

ЭНЕРГОМЕТРИКА
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Products Catalog

Technology of Electrical Automatic



Energometer-M-DCEM

4 channels
DC energy meter

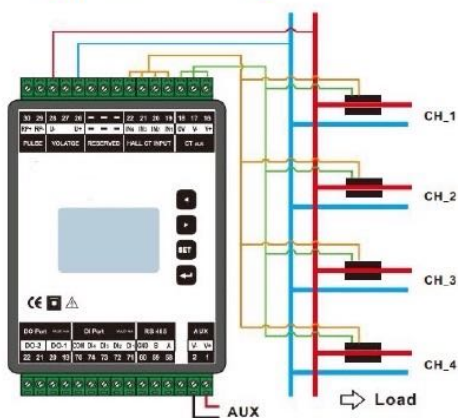
Description

DCEM are special design for DC circuit metering, multi-channels design can reduced the hardware cost of project. Meter body provide AXU terminal for external Hall CT, accept up to 3000A four channel amp reading and energy consumption value record.

Optional analog, digital, relay and alarm output is available via field-swappable plug-in communications modules. Also provide on-board RS485 serial communication port (MODBUS RTU) to send data to the external systems.



Typical wiring



Technical characteristics

Power supply:	
Power Supply	85~265VDC/AC
Consumption	20~60VDC optinal < 4 VA
Measurement:	
Current signal	0 - 4VDC (hall CT access)
Hall CT external AUX	+/-15V
Voltage signal	Typical 300V Max up to 1000V
Measurement channel	4 channels
Precision	0.5 class (depends on CT)
Isolation:	
Insulation Resistor	>100MΩ
	AC 2kV / 1min between AUX to current signal / DI / RS485
	AC 1kV / 1min between current signal to DI / RS485
	AC 2kV / 1min between voltage to AUX / DI / RS485
Communication port	
Digital Link	RS485 MODBUS-RTU
DO port	2 channels (Optional)
DI port	4 channels (Optional)
	Ri<500Ω ON / Ri>100kΩ OFF
Other:	
Ambient Temp. / Humi.	-10 ~ 55 C / ≅93% RH
Dimensions	87.3*132*46.5mm(L * H * D)

EnergOM 1000 Multi-channel Power Monitor

The EnergOM 1000 Series provides a compact and robust metering solution, enable reliable monitoring of building electrical loads with a low installation cost-per-point by combining sub-metering. The unit performs real-time metering, measures energy consumption and monitors power quality for max 18 channel circuits for single phase or 6 channel for three phase circuits.

Advanced communications options including Modbus via RS485, I/O communications provide for extensive reliable data exchange. Multiple units can be connected together to meter unlimited number of circuits. The versatility of EnergOM 1000 meters are ideal for multi-tenant or departmental metering applications within office towers, condominiums, apartment buildings, shopping centers and other multi-user environments.

Main Features

- Class 0.5 measurement accuracy
- 6 channels 3P4W / 3P3W or 18 channel 1P2W metering
- Current measuring .../5 or .../1 A
- Standard 35mm - 8 module DIN rail mounting
- Provide RS-485 MODBUS-RTU Communications
- Optional 6DI / 2DO for signal detect and remote control
- Optional external connection LCD screen, 72*72mm panel mount
- Accept customization design



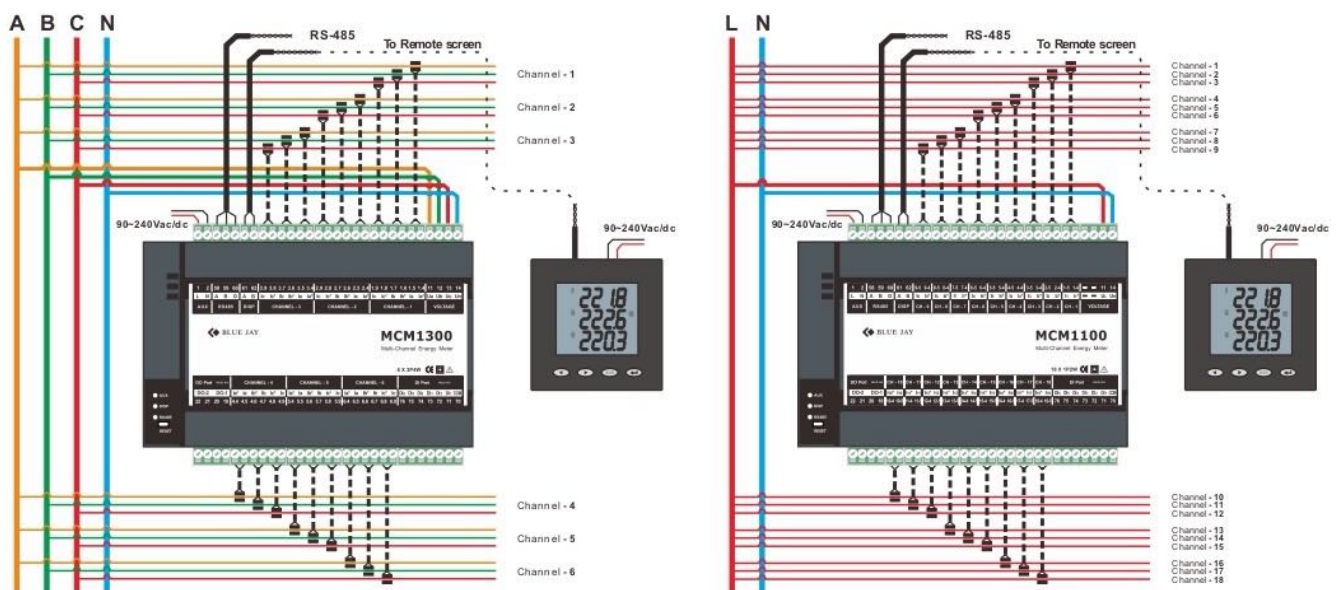
Production standards

- **Reference standard:**
 - Basic electricity: IEC 61557-12:2007
 - Active energy: IEC 62053-22:2003
 - Reactive energy: IEC 62053-23:2003
- **LVD test standard:**
 - IEC/EN 61010-1:2010
- **EMC Test**
 - Electrostatic discharge immunity test: IEC-61000-4-2 level 4
 - Electrical fast transient burst immunity test: IEC61000-4-4 level 3
 - Surge (Shock) immunity test: IEC61000-4-5 level 4

Measurement Parameter

Current measurement on inputs (TRMS)	Energom 1300	Energom 1100
CT secondary 1 and 5 A		1 or 5 A
Measurement range		0 ... 11 kA
Input consumption		<0.1 VA
Voltage measurement (TRMS)		
Direct measurement	18 ... 400 VAC L-L	18 ... 220 VAC L-N
PT secondary	100VAC / 400VAC	220VAC
Frequency		45 ... 65 Hz
Input consumption		<0.1 VA
Auxiliary power supply		
AC voltage	DC/AC 85~265 ± 10 %, 50 / 60 Hz	
Consumption	< 10 VA	
Measurement value		
Basic electrical parameter	Voltage (U) , Current (I) @ 0.2% accuracy Power (P, Q, S) @ 0.5% accuracy Power factor (H) , Frequency (Hz) @ 0.1% accuracy	
Active Energy (according to IEC 62053-22)	Consumped (Ep+) , generated (Ep-) @ 0.5% accuracy	
Reactive Energy (according to IEC 62053-23)	Consumped (Eq+) , generated (Eq-) @ 2.0% accuracy	
Outputs (alarms / control)		
Number of relays	2 channel DO & 6 channel DI	
Type	230 VAC 5 A	
Communication		
Link	RS485 (2/3 wires half duplex)	
Protocol	Modbus RTU mode	
MODBUS speed	4800/9600bauds	

Typical Wiring (with LCD screen)



Energom-101

110V/220V Battery
Online Monitor



Description

Energom-101 online monitoring system consists with battery cell acquisition module and monitoring host device. It provide real-time string voltage, charge / discharge status detect, export current, cell current & voltage, internal resistance etc. It also provide automatic balance function of battery cell, to keep the voltage at a reasonable float charging range, prolong the service life of the battery.

Comm port allow build remote monitor system, provide reliable and effective management method for the battery bank management, reduce risk of power interruption caused by power failure.

Main Features

- Independent sampling channel, fuse to protect battery safety.
- Cell monitoring module equipped external temperature sensor.
- Automatically switch three working modes: Equalization operations , Internal resistance test, Voltage and temperature monitoring.
- Automatic determine battery opened loop or offline status.
- Detect and display charge and discharge capacity of the battery bank.
- Alarm record with time stamp for battery unexpect status, minimum 1min record interval for all battery cell.
 - 4.0 inch TFT screen.
 - USB interface for export record data.
 - Provide Visual & sound alarm notice, with DO passive node for connect other device.
 - Ethernet interface, RS232 and RS485 interfaces for build SCADA.

Technical characteristics

Battery bank monitoring

Voltage	0~999.99V
Accuracy	0.10%
Current	0~999.99A
Accuracy	±0.5% for Shunt, ±1% for Hall CT

Battery cell monitoring

Cell voltage	0~20.000V
Accuracy	0.1% @ ±30% rated voltage
Cell internal resistance	0~65535uOhm
Accuracy	5%
Cell temperature	0-99.9°C
Accuracy	±0.5°C
Call capacity display	9999.9AH @ 1Sec detect interval

Others

Float charging equalization	10mV 240cells
Battery cell qty	2V, 4V, 6V, 12V
Cell rated voltage	1000lists
System info record	240lists
Alarm info display	1000lists
Alarm info record	AC220V & DC110/220V
Working voltage	RS485 / RS232 / Ethernet opional
Communication interface	

DC System Insulation Monitoring

Description

ZJS-102 Insulation monitoring system is a high accurate and secure online monitoring equipment for DC system insulation. It is designed for the measurement of different types of ground fault, insulation decreasing, AC signal interruption, DC signal interruption and so on.

Monitor detect DC leakage current, mixed with balanced & unbalanced bridge detection mode, can display leakage current of each sub export loops. It integrates voltage transient capture and current synchronous detection, records voltage and current fault curves to achieve instantaneous grounding monitoring and line selection alarm functions.

Main Features

- Monitoring various faults in the DC system: all types of grounding, abnormal voltage, voltage difference.
- Monitoring AC cross-current faults in DC systems.
- Monitoring DC system mutual channeling (ring network) faults.
- It can accurately detect the distributed capacitance of the DC system to the ground.
- Detect the leakage current of all branches.
- With battery pack grounding monitoring and positioning functions.
- Multi-caliber open and closed CT can meet all usage scenarios.



Technical characteristics

Detect range of insulation resistance to ground

Ground impedance	0 - 50Kohm
Insulation reduction	50-300Kohm
Balance compensation bridge	40K, 60K, 120K;

Detect voltage range

Positive to ground voltage	0 - 300V
Negative to ground voltage	0 - 300V
Total system voltage	0- 300V
AC interference voltage	0- 300V
Voltage monitoring error	≤0.5%

Real-time current

Current display resolution	0.01mA
Current display channels	≤240
Current sensor range	10mA, 20mA, 50mA, 100mA optional

History record

Insulation fault location	±1pcs in battery bank
Number of the record list	2000 lists, every list include 32 channels
Recording frequency	1KHz, 500Hz, 250Hz, 125Hz configuraion
Waveforms capture	8 lists per record

Others

Passive nodes	7 output
Fault indicator lights	6pcs
Distributed capacitance	0-200uF
Communication interface	RS485 / Ethernet

Ordering Notes:

1. Rated voltage of the DC system.
2. Monitored loops in the DC system.
3. Comm protocol request when work with other SCADA.
4. If dual bus DC system, please provide schematic drawing.
5. Please provide outline diagram of install site.

Energom-DCG Din-Rail mounting Insulation relay

Description

DC insulation monitor is based on RS485 Modbus protocol, suitable for EV DC charging system, photovoltaic system, energy storage system, DC power grid and other DC systems under 1000V.

This device has the function of insulation monitoring start and stop, insulation monitoring can be real-time monitoring of positive and negative poles to the ground insulation resistance, the monitoring result is not affected by DC voltage changing, is not affected by the positive and negative poles insulation resistance symmetry.

Main Features

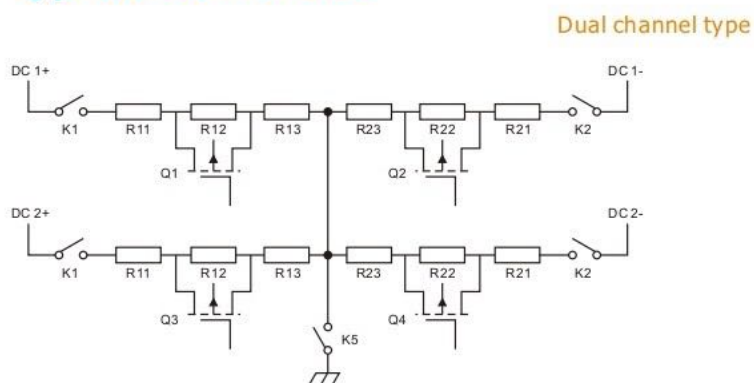
- Monitoring of the DC circuit bus bar insulation resistance R_f to earth.
- Bridge balance method for resistance measurement.
- Single channel and dual-channels type optional.
- Wider DC insulation monitoring range DC0~1000V.
- Faster monitoring speed of turning on.
- Communicate with RS485 Modbus networks
- Adaptive capacitance to ground.
- Simple device setting by DIP switch.



Technical characteristics

	Single channel	Dual channels
Detect channels		
DC voltage range	0~1000V	
Power supply	9~30VDC	
Insulation resistance range	1K Ω ~10M Ω	
Insulation monitoring accuracy	$\leq 3K\Omega + 10\%$ (100-300V) $\leq 3K\Omega + 5\%$ (300-1000V)	
Measurement accuracy	$\leq 2V + 0.3\%$	
Storage temperature	-40 $^{\circ}C$ ~ 125 $^{\circ}C$	
Operating temperature & humidity	-40 $^{\circ}C$ ~ 70 $^{\circ}C$, 85%	
Off-line pressure test	<2mA	
Communication	RS485 Modbus	
Installation type	Din Rail mount	

Typical Schematic



Energom-DCG-2
Panel mounting
Insulation monitoring relay



Description

DC insulation monitoring relay monitors the insulation of the DC bus, and it sends alarm signal when the bus-to-ground insulation drops to a certain value, also it is panel mounted type, and the relay has a high-sensitivity grounding resistance monitoring and display circuit, it is great significance for the safe operation of the DC system.

Main Features

- Monitoring of the DC circuit bus bar insulation resistance R_F to earth.
- LCD screen display resistance value.
- Bridge balance method for resistance measurement.
- Adjustable response value ranges of 0-100k Ω .
- Smaller short-circuit grounding current for safe operation.

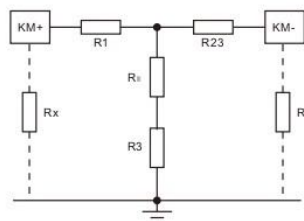
Application

- DC or AC/DC main circuits.
- UPS systems, battery systems.
- IT systems with high leakage capacitances.
- DC charging stations for electric vehicles.

Technical characteristics

Input voltage	300-1200VDC
Power supply voltage	90-150VDC 180-300VDC
Power supply current	7-20mA
Operating temperature	-40°C ~ 70°C, 85%
Measuring resistance	0~199.9K Ω
Precision	V=220V (5%)
Short circuit ground current	V=220V (2mA)
Alarm setting range	0~100K Ω
Action return factor	$R_s=50K\Omega$ (95%-98%)
Output contact capacity	Sensitive load=5mS(DC220V0.2A) Resistive load(DC220V 2A)

Typical Schematic



Peltier Condenser

Energom-DH series peltier condenser using semiconductor technology, in a certain place of cabinet to lead controlled condensation, make the interior environment humidity fall to safe value. It is refrigerant-free cooling device, can be used in switchgear, electrical cabinet, exchange control cabinets, outdoor terminal boxes etc.

It designed ultra-small install size, high efficiency energy-saving, do not need extra heater and fan wiring. And comes with the data acquisition module for remote monitoring, It's an efficient and reliable device to replace the old thermostat and heater / fan combination.



Dehumidification effect contrast



Before- Water on the wall

After- No water on the wall

Main Features

- Small size, easy for cabinet inside installation.
- Quickly reduce the switchgear internal humidity, exclude water out of air.
- Condensate water will be drained directly to the outside of the cabinet by the aqueduct.
- Automatic & manual dehumidification free to change, temperature start value and dehumidification start value adjustable.
- Real-time sampling temperature and humidity, support automatically working mode, do not extra sensor and probe.
- Build in memory to record settings, can keep original working mode after power recover.
- With diagnosis function, user can quickly find failure point to debug.
- Shell and internal components are well isolation design, can work in high humidity and strong electromagnetic field.
- Optional passive output node.
- Optional RS485 port.
- Optional external heater.






Typical wiring

1	Reserved	11	Probe
2	Reserved	12	
3	Reserved	13	Reserved
4	Alarm NC	14	
5	Heater NO	15	RS-485
6		16	
7	GND	17	
8			
9	AUX		
10			

Energom-DH 8000

Notes: Wiring according to different product specifications are subject to change. Please reference to the label on product body!

Technical characteristics

	8000B	8000L	6001	6002	105
Working power					
Power supply	85V~265VAC/DC 50Hz				
Peltier rated power ⁽¹⁾	30W, 40W, 60W optional				15W
Dehumidifying capacity	350ml in 24h	350ml in 24h	300ml in 24h	300ml in 24h	100ml in 24h
	Test in 60W @35C, 90%RH	Test in 60W @35C, 90%RH	Test in 30W @35C, 90%RH	Test in 30W @35C, 90%RH	Test in 15W @35C, 90%RH
Measurement and ability					
Humidity monitor range	20%RH~98%RH				
Sensor accuracy ⁽²⁾	±5%RH				
Dehumidify start threshold	45%RH~98%RH, Default 65%RH				
Environment temperature	5~60°C				
Temperature monitor range	-40~80°C				/
Sensor accuracy	±1.0°C				/
Heater start threshold	1~55°C, Default 5°C				/
Heater power ⁽³⁾	50~500W optional				/
Other					
Physical dimension	130*243*60	134.5*130*68.5	100*174*70	100*144*60	73*88*52
Enclosure material	Sheet metal with anti-rust spray	Aluminum alloy	ABS	ABS	ABS
Screen	2*3 digital LED	2digital LED	2*3 digital LED	2*3 digital LED	2digital LED
Standards	IEC60255-22-1				
Comm interface	RS485, modbus-RTU				
Style image					

Notes:

1. The choice of rated power is related to the cabinet inner volume and airtightness, and the general reference value is:

- 0.5cubic meter cabinet choose 15W
- 1.0cubic meter cabinet choose 30W
- 1.5cubic meter cabinet choose 40W
- 2.0cubic meter cabinet choose 60W

Cabinet volume are calculated according to the inner diameter, Length*Width*Height

2. Sensor accuracy 5% is test with inside probe, products optional external cable type sensor. Please contact sales team before order.

3. Device provide passive NO contact for external heater connection, capacity is AC250V5A. User can free to order heater or purchase with DH series.

DC Circuit Metering

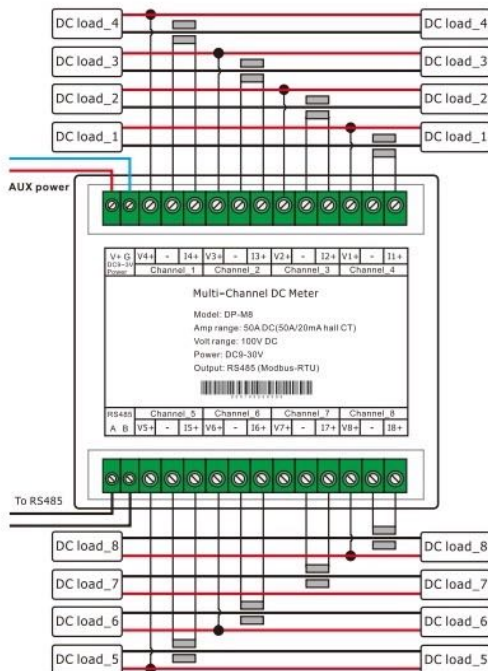
Energom-DP-M8 8 channels isolated DC Monitor

Description

DP-M8 meter is an advanced solution for multi-channel metering in DC system. It provides 8 channels, full isolated for collect voltage, current, power data and energy generate & consumption data.

With RS485 communication interface, DP-M8 can be connected to the monitoring center or on-site host. It is a high-performance automatic metering device suitable for solar plant and Telecom server room, BMS application in UPS system etc.

Typical wiring



External CT access



Technical characteristics

Power supply:	
Power Supply	9~30VDC or 9~57VDC
Consumption	< 4 VA
Measurement:	
Current signal	1mA, 20mA, 100mA, 1A, 5A, 10ADC over 10A use external CT or Hall CT
Voltage signal (Optional)	75mV, 1V, 5V, 10V, 50V, 100V, 250V, 400V (Default 100V)
Frequency response	0-1000Hz
Sampling ratio	20ms~1000ms adjustment, (default 100ms)
Load Resistance	Current: <0.15V / channel Voltage: >2Kohm/V
Precision	0.2% F.S
Isolation:	
Insulation Resistor	> 100MΩ
AC 2.5kV / 1min between AUX to current signal / DI / RS485	
AC 1.5kV / 1min between current signal to DI / RS485	
AC 2.5kV / 1min between voltage to AUX / DI / RS485	
Communication port	
Digital Link	RS485 MODBUS-RTU
Other:	
Ambient Temp. / Humi.	-20 ~ 70 C / ≅ 93% RH
Dimensions	120*110.5*50mm (L * H * D)

Energom-DT

Battery Bank Discharge Tester



Description

Energom-DT is highly intelligent battery charge and discharge tester. It can be used as the discharge load in the battery off-line state, and realize the constant discharge of the set value by continuously regulating the discharge current. the tester records all valuable and continuous real-time data during the process.

Friendly HMI provide a variety of configuration and data review, user can download record data to USB. PC host operation software can generate the curves and reports needed.

Main Features

- Intelligent SCM ARM control, 7-inch 1024*600 LCD display.
- Discharge load use PTC ceramic resistor, avoid red heat for a safer discharge process.
- Remote battery data collector use wireless, multiple band design for 4 device working in one site.
- Each device support max 25 cell collection boxes, each box connect 12 batteries, total 300 battery cell detecting.
- User free to configuration charge/discharge termination threshold.
- Provide software export record & curve report for further analysis.
- Various alarm function, provide automatic protection in over-temperature /voltage/current status.
- With RS485 port for remote control.

Technical characteristics

Battery Bank Voltage	DC110V or DC220V
Charge/discharge voltage	DC88V-264V
Charge/discharge current	Charge 60A; Discharge 60A
Power Supply	AC220V (-20%--+30%)
Battery cell voltage	2V/4V/6V/12V optional Max 300 batteries
Control precision	Discharge current $\leq \pm 1\%$; Group terminal voltage $\leq \pm 0.1\%$; Cell voltage $\leq \pm 0.05\%$
communication	RS485+ USB interface
Data storage capacity	8G SD card and 16G USB flash drive
Temperature & Humidity	-5-50°C, 0-90% (40 \pm 2°C)
Elevation	Rated elevation of 4000m
Working mode	Standalone mode; Parallel master mode; Parallel slave mode; Remote controlled mode
Protection performance	Over voltage protection; Under voltage stop; Over current protection; Over temperature protection; Wiring reversed protection

Energom-FL DC Shunt



Description

HDT hall effect current sensor is an open loop device based on the measuring principle of the hall effect, with a galvanic isolation between primary and secondary circuit. It provides accurate electronic measurement of DC currents.

The Hall effect current sensor provides strong electrical isolation between the output of the sensor and the current carrying conductor.

Typical shape



Technical characteristics

Material	Copper+Manganin, Copper with nickel plated
Current Rating	1 ~ 4000A: 0.5%; 5000 ~ 10000A: 1% (Default)
Operating Temperature	-40°C ~+60°C
Voltage Drop	50mV/ 60mV/ 75mV/ 100mV(optional)
Accuracy Class	0.5 or 0.2 (Customized 0.01)
Material	Copper + Manganin, Copper with nickel plated
Overload Capacity	120% Of Rated Current For 2H
Application	Use For DC Digital Amp Meter
The load under the heat:	≤80°C @ 50A Max ≤120°C @ Other

Ordering Infomation

- [1]-[2]/[3]

PN Code	Optional Type & Description
[1] Style	2/2A/2B: China type 2C: With patented; 2D: DIN43703 type 2F: Air cooling type; 2S: Water cooling type 13: Russian type; 15: USA type 19: Soldering use type 21: Taiwan export type 27: High accuracy(0.2) 28: High accuracy(0.1) 29: Bend type; 39: Middle type U: U shape; P: slice shape P1: Slice shape with non-inductive T1: Round tube non-inductive type
[2] Rated current	Value 1A-15000A
[3] Voltage drop	10mV ~ 800mV Blank: 75mV

Energom-M122/M522

2 channels Analog Input
2 channels output Module

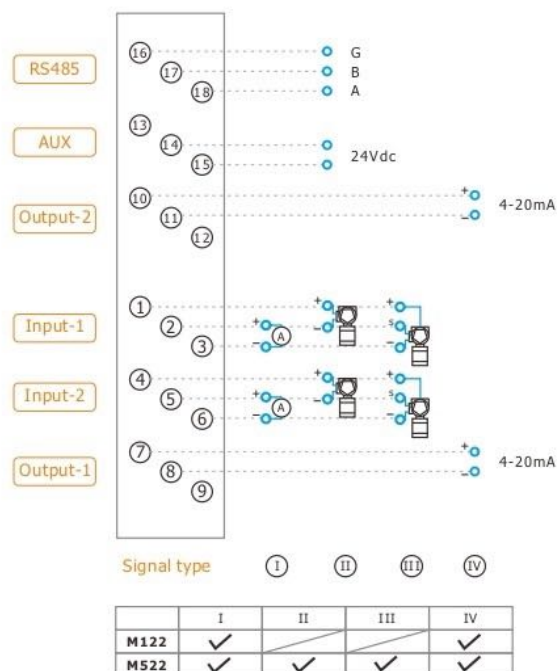


Description

The analog input module provides isolation between 2-channels current inputs, 2-channels current outputs, power, and network circuits. Energom-M522 provide 24V loop excitation current.

Support RS-485 Modbus RTU protocol, can be works as independent signal isolator with communication. Multiple M series modules combine with MWG1 to build remote I/O DAS system.

Typical wiring



Technical characteristics

Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	M122 ≅ 1.5W, M522 ≅ 2.5W
I/O capacity:	
Valid input range	4-20mA *2 (Full input range 0-24mA)
Output range	4-20mA *2 (Full output range 0-24mA)
Response Time	< 10ms
Accuracy	±0.05% F.S. (Calibrating Temp. 25±2 C)
Temperature drift	25PPM/C
Zero Drift	Auto Calibration
A/D resolution	24 bit
Input Impedance	200Ω
Input distribution voltage	≈ 22V
Isolation & Protection:	
Insulation Resistor	>100MΩ / 500V between the input / output
Isolation Strength	AC1500v 1min between all terminal
Distribution current limit	≈ 30mA
With current input reverse protection & Input overcurrent protection	
Other:	
Operation Temp.	-10~70 C
Ambient Temp. / Humi.	-40 ~ 85 C / ≅ 95% RH
Dimensions	113 X 109 X 17.5mm
Terminal Wiring Way	Screw mounting, AWG #26-12
Standard	EN61326 : 1997+A1: 1998+A2 : 2001+A3 : 2003
LED Indicator	Normally lighting indicates power supplied and working normally, blinking indicates digital communication is under way.

Energom-M140/M540

4 channels
Analog Input Module

Description

The analog input module provides isolation between 4-channels current inputs, power, and network circuits. Energom-M540 provide 24V loop excitation current.

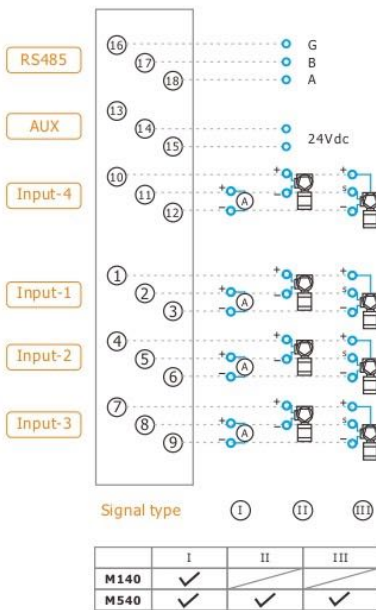
Support RS-485 Modbus RTU protocol, can be works as independent signal isolator with communication. Multiple M series modules combine with MWG1 to build remote I/O DAS system.



Technical characteristics

Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	M140 ≅ 1.5W, M540 ≅ 2.5W
I/O capacity:	
Valid input range	4-20mA *4 (Full input range 0-24mA)
Response Time	< 10ms
Sampling ratio	10times/sec
Accuracy	±0.05% F.S. (Calibrating Temp. 25±2 C)
Temperature drift	25PPM/C
Zero Drift	Auto Calibration
A/D resolution	24 bit
Input Impedance	200Ω
Isolation & Protection:	
Insulation Resistor	>100MΩ / 500V between the input / output
Isolation Strength	AC1500v 1min between all terminal
Distribution current limit	≈30mA
With current input reverse protection & Input overcurrent protection	
Other:	
Operation Temp.	-10~70 C
Ambient Temp. / Humi.	-40 ~ 85 C / ≅95% RH
Dimensions	113 X 109 X 17.5mm
Terminal Wiring Way	Screw mounting, AWG #26-12
Standard	EN61326 : 1997+A1: 1998+A2 : 2001+A3 : 2003
LED Indicator	Normally lighting indicates power supplied and working normally, blinking indicates digital communication is under way.

Typical wiring



Energom-M240

4 channels
Digital Input Module

Description

The digital input module provides isolation between 4-channels discrete signal inputs, power, and network circuits.

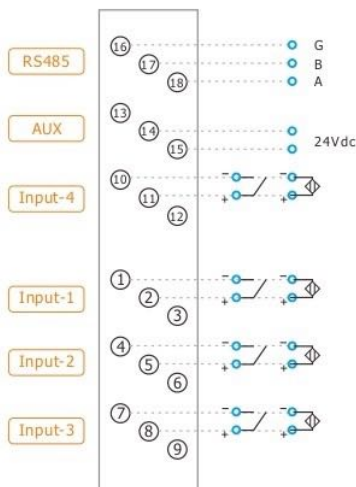
Support RS-485 Modbus RTU protocol, can be works as independent signal isolator with communication. Multiple M series modules combine with Energom-MWG1 to build remote I/O DAS system.



Technical characteristics

Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	≅ 1.5W
I/O capacity:	
Valid input	Digital (Discrete) *4
Response Time	< 10ms
Input Resistance	3 K ohms
Detect loop power	~8V (OC output)
Isolation:	
Insulation Resistor	>100MΩ / 500V between the input / output
Optical Isolation	AC1500 volts (transient)
Isolation Strength	AC1500v 1min between all terminal
Other:	
Operation Temp.	-10~70 C
Ambient Temp. / Humi.	-40 ~ 85 C / ≅95% RH
Dimensions	113 X 109 X 17.5mm
Terminal Wiring Way	Screw mounting, AWG #26-12
Standard	EN61326 : 1997+A1: 1998+A2 : 2001+A3 : 2003
LED Indicator	Normally lighting indicates power supplied and working normally, blinking indicates digital communication is under way.

Typical wiring



Energom-M304

4 channels Analog Output Module

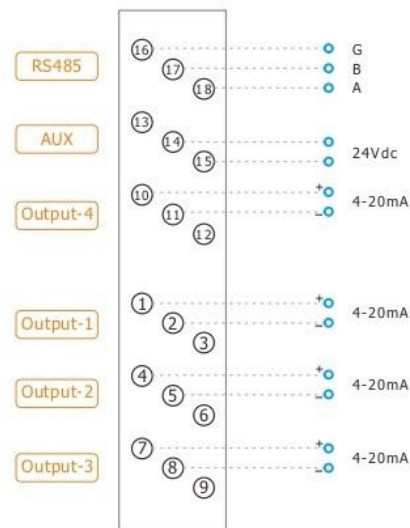
Description

The analog output module provides isolation between 4-channels current outputs, power, and network circuits.

Support RS-485 Modbus RTU protocol, can be works as independent signal isolator with communication. Multiple M series modules combine with Energom-MWG1 to build remote I/O DAS system.



Typical wiring



Technical characteristics

Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	≅ 2.5W
I/O capacity:	
Valid output range	4-20mA *4 (Full input range 0-22mA)
Response Time	< 200ms
Accuracy	±0.05% F.S. (Calibrating Temp. 25±2 C)
Zero Drift	Auto Calibration
A/D resolution	24 bit
Output Impedance	360Ω
Output Resolution	≅ 1.5uA
Isolation:	
Insulation Resistor	>100MΩ / 500V between the input / output
Isolation Strength	AC1500v 1min between all terminal
Other:	
Operation Temp.	-10~70 C
Ambient Temp. / Humi.	-40 ~ 85 C / ≅95% RH
Dimensions	113 X 109 X 17.5mm
Terminal Wiring Way	Screw mounting, AWG #26-12
Standard	EN61326 : 1997+A1: 1998+A2 : 2001+A3 : 2003
LED Indicator	Normally lighting indicates power supplied and working normally, blinking indicates digital communication is under way.

Energom-M404

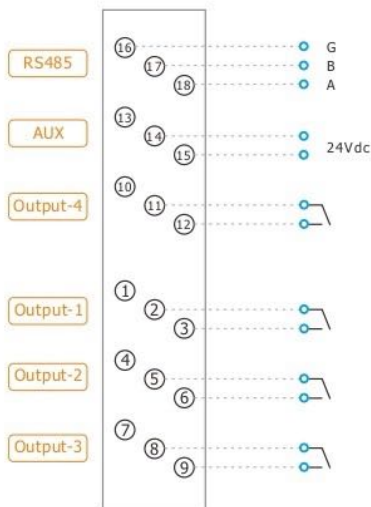
4 channels
Digital Output Module

Description

The digital output module provides isolation between 4-channels contact outputs, power, and network circuits.

Support RS-485 Modbus RTU protocol, can be works as independent signal isolator with communication. Multiple M series modules combine with Energom-MWG1 to build remote I/O DAS system.

Typical wiring



Technical characteristics

Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	≅ 1.5W
I/O capacity:	
Valid output	4* Contact
Response Time	< 10ms
Capacity	1A @ 250Vac
Isolation:	
Insulation Resistor	>100MΩ / 500V between the input / output
Field to Logic Isolation	AC4000 volts (transient)
Isolation Strength	AC1500v 1min between all terminal
Other:	
Operation Temp.	-10~70 C
Ambient Temp. / Humi.	-40 ~ 85 C / ≅ 95% RH
Dimensions	113 X 109 X 17.5mm
Terminal Wiring Way	Screw mounting, AWG #26-12
Standard	EN61326 : 1997+A1: 1998+A2 : 2001+A3 : 2003
LED Indicator	Normally lighting indicates power supplied and working normally, blinking indicates digital communication is under way.

Energom-M711/M730

Temperature signal I/O Module

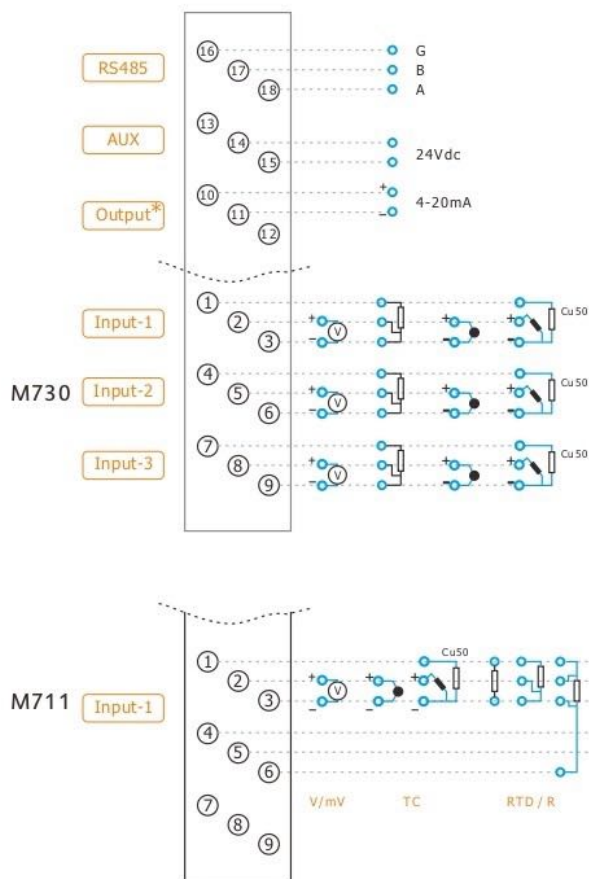
Description

The analog output module provides isolation between Temperature signal input, analog output, power, and network circuits.

Support RS-485 Modbus RTU protocol, can be works as independent signal isolator with communication. Multiple M series modules combine with Energom-MWG1 to build remote I/O DAS system.



Typical wiring



Technical characteristics

Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	M711 ≅ 2.5W, M730 ≅ 2W
I/O capacity:	
Valid input signal range & (Accuracy)	TC: K/E/S/B/R/J/T/N (≅ 1C°)
	RTD: PT100 / PT200 / PT500 / PT1000 / Cu50 (≅ 0.2C°)
	Resistance: 0~400Ω 0~4000Ω (≅ 0.05% F.S.)
	mV: +80mV (≅ +10uV)
	Voltage: 0~1V dc (≅ +10mV)
	Input Impedance
Input channels	M711*1, M730*3
Output channels	M711*1, M730 none
Response Time	< 400ms
Zero Drift	Auto Calibration
Output range	M711: 4-20mA *1, M730 none
A/D resolution	24 bit
Isolation:	
Insulation Resistor	>100MΩ / 500V between the input / output
Isolation Strength	AC1500v 1min between all terminal
Other:	
Operation Temp.	-10~70 C
Ambient Temp. / Humi.	-40 ~ 85 C / ≅ 95% RH
Dimensions	113 X 109 X 17.5mm
Terminal Wiring Way	Screw mounting, AWG #26-12
Standard	EN61326 : 1997+A1: 1998+A2 : 2001+A3 : 2003

Notes:
M711 with 2* output, 1* input support various signal
M730 without output, 4* input only support temperature signal

Introductuion

Energom-MIOS system is a special design isolated signal remote I/O system, it linked a local area network designed to connect controllers to remote I/O chassis and replacement of discrete wirings by fieldbus or industrial Ethernet communication.

Energom-MIOS supports up to 31 slots with as many as 128 I/O points in each system. If you need more, you can expand your system with Ethernet router, easily support thousands of I/O points in a single system

Features

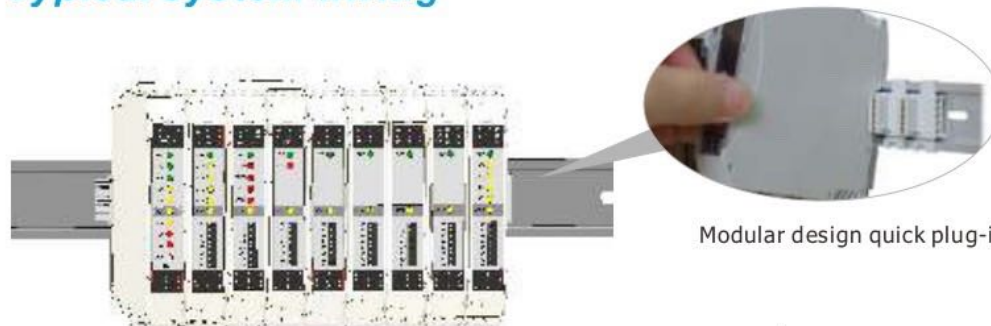
- Support universal Input Signal
- Local area network designed for factory-floor applications
- Connects controllers to remote I/O chassis and other intelligent devices
- Channel to channel isolated Remote I/O
- Built-In Web Server
- Dual Channel , Power Hot Swap Supported
- Support Multi Communication Protocols
- Flexibly Configuration With Sorts of Full Isolated I/O models
- Back board designed with redundant power-supply interfaces



Technical characteristics

Power supply:	
Power Supply	24VDC±10%
Power Consumption	Energom-MWG1 ≅ 1W, other module ≅ 3W
Group capacity:	
Analog input	Max 60 channels
Digital input	Max 60 channels
Analog output	Max 60 channels
Digital output	Max 60 channels
Energom-MWG1 module support up to 31units I/O modules	
Communication:	
RJ45 port	10m/100m Protocol Modbus TCP, TCP/IP, http Modbus TCP(client) Max 6 connections http (client) Max 2 connections
Modbus Port	Protocol Modbus RTU Address ID range 1~254
Isolation:	
Insulation Resistor	>100MΩ / 500V between the input / output
Isolation Strength	AC1500v 1min between the input / output
Other:	
Ambient Temp. / Humi.	-40 ~ 85 C / ≅ 95% RH
Dimensions	113 X 109 X N mm (N ≅ 17.5*32)
Terminal Wiring	Screw mounting, AWG #26-12
Comm Interface Standard	Mini USB EN61326-2003
LED Indicator	Normally lighting indicates power supplied and working normally, blinking indicates digital communication is under way.

Typical system wiring



Modular design quick plug-in kit

↔ EnergoM-MWG1 Other I/O modules, Max 31pcs

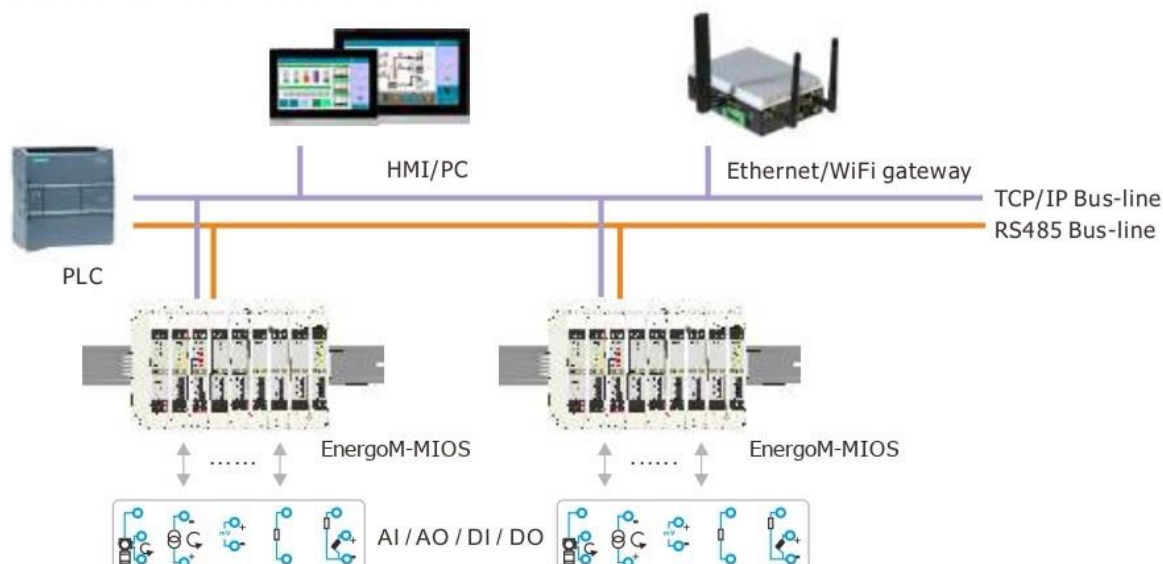
Minimal group: 1pcs **EnergoM-MWG1** + 1pcs **I/O module**

Maximum group: 1pcs **EnergoM-MWG1** + 31pcs **I/O modules**

Module selection chart

Module Code	Module Type	Description
EnergoM-MWG1	Core control unit	RJ45* 1, Built-in Webserver RS485 Master* 1, RS485 Slave* 1 AUX: 24Vdc, support Din-rail kit power other modules
EnergoM-M122	Analog input	2* current input, 2* current output
EnergoM-M140	Analog input	4* current input
EnergoM-M240	Digital input	4* input
EnergoM-M304	Analog output	4* current output
EnergoM-M404	Digital output	4* output
EnergoM-M522	Analog input	2* current input, powered loop, 2* current output
EnergoM-M540	Analog input	4* current input, powered loop
EnergoM-M711	Temperature input	1* temperature input, 1* 4-20mA output
EnergoM-M730	Temperature input	3* temperature input
BT-kit	Din-rail mounting kit	Support AUX and internal data exchange

Typical system network



Energom-PR 200

Motor protection Relay

Description

Energom-PR200 motor protector is an all-in-one solution designed to continuously monitor 3-phase power lines for abnormal conditions. It can use with motors of any size or type.

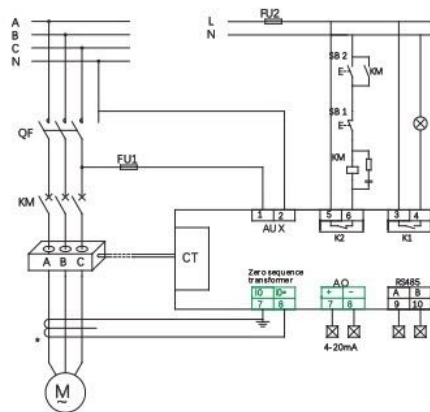
When the Energom-PR200 sense the motor runs into the preset abnormal alarm value, Energom-PR200 will automatically trigger the release switch to shut down the circuit. Option RS485 communication port can upload the monitor data and alarm status to remote control system.

Features

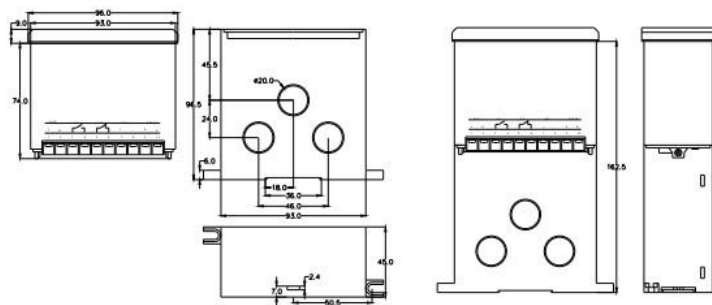
- Low cost electronic design relay, can replace a variety of single function protection relays.
- Suit for Motor under 0.66KV.
- Build in 3P CT for current sampling, suit for current under 200A.
- 2 digital outputs for external control loops.
- Optional RS-485 network communications.
- Optional earth leakage sensor or analog output.



Wiring diagrams



Installation Dimensions



Split installation

Panel mounting installation

Energom-PR240

Split motor protect relay

Description

Energom-PR240 is an excellent choice for telemetry applications for Motor monitoring, metering, and control. Its small size, low cost and remote HMI options make the relay a perfect option for power distribution systems for such uses as end-of-line monitoring and power metering.

It offers low-voltage motor protection in virtually all applications, including pumping, air-based, chiller, and bulk-material applications. It can be configured as full range of medium-voltage, three-phase induction and synchronous motors protect relay.

Features

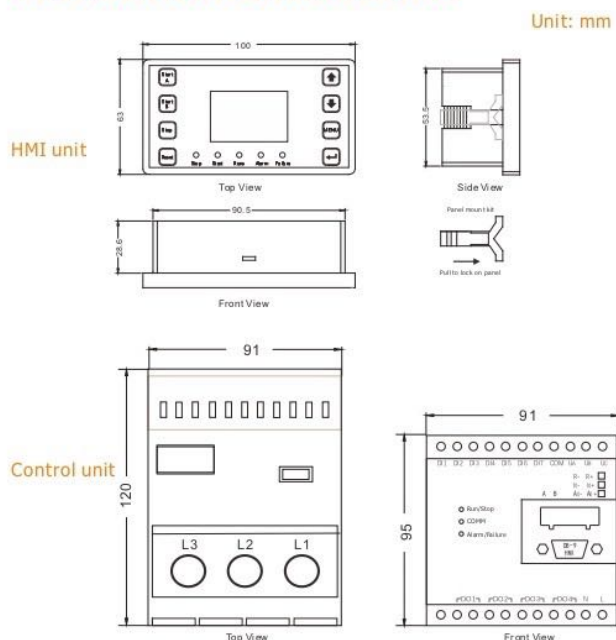
- Panel mounting HMI unit and Din-rail mounting control unit.
- Suit for Motor under 0.66KV and any current range.
- HMI unit provide 3-phase current voltage monitors, Power Measurement.
- Control unit build in 200A CT, out of range use ..1/5A CT connect.
- Abundant protection modes can be freely selected to alarm or trip.
- Can selected a variety of startup modes for different wiring application.
- RS-485 network communications.
- 4 digital outputs, and 7 digital inputs.
- Optional 1 programmable analog output.



Technical characteristics

IEEE / ANSI C37.2	PROTECTION FUNCTIONS
48	Max. Start Time
49, 51	Overload
51	Increased safety motors overload
51R	Over Current Level 1 - Jam
47	Phase loss
46	Current imbalance
50G/N, 51G/N	Ground fault
50	Over Current Level 2 - Short
32L	Under Power
38	Over temperature
59	Over voltage
27	Undervoltage
81U/81O	Abnormal frequency
55	Lead / Lag PF / Low Power Factor
74	Welded Contactor

Installation Dimensions



Energom-PR260

Modular motor management

Description

Energom-PR260 is modular design motor management device, accommodate more I/O modules. Flexible arrangement of motor control modes and state sensing. monitors voltage, current, and temperature to provide a comprehensive package of 22 protective functions. with integrated protection, motor control, metering, and data-logging functions.

This system is typically used to provide protection for three-phase low- and medium-voltage, medium to high-horsepower induction motors.

Features

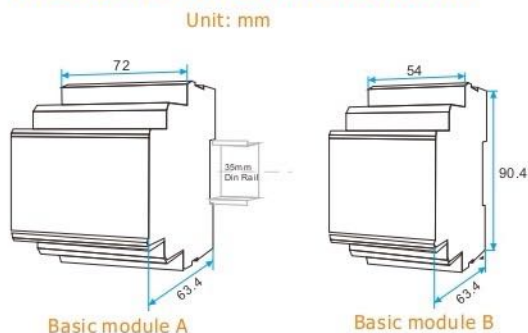
- Panel mounting HMI unit and Din-rail mounting control module.
- Suit for Motor under 0.66KV and any current range.
- HMI unit provide 3-phase current voltage monitors, Power Measurement.
- Control unit use ..5ACT connect.
- Abundant protection modes can be freely selected to alarm or trip.
- Can selected a variety of startup modes for different wiring application.
- 100 lists Waveform capture function, easy to trace back the fault.
- RS-485 network communications.
- 4 digital outputs, and 7 digital inputs.
- Optional 2 programmable analog output.
- Extra optional Modular:
 - PR-26C extra 2* RS485 or 2* Profibus-DP port;
 - PR-265 extra programmable 11*DI and 6*DO.
- Accept customerized extra function module.



Technical characteristics

IEEE / ANSI C37.2	PROTECTION FUNCTIONS
48	Max. Start Time
49, 51	Overload
51	Increased safety motors overload
51R	Over Current Level 1 - Jam
47	Phase loss
46	Current imbalance
50G/N, 51G/N	Ground fault
50	Over Current Level 2 - Short
32L	Under Power
38	Over temperature
59	Over voltage
27	Undervoltage
81U/81O	Abnormal frequency
55	Lead / Lag PF / Low Power Factor
74	Welded Contactor
86 or 94	External fault
	Data logging
	Wave capture

Installation Dimensions



PR 260	Acquisition module	B+A
PR 265	I/O Unit	A
PR 26C	Comm Unit	B

Energom-QP-X

AC Power Transducer
Three phase for DIN mounting



Description

Energom-QP-X series AC power transducer converts three phase ac signals into a load independent dc signal proportional to voltage(V), current(A), active power (watt) and reactive power (var) Frequency(Hz) etc. Three output signals combination in one transducer.

The current and voltage signals are passed into the circuit via precision instrument transformers to provide galvanic isolation between the input circuits and the transducer circuitry. Each pair of current and voltage signals is mathematically multiplied together to produce a product signal proportional to true power and independent of wave shape and phase angle.

Features

- 0.5 measurement accuracy
- RMS measurement and output
- Three phase independent measurement
- 35mm Din rail mounting
- RS485 port optional
- Max 4 channels AO signal to different equipment
- Support customized parameters

Technical characteristics

Power Signal Inputs	
Nominal input	1 or 5 Amp C.T. connected 110V, 230V, 240V, 400V, 415V ac +/-20%
Power consumption	<1 VA voltage <0.2 VA current
Overload capacity	Current: 2 times continuous, 30 times /1s . Voltage: 2 times continuous.
Frequency range	50Hz, 60Hz
Measurement Output	
Standard outputs (others on request)	4~20mA, 0~5V, 0~20mA; 5~10V; 0~10V;
Maximum load	<750 Ω (0-20 mA, 4-20 mA) >2000 Ω (voltage output)
Ripple	<1% peak to peak
Response time	<250ms 0-90% <500ms 0-99%
Measurement Accuracy	
Class	±0.2 % / ±0.5 %complying with IEC 688
Accurate range	0 - 120% I
Frequency influence	<0.02% per Hz
Load influence	<0.25% of full span for specific load range
Auxiliary Supply	
	48V, 110V, 230/240V AC 20%, 1.5VA 24V, 48V, 110V DC 20% 2W
Galvanic isolation between input, output circuits and auxiliary supply	
Test voltage	2KV RMS 50Hz for 1 minute
impulse	4KV 1.2/50µsec waveform
Temperature requirements	
Operating	-10~55C
Storage	-40~70C, 20 ~ 93%RH ; Noncondensing

Energom-QPPX

AC Programmable Transducer
Three phase for DIN mounting

Description

AC programmable transducer measures a wide range of electrical parameters and generates analog or digital output signals suitable for interfacing with instrumentation and control systems. Total four channel output, with panel key or PC control programmable, user can free to set 4 different data from max 26 electrical parameter for sampling and analog signal output.

Have three channel digital inputs and RS485-Modbus communication functionality. Can monitor the galvanically isolated DI signal and programmed the transducer with customized SCADA software, any of the measured parameters can be read out via the RS485 connection.

Features

- Accuracy 0.5 class
- 85~265VAC wide voltage AUX for most country and application
- With 4 channel output (support max 22 types parameter for analog output)
- Front panel with 4 keypad for analog parameter configuration, do not need extra configuration software.
- With RS485 port for remote electrical data
- 500ms response time
- 35mm Din rail mounting
- Advanced electrical parameter ready optional
- SOE function optional



Technical characteristics

Electrical Signal Inputs

Nominal input	1 or 5 Amp C.T. connected 110V, 230V, 240V, 400V, 415V ac +/-20%
Power consumption	<1 VA voltage <0.2 VA current
Overload capacity	1.2 times continuous 10 times /5s for current 2 times / 2sec for voltage
Frequency range	40~65Hz

Measurement Output

Standard outputs	4~20mA/ 0-20mA programmable (0~5V / 0~10V optional)
Maximum load	<390 Ω (current output) >10KΩ (voltage output)
Ripple	<1% peak to peak
Response time	<350ms 0-90% <500ms 0-99%

Measurement Accuracy

Class	0.2% / 0.5 complying with IEC 688
Accurate range	0 - 120% I
Frequency influence	<0.05% per Hz
Load influence	<0.25% of full span for specific load range

Auxiliary Supply

85~265V AC/DC 20%, 1.5VA

Galvanic isolation between input, output circuits and auxiliary supply

Test voltage	2KV RMS 50Hz for 1 minute
impulse	4KV 1.2/50μsec waveform

Temperature requirements

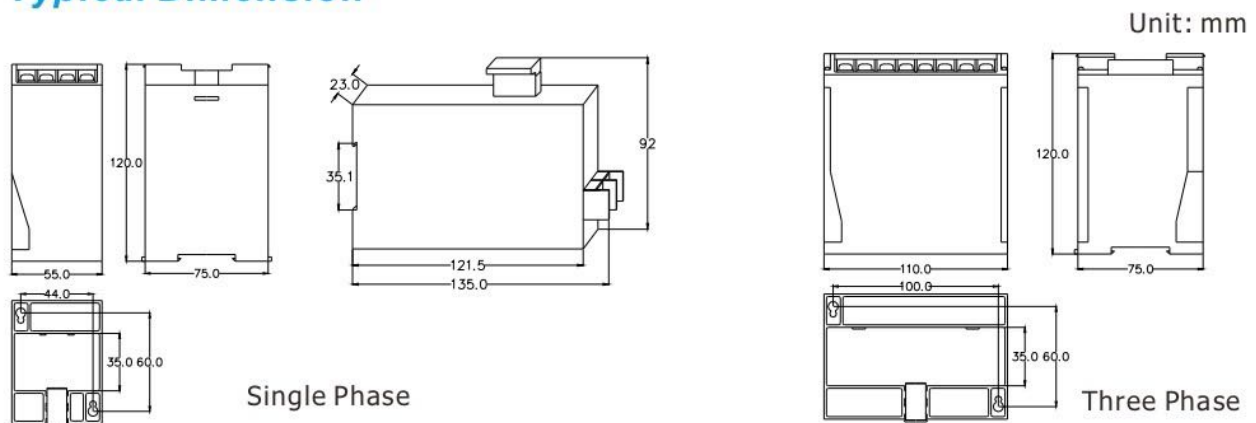
Operating	-10~55C
Storage	-40~70C, 20 ~ 93%RH ; Noncondensing

1 2-3/4 -5

Series Name	Optional Type
1 Product ID	QP: for AC grid measurement and transducer DP: for DC grid measurement and transducer
2 Input electrical signal	V: single phase voltage A: single phase current VX: three phase voltage AX: three phase current W: three phase active power K: three phase reactive power WK: three phase active & reactive power PX: three phase combination input (user free configure)
3 Input signal range	A0: Customized current input A1: 0~1A A2: 0~5A V0: Customized current input V1: 0~5V V2: 0~10V V3: 0~100V V4: 0~220V V5: 0~400V
4 Output signal range	S0: Customized current output S1: 0~20mA S2: 4~20mA S3: 0~5V S4: 0~10V
5 Power supply	P1: 85~265VAC P2: 24VDC P3: 48VDC

Notes: 1. Product specifications will change from time to time. Please contact Blue Jay for latest specifications.
2. Please confirm all the parameters with our staff before ordering.

Typical Dimension



Residual-current monitor

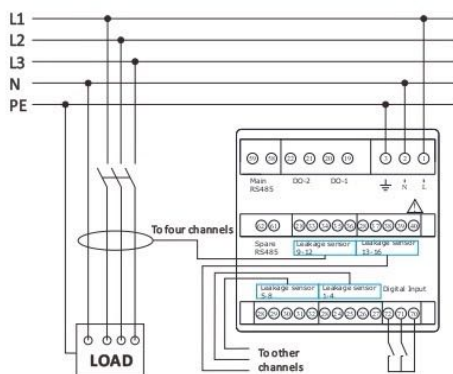
Energom-RCM-IV is a combined monitoring device for earthed power supply systems (TN-C-S, TN-S and TT) residual current. It provide max 16 monitor channels, panel mounting design suit for any electrical cabinet. LED screen display various parameters, easy for site engineer diagnosis and Insulation test

It can optionally be carried out by selected current transformer or temperature sensor for each channel detect parameter and alarm or trip threshold. Multiple Energom-RCM-IV can combination with circuit breaker for build MRCD applications, RS485 port can easy submit data to SCADA systems.

Features

- Continuous monitoring of residual currents
- Max 16 measuring channels for residual current or temperature input
- History memory with date and time stamp for 100 event data records
- Backlit graphical display (7-segment display) and indicate LEDs
- Two alarm relays, free to set alarm or trip logic
- Built-in buzzer provide sound notice when alarm triggered
- Password protection for device setting

Typical wiring



Technical characteristics

Electrical Characteristics	
Power supply	85~265Vac/dc
Consumption	<5VA
Residual current accuracy	1%
Temperature accuracy	±2°C
Data refresh rate	1sec
Binary inputs	Passive node, isolation voltage 2000VAC
Relay output	AC 250V/5A or DC 30V/5A, 2500V optocoupler isolation
Comm port	RS485 Modbus-RTU protocol, baud rate up to 19200bps
Others	
Physical dimension	96*96*75mm (L*W*H)
Protection class	IP20
Weight	0.55kg
Working environment	-10~55°C
Measurement category	CAT-III, pollution grade 2
Insulation capacity	> AC 2kV signal - power - output
Reference standard	IEC 61000-4-2, class III IEC 61000-4-3, class III IEC 61000-4-4, class IV IEC 61000-4-5, class IV IEC 61000-4-6, class III IEC 61000-4-8, class III IEC 61000-4-11, class III

Ordering selection

- Energom-RCM-16IN** 16 Residual Current sensor
- Energom-RCM-8IN8T** 8 Residual Current sensor, 8 Temperature sensor
- Energom-RCM-8IN** 8 Residual Current sensor, 8 Temperature sensor
- Energom-RCM-4IN4T** 4 Residual Current sensor, 4 Temperature sensor

Temperature Protection Relay

Energom-S digital temperature protection relay can replace the traditional bimetallic control switch, design to automatically control the install enclosure inside temperature & humidity variation within a specific range, reliable design can be used in the worst environment for long-term use. It is the ideal product to protect the normal efficient operation of electric equipment and to reduce cost.

With LED / LCD display, and optional RS485 communication port for remote monitoring. Optional customized control logic design, can be used in other place need of temperature and humidity control.

Main Features

- Standard panel size 48x48mm / 72x72mm
- Optional 35mm DIN rail (only 48X48mm mode)
- 0.39" height LED, prevent dazzle, highly visible display
- Heat/Fan control mode free to configuration
- Self calibration technology, keep stabilization
- Products package include temperature / humidity probe



Technical characteristics

Power supply:	
Standard	85~265VAC 50/60Hz
Optional	24/48DC
Power consumption	<5VA
Input signal:	
Input signal channel	Max 2 channels
Temperature sensor	NTC (-20~99C) or customer request
Humidity sensor	Digital type (0~99RH) or customer request
Sampling ratio	400ms
Control output port:	
Output channel	Max 2 channels
Relay	250VAC, 5A (10A optional)
Other port:	
Linear output	DC 4~20mA/0~5V optional
Alarm output	Passive nodes
Communication output	RS-485 MODBUS RTU, 4800/9600bauds
Other output port:	
IP protect	40
Isolation:	
Test voltage	Galvanic isolation between input, output circuits and auxiliary supply 1.5KV RMS 50 Hz for 1 minute
Ambient temperature:	
Operating	-10~55C
Storage	-40~70C, 20 ~ 93%RH ; No condensing



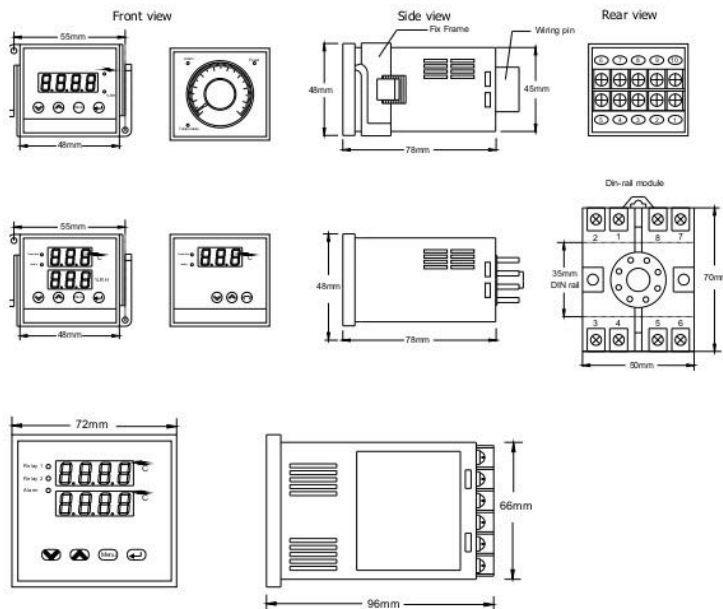
Ordering Information

Energom- S **1** - W**2**S**3**-**4**-**5**-**6**

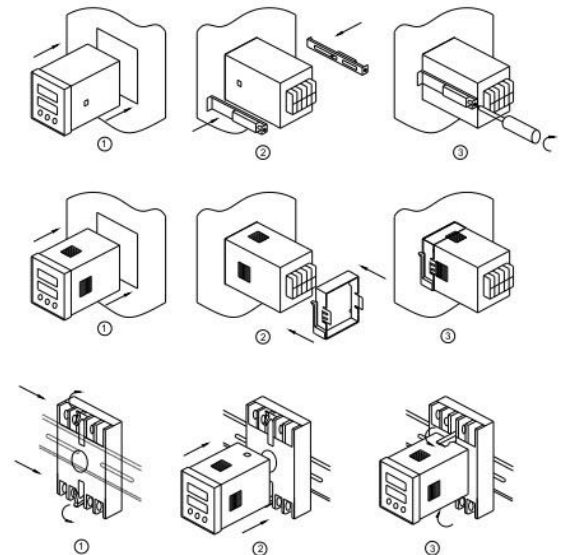
Series Name	Optional Type
1 panel size	42: For 72(W) x 72(H) x 96(D)mm Blank: standard 48(W) x 48(H) x 90(D)mm
2 temperature signal in	1: one channel temperature sensor input 2: two channel temperature sensor input
3 humidity signal in	1: one channel humidity sensor input 2: two channel humidity sensor input
4 control output	K1: one channel output K2: two channel output
5 communication port	R: one channel RS-485 communication port Blank: without this function
6 sensor type	Blank: NTC sensor(0.2% accuracy) T: thermocouple (-K, -J, -T, -E, -N, -R, -S, -B, -L, -U, -YXK) P: platinum RTD (-PT100- PT1000) L: linear signal (0~5V, 0~10V, 0~20mA, 4~20mA, 0~50mA)

Install Dimensions

Unit: mm



Install diagrams



Energom-SI-XX

Signal Isolator DIN-Rail Mounting

Description

Technology offers the industry's best selection of isolators. Dozens of models are now available to meet your needs. Select from single and dual-channel models with AC, DC, or loop-powered operation. Signal splitters deliver dual outputs from a single source. And whether you need a unit that sinks or sources current, Blue Jay has the right solution for you.

Optical or galvanic isolation eliminate ground loop errors, reduce noise, and block high voltage transient surges. Our multi-channel modules reduce costs and save space. Models with push-button calibration simplify installation and maintenance tasks. Units with mini USB port preset for 4-20mA input/output required.

Features

- Support universal Input Signal
- Provide 26...18VDC input loop power
- TC/RTD sensor broken alarm
- Low Temp. drift. Auto zero calibrating
- Loop Power current limitation protection (30mA)
- Over-current protection for input current (50mA)
- Current output can be set inverse proportional output
- Programmed by USB or adaptor
- w/o external power supply
- Back board designed with redundant power-supply interfaces



Technical characteristics

Power supply:	
Power Supply	24VDC±10%
Power Consumption	≅ 1W
I/O capacity:	
Input Types	4-20mA / 20-4mA; RTD(PT100,PT200,PT500,PT1000,Cu50); R(0-400Ω,0-4000Ω); TC(K,E,S,B,R,J,T,N); mV(-80-+80mV); V(0-1V)
Output signal types	0(4)-20mA
Response Time	< 0.4ms (0-90%,100%-10%)
Precision	±0.1%
Temp. Drift	0.01% per Celsius
Volt fluctuation influence	±0.005% X span / below V DC
Load Capacity	< 350Ω
Isolation:	
Insulation Resistor	>100MΩ / 500V between the input / output
Isolation Strength	AC2500v 1min between the input / output
Other:	
Ambient Temp. / Humi.	-40 ~ 85 C / ≅ 95% RH
Calibrating Ambient Temp.	25±2 C
Dimensions	113 X 109 X 17.5mm
Terminal Wiring Way	Screw
Comm Interface	Mini USB
Standard	EN61326 : 1997+A1: 1998+A2 : 2001+A3 : 2003
LED Indicator	Normally lighting indicates power supplied and working normally, blinking indicates digital communication is under way.

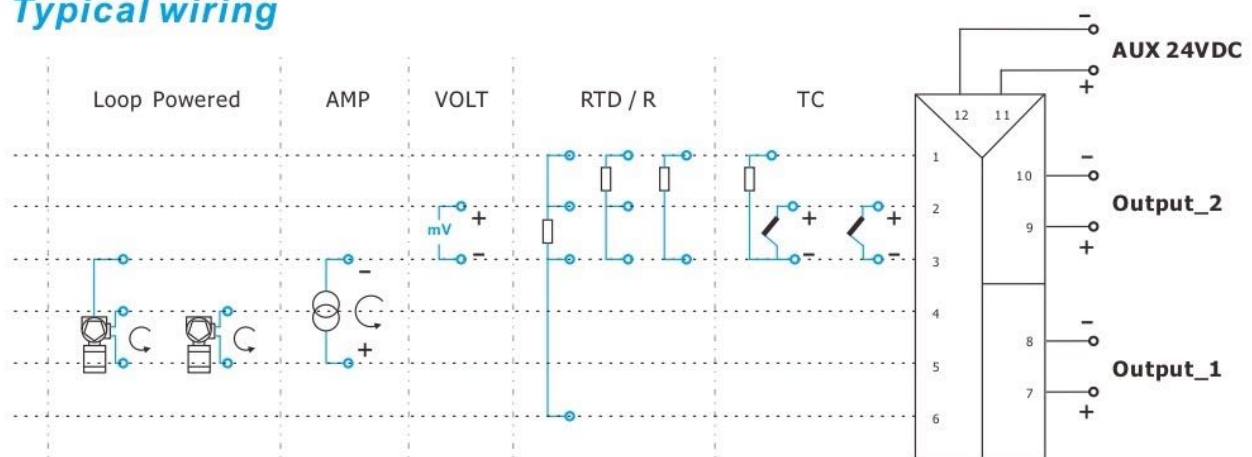
Energom-SI 1 2 3

Series Name	Optional Type
1 Input signal channel	1: Only one channel input 2: Dual channel input
2 Output signal channel	1: Only one channel output 2: Dual channel output
3 Input signal type	A: 0(4)-20mA B: 0(4)-20mA (with out input loop powered) T: TC(K,E,S,B,R,J,T,N); mV(-80-+80mV); V(0-1V) R: RTD(PT100,PT200,PT500,PT1000,Cu50); R(0-400Ω,0-4000Ω) Blank: Universal Input Signal

Convert Accuracy

Probe Type	Range	Minimum range	A/D accuracy	Conversion Accuracy	
TC	K	-270~1372C	100C	0.3C	1C or 0.1%
	E	-270~1000C	100C	0.25C	1C or 0.1%
	S	-50~1768C	500C	1C	2C or 0.1%
	B	400~1820C	500C	2C	2C or 0.1%
	R	-50~1768C	500C	1C	2C or 0.1%
	J	-210~1200C	100C	0.25C	1C or 0.1%
	T	-270~400C	100C	0.25C	1C or 0.1%
	N	-270~1300C	100C	0.4C	1C or 0.1%
RTD	PT100 / PT200	-200~850C	50C	0.15C	0.2C or 0.1%
	PT500 / PT1000				
	Cu50	-50~150C	50C	0.2C	0.2C or 0.1%
R	/	0~400Ω	10Ω	0.12Ω	0.1Ω or 0.1%
		0~4000Ω	100Ω	1Ω	1Ω or 0.1%
mV	/	+80mV ~ -80mV	3mV	12uV	0.10%
Volt	/	0~1V	100mV	0.25mV	0.25mV or 0.1%
Ampere	/	0~20mA	5mA	8uV	8uA or 0.1%

Typical wiring



Energom-WSDP

RS485

Temperature transducer

Description

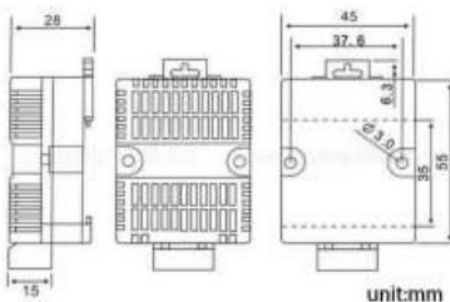
Energom-WSDP is a very reliable temperature and humidity transducer; it for multi-use of measurement application.

ABS enclosure with vents, can be directly installed on the rail. Energom-WSDP support standard Modbus-RTU protocol, can easy access exsiting SCADA system.

Features

- Industrial-grade MCU and high precision sensor.
- Realize low-temperature and humidity status online monitoring.
- RS485 communication port, MODBUS-RTU protocol.
- Wide Range non-polar DC Auxiliary Power Supply.

Dimension



Technical characteristics

Working power

Power supply	9~28VDC (default DC12V) Accept customized power range
Consumption	<0.1W

Measurement and ability

Temperature range	WSDP-1: -40-80°C WSDP-2: -20-60°C WSDP-3: 0-50°C
Humidity range	0-100% RH
Accuracy	Temperature: $\leq \pm 0.3^\circ\text{C}$ @25°C Humidity: $\pm 3\% \text{RH}$ @(20-90%RH, 25°C)
Response	Less than 2sec

Communication

Port	RS485 MODBUS-RTU
Baud Rate	9600
Default address	1

Other

Enclosure material	ABS
Dimensions	65*46*29mm (L*W*H)
Installation method	Din-rail installation (standard 35mm)

Other styles



Energom-ZP-02

Head mounted
Temperature transducer

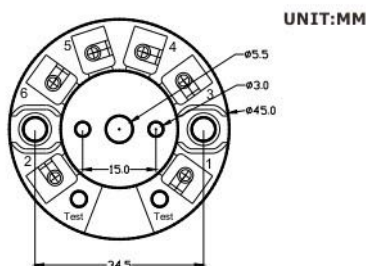
Description

The Energom-ZP series Temperature Transmitter is designed to meet common Single Point measurement application requirements. This transmitter can easily work with a variety of sensors (RTDs and thermocouples) and thermowells. It provided in a head mount configuration suitable for installation in a wide variety of connection heads and housings. A PC-programmable interface is available, providing an easy-to-use configuration method from any PC.

Features

- Support variety of sensors:
TC(K,E,S,B,R,J,T,N);
RTD (PT100,PT200,PT500,PT1000,Cu50);
R(0-400Ω,0-4000Ω)
mV(-80+80mV)
- Input 2, 3, 4 wire RTDs, thermocouple, millivolt, ohm
- Support programmable setting
- Current output can be set inverse ratio output
- Input/output isolation tested to 500 Vac rms
- Less than 1 seconds update time
- Less than 5sec response time for sensor short/fusing alarm
- Custom alarm and saturation levels

Dimension



Technical characteristics

Power supply:

Power Supply	8VDC~30VDC
Min. Working Voltage	8.5VDC

Measurement:

Output signal types	4-20mA / 20-4mA
Response Time	< 1S (0-90%,100%~10%)
Precision	±0.05%
Temp. Drift	0.01% per Celsius
Volt fluctuation influence	±0.005% X span / below V DC

Cold junction compensation:

Internal CJC	±1C
External CJC	PT100

Isolation:

Insulation Resistor	> 100MΩ / DC500V between the input / output
Isolation Strength	AC1500v 1min between the input / output
Broken Alarm Detecting	act in 5μA

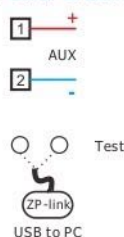
Input signal:

Load Capacity	RL=(U-8.0v) / 0.022A
Input Detecting Current	0.2mA(2w/3w/4w)
Input impedance	>5M ohm

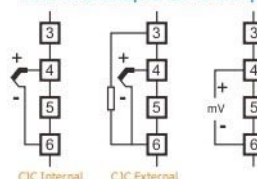
Other:

Ambient Temp. / Humi.	-40 ~ 85 C / ≅95% RH
Calibrating Ambient Temp.	25±2 C
Dimensions	Φ45mm x 20mm
Terminal Wiring Way	Screw
Comm Interface	Double pins interfaces

Power & COMM



Thermocouple & volt input



Thermal resistance

