

DC BRUSHLESS MOTOR

Tonet Network Communication

Intelligent **Connect** Operation

Communication Mode
DC Brushless Motor



INTELLIGENT OPERATION STABLE ENERGY

- Communication Control
- I/O Control
- Panel Control





BU Series

Rotary Knob Panel Operation

- ▶ Controls the RUN/STOP, revolving speed and CW/CCW rotation under [RUN Mode].
- ▶ [EDIT mode] utilizes multi-layer, loop operation process design for convenient functional parameters setting.
- ▶ It can be controlled by 3 modes, i.e. [Communication Mode], [Panel Mode] and [I/O Mode].
- ▶ Running information can be shown on LED panel, e.g. running speed, running time and load rate etc.
- ▶ Lock function can prevent unintentional operation caused malfunction of motor.
- ▶ Installation of gauges conform to DIN standard, which can be installed on the operation panel directly.

SBU Series

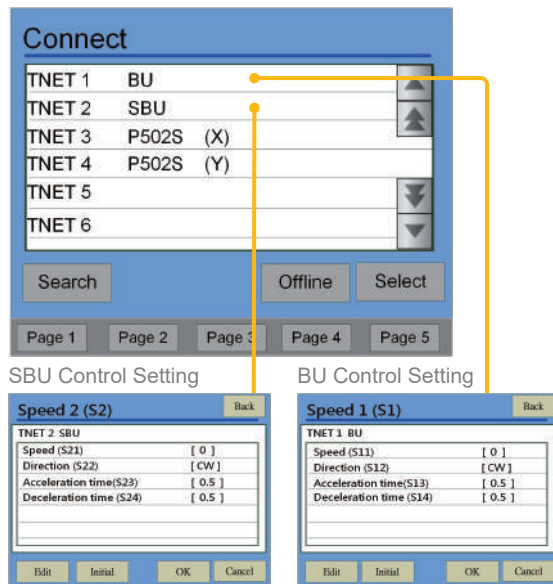
Communication, I/O Terminal Operation

- ▶ Through [Communication Mode], parameter setting, operation movement, speed selection, monitor status etc. can be controlled.
- ▶ Only need RJ45 network cable to connect front controller so as to simplify wiring and engineering time.
- ▶ Through [I/O Mode], operation movement, speed selection, monitor status etc. can be controlled.
- ▶ Under [I/O mode], it can operate stand-alone, or control by PC program.
- ▶ Save 8 sections of running data, select through [Communication Mode] or [I/O Mode].
- ▶ DIN standard guiderail, screw lock due-use design, faster and easier installation and locking.

Common Features



TOP-1 Touchscreen Controller



Tnet Network

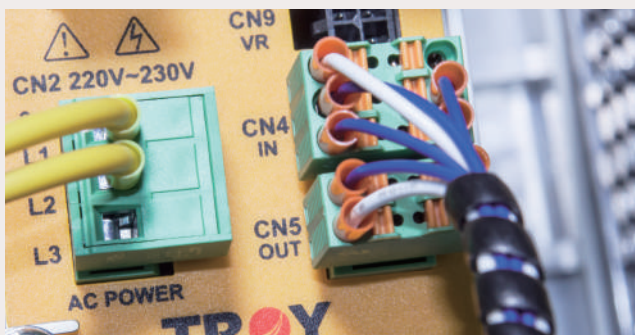
Communication System Integration

- By T-net network communication system integration platform [TOP-1], it can connect to multiple machine to set parameter, monitor status and test running.
- [TOP-1] has color touchscreen operation interface, simplifies setting of network through front controller(PLC, PC, HMI...) or internal parameters of different models, which saves service time.



Network Communication Control

- Compatible to Modbus RTU communication protocol, RS-485 interface with RJ45 cable to control different machines in series to simplify wiring.
- Can be connected to TOP-1, PC, PLC and HMI.



Flexible Customized I/O Interface

- IN connection→4 from 8; OUT connection→2 from 6. Terminal function can be customized and configured.
- Customize I/O terminal to compatible with previous controller without changing wiring or control program.
- Customized compatibility to all **TROY** brushless driver control modes, e.g. BMD/DB/ SBD/UBD/DBD.



Color Indicators Shows Status

- 7 color LED indicator shows the running status of motor and driver.

DC BRUSHLESS MOTOR

RIGHT ANGLE GEARBOX



PARALLEL TYPE GEARBOX



BRUSHLESS MOTOR

BU Driver

SBU Driver

Product Number Code

DC Brushless Motor

Motor

9	BU	120	P - T
Frame Size	Communication Mode Brushless Motor	Power Output	Shaft Type
6 <input type="checkbox"/> 60mm		40 40W	S Round Shaft Type
9 <input type="checkbox"/> 90mm		60 60W	P Pinion Shaft Type
		120 120W	

Gearbox

9	U	10	H
Frame Size	BU Motor Only	Gear Ratio	Strength
6 <input type="checkbox"/> 60mm		5 1/5	None Standard Type
9 <input type="checkbox"/> 90mm		10 1/10	H Heavy-Duty Type
		15 1/15	*Heavy-duty Type only for 9U series.
		20 1/20	
		30 1/30	
		50 1/50	
		100 1/100	
		200 1/200	
		300 1/300	
		360 1/360	

Driver

BU	120	1	T
Product Series	Power Output	Power Input	Identification Code
BU BU Series	40 40W	1 Single Phase AC110~115V	
SBU SBU Series	60 60W	2 Single Phase AC220~230V	
	120 120W	3 3 Phase AC220~230V	

Power Output				40W	60W	120W		
Motor	Round Shaft Type			6BU40S- T	6BU60S- T	9BU120S- T		
	Pinion Shaft Type			6BU40P- T	6BU60P- T	9BU120P- T		
Driver	BU Series			BU40-□ T	BU60-□ T	BU120-□ T		
	SBU Series			SBU40-□ T	SBU60-□ T	SBU120-□ T		
Power Input	-1 T Type	Single phase AC110~115V 50/60Hz	Max. Current	A	1.57	2.39	4.19	
			Rated Current	A	0.92	1.41	2.47	
	-2 T Type	Single phase AC220~230V 50/60Hz	Max. Current	A	0.99	1.43	1.94	
			Rated Current	A	0.58	0.85	1.21	
	-3 T Type	3 phase AC220~230V 50/60Hz	Max. Current	A	0.61	0.83	1.16	
			Rated Current	A	0.36	0.49	0.73	
Rated Torque				Nm	0.14	0.21	0.4	
				kgcm	1.42	2.14	4.07	
Instant Max. Torque				Nm	0.21	0.31	0.58	
				kgcm	2.14	3.16	5.91	
Permissible Inertia Load				J	kgcm ²	7.9	12.8	18.7
				GD ²	kgcm ²	31.6	51.2	74.8
Rated Speed				r/min	3000			
Speed Control Range				r/min	250 ~ 4000			

*BU40-□ T / SBU40-□ T, please fill the power voltage in the box. [1]: Single phase AC110~115V, [2]: Single phase AC220~230V, [3]: 3 phase AC220~230V.

*Power input range is -15~10% (-1 T Type / -2 T Type / -3 T Type).

*Torque 1Nm=10.19716 kgcm.

Driver Specification

Communication Specification	[Communication Protocol] T-net communication protocol(compatible to Modbus RTU). [Communication Rate] 9600, 14400, 19200, 28800, 38400, 57600, 115200 bps. [Transmission Mode] RS-485 Synchronized half-duplex. [Connection Range] Multiple.
Signal Input	[Specification] Photo Coupler Input Interface; correspond to NPN or PNP wiring. [In Connection] 4 from 8 terminal function can be customized and configured. CW/STOP, CCW/STOP or RUN/STOP, CW/CCW, Alarm-Reset, M0, M1, M2, EX-ER, Hold-Free can compatible with DB or SBD control mode.
Signal Output	[Specification] Open Collector Output Interface; correspond to NPN or PNP wiring. [Out Connection] 2 from 6 terminal function can be customized and configured. Alarm-out, Reach-out, VA-out, Speed-out, Warning-out, MOVE.
BU, SBU Common Features	<ul style="list-style-type: none"> · Can be connected to TOP-1(Touchscreen Controller), PC, PLC. · Connect to PC directly for communication setting by USB to RS-485 convertor. · [Communication Mode]: Parameter setting, operation movement control, 8 stage speed set/select, monitor status can be controlled. · [I/O mode]: Operation movement control, 8 stage speed select, monitor status can be controlled. · 10 Protective functions: Alarm protective functions like overload, over voltage, over current, over speed, overheat, power supply, abnormal starting, memory error, Encoder signal error, external interrupt. · 7 Color LED indicator display: RUN/EDIT, CW, CCW, Alarm, external interrupt, memory /CPU/ communication abnormal. For easier identification of motor and driver status. · With: Speed upper/lower limit setting, stop holding force, Alarm/Warning log record function etc. <p>* [TOP-1] is a integration platform touchscreen controller, TROY product series with [T-net communication protocol] can be connected for internal data setting, but without front controller function (optional purchase individually).</p>
BU Unique Features	<ul style="list-style-type: none"> · Control panel build in 5 bits 7-stage display, it shows one of the five items such as revolving speed, driver machine number, running data No., count down time or load rate etc. · Through [knob on the panel] control parameter setting, operation movement control, 8 stage speed set, monitor status can be controlled. · Lock function can prevent unintentional operation caused malfunction of motor.

Model	Gear Ratio	5	10	15	20	30	50	100	200	300	360	
Motor + Gearbox	Motor Speed (r/min)	4000r/min	800	400	266	200	133	80	40	20	13.3	11.1
		3000r/min	600	300	200	150	100	60	30	15	10	8.3
		250r/min	50	25	16.7	12.5	8.4	5	2.5	1.3	0.9	0.7
6BU40P- T + 6U□	Permissible Torque (Nm)	4000r/min	0.44	0.9	1.35	1.7	2.6	4.2	4.9			
		250~3000r/min	0.59	1.2	1.8	2.3	3.4	5.6	6.5			
	Permissible Inertia Load GD ² (kgcm ²)	12.5	50	113	200	450	625					
6BU60P- T + 6U□	Permissible Torque (Nm)	4000r/min	0.68	1.35	2	2.7	3.9	4.9				
		250~3000r/min	0.9	1.8	2.7	3.6	5.2	6.5				
	Permissible Inertia Load GD ² (kgcm ²)	16	64.2	144	257	577	625					
9BU120P- T + 9U□ (+ 9U□H)	Permissible Torque (Nm)	4000r/min	1.35	2.7	4	5.4	7.7	12.9	25.8	30		
		250~3000r/min	1.8	3.6	5.4	7.2	10.3	17.2	34.4	40		
	Permissible Inertia Load GD ² (kgcm ²)	+9U□	107	426	960	1706	3838	10662	11000			
		+9U□H	501	2006	4512	8022	18050	45000				

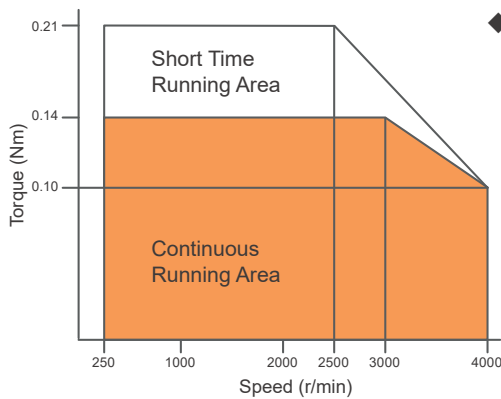
*Gearbox 6U□/9U□/9U□H, please enter the gear ratio in □.

*The colored gear ratio in aforementioned table shows the shaft of the reduction gearbox is rotating in the opposite direction to the motor's shaft itself. Non-colored reduction ratio shows the shaft of the reduction gearbox is rotating in the same direction to the motor's shaft.

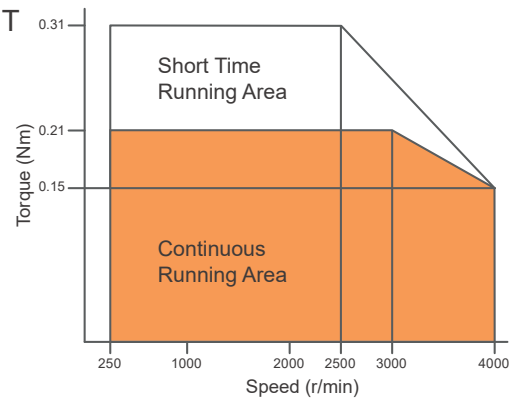
*Torque 1Nm=10.19716 kgcm.

Speed-Torque Characteristic Diagrams

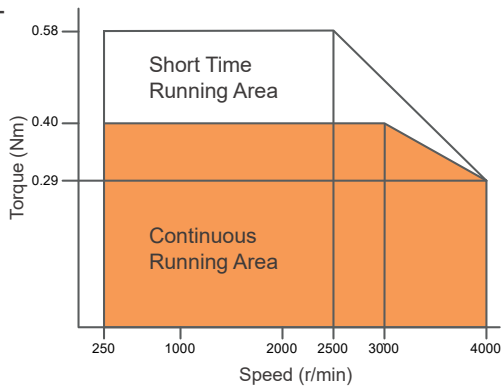
◆ 6BU40□- T



◆ 6BU60□- T



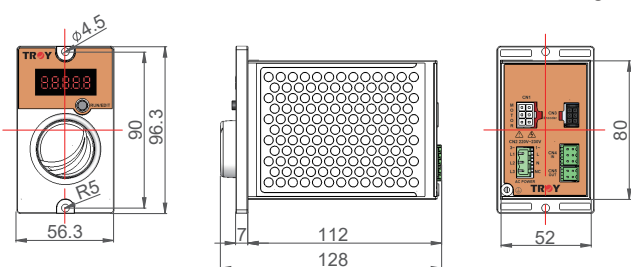
◆ 9BU120□- T



Dimensions

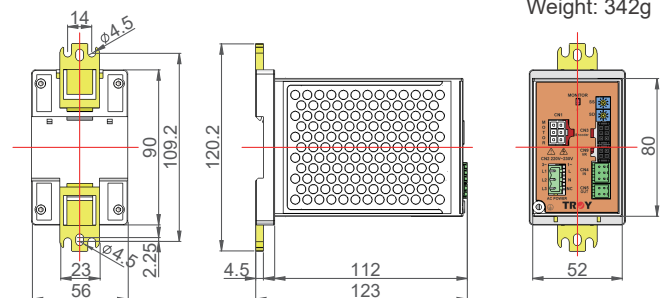
BU Driver

Unit: mm
Weight: 346g



SBU Driver

Unit: mm
Weight: 342g



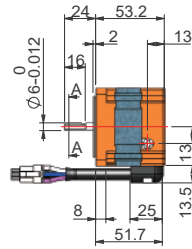
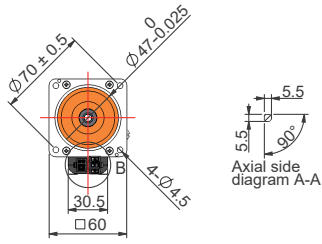
◆ BU40-□ T, BU60-□ T, BU120-□ T uni-dimension

◆ SBU40-□ T, SBU60-□ T, SBU120-□ T uni-dimension

40W/□60mm

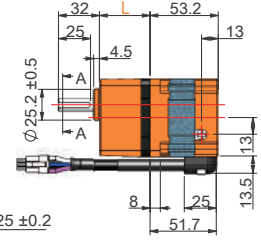
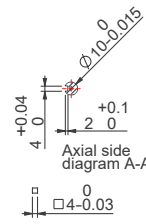
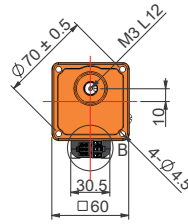
◆ 6BU40S- T

Weight : 795g



◆ 6BU40P- T+6U□

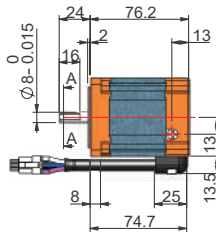
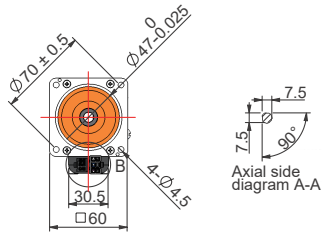
Weight : 790g+W



60W/□60mm

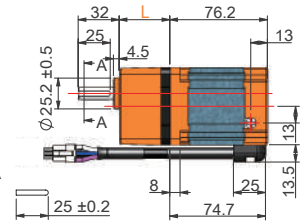
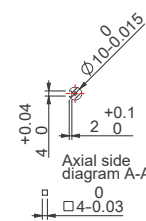
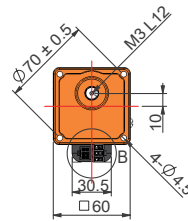
◆ 6BU60S- T

Weight : 1190g



◆ 6BU60P- T+6U□

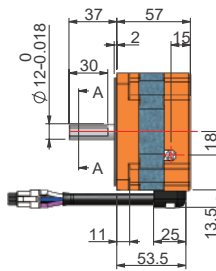
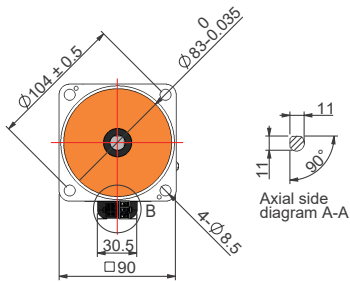
Weight : 1180g+W



120W/□90mm

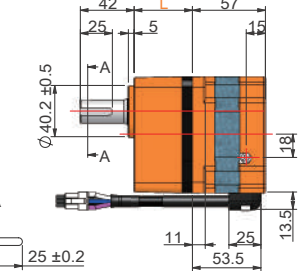
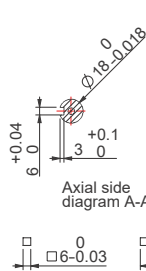
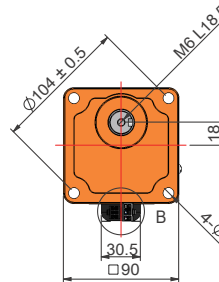
◆ 9BU120S- T


Weight : 1635g



◆ 9BU120P- T+9U□(H)

Weight : 1610g+W



Detail view B
Scale 2 : 1

 Ø7.4 Insulated housing cable 1000mm (signal cable)
 Ø 8 Insulated housing cable 1000mm (power cable)

*Pinion Shaft Type 6U5~360, the spec of Gearbox length **L** and weight **W** as following:

	Model	6U5~20	6U30~100	6U200~360
Gearbox	Length(mm)	39.5	39.5	43.5
	Weight(g)	300	325	365

*Pinion Shaft Type 9U5(H)~360(H), the spec of Gearbox length **L** and weight **W** as following:

	Model	9U5(H)~20(H)	9U30(H)~100(H)	9U200(H)~360(H)
Gearbox	Length(mm)	45.5	58.5	64.5
	Weight(g)	860	1125	1265



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