■ Cables and Connectors for Servo Amplifier (with electromagnetic brak)
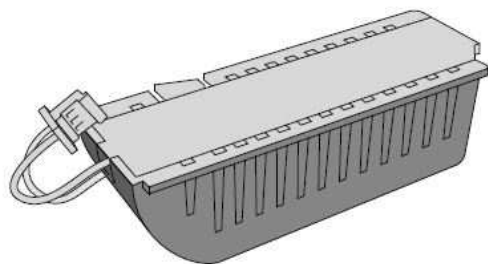
Item		Description		Model	Protection	Length	Art. no.
㊺	Brake cable for HG-KR/ HG-MR/HF-KN Lead out in direction of motor shaft	Motor power supply connector (Japan Aviation Electronics Industry) JN4FT04SJ1-R (plug) ST-TMH-S-C1B-100-(A534G) (socket contact)		MR-BKS1CBL□M-A1-H □=Cable length: 2, 5, 10 m 1 ❶	IP65	2 m 5 m 10 m	161604 161605 161606
				MR-BKS1CBL□M-A1-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	161607 161608 161609
㊻	Brake cable for r HG-KR/ HG-MR/HF-KN Lead out in opposite direction of motor shaft		Lead out	MR-BKS1CBL□M-A2-H □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	160311 161610 161611
				MR-BKS1CBL□M-A2-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	161612 161613 161614

■ Cables and Connectors for Servo Amplifier (general)

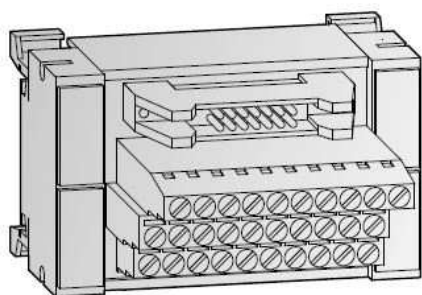| Item		Description		Model	Protection	Length	Art. no.
①	Encoder cable for HG-KR/HG-MR/HF-KN Lead out in direction of motor shaft	Encoder connector (Tyco Electronics AMP) 1674320-1	Amplifier connector 36210-0100PL (receptacle, 3M) 36310-3200-008 (shell kit, 3M) oder 54599-1019 (connector set, Molex)	MR-J3ENCBL□M-A1-H □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	160312 161547 161548
				MR-J3ENCBL□M-A1-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	161549 161550 161551
②	Encoder cable for HG-KR/HG-MR/HF-KN Lead out in opposite direction of motor shaft			MR-J3ENCBL□M-A2-H □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	160230 161552 161553
				MR-J3ENCBL□M-A2-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	161554 161555 161556
⑨	Encoder cable for HG-KR/ HG-MR/HG-SR/HG-JR/ HG-RR/HF-KN/HF-SN	Encoder connector (DDK) <Für Kabel bis 10 m Länge> CM10-SP10S-M (straight plug) CM10-#22SC(C1)-100 (socket contact) <For exceeding 10 m> CM10-SP10S-M (straight plug) CM10-#22SC((C2)-100 (socket contact)	Amplifier connector 36210-0100PL (receptacle, 3M) 36310-3200-008 (shell kit, 3M) oder 54599-1019 (connector set, Molex)	MR-J3ENSCBL□M-H □=Cable length: 2, 5, 10, 20, 30, 40,50 m ❶	IP67	2 m 5 m 10 m 20 m 30 m 40 m 50 m	160226 161563 161564 161565 161566 244812 269076
				MR-J3ENSCBL□M-L □=Cable length: 2, 5, 10, 20, 30 m ❶	IP67	2 m 5 m 10 m 20 m 30 m	161567 161568 161569 161570 161571
⑩	Cable of junction terminal block TB-50-EG and MR-JE-A	Amplifier connector (3M or an equivalent product) 10150-6000EL (connector) 10350-3210-000 (shell kit) ❸	Junction terminal block connector (3M) D7950-B500FL (connector)	MR-J2M-CN1TBL□M □=Cable length: 0.5, 1m	—	0.5 m 1 m	146794 189864

■ Buffer Battery

The servomotor's absolute value can be maintained by mounting the MR-BAT6V1SET battery on the servo amplifier. The battery is not required when the servo system is used in incremental mode.

Battery	Application
MR-BAT6V1SET	Buffering absolute positioning data
Order information Art. no.	248691

■ Terminal Blocks

These terminal blocks TB-20-EG, TB-26-EG and TB-50-EG are adapter modules that simplify the wiring of the inputs and outputs of the servo amplifiers. In addition preconfigured system cabling is available for all of these terminal blocks.

Specifications	TB-20-EG	TB-26-EG	TB-50-EG
Terminal block type	Input/output block	Input/output block	Input/output block
Channels	8/16	26	50
Design	20 pin terminal module	26 pin terminal module	50 pin terminal module
Connection type	Screw terminals	Screw terminals	Screw terminals
Application	Servoamplifier MR-J4-B	Servoamplifier MR-J4W2-B/ MR-J4W3-B	Servoamplifier MR-J4-A/ MR-JE-A Motion controller MR-MQ100, Q170MSCPU
Dimensions (WxHxD) mm	75x45x52	73x81x58	102x81x80
Order information Art. no.	212032	215134	212033
Connection cables	MR-J3TBL-CN3-05M-EG; length 0.5 m; Art. no.: 212096, MR-J3TBL-CN3-1M-EG; length 1 m; Art. no.: 212095	MR-ESTBL-CN1-05M-EG; length 0.5 m; Art. no.: 215135 MR-ESTBL-CN1-1M-EG; length 1 m; Art. no.: 215137	MR-J2M-CN1TBL05M; length 0.5 m; Art. no.: 146794 MR-J2M-CN1TBL1M; length 1 m; Art. no.: 189864

Servo setting and support software

Just follow the the guidance and setup is complete

Monitoring and checking with the diagnostics features

MR Configurator2 – a complete engineering environment

The MR Configurator2 software package makes configuration and diagnostics quick and easy and includes powerful graphical machine analysis and simulation functions. Machine analysis enables determination of the frequency response of the connected drive train without any additional instruments. If necessary, you can then make design changes or install filters to achieve better machine performance. The system can be connected to a personal computer with a standard USB port.

A wide range of automatic configuration assistants make it easy to set up your new servo systems correctly, even for less experienced users. The strong benefits are:

Preparation

■ Easy set up
MR Configurtator2 allows for easy set up and tuning the servo system with a standard personal computer.

■ Servo assistant function
Complete setting up the servo amplifier just by following guidance displays. Setting parameters and tuning are easy since related functions are called up from shortcut buttons.

Startup

■ Multiple monitor functions
Graphic display functions are provided to display the servo motor status with the input signal triggers, such as the command pulse, droop pulse and speed.

■ Parameter setting function
Display parameter setting in list or visual formats, and set parameters by selecting from the drop down list. Set in-position range in mechanical system unit (e.g. µm). Parameter read/write time is approximately one tenth of the conventional time.

Maintenance

■ Test operations with a personal computer
Test operation of the servo motors can be performed with a personal computer using multiple test mode menus.

■ Machine diagnosis function
This function estimates and displays machine friction and vibration in normal operation without any special measurement. Comparing the data of the first operation and after years of operation helps to find out the aging deterioration of machine and is beneficial for preventive maintenance.

Servo adjustment

■ One-touch tuning function
Adjustments including estimating load to motor inertia ratio, adjusting gain, and suppressing machine resonance are automatically performed for the maximum servo performance just by clicking the start button. Check the adjustment results of settling time and overshoot.

■ Graph function
The number of measurement channels is increased to 7 channels for analog, and 8 channels for digital. Display various servo statuses in the waveform at one measurement, supporting setting and adjustment. Convenient functions such as [Overwrite] for overwriting multiple data and [Graph history] for displaying graph history are available. Waveform measurement for the connected axes is simultaneously performed via controller communication.

■ Machine analyzer function
Input random torque to the servo motor automatically and analyze frequency characteristics (0.1 Hz to 4.5 kHz) of a machine system just by clicking the [Start] button. This function supports setting of machine resonance suppression filter, etc.
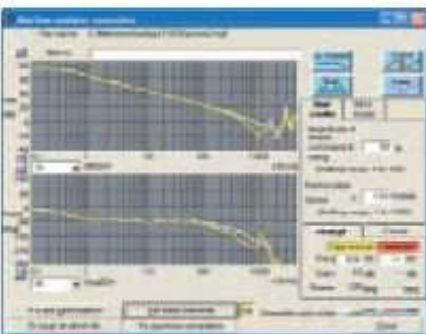
■ Improved usability
While automatically fluctuating the gain, the setup software MR Configurator searches for values with the shortest settling time and lowest overshooting or vibration.

Basic setting parameters can be easily set in a selection format. Settings in the list format are also possible.
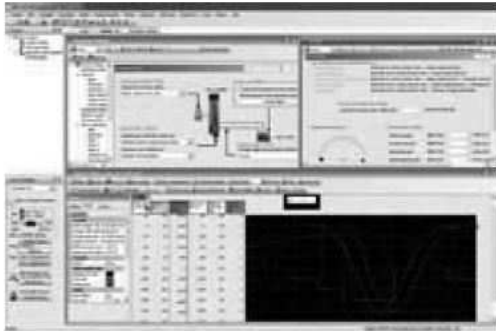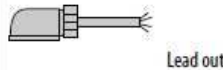
■ Setup Software (MR Configurator2)

The comfortable setup software for Windows based personal computers allows perfect tuning of the servo amplifiers and the connected servo motors.

The software makes it easy to read and write parameters, monitor, diagnose and test the servo system via a personal computer.

Functions	MR Configurator2
Monitor	Batch display, input/output I/F display, high speed monitor, graph display
Parameters	Parameter setting, device setting, tuning, display of change list, display of detailed information, converter, parameter copy
Diagnostics	Rotation failure reason display, systeminformation display, tuning data display, absolute data display, axis name setting, amplifier diagnostic
Alarms	Alarms Alarm display, alarmhistory, display of data that generated alarm
Test operations	JOG operation, positioning operation, operation witout motor, forced digital output, program operation using simple language
Advanced function	Advanced function Machine analyser, gain search,machine simulation
Others	Others Automatic operation, help display, project and data administration

Order information	Art. no.	251540

Item		Description		Model	Protection	Length	Art. no.
Select one for the motor power supply	⑳	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in direction of motor shaft, unshielded		MR-PWS1CBL□M-A1-H □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	160227 161592 161593
				MR-PWS1CBL□M-A1-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	161594 161595 161596
	㉑	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in opposite direction of motor shaft, unshielded		MR-PWS1CBL□M-A2-H □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	160228 161597 161598
				MR-PWS1CBL□M-A2-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	161599 161600 161601
	㉒	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in direction of motor shaft, shielded	Motor power supply connector (Japan Aviation Electronics Industry) JN4FT04SJ1-R (connector) ST-TMH-S-C1B-100-(A534G) (socket contact) Lead out	MR-PWS3CBL□M-A1-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	210799 210800 210801
	㉓	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in opposite direction of motor shaft, shielded		MR-PWS3CBL□M-A2-L □=Cable length: 2, 5, 10 m ❶	IP65	2 m 5 m 10 m	210802 210803 210804
	㉔	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in direction of motor shaft, shielded, power chain.		PWS007N-□.0-A1 □=Cable length: 2, 5, 10 m	IP65	2 m 5 m 10 m	220009 220010 220012
	㉕	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in opposite direction of motor shaft, shielded, power chain.		PWS007N-□.0-A2 □=Cable length: 2, 5, 10 m	IP65	2 m 5 m 10 m	220002 220005 220007
	㉖	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in direction of motor shaft	Motor power supply connector (Japan Aviation Electronics Industry) JN4FT04SJ1-R (connector) ST-TMH-S-C1B-100-(A534G) (socket contact) Lead out	MR-PWS2CBL03M-A1-L Cable length: 0.3 m ❶	IP55	0.3 m	161602
	㉗	Power supply cable for HG-KR/HG-MR/HF-KN Lead out in opposite direction of motor shaft		MR-PWS2CBL03M-A2-L Cable length: 0.3 m ❶	IP55	0.3 m	161603
	㉘	Power supply cable for HG-SR52/HF-SN52, HG-SR524–1524/ HG-JR53–73/ HG-JR534–1034	Motor power supply connector (DDK) CE05-6A□-□SD-D-BSS (straight plug) CE3057-□A-□-D (cable clamp)	PCS015N-□.0-0C4 □=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	202275 202276 202277 202278 202279
	㉙	Power supply cable for HF-SN102/HF-SN102, HG-JR103–203/ HG-JR1534–3534		PCS025N-□.0-0C4 □=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	202280 202281 202282 202283 202294
	㉚	Power supply cable for HG-SR152/HF-SN152/ HG-JR5034		PCS040N-□.0-0C4 □=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	202295 202296 202297 202298 202299
	㉛	Power supply cable for HG-SR2024		PCS025N-□.0-0C5 □=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	207465 207467 207468 207469 207470

Item		Description		Model	Protection	Length	Art. no.
Select one for the motor power supply	㉜	Power supply cable for HG-SR202/HG-SR3524/HG-JR353/HF-SN202		PCS040N-☐.0-0C5 ☐=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	202300 202301 202302 202303 202304
	㉝	Power supply cable for HG-SR352–502/HG-SR5024/HG-JR503/HF-SN302		PCS060N-☐.0-0C5 ☐=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	202468 202469 202470 202471 202472
	㉞	Power supply cable for HG-SR702/HG-SR7024		PCS100N-☐.0-0C3 ☐=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	150771 150772 150819 150821 150822
	㉟	Power supply cable for HG-RR103–203	Motor power supply connector(DDK) CE05-6A☐-☐SD-D-BSS (straight plug) CE3057-☐A-☐-D (cable clamp) Lead out	PCS040N-☐.0-0C1 ☐=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	150734 150735 150737 150738 150739
	㊱	Power supply cable for HG-RR3S3–503		PCS060N-☐.0-0C2 ☐=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	150757 150758 150760 150761 150762
	㊲	Power supply cable with integrated brake cable for HG-RR103B–203B ❷		PCS040B-☐.0-C1 ☐=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	150741 150742 150744 150745 150746
	㊳	Power supply cable with integrated brake cable for HG-RR353B–503B ❷		PCS060B-☐.0-C2 ☐=Cable length: 2, 5, 10, 20, 30 m	IP67	2 m 5 m 10 m 20 m 30 m	150764 150765 150766 150767 150768
Motor power supply connectors	㊴	Motor power supply connector set (motor side) for TM-RFM☐C20/TM-RFM☐E20	Motor power supply connector (DDK) CE05-6A14S-2SD-D (plug) (straight) YS014-9–11 (cable clamp) (Daiwa Dengyo) <Applicable cable example> Wire size: 0.3 mm² (AWG22) to 1.25 mm² (AWG16) Completed cable outer diameter: Ø 8.3 – 11.3 mm	MR-PWCNF (Straight type)	IP67	—	64037
	㊵	Motor power supply connector set (motor side) for HG-SR52–152, HG-SR524–1524, HG-JR53–203, HG-JRS34–2034, 3534 and 5034 TM-RFM_G20, HF-SN52J–152J	Motor power supply connector (DDK) CE05-6A18-10SD-D-BSS (straight) CE3057-10A-1-D (cable clamp) <Applicable cable example> Wire size: 2 mm² (AWG14) to 3.5 mm² (AWG12) Completed cable outer diameter: Ø 10.5 – 14.1 mm	MR-PWCNS4 (Straight type)	IP67	—	161573
	㊶	Motor power supply connector set (motor side) for HG-SR202–502, HG-SR2024–5024, HG-JR353–503 TM-RFM040J10, TM-RFM120J10, HF-SN202J–302J	Motor power supply connector (DDK) CE05-6A22-22SD-D-BSS (plug) (straight) CE3057-12A-1-D (cable clamp) <Applicable cable example> Wire size: 5.5 mm² (AWG10) to 8 mm² (AWG8) Completed cable outer diameter: Ø 12.5 – 16 mm	MR-PWCNS5 (Straight type)	IP67	—	161574
	㊷	Motor power supply connector set (motor side) for HG-SR702, 7024, HG-JR703–15K1M HG-JR7034–15K1M4 TM-RFM240J10	Motor power supply connector (DDK) CE05-6A32-17SD-D-BSS (plug) (straight) CE3057-20A-1-D (cable clamp) <Applicable cable example> Wire size: 14 mm² (AWG6) to 22 mm² (AWG4) Completed cable outer diameter: Ø 22 – 23.8 mm	MR-PWCNS3 (Straight type)	IP67	—	136358
	㊸	Motor power supply connector set (motor side) for HG-RR103–203	Motor power supply connector (DDK) CE05-6A22-23SD-D-BSS (plug) (straight) CE3057-12A-2-D (cable clamp) <Applicable cable example> Wire size: 2 mm² (AWG14) to 3.5 mm² (AWG12) Completed cable outer diameter: Ø 9.5 – 13 mm	MR-PWCNS1 (Straight type)	IP67	—	64036
	㊹	Motor power supply connector set (motor side) for HG-RR353–503	Motor power supply connector (DDK) CE05-6A24-10SD-D-BSS (plug) (straight) CE3057-16A-2-D (cable clamp) <Applicable cable example> Wire size: 5.5 mm² (AWG10) to 8 mm² (AWG8) Completed cable outer diameter: Ø 13 – 15.5 mm	MR-PWCNS2 (Straight type)	IP67	—	64035