



Series 661 High Capacity Force Transducers

FEATURES

Single Piece Construction

► Units are machined from alloy steel forgings or bar stock and precision heat treated to provide good repeatability and linearity and low hysteresis.

High-Output Strain Gages

► Provide good sensitivity while still offering high axial stiffness, good overload capacity and long term stability and fatigue life.

Multi-Column Design

► Resists extraneous forces and moments for greater accuracy and provides for high lateral and overturning moment stiffness.

Massive, Low-Stressed Ends

► Ensure low hysteresis and minimal end attachment effect.

MTS 661 Series High Capacity Force Transducers are specifically designed for cyclic operation in through zero tension/compression and monotonic testing applications. Models are available to measure tension and compression forces of 55,000 to 1,100,000 lb (250 to 5000 kN).

The 661.2X and 661.3X Series Force Transducers are designed as single-piece structures machined from alloy steel forging or bar stock and precision heat treated to provide excellent repeatability and linearity and low hysteresis. In addition,

there are no welds or mechanical joints to fatigue or wear.

These high capacity force transducers feature a multi-column design which resists extraneous forces and moments for greater accuracy and provides for high lateral and overturning moment stiffness.

All of the Series 661.2X and 661.3X High Capacity Force Transducers are available with single or dual bridges. If both bridges will be used for output, a second dc controller or dc conditioner and second mating connector or cable is required.





Series 661 High Capacity Force Transducers

SPECIFICATIONS

Static Overload Capacity

- ▶ 150% of rated force capacity

Temperature Coefficient of Zero

- ▶ 0.0025% of full scale/°F
- ▶ 0.0045% of full scale/°C

Temperature Coefficient Of Output

- ▶ 0.003% of reading/°F
- ▶ 0.0055% of reading/°C

Compensated Temperature Range

- ▶ +50°F (+10°C) to +150°F (+66°C)

Useable Temperature Range

- ▶ -50°F (-46°C) to +200°F (+93°C)

Nominal Output Sensitivity At Full Scale Load

- ▶ 2 mV/V

Bridge Resistance

- ▶ 661.22C/D-01, 661.23E/F-01, 661.31E/F-01, 661.34E/F-01; 700 ohms
- ▶ 661.36C/D-03, 661.38A/B-01; 350 ohms

Hysteresis (% of full scale)

- ▶ 661.22C/D-01, 661.23E/F-01; 0.15
- ▶ 661.31E/F-01, 661.34E/F-01, 661.36C/D-03, 661.38A/B-01; 0.20

Non-linearity (% of full scale)

- ▶ 661.22C/D-01, 661.23E/F-01, 661.31E/F-01, 661.34E/F-01; 0.15
- ▶ 661.36C/D-03, 661.38A/B-01; 0.20

Maximum Excitation

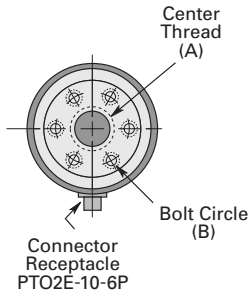
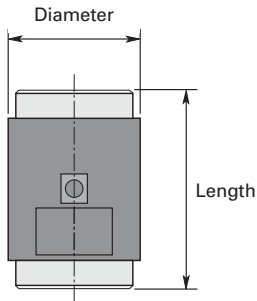
- ▶ 661.22C/D-01, 661.23E/F-01, 661.31E/F-01, 661.34E/F-01; 20 volts
- ▶ 661.36C/D-03, 661.38A/B-01; 15 volts

Calibration

- ▶ Each force transducer ordered may be calibrated by MTS using our automated calibration system at our factory or on-site by MTS Field Service. In addition, the force transducer and associated conditioning electronics may be returned to MTS for repair and recalibration.

Bolt Circle (B)

- ▶ 661.22 and 661.23 Models; none
- ▶ 661.31E-01; 1-14 UNS x 1.75 in. deep, 8 holes on a 6 in. diameter bolt circle
- ▶ 661.34E-01; 1 1/4-12 UNF x 2.50 in. deep, 8 holes on 7.00 in. diameter bolt circle.
- ▶ 661.36C-01; 1 1/2-12 UNF x 3 in. deep, 8 holes on a 10 in. diameter bolt circle
- ▶ 661.38A-01; 1 1/2-12 UNF x 3 in. deep, 16 holes on a 14 in. diameter bolt circle
- ▶ 661.31F-01; M27 x 2 mm x 44 mm deep, 8 holes on a 152.4 mm diameter bolt circle
- ▶ 661.34F-01; M30 x 2 mm x 63.5 mm deep, 8 holes on a 177.8 mm diameter bolt circle.
- ▶ 661.36D-01; M36 x 2 mm x 76.2 mm deep, 8 holes on a 254 mm diameter bolt circle
- ▶ 661.38B-01; M36 x 2 mm x 76.2 mm deep, 16 holes on a 355.6 mm diameter bolt circle



Model	Force Capacity (lb)/ Deflection at Rated Force Capacity (in)	Spring Rate (10 ⁶ lb/in)	Diameter (in)	Length (in)	Center Thread* (A)
661.22C-01	55,000/0.0025	22	5	8	1 1/2-12 UNF x 2.35 in
661.23E-01	110,000/0.003	36	6	8	2-12 UN x 2.00 in
661.31E-01	220,000/0.004	55	8.75	12	3-12 UNF x 3.00 in
661.34E-01	330,000/0.005	64	10.25	14	3 1/2-12 UN x 3.5 in
661.36C-03	550,000/0.006	92	13.75	17.25	4 1/2-8 UN x 6.00 in
661.38A-01	1,100,000/0.008	138	18.25	22	5-8 UN x 7.50 in

Model	Force Capacity (kN)/ Deflection at Rated Force Capacity (mm)	Spring Rate (10 ⁶ N/mm)	Diameter (mm)	Length (mm)	Center Thread* (A)
661.22D-01	250/0.064	3.9	127	203	M36 x 2 mm x 60 mm
661.23F-01	500/0.08	6.2	152	203	M52 x 2 mm x 51 mm
661.31F-01	1,000/0.10	10	222	305	M76 x 2 mm x 76 mm
661.34F-01	1,500/0.13	11.2	260	356	M90 x 2 mm x 89 mm
661.36D-03	2,500/0.15	17	349	438	M125 x 4 mm x 152 mm
661.38B-01	5,000/0.20	25	464	559	M125 x 4 mm x 190 mm

*Center thread information is for both ends of the unit.

MTS Systems Corporation
14000 Technology Drive
Eden Prairie, MN 55344-2290
952-937-4555, Fax 952-937-4515

Specifications Subject to Change Without Notice
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