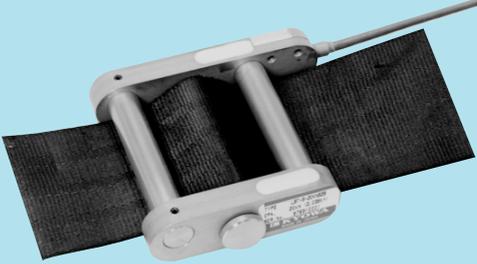
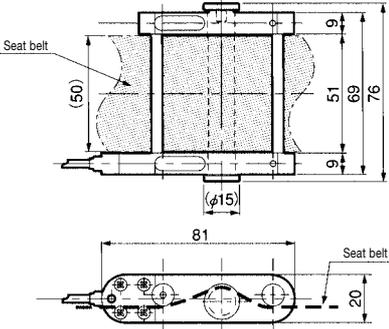
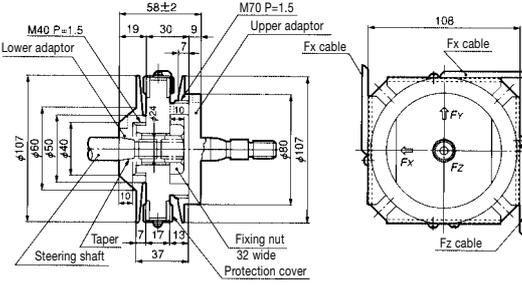
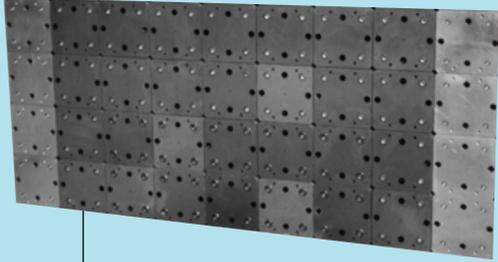
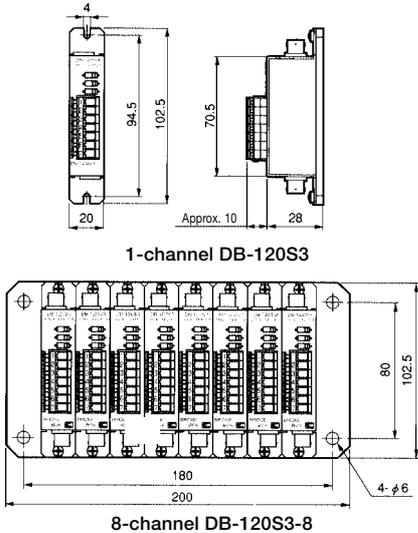
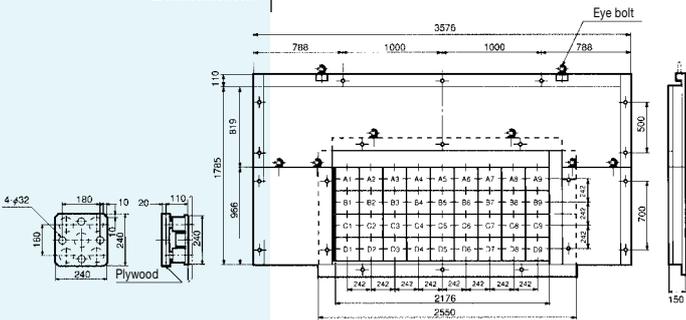
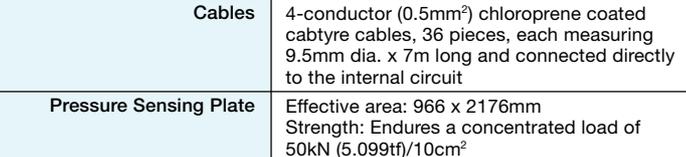
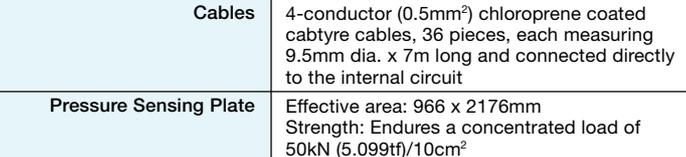
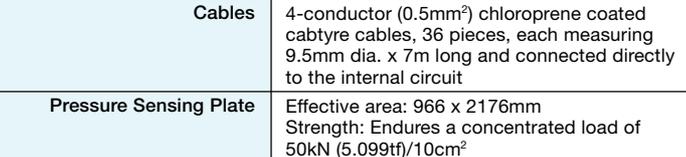
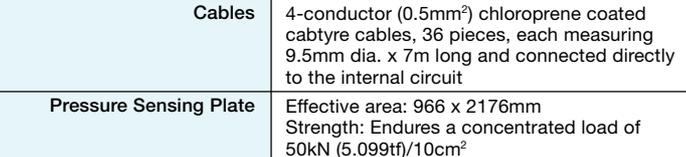
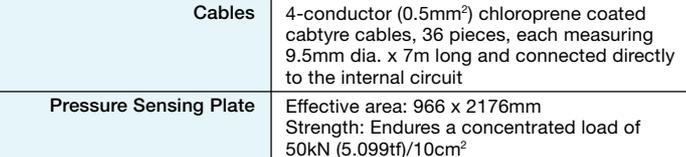
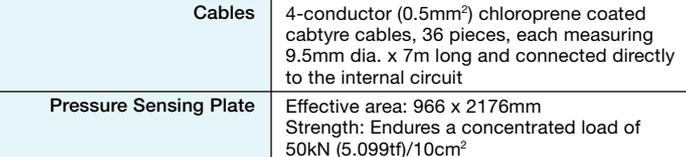
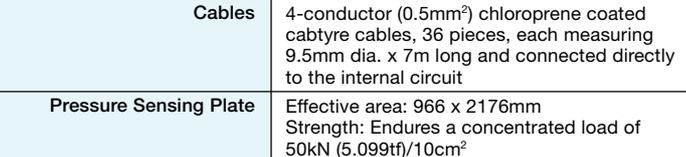


Crash Test Sensors Applicable to Automobile Equipment & Barriers

KYOWA strain-gage crash test sensors measure impact-initiated tension applied through the dummy to the seat belt, the characteristics to absorb the impact applied to the steering wheel in three directions in conformity with the automobile safety standard of each country, and the distribution of impact-initiated load to the barrier. KYOWA also provides clamp-style vehicle-borne bridge boxes.

Description	Seat Belt Tension Transducer LBT-S-20KNS2 	Steering 3-Component Force Transducer LST-B-20KNS1 
Outline	This sensor detects the impact-initiated tension applied through the dummy to the seat belt. Made of aluminum alloy, it is small and lightweight.	This sensor simultaneously detects the impact-initiated force applied in three orthogonal directions to the steering wheel to obtain the impact-absorbing characteristics. Minimal mutual interference between channels is ensured.
Rated Capacity (Reference Value)	20kN (2.039tf)	20kN (2.039tf)
Safe Overload Rating	100%	100%
Rated Output, Approx.	2.5mV/V (5000 x10 ⁻⁶ strain)	1mV/V (2000 x10 ⁻⁶ strain) with all of Fx, Fy and Fz
Non-linearity	±2%RO	±1%RO
Hysteresis	±2%RO	±2%RO
Recommended Excitation Voltage	1 to 5V ac or dc	1 to 8V ac or dc
Safe Excitation Voltage	10V ac or dc	10V ac or dc
Input Resistance	350Ω ±2%	350Ω ±2%
Output Resistance	350Ω ±2%	350Ω ±2%
Compensated Temperature Range	10 to 50°C	10 to 70°C
Safe Temperature Range	0 to 60°C	-10 to 80°C
Temperature Effect on Zero Balance	±0.1%RO/°C	±0.01%RO/°C
Temperature Effect on Output	±0.1%/°C	±0.05%/°C
Mass, Approx.	150g	1.3kg
Cables	4-conductor (0.08mm ²) vinyl shielded heat-resistant cable, 3.2mm dia. x approx. 7m long; terminated with R05-PB5M connector plug	4-conductor (0.14mm ²) polyethylene insulated vinyl cabtyre cables, 6mm dia. x 5m long; each terminated with NDIS connector plug
Remarks	Calibration is made using the double belt and specifications stated above are based on measurements obtained with KYOWA's standard calibration method and test conditions. KYOWA can also manufacture the seat belt tension transducer of the rated capacity of 10kN (1.020tf) for a single belt as well as making calibration using the seat belt supplied by the customer.	Formerly, LST-2TBS
Dimensions		

<p>Description</p>	<p>Clamp-style Vehicle-borne Bridge Boxes DB-120S3, 1-channel DB-120S3-8, 8-channel</p> 	<p>Description</p>	<p>36-Division Barrier Impact Force Sensor Complex</p> 
<p>Outline</p>	<p>These compact bridge boxes adopt a sturdy gage lead-clamping system to ensure safe vehicle-borne applications.</p>	<p>Outline</p>	<p>Placed in front of the barrier, this sensor complex detects the impact-initiated load applied to each of 36 divisions of the barrier. It consists of 36 units arranged in four columns by nine rows; each unit consists of four load cells, providing a rated capacity of 200kN.</p>
<p>Applicable Sensors</p>	<p>Strain gages and strain-gage transducers of: 1-gage method 120Ω 2-gage method 120Ω Active-dummy method 60 to 1000Ω 4-gage method 60 to 1000Ω Selectable by slide switch</p>	<p>Rated Capacity (Reference Value)</p>	<p>200kN (20.39tf) per unit, 7.2MN (734.0tf) in total (200kN x 36 units)</p>
<p>Connection Terminal</p>	<p>Clamp style</p>	<p>Safe Overload Rating</p>	<p>200%</p>
<p>Connectable Wire Size</p>	<p>0.08 to 2.5mm² (bared wire length 5 to 6mm)</p>	<p>Rated Output, Approx.</p>	<p>0.5mV/V (1000 x 10⁻⁶ strain)</p>
<p>Operating Temp. Range</p>	<p>0 to 50°C</p>	<p>Non-linearity</p>	<p>±1.0%RO (static load calibration)</p>
<p>Operating Humi. Range</p>	<p>20 to 90%R.H. (no dew condensing)</p>	<p>Hysteresis</p>	<p>±1.0%RO (static load calibration)</p>
<p>Relay Cable</p>	<p>5m long; terminated with R05-PB5M and NDIS connector plugs</p>	<p>Input Resistance</p>	<p>350Ω ±2%</p>
<p>Dimensions</p>	 <p>1-channel DB-120S3</p> <p>8-channel DB-120S3-8</p>	<p>Compensated Temp. Range</p>	<p>0 to 60°C</p>
<p>Dimensions</p>		<p>Safe Temp. Range</p>	<p>0 to 70°C</p>
<p>Dimensions</p>		<p>Temp. Effect on Zero Bal.</p>	<p>±0.1%RO/°C</p>
<p>Dimensions</p>		<p>Temp. Effect on Output</p>	<p>±0.05%/°C</p>
<p>Dimensions</p>		<p>Natural Frequency</p>	<p>1kHz min.</p>
<p>Dimensions</p>		<p>Cables</p>	<p>4-conductor (0.5mm²) chloroprene coated cabtyre cables, 36 pieces, each measuring 9.5mm dia. x 7m long and connected directly to the internal circuit</p>
<p>Dimensions</p>		<p>Pressure Sensing Plate</p>	<p>Effective area: 966 x 2176mm Strength: Endures a concentrated load of 50kN (5.099tf)/10cm²</p>
<p>Dimensions</p>		<p>Remarks</p>	<p>The rated capacity, the number of divisions and the size of unit can be tailored to customer's requirements.</p>
<p>Dimensions</p>		<p>Dimensions</p>	