SAMURAI SERIES

SERVOS AND DRIVES

SAMURAI SERVO MOTOR SPECIFICATION

Servo Motor Model Designation

SVM-MV90-750-220-AE

Code	Servo Motor Family
SVM	SAMURAI

Code	Brake
B	With +24VDC Holding Brake
E	No Brake

Code	Encoder
A	Single Turn 16 Bit Absolute Encoder
M	Multi-Turn 32 Bit Absolute Encoder

Code	Voltage Class
60	60 VAC
150	150 VAC
220	220 VAC
230	230 VAC

Code	Power
50	50 W
60	60 W
100	100 W
150	150 W
200	200 W
400	400 W
750	750 W
1000	1000 W
1300	1300 W
1800	1800 W
3000	3000 W

Code	Frame Size
MV40	40 mm
MV60	60 mm
MV80	80 mm
MV90	90 mm
MV130	130 mm
NV23	NEMA23
NV34	NEMA34
NV42	NEMA42

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Applicable Servo Drive Pair

Servo Motor Series	Model Name Prefix	Inertia Class	Frame Size	Voltage Class	Applicable Servo Drive
SVM-NV	23	Low inertia for high response, dynamic acceleration rates, high frequency, low rigidity applications	NEMA23	60V	DC2/DC4
	34	Medium inertia for low reduction, higher rigidity, slower acceleration applications.	NEMA34	150V	DC2/DC4
	42	Medium inertia for low reduction, higher rigidity, slower acceleration applications.	NEMA42	200V	DC2/DC4
SVM-MV	40-50	Low inertia for high response, dynamic acceleration rates, high frequency, low rigidity applications	40mm	60V/ 200V	DC2/DC4
	40-100			60V/ 200V	DC2/DC4
	60-200		60mm	60V/ 200V	DC2/DC4
	6-400			60V/ 200V	DC2/DC4
	80-800		80mm	200V	DC4
	130-1000	Medium inertia for low reduction, high load capacity, high rigidity applications	130mm		DC4
	130-1300				DC4
	130-1800				DC4

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Consolidated Specifications

Servo Motor Series	Model Name Prefix	Rated Output Capacity [W]	Frame Size	Voltage Class	Rated Current/ (Peak Current) [A]	Rated Speed/ (Max Speed) [r/min]	Rated Torque/ (Peak Torque) [Nm]	Rotor Inertia (Brake) [kg-cm^2]	Torque Coefficient [Nm/A]	Holding Brake Option	Applicable Servo Drive	3D Model STEP
SVM	NV23	400	NEMA23	60V	8.4 (21.0)	3,000 (5,000)	1.27 (3.82)	0.426 (0.479)	0.182	24VDC	DC2/AC4	
SVM	NV23	400	NEMA23	60V	8.4 (21.0)	3,000 (5,000)	1.27 (3.82)	0.426 (0.479)	0.182	N	DC2/AC4	
SVM	NV34	750	NEMA34	150V	7.2 (21.5)	3,000 (5,000)	2.4 (7.1)	2.45 (2.94)	0.335	24VDC	DC2/AC4	
SVM	NV34	750	NEMA34	150V	7.2 (21.5)	3,000 (5,000)	2.4 (7.1)	2.45 (2.94)	0.335	N	DC2/AC4	
SVM	NV42	1300	NEMA42	200V	6.0 (18.0)	1,500 (3,000)	4.98 (15)	6.3 (7.56)	0.833	24VDC	AC4	
SVM	NV42	1300	NEMA42	200V	6.0 (18.0)	1,500 (3,000)	4.98 (15)	6.3 (7.56)	0.833	N	AC4	
SVM	MV40	50	40mm	60V	2.0 (6.0)	3,000 (5,000)	0.16 (0.48)	0.036 (0.044)	0.08	24VDC	DC2	
SVM	MV40	50	40mm	60V	2.0 (6.0)	3,000 (5,000)	0.16 (0.48)	0.036 (0.044)	0.08	N	DC2	
SVM	MV40	50	40mm	200V	0.61 (2.1)	3,000 (5,000)	0.16 (0.48)	0.036 (0.044)	0.228	24VDC	AC4	
SVM	MV40	50	40mm	200V	0.61 (2.1)	3,000 (5,000)	0.16 (0.48)	0.036 (0.044)	0.228	N	AC4	
SVM	MV40	100	40mm	60V	3.0 (9.0)	3,000 (5,000)	0.318 (0.955)	0.063 (0.076)	0.106	24VDC	DC2	
SVM	MV40	100	40mm	60V	3.0 (9.0)	3,000 (5,000)	0.318 (0.955)	0.063 (0.076)	0.106	N	DC2	

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Servo Motor Series	Model Name Prefix	Rated Output Capacity [W]	Frame Size	Voltage Class	Rated Current/ (Peak Current) [A]	Rated Speed/ (Max Speed) [r/min]	Rated Torque/ (Peak Torque) [Nm]	Rotor Inertia (Brake) [kg-cm^2]	Torque Coefficient [Nm/A]	Holding Brake Option	Applicable Servo Drive	3D Model STEP
SVM	MV40	100	40mm	200V	0.84 (2.9)	3,000 (5,000)	0.318 (0.955)	0.063 (0.076)	0.331	24VDC	AC4	
SVM	MV40	100	40mm	200V	0.84 (2.9)	3,000 (5,000)	0.318 (0.955)	0.063 (0.076)	0.331	N	AC4	
SVM	MV60	200	60mm	60V	4.5 (11.3)	3,000 (5,000)	0.64 (1.91)	0.232 (0.278)	0.169	24VDC	DC2	
SVM	MV60	200	60mm	60V	4.5 (11.3)	3,000 (5,000)	0.64 (1.91)	0.232 (0.278)	0.169	N	DC2	
SVM	MV60	200	60mm	200V	1.9 (6.8)	3,000 (5,000)	0.64 (1.91)	0.232 (0.278)	0.28	24VDC	AC4	
SVM	MV60	200	60mm	200V	1.9 (6.8)	3,000 (5,000)	0.64 (1.91)	0.232 (0.278)	0.28	N	AC4	
SVM	MV60	400	60mm	60V	8.4 (21.0)	3,000 (5,000)	1.27 (3.82)	0.426 (0.511)	0.181	24VDC	DC2	
SVM	MV60	400	60mm	60V	8.4 (21.0)	3,000 (5,000)	1.27 (3.82)	0.426 (0.511)	0.181	N	DC2	
SVM	MV60	400	60mm	200V	2.6 (8.3)	3,000 (5,000)	1.27 (3.82)	0.426 (0.511)	0.46	24VDC	AC4	
SVM	MV60	400	60mm	200V	2.6 (8.3)	3,000 (5,000)	1.27 (3.82)	0.426 (0.511)	0.46	N	AC4	
SVM	MV80	750	80mm	200V	4.2 (12.6)	3,000 (5,000)	2.39 (7.16)	2.0 (2.3)	0.568	24VDC	AC4	
SVM	MV80	750	80mm	200V	4.2 (12.6)	3,000 (5,000)	2.39 (7.16)	2.0 (2.3)	0.568	N	AC4	
SVM	MV130	1000	130mm	200V	5.3 (15.9)	1,500 (3,000)	4.4 (12)	8.5 (10.2)	0.755	24VDC	AC4	
SVM	MV130	1000	130mm	200V	5.3 (15.9)	1,500 (3,000)	4.4 (12)	8.5 (10.2)	0.755	N	AC4	

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Servo Motor Series	Model Name Prefix	Rated Output Capacity [W]	Frame Size	Voltage Class	Rated Current/ (Peak Current) [A]	Rated Speed/ (Max Speed) [r/min]	Rated Torque/ (Peak Torque) [Nm]	Rotor Inertia (Brake) [kg-cm^2]	Torque Coefficient [Nm/A]	Holding Brake Option	Applicable Servo Drive	3D Model STEP
SVM	MV130	1300	130mm	200V	8.6 (25.8)	1,500 (3,000)	8.27 (23.3)	18.9 (21.74)	0.903	24VDC	AC4	
SVM	MV130	1300	130mm	200V	8.6 (25.8)	1,500 (3,000)	8.27 (23.3)	18.9 (21.74)	0.903	N	AC4	
SVM	MV130	1800	130mm	200V	10.7 (32.1)	1,500 (3,000)	11.5 (28.7)	23.8 (27.37)	0.894	24VDC	AC4	
SVM	MV130	1800	130mm	200V	10.7 (32.1)	1,500 (3,000)	11.5 (28.7)	23.8 (27.37)	0.894	N	AC4	
SVM	MV130	3000	130mm	220V	13.7 (41.1)	1,500 (3,000)	14.3 (42.96)	17.92 (21.56)	1.13	N	AC4	

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Features

- Standard and metric NEMA23, 34 and 42 frame size motors for universal applications
- Factory mounted and tuned ABS-16-00 Absolute Encoder - 16 bits [65,536 ppr]
- High speed serial absolute encoder with 4-wire feedback
- Medium inertia high rigidity applications
- Low cogging, smooth motor coil response
- Robust against shock and vibration - robust magnetic encoder
- Low maintenance

Application Examples

- Machine Tool / CNC
- Y X table
- Lighting / Camera Automation
- Printing / Textile Automation
- Home / Building Automation
- Roller / Conveyor

Motor Options

- +24VDC electromagnetic holding brake
- Straight shaft, keyed shaft, two flat seat (D-Cut) shaft options
- Custom voltage class options

Motor Specification

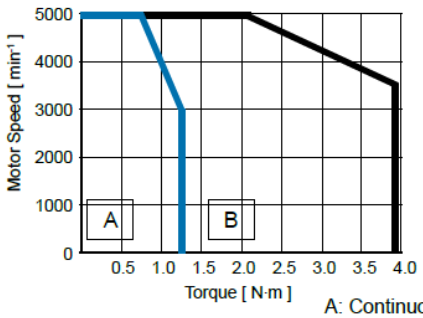
Motor Model		NV23	NV34	NV42
Rated Output	kW	0.40	0.75	1.3
Rated Speed	min^{-1}	3,000	3,000	1,500
Maximum Speed	min^{-1}	5,000	5,000*2	3,000
Rated Torque*3	N•m	1.27	2.4	4.98
Peak Torque	N•m	3.82	7.2	15
Voltage Class	V	60	150	200
Rated Current*3	Arms	8.4	7.2	6.0
Peak Current	Arms	21.0	21.5	18.0
Rotor Moment of Inertia (Brake)	$kg•cm^2$	0.426 (0.479)	2.45 (2.94)	6.3 (7.56)
Torque Constant	N•m/Arms	0.182	0.335	0.833
Encoder Option*1		16-Bit Single-Turn Absolute (65,536 ppr), 32-Bit Multi-Turn Battery, 32-bit Multi-Turn Battery-Less, Low Profile		
Frame Size		57mm NEMA23	86mm NEMA34	110mm NEMA42
Shaft Length	mm	21	37	64
Shaft Diameter	mm	6.35 (1/4")	12.7 (1/2")	15.87 (5/8")
Mass (Brake)	kg	1.2 (1.6)	3.1 (3.6)	6.7 (8.0)
Ingress Protection		IP65	IP65	IP65
Insulation		Class F		
Environment	Temperature	0~40°C Ambient temperature -20~50°C Storage		
	Humidity	85% Max. humidity. no condensation		

Note: 1. Standard encoder option is ABS-16-00 Single-Turn absolute magnetic encoder.
2. When paired with the DC2 servo drive, the peak speed of the NV34 motor depends on the voltage input. For example, at 48VDC input, the motor's peak speed is approximately 1200rpm.
3. Rated torque measured as continuous allowable current at 40°C with 6mmx200mm aluminum heat sink.

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

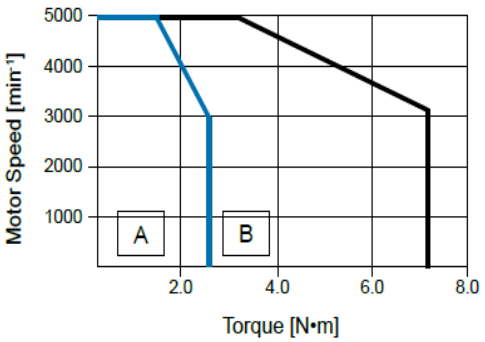
Torque - Speed Curve

NV23



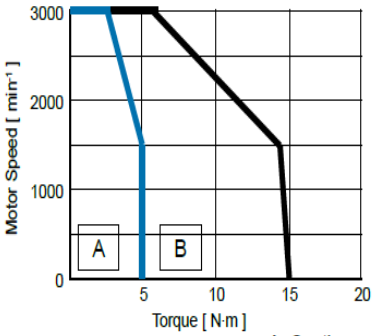
A: Continuous Duty Zone
B: Intermittent Duty Zone

NV34



A: Continuous Duty Zone
B: Intermittent Duty Zone

NV42

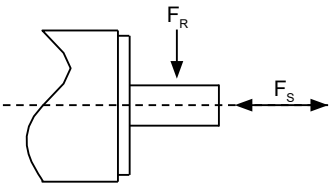


A: Continuous Duty Zone
B: Intermittent Duty Zone

Permissible Radial / Thrust Loads

During testing, installation, mounting or operation, the servo motor shaft should never experience radial or thrush loads exceeding the below specifications. The servo motor shaft must be at least ±0.1mm concentric with coupling and mechanical drive shaft. For belt drive systems, ensure the pinion is as close to the servo motor body as possible to reduce unnecessary force on the servo motor shaft.

Motor Model SMV	Radial Load F_R [N]	Thrust Load F_S [N]
NV23	240	70
NV34	490	200
N42	600	300



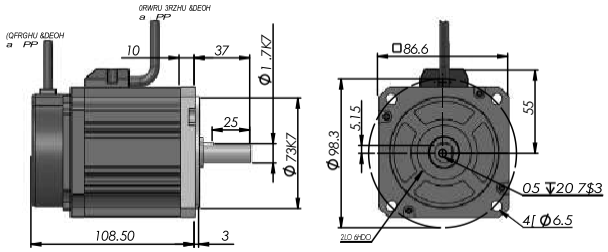
*Permissible radial/thrust load during assembly greater by 10%.

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

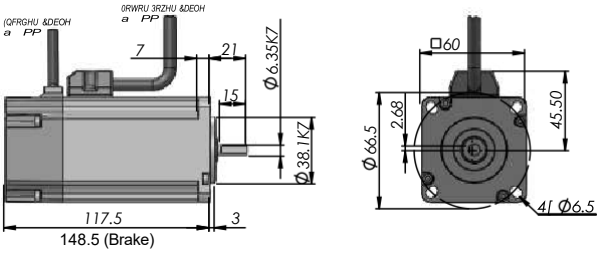
External Dimensions

All Dimensions in [mm]

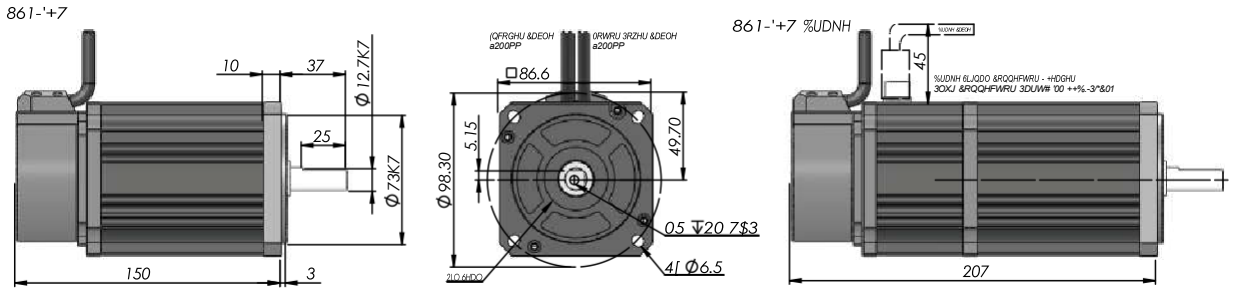
NV34-250



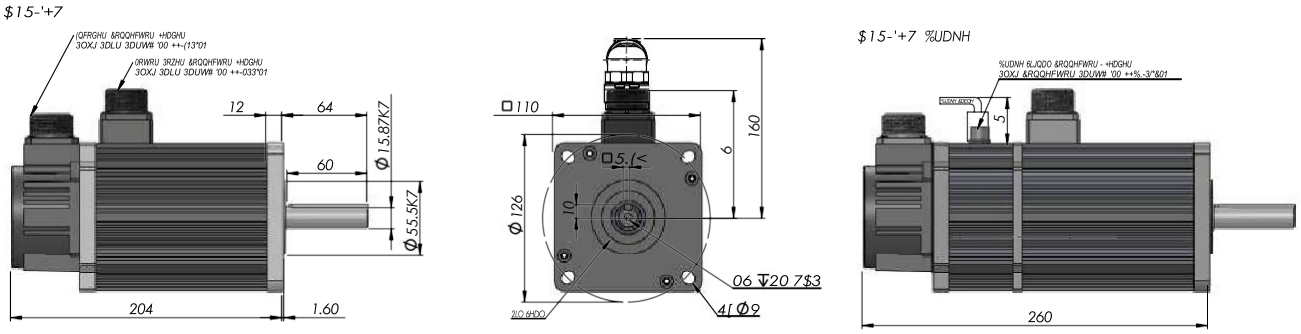
NV23-400



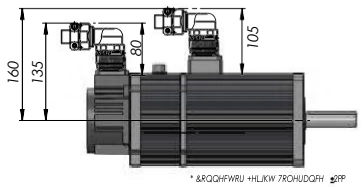
NV34-750



NV42-1300



$15-'+7 &RQQHFWRU 'LPHQVLRQV



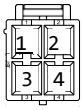
ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Connector Specifications

NV23 NV34

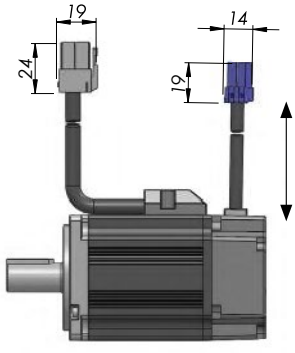
Motor Power Connector

Part	Part No.	Manufacturer
Connector Assembly Plug Housing	VLP-04V	J.S.T.
Socket Contact	SVF-61T-P2.0	J.S.T.
Cable Retainer	VLS-02V	J.S.T.



Looking from connector input side

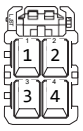
Pin Layout	Color		Signal
	57N	86L, 86M, 86N	
1	Blue	Blue	Phase A
2	Red	Red	Phase B
3	Black	Yellow	Phase C
4	Yellow/Green		Frame Ground



Motor Cable Length ~200mm

Encoder Connector

Part	Part No.	Manufacturer
Connector Assembly Plug Housing	HILP-04V-1-S	J.S.T.
Pin Contact	SHIF-01T-P0.5	J.S.T.

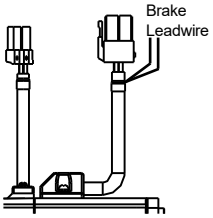


Looking from connector input side

Pin Layout	Color	Data
1	Black	Gnd
2	Blue	S-
3	Green	S+
4	Red	+5VDC

Brake Connection

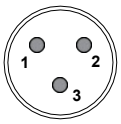
- NV23



Brake Leadwire Colour	Signal
Brown	+24VDC
White/Black	Ground

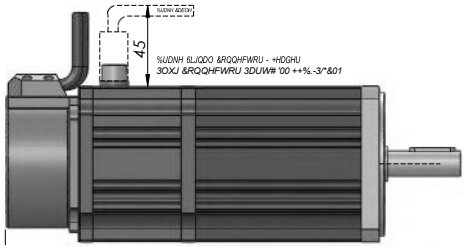
- NV34

Brake signal header connector Pinout:



Pin Layout	Signal
1	+24VDC
2	Ground
3	NC

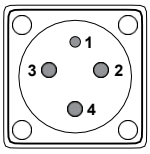
Mating Plug DMM Part# DMM HHBK-PLGC01
* Mating plug included with brake motor



ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

NV42 Motor

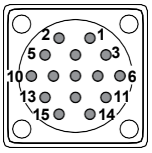
Motor Power Connector



Pin Layout	Signal
1	Frame Ground
2	Motor Phase C
3	Motor Phase B
4	Motor Phase A

Mating Plug DMM Part# DMM HH-MPPG01

Encoder Connector

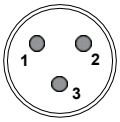


Pin Layout	Data
2	+5VDC
14	Ground
10	S-
6	S+
4	BAT+
12	BAT- (Ground)

Note: Pins 4 and 12 only used on multi-turn encoder with battery.
Mating Plug DMM Part# DMM HH-ENPG01

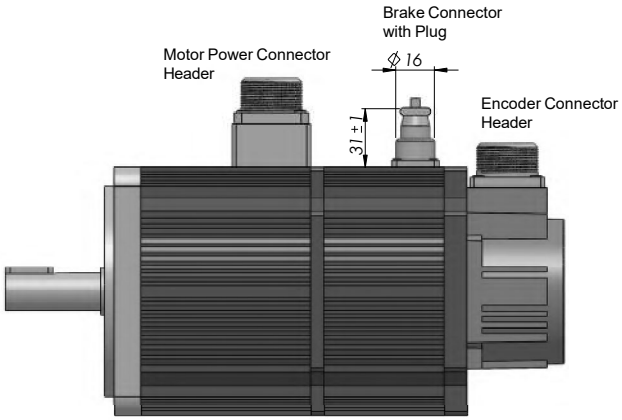
Brake Connector

Brake signal header connector Pinout:



Pin Layout	Signal
1	+24VDC
2	Ground
3	NC

Mating Plug DMM Part# DMM HHBK-PLGC01
* Mating plug included with brake motor

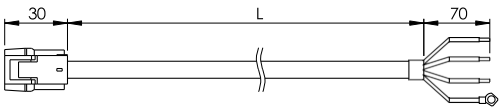


ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Cable Selection

Motor Model	Servo Drive	Encoder Cable Part#	Encoder Cable Specification	Motor Power Cable Part#	Motor Power Cable Specification	Length
NV23	DC2	CBL-DCVE	D	CBL-DCVM	A	= 3,5,10,15meter standard length options also available.
	AC4	CBL-ACVLE	E	CBL-ACVLM	B	
NV34	DC2	CBL-DCVE	D	CBL-DCVM	A	
	AC4	CBL-ACVLE	E	CBL-ACVLM	B	
NV42	AC4	CBL-ACVHE	F	CBL-ACVHM	C	

A / B Type Specification



Side B
To Servo Motor

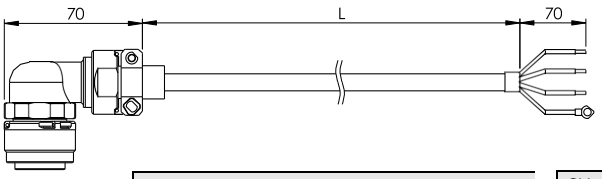
Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	VLR-04V
Contact	SVM-61T-P2.0
Manufacturer	J.S.T.

Cable	
Class	600V, 121°C UL1581
Conductor	1.5mm dia. AWG16
Insulator	PVC
O.D.	9mm

Side A To Servo Drive	
Connector	4-Position Lead Wire

C Type Specification



Side B
To Servo Motor

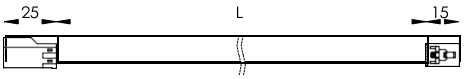
Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	4-Position Circular Connector
Contact	
Manufacturer	MOD Part# SPCU-HHMP-4

Cable	
Class	600V, 121°C UL1581
Conductor	1.5mm dia. AWG16
Insulator	PVC
O.D.	9mm

Side A To Servo Drive	
Connector	4-Position Lead Wire

D Type Specification



Side B
To Servo Motor

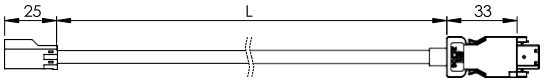
Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	HILR-04VF-1-S
Contact	SHIM-01T-P0.5
Manufacturer	J.S.T.

Cable	
Class	30V, 105°C UL20789
Conductor	0.63mm dia. AWG24 2x2 or 3x2 Twisted Pair
Insulator	PVC
O.D.	5.6mm

Side A To Servo Drive	
Connector Assembly	50-57-9404 or equivalent
Contact	16-02-0069 or equivalent
Manufacturer	Molex.

E Type Specification



Side B
To Servo Motor

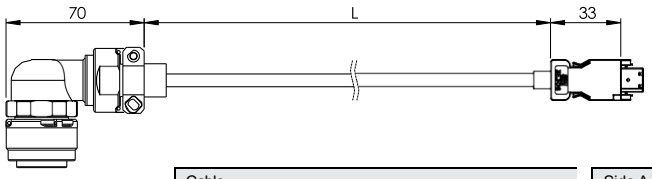
Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	HILR-04VF-1-S
Contact	SHIM-01T-P0.5
Manufacturer	J.S.T.

Cable	
Class	30V, 105°C UL20789
Conductor	0.63mm dia. AWG24 2x2 or 3x2 Twisted Pair
Insulator	PVC
O.D.	5.6mm

Side A To Servo Drive	
Connector Assembly	3E206-0100KV
Connector Shell Kit	3E306-3200-008
Manufacturer	3M

F Type Specification



Side B
To Servo Motor

Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	15-Position Circular Connector
Contact	
Manufacturer	MOD Part# SPCU-HHEN-15

Cable	
Class	30V, 105°C UL20789
Conductor	0.63mm dia. AWG24 2x2 or 3x2 Twisted Pair
Insulator	PVC
O.D.	5.6mm

Side A To Servo Drive	
Connector Assembly	3E206-0100KV
Connector Shell Kit	3E306-3200-008
Manufacturer	3M

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Features

- Low inertia and medium inertia types
- Standard metric servo frame size
- Factory mounted and tuned ABS-16-00 Absolute Encoder - 16 bits [65,536 ppr]
- High speed serial absolute encoder with 4-wire feedback
- Very low vibration, uniform winding density
- Low voltage 60V and high voltage 200V options
- Robust against shock and vibration - Robust magnetic encoder
- IP65 construction

Application Examples

- Machine Tooling / CNC
- Y X table
- Textile / Embroidery Automation
- Printing / Packaging
- Medical Machine
- Roller / Conveyor Machines
- Battery Powered / EV / Transport
- Lighting / Camera

Motor Options

- +24VDC electromagnetic holding brake
- Straight shaft, key shaft, D-cut shaft options
- Shorter frame option with ultra-thin ABS-16-00 encoder
- Custom voltage class options

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Motor Specification

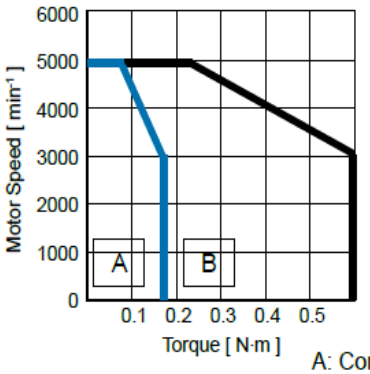
Motor Model SVM-MV		40-50		40-100		60-200		60-400		130-1000	130-1300	130-1800
Rated Voltage	V	60V	200V	60V	200V	60V	200V	60V	200V	200V		
Rated Output	kW	0.05		0.1		0.2		0.4		1.0	1.3	1.8
Rated Torque*2	N·m	0.16		0.318		0.64		1.27		4.7	8.27	11.5
Instantaneous Max. Torque	N·m	0.48		0.955		1.91		3.82		12	23.3	28.7
Rated Current	A	2.0	0.61	3.0	0.84	4.5	1.9	8.4	2.6	5.3	8.6	10.7
Max. Current	A	6.0	2.1	9.0	2.9	11.3	6.8	21.0	8.3	15.9	25.8	32.1
Rated Speed	r/min	3000		3000		3000		3000		1500	1500	1500
Max. Speed	r/min	5000		5000		5000		5000		3000	3000	3000
Rotor Inertia (Brake)	kg-cm^2	0.036 (0.044)		0.063 (0.076)		0.232 (0.278)		0.426 (0.511)		8.5 (10.2)	18.9 (21.74)	23.8 (27.37)
Torque Coefficient	N·m/A	0.08	0.228	0.106	0.331	0.169	0.28	0.181	0.460	0.755	0.903	0.894
Mass (Brake)	kg	0.38 (0.50)		0.45 (0.7)		1.1 (1.5)		1.5 (1.9)		7.7 (9.0)	8.9 (10.0)	10.0 (10.8)
Encoder Option*1	16-Bit Single-Turn Absolute (65,536 ppr), 32-Bit Multi-Turn Battery, 32-bit Multi-Turn Battery-Less, Low Profile											
Ratings	Time Rating: Continuous Thermal Class: F Excitation Method: Permanent Magnet Insulation Resistance: DC500V, >20MΩ Noise: ≤60dB; No Special Noise											
Environment	Ambient Temperature: 0~40 °C Storage: -20~50°C Ambient Humidity: 20~80% No Condensation											
Enclosure	IP65											
Shock	98m/s2 Max. (10G)											
Applicable Servo Drive		DC2	AC4	DC2	AC4	DC2	AC4	DC2	AC4	AC4		AC4

Note: 1. Standard encoder option is ABS-16-00 Single-Turn absolute magnetic encoder.
2. Rated torque measured as continuous allowable current at 40°C with 6mmx200mm aluminum heat sink.

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

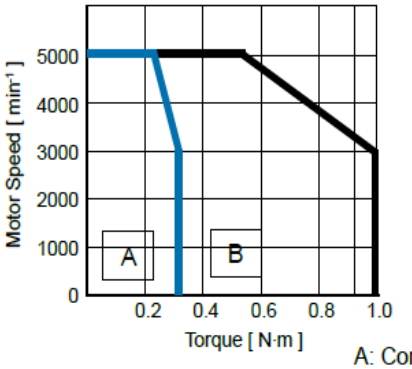
Torque - Speed Curve

MV40-50



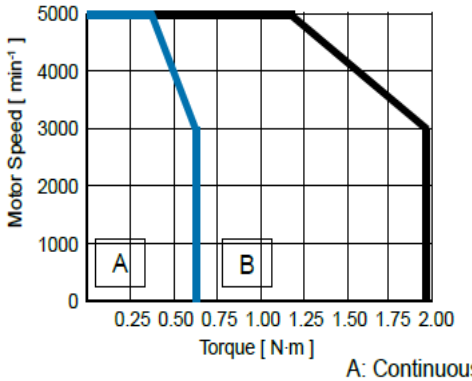
A: Continuous Duty Zone
B: Intermittent Duty Zone

MV40-100



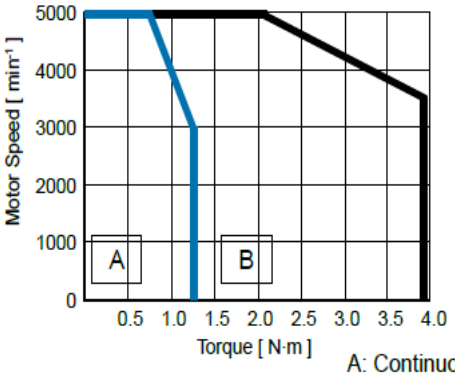
A: Continuous Duty Zone
B: Intermittent Duty Zone

MV60-200



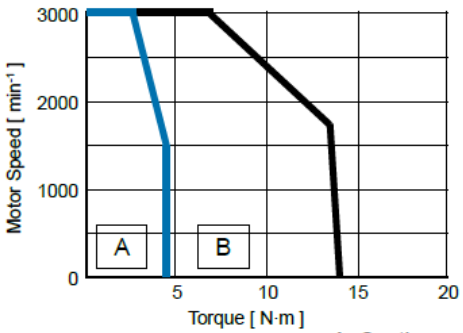
A: Continuous Duty Zone
B: Intermittent Duty Zone

MV60-400



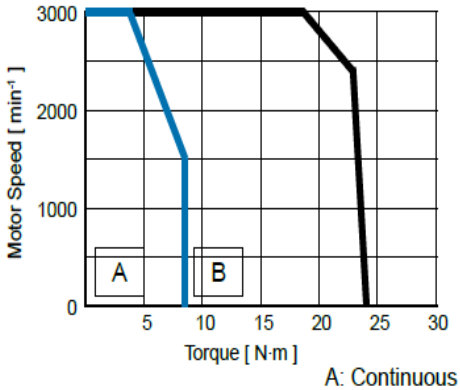
A: Continuous Duty Zone
B: Intermittent Duty Zone

MV130-1000



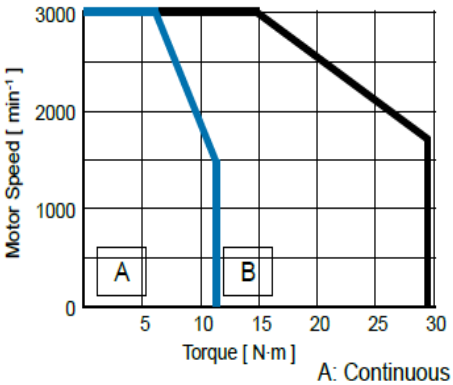
A: Continuous Duty Zone
B: Intermittent Duty Zone

MV30-1300



A: Continuous Duty Zone
B: Intermittent Duty Zone

MV130-1800



A: Continuous Duty Zone
B: Intermittent Duty Zone

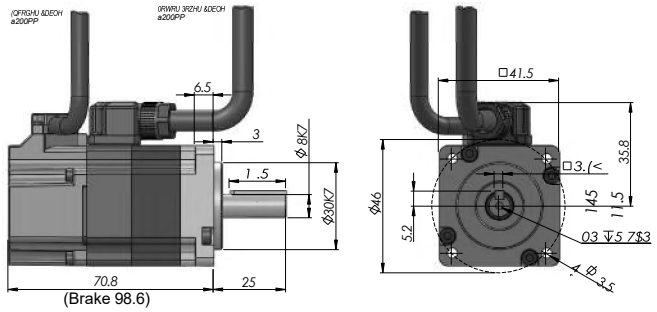
Notes:
1. Data measured at 40 °C warm-boot conditions.
2. Torque - Speed characteristic depends on exact supply voltage to servo drive.

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

External Dimensions

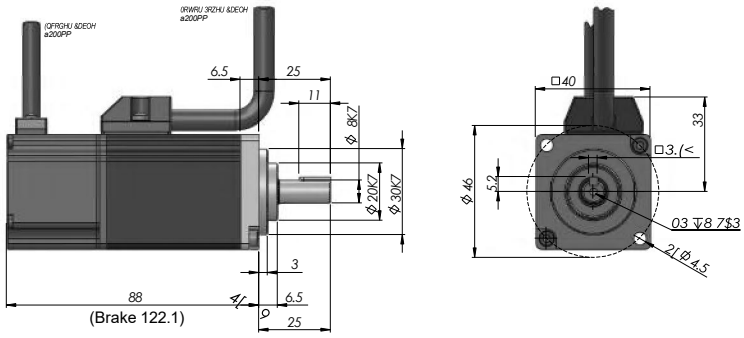
All Dimensions in [mm]

MV40-50 40mm Frame



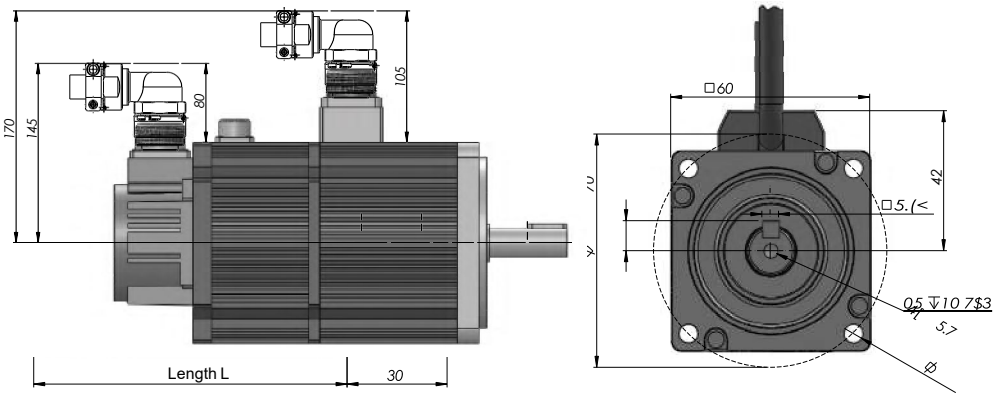
16

MV40-100 40mm Frame



MV60-200 MV60-400 60mm Frame

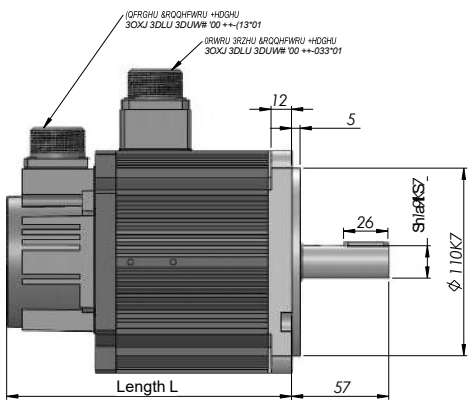
11$ 115 1 0 '67 &RQQHFWRU 'LPHQVLRQV

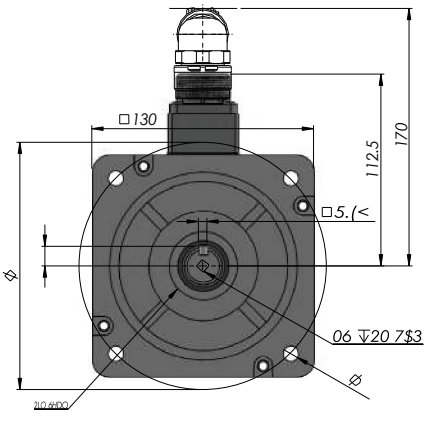


Model	Length L
MV60-200	94
MV60-200 Brake	141
MV60-400	122
MV60-400 Brake	169

MV130-1000 MV130-1300 MV130-1800 130mm Frame

All Dimensions in [mm]



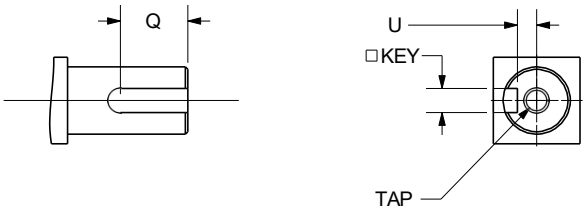


Model	Shaft S	KEY	Length L
MV130-1000	Φ19h7	5	167
MV130-1000 Brake	Φ19h7	5	236
MV130-1300	Φ22h7	6	180
MV130-1300 Brake	Φ22h7	6	248
MV130-1800	Φ22h7	6	193
MV130-1800 Brake	Φ22h7	6	261

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

Shaft Dimensions

• With Key and Tap



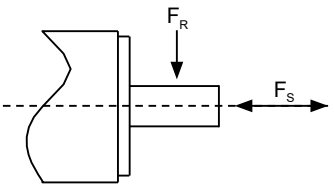
[Unit: mm]

Motor Model	Frame	Q	U	Key	Tap
MV40-50	40mm	14	2.2	3	M3× 5L
MV40-100		14	2.2	3	M3× 8L
MV60-200	60mm	14	4	5	M5× 10L
MV60-400		14	4	5	M5× 10L
MV130-1000	130mm	27	6.5	5	M6× 20L
MV130-1300		42	7.5	6	M6× 20L
MV130-1800		42	7.5	6	M6× 20L

Permissible Radial / Thrust Loads

During testing, installation, mounting or operation, the servo motor shaft should never experience radial or thrush loads exceeding the below specifications. The servo motor shaft must be at least ±0.1mm concentric with coupling and mechanical drive shaft. For belt drive systems, ensure the pinion is as close to the servo motor body as possible to reduce unnecessary force on the servo motor shaft.

Motor Model	Radial Load F_R [N]	Thrust Load F_S [N]
MV40-50	75	52
MV40-100	75	52
MV60-200	240	70
MV60-400	240	70
MV130-1000	600	300
MV130-1300	680	340
MV130-1800	980	390



*Permissible radial/thrust load during assembly greater by 10%.

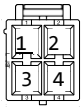
357 Piercy Rd San Jose CA 95138
408-708-5883

Connector Specification

40mm, 60mm Frame Motor

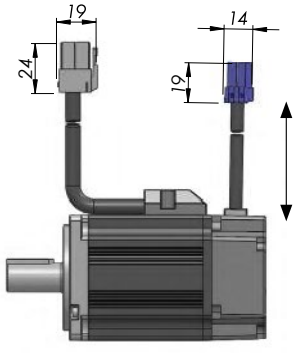
Motor Power Connector

Part	Part No.	Manufacturer
Connector Assembly Plug Housing	VLP-04V	J.S.T.
Socket Contact	SVF-61T-P2.0	J.S.T.
Cable Retainer	VLS-02V	J.S.T.



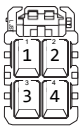
Looking from connector input side

Pin Layout	Color		Signal
	57N	86L, 86M, 86N	
1	Blue	Blue	Phase A
2	Red	Red	Phase B
3	Black	Yellow	Phase C
4	Yellow/Green		Frame Ground



Encoder Connector

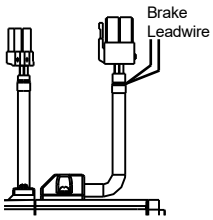
Part	Part No.	Manufacturer
Connector Assembly Plug Housing	HILP-04V-1-S	J.S.T.
Pin Contact	SHIF-01T-P0.5	J.S.T.



Looking from connector input side

Pin Layout	Color	Data
1	Black	Gnd
2	Blue	S-
3	Green	S+
4	Red	+5VDC

Brake Connection

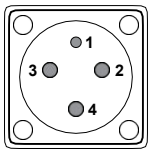


Brake Leadwire Colour	Signal
Brown	+24VDC
White/Black	Ground

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

130mm Frame Motor

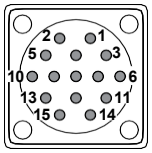
Motor Power Connector



Pin Layout	Signal
1	Frame Ground
2	Motor Phase C
3	Motor Phase B
4	Motor Phase A

Mating Plug DMM Part# DMM HH-MPPG01

Encoder Connector

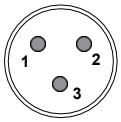


Pin Layout	Data
2	+5VDC
14	Ground
10	S-
6	S+
4	BAT+
12	BAT- (Ground)

Note: Pins 4 and 12 only used on multi-turn encoder with battery.
Mating Plug DMM Part# DMM HH-ENPG01

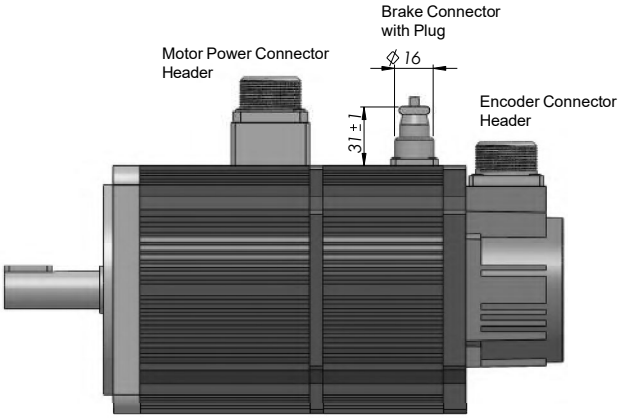
Brake Connector

Brake signal header connector Pinout:



Pin Layout	Signal
1	+24VDC
2	Ground
3	NC

Mating Plug DMM Part# DMM HHBK-PLGC01
* Mating plug included with brake motor



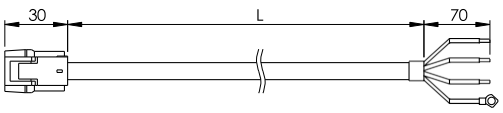
357 Piercy Rd San Jose CA 95138
408-708-5883

Cable Selection

● Motor Power Cables

Servomotor Rated Output	Applicable Servo Drive	Part Number	Length [L]	Specification
0.05 ~ 0.75kW	DC2	CBL-DCVM-3M	3m	(A)
		CBL-DCVM-5M	5m	
		CBL-DCVM-10M	10m	
		CBL-DCVM-15M	15m	
0.05 ~ 0.75kW	AC4	CBL-ACVLM-3M	3m	(B)
		CBL-ACVLM-5M	5m	
		CBL-ACVLM-10M	10m	
		CBL-ACVLM-15M	15m	
1.0 ~ 1.8kW		CBL-ACVHM-3M	3m	(C)
		CBL-ACVHM-5M	5m	
		CBL-ACVHM-10M	10m	
		CBL-ACVHM-15M	15m	

A / B Type Specification



Side B
To Servo Motor

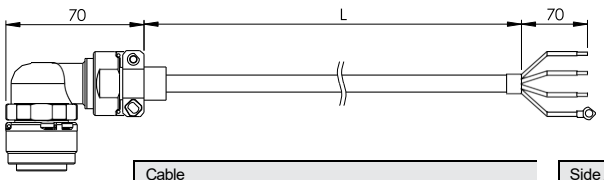
Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	VLR-04V
Contact	SVM-61T-P2.0
Manufacturer	J.S.T.

Cable	
Class	600V, 121°C UL1581
Conductor	1.5mm dia. AWG16
Insulator	PVC
O.D.	9mm

Side A To Servo Drive	
Connector	4-Position Lead Wire

C Type Specification



Side B
To Servo Motor

Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	4-Position Circular Connector
Contact	
Manufacturer	DMM Part# SPCU-HHMP-4

Cable	
Class	600V, 121°C UL1581
Conductor	1.5mm dia. AWG16
Insulator	PVC
O.D.	9mm

Side A To Servo Drive	
Connector	4-Position Lead Wire

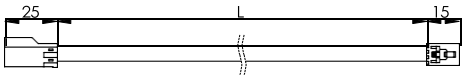
ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

● Encoder Cables

Servomotor Rated Output	Applicable Servo Drive	Part Number	Length [L]	Specification
0.05 ~ 0.75kW	DC2	CBL-DCVE-3M	3m	(D)
		CBL-DCVE-5M	5m	
		CBL-DCVE-10M	10m	
		CBL-DCVE-15M	15m	
0.05 ~ 0.75kW	AC4	CBL-ACVLE-3M	3m	(E)
		CBL-ACVLE-5M	5m	
		CBL-ACVLE-10M	10m	
		CBL-ACVLE-15M	15m	
1.0 ~ 1.8kW		CBL-ACVHE-3M	3m	(F)
		CBL-ACVHE-5M	5m	
		CBL-ACVHE-10M	10m	
		CBL-ACVHE-15M	15m	

D Type Specification

Side B
To Servo Motor



Side A
To Servo Drive

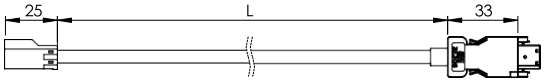
Side B To Servo Motor	
Connector Assembly	HILR-04VF-1-S
Contact	SHIM-01T-P0.5
Manufacturer	J.S.T.

Cable	
Class	30V, 105°C UL20789
Conductor	0.63mm dia. AWG24 2x2 or 3x2 Twisted Pair
Insulator	PVC
O.D.	5.6mm

Side A To Servo Drive	
Connector Assembly	50-57-9404 or equivalent
Contact	16-02-0069 or equivalent
Manufacturer	Molex.

E Type Specification

Side B
To Servo Motor



Side A
To Servo Drive

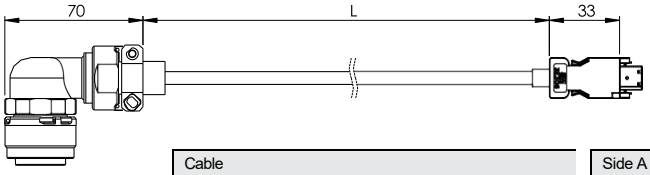
Side B To Servo Motor	
Connector Assembly	HILR-04VF-1-S
Contact	SHIM-01T-P0.5
Manufacturer	J.S.T.

Cable	
Class	30V, 105°C UL20789
Conductor	0.63mm dia. AWG24 2x2 or 3x2 Twisted Pair
Insulator	PVC
O.D.	5.6mm

Side A To Servo Drive	
Connector Assembly	3E206-0100KV
Connector Shell Kit	3E306-3200-008
Manufacturer	3M

F Type Specification

Side B
To Servo Motor



Side A
To Servo Drive

Side B To Servo Motor	
Connector Assembly	15-Position Circular Connector
Contact	
Manufacturer	MOD Part# SPCU-HHEN-15

Cable	
Class	30V, 105°C UL20789
Conductor	0.63mm dia. AWG24 2x2 or 3x2 Twisted Pair
Insulator	PVC
O.D.	5.6mm

Side A To Servo Drive	
Connector Assembly	3E206-0100KV
Connector Shell Kit	3E306-3200-008
Manufacturer	3M

ModuSystems
357 Piercy Rd San Jose CA 95138
408-708-5883

3D CAD Model Download

Please refer to Modusystems website for latest 3D CAD file downloads in .STP format.

Download Page Link: https://modusystems.com/products/samurai-ac-servo/

357 Piercy Rd San Jose CA 95138
408-708-5883