MITSUBISHI POWER

LSEOS01 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)

MITSUBISHI POWER

LSEOS01 EOST module

LS communication Turbine overspeed trip function

■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 Sense supply voltage: DC 24 V ±10%
			OFF current	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 Vp-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 Vp-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
		Maximum residual voltage when ON		DC 1.2 V @100 mA
	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) ".

DIASYS Netmation®
DIASYS Netmation4S®

MOVE THE WORLD FORWARD MITSUBISHI HEAVY INDUSTRIES GROUP

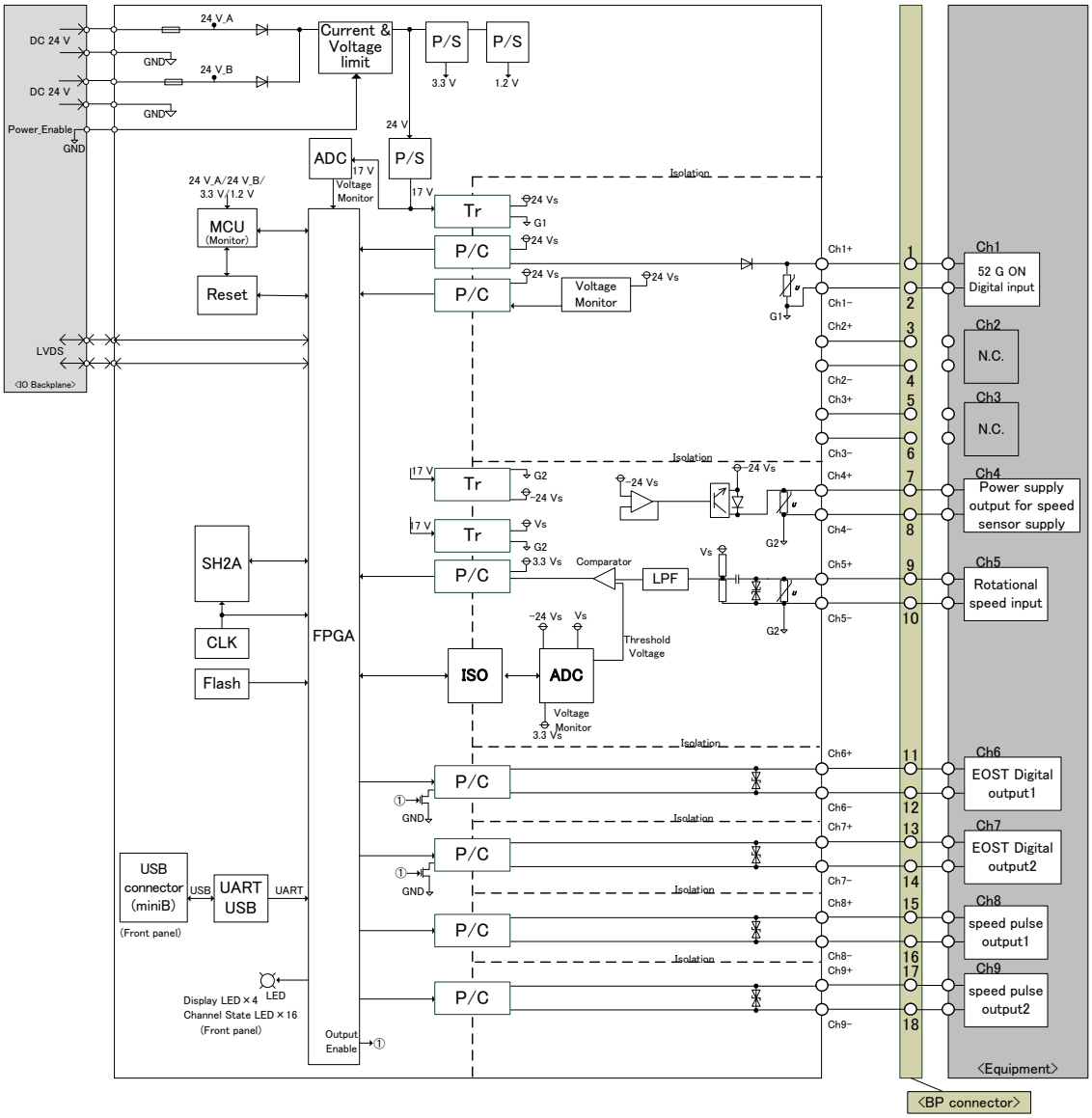
Mitsubishi Power is a power solutions brand of Mitsubishi Heavy Industries.

MITSUBISHI POWER

LSEOS01 EOST module

LS communication Turbine overspeed trip function

■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

DIASYS Netmation®
DIASYS Netmation4S®

MOVE THE WORLD FORWARD MITSUBISHI HEAVY INDUSTRIES GROUP

Mitsubishi Power is a power solutions brand of Mitsubishi Heavy Industries.

CGS-S6901-E-11 (2023. 09. 29)