



# TF Series Electric Actuator Product Guide

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***Flow Control Solutions For  
Industrial and Municipal Services***



## TF Series Electric Actuator Part Number Matrix

MODEL	FRAME SIZE & TQR	VOLTAGE		CONTROL		INTERFACE		INT TYPE		FLANGE		DRIVE			
TF	0440	K		8		S		N		G		F			
Quarter-Turn Type	0266	266"lb	A	12vdc	0	On/Off		S	None	N	None	Z	F03, F04, F05	A	9
	0310	310"lb	B	12vac/vdc	1	On/Off/Jog		C	Integral	K	LCS IP65 Knob	A	F05, F07	B	11
	031H	310"lb HW	C	12vac	2	Jog ONLY		8	IP68	B	LCS IP67 Knob	B	F05	C	14
	0440	440"lb	D	24vdc	3	0°–45°–90° Control (Supply Voltage Inputs)				L	LCS LED Type	C	F07	D	17
	044H	440"lb HW	E	24vac/vdc	5	2 Pos - Relay CLOSE				D	LCS LCD Type	D	F07 (F10)	E	22
	0880	880"lb	F	24vac	6	2 Pos - Relay OPEN						E	F10 (F12)	F	27
	1770	1770"lb	H	AutoSw1 (Specify)	7	Field Control Timer (Requires Config Sheet)						F	F12	G	36
	3540	3540"lb	K	120vac	8	Mod 4-20mA						G	F14	H	46
	5310	5310"lb	L	230vac	9	Mod 2-10V						T	F12 (F16)	J	55
	7080	7080"lb	3 Phase solutions		B	TOD Cycle Timer (Requires Config Sheet)						H	F16	K	75
	8850	8850"lb	M	220/3/60	D	0°–90°–180° Control (Supply voltage inputs) (0310, 0440, 0880, 1770 Only)						J	F25		
	AT00	15040"lb	R	380/3/60	N	LV Neg RO/RC (0310, 031H, 0440, 044H Only)						K	F30		
	BT00	20350"lb	T	480/3/60	Q	LV Neg Switching (0310, 031H, 0440, 044H Only)									
	CT00	30970"lb	U	575/3/60 (limited availability)	S	24vdc SCADA (Single Wire Control)									
	DT00	44250"lb													
HT00	70800"lb														

Note: Not all combinations of options are possible.

## TF Series Electric Actuators, Features



### ISO Mounting flange

ISO5211 standard mounting flanges.

### Flanges and Bushings

The TF series have ISO5211 standard mounting flanges. On the TF0880 series up through the TFBT00 series, different flange patterns are available and the drive socket is removable and can be fitted with a different size or a different shape female drive socket. Contact Raritan for available ISO compliant flanges and available splined drive inserts.



### Interchangeable Bushing

ISO5211 compliant double-square drive sockets.

Raritan Valve & Automation, Inc.

295 Meadow Road, Edison, NJ 08817 Ph: 732-572-2555, Fax: 732-572-2001



## TF Series Electric Actuator Part Number Matrix, Continued

BUS / FB 1&2		OPTIONS	
N		OT	
N	2 Aux Lim Switches No Other Options	00	No other options
C	2 Aux Lim Switches 4-20mA FB (std Mod)	0X	No Handwheel Ovd No Other Options
		0T	Torque Switches No Other Options
		ED	2 Aux Limit Switches Extended Duty Motor
		ET	Torque Switches Extended Duty Motor
		20	Internal Battery Backup No Other Options
		2X	Internal Battery Backup No Handwheel Ovd (0310, 0440 Only)
		2T	Internal Battery Backup Torque Switches
		30	Internal Supercap Backup No Other Options
		3X	Internal Supercap Backup No Handwheel Ovd (0310, 0440 Only)
<b>3 Phase solutions must include one of the options below</b>			
OR			XTS, XREV, XPP Level 1 - On/Off Only use w/ existing MCC
TR			TS, XREV, XPP Level 1 - On/Off Only use w/ existing MCC
OM			XTS, REV, PC Level 3 - On/Off/Mod Stand-alone, Full MCC
TM			TS, REV, PC Level 3 - On/Off/Mod Stand-alone, Full MCC
TM			TS, REV, PC Level 4 - On/Off/Mod Full MCC w/ LCS CK
TM			TS, REV, PC Level 5 - On/Off/Mod Full MCC w/ LCS CB
TM			TS, REV, PC Level 6 - On/Off/Mod Full MCC w/ LCS CL
TM			TS, REV, PC Level 7 - On/Off/Mod Full MCC w/ LCS CD
TM			TS, REV, PC Level 8 - On/Off/Mod Full MCC w/ LCS CM

## TF Series Electric Actuators, Features



### Epicyclic Drive Transmission

Highly efficient, compact transmission technology provides unmatched multiplication of motor torque compared to spur geartrain type systems. Additionally, the final drive output utilizes worm gear geometry to provide self-locking gearsets without any type of braking required to hold the connected device in position. This technology also allows a manual override system which does not require any type of declutching mechanism.



### Color Coded Cam System

Easily accessible travel and auxiliary switch cams are color coded to provide instant recognition of the CW or CCW cams when making stroke adjustments. Cam positions are easily changed by utilizing 2.5mm setscrews across the entire TF range of actuators.

# TF Series Electric Actuators

## KEY FEATURES & BENEFITS

- Powder Coated Aluminum Alloy Housing
- NEMA 4/4X & IP67 Enclosure
- Raised Position Indicator
- ISO5211 Compliant Mounting
- Internal Low Power Heater
- Clutchless Manual Override
- Torque Switches (Standard TFAT00 and larger)
- Self-Locking Drive
- Permanently Lubricated
- Thermally Protected Motor
- 2 Auxiliary Switches
- Silicone Free

Clean, Easily Accessible Internal Wiring Layout  
(2) 10A 125vac Aux Limit Switches Standard  
Anti-Condensate Heater Standard

(2) 3/4" Conduit Entry Ports

Externally Accessible  
Adjustable Mechanical  
Stops

## OPTIONAL FEATURES

- Interchangeable ISO5211 Mount
- Interchangeable Drive Inserts
- Positioners
- Extended Duty Motors
- 3 Position Control
- Passive Analog Feedback
- Torque Switches (TF0880 through TF8850)
- Local Control Stations
- 3 phase Motor Control Center
- IP68 Submersible

High Efficiency  
AC & DC Drive Motors

Non-Declutchable  
Manual Override System  
Suitable for use with overhead  
chain-wheel installations

Self Locking Epicyclic Transmission and  
Low Pull-Force Worm Override Design

\*Features typical of TF0880 Series and larger.



Raritan Valve & Automation, Inc.  
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# TF0266 Series On/Off/Proportional Electric Actuators

## Overview

The TF0266 Series are quarter-turn electric industrial service actuators delivering up to 266 in-lb torque in voltages ranging from 24v up through 230v in on/off or proportional control modes. Other Key Features include:

- Equipped with two (2) volt-free Form A Auxilliary switches rated at up to 1A 250vac (on/off models only)
- Proportional models have 4-20mA or 2-10vdc feedback output standard
- ISO5211 compliant with an 11mm double square female drive
- Furnished with a 39" (1M) cable to facilitate field connections outside the compact enclosure
- Low profile visual position indicator and three flush mounted LEDs allow at-a-glance position indication
- Manual override lever and 5mm access shaft at the bottom of the actuator housing
- NEMA 4/4X & IP67 compliant
- PG6 EMT entry port with sealed cable gland

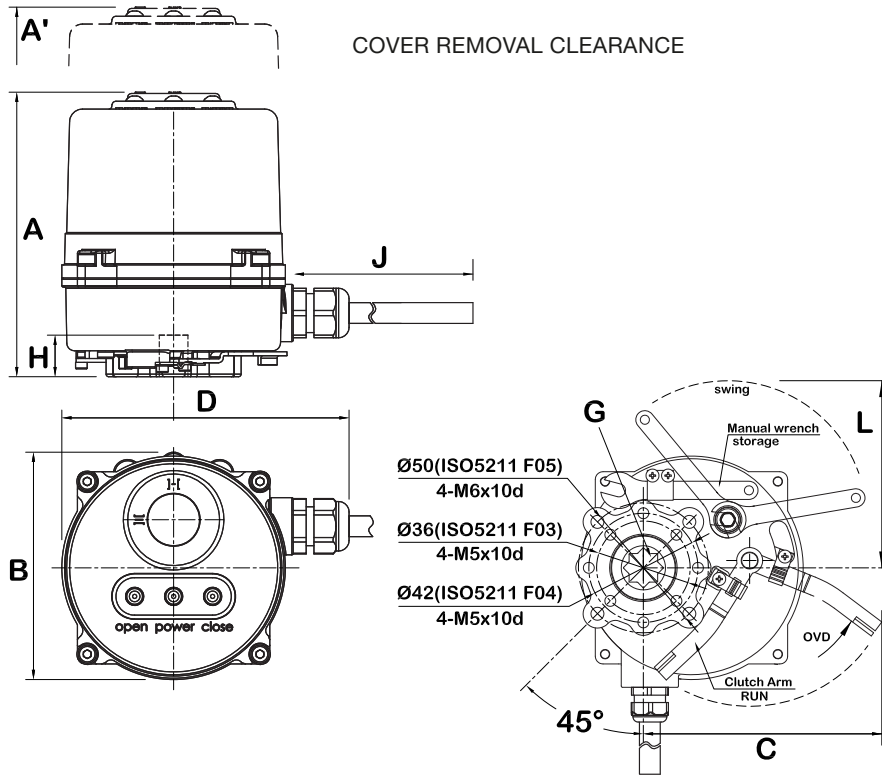


## TECHNICAL INFORMATION

ACTUATOR SPECIFICATIONS		TF0266
24VAC	Torque Output (in-lb / Nm)	266 / 30
	Current Draw (Start / Run / LRA)	1.3A / 0.7A / 2.0A
	Speed (90°) DC-60Hz / 50Hz, seconds	11 / 11
	Motor - 24V DC Perm Magnet 2 Pole Brush	10W
24VDC	Duty Cycle (IEC60034)	75% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	All - 130°C / Class B
	Motor Starts, per hour, Max	All - 600
	On/Off / Proportional	
120VAC	Current Draw (Start / Run / LRA)	1.3A / 0.7A / 2.0A
	Speed (90°) 60Hz / 50Hz, seconds	11 / 11
	Motor - 24V DC Perm Magnet 2 Pole Brush	10W
	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)
230VAC	Motor Protection, Temp / Class	All - 130°C / Class B
	Motor Starts, per hour, Max	All - 600
	On/Off / Proportional	
	Current Draw (Start / Run / LRA)	1.3A / 0.7A / 2.0A
All	Speed (90°) 60Hz / 50Hz, seconds	11 / 11
	Motor - 24V DC Perm Magnet 2 Pole Brush	10W
	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	All - 130°C / Class B
All	Motor Starts, per hour, Max	All - 600
	Manual Override	Bottom 5mm Hex Shaft
	Environmental Rating	NEMA 4/4X & IP67
	Electrical Entry (1)	1M cable thru PG6 Polyamide gland
	Control	On/Off / Proportional
	Position Feedback - On/Off ONLY	(2) Form A Volt-Free, Rated 1A @ 250vac
	Position Feedback - Proportional ONLY	4-20mA / 2-10vdc
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)
	Humidity Range	0-95% RH
	Altitude Limit	9850 ft / 3000 m



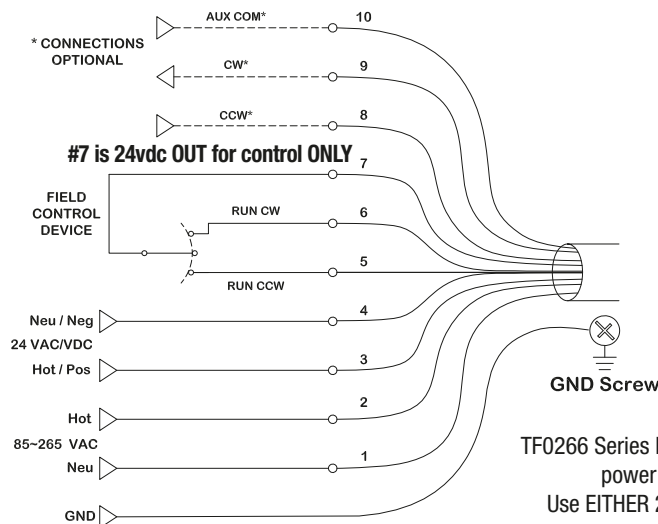
# TF0266 Series Electric Actuators



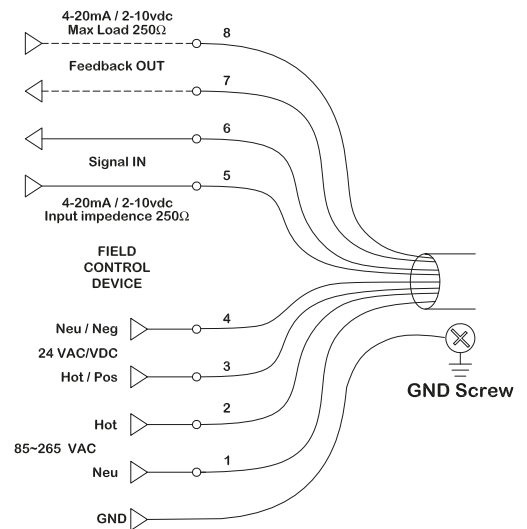
## DIMENSIONS

MODEL	A in/mm	A' in/mm	B in/mm	C in/mm	D in/mm	G in/mm	H in/mm	J in/mm	L	WEIGHT lbs/kg	
TF0266	4.33 / 110	2.95 / 75	3.44 / 87.5	4.49 / 114	4.35 / 111	.433 / 11	.63 / 16	39.4 / 1000	2.83 / 72	3.5 turns 90°	2.2 / 1.0

No Aux Switches on Modulating Models



ON/OFF WIRING DIAGRAM



PROPORTIONAL WIRING DIAGRAM

TF0266 Series has auto ranging power supply.  
Use EITHER 24vac/vdc OR 85~265vac for on/off and proportional control



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# TF0310~TF044H Series On/Off/Proportional Electric Actuators

## Overview

The TF0310~044H Series are quarter-turn electric industrial service actuators delivering up to 440 in-lb torque in voltages ranging from 12v up through 230v in on/off or proportional control modes. Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 3A @ 250vac
- ISO5211 compliant with a double square female drive
- Raised visual position indicator
- Manual override hand wheel is available as an option on H models
- Manual override shaft standard
- NEMA 4/4X & IP67 compliant
- Two (2) 1/2" EMT entry ports with sealed cable glands

## Options

- Battery Backup
- Supercap Backup
- Local Control Stations
- IP68 Submersion

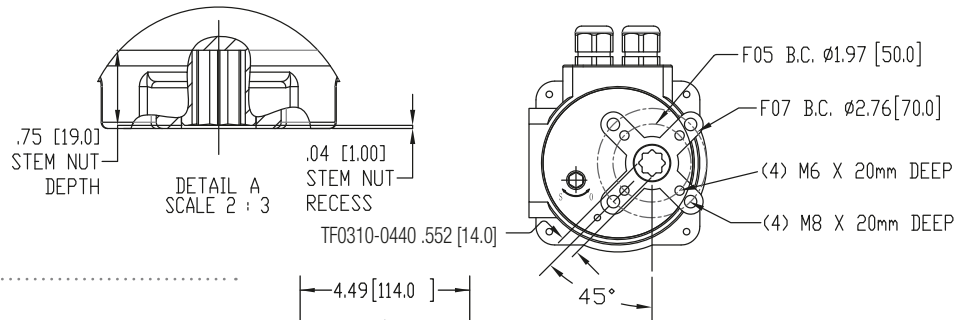
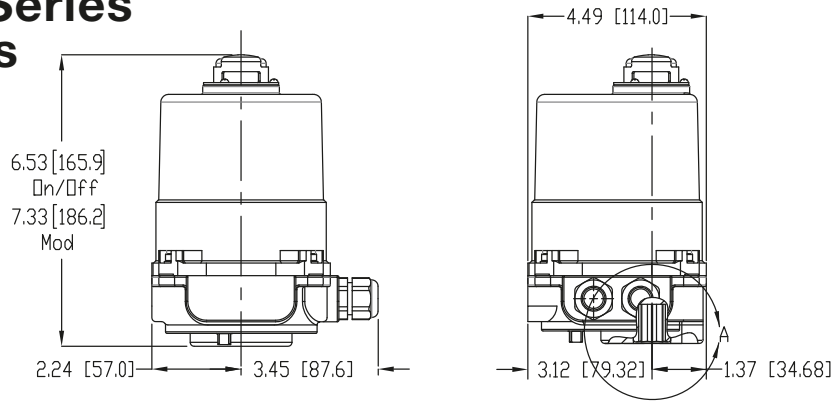
## TECHNICAL INFORMATION

ACTUATOR SPECIFICATIONS		TF0310	TF031H	TF0440	TF044H
Supply	Torque Output (in-lb / Nm)	310 / 35	310 / 35	440 / 50	440 / 50
12VAC*	Current Draw (Start / Run / LRA)	3.5A / 2.0A / 3.8A	3.5A / 2.0A / 3.8A	3.5A / 2.0A / 3.8A	3.5A / 2.0A / 3.8A
	Speed (90°) DC-60Hz/50Hz, seconds	8 / 8	8 / 8	10 / 10	10 / 10
	Motor - 12V DC Perm Magnet 2 Pole Brush	6W	6W	6W	6W
12VDC*	Duty Cycle (IEC60034)	75% (S2-15 min) / 75% (S4-75%)			
	Motor Protection, Temp / Class	All - 130°C / Class B			
	Motor Starts, per hour, Max	All - 600			
24VAC	Current Draw (Start / Run / LRA)	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A	2.1A / 1.2A / 2.3A
	Speed (90°) DC-60Hz/50Hz, seconds	8 / 8	8 / 8	10 / 10	10 / 10
	Motor - 24V DC Perm Magnet 2 Pole Brush	6W	6W	6W	6W
24VDC	Duty Cycle (IEC60034)	75% (S2-15 min) / 75% (S4-75%)			
	Motor Protection, Temp / Class	All - 130°C / Class B			
	Motor Starts, per hour, Max	All - 600			
120VAC	Current Draw (Start / Run / LRA)	0.4A / 0.4A / 0.5A	0.4A / 0.4A / 0.5A	0.4A / 0.4A / 0.5A	0.4A / 0.4A / 0.5A
	Speed (90°) 60Hz / 50Hz, seconds	9 / 11	9 / 11	13 / 15	13 / 15
	Motor - 120V Capacitor Run TENV	10W	10W	10W	10W
On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)			
	Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H			
	Motor Starts, per hour, Max	600 / 1200			
230VAC	Current Draw (Start / Run / LRA)	0.2A / 0.2A / 0.3A	0.2A / 0.2A / 0.3A	0.2A / 0.2A / 0.3A	0.2A / 0.2A / 0.3A
	Speed (90°) 60Hz / 50Hz, seconds	9 / 11	9 / 11	13 / 15	13 / 15
	Motor - 230V Capacitor Run TENV	10W	10W	10W	10W
On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)			
	Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H			
	Motor Starts, per hour, Max	600 / 1200			
All	Manual Override	Bottom 8mm Hex Shaft	Hand Wheel	Bottom 8mm Hex Shaft	Hand Wheel
	Environmental Rating	NEMA 4/4X & IP67			
	Electrical Entry (2)	1/2" EMT or Polyamide gland			
	Control	On/Off, Proportional, 2 Pos RO, RC & 3 Position			
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 3A @ 250vac			
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)			
	Humidity Range	0-95% RH			
Altitude Limit	9850 ft / 3000 m				

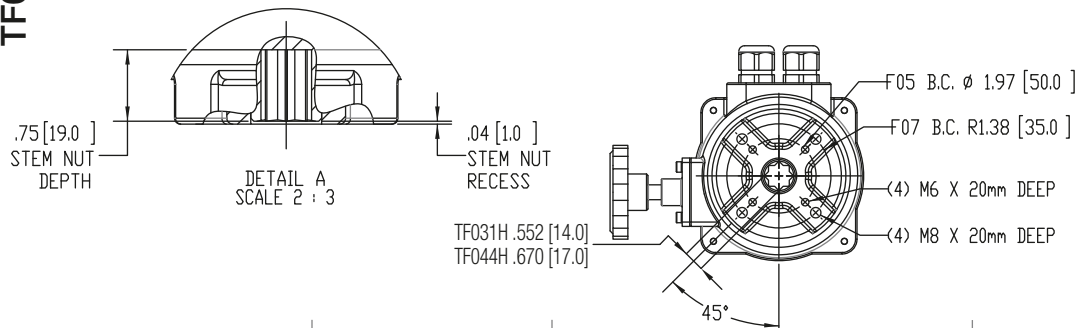
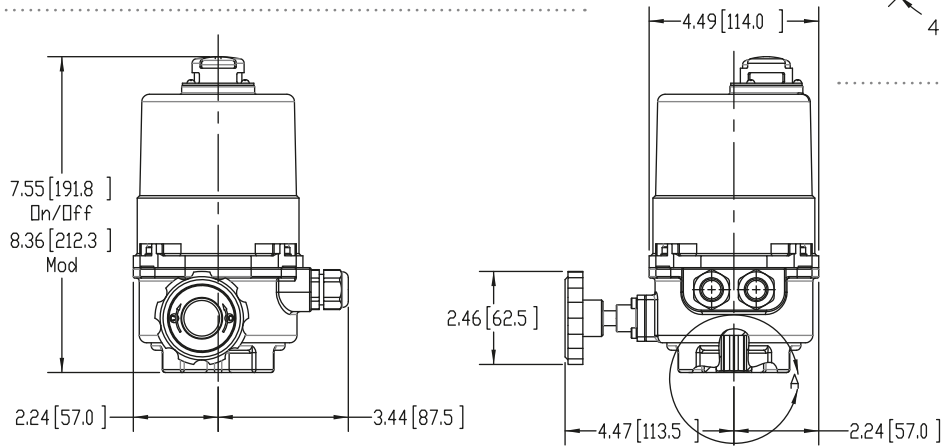
\*12V versions available custom order.

# TF0310~TF044H Series Electric Actuators

TF0310, TF0440



TF031H, TF044H



		COVER REMOVAL CLEARANCE		OVERRIDE		WEIGHT		COVER REMOVAL CLEARANCE		HANDWHEEL		WEIGHT		
MODEL	TYPE	IN/MM	MM	# TURNS FOR 90°	LBS/KG	MODEL	TYPE	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG			
TF0310	on/off - All	4.93 / 125	8mm hex	Approximately 7.5 turns 90°	6.6 / 3.0	TF031H	on/off - All	4.93 / 125	2.46 / 62.5	12 turns 90°	7.0 / 3.2			
	Mod - LV / HV						9.2 / 4.2							
TF0440	on/off - All	4.93 / 125		Approximately 7.5 turns 90°	6.6 / 3.0	8.8 / 4.0	TF044H	on/off - All	4.93 / 125	2.46 / 62.5	12 turns 90°	7.0 / 3.2		
	Mod - LV / HV							9.2 / 4.2						







# TF0880~TF1770 Series On/Off/Proportional Electric Actuators

## Overview

The TF880~TF1770 Series are quarter-turn electric industrial service actuators delivering up to 1770 in-lb torque in voltages ranging from 12V up through 230V in on/off or proportional control modes. Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 10A @ 250vac
- ISO5211 compliant mounting with double square female drive inserts
- Raised visual position indicator
- Clutch-free manual override handwheel standard
- NEMA 4/4X & IP67 compliant
- Two (2) 3/4" EMT entry ports with sealed cable glands

## Options

- Torque Switches
- Motor Control Centers
- Local Control Stations
- IP68 Submersion
- Battery Backup
- Interchangeable ISO5211 Flange & Drives



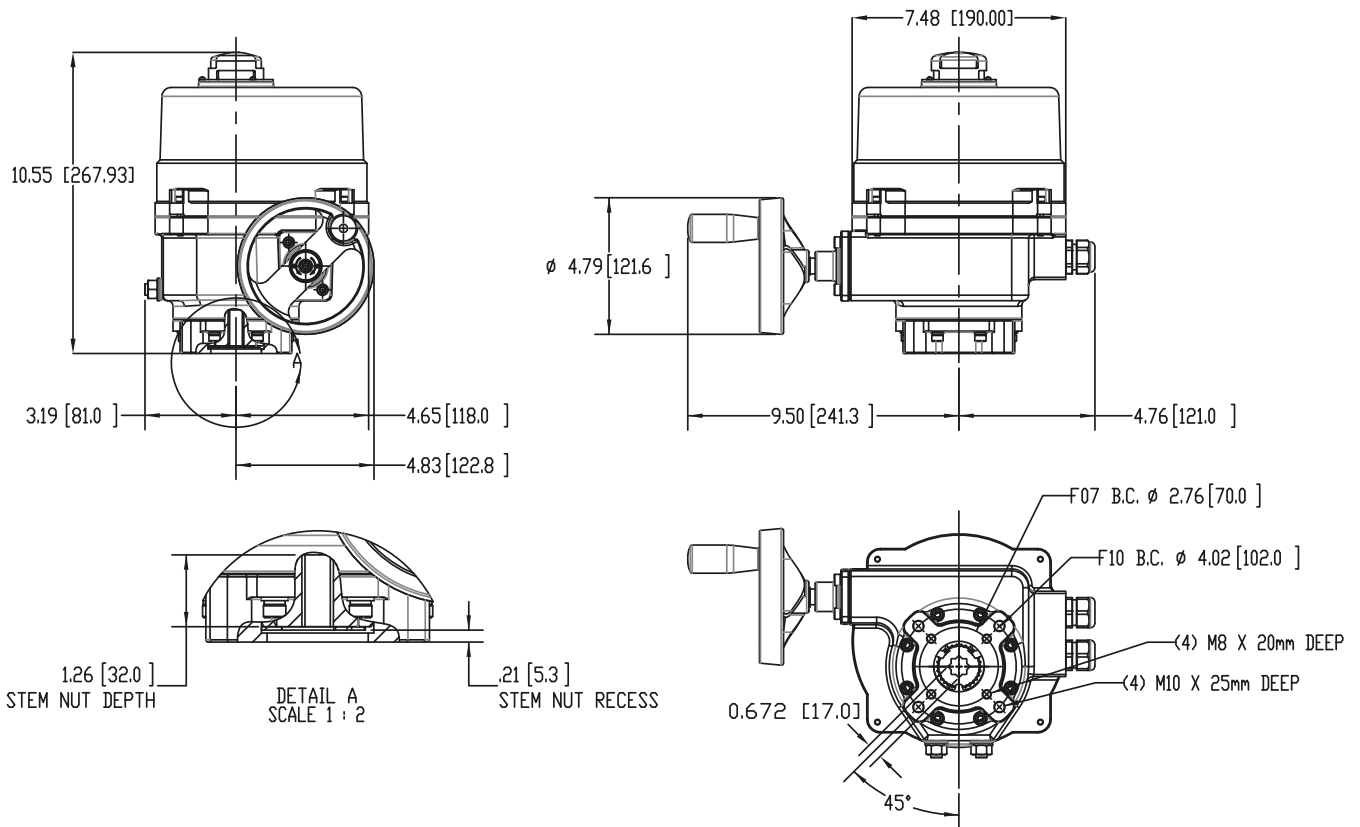
## TECHNICAL INFORMATION

ACTUATOR SPECIFICATIONS		TF0880	TF1770
Supply	Torque Output (in-lb / Nm)	880 / 100	1770 / 200
12VAC*	Current Draw (Start / Run / LRA)	7.2A / 5.2A / 17.8A	7.2A / 5.2A / 17.8A
	Speed (90°) DC-60Hz/50Hz, seconds	14 / 14	28 / 28
	Motor - 12V DC Brush TENV	25W	25W
12VDC*	On/Off / Proportional	Duty Cycle (IEC60034) 75% (S2-15 min) / 75% (S4-75%)	Duty Cycle (IEC60034) 75% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	All - 130°C / Class B	All - 130°C / Class B
	Motor Starts, per hour, Max	All - 600	All - 600
24VAC	Current Draw (Start / Run / LRA)	4.2A / 3.2A / 11.0A	4.2A / 3.2A / 11.0A
	Speed (90°) DC-60Hz/50Hz, seconds	14 / 14	28 / 28
	Motor - 24V DC Brush TENV	25W	25W
24VDC	On/Off / Proportional	Duty Cycle (IEC60034) 75% (S2-15 min) / 75% (S4-75%)	Duty Cycle (IEC60034) 75% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	All - 130°C / Class B	All - 130°C / Class B
	Motor Starts, per hour, Max	All - 600	All - 600
120VAC	Current Draw (Start / Run / LRA)	1.2A / 0.9A / 1.5A	1.2A / 0.9A / 1.5A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 120V Capacitor Run TENV	40W	40W
On/Off - Std Duty / On/Off - Ext Duty & Proportional	On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034) 25% (S2-15 min) / 75% (S4-75%)	Duty Cycle (IEC60034) 25% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H	155°C / Class F / 180°C / Class H
	Motor Starts, per hour, Max	600 / 1200	600 / 1200
230VAC	Current Draw (Start / Run / LRA)	0.5A / 0.4A / 0.7A	0.5A / 0.4A / 0.7A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 230V Capacitor Run TENV	40W	40W
On/Off - Std Duty / On/Off - Ext Duty & Proportional	On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034) 25% (S2-15 min) / 75% (S4-75%)	Duty Cycle (IEC60034) 25% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H	155°C / Class F / 180°C / Class H
	Motor Starts, per hour, Max	600 / 1200	600 / 1200
All	Environmental Rating	NEMA 4/4X & IP67	
	Electrical Entry (2)	3/4" EMT or Polyamide gland	
	Control	On/Off, Proportional, 2 Pos RO, RC & 3 Position	
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 10A @ 250vac	
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)	
	Humidity Range	0-95% RH	
Altitude Limit	9850 ft / 3000 m		

\*12V versions available custom order.

# TF0880~TF1770 Series Electric Actuators

## TECHNICAL INFORMATION, *CONTINUED*



MODEL	COVER REMOVAL CLEARANCE	HANDWHEEL		WEIGHT
	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG
TF0880	8 / 200	4.79 / 122	12.5 turns 90°	28.6 / 13
TF1770	8 / 200	4.79 / 122	12.5 turns 90°	28.6 / 13





# TF0880~TF1770 Series 3 Phase On/Off - Basic Electric Actuators

## Overview

The TF880~TF1770 Series are quarter-turn electric industrial service actuators delivering up to 1770 in-lb torque in voltages ranging from 220/3 up through 575/3 in basic (On/Off mode only). Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 10A @ 250vac
- ISO5211 compliant mounting with double square female drive inserts
- Raised visual position indicator
- Clutch-free manual override handwheel standard
- NEMA 4/4X & IP67 compliant
- Two (2) 3/4" EMT entry ports with sealed cable glands

## Options

- Torque Switches
- IP68 Submersion
- Interchangeable ISO5211 Flange & Drives



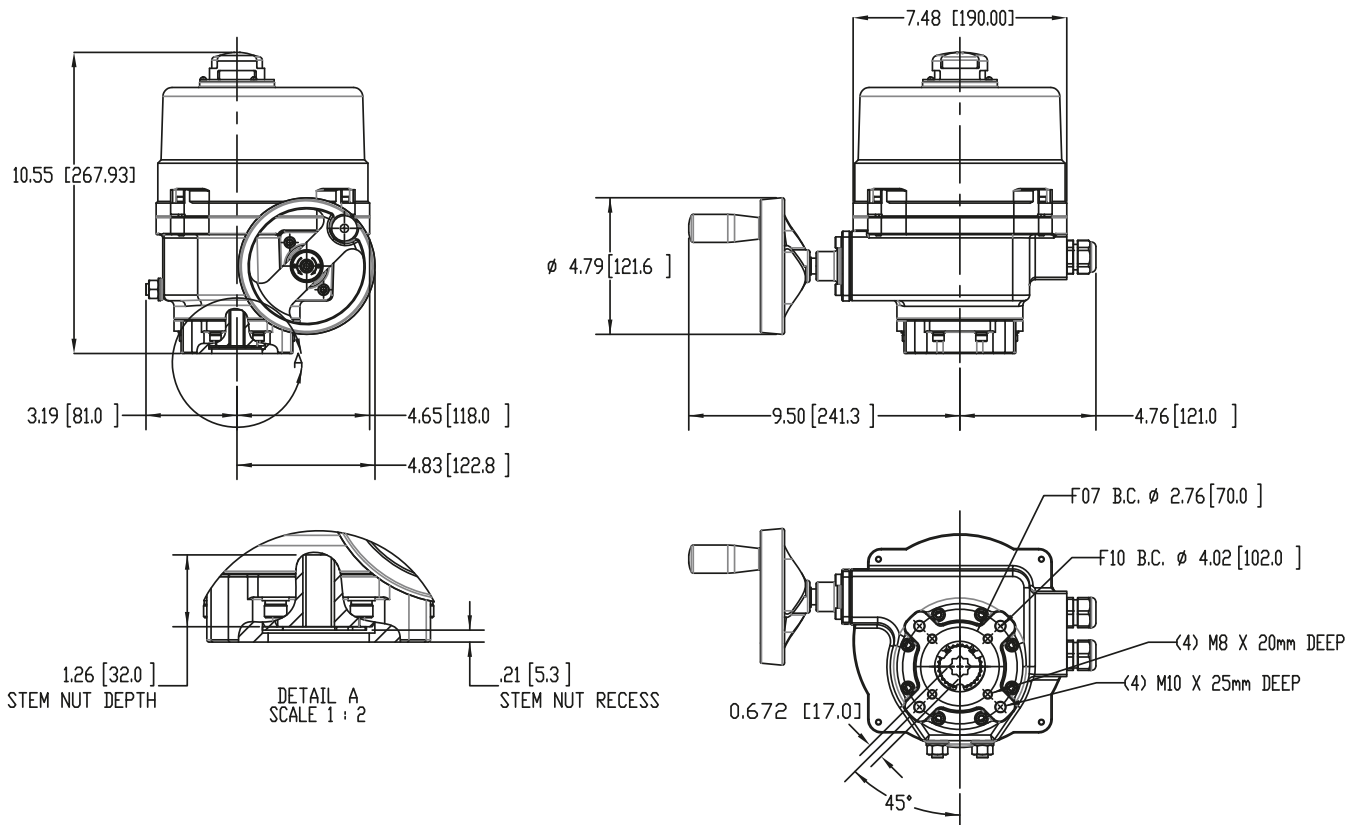
## TECHNICAL INFORMATION

ACTUATOR SPECIFICATIONS		TF0880	TF1770
Supply	Torque Output (in-lb / Nm)	880 / 100	1770 / 200
220/3ph	Current Draw (Start / Run / LRA)	0.7A / 0.6A / 1.0A	0.7A / 0.6A / 1.0A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 220V polyphase TENV	40W	40W
	On/Off - Basic	Duty Cycle (IEC60034)	25% (S2-15 min)
	Motor Protection, Temp / Class	155°C / Class F	
380/3ph	Current Draw (Start / Run / LRA)	0.4A / 0.3A / 0.6A	0.4A / 0.3A / 0.6A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 380V polyphase TENV	40W	40W
	On/Off - Basic	Duty Cycle (IEC60034)	25% (S2-15 min)
	Motor Protection, Temp / Class	155°C / Class F	
480/3ph	Current Draw (Start / Run / LRA)	0.2A / 0.2A / 0.4A	0.2A / 0.2A / 0.4A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 480V polyphase TENV	40W	40W
	On/Off - Basic	Duty Cycle (IEC60034)	25% (S2-15 min)
	Motor Protection, Temp / Class	155°C / Class F	
575/3ph	Current Draw (Start / Run / LRA)	0.2A / 0.2A / 0.3A	0.2A / 0.2A / 0.3A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 575V polyphase TENV	40W	40W
	On/Off - Basic	Duty Cycle (IEC60034)	25% (S2-15 min)
	Motor Protection, Temp / Class	155°C / Class F	
All	Environmental Rating	NEMA 4/4X & IP67	
	Electrical Entry (2)	3/4" EMT or Polyamide gland	
	Control	On/Off - Basic only	
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 10A @ 250vac	
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)	
Humidity Range	0-95% RH		
Altitude Limit	9850 ft / 3000 m		

\*12V versions available custom order.

# TF0880~TF1770 Series 3 Phase - Basic Electric Actuators

## TECHNICAL INFORMATION, *CONTINUED*



MODEL	COVER REMOVAL CLEARANCE	HANDWHEEL		WEIGHT
	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG
TF0880	8 / 200	4.79 / 122	12.5 turns 90°	28.6 / 13
TF1770	8 / 200	4.79 / 122	12.5 turns 90°	28.6 / 13





# TF0880~TF1770 Series 3 Phase - MCC On/Off/Proportional Electric Actuators

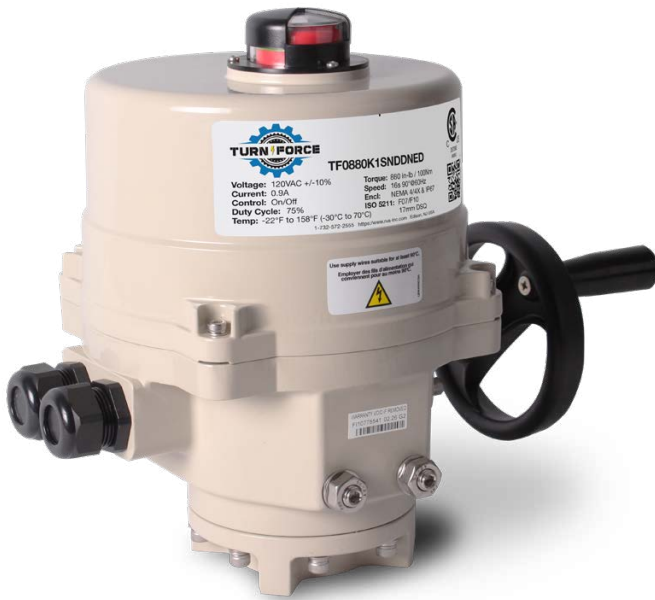
## Overview

The TF880~TF1770 Series are quarter-turn electric industrial service actuators delivering up to 1770 in-lb torque in voltages ranging from 220/3 up through 480/3 in on/off or proportional control modes. Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 10A @ 250vac
- ISO5211 compliant mounting with double square female drive inserts
- Raised visual position indicator
- Clutch-free manual override handwheel standard
- NEMA 4/4X & IP67 compliant
- Two (2) 3/4" EMT entry ports with sealed cable glands

## Options

- Torque Switches
- Motor Control Centers
- Local Control Stations
- IP68 Submersion
- Interchangeable ISO5211 Flange & Drives



## TECHNICAL INFORMATION

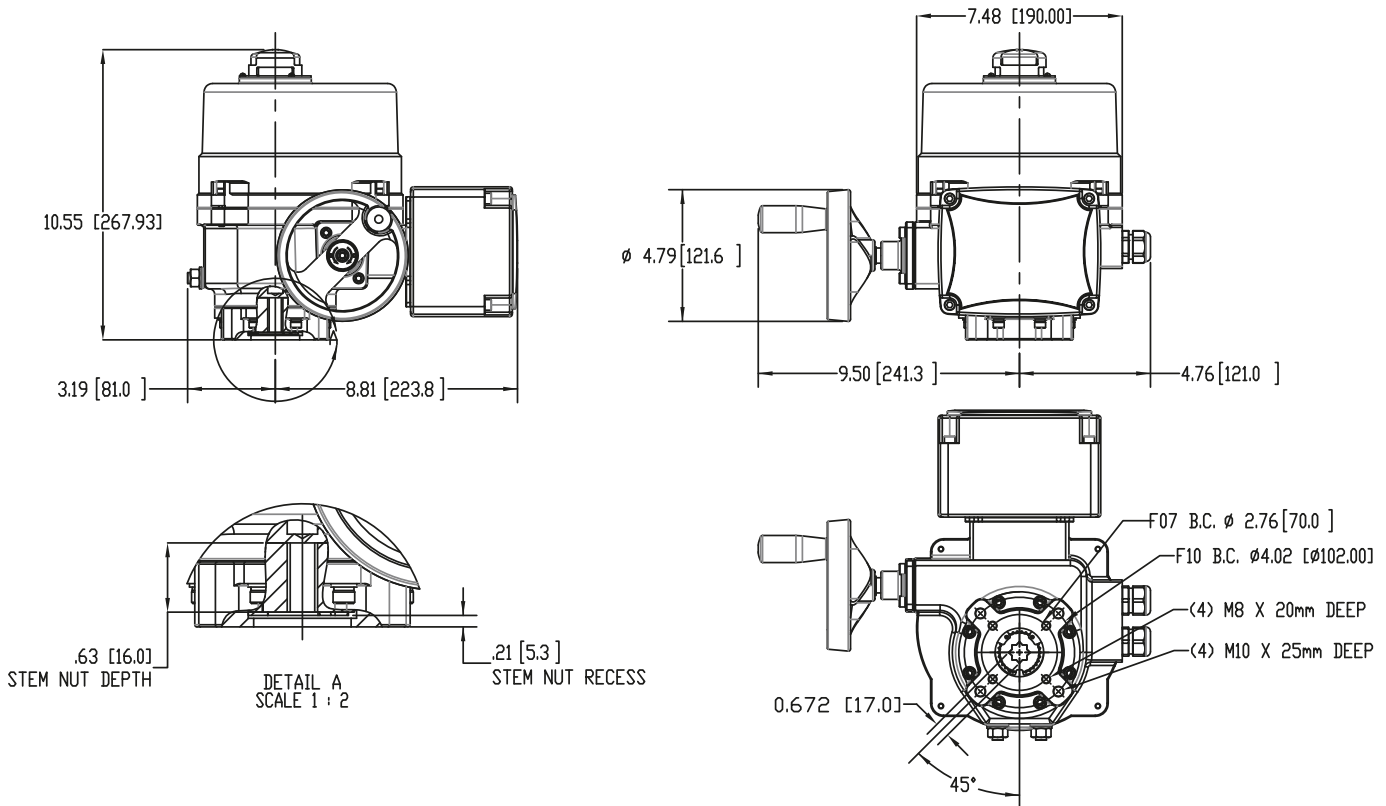
ACTUATOR SPECIFICATIONS		TF0880	TF1770
Supply*	Torque Output (in-lb / Nm)	880 / 100	1770 / 200
220/3ph	Current Draw (Start / Run / LRA)	0.7A / 0.6A / 1.0A	0.7A / 0.6A / 1.0A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 220V polyphase TENV	40W	40W
	On/Off / Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	155°C / Class F	
380/3ph	Current Draw (Start / Run / LRA)	0.4A / 0.3A / 0.6A	0.4A / 0.3A / 0.6A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 380V polyphase TENV	40W	40W
	On/Off / Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	155°C / Class F	
480/3ph	Current Draw (Start / Run / LRA)	0.2A / 0.2A / 0.4A	0.2A / 0.2A / 0.4A
	Speed (90°) 60Hz / 50Hz, seconds	16 / 19	33 / 39
	Motor - 480V polyphase TENV	40W	40W
	On/Off / Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)
	Motor Protection, Temp / Class	155°C / Class F	
All	Environmental Rating	NEMA 4/4X & IP67	
	Electrical Entry (2)	3/4" EMT or Polyamide gland	
	Control	On/Off, Proportional, in six levels of control and protection (some limited applications)	
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 10A @ 250vac	
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)	
	Humidity Range	0-95% RH	
Altitude Limit	9850 ft / 3000 m		

\*Extended Duty are not available for any 3 Phase actuators.  
\*Proportional Control motors are not available for 575/3.



# TF0880~TF1770 Series 3 Phase - MCC Electric Actuators

## TECHNICAL INFORMATION, *CONTINUED*



MODEL	COVER REMOVAL CLEARANCE		HANDWHEEL		WEIGHT	
	IN/MM	IN/MM	# TURNS FOR 90°		LBS/KG	
TF0880	8 / 200	4.79 / 122	12.5 turns 90°		34.1 / 15.5	
TF1770	8 / 200	4.79 / 122	12.5 turns 90°		34.1 / 15.5	





# TF3540~TFBT00 Series On/Off/Proportional Electric Actuators

## Overview

The TF3540~TFBT00 Series are quarter-turn electric industrial service actuators delivering up to 20,350 in-lb torque in voltages ranging from 12V up through 230V in on/off or proportional control modes. Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 10A @ 250vac
- ISO5211 compliant mounting with double square female drive inserts
- Raised visual position indicator
- Clutch-free manual override handwheel standard
- NEMA 4/4X & IP67 compliant
- Two (2) 3/4" EMT entry ports with sealed cable glands
- Torque Switches standard TFAT00 and TFBT00

## Options

- Torque Switches (TF3540~ TF8850)
- Motor Control Centers
- Local Control Stations
- IP68 Submersion
- Battery Backup
- Interchangeable ISO5211 Flange & Drives



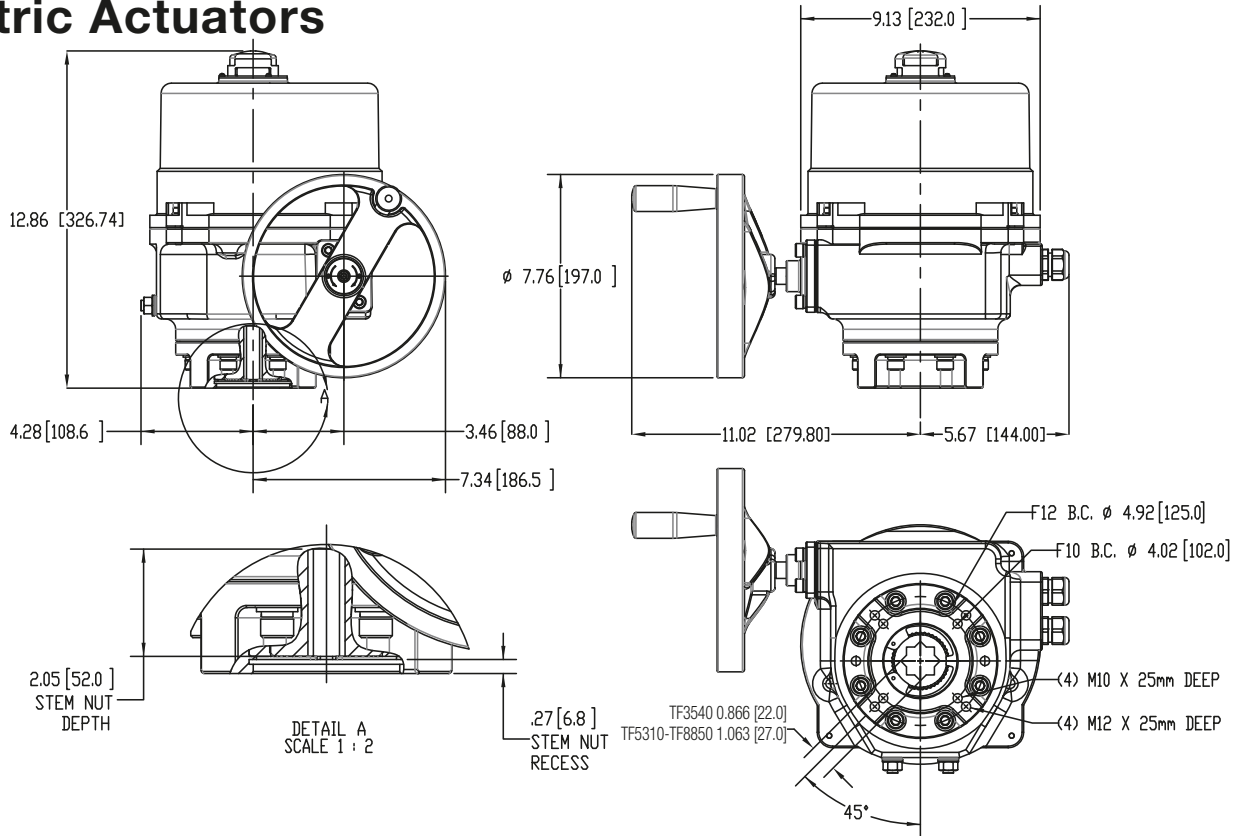
## TECHNICAL INFORMATION

ACTUATOR SPECIFICATIONS		TF3540	TF5310	TF7080	TF8850	TFAT00	TFBT00	
Supply	Torque Output (in-lb / Nm)	3540 / 400	5310 / 600	7080 / 800	8850 / 1000	15,040 / 1700	20,350 / 2300	
12VAC*	Current Draw (Start / Run / LRA)	11.4A/9.4A/24.4A	11.4A/9.4A/24.4A	11.4A/9.4A/24.4A	-	-	-	
	Speed (90°) DC-60Hz/50Hz, seconds	21 / 21	28 / 28	34 / 34	-	-	-	
	Motor - 12V DC Brush TENV	40W	40W	40W	-	-	-	
12VDC*	On/Off / Proportional	Duty Cycle (IEC60034)	75% (S2-15 min) / 75% (S4-75%)		-	-	-	
		Motor Protection, Temp / Class	All - 130°C / Class B		-	-	-	
		Motor Starts, per hour, Max	All - 600		-	-	-	
24VAC	Current Draw (Start / Run / LRA)	7.0A / 5.8A / 15A	7.0A / 5.8A / 15A	7.0A / 5.8A / 15A	10.5A / 7.8A / 22A	10.5A / 7.8A / 22A	-	
	Speed (90°) DC-60Hz/50Hz, seconds	21 / 21	28 / 28	34 / 34	34 / 34	25 / 25	-	
	Motor - 24V DC Brush TENV	40W	40W	40W	90W	90W	-	
24VDC	On/Off / Proportional	Duty Cycle (IEC60034)	75% (S2-15 min) / 75% (S4-75%)		-	50% / 50%	-	
		Motor Protection, Temp / Class	All - 130°C / Class B		-	-	-	
		Motor Starts, per hour, Max	All - 600		-	-	-	
120VAC	Current Draw (Start / Run / LRA)	3.0A / 1.8A / 3.5A	3.0A / 1.8A / 3.5A	3.0A / 1.8A / 3.5A	3.8A / 2.3A / 4.8A	7.2A / 4.5A / 9.4A	7.2A / 4.5A / 9.4A	
	Speed (90°) 60Hz / 50Hz, seconds	24 / 29	33 / 39	39 / 47	39 / 47	28 / 34	39 / 47	
	Motor - 120V Capacitor Run TENV	90W	90W	90W	120W	200W	200W	
	On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)		25% (S2-15 min) / 50% (S4-50%)		25% (S2-15 min) / 50% (S4-50%)	
		Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H		155°C / Class F / 180°C / Class H		155°C / Class F / 180°C / Class H	
Motor Starts, per hour, Max	600 / 1200		600 / 1200		600 / 1200			
230VAC	Current Draw (Start / Run / LRA)	1.7A / 0.9A / 1.9A	1.7A / 0.9A / 1.9A	1.7A / 0.9A / 1.9A	2.2A / 1.1A / 2.4A	4.1A / 2.2A / 4.5A	4.1A / 2.2A / 4.5A	
	Speed (90°) 60Hz / 50Hz, seconds	24 / 29	33 / 39	39 / 47	39 / 47	28 / 34	39 / 47	
	Motor - 230V Capacitor Run TENV	90W	90W	90W	120W	200W	200W	
	On/Off - Std Duty / On/Off - Ext Duty & Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / 75% (S4-75%)		25% (S2-15 min) / 50% (S4-50%)		25% (S2-15 min) / 50% (S4-50%)	
		Motor Protection, Temp / Class	155°C / Class F / 180°C / Class H		155°C / Class F / 180°C / Class H		155°C / Class F / 180°C / Class H	
Motor Starts, per hour, Max	600 / 1200		600 / 1200		600 / 1200			
All	Environmental Rating						NEMA 4/4X & IP67	
	Electrical Entry (2)						3/4" EMT or Polyamide gland	
	Control						On/Off, Proportional, 2 Pos RO, RC & 3 Position	
	Auxiliary Switch - End of Travel						(2) Form A Volt-Free, Rated 10A @ 250vac	
	Ambient Operating Range						-22°F to +158°F (-30°C to +70°C)	
	Humidity Range						0-95% RH	
	Altitude Limit						9850 ft / 3000 m	

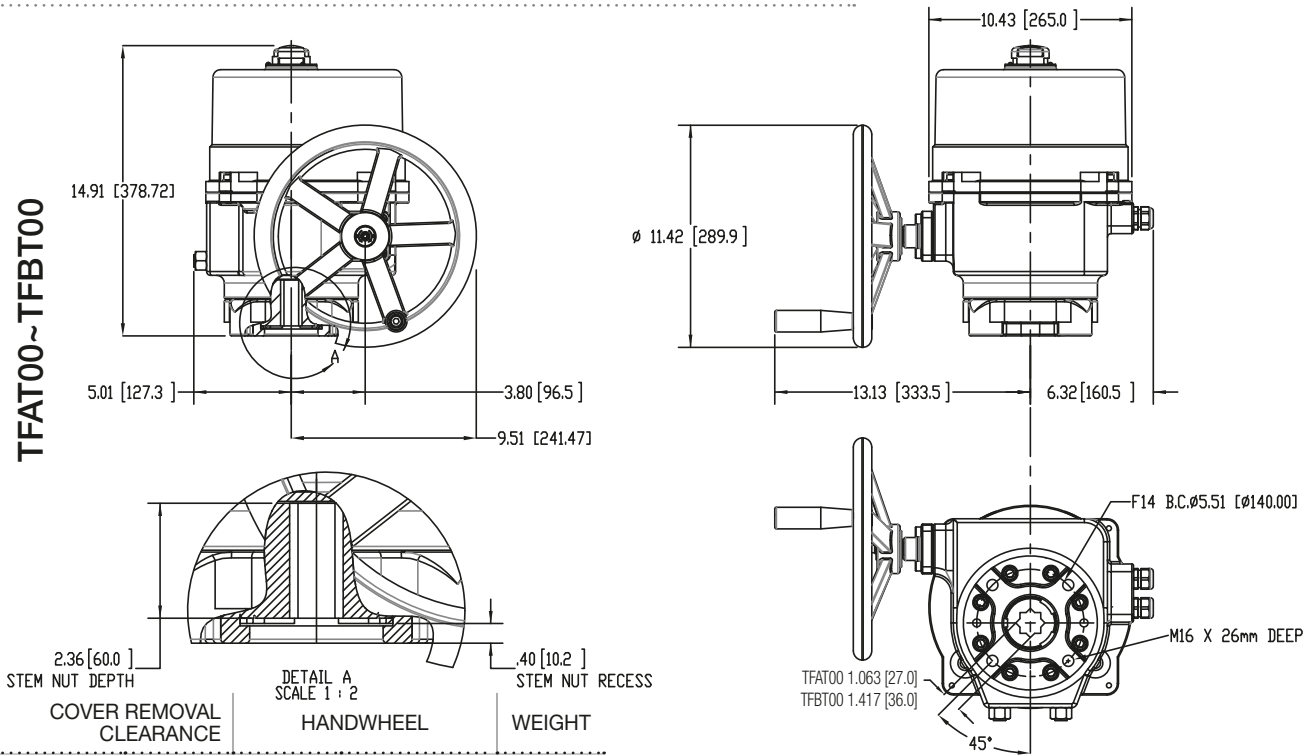
\*12V versions available custom order.

# TF3540~TFBT00 Series Electric Actuators

TF3540~TF8850



TFAT00~TFBT00



MODEL	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG
TF3540	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5
TF5310	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5
TF7080	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5
TF8850	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5

MODEL	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG
TFAT00	9.84 / 250	11.42 / 290	16 turns 90°	81.4 / 37
TFBT00	9.84 / 250	11.42 / 290	16 turns 90°	81.4 / 37





# TF3540~TFBT00 Series 3 Phase - MCC On/Off/Proportional Electric Actuators

## Overview

The TF3540~TFBT00 Series are quarter-turn electric industrial service actuators delivering up to 20,350 in-lb torque in voltages ranging from 220/3 up through 480/3 in on/off or proportional control modes and 575/3 (basic only). Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 10A @ 250vac
- ISO5211 compliant mounting with double square female drive inserts
- Raised visual position indicator
- Clutch-free manual override handwheel standard
- NEMA 4/4X & IP67 compliant
- Two (2) 3/4" EMT entry ports with sealed cable glands
- Torque Switches standard TFAT00 and TFBT00

## Options

- Torque Switches (TF3540~ TF8850)
- Motor Control Centers
- Local Control Stations
- IP68 Submersion
- Interchangeable ISO5211 Flange & Drives



## TECHNICAL INFORMATION

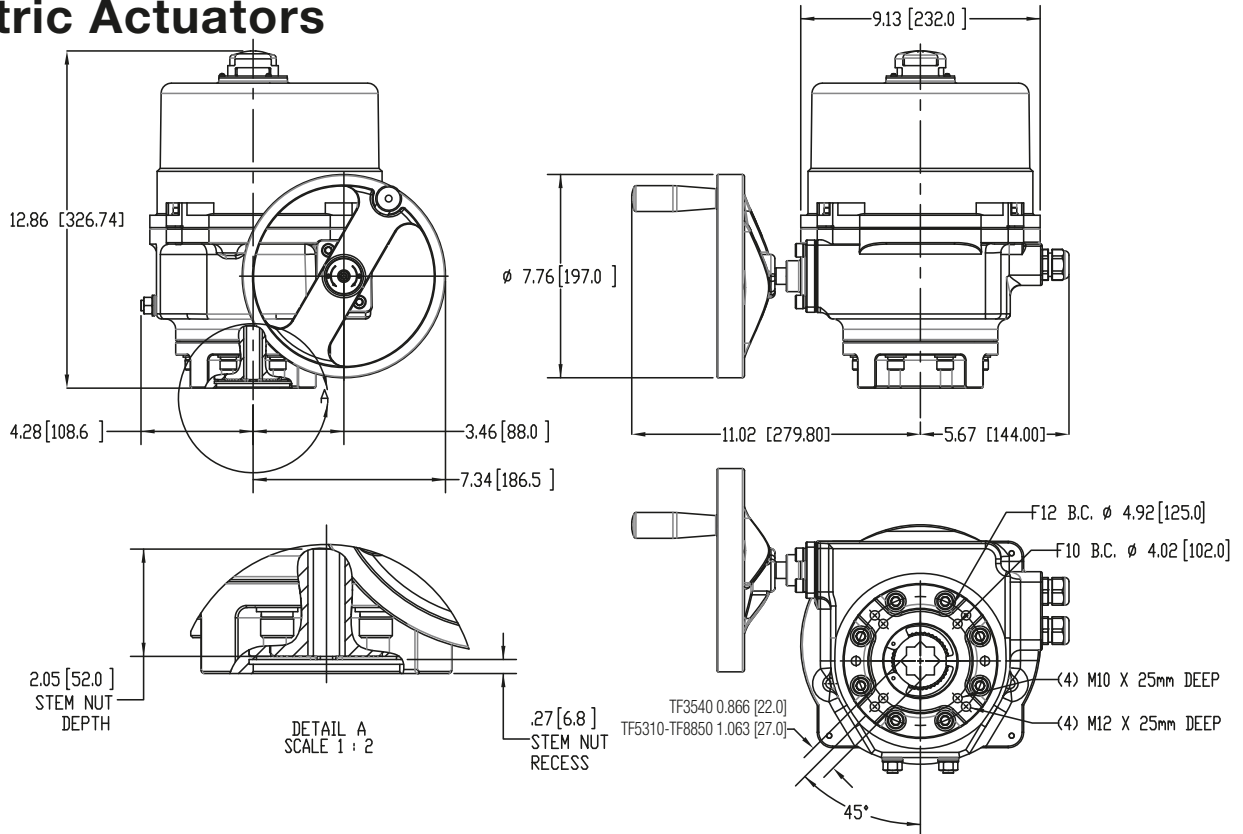
ACTUATOR SPECIFICATIONS		TF3540	TF5310	TF7080	TF8850	TFAT00	TFBT00	
Supply*	Torque Output (in-lb / Nm)	<b>3540 / 400</b>	<b>5310 / 600</b>	<b>7080 / 800</b>	<b>8850 / 1000</b>	<b>15,040 / 1700</b>	<b>20,350 / 2300</b>	
220/3ph	Current Draw (Start / Run / LRA)	1.8A / 1.1A / 2.4A	1.8A / 1.1A / 2.4A	1.8A / 1.1A / 2.4A	2.8A / 1.1A / 2.1A	3.6A / 1.9A / 4.5A	3.6A / 1.9A / 4.5A	
	220V polyphase TENV	90W	90W	90W	120W	200W	200W	
380/3ph	Current Draw (Start / Run / LRA)	1.1A / 0.6A / 1.4A	1.1A / 0.6A / 1.4A	1.1A / 0.6A / 1.4A	1.6A / 0.8A / 1.9A	2.1A / 1.1A / 2.6A	2.1A / 1.1A / 2.6A	
	Motor - 380V polyphase TENV	90W	90W	90W	120W	200W	200W	
480/3ph	Current Draw (Start / Run / LRA)	0.7A / 0.4A / 1.0A	0.7A / 0.4A / 1.0A	0.7A / 0.4A / 1.0A	0.9A / 0.5A / 1.1A	1.2A / 0.9A / 2.1A	1.2A / 0.9A / 2.1A	
	Motor - 480V polyphase TENV	90W	90W	90W	120W	200W	200W	
575/3ph	<b>575/3 On/Off - Basic Only**</b>							
	Current Draw (Start / Run / LRA)	0.4A / 0.3A / 0.8A	0.4A / 0.3A / 0.8A	0.4A / 0.3A / 0.8A	0.8A / 0.4A / 0.9A	1.0A / 0.7A / 1.9A	1.0A / 0.7A / 1.9A	
	Motor - 575V polyphase TENV	90W	90W	90W	120W	200W	200W	
All (as noted)	Duty Cycle (IEC60034)	25% (S2-15 min) / <b>75% (S4-75%)</b>				25% (S2-15 min) / <b>50% (S4-50%)</b>		
	On/Off / Proportional	Motor Protection, Temp / Class						
		155°C / Class F						
		Motor Starts, per hour, Max						
		600						
		Speed (90°) 60Hz/50Hz, seconds	24 / 29	33 / 39	39 / 47	39 / 47	28 / 34	39 / 47
		Environmental Rating	NEMA 4/4X & IP67					
		Electrical Entry (2)	3/4" EMT or Polyamide Gland					
		Control (220/3 ~ 480/3)	On/Off, Proportional, in six levels of control and protection (some limited applications)					
		Control (575/3)	On/Off - Basic (follow On/Off - Std Duty performance data)					
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 10A @ 250vac						
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)						
	Humidity Range	0-95% RH						
	Altitude Limit	9850 ft / 3000 m						

\*Extended Duty are not available for any 3 Phase actuators.

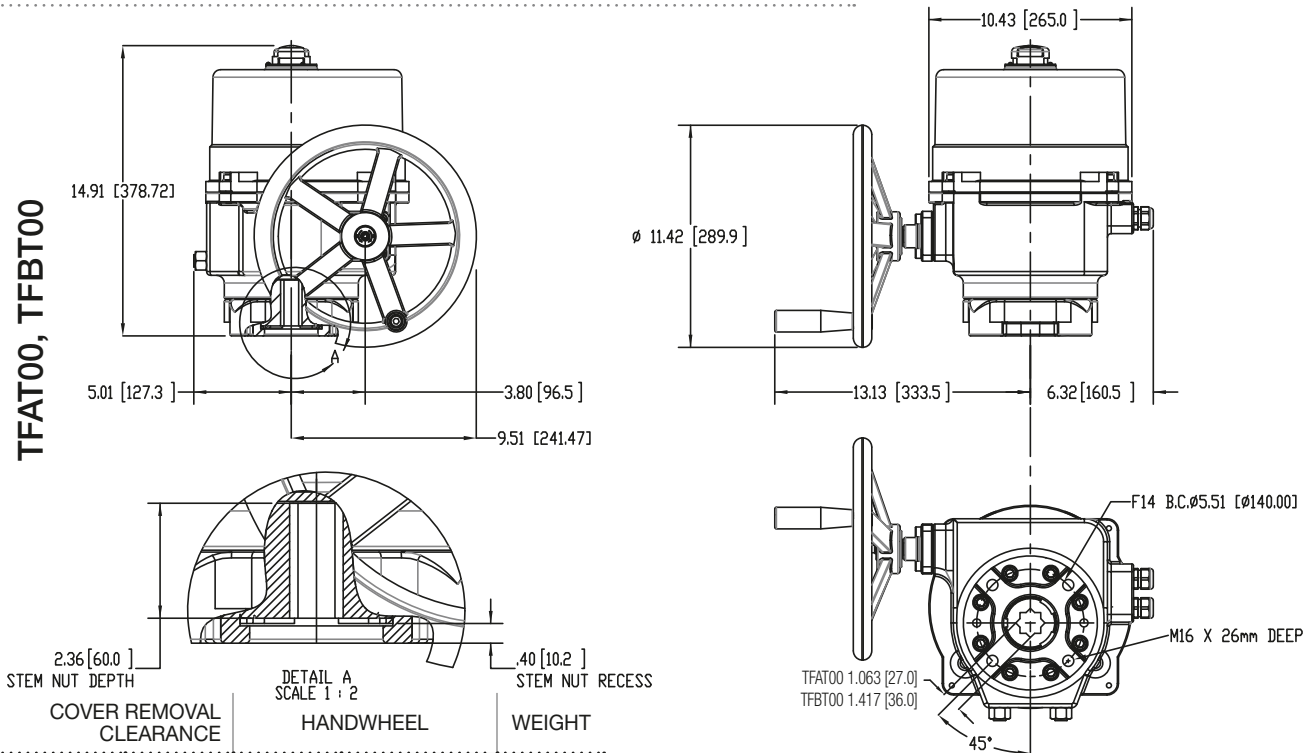
\*\*Proportional Control motors are not available for 575/3.

# TF3540~TFBT00 Series Electric Actuators

TF3540~TF8850



TFAT00, TFBT00



MODEL	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG
TF3540	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5
TF5310	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5
TF7080	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5
TF8850	8 / 200	7.76 / 197	14.5 turns 90°	53.9 / 24.5

MODEL	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG
TFAT00	9.84 / 250	11.42 / 290	16 turns 90°	81.4 / 37
TFBT00	9.84 / 250	11.42 / 290	16 turns 90°	81.4 / 37







# TFCT00~TFDT00 Series On/Off/Proportional Electric Actuators

## Overview

The TFCT00~TFDT00 Series are quarter-turn electric industrial service actuators delivering up to 44,250 in-lb torque in voltages ranging from 120VAC up through 480/3 in on/off or proportional control modes and 575/3 in on/off only. Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 10A @ 250vac
- ISO5211 compliant mounting with a double square female drive
- Flat visual position indicator
- Clutch-free manual override handwheel standard
- NEMA 4/4X & IP67 compliant
- Two (2) 3/4" EMT entry ports with sealed cable glands
- Torque Switches standard

## Options

- Motor Control Centers
- Local Control Stations
- IP68 Submersion



## TECHNICAL INFORMATION

ACTUATOR SPECIFICATIONS		TFCT00	TFDT00
Supply*	Torque Output (in-lb / Nm)	<b>30,970 / 3500</b>	<b>44,250 / 5000</b>
120VAC	Current Draw (Start / Run / LRA)	7.2A / 4.5A / 9.4A	7.2A / 4.5A / 9.4A
	Motor - 120V Capacitor Run TENV	200W	200W
230VAC	Current Draw (Start / Run / LRA)	4.1A / 2.2A / 4.5A	4.1A / 2.2A / 4.5A
	Motor - 230V Capacitor Run TENV	200W	200W
220/3ph	Current Draw (Start / Run / LRA)	3.6A / 1.9A / 4.5A	3.6A / 1.9A / 4.5A
	Motor - 220V polyphase TENV	200W	200W
380/3ph	Current Draw (Start / Run / LRA)	2.1A / 1.1A / 2.6A	2.1A / 1.1A / 2.6A
	Motor - 380V polyphase TENV	200W	200W
480/3ph	Current Draw (Start / Run / LRA)	1.2A / 0.9A / 2.1A	1.2A / 0.9A / 2.1A
	Motor - 480V polyphase TENV	200W	200W
575/3ph	<b>575/3 On/Off - Basic Only**</b>	1.0A / 0.7A / 1.9A	1.0A / 0.7A / 1.9A
	Motor - 575V polyphase TENV	200W	200W
All (as noted)	On/Off / Proportional	Duty Cycle (IEC60034)	25% (S2-15 min) / <b>50% (S4-50%)</b>
		Motor Protection, Temp / Class	155°C / Class F / <b>180°C / Class H (Single Phase Only)</b>
		Motor Starts, per hour, Max	<b>600 / 1200</b>
	Speed (90°) 60Hz/50Hz, seconds	63 / 76	88 / 105
	Environmental Rating	NEMA 4/4X & IP67	
	Electrical Entry (2)	3/4" EMT or Polyamide Gland	
	Control (120/230VAC)	On/Off, Proportional, 2 Pos RO, RC & 3 Position	
	Control (220/3 ~ 480/3)	On/Off, Proportional, in six levels of control and protection (some limited applications)	
	Control (575/3)	On/Off - Basic (follow On/Off - Std Duty performance data)	
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 10A @ 250vac	
Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)		
Humidity Range	0-95% RH		
Altitude Limit	9850 ft / 3000 m		

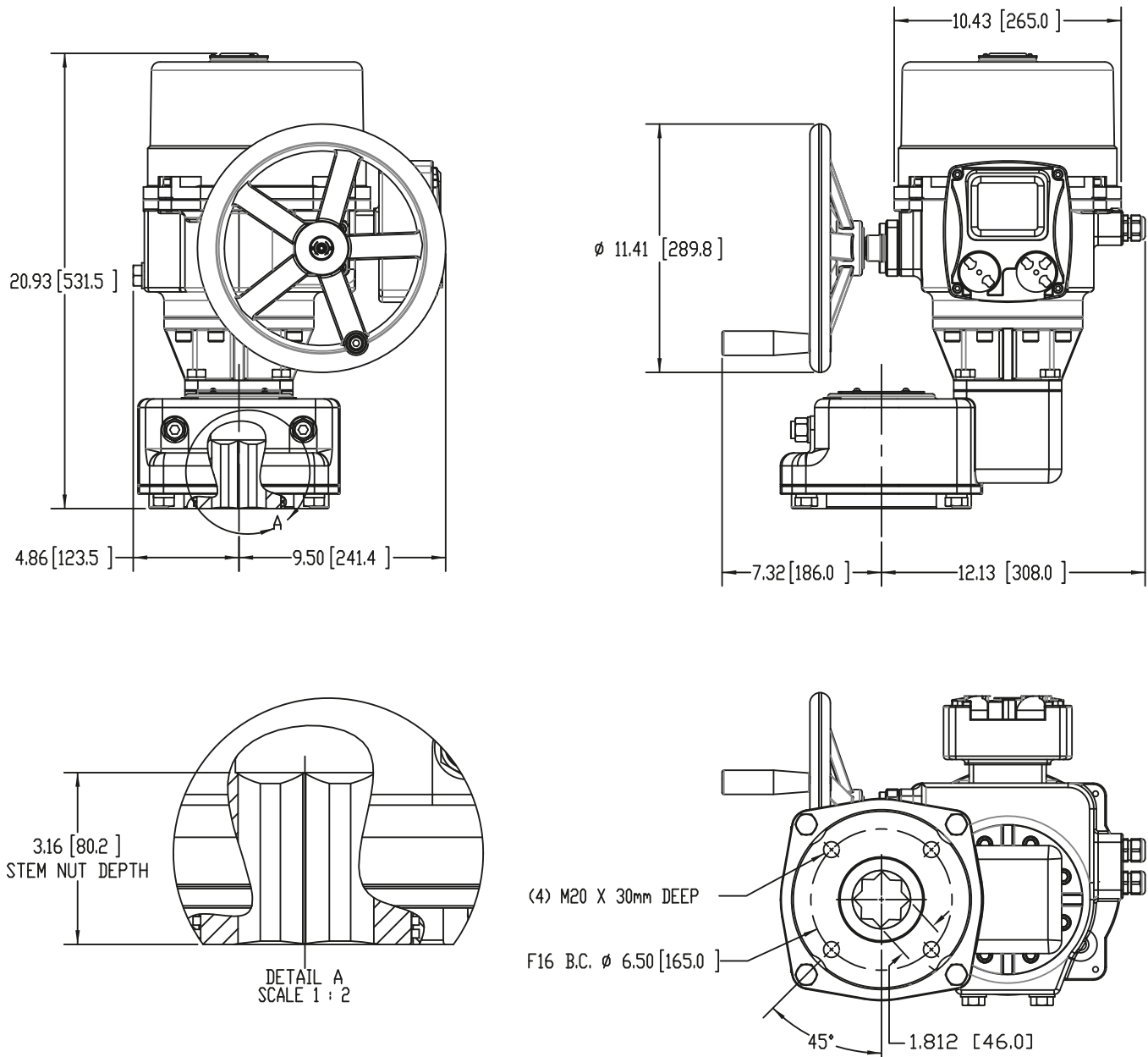
\*TFCT00~TFDT00 not available below 120vac supply.

\*Extended Duty are not available for any 3 Phase actuators.

\*\*Proportional Control motors are not available for 575/3.

# TFCT00~TFDT00 Series Electric Actuators

## TECHNICAL INFORMATION, *CONTINUED*



MODEL	COVER REMOVAL CLEARANCE		HANDWHEEL		WEIGHT
	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG	
TFCT00	9.84 / 250	11.41 / 290	35.6 turns 90°	174 / 79	
TFDT00	9.84 / 250	11.41 / 290	35.6 turns 90°	174 / 79	





# TFHT00 Series On/Off/Proportional Electric Actuators

## Overview

The TFHT00 Series are quarter-turn electric industrial service actuators delivering up to 70,800 in-lb torque in voltages ranging from 120VAC up through 480/3 in on/off or proportional control modes and 575/3 in on/off only. Other Key Features include:

- Units are equipped with two (2) volt-free Form A Auxiliary switches rated at up to 10A @ 250vac
- ISO5211 compliant mounting with a double square female drive
- Flat visual position indicator
- Clutch-free manual override handwheel standard
- NEMA 4/4X & IP67 compliant
- Two (2) 3/4" EMT entry ports with sealed cable glands
- Torque Switches standard

## Options

- Motor Control Centers
- Local Control Stations
- IP68 Submersion



## TECHNICAL INFORMATION

ACTUATOR SPECIFICATIONS		TFHT00
Supply*	Torque Output (in-lb / Nm)	<b>70,800 / 8000</b>
120VAC	Current Draw (Start / Run / LRA)	7.2A / 4.5A / 9.4A
	Motor - 120V Capacitor Run TENV	200W
230VAC	Current Draw (Start / Run / LRA)	4.1A / 2.2A / 4.5A
	Motor - 230V Capacitor Run TENV	200W
220/3ph	Current Draw (Start / Run / LRA)	3.6A / 1.9A / 4.5A
	Motor - 220V polyphase TENV	200W
380/3ph	Current Draw (Start / Run / LRA)	2.1A / 1.1A / 2.6A
	Motor - 380V polyphase TENV	200W
480/3ph	Current Draw (Start / Run / LRA)	1.2A / 0.9A / 2.1A
	Motor - 480V polyphase TENV	200W
575/3ph	<b>575/3 On/Off - Basic Only**</b>	1.0A / 0.7A / 1.9A
	Current Draw (Start / Run / LRA)	
All (as noted)	Motor - 575V polyphase TENV	200W
	Duty Cycle (IEC60034)	25% (S2-15 min) / <b>50% (S4-50%)</b>
On/Off / Proportional	Motor Protection, Temp / Class	155°C / Class F / <b>180°C / Class H (Single Phase Only)</b>
	Motor Starts, per hour, Max	600 / <b>1200</b>
	Speed (90°) 60Hz/50Hz, seconds	119 / 143
	Environmental Rating	NEMA 4/4X & IP67
	Electrical Entry (2)	3/4" EMT or Polyamide Gland
	Control (120/230VAC)	On/Off, Proportional, 2 Pos RO, RC & 3 Position
	Control (220/3 ~ 480/3)	On/Off, Proportional, in six levels of control and protection (some limited applications)
	Control (575/3)	On/Off - Basic (follow On/Off - Std Duty performance data)
	Auxiliary Switch - End of Travel	(2) Form A Volt-Free, Rated 10A @ 250vac
	Ambient Operating Range	-22°F to +158°F (-30°C to +70°C)
	Humidity Range	0-95% RH
	Altitude Limit	9850 ft / 3000 m

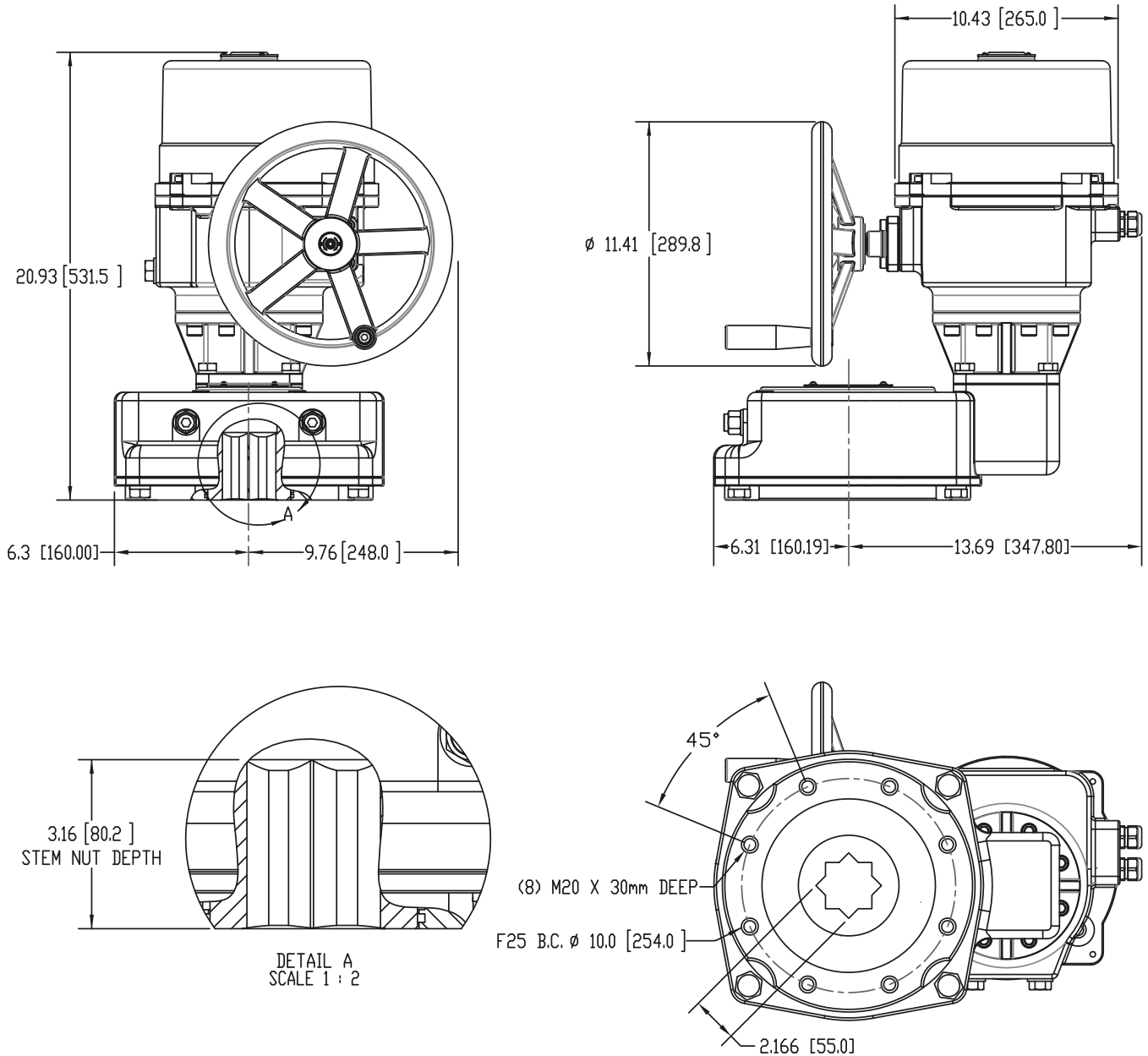
\*TFHT00 not available below 120vac supply.

\*\*Extended Duty are not available for any 3 Phase actuators.

\*\*Proportional Control motors are not available for 575/3.

# TFHT00 Series Electric Actuators

## TECHNICAL INFORMATION, *CONTINUED*



MODEL	COVER REMOVAL CLEARANCE	HANDWHEEL		WEIGHT
	IN/MM	IN/MM	# TURNS FOR 90°	LBS/KG
TFHT00	9.84 / 250	11.41 / 290	48 turns 90°	242 / 110



Raritan Valve & Automation, Inc.  
295 Meadow Road, Edison, NJ 08817 Ph: 732-572-2555, Fax: 732-572-2001

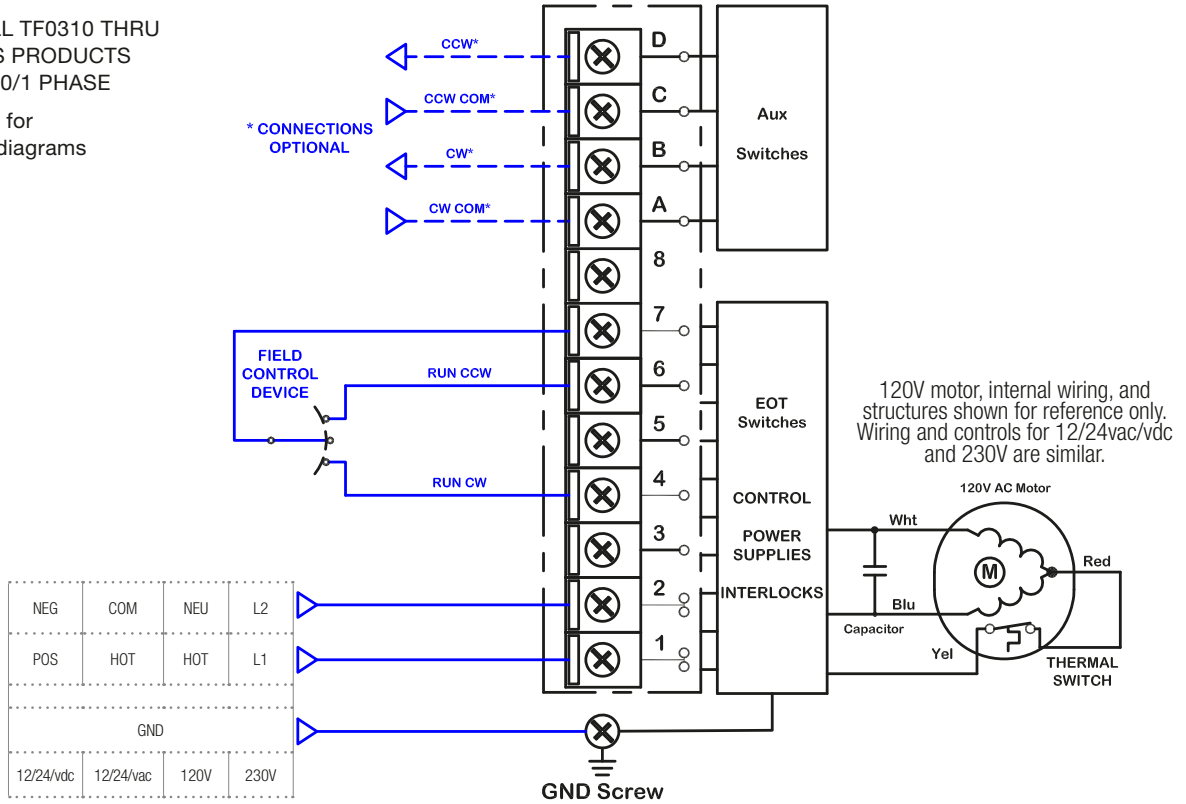
# TF Series Electric Actuators

## TF Series Wiring Diagrams

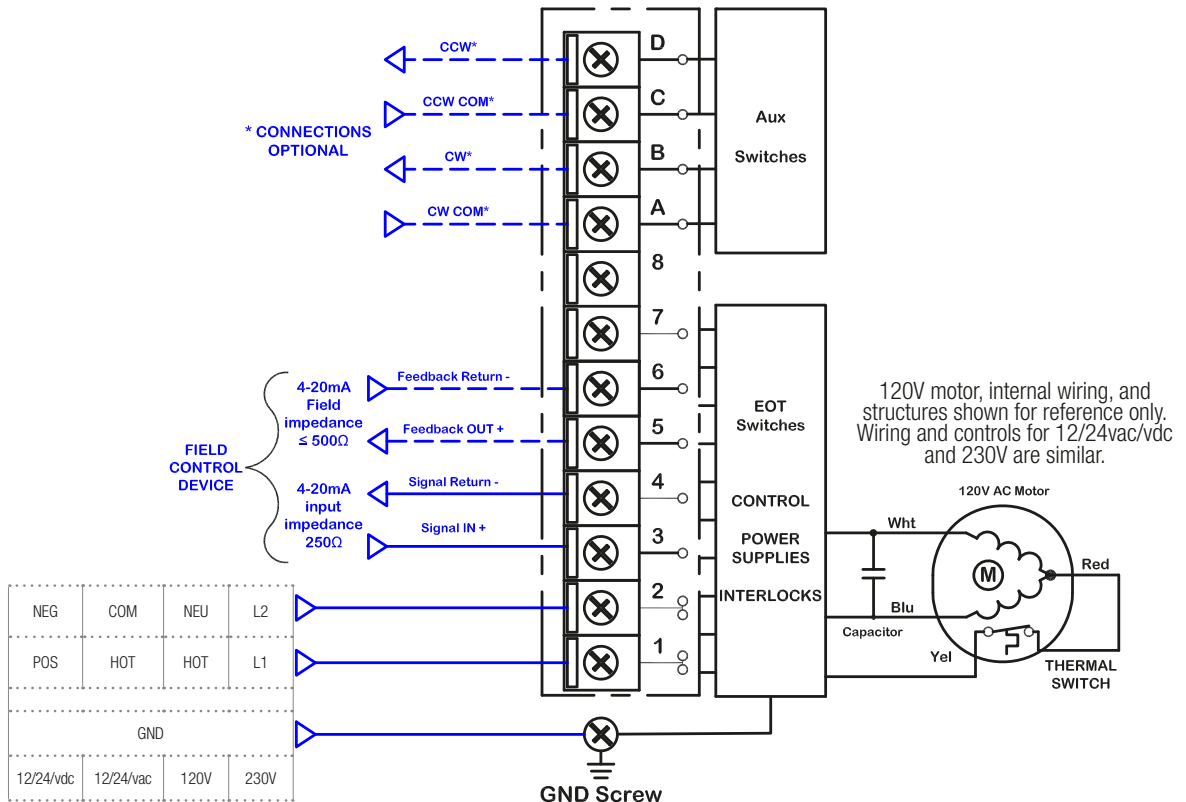
APPLIES TO ALL TF0310 THRU TFHT00 SERIES PRODUCTS  
12VAC/DC ~ 230/1 PHASE

Contact Raritan for 3 phase wiring diagrams

On/Off CONTROL



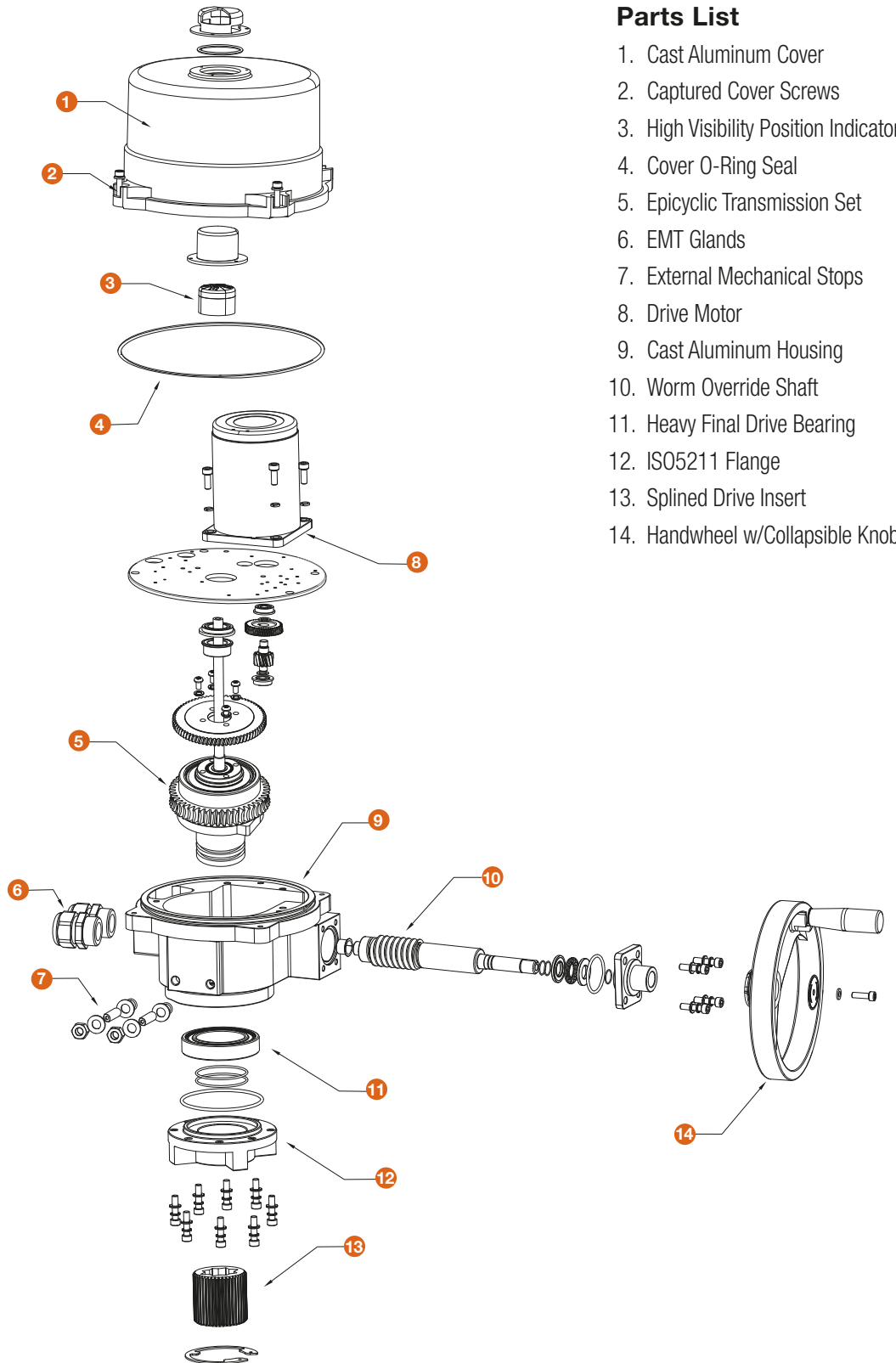
4-20mA CONTROL





# TF Series Electric Actuators, *FEATURES*

## Exploded View (Typical, 880 in-lb shown)



### Parts List

1. Cast Aluminum Cover
2. Captured Cover Screws
3. High Visibility Position Indicator
4. Cover O-Ring Seal
5. Epicyclic Transmission Set
6. EMT Glands
7. External Mechanical Stops
8. Drive Motor
9. Cast Aluminum Housing
10. Worm Override Shaft
11. Heavy Final Drive Bearing
12. ISO5211 Flange
13. Splined Drive Insert
14. Handwheel w/Collapsible Knob

