

LSAIM05 AI module

LS communication RTD inputs : 4 Pt100/Cu10

■ Summary



- * Number of inputs : 4 : Resistance temperature input
(3 wire type, 4 wire type compatible, channel individual isolation)
- * Input range : Pt100 ; -100 to 850°C (Wide)
Pt100 ; -40 to 60°C (Narrow)
Cu10 ; 0 to 130°C
- * Module ambient temperature : -5~60°C
- * Insulation method : Photocoupler insulation

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Specifications

ITEM				SPECIFICATION		
Input	Number of channels			4 (3 wire type, 4 wire type compatible, channel individual isolation)		
	Resolution			16bits		
	Range(Full Scale)			Pt100(60.26 to 390.48Ω) -100 to 850°C(Wide)	Pt100(84.27 to 123.24Ω) -40 to 60°C(Narrow)	Cu10; 0 to 130°C(9.035 to 14.055Ω)
Data refresh cycle				50ms/All channels	50ms/All channels	50ms/All channels
Absolute accuracy @25°C		4 wire type & 3 wire type		±0.75°C	±0.1°C	±0.3°C
Temperature drift @-5 to 60°C (Relative to full-scale)	4 wire type			Less than ±100ppm/°C	Less than ±200ppm/°C	Less than ±250ppm/°C
	3 wire type			Less than ±100ppm/°C	Less than ±333ppm/°C	Less than ±500ppm/°C
CMRR	RTD	4W-Pt100 0 (Wide)	When voltage	100dB or more attenuation		
			When Current	100dB or more attenuation		
		4W-Pt100 0 (Narrow)	When voltage	100dB or more attenuation		
			When Current	100dB or more attenuation		
		4W-Cu10	When voltage	100dB or more attenuation		
			When Current	100dB or more attenuation		
NMRR	RTD		20dB or more attenuation			
Wiring resistance		One wiring neighborhood		Less than 5 Ω (At 850°C in Wide range)		Less than 2 Ω (4wire type) Less than 1 Ω (3wire type)
Input filter				Software digital filter (Channel individual)		
Dielectric strength				AC500V input terminal - between PE Between input channels		
Communication with IOA	Communicaton method			LVDS		
	Communication speed			100Mbps		
Self-diagnostic functions				Power voltage check (24V, 3.3V, 1.2V) Clock check (FPGA-MCU for diagnosis, MCU for diagnosis -FPGA) Heartbeat check (FPGA-MCU for diagnosis, MCU for diagnosis -FPGA) CRC check (FPGA) AI communication error check		
Detective				ADC abnormal check I/O signal range check (Overrange , Underrange)		
When disconnected				Simultaneous detection of underrange and ove range		
Protection		(Power supply protection)		Overvoltage protection Overcurrent protection		
Indicator	Display LED			4 : RUN(Run) / STS(Status) /NSA(Network status A) / NSB(Network status B)		
Insulation method				Photocoupler insulation		
Hot swap				Possible		
Power supply				DC24V ±20% (The voltage supplied from the backplane)		
Environmental conditions	Module ambient temperature			(Operating) -5 to 60°C (Storage) -40 to 85°C		
	Module ambient humidity			Less than 95%RH (No condensation)		
Vibration				3.5mm @5 to 8.4Hz 1G @8.4 to 150Hz		
Shock				15G 11ms		
Current consumption				Less than 68mA		
Weight				0.10kg		
Dimensions				62mmD x 94mmH x 46mmW (Except projection)		
Standard/Directive				IEC61131-2 : 2007, RoHS		

*About compliant module type

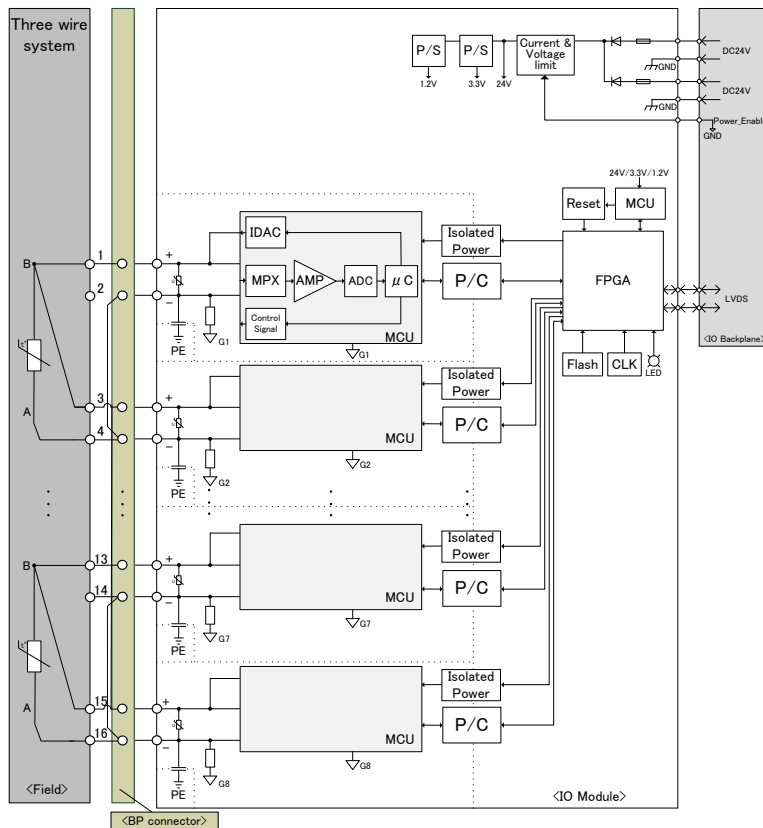
For compliant modules of this product, please refer to “Compliant backplane list (CGS-S9901-E-XX)”.

For compliant modules of this product, please refer to “Compliant accessory connector list (CGS-S9902-E-XX)”.

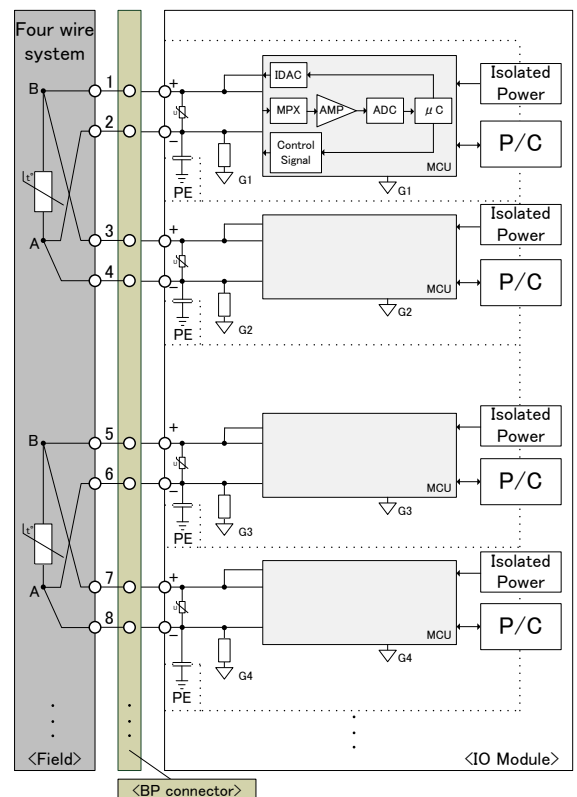
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Block diagram



P/S	: Power supply
IDAC	: Iout Digital analog converter
MPX	: Multiplexer
AMP	: Amplifier
ADC	: Analog digital converter
μ C	: Micro controller
CLK	: Clock
FPGA	: Field programmable gate array
LED	: Light emitting diode
MCU	: Micro control unit
GND,G1~G8	: Ground
IOA	: I/O adapter
LVDS	: Low Voltage Differential Signaling
BP	: Backplane
PE	: Protective Earth
P/C	: Photocoupler
	: Varistor
	: Resistor
	: Fuse
	: Diode
	: Thermistor
	: Capacitor



When using, please read the instruction manual attached to the product carefully and use it properly.

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