TECHNICAL DATA SHEET | APA95ML | v3.3

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TABLE OF STANDARD PROPERTIES OF USE AND MEASUREMENT

The properties defined in the table below, are set up according to the technical conditions of use and measurement. These properties are warranted within their variation range and in compliance with the standard technical conditions of use.

Properties APA95ML	Standard technical conditions	Unit	Nominal values	Min. values	Max. values
Notes		-	-	-	-
Max. no load displacement	*Quasistatic excitation, blocked-free*	*µm*	*94*	*85*	*122*
Blocked force	*Quasistatic excitation, blocked-free*	*N*	*1900*	*1520*	*2280*
Stiffness	*Quasistatic excitation, blocked-free*	*N/µm*	*20,21*	*16,17*	*22,23*
Resonance frequency (free-free)	*Harmonic excitation, blocked-free, on the admittance curve*	*Hz*	*7000*	*5950*	*7700*
Response time (free-free)		*ms*	*0,07*	*0,06*	*0,08*
Resonance frequency (blocked-free)	*Harmonic excitation, free-free, on the admittance curve*	*Hz*	*2000*	*1700*	*2200*
Response time (blocked-free)		*ms*	*0,25*	*0,23*	*0,29*
Capacitance	*Quasistatic excitation, free-free, on the admittance curve*	*µF*	*20,00*	*18,00*	*26,00*
Max. no load displacement at resonance	*Max. harmonic excitation, free-free*	*µm p-p*	*85*	*68*	*102*
Max. voltage at resonance	*Max. harmonic excitation, free-free*	*Vrms*	*9,00*	*7,20*	*10,80*
Force limit (0-pk)	*Max. harmonic excitation, free-free*	*N*	*950,00*	*760,00*	*1045,00*
Resolution	*Quasistatic excitation*	*nm*	*0,94*	-	-
Height (in actuation direction)		*mm*	*60,00*	*59,90*	*60,10*
Length		*mm*	*80,10*	*80,00*	*80,20*
Width (excl. wedge & wires)		*mm*	*20,00*	*19,95*	*20,05*
Width (incl. wedge & wires)		*mm*	*22,50*	*21,50*	*24,00*
Mass		*g*	*164,0*	-	-
Standard mechanical interface	*2 flat surfaces 9*20 mm² with 2 Ø 3.2 mm holes, centred at 5 mm from the side*	-	-	-	-
Standard electrical interface	*2 PTFE insulated AWG26 wires 300 mm long with Ø 1 banana plug*	-	-	-	-

PROPERTIES STANDARD TECHNICAL CONDITIONS OF USE AND MEASUREMENT

Free-free : The actuator is not fixed
Blocked-free : The actuator is fixed to a mechanical support assumed infinitely stiff
Quasistatic excitation : AC voltage between –20 and 150 V at 1 Hz
Harmonic excitation : Voltage of 0.5 Vrms, sinusoidal mode from 0 to 100 kHz
Max. harmonic excitation : Voltage defined by the measurement of max. displacement, sinus at resonance frequency
Displacement measurement : Laser interferometer, capacitive displacement sensor
Admittance measurement : HP 4194 A or Cypher C60 electrical impedance analyser
Environment : Ambient temperature (15-25°C) and dry air (Humidity < 50 % rH)

Any technical conditions of use, different from those defined above, can lead to temporary or definitive alterations of properties. Thank you to contact CEDRAT TECHNOLOGIES before using actuators under non standard technical conditions.

FACTORY TESTS CARRIED OUT

☒ Test 1 : Electrical admittance vs. Frequency, free-free
☒ Test 2 : Displacement vs. input voltage

EXTRA FACTORY TESTS

☐ Test 3 : Gain and linearity of the sensor
☐ Test 4 : Step response in closed loop
☐ Test 5 : Stability in closed loop

MECHANICAL INTERFACE

☒ [FI] Flat Interface
☐ [SV] Specific version
☒ [H] Flat Interface with hole
☒ [FF] Free-free Interface
☒ [TH] Flat Interface with threaded hole
☒ [SI] Specific interface

AVAILABLE OPTIONS

☒ [SG] Strain gauges
☐ [ECS] Eddy current displacement sensor
☐ [NM] Non-magnetic
☒ [VAC] Vacuum