

TM301

TORQUE MONITOR FOR UTMII/UTMV

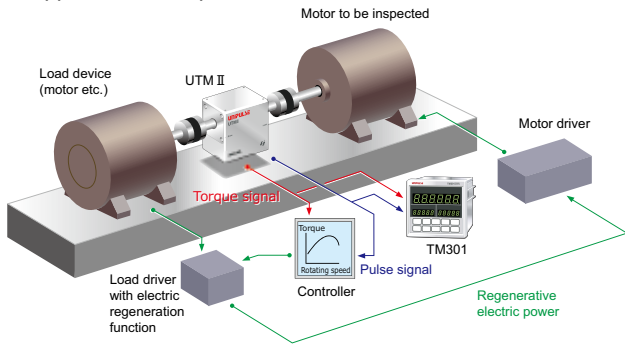


Suitable torque meter UTM II UTMV

- Torque, rotational speed, and power* are displayed simultaneously.
- Upper/lower comparators with hold functions.
- Data storage function.
(Record last 30 measurement data of torque, rotational speed, and power)
- The unit supplies electric power to UTMII/UTMV.
- Easy connection to UTMII/UTMV with the supplied cable.

* Power (W) = $2\pi \times \text{Torque (N m)} \times \text{Rotation speed (rpm)} / 60$

Application example



Specifications

Input signals	- Torque sensor input (voltage input)
	Signal input range -5 to +5 V Input resistance...1 MΩ or more
	Accuracy Non-linearity: Within 0.02% FS±1 digit Zero drift: Within 0.2 mV/°C RTI Gain drift: Within 0.01%/°C
	A/D converter Speed: 300 times/sec. Resolution: 24 bit (binary) Effective Resolution: 1/30000 against 5 V
	Analog filter Low-pass filter (-6 dB/oct.) Selectable from 3 Hz, 30 Hz, 300 Hz, and 1 kHz.
	- Voltage monitor output Linked to the output voltage of the torque meter
	- Pulse input for rotation speed (open collector input)
	Maximum input frequency Conforming to the maximum rotation speed of UTMII/UTMV
	Minimum input frequency Selectable from 15, 10, 5, 3, or 2 rpm (when pulse rate is 4 ppr)
	Minimum detection pulse width 50 μs
Display	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: 5-digit -19999 to +99999, Signs: Minus sign on most significant digit (No minus sign for rotational speed)
	Decimal point 0, 0.0, 0.00, 0.000 (Only a torque and a power. Rotation speed is nothing)
	Display frequency Selectable from 3, 6, 13, and 25 times/sec.
Hold	Sample, Peak, Bottom, P-P, Average Hold section setting (All section · External signal · External signal+Time · Level+Time)
	External input/output (4) External input Hold control / Hold reset / Digital Zero / Record data clear Dry contact input circuit (minus common type), I _c = 10 mA or less External output 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 Open collector output circuit (sink type), V _{ceo} = 30 V (max) I _c = 30 mA (max)
Interface	SIF: 2-wire serial interface
	BCO: BCD parallel data output interface (Option)
	D3V: D/A converter voltage output (3ch) (Option)
	DAV: D/A converter voltage output (Option)
	DAI: D/A converter current output (Option)
	232: RS-232C communication interface (Option)
USB: USB interface (Dedicated PC software can be downloaded) (Option) * Only one option can be installed.	
General performance	Power supply voltage AC 100 to 240 V (+10% -15%) (free power source 50/60 Hz)
	Power consumption 7 W typ.
	Operating conditions Operation temperature: -10 to +40°C Storage temperature: -40 to +80°C Humidity: 85% RH or less (non-condensing)
	Dimension 96(W) × 96(H) × 138(D) mm (Not including projections)
Attachments	Weight Approx. 1.0 kg
	Operation manual×1, Cable for UTM II/UTMV connection 2 m×1, External input/output connector×1, Unit seal×1, AC input cord 3 m (with solderless terminal)*×1, Connector for BCD output (with BCD output option)*×1, Operating tool (with D/A converter (3 ch) option)*×1, Mini screwdriver (with D/A converter option)*×1 * The attached AC input cord is intended for 100 V AC power in Japan.
Optional accessories	CA372-I/O: Cable with FCN connector at one-end 3 m CA81-USB: miniUSB-computer USB cable 1.8 m
	CAAC2P-B3: AC supply cord 3 m CAAC3P-CEE717-B2: AC supply cord
	(Same as the attachment) (Voltage resistance: 250 V) 2 m
	CAAC3P-B3: AC supply cord 3 m CA325AC3P-CEE717-B2: AC supply cord
	CA325AC3P-B3: AC supply cord 3 m (Voltage resistance: 250 V) 2 m
	CATM21-M: Cable for UTM II/UTMV connection 2 m CATM51-M: Cable for UTM II/UTMV connection 5 m
	(Same as the attachment) (Same as the attachment)
	CN34: D-Sub9p connector for RS-232C (Same as the attachment)
	CN51: BCD output connector CN50: FCN series I/O connector (with cover)
	CN73: D/A converter (3 ch) connector (Same as the attachment)
DTC2-PSL: Case for TM301 CN95: FCN series I/O connector (with diagonal cover)	
CN90: Waterproof plastic connector for UTM II/UTMV connection 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

TM301

① ②

① Standard unit

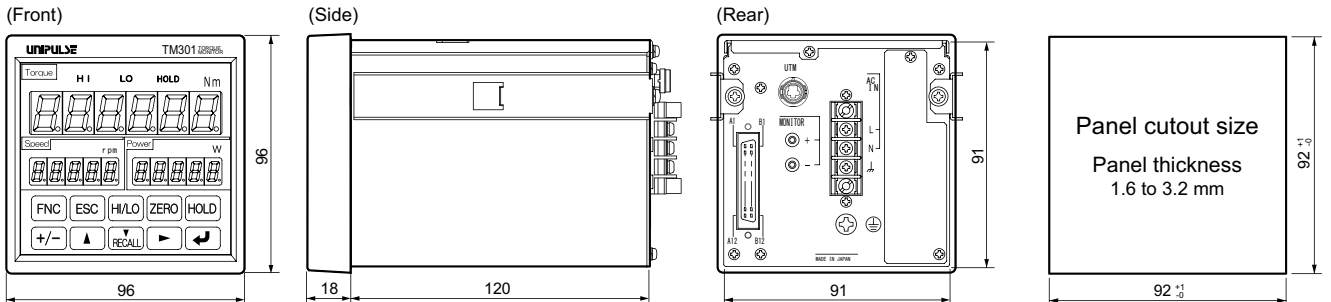
② Interface

Sign	Interface
Standard	S/F

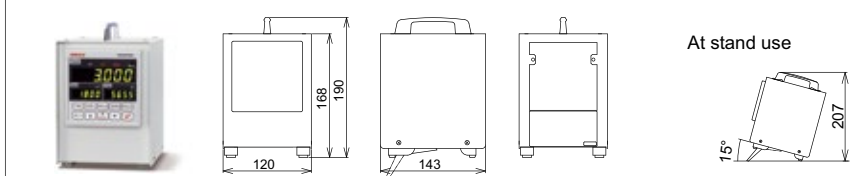
! One optional interface can be added in addition to the standard interface.

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

External dimension



DTC2-PSL: Case for TM301



Unit: mm