

# 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:  $\leq 3$  Arc Min
- IP Rating Options: IP65



PMW Dynamics Limited

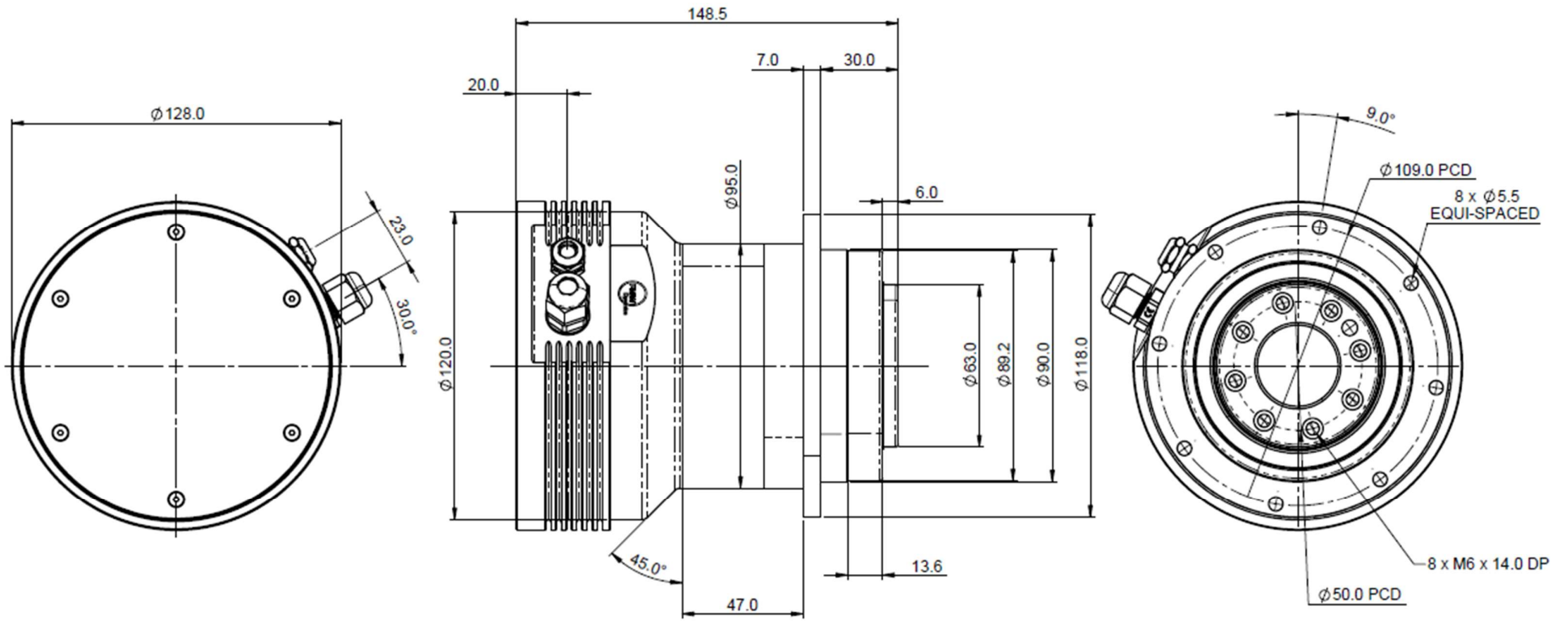
Newman Lane | Alton | Hampshire | GU34 2QW | United Kingdom

T +44 (0) 1420 594 140 | E [sales@pmwdynamics.com](mailto:sales@pmwdynamics.com) | W [pmwdynamics.com](http://pmwdynamics.com)

© PMW Dynamics Limited 2024 -- Drawing No: 6112709[2] Issue August '24

Provisional Datasheet. Contents subject to change without notice. Please contact PMW Dynamics to confirm specific performance and/or physical properties that are critical for your application

Outline Drawing



## High Performance ULT - Gearbox Variant

Gearbox Type	ULT	
Actuator Ratio	49	:1
Motor Rated Power	0.32	kW
Rated Output Torque <sup>7</sup>	45	Nm <sup>2</sup>
Rated Output Speed	60	RPM
Peak Output Torque <sup>7</sup>	90	Nm
Speed at Peak Torque	50	RPM
Rated Current	11.0 (48V Motor)	
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
Brake Holding Torque	4	Nm
Operating Life	20,000	Hours
Operating Temperature	-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

Provisional Datasheet: Contents subject to change without notice

Please contact PMW Dynamics to confirm specific performance and/or physical properties that are critical for your application

## 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