

The DTT60SM-SG is a piezo Tip Tilt Platform for Fast Steering Mirror (FSM). For instance it is relevant for line of sight stabilisation inside electro-optic systems. The load interface can welcome different mirrors' size and quality. The mirror shown in the picture is a glass mirror with 25mm diameter and 6mm thickness.

The DTT60SM-SG performances given in the table below are obtained with a two push-pull channel controller. This controller is mounted inside a desktop rack (RK42F-3U). The input commands are analogue signal (+/-10V), the controller parameters can be set up through a graphical user interface (GUI) and USB connector, and the positioning sensor feedback can be read out in analog signal through BNC plug.



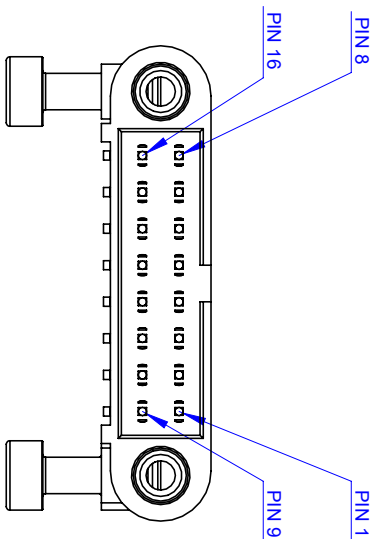
Fig. 1.a: DTT60SM-SG-SV01 with 25mm diameter mirror

NON CONTRACTUAL PICTURE

PROPERTIES	STANDARD TECHNICAL CONDITIONS	UNIT	NOMINAL VALUES
<b>&gt; Notes</b>		Preliminary data	
Sensor options	SG	-	-
Mastered motions	RX,RY	-	-
RX, RY Angular displacement	+/- 20% stroke variation in closed loop over the operating temperature range	mrad ( +/-)	5
Unloaded resonance frequency	Blocked-free	Hz	1746
Loaded resonance frequency	Blocked-free with 26mm × 6mm BK7 mirror	Hz	1272
Loaded resonance frequency	Blocked-free with 40mm × 5mm BK7 mirror	Hz	806
Settling time	Quasistatic excitation, blocked-free	ms	2
Capacitance (per channel)	Quasistatic excitation, free-free, on the admittance curve	µF	3
Angular resolution		µrad	1
Operating temperature	For FSM only	°C	-40+70
Height (Z axis)	See ICD		
Diameter	See ICD		
Mass	See ICD		
Standard mechanical interface (payload)	See ICD		
Standard mechanical interface (frame)	See ICD		
Standard electrical interface	See ICD		
Number of controller channels			2



Electrical interface



Pin N°	Signal	Description	Comments
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 Y 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	Reference for analog signals
10	AGND	Analog ground	Reference for analog signals
11	AGND	Analog ground	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	+130VDC rail for the push-pull configuration	

Part Name / Description ICD Assy_DTT60SM-SG		Part Name / Description AAR0406 DTT60SM	
Manufacturer / Supplier ICD ASSY_DTT60SM-SG		Manufacturer / Supplier AAR0406 DTT60SM	
Drawing / Revision 020075 / A.03		Drawing / Revision 020075 / A.03	
Date 24/06/2019		Date 24/06/2019	
Weight / Volume 438.39 g		Weight / Volume 438.39 g	
Material / Finish A3		Material / Finish A3	
Supplier / Reference 2/3		Supplier / Reference 2/3	