

- Wide range of frame sizes from 28 - 90mm
- Multiple stack lengths per frame size
- Extremely high torque versions
- 0.9 and 1.8 degree versions

06 Hybrid Stepper Motors >>>

3X MOTION hybrid stepper motors are widely used in laboratory and medical equipment, printing machines, pumps, vending machines and a multitude of other applications.

Breakdown of Part Number:

42	HS	34	D	S	01	XX
frame size 28 - 90mm	motor type HS - 2ph HY - 2ph	length 34 - 34mm	step angle D-1.8° M-0.9°	no. of leads F-4 V-5 S-6 E-8	winding	special

Customisation Options:

Shaft Extensions

All motors can be supplied with single or double ended shaft to customer request. Shaft length and other dimensions can also be modified on demand.

Number of Leads

All motors can be supplied with 4, 5, 6 or 8 leads and if required a connector can be provided on our motors to customer request.

Winding Code

Since each customer request can be different, we list only our standard products in this catalogue. However, we will be happy to quote other variants to your request.

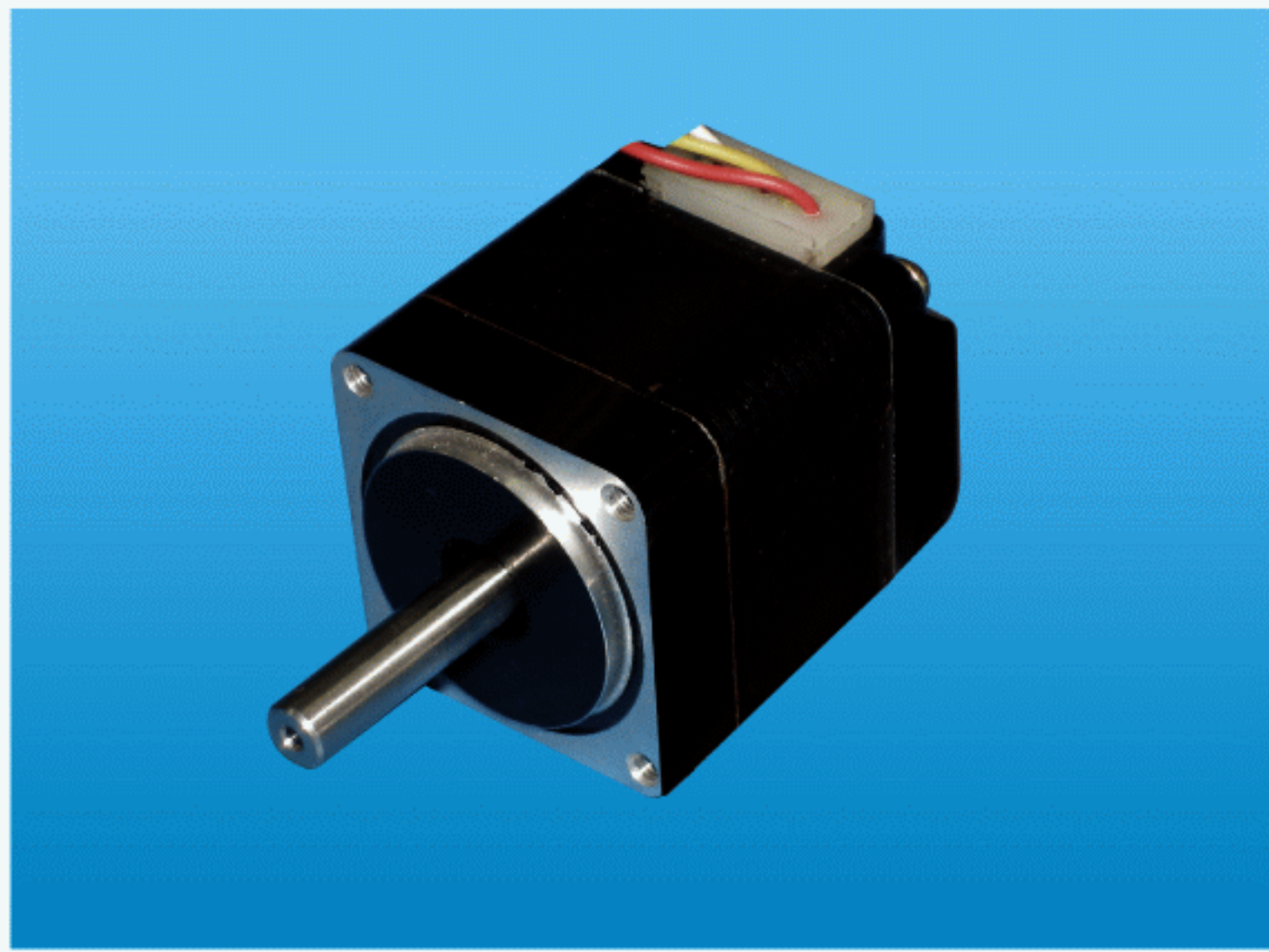
Holding Torque

Holding torque is measured with two phases supplied at the rated current. The enclosed technical specifications are therefore typical.

(On customer request for special shaft, leads, fixings, etc. we will provide you with a unique product code/identifier.)

28HSD Series

Hybrid Stepper Motors (1.8 degree)



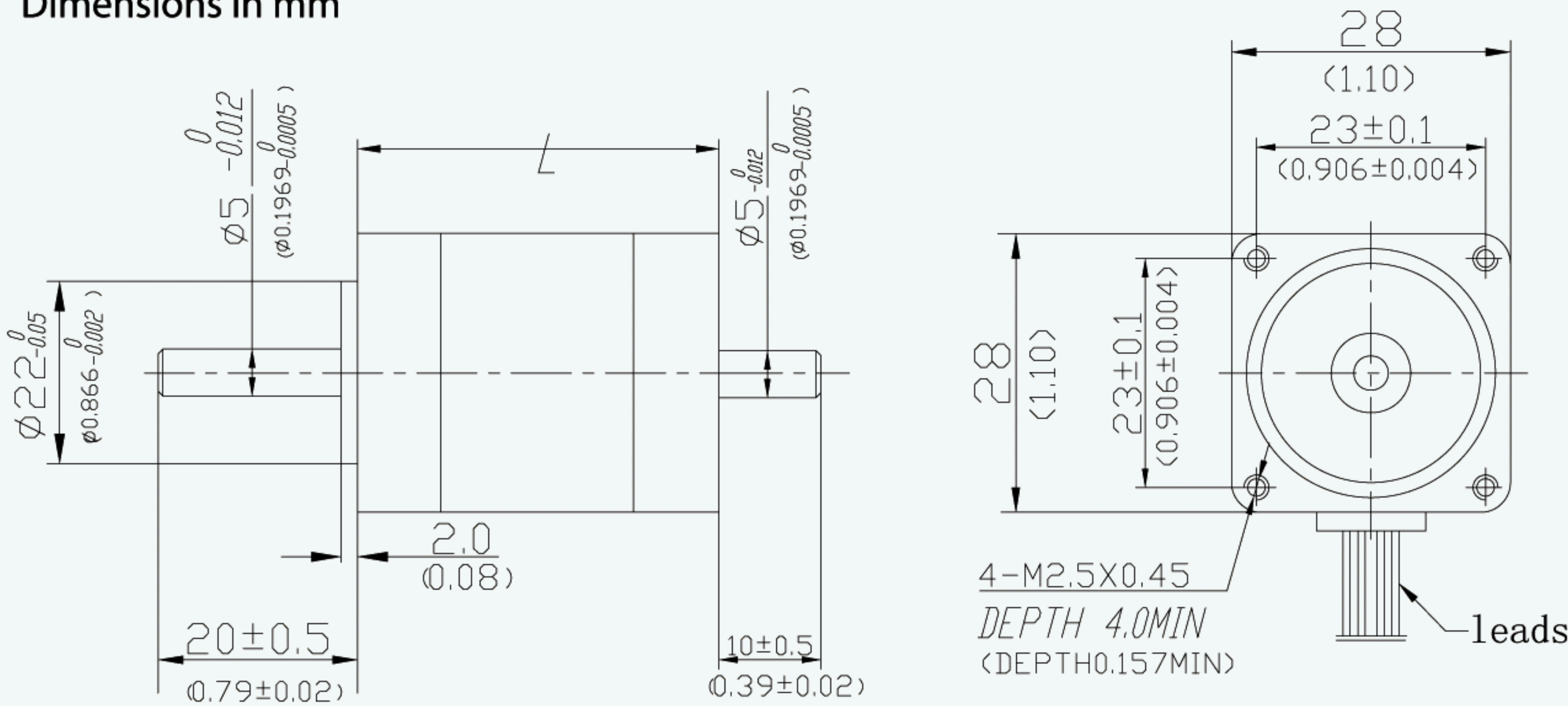
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Viewed from front flange)

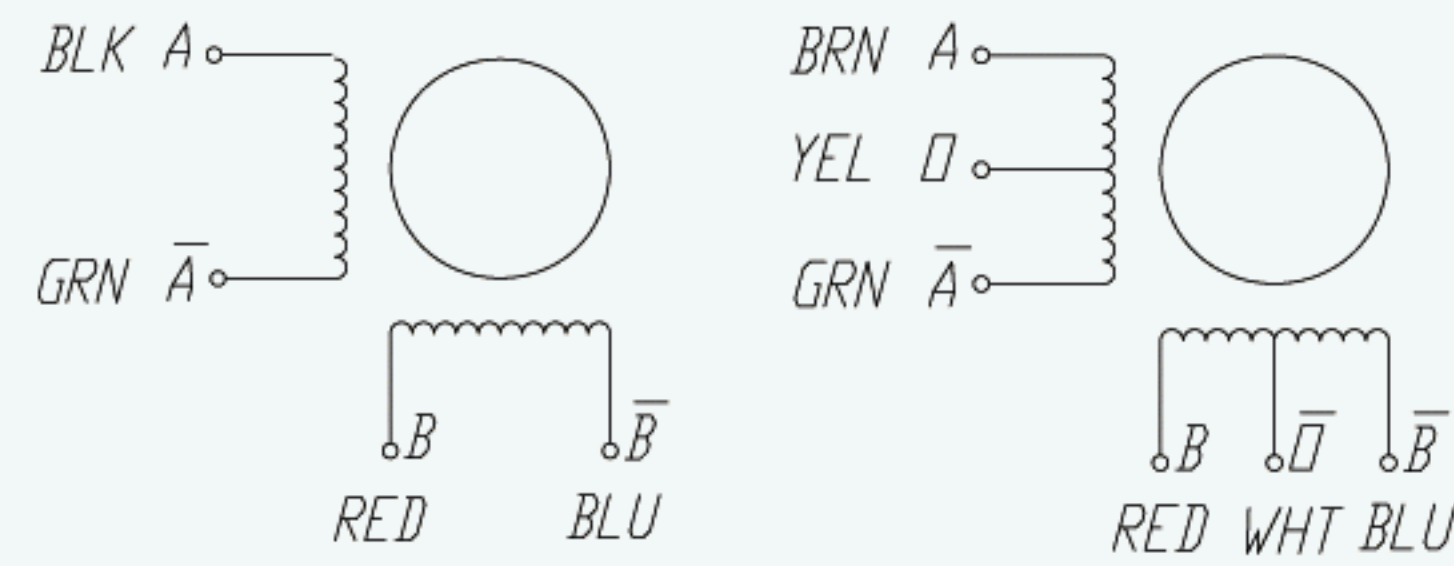
Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wires/pins	Weight g
10PYM24F12DL	28HS24DF12DL	24	1.8	12	0.5	6	3	5	4	40
10PYM24S60	28HS24DS60	24	1.8	6	0.7	4.2	2.8	5	6	40
10PYM33F01	28HS33DF01	33	1.8	5.8	0.67	6	6	9	4	60
10PYM33S36	28HS33DS36	33	1.8	36	0.3	5	5	9	6	60
10PYM40F608	28HS40DF608	40	1.8	6.8	0.67	4.6	9	12	4	70
10PYM40S304	28HS40DS304	40	1.8	3.4	0.95	3.23	7	12	6	70
10PYM50F10	28HS50DF10	50	1.8	10	0.5	5	11	18	4	80
10PYM50S406	28HS50DS406	50	1.8	4.6	0.95	4.4	9	18	6	80

Dimensions in mm



Connections



35HSD Series

Hybrid Stepper Motors (1.8 degree)



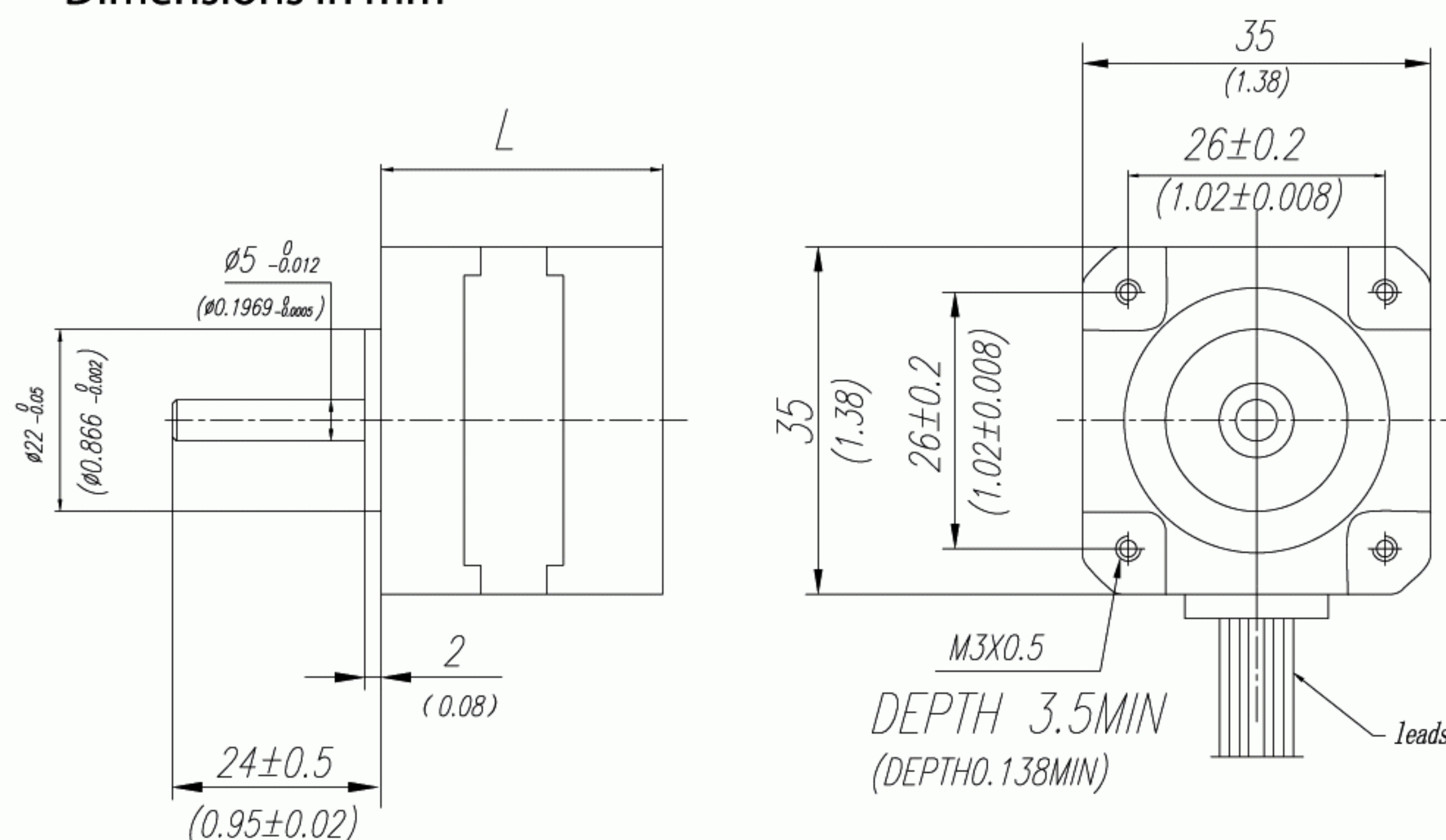
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max.-(450g load)
Shaft Axial Play	0.08mm max.-(450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Viewed from front flange)

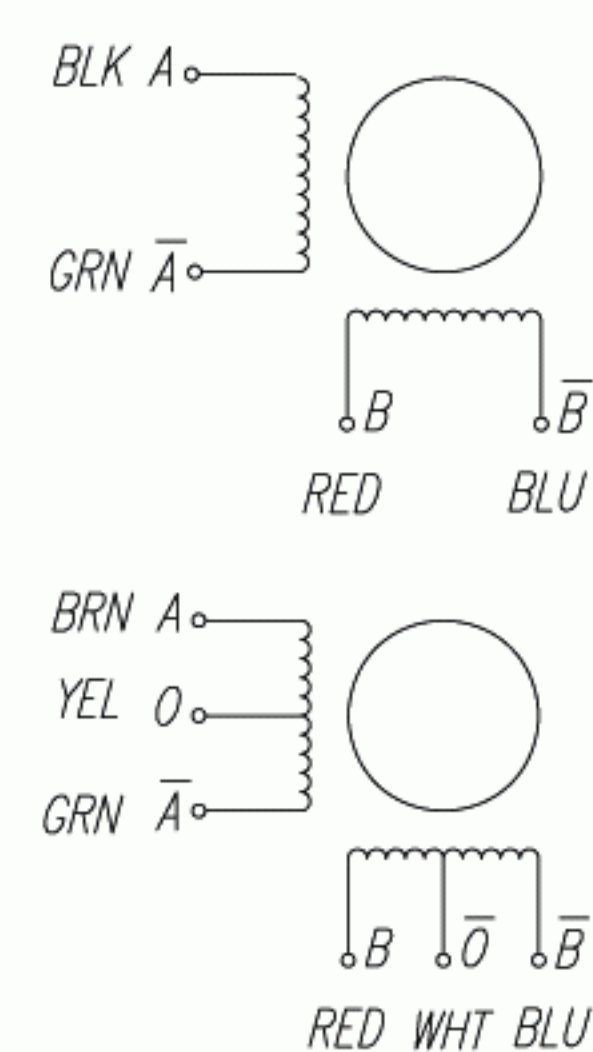
Specification

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gmm²	Lead wires/pins	Weight g
14PYM20F04	35HS20DF4	20	1.8	4	0.8	3.2	5	4	4	100
14PYM20F10	35HS20DF10	20	1.8	10	0.4	4	5	4	4	100
14PYM20F23	35HS20DF23	20	1.8	23	0.45	12	8	4	4	100
14PYM20S25	35HS20DS25	20	1.8	25	0.4	12	5.5	4	6	100
14PYM20E10	35HS22DE10	20	1.8	10	0.5	5	5	5	8	100
14PYM20F05	35HS25DF05	25	1.8	4.8	0.8	3.84	8	6	4	110
14PYM25F10	35HS25DF10	25	1.8	10	0.4	4	5	6	4	110
14PYM27F05	35HS27DF05	27	1.8	22	0.5	12	12	8	4	110
14PYM27F07	35HS27DF07	27	1.8	5.4	0.8	4.6	13	8	4	110
14PYM27S30	35HS27DS30	27	1.8	30	0.4	12	8	8	6	110
14PYM27S01	35HS27DS01	27	1.8	13	0.4	5.2	6	8	6	110
14PYM27F10	35HS27DF10	27	1.8	130	0.1	13	7.5	8	4	110
14PYM33F10	35HS33DF10	33	1.8	5.2	1	5.2	15	20	4	180
14PYM33F24	35HS33DF24	33	1.8	24	0.5	12	18	20	4	180
14PYM33S90	35HS33DS90	33	1.8	90	0.13	12.7	6	20	6	180
14PYM42S03	35HS42DS03	42	1.8	3	1.2	3.6	14	20	6	180
14PYM52F608DB	35HS52DF608DB	52	1.8	6.8	0.8	5.4	27	20	4	180

Dimensions in mm



Connections





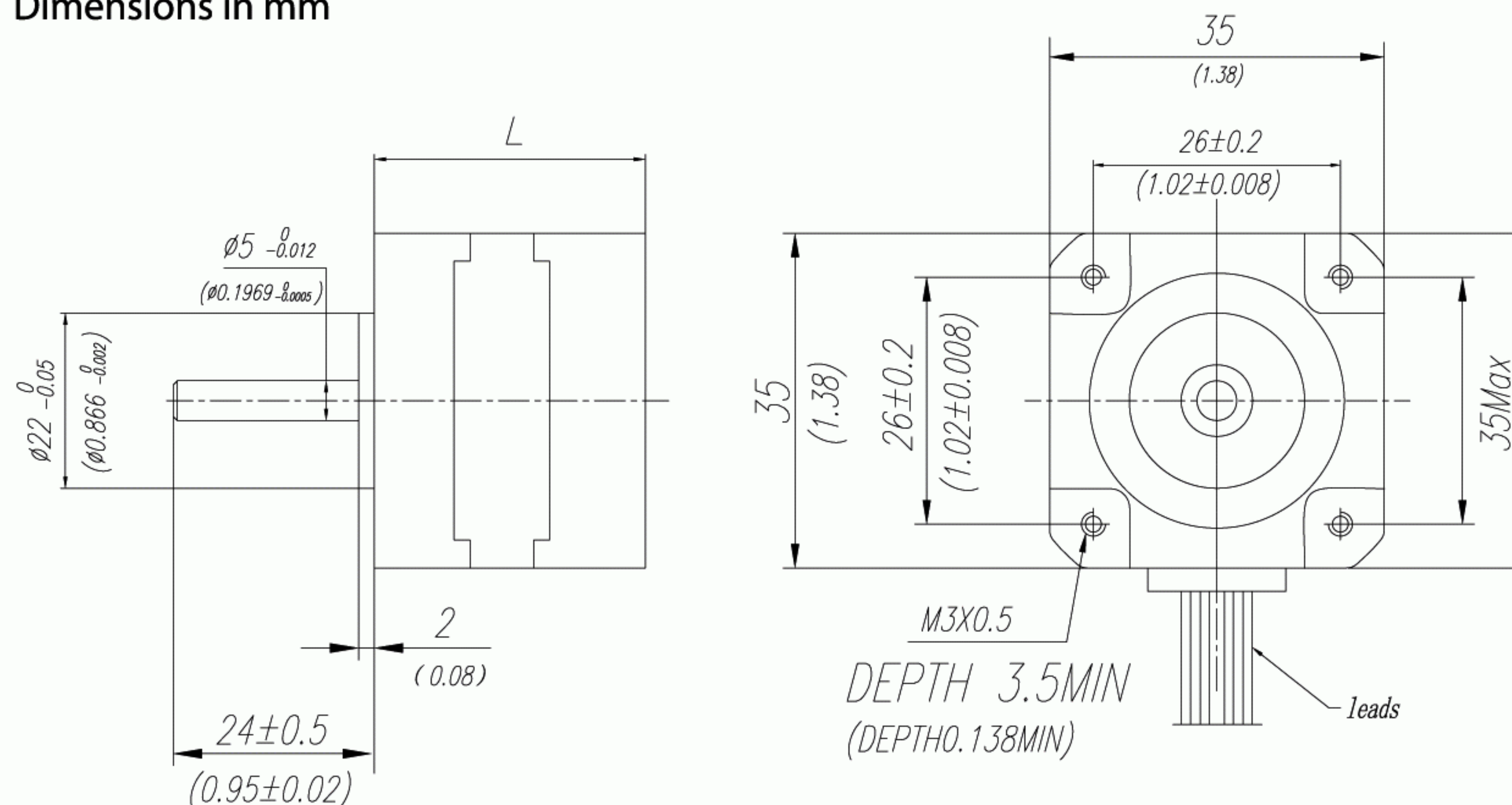
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min, 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Viewed from front flange)

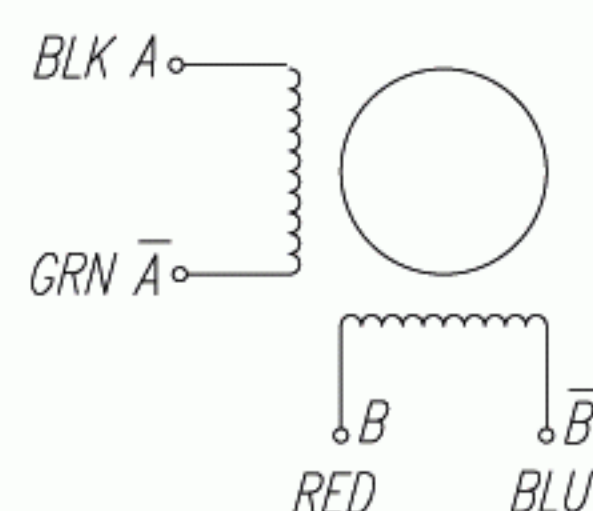
Specification

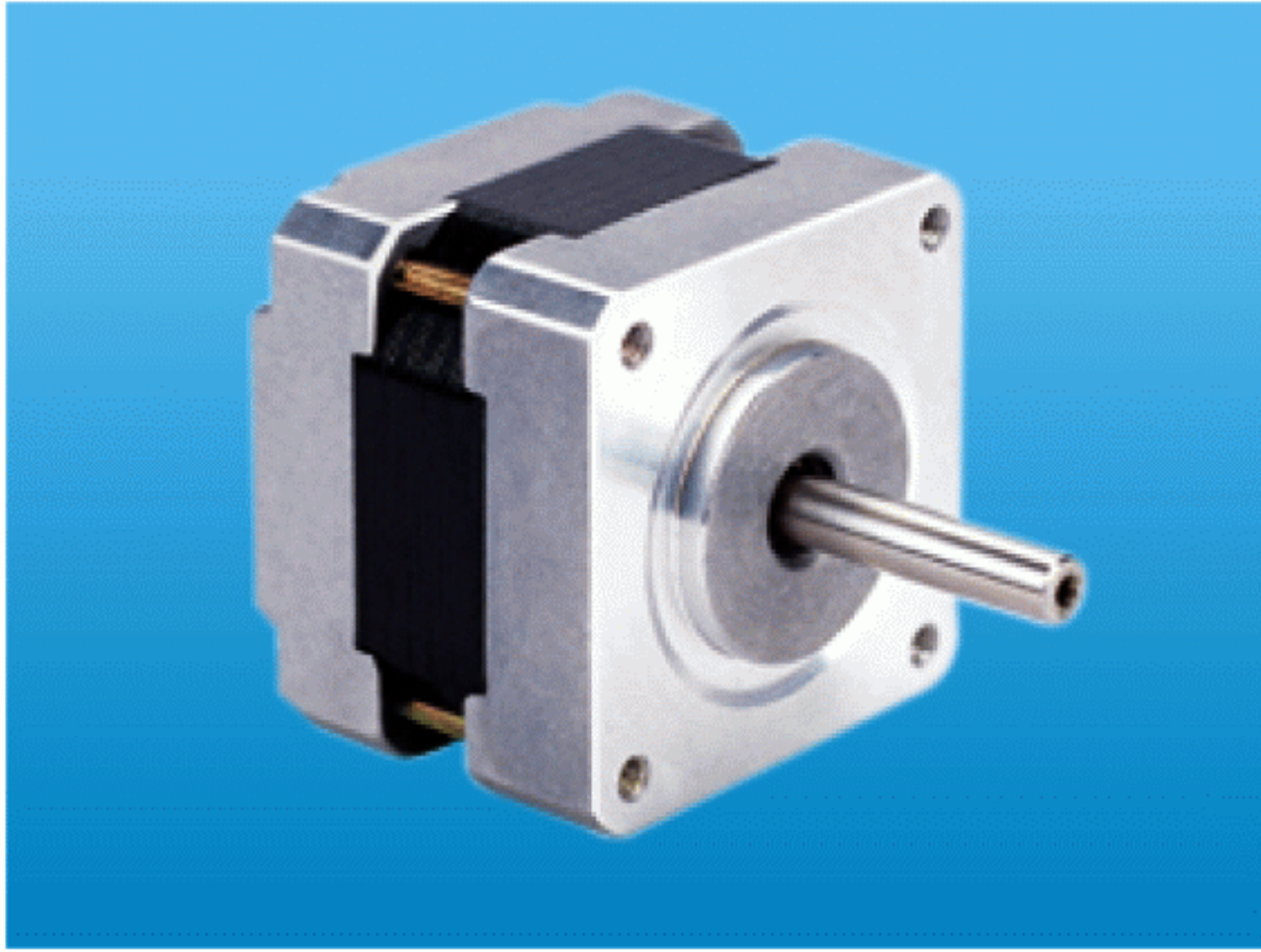
Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wires/pins	Weight g
14PMM20F10	35HS20MF10	20	0.9	10	0.4	4	4	5	4	100
14PMM20F25	35HS20MF25	20	0.9	25	0.45	12	7	5	4	100
14PMM27F07	35HS27MF07	27	0.9	4.5	0.5	2.25	7	8	4	120
14PMM27F05	35HS27MF05	27	0.9	20	0.5	10	12	8	4	120
14PMM27F50	35HS27MF50	27	0.9	50	0.24	12	10	8	4	120
14PMM33F12	35HS33MF12	33	0.9	12	0.5	6	18	8	4	130

Dimensions in mm



Connections





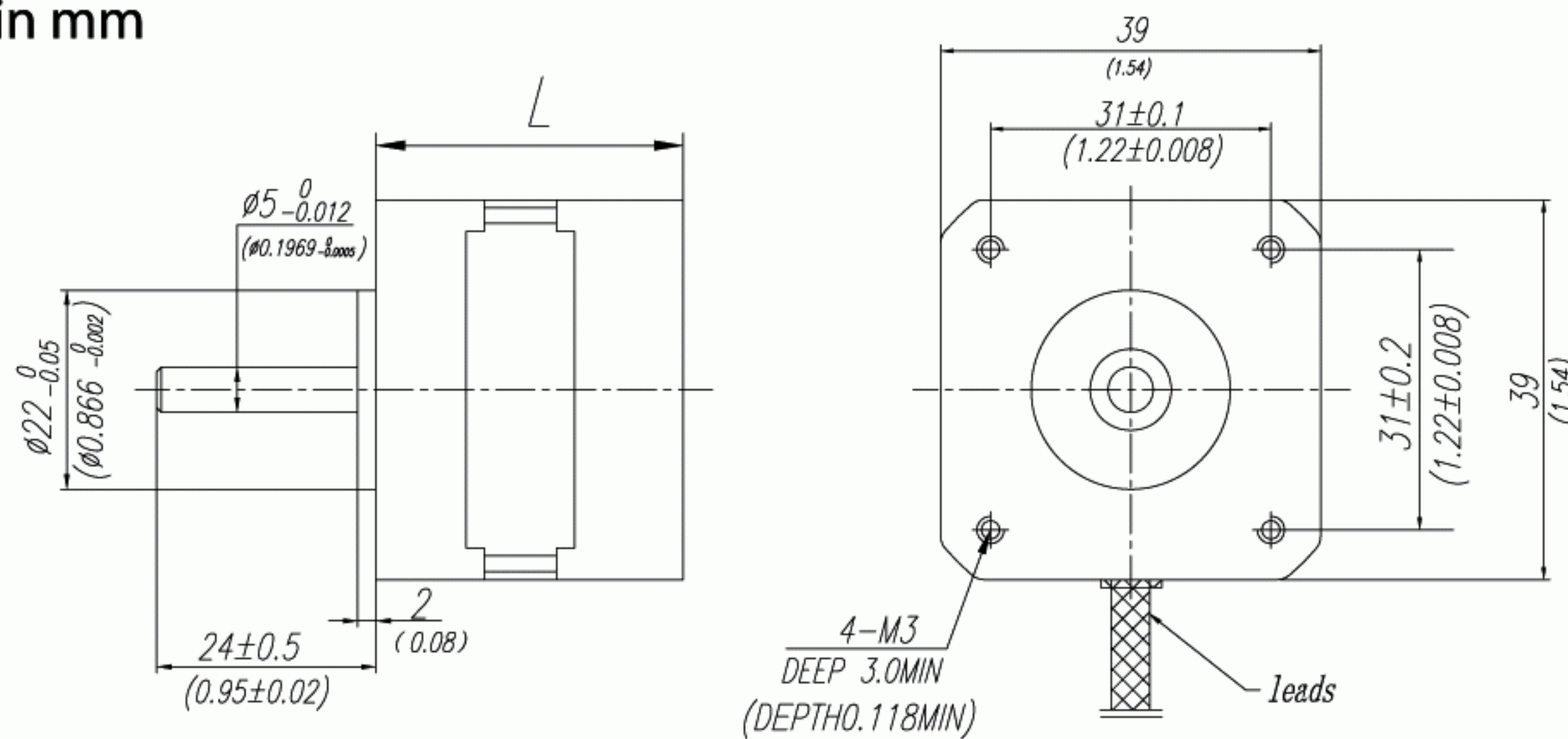
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Viewed from front flange)

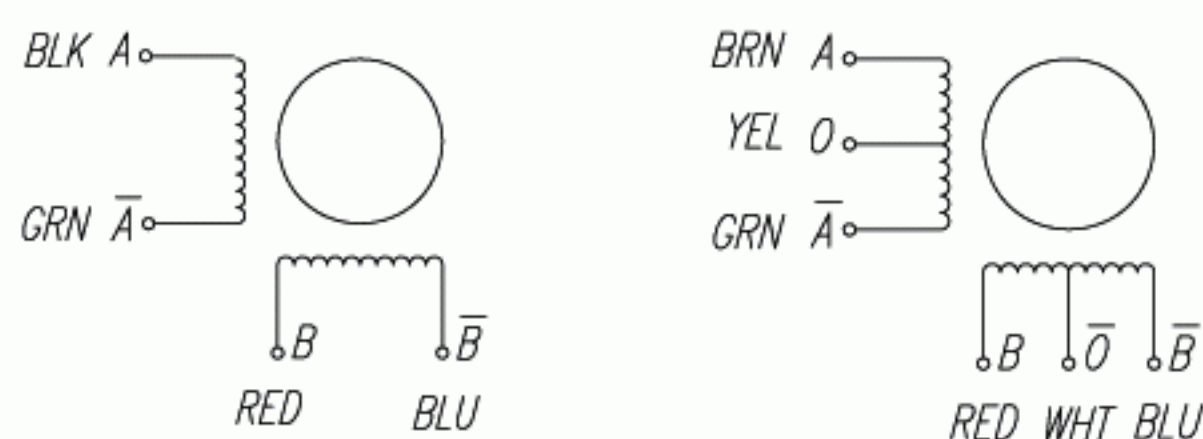
Performance Data

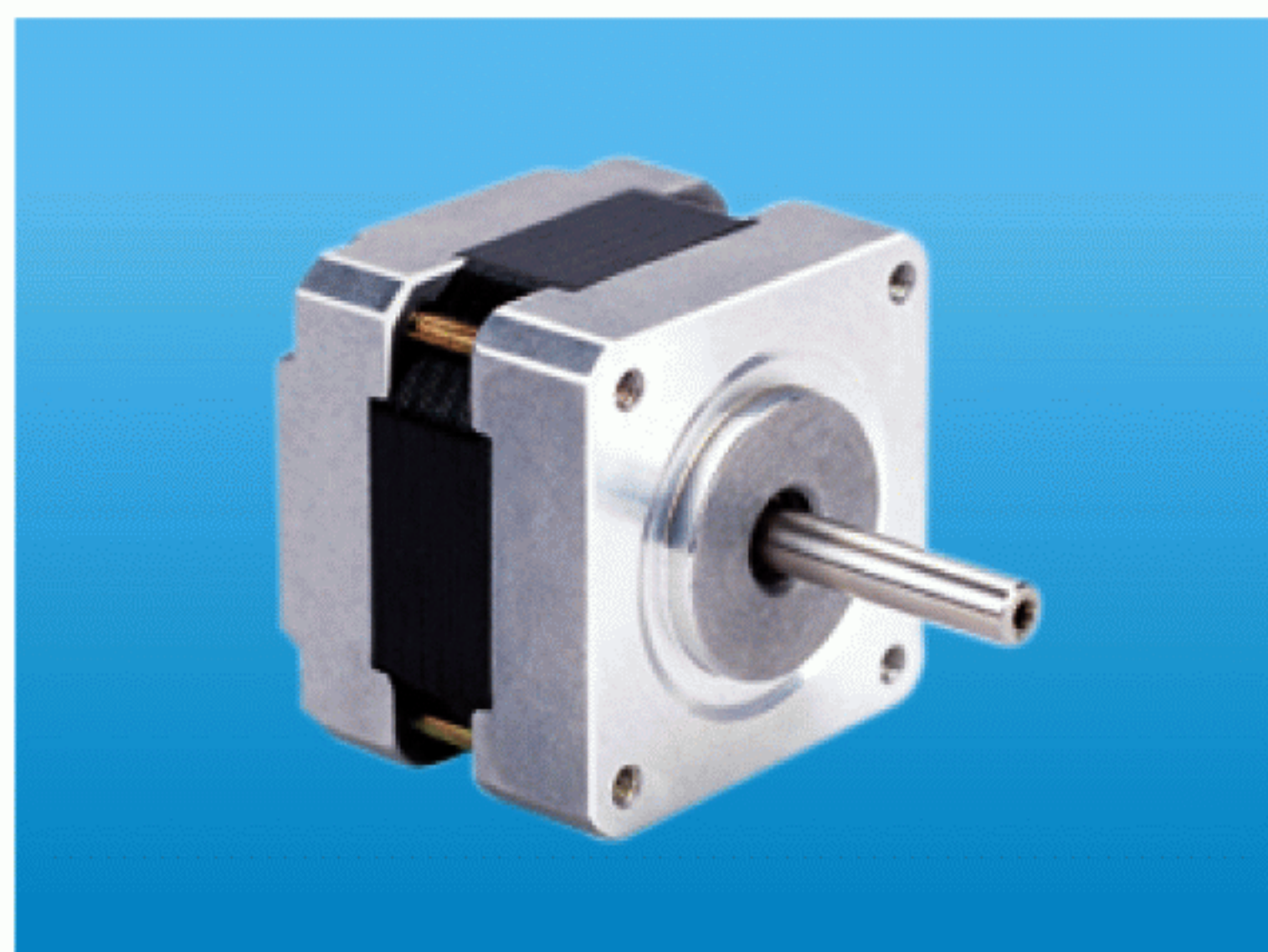
Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wires/pins	Weight g
16PYM20F85	39HS20DF85	20	1.8	7	0.6	4.2	10	14	4	110
16PYM20F03	39HS20DF03	20	1.8	3	1.2	3.6	10	14	4	110
16PYM20S13	39HS20DS13-16	20	1.8	14	0.5	7	8	14	6	110
16PYM22F08	39HS22DF08	22	1.8	9.1	0.55	5	8	15	4	120
16PYM22S3	39HS22DS3	22	1.8	3	0.6	1.8	6	15	6	120
16PYM24F23	39HS24DF23	24	1.8	23	0.48	12	10	17	4	140
16PYM24S30K	39HS24DS30K	24	1.8	30	0.4	12	12	17	6	140
16PYM24F705	39HS24DF705	24	1.8	7.5	1	7.5	19	17	4	140
16PYM33S40	39HS33DS40	33	1.8	30	0.4	12	15	20	6	240
16PYM33F705	39HS33DF705	33	1.8	7.5	1	7.5	19	20	4	240
16PYM33F05	39HS33DF05	33	1.8	12	0.6	7.2	23	20	4	240
16PYM37F15	39HS37DF15	37	1.8	15	0.8	12	27	22	4	260
16PYM37F25	39HS37DF25	37	1.8	24	0.5	12	30	22	4	260
16PYM37S705	39HS37DS705	37	1.8	7.5	0.8	6	20	22	6	260
16PYM37S30	39HS37DS30	37	1.8	30	0.4	12	20	22	6	260

Dimensions in mm



Connections





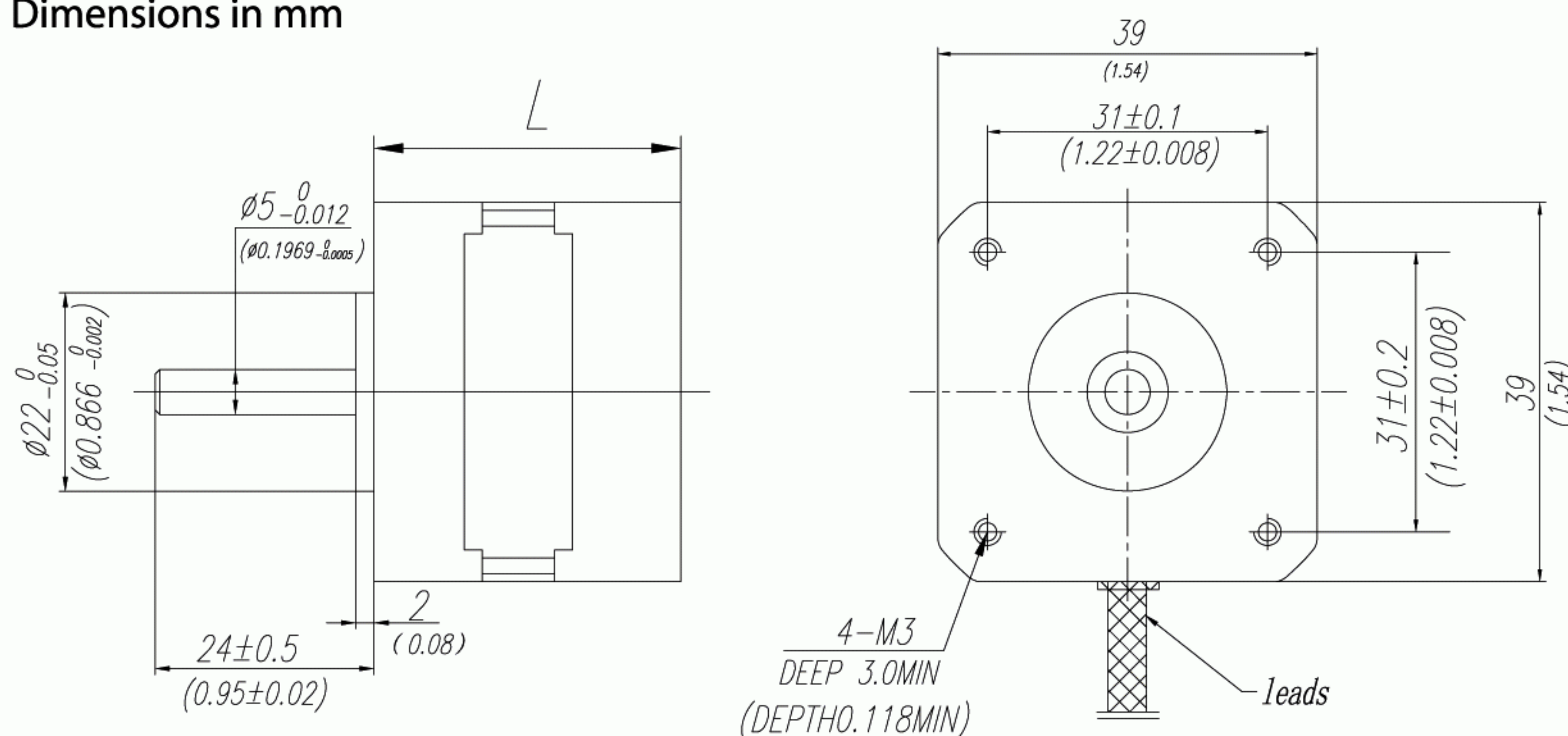
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Vewed from Front Flange)

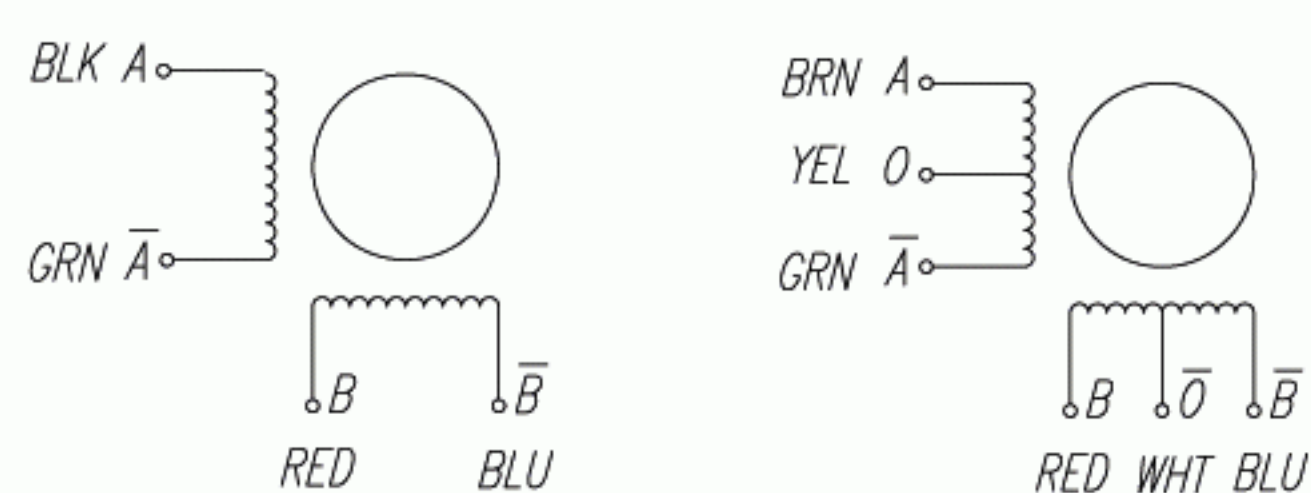
Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wires/pins	Weight g
16PMM20F13	39HS20MF13	20	0.9	12	0.48	5.76	0.7	14	4	110
16PMM20S24	39HS20MS24	20	0.9	24	0.5	12	7.5	14	6	110
16PMM24F23	39HS24MF23	24	0.9	25	0.48	12	15	17	4	140
16PMM24F01	39HS24MF01	24	0.9	3.5	1	3.5	12	17	4	140
16PMM24SS25	39HS24MS25	24	0.9	12.5	0.4	5	6	17	6	140
16PMM26F903A	39HS26MF903A	26	0.9	9.3	0.6	5.6	10	18	4	160
16PMM33F12	39HS33MF12	33	0.9	12	0.6	7.2	20	20	4	240
16PMM33S40	39HS33MS40	33	0.9	40	0.3	12	14	20	6	240

Dimensions in mm



Connections



42HSD Series

Hybrid Stepper Motors (1.8 degree)



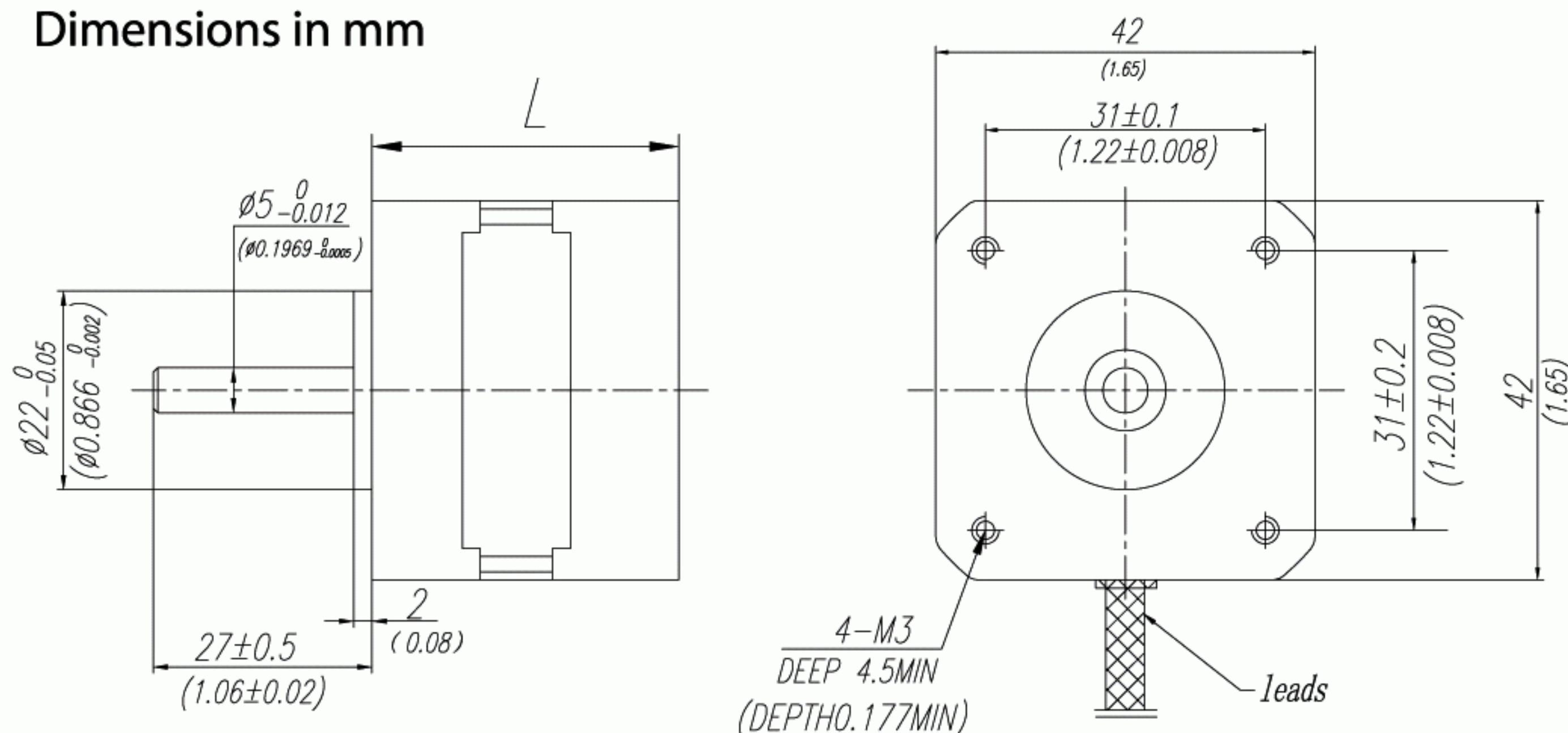
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Viewed from front flange)

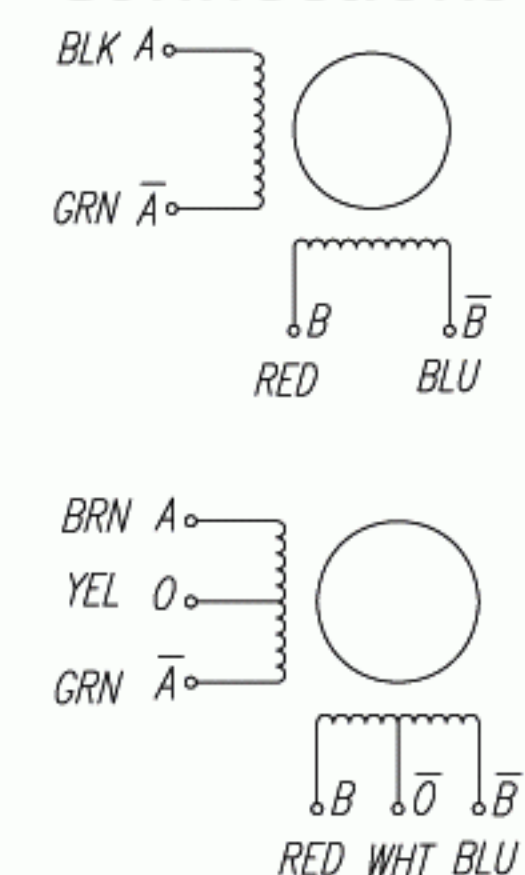
Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wire/pins
17PYM28S03	42HS28DS03	28	1.8	3	1.4	4.2	20	20	6
17PYM28F505	42HS28DF505	28	1.8	6	1	6	22	20	5
17PYM34V68	42HS34DV68	34	1.8	60	0.4	24	22	37	4
17PYM34S30	42HS34DS30	34	1.8	30	0.4	12	18	37	6
17PYM34S13	42HS34DS13	34	1.8	4.2	0.95	4	19	37	6
17PYM34S09	42HS34DS09	34	1.8	1.5	1.5	2.25	16	37	6
17PYM34F301	42HS34DF301	34	1.8	3.1	1	3.1	25	37	4
17PYM34F01	42HS34DF01	34	1.8	30	0.4	12	30	37	4
17PYM34F103	42HS34DF103	34	1.8	1.3	1.7	2.2	40	37	4
17PYM38F302	42HS38DF302	38	1.8	3.2	1.2	3.84	32	50	4
17PYM40V02	42HS40DV02-12A	40	1.8	3.2	1.2	3.84	32	62	5
17PYM40S02	42HS40DS02	40	1.8	3.2	1.2	3.84	32	62	6
17PYM40S30	42HS40DS30	40	1.8	30	0.4	12	33	62	6
17PYM40F24	42HS40DF24	40	1.8	24	0.5	12	40	62	4
17PYM40F13	42HS40DF13	40	1.8	3.3	0.87	2.87	32	62	4
17PYM40F105	42HS40DF105	40	1.8	1.5	1.7	2.55	37	62	4
17PYM44S302	42HS44DS302	44	1.8	3.2	1.2	3.84	32	68	4
17PYM44F01	42HS44DF01	44	1.8	1	1.5	1.5	35	68	4
17PYM46F072	42HS46DF072	46	1.8	0.72	2.3	1.656	40	68	4
17PYM46S303	42HS46DS303	46	1.8	3.3	1.7	5.6	40	68	6
17PYM46F30	42HS46DF30	46	1.8	30	0.4	12	46	68	4
17PYM48S110	42HS48DS110	48	1.8	110	0.1	12	18	75	6
17PYM48F028	42HS48DF028	48	1.8	24	0.28	6	35	75	4
17PYM48S30	42HS48DS30	48	1.8	30	0.4	12	35	75	6
17PYM48F10	42HS48DF10	48	1.8	6	1	6	48	75	4
17PYM48F02	42HS48DF02	48	1.8	3.3	1.5	5	48	75	4
17PYM58F202	42HS58DF202	58	1.8	2.2	1.7	3.74	70	100	4
17PYM61F502	42HS61DF502	61	1.8	5.2	1.3	6.76	90	114	4
17PYM61S06	42HS61DS06	61	1.8	6	1.2	7.2	78	114	6
17PYM61F12	42HS61DF12	61	1.8	12	0.85	10	90	114	4

Dimensions in mm



Connections





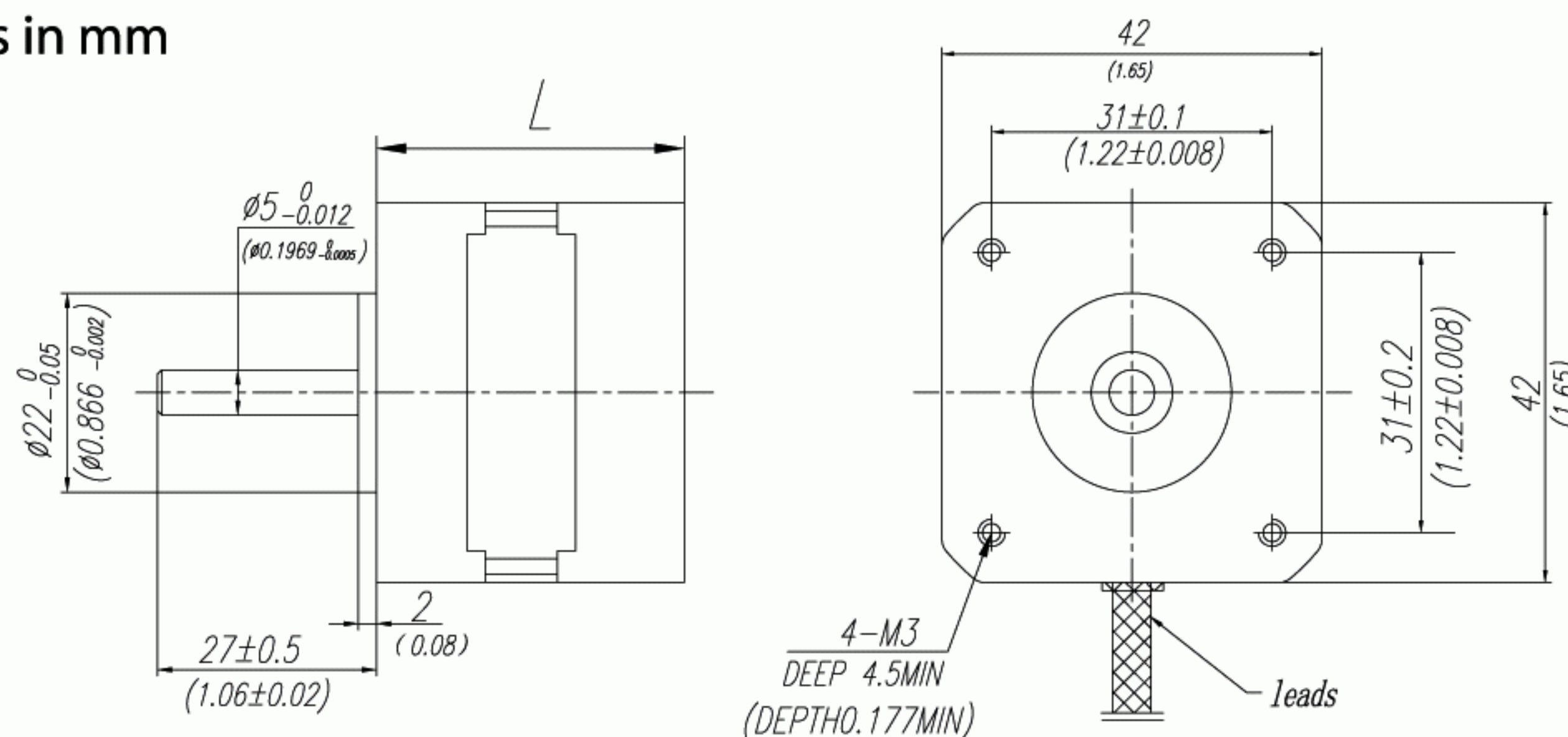
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Viewed from front flange)

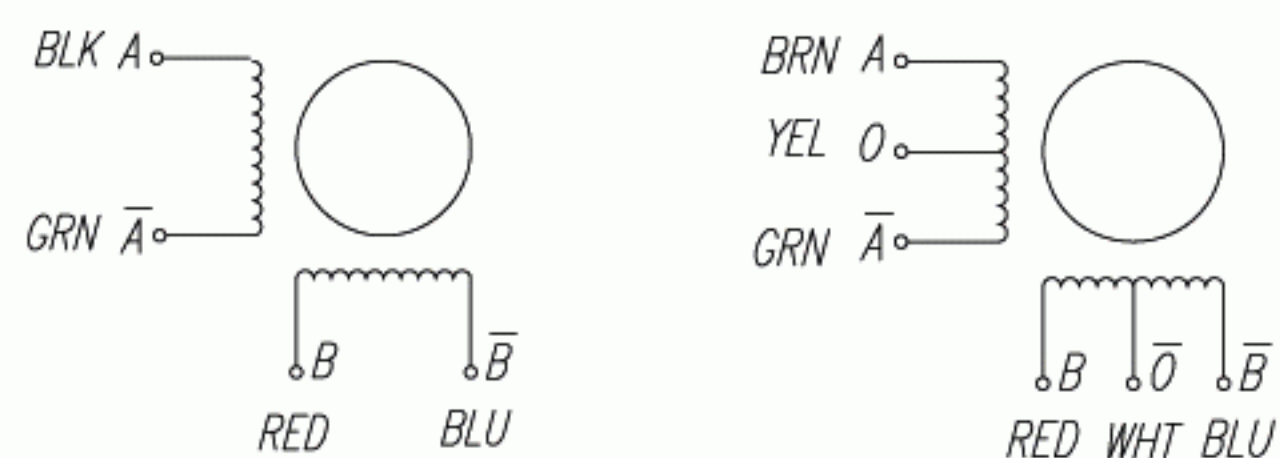
Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gmm ²	Lead wires/pins	Weight g
17PMM28F8	42HS28MF8	28	0.9	8	0.425	3.4	28	11	4	170
17PMM34F05	42HS34MF05	34	0.9	15	0.6	9	25	37	4	200
17PMM34F108	42HS34MF108	34	0.9	108	0.15	16.2	15	37	4	200
17PMM34F03	42HS34MF03	34	0.9	30	0.4	12	22	37	4	200
17PMM34S15	42HS34MS15	34	0.9	15	0.46	6.9	14	37	6	200
17PMM34V30	42HS34MV30	34	0.9	30	0.4	12	16	37	5	200
17PMM40F02	42HS40MF02	40	0.9	5.4	0.85	4.59	32	62	4	200
17PMM40F106	42HS40MF106	40	0.9	1.65	1.68	2.77	32	62	4	240
17PMM40F13	42HS40MF13	40	0.9	20	0.5	10	24	62	4	240
17PMM40S02	42HS40MS02	40	0.9	2.7	1.2	3.24	28	62	6	240
17PMM48F307	42HS48MF307	48	0.9	3.7	1	3.7	50	75	4	340
17PMM48F03	42HS48MF03	48	0.9	1	2.4	2.4	44	75	4	340
17PMM48S30	42HS48MS30	48	0.9	30	0.4	12	30	75	6	340
17PMM48V30	42HS48MV30	48	0.9	30	0.4	12	30	75	5	340

Dimensions in mm



Connections





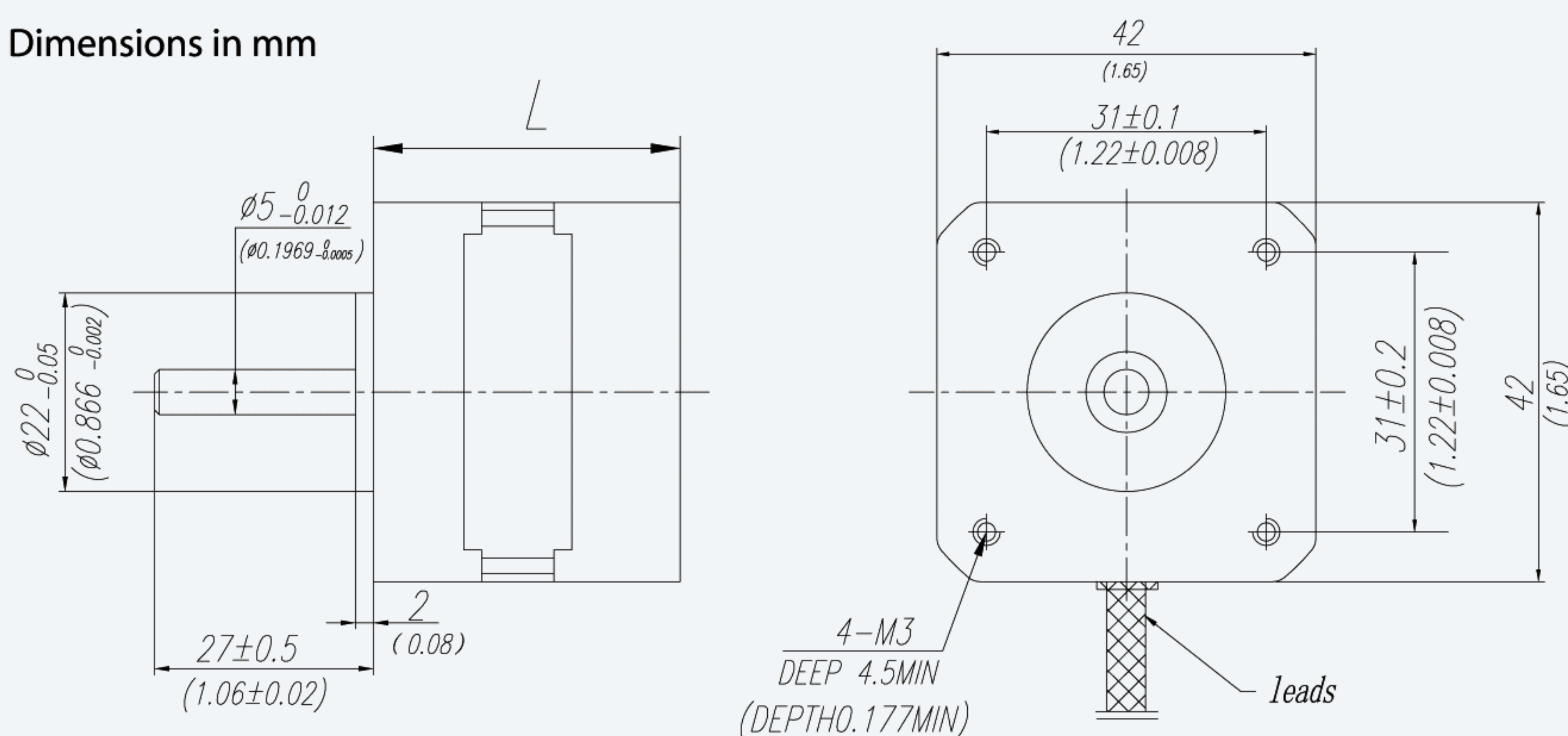
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	28N (20mm from the flange)
Max. Axial Force	10N
Rotation	CW (Viewed from front flange)

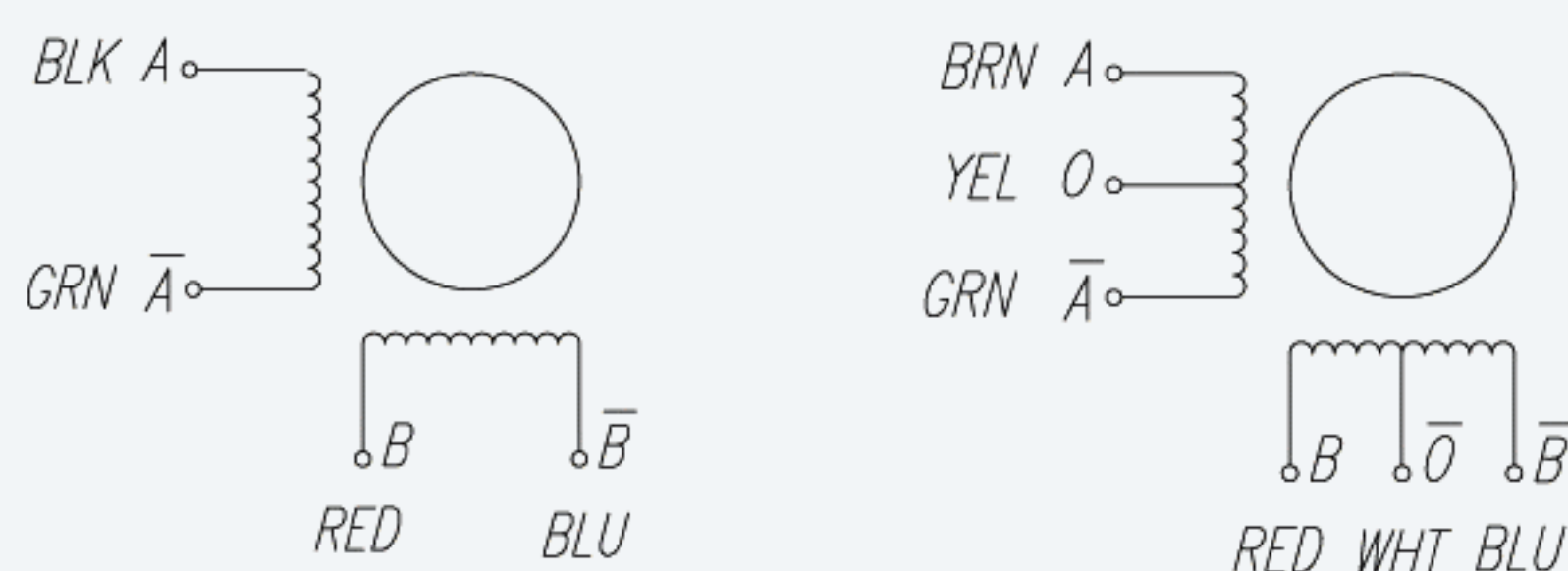
Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gmm ²	Lead wires/pins	Weight g
17PYK34F05	42HY34DF05	34	1.8	11.5	0.45	5.17	18	37	4	200
17PYK34F1	42HY34DF1	34	1.8	1	1.5	1.5	13	37	4	200
17PYK34V16	42HY34DV16	34	1.8	70	0.16	11.2	10	37	5	200
17PYK38F03	42HY38DF03	38	1.8	3	1	3	17	50	4	240
17PYK38S305	42HY38DS305	38	1.8	3.5	1	3.5	18	50	6	240
17PYK44F402	42HY44DF402	44	1.8	4.2	0.9	3.78	30	68	4	340
17PYK48F22	42HY48DF22	48	1.8	22.5	0.5	12	34	75	4	340

Dimensions in mm



Connections



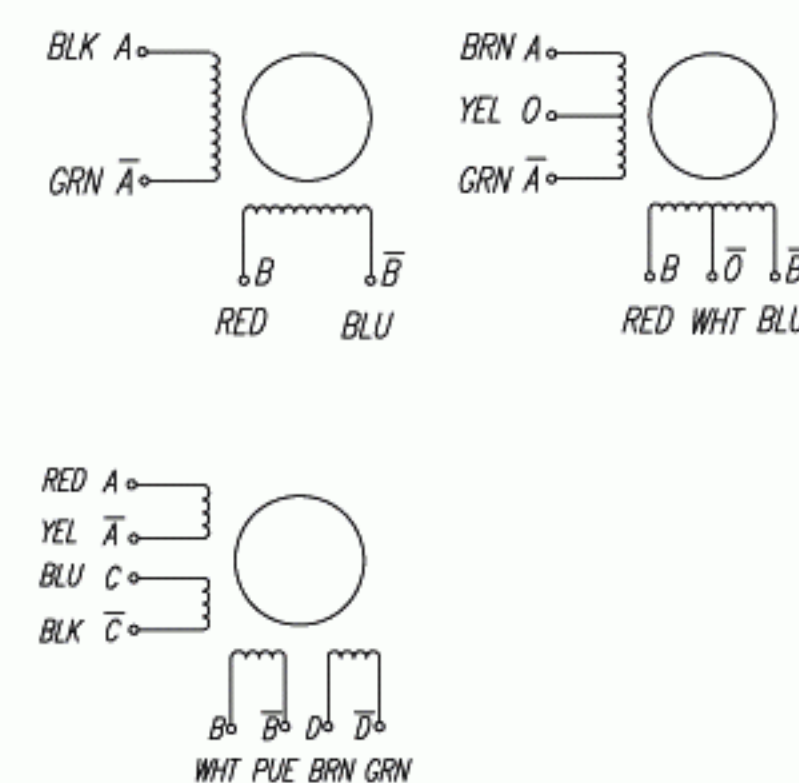
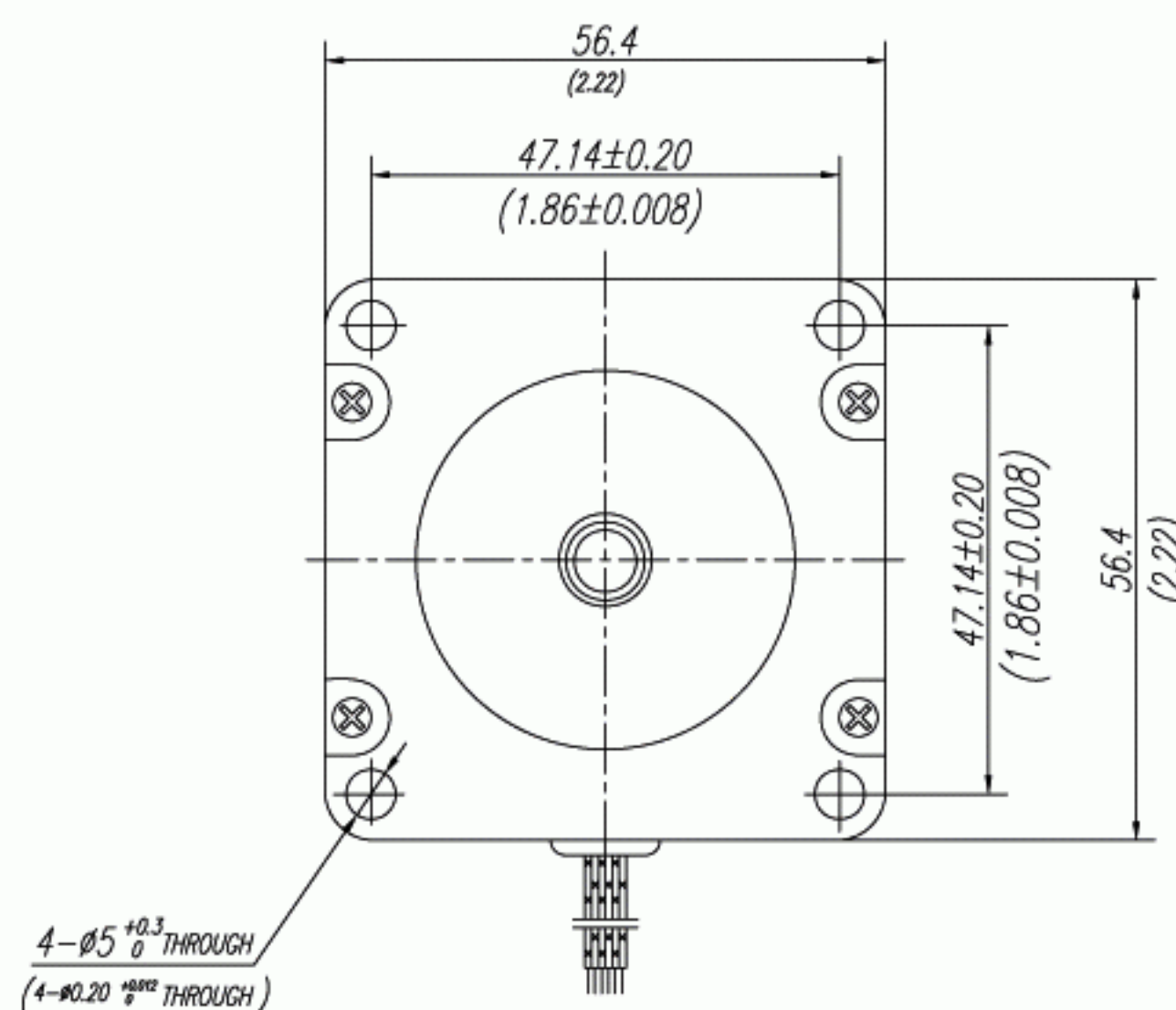


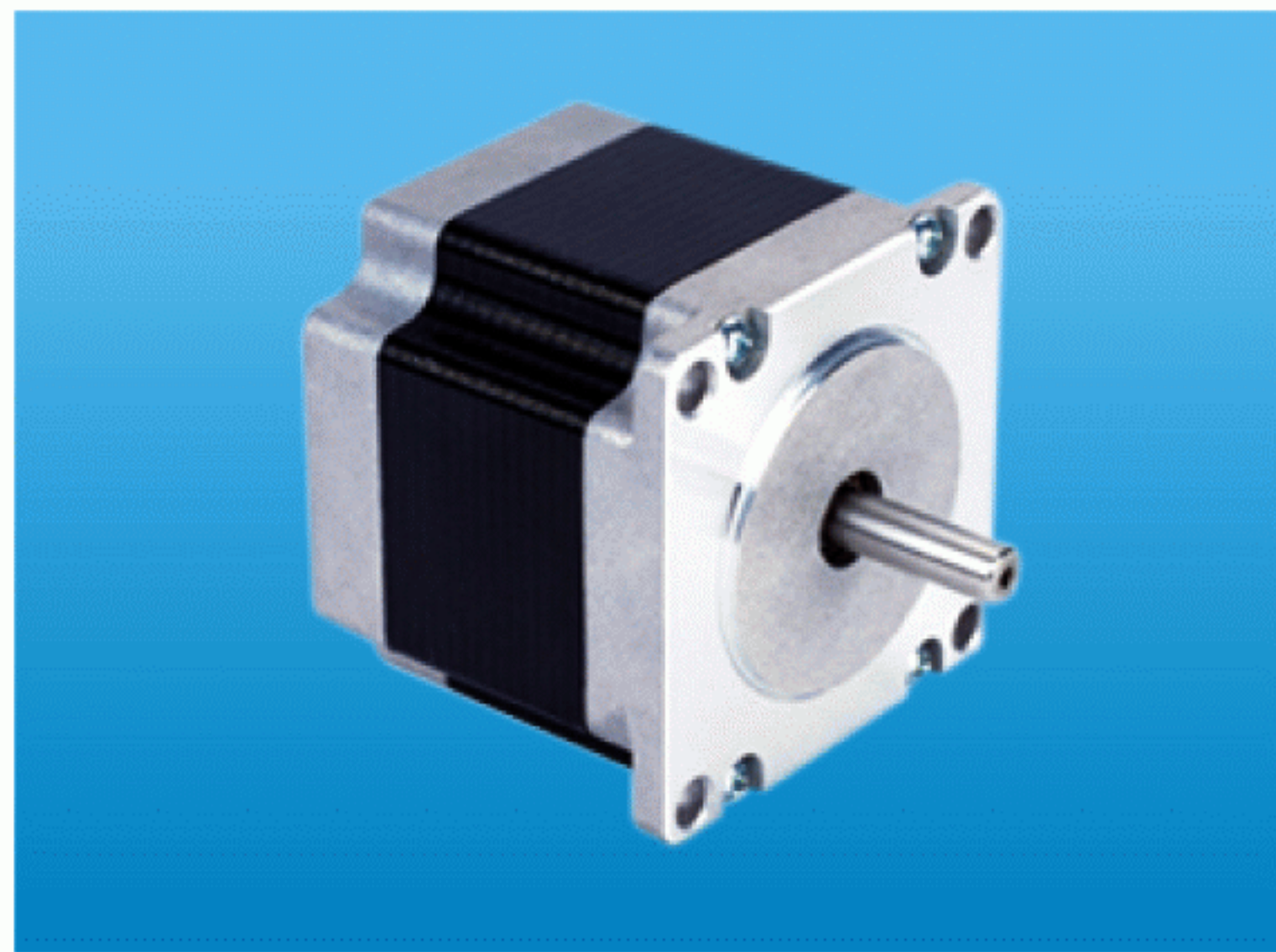
4 Electronic Drive / Controllers

05 Geared DC Motors

06 Stepper Motors

Connections





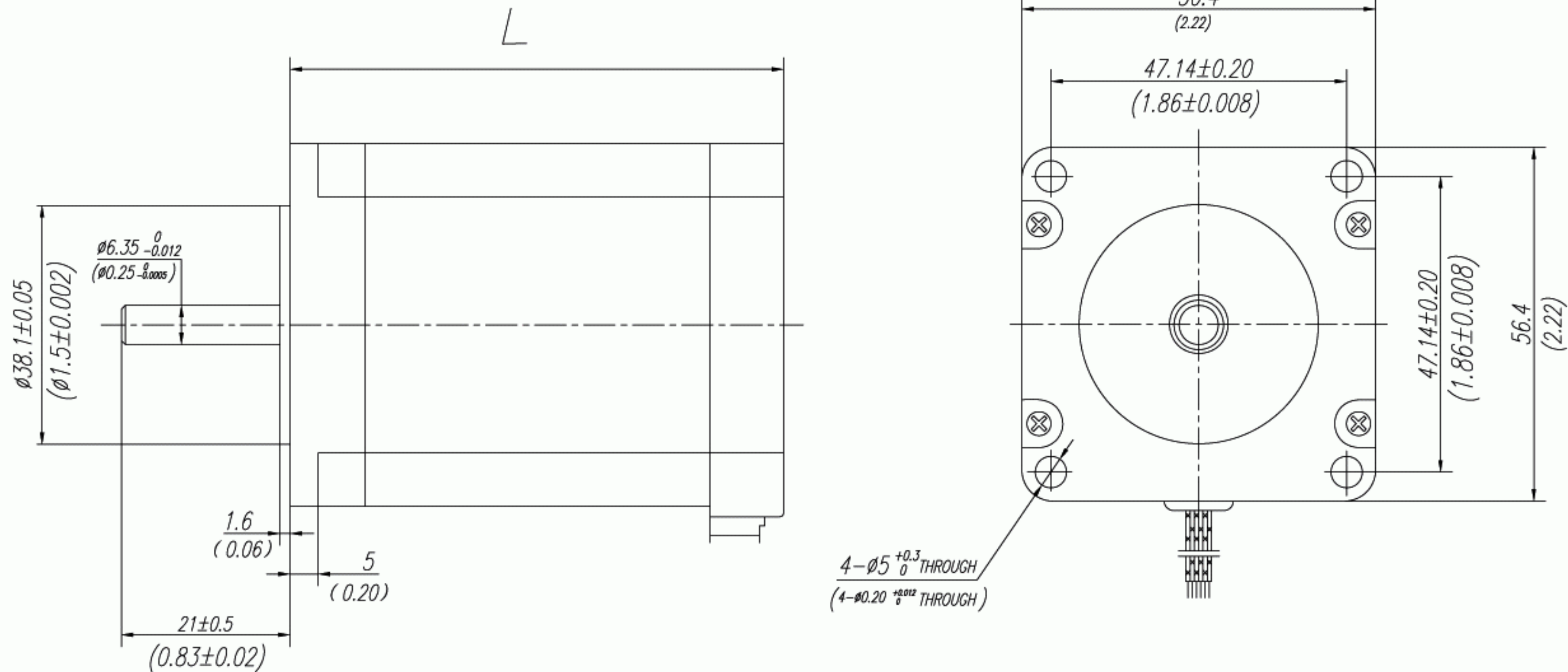
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	75N (20mm from the flange)
Max. Axial Force	15N
Rotation	CW (Viewed from front flange)

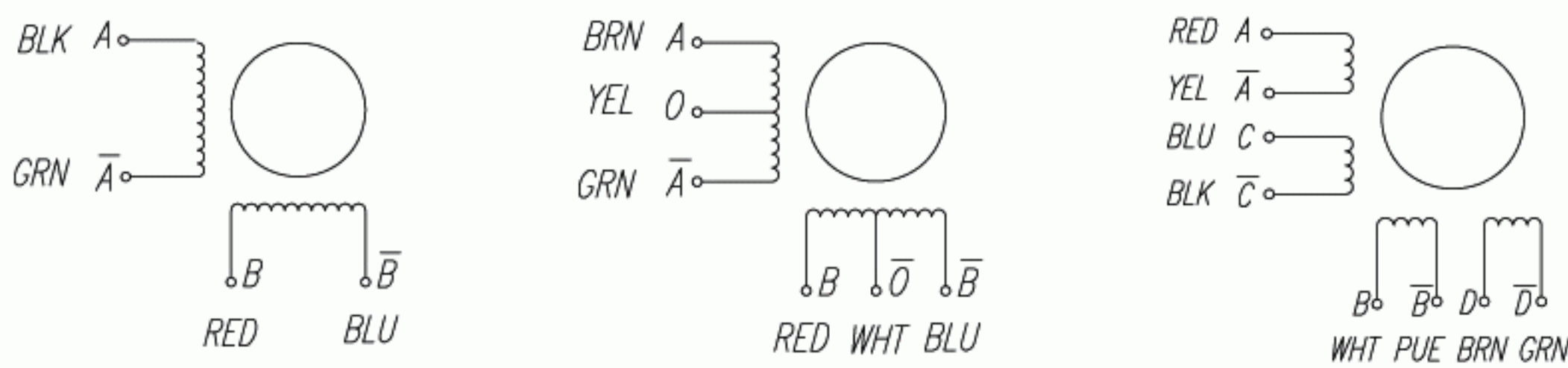
Performance Data

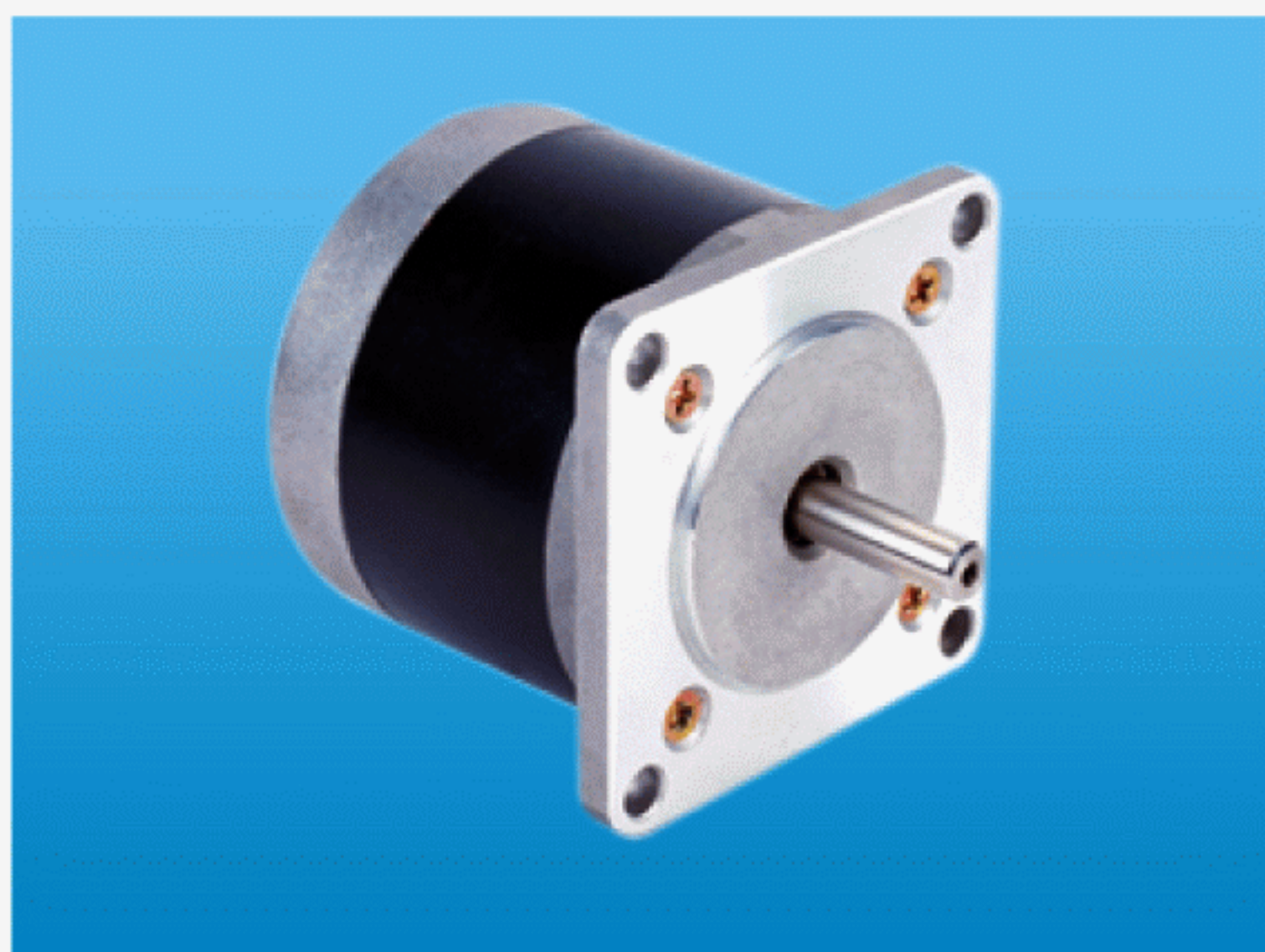
Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wire/pins	Weight g
23PMM41F57	57HS41MF57	41	0.9	5.7	1	5.7	54	120	4	470
23PMM41F098	57HS41MF098	41	0.9	0.98	2	1.96	49	120	4	470
23PMM41S06	57HS41MS06	41	0.9	3.8	1	3.8	38	120	6	470
23PMM41E104	57HS41ME104	41	0.9	1.4	2	2.8	38	120	8	470
23PMM41E54	57HS41ME54	41	0.9	0.36	5.4	1.94	22	120	8	470
23PMM47E101	57HS47ME101	47	0.9	1.13	2.1	2.37	70	150	8	530
23PMM56F05	57HS56MF05	56	0.9	33	0.5	16.5	110	200	4	680
23PMM56F03	57HS56MF03	56	0.9	1.1	2.5	2.75	95	200	4	680
23PMM56S075	57HS56MS075	56	0.9	0.75	3	2.25	90	200	6	680
23PMM56S302	57HS56MS302	56	0.9	3.2	1.5	4.8	90	200	6	680
23PMM76S10	57HS76MS10	76	0.9	10	1	10	152	360	6	1050
23PMM76S03	57HS76MS03	76	0.9	3	1.8	5.4	135	360	6	1050
23PMM76F21	57HS76MF21	76	0.9	21	0.5	11	135	360	4	1050
23PMM76F101	57HS76MF101	76	0.9	1.1	3	3.3	190	360	4	1050
23PMM100F10	57HS100MF10	100	0.9	0.7	3	2.1	220	500	4	1360
23PMM100S10	57HS100MS10	100	0.9	1.3	3	3.9	200	500	6	1360

Dimensions in mm



Connections





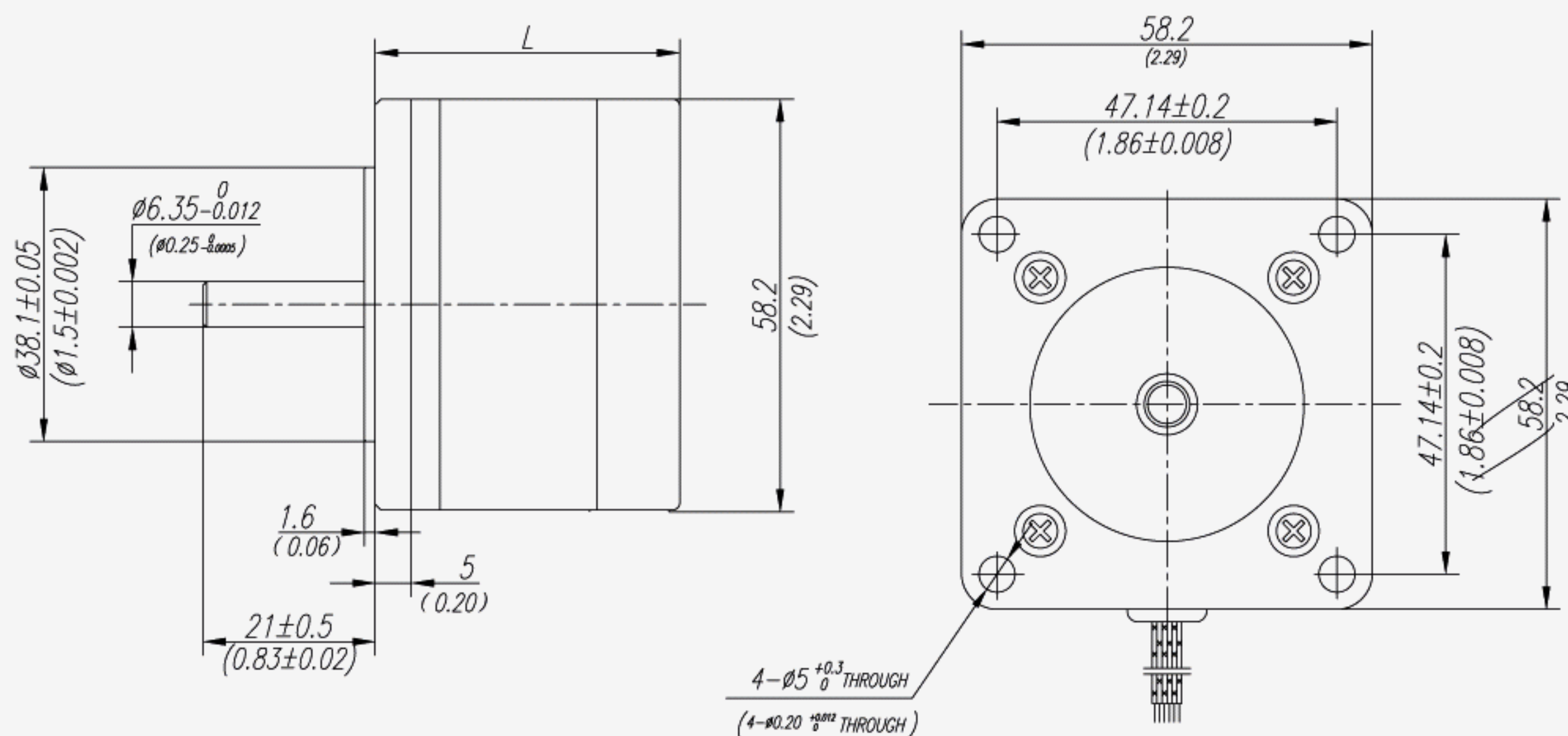
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	75N (20mm from the flange)
Max. Axial Force	15N
Rotation	CW (Viewed from front flange)

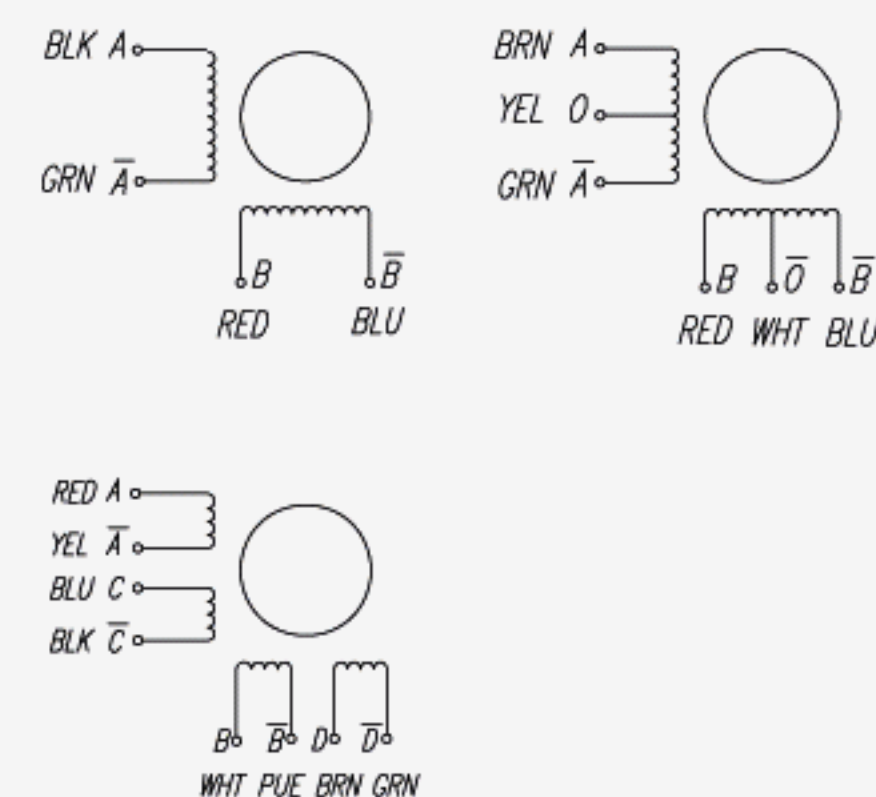
Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wires/pins	Weight g
23SYM41F07	57HY41DF07	41	1.8	16	0.38	6	30	80	4	360
23SYM41F06	57HY41DF66	41	1.8	3.55	0.85	3	43	80	4	360
23SYM41S56	57HY41DS56	41	1.8	1.5	1.5	2.25	25	80	6	360
23SYM41S07	57HY41DS07	41	1.8	32	0.38	1.2	30	80	6	360
23SYM51F26	57HY51DF26	51	1.8	2.6	1.5	3.9	50	120	4	450
23SYM51F60B	57HY51DF60B	51	1.8	1.3	2	2.6	62	120	4	450
23SYM51F055	57HY51DF055	51	1.8	0.55	3	1.6	60	120	4	450
23SYM51S01	57HY51DS501	51	1.8	5.1	1	5.1	54	120	6	450
23SYM51S19	57HY51DS19	51	1.8	13	0.7	9.1	50	120	6	450
23SYM51S07	57HY51DS07	51	1.8	32	0.38	12	38	120	6	450
23SYM51S08	57HY51DS08	51	1.8	3.1	1.3	4	45	120	6	450
23SYM51V61	57HY51DV61	51	1.8	1.5	2	3	52	120	5	450
23SYM51E103	57HY51DE103	51	1.8	1.3	2	2.6	43	120	8	450
23SYM51E5	57HY51DE5	51	1.8	5	1	5	53	120	8	450
23SYM56F09	57HY56DF09	56	1.8	0.9	3	2.7	80	140	4	540
23SYM56F20	57HY56DF20	56	1.8	20	0.6	12	58	140	4	540
23SYM56S27	57HY56DS27	56	1.8	27	0.42	11.3	60	140	6	540
23SYM56S84	57HY56DS84	56	1.8	20	0.6	12	58	140	6	540
23SYM56S59	57HY56DS59	56	1.8	2.5	1.6	4	60	140	6	540
23SYM56S09	57HY56DS09	56	1.8	1	2.4	2.4	60	140	6	540
23SYM56E103	57HY56DE103	56	1.8	1.35	2	2.7	60	140	8	540
23SYM76F07	57HY76DF07	76	1.8	2	2.3	4.6	120	290	4	100
23SYM76F048	57HY76DF048	76	1.8	0.48	4.7	2.26	120	290	4	100
23SYM76S70	57HY76DS70	76	1.8	3.6	1.5	5.4	90	290	6	100
23SYM76S71	57HY76DS71	76	1.8	1.4	2.5	3.5	105	290	6	100

Dimensions in mm



Connections





Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	75N (20mm from the flange)
Max. Axial Force	75N
Rotation	CW (Viewed from front flange)

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gmm ²	Lead wires/pins	Weight g
24PYM44F073B	60HS44DF073DB	44	1.8	0.73	2.8	2	106	70	4	500
24PYM76F1	60HS76DF1	76	1.8	1	3	3	210	120	4	1100
24PYM100F12	60HS100DF12	100	1.8	1.2	3	3.6	350	160	4	1400
24PYM100F07	60HS100DF07	100	1.8	0.7	4	2.8	400	160	4	1400

Technical drawing of a mechanical part, showing two views: a side view (left) and a top view (right).

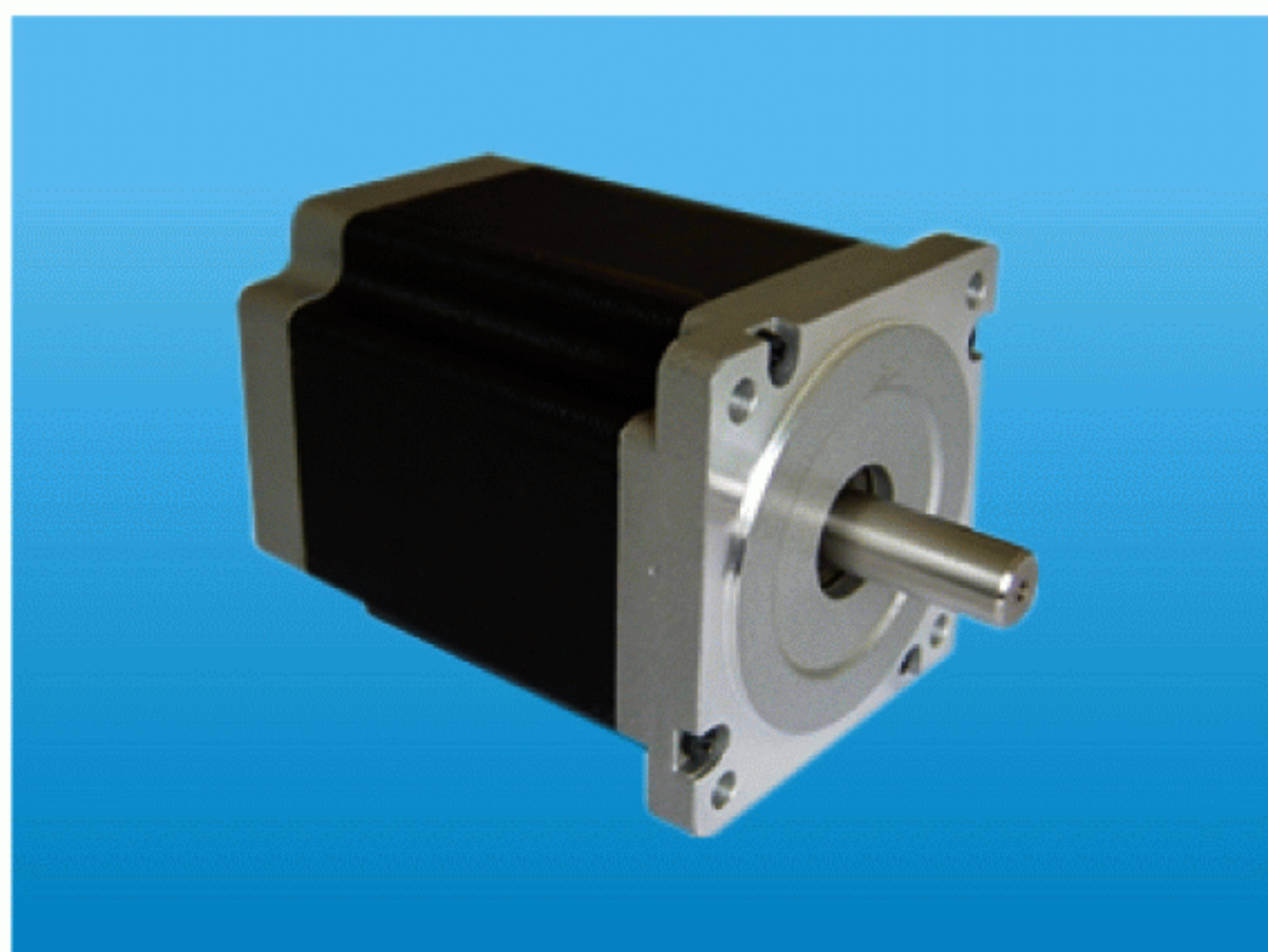
Side View (Left):

- Overall width: 60 (2.36)
- Central hole diameter: 47.14 ± 0.20 (1.86 ± 0.008)
- Smaller hole diameter: $6.35 -0.012$ ($0.25 -0.008$)
- Distance from left edge to smaller hole center: 1.5 ± 0.002 (0.06)
- Distance from smaller hole center to right edge: 1.6 (0.06)
- Distance from right edge to central hole center: 5 (0.20)
- Overall height: 21 ± 0.5 (0.83 ± 0.02)

Top View (Right):

- Overall width: 60 (2.36)
- Central hole diameter: 47.14 ± 0.20 (1.86 ± 0.008)
- Smaller hole diameter: $6.35 -0.012$ ($0.25 -0.008$)
- Distance from left edge to smaller hole center: 1.5 ± 0.002 (0.06)
- Distance from smaller hole center to right edge: 1.6 (0.06)
- Distance from right edge to central hole center: 5 (0.20)
- Overall height: 21 ± 0.5 (0.83 ± 0.02)

Part label: **L**



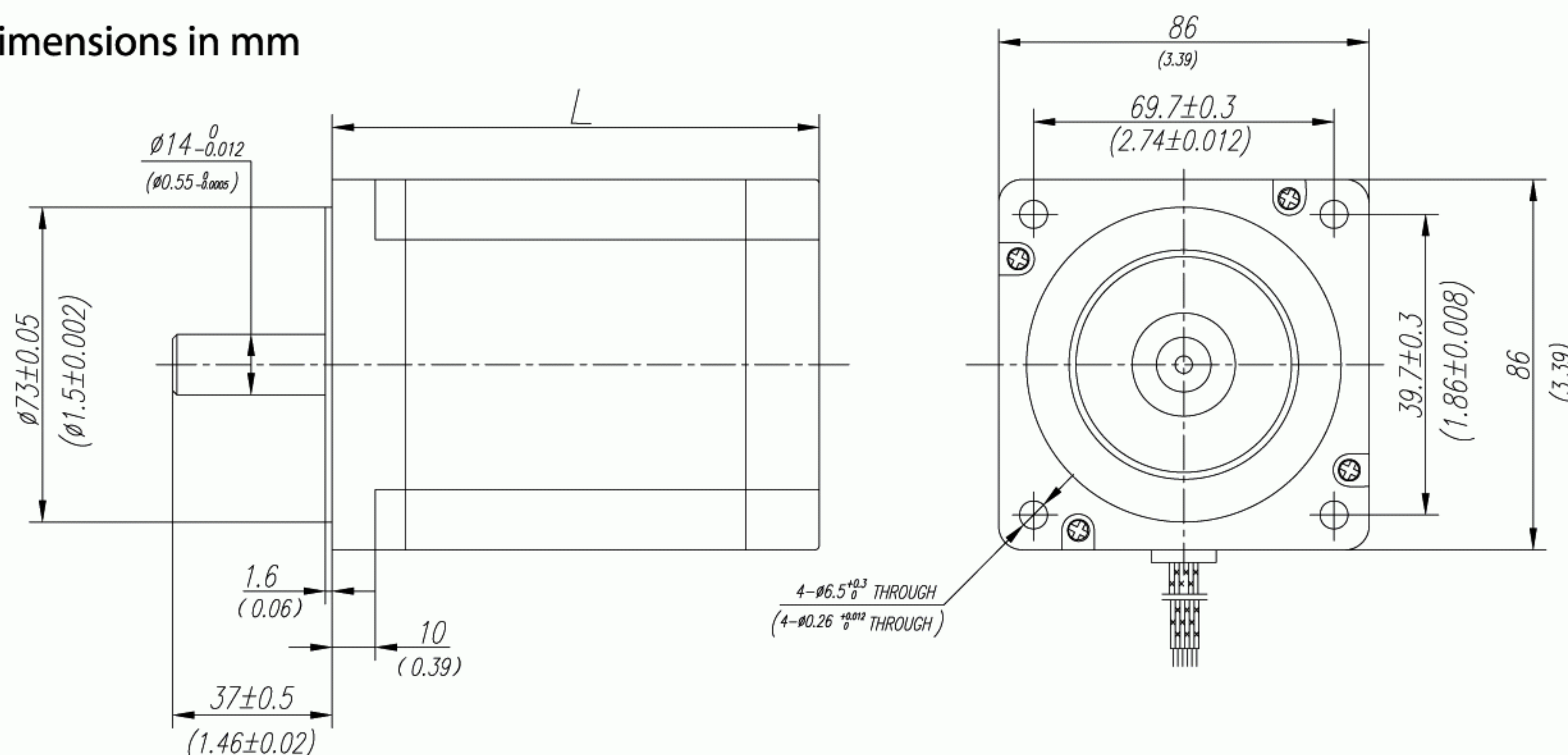
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	220N (20mm from the flange)
Max. Axial Force	60N
Rotation	CW (Viewed from front flange)

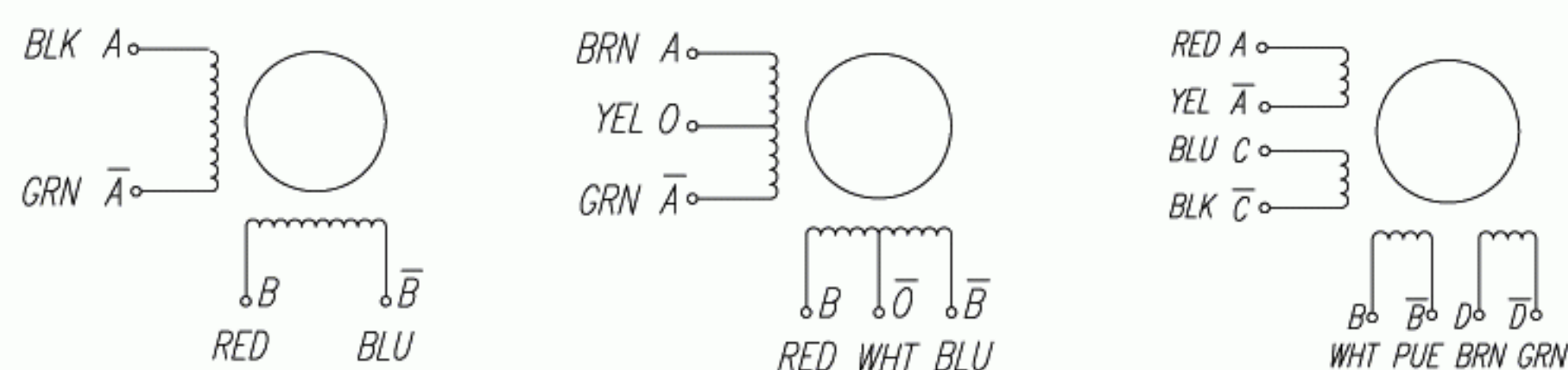
Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wires/pins	Weight g
34PYM61F027	86HS61DF027	61	1.8	0.27	6	1.62	300	1000	4	1400
34PYM65F101	86HS65DF101	65	1.8	1.14	3	4.42	340	1400	4	1700
34PYM64E07	86HS64DE07	65	1.8	0.7	4	2.8	350	1400	8	1700
34PYM78F042	86HS78DF042	78	1.8	0.42	5.5	2.31	460	2400	4	2600
34PYM78F01	86HS78DF01	78	1.8	1	3	3	330	2400	4	2800
34PYM78E01	86HS78DE01	78	1.8	2.1	2	4.2	350	2400	8	2800
34PYM78E02	86HS78DE02	78	1.8	0.45	4.5	2	300	2400	8	2800
34PYM80E08	86HS80DE08	80	1.8	0.8	4.5	3.6	460	2500	8	2800
34PYM114E036	86HS114DE036	114	1.8	0.36	6	2.16	580	3700	8	3800
34PYM114E02	86HS114DE02	114	1.8	0.6	4.5	2.7	570	3700	8	3800
34PYM114F02	86HS114DF02	114	1.8	1.2	4	4.8	850	3700	4	3800
34PYM150E025	86HS150DE025	150	1.8	0.24	12	2.88	1300	5000	8	5400
34PYM150E02	86HS150DE02	150	1.8	0.8	4.5	3.6	800	5000	8	5400
34PYM150F056	86HS150DF056	150	1.8	0.56	6.2	3.47	1278	5000	4	5400

Dimensions in mm



Connections





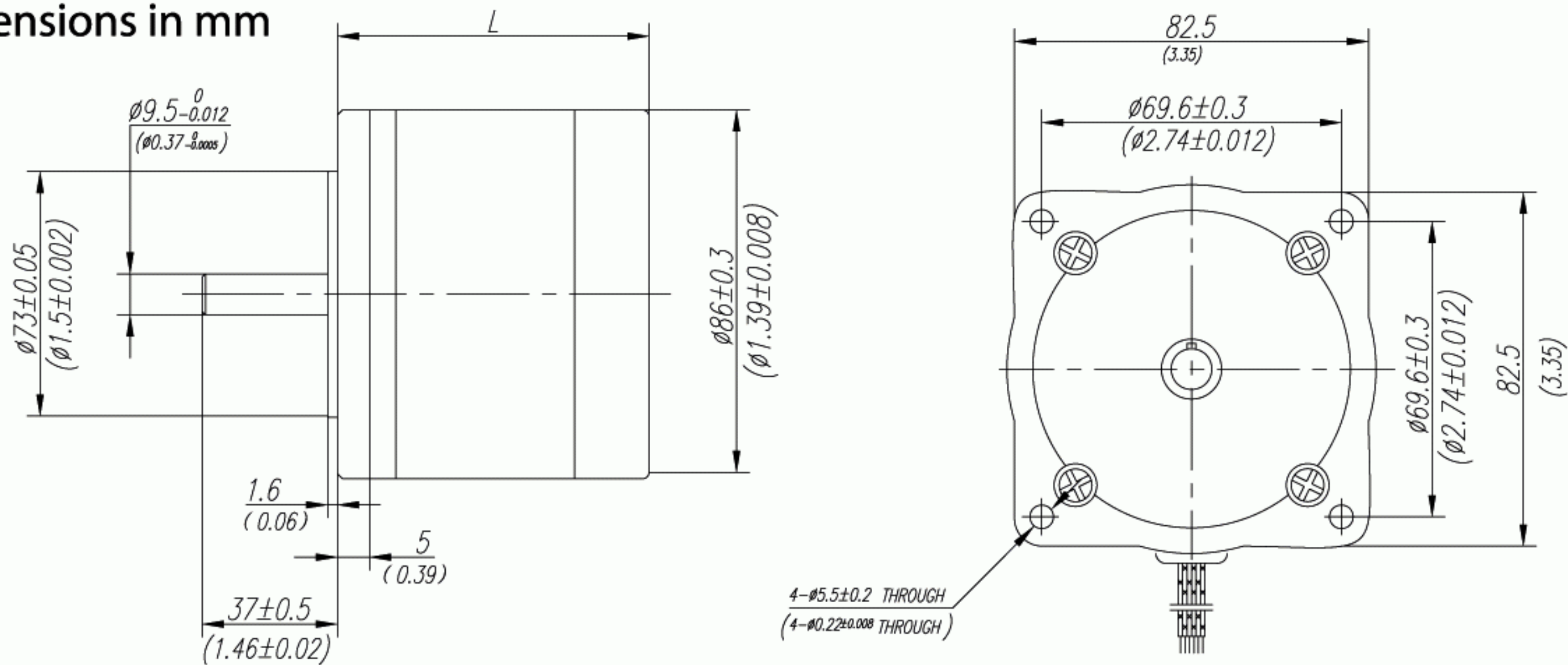
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	220N (20mm from the flange)
Max. Axial Force	60N
Rotation	CW (Viewed from front flange)

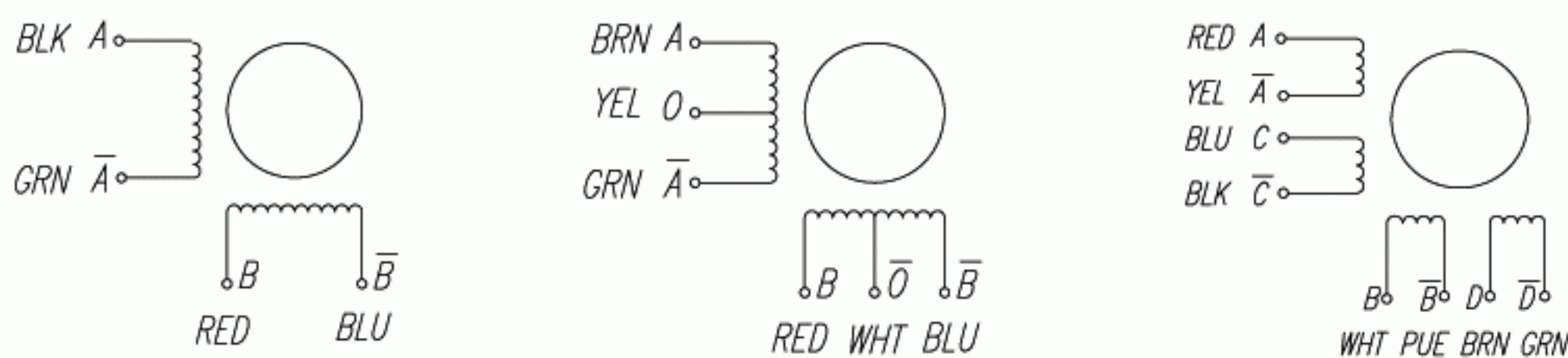
Performance Data

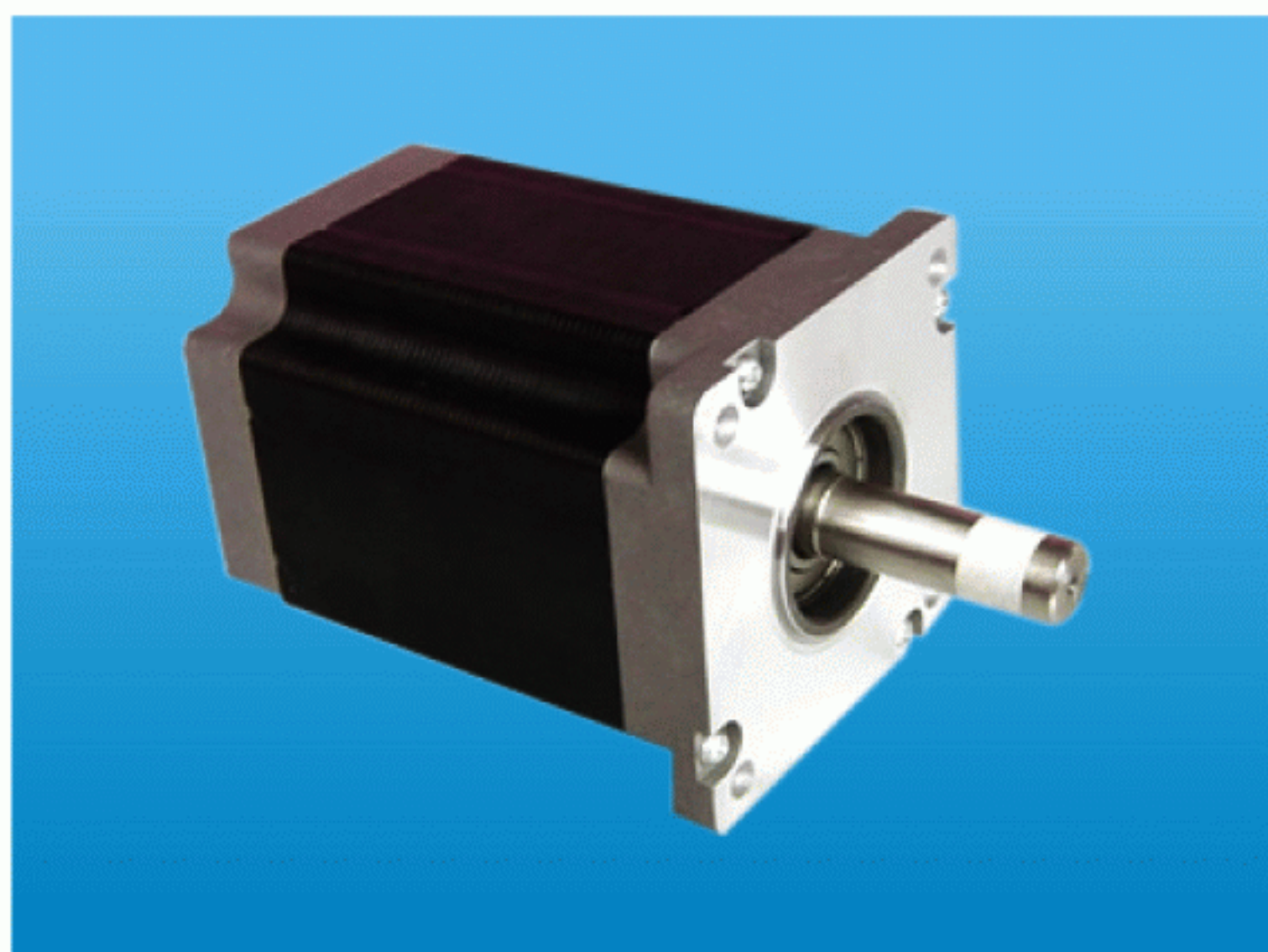
Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gmm ²	Lead wires/pins	Weight g
34SYM64F09	86HY64DF09	64	1.8	0.9	2.4	2.3	200	640	4	1600
34SYM64F109	86HY64DF109	64	1.8	1.9	3	5.7	220	640	4	1600
34SYM64F06	86HY64DF06	64	1.8	0.6	4	2.4	275	640	4	1600
34SYM64S01	86HY64DS01	64	1.8	2	1.9	3.8	180	640	6	1600
34SYM64E045	86HY64DE045	64	1.8	0.45	3.6	1.62	180	640	8	1600
34SYM64E01	86HY64DE01	64	1.8	2	1.9	3.8	180	640	8	1600
34SYM73F107	86HY73DF107	73	1.8	1.7	2	3.4	260	1000	4	2000
34SYM92F105	86HY92DF105	92	1.8	1.5	2.83	4.245	460	1300	4	2600
34SYM92F02	86HY92DF02	92	1.8	0.28	4.5	2.02	350	1300	4	2600
34SYM92S02	86HY92DS02	92	1.8	0.55	4.5	2.475	350	1300	6	2600
34SYM92E075	86HY92DE075	92	1.8	0.75	4	3	350	1300	8	2600
34SYM92E04	86HY92DE04	92	1.8	2.7	2	5.4	350	1300	8	2600
34SYM122E02	86HY122DE02	122	1.8	0.8	4	3.2	400	3000	8	4000

Dimensions in mm



Connections





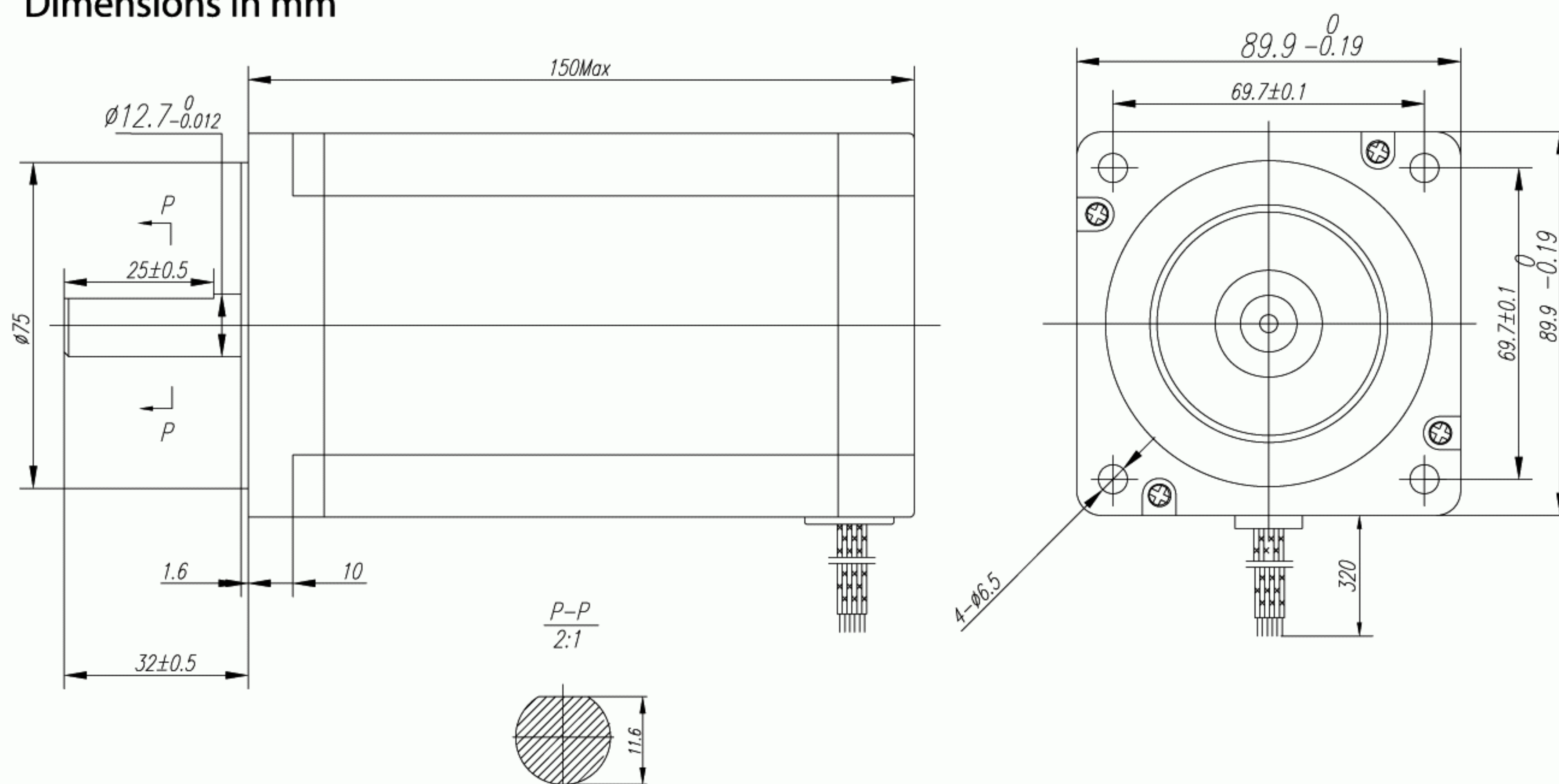
General Specification

Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C max. (rated current, 2 phases on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100MΩ min., 500Vdc
Dielectric Strength	500Vac for one minute
Shaft Radial Play	0.02mm max. (450g load)
Shaft Axial Play	0.08mm max. (450g load)
Max. Radial Force	220N (20mm from the flange)
Max. Axial Force	60N
Rotation	CW (Viewed from front flange)

Performance Data

Old Part Number	New Part Number	Length (L) mm	Step Angle deg	Resistance Ω	Current A	Voltage V	Holding Torque Ncm	Rotor Inertia gcm ²	Lead wires/pins	Weight g
35PYM65E053	90HS65DE053	65	1.8	0.53	5.0	2.6	320	1.2	8	2200
35PYM78E062	90HS78DE062	78	1.8	0.62	5.0	3.1	520	1.8	8	3200
35PYM95E052	90HS95DE052	95	1.8	0.52	6.0	3.1	700	2.4	8	3600
35PYM114E065	90HS114DE065	114	1.8	0.65	6.0	3.9	1000	3.5	8	4200
35PYM150E082	90HS150DE082	150	1.8	0.82	6.0	4.9	1300	4.8	8	5100

Dimensions in mm



Connections

