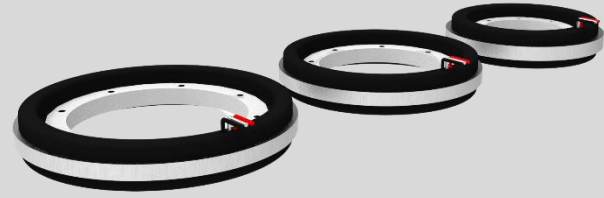


UT-TRM Series Frameless Torque Motors

95-230 OD Frame Size

www.mdsmotor.com



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Başiskele, Kocaeli, Türkiye

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UT-TRM Series Frameless Torque Motors

MDS has several new frameless motor series for direct drive applications.

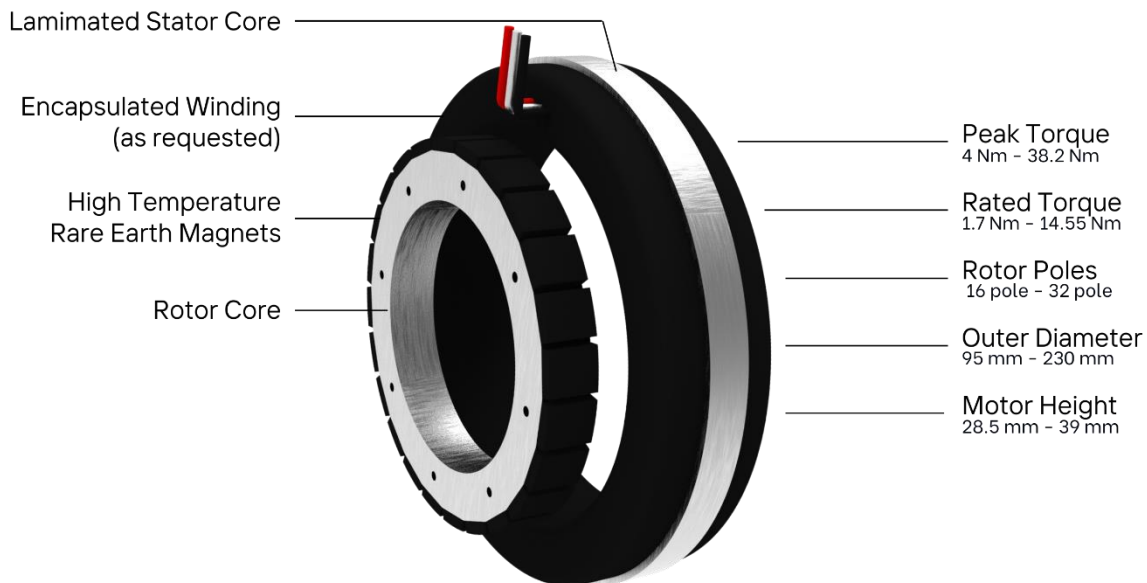
For customized motor selections or new custom motor specifications, contact MDS Motor to help us understand exactly what you need and how we can further optimize any MDS torque motor series for your needs. MDS Motor is an expert in providing optimized custom solutions for your applications with utilizing different materials, special winding structures, tailored mounting features, height and diameter adjustments and etc.

UT-TRM series frameless torque motor product family includes two different sub series based on DC bus voltage levels. Low voltage (24/48V) motors are named as UT-TML series torque motor while high voltage (310V) motors are named as UT-TMH series torque motor.

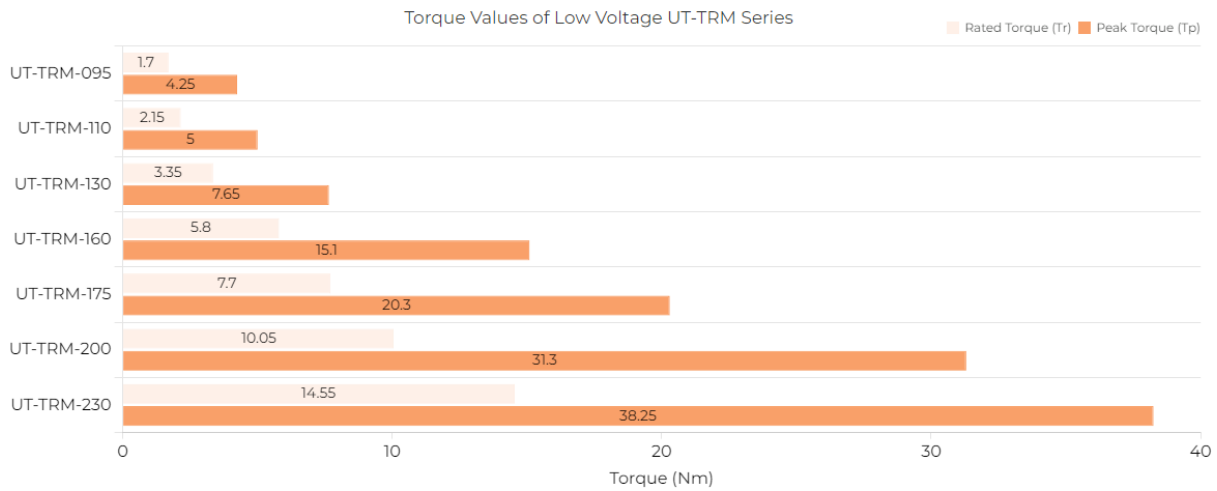
Main Features and Benefits

- High Reliability and Lifetime
- Perfect electromagnetic designs delivered to provide maximum torque density
- Maximum torque-per-weight ratios
- Small volume and active weight
- Extremely small cogging torque
- Extremely small torque ripple to have smooth rotation
- Extremely low back-EMF total harmonic distortion (THD)
- Wide operating speed range with AC winding options and rapid acceleration
- Lowest possible rotor inertia (can be increased if requested)
- High outer diameter/stack size

Description of UT-TRM Frameless Torque Motor Series



Overview of UT-TRM Series Frameless Torque Motors Range



UT-TRM-095

- Stator OD: 95 mm
 - Rotor ID: 40 mm
 - 24 V-310 V options
- Peak torque up to 4.25 Nm



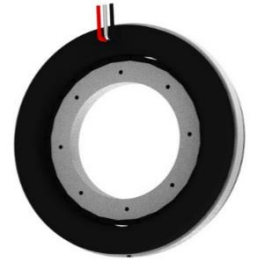
UT-TRM-110

- Stator OD: 110 mm
 - Rotor ID: 40 mm
 - 24 V-310 V options
- Peak torque up to 5 Nm



UT-TRM-130

- Stator OD: 130 mm
 - Rotor ID: 55 mm
 - 24 V-310 V options
- Peak torque up to 7.65 Nm



UT-TRM-160

- Stator OD: 160 mm
 - Rotor ID: 80 mm
 - 24 V-310 V options
- Peak torque up to 15.1 Nm



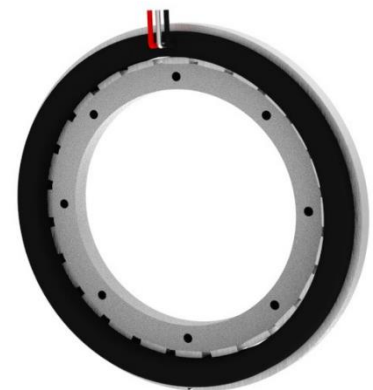
UT-TRM-175

- Stator OD: 175 mm
 - Rotor ID: 88 mm
 - 24 V-310 V options
- Peak torque up to 20.3 Nm



UT-TRM-200

- Stator OD: 200 mm
 - Rotor ID: 120 mm
 - 24 V-310 V options
- Peak torque up to 31.3 Nm



UT-TRM-230

- Stator OD: 230 mm
 - Rotor ID: 148 mm
 - 24 V-310 V options
- Peak torque up to 38.2 Nm

Definition of Motor Parameters

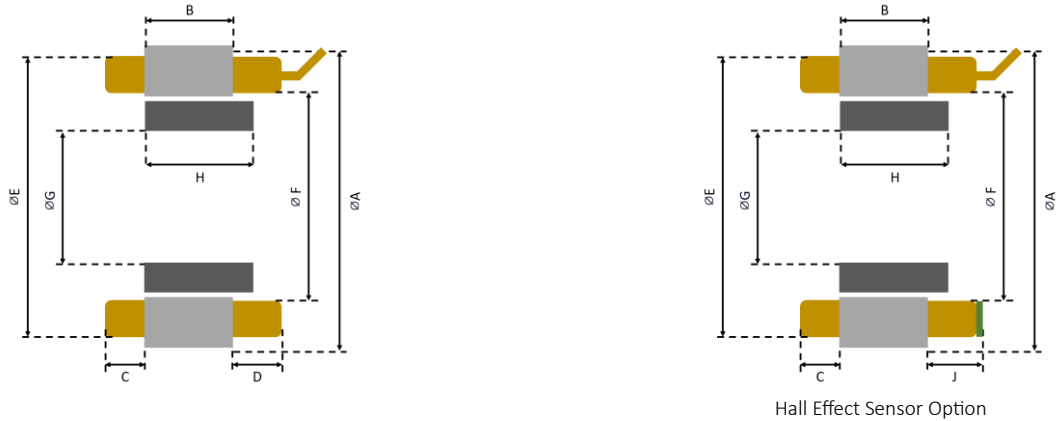
Rated Torque	T_r	Torque value at rated speed when continuous power is the output
Peak Torque	T_p	Maximum torque that the motor delivers when maximum current (I_p) is provided. Peak torque is available for a maximum of 2 seconds
Rated Speed	N_r	Speed at continuous power is the output
No-Load Speed	$N_{no-load}$	Maximum possible speed of motor that it can be electrically excited
Torque Constant	K_t	Ratio of the developed torque to input current
Voltage Constant	K_v	Ratio of voltage generated in the winding to rotor speed
Max. Cogging Torque	T_{cog}	Undesirable torque component arising from attractions between magnets and teeth. Cogging torque is minimized for each MDS's torque motor is less than 0.5 % of the rated torque
Torque Ripple	T_{ripple}	Undesirable torque component arising from attractions between stator MMF and magnets
Num. of Pole	$2p$	Number of poles
Rated Current	I_r	Current required to obtain the rated continuous torque
Peak Current	I_p	Current required to obtain peak torque from the motor
Line Resistance	R_{LL}	Cold (25°C) resistance measured between two leads of the winding
Line Inductance	L_{LL}	Inductance measured between two leads of the AC winding (@60Hz)
Stator Weight	W_s	Total weight of stator laminations including windings
Rotor Weight	W_r	Total weight of rotor laminations and magnets
Total Weight	W_{total}	Total weight of stator and rotor weight
Mech. Time Constant	K_{mech}	Motor mechanical dynamic capability level
Thermal Resistance	R_{th}	Ratio of winding temperature rise to average stator power loss at rated motor operation
Inertia	J	Inertia of the rotor including rotor core and magnets
Motor Constant	K_m	Ratio of peak torque to square root of input power: $K_m = T_{peak}/(P_{peak})^{.5}$. It shows the ability of a motor to convert electrical power to torque
Rotor ID		Rotor inner diameter of the motor
Stator OD		Stator outer diameter of the motor

NOTE: All performance data is obtained at 25°C ambient

	Motor Parameters	Symbols	Units	UT-TML-95-012		UT-TMH-95-012
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	310
	Rated Torque	T_r	Nm	1.70		1.70
	Peak Torque	T_p	Nm	4.00		4.25
	Rated Speed	N_r	rpm	320	800	3100
	No-Load Speed	$N_{no-load}$	rpm	565	1130	3600
	Torque Constant	K_t	Nm/A	0.49		0.97
	Voltage Constant	K_v	V/rpm	0.042		0.086
	Max. Cogging Torque	T_{cog}	%			<1
	Torque Ripple	T_{ripple}	%			<1
	Number of Pole	2p	--			16
ELECTRICAL	Rated Current	I_r	A_{rms}	3.50		1.75
	Peak Current	I_p	A_{rms}	8.50		4.50
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	2.30 ($\pm 20\%$)		8.70 ($\pm 20\%$)
	Line Inductance	$L_{LL}@60Hz$	mH	4.00 ($\pm 30\%$)		7.60 ($\pm 30\%$)
MECHANICAL & THERMAL	Stator Weight	W_s	kg	0.35		0.35
	Rotor Weight	W_r	kg	0.19		0.19
	Total Weight	W_{total}	kg	0.54		0.54
	Mech. Time Constant	K_{mech}	ms	1.49		0.72
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	-		-
	Inertia	J	$kg.m^2$			1.28E-4
	Motor Constant	K_m	Nm/\sqrt{W}	0.04		0.08
	Rotor ID		mm			40
Stator OD		mm			95	

1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 180 mm sq. x 10 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

UT-TM(L/H)-95 Outline Drawing



Model	A	B	C	D	E	F	G	H	J
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
UT-TRM-95-012	95	12.5	8	8	91	68	40	15.1	11

Notes:

MOTOR LEADS:

UT-TM(L/H)-95-012: #20 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

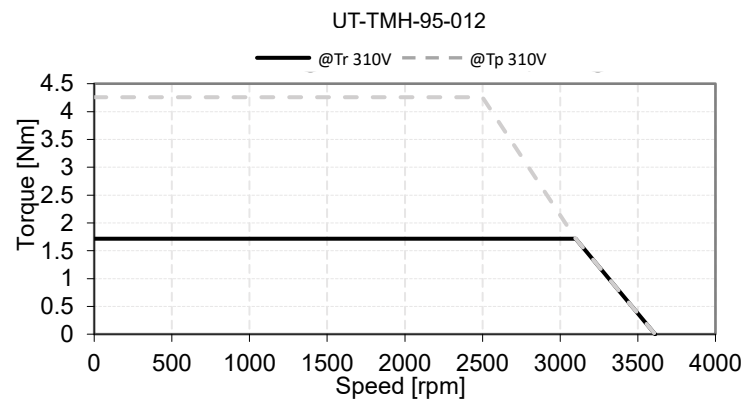
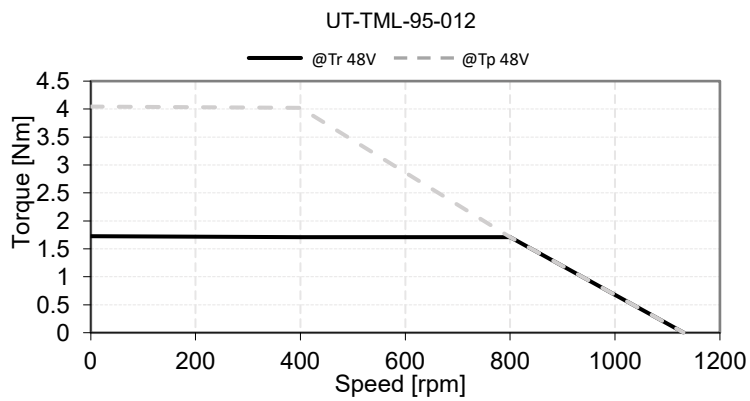
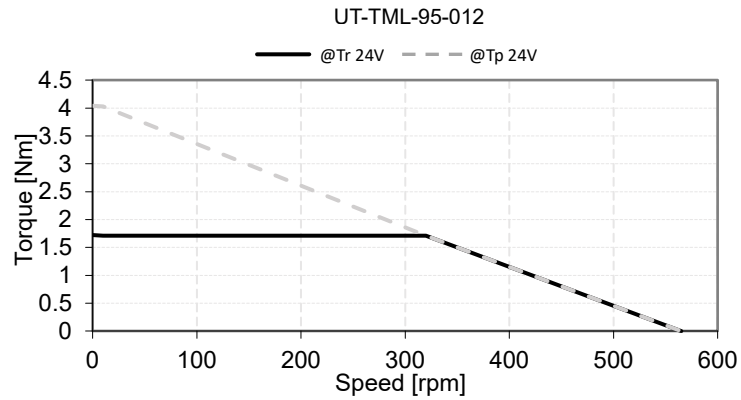
#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

UT-TM(L/H)-95 Torque-Speed Curves

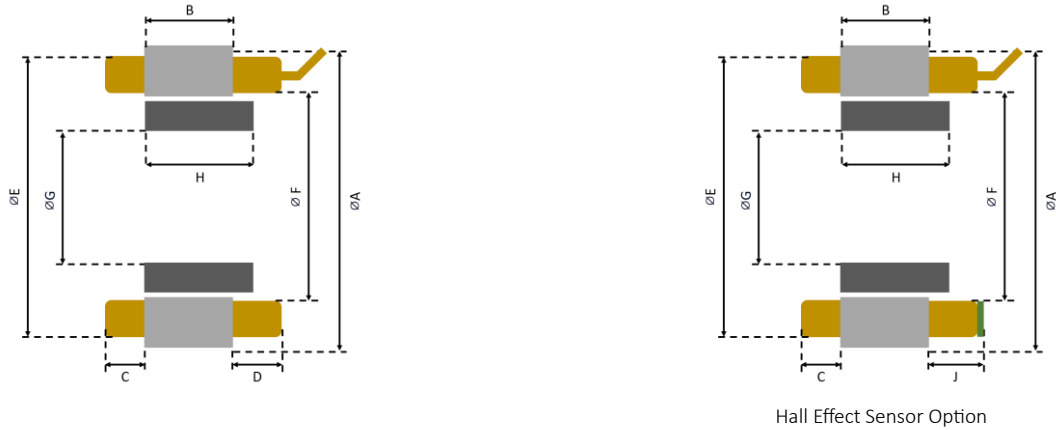
Tr: Rated Torque
Tp: Peak Torque



	Motor Parameters	Symbols	Units	UT-TML-110-012		UT-TMH-110-012
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	310
	Rated Torque	T_r	Nm	2.15		2.15
	Peak Torque	T_p	Nm	4.3		5
	Rated Speed	N_r	rpm	310	770	3320
	No-Load Speed	$N_{no-load}$	rpm	520	1045	3990
	Torque Constant	K_t	Nm/A	0.52		0.88
	Voltage Constant	K_v	V/rpm	0.046		0.078
	Max. Cogging Torque	T_{cog}	%			<1
	Torque Ripple	T_{ripple}	%			<1
	Number of Pole	$2p$	--			16
ELECTRICAL	Rated Current	I_r	A_{rms}	4.25		2.5
	Peak Current	I_p	A_{rms}	10.6		8.75
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	1.5 ($\pm 20\%$)		4.4 ($\pm 20\%$)
	Line Inductance	$L_{LL}@60Hz$	mH	5.5 ($\pm 30\%$)		18.0 ($\pm 30\%$)
MECHANICAL & THERMAL	Stator Weight	W_s	kg	0.74		0.74
	Rotor Weight	W_r	kg	0.19		0.19
	Total Weight	W_{total}	kg	0.93		0.93
	Mech. Time Constant	K_{mech}	ms	0.87		0.87
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	1.44		1.26
	Inertia	J	$kg.m^2$			1.28E-4
	Motor Constant	K_m	Nm/\sqrt{W}	0.26	0.16	0.08
	Rotor ID		mm			40
Stator OD		mm			110	

1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 200 mm sq. x 10 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

UT-TM(L/H)-110 Outline Drawing



Model	A	B	C	D	E	F	G	H	J
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
UT-TRM-110-012	110	12.5	11	13	105	66	40	15.1	16

Notes:

MOTOR LEADS:

UT-TM(L/H)-110-012: #16 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

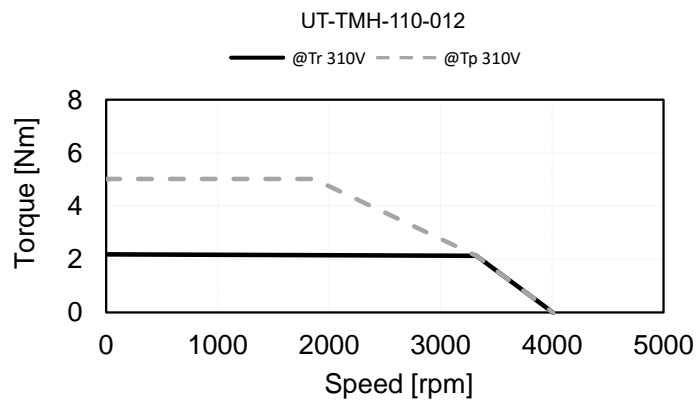
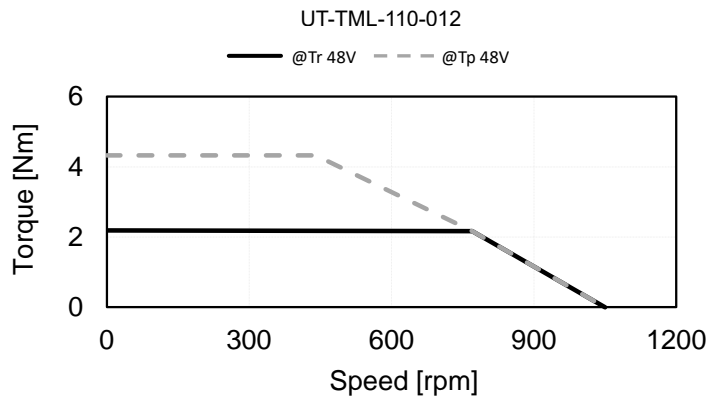
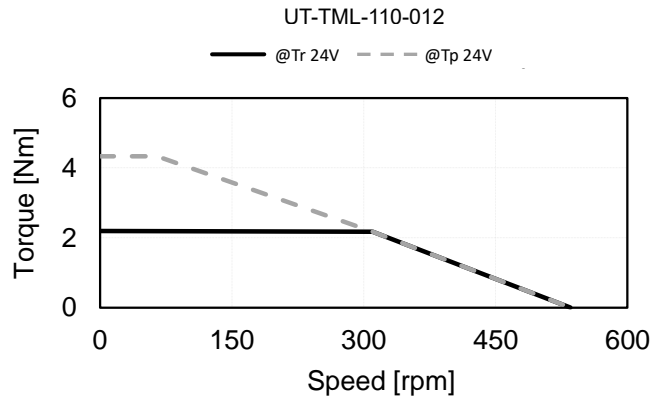
#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

UT-TM(L/H)-110 Torque-Speed Curves

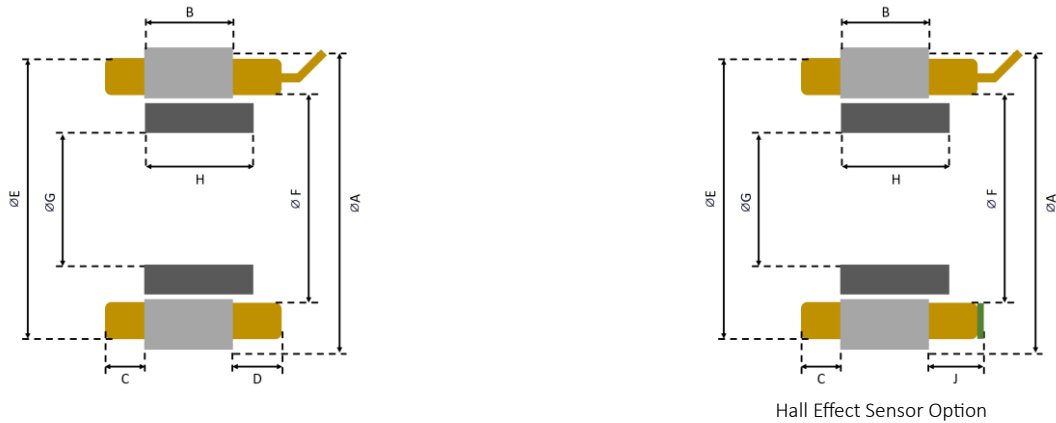
Tr: Rated Torque
Tp: Peak Torque



	Motor Parameters	Symbols	Units	UT-TML-130-012		UT-TMH-130-012
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	310
	Rated Torque	T_r	Nm	3.35		3.3
	Peak Torque	T_p	Nm	6.65		7.65
	Rated Speed	N_r	rpm	245	620	3160
	No-Load Speed	$N_{no-load}$	rpm	420	850	3780
	Torque Constant	K_t	Nm/A	0.64		0.95
	Voltage Constant	K_v	V/rpm	0.056		0.082
	Max. Cogging Torque	T_{cog}	%			<1
	Torque Ripple	T_{ripple}	%			<1
	Number of Pole	$2p$	--			24
ELECTRICAL	Rated Current	I_r	A_{rms}	5.3		3.5
	Peak Current	I_p	A_{rms}	13.25		12.25
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	1.1 ($\pm 20\%$)		2.4 ($\pm 20\%$)
	Line Inductance	$L_{LL}@60Hz$	mH	4.1 ($\pm 30\%$)		9.2 ($\pm 30\%$)
MECHANICAL & THERMAL	Stator Weight	W_s	kg	0.96		0.96
	Rotor Weight	W_r	kg	0.28		0.28
	Total Weight	W_{total}	kg	1.24		1.24
	Mech. Time Constant	K_{mech}	ms	1.23		1.2
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	1.07		0.86
	Inertia	J	$kg.m^2$			3.32E-4
	Motor Constant	K_m	Nm/\sqrt{W}	0.36	0.23	0.1
	Rotor ID		mm			55
Stator OD		mm			130	

1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 250 mm sq. x 10 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

UT-TM(L/H)-130 Outline Drawing



Model	A	B	C	D	E	F	G	H	J
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
UT-TRM-130-012	130	12.5	11	13	124	82.4	55	15.1	16

Notes:

MOTOR LEADS:

UT-TM(L/H)-130-012: #14 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

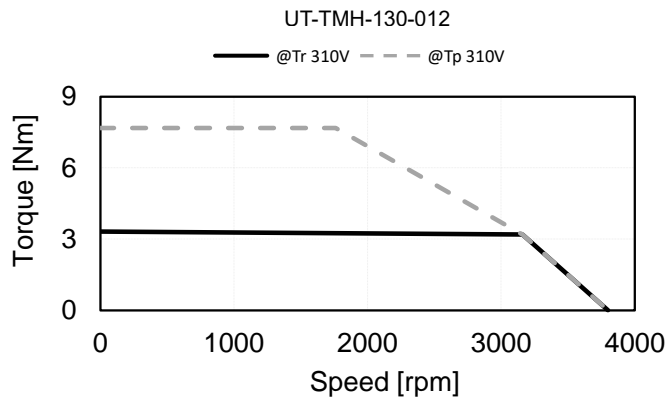
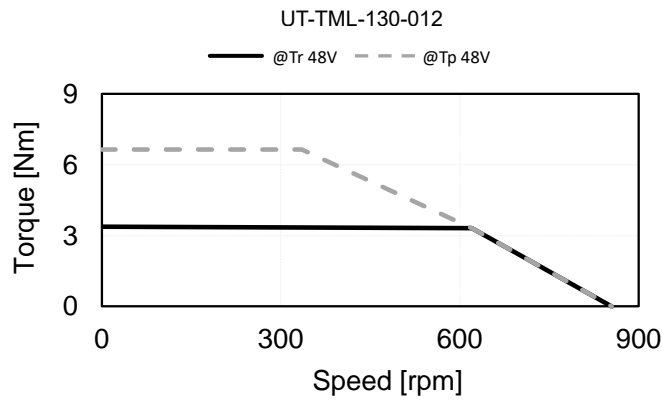
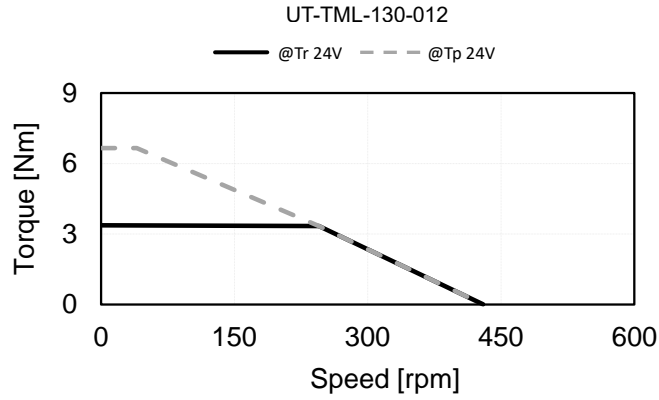
#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

UT-TM(L/H)-130 Torque-Speed Curves

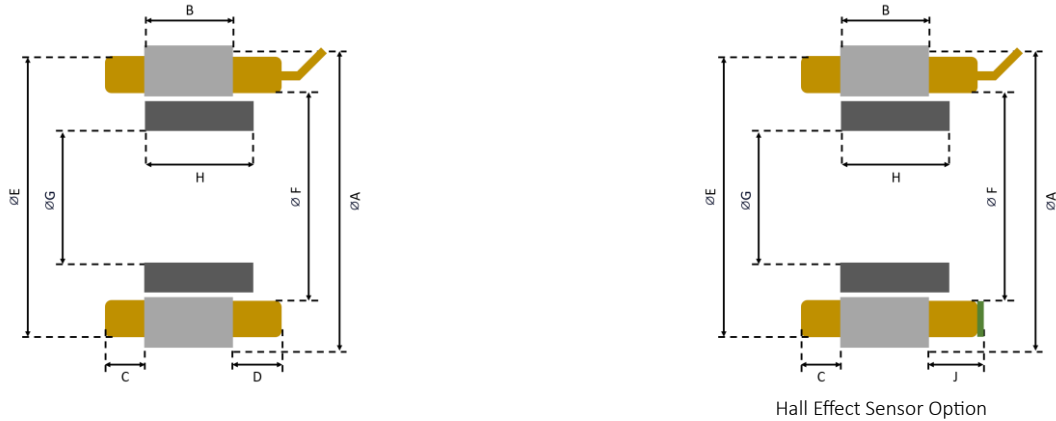
Tr: Rated Torque
Tp: Peak Torque



	Motor Parameters	Symbols	Units	UT-TML-160-012		UT-TMH-160-012
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	310
	Rated Torque	T_r	Nm	5.8		5.7
	Peak Torque	T_p	Nm	12.55		15.1
	Rated Speed	N_r	rpm	220	525	2765
	No-Load Speed	$N_{no-load}$	rpm	350	700	3275
	Torque Constant	K_t	Nm/A	0.78		1.08
	Voltage Constant	K_v	V/rpm	0.068		0.094
	Max. Cogging Torque	T_{cog}	%			<1
	Torque Ripple	T_{ripple}	%			<1
	Number of Pole	$2p$	--			24
ELECTRICAL	Rated Current	I_r	A_{rms}	7.5		5.3
	Peak Current	I_p	A_{rms}	18.75		18.55
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	0.76 ($\pm 20\%$)		1.4 ($\pm 20\%$)
	Line Inductance	$L_{LL}@60Hz$	mH	2.82 ($\pm 30\%$)		5.5 ($\pm 30\%$)
MECHANICAL & THERMAL	Stator Weight	W_s	kg	1.2		1.2
	Rotor Weight	W_r	kg	0.48		0.48
	Total Weight	W_{total}	kg	1.68		1.68
	Mech. Time Constant	K_{mech}	ms	1.68		1.68
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.82		0.69
	Inertia	J	$kg.m^2$			1.11E-4
	Motor Constant	K_m	Nm/\sqrt{W}	0.58	0.38	0.17
	Rotor ID		mm			80
	Stator OD		mm			160

1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 300 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

UT-TM(L/H)-160 Outline Drawing



Model	A	B	C	D	E	F	G	H	J
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
UT-TRM-160-012	160	12.5	11	13	154	112.3	80	15.1	16

Notes:

MOTOR LEADS:

UT-TM(L/H)-160-012: #13 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

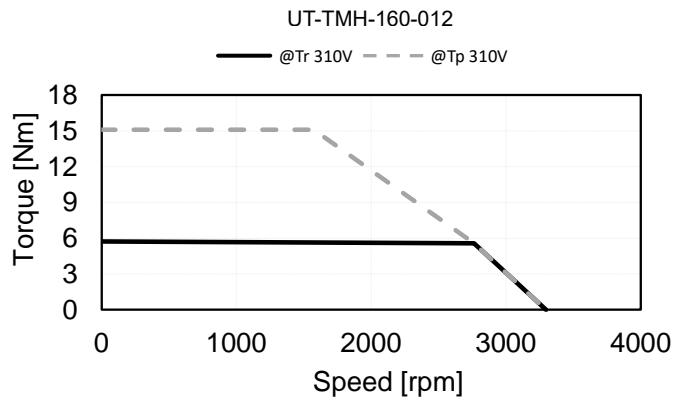
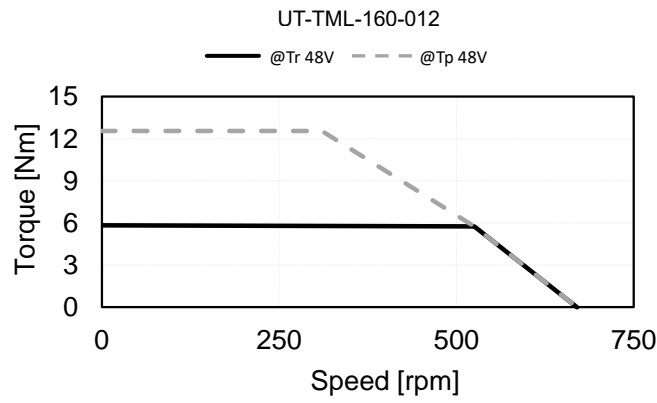
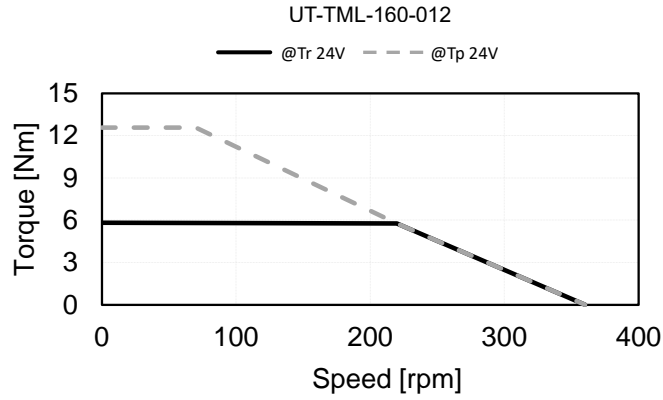
#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

UT-TM(L/H)-160 Torque-Speed Curves

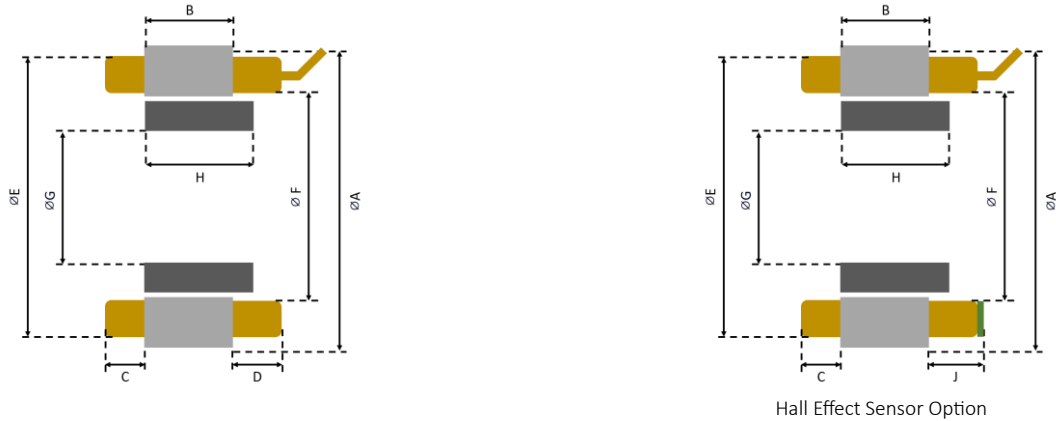
Tr: Rated Torque
Tp: Peak Torque



	Motor Parameters	Symbols	Units	UT-TML-175-015		UT-TMH-175-015
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	310
	Rated Torque	T_r	Nm	7.74		7.73
	Peak Torque	T_p	Nm	16.75		20.3
	Rated Speed	N_r	rpm	220	510	2500
	No-Load Speed	$N_{no-load}$	rpm	330	665	2965
	Torque Constant	K_t	Nm/A	0.81		1.19
	Voltage Constant	K_v	V/rpm	0.071		0.104
	Max. Cogging Torque	T_{cog}	%			<1
	Torque Ripple	T_{ripple}	%			<1
	Number of Pole	2p	--			24
ELECTRICAL	Rated Current	I_r	A_{rms}	9.5		6.5
	Peak Current	I_p	A_{rms}	23.75		22.75
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	0.54 ($\pm 20\%$)		1.12 ($\pm 20\%$)
	Line Inductance	$L_{LL}@60Hz$	mH	2.32 ($\pm 30\%$)		5.03 ($\pm 30\%$)
MECHANICAL & THERMAL	Stator Weight	W_s	kg	1.78		1.78
	Rotor Weight	W_r	kg	0.61		0.61
	Total Weight	W_{total}	kg	2.39		2.39
	Mech. Time Constant	K_{mech}	ms	1.6		1.68
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.74		0.63
	Inertia	J	$kg.m^2$			1.642E-3
	Motor Constant	K_m	Nm/\sqrt{W}	0.58	0.38	0.17
	Rotor ID		mm			88
Stator OD		mm			175	

1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 300 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

UT-TM(L/H)-175 Outline Drawing



Model	A	B	C	D	E	F	G	H	J
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
UT-TRM-175-015	175	15	11	13	166	120.5	88	17.6	16

Notes:

MOTOR LEADS:

UT-TM(L/H)-175-015: #12 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

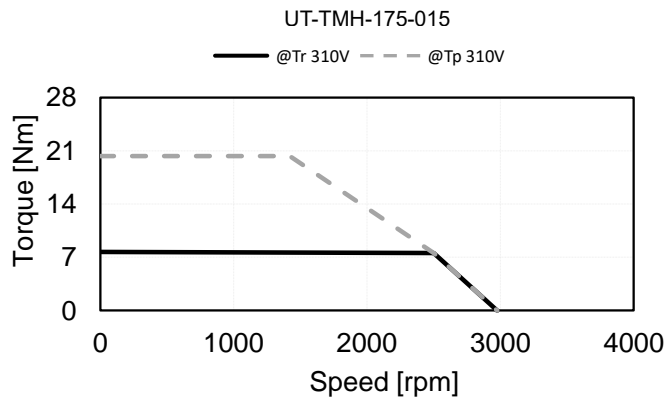
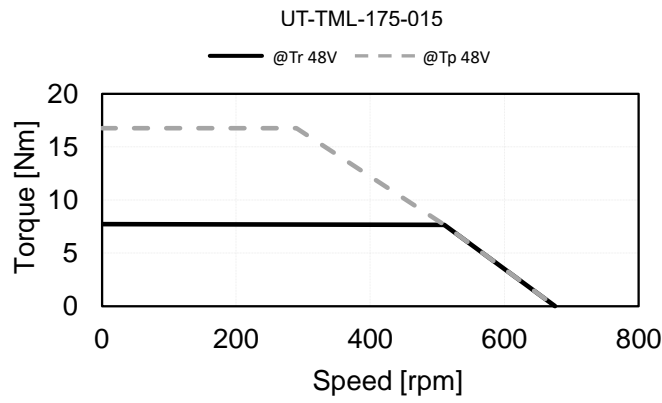
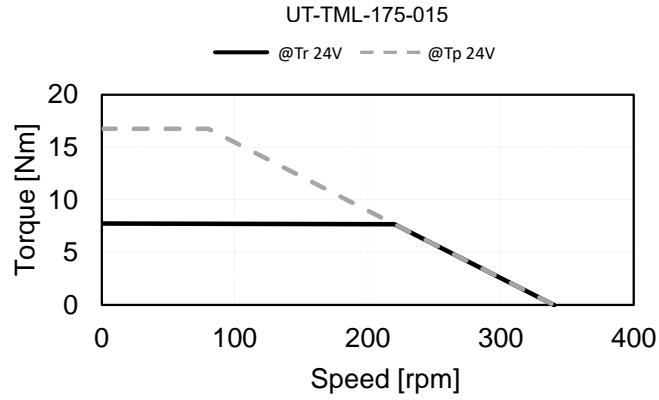
#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown.

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

UT-TM(L/H)-175 Torque-Speed Curves

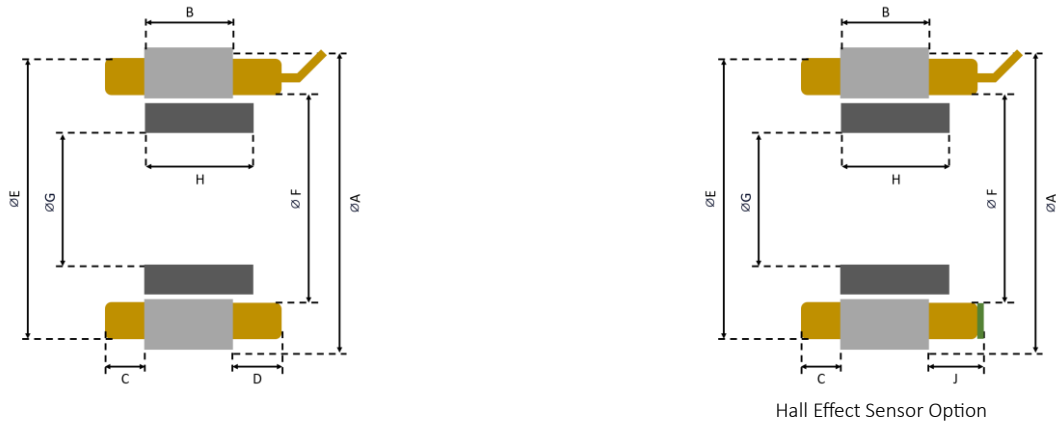
Tr: Rated Torque
Tp: Peak Torque



	Motor Parameters	Symbols	Units	UT-TML-200-015		UT-TMH-200-015
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	310
	Rated Torque	T_r	Nm	10.05		10.25
	Peak Torque	T_p	Nm	23.7		31.3
	Rated Speed	N_r	rpm	185	430	2025
	No-Load Speed	$N_{no-load}$	rpm	270	545	2330
	Torque Constant	K_t	Nm/A	1.01		1.53
	Voltage Constant	K_v	V/rpm	0.087		0.133
	Max. Cogging Torque	T_{cog}	%			<1
	Torque Ripple	T_{ripple}	%			<1
	Number of Pole	2p	--			24
ELECTRICAL	Rated Current	I_r	A_{rms}	10		6.7
	Peak Current	I_p	A_{rms}	25		23.45
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	0.52 ($\pm 20\%$)		1.14 ($\pm 20\%$)
	Line Inductance	$L_{LL}@60Hz$	mH	2.0 ($\pm 30\%$)		4.3 ($\pm 30\%$)
MECHANICAL & THERMAL	Stator Weight	W_s	kg	1.6		1.6
	Rotor Weight	W_r	kg	0.93		0.93
	Total Weight	W_{total}	kg	2.53		2.53
	Mech. Time Constant	K_{mech}	ms	2.74		2.59
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.75		0.63
	Inertia	J	$kg.m^2$			4.414E-3
	Motor Constant	K_m	Nm/\sqrt{W}	0.72	0.47	0.22
	Rotor ID		mm			120
	Stator OD		mm			200

1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 300 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

UT-TM(L/H)-200 Outline Drawing



Model	A	B	C	D	E	F	G	H	J
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
UT-TRM-200-015	200	15	11	13	193	156.5	120	17.6	16

Notes:

MOTOR LEADS:

UT-TM(L/H)-200-015: #11 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

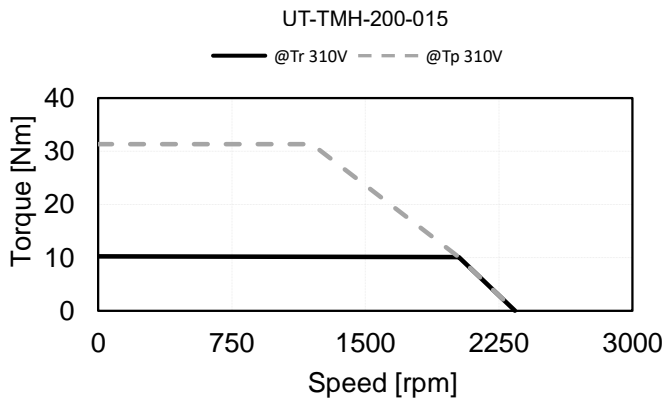
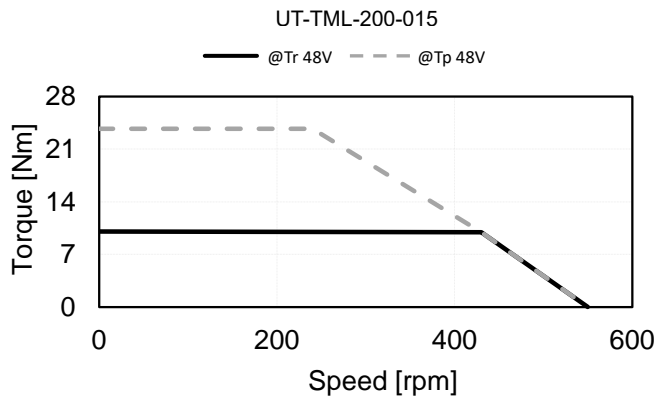
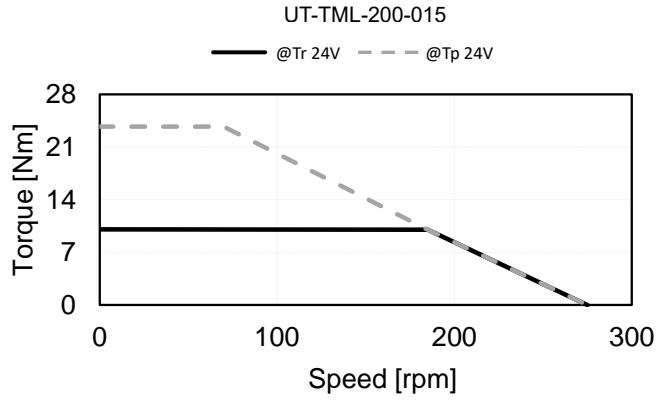
#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

UT-TM(L/H)-200 Torque-Speed Curves

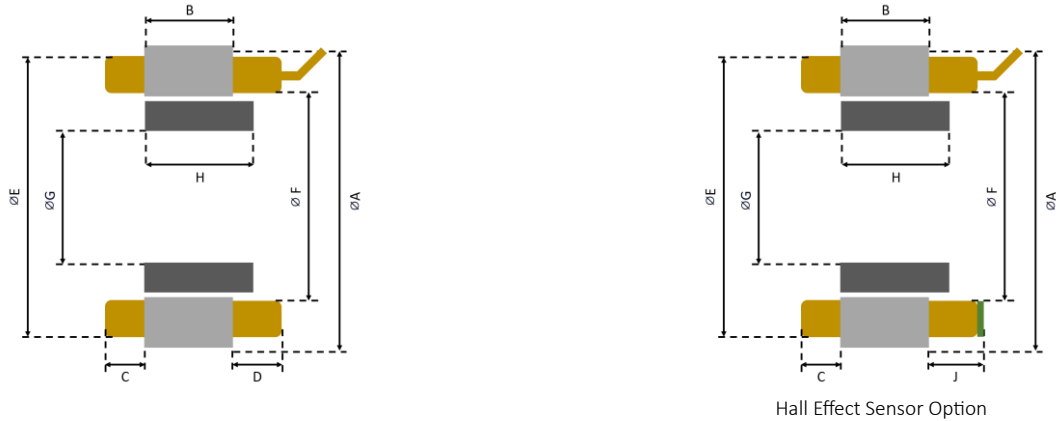
Tr: Rated Torque
Tp: Peak Torque



	Motor Parameters	Symbols	Units	UT-TML-230-015		UT-TMH-230-015
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	310
	Rated Torque	T_r	Nm	14.35		14.55
	Peak Torque	T_p	Nm	33		38.25
	Rated Speed	N_r	rpm	135	320	1820
	No-Load Speed	$N_{no-load}$	rpm	200	400	2075
	Torque Constant	K_t	Nm/A	1.36		1.71
	Voltage Constant	K_v	V/rpm	0.117		0.149
	Max. Cogging Torque	T_{cog}	%			<1
	Torque Ripple	T_{ripple}	%			<1
	Number of Pole	2p	--			32
ELECTRICAL	Rated Current	I_r	A_{rms}	10.6		8.5
	Peak Current	I_p	A_{rms}	26.5		25.5
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	0.5 ($\pm 20\%$)		0.82 ($\pm 20\%$)
	Line Inductance	$L_{LL}@60Hz$	mH	2.0 ($\pm 30\%$)		3.2 ($\pm 30\%$)
MECHANICAL & THERMAL	Stator Weight	W_s	kg	1.94		1.94
	Rotor Weight	W_r	kg	1.12		1.12
	Total Weight	W_{total}	kg	3.06		3.06
	Mech. Time Constant	K_{mech}	ms	2.51		2.58
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.61		0.49
	Inertia	J	$kg.m^2$			7.643E-3
	Motor Constant	K_m	Nm/\sqrt{W}	1.01	0.65	0.27
	Rotor ID		mm			148
	Stator OD		mm			230

1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 340 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

UT-TM(L/H)-230 Outline Drawing



Model	A	B	C	D	E	F	G	H	J
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)
UT-TRM-230-015	230	15	11	13	223	185	148	17.6	16

Notes:

MOTOR LEADS:

UT-TM(L/H)-230-015: #11 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

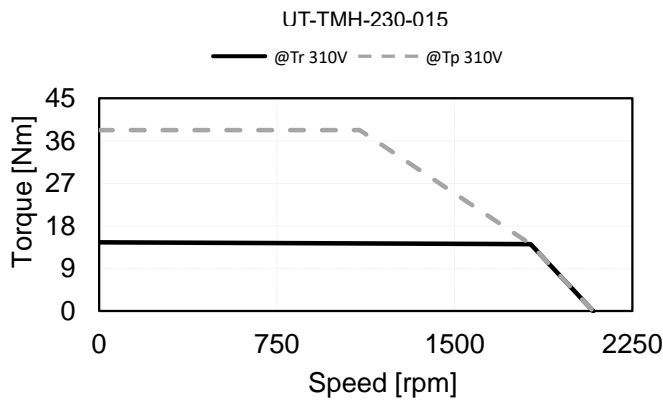
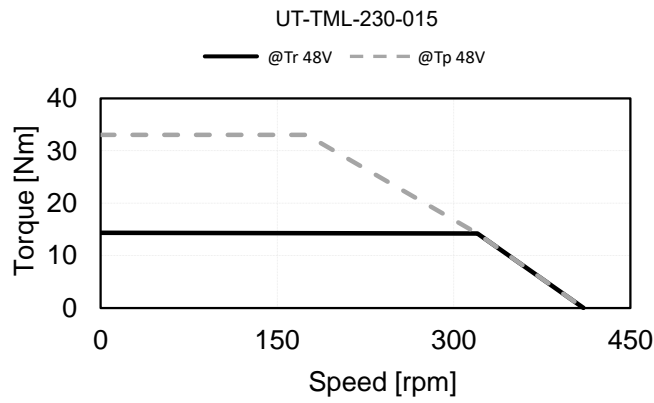
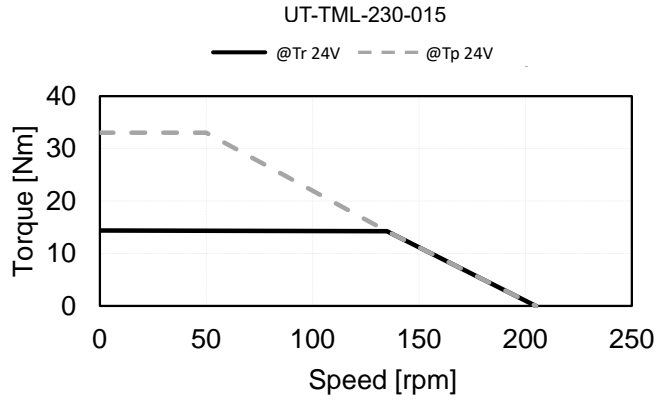
#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

UT-TM(L/H)-230 Torque-Speed Curves

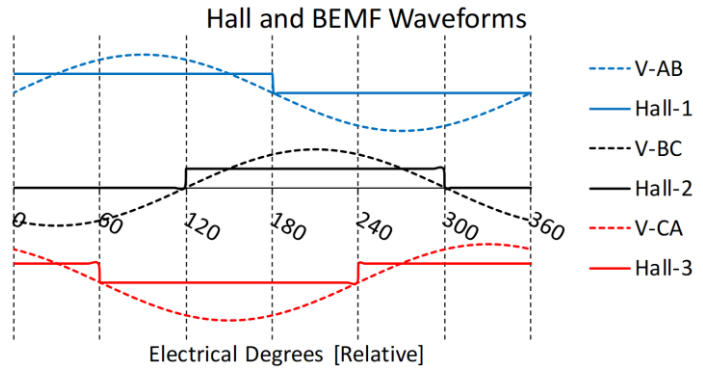
Tr: Rated Torque
Tp: Peak Torque



Hall Effect Sensor Information

Motor and Sensor Cable Information

"A"	Red
"B"	White
"C"	Black
+5V to +24V	Blue
GND	Green
H1	Brown
H2	White
H3	Yellow



Electrical Degree°	Communication Channel Sequence			Motor Phase Excitation Sequence ¹		
	H1	H2	H3	A	B	C
0 – 60	1	0	1		-	+
60 – 120	1	0	0	+	-	
120 – 180	1	1	0	+		-
180 – 240	0	1	0		+	-
240 – 300	0	1	1	-	+	
300 – 360	0	0	1	-		+

Notes: ¹When the values in the table are applied to the phase excitation signals and viewed from the direction of the motor cables, it is observed that the motor rotates clockwise

Motor Design Sheet

Please send your inquiry to
mds@mdsmotor.com or fax: +90 (262) 341 4472

Contact details	
Company:	
Name:	
Tel:	
Email:	
Application/Project:	

Specifications for motor design

Required torques			
Rated torque [Nm]			
Rated speed [rpm]			
Max. torque [Nm]			
Max speed [rpm]			
Electrical specifications			
DC bus voltage [V]			
Rated current [Arms]			
Max current [Arms]			
Current supply	BLDC / BLAC		
Motor size limits			
Max. diameter allowed [mm]			
Max. length allowed [mm]			
Weight limit if any [kg]			
Inertia req. if any			
Cooling / Construction			
Ambient temp. [oC]			
Housing / cooling type	<input type="checkbox"/> None	<input type="checkbox"/> Air cooled	<input type="checkbox"/> Water cooled
Duty cycle			
Other / Comments			
Rotor type	Surface / IPM / other...		
Torque-speed curve – please draw			
Comments			

Revision No	Version No	Made By	Date
A6	V1	OS	04.10.2024



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