

TABLE OF STANDARD PROPERTIES OF USE AND MEASUREMENT

The XY300M-SG stage includes Strain gages (SG) positioning sensors on each axis as well as a SG conditioner embedded on the PCB. This XY300M-SG stage displacement per axis is valid from -40 °C to +65 °C temperature range.

The picture shows the XY300M-SG stage with a metallic cover option not detailed in the interface control document below.



NON CONTRACTUAL PICTURE

NOTES

PROPERTIES	STANDARD TECHNICAL CONDITIONS	UNIT	NOMINAL VALUES
Sensor options	SG, ECS	-	-
Mastered motions	TX, TY	-	-
Max. no load displacement	Quasistatic excitation, blocked-free (Tx, Ty)	µm	300
Unloaded resonance frequency (in the actuation's direction)	Harmonic excitation, blocked-free, on the admittance curve	Hz	340
Capacitance (per electrical port)	Quasistatic excitation, blocked-free, on the admittance curve	µF	4.2
Height (Z axis)		mm	21
Dimensions (X&Y)		mm	95×95
Mass		g	355
Standard mechanical interface (payload)	1 Ø 29 mm hole + 4 M2 on Ø 32.6 mm	-	-
Standard mechanical interface (frame)	4 Ø 5 mm holes on [] 85	-	-
Standard electrical interface	1 Nicomatic connector ref 221R16F26		

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**

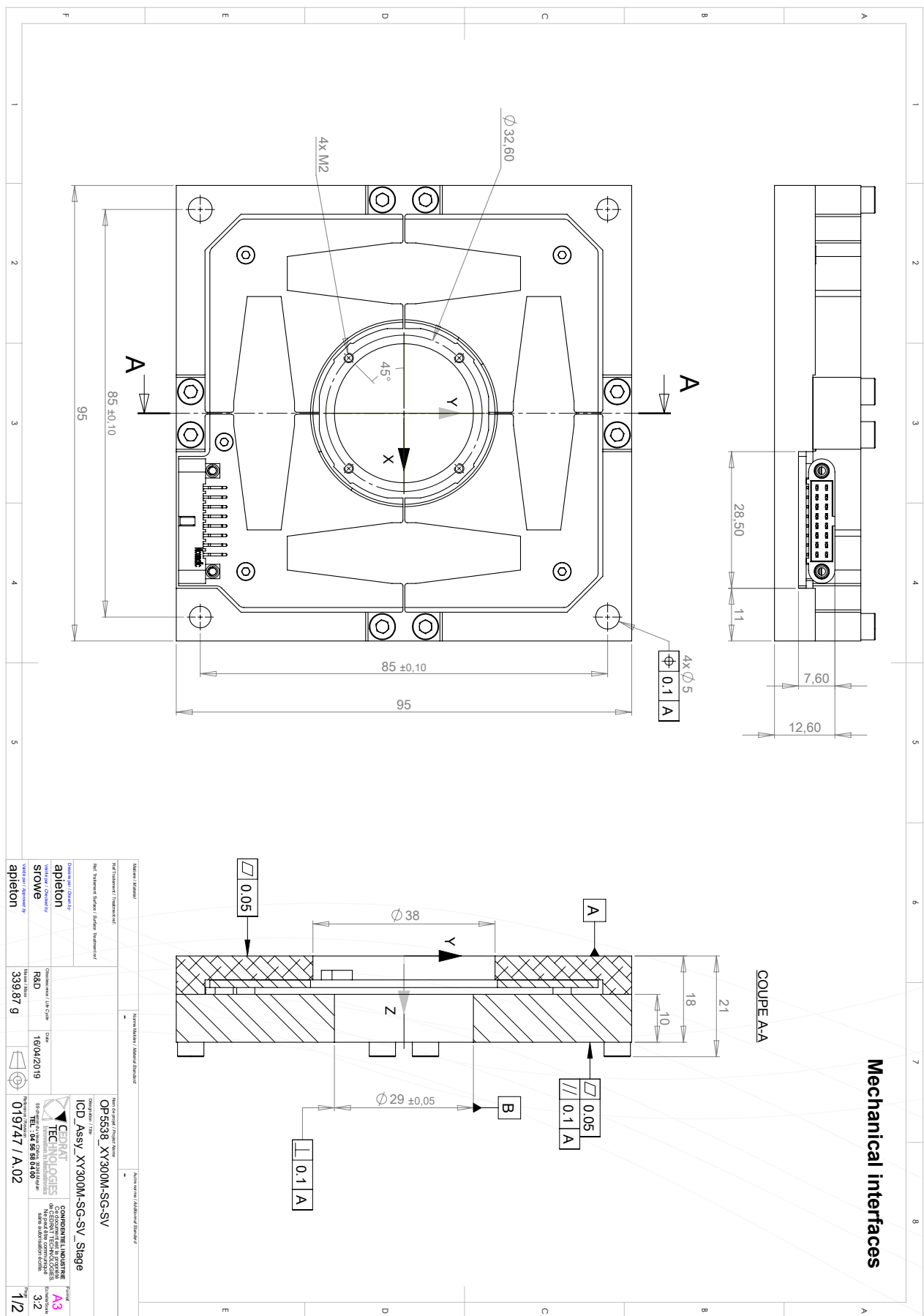
OPTIONAL EXTRA FACTORY TESTS

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

AVAILABLE OPTIONS

- > **[SG] Strain gauges**
- > **[ECS] Eddy current displacement sensor**
- > **[SI] Specific interface**
- > **[VAC] Vacuum**
- > **[SV] Specific version / customization**

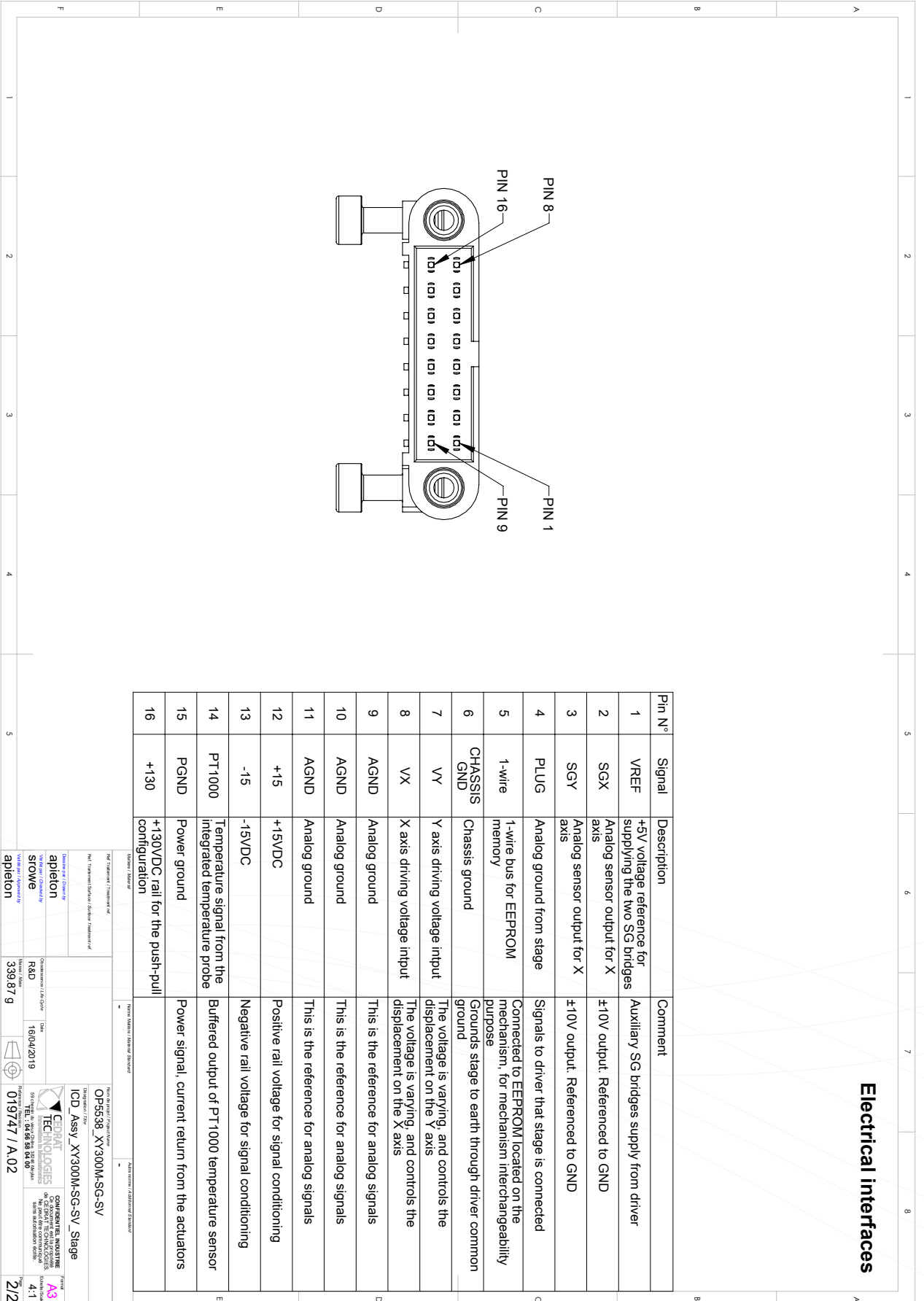
DRAWINGS



Mechanical interfaces

(Material / Matière) Non traité / Non traité		(Matière / Matière) Non traité / Non traité	
(Procédé de traitement / Traitement) Non traité / Non traité		(Procédé de traitement / Traitement) Non traité / Non traité	
(Nom du fournisseur / Fournisseur) apletion		(Nom du fournisseur / Fournisseur) apletion	
(Date de conception / Conception) 16/04/2019		(Date de conception / Conception) 16/04/2019	
(Nom de l'ingénieur / Ingénieur) SLOWE		(Nom de l'ingénieur / Ingénieur) SLOWE	
(Statut de l'avis / Avis) 339/87 g		(Statut de l'avis / Avis) 339/87 g	
(Révision / Révision) 019/47 / A.02		(Révision / Révision) 019/47 / A.02	
(Nom de l'actuateur / Actuateur) OP5538 XY300M-SG-SV		(Nom de l'actuateur / Actuateur) OP5538 XY300M-SG-SV	
(Nom de l'ensemble / Ensemble) ICD Assy XY300M-SG-SV_Stage		(Nom de l'ensemble / Ensemble) ICD Assy XY300M-SG-SV_Stage	
(Échelle / Échelle) 3:2		(Échelle / Échelle) 3:2	
(Format / Format) A3		(Format / Format) A3	

TYPICAL PERFORMANCE CHARACTERISTICS



Electrical interfaces

Pin N°	Signal	Description	Comment
1	VREF	+5V voltage reference for supplying the two SG bridges	Auxiliary SG bridges supply from driver
2	SGX	Analog sensor output for X axis	±10V output. Referenced to GND
3	SGY	Analog sensor output for X axis	±10V output. Referenced to GND
4	PLUG	Analog ground from stage	Signals to driver that stage is connected
5	1-wire	1-wire bus for EEPROM memory	Connected to EEPROM located on the mechanism, for mechanism interchangeability purpose
6	CHASSIS GND	Chassis ground	Grounds stage to earth through driver common ground
7	VY	Y axis driving voltage input	The voltage is varying, and controls the displacement on the Y axis
8	VX	X axis driving voltage input	The voltage is varying, and controls the displacement on the X axis
9	AGND	Analog ground	This is the reference for analog signals
10	AGND	Analog ground	This is the reference for analog signals
11	AGND	Analog ground	This is the reference for analog signals
12	+15	+15VDC	Positive rail voltage for signal conditioning
13	-15	-15VDC	Negative rail voltage for signal conditioning
14	PT1000	Temperature signal from the integrated temperature probe	Buffered output of PT1000 temperature sensor
15	PGND	Power ground	Power signal, current return from the actuators
16	+130	+130V/DC rail for the push-pull configuration	

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