

# Steering Torque and Angle Transducer HLA-50B

## Directly mountable on the steering wheel

This is a steering torque and angle transducer for evaluation test of traveling performance of a car.

It can be easily mounted on the steering wheel, has high measurement accuracy and is easy to operate.

It does not affect existing steering wheel switches or electronic circuits.

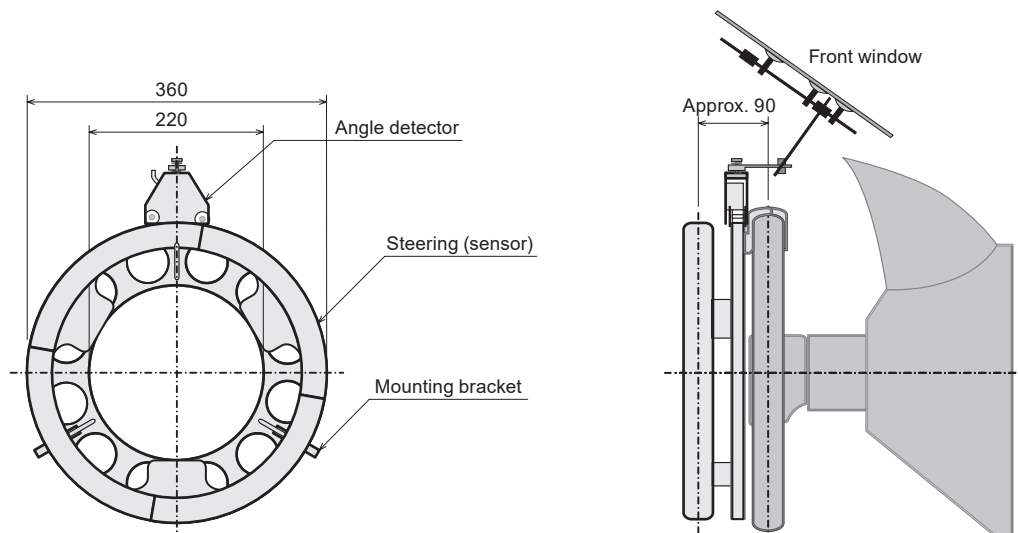


### ■ Features

- Installation possible on cars of various types (applicable to steering outer-diameter of 240-400mm)
- No need to remove the existing steering wheel
- Easily attached and detached
- Excellent operability
- Steering torque is detected by strain gauges and torque output by telemetry



### ■ External dimensions



# Specification

## Specification Steering Torque and Angle Transducer HLA-50B

Steering ability	
Capacity	50N·m
Rated output	Approx. 4 V (DT-281R(-04): at 2500 με range)
Non-linearity	1%RO
Hysteresis	1%RO
Temperature characteristics of zero point	0.1%RO/°C
Allowable overload	120%
Continuous operating time	approx. 10 hours (23±5°C)
Weight	approx. 1.8 kg (excluding battery)
Wireless specification	2.4 GHz band advanced low power data communication system
Steering angle	
Output pulse	Approx. 11000 pulses / 360°
Response time	approx. 3160 deg./sec
Weight	approx. 60 g
Input/output cable	φ4 0.18 mm <sup>2</sup> 6-conductor vinyl cable 1 m
Attached cable	φ4 0.18 mm <sup>2</sup> 6-conductor vinyl cable 4 m free end
common feature	
Operating temperature range	0 to +40°C (no icing)
Allowable temperature range	-10 to +60°C (no icing)
Protection class	IP40 equivalent
Compatible steering wheel diameters	φ240 - φ400 (depending on steering wheel shape)
Compatible steering grip diameter	φ30 - φ50 (depending on steering wheel shape)

Remarks AAA batteries x 2 (secondary batteries can be used)

\*1 Calculated values based on 2 x AAA batteries at 23 ± 5°C. Continuous use time may vary depending on the measurement environment and individual batteries, and is not a guaranteed value

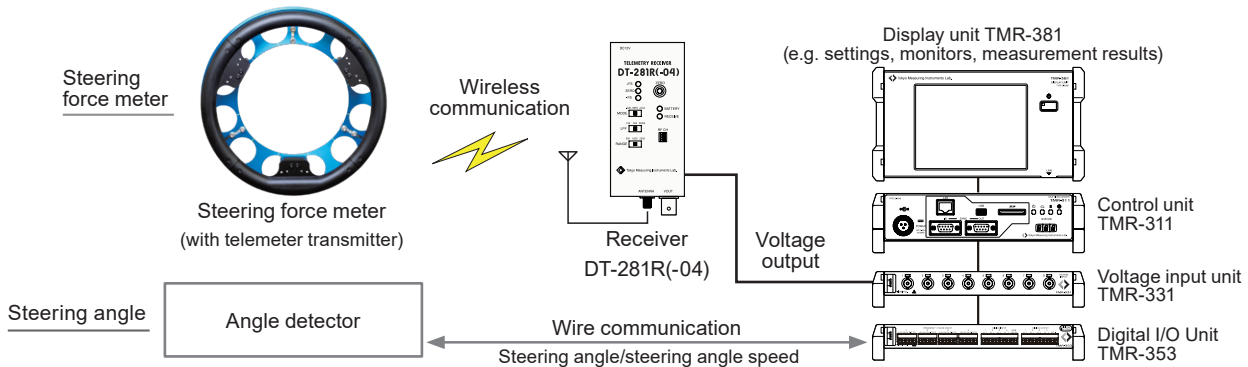
\*2 Depending on the shape of the steering wheel, installation may not be possible and is not a guaranteed value

\*3 Polarity for both steering force and steering angle is clockwise for positive output

## Specification Telemetry receiver DT-281R(-04)

Wireless part	
Wireless specifications	2.4 GHz band advanced low-power data communication system
Number of channels	16 channels
Antenna connection terminal	SMA connector
Display/operation	Reception signal strength LED / transmitter battery voltage LED / radio channel switching switch
Voltage output unit	
Voltage output connector	BNC connector
Voltage output	±5 V Selected by strain output range selector switch $\left( \begin{array}{l} \pm 500 \times 10^{-6} \text{ strain} \\ \pm 1000 \times 10^{-6} \text{ strain} \\ \pm 2500 \times 10^{-6} \text{ strain} \end{array} \right)$
Voltage output accuracy	±0.5% FS (entire system)
Stability Zero point	±0.55mV/°C
Stability Sensitivity	±0.05%FS/°C
SN ratio	47 dB (whole system)
Calibration output	±5V
Low-pass filter	100 Hz, 500 Hz, PASS (1 kHz) (-3 dB ± 1 dB)
Balancing adjustment range	±6000×10 <sup>-6</sup> strain
Balancing accuracy	±5mV
Display and operation	Strain output range selector switch LPF selector switch/calibration output selector switch Balance adjustment switch/output level LED
Overall	
Power supply voltage	DC 9 to 16V
Current consumption	80mA MAX (DC12V supply, +23°C±5°C)
Operating temperature range	0 to +50°C 85%RH or less (without condensation)
Dimensions	48(W)×23.5(H)×100(D)mm (excluding protruding parts)
Weight	approx. 140 g
Standard accessory	
Operation manual	1
Certificate	1
BNC coaxial cable (CR-31)	1
DC power supply cable (CR-062)	1
Receiving antenna	1
Option	
2.4 GHz telemetry antenna cable 1m (CR-4701)	
2.4 GHz telemetry antenna cable 3m (CR-4703)	
2.4 GHz telemetry antenna cable 5m (CR-4705)	
AC adapter (CR-1867)	

## System block diagram



Approval Certificate ISO9001  
Design and manufacture of  
strain gauges, strain measuring  
equipment and transducers

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