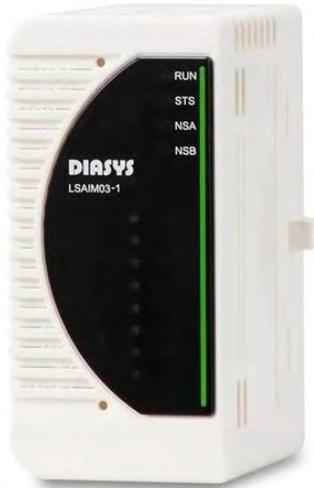# MITSUBISHI POWER

LSAIM03-1   AI module

LS communication   Analog inputs : 8   1 to 5 V/0 to 5 V

■Summary

✱Number of inputs	:	8 (Channel individual isolation)
✱Input range	:	1 to 5 V/0 to 5 V (Selectable)
✱Absolute precision	:	±0.1% FS @25°C
✱Temperature drift	:	±100 ppm/°C or less
✱Module operating ambient temperature	:	-5 to 60°C
✱Insulation method	:	Photocoupler insulation

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CGS-S5109-E-01 (2025.10.31)
SL : 1   ECT : N/A

LSAIM03-1 AI module

LS communication　Analog inputs : 8　1 to 5 V/0 to 5 V

■Specifications

ITEM		SPECIFICATION
Input	Number of channels	8 (Channel individual isolation)
	Range	1 to 5 V*[1] / 0 to 5 V (Selectable for communication setting) (Full Scale)
	Internal impedance	320 kΩ or more
	Resolution	16 bits
Absolute accuracy	@25℃	±0.1% FS
Temperature drift	@-5 to 60℃	±100 ppm/°C or less (relative to full-scale)
CMRR		100 dB or more attenuation
NMRR		About 11 dB attenuation (When the first-order lag filter is set to 10 ms or more, attenuation by 20 dB or more)
Data refresh cycle		10 ms
Input filter		Software digital filter (Channel individual)
Dielectric strength		AC 500 V input terminal - between PE 　　　　　　Between input channels
Communication with IOA	Communicaton method	LVDS
	Communication speed	100 Mbps
Self-diagnostic functions		Power voltage check (4V, 3.3V, 2.5V, 1.8V, 1.0V) 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)
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		DC 24 V ±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	(Operating / Storage) 10 to 95% RH (No condensation)
Vibration		3.5 mm @5 to 8.4 Hz 1 G @8.4 to 150 Hz
Shock		15 G 11 ms
Rated Current		80 mA
Weight		0.12 kg
Dimensions		62 mm (D) x 94 mm (H) x 46 mm (W) (Except projection)
Standard/Directive		EN 61131-2:2007, RoHS

About compliant module type

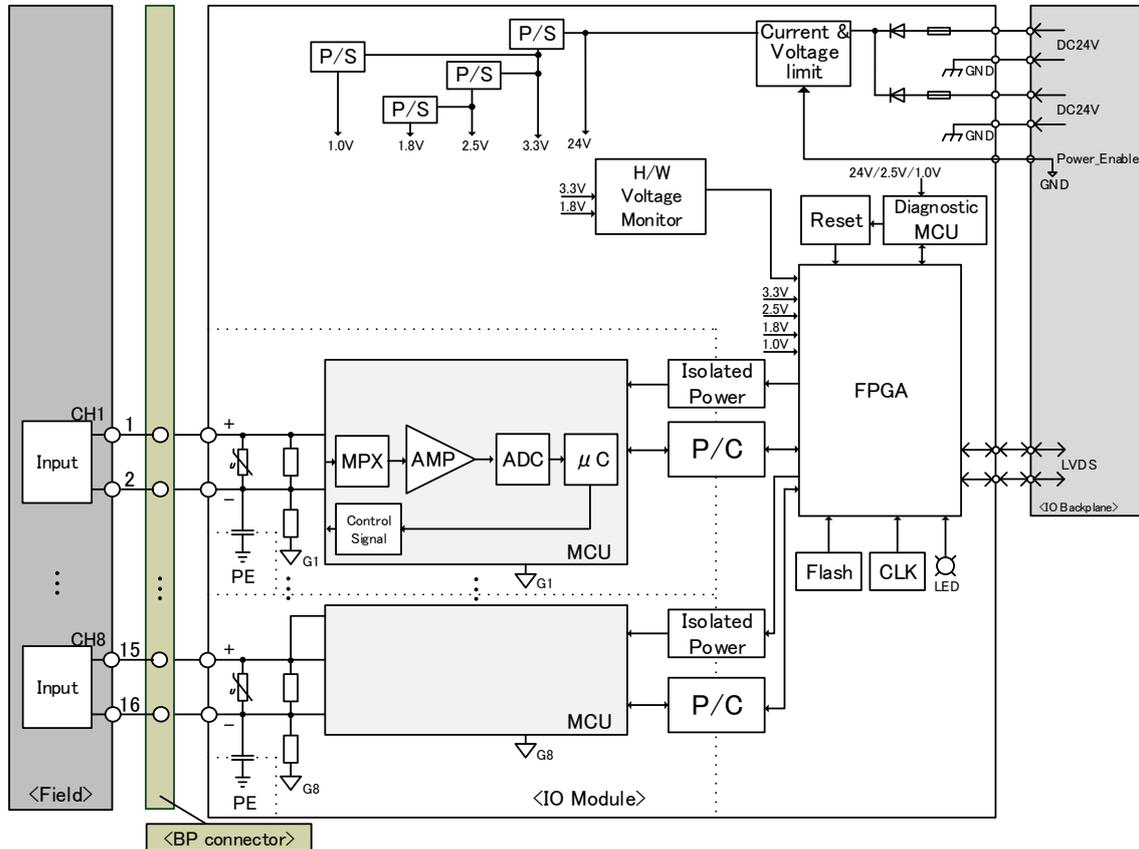　For compliant modules of this product, please refer to ″ Compliant backplane list (CGS-S9901-E-XX) ″.

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

*[1] :The configuration to convert 4-20 mA to 1-5 V via 250 Ω and input is prohibited as the error will exceed the specified value.

MITSUBISHI POWER

LSAIM03-1 AI module
LS communication Analog inputs : 8 1 to 5 V/0 to 5 V

■Block diagram

P/S	:	Power supply
MPX	:	Multiplexer
AMP	:	Amplifier
ADC	:	Analog digital converter
μC	:	Micro controller
CLK	:	Clock
FPGA	:	Field programmable gate array
LED	:	Light emitting diode
MCU	:	Micro control unit
GND,G1 to G8	:	Ground
IOA	:	I/O adapter
LVDS	:	Low Voltage Differential Signaling
BP	:	Backplane
PE	:	Protective Earth
P/C	:	Photocoupler
(varistor symbol)	:	Varistor
(resistor symbol)	:	Resistor
(fuse symbol)	:	Fuse
(diode symbol)	:	Diode
(capacitor symbol)	:	Capacitor

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