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Find the *Parker / Compumotor TQ10X* at our website: *Click HERE*

TQ10 and TQ10SD Specifications

	Parameter	Value
Performance	Accuracy	±2 arc min, encoder dependent
	Resolution	2000 or 4000 post-quadrature counts
	Speed/Torque Curves	Located on page 156
Drive Input Power	Voltage	95–132VAC
	Frequency	50/60 Hz
	Recommended Service	20 Amp RMS dedicated
Drive Output Power	Voltage	170VDC
	Switching Frequency	20 kHz
	Continuous Current	5 Amps with TQ10-EHS or mounted to heatsink at or below 45°C
	Peak Current	10 Amps with approx. 2 sec. maximum duration at 45°C
	Bandwidth	2 kHz typical (motor dependant)
	Commutation	6-state commutation, 120° open-collector Hall sensors, 6° (elec.) max. commutation error
Outputs		**TQ10** / **TQ10SD**
	Command	±10V 20K ohms input impedance
	Enable	Must be low or grounded to enable, 5-24VDC to disable, optically coupled with internal pull-up. / Must be low or grounded to enable, 5-24VDC to disable, optically coupled with internal pull-up.
	Fault Reset	Must be 5-24V or unconnected for normal operation, ground to reset, optically coupled with internal pull-up. / Must be low or grounded for normal operation, 5-24VDC to reset, optically coupled with internal pull-up.
	Step	5V maximum input, current 12 mA max, 6.3 mA min. 500 nS min. pulse width.
	Direction	5V maximum input, current 12 mA max., 6.3 mA min, 500 nS set up time. Positive voltage = CW motor rotation.
	Shutdown	5V maximum input (24V with series resistor), current 12 mA max., 6.3 mA min. +5V at shutdown + input commands zero torque, power stage still active.
Protection	Short Circuit	Phase-to-phase, phase-to-earth
	Brownout	Below 80VAC
	Over temperature	Motor 90°C (194°F); Drive 65°C (150°F)
Outputs		**TQ10** / **TQ10SD**
	Reference	±15V, 10 mA available
	Encoder Power	+5VDC @ 200mA max
	Fault+	5-24VDC, 20mA max current. / 5-24VDC, 20mA max current.
	Fault-	Pull-up resistor needed. No fault, transistor on, current flows. Output turns off under fault condition / Pull-up resistor needed. No fault, transistor on, current flows. Output turns off under fault condition
	Velocity Monitor	0–10VDC signal. 1VDC per 40 kHz post quadrature. 2 K ohms min load.
	Motor-Mounted Encoder	SM and NeoMetric motors use two-phase differential encoder outputs with line drivers. 20 mA sink or source. Max of 100 kHz pre-quad operating frequency.
Physical	Connections	10-pin removable screw terminal (all connection points)
	Motor Power	7-pin removable screw terminal
		Standard 3-pin AC connection, molded plug
Environment	Drive Temperature ambient	32°F to 122°F (0° to 50°C)
	Storage Temperature	-40°F to 185°F (-40°C to 85°C)
	Humidity	0 to 95% non-condensing
Diagnostics	LEDs	**LED Name** / **Indication**
		Enable (Bi-color) / Green = enabled Red = power on, not enable
		Drive Temp / Red = drive overtemp
		Motor Fault / Red = fault (short circuit, motor overtemp, etc.)
		Peak Current/Foldback (Bi-color) / Green = current is near peak (over ~90%) Red = in foldback (peak current time exceeded)
	Faults (Hardware)	Regen (Bi-color) / Green = regen active Red = overvoltage fault
		Short Circuit (phase-phase, phase-ground)
		Under voltage lock out (input <80VAC) (no LED indication for this)
		Drive temperature

Parker Automation
Parker Hannifin Corporation
Compumotor Division
Rohnert Park, California

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TQ10X Specifications

	Parameter	Value
Performance	Position Range	±1,073,741,823
	Velocity Range	0.01 to 200 rps
	Acceleration Range	0.01 to 9999 rps2
	Velocity Accuracy	±0.02% of max rate
	Velocity Repeatability	±0.02% of set rate
	Resolution	400–65,532 encoder counts/rev
	Speed/Torque Curves	Located on page 156
Power Input	Voltage	95-132VAC single phase
	Frequency	50/60 Hz
Power Output Motor	Peak Current	10 A (approx 2 sec max duration at 45°C ambient temperature)
	Continuous Current	5 A with TQ10-EHS or mounted to heatsink at or beow 45°C
	Voltage	170VDC nominal
	Peak Power	830 W (1.1 hp) @ 170V supply voltage
	Continuous Power	420 W (0.56 hp)
	Switching Frequency	20 kHz
	Bandwidth	2 kHz typical (dependent on motor)
	Transconductance	1 volt = 1.0 amp
	Commutation	120° hall effect sensors for six-state commutation method or brushed DC motor
	Short-Circuit Protected	Yes
Power Output Hall Effect Sensors	Voltage	+5VDC ±0.5VDC
	Current	50 mA (max)
	Short-Circuit Protected	Yes
Power Output To Encoder	Voltage	+5VDC
	Current	200 mA max each output
Hall Inputs	Low State	Ø-2V
	High State	Internal 3KΩ pull-up resistor to +15V (open-collector hall outputs should be used)
	Input Frequency	Ø–2 kHz max
Inputs	Programmable Inputs	5 user-defined, TTL signal levels: low = 0.8V; high = 2–5V
	End-of-travel limits	CW/CCW, 0–5V, TTL signal levels: low = 0.8V; high = 2–5V
	RS-232C	3-wire (Rx, Tx, GND) connections
Outputs	Programmable outputs	2 user-defined, TTL signal levels: low = 0.8V; high = 2–5V
	Fault Output–Isolated	24V max voltage; 10 mA max current
	LEDs	Indication
	-Enable (Bi-color)	Green = enabled; Red = power on, not enabled
	-Drive temp	Red = fault (drive overtemp, etc.)
	-Motor fault	Red = fault (short circuit, motor overtemp, etc.)
	-Peak current/Foldback (Bicolor)	Green = current is near peak (over~75%) Red = in foldback (peak current time exceeded)
	-Regen (Bi-color)	Green = regen active; Red = overvoltage fault
Digital Servo Loop	Update Time	266 µsec
	Output	12-bit DAC
	Servo Tuning	Via RS-232C
	Tuning Parameters	PID with digital filter
Protective Circuits	Short Circuit	Turns off outputs to motor; latched
	Overtemperature	55°C ±5°C trip temperature; latched
	Undervoltage	80V min
Physical	All connection points	10 pin screw terminal, removable
	Environment	Drive Temperature ambient: 0-50°C (32-122°F) Humidity: 0-95% non-condensing Storage: -40-85°C (-40-185°F)

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