RH Series Harmonic Actuator

(Dual encoder)

Understand What You Need In Heart
And Know How To Make Effort Diligently

- Low Speed Steady
- Low Noise
- High Precision
- High Load Capacity
- Precise Control
- Easy To Operate

Diversified Application Scenarios

Robotic Arm

Food Processing

Medical Equipment

CNC Bed

Shipbuilding Industry

Aviation Industry

EPS-RH Series Naming Conventions

EPS-RH-17-100-C-B-D

① ② ③ ④ ⑤ ⑥ ⑦

① Brand Name E-Efficency P-Precision S-Smart

② RH Stands For The Series Name: Harmonic Actuator

③ Harmonic Model e.g: 14/17/20/25/32 etc

④ Reduction ratio 1:100

⑤ Communication C/E: CAN BUS and EtherCAT

⑥ N: Without Brake B: with Brake

⑦ D: Dual Encoder S: Single Encoder

For example

Model **EPS-RH-20-100-C-N-D**

Illustrate

EPS: Brand Name
RH: Harmonic Module
20: Harmonic Model
100: Harmonic gear ratio 100:1
C: Communication C: CAN BUS
N: Without Brake
D: Dual encoder

Series Name
EPS-RH

Motor Simplified Name
RH-14

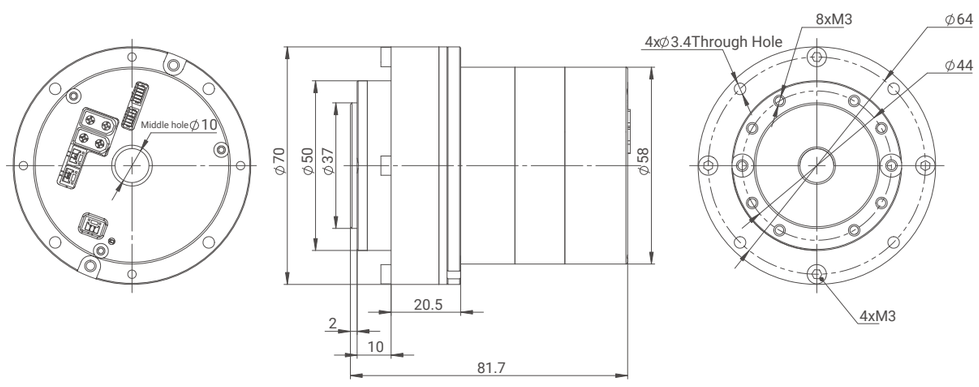
Off Axis Encoder

Actuator Full Name	Communication	With Brake/Without Brake	Gear ratio
EPS-RH-14-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100

* 1. The standard motor can support without brake.
* 2. The standard motor no IP protection. If need IP54 please contact salesman before order.
* 3. This product also supports a reduction ratio of 50:1. Please contact sales to confirm the delivery time before ordering.

Installation Drawing

EPS-RH-14-100-E-N-D



Product Parameters

Parameters		Unit	RH-14
Gear ratio		—	50 | 100
Input Voltage		V	48
No Load Speed		RPM	60 | 30
No Load Current		A	0.4 | 0.4
Rated Speed		RPM	50 | 25
Rated Torque		N.m	5.5 | 11
Rated Power		W	28
Rated Current		A(rms)	2.8
Peak Torque		N.m	14 | 28
Peak Current		A(rms)	5.7
Efficiency		%	—
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	2 | 4
Motor Phase Resistance		Ω	0.62
Motor Phase Inductance		mH	0.43
Pole Pair		—	10
Cogging Torque		N.m	—
3 Phase Connection		—	Y
Back Drive Torque		N.m	—
Backlash		Arcsec	< 40
Radial Load	Static load	KN	8.6
	Dynamic load	KN	5.8
Axial Load	Static load	KN	58.7
	Dynamic load	KN	16.2
Inertia	N	$kg.m^2$	0.11 | 0.29
	B	$kg.m^2$	— | 0.32
Encoder Type		—	Dual Encoder ABS-17BIT (Input) | ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		—	CAN BUS and EtherCAT
Weight	N	Kg	0.78
	B	Kg	/
Insulation Grade		—	F

*** Rated torque test method:** When the ambient temperature is 24 degrees Celsius (no other heat dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

Series Name
EPS-RH

Motor Simplified Name
RH-17

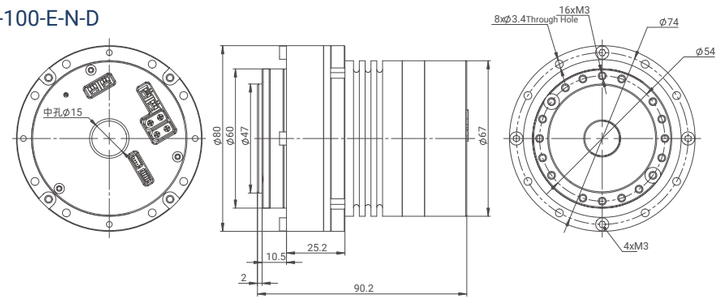
Off Axis Encoder

Actuator Full Name	Communication	With Brake/Without Brake	Gear ratio
EPS-RH-17-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100
EPS-RH-17-100-E-B-D	CAN BUS and EtherCAT	B (with brake)	100

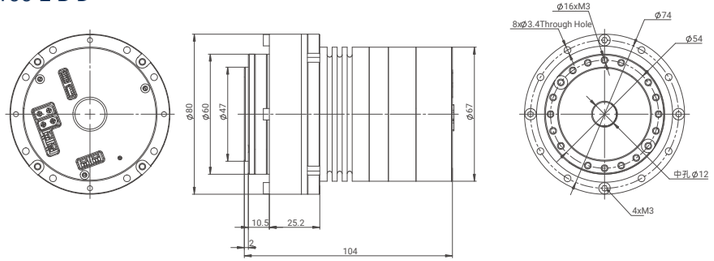
* 1. The standard motor can support both brake or without brake.
* 2. The standard motor support CAN BUS and EtherCAT.
* 3. The standard motor no IP protection. If need IP54 please contact salesman before order.
* 4. This product also supports a reduction ratio of 50:1. Please contact sales to confirm the delivery time before ordering.

Installation Drawing

EPS-RH-17-100-E-N-D



EPS-RH-17-100-E-B-D



Product Parameters

Parameters		Unit	RH-17
Gear ratio		—	50 | 100
Input Voltage		V	48
No Load Speed		RPM	60 | 30
No Load Current		A	0.6 | 0.6
Rated Speed		RPM	50 | 25
Rated Torque		N.m	17.5 | 35
Rated Power		W	91
Rated Current		A(rms)	4.7
Peak Torque		N.m	27 | 54
Peak Current		A(rms)	7.4
Efficiency		%	—
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	3.7 | 7.4
Motor Phase Resistance		Ω	0.70
Motor Phase Inductance		mH	0.47
Pole Pair		—	10
Cogging Torque		N.m	—
3 Phase Connection		—	Y
Back Drive Torque		N.m	—
Backlash		Arcsec	< 40
Radial Load	Static load	KN	16.3
	Dynamic load	KN	10.4
Axial Load	Static load	KN	78.2
	Dynamic load	KN	20.8
Inertia	N	$kg.m^2$	0.16 | 0.52
	B	$kg.m^2$	0.18 | 0.56
Encoder Type		—	Dual Encoder ABS-17BIT (Input) | ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		—	CAN BUS and EtherCAT
Weight	N	Kg	1.11
	B	Kg	1.28
Insulation Grade		—	F

*** Rated torque test method:** When the ambient temperature is 24 degrees Celsius (no other heat dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

Series Name
EPS-RH

Motor Simplified Name
RH-20

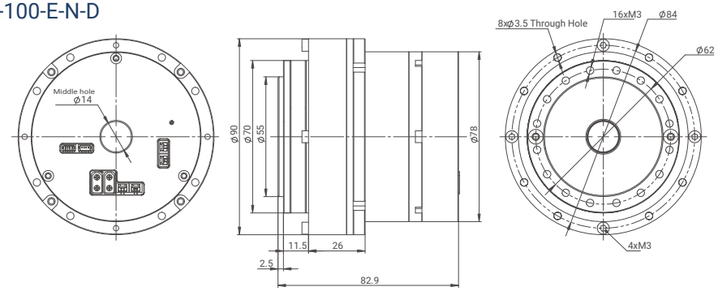
Off Axis Encoder

Actuator Full Name	Communication	With Brake/Without Brake	Gear ratio
EPS-RH-20-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100
EPS-RH-20-100-E-B-D	CAN BUS and EtherCAT	B (with brake)	100

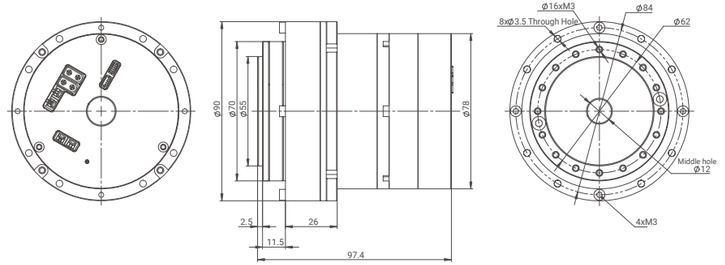
* 1. The standard motor can support both brake or without brake.
* 2. The standard motor support CAN BUS and EtherCAT.
* 3. The standard motor no IP protection. If need IP54 please contact salesman before order.
* 4. This product also supports a reduction ratio of 50:1. Please contact sales to confirm the delivery time before ordering.

Installation Drawing

EPS-RH-20-100-E-N-D



EPS-RH-20-100-E-B-D



Product Parameters

Parameters		Unit	RH-20
Gear ratio		—	50 | 100
Input Voltage		V	48
No Load Speed		RPM	60 | 30
No Load Current		A	1.1 | 1.2
Rated Speed		RPM	50 | 25
Rated Torque		N.m	25 | 50
Rated Power		W	130
Rated Current		A(rms)	6.8
Peak Torque		N.m	40 | 80
Peak Current		A(rms)	10.6
Efficiency		%	—
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	3.65 | 7.3
Motor Phase Resistance		Ω	0.36
Motor Phase Inductance		mH	0.51
Pole Pair		—	10
Cogging Torque		N.m	—
3 Phase Connection		—	Y
Back Drive Torque		N.m	—
Backlash		Arcsec	< 40
Radial Load	Static load	KN	22
	Dynamic load	KN	14.6
Axial Load	Static load	KN	132.7
	Dynamic load	KN	34
Inertia	N	$kg.m^2$	0.21 | 0.87
	B	$kg.m^2$	0.24 | 0.95
Encoder Type		—	Dual Encoder ABS-17BIT (Input) | ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		—	CAN BUS and EtherCAT
Weight	N	Kg	1.45
	B	Kg	1.75
Insulation Grade		—	F

*** Rated torque test method:** When the ambient temperature is 24 degrees Celsius (no other heat dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

Series Name
EPS-RH

Motor Simplified Name
RH-25

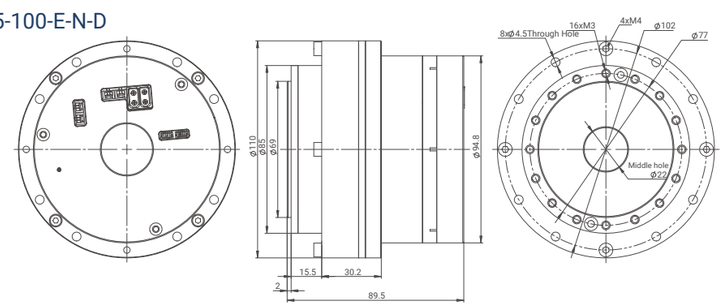
Off Axis Encoder

Actuator Full Name	Communication	With Brake/Without Brake	Gear ratio
EPS-RH-25-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100
EPS-RH-25-100-E-B-D	CAN BUS and EtherCAT	B (with brake)	100

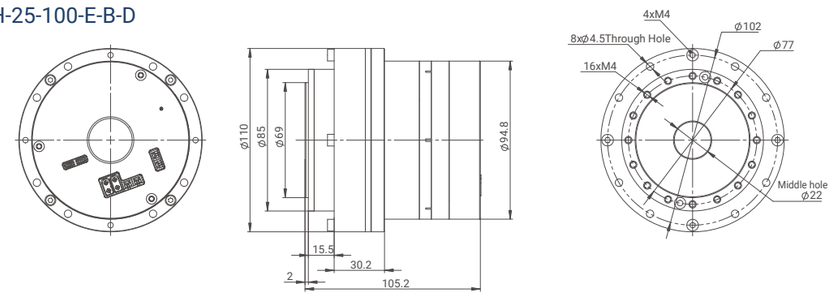
* 1. The standard motor can support both brake or without brake.
* 2. The standard motor support CAN BUS and EtherCAT.
* 3. The standard motor no IP protection. If need IP54 please contact salesman before order.
* 4. This product also supports a reduction ratio of 50:1. Please contact sales to confirm the delivery time before ordering.

Installation Drawing

EPS-RH-25-100-E-N-D



EPS-RH-25-100-E-B-D



Product Parameters

Parameters		Unit	RH-25
Gear ratio		—	50 | 100
Input Voltage		V	48
No Load Speed		RPM	60 | 30
No Load Current		A	1.8 | 2.0
Rated Speed		RPM	50 | 25
Rated Torque		N.m	54 | 108
Rated Power		W	282
Rated Current		A(rms)	10.6
Peak Torque		N.m	78.5 | 157
Peak Current		A(rms)	14.1
Efficiency		%	—
Motor Back-EMF Constant		Vdc/Krpm	19.2
Module Torque Constant		N.m/A	5.05 | 10.1
Motor Phase Resistance		Ω	0.16
Motor Phase Inductance		mH	0.33
Pole Pair		—	10
Cogging Torque		N.m	—
3 Phase Connection		—	Y
Back Drive Torque		N.m	—
Backlash		Arcsec	< 40
Radial Load	Static load	KN	35.8
	Dynamic load	KN	21.8
Axial Load	Static load	KN	198.2
	Dynamic load	KN	49.1
Inertia	N	$kg.m^2$	0.51 | 1.94
	B	$kg.m^2$	0.59 | 2.32
Encoder Type		—	Dual Encoder ABS-17BIT (Input) | ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		—	CAN BUS and EtherCAT
Weight	N	Kg	2.42
	B	Kg	2.74
Insulation Grade		—	F

*** Rated torque test method:** When the ambient temperature is 24 degrees Celsius (no other heat dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.

Series Name
EPS-RH

Motor Simplified Name
RH-32

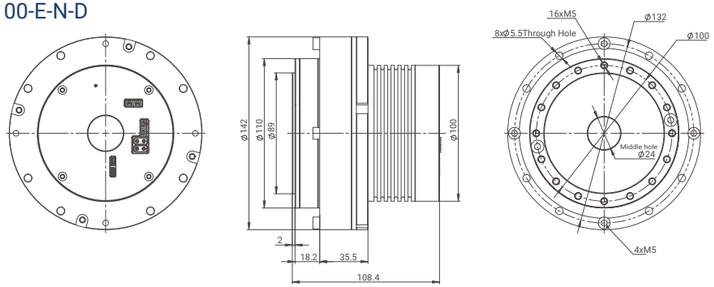
Off Axis Encoder

Actuator Full Name	Communication	With Brake/Without Brake	Gear ratio
EPS-RH-32-100-E-N-D	CAN BUS and EtherCAT	N (without brake)	100
EPS-RH-32-100-E-B-D	CAN BUS and EtherCAT	B (with brake)	100

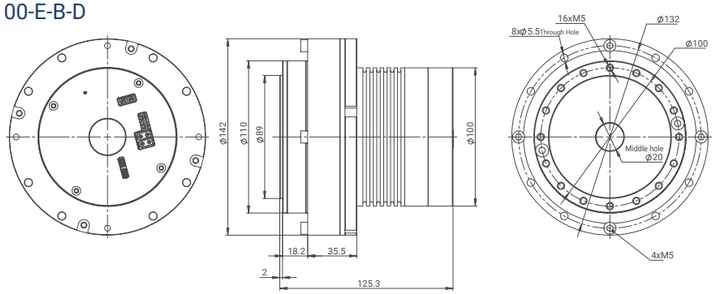
* 1. The standard motor can support both brake or without brake.
* 2. The standard motor support CAN BUS and EtherCAT.
* 3. The standard motor no IP protection. If need IP54 please contact salesman before order.
* 4. This product also supports a reduction ratio of 50:1. Please contact sales to confirm the delivery time before ordering.

Installation Drawing

EPS-RH-32-100-E-N-D



EPS-RH-32-100-E-B-D



Product Parameters

Parameters		Unit	RH-32
Gear ratio		—	50 | 100
Input Voltage		V	48
No Load Speed		RPM	40 | 20
No Load Current		A	2.6 | 2.8
Rated Speed		RPM	36 | 18
Rated Torque		N.m	75 | 150
Rated Power		W	282
Rated Current		A(rms)	21.8
Peak Torque		N.m	114.5 | 229
Peak Current		A(rms)	32.1
Efficiency		%	—
Motor Back-EMF Constant		Vdc/Krpm	26.7
Module Torque Constant		N.m/A	3.45 | 6.9
Motor Phase Resistance		Ω	0.08
Motor Phase Inductance		mH	0.18
Pole Pair		—	10
Cogging Torque		N.m	—
3 Phase Connection		—	Y
Back Drive Torque		N.m	—
Backlash		Arcsec	< 40
Radial Load	Static load	KN	65.4
	Dynamic load	KN	38.2
Axial Load	Static load	KN	342.6
	Dynamic load	KN	81.8
Inertia	N	$kg.m^2$	0.82 | 6.86
	B	$kg.m^2$	2.05 | 8.32
Encoder Type		—	Dual Encoder ABS-17BIT (Input) | ABS-17BIT (Output)
Repeat Position Accuracy		Degree	< 0.01
Communication		—	CAN BUS and EtherCAT
Weight	N	Kg	4.32
	B	Kg	4.74
Insulation Grade		—	F

* **Rated torque test method:** When the ambient temperature is 24 degrees Celsius (no other heat dissipation methods), the test is performed at the rated speed. The motor torque reaches temperature balance under the condition of a temperature rise of 60 degrees Celsius, and the long-term working point is the rated torque value of the motor.