
	The statement or event that warns of something or that serves as a cautionary example.

Table of Contents

1 Overview

ST902-MEK is a high-security RFID reader, that supports 125kHz and 13.56MHz cards. This features tamper-proof alarm functionality and offer two communication modes: Wiegand only or Wiegand & RS485. The RS485 communication protocol supports OSDP (Ver2.1.7), making it compatible with Defendas access control standalone devices and controllers. Also, Wiegand and OSDP communication protocols also enable integration with third-party access control devices.

ST-902-MEK offers physical keypads and flexible authentication methods. It supports ID cards at 125kHz and IC cards at 13.56MHz, with a verification speed under 0.3 seconds and recognition distance of up to 4cm. It also features a tamper switch, indicators, and an audio buzzer.

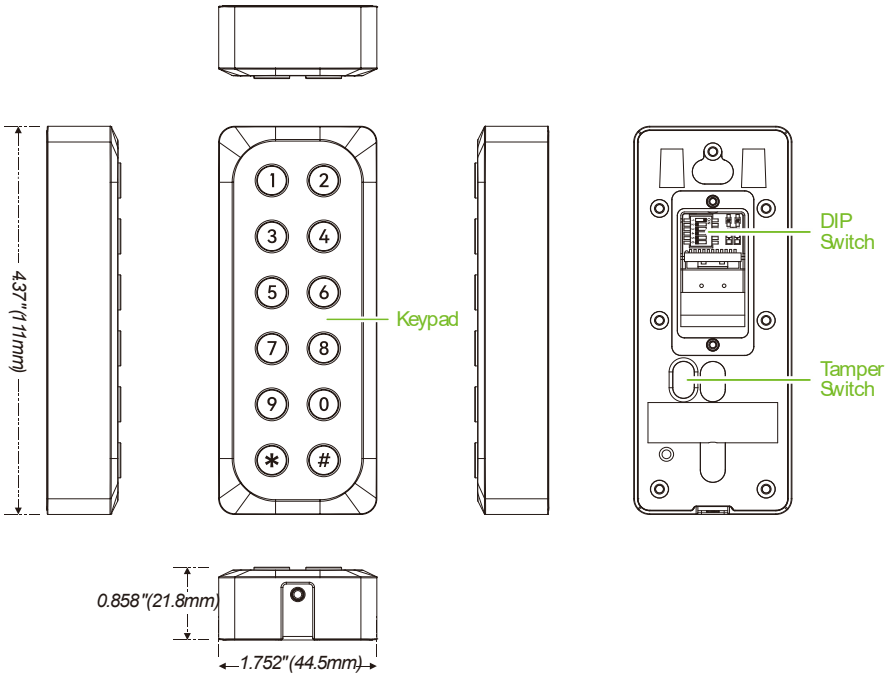
The ST902-MEK installation is compatible with:
- Mullion mount
- Flat surface mount

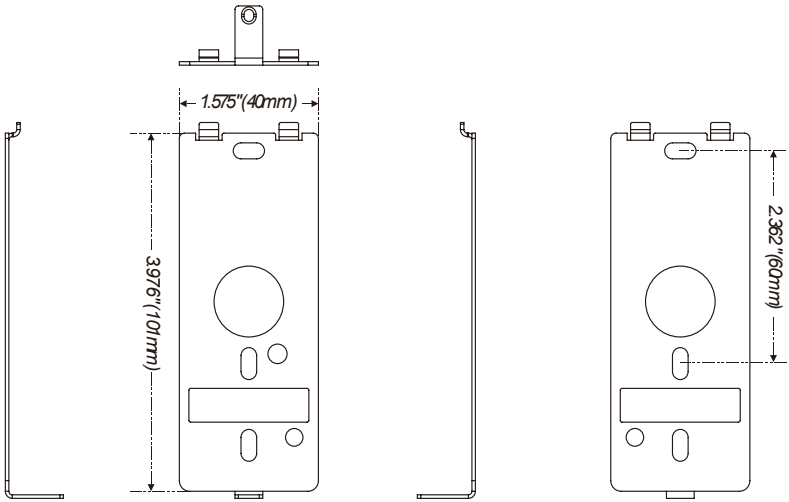
1.1 Features

- Support multi-frequency 125kHz ID card and 13.56MHz IC card, including DESFire EV1 / EV2 / EV3 and NTAG.
- Two communication options: Wiegand only or Wiegand + RS485 (OSDP Version 2.1.7).
- Tamper detection and alarm.
- Multiple authentication methods: card or card with PIN code.
- Achieved IP65 protection rating with dustproof and waterproof.

1.2 Appearance

ST902-MEK



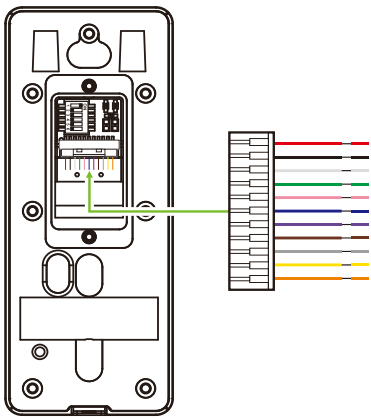


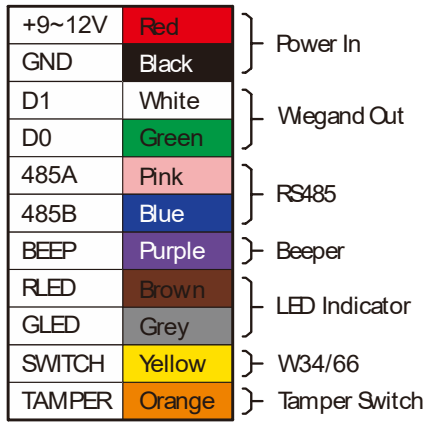
1.3 Technical Specifications

Model	KR902
Hardware	Physical Keypad: 12keys RFID Module: ID & IC Tamper Switch: Support
Authentication Method	Card / Password
Card Type	ID Card@125kHz & IC Card@13.56MHz (Standard)
Verification Speed	＜0.3s @ Card
Recognition Distance	＜4cm @ Card

Communication	Wiegand output only (W34 / 66) Or RS485 (ZK-RS485 / OSDP) & Wiegand output (W34 / 66) Note: Support Wiegand format switching (Default: W34)
Visual Indicator	LED Indicators Power On:Blue = Standby Status: Green = Verification successful Red = Verification failed
Audio Indicator	Buzzer
Tamper Switch	Support
Operating Environment	Indoor/Outdoor
Power Supply	9V~12V DC
Operating Temperature	-20℃ to 60℃
Operating Humidity	10%-90% RH (Non-condensing)
Dimensions (L*W*H)	111*44.5*21.8mm
Gross Weight	0.16Kg
Net Weight	0.13Kg
Installation	Compatible with mullion mount or any flat surface mounting
Housing Material	ABS Plastic
Ingress Protection Rating	IP65 (water & dust proof)
Certifications	ISO9001,ISO14001,CE,FCC,RoHS
Factory ID	AC03-KR92H-01

2 Terminal Description





Name	Interface	Color	Description
Power In	+9~12V	Red	+9~12V DC Input ***Note:*** *Minimum AC adapter:**12V, 0.5A**,* *Recommended AC adapter:**12V, 1A**.*
	GND	Black	
Wiegand Out	D1	White	Wiegand Output1
	D0	Green	Wiegand Output0
RS485	485A	Pink	RS-485 Communication Interface For connecting to OSDP Output.
	485B	Blue	
Beeper	BEEP	Purple	Beep Input

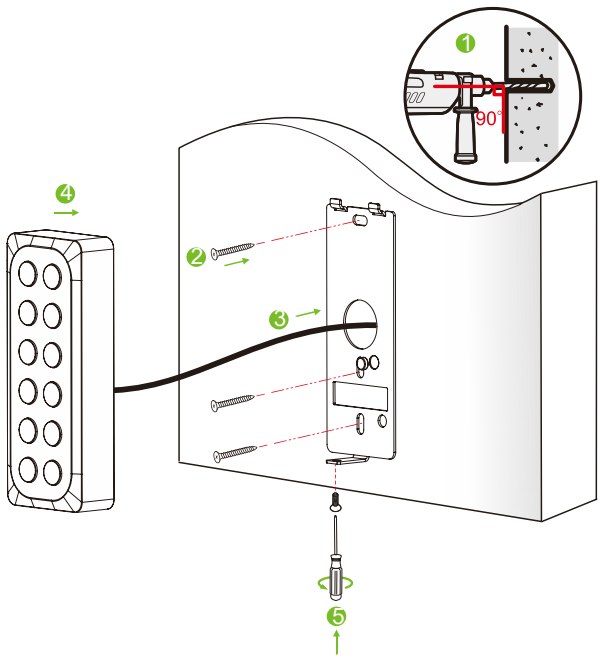
Name	Interface	Color	Description
LED Indicator	RLED	Brown	Red LED Input
	GLED	Grey	Green LED Input
W34/66	SWITCH	Yellow	Used to switch the Wiegand format. The default ungrounded is W34. Grounded to W66.
TAMPER	TAMPER	Orange	Used for the tampering alarm function. ***Cancel Alarm:*** *The tamper alarm is deactivated after a magnet is placed for 5 seconds.*

3 Installation Set-up

The device supports a variety of installation methods; the user can be freely selected according to actual needs.

3.1 Install On the Wall Via The Backplate

1. Drill holes in the wall at suitable locations according to the holes in the backplate.
2. Fix the backplate on the wall with the wall mounting screws.
3. Pass the cable through the wiring hole and then snap the device onto the backplate from top to bottom.
4. Fasten the device to the backplate with a security screw.



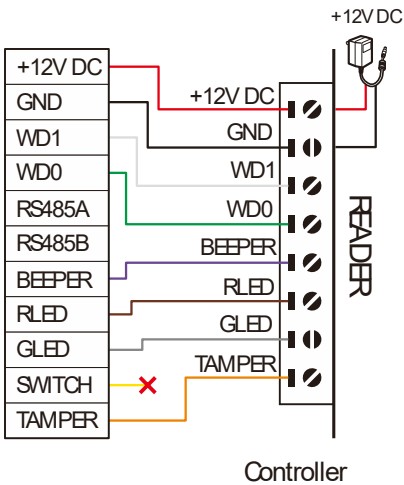
4 Communication Methods

The ST902-MEK can communicate with the control panel via either RS-485 (OSDP) or Wiegand.

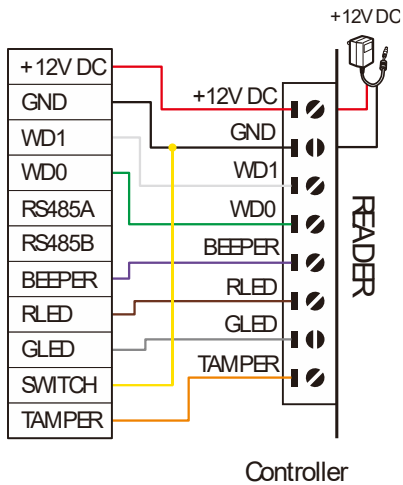
4.1 Wiegand Mode

Connect the reader to the controller via Wiegand as follows and then connect the +12V power supply. The controller shown in the diagram is only partially wired. The Wiegand wiring reference is shown below:

1. Wiegand format is W34 (default):



2. Wiegand format is W66:

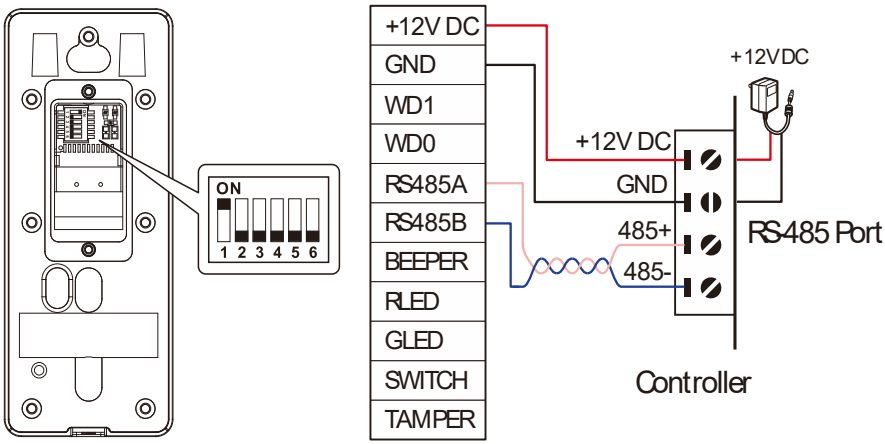


Notes:

- *The default Wiegand format is W34. It can be switched to W66 when supporting IC cards.*
- *The format can be switched via the terminal SWITCH. By default, it is W34 when SWITCH is not grounded, and it becomes W66 when SWITCH is*

grounded.

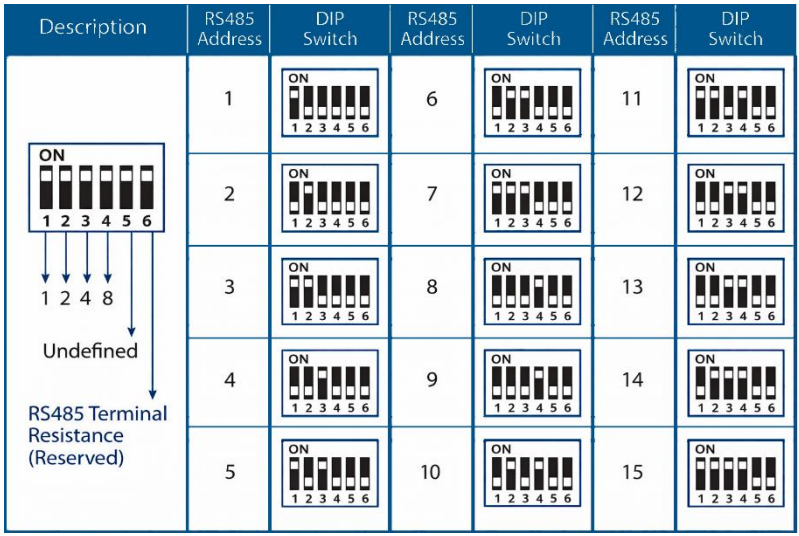
4.2 RS-485(OSDP) Mode



Notes:

- *The RS-485/OSDP address of each reader is set via the DIP switch before power is applied.*
- *Each controller supports up to **16** readers.*
- *Each reader requires a separate power supply.*
- *RS485 communication supports the following protocol:*
- *Encrypted and unencrypted versions of the OSDP protocol (V2.1.7).*

4.2.1 DIP Switch Setting



4.2.2 Status Indicator & Buzzer

After the RS485 communication is successfully connected, the status of the status indicator and buzzer are shown in the table below.

Working Status	Description
Standby Mode	Breathing blue light, with one breath cycle every 2 seconds.
Card Detected	The buzzer beeps once briefly, and the blue light turns on.
Received the	• **Successful verification:** the buzzer beeps

verification result	once and the indicator light (green) lights up. • **Failed verification:** buzzer beeps twice, indicator light (red) lights up briefly twice. • **Authentication mode error:** red light, two quick beeps and one long beep. • **No authority:** the buzzer short beep four times, the indicator (red) short light four times. • **Combination of validation to continue validation:** indicator (red) short three times. • **Combination verification is not completed:** buzzer short beep four times (timeout time is 10s), indicator (red) short light four times. • **Verification timeout:** the buzzer sounds three times (timeout is 8s), and the indicator (red) lights up three times.
Standby status light when RS485 is not connected	Breathing blue light, with one breath cycle every 4 seconds. ***Note:*** *The RS485 (OSDP) protocol standby status lamp is determined by the master.*
When the tamper alarm is triggered	The buzzer sounds long; the standby status light remains unchanged. ***Note:*** *The tamper alarm will be canceled, and the beeping will stop after the tamper button (magnet) is held in place for* ***5*** *seconds.*

Note:

Under Wiegand mode or RS485 (OSDP) protocol, the verification result status indicator is determined by the master controller.

5 Verification Methods

5.1 Password Verification

The ***** key is the delete key. The **#** key is the confirmation key.
The reader supports 1~8-digit password verification.

17333 Freedom Way, City of Industry, CA 91748
Phone : 626-435-2838
Fax : 626-435-2815
https://ltsecurityinc.com/