# TERMINAL BLOCKS OVERVIEW

# Product Family Overview

The XB Series offers a complete terminal block system with a universal range of accessories. Marking, bridging and testing accessories are standardized across the different clamping technologies-reducing inventory and logistics costs. The modular terminal block design allows for use of the different terminal block types together or individually, providing the highest degree of flexibility.

# **Application Description**

The metal portion of the XB Series terminal blocks are made from highgrade, strain-crack and corrosion-proof copper alloys. They won't experience any electrolytic corrosion or rusting, even when moisture is present. The metal surfaces are protected with a lead-free, galvanic nickel or tin plating.

The good electrical conductivity permits only a low temperature rise. The Polyamide 6.6 housings allow for operating temperatures up to 125°C and are certified for inflammability Class V0 in accordance with UL 94.

# **Features**

Global Acceptance— The XB Series terminal blocks are designed to meet worldwide standards and the latest international requirements.

#### Flexible Plug-In Bridge System—

All 3 technologies (screw, spring and IDC) use the same bridge system, allowing for individual potential distribution and guickly bridged connections among the same terminal block type or across different types. The XB Series terminal blocks have 2 bridge shafts arranged in 1 line, making flexible chain bridging and skip bridging between non-adjacent terminal blocks possible. Plug-in bridges are available from 2 to 50 positions. Reducing bridges are also available to connect a larger terminal block to a smaller one.



XBUT4RD-50PK package of 50



All models shown smaller than actual size.

XBUT4WH-50PK package of 50



#### Large Surface Area for Marking—

All XB Series terminal blocks have generously sized surface areas for labeling. This allows for clearly labeled wiring which results in reduced start-up time and simplifies activities such as testing and maintenance. There are provisions for marking individual terminal blocks and end stops, strips of terminal blocks, and large groups of terminal blocks.

#### Standardized Testing System—

All test plugs make contact in one of the easily accessible bridge shafts. A 2.3 mm diameter test plug is available for individual measuring wires. Modular test plugs are also available for more advanced testing.



package of 50

XBAFBS105-10PK

XBAFBS506

Flammability Rating: UL 94 V0 **Continuous Operating Temperature:** -40 to 125°C (-40 to 257°F)

**STANDARDS AND CERTIFICATIONS** 

UL and cUL Recognized: File no. E67464; CE approved LVD\*: EN 60947-7-1. EN 60947-7-2. EN 60998-2-3, EN 60352-4/A1 **ATEX Approval:** Eex e applications \* Not all standards apply to all

# terminal blocks.

#### **Modular Terminal Blocks for Potentially Explosive Environments**

The standard modular terminal blocks are approved for potentially explosive environments. In addition to the usual approvals, they also have been approved by a testing center authorized by the EU. No extra approval is required in intrinsic safety type applications. Modular terminal blocks on the internet address listed below fulfill the requirements for "increased safety" protection type when installation instructions are followed, and have a type examination certificate in accordance with the Ex directive Ex-RL 94/9/EU. These test certificates are recognized in all the EU member states and beyond.

The modular terminal blocks are approved for fitting in Zone 1, the Ex environment, as well as Zone 2. Zone 1 fitting is conditional upon terminal blocks being used in connection boxes approved for EEx e type protection and having the equivalent of at least IP54 protection.

The EEx approved modular terminal blocks can be divided into the following groups:

- Screw connection terminal blocks •
- Spring-cage connection terminal blocks
- Insulation displacement connection •
- terminal blocks
- Mini terminal blocks
- Terminal blocks for specialized applications

#### Identification

Explosion protected electrical equipment must be marked so that the safety characteristics are identifiable. The identification of electrical equipment is described in the harmonized standard EN 50014, as shown in the following example:

TABLE 55-1. EN 50014 Standard example	
Type Designation	XBUT25
Abbreviation of Explosion Protection	EEx e II
Protection Type Increased Safety "e"	е
Equipment Group	
Mark of the Testing Body	KEMA
Approval Number	05ATEX2158 U

#### Identification in Accordance with ATEX-RL

**XBUT25-50P** 

Electrical equipment that is certified in accordance with the ATEX 100a guideline also receives identification describing the site for use.

TABLE 55-2. ATEX GUIDELINE Example		
Manufacturing Data	02.01.2004	
Address of the Manufacturer	Duncan, SC	
Number of the Appointed Dept	344	
Common Marking	Ex symbol	
Equipment Group	I	
Category	2	
Use in Gas and/or Dust Atmospheres	G D	

# FEED-THROUGH TERMINAL BLOCK



- Maintenance-Free Connections
- Global Acceptance
- Multi-Conductor Connections
- Flexible Plug-In Bridge System
- Large Surface Area for Marking
- Standardized Testing System
- Metal Parts Made of Tin-Plated Copper Alloy

#### **SPECIFICATIONS FOR XBUT25**

Terminal Width: 5.2 mm Maximum Wire Size: 12 AWG/2.5 mm<sup>2</sup> IEC 60 947-7-1 in V/A/AWG: 800/32/26-12 EN 50 019<sup>1</sup> in V/A/AWG: 750/22 or 28/26-12 UL-cUL Ratings in V/A/AWG: 600/20/26-12

# TECHNICAL DATA DIMENSIONS

Width/Length/Cover Width in mm (inch): 5.2 (0.20)/46.9 (1.85)/2.2 (0.09) Height for 35 x 7.5/35 x 15 in mm (inch): 47.5 (1.87)/55.0 (2.17)

#### TECHNICAL DATA IN ACCORDANCE WITH IEC

Maximum Load Current in A/Cross Section in mm<sup>2</sup>: 32 / 4 Rated Surge Voltage in kV/ Contamination Class: 8 / 3 Surge Voltage Category/Insulating Material Group: 111 / 11

#### **CONNECTION CAPACITY** Stranded with Ferrule/with Ferrule and Plastic Sleeve in mm<sup>2</sup>: 0.25 to 2.5/0.25 to 2.5

#### MULTI-CONDUCTOR CONNECTION (SAME CROSS-SECTION) Solid/Stranded in mm<sup>2</sup>:

0.14 to 1.5/0.14 to 1.5 Stranded with Ferrules without Plastic Sleeve in mm<sup>2</sup>: 0.25 to 1.5 Stranded with Twin Ferrule with Plastic Sleeve in mm<sup>2</sup>: 0.5 to 1.5 Stripping Length in mm (inch): 9 (0.35) Thread: M3 Torque in in-lb (Nm): 5.3 to 7.1 (0.6 to 0.8) The XBUT Series utilizes a screw connection system that is accepted worldwide and is suitable in most applications. The maintenance-free connection provides the reliability you expect.

Designed for applications with high demands, the XBUT Series screw terminal block has a maintenance-free wire connection. Tightening of the terminal screws is not necessary to ensure proper operation. The screw locking technique prevents the screws from backing out. Copper wires can be clamped without pre-treatment or ferrules can be used for splicing protection. Multiple conductors can be connected in the same clamping mechanism, saving space.

The XBUT terminal blocks feature a compact design and maintenance-free screw connection. There is a double bridge shaft providing maximum flexibility. The double bridge shaft can accommodate individual chain bridging and step down bridging from other terminal blocks. There are numerous options for accessories, including those for testing and marking. Terminal blocks are available for wire cross-sections ranging from 12 AWG (2.5 mm<sup>2</sup>) to 0 AWG (150 mm<sup>2</sup>).

XBANS3575P shown smaller than actual size.



XBUT25-50PK shown smaller than actual size.

<b>To Order</b> Visit omega.com/xbut for Pricing and Details		
MODEL NO.	DESCRIPTION	
XBUT25-50PK	Gray single level connection, package of 50	
XBUT25BU-50PK	Blue single level connection, package of 50	
ACCESSORIES		
XBACUT10-10PK	Gray end cover, package of 10	
XBATUT10-10PK	Gray partition plate, package of 10	
XBAFBS25-10PK	Red 2 position plug-in bridge, package of 10	
XBAFBS35-10PK	Red 3 position plug-in bridge, package of 10	
XBAFBS55-10PK	Red 5 position plug-in bridge, package of 10	
XBAFBS105-10PK	Red 10 position plug-in bridge, package of 10	
XBAFBS505	Red 50 position plug-in bridge	
XBATSPAI4-10PK	Test adaptor package of 10	
XBMZB5-10PK	5.2 mm white blank marker strip, package of 10	
XBANS3575P	DIN rail 35 x 7.5 mm x 2 m slotted	
XBANS3575U	DIN rail 35 x 7.5 mm x 2 m solid	
XBANS3515P	DIN rail 35 x 15 mm x 2 m slotted	
XBANS3515U	DIN rail 35 x 15 mm x 2 m slotted	
XBAES35C-50PK	1-screw mounted end stop, package of 50	
XBAES35T-50PK	3-screw mounted end stop, package of 50	
XBAES35N-50PK	Snap-on end stop, package of 50	

Comes complete with instruction sheet.

Note 1: EU type-examination certificate number KEMA 05ATEX2158U.

Ordering Example: XBUT25-50PK, gray terminal blocks, XBACUT10-10PK, gray end covers.

XBUT4RD-50PK package of 50

### **SPECIFICATIONS FOR XBUT4**

Terminal Width: 6.2 mm Maximum Wire Size: 10 AWG/4 mm<sup>2</sup> IEC 60 947-7-1 in V/A/AWG: 800/41/26-10 EN 50 019<sup>1</sup> in V/A/AWG: 750/30 or 38/26-10 UL-cUL Ratings in V/A/AWG: 600/30/26-10 **TECHNICAL DATA DIMENSIONS** 

Width/Length/Cover Width in mm (inch): 6.2 (0.24)/46.9 (1.85)/2.2 (0.09)

Height for 35 x 7.5/35 x 15 in mm (inch): 47.5 (1.87)/55.0 (2.17)

#### **TECHNICAL DATA IN ACCORDANCE WITH IEC**

Maximum Load Current in A/Cross-Section in mm<sup>2</sup>: 41/6 Rated Surge Voltage in kV/Contamination Class: 8/3 Surge Voltage Category/Insulating Material Group: 111/1 **Connection Capacity** 

Stranded with Ferrule/with Ferrule and Plastic Sleeve in mm<sup>2</sup>: 0.25 to 4/0.25 to 4

#### MULTI-CONDUCTOR CONNECTION (SAME CROSS-SECTION)

Solid/Stranded in mm<sup>2</sup>: 0.14 to 1.5/0.14 to 1.5

Stranded with Ferrules without Plastic Sleeve in mm<sup>2</sup>: 0.25 to 1.5 Stranded with Twin Ferrule with Plastic Sleeve in mm<sup>2</sup>: 0.5 to 2.5 Stripping Length in mm (inch): 9 (0.35)

Thread: M3

To Order w

Torque in in-lb (Nm): 0.6 to 0.8 (5.3 to 7.1)

All models shown smaller than actual size.

package of 50

XBUT4BU-50PK package of 50

I O Urder Visit omega.com/xbut for Pricing and Details	
MODEL NO.	DESCRIPTION
XBUT4-50PK	Gray single level connection, package of 50
XBUT4BU-50PK	Blue single level connection
XBUT4OR-50PK	Orange single level connection
XBUT4YE-50PK	Yellow single level connection
XBUT4RD-50PK	Red single level connection
XBUT4WH-50PK	White single level connection
XBUT4BK-50PK	Black single level connection
XBUT4GN-50PK	Green single level connection
ACCESSORIES	
XBACUT10-10PK	Gray end cover, package of 10
XBATUT10-10PK	Gray partition plate, package of 10
XBAFBS26-10PK	Red 2 position plug-in bridge, package of 10
XBAFBS36-10PK	Red 3 position plug-in bridge, package of 10
XBAFBS56-10PK	Red 5 position plug-in bridge, package of 10
XBAFBS106-10PK	Red 10 position plug-in bridge, package of 10
XBAFBS506	Red 50 position plug-in bridge, package of 10
XBATSPAI4-10PK	Test adaptor, package of 10
XBMZB6-10PK	5.2 mm white blank marker strip, package of 10
XBANS3575P	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') slotted
XBANS3575U	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') solid
XBANS3515P	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') slotted
XBANS3515U	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') solid
XBAES35C-50PK	1-screw mounted end stop, package of 50
XBAES35T-50PK	3-screw mounted end stop, package of 50
XBAES35N-50PK	Snap-on end stop, package of 50
XBAES35N-50PK	Snap-on end stop, package of 50

Note 1: EU type-examination certificate number KEMA 05ATEX2158U. Ordering Example: XBUT4-50PK, blue terminal blocks, XBUT4RD-50PK, red terminal blocks, XBANS3575P, DIN rail.



Terminal Width: 8.2 mm Maximum Wire Size: 8 AWG/6 mm<sup>2</sup> IEC 60 947-7-1 in V/A/AWG: 800/57/24-8 EN 50 019<sup>1</sup> in V/A/AWG: 750/40 or 50/24-8 UL-cUL Ratings in V/A/AWG: 600/50/24-8

TECHNICAL DATA DIMENSIONS Width/Length/Cover Width in mm (inch): 8.2 (0.32)/46.9 (1.85)/2.2 (0.09)Height for 35 x 7.5/35 x 15 in mm (inch): 47.5 (1.87)/55.0 (2.17)

TECHNICAL DATA IN ACCORDANCE WITH IEC Maximum Load Current in A/ Cross-Section in mm<sup>2</sup>: 57/10 Rated Surge Voltage in kV/ Contamination Class: 8/3 Surge Voltage Category/Insulating Material Group: III/I

CONNECTION CAPACITY Stranded with Ferrule/with Ferrule and Plastic Sleeve in mm<sup>2</sup>: 0.25 to 6/0 .25 to 6

MULTI-CONDUCTOR CONNECTION (SAME CROSS-SECTION)

Solid/Stranded in mm<sup>2</sup>: 0.2 to 2.5/0.2 to 2.5 Stranded with Ferrules without Plastic Sleeve in mm<sup>2</sup>: 0.25 to 1.5 Stranded with Twin Ferrule with Plastic Sleeve in mm<sup>2</sup>: 0.5 to 4 Stripping Length in mm (inch): 10 (0.39) Thread: M4 Torque in in-lb (Nm): 13.3 to 15.9 (1.5 to 1.8) XBUT6-50PK shown larger than actual size

To Order Visit omega.com/xbut for Pricing and Details	
MODEL NO.	DESCRIPTION
XBUT6-50PK	Gray single level connection, package of 50
XBUT6BU-50PK	Blue single level connection, package of 50
ACCESSORIES	
XBACUT10-10PK	Gray end cover, package of 10
XBATUT10-10PK	Gray partition plate, package of 10
XBAFBS28-10PK	Red 2 position plug-in bridge, package of 10
XBATSPAI4-10PK	Test adaptor, package of 10
XBMZB8-10PK	8.22 mm white blank marker strip, package of 10
XBANS3575P	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') slotted
XBANS3575U	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') solid
XBANS3515P	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') slotted
XBANS3515U	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') solid
XBAES35C-50PK	1-screw mounted end stop, package of 50
XBAES35T-50PK	3-screw mounted end stop, package of 50
XBAES35N-50PK	Snap-on end stop, package of 50

Note 1: EU type-examination certificate number KEMA 05ATEX2158U. Ordering Example: XBUT6-50PK, gray terminal blocks, XBANS3575P, DIN rail.

Terminal Width: 10.2 mm Maximum Wire Size: 6 AWG/10 mm<sup>2</sup> IEC 60 947-7-1 in V/ A/AWG: 1000/76/20-6 EN 50 019<sup>1</sup> in V/A/AWG: 750/54 or 69/20-6 UL-cUL Ratings in V/A/AWG: 600/65/20-6 TECHNICAL DATA DIMENSIONS

Width/Length/Cover Width in mm (inch): 10.2 (0.40)/46.9 (1.85)/2.2 (0.09) Height for 35 x 7.5 / 35 x 15 in mm (inch): 47.5 (1.87)/55.0 (2.17)

#### **TECHNICAL DATA IN ACCORDANCE WITH IEC**

Maximum Load Current in A/ Cross-Section in mm<sup>2</sup>: 76/16 Rated Surge Voltage in kV/ Contamination Class: 8/3 Surge Voltage Category/Insulating Material Group: III/I

CONNECTION CAPACITY Stranded with Ferrule/with Ferrule and Plastic Sleeve in mm<sup>2</sup>: 0.5 to 10/0.5 to 10

MULTI-CONDUCTOR CONNECTION (SAME CROSS-SECTION) Solid/Stranded in mm<sup>2</sup>: 0.5 to 4/0.5 to 4 Stranded with Ferrules without Plastic Sleeve in mm<sup>2</sup>: 0.5 to 2.5 Stranded with Twin Ferrule with Plastic Sleeve in mm<sup>2</sup>: 0.5 to 6 Stripping Length in mm (inch): 10 (0.39) Thread: M4 Torgue in in-lb (Nm): 13.3 to 15.9 (1.5 to 1.8)



XBAES35C-10PK

package of 10

package of 10





XBATUT10-10PK package of 10



To Order Visit omega.com/xbut for Pricing and Details	
MODEL NO.	DESCRIPTION
XBUT10-50PK	Gray single level connection, package of 50
XBUT10BU-50PK	Blue single level connection, package of 50
XBUT10OR-50PK	Orange single level connection, package of 50
XBUT10RD-50PK	Red single level connection, package of 50
XBUT10YE-50PK	Yellow single level connection, package of 50
ACCESSORIES	
XBACUT10-10PK	Gray end cover, package of 10
XBATUT10-10PK	Gray partition plate, package of 10
XBAFBS210-10PK	Red 2 position plug-in bridge, package of 10
XBARBUT10-10PK	Red reducing bridge, package of 10
XBMZB10-10PK	10.2 mm white blank marker strip, package of 10
XBANS3575P	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') slotted
XBANS3575U	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') solid
XBANS3515P	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') slotted
XBANS3515U	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') solid
XBAES35C-50PK	1-screw mounted end stop, package of 50
XBAES35T-50PK	3-screw mounted end stop, package of 50
XBAES35N-50PK	Snap-on end stop, package of 50

**Note 1:** EU type-examination certificate number KEMA 05ATEX2158U. **Ordering Example: XBUT10YE-50PK,** yellow terminal blocks.

Terminal Width: 12 mm Maximum Wire Size: 4 AWG/16 mm<sup>2</sup> IEC 60 947-7-1 in V/A/AWG: 1000/101/17-4 UL-cUL Ratings in V/A/AWG: 600/85/16-4

TECHNICAL DATA DIMENSIONS Width/Length/Cover Width in mm (inch): 12 (0.47)/52.8 (2.08)/2.2 (0.09)Height for 35 x 7.5/35 x 15 in mm (inch): 54.8 (2.16)/62.3 (2.45)

TECHNICAL DATA IN ACCORDANCE WITH IEC Maximum Load Current in A/ Cross-Section in mm<sup>2</sup>: 101/25 Rated Surge Voltage in kV/ Contamination Class: 8/3 Surge Voltage Category/Insulating Material Group: III/I Connection Capacity Stranded with Ferrule/with Ferrule and Plastic Sleeve in mm<sup>2</sup>: 1.0 to 16/1.0 to 16

# MULTI-CONDUCTOR CONNECTION (SAME CROSS-SECTION)

Solid/Stranded in mm<sup>2</sup>: 1.0 to 6/1.0 to 4 Stranded with Ferrules without Plastic Sleeve in mm<sup>2</sup>: 1.0 to 4 Stranded with Twin Ferrule with Plastic Sleeve in mm<sup>2</sup>: 0.75 to 10 Stripping Length in mm (inch): 10 (0.39) Thread: M5 Torque in in-lb (Nm): 22.1 to 26.6 (2.5 to 3.0) XBUT16-10PK shown larger than actual size.

XBANS3575P shown smaller than actual size.



Ordering Example: XBUT16-10PK, gray terminal blocks, XBANS3575P, DIN rail.

Terminal Width: 16 mm Maximum Wire Size: 0 AWG/35 mm<sup>2</sup> IEC 60 947-7-1 in V/A/AWG: 1000/150/15-0 UL-cUL Ratings in V/A/AWG: 600/150/14-1/0

TECHNICAL DATA DIMENSIONS Width/Length/Cover Width in mm (inch): 16.0 (0.63)/60.2 (2.37)/-Height for 35 x 7.5/35 x 15 in mm (inch): 65.7 (2.59)/73.2 (2.88)

# TECHNICAL DATA IN ACCORDANCE WITH IEC

Maximum Load Current in A/ Cross-Section in mm<sup>2</sup>: 150/50 Rated Surge Voltage in kV/ Contamination Class: 8/3 Surge Voltage Category/Insulating Material Group: III/I

CONNECTION CAPACITY Stranded with Ferrule/with Ferrule and Plastic Sleeve in mm<sup>2</sup>: 1.5 to 35/1.5 to 35

#### MULTI-CONDUCTOR CONNECTION (SAME CROSS-SECTION)

Solid/Stranded in mm<sup>2</sup>: 1.5 to 16/1.5 to 10

Stranded with Ferrules without Plastic Sleeve in mm<sup>2</sup>: 1.5 to 10 Stranded with Twin Ferrule with Plastic Sleeve in mm<sup>2</sup>: 1.5 to 10 Stripping Length in mm (inch): 16 (0.63) Thread: M6

Torque in in-lb (Nm): 28.3 to 32.7 (3.2 to 3.7)



XBUT35-10PK shown larger than actual size

To Order Visit omega.com/xbut for Pricing and Details		
MODEL NO.	DESCRIPTION	
XBUT35-10PK	Gray single level connection, package of 10	
ACCESSORIES		
XBAFBS216-10PK	Red 2 position plug-in bridge, package of 10	
XBMZB15-10PK	8.22 mm white blank marker strip, package of 10	
XBANS3575P	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') slotted	
XBANS3575U	DIN rail 35 x 7.5 mm x 2 m (1.4 x 0.30" x 6.6') solid	
XBANS3515P	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') slotted	
XBANS3515U	DIN rail 35 x 15 mm x 2 m (1.4 x 0.60" x 6.6') solid	
XBAES35C-50PK	1-screw mounted end stop, package of 50	
XBAES35T-50PK	3-screw mounted end stop, package of 50	
XBAES35N-50PK	Snap-on end stop, package of 50	

Ordering Example: XBUT35-10PK, gray terminal blocks, XBANS3575P, DIN rail.

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