



BUCK-BOOST

TRANSFORMERS

CATALOG 2020



The Larson Electronics Buck-boost and Zigzag Transformers catalog provides low-cost and compact voltage conversion solutions for equipment in industrial facilities. Starting with buck-boost transformers, these devices step up (boost) or step down (buck) voltages within a 9-25% range. The auto transformers share primary and secondary windings (single coil), which contributes to their space-saving benefits. Additional circuit protection may be required when using buck-boost transformers with machines, as the units do not provide isolation. An encapsulated design protects the internal components with solid epoxy (mixture of silica sand resin), making the transformers suitable for long-term use in rugged environments. This series includes single-phase, split-phase, three-phase Delta and three-phase Wye models. Operators can complete wiring connections via copper tabs or lead wires located at the front of the devices for easy access. Pre-wired versions of the transformer models above are available for convenience and time-saving installations at the site.

Our zigzag transformers can be used to create a neutral when one is not present for grounding in a three-phase Delta configuration ("artificial neutral"). These devices are suitable for three-phase, 4-wire systems and are designed for heavy, unbalanced loads. The units can be used with a neutral grounding resistor (NGR). This type of grounding transformer suppresses third (triple) harmonic currents, offers no phase displacement and ensures ground current isolation. It is common to install these power devices on the line side of the main breaker and close to the



system transformer's secondary terminals. Zigzag transformers in this catalog cater to a wide range of three-phase power requirements and feature ventilated housings to promote natural cooling in the surrounding environment.

Standard buck-boost and zigzag transformers feature copper or aluminum windings and are protected by a NEMA 3R rated, steel enclosure. Suitable for indoor or outdoor locations, this level of protection enables the devices to withstand moisture, debris and external ice formation. Both types of transformers meet or exceed NEMA ST-20 standards.

Applications for our buck-boost transformers include the following: industrial, manufacturing, commercial, uninterruptible power supply (UPS), tanning beds, low voltage circuits, HVAC systems, motors, lighting systems, heaters, electronic converters, power distribution and more. We offer a complete line of standard transformers for conventional voltage conversion (beyond the range of buck-boost transformers) in a separate catalog.

Larson Electronics offers customization services for the buck-boost and zigzag transformers in this series at additional costs. Our customization services are designed for businesses with specific power requirements or needs. Examples of features available for customization include: primary and/or secondary voltages, transformer capacity, mount, finish, color and more. Contact us today at 1-800-369-6671 for more information about customization services for our transformer products.



Buck-boost Transformers

Larson Electronics buck-boost transformers step up or step down voltage for compatibility with equipment in industrial and commercial facilities. Compared to large, conventional transformers, these compact units are designed to handle a tight voltage rectification range of 9-25%. The auto transformers have a shared winding configuration, with the primary and secondary windings located on a single coil. This configuration allows the devices to be installed close to machines or equipment requiring buck-boost transformers and maximize space. In order to protect internal components, the power devices are encapsulated with solid epoxy (mixture of silica and resin). All buck-boost transformers in this catalog are protected by NEMA 3R rated enclosures and can be used in indoor or outdoor locations. Mounting brackets at the back of the devices cater to surface or wall mounting requirements. The transformers meet or exceed NEMA ST-20 standards.

In the buck-boost transformers series, customers can choose from single-phase, split-phase, three-phase Delta and three-phase Wye models. Pre-wired versions of the buck-boost transformers are available. Applications for our buck-boost transformers include: industrial, commercial, business, general purposes, data centers, motors, uninterruptible power supply (UPS), tanning beds, low voltage circuits, HVAC systems, motors, lighting systems and more.

BENEFITS

- Step up or step down voltages
- Compact and encapsulated
- NEMA 3R rated for indoor or outdoor use
- Single phase, split phase, three-phase Delta and three-phase Wye
- Pre-wired buck-boost transformers available
- Customization available



Buck-boost Transformers – Single Phase

Larson Electronics single-phase buck-boost transformers perform voltage rectification and ensure accurate power management. One unit is designed to handle single-phase voltage conversion, within a range of 9-25%. The units take on an auto transformer configuration, with shared primary and secondary windings (no isolation occurs between the two sides). To ensure long-term use and durability in rugged sites, these transformers are protected by NEMA 3R rated, steel enclosures for use in indoor or outdoor locations. Standard units in this series are compatible with surface or wall mounting installations and have front-accessible lead wires or copper tabs for primary and secondary connections. Natural air cooling keeps the dry-type devices running optimally. When installed at the site, buck-boost transformers can reduce excess heat generation of machines, preserve equipment lifespans and promote cost-effective, efficient operation. Customers may choose from a selection of kVA capacity ratings and primary and secondary voltages to meet the power requirements of their project.



Buck-boost Transformers – Split Phase

Larson Electronics split-phase buck-boost transformers perform voltage rectification and offer two different type of outputs with a neutral for connected equipment. Two units handle single-phase voltage conversion, within a range of 9-25%. This type of power solution is ideal for stepping down a primary voltage to one secondary output or generating two secondary legs (with a lower voltage) from a single power source. The buck-boost devices in this series take on an auto transformer configuration, with shared primary and secondary aluminum windings (no isolation occurs between the two sides). To ensure long-term use and durability in rugged sites, these transformers are protected by NEMA 3R rated, steel enclosures for use in indoor or outdoor locations. Standard models are compatible with surface or wall mounting installations and have front-accessible lead wires or copper tabs for primary and secondary connections. Natural air cooling keeps the dry-type devices running optimally. When installed at the site, buck-boost transformers can reduce excess heat generation of machines, preserve equipment lifespans and promote cost-effective, efficient operation. Customers may choose from a selection of kVA capacity ratings and primary and secondary voltages to meet the power requirements of their project.



Buck-boost Transformers – Three Phase Delta

Larson Electronics three-phase Delta buck-boost transformers perform voltage rectification for compatibility with connected equipment. Two units handle three-phase voltage conversion, within a range of 9-25%. For proper application, the transformers should not be used in a closed Delta connection (may result in phase shifting on the output side) and should not be utilized to generate a three-phase 4-wire Wye connection (from a 3-wire Delta circuit). The buck-boost devices in this series take on an auto transformer configuration, with shared primary and secondary aluminum windings. With this design, no isolation occurs between the two sides. These transformers are protected by NEMA 3R rated enclosures with a painted steel finish for use in indoor or outdoor locations and ensure long-term use in rugged sites. Standard models are compatible with surface or wall mounting installations and have front-accessible lead wires or copper tabs for primary and secondary connections. Natural air cooling keeps the dry-type devices running optimally. When installed at the site, buck-boost transformers can reduce excess heat generation of machines, preserve equipment lifespans and promote cost-effective, efficient operation. Customers may choose from a selection of kVA capacity ratings and primary and secondary voltages to meet the power requirements of their project.



Buck-boost Transformers – Three Phase Wye

Larson Electronics three-phase Wye buck-boost transformers perform voltage rectification for compatibility with connected equipment. Three units handle three-phase voltage conversion, within a range of 9-25%. Compared to conventional isolation transformers, buck-boost devices are low cost, more compact and lighter in weight. These benefits translate to an overall more efficient power solution for stepping up or stepping down voltages in small amounts. The transformers in this series take on an auto transformer configuration, with shared primary and secondary aluminum windings. Leveraging this space-saving design, no isolation occurs between the two sides. These transformers are protected by NEMA 3R rated enclosures with a painted steel finish for use in indoor or outdoor locations and ensure long-term use in rugged sites. Standard models are compatible with surface or wall mounting installations and have front-accessible lead wires or copper tabs for primary and secondary connections. Natural air cooling keeps the dry-type devices running optimally. When installed at the site, buck-boost transformers can reduce excess heat generation of machines, preserve equipment lifespans and promote cost-effective operation. Customers may choose from a selection of kVA capacity ratings and primary and secondary voltages to meet the power requirements of their project.



Buck-boost Transformers – Prewired

Larson Electronics prewired buck-boost transformers perform voltage rectification for compatibility with connected equipment. With 1-3 units (depending on type of transformer), the compact devices handle single-phase or three-phase voltage conversion, within a range of 9-25%. These systems are prewired for added convenience and quick installations. On the primary side, an input cord with a cord cap is available for connection to power sources. The secondary side has an output cord with a receptacle or connector for powering equipment on a bucked or boosted voltage. Primary and/or secondary wiring leads (without cord caps or receptacles/connectors) are also available, which is recommended for direct wiring with power sources and equipment. This selection of prewired units includes single-phase, split-phase, three-phase Delta and three-phase Wye models.

The transformers in this series take on an auto transformer configuration, with shared primary and secondary aluminum windings. Leveraging this space-saving design, no isolation occurs between the two sides. These transformers are protected by NEMA 3R rated enclosures for use in indoor or outdoor locations and ensure long-term use in rugged sites. Standard models are compatible with surface or wall mounting installations. Natural air cooling keeps the dry-type devices running optimally. When installed at the site, buck-boost transformers can reduce excess heat generation of machines, preserve equipment lifespans and promote cost-effective operation. Customers may choose from a selection of kVA capacity ratings and primary and secondary voltages to meet the power requirements of their project.



Buck-boost Transformers – Zigzag

Larson Electronics zigzag transformers are heavy-duty power devices designed for fault monitoring applications and enhancing electrical safety. With three units and when used as a grounding transformer, the compact devices help generate a neutral for ungrounded three-phase systems, including a three-phase Delta connection. Zigzag transformers also provide a form of harmonic mitigation, which addresses triple (triplet) harmonic currents: 3rd, 9th and 15th. When installed close to loads that produce such harmonic currents, the windings “trap” the unwanted currents. A wide selection of three-phase models is available for this line of zigzag transformers.

The transformers in this series take on an auto transformer configuration, with shared primary and secondary aluminum windings. Leveraging this space-saving design, no isolation occurs between the two sides. These zigzag transformers are protected by NEMA 3R rated enclosures for use in indoor or outdoor locations and ensure long-term use in rugged sites. Standard models are compatible with surface/wall or floor mounting (for larger units) installations. Natural air cooling keeps the dry-type devices running optimally. When installed at the site, zigzag transformers can reduce excess heat generation of machines, preserve equipment lifespans and promote cost-effective operation. Customers may choose from a selection of kVA capacity ratings and primary and secondary voltages to meet the power requirements of their project.

LARSON ELECTRONICS LLC
9419 E US HWY 175
KEMP, TX 75143

Web: larsonelectronics.com
Email: sales@larsonelectronics.com
Phone: 1-800-369-6671
Intl: +1-214-616-6180
Fax: 903-498-3364

FOLLOW US

facebook.com/LarsonElectronics
twitter.com/LarsonLights
youtube.com/LEMagnalight
instagram.com/LarsonLights

