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 5V) : 8

Panel I/O connector
・Auxiliary output(Analog) (1 to 5V) : 8
・Auxiliary input(Analog) (1 to 5V) : 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℃

■Overview Specifications

ITEM	SPECIFICATION
Analog input	8 1 to 5V
Auxiliary output(Analog)(Panel I/O)	8 1 to 5V
Auxiliary input(Analog)(Panel I/O)	2 1 to 5V
Digital output(Panel I/O)	2 DC30V
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 : Ch1 to Ch16 Arbitrarily set by internal logic
Dielectric strength	AC500V Analog input terminal (Terminal block) - PE AC500V Analog output terminal (Panel I/O) - PE AC500V Analog input terminal (Panel I/O) - PE AC500V Digital output terminal (Panel I/O) - PE AC500V RS232C Serial communication (Panel I/O) - PE
Environmental conditions	(Operating) Ambient temperature : -5 to 60℃ Ambient humidity : 10 to 95%RH (No condensation) (Storage) Ambient temperature : -40 to 85℃ Ambient humidity : 10 to 95%RH (No condensation)
Operating power supply	DC 24V±20% Dual power reception(The voltage supplied from the backplane)
Shock / Vibration	15G 11ms / 3.5mm @5 to 8.4Hz , 1G @8.4 to 150Hz
Dimensions	62mmD x 94mmH x 46mmW (Except projection)

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■Specifications

ITEM			SPECIFICATION	
Terminal block	Analog input	Number of channels	8 (Channel Individual Isolation)	
		Input range	1 to 5V	
		Signal filter	Cutoff frequency 20kHz (Input frequency characteristics±0.2dB @ DC to 10kHz)	
		Input impedance	More than 100kΩ	
		Input frequency range	0 to 10kHz	
Panel I/O	Auxiliary output(Analog)	Number of channels	8(Common)	
		Input range	1 to 5V	
		Load resistance	More than 10kΩ	
	Auxiliary input(Analog)	Number of channels	2(Common)	
		Input range	1 to 5V / 12bit	
		Input impedance	More than 100kΩ	
	Digital output	Number of channels	2(Common)	
		Applied maximum voltage	DC30V	
		Maximum load current	0.1A	
		Leakage current when OFF	0.1mA or less	
	Serial communication	Number of channels	2(Common)	
		Interface	RS232C level	
		Maximum communication speed	115200bps	
USB connector(For maintenance)			1(For maintenance communication mini-B)	
Calculation cycle usable in NPS			More than 50ms	
Dielectric strength			AC500V Analog input terminal (Terminal block) - PE AC500V Analog output terminal (Panel I/O) - PE AC500V Analog input terminal (Panel I/O) - PE AC500V Digital output terminal (Panel I/O) - PE AC500V 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			0.14kg	
Dimensions			62mmD x 94mmH x 46mmW (Except projection)	
Insulation method			Analog input Analog input terminal (Terminal block) : Transformer insulation Analog output terminal (Panel I/O) : Digital Isolator Isolation AC500V 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			DC24V ±20% (The voltage supplied from the backplane)	
Environmental conditions		Module ambient temperature	(Operating) -5 to 60℃	(Storage) -40 to 85℃
		Module ambient humidity	10 to 95%RH (No condensation)	
Vibration			3.5mm @ 5 to 8.4Hz 1G @ 8.4 to 150Hz	
Shock			15G 11ms	
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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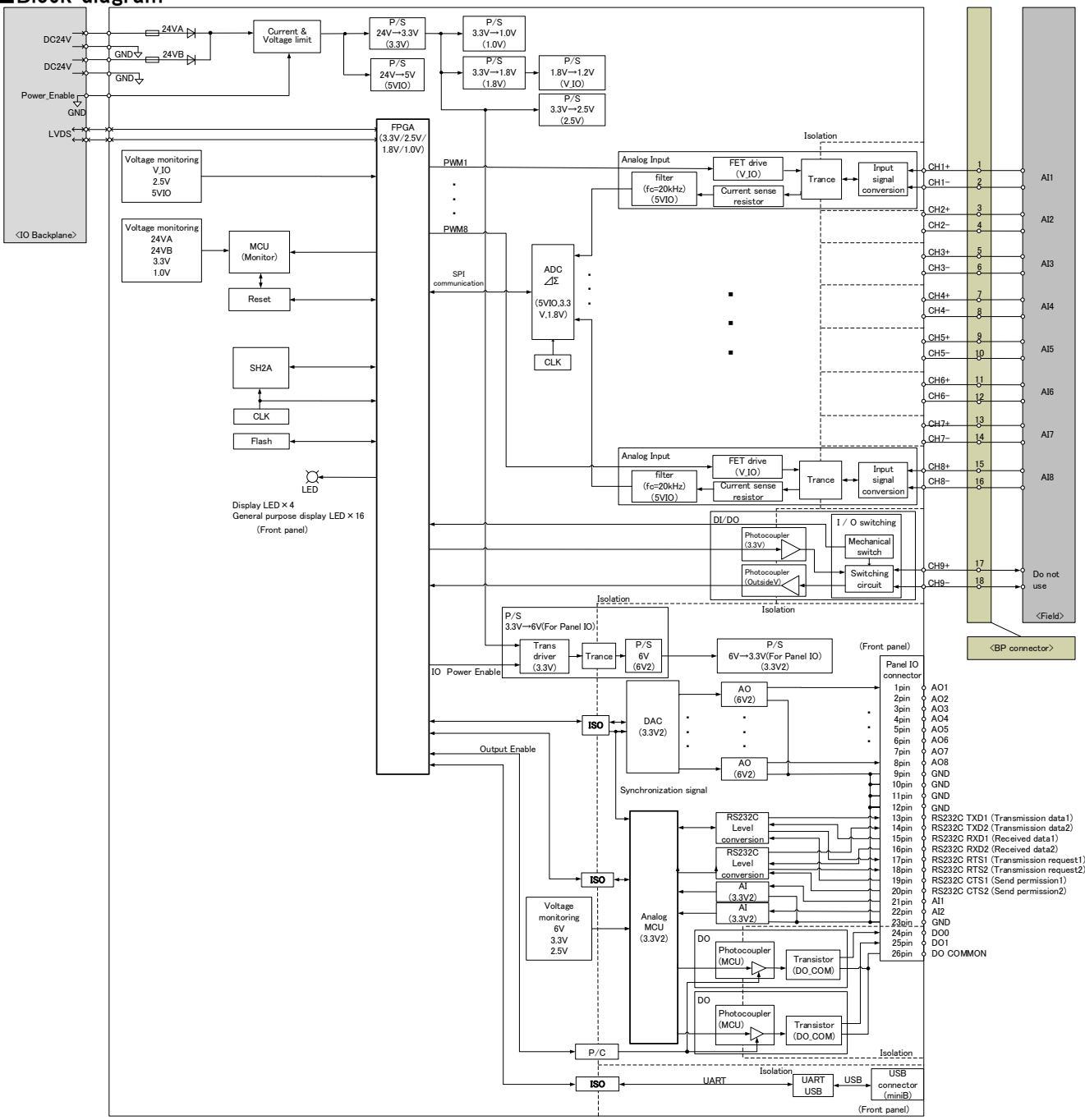
■Block diagram



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.