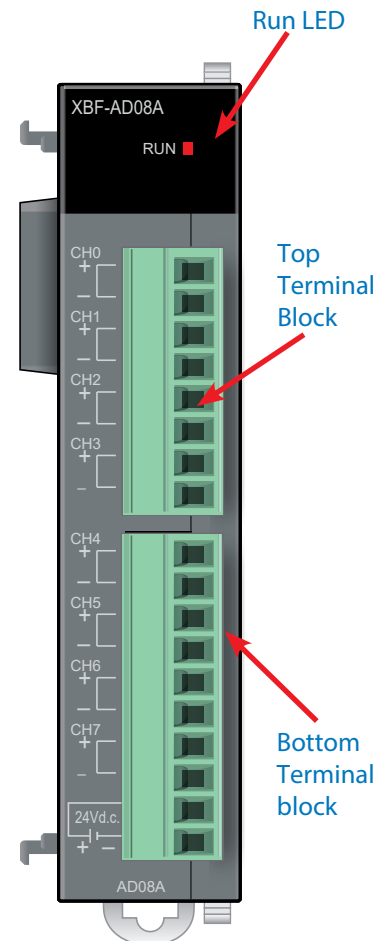


XBF-AD08A Analog Input Module

Part Number	Price	Classification	Description	# of Channels	Drawing
XBF-AD08A	\$,05]59:	Voltage/current Input	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.	8	PDF

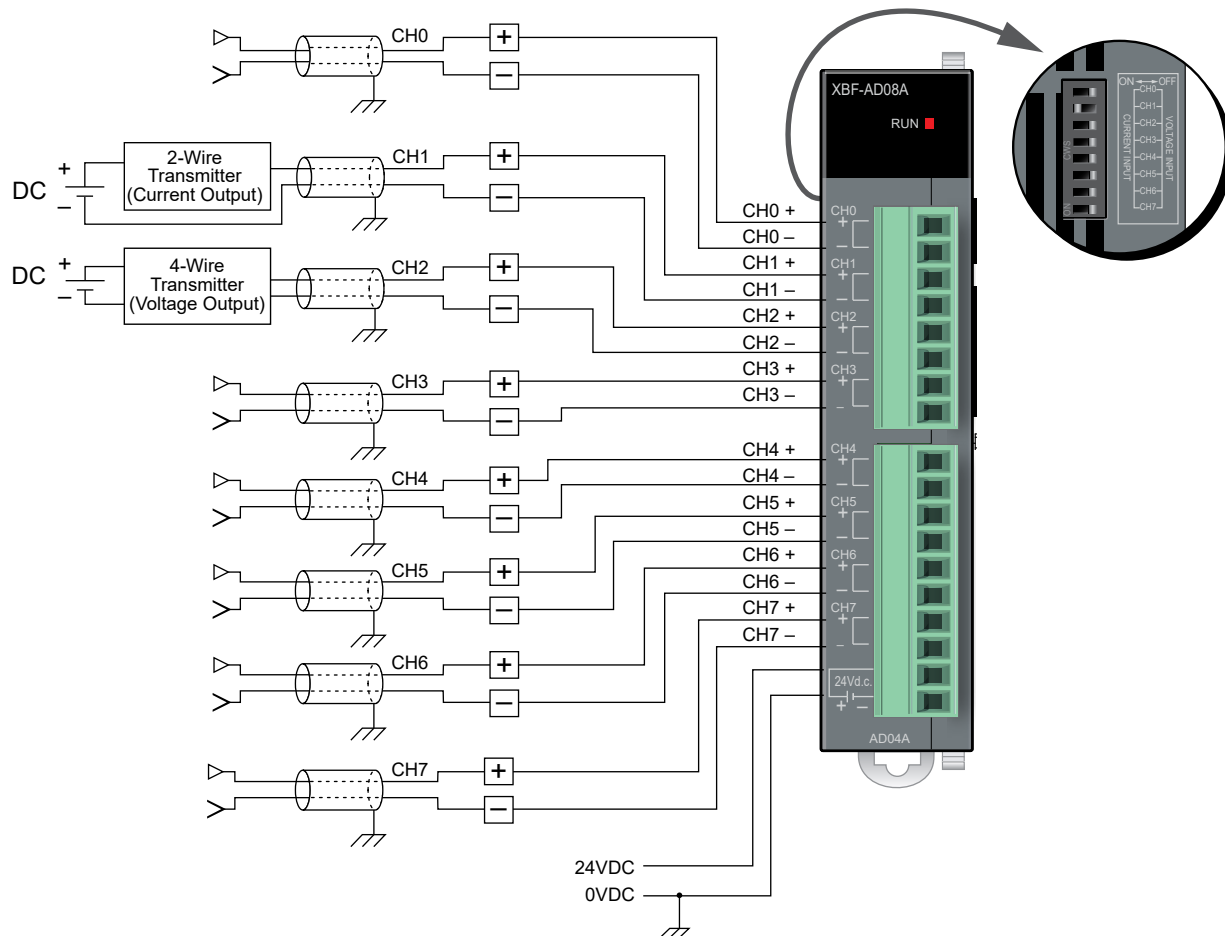
General Specifications		XBF-AD08A	
		Voltage	Current
Analog Input Range		1-5 VDC 0-5 VDC 0-10 VDC (input resistance 1MΩ min.)	4-20 mA DC 0-20mA DC (input resistance 250Ω)
Digital Output	Type	12 bit binary data	
	Unsigned Value	0-4000	
	Signed Value	-2000-2000	
	Precise Value	100-500 (1-5 VDC) 0-500 (0-5 VDC) 0-1000 (0-10 VDC)	400-2000 (4-20 mA DC) 0-2000 (0-20 mA DC)
	Percentile Value	0-1000	
Maximum Resolution		1/4000	
		1.25 mV (1-5, 0-5 VDC) 2.5 mV (0-10 VDC)	5 μA (4-20 mA, 0-20 mA DC)
Accuracy		±0.5% or less	
Maximum Conversion Speed		1.5 ms/channel	
Absolute Maximum Input		±15VDC	±25mA DC
Additional Function	Filter Function	Digital filter (4-64,000 ms)	
	Average Function	Time average (4-16,000 ms)	
		Count average (2-64,000 times)	
	Alarm Function	Moving average (2-100)	
Insulation Method		Photocoupler insulation between I/O terminal and PLC power (no insulation between channels)	
Input Terminal		8-pin terminal block + 10-pin terminal block connector	
I/O Points Occupied		Fixed type: 512 points	
Current Consumption	Internal (5VDC)	105mA	
	External (24VDC)	85mA	
Weight		81g	
Power Supply		20.4-28.8 VDC	



XBF-AD08A Analog Input Module Wiring

When connecting cable to your XBF-AD08A:

- In case of voltage/current input, wiring is the same. Adjust the voltage/current setting switch according to the case.
- Keep the AC power line away from the analog input module's external input signal line to prevent surge or inductive noise.
- Use cable rated to meet your application's ambient temperature and current needs. AWG22 (0.3mm²) 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 (0.3mm²) or greater cable
- Current input resistance is 250Ω
- Voltage input resistance is 1MΩ
- Terminal screwdriver: slotted 2.5 mm



XGB Analog Modules

XBF-AD08A Analog Input 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-AD08A are as follows (z refers to module slot number (2 to 8)).

Type	Scope	Variable (Symbolic)	Address (Direct Variable Alias)	Data Type	Comment
Tag	Global/Variable	_0z_CH0_ACT	%UX0.z.16	BOOL	Analog Input Module: CH0 Activation Status
Tag	Global/Variable	_0z_CH0_DATA	%UW0.z.2	WORD	Analog Input Module: CH0 Output
Tag	Global/Variable	_0z_CH0_ERR	%UX0.z.24	BOOL	Analog Input Module: CH0 Error
Tag	Global/Variable	_0z_CH0_IDD	%UX0.z.160	BOOL	Analog Input Module: CH0 Disconnection Flag
Tag	Global/Variable	_0z_CH1_ACT	%UX0.z.17	BOOL	Analog Input Module: CH1 Activation Status
Tag	Global/Variable	_0z_CH1_DATA	%UW0.z.3	WORD	Analog Input Module: CH1 Output
Tag	Global/Variable	_0z_CH1_ERR	%UX0.z.25	BOOL	Analog Input Module: CH1 Error
Tag	Global/Variable	_0z_CH1_IDD	%UX0.z.161	BOOL	Analog Input Module: CH1 Disconnection Flag
Tag	Global/Variable	_0z_CH2_ACT	%UX0.z.18	BOOL	Analog Input Module: CH2 Activation Status
Tag	Global/Variable	_0z_CH2_DATA	%UW0.z.4	WORD	Analog Input Module: CH2 Output
Tag	Global/Variable	_0z_CH2_ERR	%UX0.z.26	BOOL	Analog Input Module: CH2 Error
Tag	Global/Variable	_0z_CH2_IDD	%UX0.z.162	BOOL	Analog Input Module: CH2 Disconnection Flag
Tag	Global/Variable	_0z_CH3_ACT	%UX0.z.19	BOOL	Analog Input Module: CH3 Activation Status
Tag	Global/Variable	_0z_CH3_DATA	%UW0.z.5	WORD	Analog Input Module: CH3 Output
Tag	Global/Variable	_0z_CH3_ERR	%UX0.z.27	BOOL	Analog Input Module: CH3 Error
Tag	Global/Variable	_0z_CH3_IDD	%UX0.z.163	BOOL	Analog Input Module: CH3 Disconnection Flag
Tag	Global/Variable	_0z_CH4_ACT	%UX0.z.20	BOOL	Analog Input Module: CH4 Activation Status
Tag	Global/Variable	_0z_CH4_DATA	%UW0.z.6	WORD	Analog Input Module: CH4 Output
Tag	Global/Variable	_0z_CH4_ERR	%UX0.z.28	BOOL	Analog Input Module: CH4 Error
Tag	Global/Variable	_0z_CH4_IDD	%UX0.z.164	BOOL	Analog Input Module: CH4 Disconnection Flag
Tag	Global/Variable	_0z_CH5_ACT	%UX0.z.21	BOOL	Analog Input Module: CH5 Activation Status
Tag	Global/Variable	_0z_CH5_DATA	%UW0.z.7	WORD	Analog Input Module: CH5 Output
Tag	Global/Variable	_0z_CH5_ERR	%UX0.z.29	BOOL	Analog Input Module: CH5 Error
Tag	Global/Variable	_0z_CH5_IDD	%UX0.z.165	BOOL	Analog Input Module: CH5 Disconnection Flag
Tag	Global/Variable	_0z_CH6_ACT	%UX0.z.22	BOOL	Analog Input Module: CH6 Activation Status
Tag	Global/Variable	_0z_CH6_DATA	%UW0.z.8	WORD	Analog Input Module: CH6 Output
Tag	Global/Variable	_0z_CH6_ERR	%UX0.z.30	BOOL	Analog Input Module: CH6 Error
Tag	Global/Variable	_0z_CH6_IDD	%UX0.z.166	BOOL	Analog Input Module: CH6 Disconnection Flag
Tag	Global/Variable	_0z_CH7_ACT	%UX0.z.23	BOOL	Analog Input Module: CH7 Activation Status
Tag	Global/Variable	_0z_CH7_DATA	%UW0.z.9	WORD	Analog Input Module: CH7 Output
Tag	Global/Variable	_0z_CH7_ERR	%UX0.z.31	BOOL	Analog Input Module: CH7 Error
Tag	Global/Variable	_0z_CH7_IDD	%UX0.z.167	BOOL	Analog Input Module: CH7 Disconnection Flag
Tag	Global/Variable	_0z_CH_ACT_ARY	%UX0.z.16	ARRAY[0..7] OF BOOL	Analog Input Module: Each CH Active
Tag	Global/Variable	_0z_CH_DATA_ARY	%UW0.z.2	ARRAY[0..7] OF WORD	Analog Input Module: Each CH Output
Tag	Global/Variable	_0z_CH_ERR_ARY	%UX0.z.24	ARRAY[0..7] OF BOOL	Analog Input Module: Each CH Error
Tag	Global/Variable	_0z_CH_IDD_ARY	%UX0.z.160	ARRAY[0..7] OF BOOL	Analog Input Module: Each CH Disconnection Flag
Tag	Global/Variable	_0z_ERR	%UX0.z.0	BOOL	Analog Input Module: Error Flag
Tag	Global/Variable	_0z_ERR_CLR	%UX0.z.176	BOOL	Analog Input Module: Error Clear Request
Tag	Global/Variable	_0z_RDY	%UX0.z.15	BOOL	Analog Input Module: Ready Flag



XGB Series PLC Family

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	$5 \leq f < 8.4 \text{ Hz}$	3.5 mm pulse width	IEC61131-3-2
			$8.4 \leq f < 150\text{Hz}$	9.8 m/s ² (1G)	
	Continuous Vibration		$5 \leq f < 8.4 \text{ Hz}$	1.75 mm pulse width	
			$8.4 \leq f < 150\text{Hz}$	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.



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	Bus Coupler Compatible	Smart Link Required
Digital									
<u>XBE-DC08A</u>	\$61ey:	LS Electric XGB discrete input module, 8-point, 24 VDC, sinking/sourcing, 1 common(s), 8 point(s) per common. Removable terminal block included.	✓					✓	
<u>XBE-DC16A</u>	\$:;5]4]:	LS Electric XGB discrete input module, 16-point, 24 VDC, sinking/sourcing, 1 common(s), 16 point(s) per common. Removable terminal blocks included.	✓					✓	
<u>XBE-DC16B</u>	\$:5]4?:	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.	✓					✓	
<u>XBE-DC32A</u>	\$:;05]4.:	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.	✓					✓	✓
<u>XBE-AC08A</u>	\$:5]50:	LS Electric XGB discrete input module, 8-point, 120 VAC, 2 common(s), 4 point(s) per common. Removable terminal blocks included.	✓					✓	
<u>XBE-RY08A</u>	\$61eu:	LS Electric XGB relay output module, 8-point, 125 VDC/250 VAC, (8) Form A, 1 common(s), 8 point(s) per common, 2A/point, 5A/common. Removable terminal block included.		✓				✓	
<u>XBE-RY08B</u>	\$:05]51:	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.		✓				✓	
<u>XBE-RY16A</u>	\$:05]52:	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.		✓				✓	
<u>XBE-TN08A</u>	\$61ev:	LS Electric XGB discrete output module, 8-point, 12-24 VDC, sinking, 1 common(s), 8 point(s) per common, 0.5A/point, 2A/common. Removable terminal blocks included.		✓				✓	
<u>XBE-TN16A</u>	\$:5]54:	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.		✓				✓	
<u>XBE-TN32A</u>	\$:05]55:	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.		✓				✓	✓
<u>XBE-TP08A</u>	\$61ex:	LS Electric XGB discrete output module, 8-point, 12-24 VDC, sourcing, 1 common(s), 8 point(s) per common, 0.5A/point, 2A/common. Removable terminal blocks included.		✓				✓	
<u>XBE-TP16A</u>	\$:5]56:	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.		✓				✓	
<u>XBE-TP32A</u>	\$:05]57:	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.		✓				✓	✓
<u>XBE-DN32A</u>	\$:05]53:	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.	✓	✓				✓	✓
<u>XBE-DR16A</u>	\$061e#:	LS Electric XGB discrete combo module, Input: 8-point, 24 VDC, sinking/sourcing, Output: 8-point, 125 VDC/250 VAC, relay, (8) Form A (SPST) relays, 2A/point, 5A/common. Removable terminal blocks included.	✓	✓				✓	
Motion									
<u>XBF-PN04B</u>	\$:;05]5:	LS Electric XGB 4-axis positioning module, EtherCAT Master, 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-DxxxHx PLCs.					✓		
<u>XBF-PN08B</u>	\$:;05]6:	LS Electric XGB 8-axis positioning module, EtherCAT Master, 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-DxxxHx PLCs.					✓		
<u>XBF-HO02A</u>	\$:05]5e:	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.					✓	✓	✓
<u>XBF-HD02A</u>	\$:;05]5f:	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.					✓	✓	✓

Note: See "Smart Link I/O System" on page tLSE-131 for the XTB-40H terminal block and cables. See "XGB PLC Replacement Terminals" on page tLSE-149 for replacement removable terminal blocks.

Continued on next page