

# LSVIM01 Vibration Interface module

LS communication Vibration pressure variation , Combustor vibration input , FFT analysis

## ■ Summary



### \*Vibration interface module input / output

Terminal block input / output unit

- Analog input (1 to 5 V) : 8

Panel I/O connector

- Auxiliary input(Analog) (1 to 5 V) : 2

- Digital output (Open collector) : 2

- Serial communication : 2

### \*USB connector (For maintenance)

- For maintenance communication mini-B : 1

### \*Indicator

- Display LED (RUN / STS / NSA / NSB) : 4

- General purpose display LED : 16

\*Module operating ambient temperature range : -5 to 60°C

## ■ Overview Specifications

ITEM	SPECIFICATION
Analog input	8 1 to 5 V
Auxiliary input(Analog)(Panel I/O)	2 1 to 5 V
Digital output(Panel I/O)	2 DC 30 V
Serial communication	2 RS232C level
USB connector(For maintenance)	1 For maintenance communication mini-B
Self-diagnostic functions	Watchdog timer, MCU communication monitoring, Flash access monitoring, Clock monitor, Power-supply voltage(Low / High), CRC check
IDOL Implementation	Possible
Indicator	Display LED × 4: Run / Status / Network status A / Network status B Channel State LED × 16: Ch 1 to Ch 16 Arbitrarily set by internal logic
Dielectric strength	AC 500V Analog input terminal (Terminal block) - PE AC 500V Analog input terminal (Panel I/O) - PE AC 500V Digital output terminal (Panel I/O) - PE AC 500V RS232C Serial communication (Panel I/O) - PE
Environmental conditions	Ambient temperature (Operating / Storage) -5 to 60°C Ambient humidity (Operating / Storage) 0 to 95% RH (No condensation)
Operating power supply	DC 24 V ±20% Dual power reception (The voltage supplied from the backplane)
Shock / Vibration	15 G 11 ms / 3.5 mm @5 to 8.4 Hz, 1 G @8.4 to 150 Hz
Dimensions	62 mm (D) x 94 mm (H) x 46 mm (W) (Except projection)

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## ■ Specifications

ITEM		SPECIFICATION	
Terminal block	Analog input	Number of channels	8 (Channel Individual Isolation)
		Input range	1 to 5 V
		Signal filter	Cutoff frequency 20 kHz (Input frequency characteristics $\pm 0.2$ dB @ DC to 10 kHz)
		Input impedance	More than 100 k $\Omega$
		Input frequency range	0 to 10 kHz
Panel I/O	Auxiliary input(Analog)	Number of channels	2 (Common)
		Input range	1 to 5 V / 12 bit
		Input impedance	More than 100 k $\Omega$
	Digital output	Number of channels	2 (Common)
		Applied maximum voltage	DC 30 V
		Maximum load current	0.1 A
		Leakage current when OFF	0.1 mA or less
	Serial communication	Number of channels	2 (Common)
		Interface	RS232C level
		Maximum communication speed	115200 bps
USB connector(For maintenance)		1 (For maintenance communication mini-B)	
Calculation cycle usable in NPS		More than 50 ms	
Dielectric strength		AC 500 V Analog input terminal (Terminal block) - PE AC 500 V Analog input terminal (Panel I/O) - PE AC 500 V Digital output terminal (Panel I/O) - PE AC 500 V RS232C Serial communication (Panel I/O) - PE	
Self-diagnostic functions		Watchdog timer MCU communication monitoring Flash access monitoring Clock monitor Power-supply voltage (Low / High) CRC check	
Protective function		Overvoltage protection Overcurrent protection	
Indicator		- Display LED (RUN / STS /NSA / NSB) - Channel State LED (Arbitrarily set by internal logic)	
Current consumption		179 mA	
Weight		0.14 kg	
Dimensions		62 mm (D) x 94 mm (H) x 46 mm (W) (Except projection)	
Insulation method		Analog input Analog input terminal (Terminal block): Transformer insulation Analog input terminal (Panel I/O): Digital Isolator Isolation Digital output terminal (Panel I/O): Photocoupler insulation RS232C Serial communication (Panel I/O): Digital Isolator Isolation	
Hot swap		Possible	
Power supply		DC 24 V $\pm 20\%$ (The voltage supplied from the backplane)	
Environmental conditions	Module ambient temperature	(Operating / Storage) -5 to 60°C	
	Module ambient humidity	(Operating / Storage) 0 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	
Standard/Directive		IEC61131-2:2007, RoHS	

\*About compliant module type

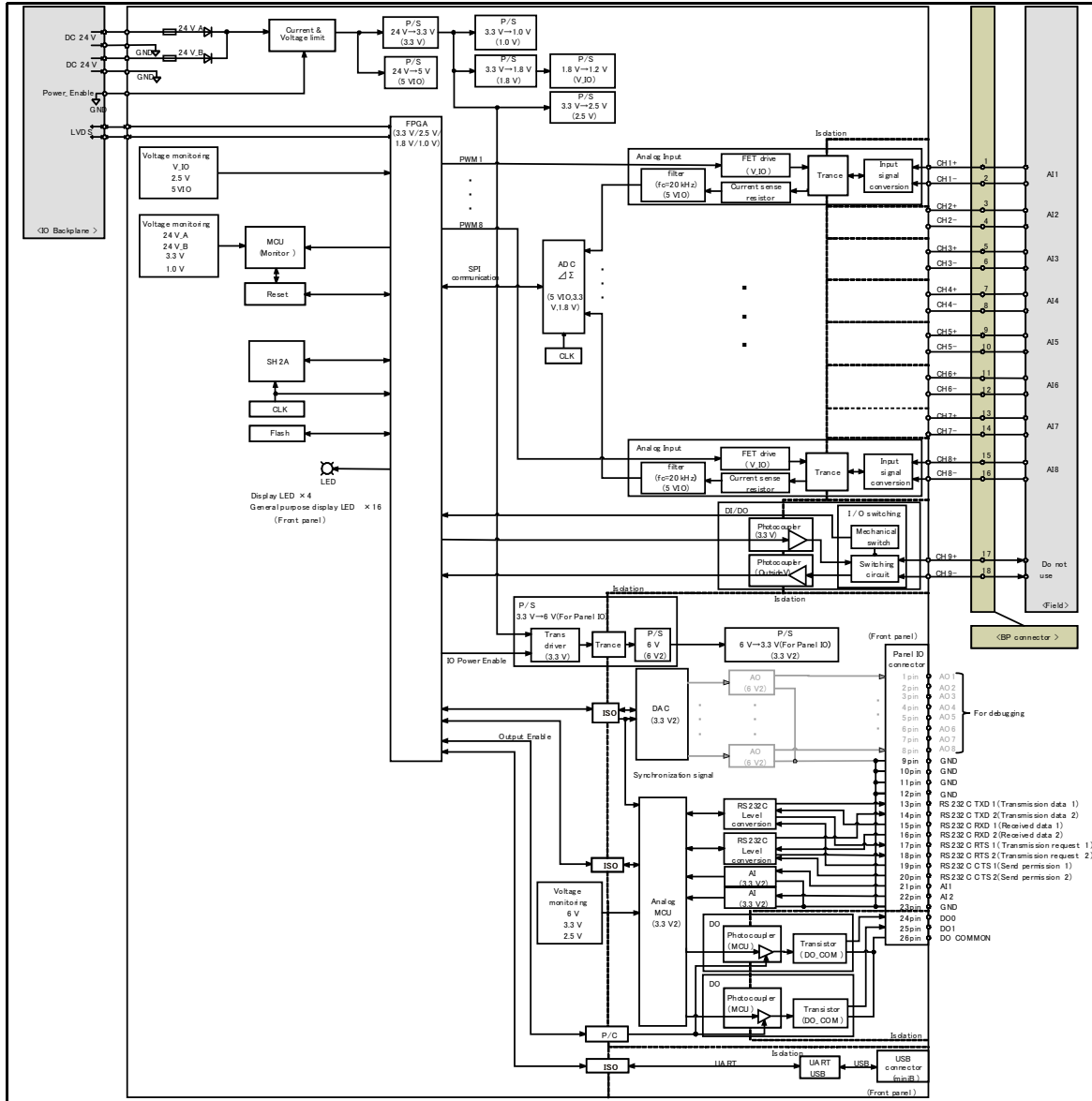
For compliant modules of this product, please refer to "Compliant backplane list (CGS-S9901-E-XX)".



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	MCU	: Micro control unit
SH2A	: Renesas SH-2A micro processor	FPGA	: Field programmable gate array
CLK	: Clock generation circuit	LED	: Light emitting diode
ISO	: Digital isolator	ADC	: Analog digital converter
DAC	: Digital analog converter	Flash	: Flash ROM
LVDS	: Low Voltage Differential Signaling	BP	: Backplane
PWM	: Pulse width modulation	DAC	: Digital analog converter
AMP	: Amplifier	AI	: Analog Input
P/C	: Photo Coupler	AO	: Analog Output
N.C	: No Connection	DO	: Digital Output
	: Fuse		: Diode

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

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