

eco-420/ETH

4.. 20mA

ACTIVO
PASIVO



ETHERNET

CONVERTIDOR DE 4/20mA A ETHERNET/IP MODBUS TCP



4/20mA
ACTIVO/PASIVO

- ☐ RED MODBUS TCP
- ☐ Protocolos TCP SERVER, UDP, MQTT, etc
- ☐ Función de página web integrada para configuración de dirección IP y parámetros.

Conecta cualquier sensor 4/20mA (activo o pasivo) a la red Ethernet, para monitorizarlo desde cualquier parte del mundo.

APLICACIONES

- ☐ Medición de señales para generación de informes.
- ☐ Adquisición y registro de datos IoT y ethernet.
- ☐ Aislamiento de señales industriales con transmisión a larga distancia, con seguridad y fiabilidad.

DPF
sensors
www.dpfensors.com

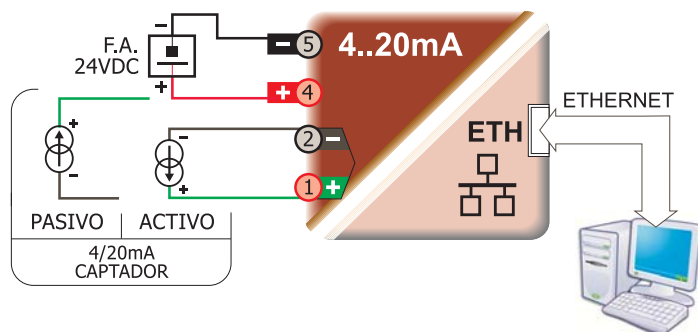


MODBUS TCP



EtherNet/IP™

conexionado



calibración con generador patrón 4/20mA

INICIO de ESCALA

Introducir 4mA.
Enviar \$01 {"calibrationCH0":0} --
Memorizará el inicio de escala

FINAL de ESCALA

Introducir 20mA.
Enviar \$01 {"calibrationCH0":1} --
Memorizará el final de escala

características técnicas

ENTRADA

Analógica	4/20mA (Pasiva / Activa)
Impedancia de entrada	150Ω
Protegida contra sobrecorrientes y sobretensiones transitorias	
Ancho de banda	-3dB 10Hz

ETHERNET

Protocolos	Modbus TCP TCP socket character MQTT
Modo común de rechazo (CMR)	120dB (1KΩ)
Conector interface	RJ45
2 indicadores de estado: Comunicación: verde ● // Datos: amarillo ●	
Caché enviar/recibir	2K
Tiempo de respuesta	<10mseg

CONFIGURACIÓN

Función página web integrada dirección IP, máscara de subred, calibración,...	
Memoria no volátil	EEPROM
Valores de fábrica (Reset)	pulsador > 3seg

ALIMENTACIÓN

Alimentación	24VDC
Margen	8.. 32V
Potencia	3W
Protección polaridad	

AMBIENTALES

Temperatura de trabajo	-45/+80°C
Humedad máxima	90HR%

PRECISIÓN

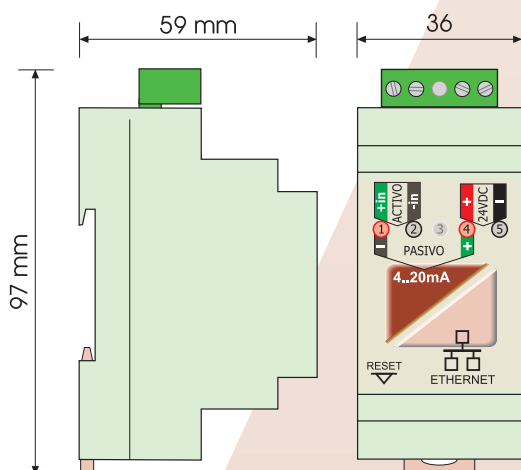
Precisión	0,05%
Resolución A/D	16 bits
Velocidad de conversión	16 muestras/seg
configurable desde	2.. 100muestras/seg



EMC 2014/30/EU (compatibilidad electromagnética)
DBT 2014/35/EU (directiva de bajo voltaje) para ambientes industriales.
Inmunidad a interferencias de acuerdo con EN 61000-6-2.
Emisión de perturbaciones de acuerdo con EN 61000-6-3.
Categoría de instalación II. Grado de polución 2 EN 61010-1.

FORMATO

Protección	IP20
Clase de combustibilidad	Vo según UL94
Caja Ergonómica. Montaje rápido rail	EN50022
Material Poliamida	PA6.6
Conexión:	
Analógica: bornas enchufables por tornillo	
Cable conexión: ≤ 2,5mm², 12AWG 250V/12A	
Conexión Red	RJ45 Ethernet
Peso	70grs



PROTOCOLO DE COMUNICACIÓN DE CARACTERES

Under working modessuch as TCP Server, TCP Client, UDP Mode, Web Socket , etc.:

After a successful connection, commands can be sent and data can be received.

1. Read data command

Send: # 01 (If timed automatic reporting is set, there is no need to send commands, the module will report data at regular intervals)

Reply: {"devName": "98CDAC3FA407", "time": 43545, "ADC": [0], "overrange": [0], actual data": [0]}

Format Description:

The module name 'devName' can be modified on the webpage as needed

The internal time of the 'time' module, measured in mS.

TheAD conversion data collected by theADC module ranges from 0 to 32767. 0=zero point; 32767=full degree.

For example, 4-20mA input: 0=4mA; 32767=20mA; Users can also directly use the converted engineering values.

OverRanger "0 indicates normal, 1 indicates input signal below zero, and 2 indicates input signal above full scale.

The 'practicalData' data is a value obtained by converting the zero point and fullness set by the user on the webpage.

Generally, this value can be directly used for general applications.

No need to process the data in theADC.

You can also read a single set of data:

#01>ADC reply: {"ADC": [32767]}

#01>actual data reply: {"actual data": [20000]}

#01>OverRanger reply: {"overRanger": [0]}

2. Set range

Send: \$01 {"range": [0,20]}

Reply: ! 01 (cr) indicates successful setting? 01 (cr) indicates a command error

3. Read configuration commands

The configuration parameters of the reading module can also be viewed directly on the webpage.

Send: % 01ReadConfig

Reply: {"version": "V1.0", "rangeStart": 4.000000, "rangeEnd": 20.000000, "dataRate": 1, "setIP": 1, "mac": "EE: 86: B0:52:7F:12", "ipAddress": "192.168.0.7", "gateway": "192.168.0.1", "netmask": "255.255.255.0", "work mode": 0, "localPort": 23, "remoteServerIP": "192.168.0.160", "remotePort": 23, "setQuickUp": 0, "sendTime": 0, "devName": "EE86B0527F12", "setMQTT": 0, "mqttHostURL": "broker.emqx.io", "contentId": "EE86B0527F12", "username": "", "passwd": "", "topic": "/wayjun/sub", "port": 1883, "pubTime": 1000, "subtopic": "/wayjun/sub"}

4. Set configuration commands

The configuration parameters of the module can also be set directly on the webpage. You can set all or some parameters, and the module will automatically restart after setting.

send out:

%01WriteConfig{"version":"V1.0","rangeStart":4.000000,"rangeEnd":20.000000,"dataRate":1,"setIP":1,"mac":"EE:86:B0:52:7F:12","ipAddress":"192.168.0.7","gateway":"192.168.0.1","netmask":"255.255.255.0","workmode":0,"localPort":23,"remoteServerIp":"192.168.0.160","remotePort":23,"setQuickUp":0,"sendTime":0,"devName":"EE86B0527F12","setMQTT":0,"mqttHostUri":"broker.emqx.io","clientId":"EE86B0527F12","username":"","passwd":"","topic":"/wayjun/pub","port":1883,"pubTime":1000,"subtopic":"/wayjun/sub"}

You can also set only a single parameter, such as modifying IP:% 01WriteConfig {"ipAddress": "192.168.0.7"}

Reply: ! 01 (cr) indicates successful setting? 01 (cr) indicates a command error

Description of supported function codes

03 (0x03) Read hold register

In a remote device, use this function code to read the contents of consecutive blocks in the hold register. The request PDU specifies the starting register address and the number of registers. Address registers from scratch. Therefore, addressing registers 1-16 are 0-15. In the response message, each register has two bytes, with the first byte being the data high bit and the second byte being the data low bit.

Example of function code 03, read input analog quantity, register address 40001:

request			response		
Field Name		hexadecimal	Field Name		hexadecimal
MBAP message header	Transmission identification	01	MBAP message header	Transmission identification	01
		00			00
	Protocol Logo	00		Protocol Logo	00
		00			00
	length	00		length	00
		06			05
	Unit identifier	01		Unit identifier	01
Function code		03	Function code		03
Starting address Hi		00	Byte count		02
Starting address Lo		00	Register value Hi (0x00)		00
Register number Hi		00	Register value Lo (DI7-DI0)		00
Register number Lo		01			

Register address description

Supports registers with function code 03.

Address 4X (PI C)	Address (PC, DCS)	Data content	attribute	Data Explanation
40001	0	Input analog quantity	read-only	Signed integer, AD converted value. 0x0000=zero point; 0x7FFF=Full Degree For example, 4-20mA: 0x0000=4mA; 0x7FFF=20mA;
40002	one	Is it out of range	read-only	Signed integer, 0 represents normal, 1 represents input signal below zero, and 2 represents input signal above full scale.
40003~40004	2~3	Actual engineering value	read-only	The data is a 32-bit floating-point number stored in CDAB order. It is a value obtained by converting the zero point and fullness set by the user on the webpage. For example, if the input signal is 4-20mA, representing a temperature of -20~100 degrees, the zero point can be set to -20 and the full degree can be set to 100. After the setting is completed, the actual engineering value read out is the actual temperature value. Generally, this value can be directly used for general applications. No need to process the data in the 40001 register. Note that some PLCs require swapping of high 16 and low 16 bit SWAPs to read data.
40211	210	Module Name	read-only	High bit: 0x01 Low bit: 0x81