DPO2212A

GPIB PROGRAMMER

3ch GPIB Control
**Service Request, Talker Function**

Outline

The DPO2212A GPIB Programmer is an interface for controlling Kikusui DC regulated power supplies, electronic loads, an other equipment from a computer over a GPIB bus (IEEE-488-1978). It has three analog outputs: 2 BCD 12-bit outputs and 1 binary 8-bit output.

Features

■ Up to three power supplies can be programmed
The DPO2212A contains two 12-bit (BCD, resolution 0.1%) D/A converters and one 8-bit (binary, resolution 0.4%) D/A converter. Each D/A converter is isolated so that up to three power supplies can be controlled (voltage control only). (For current control, please consult us.)

■ Analog interfacing is easy
Each D/A converter has a wide voltage variation range. Power supply connection and adjustment are easy. Remote/local switching is also possible.

■ A reliable power supply system can be built using interrupt functions and contact output
•Four bits are provided for interrupt use. The DPO2212A generates service requests (SRQ) to the GPIB bus. It is also adaptable to serial polling. Power supply fault detection, etc. are possible by using these. However, a power supply that can output alarms (LP, P specifications) or an equivalent type is necessary.
•The power supply can be tripped with relay make contact by device clear command.

Front and Rear Panels
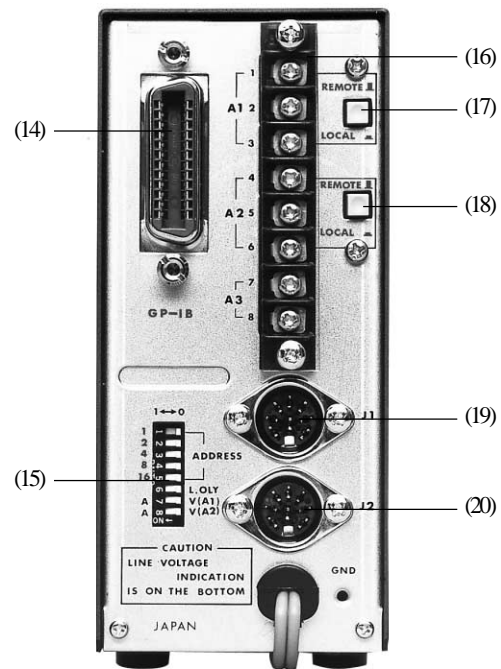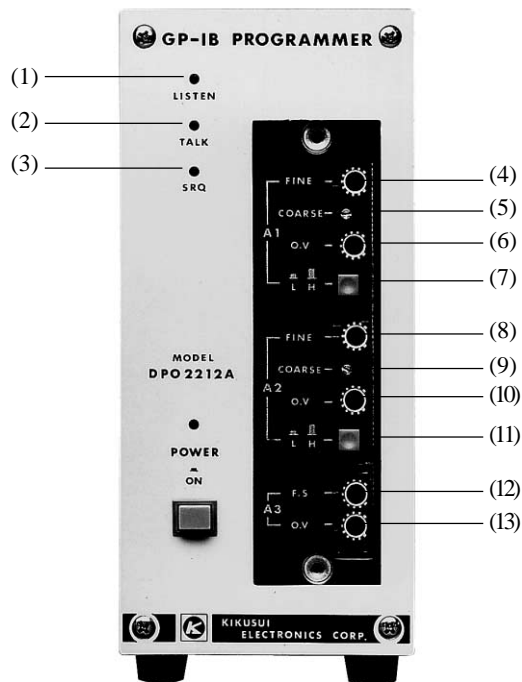
(1) Status display lamp (LISTEN)
Lights while the DPO2212A is specified as the listener on the GPIB bus.

(2) Status display lamp (TALK)
Lights while the DPO2212A is specified as the talker on the GPIB bus.

(3) Status display lamp (SRQ)
Lights while the DPO2212A is generating an SRQ on the GPIB bus. (Red LED)

(4) A1 output voltage fine adjustment semi-fixed resistor (FINE)

(5) A1 output voltage coarse adjustment semi-fixed resistor (COARSE)

(6) A1 output offset adjustment semi-fixed resistor (O.V)

(7) A1 output range switching switch (HL)

(8) A2 output voltage fine adjustment semi-fixed resistor (FINE)

(9) A2 output voltage coarse adjustment semi-fixed resistor (COARSE)

(10) A2 output offset adjustment semi-fixed resistor (O.V)

(11) A2 output range switching switch (HL)

(12) A3 output voltage fine adjustment semi-fixed resistor (F.S)

(13) A3 offset adjustment semi-fixed resistor

(14) GPIB connector (GPIB)
GPIB connector ANSI/IEEE std 488.1-1987 specifications 24-pin ribbon connector.
The GPIB bus cable connects to this connector. For IEC specifications connector, use an IEC → IEEE conversion connector.

(15) Address setting switches (ADDRESS)
The address of the DPO2212A on the GPIB bus is set with an 8 DIP switch. This switch also sets the listen only mode and A1, A2 key code.

(16) Analog output terminal
Three channels (A1, A2, A3) analog output terminals. These terminals supply the output setting analog signals to the connected power supply. (M3 bolt)

(17) A1 remote/local switch (REMOTE/LOCAL)

(18) A2 remote/local switch (REMOTE/LOCAL)

(19) Digital I/O connector 1 (J1)
Interrupt signal input and make contact signal output.

(20) Digital I/O connector 2 (J2)
Interrupt signal input and make contact signal output.

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System Configuration

■ Control contents

Model	DPO2212A				
Control contents ⟋ Power supply series	Voltage only	Current only	Voltage and current	Irregularity Detection	Cut off breaker *1
PAD-L	✔	✔	✔		✔
PAD-LP	✔	✔	✔	✔	✔
PAN-A	✔	✔	✔		✔
PMC-A	✔	✔	✔		
PLZ-WU		✔			
PLZ-W2/W2A		✔			

*1: Toggle switch type uses a gate block system to trip the rectifier circuit.

[Precautions]

●When the DPO2212A is used with a power supply, its output rise time depends on the type of connected power supply. For example, with the PAD-L Series, the rise time is about 100ms to 300ms.
Also note that the time required for readback is also related to the controller processing speed.

●When the DPO2212A is used with a power supply and performs current setting, the setting accuracy is about 0.3% of f.s in addition to the performance of the connected power supply.
●When current is controlled by combining the DPO2212A with a PAD-L(LP) Series power supply, modification may be necessary, depending on the production month and type. Please consult us.
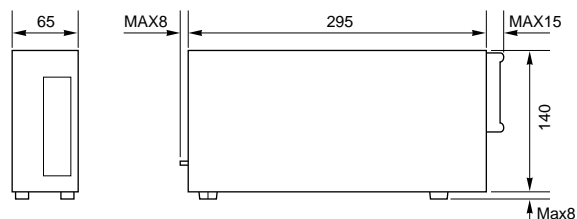
Options

■ GPIB cable
● Connects the DPO2212A to a computer.
● ANSI/IEEE std 488.1-1987
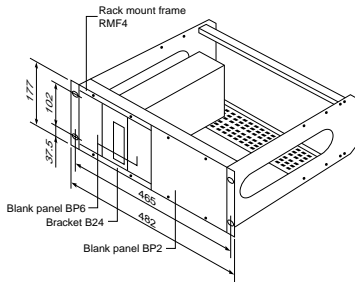● The connectors and cable are EMI countermeasures shielded type.
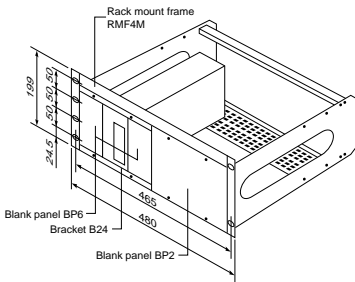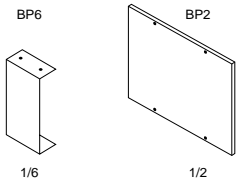
Type	Length
408J-101	1m
408J-102	2m
408J-104	4m

Outline Dimensions

■Outline dimensions

Rack Mount Options

Rack standard	EIA Standard	JIS Standard	EIA/JIS Standards
Name	Rack mount frame	Rack mount frame	Blank panel
Type	RMF4	RMF4M	BP6 BP2
Shape			

Spesifications

Model		DPO2212A	
Digital input	Applicable standard	ANSI / IEEE std 488.1-1987	
	Interface functions	SH1, AH1, T6, L3, SR1, RL0, PP0, DC1, DT0, C0	
Analog output	Channel	A1, A2	A3
	Maximum voltage variation range	H: 8.5V to 10.2V L: 0.25V to 1.5V*	8.5V to 10.2V
	Maximum output current	3mA	
	Resolution	0.1% of F.S	0.4% of F.S
	Accuracy	0.05% of F.S	0.2% of F.S
	Output ripple	300μV RMS(5Hz to 1MHz)	
	Line fluctuation	0.005%+1mV *3	
	Load fluctuation	0.005%+1mV *4	
	Temperature coefficient	50ppm/°C (0.25V to 1.5V range: 100ppm/°C)	
Optional functions		Remote/local switching (Except A3)	
Interrupt	Interrupt bits	2 bits × 2 negative logic TTL levels	
	Input connector	DIN connector 8P × 2	
External contact signal input		2 contacts (simultaneous make)	
Operating temperature & humidity ranges		0°C to 40°C 10% to 90%RH	
Dielectric strength			
	Digital input-analog output	500VAC for 1 minute	
	Input power supply-case	1500VAC for 1 minute	
Input power		A) 85 to 115V(100V) C) 183 to 247V(215V) B) 98 to 132V(115V) D) 195 to 254V(230V)	
Dimensions		65(70)W × 140(148)H × 295(318)Dmm ( ): Maximum	
Weight		Approx. 2.4kg	
Accessories		DIN connector (8P) × 2, connection wire sample (1m) 3	

*1 H(HIGH), L(LOW) can be switched with a switch.
*2 At room temperature 25°C
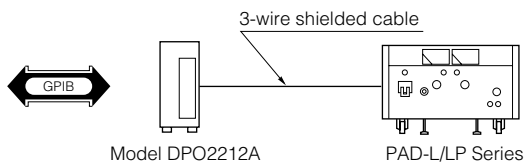*3 Relative to ±15% of center value of input power supply voltage range
*4 Relative to 0% to 100% load changes

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System Configuration Examples

■ DPO2212A Programmer and PAD-L/LP Series

3-wire shielded cable

GPIB

Model DPO2212A   PAD-L/LP Series

- The DPO2212A contains two 12-bit (BCD, resolution 0.1%) D/A converters and one 8-bit (binary, resolution 0.4%) D/A converter. Each D/A converter is isolated so that up to 3 PAD-L/LP Series power supplies can be controlled as long as there is a voltage or current.
- Each converter has 4 bits for interrupt use, and can generate a service request (SRQ) to the GPIB bus and adapt to serial polling. This can be used to detect power supply trouble and to trip the power supply with relay make contacts by device clear. (However, the power supply is limited to the PAD-LP Series, which can output an alarm.)

■ DPO2212A Programmer and PLZ-WU Series

The PLZ-WU Series and GPIB (IEEE-488-1978) can be computer controlled by using a DPO2212A.
The DPO Series can also generate an SRQ (Service Request) with listeners. Therefore, a safe test system can be built.

GPIB

DPO2212A   PLZ-WU Series

[Control content]
●Output current setting

■ DPO2212A Programmer and PLZ-W2 Series

Three loads can be computer controlled by using the DPO2212A. (Control: Constant current only)

GPIB

DPO2212A   PLZ-W2 Series