

IG-Mini Geared Servo Actuator

Ultra-Compact Precision Geared Servo Actuator

IG-Mini Comprising ...

- Precision Dual-Stage Planetary Gear 090
- Integrated Low-Voltage DC Brushless Pancake Motor
- High Resolution Encoder Plus Halls

Actuator Options ...

- Gearbox Ratio 49:1
- Motor Voltage; 48v
- Motor Rated Power; 320W
- Backlash Specification: ≤ 3 Arc Min
- IP Rating Options: IP65



PMW Dynamics Limited

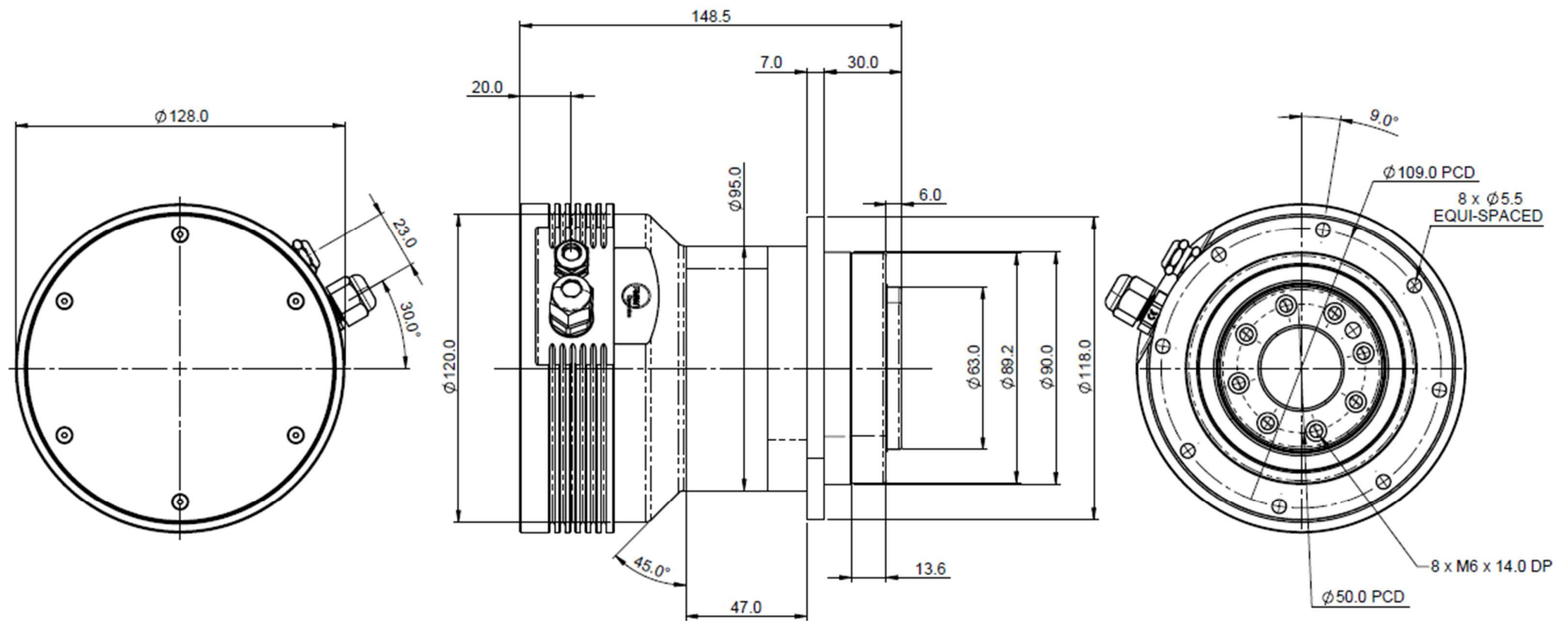
Newman Lane | Alton | Hampshire | GU34 2QW | United Kingdom

T +44 (0) 1420 594 140 | E sales@pmwdynamics.com | W pmwdynamics.com

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Outline Drawing



High Performance ULT - Gearbox Variant

Gearbox Type	ULT	
Actuator Ratio	49	:1
Motor Rated Power	0.32	kW
Rated Output Torque ⁷	45	Nm ²
Rated Output Speed	60	RPM
Peak Output Torque ⁷	90	Nm
Speed at Peak Torque	50	RPM
Rated Current	11.0 (48V Motor)	A RMS
Motor Ke/Kt - 48V Rated Voltage Winding (+/- 10%)	Ke 0.1220 VS/Rad Kt 0.0995 Nm/Arms	
48V Motor Inductance (mH) & Resistance (+/- 10%)	0.327 mH 0.110 Ω	
Electrical Properties		
Motor Pole Pairs	5	Poles Pairs
Encoder	Differential Output ABI Output - 1,024 PPR (4,096 CPR)	
Thermistor	NTC	
Mechanical Properties		
Max. Backlash	≤8	Arc Minutes
Torsional Stiffness	32	Nm/min
Tilting Moment	95	Nm
Max Axial Load	1,450	N
Max Radial Load	2,050	N
Operating Life	20,000	Hours
Operating Temperate	-10 to +45	Degs C
Protection Class	IP65	
Efficiency	> 94% @ Full Rated Gearbox Torque	
Lubrication	Lifetime lubrication (Grease)	

Motor Performance

320 Watt Motor | Rated Torque 1.0 Nm | Rated Speed 3,000 RPM | Peak Torque 2.0 Nm | Speed at Peak Torque 2,800 RPM

Please note that motor voltage designations are maximum charge voltages for battery packs. Nominal operating DC BUS voltage are as follows ...

48V Motor – 42V DC (i.e. published motor rated performance achieved @ 42V DC BUS)

Please note that motors are available without gearhead and as frameless component sets. Please ask our Application Team for further details

Important Notice

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IG-Mini Electrical Connections

Encoder	
+5V	RED
Gnd	BLUE
A	PINK
$\overline{A}$	GREY
B	GREEN
$\overline{B}$	YELLOW
Z	WHITE
$\overline{Z}$	BROWN
HALL U	BLACK
HALL V	PURPLE
HALL W	PINK & GREY
SCREEN	BRAID

Motor Phase Wire IDENTs	
Phase U	U or 1
Phase V	V or 2
Phase W	W or 3
SCREEN	BRAID

Thermistor	
NTC +	YELLOW
NTC -	YELLOW

Motor Power
Thermistor



Encoder