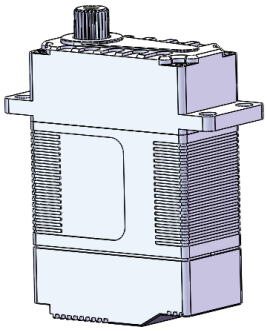
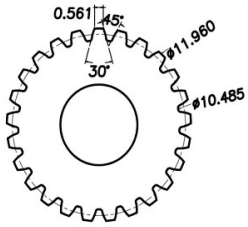
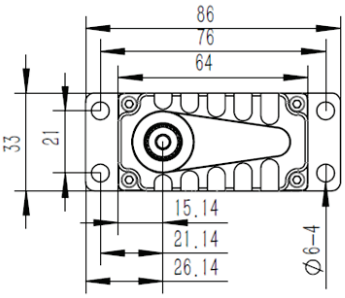
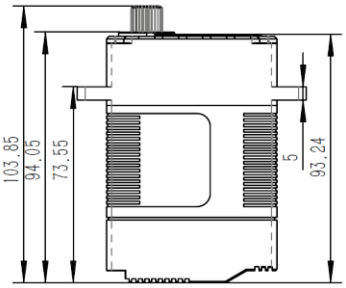
X30-12-165-x Technical Specification







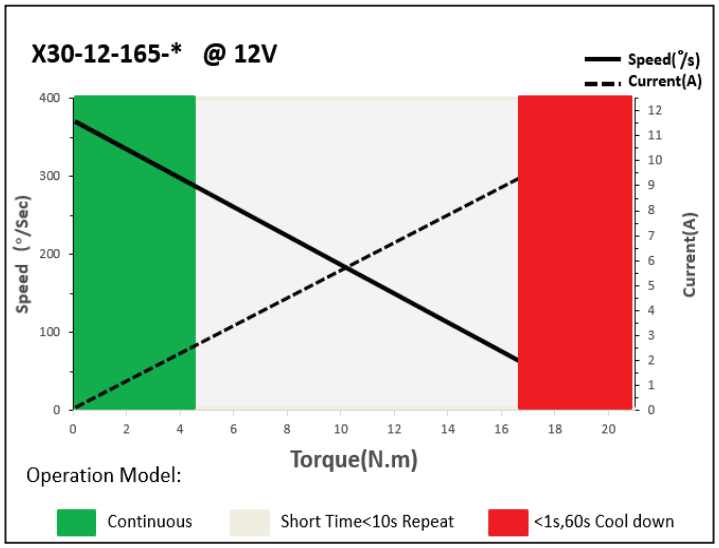


Output Shaft Spline (25T&12mm)

1. Servo Data

Rated Voltage	DC12V
Voltage Range	DC8.4V-12V
Torque	115kgf.cm@8.4V
	165kgf.cm@12V
Speed	0.27sec/60°@8.4V
	0.18sec/60°@12V
Working Frequency	1520us/333Hz
Default Travel Angle	±50°=100° Total
Temperature Range	-20℃.....+65℃
Case Material	Aluminum Alloy
Motor Type	Brushless DC Motor
Gear Set Material	Hardened Steel
Position Sensor	Potentiometer
Ball Bearing	7 BB
Case Dimensions	64mm*33mm*94mm±0.2mm
Weight	435g±10%

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	900us-2100us
Pulse Lengths for Position	1000us/1500us/2000us -50°/ 0°/+50°

3.2. RS485 Command Interface

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

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

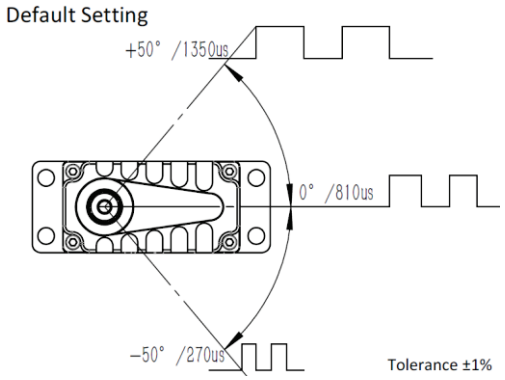
3.3 CAN Bus Command Interface

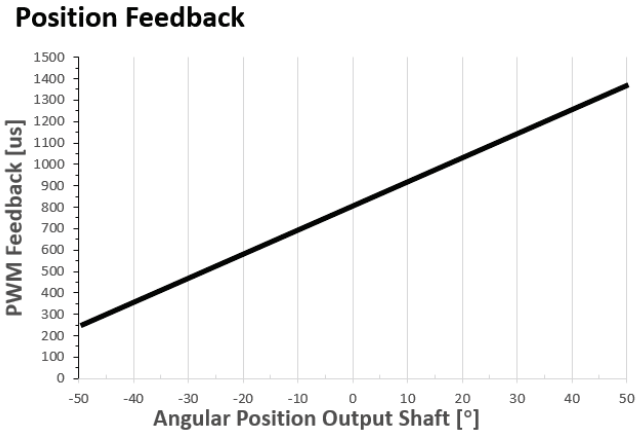
Baud-Rate	500Kbps	Communication	CAN Open standard frame CAN Extended frame UAVCAN
Node number	0 x25 (range 1 ~ 127, 0 is radio)		

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.



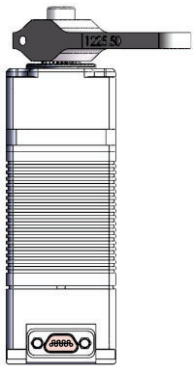


3.4.2 Feedback Value (Bus Version)

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

Industrial Standard J30J-9ZKP electrical Connector

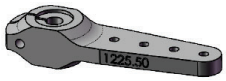


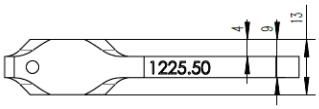
	Assignment PWM		Assignment RS485		Assignment CAN	
1	DC + Supply Voltage	1	DC + Supply Voltage	1	DC + Supply Voltage
2		2		2	
3		3		3	
4	DC- Supply Ground	4	DC- Supply Ground	4	DC- Supply Ground
5		5		5	
6		6		6	
7	PWM Signal	7	Do not connect	7	Isolated GND
8	Feedback Signal	8	RS485A	8	CAN_H
9	Signal Ground	9	RS485B	9	CAN_L

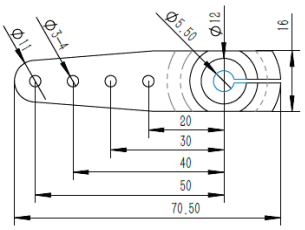
5. Accessories List

Model	Output Shaft Spline	Item	Item No.
X30-12-165-x	25T 12mm	Aluminum Servo Arm (Single side)	1225.50
		Aluminum Servo Arm (Double side)	1225.55
		Aluminum Servo Disc	1225.16.5

Item No.: 1225.50







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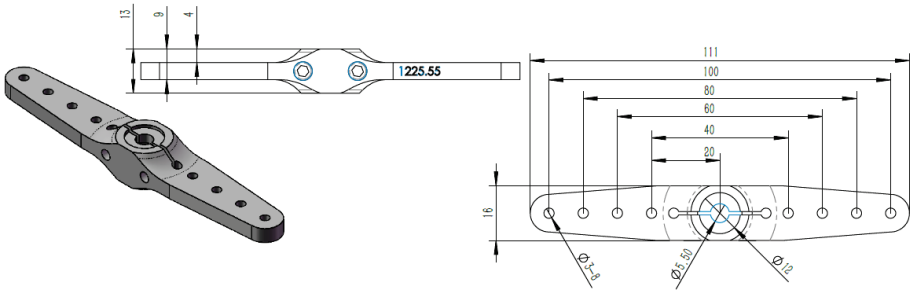

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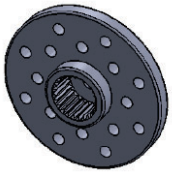

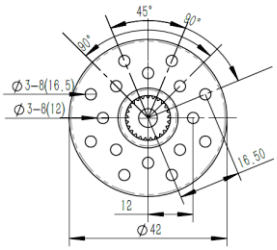

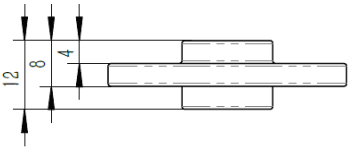

6. Item Number System

X 30 - 12 - 165 - X

Servo Class
30mm Class

Supply Voltage
12 : DC12.0V

Type
165

Interface
1: PWM
2: RS485 Bus
3: CAN Bus
3.1: CAN Open Standard Frame
3.2: CAN Open Extended Frame
3.3: Drone CAN (UAVCAN)
3.5: Isolated CAN Bus
3.51: CAN Open Standard Frame
3.52: CAN Open Extended Frame