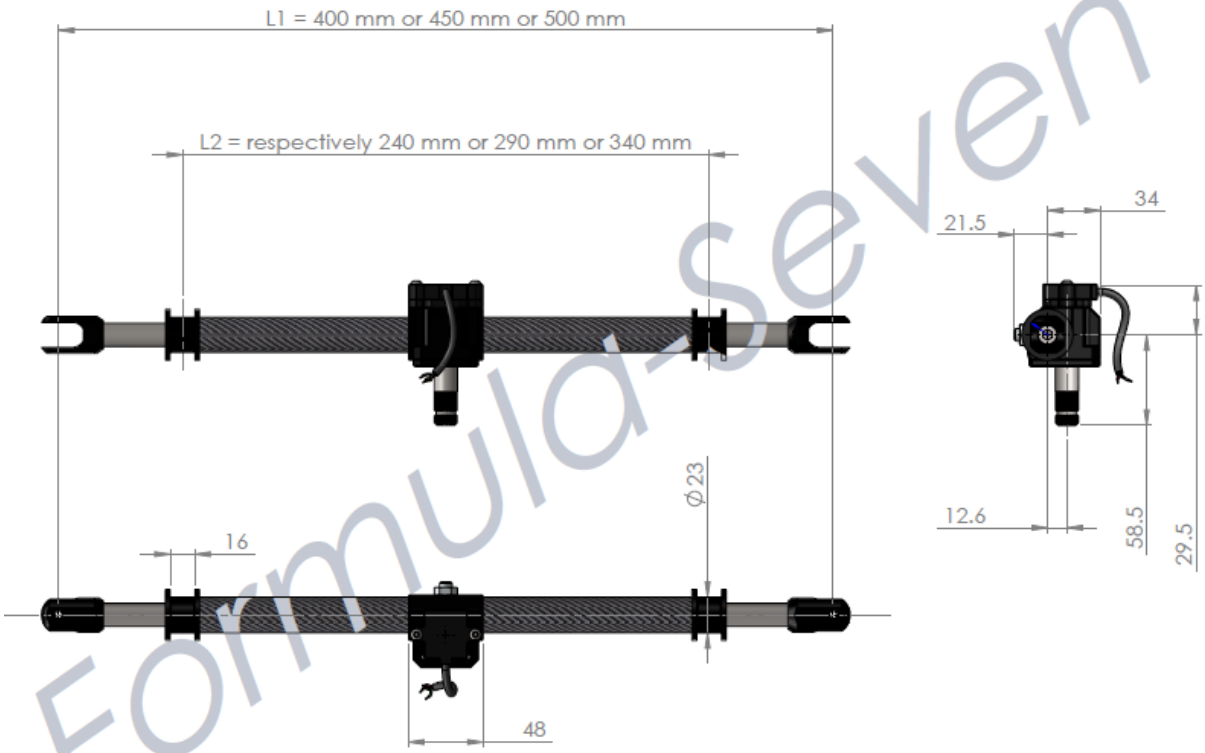
FORMULA SEVEN
FORMULA SAE COMPONENTS

3 Different Available Lengths

1. **L1=400mm; L2=240mm;**
2. **L1=450mm; L2=290mm;**
3. **L1=500mm; L2=340mm.**

Mechanical Data	
Housing Material	Carbon Fiber/Aluminum
Gears Material	Steel 39NiCrMo3
Gear Type	Helicoidal
Backlash	Zero
Total Rack Travel	72mm (lock-to-lock)
Rack Displacement/one pinion rev	80mm/rev
Max Axial Load	1880 N
Max Orthogonal Load	680 N
Weights	870 grams (for L1=400mm with sensor)
	940 grams (for L1=450mm with sensor)
	1010 grams (for L1=500mm with sensor)



Formula-Seven

Steering Rack, Hall Effect rotary Encoder

- Steering rack rotary Sensor
- Contact less magnetic encoder
- High accuracy

Electrical Data	
Working angle	0 … 360 [°]
Indep. linearitiy (without misalignment)	±0.3 ±0.3, % of meas. Range
Indep. linearitiy (with allowed misalignment @ 360°)	±0.5, % of meas. Range
Max. hysteresis	0.1 [°]
Resolution	12 [Bit]
Max repeatability	0.1 [°]
Sample rate fast mode	(5) [kHz]
Sample rate slow mode	1.66 [kHz]
System Propagation delay fast mode	(800) [ms]
System Propagation delay slow mode	4600 [ms]
Max. temperature coefficient of the output signal	100 [ppm/°K]
MTTFd / MTBF	240/240 [years]
Power supply voltage	8 … 35 [VDC]
Current consumption without load (typ.) fast mode	(19) [mA]
Current consumption without load (typ.) slow mode	14[mA]
Min. ohmic load at output	10 [kOhm]
Max. capacitive load at output	100 [nF]
Reverse polarity protection of power supply	Yes
Electrical connection	Cable 3 pole
Cross section of single wires	0.56 (AWG20) [mm2]
Length of cable	1 [m]
Redundancy feasible	Yes
Electrical connection redundant	Cable 6pole
Cross section of single wires redundant	0.25 (AWG24) [mm2]
Output characteristics	Positive gradient CW
Output Signal	0.5 … 4.5 [VDC]

Mechanical Data	
Mechanical range	360 (continuos) [°]
Protection class	IP68
Min. life	No movements limitation
Operating & storage temperature	-40 … +85 [°C]
IEC 68-2-6 Vibration (Amax = 0.75mm, f = 5 … 2000 Hz)	50 [g]
IEC 68-2-27 Shock	200 [g]
Mounting hole	2 through-holes 4.4 mm