Strain Gage
Load Cell
Pressure Sensor
Acceleration Sensor
Torque Sensor
Displacement Sensor
Component Force Sensor
Automotive Sensor
Civil Engineering Sensor

LBT-A/E

Seat Belt Tension Transducer



LBT-A-20KNSA1-IDT



LBT-E-SA1-IDT

Tension measurement during crash testing

- **Rated capacity: 15, 20 kN**
- **Rated output: Approx. 2.5 mV/V (LBT-A)**

These sensors are designed to measure the tension applied to the seatbelt due to the dummy's behavior during a crash test.

LBT-A-20KNSA1-IDT Specifications

Performance	
Rated Capacity	20 kN
Nonlinearity	Within ±2% RO
Rated Output	Approx. 2.5 mV/V
Environmental Characteristics	
Safe Temperature	0 to 60℃
Compensated Temperature	10 to 50℃
Temperature Effect on Zero	Within ±0.1% RO/℃
Electrical Characteristics	
Safe Excitation	10 V AC or DC
Recommended Excitation	1 to 5 V AC or DC
Input Resistance	350 Ω ±5%
Output Resistance	350 Ω ±5%
Insulation Resistance	500 MΩ or more (With 25 VDC applied)
Cable	4-conductor (0.08 mm^2) vinyl shielded cable,
	3.2 mm diameter by 7 m long, terminated with a
	connector plug 3RT01-PE7M (TEDS installed)
	(Shield wire is not connected to the case.)
Mechanical Properties	
Safe Overloads	100%
Enclosure	Metallic finish
Material	Aluminum alloy
Weight	Approx. 130 g (Excluding cable)
Others	
Not waterproofed.	
Single belt calibration (Our standard seat belt)	

*Characteristic values are based on our calibration methods and conditions.
*We are able to calibrate the sensors using seat belts you provide.
*Specifications and design are subject to change without notice.
*Please contact us for information on product warranties.

■Models

Model		Rated Capacity	Nonlinearity	Weight (Approx.)*1
For left seat	For right seat			
LBT-A-20KNSA1-IDT		20 kN	Within ±2% RO	130 g
LBT-E-15KNSA1L-IDT	LBT-E-15KNSA1R-IDT	15 kN	Within ±1.5% RO*2	72 g
LBT-E-20KNSA1L-IDT	LBT-E-20KNSA1R-IDT	20 kN	Within ±2.0% RO*2	

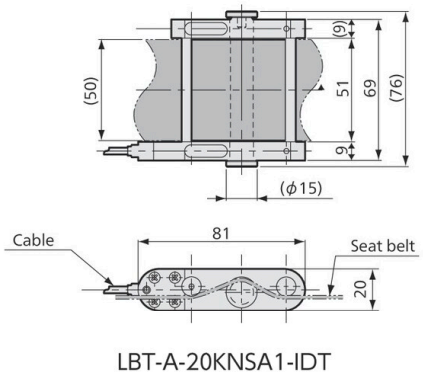
*1 Excluding cable
*2 With a built-in compensation circuit

LBT-E-SA1-IDT Specifications

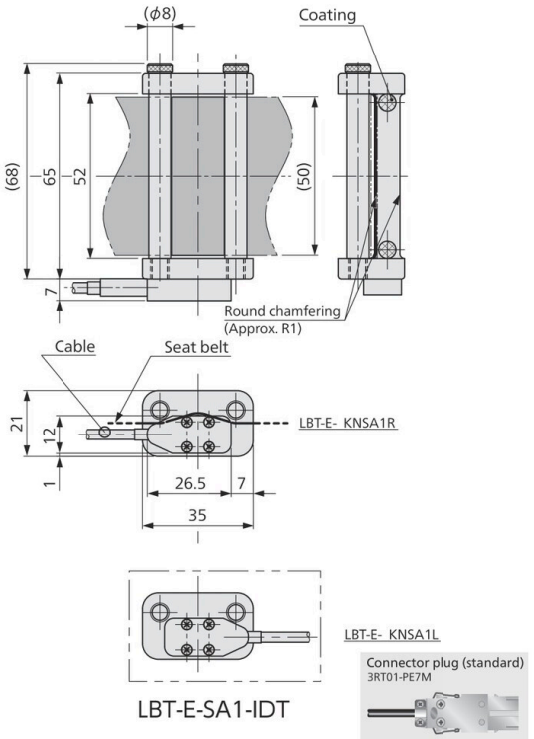
Performance	
Rated Capacity	See table on 1-205.
Nonlinearity	Within ±1.5% RO (15 kN)
	Within ±2.0% RO (20 kN)
	(With a built-in compensation circuit)
Rated Output	Approx. 1.5 mV/V (15 kN)
	Approx. 1.0 mV/V (20 kN)
Environmental Characteristics	
Safe Temperature	0 to 60℃
Compensated Temperature	10 to 50℃
Temperature Effect on Zero	Within ±0.1% RO/℃
Electrical Characteristics	
Safe Excitation	8 V DC
Recommended Excitation	2 to 5 V DC
Input Resistance	240 to 440 Ω
Output Resistance	240 Ω ±7%
Insulation Resistance	500 MΩ or more (With 50 VDC applied)
Cable	4-conductor (0.08 mm²) vinyl shielded cable,
	3.2 mm diameter by 7 m long, terminated with a connector plug
	(Measuring instrument side: 3RT01-PE7M (TEDS installed))
	(Shield wire is not connected to the case.)
Mechanical Properties	
Safe Overloads	120% (15 kN)
	100% (20 kN)
Enclosure	Metallic finish
Material	Aluminum alloy and stainless steel
Weight	Approx. 72 g (Excluding cable)
Others	
Because this product has a built-in compensation circuit, use with	
excitation voltage of 2 to 5 VDC.	
(No specifications are guaranteed at the excitation less than 2 VDC.)	
Data on the "Test Data Sheet" is based on 2 VDC bridge excitation.	
This product has 2 types - left seat type and right seat type - depending	
on the direction in which the cable comes out.	
Not waterproofed.	
Single belt calibration (Our standard seat belt)	
We accept calibration for the supplied seat belt.	
Cable exchangeable model is also available by using connectors.	

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■Dimensions



LBT-A-20KNSA1-IDT



LBT-E-SA1-IDT