

## Product Information

### Electromechanical Creep Testing Machine Kappa SS-CF

CTA: 219137 179371



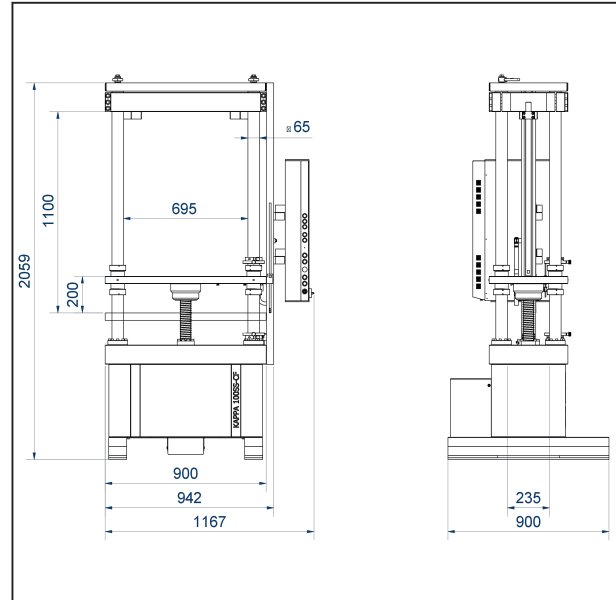
Kappa 100 SS-CF with videoXtens 1-32 HP/TZ and alternatively with contact-type extensometer

#### Applications

This patented electromechanical fatigue testing machine with play-free zero crossing has a central lead screw and is ideal for force and strain-controlled creep fatigue tests. The Kappa SS-CF provides maximum flexibility, covers the complete range of creep testing applications and is ideal for a variety of tests with alternating loads in both ambient temperature and high-temperature conditions.

- Force-controlled and strain-controlled creep fatigue tests with alternating loads (through zero), e.g., CF, LCF and TMF
- Advanced creep tests:
  - Strain modeling (e.g. determination of creep curve at different loads)
  - Creep test with slow strain rate (SSRT)
  - Creep data from components tests
- Static (CCG) and cyclic creep fatigue crack growth tests (CFCG)
- Determination of hydrogen embrittlement
- Relaxation tests
- Classic fatigue tests:
  - Creep, creep rupture
  - Stress rupture
- Short-term tensile, compression, and flexure tests can also be performed with this testing machine

PL\_ZRF\_88\_960\_06.2024



Kappa 50 / 100 SS-CF

#### Specific machine design

- Specially designed and patented for fatigue tests
- Load frame with play-free central lead screw drive and precision guidance provided via four steel columns for precise, axial loading
- Adjustable crosshead enables maximum flexibility in test area height
- High drive control frequency from 1000 Hz, which enables precise force and strain control for a large application range.
- High-resolution force and travel measurement for optimum control properties, especially at very low test speeds
- Precise loading speed with  $\pm 0.1\%$  tolerance of the set speed in the measurement range of  $1\mu\text{m/h}$  to  $100\text{ mm/min}$  unloaded or under constant load
- Precision testing machine to DIN EN ISO 7500-1

#### Axial alignment

- Central lead screw for axial alignment to ASTM E292
- Accessories: Fixed load spring for alternating tensile/compression loading with optimal alignment properties to ASTM E012
- Option: Alignment fixture for axial alignment to ISO 23788:2012 and NADCAP requirements ( $\pm 5\%$  flexural stress)

## Product Information

### Electromechanical Creep Testing Machine Kappa SS-CF

Type Kappa	50 SS-CF	50 SS-CF	100 SS-CF	100 SS-CF	
Item No.	MP02366	MP02728	MP02372	MP02384	
Test load $F_{max}$	50	50	100	100	kN
<b>Test area</b>					
Height	1090 <sup>1)</sup>	1290 <sup>2)</sup>	1090 <sup>1)</sup>	1290 <sup>2)</sup>	mm
Width	695 <sup>3)</sup>	695 <sup>3)</sup>	695 <sup>3)</sup>	695 <sup>3)</sup>	mm
Crosshead travel	200	200	200	200	mm
<b>Load frame</b>					
Dimensions					
Height	2060	2260	2060	2260	mm
Width	900	900	900	900	mm
Width with machine electronics	1170	1170	1170	1095	mm
Depth	900	900	900	900	mm
Weight					
With machine electronics, approx.	1250	1280	1250	1280	kg
<b>Drive</b>					
Crosshead speed $v_{min} \dots v_{max}$	1 ... 250	1 ... 250	1 ... 250	1 ... 250	$\mu\text{m/h} \dots \text{mm/min}$
Deviation from the set drive speed, max.	$\pm 0.1^{4)}$	$\pm 0.1^{4)}$	$\pm 0.1^{4)}$	$\pm 0.1^{4)}$	% of $v_{actual}$
Drive travel resolution	0.136	0.136	0.136	0.136	nm
Crosshead return speed, max.	250	250	250	250	mm/min
<b>Power input specifications</b>					
Power supply voltage	230	230	230	230	VAC
Power consumption (full load), approx.	2.3	2.3	2.3	2.3	kVA

<sup>1)</sup> Maximum distance from the moving crosshead to the height-adjustable crosshead or base crosshead, without any accessories Only LCF applications are possible with this test area height

<sup>2)</sup> Maximum distance from the moving crosshead to the height-adjustable crosshead or base crosshead, without any accessories All creep testing applications are possible with this test area height

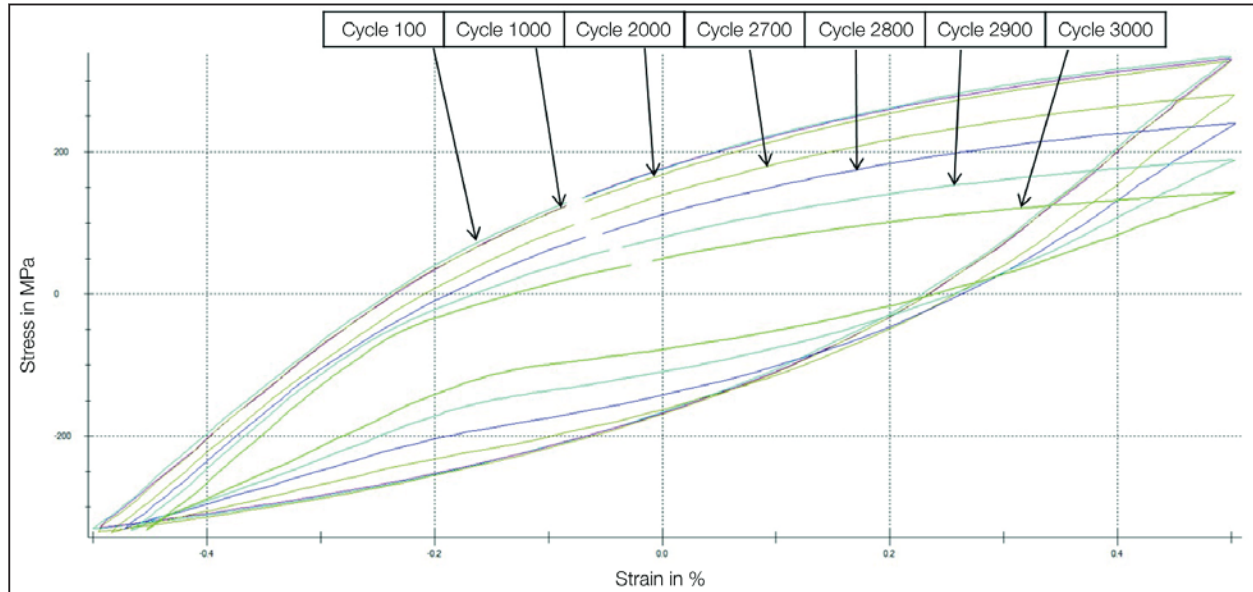
<sup>3)</sup> Clearance between the lead screws

<sup>4)</sup> Measured over an interval of at least 5 s or 10 mm travel

## Product Information

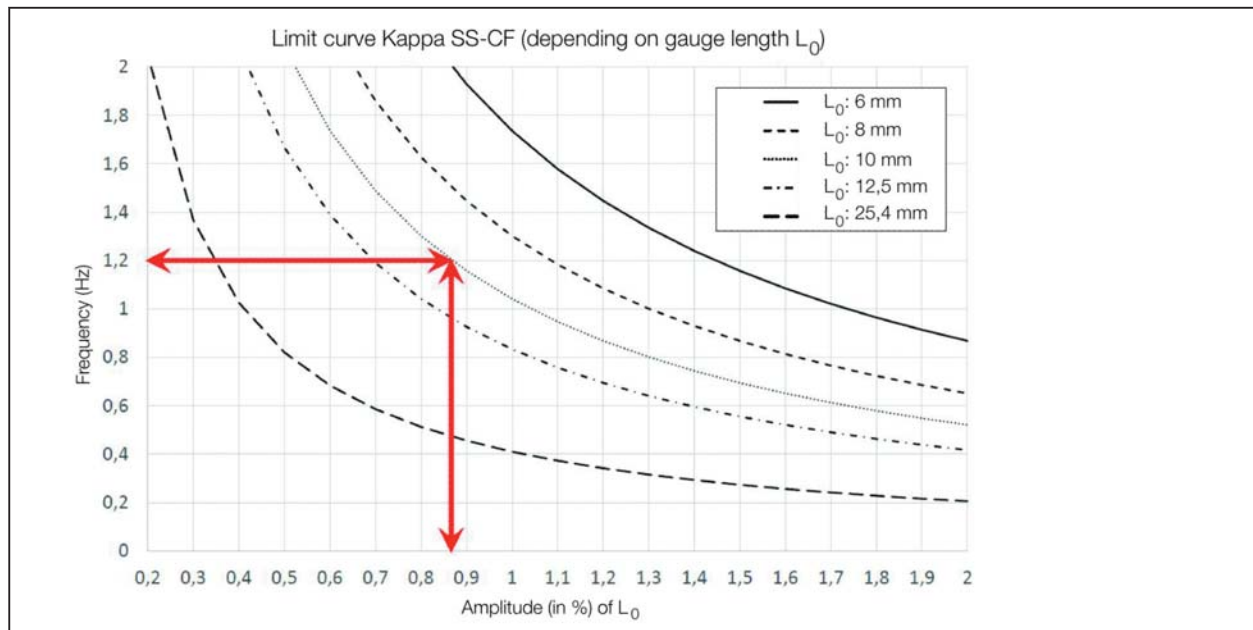
### Electromechanical Creep Testing Machine Kappa SS-CF

CTA: 217030



Stress-strain curve

CTA: 217029



Dependency between alternating stress and amplitude

Example: for a gauge length of 10 mm and a frequency of 1.2 Hz, the max. amplitude is 0.87% (= 0.087) of

the initial gauge length and vice versa. The application range is below the limit curve.

## Product Information

### Electromechanical Creep Testing Machine Kappa SS-CF

#### Overview of the Kappa SS-CF range of application

