



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: www.actechdrives.com.

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 -10 to +10V. Analog output indicates either speed or 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:

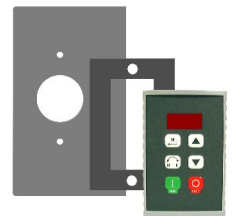
Allows easy mounting of the TCF Drive or Dynamic braking kits onto standard DIN Rail.

Through Hole Mounting:

The TCF Series can be ordered for through hole mounting that puts the drive heat sink outside the electrical enclosure for better thermal management and space savings. Ships on black anodized heat sink with gasket that will meet NEMA 4 and NEMA 4X (IP65) construction.

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 Model Designation Code

The TCF drive model number gives a full description of the drive unit (see example below).

Example: TF250YFV: TCF Series, 208 / 240 VAC, 5 HP (3.7 kW), single or three phase input with through-hole mounting and high frequency output options.

TF	2	50	Y	F	V
-----------	----------	-----------	----------	----------	----------

Series:

TF = TCF Series Variable Speed AC Motor Drive with Modbus®

Input Voltage:

- 2 = 208 / 240 Vac, 1Ø or 3Ø, 50 or 60 Hz (208, 220, 230, and 240 volt)
- 4 = 400 / 480 Vac, 3Ø, 50 or 60 Hz (380, 400, 415, 440, 460 and 480 volt)
- 5 = 480 / 590 Vac, 3Ø, 50 or 60 Hz (460, 480, 550, 575 and 600 volt)

Horsepower:

- | | | |
|----------------------|--------------------|----------------------|
| 05 = ½ Hp (0.37 kW) | 20 = 2 Hp (1.5 kW) | 75 = 7 ½ Hp (5.5 kW) |
| 10 = 1 Hp (0.75 kW) | 30 = 3 Hp (2.2 kW) | 100 = 10 Hp (7.5 kW) |
| 15 = 1 ½ Hp (1.1 kW) | 50 = 5 Hp (4.0 kW) | |

Input Phase:

- Y = Single or three phase input
- No character indicates three phase input only.

Mounting Style:

- F = Through-hole mounting
- No character indicates IP20 component for panel or DIN rail mounting.

Application Specific Versions:

- V = High Frequency Output - up to 1000 Hz to motor
- No character indicates standard drive features with maximum output frequency to 240 Hz

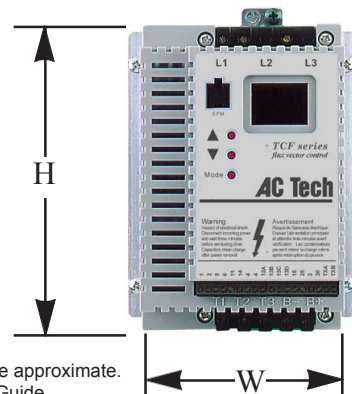
TCF Series Drive Dimensions and Ratings

Selections

HP (kW)	208-240V 1Ø		208-240V 3Ø		400-480V 3Ø		480-590V 3Ø	
	Model#	Size	Model#	Size	Model#	Size	Model#	Size
0.5 (0.37)	TF205Y	B			TF405	B		
1 (0.75)	TF210Y	B	TF210	B	TF410	B	TF510	B
1.5 (1.1)	TF215Y	B	TF215	B	TF415	B		
2 (1.5)	TF220Y	B	TF220	B	TF420	B	TF520	B
3 (2.2)	TF230Y	B	TF230	B	TF430	B	TF530	B
5 (4.0)	TF250Y	C	TF250	B	TF450	B	TF550	B
7.5 (5.5)			TF275	C	TF475	B	TF575	B
10 (7.5)			TF2100	C	TF4100	C	TF5100	C

Dimensions

Size	Height (H)		Width (W)	
	in	(mm)	in	(mm)
B	5.75	(146)	3.76	(95)
C	7.75	(197)	5.02	(128)



Dimensions shown are approximate. Please refer to User Guide.

AC Tech