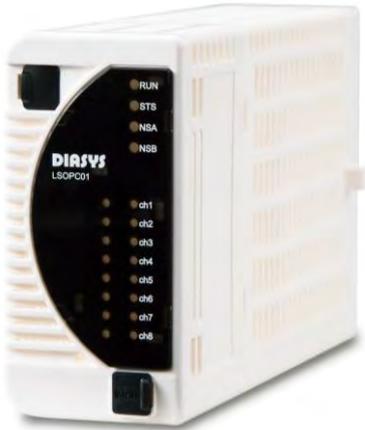


LSOPC01 OPC module

LS communication Overspeed protection function & High speed valve control function

■ Summary



* Terminal block input / output unit

-Rotational speed input	: 1
	1 to 10000 Hz
-52 G ON Digital input	: 1
-Pressure transmitter input	: 1
	Distributor input
-Analog input	: 2 Passive input
	MW signal input
	Generated current signal input
-Digital output	: 4
	: OPC output × 2 (interlock)
	FV output × 2 (interlock)
*USB connector	: 1 (For maintenance communication mini-B)
*Module operating ambient temperature range	: -5 to 60°C

■ Overview Specifications

ITEM	SPECIFICATION
Rotational speed input	DC 24 V × 1, 1 to 10000 Hz, Resolution: 0.1 Hz
52 G ON Digital input	DC 24 V × 1, Minimum ON current 2 mA
Pressure transmitter input	Distributor input × 1, 4 to 20 mA
Analog input	Passive input × 2, 4 to 20 mA MW signal input / Generated current signal input
Digital output	Open collector output × 4, Maximum voltage DC 30 V, Maximum load resistance 0.1 A
Self-diagnostic functions	Power voltage check, Clock abnormal check, Heartbeat check, CRC check ADC communication error check, Analog input signal range check
IDOL Implementation	Possible
Module Duplication	Unsupported
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
Dielectric strength	AC 1500 V Digital input / output terminal - PE Between AC 1000 V Analog input / output 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 to 8.4 Hz, 1 G @8.4 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	
Terminal block input / output unit	Ch 1: Rotational speed input	Number of channels	1
		Insulation method	Photocoupler insulation (Individual isolation)
		Dielectric strength	AC 1500 V Digital input terminal - PE Between
		Speed measurement range	1 to 10000 Hz
		Sense supply voltage	DC 24 V \pm 10%
		Resolution	0.1 Hz
		Accuracy	\pm 0.01% FSD (1 to 10000 Hz)
	Ch 2: 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 \pm 10% OFF current DC 1 mA or less
	Ch 3: Pressure transmitter input (Distributor input)	Number of channels	1
		Insulation method	Transformer insulation (Individual isolation)
		Dielectric strength	AC 1000 V Analog input terminal - PE Between
		Input current range	4 to 20 mA (full scale)
		Output voltage	15 to 30 V (4 to 20 mA)
		Absolute precision	@25 °C \pm 0.15% FS (\pm 0.024 mA)
		Temperature drift	@-5 to 60 °C \pm 100 ppm/°C (Against full scale)
	Ch 4, Ch 5: MW signal input Current generation analog input (Passive input)	Number of channels	2
		Insulation method	Digital isolator insulation (Individual isolation)
		Dielectric strength	AC 1000 V Analog input terminal - PE Between
		Input current range	4 to 20 mA (full scale)
		Signal input resistance	300 Ω or less
		Absolute precision	@25 °C \pm 0.1% FS (\pm 0.016 mA)
	Ch 6, Ch 7, Ch 8, Ch 9: interlock Digital output	Temperature drift	@-5 to 60 °C \pm 100 ppm/°C (Against full scale)
		Number of channels	4 (Open collector)
		Insulation method	Photocoupler insulation (Individual isolation)
		Dielectric strength	AC 1500 V Digital output terminal - PE Between
Maximum applied 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		
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) ADC communication error check Analog input signal range check (Overrange, Underrange)	
IDOL Implementation		Possible (Shortest calculation cycle : 1ms) 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 \pm 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	
Rated Current		190 mA	
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

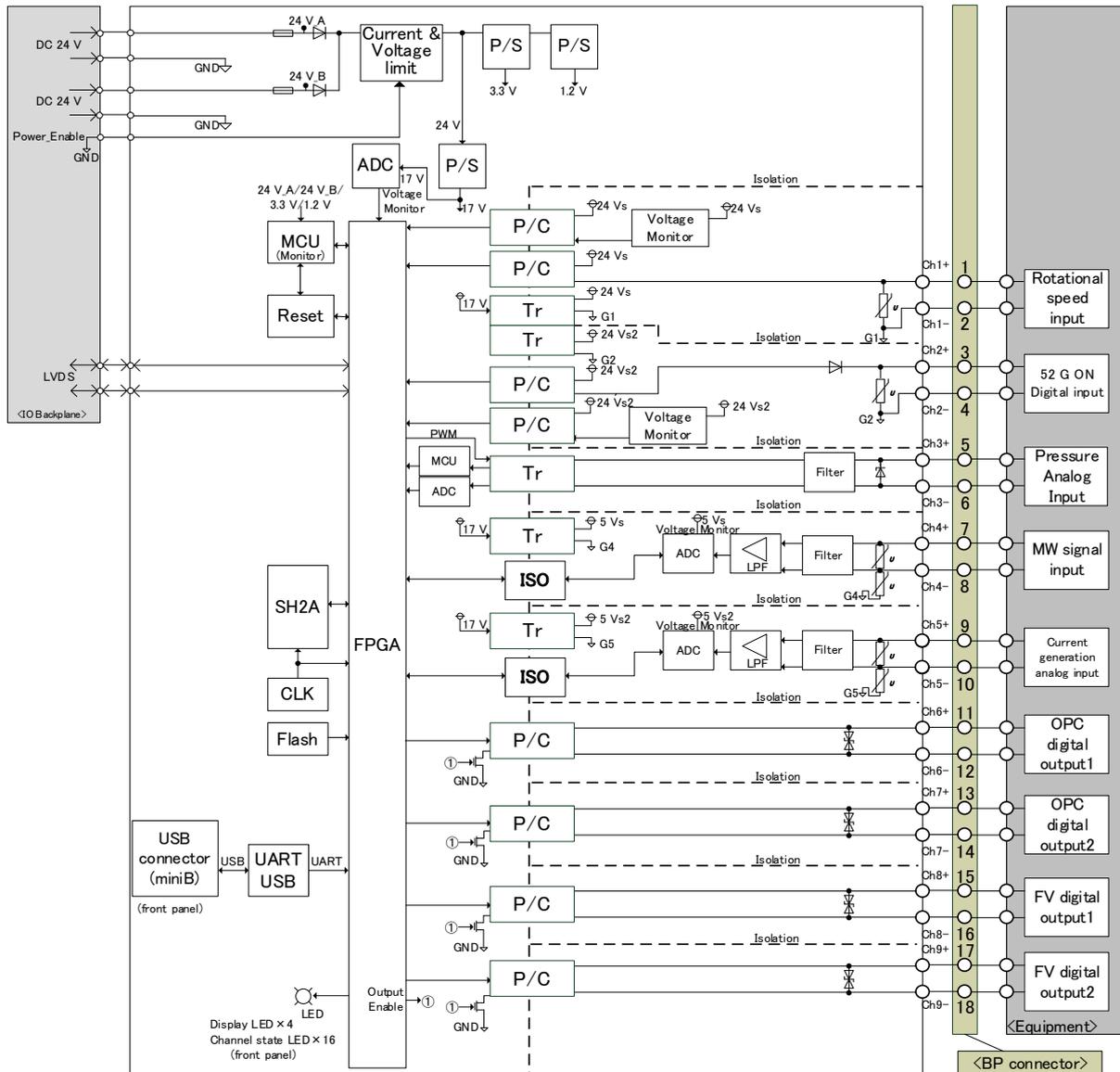
For compliant modules of this product, please refer to "Compliant backplane list (CGS-S9901-E-XX)".

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, G4, G5	: Ground
LVDS	: Low Voltage Differential Signaling	BP	: Backplane
P/C	: Photo Coupler	Tr	: Transformer
PWM	: Pulse width modulation	Flash	: Flash ROM
	: Varistor		: Resistor
	: Fuse		: Diode
	: Zener diode		: Bidirectional diode

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

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