APPLIED WIRELESS ID

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Technical Reference

TECHNICAL SUPPORT – PROXIMITY READERS (125 kHz)

OBSERVED	CAUSE	CORRECTION	REFERENCE
Reader is dead – no LED, no reading.	No power is applied to the reader.	*Test:* Use DC voltmeter to test for voltage at the reader.	Installation Sheet, Figure 2.
"	Wrong polarity of power is applied to the reader.	Reverse power connections -- + on red wire, common or ground on black wire.	
"	Wrong voltage of power is applied to the reader.	Apply rated voltage – between +5 volts DC (min. +4.5 volts) and +12 volts DC (max. 13.2 volts).	
"	Wrong wiring connections are made to the reader.	Apply voltage to black and red wires only.	
"	DC power quality is poor.	Use regulated power supply, with linear DC output (not switching or filtered full-wave-rectified output).	
LED is not lighted, but reader reads cards.	—	—	
Reader does not read cards, but LED is lighted.	Power supply has insufficient current capacity.	If voltage measured at the reader is less than the power supply's rated voltage, use a power supply with greater current capacity.	Data sheet or Installation Sheet, specifications for power supply.
"	"	*Test:* Measure the voltage at the reader's power connections. If voltage drops when a card is presented to the reader, use a power supply with greater current capacity.	
Reader doesn't read cards, and LED shows only one color, either red or green, continually.	Reader is dead because of damage to the reader.	Replace reader.	Technical Reference, "Basic Reader Tests".
LED shows only one color, either red or green, intermittently (LED is sometimes not lighted), and reader reads cards.	The LED control circuit in the reader has been damaged, possibly by applying voltage to the reader's LED control wire (brown).	Replace reader.	Technical Reference, "Basic Reader Tests".
LED shows only one color, either red or green, intermittently (LED is sometimes not lighted), and reader does not read cards.	The LED control circuit in the reader has been damaged, possibly by applying voltage to the reader's LED control wire (brown).	Replace reader.	Technical Reference, "Basic Reader Tests".
LED changes from red to amber for about 1 second when a card is read, not from red to green for the door-unlocked cycle.	LED control wire (brown) is not connected to the LED terminal.	Connect the reader's brown wire to the control panel's LED control terminal. If there are two LED control terminals (red and green), connect to the green LED terminal.	Technical Reference, "Basic Reader Tests".
"	The LED control circuit in the reader has been damaged, possibly by applying voltage to the reader's LED control wire (brown).	Replace reader.	
LED is green in standby (reader	LED color control logic in	Use a Color Changer card; request the card	Installation Sheet,

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ready); it should be red.	the reader has become reversed,	from AWID Support.	page 1, [last numbered item]
Beeper (or buzzer) does not sound when a card is read.	Does the host system have a programmable feature for external beeper control?		
"	Does the control panel have a terminal for controlling beeper through the panel?		
"	The beeper control circuit in the reader has been damaged, possibly by applying voltage to the reader's beeper control wire (_ color).	Replace reader.	
Beeper sounds briefly only when the card is read, not when the control panel unlocks the door or triggers the gate.	The reader's beeper control wire (brown) is not connected to the control panel's beeper control terminal.		
"	The control panel's beeper control terminal is not operating.	*Test:* Does the control panel's beeper terminal float at about 4-5 VDC when the beeper is not required, and measure about 0-0.8 VDC when the beeper is to sound?	
HOLD feature in the reader does not operate.	Does the host system have a programmable feature for data hold from the reader?	If not, the reader's HOLD will not work. If so, check the host system for proper programming. Check to control panel's HOLD terminal for proper operation.	
"	Does the control panel have a terminal for controlling HOLD?	If not, HOLD will not operate. If so, see *Test* below.	
"	The control panel's HOLD control terminal is not operating.	*Test:* Does the control panel's HOLD terminal float at about 4-5 VDC when the HOLD feature is not armed, and measure about 0-0.8 VDC when HOLD is armed?	
"	The HOLD control circuit in the reader has been damaged, possibly by applying voltage to the reader's HOLD control wire (blue).	Replace reader.	
Reader reads the card (LED is lighted amber for about 1 second), but the card's code is not transmitted to the control panel.	There is a wiring error.	Check continuity of Data 0 (green) and Data 1 (white) wires from the reader to the control panel.	
"	"	Connect the reader's wires directly to the control panel, bypassing the shielded cable from the reader site to the panel. If reader works now, test for cable problems.	
Reader reads the card (LED is lighted amber for about 1	The Data 0 (green) and Data 1 (white) lines are	Reverse the Data 0 and Data 1 lines at the reader or at the control panel.	

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second), but the card's code is not correct in the control panel or host system. Data at the host are consistent but wrong.	reversed. This results in the "twos complement" of the card's correct data.		
Reader reads the card (LED is lighted amber for about 1 second), but the host system occasionally fails to register the code data.	Data transmission from the reader to the control panel was corrupted because electrical noise added erroneous bits to the data stream.	Check wiring from reader to cable, and from cable to panel terminals. Check that the reader's drain wire is connected to the cable's shield. Check that the cable's shield is earth-grounded at the panel only.	
"	"	Check the cable between the reader and the panel. If the cable's wires are twisted-pairs, connect the reader's Data 0 and Data 1 wires to cable wires in different twisted pairs. Example: Let Data 0 and positive power make up one pair, and Data 1 and power common make up a second pair.	
"	"	Use the reader cable for the reader connection only, or reader plus dry contact status wires, such as the door contact or PIR sensor. Do not run door lock current through the reader cable. Separate the cables for different applications by distance between them.	
"	"	Turn off noisy electrical machinery near the reader and the system	
"	Data transmission from the reader to the control panel was corrupted because one or more data bits were lost.	Check reader voltage, power supply current capacity, wiring, connections of wires to cable, and cable to panel terminals.	

NOTES

a. These suggestions apply to Revision D of SR-2400, MM-6800, SP-6820, and MR-1824 and MR-1824 MC proximity readers, and to Revisions C, C4, C8 and D of KP-6840 reader. These suggestions do not necessarily apply to earlier Revision letters for these readers.

b. These suggestions refer to "cards". The suggestions apply to all proximity credentials – CS cards, GR cards, GRMAG cards, KT keytags, and PW proximity wafers.