



The TCF SERIES - Sensorless Vector AC drive

Delivering torque when you want it, where you want it - the TCF Series from AC Tech will control your motor down to 1Hz at full output torque! When you really need torque, for impact loading or acceleration, the TCF can provide up to 200% motor rated torque.

The TCF is designed for easy integration into your control panel. The compact, contactor style drive conserves panel space and simplifies wiring. Start-up is simplified as well with auto tuning to make sure you get all of the performance you need in either Vector or V/Hz mode.

The user manual and quick reference guide for the TCF Series Drive, and all AC Tech drives, are available in the AC Tech website Library.

General Specifications

Power Range: 0.5 to 10 HP (0.37 to 7.5 kW)

Supply Power:

- Single Phase: 208, 220 or 240 VAC
- Three Phase: 208, 240, 400, 480 or 590 VAC
- 50 / 60 Hz

Motors: The TCF is designed for operation with vector duty rated induction motors rated for 200, 230, 400, 460 or 590 VAC from 0 to 240 Hz.

Enclosure: IP20 with finger safe terminals.

Standard Features

Easy Set-up and Operation: Program the TCF drive one of four different ways:

- From the front of the drive
- The optional Remote Keypad
- A PC using AC Tech's TechLink Software.
- The innovative EPM Programmer.

Modes of operation:

- Constant Torque V/Hz
- Variable Torque V/Hz
- Sensorless Vector - speed mode
- Sensorless Vector - torque mode

Auto Tuning: Determines key performance values based on the motor and installation variables. Required for vector modes but can be used to enhance performance in V/Hz mode.

Motor Thermal Overload: The TCF is an approved motor protection device for single motor applications.

Control I/O: 18 isolated terminals provide 5 logic inputs and 2 logic outputs. Two reference inputs allow for 4-20mA and either 0-10 V or bipolar -10 to +10V. Two analog outputs indicate speed and load. 2 wire RS485 for Modbus RTU serial communication.

TCF Options

Remote Keypad:

Simple four wire connection to the TCF for operation and programming of the drive. High-impact plastic and gasket permit installation in NEMA 4X (IP65) environments.



Dynamic Braking Kit:

Prepackaged resistor modules with control electronics provide solution for applications requiring braking on deceleration or stopping.



DIN Rail Mounting Kit:

Allows easy mounting of the TCF Drive or Dynamic braking kits onto standard DIN Rail.

AC Line Filters:

AC input line filters are available for all sub-micro drives to meet European requirements for susceptibility and emissions of electrical and radiated noise (EN 61800-3 and EN 5501). The filter is designed to mount to the electrical panel and has provisions for mounting the drive directly to the face of the filter.



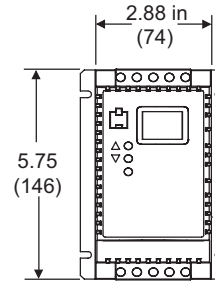
EPM Programmer:

Copy drive programs in 2 seconds using the EPM Programmer! Then just plug the EPM into the TCF Series drive and it's ready for operation. The EPM Programmer also provides full programming capability using the backlit LCD display. Archiving of programs to a PC only requires an RS232 cable and free TechLink Software.



TCF Series Drive Dimensions and Ratings

| Input Line Voltage: 208 / 240 Volt 1Ø or 3Ø | | Output Voltage: 0 - 200 / 230 Volt 3Ø | | | | | |
|---|--------|---------------------------------------|-------------|-------------|------------------|------|---------------------|
| HP | (kW) | Input Amps | | Output Amps | IP 20 Dimensions | | |
| | | 1Ø | 3Ø | | Model | Size | Weight ¹ |
| 0.5 | (0.37) | 5.4 / 4.7 | 3.1 / 2.7 | 2.5 / 2.2 | TF205Y | A1 | 1.9 (0.9) |
| 1 | (0.75) | 10.6 / 9.2 | 5.8 / 5.1 | 4.8 / 4.2 | TF210Y | A2 | 2.5 (1.1) |
| 1.5 | (1.1) | 13.9 / 12.0 | 8.0 / 6.9 | 6.9 / 6.0 | TF215Y | B1 | 3.6 (1.6) |
| 2 | (1.5) | 14.8 / 12.9 | 9.1 / 7.9 | 7.8 / 6.8 | TF220Y | B2 | 4.8 (2.2) |
| 3 | (2.2) | 19.7 / 17.1 | 12.4 / 10.8 | 11.0 / 9.6 | TF230Y | BF | 5.0 (2.3) |

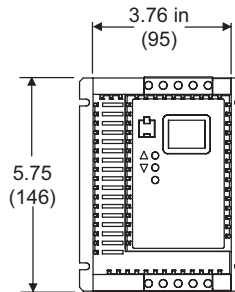


A

Depth

- A1: 3.94 in (100)
- A2: 4.74 in (120)
- A3: 5.74 in (146)

| Input Line Voltage: 208 / 240 Volt 3Ø | | Output Voltage: 0 - 200 / 230 Volt 3Ø | | | | | |
|---------------------------------------|--------|---------------------------------------|-------------|------------------|------|---------------------|--|
| HP | (kW) | Input Amps | Output Amps | IP 20 Dimensions | | | |
| | | | | Model | Size | Weight ¹ | |
| 1 | (0.75) | 5.8 / 5.1 | 4.8 / 4.2 | TF210 | A2 | 2.5 (1.1) | |
| 1.5 | (1.1) | 8.0 / 6.9 | 6.9 / 6.0 | TF215 | A3 | 3.0 (1.4) | |
| 2 | (1.5) | 9.1 / 7.9 | 7.8 / 6.8 | TF220 | B2 | 4.4 (2.0) | |
| 3 | (2.2) | 12.4 / 10.8 | 11.0 / 9.6 | TF230 | BF | 4.8 (2.2) | |
| 5 | (3.7) | 19.6 / 17.1 | 17.5 / 15.2 | TF250 | BF | 4.8 (2.2) | |
| 7.5 | (5.5) | 28 / 25 | 25 / 22 | TF275 | C1 | 7.3 (3.3) | |
| 10 | (7.5) | 34 / 32 | 30 / 28 | TF2100 | C1 | 7.6 (3.4) | |

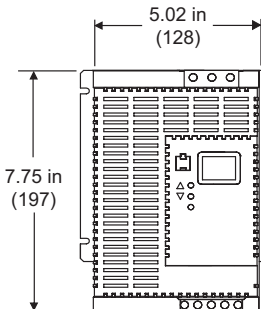


B

Depth

- B1: 5.24 in (133)
- B2: 6.74 in (171)
- BF: 6.74 in (171)

| Input Line Voltage: 400 / 480 Volt 3Ø | | Output Voltage: 0 - 400 / 460 Volt 3Ø | | | | | |
|---------------------------------------|--------|---------------------------------------|-------------|------------------|------|---------------------|--|
| HP | (kW) | Input Amps | Output Amps | IP 20 Dimensions | | | |
| | | | | Model | Size | Weight ¹ | |
| 0.5 | (0.37) | 1.6 / 1.4 | 1.3 / 1.1 | TF405 | B1 | 3.6 (1.6) | |
| 1 | (0.75) | 2.9 / 2.5 | 2.4 / 2.1 | TF410 | B1 | 3.6 (1.6) | |
| 1.5 | (1.1) | 4.0 / 3.6 | 3.4 / 3.0 | TF415 | B1 | 3.6 (1.6) | |
| 2 | (1.5) | 4.6 / 4.0 | 3.9 / 3.4 | TF420 | B2 | 4.4 (2.0) | |
| 3 | (2.2) | 6.2 / 5.4 | 5.5 / 4.8 | TF430 | BF | 4.8 (2.2) | |
| 5 | (3.7) | 10.6 / 8.8 | 9.4 / 7.8 | TF450 | BF | 4.8 (2.2) | |
| 7.5 | (5.5) | 14.2 / 12.4 | 12.6 / 11.0 | TF475 | C1 | 7.4 (3.4) | |
| 10 | (7.5) | 18.1 / 15.8 | 16.1 / 14.0 | TF4100 | C1 | 7.5 (3.4) | |



C

Depth

- C1: 7.18 in (182)

| Input Line Voltage: 480 / 590 Volt 3Ø | | Output Voltage: 0 - 460 / 575 Volt 3Ø | | | | | |
|---------------------------------------|--------|---------------------------------------|-------------|------------------|------|---------------------|--|
| HP | (kW) | Input Amps | Output Amps | IP 20 Dimensions | | | |
| | | | | Model | Size | Weight ¹ | |
| 1 | (0.75) | 2.2 / 2.0 | 1.9 / 1.7 | TF510 | B1 | 3.6 (1.6) | |
| 2 | (1.5) | 4.0 / 3.5 | 3.4 / 3.0 | TF520 | B2 | 4.4 (2.0) | |
| 3 | (2.2) | 4.7 | 4.2 | TF530 | BF | 4.8 (2.2) | |
| 5 | (3.7) | 7.4 | 6.6 | TF550 | BF | 4.8 (2.2) | |
| 7.5 | (5.5) | 11.2 | 9.9 | TF575 | C1 | 7.4 (3.4) | |
| 10 | (7.5) | 13.7 | 12.2 | TF5100 | C1 | 7.5 (3.4) | |

¹ Estimated UPS shipping weight in lbs. (kg) including packaging.

Dimensions shown are approximate. Please refer to User Guide.

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