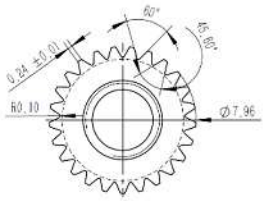
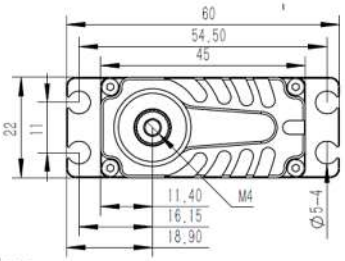
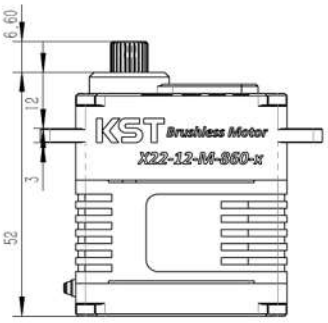
X22-xx-M-860-* V8.0 Technical Specification







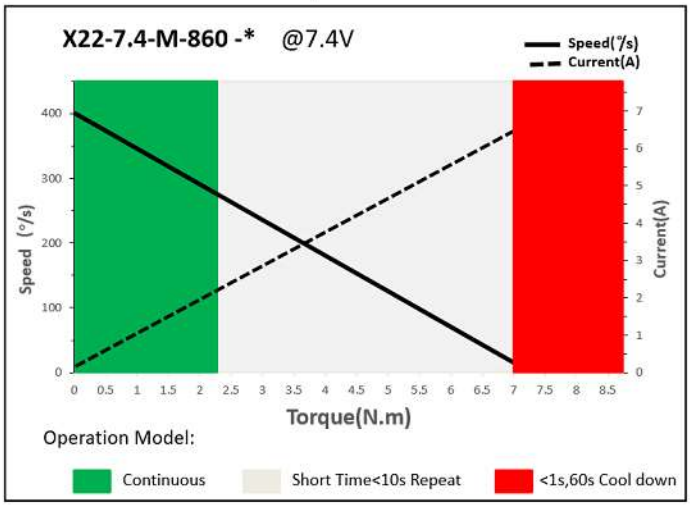
25T- 8mm Output Shaft Spline

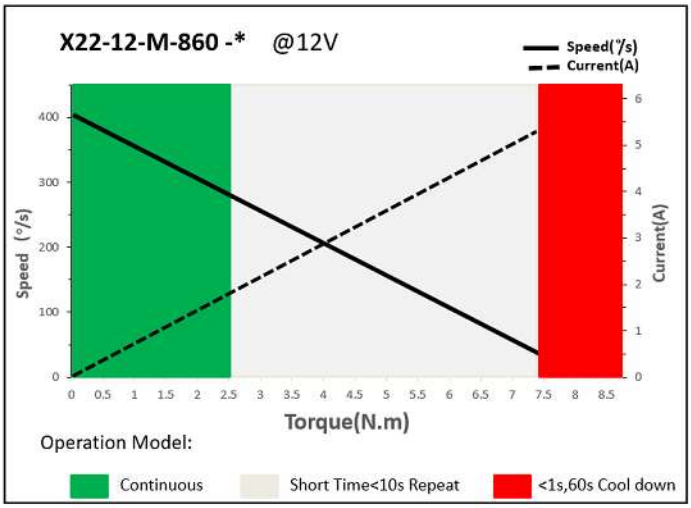
1. Operating Data

	X22-7.4-M-860-*	X22-12-M-860-*
Rated Voltage	DC7.4V	DC12.0V
Voltage Range	DC6.0V-8.4V	DC9.0V-13V
Stalling Torque	7.0N.m@7.4V	7.5N.m@12V
Rated Torque	2.2N.m@7.4V	2.5N.m@12V
Stalling Current	7.50A	6.00A
Rated Current	1.98A	1.68A
No-load Speed	0.15sec/60°@12V	0.14sec/60°@12V
Rated Speed	0.21sec/60°@12V	0.20sec/60°@12V
Working Frequency	1520us/333Hz	
Default Travel Angle	± 100°=200°Total When 500us-2500us	
Temperature Range	-10℃.....+65℃	
Case Material	Aluminum Alloy	
Motor Type	Brushless DC Motor	
Gear Set Material	Hardened Steel	
Position Sensor	Contactless	
Ball Bearing	6BB	
Case Dimensions	45mm*22mm*52mm±0.2mm	
Weight	128g±10%	

28g

2. Performance





3. Command signal

3.1. PWM Command Interface

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

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3.2. RS485 Command Interface

Baud-Rate	115200 ±1.5% bits/s
Protocol (Documentation available)	10 Byte (incl. 1 byte Check Sum)

3.2.1. RS485 Protocol Specifications

Number of Data Bits	8
Number of Stop Bits	1
Parity	None

3.2.2. 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

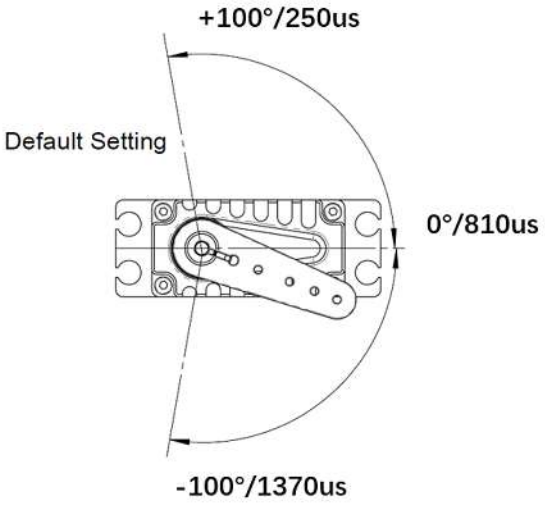
3.3. CAN Bus Command Interface

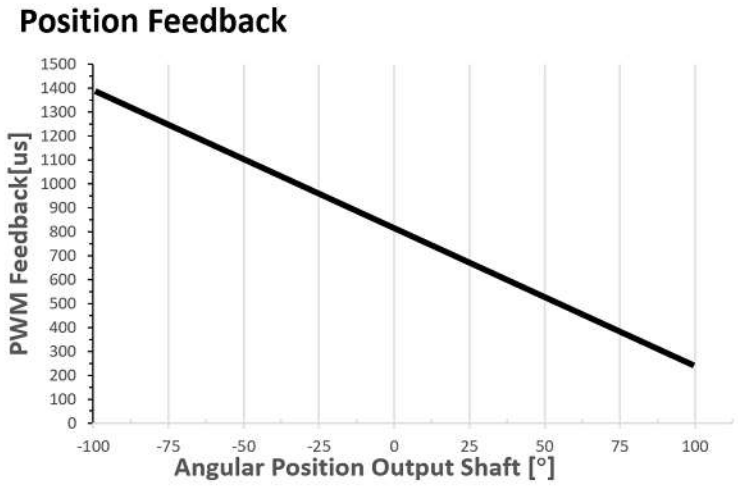
Baud-Rate	500Kbps
Node number	0 x25 (range 1 ~ 127, 0 is radio)
Communication	3.1：CAN Open standard frame format 3.2：CAN Extended frame

3.4. Feedback Singnal

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.





* Tolerance ±1%

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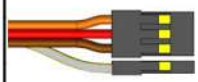
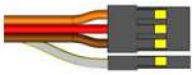
4.4.2 Feedback Value (Bus Versions)

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.

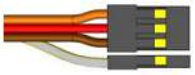
4. Electrical Connection Options



Pin Assignment (PWM)			
1	Yellow	SIG	Command Signal
2	Red	DC+	Supply Voltage
3	Brown	DC-(GND)	Supply Ground, Signal Ground
4	White(Options)	Feedback	Position Feedback



Pin Assignment (RS485)			
1	Yellow	RS485A	Non-Inverted Input / Output line
2	Red	DC+	Supply Voltage
3	Brown	DC-(GND)	Supply Ground, Signal Ground
4	white	RS485B	Inverted Input / Output line

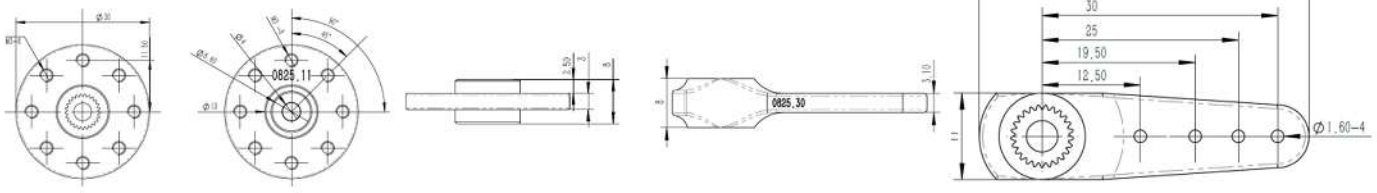


Pin Assignment (CAN_BUS)			
1	Yellow	CAN_H	CAN high
2	Red	DC+	Supply Voltage
3	Brown	DC-(GND)	Supply Ground, Signal Ground
4	white	CAN_L	CAN low

5. Accessories （Options）

Item	Item-No.
Aluminum Servo Disc	0825.11
Aluminum Servo Arm (Single side)	0825.30

#Item No.: 0825.11 **#Item No.: 0825.30**



6. Item Number System

X 22_ - ** - M - 860 - *

Servo Class
22mm Class

Supply Voltage
7.4: DC7.4V
12: DC12V

Sensor
M: Contactless

Servo Type
860

Command
1: PWM
2: RS485
3.1: CAN Open Stardard Frame
3.2: CAN Open Extended Frame

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