TCP/IP Ethernet Quick Start Guide

Power Requirements

The Reader can be powered from 8 to 16 volts DC (1.5A @ 12V) regulated, linear or switching power sources. The Reader should be operated from a grounded supply that has the same ground reference as the host. The positive power and the ground connections are applied to the Reader at the pigtail.

Color	Signal Name	Function
Brown	RS232 TX	RS232
White	RS232 RX	RS232
Purple	Ground	RS232
Blue	T1	Reader Control
Red	Power +V	+8 to +16 volts
Black	Power -V	- volts ground

Serial Output (RS232)

This is a standard RS232 Serial interface that can be read by any computer that accepts RS232 communications. Both models of readers have this interface built in and can be used to configure the Reader and to monitor data. The Readers will output data through simultaneous output ports and can be monitored with a terminal program that displays ASCII data.

TCP/IP Ethernet Output

This is a standard TCP/IP Ethernet modem (ZNE-100TL module network adaptor). It will be necessary to load a program termed "ZNetCom2.66_Setup.exe" (included on the CD) in order to setup your preferred properties. Just highlight and select the Next> tab and follow the setup instructions. You may want to change the language and do a Search, and then you can configure the IP address if you need to modify it. The default password is '**88888**'.

PC Configuration

Windows XP users should first enter the system control panel, click "Start" → "Control Panel", and then select the "network connection" icon; select the "Local Area Connection" icon for the ZNE-100TL module network adaptor, then select the property option and choose "internet protocol (TCP/IP)" within the "Routine" Tab to check its "Property". Choose "Use the IP address below", and fill in the IP address "192.168.0.55", network mask "255.255.255.0" and default MAC address "192.168.0.1" (the part of DNS is not needed to be entered). Click the OK button to confirm the setting, and wait for the system to complete the configuration. The default IP address of reader is 192.168.0.178.

Installation Overview

The Reader is supplied in a weatherproof enclosure for direct outdoor installation or can be placed indoors, such as in a guardhouse, close to other electronic equipment. The Reader outputs the decoded data to an access control unit via standard data cabling. Systems are available that output data in either the standard Wiegand and the serial RS232 and the TCP/IP Ethernet formats.

Wiring Guide

Selecting the correct size and type of wire will enhance the performance and reliability of your system. The size of the wire must be large enough to carry the maximum current expected without undue voltage losses.

Wire Length Table

POWER	WIRE GAUGE									
W(VA)/Amps	8awg	10awg	12awg	14awg	16awg	18awg	20awg	22awg	24awg	26awg
5W/.42A	2,222	1,426	898	564	354	224	139	87	55	35
10W/.83A	1,124	722	454	285	179	113	71	44	28	18
20W/1.67A	559	359	226	142	89	56	35	22	14	9
30W/2.50A	373	240	151	95	60	38	23	15	N/A	N/A

Troubleshooting Guide

Q: To confirm that the unit is operating properly
A: Confirm the beeper is audible when a good tag is presented or when power is first applied. If it is not, remove power. Verify the voltage supplied to the Reader is between 8 and 16 VDC

Q: Reader does not recognize a tag (no beep, no outputted tag data)
A: If no beep, check to see if another tag works, maybe damaged tag. Verify Reader operations by connecting to a computer through the RS232 port and running a Terminal program.

Q: How can I verify that the tres900 Reader I have is Wiegand or serial or TCP/IP?
A: Both Reader products have RS232 and one model has Wiegand and one has TCP/IP. The TCP/IP model has a cat 5 cable with an 8 pin connector attached.

Q: Tag data to panel is scrambled
A: One or more of the Reader's wiring connections are incorrect. Power down the receiver/panel and verify the wiring connections are correct. Check that data 1 and data 0 are consistent from tres900 to the host panel.

Earth Ground should terminate at the back of the Reader through the mounting brackets.

Reader timing not set properly or cable too long back to the panel.

Q: Reader beeping and host not responding
A: Check to insure the tres900 tag number and site code are properly programmed to the host panel. Check the Wiegand timing that your host is looking for and insure their timing scheme is within the SIA standard parameters.

Q: Read Range too short
A: Ground loop could be an issue here, see if earth ground terminates at the reader. Check by powering reader without reader ground wire connected. Earth ground should terminate at the Reader, check your panel or power supply.

Tag orientation should be in a vertical position for the Readers Antenna maximum performance and distance.

Reader Operating Parameters

Item Details	Specifications
Operating Frequency	902MHz～928MHz (860-960 MHz built-in)
RF Protocol	ISO18000-6B, EPC Class 1, EPC Class 1 GEN 2
Operating Method	FHSS or fixed frequency (configured by software)
Antenna	Internal 7dBi circular polarized w/ 0.65:1.0 H/V power ratio
Max RF Power	30 dBm (1 Watt)
RF Power Range	20~30 dBm, Software Adjustable
Tag ID Modes	Trigger Mode - external trigger control to read
Identify Tag Time	≤ 8ms Identify single tag
Reading/Writing Tag Time	Reads every 8 bytes in less than 5ms
Reading/Writing Tag Distance	18' to 25', depends on variables defined later
Communication Interface	RS-232, Wiegand, TCP/IP
Input (trigger control)	One way trigger input (grounded turns off Reader)
Power Supply (suggested)	8-16VDC @ 2Amp
Power Consumption (peak)	1.5A max. @ 12VDC
Size	10.24" x 10.24" x 3.54" (260mm×260mm×90mm)
Net Weight	4.2 lb (1.91kg)
Work Temperature	-4°F to 158°F (-20°C to +70°C)
Storage Temperature	-40°F to 185°F (-40°C to +85°C)
Wiegand Timing (default)	Pulse Width: 80μS; Period: 2mS; Start Bits: 1
Working Status Indication	Audible Beeper

Technical Support
888.574.tres (8737)

tres®
transponder and reader engineered systems

techsupport@tresrfsolutions.com
www.tresrfsolutions.com