

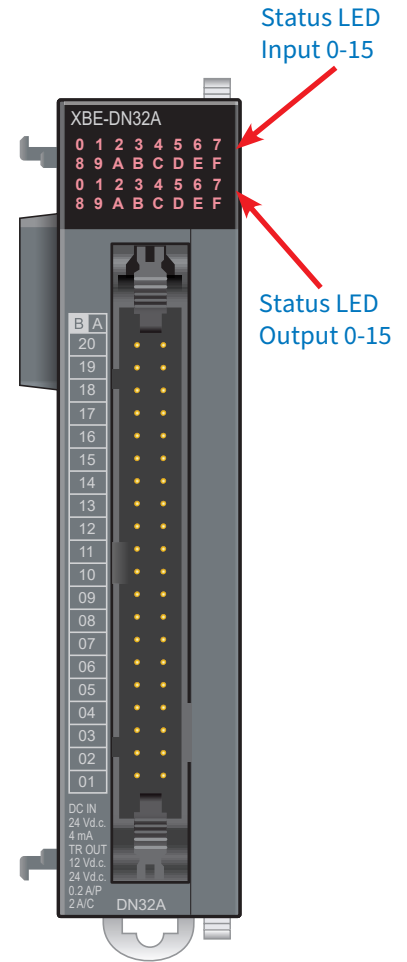


XGB Digital Modules

XBE-DN32A Digital Combo Module

Part Number	Price	Classification	Description	Drawing
XBE-DN32A	\$172.00	Digital Input/Output	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.	PDF

General Specifications		XBE-DN32A	
Input Specifications	Input Point	16 point	
	Rated Input Voltage	24VDC	
	Rated Input Current	~ 4mA	
	Operation Voltage Range	20.4 – 28.8 VDC (ripple rate <5%)	
	On Voltage/Current	19VDC or higher / 3mA or higher	
	Off Voltage/Current	6VDC or less / 1mA or less	
	Input Resistance	~ 5.6kΩ	
	Response Time	Off → On	1/3/5/10/20/70/100 ms (set by CPU parameter) Default: 3ms
		On → Off	
	Common Method	16 point / COM	
Output Specifications	Output Point	16 point	
	Rated Voltage	12/24 VDC	
	Operation Voltage Range	10.2–26.4 VDC	
	Operation Load Current	0.2 A / 1 point, 2A / 1COM	
	Off Leakage Current	0.1 mA or less	
	Maximum Load Current	0.7A / 10ms or less	
	Maximum Voltage Drop (On)	0.4 VDC or less	
	Response Time	Off → On	1ms or less 1ms or less (rated load, resistive load)
		On → Off	
	Common Method	16 point / COM	
External Power	Voltage	12/24 VDC ±10% (ripple voltage 4 Vp-p or less)	
	Current	20mA or less (connecting 24VDC)	
Over Voltage Protection	TVS Diode		
Insulation Method	Photocoupler insulation		
Insulation Pressure	560VACrms / 3 Cyle (altitude 2000m)		
Insulation Resistance	10MΩ or more by Megohmmeter		
Proper Cable Size	0.3 mm ²		
Current Consumption	60mA (when all inputs and outputs are On)		
Operation Indicator	Input On, LED On		
External Connection Method	40 pin connector		
Weight	60g		



XBE-DN32A - Digital I/O Module Configuration

Direct Variables

The base rack slot number determines the Direct Variable name for the module. Each slot is automatically allocated 64 input points and 64 output points. See the chart below for the actual input Direct Variable assignments used.

For Direct Variable nomenclature explanation, see [Direct Variable User Programming Memory](#).

Part Number	PLC Memory Allocation	Actual I/O Direct Variable
XBE-DN32A	Input: %IX0.z.0 – %IX0.z.63 Output: %QX0.z.0 – %QX0.z.63	%IX0.z.0 - %IX0.z.15 %QX0.z.0 - %QX0.z.15

“z” denotes the module slot (2 to 8).

Follow the Quick start video to learn how to Register and Configure any Digital I/O Module.

[Digital Module Setup](#)

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XBE-DN32A Digital Combo Module Wiring

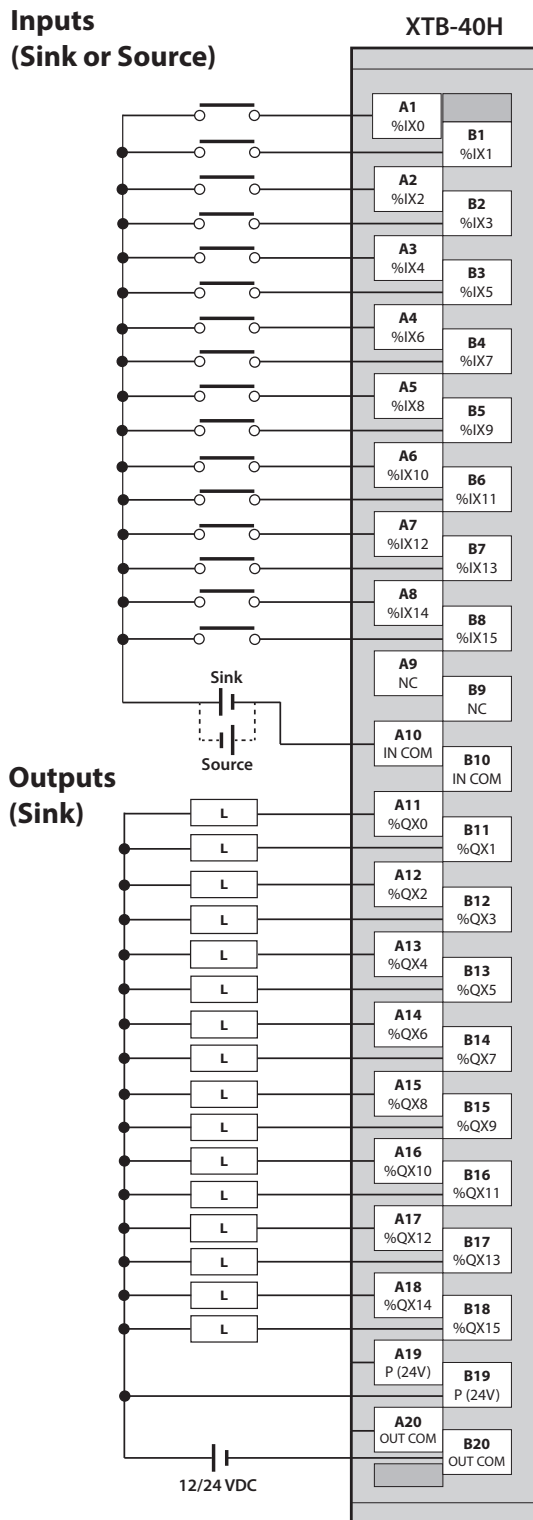
XBE-DN32A Input Circuit Configuration				
Circuit Configuration	XTB-40H Terminal	XEM Pin#	I/O Direct Variable	Description
<p>The diagram shows the input circuit configuration for the XBE-DN32A module. It features an XT-B40H terminal block with terminals A1 through B10. A 24VDC source is connected to terminal 15, which is a sink. The circuit includes photo couplers and resistors (R) connected to module pins B20 through B01. An internal circuit is also shown.</p>	A1	B20	%IX0.z.0	General Input 0
	B1	B19	%IX0.z.1	General Input 1
	A2	B18	%IX0.z.2	General Input 2
	B2	B17	%IX0.z.3	General Input 3
	A3	B16	%IX0.z.4	General Input 4
	B3	B15	%IX0.z.5	General Input 5
	A4	B14	%IX0.z.6	General Input 6
	B4	B13	%IX0.z.7	General Input 7
	A5	B12	%IX0.z.8	General Input 8
	B5	B11	%IX0.z.9	General Input 9
	A6	B10	%IX0.z.10	General Input 10
	B6	B09	%IX0.z.11	General Input 11
	A7	B08	%IX0.z.12	General Input 12
	B7	B07	%IX0.z.13	General Input 13
	A8	B06	%IX0.z.14	General Input 14
B8	B05	%IX0.z.15	General Input 15	
A9	B04	-	-	Not used (NC)
B9	B03	-	-	Not used (NC)
A10	B02	-	-	Common
B10	B01	-	-	Common
XBE-DN32A Output Circuit Configuration				
<p>The diagram shows the output circuit configuration for the XBE-DN32A module. It features an XT-B40H terminal block with terminals A1 through B20. A 5VDC source is connected to the internal circuit. The circuit includes photo couplers, resistors (R), and a 12/24VDC source connected to terminals A20 through A01. Loads are connected to terminals A11 through A01. An internal circuit is also shown.</p>	A11	A20	%QX0.z.0	General Output 0
	B11	A19	%QX0.z.1	General Output 1
	A12	A18	%QX0.z.2	General Output 2
	B12	A17	%QX0.z.3	General Output 3
	A13	A16	%QX0.z.4	General Output 4
	B13	A15	%QX0.z.5	General Output 5
	A14	A14	%QX0.z.6	General Output 6
	B14	A13	%QX0.z.7	General Output 7
	A15	A12	%QX0.z.8	General Output 8
	B15	A11	%QX0.z.9	General Output 9
	A16	A10	%QX0.z.10	General Output 10
	B16	A09	%QX0.z.11	General Output 11
	A17	A08	%QX0.z.12	General Output 12
	B17	A07	%QX0.z.13	General Output 13
	A18	A06	%QX0.z.14	General Output 14
B18	A05	%QX0.z.15	General Output 15	
A19	A04	-	P (24V)	2.0A/common
B19	A03	-	P (24V)	
A20	A02	-	OUT_COM	
B20	A01	-	OUT_COM	

Note: Input Ambient Temp Derating: Derate 5% for each degree above 50°C. Max 55°C (25% derating at 55°C).

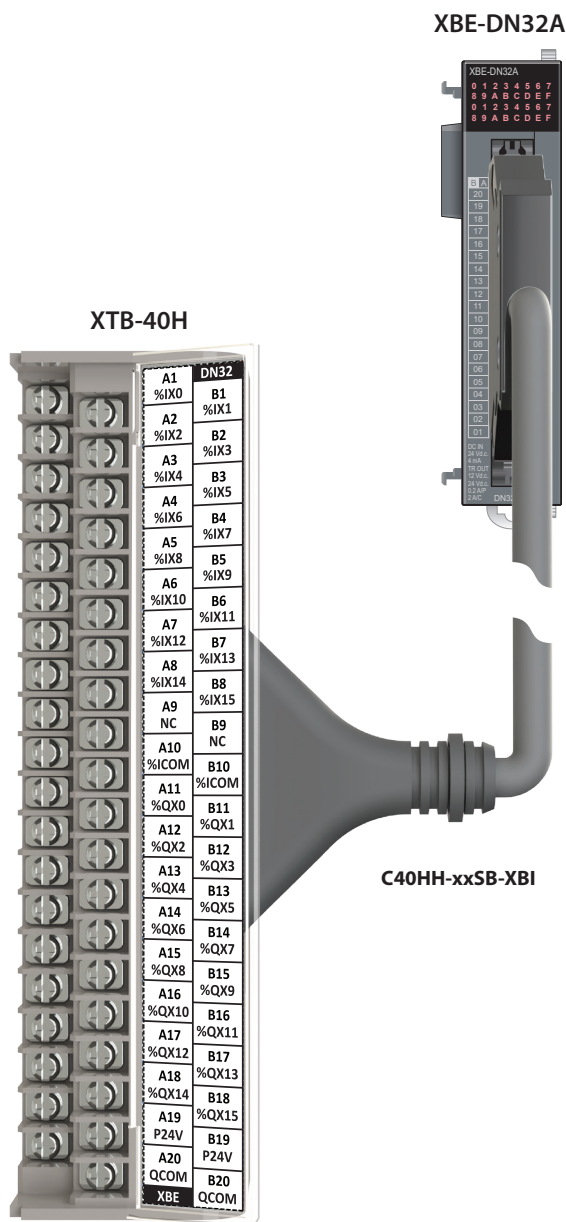
XBE-DN32A Digital Output Module Terminal Block Wiring

Download module specific XTB-40H Terminal Label Printouts here: [Download Printouts](#)

Terminal Wiring



PLC Connection



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	5 ≤ f < 8.4 Hz	IEC61131-3-2	
		8.4 ≤ f < 150Hz		
	Continuous Vibration	5 ≤ f < 8.4 Hz		
		8.4 ≤ f < 150Hz		
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	Smart Link Cable and Terminal Required
Digital								
<u>XBE-DC16A</u>	\$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.	✓					
<u>XBE-DC16B</u>	\$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.	✓					
<u>XBE-DC32A</u>	\$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.	✓					✓
<u>XBE-AC08A</u>	\$88.00	LS Electric XGB discrete input module, 8-point, 120 VAC, 2 common(s), 4 point(s) per common. Removable terminal blocks included.	✓					
<u>XBE-RY08B</u>	\$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.		✓				
<u>XBE-RY16A</u>	\$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.		✓				
<u>XBE-TN16A</u>	\$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.		✓				
<u>XBE-TN32A</u>	\$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.		✓				✓
<u>XBE-TP16A</u>	\$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.		✓				
<u>XBE-TP32A</u>	\$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.		✓				✓
<u>XBE-DN32A</u>	\$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								
<u>XBF-AD04A</u>	\$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.			✓			
<u>XBF-AD08A</u>	\$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.			✓			
<u>XBF-AD04C</u>	\$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.			✓			
<u>XBF-DV04A</u>	\$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.				✓		
<u>XBF-DV04C</u>	\$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.				✓		
<u>XBF-DC04A</u>	\$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.				✓		
<u>XBF-DC04C</u>	\$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.				✓		
<u>XBF-AH04A</u>	\$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								
<u>XBF-PN04B</u>	\$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.					✓	
<u>XBF-PN08B</u>	\$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.					✓	
<u>XBF-HQ02A</u>	\$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.					✓	✓
<u>XBF-HD02A</u>	\$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								
<u>XBL-EIPT</u>	\$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.



XGB Accessories

Smart Link I/O System

The Smart Link I/O system is a breakout wiring system used for high density I/O modules in the LS Electric XGB PLC series. The system is required for all modules with a 40-pin connection, and consists of a Smart Link cable with an XTB-40H terminal block.

Download module specific XTB-40H Terminal Label Printouts here: [Terminal Printouts](#)



Part Number	Price	Description	Length	Compatible With
<u>XTB-40H</u>	\$20.00	LS Electric XGB terminal block, 40-pin screw type. For use with LS Electric XGB series high-density modules.	n/a	All LS XGB series PLCs and modules with 40-pin connectors
<u>C40HH-05SB-XBI</u>	\$22.00	LS Electric XGB PLC I/O cable, 1.6ft/0.5m cable length, 40-pin connector to 40-pin connector. For use with LS Electric XGB series high-density modules.	0.5 m	
<u>C40HH-10SB-XBI</u>	\$25.00	LS Electric XGB PLC I/O cable, 3.2ft/1m cable length, 40-pin connector to 40-pin connector. For use with LS Electric XGB series high-density modules.	1m	
<u>C40HH-15SB-XBI</u>	\$29.00	LS Electric XGB PLC I/O cable, 4.9ft/1.5m cable length, 40-pin connector to 40-pin connector. For use with LS Electric XGB series high-density modules.	1.5 m	
<u>C40HH-20SB-XBI</u>	\$36.00	LS Electric XGB PLC I/O cable, 6.5ft/2m cable length, 40-pin connector to 40-pin connector. For use with LS Electric XGB series high-density modules.	2m	
<u>C40HH-30SB-XBI</u>	\$42.00	LS Electric XGB PLC I/O cable, 9.8ft/3m cable length, 40-pin connector to 40-pin connector. For use with LS Electric XGB series high-density modules.	3m	

XTB-40H Specifications		
Number of Pins	40 pin	
Terminal Pitch	7.0 mm	
Connector Type	MIL-C-83503 (50P polarity guide: 2EA)	
Applicable Wires	AWG22-16 (1.5mm ² /MAX)	
Insulation Resistance	100MΩ (500VDC)	
Dielectric Strength	500VAC 1 minute	
Screw	M3 x 8L	
Screw Torque	1.2N•m (12kgf•cm)	
Ambient Temperature	-10°C to +50°C (no freezing)	
Material	Case	Modified PPO
	Protective Cover	Polycarbonate
	PCB	Epoxy 1.6t

Smart Link I/O System, Terminals and Cable Connections

Module to Cable to Terminal Pinouts		
Module Pins	C40HH-xxSB-XBI	XTB-40H Terminal
B20	<p>HIROSE HIF3BA-40D-2.54R</p> <p>HIROSE HIF3BA-40D-2.54R</p>	A1
B19		B1
B18		A2
B17		B2
B16		A3
B15		B3
B14		A4
B13		B4
B12		A5
B11		B5
B10		A6
B09		B6
B08		A7
B07		B7
B06		A8
B05		B8
B04		A9
B03		B9
B02		A10
B01		B10
A20		A11
A19		B11
A18		A12
A17		B12
A16		A13
A15		B13
A14		A14
A13		B14
A12		A15
A11		B15
A10		A16
A09		B16
A08		A17
A07		B17
A06		A18
A05		B18
A04		A19
A03		B19
A02		A20
A01		B20