



ECL-ACC910

125KHz Card Reader Operation Manual

Revision History

Version	Date	Description	Author
1.0	March 2004	Initial release	Andrew
1.1	April 2004	Option of RS485/WG	Andrew

1. Introduction

1.1 Option

RS-485: 125KHz proximity reader building RS485 interface in 9600,N,8,1.

Wiegand: 125KHz proximity reader with TTL Wiegand or ORMON interface.

1.2 Function Setting

Mode	RS485 Networking	TTL Wiegand/ORMON					
Jumper (JP2)	Close	Open					
Option	Parameters Setting via Software	J2	J1	Output	J4	J3	Card Present
		Open	Open	WG26	Open	Open	No Indicator
		Open	Close	WG34	Open	Close	Red LED & Buzzer On
		Close	Open	WG38	Close	Open	Green LED On
		Close	Close	ABA10	Close	Close	Red LED On
J5	Open	Stand Card	Close	Reserved			

2. Reader Register Set (RS-485 Only)

The reader provides a register set, which allow customizing its behavior. The registers set are mapped into a non-volatile memory area.

Register Set			
Address	Name	Function Description	Remark
1	NODE	Device Node Address (Station Number)	Default: 01h
2	Present Options	Options of LED and Beeper	Default: 40h
3	Access Options	Options of Anti-passback and Time Attendance	Default:00h

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Present	1: On Green LED	1: On Red LED	1: On Buzzer					
Access	Anti-passback 0: Disable 1: Enable	0: Out Door 1: In Door						0: Time Attendance 1: None Time Attendance

3. Communication Protocol: (RS-485 Only)

Transmission rate		9600,N,8,1				
Data format		Binary HEX "hexadecimal"				
Data package						
Head 8bits	Length 8bits	Destination ID 8bits	Function Code 8bits	Data ...	XOR 8bits	SUM 8bits

	Data Bytes		X O R	S U M
Head	01	Fixed in 7Eh		
Length	01	Data length Indicator. Denotes the length from Destination to SUM. (Range From 4 to 30)		
Destination ID	01	Unique Destination Node Address(Station Number). 00: Reserved for the bus master (Controller or PC) FF: Broadcast to each device.	X	S
Function code	01	Instruction command.	X	S
Parameter	00~D0	The length of Data Block depends on the instructions.	X	S
XOR	01	XOR each byte from [Node ID] to Last Data byte with 0xFF.		S
SUM	01	Summing each byte from [Node ID] to XOR byte with 0x00		

Head	Length	Destination	Function Code	Parameter ...	XOR	SUM
0x7E	0x04	0x01	0x18		0xE6	0xFF

4. Lists Command Code: (RS-485 Only)

4.1 Command Echo

Command	Description	Note
09h	Echo requested data	7E xx 00 03 [Data...] XOR SUM

4.2 Read/Write Node Address and Device Options

It will echo Node ID & option bytes of device while write node successes or read node.

Command	Parameter	0	1	2	3	4	5	6
12h	Set	01	New ID	~(New ID)	Present Option	Access Option		
	Read	02						

Option bytes define reference to section 2.

Read: 7E 05 FF 12 02 10 23

Echo: 7E 0C 00 03 NODE [Reader Type(72h)] [Present Option] [Access Option] VER XOR SUM

Set : 7E 09 FF 12 01 01 FE 40 00 AC FD

Echo: Same with read node if execute success. VER is Firmware Version in HEX mode.

4.3 Polling Device Status

If any Tags in RF Field it will Echo 4 Bytes UID of Tags otherwise it will echo I/O Status.

Command	Parameter	0	1	2	3	4	5	6
18h	Send							

Echo:

Command	Parameter	0	1	2	3	4	5	6	7
09h (No Tag)	Echo	Node	Event: 0		Sensor		Option1		
09h (Has Tag)		Node	Event: 2						

Event: (0) means no tag in RF Field. (2) means there has tag in RF field.

Sensor: Bit0 is Limit SW status. 0 means SW open, 1 means SW closed.

UID: Unique serial number of card. UID3(31:24) ~ UID0(7:0)

Example:

Send	7E 04 01 13 ED 01								
Echo	7E 10 00 09 Node 02 00 UID3 UID2 00 00 UID1 UID0 00 00 00 XOR SUM							Has Tag	
	7E 09 00 09 Node 00 Sensor 00 Option1 XOR SUM							No Tags	

4.4 OK or Not OK Events

If send command 04h to reader. The reader will on Green LED and one beep sound. If send command 05h to reader it will on red LED and two beep sounds.

5. Specifications

ECL-ACC910		
Operating Frequency	125KHz	
Reading Range	Up to 15 cm, Depending on the tag Transponder.	
Modulations Frequency	125K/64 Baud Rate / Manchester	
Supported tags	EM4001 / EM4012 compliant	
Security Confirm	None	
Communication	Interface	RS-485, RS-232, TTL Wiegand and OMRON
	Speed	Binary Protocol, 9600/19200, N, 8, 1
Outputs	Two LEDs and One Beeper	
Power Supply	9 ~ 24 VDC	
Power Consumption	< 1.5W	
Temperature Range	-20°C ~ +70°C	
Weight	80gr.	
Dimensions	71 x 115 x 35 (W x L x H) ABS Plastic	

6. Connection

PIN	Description		Color	Name
1	DC Power Input		Black	GND
2	DC Power Input		Red	V12
3	Beeper Control Input (Active low)		Purple	BEEP
4	Wiegand Output: Data 0	ORMON: Data	Green	D0
5	Card Present Output (Active low)		White	CP
6	Wiegand Output: Data 1	ORMON: Clock	Blue	D1
7	Red LED control Input (Active low)		Yellow	R-LED
8	Green LED control Input (Active low)		Brown	G-LED
9	RS-232 Transmitter	RS-485 A+	Gray	TA
10	RS-232 Receiver	RS-485 B-	Orange	RB

- 1) In networking mode the present signal will keep in low while tag in RF field.
- 2) ECL-ACC910: Standard Wiegand output without serial interface.
- 3) ECL-ACC910-RS485: Built-in RS485 Interface.
- 4) ECL-ACC910-RS232: Built-in RS232 Interface.

7.2 ECL-ACC950 & ECL-ACC910 installation

