

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 ± 0.2 dB @ DC to 10 kHz) |
| | | Input impedance | More than 100 k Ω |
| | | 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 Ω |
| | 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 | | EN 61131-2:2007, RoHS | |

About compliant module type

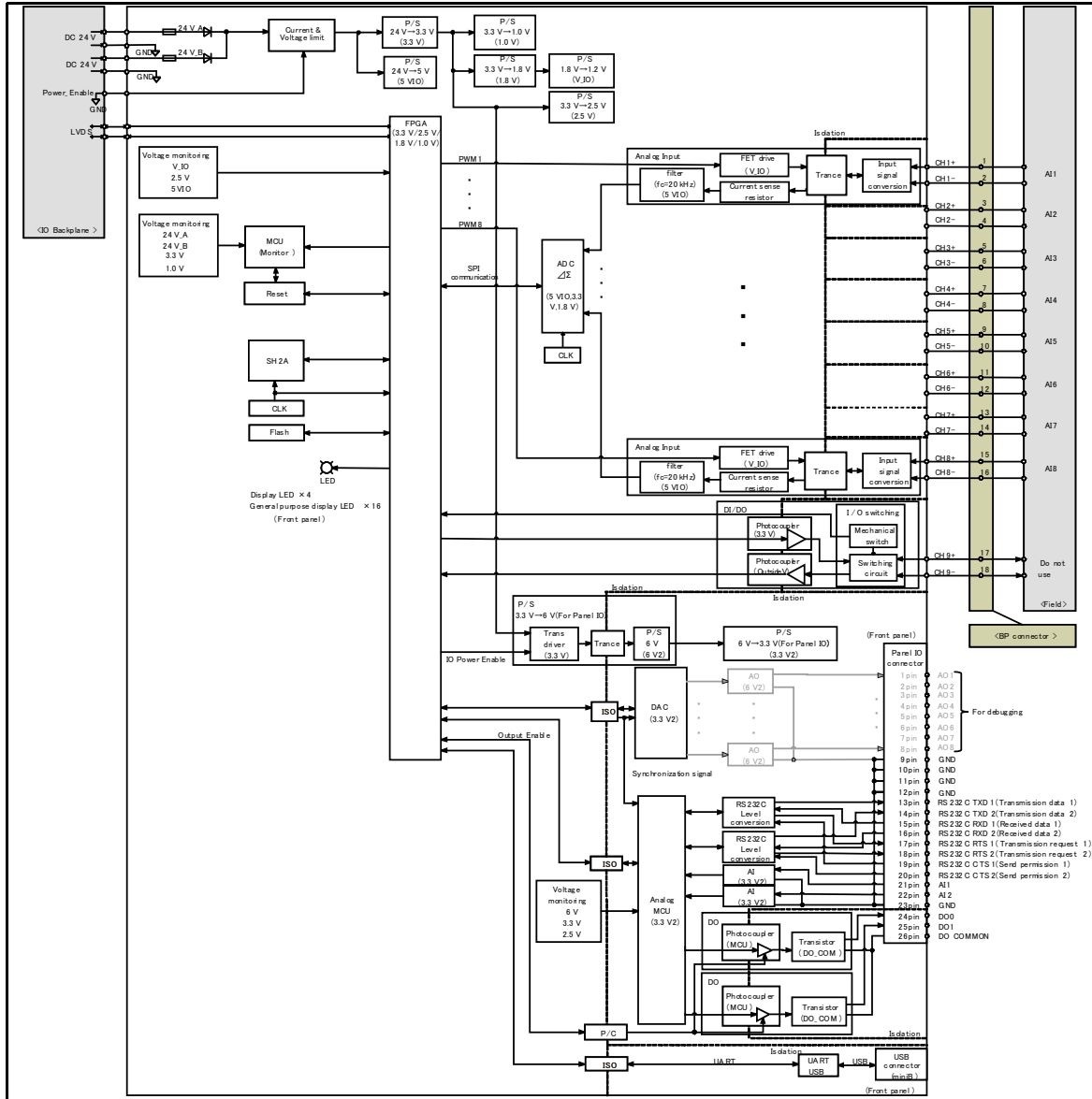
For compliant modules of this product, please refer to "Compliant backplane list (CGS-S9901-E-XX)".



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

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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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