

## Product Information

### Long travel extensometer

CTA: 43948 43962



Long-travel extensometer on an AllroundLine Z010

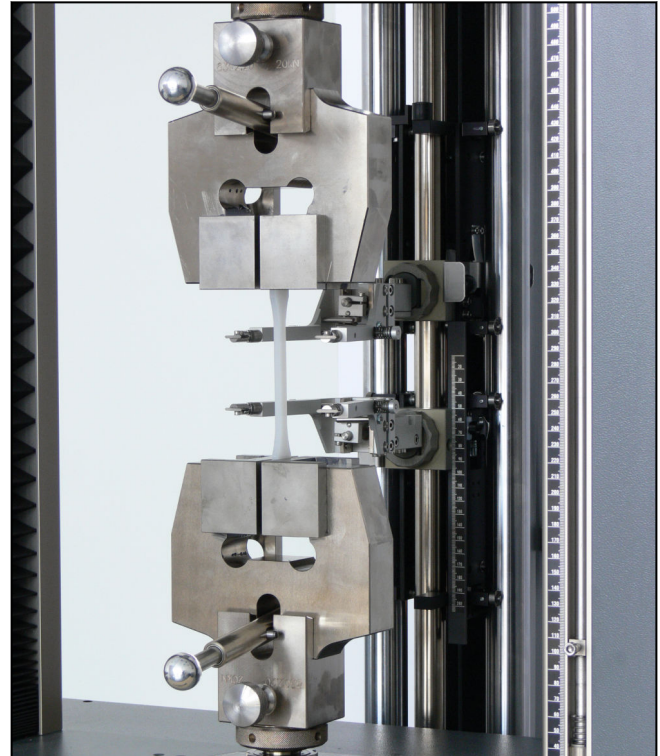
#### Applications

The long travel extensometer is designed for tests on elastic materials such as elastomers, flexible plastics, films, textiles, and leather. The solid mechanical design of the guide elements ensures reliable functionality even with specimens that show a whiplash effect at break. Standards-compliant secant modulus or E-modulus determination with the specified initial gauge length is not provided.

The extensometer is used for direct extension measurement for specimens with average and high elongation during tensile and hysteresis tests. Extended length sensor arms enable tests to be carried out in temperature chambers.

#### Function description

The measurement carriages are mounted with an extremely wide spacing between the bearings and the knife edges are tiltable. This makes the measuring system insensitive to impact loading such as may happen when some elastomeric specimen break. The measurement carriages are guided on two precision guide columns with the help of low-friction guide elements. This provides a low-force transmission of the



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extension; thus transmission errors are minimized. The mass of the carriage is counter balanced by counter weights.

#### Advantages and features

- Can be used up to specimen break, even with high loads and brittle specimen material.
- Very high resolution over the entire measurement range.
- Very large measurement travel.
- Synchronous force-displacement acquisition.
- The drag forces are very low.
- The long travel extensometer can be combined with all analog or digital clip-on extensometers or with a manual transverse strain extensometer.
- The extensometer is controlled automatically via the test program. At the start of the test, the sensor arms are attached via electric motor. At the end of the test they are detached and the initial gauge-length is reset via the crosshead movement.
- The extensometer has a robust construction with impact-resistant measurement system.
- Low-friction measuring-carriage mounting minimizes transmission errors.

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#### Technical data

Long travel extensometer for mounting on AllroundLine or cLine testing system

Type Item No.	Long-travel extensometer 1040304	
Initial gauge length	10 ... 200	mm
Measured displacement, max.	1000 - L <sub>0</sub>	mm
Resolution	1.5	µm
Accuracy to EN ISO 9513	Class 1 from 1 mm	
Drag force, max.	0.2	N
Specimen thickness, max.	depends on sensor arm	
Opening and closing of sensor arms	motorized	
Dimensions:		
Height	1760	mm
Width	192	mm
Depth	280	mm
Minimum version	all testXpert II / testXpert III	
Weight	29	kg

#### Accessories required

##### Required module

Description	ArticleNumber
Incremental measurement module	<b>046637</b>

##### Sensor arms for tensile tests

Item No.	325890	325892	325894	325896	1011227	
Sensor arm length	300	300	450 <sup>1)</sup>	600 <sup>1)</sup>	335	mm
Measurement travel	1000 - L <sub>0</sub>	1000 - L <sub>0</sub>	1000 - L <sub>0</sub>	1000 - L <sub>0</sub>	1000 - L <sub>0</sub>	mm
Resolution	1.5	1.5	1.5	1.5	1.5	µm
Specimen dimensions						
Round specimen						
Diameter, max.	30	110	30	30	30	mm
Flat specimen						
Width, max.	60	150	60	60	60	mm
Thickness, max.	30	85	30	30	30	mm
Ambient temperature	+10 ... +35	+10 ... +35	-70 ... +250	-70 ... +250	+10 ... +35	°C
Gripping force of the sensor arm	0.1 ... 3 (manually adjustable)	0.1 ... 3 (manually adjustable)	0.1 ... 3 (manually adjustable)	0.1 ... 3 (manually adjustable)	0.1 ... 3 (manually adjustable)	N

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Item No.	325890	325892	325894	325896	1011227	
Scope of delivery	2	2	2	2	2	piece(s)
For use with		AllroundLine	AllroundLine	AllroundLine	cLine	

1) Sensor arm length of 450 mm suitable for temperature chambers with a width of 400 mm, sensor arm length of 600 mm suitable for temperature chambers with a width of 600 mm (outer dimensions)

#### Optional accessories

##### Knife-edges for sensor arms

Included in delivery are steel knife-edges, each with one flat and one convex blade (swiveling).

Type	Application	Knife edges	Ambient temperature [°C]	Item No.
Interchangeable knife edges with corundum coating	Soft metal wires, round specimens	straight/straight	-70 ... +80	310876
Interchangeable knife edges with Vulkollan plate	Clamping-sensitive specimens, elastomers, soft materials	Straight/straight	-15 ... +70	031216
Interchangeable carbide knife edges	Metal wires, clamping-sensitive plastics and wires	Straight/round, radius 0.5 mm	-70 ... +250	037646
Interchangeable measuring insert with O-ring	Elastomers with high break energy	Straight/straight	-30 ... +110	1009207
Interchangeable measuring insert with rollers	Elastomers with high break energy and resilience	Specimen contact, pointed	-55 ... +180	1018413

Scope of delivery: 1 set = 4 pieces

##### Mounting parts for mounting the extensometer to a materials testing machine

The basic version of the long travel extensometer includes mounting parts for rigid mounting in connection with 300 mm long sensor arms. (not for cLine or new floor-standing testing machine)

##### Mounting variation for table-top testing machines

Description	ArticleNumber
Rigid mounting set (AllroundLine) <u>Use:</u> For rigid mounting with 300 mm long sensor arms <u>Mounting:</u> Attachment position in rear center at 90°	<b>Included</b>
<b>Swiveling mounting set (AllroundLine)</b> used to swivel the extensometer out of the center of the test area. Required for use with a temperature conditioning device. <u>Use:</u> For table-top testing machines with test area width of 440 mm, and sensor arm length of 300/450 mm. For table-top testing machines with test area width of 640 mm, and sensor arm length of 300/600 mm. <u>Mounting:</u> Attachment position in rear center at 90°/ rear left at 45°.	<b>315213</b>

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#### Mounting variations for floor-standing machines SN/SH/SE/SW/SR

Description	ArticleNumber
<b>Rigid mounting kit (AllroundLine)</b> <u>Use:</u> for rigid mounting with sensor-arm length 300mm <u>Mount:</u> mounting position rear center 90°	<b>1047338</b>
<b>Swiveling mounting kit (AllroundLine)</b> for swiveling the extensometer out of the test-area center. Required for use with temperature conditioning device <u>Use:</u> for sensor-arm length 300/600 mm for working-area width 640mm. <u>Mount:</u> mounting position rear center 90° / rear left 45°	<b>1047339</b>
<b>Swiveling mounting kit (AllroundLine)</b> for swiveling the extensometer out of the test-area center. Required for use with temperature chamber and / or 600 x 600mm mounting platform Additional swiveling of extensometer out of test area. <u>Use:</u> for sensor arms 300/600 mm in length for working-area width 640/1040 mm. <u>Mount:</u> mounting position rear center 90° / rear left 45°	<b>1067520</b>

#### Mounting variations for cLine

Description	ArticleNumber
<b>Swiveling mounting kit (cLine)</b> for swiveling the extensometer out of the test-area center. <u>Use:</u> for sensor arms 335 mm in length Required for cLine testing machines <u>Mount:</u> mounting position rear center 90°	<b>1011228</b>