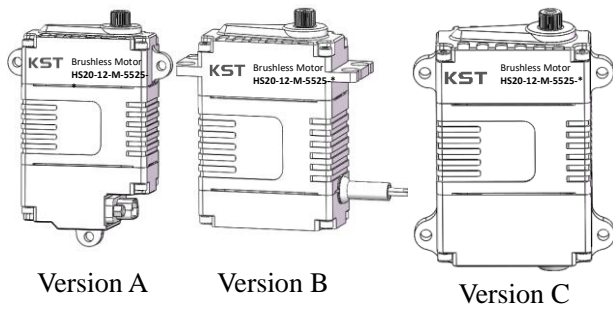


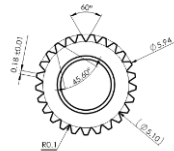
HS20-12-M-5525-x Technical Specification



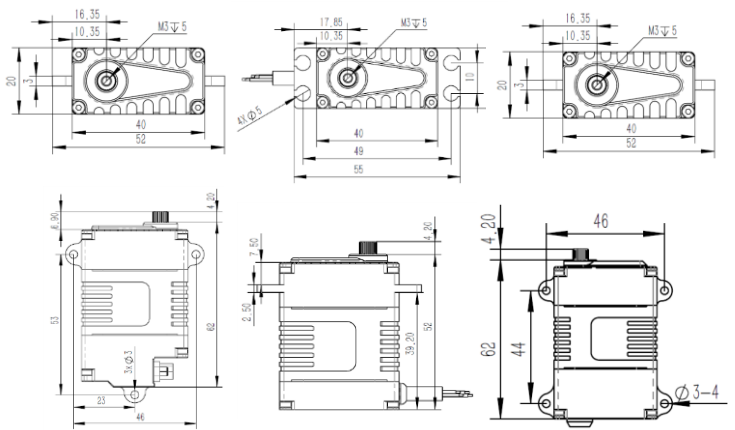
Version A

Version B

Version C



25T 6mm Output Shaft Spline



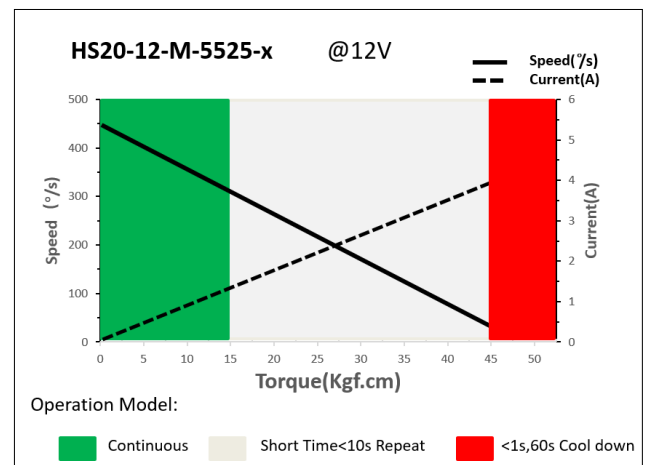
1. Servo Data

Rated Voltage	DC12V	
Voltage Range	DC9V-12V	
Stalling Torque	45Kgf.cm@12V	
Rated Torque	15Kgf.cm@12V	
Stalling Current	4.00A	
Rated Current	1.60A	
No-load Speed	450°/s @25°C	
Rated Speed	300°/s @25°C	
Default Travel Angle	±100° =200° total travel	
Operating Temperature Range	-30°C+65°C	
Case Material	Aluminum Alloy 7075	
Motor Type	Brushless DC Motor	
Gear Set Material	Hardened Steel	
Position Sensor	Contactless	
Ball Bearing	6BB	
Version A	Case Dimensions	40mm*20mm*62mm(±0.2mm)
	Weight	100g(±10%)
Version B	Case Dimensions	40mm*20mm*52mm(±0.2mm)
	Weight	90g(±10%)
Version C	Case Dimensions	40mm*20mm*62mm(±0.2mm)
	Weight	100g(±10%)

3.2 RS485 / RS422 Command Interface

Baud-Rate	115200 ±1.5% bits/s
Protocol (Documentation available)	10 Byte (incl. 1 byte Check Sum)
Number of Data Bits	8
Number of Stop Bits	1
Parity	None

2. Performance



3. Command Signal

3.1 PWM Command Interface

Signal Voltage	HIGH:min.3.3V,max.5.0V Low:min.0.0V,max.1.5V
Pulse Lengths	500us-2500us
Pulse Lengths for Position	500us/1500us/2500us -100°/ 0°/+100°

Command / Response Frame

Byte #	Description	Byte #	Description
1	Frame Head(0xFE)	6	Data
2	Version(0xCA)	7	Data
3	Address	8	Data
4	Command code	9	Check Sum
5	Data	10	(0A)Frame End

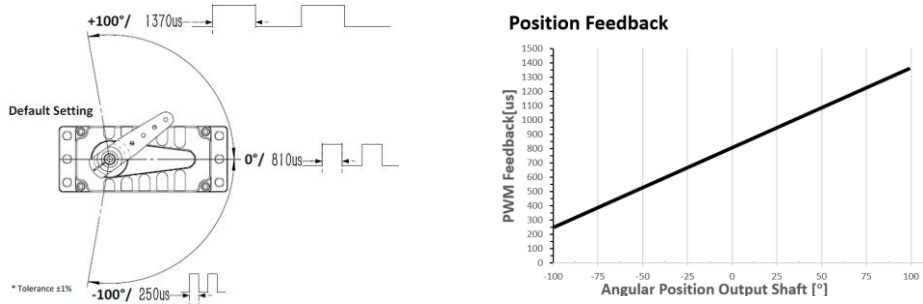
3.3 CAN Bus Command Interface

Baud-Rate	500Kbps	Communication	3.1: CAN Open standard frame 3.2: CAN Extended frame
Node number	0 x25 (range 1 ~ 127, 0 is radio)		

3.4. Feedback Signal

3.4.1 Position Feedback Signal (PWM Versions)

The Position Feedback signal is an output signal with a square wave which is directly related to the output shaft's angular position. Reference is Supply Ground.



3.4.2 Feedback Value (Bus Version)

Integrated in the Bus protocol a Feedback Value, including the Angle position, Temperature, current value. Value read by sending request command. Provide the details of the bus in the document.

4. Electrical Connection Options

4.1 Shielded Cable, Open leads (Version B) (KFVP 2*0.14+2*0.30 AFR250, Cable diameter ≤ ϕ 4.3mm)

Pin	Pin Assignment (PWM)		Pin Assignment (RS485)		Pin Assignment (CAN_BUS)			
	Color	Signal	Color	Signal	Color	Signal		
1	Red	DC+	1	Red	DC+	1	Red	DC+
2	Black	DC-	2	Black	DC-	2	Black	DC-
3	White	SIG	3	White	RS 485 B	3	White	CAN_L
4	Blue	NC	4	Blue	RS 485 A	4	Blue	CAN_H

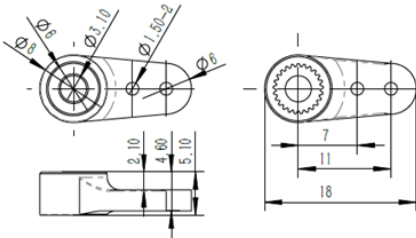
4.2 Industrial Standard J30J-9ZKP electrical Connector (Version A)

Pin	Assignment PWM		Assignment RS485		Assignment CAN		Assignment RS422	
	Signal	Description	Signal	Description	Signal	Description	Signal	Description
1	DC +	Supply Voltage	1	DC +	1	DC +	1	DC +
2	Supply Voltage		2	Supply Voltage	2	Supply Voltage	2	Supply Voltage
3	NC	Do not connect	3	NC	3	NC	3	NC
4	DC-		4	DC-	4	DC-	4	DC-
5	Supply Ground	Supply Ground	5	Supply Ground	5	Supply Ground	5	Supply Ground
6	PWM		6	RS485A	6	CAN_H	6	TX+
7	Command Signal	7	7		7		TX-	
8	FeedBack Signal	Signal GND	8	RS485B	8	CAN_L	8	RX+
9	Signal GND		9		9		9	RX-

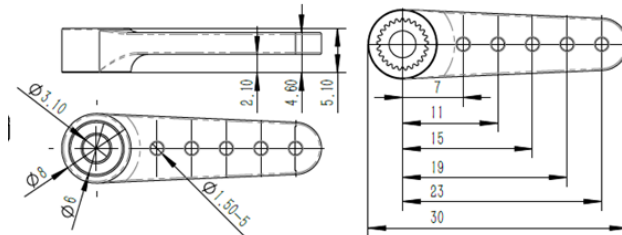
5. Accessories List

Model	Output Shaft Spline	Item	Item No.
HS20-12-M-5525-X	25T 6mm	Aluminum Servo Arm (Single side)	0625.11
		Aluminum Servo Arm (Single side)	0625.23
		Aluminum Servo Arm (Single side)	0625.40
		Aluminum Servo Arm (Double side)	0625.60

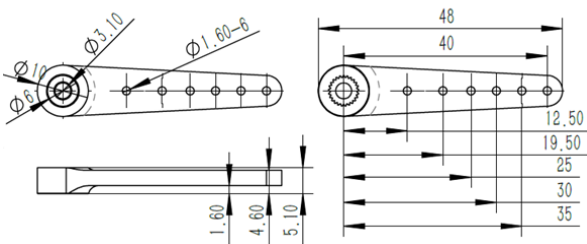
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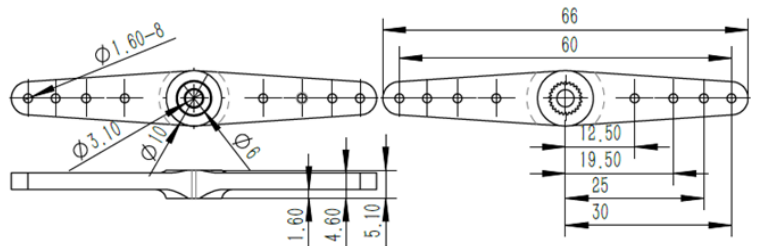
Item No.: 0625.23



Item No.: 0625.40



Item No.: 0625.60



6. Item Number System

