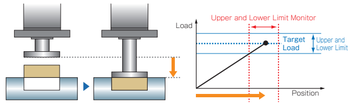
Press Control Method 1

4 choices of control methods are available to meet the requirement of various different applications.

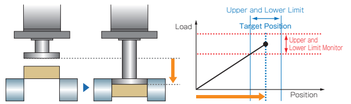
1 Load Control Position Monitor

Press until target load is detected, and judge Upper and Lower load limit at the same time, monitor Upper and Lower position and time limit,



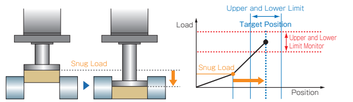
2 Position Control Load Monitor

Press until target position is detected, and judge Upper and Lower position limit at the same time, monitor Upper and Lower load and time limit,



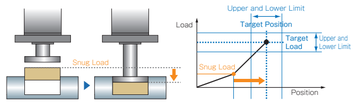
3 Increment Control

Press from Snug Load until target position, and judge Upper and Lower position limit at the same time, monitor Upper and Lower load and time limit,



4 Load & Increment Control

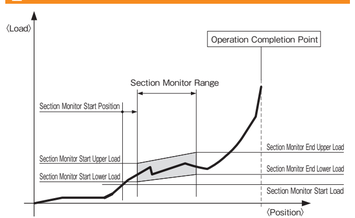
Press untill target load and target position (increment control), and judge Upper and Lower load and position limit at the same time, monitor Upper and Lower time limit,



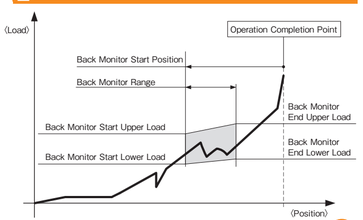
Monitor (Zone Judgement) Function 2

A function to monitor and judge Upper and Lower limit on a zone set optionally. Section Monitor : Monitor Start Position is set by distance from Section Monitor Start Load detected. Judgement is made when Upper or Lower limit detected. Back Monitor : Monitor Start Position is set by distance from the operation completion point. Judgement is made when operation is completed.

1 Section Monitor

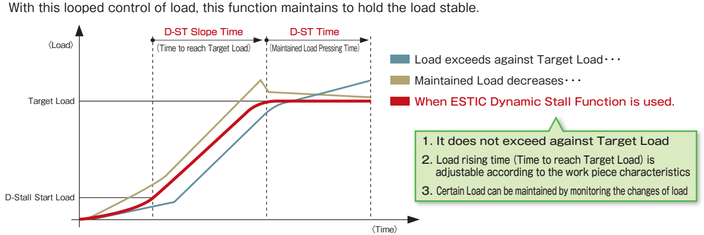


2 Back Monitor



Dynamic Stall Function 3

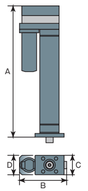
A function to hold the constant load by real time feedback from reading built-in load cell on Press unit.
With this looped control of load, this function maintains to hold the load stable.



1. It does not exceed against Target Load
2. Load rising time (Time to reach Target Load) is adjustable according to the work piece characteristics
3. Certain Load can be maintained by monitoring the changes of load

Press Unit Specifications

Model		SPC010-20	SPC010-20-F	SPC020-20	SPC020-20-F	SPC030-20	SPC030-20-F	SPC050-20	SPC050-20-F	SPC100-20	SPC100-20-F
Pressing Capacity	kN	10.00		20.00		30.00		50.00		100.00	
Press Consecutive Rate	kN	4.10		7.50		10.40		25.10		42.50	
Max. Stroke	mm	200									
Max. Feed Speed	mm/s	200		310		235		255		151	
Max. Press Speed	mm/s	120		220		155		170		100	
Brake Sustainable Load	N	196 (20kg)		294 (30kg)		490 (50kg)		980 (100kg)		1960 (200kg)	
Repetition Load Accuracy		$3\sigma\bar{X}$ <=+1.5%									
Repetition Position Accuracy	mm	-0.01									
Dimensions	A (mm)	503	520	605	625	695	720	809	837	910	945
	B (mm)	155	177.5	254.6	279.6	282.1	307.1	353.6	406.1	354.8	409.8
	C (mm)	65		80		90		135		135	
	D (mm)	65		100		100		135		135	
Flange	—	without flange	with flange	without flange	with flange	without flange	with flange	without flange	with flange	without flange	with flange
Weight	kg	13	14	35	36	49	51	110	117	145	153
Controller Type	—	SPU50C-40		SPU50C-5K				SPU50C-5K2			

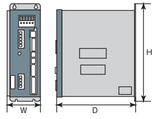


Control Unit Specifications

Model		SPU50C-40	SPU50C-5K	SPU50C-5K2
Control Power Voltage		Single Phase AC200~230V±10% 50/60Hz		
Main Power Voltage		Three Phases AC200~230V±10% 50/60Hz		
Main Power Capacity (At Rated Operation)		1.7KVA	3.7KVA	8.0KVA
Dimensions	W (mm)	87	116	116
	H (mm)	255	274.5	298
	D (mm)	205	210	208
Weight	kg	3.4	3.5	5.6

Model	SPU50C-40	SPU50C-5K	SPU50C-5K2
Display and Key Pad	5 letters × 1 line with 7 Segment LED Display: 5 Function keys. Indicator lamps (OK/ALM/NG)		
I/O	IN 12 OUT 22		
COM Port	RS-232C x 1		

■SPU50C

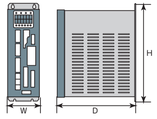


Master Control Unit Specifications

Model		ENRZ-MU50—※※※
Control Power Voltage		AC100~230V±10% 50/60Hz
Power Capacity		80W
Dimensions	W (mm)	82.8
	H (mm)	255
	D (mm)	206
Weight	kg	3.0
Display and Key Pad		6 characters x 2 lines with 7 Segments LED Display, Status lamp (ST1, ST2, ST3, ST4), Function keys (6 keys)

Model	ENRZ-MU50—※※※
Ethernet Port	10/100BASE-T x 1
COM Port	RS-232C x 1
Fieldbus Port (option)	Profibus, Profinet, EtherNet/IP, DeviceNet, CC-Link
I/O	IN 6 OUT 6
Extended I/O (option)	IN 16 OUT 16
Remote I/O (option)	IN 16 OUT 16
USB Port	USB-Mini A x 1

■MU50



※How to read Model Type ····· ENRZ-MU50— N N N

N: No Fieldbus (Standard) **C**: CC-Link (Optional) **NN**: without Extend I/O and Remote I/O (Standard)
D: DeviceNet (Optional) **E**: Ethernet/IP (Optional) **EN**: with Extend I/O (Optional)
P: Profibus (Optional) **T**: Profinet (Optional) **ER**: with Extend I/O and Remote I/O (Optional)

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JQA-2805
SERVO SYSTEM

● The colors of the products may slightly differ from those of the actual products, which inevitable in printing.
● The specifications and designs of the products may be changed without previous notice.

VEGETABLE OIL INK
This catalog uses vegetable oil ink.

The contents of the catalog are as of July, 2015.

ESTIC
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COMPACT SERVO PRESS

ELECTRO-MECHANICAL PRESS SYSTEM

Precision, Traceability, Environmentally Friendly

State of Art Servo Control Technology
ESTIC Servo Press realizes High Quality Assembly

Downsized
Designed to be as compact as Hydraulic Press for easier mechanical designing.

Environmentally Friendly
Servo Motor driven Press reduces energy consumption as low as 10-20% of Pneumatic or Hydraulic.

High Procutivity
Controlling Load, Position, Speed and Time with accuracy optimize the system for the best cycle time. And real time looped feedback for pressing status eliminates damages of the work piece.

Durability
No Belt drive is adopted, and Gear drive eliminates belt skipping, belt stretch, belt cut.

Easy Settings
Simple system configuration with Press unit, Cables and Controller, and User friendly Parameter Editing Software shorten the setting up time.

Safety Design
Fall prevention of Output Shaft during power shutdown is secured with a Break.

SPU50C (Press Control Unit)

Press Control Unit realizes High Quality, High Accuracy pressing

- Pressing Channel: 99 Channels
- Press Result History: 5120 records
- Press Curve Data: 50,000 points
- System Error History: 50 records

*Numbers of the records which can be stored in the controller varies depending on the items selected for pressing results history.

MU50 (Master Control Unit)

Master Control Unit enables easy communication with PLC, Fieldbus, and it is expandable up to 10 Press Control Units.

- Pressing Channel: 99 Channels
- Press Result History: 20,000 records
- Press Curve Data: 50 records
- System Error History: 200 records

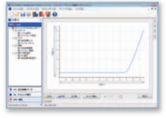
*Numbers of the records which can be stored in the controller varies depending on the items selected for pressing results history.

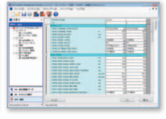
PC50 (Management Software)

User Friendly Parameter Editing Software helps to edit and maintain various parameters quickly.

- Creating and editing Pressing Program Parameters
- Monitoring Pressing result, Pressing Curve
- Downloading Pressing result, Pressing curve

PC50-J : Japanese
PC50-E : English





Where to use

Pressing
Bearing/Valve Guide
Valve Seat/Plug
Bush/Dowel/Pin/etc

Calking

Straightening

Pasting

Punching

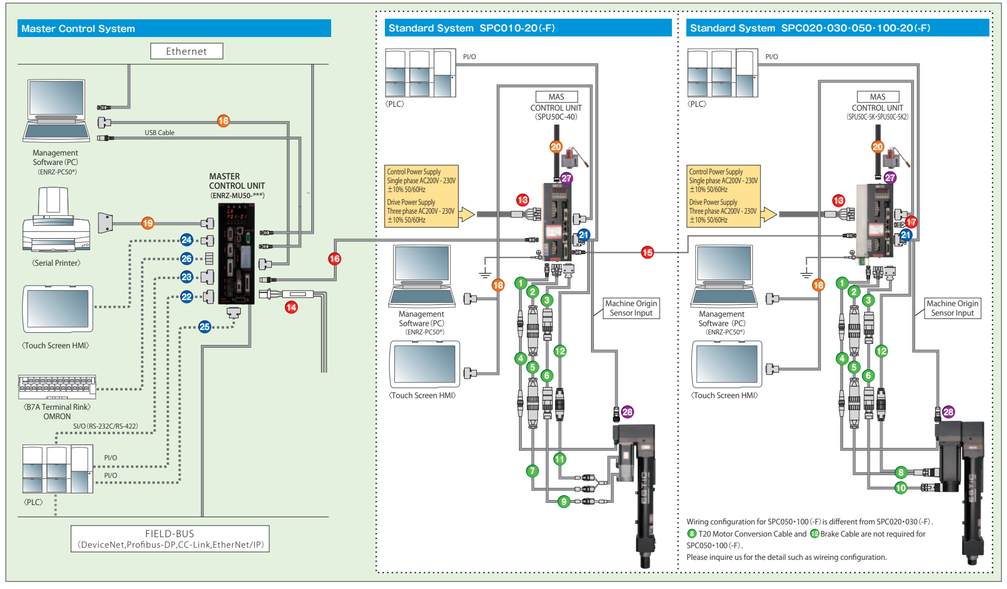
Positioning

Master Control System

Master Control System enables to connect up to 10 press units. All pressing results are collected by Master Unit. The system makes wiring and data control easier.

Standard System

This is one to one system. Controls are made by discrete I/O.



Peripherals List

No.	Description	Length	Model Code
1	Torque Transducer Cable	5[m]	ENRZ-CVTN2-050
		10[m]	ENRZ-CVTN2-100
		15[m]	ENRZ-CVTN2-150
		20[m]	ENRZ-CVTN2-200
2	Motor Cable *1	5[m]	ENRZ-CVMN2-050
		10[m]	ENRZ-CVMN2-100
		15[m]	ENRZ-CVMN2-150
		20[m]	ENRZ-CVMN2-200
		5[m]	ENRZ-CVMN5-050
		10[m]	ENRZ-CVMN5-100
		15[m]	ENRZ-CVMN5-150
		20[m]	ENRZ-CVMN5-200
3	Resolver Cable	5[m]	ENRZ-CVRN-050
		10[m]	ENRZ-CVRN-100
		15[m]	ENRZ-CVRN-150
		20[m]	ENRZ-CVRN-200
4	Torque Transducer Relay Cable	3[m]	ENRZ-CVTN-030
		6[m]	ENRZ-CVTN-060
		10[m]	ENRZ-CVTN-100
		15[m]	ENRZ-CVTN-150
5	Motor Relay Cable *2	3[m]	ENRZ-CVMP-030
		6[m]	ENRZ-CVMP-060
		10[m]	ENRZ-CVMP-100
		15[m]	ENRZ-CVMP-150
		3[m]	ENRZ-CVMP5-030
		6[m]	ENRZ-CVMP5-060
		10[m]	ENRZ-CVMP5-100
		15[m]	ENRZ-CVMP5-150
6	Resolver Relay Cable	3[m]	ENRZ-CVRP-030
		6[m]	ENRZ-CVRP-060
		10[m]	ENRZ-CVRP-100
		15[m]	ENRZ-CVRP-150
7	T06 Motor Conversion Cable *3	0.5[m]	ENRZ-CVMN40-005
8	T20 Motor Conversion Cable *4	1[m]	ENRZ-CVMN5K-010
9	T06 Resolver Conversion Cable *3	0.5[m]	ENRZ-CVRN40-005
10	T20 Resolver Conversion Cable *5	1[m]	ENRZ-CVRN5K-010
11	T06 Break Cable *3	0.5[m]	ENRZ-CVBN40-005
12	Brake Cable (SPC050-100(-F) do not require this cable)	5[m]	ENRZ-CVBN-050
		10[m]	ENRZ-CVBN-100
		20[m]	ENRZ-CVBN-200

*1 Motor Cable ENRZ-CVMN2-*** is for Press Unit SPC010-20/20-F, SPC020-20/20-F, SPC030-20/20-F
Motor Cable ENRZ-CVMN5-*** is for Press Unit SPC050-20/20-F, SPC100-20/20-F
*2 Motor Relay Cable ENRZ-CVMP-*** is for Press Unit SPC010-20/20-F, SPC020-20/20-F, SPC030-20/20-F
Motor Relay Cable ENRZ-CVMP5-*** is for Press Unit SPC050-20/20-F, SPC100-20/20-F
*3 Attachment of Press Unit SPC010-20/20-F
*4 Attachment of Press Unit SPC020-20/20-F, SPC030-20/20-F

No.	Description	Length	Model Code
13	Power Cable *6	3[m]	ENRZ-CVDC2-030
14	MU50 Power Cable *6	3[m]	ENRZ-CVDC3-030
15	NET Cable (AU to AU) *7	0.2[m]	ENRZ-CVNK2A-002
		1[m]	ENRZ-CVNK2A-010
		2[m]	ENRZ-CVNK2A-020
16	NET Cable (MU to AU)	0.3[m]	ENRZ-CVNK3M-003
		1[m]	ENRZ-CVNK3M-010
		3[m]	ENRZ-CVNK3M-030
		10[m]	ENRZ-CVNK3M-100
17	NET Terminal Connector *8	–	ENRZ-CVST3
18	Serial Communication Cable	1.5[m]	ENRZ-CVSR-015
		5[m]	ENRZ-CVSR-050
		10[m]	ENRZ-CVSR-100
19	Serial Printer Cable	3[m]	ENRZ-CVSP-030
		5[m]	ENRZ-CVSP-050
		10[m]	ENRZ-CVSP-100
20	Check Connector Cable	3[m]	ENRZ-CVCK-030
21	Control Connector *9	–	ENRZ-CNAU
22	Control Connector	–	ENRZ-CN14-CR
23	PLC Connector	–	ENRZ-CN15-PL
24	PANEL Connector	–	ENRZ-CN9-PA
25	EX Connector	–	ENRZ-CN36-EX
26	Remote I/O Connector	–	EH2-FCN04-RM
27	AU40 Battery *9	–	ENRZ-BATT
28	P/B Connector *10	–	SPCNP8

*5 Attachment of Press Unit SPC020-20/20-F, SPC030-20/20-F, SPC050-20/20-F, SPC100-20/20-F
*6 Attachment of Master Control Unit
*7 Required between Press Control Unit and Press Control Unit when multiple presses are connected under Master Control System
*8 Required 1 piece for Master Control System
*9 Attachment of Press Control Unit
*10 Attachment for all models of Press Unit

Built-in PLC Logic

Simplified PLC logic functions such as A contact, B contact, AND, OR, Timer, etc are equipped. PLC less system can be realized.

- Logic capacity: 500 steps

I/O Signal Allocation

Input and Output signals on Control I/O, Extend I/O and Remote I/O, PLC Connection, Fieldbus Connection can be changed and allocated freely.

Serial Protcol for PLC Communication

PLC Serial Communication can be made by either RS232C or RS422. System Control and Pressing Result can be communicated with Serial Connection. MU50 is compatible with following PLC models.

Compatible PLC seires

Manufacturer	Series
MITSUBISHI ELECTRIC	MELSEC-A Series
	MELSEC-Q Series
OMRON	SYSMAC-CS1 Series SYSMAC-CJ1 Series
SHARP	JW30 Series JW300 Series
JTEKT	TOYOPUC

(RS-232C and RS-422 cannot be used at the same time)

Fieldbus (Optional)

MU50 is compatible with Filedbus (DeviceNet, Profibus-DP, CC-Link, EtherNet/IP).
By using Fieldbus, System Control and Pressing Result can be communicated with Fieldbus.

Communication Specification

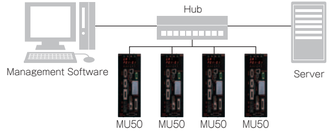
Item	Fieldbus Type
DeviceNet	Complied with DeviceNet Group 2
Profibus-DP	Complied with Profibus DP-V1
CC-Link	Complied with CC-Link communication system
EtherNet/IP	Complied with EtherNet/IP Group 2, 3

USB connection

PC and SPC controller can be connected and communicated by USB cable (USB Mini-A port on MU controller). This will be useful if PC does not have a RS-232C port.
RS-232C is also available for communication with PC.

Data storage on USB Flash Drive

Program File, System Parameters,
Pressing Results can be stored on USB Flash Drive (USB Type A port on MU controller).

Ethernet Port

Ethernet port is equipped on MU50 as standard.