

SIEMENS

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BT300™ Variable Frequency Drives with Conventional or Electronic Bypass

The perfect power solution at a great value

usa.siemens.com/hvac

Unstoppable power.

One compact design, two bypass options, and non-stop coverage for demanding HVAC environments.

Half of today's drive specifications require bypass functionality. The BT300 with Conventional or Electronic Bypass is designed to meet these growing needs. It offers the same sophisticated features and easy-to-use menu structure found in the BT300 VFD. This makes installation and commissioning quick and easy and provides peace-of-mind to customers in mission critical facilities.

The Conventional Bypass utilizes selector switches and indicator lights as primary functions. The Electronic Bypass utilizes internal control boards that act as the brains and eliminate the control wiring, relay logic, and terminal blocks. They are replaced with advanced built-in features that are accessible from an electronic keypad. Both are built for North America and assembled in the USA.



Both Bypass Options Feature:

Advanced Keypad with Start-Up Wizards and Displays

- Built-in simplicity with an intuitive, easy-to-use Bypass Start-up Wizard
- Nine user-defined values of Drive or Bypass can be monitored and displayed at one time
- Graphical keypad features help texts and clear fault info including possible causes and remedies

Conventional Bypass Features:

Two Drive Bypass Configuration Options

Choose either the two contactors and a service switch, or the traditional three-contactor configuration. Selector switches and indicator lights are incorporated for primary functions.

22 mm Components with Wide Viewing Angle

Industrial style operators and lights have a longer life and require less maintenance.

Electronic Bypass Features:

Full Bypass Control – Even if the Bypass Board Fails

If the bypass control board malfunctions, the Electronic Diagnostic Board provides an override switch input to allow the motor to continue to run in bypass.

Auto Bypass

Bypass can be auto-activated based on the drive's programmable relay.

Pass Through I/O

Monitor and display up to 8 safety interlocks. For easy troubleshooting, read the status of all 12 I/O points of the drive, plus up to 8 additional inputs.

Additional HVAC I/O

For external safety systems, PID loops, and external device control and monitoring.

Essential Service

This system override enhances operator safety by eliminating the drives from the control scheme and running the motor in bypass mode.



Keep HVAC equipment in mission critical facilities running continuously and efficiently.
– Laboratories, Data Centers, Airports, Hospitals

Reduce installation time and maintenance costs.

On-board Ethernet – Lead the way with the first VFD with bypass that offers on-board Ethernet. All standard HVAC protocols are ready for “out of the box” installation. Ethernet and RS-485 connections are included for APOGEE® P1, BACnet IP and MS/TP, Modbus RTU/TCP, and Metasys N2. Since communication is built into the drive, there is no need for a cabinet, power supply, converter, or extra cabling. This saves time during installation.

5% Impedance with Harmonic Filters – Protect against distortion, especially in sensitive areas, such as laboratories, data centers, airports, and hospitals.

Seismic Certification – Meets International Building Code 2012 Standard for confident coverage of critical systems after a seismic event.

Rugged Housing, Compact Footprint – Helps lower shipping costs, makes installation easy, and ensures long-lasting performance in demanding HVAC environments.

Diagnostic Board – Easily accessible test points enable troubleshooting of the bypass components and their functionality. A fusible link prevents electrical damage to the bypass circuitry.

Safety Switch – While in bypass mode, the drive can be replaced without de-energizing power to the driven equipment. There’s no need to remove fuses or fuse blocks and no equipment down time when replacing the drive.





Conventional and electronic bypass options provide non-stop coverage in demanding applications.

Product Ordering

| | | | | | | | | | | | | | | | |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|
| Your Product Number | | | | | | | | | | | | | | | |
| Example Product Number | B | T | C | - | 0 | 0 | 1 | X | 2 | - | F | 0 | 1 | 3 | |
| Example Product Number | B | T | E | - | 0 | 0 | 7 | 5 | 4 | - | B | 0 | 1 | 2 | |
| Model(s) | | | | | | | | | | | | | | | |
| BTC Conventional | | | | | | | | | | | | | | | |
| BTE Electronic | | | | | | | | | | | | | | | |
| <i>Separator</i> | | | | | | | | | | | | | | | |
| HP | | | | | | | | | | | | | | | |
| ¹ , 1.5, 2, 3, 5, 7.5, 10, 15, 20, 25, 30, 40, 50, 60, 75 ² , 100, 125, 150 ³ , 200 ³ , 250 ³ | | | | | | | | | | | | | | | |
| X = no fract, 5 = 1/2 HP | | | | | | | | | | | | | | | |
| Voltage | | | | | | | | | | | | | | | |
| 2 208 to 240 Vac | | | | | | | | | | | | | | | |
| 4 380 to 500 Vac | | | | | | | | | | | | | | | |
| <i>Separator</i> | | | | | | | | | | | | | | | |
| Disconnect | | | | | | | | | | | | | | | |
| F Disconnect with Fuses | | | | | | | | | | | | | | | |
| B Circuit Breaker | | | | | | | | | | | | | | | |
| NEMA | | | | | | | | | | | | | | | |
| 01 NEMA Type 1 (IP 21) | | | | | | | | | | | | | | | |
| Type | | | | | | | | | | | | | | | |
| 2 2 contactors (output and bypass) with service switch | | | | | | | | | | | | | | | |
| 3⁴ 3 contactors (input, output and bypass) (for C Bypass only) | | | | | | | | | | | | | | | |

Table Notes:

¹Available only with voltage code 2.

³Available only with voltage code 4.

²Use with voltages equal to or greater than 230 Vac.

⁴Available only with BTC models.

Example Product Numbers:

BTC-001X2-F013 = Conventional Bypass, 1 HP, 208-240 Vac, Fused Disconnect, NEMA Type 1, with 3 contactors

BTE-00754-B012 = Electronic Bypass, 7.5 HP, 380-500 Vac, Circuit Breaker, NEMA Type 1, with 2 contactors and service switch.

Bypass Frame Sizes and Power Ranges per NEC Motor Tables

| HP | kW | 208-240 | 380-500 | 208-240 | 380-500 | |
|------|------|------------|---------|----------------|---------|-----|
| | | Frame Size | | Output Current | | |
| 1 | 0.75 | 4 | N/A | 4.8 | N/A | |
| 1.5 | 1.1 | | 4 | 4 | 6.7 | 3.4 |
| 2 | 1.5 | | | | 8.0 | 4.8 |
| 3 | 2.2 | 5 | 5 | 11.0 | 5.6 | |
| 5 | 4 | | | 18.0 | 9.6 | |
| 7.5 | 5.5 | | | 24.2 | 12.0 | |
| 10 | 7.5 | 6 | 6 | 31.0 | 16.0 | |
| 15 | 11 | | | 48.0 | 23.0 | |
| 20 | 15 | | | 62.0 | 31.0 | |
| 25 | 18.5 | 7 | 7 | 75.0 | 38.0 | |
| 30 | 22 | | | 88.0 | 46.0 | |
| 40 | 30 | | | 105.0 | 61.0 | |
| 50 | 37 | 8 | 8 | 143.0 | 72.0 | |
| 60 | 45 | | | 170.0 | 87.0 | |
| 75* | 55 | | | 208.0 | 105.0 | |
| 100* | 75 | 9 | 9 | 261.0 | 140.0 | |
| 125* | 90 | | | 310.0 | 170.0 | |
| 150 | 110 | | | 205.0 | | |
| 200 | 132 | N/A | 9 | N/A | 261.0 | |
| 250 | 160 | | | | 310.0 | |

Table Notes:

* Available for 230 Vac and above. NOTE: Drives are current (ampere) rated devices. Verify that the listed ratings are ≥ the motor full load current rating

**VFD products are only available through authorized distribution channels.
To locate an authorized distributor, please contact a Siemens Building
Technologies representative at 1.800.515.9964.**

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