

LSEOS01-1 EOST module

LS communication Turbine overspeed trip function

■ Summary



* Terminal block input / output unit

-52 G ON Digital input	: 1
-Power supply output for speed sensor supply	: 1
-Rotational speed input	: 1
	1 to 12000 Hz 1 to 200 Vp-p
-EOST Digital output	: 2
-Rectification speed pulse output	: 2

* Indicator

-Display LED	: 4 RUN / STS / NSA / NSB
-Channel State LED	: 16 Ch 1 to Ch 16

* USB connector

: 1 (For maintenance communication mini-B)

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

■ Overview Specifications

ITEM	SPECIFICATION
52 G ON Digital input	DC 24 V × 1, minimum ON Current 2 mA
Power supply output for speed sensor supply	DC 24 V ±10% × 1
Rotational speed input	1 to 12000 Hz, 1 to 200 Vp-p, Resolution: 0.1 Hz × 1
EOST Digital output	Open collector output × 2, Maximum voltage DC 30 V, Maximum load current 0.1 A
Rectification speed pulse output	Maximum voltage DC 30 V × 2, Maximum load current 4 mA
Indicator	Display LED × 4: Run/ Status/ Network status A/ Network status B General purpose display LED × 16: Ch 1 to Ch 16 Arbitrarily set by internal logic
USB connector	For maintenance communication mini-B × 1
Self-diagnostic functions	Power voltage check, Clock abnormal check, Heartbeat check, CRC check
IDOL Implementation	Possible
Module Duplication	Unsupported
Dielectric strength	AC 1500 V Digital input / output terminal - PE Between AC 1350 V Rotation count input terminal - PE Between
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 Hz to 8.4 Hz, 1 G @8.4 Hz to 150 Hz
Dimensions	152.5 mm (D) x 94 mm (H) x 46 mm (W) (Except projection)

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■Details Specifications

ITEM		SPECIFICATION		
I/O Input/output section	Ch 1: 52 G ON Digital input	Number of channels	1	
		Insulation method	Photocoupler insulation (Individual isolation)	
		Dielectric strength	AC 1500 V Digital input terminal - PE Between	
		Current range	ON current	DC 2 mA or more
			OFF current	Sense supply voltage: DC 24 V ±10% DC 1 mA or less
	Ch 4: Power supply output for speed sensor supply	Number of channels	1	
		Insulation method	Transformer insulation	
		Dielectric strength	AC 1350 V Sensor power supply output terminal - PE Between	
		Output voltage	DC 24 ±10%	
		Supply current limit	26 mA	
	Ch 5: Rotational speed input	Number of channels	1	
		Insulation method	Photocoupler insulation	
		Dielectric strength	AC 1350 V Rotation count input terminal - PE Between	
		Speed measurement range	1 to 12000 Hz (full scale)	
		Input voltage range	1 to 200 V _{p-p} Chopping Voltage: -18 to +18 V	
		Over speed trip setting range	800 to 11900 Hz	
		Resolution	0.1 Hz	
	Accuracy	±0.01% FS @20 to 200 V _{p-p}		
	Ch 6, Ch 7: EOST Digital output	Number of channels	2 (Open collector)	
		Insulation method	Photocoupler insulation (Individual isolation)	
		Dielectric strength	AC 1500 V Digital output terminal - PE Between	
		Contact maximum voltage	DC 30 V	
		Contact withstand current	100 mA	
		Leakage current at OFF	0.1 mA or less	
	Ch 8, Ch 9: Rectification speed pulse output	Number of channels	2	
		Insulation method	Photocoupler insulation (Individual isolation)	
		Dielectric strength	AC 1500 V Digital output terminal - PE Between	
		Contact rated voltage	DC 30 V	
Contact withstand current		4 mA		
Leakage current at OFF		0.1 mA or less		
Maximum residual voltage when ON	DC 1.0 V @4 mA			
Calculation cycle usable in DPS		10 msec or more		
Communication specification between IOA		Communication method , communication speed LVDS, 100 Mbps		
Self-diagnostic functions		Power voltage check (24 V, 17 V, 3.3 V, 1.2 V, Other) *Refer to block diagram Clock abnormal check (FPGA-MCU, FPGA-CPU) Heartbeat check (FPGA-MCU, FPGA-CPU) CRC check (FPGA-MCU)		
IDOL Implementation		Possible Supplement: IDOL is the logic description language used in DIASYS-UP, DIASYS-UP/V. The internal logic of this module is described in IDOL.		
Module Duplication		Unsupported		
Protective function (Backplane supply power protection)		Overvoltage protection, Overcurrent protection		
Indicator	Display LED	4: RUN (Run) /STS (Status) /NSA (Network status A) /NSB (Network status B)		
	General purpose display LED	16: Ch 1 to Ch 16 Arbitrarily set by internal logic		
Serial interface	For maintenance	1: USB Serial (USB mini-B connector)		
Hot swap		Possible		
Operating power supply		DC 24 V ±20% Dual power reception (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		
Current consumption		180 mA or less		
Weight		0.19 kg		
Dimensions		152.5 mm (D) x 94 mm (H) x 46 mm (W) (Except projection)		
Standard/Directive		EN 61131-2:2007, RoHS		

About compliant module type

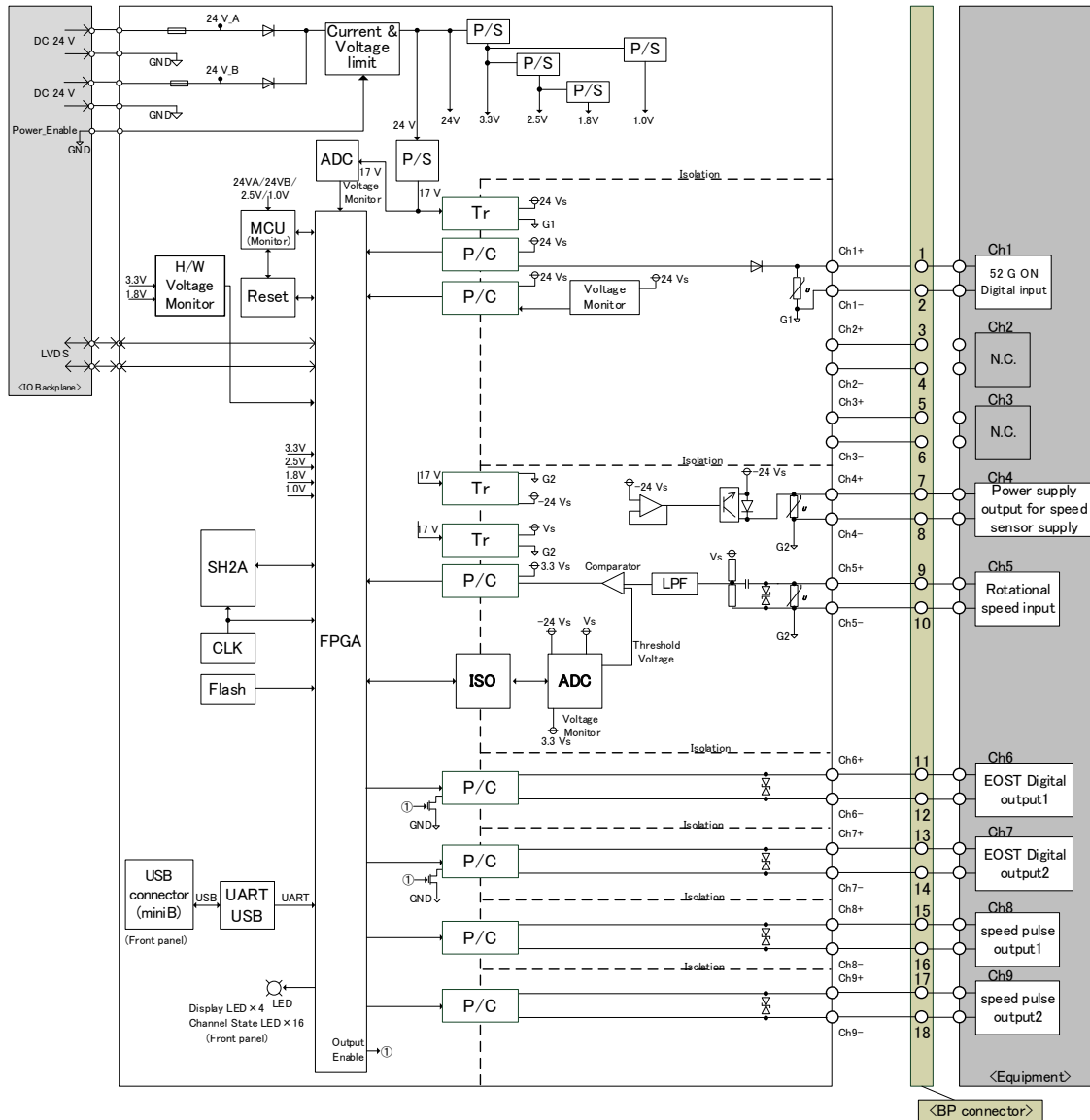
For compliant modules of this product, please refer to "Compliant backplane list (CGS-S9901-E-XX)".






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

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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
LPF	: Low pass filter	GND, G1, G2	: Ground
LVDS	: Low Voltage Differential Signaling	BP	: Backplane
P/C	: Photo Coupler	Tr	: Transformer
N.C.	: No Connection	Flash	: Flash ROM
	: Varistor	UART	: Universal Asynchronous Receiver Transmitter
	: Fuse		: Resistor
	: Bidirectional diode		: Diode

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

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