

Digital Tensile Force Indication Instrument Series: SA 310



The instruments for installation series **SA 310** are precise analogue amplifier destined for all Tensometric tensile-force-measuring components.

A digital display indicates with big, red digits the measured values.

The instruments are destined for installation in machines, panels test-areas etc.

Due to the great variety for service-voltages and output-signals it can be fitted into most of existing measuring-concepts.

SA 310 DMS - S

by means of the switch at the front-page, it can be switched-over between operation " normal " and " peak-value-indication "

By that, p.e.: it is possible to control continuously the peak of the warp in weaving-machines

Measuring range: depends on the connected measuring head

Control-system: with the built-in analogue amplifier the instrument is suited for taking-up the actual - value of the tensile forces as well for high-dynamic automatic control-systems

Connections: easy connection via plug at the rear of the instrument
Tensometric components easy can be put-in

for utilization

- of Tensometric strain-gage-sensors,	series 11xx,
- of Tensometric capacitive sensors,	series 1xx
- of Tensometric sensor with amplifier,	series 3xx
- of Tensometric amplifier KVM 10	

instrument is able to supply the corresponding service-voltage

at the additional output-socket at the front-page of the instrument,
reorder or other control-instruments can be connected

Calibration: easy adjustment of the calibration in combination with a sensor.
Adjustment of the zero - (tare) and amplifier (calibration) of the meas. signal is executed by the recessed potentiometer at the front-page of the instrument.

Damping: an infinitely adjusted damping allows a smooth indication,
even with fluctuating tensile forces.
The damped measuring-signal is available as an output-signal
at the rear of the instrument

Over-load indication: The built-in lamp signalized an overload of the connected sensor.

Technical data series : SA 310:

<i>Indication:</i>	3 ½ - digits, LED -digital-display
<i>max. Indication:</i>	1000
<i>Height:</i>	9,4 mm
<i>Indication-frequency:</i>	2,5 Hz
<i>Adjusting:</i>	damping the indication- and output-signal electrical zero (Offset) adjusting the amplifier infinitely (calibration)
<i>Amplifier :</i>	analogue amplifier
<i>Limit. frequency (-3 dB) :</i>	300 Hz
<i>Measuring error:</i>	< 0,1 % v.E.
<i>Output:</i>	rear: 1. output 0 - 10 V 2. output 0 - 10 V damped at a 5 pol. output-socket
	Options: - current 0 - 20 mA, 4 - 20 mA max. load 500 Ω
	- galvanically separate output 0 - 10 V (ISO)
	- MIN - MAX alarm via optokoppler - output Threshold for the marginal-value must be external defined per tension 0 - 10 V and supplied to the instrument.
	front-page : 1. output 0 - 10 V (not SA 310 S) at a 2 pol. output-socket
<i>Aux. tension for connected amplifier:</i>	± 15V
<i>Service-voltage:</i>	230 V AC, 45 - 60 Hz, 8 VA Option: 110 V AC, 45 - 60 Hz 5 V DC, 12 V DC, ± 15 V DC
<i>Housing:</i>	DIN - Format 96 x 48mm, depth : 164 mm
<i>Mounting:</i>	with DIN fixing screws
<i>Protection DIN 40050:</i>	IP 30
<i>Ambient temperature:</i>	operation - range: 5°C up to + 60°C, storage-r ange : -40°C up to +80°C
<i>Weight:</i>	approx. 540 g.
<i>Included in delivery:</i>	instrument, for each socket - one plug, mounting-clips, instr. manual

Information to order the instrument :

Connection :	Type of instrument :
for connection of capacitive Tensometric sensors series 1**:	SA 310 - N
for connection of Tensometric sensors with built-in amplifier, series 3** , series 13** and KMV – amplifier:	SA 310 - E
for connection of Tensometric strain-gage-sensors series 11**:	SA 310 DMS
for connection of Tensometric strain-gage-sensors series 11** with switch for "peak-value-indication" -> "actual-value-indication":	SA 310 DMS - S