# **TRP-C68H**

Isolated 8 Channel Analog Input Modbus TCP Module Support TRP-ASCII, Modbus RTU/ASCII protocol



# **User's Manual**

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# 1. Introduction

The TRP-C68H is an 8-ch analog Input differential isolation module that can read the voltage or current value from the web-based.

Each channel allows the user to input the voltage value or current.

We built-in safety surge protection prevents the spark and damage analog chipsets at each channel.

There are 3 protocols we support that include ASCII and Modbus TCP RTU / ASCII.

The watchdog function ensures running stable under harsh environment.

It allows connecting 1~8 sets of host IP in the network security.

#### 1-1.Features

- Wide input range DC power supply.
- Automatically determine 3 TRP-ASCII and Modbus RTU/ASCII communication protocol.
- 16 TCP Port can be open at the same time.
- Heart Beat function ensures a reliable communicating connection.
- Maximum 8 sets host IP that limits network access.
- Support Virtual-COM mode.
- The web-based can be directly read analog value status.
- It is easy to update the firmware by LAN interface.
- Back to factory configuration by external touch button.
- Auto reconnection when power or Ethernet fail.
- Digital input signal from +/- 0 to 30V DC.
- Built-in surge absorbers in each relay N.C and N.O.
- Built-In watchdog function prevents system boot fail.
- LED for each I/O channels working status.
- Support Auto-MDIX twisted pair crossover detection and Auto-Correction.
- Power/Link LED indicator.
- DIN-Rail and panel mount support.
- Dual power input selects from screw terminal or DC-Jack.

### 1-2.Specification

- Resolution: 16 bit/24bit.
- Sample rate: 24 BIT Normal mode: 10 sample / sec.

16 BIT Fast Mode: 60 sample / sec.

• Bandwidth: Normal Mode: 15.72Hz.

Fast Mode:/78.72Hz.

Zero drift: 0.03uV/C .

Span drift: 25 ppm/C.

• Accuracy: Normal 0.1 or better.

Fast: 0.5 or better.

Analog Input range: Voltage:±10V,±5V,±2.5V,±1.25V,±650mV..

Current: +/-20mA. CMRR:92 db min/50/60Hz

- Analog input over voltage protection: +/- 48V.
- Power Input Voltage DC +10V to +30V.
- Protocol: TRP-ASCII and Modbus RTU/ASCII.
- Input channel:8-ch analog Input differential
- Input optical isolation: 3750 Vrms.
- Communication interface: Ethernet RJ45.
- Configuration mode: Device Manager, WEB settings.
- Heart Beat: TCP Port sent string every 5 seconds.
- TCP Maximum Connection:1~16.
- Module ID: 1~255.
- Connection type: Screw terminal for maximum AWG 12 wire.
- Power supply: Screw terminal, or external DC adapter.
- Power consumption 320mA/12V.
- Operating environment: 0 to  $50^{\circ}$ C.
- Storage temperature: -10 to 70°C.
- Humidity: 10~90% Non-condensing.
- Dimension: 151mm X 75mm X 26mm.
- Weight: 395g.

### 2. Hardware Description

2-1. Panel layout



**Notice:** The Module provides two type power inputs, optional DC-JACK or Screw Terminal input, not to two used together!

**PWR LED**: Blinking is ready.

LINK LED: RJ-45 cable connection and data active.

**DC Jack**: Power Input DC +10V to +30V, Please use the 5.5\*2.1mm DC JACK.

### 2-2. Block Diagram



#### 2-3. Factory Button

Hold down the button, and then power on, until the power light flashes, Release the button.

#### 2-4. Factory parameter values

Device Name       IRP-C68H         MAC Address       00-0E-C6-00-04-33         DHCP       Enable         Enable       Gateway         192.168.0.109       DNS         Data listening port       502         To       0.0.0.0	vice Name       IRP-C69H       Module Name       IRP-C69H         AC Address       00-0E-C6-00-04-33       Netmask       255.255.255.0         ICP       Enable       Gateway       192.168.1.3         Server/Master       192.168.0.109       DNS       168.95.1.1         Listening IP       192.168.0.109       DNS       168.95.1.1         Data listening port       502       Transmit Time/Plus       10         Client/Slave       UID Range       Client/Slave IP Address Port       Heart Beat       Disable I         To       0       0.0.0       0       TCP Keep Alive       7       Image         To       0       0.0.0       0       Firmware Version       620       Data Packet Type         To       0       0.0.0       0       Image       Data Packet Type       Management Packet Type         To       0       0.0.0       0       Firmware Version       620       Data Packet Type         To       0       0.0.0       0       Pata Packet Type       Management Packet Type         To       0       0.0.0       0       Pata Packet Type       Management Packet Type         To       0       0.0.0       0       Pata Packet Type <td< th=""><th></th><th>In tort process security [</th><th></th><th></th></td<>		In tort process security [		
AAC Address       00-0E-C6-00-04-33       Netmask       255.255.255.0         DHCP       Enable       Gateway       192.168.1.3         Server/Master       192.168.0.109       DNS       168.95.1.1         Listening IP       192.168.0.109       DNS       10         Data listening port       502       Transmit Time/Plus       10         Client/Slave       Lient/Slave IP Address       Port       Heart Beat       Disable       Image: Client/Slave IP Address         0       To       0.00.0       502       Maximun Connection       8       Image: Client/Slave IP Address       Port         0       To       0.00.0       0       ICP Keep Alive       7       Image: Client/Slave IP Address       Port         0       To       0.00.0       0       New Password       Image: Port       Image: Port         0       To       0.00.0       0       Port       Port       Port         0       To       0.00.0       0       Port       Port       Port         0       0       0.00.0       0       Port       Port       Port         0       0       0.00.0       0       Port       Port       Port         0	AC Address       00-0E-C6-00-04-33       Netmask       255.255.255.0         ICP       Enable       Gateway       192.168.1.3         Server/Master       192.168.0.109       DNS       168.95.1.1         Data listening port       502       Transmit Time/Plus       10         Client/Slave       Client/Slave IP Address Port       Heart Beat       Disable       Image         To       0       0.00.0       502       Meximum Connection       8       Image         To       0       0.00.0       Firmware Version       620       Data Packet Type       Management Packet Type         To       0       0.00.0       0       Firmware Version       620         To       0       0.00.0       0       Firmware Version       Firmware Version       F	Device Name	TRP-C68H	Module Name	TRP-C68H
HCP       Enable       Gateway       192.168.1.3         Server/Master       192.168.0.109       DNS       168.95.1.1         Data listening pr       502       Transmit Time/Plus       10         Oata listening pr       502       Maximun Connection       8         Client/Slave       UID Range       Client/Slave IP Address Port       Maximun Connection       8         0       To       0       0.0.0       TCP Keep Alive       7         0       To       0       0.0.0       Firmware Version       620         0       To       0       0.0.0       0       Data Packet Type       Management Packet Type         0       To       0       0.0.0       0       Pata Packet Type       Management Packet Type         0       To       0       0.0.0       0       Pata Packet Type       Management Packet Type         0       To       0       0.0.0       0       Pata Packet Type       Management Packet Type         0       To       0       0.0.0       0       Pata Packet Type       Management Packet Type         0       To       0       0.0.0       0       Pata Packet Type       Management Packet Type	ICP       Enable       Gateway       192.168.1.3         Server/Master       192.168.0.109       DNS       168.95.1.1         Data listening port       502       Transmit Time/Plus       10         Data listening port       502       Transmit Time/Plus       10         Client/Slave       UID Range       Client/Slave IP Address Port       Heart Beat       Disable I         To       0       0.0.0       0       TCP Keep Alive       7       Image: Client/Slave IP Address Port         To       0       0.0.0       0       TCP Keep Alive       7       Image: Client/Slave IP Address Port         To       0       0.0.0       0       Firmware Version       620         To       0       0.0.0       0       Pata Packet Type       Management Packet Type         To       0       0.0.0       0       Auto connect       Multicast         To       0       0.0.0       0       Image: Protect	MAC Address	00-0E-C6-00-04-33	Netmask	255.255.255.0
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0       To       0       0.0.0.0       0       Data Packet Type       Management Packet Type         0       To       0       0.0.0.0       0       UDP       Imagement Packet Type         0       To       0       0.0.0.0       0       Imagement Packet Type       Imagement Packet Type         0       To       0       0.0.0.0       0       Imagement Packet Type       Imagement Packet Type	To       0       0.0.0.0       0         To       0       0.0.0.0       0       Data Packet Type       Management Packet Type         To       0       0.0.0.0       0       Image: Constant C	0 To 0	0.0.0.0	— Firmware Version	620
0         To         0         0.0.0.0         □         □ UDP Auto connect after reboot         □ Broadcast           0         To         0         0.0.0.0         0         □ Auto connect after reboot         □ Multicast	To       0       0.0.0.0       0       UDP       Broadcast         To       0       0.0.0.0       0       Image: Contract of the second s	0 To 0	0.0.0.0	— _ Data Packet Type ——	Management Packet Type
0 To 0 0.0.0.0 0 after reboot 🔽 Multicast	To         0         0.0.0.0         0         after reboot         Multicast           To         0         0.0.0.0         0         Image: TCP         Multicast	0 To 0	0.0.0.0	UDP	🔽 Broadcast
TCP		0 To 0	0.0.0.0	after reboot	🥅 Multicast
		0 To 0	0.0.0.0		]

### Device Setup

etwork Setting Serial Port_M	fodbus Setting		
Serial Port Setting		Digital Output Status	ff00
Baud rate	9600 💌	Digital Input Status	ff00
		Digital Input CH1	0
Data bits	8	Digital Input CH2	0
Parity	None	Digital Input CH3	0
0 1.'h.		Digital Input CH4	0
210p D115	1	Digital Input CH5	0
Flow Control	None 💌	Digital Input CH6	0
Modhue Setting	,	Digital Input CH7	0
Slave ID	1	Digital Input CH8	0
I ED Dimley Penel Setting		Digital Input CH9	0
Delling Cotting		Digital Input CH10	0
round setting	High	Digital Input CH11	0
System Mode	Power On Mode 💌	Digital Input CH12	0
Trycom Checksum Setting	Disable	Digital Input CH13	0
Power On Mode Output	0	Digital Input CH14	0
Safe On Mode Output	Itd /c	Digital Input CH15	0
Mode	Fast 💌	Digital Input CH16	0
Configuration	±10V 💌		
Analog data type	BCD		
Channel setting	8 🔹		
Frequency	60Hz 💌		
		Submit	Save Load

### 2-5. Voltage and current selectable.

The TRP-C68H which is built in 1250hm resistors inside. The default is for voltage mode, if user

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who needs using the current mode, please open the metal cover then adjust the jumper to pin2,3 position ,please refer the following setting.



### 2-6. Wire Connection

### Voltage mode



**Current Mode** 



### 2-7. Pin Description

VIN5+	Analog CH5 input positive	VIN4-	Analog CH4 input negative
VIN5-	Analog CH5 input negative	VIN4+	Analog CH4 input positive
VIN6+	Analog CH6 input positive	VIN3-	Analog CH3 input negative
VIN6-	Analog CH6 input negative	VIN3+	Analog CH3 input positive
VIN7+	Analog CH7 input positive	VIN2-	Analog CH2 input negative
VIN7-	Analog CH7 input negative	VIN2+	Analog CH2 input positive
F-GND	To earth ground	VIN1-	Analog CH1 input negative
A-GND	To earth ground	VIN1+	Analog CH1 input positive
DC 10~30V	Input DC 10~30V	VIN0-	Analog CH0 input negative
GND	Power Ground	VIN0+	Analog CH0 input positive

## 3. Install TRP-C68H Hardware

STEP1: Connect power source with TRP-C68H, the PWR LED will blinking.

STEP2: Connect TRP-C68H with network by RJ45 cable.

If the cable is properly connected the "LINK" LED will light up.

\*The TRP-C68H Support Auto-MDIX, A straight-through or crossover RJ45 cable can be used to make a connection directly to the HUB/Router/PC LAN port.

STEP3: Connect TRP-C68H screw terminal wiring, such as 2-5 picture description.

## 4. How to configure TRP-C68H

\*Please make sure the both IP segment between the PC and TRP-C68H are same.

For example: Computer IP is 192.168.1.xx TRP-C68H 192.168.1.1

There are 2 ways can change the module parameter values.

### A. DSM utility

The DSM utility you can download from our website, it is an execution file which helps user easy to find the TRP-C68H over the network.

1	PC	IRI	P-C37/C37M/C37A	/C37MA/C	24H/C26H/C28	H/C29F	I/C68H	
VI Setting	[Device State	us List						
Setting	NO.	Device Name	MAC Address	DHCP	IP	Port	Mode	Status
		TRP-C68H	00-0E-C6-00-04-33	Enable	192.168.0.109	502	Master	Idle
A Function								
Search								
IP Search								
evice Setup								
eo Browser								
Restore								

### B. WEB Server

The TRP-C68H provides a simple way to modify the parameter or user can easy to read the analog value from the Web browser.

🖉 TRP-C68H 8-CH Analog Input Mo	odbus TCP Module Internet Explorer		_ 문 ×
🕒 🕤 🗢 🥖 http://192.168.1.1/	+ • • ۵	🔊 🧉 TRP-C68H 8-CH Analog Inpu 🗙 📃	命☆ 第
		http://www.trycom.com.t	w
	TRP-C68H WDT-inside	8-CH Analog Input Modbus TCP Module	
	TRP-C68H Setting		
	Mode Configuration Analog data type Channel Setting(1~8)	Fast ±10V BCD 8	
	Frequency Setting(60Hz,50Hz)	60 Hz	
	Inycom Checksum	Disable ⊻	
	Input Display		
	Input CH1 Input CH2 Input CH3 Input CH4 Input CH5 Input CH6 Input CH7 Input CH8 Network Settings	+05.629 +00.692 +08.325 +00.455 +00.452 +00.052 +00.052 +01.495	
		✓ Enable DHCP	
	Static IP Address Static Subnet Mask	192.168.1.1 255.255.255.0	
	Static Default Gateway	192.168.1.3	
	Static DNS Server	168.95.1.1	
	Connection Type	TCP 🔽	
	Master/Slave	Master 💙	~
🎝 Start 🧭 🚞 🔘	0	СН ј 🚎 (	2 🕈 🖈 🕞 🛱 🙀 🕪 12:19 PM 🛌

### 4-1. Using DSM Utility

The DSM utility software performs several functions:

- A: Searching for TRP-C68H connected to the network.
- B: Displaying and changing the configuration.
- C: Upgrading the TRP-C68H firmware, Refer the Firmware upgrade help file.
- D: Saving and Loading Configuration from external log File or memory.

### 4-2. Searching TRP-C68H

Once TRP-C68H is connected to the network the **DSM** software will search it and display it in a window by name, IP address, Mac....Information.

	PC	TRI	P-C37/C37M/C37A	C37MA/C	24H/C26H/C28	H/C29H	I/C68H	
M Setting	_Device State	us List						
Setting	NO.	Device Name	MAC Address	DHCP	IP	Port	Mode	Status
		TRP-C68H	00-0E-C6-00-04-33	Enable	192.168.0.109	502	Master	Idle
M Function								
Search								
IP Search								
10 10 1 1 1								
evice Setup								
oh Provense								
eo biowsei								
Restore								

### **4-3.**Configuring Server Properties

Select the "NO." item and Double click to open the module configuration, after setting then click "Submit" will save the configuration to memory.

### Device Setup

Device Setup			×
Network Setting	Serial Port_Modbus Setting		
Device Name	TRP-C68H	Module Name	TRP-C68H
MAC Address	00-0E-C6-00-04-33	Netmask	255.255.255.0
DHCP	Enable 💌	Gateway	192.168.1.3
<ul> <li>Server/Master Listening IP</li> </ul>	192.168.0.109	DNS	168.95.1.1
Data listening	; port 502	Transmit Time/Plus	10
C Client/Slave UID Range	Client/Slave IP Address Port	Heart Beat	Disable 💌
0 To 0	0.0.0.0 502	Maximun Connection	8 💌
0 To 0	0.0.0.0	TCP Keep Alive	7 💌
0 To 0	0.0.0.0	– New Password	*****
0 To 0	0.0.0.0	– Firmware Version	620
0 To 0	0.0.0.0	– – Data Packet Type ––––	Management Packet Type
0 To 0	0.0.0.0	UDP	🔽 Broadcast
0 To 0	0.0.0.0	after reboot	🔲 Multicast
0 To 0	0.0.0.0		
8		Submit	Save Load

#### **Device Setup**

Serial Port Setting		Digital Output Status	ff00
Baud rate	9600 💌	Digital Input Status	ff00
		Digital Input CH1	0
Jata bits	18 💌	Digital Input CH2	0
Parity	None	Digital Input CH3	0
4, 1 <sup>-</sup> ,		Digital Input CH4	0
top bits	1	Digital Input CH5	0
Now Control	None	Digital Input CH6	0
Indhus Catting	·	Digital Input CH7	0
Nourus seinig Nave ID	10	Digital Input CH8	0
ED Display Panal Sotting		Digital Input CH9	0
		Digital Input CH10	0
oling Setting	High	Digital Input CH11	0
System Mode	Power On Mode 💌	Digital Input CH12	0
Frycom Checksum Setting	Disable	Digital Input CH13	0
ower On Mode Output	0	Digital Input CH14	0
afe On Mode Output	fd7c	Digital Input CH15	0
Mode	Fast 💌	Digital Input CH16	0
Configuration	±10V 💌		
Analog data type	BCD		
Channel setting	8		
Frequency	60Hz		

#### Device Name:

Device server name, Maximum 10 chars.

#### Model Name:

TRP-C68H.

#### MAC Address

The TRP-C68H MAC address.

#### DHCP

If DHCP is disabled, it allows user setting the IP address, Subnet mask, Gateway.

If DHCP is enabled, the IP address, Subnet mask, Gateway address will be dynamically configuration by DHCP server such router.

When DHCP is enabled, but the DHCP server is not available on the network, the TRP-C68H will timeout then back to factory setting IP=192.168.1.1.

#### Server Listening IP

The TRP-C68H IP address.

#### Server Data listening port

TRP-C68H port address.

X

### Client Destination IP

When user using the pair mode, the client setting need to input module IP and port which one need to connect.

### Client Destination port

Client port address.

Port: 16 bit number. (1 ~ 65535)

### Netmask

The default LAN Netmask is configured for a Class C address. This maybe reconfigured by the user.

### Gateway

Input the gateway IP address that can be allows users to access the serial server from internet.

### DNS

Short for Domain Name System, an Internet service that translates domain names into IP addresses. Because domain names are alphabetic, they're easier to remember. The Internet however, is really based on IP addresses. Every time you use a domain name, therefore, a DNS service must translate the name into the corresponding IP address.

• Transmit Timer: This feature is only available to Serial Server TRP-C37 and TRP-C37M.

### Maximum Connection: 1~16

The function allows the user to configure the TRP-C68H in Server mode, adjust 1~16 TCP client host connections.

### ◆ TCP Keep Alive: 1~7 /Minute

When TRP-C68H in Server or Client mode, the TRP-C68H without data over the 1~7 Min setting value, The TRP-C68H will be disconnecting TCP port.

### • New Password: 12345

It only accepts value from 10000~65535 integer, if input the wrong password over 5 times, the WEB-Page will lock until the TRP-C68H re-boot.

### Firmware Version: ABC

### ♦ Slave ID:1~255.

ID performs MODBUS RTU / ASCII and TRP-ASCII will use to address.

### LED Display Panel Setting :ON/OFF

No used

### Polling Setting: High/Low.

No used

### System Mode

No used

### • Trycom Checksum setting: Disable/Enable.

TRP-ASCII command used bit checksum.

#### Power On Mode Output: 0000~FFFF.

No used.

#### Save ON Mode Output:0000~FFFF.

No used.

#### Mode:Fast/Normal.

Fast Mode: 2 Bytes, The analog chipset reads the data speed is very fast.

This mode suitable the Modbus poll or Modscan utility.

Normal Mode:3 Byte, The analog chipset reads the data speed is normal.

This data output 3 bytes.

### Configuration:+/-10V,+/-5V,+/-2.5V,+/-1.25V,+/-650mV,+/-20mA,+4~20mA.

Selecting the mode for the analog Voltage or Current input.

#### Analog Data Type: BCD, PRECENT, HEX.

Selecting the display data way for the Decimal, Percentage or Hexadecimal.

#### ♦ Channel Setting:1~8.

There are eight channels input Disable or Enable.

#### Frequency:50Hz/60Hz.

Display last stored in the memory of the digital input counter value.

#### Submit

Save the setting value to memory.

#### Save

Save the setting value to external log file.

#### Load

Load the setting value to external log file.

### Upgrade

Upgrade the TRP-C68H firmware.

#### 4-4.Using the WEB Server mode

The Web Server can be used to configure the TRP-C68H from any web browser software (such as I.E).

In Internet Explorer type the IP Address of the TRP-C68H into the address field and press the Enter key. The following window will appear:

Example:

If TRP-C68H's IP is 192.168.1.1 ,Please Input the 192.168.1.1 then enters at web address, the web-page will appear.

🙋 TRP-C68H 8-CH Analog Input Modbi	us TCP Module Internet Explorer		<u>_8×</u>
C 🗢 🗢 🖉 http://192.168.1.1/	ب• ◄ ٩	😝 TRP-C68H 8-CH Analog Inpu 🗙	☆☆ 磁
		http://www.trvcom.com.tw	
			1 ^
	TRP-C68H	8-CH Analog Input	
	dis .	Modbus TCP Module	
2	WDT-inside		
TI	RP-C68H Setting		
Sla	ave ID (1~255)	1	
M	ode	Fast 🔽	
Co	onfiguration	±10V 🔽	
Ar	nalog data type	BCD 🔽	
Ch	nannel Setting(1~8)	8	
Fr	requency Setting(60Hz,50Hz)	60 Hz	
Tr	rycom Checksum	Disable 🖌	
Inj	put Display		
Inj	put CH1	+05.629	
Inj	put CH2	+00.692	
Inj	put CH3	+08.325	
Inj	put CH4	+00.455	
Inj	put CH5	+00.452	
Inj	put CH6	+00.052	
lnı	put CH7	+00.072	
inj	put CH8	J+01.495	
Ne	erwork Sennigs	Pr., 11. Duch	
	- TD A llose	Enable DHCP	
	atic Ir Address	192.168.1.1	
51	and Subnet Mask	255.255.255.0	
Sta	atic Default Gateway	192.168.1.3	
Sta	atic DNS Server	168.95.1.1	
Co	onnection Type	TCP	
M	aster/Slave	Mactor	~
🍂 Start 🧑 🚞 🚺	S 3	СН 🚎 😨	

### 4-5. TRPCOM Test Utility

The TRPCOM test utility may help to use the debugging program development phase, the user can find this software in our CD internal directory copied to the hard disk, and then directly execute TRPCOM.exe.

TRPCOM utility can automatically detect the model, it will list the corresponding function key,

It helps developers to understand and control the digital state.

\$01M	Cll command — Send C	Auto 🗖	80	Respons	Se		2
RP-C26H/28	H/68H Data Va	alue	D3		DS	D6	DZ
+08.31721	+00.42239	+00.46998	+00.00245	+00.37569	+00.01283	+00.00306	+00.00122
D8	D9	DA	DB	DC	DD	DE	DF
00000	00000	00000	00000	00000	00000	00000	00000
DO/DI Statu:	s 0000	Command	#017	Respons	e 101+00.0	D122 J	🗌 Auto Rea
RP-C24H Dig	aital Output Cor	ntrol					
DO	D1	D2	D3	D4	D5	D6	D7
D8	D9	DA	DB	DC	DD	DE	DF
RP-C2XH Co	mmon commar	nds	7				
Back to	Factory	Reset	Counter	Clear	D/O Value	Settin	g Power On

### 4-6 How to setup the network security

In network security, the TRP-C68H is able to setup 1~ 8 sets host IP, only these host IP can access the TRP-C68H.

The TRP-C68H actually can make connections with any Host IP,

Once the user has filled in the Host IP, these IP are available, the TRP-C68H will be pass with them, other host IP will not pass.

Refer to the following example illustrates.

\*Please make sure the firmware version is 608 above,

and the DSM utility version is 6.07 above.

Maximum 8 sets host IP that limits network access.

	es pass	PC	
TRP-C68H	Host IP 192	2.168.0.111~192.168.0.118	
	1		-
Device Setup		<u></u>	× I
Network Setting Serial Port_Modbus Setting			
Device Name TRP-C68H	Module Name	TRP-C68H	
MAC Address 00-0E-C6-00-04-33	Naturali	255.255.255.0	
DHCP Enable	Cetuure	102 169 1 2	
• Server/Master	Galeway	152.100.1.5	
Listening IP 192.168.0.109	DNS	168.95.1.1	
Data listening port 502	Transmit Time/Plus	10	
C Client/Slave IIID Range Client/Slave IP Address Port	Heart Beat	Disable 💌	
0 To 07 192.168.0.111 502	Maximun Connection	8	
0 To 0 192.168.0.112 0	TCP Keep Alive	7	
0 To 0 192.168.0.113	New Password	*****	
0 To 0 192.168.0.114 0	Firmware Version	620	
0 To 0 192.168.0.115 0	– Data Packet Type ——	Management Packet Type	
0 To 0 192.168.0.116	UDP	✓ Broadcast	
0 To 0 192.168.0.117	after reboot	🗖 Multicast	
0 To 0 192.168.0.118 0	TCP		

# 5. TRP-ASCII Communication Protocol

TRP-C68H supports three modes of communication Protocol TRP-ASCII, Modbus RTU, Modbus ASCII.

#### **TRP-ASCII Command Protocol Description**

Command Format :"Leading Code"+"ID Address"+"Command"+"CHK"+(cr) .

at :"Leading Code"+"ID Address"+"Data"+"CHK"+(cr) .

#### How to calculate the checksum

1. Calculate all characters of the command string to get the ASCII sum, except the character return.

2. Mask the sum of string with 0FFH.

#### Example:

Send the command is "\$06M".

Sum of string is "\$"+"0"+"6"+"M"="24H"+"30H"+" 4D"="A1H"......The checksum and [CHK]="A1".

Response string with checksum is :" A1".

TRP-ASCII: ease of use TRP-ASCII integration to develop their own software, such as VB, VC .

Command List	Function Description	Paragraph index
%IDNNTTDD(CHK)(cr)	Setting module configuration	See 5-1
#IDN (CHK)(cr)	Read N channel analog value	See 5-2
#ID(CHK)(cr)	Read all channel analog value	See 5-3
\$ID2 (CHK)(cr)	Read digital input/output status	See 5-9
\$IDF (CHK)(cr)	Read the module's firmware version	See 5-10
\$IDM (CHK)(cr)	Read the module's name	See 5-11
\$01RS(CHK)(cr)	Reset Module	See 5-12
~IDONN (CHK)(cr)	Change the module's name	See 5-13
~IDLEDA(CHK)(cr)	Set the module's LED operating mode	See 5-14
037590566		
		See 5-19
~**(CHK)(cr)	Read Module ID and mode name	See 5-20
#**(CHK)(cr)	Back to factory	See 5-21