



# FORMULA SEVEN

## FORMULA SAE COMPONENTS

### Steering Rack, Hall Effect rotary Encoder

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

<b>Electrical Data</b>	
Working angle	0 ... 360 [°]
Indep. linearity (without misalignment)	±0.3 ±0.3, % of meas. Range
Indep. linearity (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) [mm <sup>2</sup> ]
Length of cable	1 [m]
Redundancy feasible	Yes
Electrical connection redundant	Cable 6pole
Cross section of single wires redundant	0.25 (AWG24) [mm <sup>2</sup> ]
Output characteristics	Positive gradient CW
Output Signal	0.5 ... 4.5 [VDC]

<b>Mechanical Data</b>	
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



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<b>Sensor Cabling</b>	
Joining Color	Description
Red	Power Supply Ub 8...35Vdc
Brown	Signal Output 0.5...4.5Vdc
Black	GND

#### **ATTENTION:**

Wrong connection may cause permanent damage to the device!  
The Specification is only valid if the product has not been manipulated!