Introductuion

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.

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

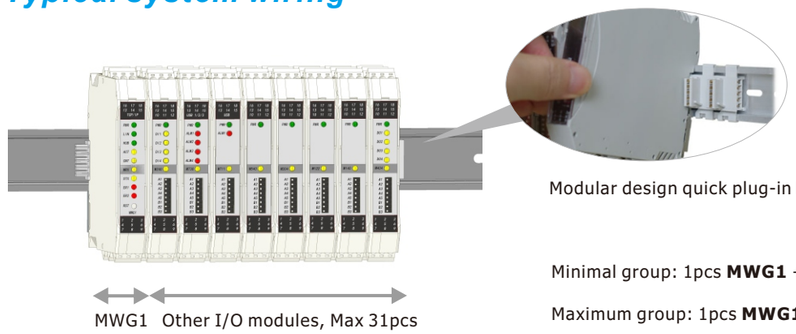
Features

- 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	MWG1 ≦ 1W, other module ≦ 3W
Group capacity:	
Analog input	Max 60 channels
Digital input	Max 60 channels
Analog output	Max 60 channels
Digital input	Max 60 channels
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	Mini USB
Standard	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

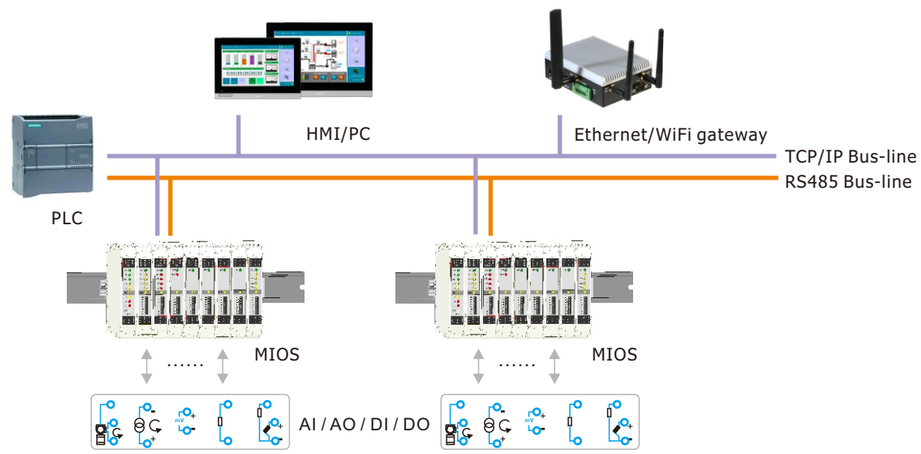
Minimal group: 1pcs **MWG1** + 1pcs **I/O module**

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

Module selection chart

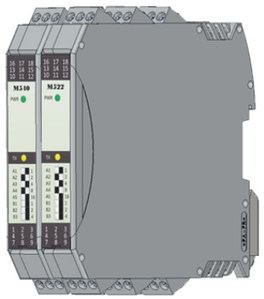
Module Code	Module Type	Description
MWG1	Core control unit	RJ45* 1, Built-in Webseve RS485 Master* 1, RS485 Slave* 1 AUX: 24Vdc, support Din-rail kit power other modules
M122	Analog input	2* current input, 2* current output
M140	Analog input	4* current input
M240	Digital input	4* input
M304	Analog output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

Typical system network



M140/M540

4 channels
Analog Input Module

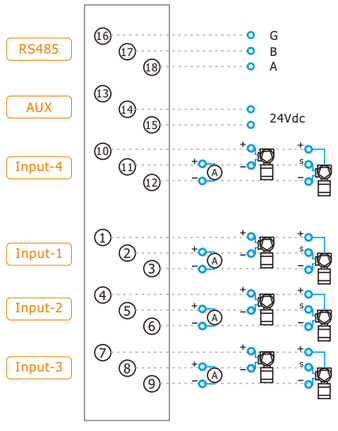


Description

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

Typical wiring



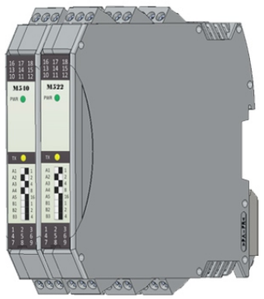
	I	II	III
M140	✓		
M540	✓	✓	✓

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.

M122/M522

2 channels Analog Input
2 channels output Module

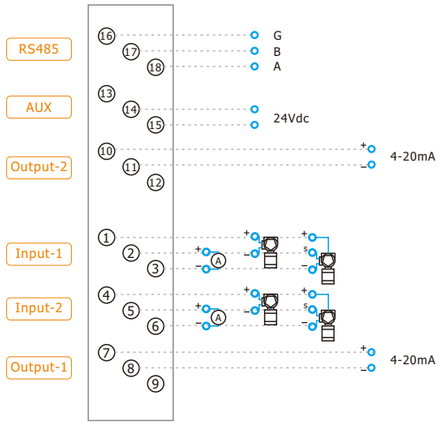


Description

The analog input module provides isolation between 2-channels current inputs, 2-channels current outputs, power, and network circuits. 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



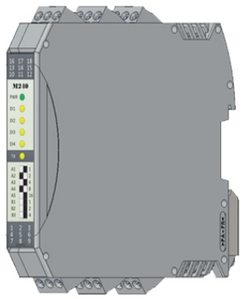
	I	II	III	IV
M122	✓			✓
M522	✓	✓	✓	✓

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.

M240

4 channels Digital Input Module



Description

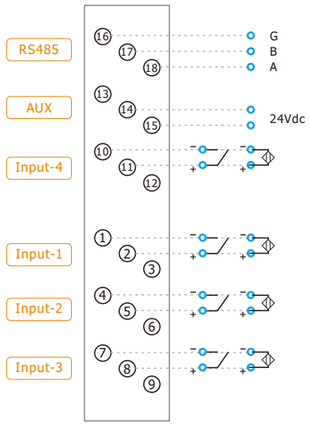
The digital input module provides isolation between 4-channels discrete signal inputs, power, and network circuits.

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

Technical characteristics

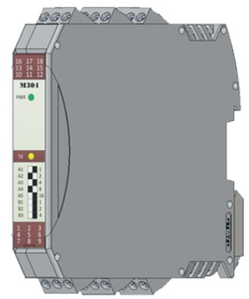
Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	≦ 1.5W
I/O capacity:	
Valid input	Digital (Discrete) *4
Response Time	< 10ms
Input Resistance	3 K ohms
Detect loop power	~8V (OC output)
Isolation:	
Insulation Resistor	>100MΩ / 500V between the input / output
Optical Isolation	AC1500 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



M304

4 channels Analog Output Module



Description

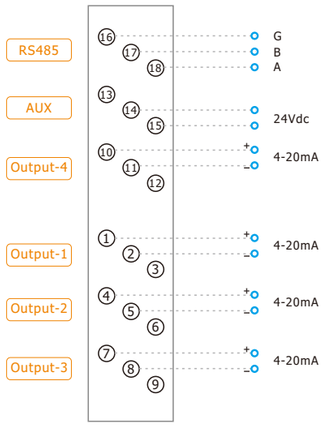
The analog output module provides isolation between 4-channels current outputs, power, and network circuits.

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

Technical characteristics

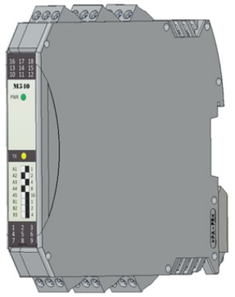
Power supply:	
Power Supply	15~30Vdc or 10~24Vac
Power Consumption	≦ 2.5W
I/O capacity:	
Valid output range	4-20mA *4 (Full input range 0-22mA)
Response Time	< 200ms
Accuracy	±0.05% F.S. (Calibrating Temp. 25±2 C)
Zero Drift	Auto Calibration
A/D resolution	24 bit
Output Impedance	360Ω
Output Resolution	≦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.

Typical wiring



M404

4 channels Digital Output Module

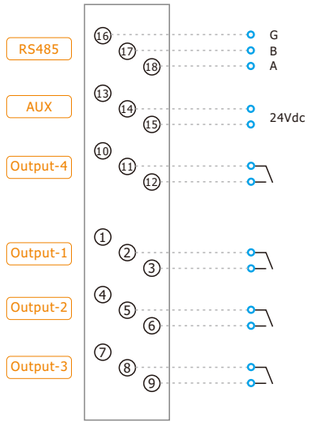


Description

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 MWG1 to build remote I/O DAS system.

Typical wiring

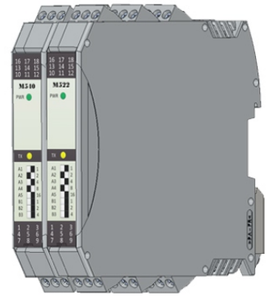


Technical characteristics

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.

M711/M730

Temperature signal I/O Module

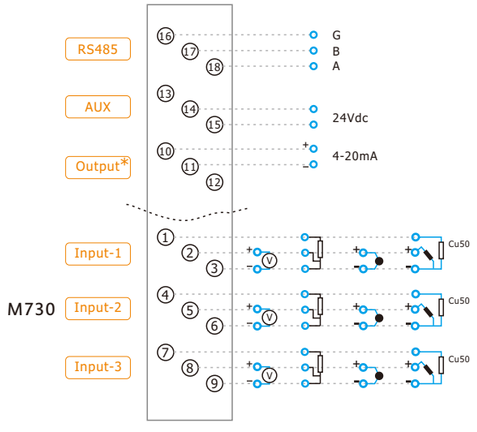


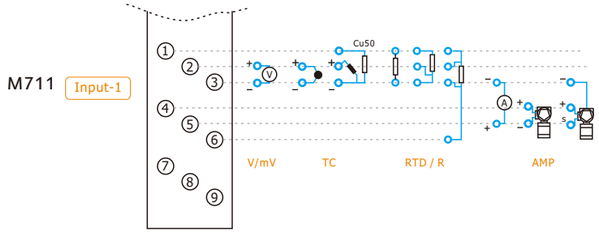
Description

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 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	10MΩ
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