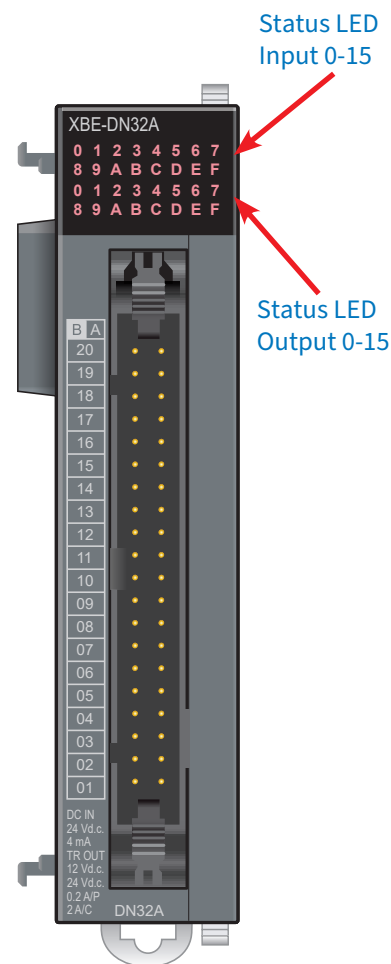


XBE-DN32A Digital Combo Module

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
		On → Off	1ms or less (rated load, resistive load)
	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

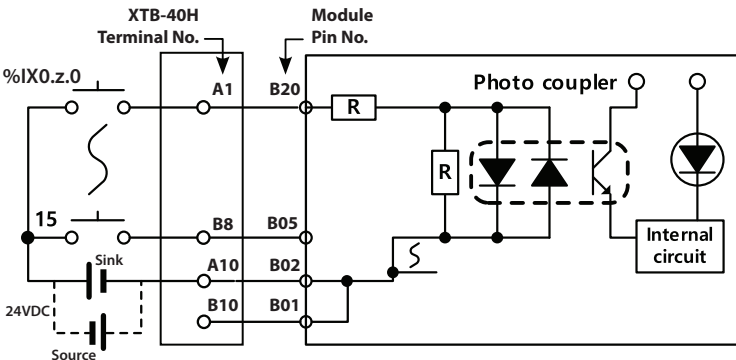
“z” denotes the module slot (2 to 8).

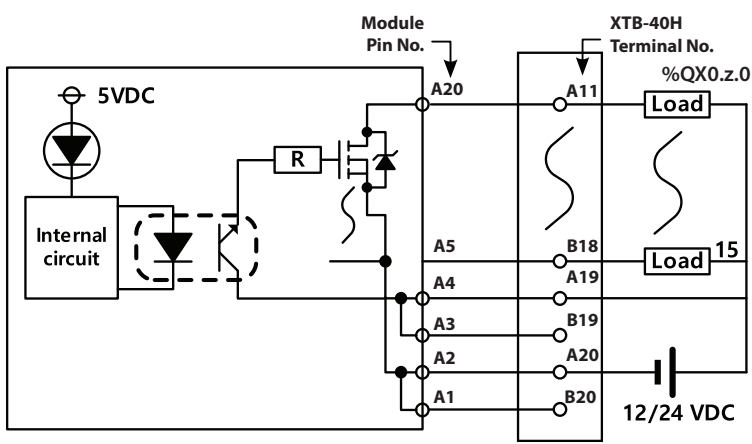
Follow the Quick start video to learn how to Register and Configure any Digital I/O Module.

Digital Module Setup

www.automationdirect.com

XBE-DN32A Digital Combo Module Wiring

XBE-DN32A Input Circuit Configuration				
Circuit Configuration	XTB-40H Terminal	XEM Pin#	I/O Direct Variable	Description
 The diagram shows the input circuit configuration for the XBE-DN32A module. It includes a 24VDC source connected to a switch (labeled 15) and a sink. The switch is connected to terminal A1 (XTB-40H Terminal No.) and B20 (Module Pin No.). The sink is connected to terminal B01 (Module Pin No.). The module contains a photo coupler and an internal circuit. The photo coupler has two resistors (R) and is connected to terminals B20, B05, B02, and B01. The internal circuit is connected to terminal B01.	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					
 The diagram shows the output circuit configuration for the XBE-DN32A module. It includes a 5VDC source connected to an internal circuit. The internal circuit is connected to a photo coupler, which is connected to a transistor. The transistor is connected to terminals A20 (Module Pin No.) and A11 (XTB-40H Terminal No.). The photo coupler has two resistors (R) and is connected to terminals A5, A4, A3, A2, A1, B18, A19, B19, A20, and B20. The module also contains a 12/24 VDC source connected to terminals A20, A11, B18, A19, B19, A20, and B20. The output is connected to a load (labeled 15) and a 12/24 VDC source.	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).

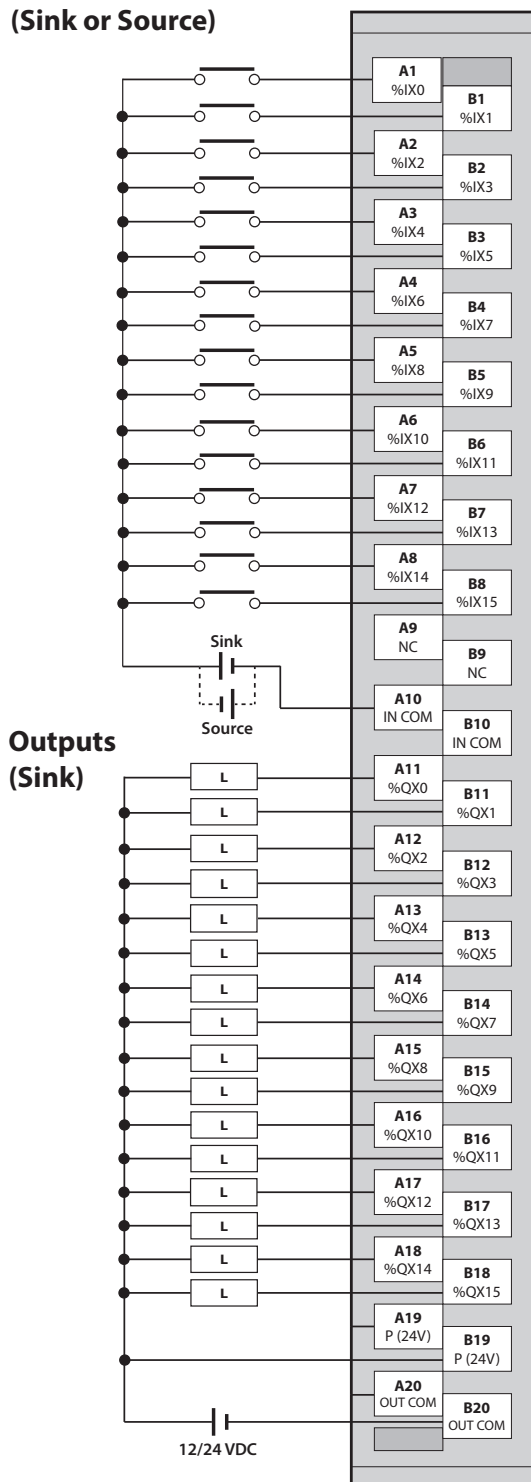
XBE-DN32A Digital Output Module Terminal Block Wiring

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

Terminal Wiring

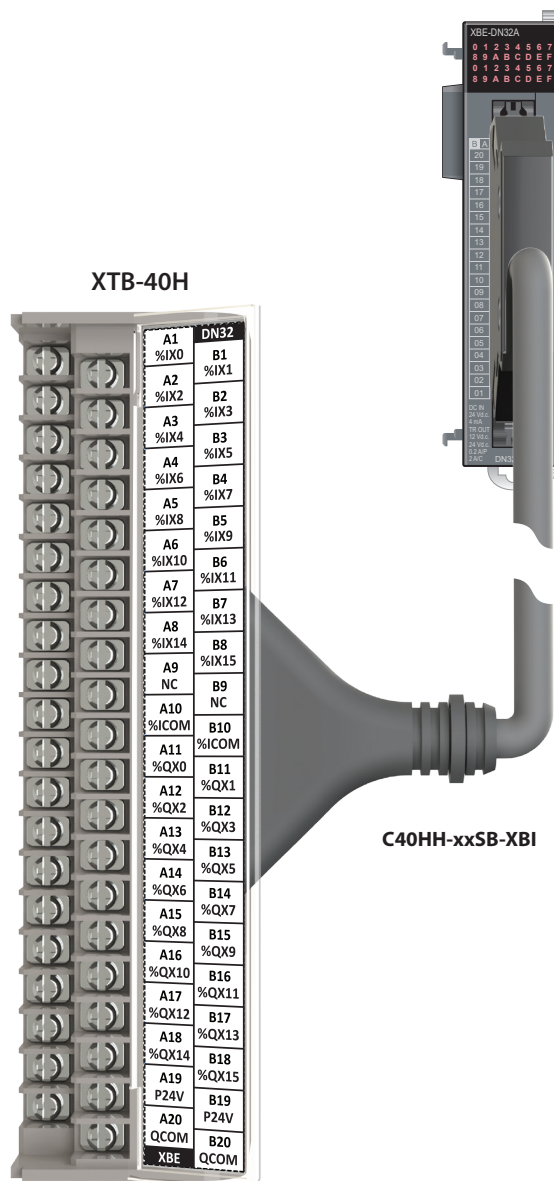
**Inputs
(Sink or Source)**

XTB-40H



PLC Connection

XBE-DN32A



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>	\$59.00	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>	\$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-RY08A</u>	\$80.00	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>	\$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-TN08A</u>	\$60.00	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>	\$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-TP08A</u>	\$62.00	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>	\$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.	✓	✓				✓	✓
<u>XBE-DR16A</u>	\$97.00	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>	\$350.00	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>	\$395.00	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>	\$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.					✓	✓	✓

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

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.

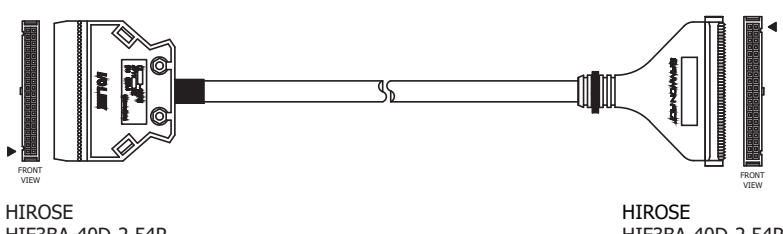
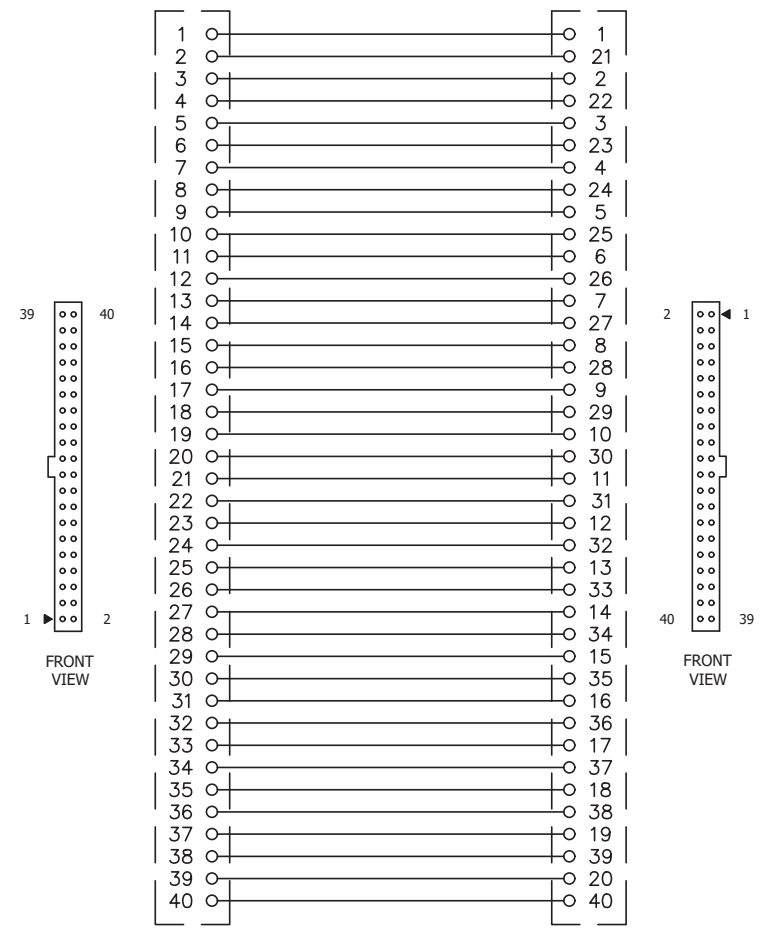
Download module specific XTB-40H Terminal Label Printouts here: [Terminal Printouts](#)



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>XTB-40H-LABEL</u>	\$3.00	AutomationDirect terminal label sheet, printed with terminal names for LS Electric XGB series modules. Package of 8. For use with XTB-40H terminal block.	n/a	
<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	 HIROSE HIF3BA-40D-2.54R	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	 39 40 1 2 FRONT VIEW	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