TM380

HIGH-SPEED TORQUE MONITOR FOR UTMⅢ/UTMⅡ/UTMV



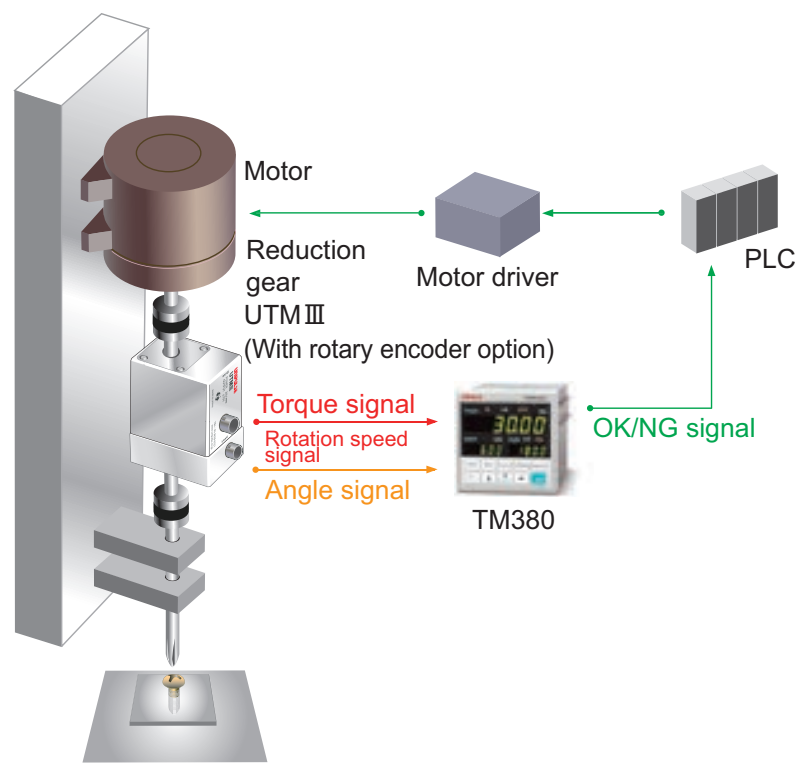
DIN 96 RoHS2

Suitable torque meter UTMⅢ UTMⅡ UTMV

- High-speed sampling at 16000 times/sec.
- Compatible with rotary encoder option(R)(H) of UTM series.
- Equipped with display and comparison function for connection data*1 of UTMⅢ
- Torque, rotation speed and angle are displayed simultaneously.
- Hold function
- Upper/lower comparators function
- Equipped with data memory function (Torque, rotation speed, angle, the latest 30 items are recorded)
- The unit supplies electric power to UTMⅢ/UTMⅡ/UTMV.

*1 RS-485 interface (torque, rotation speed)

■ Usage example



Specifications

Section	Item	Specification
Analog section	- Torque sensor input (voltage input)	
	Signal input range	-10 to +10 V (UTMⅢ) Input resistance 1 MΩ or more -5 to +5 V (UTMⅡ/UTMV) Input resistance 1 MΩ or more
	Accuracy	Non-linearity: Within 0.02% FS±1 digit Zero drift: Within 0.2 mV/℃ RTI Gain drift: Within 0.01%/℃
	A/D converter	Speed: 16000 times/sec. Resolution: 24 bit (binary) 1/30000 with respect to 10 V
	Digital low pass filter	PASS, 3 Hz to 1 kHz
	Digital high pass filter	PASS, 3 Hz to 1 kHz
	- Voltage monitor outpu	Linked to the output voltage of the torque meter
	- Rotation speed input (Pulse input, open collector) (UTMⅢ/UTMⅡ/UTMV)	
	Maximum input rotation speed	Conforming to the maximum rotation speed of UTMⅢ/UTMⅡ/UTMV
	Minimum input rotation speed	Selectable from 15, 10, 5, 3, or 2 rpm (when pulse rate is 4 ppr)
	Minimum detection pulse width	50 μs
	Circuit configuration	No-voltage contact input (minus common) Open collector connectable (Ic = Approx. 10 mA)
	- Rotation speed input (Pulse input, open collector) (For using rotary encoder option)	
	Maximum input rotation speed	Conforming to the maximum rotation speed of UTMⅢ/UTMⅡ
	Minimum input rotation speed	0.1 rpm * The resolution depends on the settings of the rotation speed and the number of the output pulse.
	Minimum detection pulse width	5 μs
	Circuit configuration	No-voltage contact input (minus common) Open collector connectable (Ic = Approx. 10 mA)
	- Encoder input (Pulse input) Compatible with encoder option of UTMⅢ/UTMⅡ	
Display section	Display	Main display: Character height: 15 mm Numerical display by 7-segment green LED (5-digit+sign) Sub display: Character height: 8 mm Numerical display by 7-segment green LED (5-digit)
	Indicated value	Main display: 5-digit -99999 to +99999 Signs: Minus sign on most significant digit Sub-display (Rotation speed): 5-digit 0 to +99999 Sub-display (Angle): -19999 to +19999 Signs: Minus sign on most significant digit
	Decimal point	0, 0.0, 0.00, 0.000 (Torque) 0 (Rotation speed,0.0 for Low-speed rotation mode) 0, 0.0, 0.00 (Angle Depending on unit and min. scale division setting)
	Display frequency	Selectable from 3, 6, 13, and 25 times/sec.
	Status display	HI / LO / HOLD
	Unit	rad/deg (Depending on angle unit setting)
Hold		Sample, Peak, Bottom, P-P, Average, Peak (angle), Peak (angle+torque) Hold section setting (All section・External signal・External signal+Time・Level+Time)
External I/O section	External input (5 points)	Hold control / Hold reset / Digital Zero / Angle zero clear/ Record data clear Dry contact input circuit (minus common type), Ic = 10 mA or less
	External output (13 points)	Torque HI/LO limit comparison (alarm HI・HI・OK・LO・alarm LO) / Rotation speed HI/LO limit comparison (alarm HI·HI·OK·LO·alarm LO) / Hold complete / RUN) Timing output/ Absolute value display Open collector output circuit (sink type), Vceo = 30 V (max) Ic = 30 mA (max)
Interface		SIF: 2-wire serial interface BCO: BCD parallel data output interface (Option) D3V: D/A converter voltage output (3 ch) (Option) DAV: D/A converter voltage output (Option) DAI: D/A converter current output (Option) 232: RS-232C communication interface (Option) USB: USB interface (Option) * Only one option can be installed.
General performance	Power supply voltage	DC 24 V±15%
	Power consumption	8 W typ.
	Operating conditions	Operation temperature: -10 to +50℃ Storage temperature: -40 to +80℃ Humidity: 85% RH or less (non-condensing)
	Dimension	96(W) × 96(H) × 138(D) mm (Not including projections)
	Weight	Approx. 1.2 kg
Attachments		Operation manual ···························· 1 External input/output connector ················ 1 Connector for BCD output (with BCO option) ······ 1 Mini screwdriver (with D/A converter option) ······ 1 Unit seal ···························· 1 Operating tool (with D/A converter (3 ch) option) ······ 1
Optional accessories		CA372-I/O: Cable with FCN connector at one-end 3 m CA81-USB: USB cable (TypeA-Bmini) 1.8 m CATM321-M: Cable for UTMⅢ connection 2 m CATM351-M: Cable for UTMⅢ connection 5 m CATM221-MC: Cable for UTMⅡ/UTMV connection 2 m CATM251-MC: Cable for UTMⅡ/UTMV connection 5 m CATM(R)321-M: Cable for connecting UTMⅢ rotary encoder 2 m CATM(R)351-M: Cable for connecting UTMⅢ rotary encoder 5 m CATM(R)321-MR: Cable for connecting UTMⅡ rotary encoder 2 m CATM(R)351-MR: Cable for connecting UTMⅡ rotary encoder 5 m CATM(R12)321-M: Cable for connecting UTMⅢ(RC) rotary encoder 2 m CATM(R12)351-M: Cable for connecting UTMⅢ(RC) rotary encoder 5 m CN34: D-Sub9p connector for RS-232C CN50: FCN series I/O connector (with cover) (Same as the attachment) CN51: BCD output connector CN55: FCN series I/O connector (with diagonal cover) CN73: D/A converter (3 ch) connector CN96: UTMⅢ connector CN93: UTMⅢ rotary encoder connector DTC2: Case for TM380 (with AC power supply) GMP96x96: Rubber packing

* Please note that there are possibilities of individual differences in a color tone on display devices such as LEDs, fluorescent display tubes and LCDs due to manufacturing process or production lots.

Structure of product code

TM380 □

① ②

① Standard unit

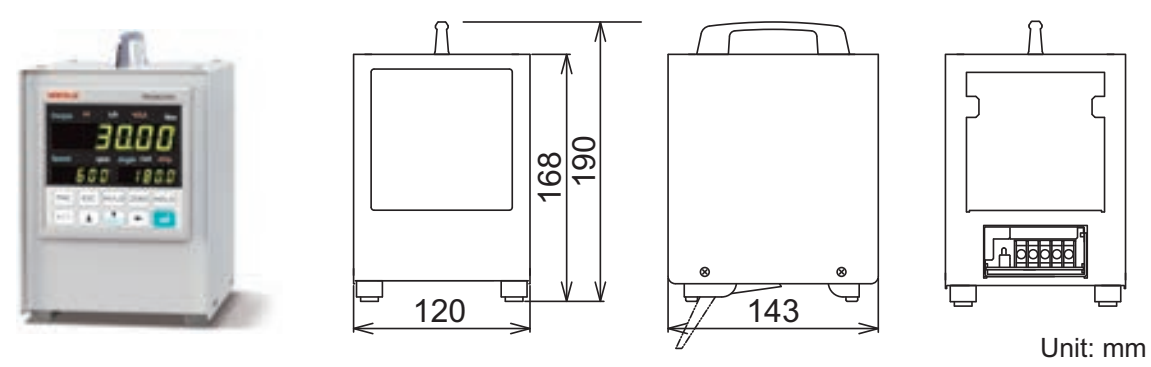
② Interface

Sign	Interface
Standard	SI/F

↓ One optional interface can be added in addition to the standard interface.

BCO	BCD output (Sink type)
D3V	D/A converter voltage output (3 ch)
DAV	D/A converter voltage output
DAI	D/A converter current output
232	RS-232C
USB	USB

DTC2: Case for TM380 (with AC power supply)



External dimension

