

# SFA-E-SA20

- Thin & Lightweight
- Rotary Encoder Adopted
- High Resolution Angle Detection

## Steering Force/Angle Transducer



### Thin and lightweight design and rotary encoder detects steering angle with high resolution

- Built-in amplifier ensures stable steering force output with minimal influence of external noise.
- Easy installation/removal to/from steering shaft
- Dedicated indicator is separately available.

SFA-E-SA series steering sensors adopt strain gages to detect steering force (Torque) and has built-in amplifier. Also, rotary encoders in steering sensors measure steering angle with high resolution. In addition, dedicated indicator displays steering force and angles.

#### Specifications

##### Steering Torque

Rated Capacity	±20 to 200 N·m (As specified)
Rated Output	±2 V
Nonlinearity	Within ±0.3%RO except for ±150 N·m (Within ±0.5%RO for ±150 N·m)
Hysteresis	Within ±0.3% RO except for ±150 N·m (Within ±0.5%RO for ±150 N·m)
Safe Overloads	120%
Power Supply	±5 VDC

##### Steering Angle

Detector	Rotary encoder
Output phase	A phase, B phase
Output form	Rectangular wave
Output pulse	18000 pulses/360°
Recommended Excitation	5 VDC

##### General

Compensated Temperature	0 to 50°C
Safe Temperature	0 to 60°C
Weight	Approx. 2.5 kg (Including 1 kg of steering wheel)

##### Standard Accessories

- Cable: 1 (Used to connect a dedicated display)  
0.08 mm<sup>2</sup>, 10 shielded cables: 5m, diameter is about 7 mm,  
Plugs at both ends are equipped with interfaces.
- Connector adapter nut each 1 (According to different models,  
separate processing of indirect adapter)

##### Optional Accessories

- Dedicated displays, indirect adapter,  
Lock arms, and Housing case

### Dedicated Indicator of SFA-E-SA

- 2 channels of input for steering angle (Pulse) and steering force (Voltage)
- 3 voltage signals and indications: steering force (Torque), steering angle, and steering angle speed.
- Allows indicator unit to be separately mounted with suction mount.



#### Dedicated Indicator

Top: Indicator Unit SFA-E-20A  
Bottom: Signal Conditioner Unit SFA-E-218A

SFA-E-SA  
Recommended  
products for  
combination

Universal Recorder  
EDX-200A  
→ 3-55

Universal Recorder  
EDX-100A  
→ 3-63

Memory Recorder/Analyzer  
EDX-5000A  
→ 3-68

