

LSSVT13 SVT module

LS communication Transmitter Servo valve interface module

■ Summary



* Terminal block input / output unit

- 52G ON Digital input : 1
- External forced closed input : 1
- Valve position demand output : 1
 - 03 type : 0 to 250mA
 - 04 type : 0 to 500mA
- Valve position feedback input : 1
 - Distributor input

- Analog output : 1
- Analog input : 3

* Auxiliary output connector

- Analog output : 3

* USB connector : 1 (For maintenance communication mini-B)

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

■ Overview Specifications

ITEM	SPECIFICATION
52G ON Digital input	DC24V×1, minimum ON Current 2mA
External forced closed input	DC24V×1, minimum ON Current 2mA
Valve position demand output	0 to 250mA / 0 to 500mA ×1
Valve position feedback input	Distributor input×1, 4 to 20mA
Analog output	1 to 5VDC×1 (Minus common)
Analog input	1 to 5VDC×3 (Minus common)
Analog output(Auxiliary output connector)	1 to 5VDC×3
Self-diagnostic functions	Power voltage check, Clock abnormal check, Heartbeat check, CRC check, ADC communication error check, I/O signal range check
IDOL Implementation	Possible
Module Duplication	Correspondence (LSIOB03 is used for backplane) However, the signal of the auxiliary output connector does not support duplication
Indicator	Display LED×4 : Run / Status / Network status A / Network status B General purpose display LED×16 : Ch1 to Ch16 It can be arbitrarily set with internal logic
USB connector	1(For maintenance communication mini-B)
Dielectric strength	AC2000V Digital input / output terminal — FG Between AC1000V Analog input / output terminal — FG Between
Environmental conditions	(Operating) Ambient temperature : -5 to 60°C Ambient humidity : Less than 95%RH(No condensation) (Storage) Ambient temperature : -40 to 85°C Ambient humidity : Less than 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	152.5mmD x 94mmH x 46mmW (Except projection)

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Details Specifications

		ITEM	SPECIFICATION	
Terminal block Input / output unit	Ch1: 52G ON Digital input	Number of channels	1	
		Insulation method	Photocoupler insulation	
		Dielectric strength	AC2000V	
		Current range	ON current	DC 2mA or more
			OFF current	Sense supply voltage:DC24V ±10%
	Ch2: External forced closed input	Number of channels	1	
		Insulation method	Photocoupler insulation	
		Dielectric strength	AC2000V	
		Current range	ON current	DC 2mA or more
			OFF current	Sense supply voltage:DC24V ±10%
	Ch3,Ch4: Valve position demand output *The type of 03/04 is switched by EMS	Number of channels	1	
		Insulation method	Transformer insulation	
		Dielectric strength	AC1000V	
		Rated output current	03 type	0 to 250mA (full scale)
			04 type	0 to 500mA (full scale)
		Load resistance range	03 type	18 to 32 Ω
			04 type	
		Absolute precision	@25°C	03 type ±0.1%FS (±0.25mA) @10 to +250mA
				04 type ±0.1%FS (±0.5mA) @10 to +500mA
		Temperature drift	@-5 to 60°C	03 type ±100ppm/°C (Against full scale)
				04 type
		Output current monitor	Built-in	
			Absolute precision	@25°C
				03 type ±0.3%FS (±0.75mA) @10 to +250mA
			04 type	±0.3%FS (±1.5mA) @10 to +500mA
			Temperature drift	@-5 to 60°C
				03 type ±200ppm/°C (Against full scale)
			04 type	
	Ch5: Valve position feedback input (Distributor input)	Number of channels	1	
		Insulation method	Transformer insulation (Individual isolation)	
		Dielectric strength	AC1000V	
		Input current range	4~20mA (full scale)	
		Output voltage	15~30V (4 to 20mA)	
		Absolute precision	@25°C	±0.15%FS (±0.016mA)
		Temperature drift	@-5 to 60°C	±100ppm/°C (Against full scale)
	Ch7: Analog output (Ch9--:Common ground)	Number of channels	@-5 to 60°C	
		Insulation method	Digital isolator insulation	
		Dielectric strength	AC1000V	
		Rated output voltage	1 to 5V (full scale)	
		Minimum load resistance	2k Ω	
		Absolute precision	@25°C	±0.3%FS (±12mV)
		Temperature drift	@-5 to 60°C	±200ppm/°C (Against full scale)
	Ch8+,Ch8--:Ch9+: Analog input (Ch9--:Common ground)	Number of channels	3	
		Insulation method	Digital isolator insulation	
		Dielectric strength	AC1000V	
		Rated input voltage	1 to 5V (full scale)	
		Input resistance	100k Ω or more	
		Absolute precision	@25°C	±0.3%FS (±12mV)
		Temperature drift	@-5 to 60°C	±200ppm/°C (Against full scale)

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ITEM			SPECIFICATION	
Auxiliary output connector	Analog output	Number of channels	3	
		Insulation method	Digital isolator insulation	
		Dielectric strength	AC500V	
		Rated output voltage	1 to 5V (full scale)	
		Minimum load resistance	2k Ω	
		Absolute precision	@25°C	±0.3%FS (±0.12mV)
		Temperature drift	@-5 to 60°C	±200ppm/°C (Against full scale)
Calculation cycle usable in DPS			10msec or more	
Communication specification between IOA	Communication method , communication speed		LVDS, 100Mbps	
Self-diagnostic functions			Power voltage check (24V, 17V, 3.3V, 1.2V, 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 I/O signal range check (Analog input channel : Overrange , Underrange)	
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			Correspondence (LSIOB03 is used for backplane) However, the signal of the auxiliary output connector does not support duplication	
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: Ch1 to Ch16 Arbitrarily set by internal logic	
Serial interface	For maintenance		1 : USB Serial (USB mini-B connector)	
Hot swap			Possible	
Operating power supply			DC 24V±20% Dual power reception (The voltage supplied from the backplane)	
Environmental conditions	Module ambient temperature		(Operating) -5 to 60°C (Storage) -40 to 85°C	
	Module ambient humidity		Less than 95%RH (No condensation)	
Vibration			3.5mm @5 to 8.4Hz 1G @8.4 to 150Hz	
Shock			15G 11ms	
Current consumption			860mA or less	
Weight			0.24kg	
Dimensions			152.5mmD x 94mmH x 46mmW (Except projection)	
Standard/Directive			IEC61131-2:2007, RoHS	

*About compliant module type

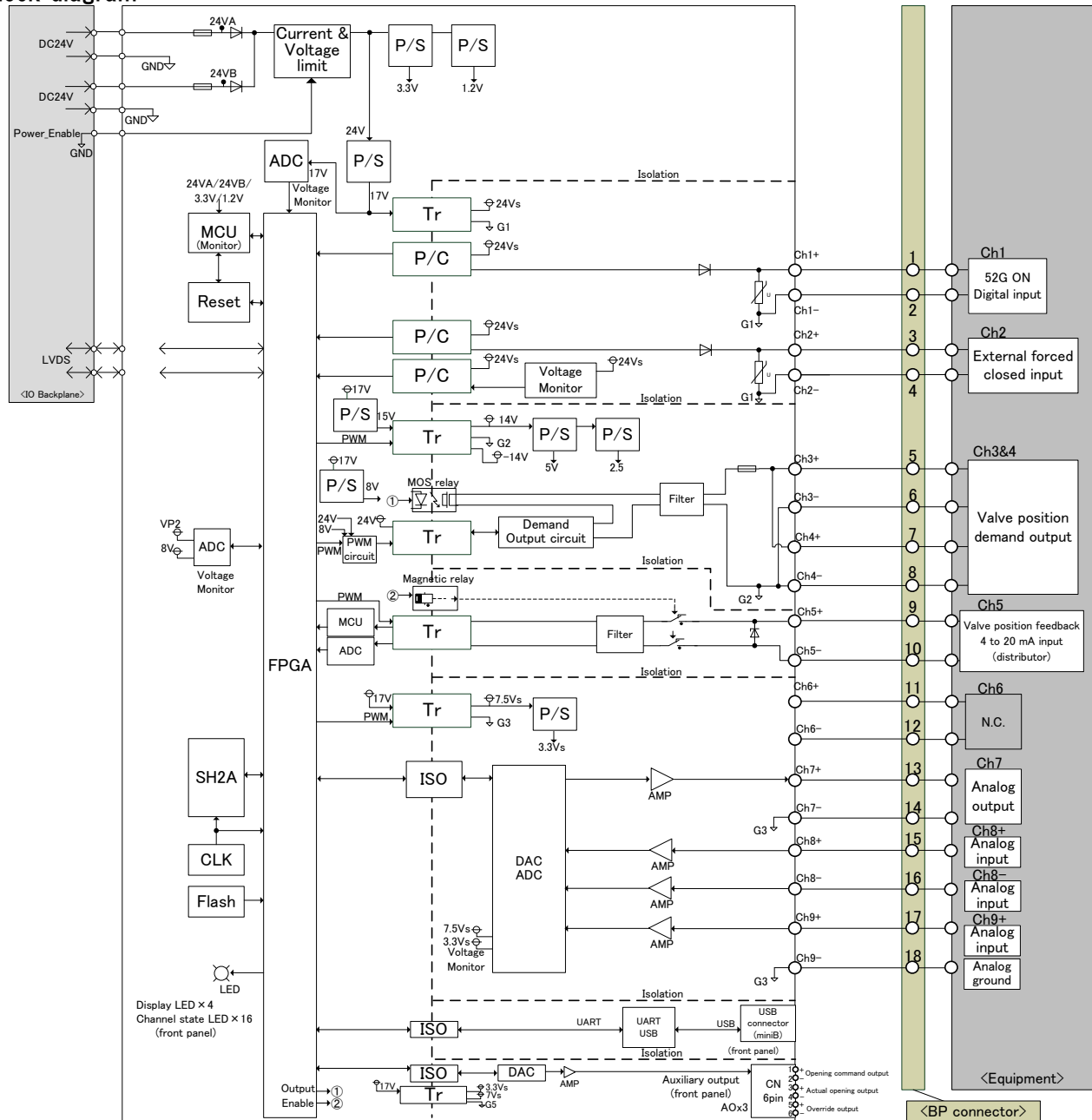
For compliant modules of this product, please refer to " Compliant backplane list (CGS-S9901-E-XX) ".

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
SH2A : Renesas SH-2A micro processor
CLK : Clock generation circuit
ISO : Digital isolator
LPF : Low pass filter
LVDS : Low Voltage Differential Signaling
DP : Digital potentiometer
PWM : Pulse width modulation
AMP : Amplifier
P/C : Photo Coupler
N.C : No Connection
AO : Analog Output
V : Varistor
F : Fuse

MCU : Micro control unit
FPGA : Field programmable gate array
LED : Light emitting diode
ADC : Analog digital converter
GND, G1, G2, G3, G4 : Ground
BP : Backplane
DDS : Direct digital synthesizer
DAC : Digital analog converter
Z : Zener diode
Tr : Transformer
CN : Connector
Flash : Flash ROM
R : Resistor
D : Diode

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

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