TS-8700 system For Motor Torque Measure Torque Station Pro

High precision, high response torque measurement system for motor torque characteristics







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The measurement with High precision, High response and Multi-function

for various motor evaluation

The Torque Station Pro TS-8700 and the motor torque detector MT Series have achieved highly accurate torque measurement and high response which are required for motor silence evaluation and measurement efficiency.

The detector with a new compact high-rigidity torque detector RH series (10 N·m/20 N·m) has been added, and the measurement up to a higher frequency range with high accuracy (± 0.05 % FS) is available. Accurate grasping of events contributes to improve the accuracy of the motor simulation and motor development efficiency.





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	Speed	Torque	Current	Votage	input W	Power	Eff %
	971	0.19	0.45	229.1	09.2	19.2	17
2	970	0.19	0.48	228.7	90.6	19.7	17
3	970	0.20	0.48	228.6	90.5	19.8	18
4	970	0.20	0.48	228.7	90.5	20.0	18
5	970	0.20	0.48	228.7	90.5	20.2	18.
6	970	0.20	0.48	228.7	90.4	20.2	18.
7	970	0.20	0.40	228.6	90.5	20.3	18
8	970	0.20	0.48	228.6	90.3	20.4	18.
9	970	0.20	0.48	228.6	90.2	29.3	18
10	970	0.20	0.48	228.6	90.4	20.3	18
11	970	0.20	0.48	228.7	90.4	20.2	18
12	970	0.20	0.48	228.7	90.5	20.2	18
13	970	0.20	0.48	228.7	90.4	19.9	18
14	970	0.19	0.48	228.7	90.3	19.6	17.
15	970	0.19	0.48	228.7	90.3	19.5	17
16	970	0.19	0.48	228.7	90.3	19.3	17.
17	970	0.19	0.48	228.7	90.4	19.3	17
18	970	0.19	0.48	228.7	90.3	19.2	17.
19	970	0.19	0.48	228.8	90.4	19.3	17.
20	970	0.19	0.40	228.8	90.4	19.4	17
21	970	0.19	0.48	228.8	90.2	19.5	17.
22	970	0.19	0.48	228.8	90.2	13.6	17.
23	970	0.19	0.48	228.8	90.2	19.6	17
24	970	0.20	0.48	228.8	90.3	13.9	10



The RH type torque detector (10 N·m/20 N·m) can be mounted. The highly accurate measurement (with TH: \pm 0.1 %, with RH: \pm 0.05 %) and high-response measurement with up to 5.12 kHz sampling are available.

The RH type torque detector has achieved high accuracy $(\pm 0.05 \% \text{ FS})$ and high rigidity (4.5 times that of our existing models). It enables to measure torque fluctuations of motors in a higher frequency range with higher accuracy.



Example of comparison results (Tracking analysis in the system directly connected with motor)



Rotation angle measurement, rotation angle sampling

The rotation angle and angle sampling are measured by using the pulses from an encoder built-in a target motor. When an encoder is optionally added to the MT-82 T/M series (except certain models) detector for cogging torque/torque ripple measurement, rotation angle and rotation angle sampling can be measured in units of 0.1°.

Temperature measurement, temperature trigger function

8ch temperature measurement with a T-type thermocouple, and temperature trigger function are optionally supported. They allow starting measurement automatically after warm-up operation.

Freely selectable system component

You can flexibly select the devices according to the size of the target object and the installation location, such as desktop type base, floor type stand with casters, XYZ stage, slide base, V block, and L-shaped jig.



Data communication with a power meter

By connecting to the following five specified power meters made by other companies via LAN, the measurement data can be imported digitally.

- Made by YOKOGAWA ELECTRIC: WT1800E, WT300E (WTViewerEfree*1 Ver1.42 or later used)
- Made by HIOKI E.E. CORPORATION: PW3390, PW3337 (PW Communicator*² Ver1.7.0 or later used) PW8001 (Dedicated software is not required as it can be connected through key operations on the unit or via the browser.)

*Note: The data update interval of the TS-8700 is limited up to 50 ms. TS-8700 requires DSP ver.201 or later and software ver.2.2.0.0 or later. Please contact us for compatibility with existing equipment.

- *1: WTViewerEfree is registered trademark of YOKOGAWA ELECTRIC.
- *2: PW Communicator is a registered trademark of HIOKI.E.E CORPORATION.

TS-8700

Specification	Measurement target	DC motor, AC m	notor (exclu	iding stepping motor)			
	Measurement parameter	ter Torque, rotation speed, voltage signal input data, temperature*1,rotation angle*1,power meter digital in					
	Torque input	Use signals form Ono Sokki's exclusive detector (MD/SS,TH/RH/TQ*1), external torque analog input*1					
	Rotation input	Use signals form	n Ono Sokk	i's MP-981 or RP series detectors			
	Analog input	0 to ±10 V DC,	16 channel	s, 16 bit A/D Connection cable: customer prepared			
	Temperature input	T-type thermoco	puple*1 Nor	n-grounded type temperature sensor (T) : prepared by customer			
	Measurement accuracy	Torque*2	±0.05 %	FS (RH, TQ*1)			
			±0.1 % F	S (TH-1000/2000)			
			±0.2 % F	S (MD/SS, 1H-3000)			
		Revolution speed*2	MT-84M/ MT-82T**	I/R series, MI-85M/I/R series ±0.02 % FS ±1 count * (excluding MT-82T15, MT-82T25) ±0.06 r/min * MT-82T15, MT-82T45, MT-82P15, MT-82P25, ±0.02 r/min			
		Analog	Linearity	within +0.1 % ES (1 second average) Temperature drift : +0.01 % ES /%			
		Temperature	Conversio	$\frac{1}{2} = \frac{1}{2} \left[\frac{1}{2} + 1$			
		*1: Option	Temperat	ture drift : within ±0.2 % of span to the change of 10 °C			
		*2: After N-0 comp Excluding the ir	ensation. 1-s	second averaged value. In component which comes from equipment component, and resonance component including the target.			
	Computing equation	4 operations (for Ca	ur arithmeti Iculation ite	ic operations) ems can be defined from input signal, existing computed data			
	Measurement condition setting	Setting of torque	e detector,	rotation detector			
	Control method	Revolution/torqu	ie, Measure	ement mode: Automatic/Manual (can be saved with a file name)			
	Measurement function	\bigcirc Fixed value	Time	2 to 28,800 seconds			
		measurement	Number of	• SS/MD : 512 / 1024 / 2048 / 4096 / 8192 / Sample			
			data	• TH : 2048 / 4096 / 8192 / 16384 / 32768 / Sample			
				• TH high response (available when TS-0871 option installed)			
				• TQ/RH (available when TS-0882 option installed) : 10240 / 20480 / 40960 / 81920 / 163840 / Sample			
				• EXT TRQ IN (available when TS-0873 option installed) : 512 / 1024 / 2048 / 4096 / 8192 / Sample			
				(Angle Sample: available only when manual operation (N) and			
				the measurement time is limited to 60 seconds or 120 seconds.)			
		© Sweep	Time	Depending on the number of data. 512 : 2 to 1000 seconds 1024 : 4 to 1000 seconds			
		measurement	Number of	• SS/MD : 512 / 1024			
			data	• TH : 2048 / 4096			
				TH high response (available when TS-0871 option installed)			
				• TQ/RH (available when TS-0882 option installed) : 10240 / 20480			
				EXT TRQ IN (available when TS-0873 option installed) : 512 / 1024			
		© Step measurement	Number o	of steps 2 to 128 : Calculated automatically from the upper/lower limit torque or upper/ lower limit rotation speed and step width.			
			Step time	5 to 100 seconds			
		O Pattern	Number of	patterns 1 to 128			
		measurement	Number of re	epeat times 1 to 10			
			Shift time	1 to 100 seconds			
	Monitor display Trend display	Numeric value o Time axis displa	lisplay : Ma v	ax. 100 items can be displayed simultaneously			
	Graph display	• Display by spe	ecifying X-a	axis, Y-axis (max. 6 axes) from the measured data			
		Text display of Graph enlarge Commont input	n the graph ement/reduc	n and saving it (label function) ction • Specifying line color/width • Currer function			
		Peak search fi	unction	Overlay display (max. 16 files)			
	Table display	List display of m	easured va	alue, data edition function			
	Comparator	Upper / lower lir	nit of selec	ted items can be specified, max. 4 points to max. 6 items			
		Display and out	put of judgi	ment result			
	I/F for MT series detector	2 channels (4 cl	nannels as	an option)			
	Saving measurement results	Data saved in a	n exclusive	format or text format			
	Operating environment	PC specification	n that TS-87	'00 software can be operated on			
	of a PC	CPU Intel®™ 4 GB or more	Core [®] i5 or of free me	higher (recommended) mory (recommended)			
		HDD / SSD 2	56 GB or m	nore (recommended)			
		Optical drive:	Optical dr	ive that can read CD-R for installation or update			
		OS : Microso	ft® Window	s® 10 Pro (64-bit), English or Japanese version, Version 1803 to 22H2			
		Microso	ft® Window	s® 11 Pro (64-bit), English or Japanese version, up to Version 23H2			
		Display : 136	6 × 768 (fu	II wide XGA) or more			
		LAN port : Etl * The operation	hernet 1008 is not guarar	BASE-TX (onboard LAN) nteed on all PCs with the above specifications. Please contact us for more details.			

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Power requirement	AC100 to 240	V ±10%, 50/60 Hz	2
Power consumption	Approx.200 VA (AC100 V) or less		
Isolation resistance	10 M Ω or more	e (rated voltage D	DC 500 V)
Withstand voltage	AC 1500 V for	1 minutes	
Temperature/humidity	Operating tem	perature range	: 5 to 35 °C
	Operating hum	nidity range	: 30 to 80 %RH (with no condensation)
	Storage tempe	erature range	: -10 to 55 °C
	Storage humid	lity range	: 30 to 80 %RH (with no condensation)
Altitude condition etc.	Pollution degre	ee	: 2
	Installation cat	egory	: Category 2, indoor use
	Max. altitude		: 2000 m
	With no conde	nsation, with no c	orrosive gas
Outer dimensions	420 (W) × 149	(H) × 450 (D) mn	n or less
Weight	Approx. 12 kg		
Conforming standard	CE marking	Low voltage Directiv	e : 2014/35/EU EN61010-1
		EMC Directive	: 2014/30/EU EN61326-1 class 1 Industrial environment
		RoHS Directive	: 2011/65/EU EN50581
	FCC	CRF47 Part15	Subpart B class A
	MT8*M**: CE not MT-0100 series.	supported MT-071 series: BoHS	S not supported
Accessories	AC power cord	d. LAN cable (2 m), installation disc, instruction manual
		-,	· · · · · · · · · · · · · · · · · · ·
TS-0871	TH highly resp	oonsive sampling	Adds the highly responsive sampling function of the TH detector (supports 5120 Hz)

Option	TS-0871	TH highly responsive sampling	Adds t
	TS-0872	Analog/pulse output	Adds t
	TS-0873	External torque/analog input	Requir
	TS-0874	Additional detector interface	Adds
	TS-0875	Interface for BA-910A	Requir
	TS-0876	Temperature measurement/ temperature trigger	Requir •Eight •Non-g
	TS-0877	Angle measurement/ angle sampling	Adds t •Cable
	TS-0878	Link to DS-3000	Links t *LAN ł
	TS-0881	Power meter digital communication	Conne measu *LAN h
	TS-0882	Additional TQ/RH detector	lt car

Outer dimensions (full option)

Front 0100 0000 300 000000 Ô 149 (12) (2) 420 (2) Rear (<u>)</u> •

torque/rotation speed analog output, and rotation speed pulse output function. irred when the torque control is used in the analog output of the torque detector. connection for two MT series torque detectors.

ired when the BA-910 type power amplifier is used.

ired for temperature measurement.

t connectors (male) for sensor side are provided as standard.

-grounded type temperature sensor (T) : prepared by customer

the angle sampling function of external encoders

ble side connector (R03-PB8M) is provided as standard.

to DS-3000 series made by Ono Sokki.

hub, LAN cable, a sync signal cable for DS series: prepared by customer

nects to power meter made by other company via LAN, and loads the

surement values digitally.

hub, LAN cable: prepared by customer

an connect our TQ/RH series torque detectors.



MT series



		-	
Common	Torque detection method	MT-8*M**: Electromagnetic gear type phase difference method	
		MT-8*T** : Electromagnetic induction phase difference method	
Specifications		MT-8*R** : Strain gauge detection method	
	Bearing method	Ball bearing type	
	Torque measurement	±0.2 % FS	
	accuracy	±0.1 % FS (some models of MT-8*T**(with TH detector))	
		±0.05 % FS (MT-8*R**)	
		**: Combined with TS-8700/7700/B, after N0 compensation, 1 second averaged value.	D
		The following influences are excluded. 1. Fluctuation component coming from	M
		the equipment component 2. Resonance component including the target	
	Motor power supply	Not included motor power supply	9 [
	Power requirement	MT-8*M**: AC100V ±10% 50/60 Hz	to to
		MT-8*T** : AC100 to 240 V ±10% 50/60 Hz	- E
		MT-8*R** : AC100 to 240 V ±10% 50/60 Hz	z =
	Power consumption	MT-8*M** : small capacity: approx. 20 VA or less medium capacity: approx. 38 VA or less) dd
		MT-8*T** : small capacity: approx. 6 VA or less medium capacity: approx. 7 VA or less	E E
		MT-8*R** : approx. 44 VA or less	⊢ [
	Isolation resistance	10 MΩ or more (rated voltage: DC 500 V)	-
	Withstand voltage	AC 1500 V for 1 minutes	
	Temperature/humidity	Operating temperature range : 0 to 40 °C	0 Lowe
		Operating humidity range : 30 to 80 %RH (with no condensation)	
		Storage temperature rangee : -10 to 50 °C	
		Storage humidity range : 30 to 80 %RH (with no condensation)	
	Altitude condition etc.	Pollution degree 2	Braking
		Max. altitude : 2000 m (only for MT-8T/R**)	
		Max. altitude : 1000 m (MT-8M**)	
		With no condensation, with no corrosive gas	nbu
	Conforming standard	RoHS Directive, CE marking, FCC	i i i
		*CE marking/FCC : MT-8*T** (MT series with TH) only	Ê a
		CE marking Low voltage Directive : 2014/35/EU EN61010-1	i d
		EMC Directive : 2014/30/EU EN61326-1 class 1 Industrial environment	e e e
		RoHS Directive : 2011/65/EU EN50581	Jord up
		FCC CRF47 Part15 Subpart B class A	i i i i i i i i i i i i i i i i i i i
	Braking capability	Can be used within the colored area in the right graph	
		* MT-84/85 series can be used within the following range and within the braking capability W.	<u></u>
		* The torque below the brake torque loss cannot be controlled in MT-84/85 series.	Lowe
		(approx. 5 % of torque capacity)	
		In addition to the MT series, the detectors for various rotation speed ranges and torque ranges will be made upon consultation. Please feel freely contact us	
		and torque ranges in serificate apen consultation. Thease feel neery contact us.	

For torque ripple cogging torque measurement



Lineup

MT-82 M/T/R series



-Suitable for torque ripple measurement in the state of motor excitation, and cogging torque measurement in the state of non-excitation motor.

-Control and measurement are performed at intervals below.

MT-82M**/R**: 0.5 to 5 r/min

MT-82T** : 2 to 15 r/min (excluding some models)

Specifications	
Measurement item	Torque, rotation speed, rotation angle*, current*, voltage*
Weight	Varies depending on the model.
	*: option

* It may be affected by the resonance component or the fluctuation component coming from the equipment component. Details of the specification is decided after consultation.

TN·TI characteristics measurement with hysteresis brake type MT-84 M/T/R series



-Suitable for measurement of high speed rotating motor. -Rotation speed of the motor and torque characteristics are automatically measured in combination with the TS-8700 Torque Station Pro.

-Controls torgue and rotation speed, can be used for AC motor measurement, DC motor measurement.

Specificati

Measurement Torque, rotation speed, current*, voltage* item

Weight Varies depending on the model. : option

* It cannot be measured in no-load condition due to the idling torque on the brake.

* It may be affected by the resonance component or the fluctuation component coming from the equipment component. Details of the specification is decided after consultation.



Lineup list

Туре	Series	ID code	
		82M21	
		82M51	
		82M12	
		82M22	
		82M52	
	Standard type	82M13	
	with MD/SS	82M23	
	(SUCCESSOR OF	82M53	
	MIT- 6200B series)	82M14	
		82M24	
Terrere size le (82M54	
lorque rippie/		82M15	
cogging torque		82M25	
measurement		82T52	
		82T13	
		82T23	
	High performance type	82T53	
	with TH	82T14	
	(successor of	82T24	
	MI-6200B series)	82T54	
		82T15	
		82T25	
		82R15	
	High accuracy type with RH	82R25	
		84M22	
		84M52	
		84M13	
	Standard type	84M23	
	with MD/SS	84M53	
	(successor of	84M14	
	MT- 6400B series)	84M24	
		84M54	
		84M15	
		84M25	
TN·TI characteristics		84T22	
measurement		84T52	
with hysteresis brake		84T13	
	High performance type	84T23	
	with TH	84T53	
	(successor of	84T14	
	MT-6400B series)	84T24	
	,	84T54	
		84T15	
		84T25	
		84R15	
	High accuracy type with RH	84R25	
		85M14	
	Standard type	85M24	
	with SS	85M54	
	(successor of	85M15	
	IVI I- 0000B series)	85M25	
IN-II characteristics		85T14	
measurement	High performance type	85T24	
with powder brake	with TH	85T54	
	(successor of	85T15	
	MT-6500B series)	85T25	
		85R15	
	High accuracy type with RH	85B25	
		00.120	

TN-TI characteristics measurement with powder brake type

- -Suitable for measurement of large capacity and low speed rotating motor, such as a motor with gear.
- -Rotation speed of the motor and torque characteristics are automatically measured in combination with the TS-8700 Torque Station Pro.

Specifications	
Measurement item	Torque, rotation speed, current*, voltage*
Weight	Varies depending on the model.
	*: option

- * It cannot be measured in no-load condition due to the idling torque on the brake.
- * Please consult us for a detector for large torque capacity (made-to-order) . * It may be affected by the resonance component or the fluctuation
- component coming from the equipment component. Details of the specification is decided after consultation.

Torque (N · m)	Braking capability (W)	Rotation speed range (r/min)	Torque measurement accuracy (% FS)
0.002	-	0.5 to 5	±0.2
0.005	_	0.5 to 5	±0.2
0.01	-	0.5 to 5	±0.2
0.02	-	0.5 to 5	±0.2
0.05	-	0.5 to 5	±0.2
0.1	_	0.5 to 5	±0.2
0.2	_	0.5 to 5	±0.2
0.5	-	0.5 to 5	±0.2
1	_	0.5 to 5	±0.2
2	-	0.5 to 5	±0.2
5	-	0.5 to 5	±0.2
10	-	0.5 to 5	±0.2
20	-	0.5 to 5	±0.2
0.05	-	2 to 15	±0.2
0.1	-	2 to 15	±0.2
0.2	-	2 to 15	±0.2
0.5	-	2 to 15	±0.2
1	_	2 to 15	±0.2
2	-	2 to 15	±0.1
5	-	2 to 15	±0.1
10	-	0.5 to 5	±0.1
20	-	0.5 to 5	±0.1
10	-	0.5 to 5	±0.05
20	-	0.5 to 5	±0.05
0.02	5	100 to 20,000	±0.2
0.05	8	100 to 20,000	±0.2
0.1	12	100 to 20,000	±0.2
0.2	23	100 to 15,000	±0.2
0.5	75	100 to 12,000	±0.2
1	75	100 to 12,000	±0.2
2	160	100 to 10,000	±0.2
5	200	100 to 10,000	±0.2
10	300	100 to 7,000	±0.2
20	5	100 to 7,000	±0.2
0.02	0	100 to 9,000	±0.2
0.05	10	100 to 11,000	10.2
0.2	23	100 to 20,000	10.2
0.5	75	100 to 13,000	±0.2
1	75	100 to 12,000	+0.2
2	160	100 to 10,000	+0.1
5	200	100 to 10,000	+0.1
10	350	100 to 7.000	±0.1
20	600	100 to 7.000	±0.1
10	350	100 to 7,000	±0.05
20	600	100 to 7,000	±0.05
1	20	5 to 1,800	±0.2
2	50	5 to 1,800	±0.2
5	130	5 to 1,800	±0.2
10	320	5 to 1,800	±0.2
20	450	5 to 1,800	±0.2
1	20	5 to 1,800	±0.1
2	50	5 to 1,800	±0.1
5	130	5 to 1,800	±0.1
10	320	5 to 1,800	±0.1
20	450	5 to 1,800	±0.1
10	320	5 to 1,800	±0.05
20	450	5 to 1,800	±0.05

MT series Motor torque detector Option



Stand to attach a target with XYZ stage +V block (/V2 or /V3) . Used for medium capacity torque measurement, stand type.

Table surface	200 mm	Applicable MT serie	s
(Rotation axis perpendicular horizontal direction) ±10 mm	82T24 to 82T25	85M14 to 85M25
(Rotation axis horizontal back and forth direction	on) ±20 mm	82M14 to 82M25	82R15, 82R25
(Vertical direction)	70 mm	84T24 to 84T15	84R15, 85R15
.oad capacity	5 kg	84M24 to 84M15	85R25
		85T14 to 85T25	



Stand to measure small capacity torque with V block (/V2 or /V3). MT series torque detector will be mounted on the stand. Specification of the stand, XYZ stage is same as /B3a.

Annlicable MT series 82T52 to 82T14

84T22 to 84T14 82M21 to 82M53 84M22 to 84M14

V block



V block used when mounting a target using XYZ stage (/X1), for small capacity torque measurement, desktop type.

Outer diameter range	<i>φ</i> 30 to 60	
Applicable MT series	5	
82T52 to 82T14	84T22 to 84	4T14
82M21 to 82M53	84M22 to 8	4M14



V block used when mounting a target using a stand with XYZ stage and casters (/B3a or /B3b).

Outer diameter range of a target *φ*60 to 120 Applicable MT series Same as /B3a and /B3b

/V3 V block C for medium capacity ϕ 100 to 150



V block used when mounting a target using a stand with XYZ stage and casters (/B3a or /B3b).

Outer diameter range of a target φ100 to 150 Applicable MT series

Same as /B3a and /B3b



angle measurement and angle sampling can be performed in 0.1 degree steps.

* Rotation speed range : from lower limit speed of the MT detector to 5 r/min. Angle measurement (angle sampling) may not be performed under resonance. In that case, the rotation speed should be changed.

Cable for between MT and TS **Rotation signal cable Control cable** AC power cable for MT

/LX Cable length X m (made to order)

Made-to-order cable with the length a customer requests. The length supported depends on the torque capacity. Please consult us for more details. Not applicable to CE marking

Options (corresponding to each product) DC Voltage / Current Detector MT-0100 series (calibrator for quick checking at site) (Made to order) Calibration set to check the torque value at site. Calibration for detector range: from 50 mN·m to motor and a power supply device. 20 N·m

Calibration ±0.5 %; detectors for 50 mN·m to200 mN·m accuracy ±0.4 %; detectors for 500 mN·m to 20 N·m *The weight of the MT-0100 series is not supported RoHS.

For DC measurement. Used to set between a Voltage: 50 V (Selectable from 30 V, 60 V, 100 V when ordering) for 2 A, 10 A, 50 A, 100 A, 200 A

/L2 L-shaped jig for medium & large capacity



Used with Large stand with casters (/B4) and slide base (/S3) to measure medium or large capacity torque. It helps reproducible centering, when testing the same model many times etc. The target is attached via the surface plate provided as standard.

*Processing to a surface plate can be done by Ono Sokki (Fee quote required). This is for medium & large capacity, stand type.

L-shaped inner diameter of in-low section		<i>φ</i> 62H7
Center height		140 mm
Applicable MT serie	s	
82T24 to 82T25	85M1	4 to 85M25
82M14 to 82M25	82R1	5, 82R25
84T24 to 84T25	84R1	5, 84R25
84M24 to 84M25	85R1	5, 85R25
85T14 to 85T25		

/S3 Slide base for L-shaped jig for medium & large capacity



Slide base used for the measurement using L-shaped iig (/L2) on the large stand with casters(/B4).

Sliding amount of L-shaped metal fixture : 330 mm (Length from end to end. Actual sliding amount depends on the L-shaped metal fixture to be placed.)

3 m
3 m
3 m
1.9 m

/L5 Cable length 5 m

Cable for between MT and TS	
Torque signal cable	5 m
Rotation signal cable	5 m
Control cable	5 m
AC power cable for MT	1.9 m

/GY Cable length Y m (made to order:worldwide type cable)

Made-to-order cable with the length a customer requests. (for overseas specification) The length supported depends on the torque capacity. Depending on the required power supply standard, it may not be supported.

Please consult us for more details. Not applicable to CE marking

Brake Control Amplifier





Required when large capacity type madeto-order detector is used. TS-0875 (option) is required to attach to the TS-8700.

Combination table	Туре	Series	ID code	TS-8700	TS-8700 + Brake control amplifier	TS-7700/B	TS-7700/B + BA-910A	TS-7100 + BA-910A
TS/MT series ○ Can be combined ○ Can be combined △ Can be combined △ The interlock function for the cover of the moving part of MT8* cannot be used. △ 2 The interlock function for the cover of the moving part of TS-8700 cannot be used.*1 ─ No need for combination 11 Blaces econcert to	Torque ripple/ cogging torque measurement	Standard type with MD/SS (successor of MT-6200B series)	82M**	0	_	$ riangle^1$	_	×
		High performance type with TH (successor of MT-6200B series)	82T**	0	_	×	_	×
 EXT SEQUENCE1. * If you would like to mount the RH detector, 		High accuracy type with RH	82R**	0		×	_	×
the modification of TS-8700 will be required.	TN, TI characteristics measurement with hysteresis brake	Standard type with MD/SS (successor of MT-6400B series)	84M**	0	_	∆1	_	×
		High performance type with TH (successor of MT-6400B series)	84T**	0	_	×	_	x
		High accuracy type with RH	84R**	0	_	×	_	×
	TN, TI characteristics measurement with powder brake High pe (succ MT-650 High acc wi	Standard type with SS (successor of	85M**	0	_	_1	_	×
		MT-6500B series)	Custom order (50 N+m) Custom order (100 N+m) Custom order (200 N+m)	×	0	×	$ riangle^1$	×
		High performance type with TH (successor of MT-6500B series)	85T**	0	_	x	-	×
			Custom order (50 N•m) Custom order (100 N•m) Custom order (200 N•m)	×	0	×	_	×
		High accuracy type with RH	85R**	0	_	×	_	×
	Torque ripple/ cogging torque measurement	MT-6200 MT-6200A MT-6200B	62**	_2	_	0	_	0
	MT-6400 MT-6400A MT-6400B TN, TI characteristics measurement MT-6500 MT-6500B	MT-6400 MT-6400A MT-6400B	64**	<u>ے</u>	_	0	_	0
		MT-6500 MT-6500B	6514 6524 6554 6515 6525	\bigtriangleup^2	_	0	-	0
			6555 6516 6526	×	_2	×	0	0

For further detailed information,

please visit our website.

MT-8x series

TS-8700

series



Measuring torque characteristic of DC motor





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mmon	Option (ordered with an ID cord)
orque ripple /	/B0a Without base for small capacity
gging measurement	/B0b Without stand for medium capacity
Chanderd turne with MD/CC	/B1 XYZ base for small capacity
Standard type with MD/SS	/B2 L-shaped base for small capacity
	/B3a Stand with XYZ stage and casters for medium capacity
High performance type with TH	/B3b Stand with XYZ stage and casters for small capacity
MT-82T**	+Center height adjustment plate+blinding plate
	/B4 Large stand with casters for medium & large capacity
High accuracy type with RH	/BX Base/ stand (made to order)
WIT-02h	/X0 Without XYZ /slide
LTL oborgatoriation	/X1 XYZ stage for small capacity
easurement with	/S3 Slide base for L-shaped jig for medium & large capacity
steresis brake	/XX XYZ / slide base (made to order)
	/V0 Without mounting jig
Standard type with MD/SS	/V1 V block A for small capacity ϕ 30 to 60
MT-84M**	/V2 V block B for medium capacity ϕ 60 to 120
High performance type with TH	/V3 V block C for medium capacity ϕ 100 to 150
MT-84T**	/L1 L-shaped jig for small capacity
	/L2 L-shaped jig for medium capacity
High accuracy type with RH	/VX Mounting jig (made to order)
MT-84R**	/E0 Without encoder
	/E1 Encoder
I-TI characteristics	/L3 Cable length 3 m
easurement with	/L5 Cable length 5 m
wuel blake	/LX Cable length X m (made to order)
Standard type with MD/SS	/GY Cable length Y m (made to orde, worldwide type cable)
MT-85M**	*Please refer to the next page for combination with each detectors
High performance type with TH	Option (ordered with a model name)
MT-85T**	MT-071 series for current voltage measurement
High accuracy type with RH	MT-0100 series for calibrator for quick checking at site
MT-85R**	Brake Control Amplifier
Custom for large capacity (Powder brake)	

Combination	Туре	Seriess	ID code	Base / stand	XYZ / slide	Mounting jig	Angle encoder	Cable length
o o momation			82M21 82M52	/B0a	/X0	/V0		
able of		Standard type	82M51 82M13	/B1	/X0,/X1	/V0,/V1	/E0	/L3 to /LX/GY
D code option		Stanuaru type	82M12 82M23	/B2	/X0	/V0,/L1		
D code option		with wiD/33	82M22 82M53	/B3b	attached to /B3b	/V0,/V2,/V3		
		(successor of	82M14 82M15	/B0b	/X0	/V0		
		MI-6200B series)	82M24 82M25	/B3a	attached to /B3a	/V0,/V2,/V3	/E0,/E1	/L3 to /LX/GY
			82M54	/B4	/X0,/S3	/V0,/L2		
	Torque ripple/			/B0a	/X0	/V0	/E0,/E1	1. o
	cogging torque	High performance	82T52 82T53	/B1	/X0,/X1	/V0,/V1		
	measurement	type with TH	82113 82114	/B2	/X0	/V0,/L1		/L3 10 /LX/G Y
		(successor of	02123	/B3b	attached to /B3b	/V0,/V2,/V3		
		(Successor of	82T24 82T25	/B0b	/X0	/V0	/E0,/E1	
		WIT-6200B Series)	82T54	/B3a	attached to /B3a	/V0,/V2,/V3		/L3 to /LX/GY
			82T15	/B4	/X0,/S3	/V0,/L2		
			00045	/B0b	/X0	/V0		
			82R15	/B3a	attached to /B3a	/V0,/V2,/V3	/E0	/L3 to /LX/GY
		WITH RH	02H20	/B4	/X0,/S3	/V0,/L2		
				/B0a	/X0	/V0	/E0	/L3 to /LX/GY
			84M22 84M23	/B1	/X0,/X1	/V0,/V1		
		Standard type	84M52 84M53	/B2	/X0	/V0,/L1	/E0	/L3 to /LX/GY
		with MD/SS	84IVI 13	/B3b	attached to /B3b	/V0,/V2,/V3		
		(successor of	84M14 84M15	/B0b	/X0	/V0	/E0	/L3 to /LX/GY
		MT-6400B series)	84M24	/B3a	attached to /B3a	/V0,/V2,/V3		
			84M54	/B4	/X0,/S3	/V0,/L2	/E0	/L3 to /LX/GY
	TN·TI		84M25	/B4	/X0,/S3	/V0,/L2	_	
	characteristics		94700 94700	/B0a	/X0	/V0	/E0	/L3 to /LX/GY
	measurement		84122 84123	/B1	/X0,/X1	/V0,/V1		
	with	High performance	84132 84133 94T12 94T14	/B2	/X0	/V0,/L1		
	hysteresis	type with TH	04113 04114	/B3b	attached to /B3b	/V0,/V2,/V3		
	brake	(successor of	84T24	/B0b	/X0	/V0		
		MT-6400B series)	84T54	/B3a	attached to /B3a	/V0,/V2,/V3	/E0	/L3 to /LX/GY
			84T15	/B4	/X0,/S3	/V0,/L2		
			84T25	/B4	/X0,/S3	/V0,/L2	/E0	/L3 to /LX/GY
				/B0b	/X0	/V0		
		High accuracy type	84R15	/B3a	attached to /B3a	/V0,/V2,/V3	/=0	/1.2 to /1 X/GV
		with RH		/B4	/X0,/S3	/V0,/L2	/L0	/13 10 /12//01
			84R25	/B4	/X0,/S3	/V0,/L2		
		Standard type	85M14 85M15	/B0b	/X0	/V0		
		(successor of	85M24 85M25	/B3a	attached to /B3a	/V0,/V2,/V3	/E0	/L3 to /LX/GY
	TN·TI	MT-6500B series)	T-6500B series) 85M54	/B4	/X0,/S3	/V0,/L2		
	characteristics	High performance	85T14 85T15	/B0b	/X0	/V0		
	measurement	(successor of	85T24 85T25	/B3a	attached to /B3a	/V0,/V2,/V3	/E0	/L3 to /LX/GY
	with	MT-6500B series)	85T54	/B4	/X0,/S3	/V0,/L2		
	powder brake		05D15	/B0b	/X0	/V0		
	Hig	High accuracy type with RH	85B25	/B3a	attached to /B3a	/V0,/V2,/V3	/E0	/L3 to /LX/GY
			001120	/B4	/X0./S3	/V0./L2		

Example: MT-82 M 21 /B1 /X1 /V1 /E1 /L3

Purpose/Brake type	O Torque capacity	Base / stand	O Mounting jig
2 : MT-82M/T/R	21 : 2 mN ⋅ m	/BOa : without base for small capacity	/V0 : without mounting jig
Detector for Torque ripple /	51 : 5 mN ⋅ m	/BOb : without stand for medium capacity	/V1 : V block A for small capacity
DC geared motor drive	12 : 10 mN ⋅ m	separate control box	φ30 to 60
A · MT_8/M/T/P	22 · 20 mN⋅m	*The cable length between MT and	/V2 : V block B for medium capacity
Detector with hysteresis brake for	52 : 50 mN+m	/B1 : XYZ base for small capacity	Ψου το τ20
small & medium torque high	12.100 mNim	/B2 : L-shaped base for small capacity	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
revolution	13:100 mix-m	/B3a : Stand with XYZ stage and caster for	/L1 : L-shaped jig 1 for small capacity
TN, IT measurement	23:200 mN·m	medium capacity	/L2 : L-shaped jig 2 for medium &
5 : MI-85M/I/R Detector with powder brake for	53 : 500 mN ⋅ m	/B3b : Stand with XYZ stage and caster for	large capacity
medium & large torgue low	14 : 1 N ⋅ m	small capacity	/VX : mounting jig (made to order)
revolution	24 : 2 N ⋅ m	+ blinding plate	Encoder
IN, II measurement	54 : 5 N·m	/B4 : Large stand with caster for medium &	/E0 : without encoder
2 Detector type	15 : 10 N ⋅ m	large capacity	/E1 : with encoder MT-82M/T
M: Standard type with MD/SS	25 : 20 N⋅m	/BX : made to order base/stand	(Available only for the types with
T High-performance type with TH		XYZ / Slide base	TH and with SS)
R : High accuracy/response type with RH		XO : without XYZ / slide	Or able length
		X1 : XYZ stage for small capacity	/L3 : cable length 3 m
		(equivalent to MT-0094)	/L5 : cable length 5 m
		/S3 : Slide base for L-shaped jig for medium 8	/LX : cable length X m (made-to-order)
		large capacity	/GY: cable length Y m (made-to-order)
		stand with caster / B4)	*/LX, /GY: not conforming to CE and FCC
		XX made to order XYZ / slide base	

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MT series ID code

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*Outer appearance and specifications are subject to change without prior notice. URL: https://www.onosokki.co.jp/English/english.htm

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