

# FUJI SERVO SYSTEM

# FALDIC-B Series



#### FALDIC-B CATALOG **CONTENTS**

Explanation of Model Codes

go to page



**Product Features** 

go to page 4



Setup/ Parameter List

go to page 6



**Connection Diagram** (Reference)

go to page 7



**Specifications** for Servo Amplifier/ **External Dimensions** 

go to page 8



**Specifications** for Servo Motor/ **External Dimensions** 

go to page 10



Option/ Peripheral Equipment

go to page 14



**Model List** 

go to page 18



Product Warranty/ Service Network

go to page 19



The functions and features you're looking for, polished up.









The FALDIC-β Series, designed for high performance and high precision, achieves vastly suppressed mechanical vibration through the use of Fuji's original vibration suppressing control function and notch filter, and realizes positioning settling times of less than 1 ms, etc. All the functions are housed in a compact body, and installation can be done in different ways to enable flexibility in different applications. Through the polished presentation of the functions and performance you are looking for, multiple needs can be met at a high level. This product is ideal particularly for machines in which high tact and high speed positioning are required.

# FALDIC-B CONCEPT

- Suppresses mechanical vibrations to the maximum
- Designed for high performance and high precision.
- Innovative compact size.
- Simple operation and short setup time.
- The standard configuration conforms to international standards. (UL/cUL, CE Marking)

#### TARGET



Semiconductor manufacturing, inspection equipment



Electronic parts fabrication equipment



Unloading robots



Wire harness fabricator

Ideal for machines for which high tact and high speed positioning are required.

# Line of Products of FALDIC- $\beta$ series

Model	Type	Host interface	Power supply	Capacity	Applicable motor series
FALDIC-B	V type with	DUDG	Single-phase 100 to 115V	50 to 200W	GYS
	pulse train control	DI/DO	3-phase 200 to 230V	50 to 750W	GYS GYC

#### Servomotor

Model	Type	Rated speed (max.speed)	Power supply	Capacity	Applicable motor series
GYS motor	Slim type	3000r/min (5000r/min)			16-bit INC
		3000r/min (5000r/min)	3-pahse 200V class	50 to 750W	16-bit INC
GYC motor	Cubic type	3000r/min (5000r/min)	3-pahse 200V class	100 to 750W	16-bit INC

# **Explanation of Model Codes**

## Servo amplifier

RYB 201 S 3 - V B C 6

500         50×10°= 50W           201         20×10¹=200W           Code         Series           S         Standard           Order of development	Code	Rated output	
Code Series S Standard	500	50×10°= 50W	
S Standard	201	20×10¹=200W	
	Code	Series	
Order of development	S	Standard	

Code	Input voltage
Blank	3-phase 200V
6	Single-phase 100V
Code	Encoder, others
С	16-bit INC, standard
Code	Upper interface
В	DI/DO (for pulse train)
Code	Major functions
V	Pulse train control

#### Servomotor

GYS 201 D C 1 - C 6 A - B

Code	Basic type
GYS	Slim type
GYC	Cubic type
Code	Rated output
500	50×10°= 50W
201	20×10¹=200W
Code	Rated speed
D	3000r/min
	*
Code	Installation method
С	By securing flange
	Order of development
	State of acveropment

	Code Blank B		Brake			
			Not provided			
			Provided			
			Nil anni	. Applicable motor		
	Code	Shaft Without an oil seal straight		Single-phase 100V	3-phas	se200V
				50 to 375W	50 to 100W	200W or over
	Α			0	0	0
	В	Withou sha	t an oil seal,straight ft without a key	0	0	0
	©:Standard item O:Option  Code Voltage		andard item O:Optional ite			
			je			
	Bla	nk		200V	1	
	6			100V	1	
	8 C		Common to 100V and 200V			200V
	Code		Encoder			
	С		16-bit INC			

#### Features 1.

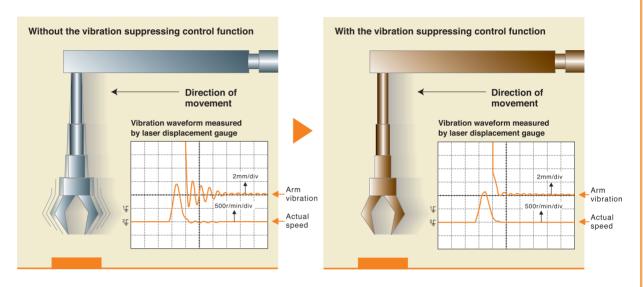


# Suppresses mechanical vibrations to the maximum extent.

■ Equipped with a "Vibration Suppressing Control Function" which is an effective countermeasure for suppressing vibration of the tips of robot arms, etc.

#### Fuji's original vibration control function (Patent pending)

In high tact operation of mechanisms with low rigidity, such as the tips of robot arms, suppression of arm tip vibration is a major factor in shortening tact time. In the FALDIC- $\beta$  series, Fuji's original "Vibration Suppressing Control Function" is standard equipment. It reduces vibration in machines with low rigidity and realizes high machine tact.



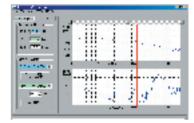
#### **■** Equipped with a notch filter and servo analysis function.

#### **Notch Filter**

This function is for the purpose of reducing machine resonance. By setting the data on the resonance point, which differs in each machine, as a parameter in the servo amplifier, the machine resonance occurring in that point can be reduced.

#### **Servo Analysis Function (Option)**

In order to utilize the "Vibration Suppressing Control Function" and "Notch Filter," etc. effectively, it is necessary to analyze the "resonance frequencies" that are inherent in each machine. If the "Servo Analysis Function" offered in the optional personal computer loader is used, it can analyze the data for the machine system simply, eliminating the needs for complicated calculations and adjustments which are dependent on intuition.



#### Features 2.

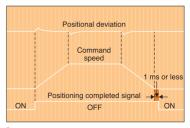


# Designed for high performance and high precision.

#### **■** Command following servo (positional deviation ≈ zero).

#### Positioning settling time is 1 ms or less.

Through the newly developed feed forward control which compensates for servo delay, operation even during acceleration and deceleration can be done with positional deviation almost zero. A positioning completed signal can be output virtually simultaneously with the end of the command pulse (within 1 ms) .



#### ■ 16-bit High Resolution Encoder

A 65536 pulse/revolution serial encoder (exclusive INC) is standard equipment.

It can also be used for machines where high performance and highly accurate positioning is required.

#### Features 3.



# Servo amplifiers which are the smallest in the industry, and can be installed side by side without clearance.

■ Innovative compact body

200V type, 200W: 35 (W) x 130 (H) x 130 (D)

■ Side by side installation supports miniaturization of the control panel.

These units can be installed side by side horizontally, and through standardization of the height and depth dimensions, even if multiple units are used, they can be housed in an extremely compact cabinet, enabling miniaturization of control panels.

Capacity (W)	W (mm)	H (mm)	D (mm)
50	35	130	130
100	35	130	130
200	35	130	130
400	50	130	130
750	70	130	130

■ Panel space is reduced by side-by-side installation. Example: 200W x 3 axes + 400 W x 2 axes



\* The operating environment differs if the units are mounted side by side

200V type, 200W actual size



35mm

#### Features 4.



# Simple operation and short setup time

■ Uses a new type auto tuning function. ■ Setup parameters are designed to enhance operability.

The previous auto tuning function has been further refined so that adjustments of even "heavy perpetual loads," which are considered to be difficult in ordinary tuning, can be done easily.

By setting only 7 different parameters in the basic settings, operation with the industry's top level performance can be accomplished. In addition, by using the "personal computer loader" (option) for setting each type of system, setup can be accomplished in a short time.

#### Features 5.



# The standard configuration conforms to international standards. (UL/cUL, CE Marking)

The standard specifications of the FALDIC- $\!\beta$  Series support the "UL/cUL" and "CE Marking," so it can be used not only within Japan but anywhere overseas. This makes it a global servo with leading-edge performance, dimensions and operability that can be utilized anywhere.

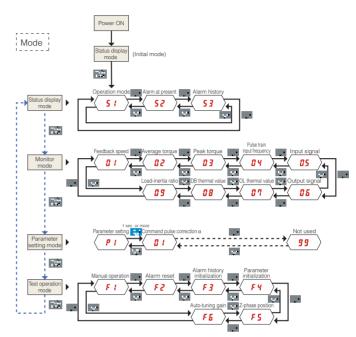


#### Setup

## Keypad Panel



## 7-Segment Indication



#### Parameter List

#### Basic parameters

No.	Name
01	Command pulse correction α
02	Command pulse correction β
03	Pulse train input form
04	Rotation direction change
05	Tuning mode
06	Load-inertia ratio
07	Auto-tuning gain
08, 09	Not used

#### System parameters

No.	Name
10	CONT1 signal assignment
11	CONT2 signal assignment
12	CONT3 signal assignment
13	CONT4 signal assignment
14	CONT5 signal assignment
15	OUT1 signal assignment
16	OUT2 signal assignment
17	Output pulse count
18	Z-phase offset
19	Deviation zero width
20	Deviation over width
21	Speed zero width
22	Positioning end judgment time
23	Maximum current
24	Alarm detection at undervoltage
25	Computing electronic thermal relay for regenerative resistor
26	Dynamic brake active/inactive in OT detection
27	Parameter rewriting inhibit
28	Keypad panel initial display
29	Speed setting (for test operation)
30	Acceleration-deceleration time (for test operation)
31 to 39	Not used

#### Control system parameters

No.	Name
40	Position regulator gain 1
41	Speed response 1
42	Speed regulator integration time 1
43	Non-linear (S-curve) time constant
44	Feed forward gain
45	Feed forward filter time constant
46	Torque filter time constant
47	Speed setting filter
48	Gain changeover factor
49	Gain changeover level
50	Gain changeover time constant
51	Position regulator gain 2
52	Speed response 2
53	Speed regulator integration time 2
54	Position gain added in settled state
55	Limit value added in settled state
56	Selection of command follow-up control
57	Notch filter 1 frequency
58	Notch filter 1 damping rate
59	Notch filter 2 frequency
60	Notch filter 2 damping rate
61	Anti-resonant frequency 0
62	Anti-resonant frequency 1
63	Anti-resonant frequency 2
64	Anti-resonant frequency 3
65 to 79	Not used

#### Parameters for maker's adjustment

No.	Name
80	Reserved for maker 1
81	Reserved for maker 2
82	Reserved for maker 3
83	Reserved for maker 4
84 to 99	Not used

Do not change these parameters.

#### Function number assigned to CONT

0 : Not assigned

6 : P-action 7: Deviation clear

1 : RUN

2: RST 3:+OT 4:-OT

8 : External regenerative resister overheat 9 : Anti-resonant frequency 0

5 : Emergency stop

10 : Anti-resonant frequency 1

Function assigned to OUT

0 : Not assigned

1 : Alarm detection (contact "a")

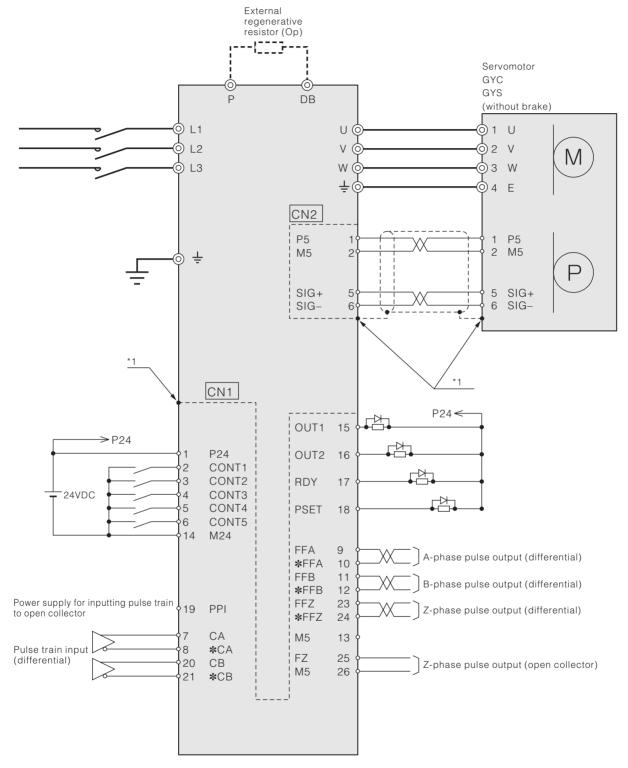
2 : Alarm detection (contact "b")

3 : Dynamic braking

4 : OT detection

5 : Emergency stop detection

## Connection Diagram (Reference)



<sup>\*1:</sup> Connect the shielded lines of CN1 and CN2 to the connector shell. The connector shell is connected with FG (earth).



The above diagram is given as a reference for model selection.

When actually using the selected servo system, make wiring connections according to the connection diagram and instructions described in the user's manual.

# Specifications for Servo Amplifier

#### **Basic Specifications**

Ap	olicable motor rated speed	3000r/min								
Ap	olicable motor output [W]	50	100	200	50	100	200	400	750	
Ar R	nplifier type 'B	500S3-VBC6	101S3-VBC6	201S3-VBC6	500S3-VBC	101S3-VBC	201S3-VBC	401S3-VBC	751S3-VBC	
M	ass [kg]	0	0.7	1.0						
=	Phase	S	ingle phase inp	ut	3-phase inpu			motor output is 40	00 W or less.)	
Input	Voltage	AC10	0 to 115V -15	to +1 0%		AC200	to 230V -15 t	o +1 0%		
_=	Frequency		50/60Hz				50/60Hz			
Ħ	Control system		usoidal PWM dri	ve						
Output	Overload capability	0 [0]/000/-								
_	Braking			k circuit with reg		or (op) externally	installed			
Fe	edback			nental position de	etection					
_	Control system	Position contro								
ъ.	Max. pulse frequency			0 [kHz] (open co	llector), output:	500 [kHz] (differ	ential)			
5.5	Position control resolution									
₩	Frequency response		-JM)							
pat	Max. speed	5000r/min								
Capability and functions	Major new functions		ressing control, function (PC loa	notch filter, comi der option)	mand follow-up	control, new auto	o-tuning,			
Protective function (Alarm indication)  Overcurrent (01, 02), overspeed (03), overvoltage (04), encoder trouble (05), control power trouble (06, 07), memory error (08), combination error (09), regenerative transistor overheat (10), encoder communication error (11), control signal error (12), motor overload (13), undervoltage (14), regenerative resistor overheat (15), excessive deviation (16), amplifier overheat (17), encoder overheat (18), initial error (19)									11),	
Indoors (free from direct sunshine), altitude ≤1000m, free from corrosive and flammable gases, oil mist and dust In case of compliance with CE marking Models compliant with EU directive: Pollution degree = 2, Over voltage category = II  Temperature, humidity -10 to +50 [c], 10 to 90 [%] RH (without condensation)										
≥ 5					nsation)					
	Vibration/shock resistance		)/ 19.6 m/s² (2G		Itaaa diraatiya FN	IE0170)				
	mpliance with standards	UL/CUL (UL5080	) and OE marking	g (based on low-vo	niage directive En	100176)				

#### Interface Specifications

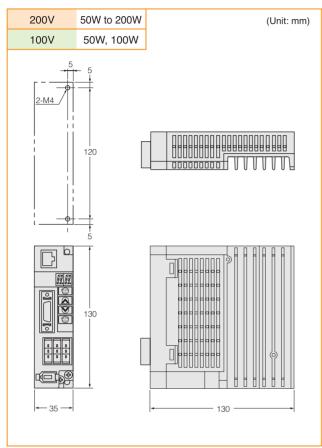
Terminal	Code	Specifications			
Pulse train input	CA, *CA CB, *CB	Pulse train format Command pulse/code Forward/reverse pulse Two signals at 90-degree phase difference			
	PPI	Pull-up power input at open collector input: 12 to 24V DC			
Frequency dividing output	Differential output, two signals at 90-degree phase difference Setting output pulses: n = 16 to 16384 [pulses/rev]  Differential output [1 pulse/rev]  Open collector output [1 pulse/rev]				
Power input for sequence signals	P24 M24	+24 V DC for sequence signals is input from outside. 300-mA power is required as external power source.			
Sequence input signal  CONT1 to CONT5  ON upon short circuit of terminals to M24, OFF upon open circuit.  +24 V DC, 10 mA (one-point)  Terminals can be assigned to each function by parameter setting.					
Sequence output signal	RDY PSET OUT1, OUT2	Short circuit to M24 terminal during ON 30 VDC/50 mA (max.) OUT1 and OUT2 to which control output signals are assigned			

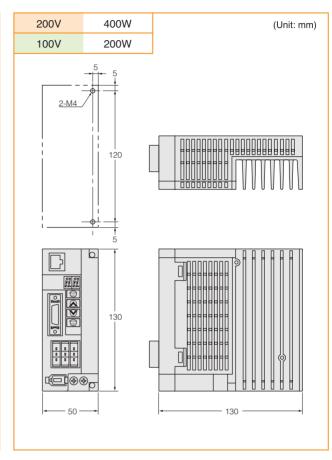
<sup>\*</sup>Install an AC reactor if the connected power source capacity is 500kVA or over. \*Installation with close contact: 80%ED. At temperatures  $\leq$  45°C: 100%ED.

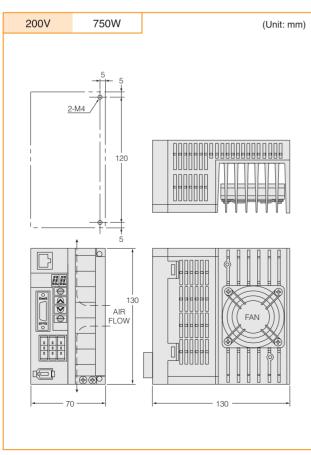


# **External Dimensions**

# Servo Amplifier







# Specifications of Servomotor

## **GYS Motor**

Standard specifications Note: Designate a key-incorporated motor to combine a gear head to all 100V models (50 to 200W) or 200V model (50W or 100W).

Motor type	500DC1(*1)	101DC1	201DC1	500DC1(*1)	101DC1	201DC1	401DC1	751DC1				
GYS	-C8B	-C6B	-C6B	-C8B	-CB	-CA	-CA	-CA				
Series	Single-phase 10	0V series		3-phase 200V series								
Rated output [W]	50	100	200	50	100	200	400	750				
Rated torque [N·m]	0.159	0.318	0.637	0.159	0.318	0.637	1.27	2.39				
Rated speed [r/min]	3000											
Max. speed [r/min]	5000											
Max. torque [N·m]	0.478	0.955	1.91	0.478	0.955	1.91	3.82	7.17				
Moment of inertia [kg·m²]	0.0192×10 <sup>-4</sup>	0.0371×10 <sup>-4</sup>	0.135×10 <sup>-4</sup>	0.0192×10 <sup>-4</sup>	0.0371×10 <sup>-4</sup>	0.135×10 <sup>-4</sup>	0.246×10 <sup>-4</sup>	0.853×10 <sup>-4</sup>				
Rated current [A]	0.85	1.5	2.7	0.85	0.85	1.5	2.7	4.8				
Max. current [A]	2.55	4.5	8.1	2.55	2.55	4.5	8.1	14.4				
Winding insulation class	Class B											
Operation duty type	Continuous											
Degree of enclosure protection	Totally enclosed	, self cooled (IP55	) (excluding the s	haft sealing and co	onnectors)							
Terminals (motor)	Cable 0.3 m (wit	h connector)										
Terminals (encoder)	Cable 0.3 m (with connector)											
Overheat protection	Not provided (Servo amplifier detects temperature.)											
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)											
Shaft extension	Straight shaft without a key Straight shaft with a key											
Paint color	N1.5											
Encoder	16-bit serial incremental encoder											
Vibration level	V5 or below											
Installation place, altitude, and environment	For indoor use, (	free from direct su	ınlight), 1000 [m]	or below, free from	corrosive gas, fla	ammable gas, oil n	nist and dust					
Ambient temperature, humidity	-10 to +40 [°C], 90 [%] RH max. (without condensation)											
Vibration resistance [m/s²]	49											
Mass	0.45	0.55	1.2	0.45	0.55	1.2	1.8	3.4				
( ) indicates brake-incorporated type. [kg]	(0.62)	(0.62) (0.72) (1.7) (0.62) (0.72) (1.7) (2.3) (4.2)										
Compliance with standards	UL/cUL (UL1004	), CE marking (EN	60034-1, EN6003	4-5), RoHS directiv	re .							

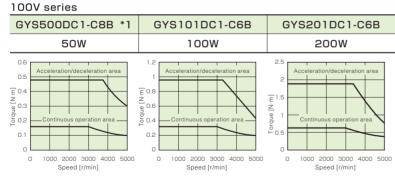
<sup>\*1)</sup> The same 50W motor is used for both single phase100V and 3-phase 200V applications.

Brake specifications (motor equipped with a brake) Note: Designate a key-incorporated motor to combine a gear head to all 100V models (50 to 200W) or 200V model (50W or 100W).

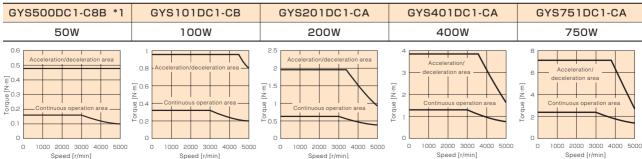
			,	,	•				
Motor type		500DC1(*1)	00DC1(*1) 101DC1		500DC1(*1)	101DC1	201DC1	401DC1	751DC1
GYS		-C8B-B	-C6B-B	-C6B-B	-C8B-B	-CB-B	-CA-B	-CA-B	-CA-B
Series	Single-phase 100	ries							
Static friction torque	[N·m]	0	.3	1.27	0.	3	1.3	2.45	
Rated DC voltage		DC24±10%							
Attraction time	[ms]	3	5	40	3	5	4	60	
Release time	[ms]	1	0	20	1	0	2	25	
Power consumption	[W]	6.1 (at	t 20°C)	7.3 (at 20°C)	6.1 (at	20°C)	7.3 (a	8.5 (at 20℃)	

<sup>\*1)</sup> The same 50W motor is used for both single phase 100V and 3-phase 200V applications.

# Torque characteristic diagrams



#### 200V series



<sup>\*1)</sup> GYS500DC1-C8B is used for both 100V and 200V series.

<sup>\*2)</sup> The brake is used to hold the rotor.

# Specifications of Servomotor

# **GYC** Motor

#### Standard specifications

Motor type  GYC	101DC1-CA	201DC1-CA	401DC1-CA	751DC1-CA							
Series	3-phase 200V series										
Rated output [W]	100 200 400 750										
Rated torque [N·m]	0.318	0.637	1.27	2.39							
Rated speed [r/min]	3000										
Max. speed [r/min]	5000										
Max. torque [N·m]	0.955	1.91	3.82	7.17							
Moment of inertia [kg·m²]	0.0577×10 <sup>-4</sup>	0.213×10 <sup>-4</sup>	0.408×10 <sup>-4</sup>	1.21×10 <sup>-4</sup>							
Rated current [A]	1.0	1.5	2.6	4.8							
Max. current [A]	3.0	4.5	7.8	14.4							
Winding insulation class	В										
Operation duty type	Continuous										
Degree of enclosure protection	Totally enclosed, self cooled (IP55) (excluding the shaft sealing and connectors)										
Terminals (motor)	Cable 0.3 m (with connector)										
Terminals (encoder)	Cable 0.3 m (with connector)										
Overheat protection	Not provided (Servo amplifier detects temperature.)										
Mounting method	By securing motor flange IMB5 (L51), IMV1 (L52), IMV3 (L53)										
Shaft extension	Straight shaft with a key										
Paint color	N1.5										
Encoder	16-bit serial incremental encoder										
Vibration level	V5 or below										
Installation place, altitude, atmosphere	For indoor use, (free from direct sunlight), 1000 [m] or below, free from corrosive gas, flammable gas, oil mist and dust										
Ambient temperature, humidity	-10 to +40 [°C], 90 [%] RH max. (without condensation)										
Vibration resistance [m/s²]	49										
Mass	0.75	1.3	1.9	3.5							
( ): with a brake [kg]	(1.0) (1.9) (2.6) (4.3)										
Standards	UL/cUL (UL1004), CE marking (El	N60034-1, EN60034-5), RoHS direct	ive								

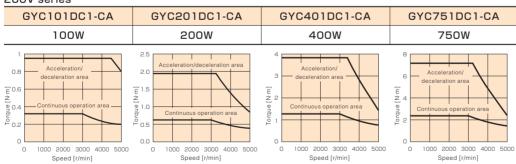
#### Brake specifications (motor equipped with a brake)

Motor type  GYC		101DC1-CA-B	201DC1-CA-B	401DC1-CA-B	751DC1-CA-B							
Series		3-phase 200V series										
Static friction torque	[N·m]	0.318	1	2.39								
Rated DC voltage		DC24±10%										
Attraction time	[ms]	60	50									
Release time	[ms]	40	80									
Power consumption	[W]	6.5 (at 20°C)	9.0 (a	8.5 (at 20°C)								

 $<sup>^{\</sup>star}$ 1) The brake is used to hold the rotor.

#### Torque characteristic diagrams

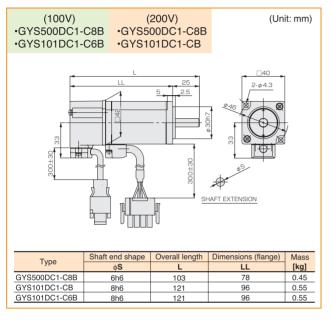
#### 200V series



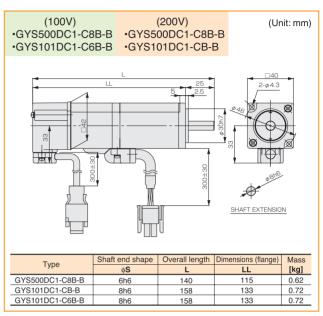
#### **External Dimensions**

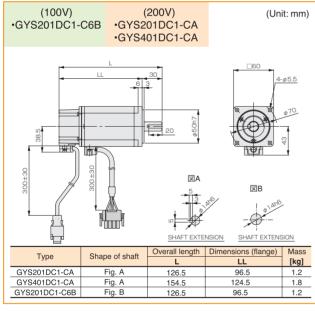
#### **GYS Motor**

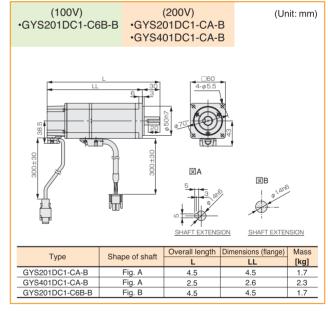
■Series: GYS series motor of standard type

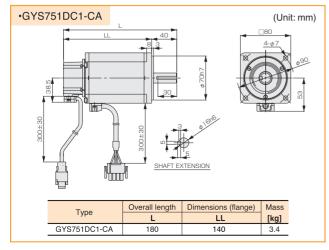


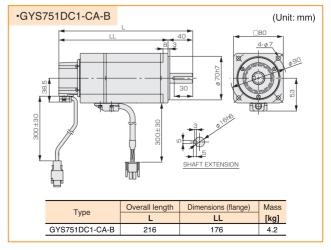
■Series: GYS series motor with a brake







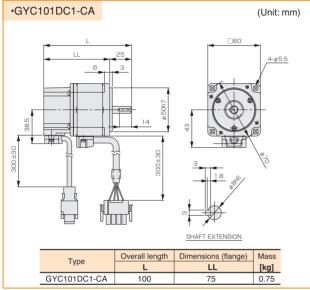




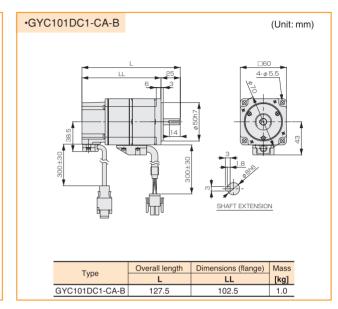
#### **External Dimensions**

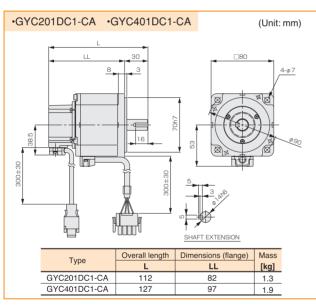
#### **GYC Motor**

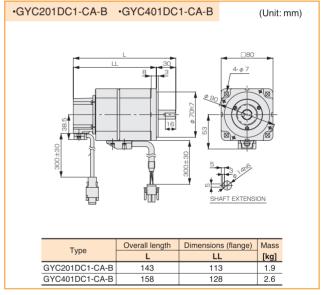
■Series: GYC series motor of standard type

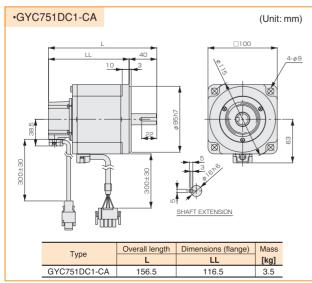


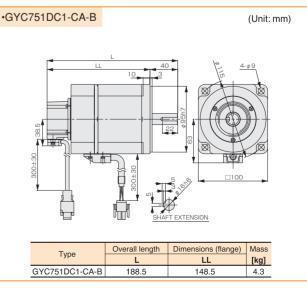




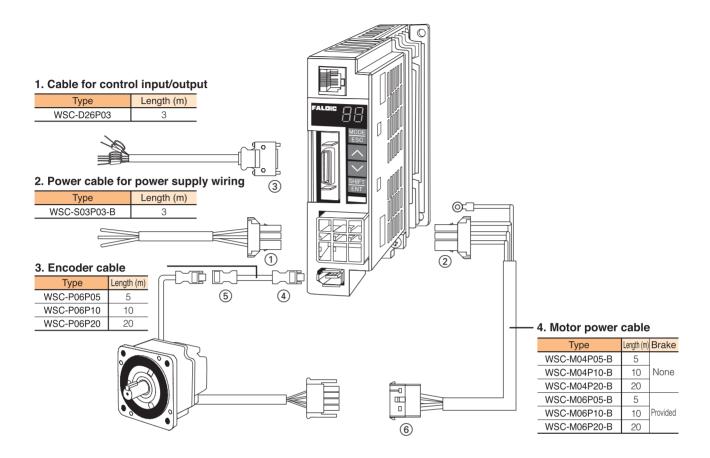








# Optional Cable

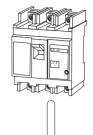


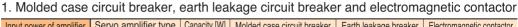
# Optional connector and recommended cable size

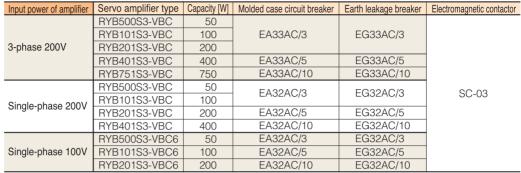
#### \*Prepare cables.

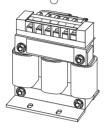
Series	Main circuit connector	Connector for control input /output wiring	Connector for encoder wiring (amplifier side)	Connector for encoder wiring (motor side)	Connector for motor power wiring	
External view	For power supply wiring 1 For external regenerative resistor For motor power 2	3	(4)	(5)	6	
Туре	For power supply wiring WSK-S03P-B For external regenerative resistor	WSK-D26P	WSK-P06P-M	WSK-P06P-F	Without brake WSK-M04P	
,, 	WSK-R03P-B For motor power WSK-M03P-B	Work D201	Work Foot W	WOKTOOT	With brake WSK-M06P	
	For power supply wiring 0.75mm <sup>2</sup> *		Cross linked polyethyle robot travel (twisted type	ene vinyl sheath cable for be)	For motor power	
Cable size (Common to all models)	For external regenerative resistor 0.75mm <sup>2</sup> *	AWG26 26-conductor batch shielded cable	RMCV-SB AWG#25/2P (10m or shot AWG#25/2P		0.75mm <sup>2</sup> * For brake	
	For motor power 0.75mm² *	Sinoided cable	(50m or short Made by DAIDEN Co.,	0.75mm² *		

<sup>\*</sup>Based on the 600V vinyl cable.



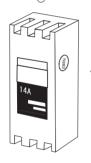






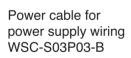
#### 2. AC reactor

Input power of amplifier	Servo amplifier type	Capacity [W]	AC reactor
	RYB500S3-VBC	50	
	RYB101S3-VBC	100	ACR2-0.4A
3-phase 200V	RYB201S3-VBC	200	
	RYB401S3-VBC	400	ACR2-0.75A
	RYB751S3-VBC	750	ACR2-1.5A
	RYB500S3-VBC	50	ACR2-0.4A
Single-phase 200V	RYB101S3-VBC	100	ACR2-0.4A
Single-phase 2007	RYB201S3-VBC	200	ACR2-0.75A
	RYB401S3-VBC	400	ACR2-1.5A
	RYB500S3-VBC6	50	ACR2-0.4A
Single-phase 100V	RYB101S3-VBC6	100	AUNZ-0.4A
	RYB201S3-VBC6	200	ACR2-0.75A

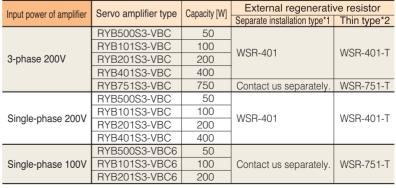


#### 3. Power filter

_	-0.1 ower mer									
	Input power of amplifier	Servo amplifier type	Capacity [W]	Power filter						
		RYB500S3-VBC	50							
		RYB101S3-VBC	100	RNFTC06-20						
	3-phase 200V	RYB201S3-VBC	200	NNF1000-20						
		RYB401S3-VBC								
		RYB751S3-VBC	750	RNFTC10-20						
		RYB500S3-VBC	50							
	Single-phase 200V	RYB101S3-VBC	100	RNFTC06-20						
	Single-phase 2007	RYB201S3-VBC	200							
		RYB401S3-VBC	400	RNFTC10-20						
		RYB500S3-VBC6	50	RNFTC06-20						
	Single-phase 100V	RYB101S3-VBC6	100	NINF 1 CU6-20						
		RYB201S3-VBC6	200	RNFTC10-20						



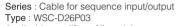




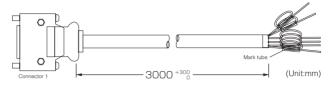
<sup>\*1)</sup> This resistor is installed separately from the amplifier. Because the amplifier connector is not included in the product, a separate connector (WSK-R03P-B) for the external regenerative resistor is necessary.

<sup>\*2)</sup> This resistor is installed on the side of the amplifier.

# **External Dimensions of Options**



Applicable amplifier : All models



Connector 1

Plug	10126-3000PE
Shell	10326-52AO-008

Maker: Sumitomo 3M

Connecto	or 1	1	2	3	4	5	6	7	8	9	10	11	12	13	15	14	16	17	18	19	20	21	22	23	24	25	26
Mark tube		1	2	3	4	5	6	7	8	9	10	11	12	13	15	14	16	17	18	19	20	21	22	23	24	25	26
Color		Color Ora		Gr	ay	Wh	ite	Yel	low	Pi	nk	Ora	nge	Gr	ay	Wh	iite	Yel	low	Pi	nk	Ora	nge	Gr	ay	Wh	nite
Wire color	Mark	Red 1	Black 1	Red 1	Black 1	Red 1	Black 1	Red 1	Black 1	Red 1	Black 1	Red 2	Black 2	Red 3	Black 3	Red 3	Black 3	Red 3	Black 3								

Series : Cable for servo motor encoder Type : WSC-P06P05 to WSC-P06P20 Applicable range : All models

Applicable range : 7 iii medele



Туре	L
WSC-P06P05	5000 +500 0
WSC-P06P10	10000 +1000
WSC-P06P20	20000 +2000

Connector 1	1	2	3	4	5	6	
Connector 2	1	2	3	4	5	6	
Wire color	Ped	Black	Orange	Orange/White	Light blue	Light blue/White	
	White	Black	Yellow	Brown	Red	Blue	

Maker: Molex Japan

Connector 1				
Socket housing	53988-0619			
Socket shell body cover	58302-0628			
Socket mold cover	53989-0605			
Socket mold cover	53990-0605			
Cable clamp	58303-0000			
Clamp serow	E0033 0000			

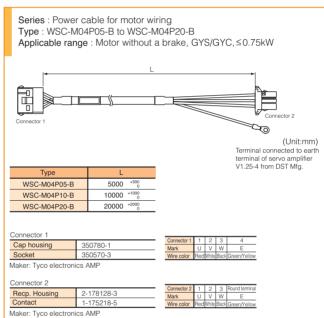
Maker: Molex Japan

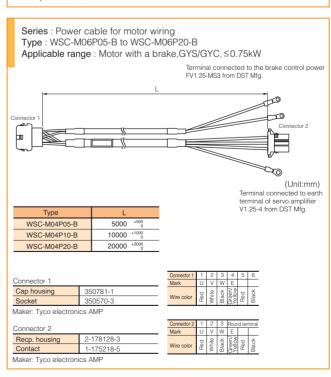
Connector 2	
Plug housing	54180-0619
Plug shell body cover	58299-0626
Plug shell body	58300-0626
Plug mold cover (A)	54181-0615
Plug mold cover (B)	54182-0605
Cable clamp	58303-0000
Clamp screw	59832-0009

\* Type of Connector 1 and Connector 2 are different from connector kit.

Series : Power cable for power supply wiring
Type : WSC-S03P03-B
Applicable range : All models

3000 +300
Connector 1
Recp. housing 1-178128-3
Contact 1-175196-5
Maker: Tyco electronics AMP





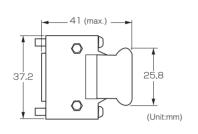
## **External Dimensions of Options**

Series: Connector kit for sequence input/output

Type: WSK-D26P

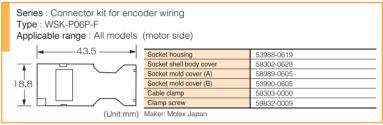
Maker: Sumitomo 3M

Applicable range : All models



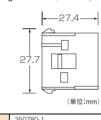
Soldered plug	10126-3000PE
Shell kit	10326-52AO-008

Series: Connector kit for encoder wiring Type: WSK-P06P-M Applicable range: All models (amplifier side) 41 (max.) Plua housina 54180-0619 Plug shell body o 58299-0626 Plug shell body 58300-0626 Plug mold cover (A) 54181-0615 18.8 Plug mold cover (B) 54182-060 Cable clamp 58303-0000 Clamp screw (Unit:mm) Maker: Molex Japan



Series: Connector kit for power cables of motor wiring Type: WSK-M04P

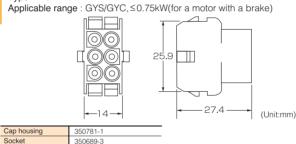
Applicable range :GYS/GYC,≤0.75kW(for a motor without a brake)



Cap housing	350780-1		
Socket	350689-3		
Maker: Type electronics AMP			

Series: Connector kit for power cables of motor wiring

Type: WSK-M06P



Maker: Tyco electronics AMP

Series: Connector kit for power cables of motor wiring (amplifier side)

Type: WSK-M03P-B

Applicable range : All models

Series: Connector kit for power supply wiring (amplifier side)

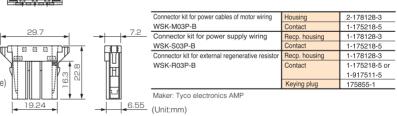
Type: WSK-S03P-B Applicable range : All models

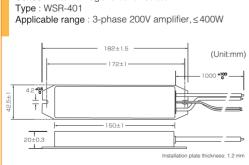
Series: Connector kit for external regenerative resistor (amplifier side)

Type: WSK-R03P-B

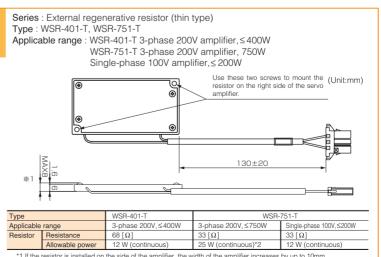
Applicable range : All models

Series: External regenerative resistor





	Specifications	
	WSR-401	
Resistance	68 Ω	
Allowable power	30 W (continuous)	
Working temperature	Open at 135±5 [°C]	
Withstand voltage	2.5 kV AC for 1 min	
Contact capacity	DC30V 3A	
	Allowable power Working temperature Withstand voltage	



\*1 If the resistor is installed on the side of the amplifier, the width of the amplifier increases by up to 10mm \*2 If the resistor is installed on the side of the 750W amplifier, the cooling effect of the cooling fan of the amplifier increases the allowable power to 25 (W).

# Model List

## Servo Motor

# [GYS motor]

Specifications				Part Code	Туре	Delivery
	100[V]	Without key	50 W	GYS1061	GYS500DC1-C8B	0
	/200[V]	With key	30 W	_	GYS500DC1-C8A	Δ
		Without key	100 W	GYS1062	GYS101DC1-CB	0
		With key	100 00	_	GYS101DC1-CA	Δ
	200[V]		200 W	GYS1063	GYS201DC1-CA	0
Without		With key	400 W	GYS1064	GYS401DC1-CA	0
brake			750 W	GYS1065	GYS751DC1-CA	0
		Without key	100 W	GYS1102	GYS101DC1-C6B	0
	100[V]	With key	100 00	_	GYS101DC1-C6A	$\triangle$
		Without key	200 W	GYS1103	GYS201DC1-C6B	0
		With key	200 W	_	GYS201DC1-C6A	$\triangle$
	100[V] /200[V]	Without key	50 W	GYS1081	GYS500DC1-C8B-B	0
		With key	30 W	_	GYS500DC1-C8A-B	$\triangle$
		Without key	100 W	GYS1082	GYS101DC1-CB-B	0
		With key	100 00	_	GYS101DC1-CA-B	$\triangle$
	200[V]		200 W	GYS1083	GYS201DC1-CA-B	0
		With key	400 W	GYS1084	GYS401DC1-CA-B	0
With			750 W	GYS1085	GYS751DC1-CA-B	0
brake		Without key	100 W	GYS1112	GYS101DC1-C6B-B	0
	1000	With key	100 W	-	GYS101DC1-C6A-B	Δ
	100[V]	Without key	hout key 200 W	GYS1113	GYS201DC1-C6B-B	0
		With key	200 W	_	GYS201DC1-C6A-B	Δ

# [GYC motor]

Specifications		Part Code	Type	Delivery		
Without brake 200[V] With key	100 W	GYC1040	GYC101DC1-CA	0		
	Mith Louis	200 W	GYC1041	GYC201DC1-CA	0	
	200[V]	Willi key	400 W	GYC1042	GYC401DC1-CA	0
			750 W	GYC1043	GYC751DC1-CA	0
With brake 200[V] V		100 W	GYC1050	GYC101DC1-CA-B	0	
	200[V]	With key	200 W	GYC1051	GYC201DC1-CA-B	0
			400 W	GYC1052	GYC401DC1-CA-B	0
			750 W	GYC1053	GYC751DC1-CA-B	0

○ : In stock

## 

# Servo Amplifier

Input voltage	Applied motor capacity	Part Code	Туре	Delivery
	50 W	RYB1001	RYB500S3-VBC	0
3-phase 200V	100 W	RYB1002	RYB101S3-VBC	0
	200 W	RYB1003	RYB201S3-VBC	0
	400 W	RYB1004	RYB401S3-VBC	0
	750 W	RYB1005	RYB751S3-VBC	0
	50 W	RYB3001	RYB500S3-VBC6	0
Single-phase 100V	100 W	RYB3002	RYB101S3-VBC6	0
	200 W	RYB3003	RYB201S3-VBC6	0

# **Options**

		Part Name		Part Code	Туре	Delivery
Sequence input/	Sequence input/output cable Common to all models (with 26 pin connector)		3 m (one-end connector)	RYWS801	WSC-D26P03	0
Encoder cable			5 m (both-end connector)	RYWS803	WSC-P06P05	0
		Common to all models	10 m (both-end connector)	RYWS804	WSC-P06P10	0
			20 m (both-end connector)	RYWS805	WSC-P06P20	0
			5 m (both-end connector)	RYWS812	WSC-M04P05-B	0
		Motor without a brake	10 m (both-end connector)	RYWS813	WSC-M04P10-B	0
Power cable for	motor wiring		20 m (both-end connector)	RYWS814	WSC-M04P20-B	0
			5 m (both-end connector)	RYWS818	WSC-M06P05-B	0
		Motor with a brake	10 m (both-end connector)	RYWS819	WSC-M06P10-B	0
			20 m (both-end connector)	RYWS820	WSC-M06P20-B	0
Power cable for power supply wiring		Between power input and amplifier (common to all models)	3 m (one-end connector)	RYWS824	WSC-S03P03-B	0
Connector kit for sequence input/output		26-pin connector	_	RYWS021	WSK-D26P	0
Connector kit for	conceder wiring	Amplifier (common to all models)	_	RYWS023	WSK-P06P-M	0
Connector kit for	encoder wiring	Motor (common to all models)	-	RYWS024	WSK-P06P-F	0
		Amplifier (common to all models)	-	RYWS034	WSK-M03P-B	0
Power cable cor	nnector kit for motor wiring	Motor (without motor, 4 pin)	-	RYWS026	WSK-M04P	0
		Motor (with motor, 6 pin)	_	RYWS028	WSK-M06P	0
Power cable con	nector kit for power supply wiring	Amplifier (common to all models)	_	RYWS033	WSK-S03P-B	0
Power cable connector kit for external regenerative resistor		Amplifier (common to all models)	_	RYWS035	WSK-R03P-B	0
External regenerative resistor		Max. 0.4 kW *1	_	RYWS010	WSR-401	0
		Max. 0.4 kW (slim type)	_	RYWS013	WSR-401-T	0
		0.75 kW (slim type)	_	RYWS014	WSR-751-T	0
PC loader	Conversion adaptor	Common to all β models	_	NWOH003	NWOH-CNV	0
connection *2	Cable	Common to all β models	_	RYWS005	WSC-PCL	0

<sup>\*1)</sup> When using the resistor WSR-401, order the power cable connector kit for external regenerative resistor type WSK-R03P-B. \*2) Software for PC loader can be downloaded from Fuji's website.

## **Product Warranty**

**Product Warranty** 

# To all our customers who purchase Fuji Electric FA Components & Systems' products:

#### Please take the following items into consideration when placing your order.

When requesting an estimate and placing your orders for the products included in these materials, please be aware that any items such as specifications which are not specifically mentioned in the contract, catalog, specifications or other materials will be as mentioned below.

In addition, the products included in these materials are limited in the use they are put to and the place where they can be used, etc., and may require periodic inspection. Please confirm these points with your sales representative or directly with this company

Furthermore, regarding purchased products and delivered products, we request that you take adequate consideration of the necessity of rapid receiving inspections and of product management and maintenance even before receiving

#### 1. Free of Charge Warranty Period and Warranty Range

#### 1-1 Free of charge warranty period

- (1) The product warranty period is "1 year from the date of purchase" or 24 months from the manufacturing date imprinted on the name place, whichever date is earlier
- (2) However, in cases where the use environment, conditions of use, use frequency and times used, etc., have an effect on product life, this warranty period may not apply.
- (3) Furthermore, the warranty period for parts restored by Fuji Electric's Service Department is "6 months from the date that repairs are completed."

#### 1-2 Warranty range

- (1) In the event that breakdown occurs during the product's warranty period which is the responsibility of Fuji Electric, Fuji Electric will replace or repair the part of the product that has broken down free of charge at the place where the product was purchased or where it was delivered. However, if the following cases are applicable, the terms of this
  - 1) The breakdown was caused by inappropriate conditions, environment, handling or use methods, etc. which are not specified in the catalog, operation manual, specifications or other relevant documents.

    2) The breakdown was caused by the product other than the purchased or delivered Fuji's product.

  - 3) The breakdown was caused by the product other than Fuji's product, such as the customer's equipment or software design, etc.
  - 4) Concerning the Fuji's programmable products, the breakdown was caused by a program other than a program supplied by this company, or the results from using such a program.
  - 5) The breakdown was caused by modifications or repairs affected by a party other than Fuji Electric.
    6) The breakdown was caused by improper maintenance or replacement using consumables, etc. specified in the
  - operation manual or catalog, etc.

    7) The breakdown was caused by a chemical or technical problem that was not foreseen when making practical
  - application of the product at the time it was purchased or delivered.

    8) The product was not used in the manner the product was originally intended to be used.

  - 9) The breakdown was caused by a reason which is not this company's responsibility, such as lightning or other
- (2) Furthermore, the warranty specified herein shall be limited to the purchased or delivered product alone.
  (3) The upper limit for the warranty range shall be as specified in item (1) above and any damages (damage to or loss of machinery or equipment, or lost profits from the same, etc.) consequent to or resulting from breakdown of the purchased or delivered product shall be excluded from coverage by this warranty.

#### 1-3. Trouble diagnosis

As a rule, the customer is requested to carry out a preliminary trouble diagnosis. However, at the customer's request, this company or its service network can perform the trouble diagnosis on a chargeable basis. In this case, the customer is asked to assume the burden for charges levied in accordance with this company's fee schedule.

#### 2. Exclusion of Liability for Loss of Opportunity, etc.

Regardless of whether a breakdown occurs during or after the free of charge warranty period, this company shall not be liable for any loss of opportunity, loss of profits, or damages arising from special circumstances, secondary damages, accident compensation to another company, or damages to products other than this company's products, whether foreseen or not by this company, which this company is not be responsible for causing

#### 3. Repair Period after Production Stop, Spare Parts Supply Period (Holding Period)

Concerning models (products) which have gone out of production, this company will perform repairs for a period of 7 years after production stop, counting from the month and year when the production stop occurs. In addition, we will continue to supply the spare parts required for repairs for a period of 7 years, counting from the month and year when the production stop occurs. However, if it is estimated that the life cycle of certain electronic and other parts is short and it will be difficult to procure or produce those parts, there may be cases where it is difficult to provide repairs or supply spare parts even within this 7-year period. For details, please confirm at our company's business office or our service office

#### 4. Transfer Rights

In the case of standard products which do not include settings or adjustments in an application program, the products shall be transported to and transferred to the customer and this company shall not be responsible for local adjustments or trial operation.

#### 5. Service Contents

The cost of purchased and delivered products does not include the cost of dispatching engineers or service costs. Depending on the request, these can be discussed separately

#### 6. Applicable Scope of Service

Above contents shall be assumed to apply to transactions and use of the country where you purchased the products Consult the local supplier or Fuji for the detail separately

#### Service Network



#### Fuji FA Service Centers

- Overseas Service Center [Service Area: Far East Asia] 5-7, Nihonbashi Odemma-cho, Chuo-ku, Tokyo, 103-0011, Japan Phone: (03)5847-8072
- USA Service Center [Service Area: USA, Canada, Central & South Americal 5550 Cerritos Ave. Suite H Cypress, CA. 90630 USA

Phone: (714)220-1879

CHICAGO Service Station 4825 N. Scott St. Suite 210, Schiller Park, IL 60176

Phone: (847)233-9844

- EC Service Center [Service Area: Europe, Middle East & Africa] Goethering 58, 63067 Oftenbach/ Main Germany Phone: (69)669029-0
- South East Asia & Oceania Service Center [Service Area: SE & S Asia, Oceania] 171 Chin Swee Road, #12-01, San Centre, Singapore 169877
  Phone: (6481)5079
  • FUJI-ELECTRIC TECHNOLOGY AND
- SERVICE (SHENZHEN) CO., LTD [Service Area: China] 5F, Liming Bldg., No.144, Zhongxing Rd., Luohu District, Shenzhen Phone: (0755)8220-2745, 8218-4287

#### **Contracted Service Companies**

- USA, Canada, Central & South America Area USA OESS CORPORATION(Head Office:NEW
- JERSEY)

   NEW JERSEY 800 Huyler Street Teterboro, NJ 07608, USA Phone: (201)288-4422
- **OCHICAGO** 4825 N Scott Suite 210, Schiller park, IL 60176,

USA Phone: (847)233-9412

- **3** LOS ANGELES 5550 Cerritos Ave. Suite H, Cypress, CA 90630 USA
- Phone: (714)220-1879
- **4** SAN JOSE 1440, Koll Circle, Suite 107, San Jose, CA 95112 USA Phone: (408)437-1582
- 6 PORTI ÀND 7921 SW Cirrus Drive, Beaverton, OR 97008, USA Phone: (503)520-5044
- Far East Asia Area

  6 KOREA

GAIUS INDUSTRIES CO., LTD. Cana Bldg., 10-59, Yangjae-Dong, Seocho-Gu, Seoul, 137-887, R.O. KOREA Phone: (02)3463-0766

7 TAIWAN ELTA Electrical Co., Ltd. 4F, No.32. Sec. 3, Cheng TehRoad, Taipei, Taiwan Phone: (02)2597-6458
7 TAIWAN

Full Key International Technology Ltd 12F, No.111-8, HSING TEH RD., SAN-CHUNG CITY, TAIPEI, TAIWAN Phone: (02)2995-2008

- Europe, Middle East & Africa Area
   F.R.GERMANY OESS GmbH. Senefelder Strasse 1, 63110 Rodgau, F.R.GERMANY Phone: (06106)285-7890

 SE & S Asia, Oceania
 SINGAPORE
 Fuji Technical Center (S'pore) Pte Ltd. Block 5000 Ang Mo kio Ave 5 #02-03 TechplaceII SINGAPORE 569870 Phone: (6481)5079 

Output Description: AUSTRALIA

CNC and ROBOTIC AUTOMATED SERVICES
Unit 33/16 Macquarie Place Boronia Victoria 3155, AUSTRALIA Phone: (03)9483-8629

**M**INDIA

AUTONUM CONTROLS PVT LTD. NOT NOW CONTROLS PYTEID.

109, Sagar Building, Prabhat Industrial Estate,
W.E. Highway, Befor Check Naka, Dahisar-East,
Mumbai 400 068 INDIA
Phone: (022)28960027



- 1. This catalog is intended for use in selecting required servo systems. Before actually using these products, carefully read their instruction manuals and understand their correct usage.
- 2. Products described in this catalog are neither designed nor manufactured for combined use with a system or equipment that will affect human lives.
  - If you are considering using these products for special purposes such as atomic energy control, use in aerospace, medical application, or traffic control, you are requested to consult our sales office.
- 3. If you use our product with anticipation that a trouble of our product may induce serious injury or damage to your property, be sure to take safety measures for protecting human body and equipment.

# Fuji Electric Systems Co., Ltd.

Gate City Ohsaki, East Tower, 11-2, Osaki 1-chome Shinagawa-ku, Tokyo 141-0032, Japan

Phone: +81-3-5435-7283 Fax: +81-3-5435-7425