LS *ELECTRIC*

XGB Analog Modules

XBF-DV04A Analog Output Module

| Part Number	Price	Classification	Description	# of Channels	Drawing
XBF-DV04A	$152.00	Voltage Output	LS Electric XGB analog output module, 4-channel, voltage, 12-bit, output voltage signal range(s) of 0-10 VDC, external 24 VDC required.	4	PDF

General Specifications			XBF-DV04A
			Voltage
Analog Ouput Range			0–10 VDC (Load resistance: 2kΩ or more)
Digital Input	Range	Type	12-bit binary data
		Signed Value	±2000
		Unsigned Value	0–4000
		Precise Value	0–1000
		Percentile Value	0–1000
Maximum Resolution			2.5 mV (1/4000)
Accuracy			±0.5% or less
Maximum Conversion Speed			1ms/channel
Absolute Maximum Output			±15VDC
Number of Output Channels			4 channels
Insulation Method			Photocoupler insulation between input terminal and PLC power (no insulation between channels)
Connection Terminal			11-point terminal block
I/O Points Occupied			Fixed type: 512 points
Current Consumption		Internal (5VDC)	110mA
		External (24VDC)	70mA
Weight			64g
Power Supply			20.4–28.8 VDC

Run LED

Terminal block

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XGB Analog Modules
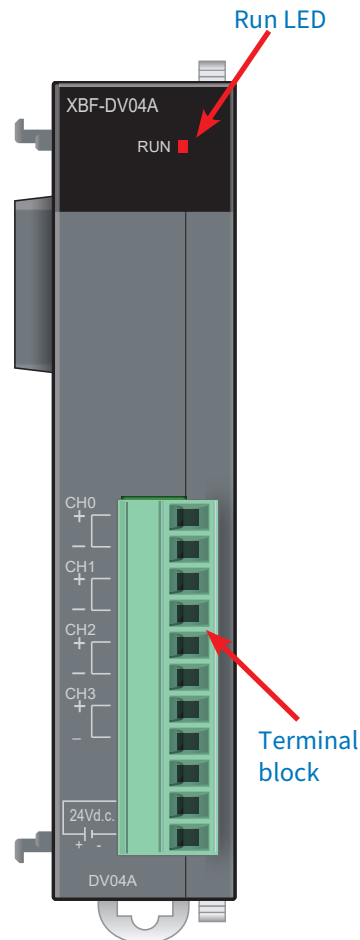
XBF-DV04A Analog Output Module Wiring

When connecting cable to your XBF-DV04A:

- Keep the AC power line away from the analog output module's external output signal line to prevent surge or inductive noise.
- Use cable rated to meet your application's ambient temperature and current needs. AWG22 (0.3mm^2) or greater recommended.
- Keep cable clear of high heat and oil.
- Check polarity when wiring the terminal.
- Using high-voltage line or power line may cause abnormal operations or defects due to inductive hindrance.
- Make sure the desired channel is enabled.
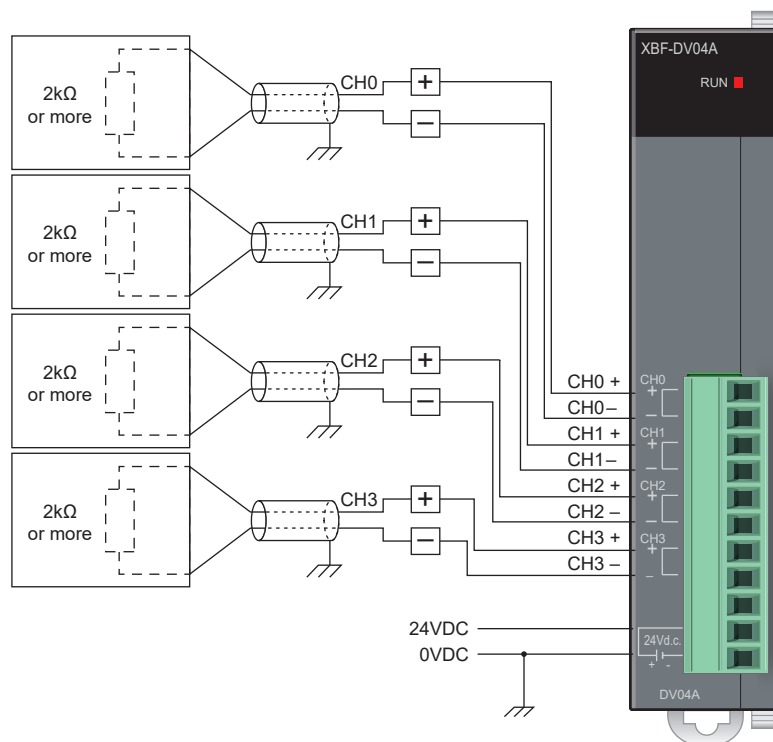
Notes:
- Use 2-core twisted shield cable
- Use AWG22 (0.3mm^2) or greater cable
- Terminal screwdriver: slotted 2.5 mm
- Load resistance is 2kΩ or more

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XBF-DV04A Analog Output Module Configuration

Follow the Quick start video to learn how to Register and Configure any Analog Module:

Analog Module Setup

Direct Variables
All XGB series analog modules are assigned 32 words in the "U" memory area based on the slot number assignment. (%UW0.z.0 - %UW0.z.31 , z= slot number). The actual memory address used within the 32 word block are specific to each module. See the table below for Direct Variable assignments.

For Direct Variable nomenclature explanation, see Direct Variable User Programming Memory.

Symbolic Variables
Symbolic variables for the analog module can be automatically created in XG5000 software by using the top MENU bar: Edit > Register Module Variable Comments.

Symbolic variables and direct variables for XBF-DV04A are as follows (z refers to module slot number (2 to 8)).

Type	Scope	Variable (Symbolic)	Address (Direct Variable Alias)	Data Type	Comment
Tag	GlobalVariable	_0z_CH0_ACT	%UX0.z.16	BOOL	Analog Output Module: CH0 Activation Status
Tag	GlobalVariable	_0z_CH0_DATA	%UW0.z.3	WORD	Analog Output Module: CH0 Input
Tag	GlobalVariable	_0z_CH0_ERR	%UX0.z.0	BOOL	Analog Output Module: CH0 Error
Tag	GlobalVariable	_0z_CH0_OUTEN	%UX0.z.32	BOOL	Analog Output Module: CH0 Output Enable
Tag	GlobalVariable	_0z_CH1_ACT	%UX0.z.17	BOOL	Analog Output Module: CH1 Activation Status
Tag	GlobalVariable	_0z_CH1_DATA	%UW0.z.4	WORD	Analog Output Module: CH1 Input
Tag	GlobalVariable	_0z_CH1_ERR	%UX0.z.1	BOOL	Analog Output Module: CH1 Error
Tag	GlobalVariable	_0z_CH1_OUTEN	%UX0.z.33	BOOL	Analog Output Module: CH1 Output Enable
Tag	GlobalVariable	_0z_CH2_ACT	%UX0.z.18	BOOL	Analog Output Module: CH2 Activation Status
Tag	GlobalVariable	_0z_CH2_DATA	%UW0.z.5	WORD	Analog Output Module: CH2 Input
Tag	GlobalVariable	_0z_CH2_ERR	%UX0.z.2	BOOL	Analog Output Module: CH2 Error
Tag	GlobalVariable	_0z_CH2_OUTEN	%UX0.z.34	BOOL	Analog Output Module: CH2 Output Enable
Tag	GlobalVariable	_0z_CH3_ACT	%UX0.z.19	BOOL	Analog Output Module: CH3 Activation Status
Tag	GlobalVariable	_0z_CH3_DATA	%UW0.z.6	WORD	Analog Output Module: CH3 Input
Tag	GlobalVariable	_0z_CH3_ERR	%UX0.z.3	BOOL	Analog Output Module: CH3 Error
Tag	GlobalVariable	_0z_CH3_OUTEN	%UX0.z.35	BOOL	Analog Output Module: CH3 Output Enable
Tag	GlobalVariable	_0z_CH_ACT_ARY	%UX0.z.16	ARRAY[0..3] OF BOOL	Analog Output Module: Each CH Active
Tag	GlobalVariable	_0z_CH_DATA_ARY	%UW0.z.3	ARRAY[0..3] OF WORD	Analog Output Module: Each CH Input
Tag	GlobalVariable	_0z_CH_ERR_ARY	%UX0.z.0	ARRAY[0..3] OF BOOL	Analog Output Module: Each CH Error
Tag	GlobalVariable	_0z_CH_OUTEN_ARY	%UX0.z.32	ARRAY[0..3] OF BOOL	Analog Output Module: Each CH Output Enable
Tag	GlobalVariable	_0z_OUTEN	%UW0.z.2	WORD	Analog Output Module: Output Enable
Tag	GlobalVariable	_0z_RDY	%UX0.z.15	BOOL	Analog Output Module: Ready Flag

Environmental Specifications, all XGB Series Modules

Item				Specification	Reference
Ambient Operating Temperature				0–55°C (32–131°F)	–
Storage Temperature				-25–70°C (-13–158°F)	
Ambient Operating Humidity				5–95% relative humidity (non-condensing)	
Storage Humidity				5–95% relative humidity (non-condensing)	
Vibration[1]	Occasional Vibration	Frequency	$5 \leq f < 8.4$ Hz	3.5 mm pulse width	IEC61131-3-2
			$8.4 \leq f < 150$Hz	9.8 m/s^2 (1G)	
	Continuous Vibration		$5 \leq f < 8.4$ Hz	1.75 mm pulse width	
			$8.4 \leq f < 150$Hz	4.9 m/s^2 (0.5G)	
Shocks	Peak Acceleration			147 m/s^2 (15G)	
	Duration			11ms	
	Pulse Wave Type			Half-sine (3 times each direction per each axis)	
Noise Resistance	Square Wave Impulse Noise			1,500VAC 900VDC	LS Electric standard
	Electrostatic Discharge			Voltage: 4kV (contact discharge)	IEC61131-3-2 IEC61000-4-2
	Radiated Electromagnetic Field Noise			80–1,000 MHz, 10 V/m	IEC61131-3-2 IEC61000-4-3
	Fast Transient / Burst Noise	Classification		Voltage	IEC61131-3-2 IEC61000-4-4
		Power Supply		2kV	
		Digital/Analog Input/Output Communication Interface		1kV	
Environment				Free from corrosive gases and excessive dust	–
Attitude				Less than 2,000m	
Pollution Degree				Less than 2 (see note 2)	
Cooling Method				Air-cooling	

1 - Vibration of 10 times each direction (X, Y, and Z)
2 - Normally only nonconductive pollution occurs. Temporary conductivity caused by condensation is to be expected.

LS ELECTRIC

XGB Series PLC Family

Available I/O Modules

XGB Series I/O Modules

Part Number	Price	Description	Digital Input	Digital Output	Analog Input	Analog Output	Motion	Smart Link Cable and Terminal Required
Digital								
XBE-DC16A	$70.00	LS Electric XGB discrete input module, 16-point, 24 VDC, sinking/sourcing, 1 common(s), 16 point(s) per common. Removable terminal blocks included.	✓					
XBE-DC16B	$78.00	LS Electric XGB discrete input module, 16-point, 12-24 VDC, sinking/sourcing, 1 common(s), 16 point(s) per common. Removable terminal blocks included.	✓					
XBE-DC32A	$97.00	LS Electric XGB discrete input module, 32-point, 24 VDC, sinking/sourcing, 1 common(s), 32 point(s) per common. Requires XTB-40H terminal block and C40HH-xxSB-XBI cable.	✓					✓
XBE-AC08A	$88.00	LS Electric XGB discrete input module, 8-point, 120 VAC, 2 common(s), 4 point(s) per common. Removable terminal blocks included.	✓					
XBE-RY08B	$95.00	LS Electric XGB relay output module, 8-point, 125 VDC/250 VAC, (8) Form A, 8 isolated common(s), 1 point(s) per common, 2A/point. Removable terminal blocks included.		✓				
XBE-RY16A	$110.00	LS Electric XGB relay output module, 16-point, 125 VDC/250 VAC, (16) Form A, 2 isolated common(s), 8 point(s) per common, 2A/point, 5A/common. Removable terminal blocks included.		✓				
XBE-TN16A	$78.00	LS Electric XGB discrete output module, 16-point, 12-24 VDC, sinking, 1 common(s), 16 point(s) per common, 0.5A/point, 2A/common. Removable terminal blocks included.		✓				
XBE-TN32A	$109.00	LS Electric XGB discrete output module, 32-point, 12-24 VDC, sinking, 1 common(s), 32 point(s) per common, 0.2A/point, 2A/common. Requires XTB-40H terminal block and C40HH-xxSB-XBI cable.		✓				✓
XBE-TP16A	$88.00	LS Electric XGB discrete output module, 16-point, 12-24 VDC, sourcing, 1 common(s), 16 point(s) per common, 0.5A/point, 2A/common. Removable terminal blocks included.		✓				
XBE-TP32A	$93.00	LS Electric XGB discrete output module, 32-point, 12-24 VDC, sourcing, 1 common(s), 32 point(s) per common, 0.2A/point, 2A/common. Requires XTB-40H terminal block and C40HH-xxSB-XBI cable.		✓				✓
XBE-DN32A	$172.00	LS Electric XGB discrete combo module, Input: 16-point, 24 VDC, sinking/sourcing, Output: 16-point, 12-24 VDC, sinking, 0.2A/point, 2A/common. Requires XTB-40H terminal block and C40HH-xxSB-XBI cable.	✓	✓				✓
Analog								
XBF-AD04A	$160.00	LS Electric XGB analog input module, 4-channel, current/voltage, 12-bit, input current signal range(s) of 0-20 mA, 4-20 mA, input voltage signal range(s) of 0-10 VDC, external 24 VDC required.			✓			
XBF-AD08A	$242.00	LS Electric XGB analog input module, 8-channel, current/voltage, 12-bit, input current signal range(s) of 0-20 mA, 4-20 mA, input voltage signal range(s) of 0-5 VDC, 1-5 VDC, 0-10 VDC, external 24 VDC required.			✓			
XBF-AD04C	$231.00	LS Electric XGB analog input module, 4-channel, current/voltage, 14-bit, input current signal range(s) of 0-20 mA, 4-20 mA, input voltage signal range(s) of 0-5 VDC, 1-5 VDC, 0-10 VDC, +/- 10 VDC, external 24 VDC required.			✓			
XBF-DV04A	$152.00	LS Electric XGB analog output module, 4-channel, voltage, 12-bit, output voltage signal range(s) of 0-10 VDC, external 24 VDC required.				✓		
XBF-DV04C	$209.00	LS Electric XGB analog output module, 4-channel, voltage, 14-bit, output voltage signal range(s) of 0-5 VDC, 1-5 VDC, 0-10 VDC and +/- 10 VDC, external 24 VDC required.				✓		
XBF-DC04A	$162.00	LS Electric XGB analog output module, 4-channel, current, 12-bit, output current signal range(s) of 0-20 mA and 4-20 mA, external 24 VDC required.				✓		
XBF-DC04C	$209.00	LS Electric XGB analog output module, 4-channel, current, 14-bit, output current signal range(s) of 0-20 mA and 4-20 mA, external 24 VDC required.				✓		
XBF-AH04A	$216.00	LS Electric XGB analog combo module, Input: 2-channel, current/voltage, 0-20 mA and 4-20 mA, 0-5 VDC, 1-5 VDC and 0-10 VDC, Output: 2-channel, current/voltage, 0-20 mA and 4-20 mA, 0-5 VDC, 1-5 VDC and 0-10 VDC.			✓	✓		
Motion								
XBF-PN04B	$350.00	LS Electric XGB 4-axis positioning module, EtherCAT protocol, 1 high-speed input point(s), sinking/line driver (differential), 1-channel, differential and single-ended encoder input(s), (1) Ethernet 100Base-TX (RJ45) port(s). For use with LS Electric XEM-Dx32Hx PLCs.					✓	
XBF-PN08B	$395.00	LS Electric XGB 8-axis positioning module, EtherCAT protocol, 1 high-speed input point(s), sinking/line driver (differential), 1-channel, differential and single-ended encoder input(s), (1) Ethernet 100Base-TX (RJ45) port(s). For use with LS Electric XEM-Dx32Hx PLCs.					✓	
XBF-HO02A	$176.00	LS Electric XGB counter input module, 200 kHz maximum switching frequency, 2 high-speed input point(s), 5-24 VDC, sinking, 2-channel, single-ended encoder input(s), 2 high-speed output point(s), 5-24 VDC, sinking, external 24 VDC required.					✓	✓
XBF-HD02A	$253.00	LS Electric XGB counter input module, 500 kHz maximum switching frequency, 2 high-speed input point(s), 5-24 VDC, sinking, 2-channel, differential encoder input(s), 2 high-speed output point(s), 5-24 VDC, sinking, external 24 VDC required.					✓	✓
Communication								
XBL-EIPT	$199.00	LS Electric XGB communication module, EtherNet/IP, 2 ports, (2) Ethernet 10/100Base-T (RJ45) port(s). For use with LS Electric XGB series PLCs.						

Note: See "Smart Link I/O System" on page tLSE-83 for the XTB-40H terminal block and cables. See "XGB PLC Replacement Terminals" on page tLSE-82 for replacement removable terminal blocks.