



High Pressure

High Flow Rate

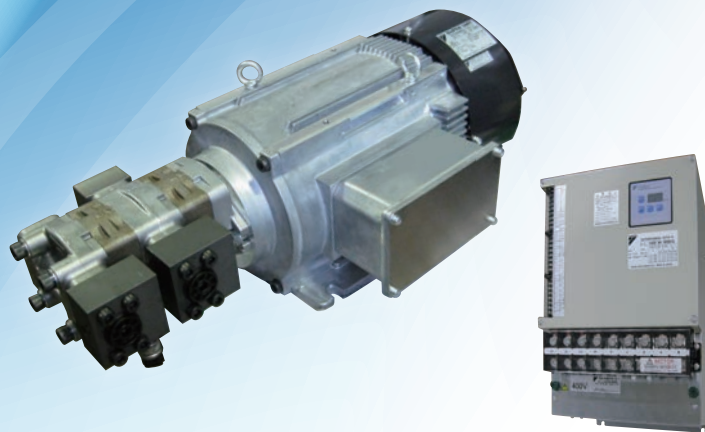
Analog Command Input

High Accuracy

SUPER UNIT

HYBRID HYDRAULIC UNIT

Exceeds standard of high efficiency motor regulation



Unique Offer from DAIKIN!!

Unparalleled energy-saving and high-accuracy servo-based pump PQ control system

- An extensive lineup of pump control systems covering a wide range of applications including presses and industrial machinery -

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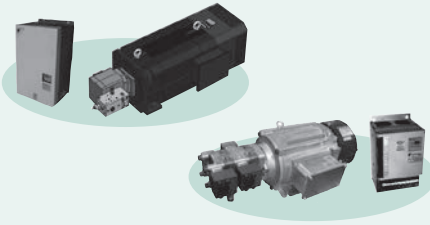
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List of SUPER UNIT Models

Specifications vary depending on the machine type. The Daikin product lineup provides various functions and capacities according to the machine type.

Maximum discharge rate

SUPER UNIT (Analog Command Input, High-accuracy Type) Model List by Pressure/Flow Rate

300 L/min	S-SUT00S30018 380 V			S-SUT00D30025 380 V	
250 L/min	S-SUT00S25018 380 V				
200 L/min	SUT00S20018 400 V	SUT00D20021 200 V	S-SUT00D20021 400 V	S-SUT00D20025 400 V	SUT00D20028 400 V
150 L/min	SUT00S15018 200/400 V	SUT00D15021 200/400 V			SUT00D15028 200/400 V
130 L/min	SUT00S13018 200/400 V	SUT00S13021 200 V	SUT00D13021 200/400 V	S-SUT00D13025 400 V	SUT00D13028 200/400 V
80 L/min	SUT00S8018 200/400 V	SUT00D8021 200 V		S-SUT00D8025 400 V	SUT00D8028 200/400 V
50 L/min		SUT00S5021 200/400 V		S-SUT00S5025 200 V	
30 L/min	SUT00S3018 200 V	SUT00D3021 200 V			

Maximum operating pressure

18 MPa

21 MPa

25 MPa

28 MPa ^(Note 5)

Note 1 All models allow selection of the input type as the analog command input type or 8-PQ digital command input type using a parameter. (Factory default is the analog command input type.)

Note 2 All models are tankless units with a split type controller (electrical components).

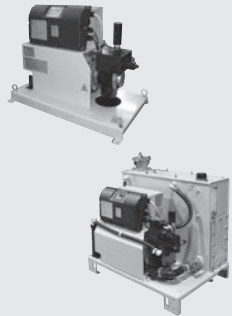
Note 3 Flow rate/pressure combinations other than those given in the model list above are also available. Please consult us when considering adoption.

Note 4 When a discharge rate higher than 300 L/min is required, it can be achieved by combining multiple SUPER UNITS. Please consult us for detailed information.

Note 5 We plan to develop 28 MPa specifications sequentially from October 2016 to March 2017. Please consult us for detailed information.

Maximum discharge rate

SUPER UNIT (High-functionality Type) Model List by Pressure/Flow Rate

110 L/min	SUT00S11007 200 V			SUT00D11021 200 V P-SUT20D11KW	
80 L/min	SUT00S8007 200 V SUT10S8007			SUT00D8021 200 V SUT10D8021 SUT16D8021	
60 L/min	SUT00S6007 200 V SUT06S6007			SUT00D6021 200 V SUT06D6021 SUT10D6021	
40 L/min	SUT00S3007 200 V SUT03S3007		SUT00D4016 200 V SUT06D4016		
30 L/min	SUT00S4007 200 V SUT03S4007	SUT00S3010 200 V SUT03S3010	SUT00S3016 200 V SUT06S3016		
15 L/min	SUT00S1507 200 V SUT03S1507	SUT00S1510 200 V SUT03S1510	SUT00S1516 200 V SUT03S1516		

Maximum operating pressure

7 MPa

10 MPa

16 MPa

21 MPa

Note 1 All models are 16-PQ control type units. The communications type and analog command input type (single pump type only) can be selected as optional models.

Note 2 A motor pump type (tankless) and unit type (with tank) are available. Please refer to the separately provided SUPER UNIT catalog (GK244) for details.

SUPER UNIT

Series	Nominal motor capacity [kW] (Equivalent)	Power supply voltage [V]	Flow rate selection	Maximum operating pressure [MPa]	Maximum flow rate [L/min]	Maximum flow rate [L/min]											Model	PQ chart No.	8-PQ function	Figure Page No.		
						30	50	80	100	130	150	180	200	250	300							
Single pump type	7	AC3φ 200V	—	17.6	30												SUT00S3018-30-A	1	✓	21		
	11			20.6	50													SUT00S5021-30-A	2	✓	21	
	11			17.6	80														SUT00S8018-30-A	3	✓	21
	15			24.5	50														SUT00S5025-10-L-N0432	4	✓	22
	15			17.6	150														SUT00S15018-10-A	5	✓	23
	11			20.6	50														SUT00S5021-20YA-N0265	6	✓	21
	11			17.6	80														SUT00S8018-21YA	7	✓	21
	15			17.6	130														SUT00S13018-10YA-N0218	8	✓	23
	15			20.6	130														SUT00S13021-11YA-N0286	9	None	23
	15			17.6	150														SUT00S15018-10YA	10	✓	23
	22			17.6	200														SUT00S20018-20YL-N0340	11	✓	23
	37			17.6	250														S-SUT00S25018-10YA	12	16-PQ	24
	45			17.6	300														S-SUT00S30018-10YA	13	16-PQ	24
Double pump type	7	AC3φ 200V	Combination	17.6	30												SUT00D3021-30-B-N0436	14	✓	25		
			Independent	20.6	18.3																	
	11		Combination	17.6	80													SUT00D8021-30-B-N0323	15	✓	26	
			Independent	20.6	38.4																	
	15		Combination	20.6	130														SUT00D13021-10-B-N0321	16	None	26
			Independent	20.6	47.9																	
	15		Combination	17.6	150														SUT00D15021-10-B-N0365	17	None	26
			Independent	20.6	70.9																	
	15		Combination	11.5	200														SUT00D20021-10-L	18	None	27
			Independent	25.0	56																	
	11		Combination	17.6	80														SUT00D8021-21YB-N0324	19	✓	26
			Independent	20.6	38.4																	
	15		Combination	20.6	130														SUT00D13021-10YB-N0322	20	✓	26
			Independent	20.6	47.9																	
	15		Combination	17.5	150														SUT00D15021-10YB-N0358	21	✓	26
			Independent	20.6	70.9																	
	15		Combination	11.5	200														S-SUT00D20021-12YL	22	✓	27
			Independent	25.0	56																	
	11		Combination	15.0	80														S-SUT00D8025-11YL	23	✓	27
			Independent	25.0	40																	
15	Combination	15.0	130														S-SUT00D13025-11YL	24	✓	27		
	Independent	25.0	37.3																			
22	Combination	16.5	200														S-SUT00D20025-20YL	25	✓	28		
	Independent	25.0	56																			
47	Combination	17.5	300														S-SUT00D30025-10YA	26	16-PQ	28		
	Independent	25.0	160																			

Note 1 All models are tankless motor pump type units. The input type can be selected either as the analog command input type or 8-PQ (16-PQ) digital command input type using a parameter.
 Note 2 The numbers in the PQ chart No. column in the above table correspond to the figure numbers in the "PQ characteristic chart" later in this catalog.
 Note 3 Please refer to P32 "List of Electrical Components" for the electrical components that need to be arranged separately for each of the models indicated above.

Series	Nominal motor capacity [kW] (Equivalent)	Power supply voltage [V]	Flow rate selection	Maximum operating pressure [MPa]	Maximum flow rate [L/min]	Maximum flow rate [L/min]											Motor pump type (tankless)	Unit type (with tank)	Tank capacity [L]		
						10	20	30	40	50	60	70	80	90	100	110					
Single pump type	2.2	AC 3φ 200 V	—	7.0	15.2												SUT00S1507-30	SUT03S1507-30	30		
	2.8			7.0	28.5													SUT00S3007-30	SUT03S3007-30	30	
	3.7			7.0	39.7														SUT00S4007-30	SUT03S4007-30	30
	5.0			7.0	61.1														SUT00S6007-30	SUT06S6007-30	60
	7.0			7.0	83.0														SUT00S8007-30	SUT10S8007-30	100
	11.0			7.0	110														SUT00S11007-30	—	—
	2.8			10.0	15.2														SUT00S1510-30	SUT03S1510-30	30
	3.7			10.0	25.6														SUT00S3010-30	SUT03S3010-30	30
	3.7			16.0	15.2														SUT00S1516-30	SUT03S1516-30	30
	5.0			16.0	25.6														SUT00S3016-30	SUT06S3016-30	60
Double pump type	3.7	AC 3φ 200 V	Combination	7.0	41.0												SUT00D4016-30	SUT06D4016-30	60		
			Independent	15.7	8.7																
	5.0		Combination	7.0	61.1													SUT00D6021-30	SUT06D6021-30	60	
			Independent	20.6	7.7														SUT10D6021-30	SUT10D6021-30	100
	7.0		Combination	7.0	83.0													SUT00D8021-30	SUT10D8021-30	100	
			Independent	20.6	14.2														SUT16D8021-30	SUT16D8021-30	160
	11.0		Combination	7.0	110.0														SUT00D11021-30	P-SUT20D11KW-30	200
			Independent	20.6	28.4																

Note 1 Please refer to the separately provided SUPER UNIT catalog (GK244) for specifications and external appearances.

Nomenclature

SUT	00	S	300	18	-	10	Y	A	R	-	****
a	b	c	d	e		f	g	h	i		j

a Model code

- SUT : SUT series
- S-SUT : S-SUT series

b Tank capacity

- 00 : Motor pump type (tankless)

c Pump type

- S : Single pump type
- D : Double pump type

d Pump discharge rate

- 30 : 30 L/min
- 50 : 50 L/min
- 80 : 80 L/min
- 130 : 130 L/min
- 150 : 150 L/min
- 200 : 200 L/min
- 250 : 250 L/min
- 300 : 300 L/min

e Maximum operating pressure

- 18 : 17.6 MPa
- 21 : 20.6 MPa
- 25 : 25.0 MPa

f Design No.

- 10 : Design No.
Incremented at model changes

g Power supply voltage^{*1}

- - : AC 200 V specifications
- Y : AC 400 V specifications

h Functional option code

- A : Analog command input type, with discharge block with safety valve
- B : Analog command input type, with discharge block without safety valve
- L : Analog command input type, with discharge block without safety valve

i Motor terminal box (viewed from pump side)

- No designation : Terminal box at the right side (standard)
- R : Terminal box at the left side

j Non-standard code

- "N" + non-standard number designated for each specification
Non-standard No.: Specifications such as the 10V input specification or with suction flange
- No designation: Standard (5V input specification, separate arrangement of controller's electrical components, etc.)

^{*1} 200/400 V cited as power supply voltage specifications are nominal voltages.

Refer to the specification tables and separately provided model drawings for details on the operating range.

Main Features and Functions

High Voltage/High Flow Rate

The analog command input/high-accuracy type SUPER UNITS have operating ranges extended to include high pressure and high flow rate ranges, enabling PQ control with even greater accuracy than conventional SUPER UNITS (high-functionality type).

High Accuracy

Achieving stable servo control in response to analog input voltages over a range from low pressure (1%)/flow rate (1%) to the maximum pressure/flow rate.

The double pump type units enable low-pressure/high-flow-rate control in the combination flow mode, and high-pressure holding (continuous) control over a prolonged period in the individual flow mode.

Energy Saving

Superior energy-saving hydraulic systems suited to applications with industrial machinery such as presses and general industrial machines while offering high performance, easy operation and reasonable prices.

Two Types of Operation Commands

As an alternative to directly specifying command values for pressure and flow rate with analog voltage inputs, the operation conditions can be selected easily by using 3-bit ON/OFF digital signals that can call eight different preset pressure/flow rate patterns.

(8-PQ type: Selectable using a parameter)

Features

Energy Saving

Energy savings at least 60% greater than conventional fixed displacement pump systems

(The energy-saving effect varies depending on the operation conditions.)

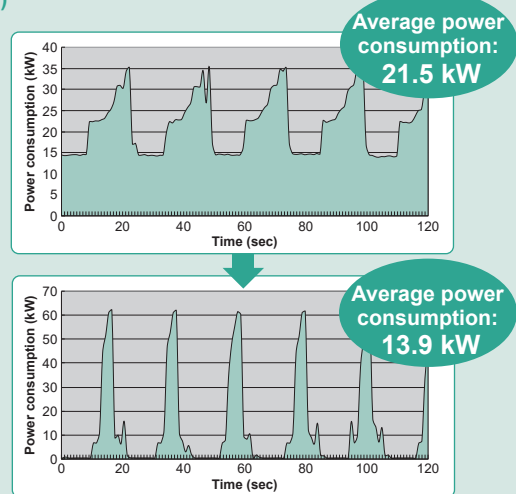
- Significant reduction of running costs with a small investment. Contributes to improvement of production efficiency at a reasonable price.

600-t press machine	
Pump model	Fixed-displacement pump → SUT00D8025
Average power consumption	21.5 kW → 13.9 kW
Effect of reduced power consumption: \$6,350 (¥635,000) / year	

* Electricity rate: \$0.16 (¥16) / kWh, Annual operating hours: 5,220 hours / year

Oil cooler downsized by suppressing oil temperature rise

- Fewer oil changes by restricting hydraulic oil deterioration. Further, downsizing the hydraulic oil tank and oil cooler reduces the amount of hydraulic oil and cooling water used.



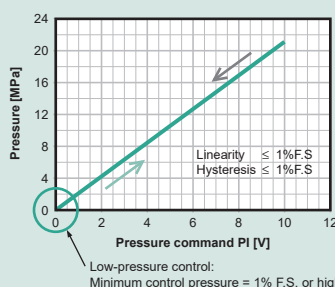
High Accuracy with Simple Operation

High-accuracy servo control according to analog pressure (P) / flow rate (Q) voltage commands

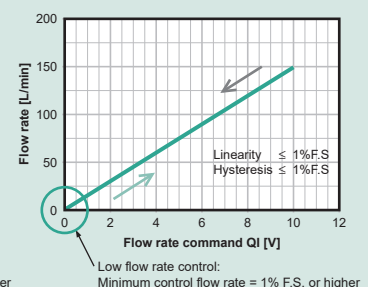
- Easy to use, just like conventional proportional valves.
- The servo-controlled pump adjusts the pressure and flow rate in accordance with the load.
- Highly accurate control with respect to pressure/flow rate command values, with a linearity of 1% F.S. maximum and hysteresis of 1% F.S. maximum.

Example with double pump type (SUT00D15021-10-B)

PI-PO static characteristics



QI-QO static characteristics



Main Features and Functions

Features

Sustained High-pressure Holding Control

Sustained high-pressure control with energy savings by selecting the pump flow rate

- Double pump type units enable selection of combination or independent flow rate using a dedicated solenoid valve to achieve sustained high-pressure control, switching between a low pressure with high flow rate and a high pressure with low flow rate, as is often required for presses and other equipment.
- The solenoid valve can be switched autonomously by the SUPER UNIT or from the machine, according to the parameter setting.

Faster Shipping Adjustment

Simple adjustment to start a trial run on the machine, meaning a shorter adjustment time

- The SUPER UNIT can be easily adjusted without requiring special skills for setting/adjusting complicated parameters of servo systems. The unit runs stably even with the default settings so the machine can reach the trial run stage in a short time.

Economical replacement of conventional hydraulic systems with servo-controlled pump systems

- Conventional hydraulic systems with proportional valves can be economically replaced with next-generation energy-saving high-accuracy servo-controlled pump systems, where the pump discharge rates and pressures are servo-controlled, by using analog command input type SUPER UNITS.
- Even hydraulic systems that do not incorporate proportional valves can be replaced with energy-saving hydraulic systems that can achieve stable control with a simple pressure/flow rate adjustment.
- The command input method can be selected, by parameter setting, as the analog command input type (0 to 5 V or 0 to 10 V) or the 8-PQ pattern input type using 3-bit digital ON/OFF input signals. (Factory default is the analog command input type.)

Improving the Working Environment

Reduced noise during operation

- Noise while holding a high pressure is reduced by lowering the rotational speed of the pump to the minimum level required to hold the pressure.
- Shockless control of pressures and flow rates can be achieved by ramping the command voltages during acceleration/deceleration of the pressure and flow rate. This gives smooth machine operation with less impact noise, helping to improve your working environment.

Ambient air temperature rise reduced by restricting oil temperature rise

- Temperature rise of the hydraulic oil raises the ambient temperature, which leads to a poor working environment. The energy-saving SUPER UNIT restricts hydraulic oil temperature rise to the minimum, helping to maintain a comfortable working environment.

Exceeds Standard of High Efficiency Motor regulation

Incorporating a motor dedicated to servo-based rotational speed control

- Exceeds standard of high efficiency motor regulations eliminates complicated formalities both in Japan and when exporting the machine.
- Since no induction motor is used, the maximum discharge rate of the pump does not fluctuate depending on the power supply frequency, making it unnecessary to adjust the machines' maximum speed for each shipping destination.

Functions

Maintenance/Management Function Software

Editing/Saving Parameter Settings

Equipped with RS232C communications port as default, DAIKIN's maintenance/waveform measurement software (Hybrid-Win) provided

- The software tool Hybrid-Win, which can manage default parameter settings, read the alarm history, and save parameter data, allows easy maintenance and management of the SUPER UNIT simply by preparing a personal computer (Windows 7/8) and a communications cable (RS232C/USB conversion cable).

Displaying and Recording Waveform Graphs during SUPER UNIT Operation

- During service work or adjustment for test runs, the pressure and flow rate commands at the SUPER UNIT and the result of pressure and flow rate control can be monitored and displayed in the form of graphs using Hybrid-Win software. The waveforms can also be saved in the PC. This speeds up adjustment of SUPER UNIT parameters and troubleshooting.

Collecting Data for Predictive Maintenance ^(*)

- Periodically collecting, monitoring and analyzing those data on the results of SUPER UNIT control using the RS232C communications port opens up the possibility of new approaches to maintenance and management such as predictive maintenance.

Note: A personal computer with Windows 7/8 operating system and an RS232C/USB conversion cable are necessary.

Communications cables (3-core soldered cables PM-CM02-15 for 1.5 m and PM-CM02-30 for 3 m) are available as options (to be ordered separately).

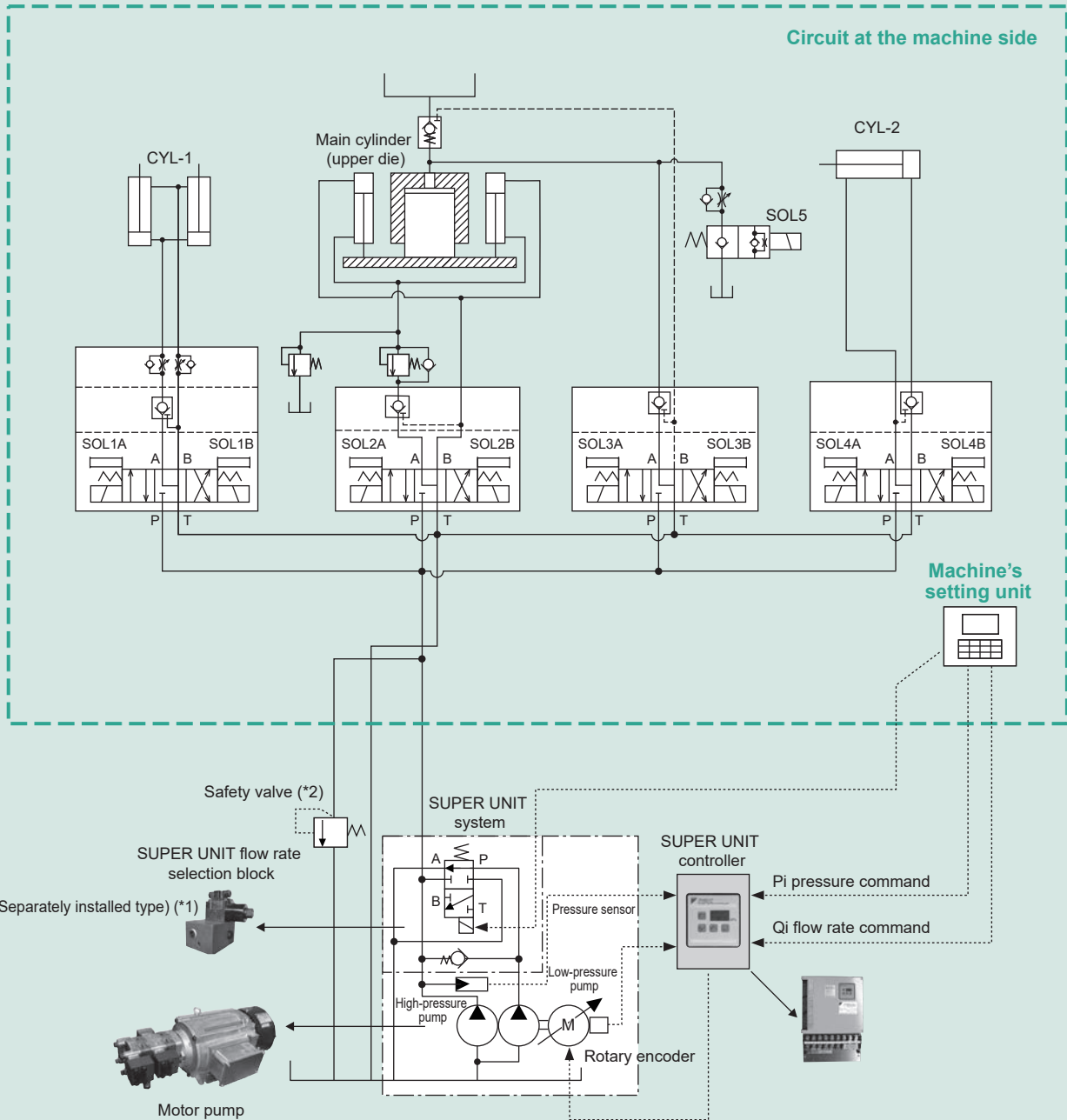
Note: Hybrid-Win is a software tool to provide functions for editing or saving parameters and measuring waveforms of a SUPER UNIT, and runs on a personal computer connected to the SUPER UNIT using a communications cable.

Hybrid-win and its instruction manual are available free of charge from the website (<http://www.daikinpmc.com/>) after registering as a member.

(*) Please consult us for detailed information on predictive maintenance.

Circuit Configuration Examples (Double pump specifications)

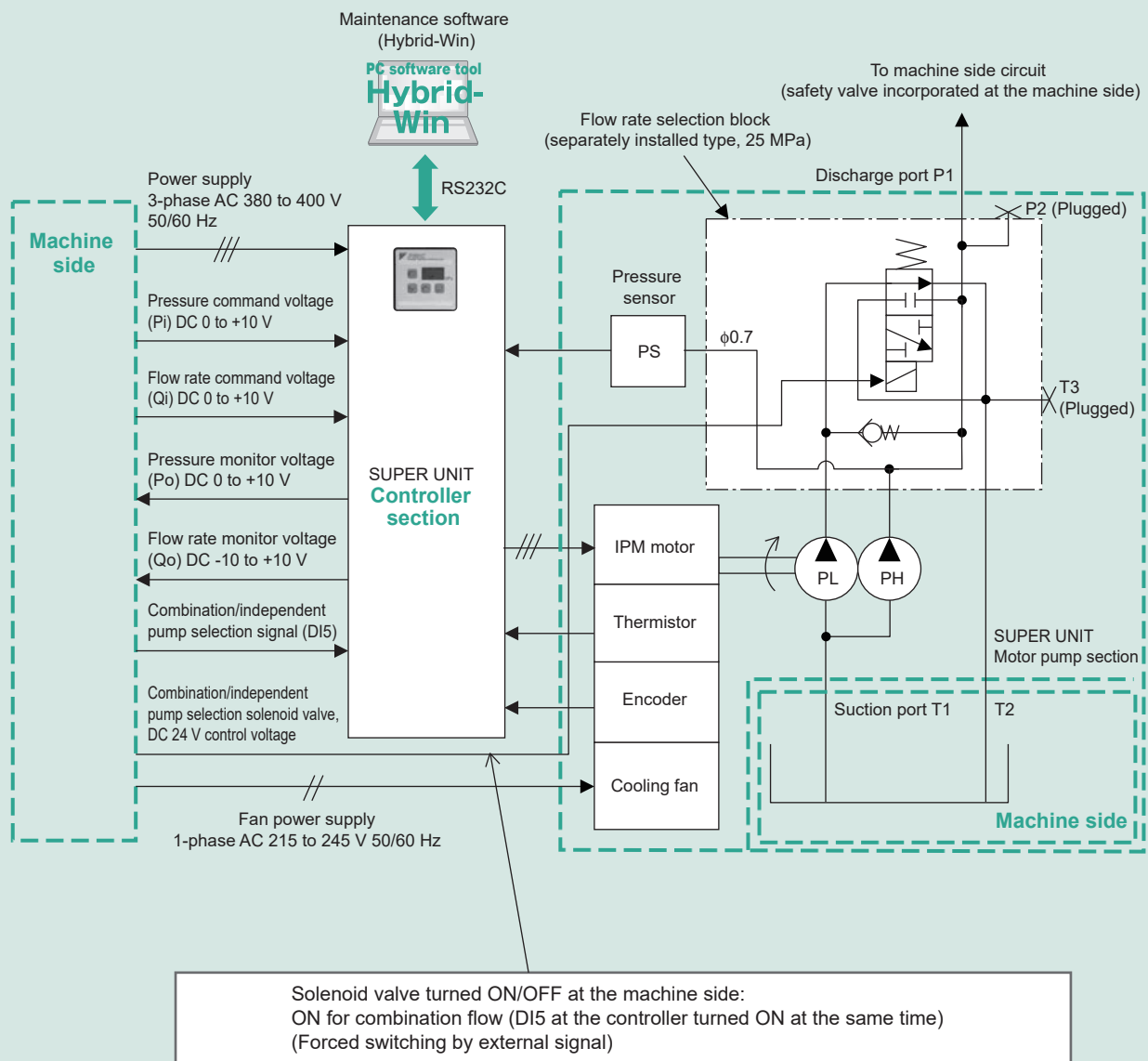
Example hydraulic press circuit



(*1) There are two types of flow rate selection circuit, the type built into the pump discharge block and the separately installed type.

(*2) A safety valve needs to be incorporated in hydraulic circuits at the pump discharge side for safety.

System block diagram for SUT00D flow rate selection specifications



Specifications by Product (Single pump 200 V/400 V specifications)

Item	Model	200 V specifications					400 V specifications							
		SUT00S					SUT00S					S-SUT00S		
		3018-30-A	5021-30-A	8018-30-A	5025-10-L-N0432	15018-10-A	5021-20YA-N0265	8018-21YA	13018-10YA-N0218	13021-11YA-N0286	15018-10YA	20018-20YL-N0340	25018-10YA	30018-10YA
Maximum operating pressure [MPa]		17.6	20.6	17.6	24.5	17.6	20.6	17.6	17.6	20.6	17.6	17.6	17.6	
Maximum flow rate [L/min]		30	50	80	50	150	50	80	130	150	200	250	300	
Operating pressure adjustment range [MPa]		0.18 to 17.6	0.21 to 20.6	0.18 to 17.6	0.25 to 24.5	0.18 to 17.6	0.21 to 20.6	0.18 to 17.6	0.21 to 20.6	0.18 to 17.6		0.18 to 17.6		
Operating flow rate adjustment range [L/min]		0.3 to 30	0.5 to 50	0.8 to 80	0.5 to 50	1.5 to 150	0.5 to 50	0.8 to 80	1.3 to 130	1.5 to 150	2.0 to 200	7.5 to 250	9.0 to 300	
Pump model	Pump type	Single geared pump					Single geared pump					Single geared pump		
	Pump capacity [cm ³]	9.13	20.7	31.2	27.4	52.7	20.7	31.2	44	52.7	73	-	-	
Power supply	Controller input power (*1)	3-phase AC 200 to 220 V (50 Hz/60 Hz)					3-phase AC 380 to 440 V(50 Hz/60 Hz)					3-phase AC 380 V (50 Hz/60 Hz)		
	Permissible power supply voltage fluctuation range	-15% to +10%					-20% to +10%					-15% to +15%		
	Required power supply capacity [kVA]	11.3	23.2	33.8			20.1	34.8	52			83.0		
	Motor cooling fan power	1-phase AC 200 V ±10% (50 Hz/60 Hz)					1-phase AC 215 to 245 V (50 Hz/60 Hz)					1-phase AC 230 V ±15% (50 Hz/60 Hz)		
	Controller control power (*2)	-					-					DC 24 V ±10% 0.2 A		
Rated value	[min ⁻¹]	2,340	1,800				1,800					-		
	[N·m]	28	58.4				58.4	-			117	-		
Controller rated input current [A] (*3)		25.3	35.6	20	23.3	19	-			40	88.0	114.0		
Motor rated input current [A] (*3)		29.2	38.3	27.5	27.7	21	-			45	73.2	88.9		
Leak current [mA] (*3)		-	-	3	3.2	2.1	-			2.8	8.9			
Mass	Motor pump [kg]	40	69	70	92	103	69	70	103	104	103	118	246	342
	Controller [kg]	11					11		-			14	52	63
	Regenerative resistance unit [kg]						-					12		
	Regenerative brake unit [kg]						-					3		
Analog command input voltage DC [V] (*4)		0 to +5					0 to +10					0 to +10		
Non-standard specifications	Suction flange/block	Incorporated	None	Incorporated	None	Incorporated	None	Incorporated	None	Incorporated	None	Incorporated	Incorporated	
	Safety valve (*5)	Incorporated			None	Incorporated			Incorporated			None	Incorporated	

- (*1) Even if the unit is used within the permissible power voltage fluctuation range, the PQ output characteristics may deteriorate if the power voltage fluctuates to the negative side. Also note that power voltage fluctuation to the positive side may cause alarms, due to overloading of regenerative operation, depending on the operation conditions. You are therefore recommended to use the unit in an environment with limited power voltage fluctuation as far as possible.
- (*2) With the S-SUT00S25018 and S-SUT00S30018 specifications, the DC 24 V control power (0.2 A minimum) needs to be input at the same time as the controller's AC power supply voltage.
- (*3) Representative values when using a noise filter recommended by DAIKIN. Protection against noise, in accordance with DAIKIN's recommendations, may be required depending on the operating environment.
- (*4) With 5 V analog command input voltage specifications, the voltage can be adjusted from 0 to 5 V using parameter VMAX. With 10 V specifications, the voltage can be adjusted from 0 to 10 V, so it can also be operated with 5 V inputs.
- (*5) With models without a safety valve in the discharge block, incorporate a safety valve in the hydraulic circuit at the machine side. Use the unit with the safety valve set at the maximum operating pressure + 2 MPa.

Specifications by Product (Double pump 200 V/400 V specifications)

Item	Model	200 V specifications					400 V specifications									
		SUT00D					SUT00D			S-SUT00D						
		3021-30-B-N0436	8021-30-B-N0323	13021-10-B-N0321	15021-10-B-N0365	20021-10-L	8021-21YB-N0324	13021-10YB-N0322	15021-10YB-N0358	20021-12YL	8025-11YL	13025-11YL	20025-20YL	30025-10YA		
Maximum operating pressure	Combination [MPa]	17.6		20.6	17.6	11.0	17.6	20.6	17.6	11.0	15.0		17.0	17.5		
	Independent [MPa]	20.6				25.0	20.6			25.0						
Maximum flow rate	Combination [L/min]	30	80	130	150	200	80	130	150	200	80	130	200	300		
	Independent [L/min]	18.3	38.4	47.9	70.9	56.0	38.4	47.9	70.9	56.0	40.0	37.0	56.0	160.0		
Operating pressure adjustment range	[MPa]	0.21 to 20.6				0.25 to 25	0.21 to 20.6			0.25 to 25						
Operating flow rate adjustment range	[L/min]	0.3 to 30	0.8 to 80	1.3 to 130	1.5 to 150	2.0 to 200	0.8 to 80	1.3 to 130	1.5 to 150	2.0 to 200	0.8 to 80	1.3 to 130	2.0 to 200	9.0 to 300		
Pump model	Pump type	Double geared pump					Double geared pump									
	Pump capacity	Combination [cm ³]	9.1	31.2	44.0	52.7	74.1	31.2	44.0	52.7	74.1	33.4	41.1	74.1	–	
		Independent [cm ³]	5.6	15.0	16.2	24.9	20.8	15.0	16.2	24.9	20.8	16.7	16.6	20.8	–	
Power supply	Controller input power (*1)	3-phase AC 200 to 220 V (50 Hz/60 Hz)					3-phase AC 380 to 440 V (50 Hz/60 Hz)								3-phase AC 380 V (50 Hz/60 Hz)	
	Permissible power supply voltage fluctuation range	–15% to +10%					–20% to +10%								–15% to +15%	
	Required power supply capacity [kVA]	11.3	23.2	33.8			20.1	34.8			34.8	20.1	34.8	52	84.0	
	Motor cooling fan power	1-phase AC 200 V ±10% (50 Hz/60 Hz)					1-phase AC 215 to 245 V (50 Hz/60 Hz)								1-phase AC 230 V ±15% (50 Hz/60 Hz)	
	Controller control power (*2)	–					–								DC 24 V ±10% 0.2 A	
	Flow rate selection solenoid valve power (*3)	DC 24 V (*4)	DC 24 V ±10% (*5)			– (*6)	DC 24 V ±10% (*5)			– (*6)			– (*6)			
Rated value	[min ⁻¹]	2,340	1,800			1,800								–		
	[N·m]	28	58.4	58.4		79.6	58.4	79.6		79.6	58.4	79.6	117	–		
Controller rated input current [A] (*7)		25.3	35.6	20	23.3	23.3	19	26		26	19	26	40	118		
Motor rated input current [A] (*7)		29.2	38.3	27.5	27.7	27.4	21	29		29	21	29	45	88.9		
Leak current [mA] (*7)		–	–	3.2	3.2	3.9	2.1	3.9		3.9	2.1	3.9	2.8	8.9		
Mass	Motor pump [kg]	40	76	109	109	99	76	109		99	65	98	119	342		
	Controller [kg]	10					10								14	63
	Regenerative resistance unit [kg]	–					–								12	
	Regenerative brake unit [kg]	–					–								3	
Analog command input voltage DC [V] (*8)		0 to +10					0 to +10									
Non-standard specifications	Suction flange/block	Incorporated					Incorporated									
	Safety valve (*9)	None					None									

(*1) Even if the unit is used within the permissible power voltage fluctuation range, the PQ output characteristics may deteriorate if the power voltage fluctuates to the negative side. Also note that power voltage fluctuation to the positive side may cause alarms, due to overloading of regenerative operation, depending on the operation conditions. You are therefore recommended to use the unit in an environment with limited power voltage fluctuation as far as possible.

(*2) With the S-SUT00S25018 and S-SUT00S30018 specifications, the DC 24 V control power (0.2 A minimum) needs to be input at the same time as the controller's AC power supply voltage.

(*3) Please refer to "List of Electrical Components" for the electrical components required.

(*4) Solenoid valve model: KSOB-G02-9AP-40-N-H7 (minute signal current type solenoid valve, power supply voltage: DC 24 V ± 10%)

(*5) Solenoid valve model: KSO-G03-20BP-20-EN (power supply voltage: DC 24 V ± 10%)

(*6) Not equipped with a solenoid valve for flow rate selection (Arrange a separately installed type flow rate selection block or provide a flow rate selection mechanism in the hydraulic circuit at the machine side.)

(*7) Representative values when using a noise filter recommended by DAIKIN. Protection against noise, in accordance with DAIKIN's recommendations, may be required depending on the operating environment.

(*8) With 5 V analog command input voltage specifications, the voltage can be adjusted from 0 to 5 V using parameter VMAX. With 10 V specifications, the voltage can be adjusted from 0 to 10 V, so it can also be operated with 5 V inputs.

(*9) With models without a safety valve in the discharge block, incorporate a safety valve in the hydraulic circuit at the machine side. Use the unit with the safety valve set at the maximum operating pressure + 2 MPa.

Common Specifications (30 L/min to 200 L/min, single/double pump, 200 V/400 V specifications)

Item		Specifications	
		Command resolution: 0.1 [%]	
Analog command input (*1) (2 ch)	Pressure command Pi	5 V specifications: 0 to +5 V / 0 to PMAX 10 V specifications: 0 to +10 V / 0 to PMAX	
	Flow rate command Qi	5 V specifications: 0 to +5 V / 0 to PMAX 10 V specifications: 0 to +10 V / 0 to PMAX	
Analog output (*1) (2 ch)	Pressure monitor Po	5 V specifications: 0 to +5 V / 0 to PMAX 10 V specifications: 0 to +10 V / 0 to PMAX	
	Flow rate monitor Qo	5 V specifications: -5 to +5 V / -QMAX to +QMAX 10 V specifications: -10 to +10 V / -QMAX to +QMAX	
		Photo-coupler insulation, DC +24 V (27 V maximum), 5 mA/channel Shared positive/negative common	
Digital input signal (*2) (8 ch)	DI1	Start/stop signal (control stop signal)	
	DI3, DI4, DI6	PQ number selection signal for 8-PQ type (3-bit)	
	DI5	Pump capacity selection input (for flow rate selection specifications)	
	DI2, 7, 8	(Unassigned)	
		Photo coupler insulation, open collector, DC +24 V, 30 mA maximum Negative common	
Digital output signal (*3) (7 ch)	DO1	Ready to operate signal	
	DO3	Pump capacity selection output (for autonomous flow rate selection specifications)	
	DO4	Overload warning output (OFF: normal, ON: Warning)	
	DO5 to 7	(Unassigned)	
Contact output (alarm) (1 ch)		Dry contact: DC 30 V, 1 channel, 500 mA maximum	
Paint color	Motor pump	No paint, only fan cover is in black	
	Controller	Ivory white (Munsell code 5Y7.5/1)	
Oil used (*4)	Oil type	Mineral-oil base hydraulic oil, wear resistance hydraulic oil	
	Oil temperature	0 to 60 [°C] (Recommended operating temperature range: 15 to 50 [°C])	
	Viscosity grade	ISO VG32 to 68	
	Viscosity range	15 to 400 mm ² /s	
	Contamination	Within NAS class 9	
Operating environment	Atmosphere	Indoors (not exposed to direct sunlight) Not to be subject to corrosive gases, inflammable gases, oil mist or dust	
	Altitude	1,000 m maximum	
	Ambient humidity	85% RH maximum (no dew condensation)	
	Ambient temperature	Motor pump	0 to 40°C (no freezing)
		Controller	0 to 55°C (no freezing)
	Installation orientation	Motor pump	To be secured on the base for the hydraulic unit on the machine. To be installed horizontally
Controller		To be installed inside an electrical cabinet (IP54). To be installed in the vertical orientation (with the main power supply terminals at the bottom)	
Protection grade	Controller	IP00	
	Motor (*5)	IP44	
Storage environment	Storage temperature	Motor pump	-20 to +70°C (no freezing)
		Controller	-20 to +60°C (no freezing)
	Storage humidity	Motor pump	85% RH maximum (no dew condensation)
		Controller	
Startup time	5 seconds maximum (at ambient temperature of 15°C)		
Power supply grounding type	TN		
Others	(a) Install a no fuse breaker on the main power supply to protect electrical circuits from overcurrent, in the event of short circuits for example. (b) Be sure to connect the ground terminals of the controller and motor pump. (c) Frequently turning the controller's power supply ON/OFF will substantially shorten the controller's service life. It is advisable to start and stop the motor by turning the digital input (DI1) ON/OFF.		

(*1) There are two different voltage specifications: 5 V specifications and 10 V specifications. The PMAX and QMAX settings can be selected using parameters. The input and output voltage settings can be selected using parameter VMAX.

(*2) When incorporating a semiconductor relay in the circuit, select a product with a leak current specification of 1 mA maximum.

(*3) When incorporating a relay in the circuit as a load, take necessary measures against surge or select a surge-resistant product.

(*4) Consult DAIKIN about the use of hydraulic oils other than mineral-oil base type (e.g. hydrous/synthetic) such as water-glycol hydraulic oil.

(*5) The shaft through hole, encoder connector, motor cooling fan and terminal block are excluded.

Common Specifications (250 L/min to 300 L/min, single/double pump, 400V specifications)

Item		Specifications	
Analog command input (*1) (2 ch)	Pressure command Pi	Command resolution: 0.1 [%] 0 to +10 V/0 to PMAX	
	Flow rate command Qi	0 to +10 V/0 to QMAX	
Analog output (*1) (2 ch)	Pressure monitor Po	(An output harness is used only for the models with the non-standard code "-001" or "-003".) 0 to +9.99 V/0 to PMAX	
	Flow rate monitor Qo	0 to +9.99 V/0 to QMAX	
Digital input signal (*2) (5 ch)		Photo-coupler insulation, DC +24 V (27 V maximum), 5 mA/channel Shared positive/negative common	
	DI1	Start/stop signal (control stop signal)	
	DI2	Regenerative brake unit alarm signal	
	DI3	Regenerative resistance unit alarm signal	
	DI4, DI5, DI6, DI7	PQ number selection signal for 16-PQ type (4-bit, 18 MPa specifications)	
	DI4 to 7	Pump capacity selection input (flow rate selection, analog command input specifications) (Not used, analog command input, single pump specifications)	
Digital output signal (*3) (3 ch)		Photo coupler insulation, open collector, DC +24 V, 30 mA maximum Shared positive/negative common	
	DO1	Alarm signal	
	DO2, 3	Pump capacity selection output (flow rate selection, analog command input specifications) (Not used, analog command input, single pump specifications)	
Fluid used (*4)	Oil type	Mineral-oil base hydraulic oil, wear resistance hydraulic oil	
	Oil temperature	0 to 60[°C] (Recommended operating temperature range: 15 to 50[°C])	
	Viscosity grade	ISO VG32 to 68	
	Viscosity range	15 to 400 mm ² /s	
	Contamination	Within NAS class 9	
Operating environment	Atmosphere	Indoors (not exposed to direct sunlight) Not to be subject to corrosive gases, inflammable gases, oil mist or dust	
	Altitude	1,000 m maximum	
	Ambient humidity	85% RH maximum (no dew condensation)	
	Ambient temperature	Motor pump 0 to 40°C (no freezing) Controller 0 to 40°C (no freezing)	
	Installation orientation	Motor pump To be secured on the base for the hydraulic unit on the machine. To be installed horizontally Controller To be installed inside an electrical cabinet (IP54). To be installed in the vertical orientation (with the main power supply terminals at the bottom)	
Protection grade	Controller	IP20	
	Motor (*5)	IP54	
Storage environment	Storage temperature	Motor pump	-20 to +70°C (no freezing)
		Controller	-20 to +60°C (no freezing)
	Storage humidity	Motor pump	85% RH maximum (no dew condensation)
		Controller	
Power supply grounding type		TN	
Others		(a) Install a no fuse breaker on the main power supply to protect electrical circuits from overcurrent, in the event of short circuits for example. (b) Be sure to connect the ground terminals of the controller and motor pump. (c) Frequently turning the controller's power supply ON/OFF will substantially shorten the controller's service life. It is advisable to start and stop the motor by turning the digital input (DI1) ON/OFF.	

(*1) There are two different voltage specifications: 5 V specifications and 10 V specifications. The PMAX and QMAX settings can be selected using parameters. The input and output voltage settings can be selected using parameter VMAX.

(*2) When incorporating a semiconductor relay in the circuit, select a product with a leak current specification of 1 mA maximum.

(*3) When incorporating a relay in the circuit as a load, take necessary measures against surge or select a surge-resistant product.

(*4) Consult DAIKIN about the use of hydraulic oils other than mineral-oil base type (e.g. hydrous/synthetic) such as water-glycol hydraulic oil.

(*5) The shaft through hole, encoder connector, motor cooling fan and terminal block are excluded.

Performance Specification

Item	Model	200 V specifications		400 V specifications			
		SUT00S / SUT00D		SUT00S / SUT00D	S-SUT00D	S-SUT00S	S-SUT00D
		S3018, S5021, S5025, S8018, S13018, S15018	D3021, D8021, D15021, D20021	S5021, S8018, S13018, S13021, S15018, S20018	—	S25018, S30018	—
Flow rate characteristics	Linearity			F.S. 1[%]			
	Hysteresis			F.S. 1[%]			
	Maximum flow rate response time (*1)			0.1 [s]	0.12 [s]	0.1[s]	
	Repeatability			F.S. 1[%]			
Pressure characteristics	Linearity			F.S. 1[%]			
	Hysteresis			F.S. 1[%]			
	Maximum pressure response time (*2)			0.1 [s]	0.14 [s]	0.15 [s]	
	Repeatability			F.S. 1[%]			

Note: The data given above are the representative performance values, not guaranteed values.

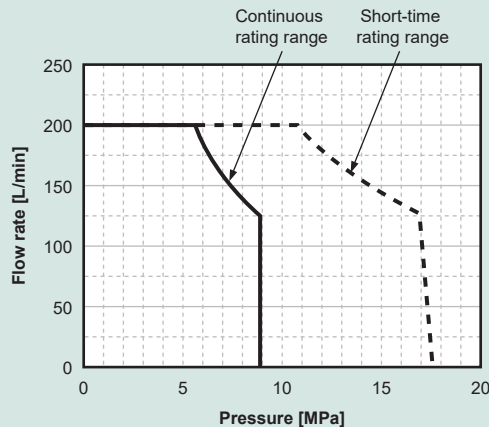
(*1) Time required to reach 95% of the commanded value in response to a command to change the flow rate from 0 to the maximum with no load applied. With S-SUT00S25018 and S-SUT00S30018, it is the time required to reach 90% from 10% under the same condition.

(*2) Time required to reach 95% of the commanded value in response to a command to change the pressure from 0 to the maximum. The volumetric load capacity condition is 2 m of 3/4 high-pressure hose with SUT00S3018 to SUT00S13021, and 2 m of 1B high-pressure hose with SUT00S20018. With S-SUT00S25018 and SUT00S30018, it is the time required to reach 90% from 10% under the same condition. The volumetric load capacity condition is 2 m of 1-1/2B high-pressure hose and a 10 L cylinder with S-SUT00S25018, and 2 m of 1-1/4B high-pressure hose × 2 and a 10 L cylinder with S-SUT00S30018.

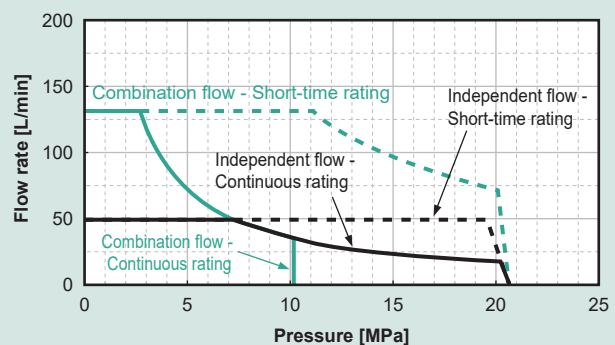
About Continuous and Short-time Rating Range

Analog command input/high-accuracy type SUPER UNITS can run continuously within the continuous rating range given in the pressure - flow rate characteristic charts (see P-Q charts on pages 15 to 20). Note, however, that the range of operation can be extended to within the short-time rating range for up to 20 seconds (or 60 seconds for the 400 V single pump type), provided it does not exceed a 20% duty cycle.

Example with Single Pump Type SUT00S20018-20YL-N0340



Example with Double Pump Type SUT00D13021-10-B-N0321



Continuous rating

: Continuous operation is possible when the mean hydraulic power obtained based on the pressure and flow rate during operation of 1 cycle is lower than the hydraulic power for the continuous rating range in the figure above and also the root-mean-square of the load pressure is within the maximum pressure for the continuous rating range.

(With the double pump type unit shown in the figure above with independent flow selected, continuous operation with the pressure held at 20.6 MPa is possible. However, for cycles that include pressure holding for 3 minutes or longer, a bleed off circuit equivalent to the capacity of a single pump running at 150 min⁻¹ must be provided at the pump discharge side to cool the pump.)

Short-time rating

: Operation possible for 20 seconds (or 60 seconds with 400 V single pump type)

Reference

How to obtain the mean hydraulic power and root-mean-square pressure (example for single pump type)

When load pressure in each process within 1 cycle is P_n ($n = 1, 2, \dots, n$), flow rate is Q_n ($n = 1, 2, \dots, n$), and time is t_n ($n = 1, 2, \dots, n$)

- Mean hydraulic power = $(P_1 \times Q_1 / 60 \times t_1 + P_2 \times Q_2 / 60 \times t_2 + \dots + P_n \times Q_n / 60 \times t_n) / (t_1 + t_2 + \dots + t_n)$
- Root-mean-square of load pressure = $\text{SQRT}((P_1^2 \times t_1 + P_2^2 \times t_2 + \dots + P_n^2 \times t_n) / (t_1 + t_2 + \dots + t_n))$

(Note, however, that if the pump runs above the rated pump rotational speed of 1800 min⁻¹ to provide the control flow rate of Q_n , with the load pressure P_n , P_n needs to be converted to the value when the pump is running at 1800 min⁻¹.)

When the pump capacity of the SUPER UNIT is q_n [cm³], the pump rotational speed N_n is $N_n = Q_n \times 10^3 / q_n$. Therefore, converted pressure $P_n = P_n \times (N_n / 1800)$

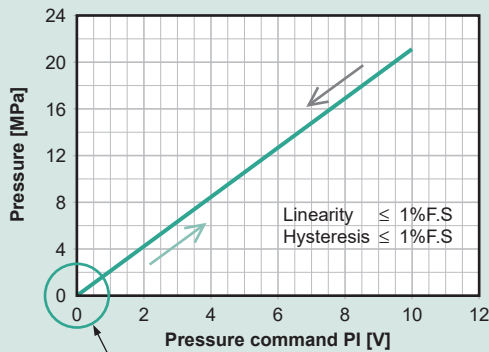
Note 1: The procedure for obtaining the mean hydraulic power and root-mean-square pressure with flow-rate-selection specifications (double pump type) is basically the same as above. Please consult us for detailed information.

Note 2: SQRT above represents square root operation ($\sqrt{\quad}$). For the continuous rating hydraulic powers for each model, see the pressure - flow rate characteristic charts (P-Q characteristic charts) given in the instruction manual provided separately.

Command Voltage - Control Pressure / Command Voltage - Control Flow Rate Characteristic Examples

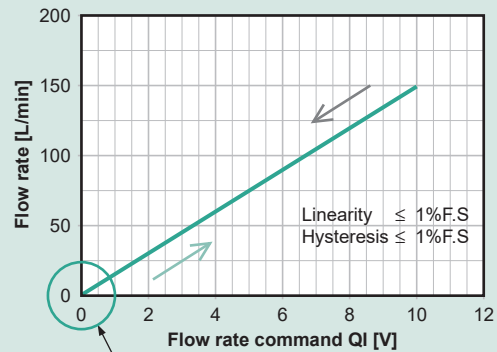
Example with Double Pump Type (SUT00D15021-10-B)

PI-PO static characteristics



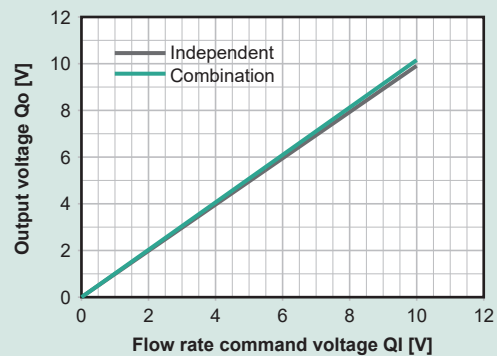
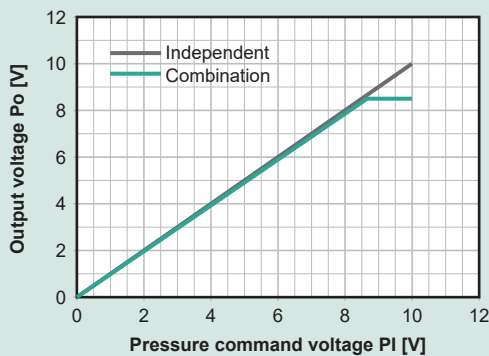
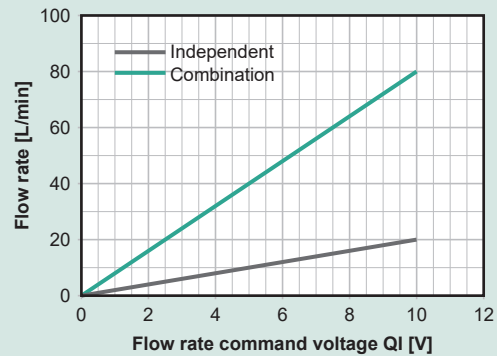
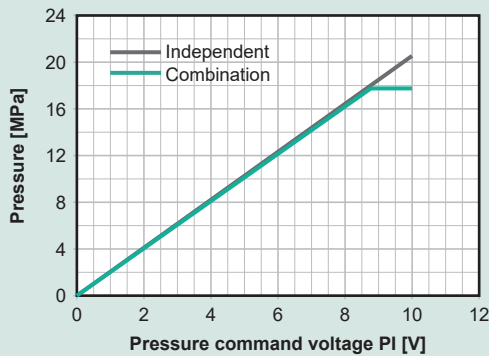
Low-pressure control:
Minimum control pressure = 1% F.S. or higher

QI-QO static characteristics



Low flow rate control:
Minimum control flow rate = 1% F.S. or higher

Example Output Characteristics for Flow Rate Selection Specifications (SUT00D8021-30-B)



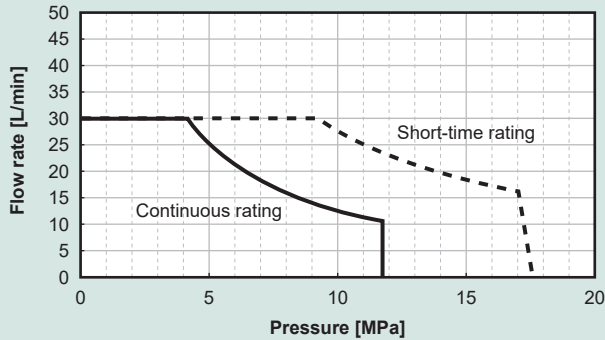
Note 1: Since the PQ characteristics vary depending on the model, refer to the appropriate PQ characteristic chart for the detailed output characteristics of each model.

Note 2: When the combination flow is selected (DI5 = ON), the pressure does not rise above 17.5 MPa even if the pressure command voltage (Pi) is increased as shown in the graph above.

Pressure – Flow Rate Characteristics (Single pump type)

200 V Single Pump

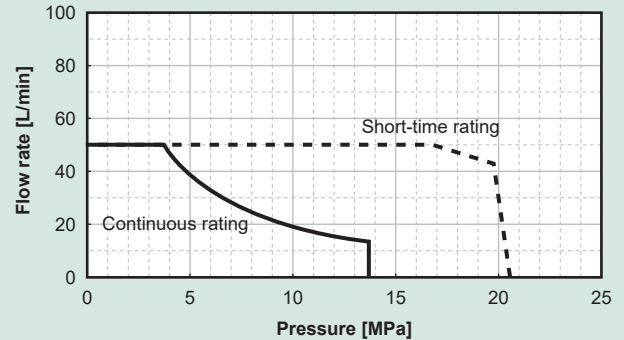
PQ chart - 1



SUT00S3018-30-A

Maximum operating pressure = 17.6 [MPa]
 Maximum flow rate = 30 [L/min]
 Command voltage = 5 [V]

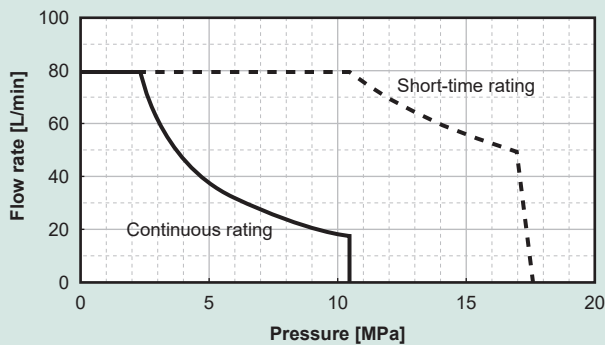
PQ chart - 2



SUT00S5021-30-A

Maximum operating pressure = 20.6 [MPa]
 Maximum flow rate = 50 [L/min]
 Command voltage = 5 [V]

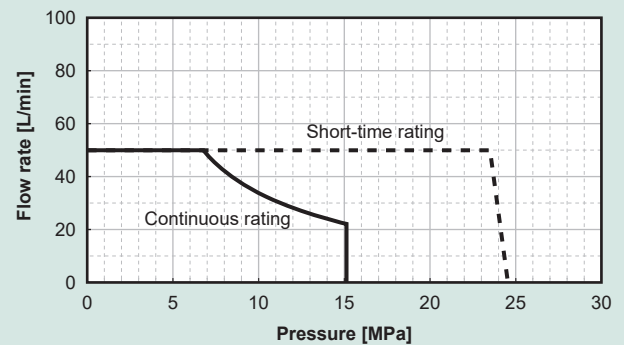
PQ chart - 3



SUT00S8018-30-A

Maximum operating pressure = 17.6 [MPa]
 Maximum flow rate = 80 [L/min]
 Command voltage = 5 [V]

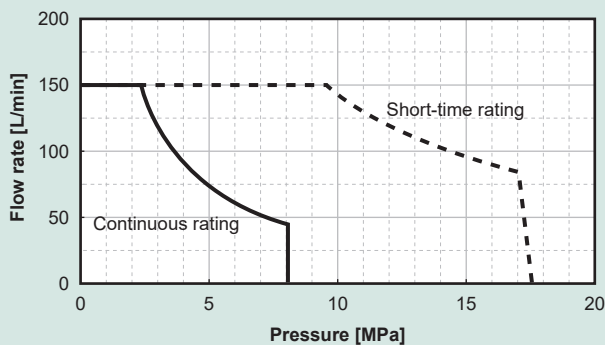
PQ chart - 4



SUT00S5025-10-L-N0432

Maximum operating pressure = 24.5 [MPa]
 Maximum flow rate = 50 [L/min]
 Command voltage = 5 [V]

PQ chart - 5

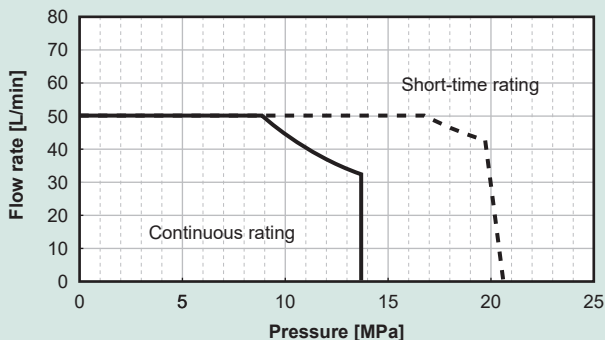


SUT00S15018-10-A

Maximum operating pressure = 17.6 [MPa]
 Maximum flow rate = 150 [L/min]
 Command voltage = 5 [V]

400 V Single Pump

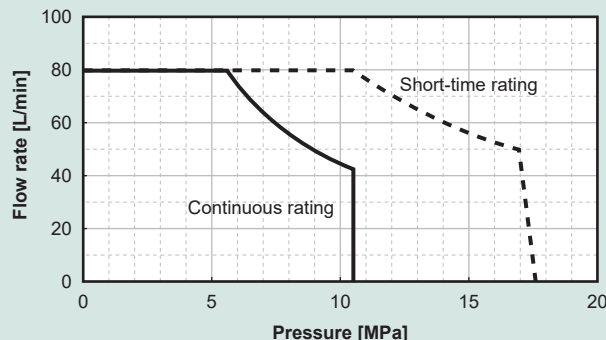
PQ chart - 6



SUT00S5021-20YA-N0265

Maximum operating pressure = 20.6 [MPa]
 Maximum flow rate = 50 [L/min]
 Command voltage = 10 [V]

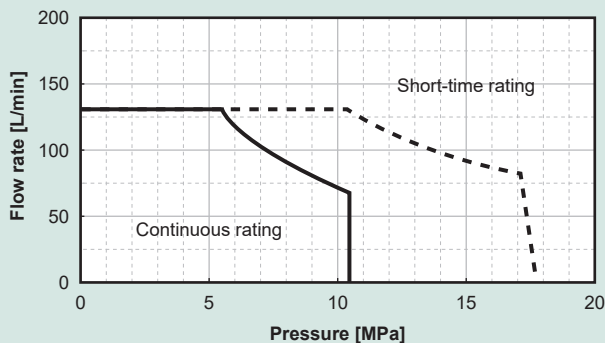
PQ chart - 7



SUT00S8018-21YA

Maximum operating pressure = 17.6 [MPa]
 Maximum flow rate = 80 [L/min]
 Command voltage = 10 [V]

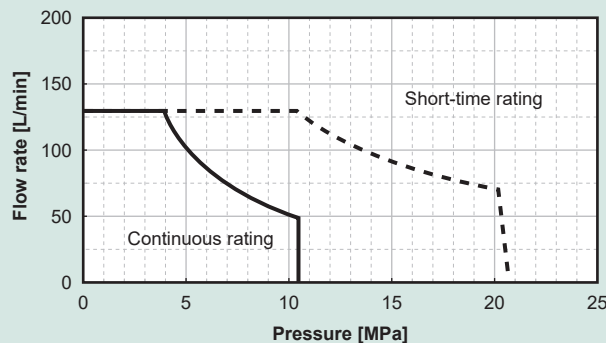
PQ chart - 8



SUT00S13018-10YA-N0218

Maximum operating pressure = 17.6 [MPa]
 Maximum flow rate = 130 [L/min]
 Command voltage = 10 [V]

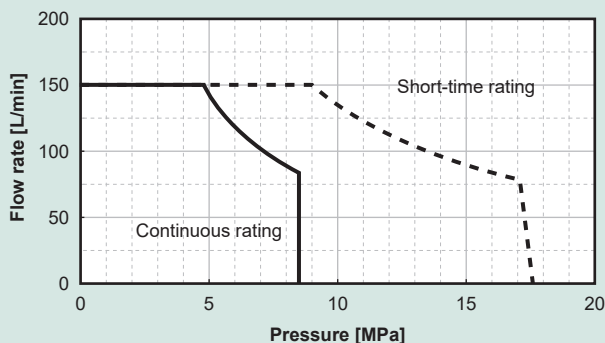
PQ chart - 9



SUT00S13021-11YA-N0286

Maximum operating pressure = 20.6 [MPa]
 Maximum flow rate = 130 [L/min]
 Command voltage = 10 [V]

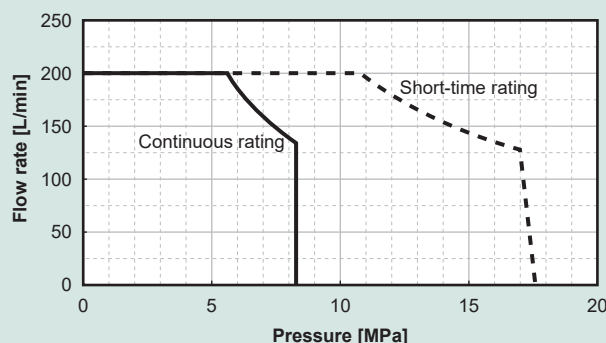
PQ chart - 10



SUT00S15018-10YA

Maximum operating pressure = 17.6 [MPa]
 Maximum flow rate = 150 [L/min]
 Command voltage = 10 [V]

PQ chart - 11



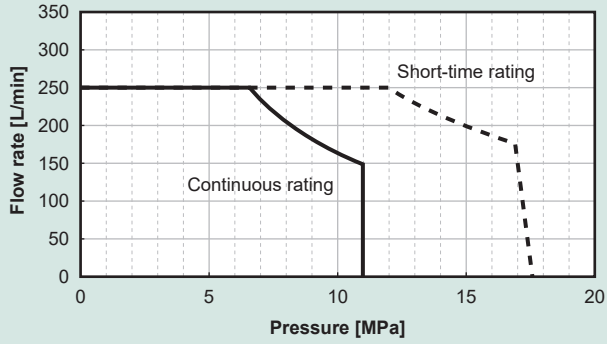
SUT00S20018-20YL-N0340

Maximum operating pressure = 17.6 [MPa]
 Maximum flow rate = 200 [L/min]
 Command voltage = 10 [V]

Pressure – Flow Rate Characteristics (Single pump type)

400 V Single Pump

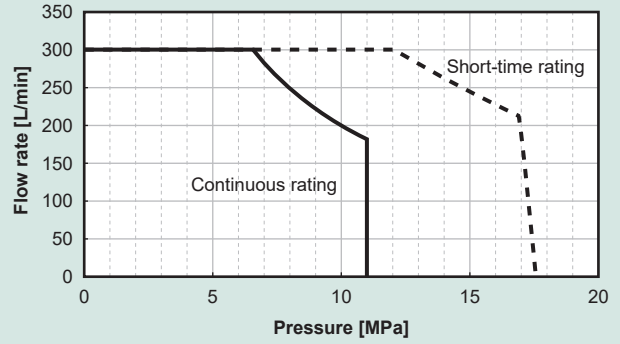
PQ chart - 12



S-SUT00S25018-10YA

Maximum operating pressure = 17.6 [MPa]
Maximum flow rate = 250 [L/min]
Command voltage = 10 [V]

PQ chart - 13



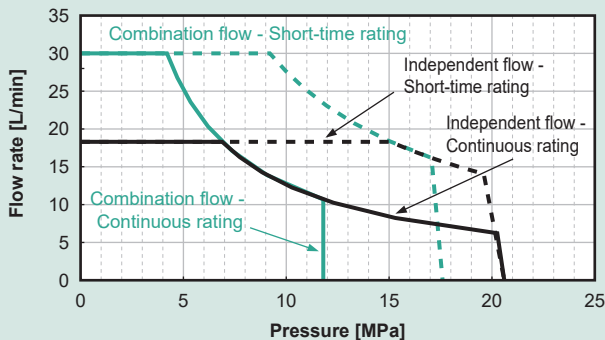
S-SUT00S30018-10YA

Maximum operating pressure = 17.6 [MPa]
Maximum flow rate = 300 [L/min]
Command voltage = 10 [V]

Pressure – Flow Rate Characteristics (Double pump specifications)

200 V Double Pump

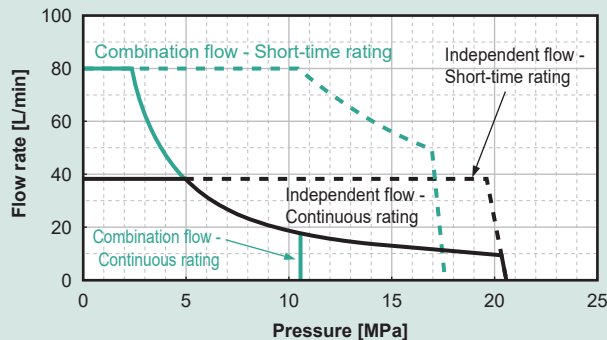
PQ chart - 14



SUT00D3021-30-B-N0436

Maximum operating pressure = 17.6/20.6 [MPa]
 Maximum flow rate = 30/18.3 [L/min]
 Command voltage = 10 [V]

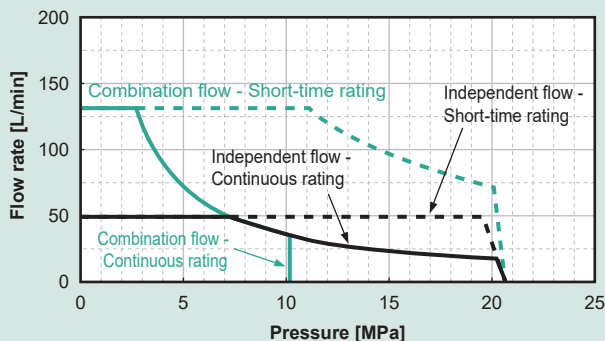
PQ chart - 15



SUT00D8021-30-B-N0323

Maximum operating pressure = 17.6/20.6 [MPa]
 Maximum flow rate = 80/38.4 [L/min]
 Command voltage = 10 [V]

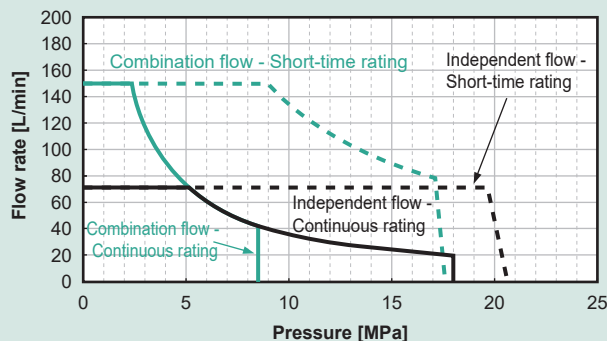
PQ chart - 16



SUT00D13021-10-B-N0321

Maximum operating pressure = 20.6/20.6 [MPa]
 Maximum flow rate = 130/47.9 [L/min]
 Command voltage = 10 [V]

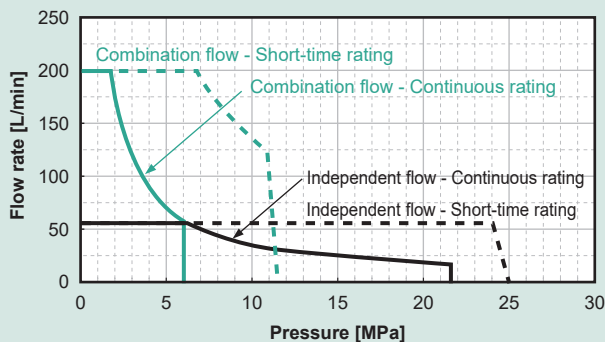
PQ chart - 17



SUT00D15021-10-B-N0365

Maximum operating pressure = 17.6/20.6 [MPa]
 Maximum flow rate = 150/70.9 [L/min]
 Command voltage = 10 [V]

PQ chart - 18



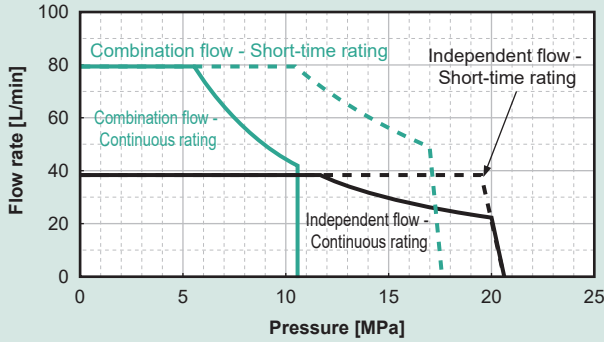
SUT00D20021-10-L

Maximum operating pressure = 11.5/25.0 [MPa]
 Maximum flow rate = 200/56 [L/min]
 Command voltage = 10 [V]

Pressure – Flow Rate Characteristics (Double pump specifications)

400 V Double Pump

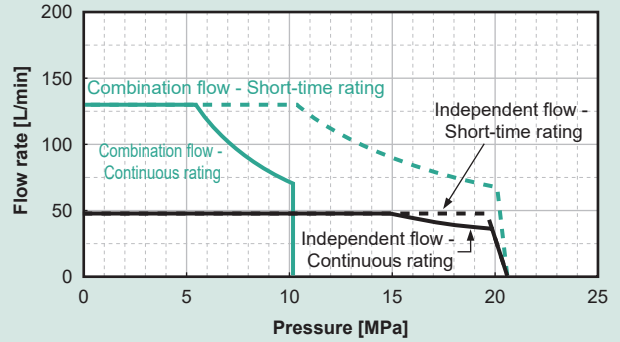
PQ chart - 19



SUT00D8021-21YB-N0324

Maximum operating pressure = 17.6/20.6 [MPa]
 Maximum flow rate = 80/38.4 [L/min]
 Command voltage = 10 [V]

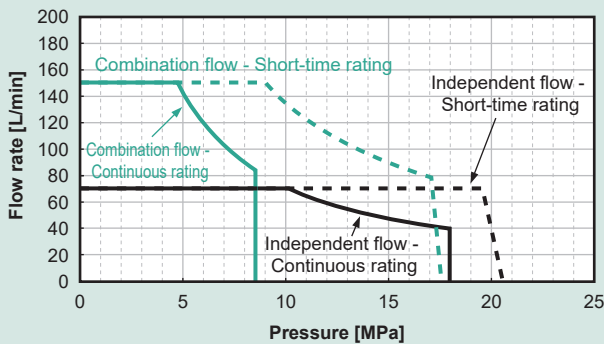
PQ chart - 20



SUT00D13021-10YB-N0322

Maximum operating pressure = 20.6/20.6 [MPa]
 Maximum flow rate = 130/47.9 [L/min]
 Command voltage = 10 [V]

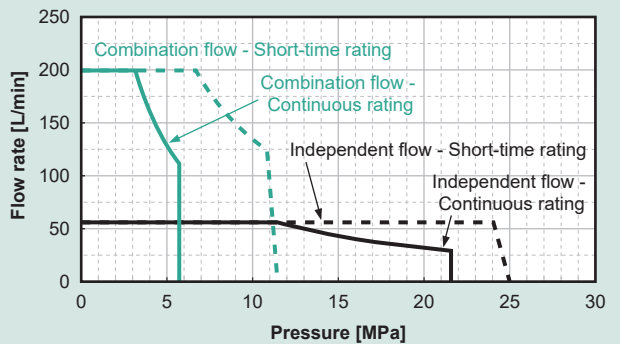
PQ chart - 21



SUT00D15021-10YB-N0358

Maximum operating pressure = 17.6/20.6 [MPa]
 Maximum flow rate = 150/70.9 [L/min]
 Command voltage = 10 [V]

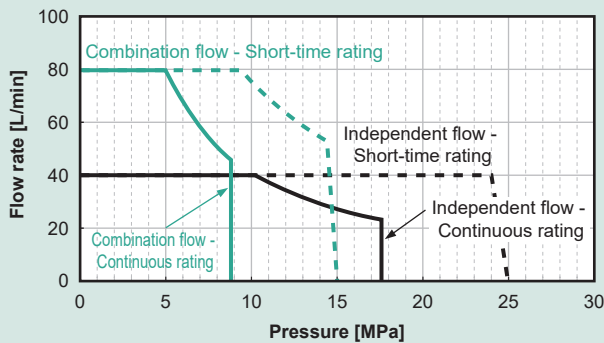
PQ chart - 22



S-SUT00D20021-12YL

Maximum operating pressure = 11.5/25.0 [MPa]
 Maximum flow rate = 200/56 [L/min]
 Command voltage = 10 [V]

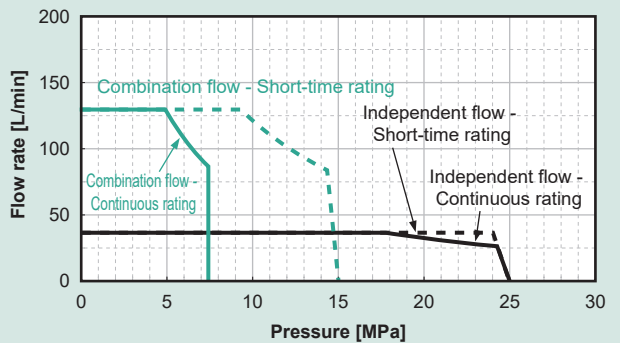
PQ chart - 23



S-SUT00D8025-11YL

Maximum operating pressure = 15.0/25.0 [MPa]
 Maximum flow rate = 80/40.0 [L/min]
 Command voltage = 10 [V]

PQ chart - 24

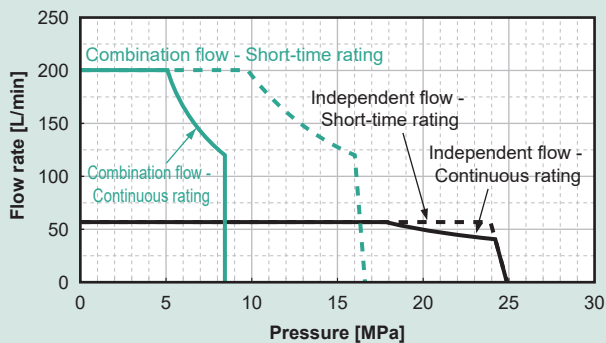


S-SUT00D13025-11YL

Maximum operating pressure = 15.0/25.0 [MPa]
 Maximum flow rate = 130/37.3 [L/min]
 Command voltage = 10 [V]

400 V Double Pump

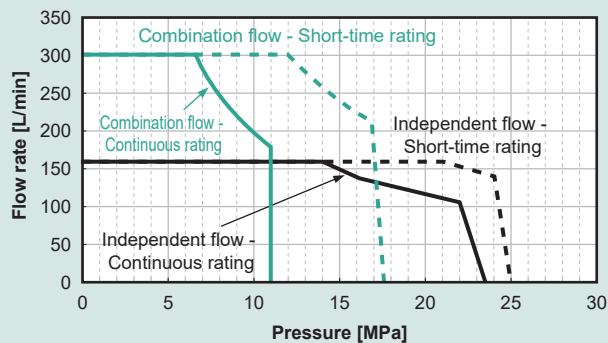
PQ chart - 25



S-SUT00D20025-20YL

Maximum operating pressure = 16.5/25.0 [MPa]
 Maximum flow rate = 200/56.1 [L/min]
 Command voltage = 10 [V]

PQ chart - 26



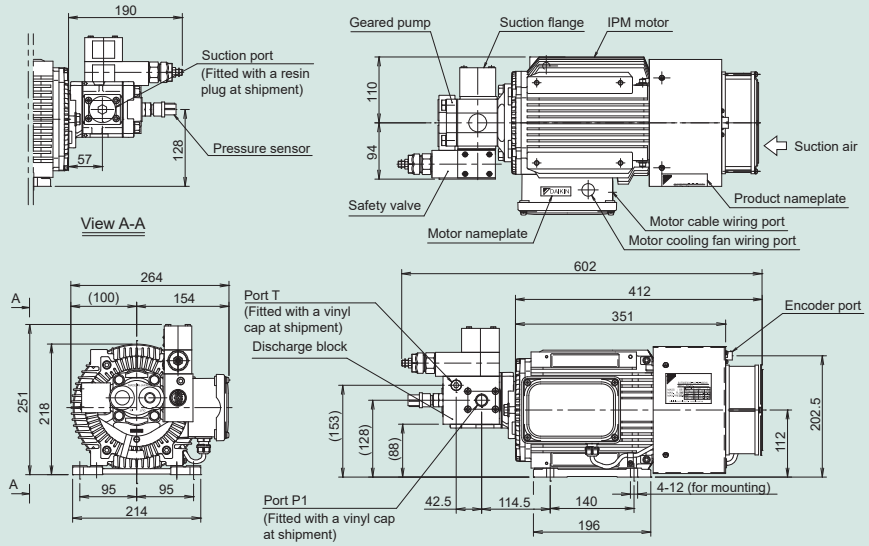
S-SUT00D30025-10YA

Maximum operating pressure = 17.5/25.0 [MPa]
 Maximum flow rate = 300/160.0 [L/min]
 Command voltage = 10 [V]

External Dimension Diagram (Motor pump 200 V/400 V single pump type)

200 V 30 L/min 17.6 MPa

SUT00S3018-30-A

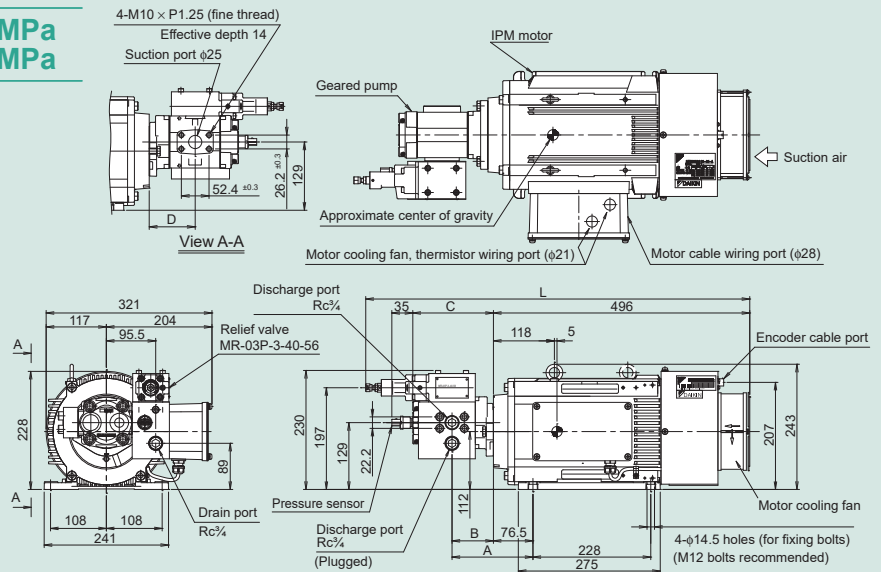


Model code	Power supply specifications	Pump specifications	Suction port	Discharge port	Drain port	Pressure sensor orientation (*1)	Suction flange
SUT00S3018-30-A	200 V	Single	Rc1	Rc $\frac{3}{4}$	Rc $\frac{3}{4}$	Front	Incorporated

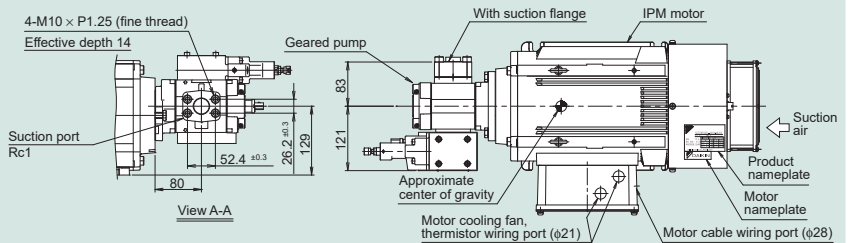
(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

200 V/400 V 50 L/min 20.6 MPa 200 V/400 V 80 L/min 17.6 MPa

SUT00S5021-30-A
SUT00S8018-30-A
SUT00S5021-20YA-N0265
SUT00S8018-21YA



SUT00S5021-20YA-N0265 with suction flange



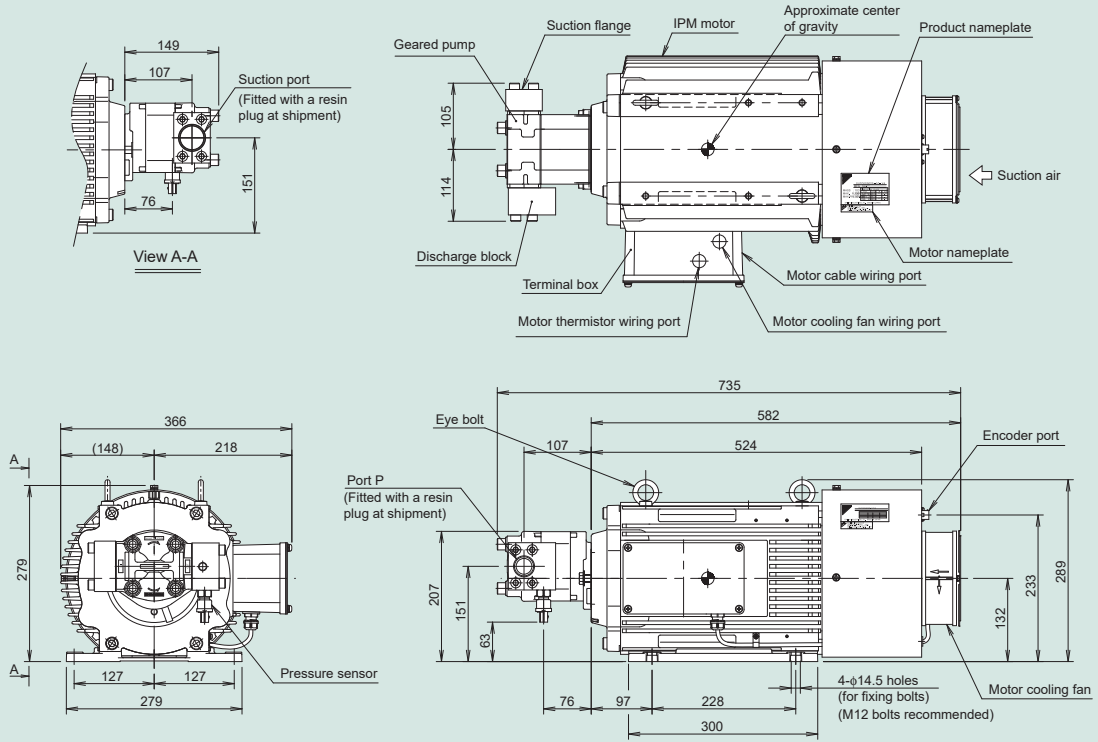
Model code	Power supply specifications	Pump specifications	L	A	B	C	D	Suction port	Discharge port	Drain port	Pressure sensor orientation (*1)	Suction flange
SUT00S5021-30-A	200 V	Single	736	156.5	80	156	80	$\phi 25$	Rc $\frac{3}{4}$	Rc $\frac{3}{4}$	Front	None
SUT00S8018-30-A	200 V	Single	750	163.5	87	169	87	$\phi 25$	Rc $\frac{3}{4}$	Rc $\frac{3}{4}$	Front	None
SUT00S5021-20YA-N0265	400 V	Single	743	163.5	80	156	80	Rc1	Rc $\frac{3}{4}$	Rc $\frac{3}{4}$	Front	Incorporated
SUT00S8018-21YA	400 V	Single	750	163.5	87	169	87	$\phi 25$	Rc $\frac{3}{4}$	Rc $\frac{3}{4}$	Front	None

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

* The motor pump needs to be secured horizontally on the machine or tank. Also, secure a clearance of at least 100 mm at the suction side of the motor cooling fan. In addition, a clearance of at least 100 mm from the pump or solenoid valve is required at the exhaust side, with good ventilation assured by mounting a cover provided with ventilation holes or other means.

200 V 50 L/min 24.5 MPa

SUT00S5025-10-L-N0432



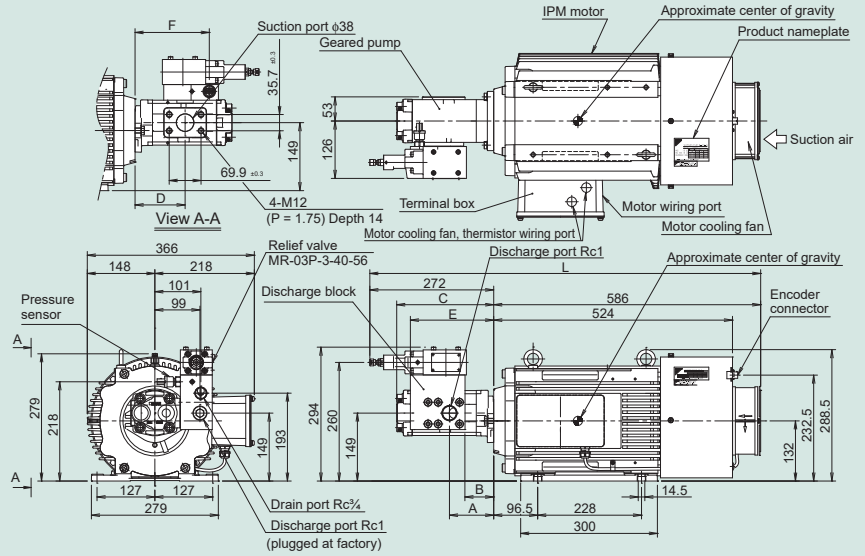
Model code	Power supply specifications	Pump specifications	Suction port	Discharge port	Drain port	Pressure sensor orientation (*1)	Suction flange
SUT00S5025-10-L-N0432	200 V	Single	Rc1-1/4	Rc1	—	Bottom	Incorporated

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

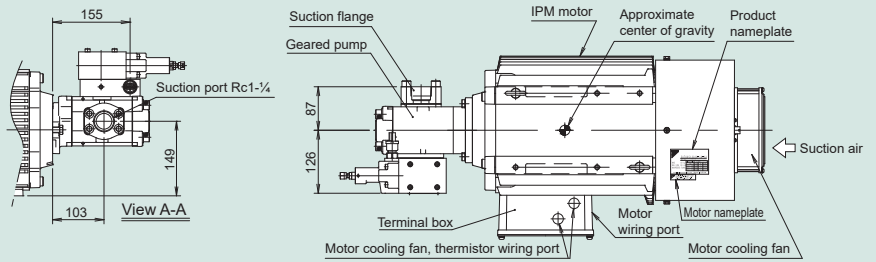
External Dimension Diagram (Motor pump 200 V/400 V single pump type)

200 V 150 L/min 17.6 MPa
400 V 130 L/min 17.6 MPa, 130 L/min 20.6 MPa, 150 L/min 17.6 MPa

SUT00S15018-10-A
SUT00S13018-10YA-N0218
SUT00S13021-11YA-N0286
SUT00S15018-10YA



SUT00S13018-10YA-N0218 With suction flange

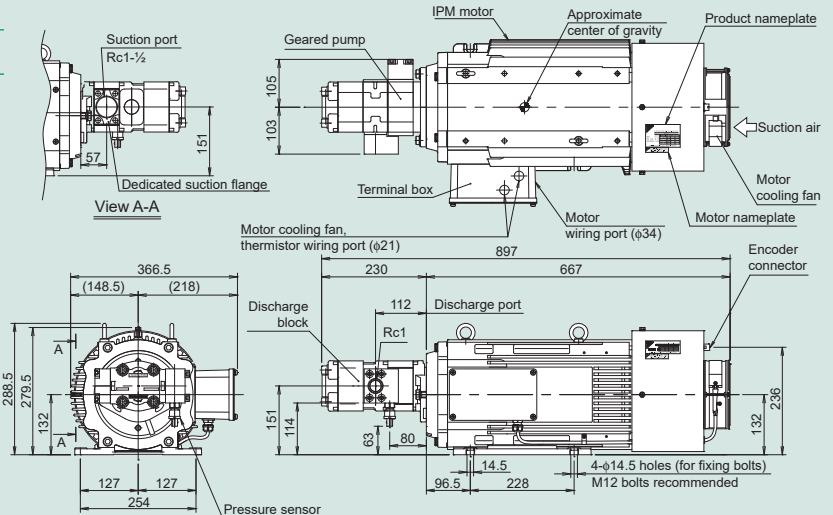


Model code	Power supply specifications	Pump specifications	L	A	B	C	D	E	F	Suction port	Discharge port	Drain port	Pressure sensor orientation (*1)	Suction flange
SUT00S15018-10-A	200 V	Single	858	97	63	213	110	183	163	φ38	Rc1	Rc1/2	(L)	None
SUT00S13018-10YA-N0218	400 V	Single	850	90	55	194	103	175	155	Rc1-1/4	Rc1	Rc1/2	(L)	Incorporated
SUT00S13021-11YA-N0286	400 V	Single	850	90	55	194	103	175	155	Rc1-1/4	Rc1	Rc1/2	(L)	Incorporated
SUT00S15018-10YA	400 V	Single	858	97	63	213	110	183	163	φ38	Rc1	Rc1/2	(L)	None

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

400 V 200 L/min 17.6 MPa

SUT00S20018-20YL-N0340



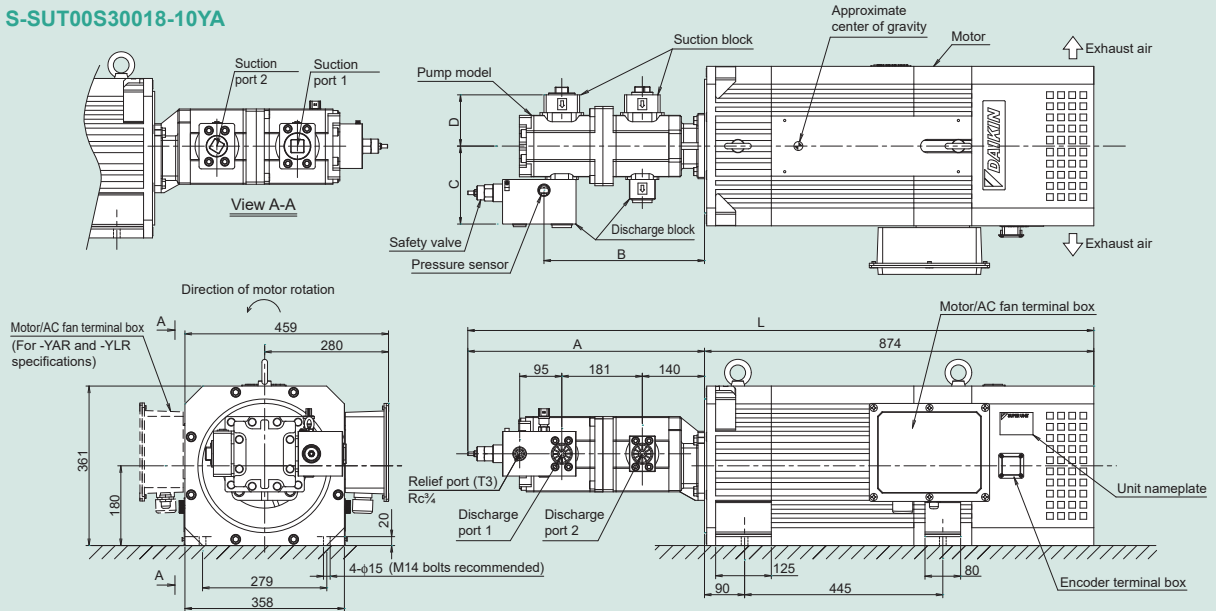
Model code	Power supply specifications	Pump specifications	Suction port	Discharge port	Drain port	Pressure sensor orientation (*1)	Suction flange
SUT00S20018-20YL-N0340	400 V	Single	Rc1-1/2	Rc1	—	Bottom	With dedicated part

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

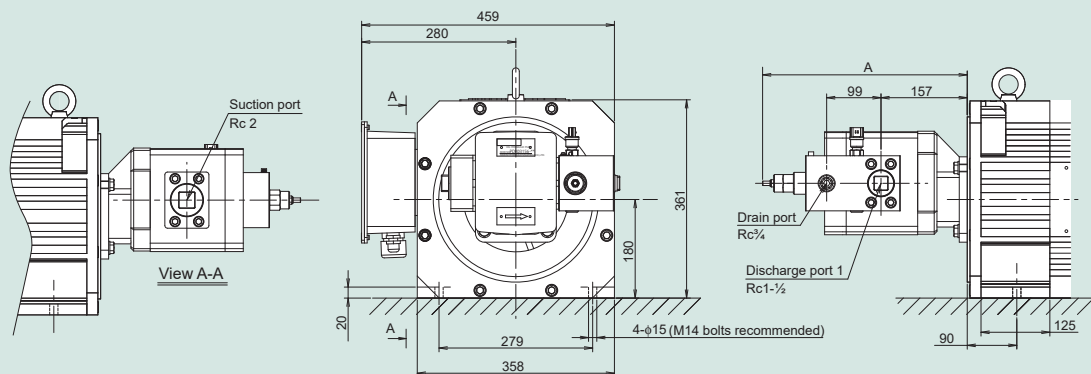
* The motor pump needs to be secured horizontally on the machine or tank. Also, secure a clearance of at least 100 mm at the suction side of the motor cooling fan. In addition, a clearance of at least 100 mm from the pump or solenoid valve is required at the exhaust side, with good ventilation assured by mounting a cover provided with ventilation holes or other means.

380 V 250 L/min 17.6 MPa, 300 L/min 17.6 MPa (Full-time combination flow specifications)

S-SUT00S25018-10YA
S-SUT00S30018-10YA



S-SUT00S25018-10YA (R) (Specifications with terminal box at the left side, viewed from the pump)



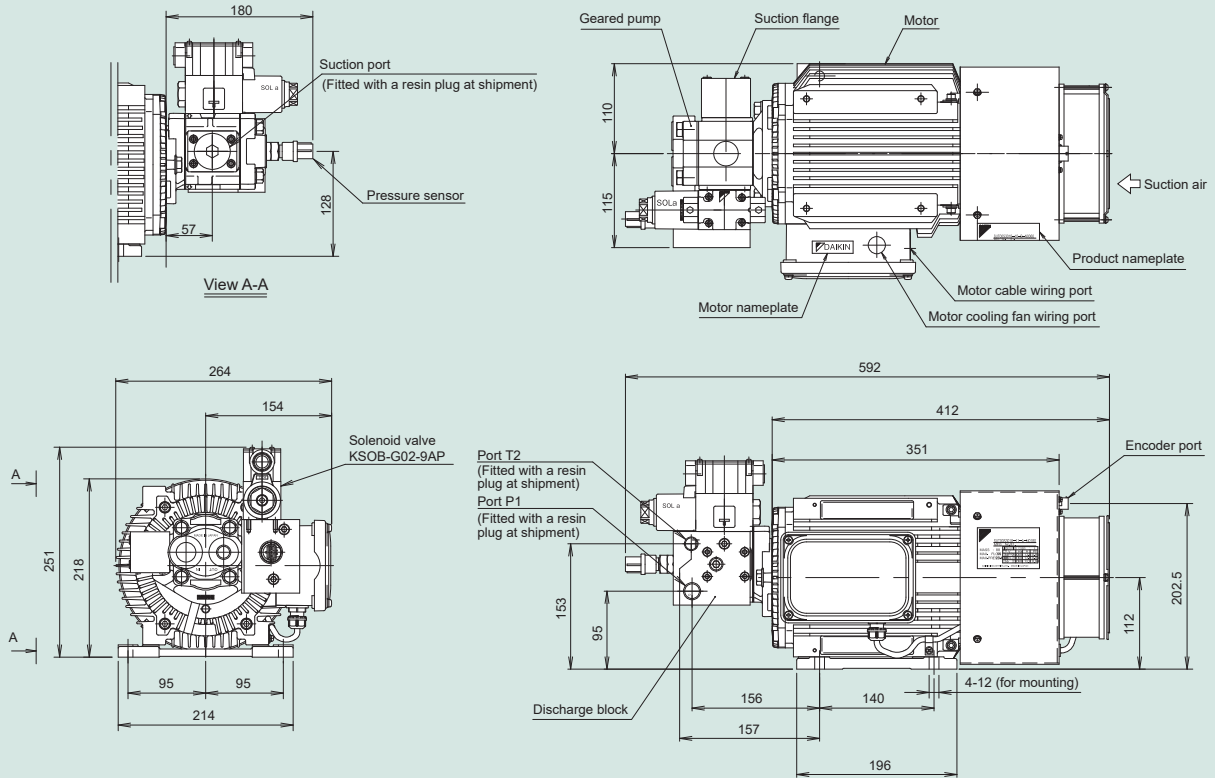
Model code	Power supply specifications	Pump specifications	L	A	B	C	D	Suction port 1	Suction port 2	Discharge port 1	Discharge port 2	Drain port	Pressure sensor orientation (*1)	Suction flange
S-SUT00S25018-10YA	380 V	Single	1246	372	201	178	118	Rc2	—	Rc1-1/2	—	Rc1/4	Top	Incorporated
S-SUT00S30018-10YA	380 V	Single	1405	531	360	175	115	Rc2	Rc1-1/2	Rc1-1/4	Rc1-1/4	Rc1/4	Top	Incorporated

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

External Dimension Diagram (Motor pump 200 V/400 V double pump type)

200 V 30 L/min 20.6 MPa

SUT00D3021-30-B-N0436



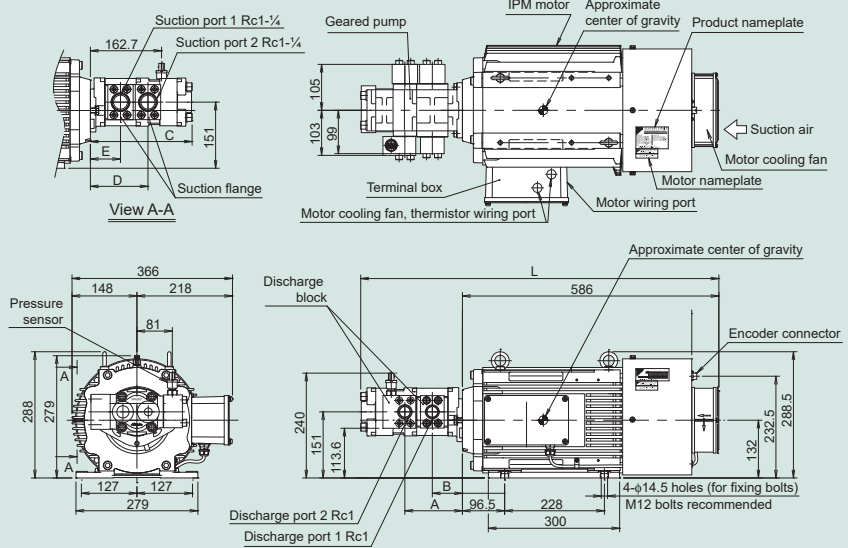
Model code	Power supply specifications	Pump specifications	Suction port	Discharge port	Return port (T2)	Pressure sensor orientation (*1)	Suction flange
SUT00D3021-30-B-N0436	200 V	Double	Rc1	Rc½	Rc¾	Front	Incorporated

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

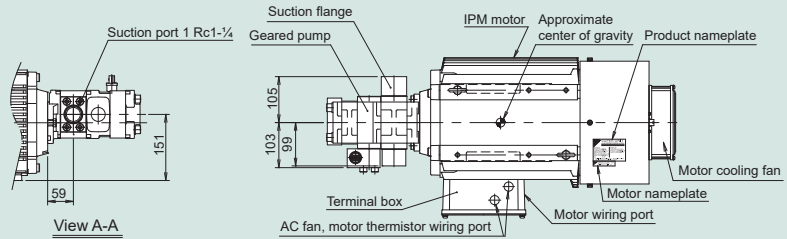
External Dimension Diagram (Motor pump 200 V/400 V double pump type)

200 V 200 L/min 20.6 MPa
400 V 200 L/min 20.6 MPa, 130 L/min 25 MPa

SUT00D20021-10-L
S-SUT00D20021-12YL
S-SUT00D13025-11YL



S-SUT00D13025-11YL (Pump unit, suction flange, 1 port)

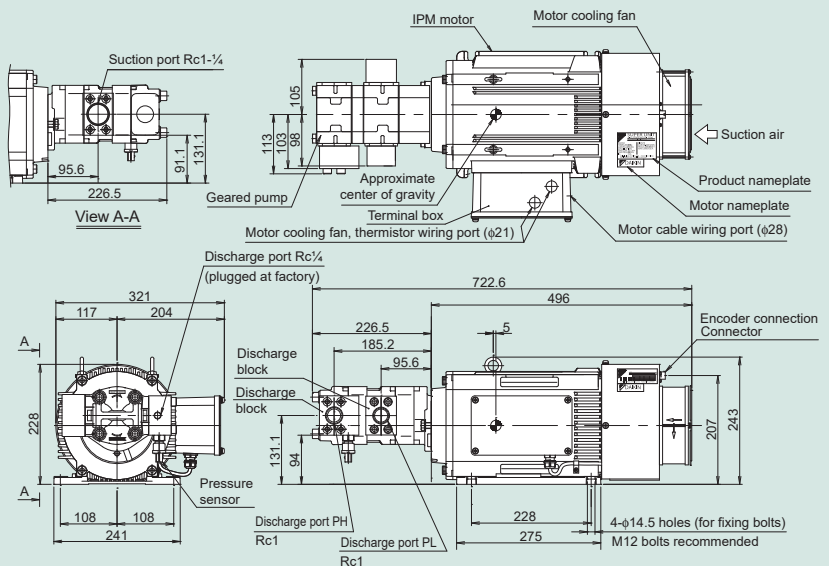


Model code	Power supply specifications	Pump specifications	L	A	B	C	D	E	Suction port 1	Suction port 2	Discharge port	Drain port	Pressure sensor orientation (*1)	Suction flange
SUT00D20021-10-L	200 V	Double	814	131.6	68.6	232	131.6	68.6	Rc1-1/4	Rc1-1/4	Rc1	Rc1	Top	Incorporated (2 pcs.)
S-SUT00D20021-12YL	400 V	Double	819	131.6	68.6	232	131.6	68.6	Rc1-1/4	Rc1-1/4	Rc1	Rc1	Top	Incorporated (2 pcs.)
S-SUT00D13025-11YL	400 V	Double	799	116	59	212	—	59	Rc1-1/4	—	Rc1	Rc1	Top	Incorporated

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

400 V 80 L/min 25 MPa

S-SUT00D8025-11YL



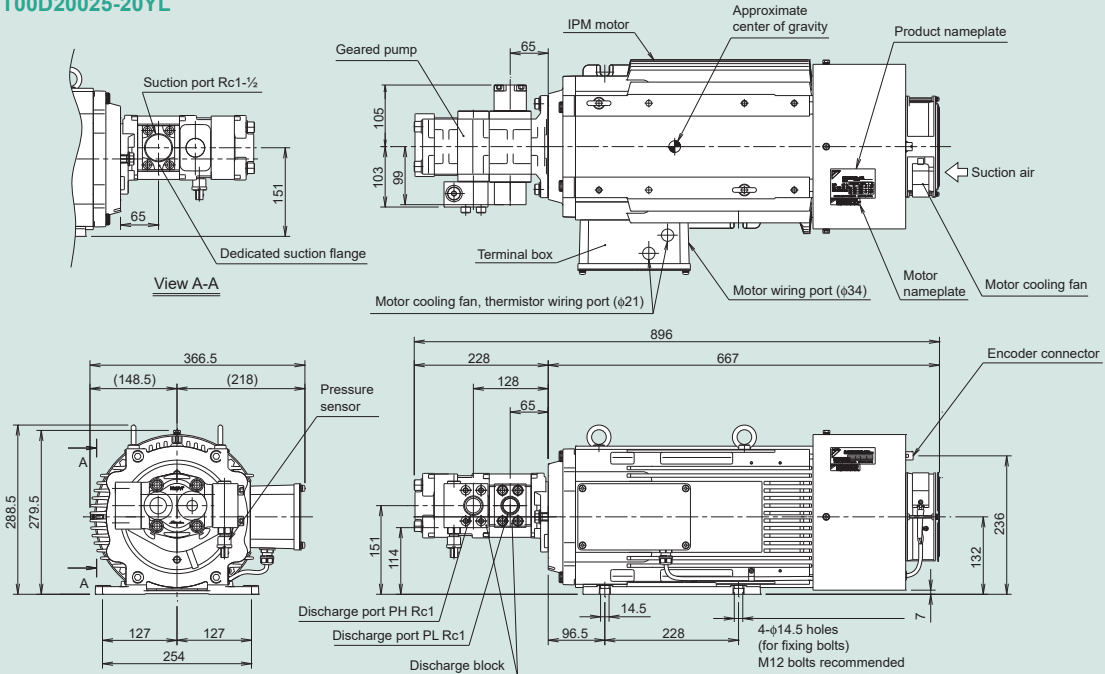
Model code	Power supply specifications	Pump specifications	Suction port	Discharge port PL	Discharge port PH	Pressure sensor orientation (*1)	Suction flange
S-SUT00D8025-11YL	400 V	Double	Rc1-1/4	Rc1	Rc1	Bottom	Incorporated

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

* The motor pump needs to be secured horizontally on the machine or tank. Also, secure a clearance of at least 100 mm at the suction side of the motor cooling fan. In addition, a clearance of at least 100 mm from the pump or solenoid valve is required at the exhaust side, with good ventilation assured by mounting a cover provided with ventilation holes or other means.

400 V 200 L/min 25 MPa

S-SUT00D20025-20YL

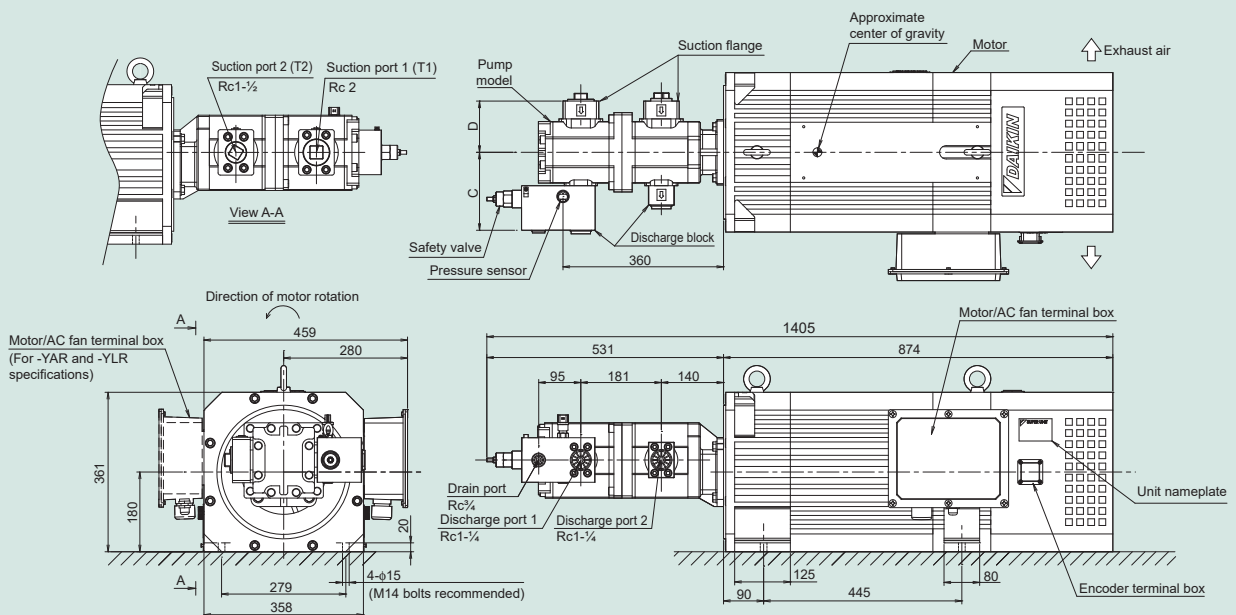


Model code	Power supply specifications	Pump specifications	Suction port	Discharge port PL	Discharge port PH	Pressure sensor orientation (*1)	Suction flange
S-SUT00D20025-20YL	400 V	Double	Rc1-1/2	Rc1	Rc1	Bottom	With dedicated part

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

380 V 300 L/min 25 MPa

S-SUT00D30025-10YA



Model code	Power supply specifications	Pump specifications	Suction port 1	Suction port 2	Discharge port 1	Discharge port 2	Drain port	Pressure sensor orientation (*1)	Suction flange
S-SUT00D30025-10YA	380 V	Double	Rc2	Rc1-1/2	Rc1-1/4	Rc1-1/4	Rc3/4	Top	Incorporated

(*1) "Pressure sensor orientation" indicates the orientation of the pressure sensor viewed from the pump side.

External Dimension Diagram (Controller 200 V/400 V single/double pump type)

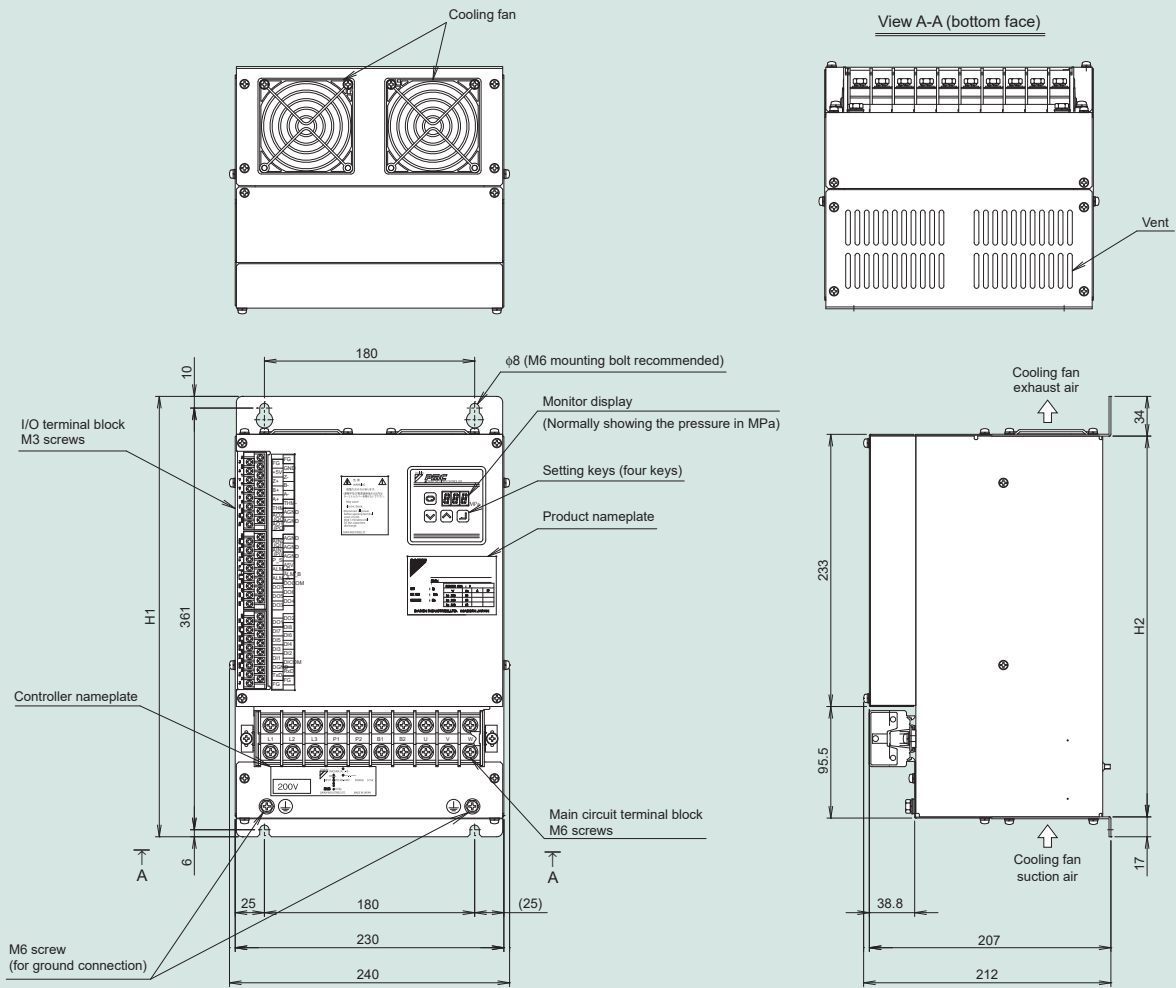
200 V, 30 to 200 L/min, 17.6 MPa, 20.6 MPa, 24.5 MPa (Single/double pump)
 400 V, 50 to 200 L/min, 17.6 MPa, 20.6 MPa, 24.5 MPa (Single/double pump)

SUT00S3018-30-A
 SUT00S5021-30-A
 SUT00S8018-30-A
 SUT00S5025-10-L-N0432
 SUT00S15018-10-A

SUT00S5021-20YA-N0265
 SUT00S8018-21YA
 SUT00S13018-10YA-N0218
 SUT00S13021-11YA-N0286
 SUT00S15018-10YA

SUT00D3021-30-B-N0436
 SUT00D8021-30-B-N0323
 SUT00D13021-10-B-N0321
 SUT00D15021-10-B-N0365
 SUT00D20021-10-L

SUT00D8021-21YB-N0324
 SUT00D13021-10YB-N0322
 SUT00D15021-10YB-N0358
 SUT00D20021-12YL

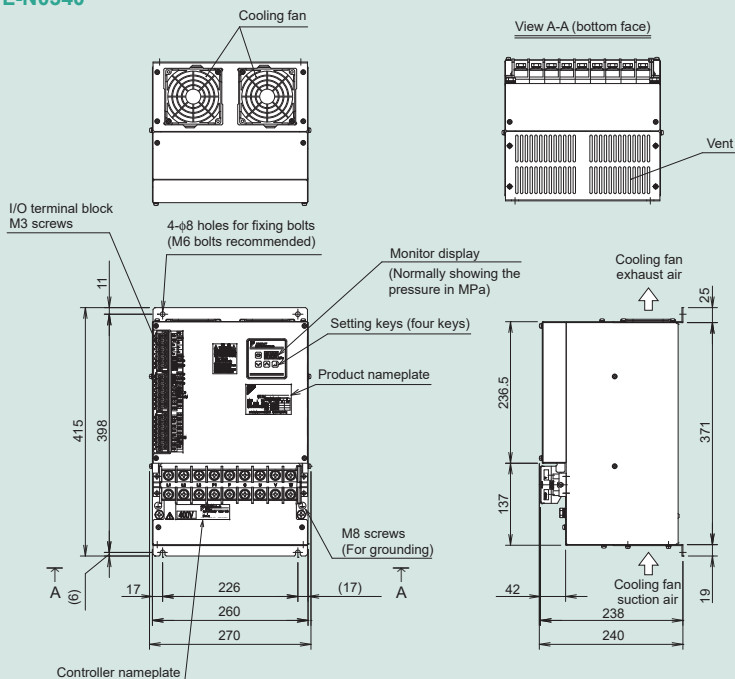


Model code	Power supply specifications	Pump specifications	H1	H2
SUT00S3018-30-A	200 V	Single	377	326
SUT00S5021-30-A				
SUT00S8018-30-A				
SUT00S5025-10-L-N0432				
SUT00S15018-10-A				
SUT00S5021-20YA-N0265	400 V	Single	377	361
SUT00S8018-21YA				
SUT00S13018-10YA-N0218				
SUT00S13021-11YA-N0286				
SUT00S15018-10YA				
SUT00D3021-30-B-N0436	200 V	Double	377	326
SUT00D8021-30-B-N0323				
SUT00D13021-10-B-N0321				
SUT00D15021-10-B-N0365				
SUT00D20021-10-L				
SUT00D8021-21YB-N0324	400 V	Double	377	326
SUT00D13021-10YB-N0322				
SUT00D15021-10YB-N0358				
SUT00D20021-12YL				

* The controller needs to be mounted vertically on a wall inside the electrical cabinet, with a clearance of at least 100 mm secured above and below and a clearance of at least 30 mm for wiring and maintenance at the left and right.

400 V 200 L/min 17.6 MPa (Single pump)

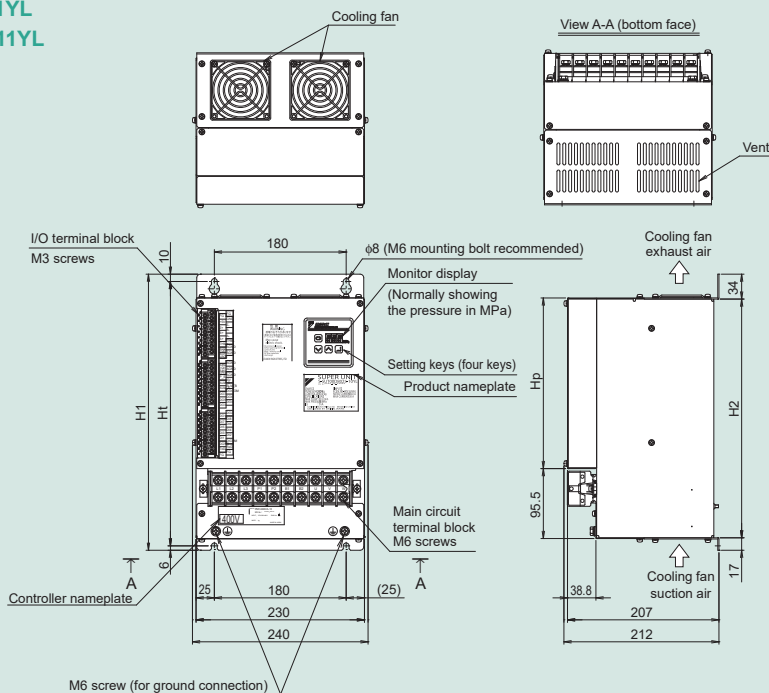
SUT00S20018-20YL-N0340



Model code	Power supply specifications	Pump specifications
SUT00S20018-20YL-N0340	400 V	Single

400 V 80 L/min 25 MPa, 130 L/min 25 MPa (Double pump)

S-SUT00D8025-11YL
S-SUT00D13025-11YL



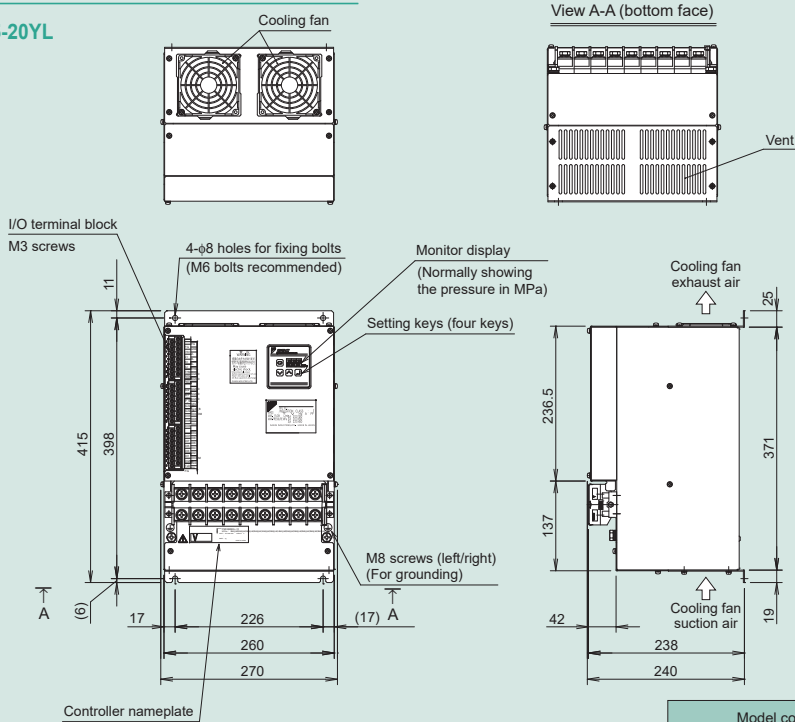
Model code	Power supply specifications	Pump specifications	H1	H2	Ht	Hp
S-SUT00D8025-11YL	400 V	Double	377	326	361	233
S-SUT00D13025-11YL			379	328	363	235

External Dimension Diagram (Controller 400 V single/double specifications)

* The controller needs to be mounted vertically on a wall inside the electrical cabinet, with a clearance of at least 100 mm secured above and below and a clearance of at least 30 mm for wiring and maintenance at the left and right.

400 V 200 L/min 25 MPa (Double pump)

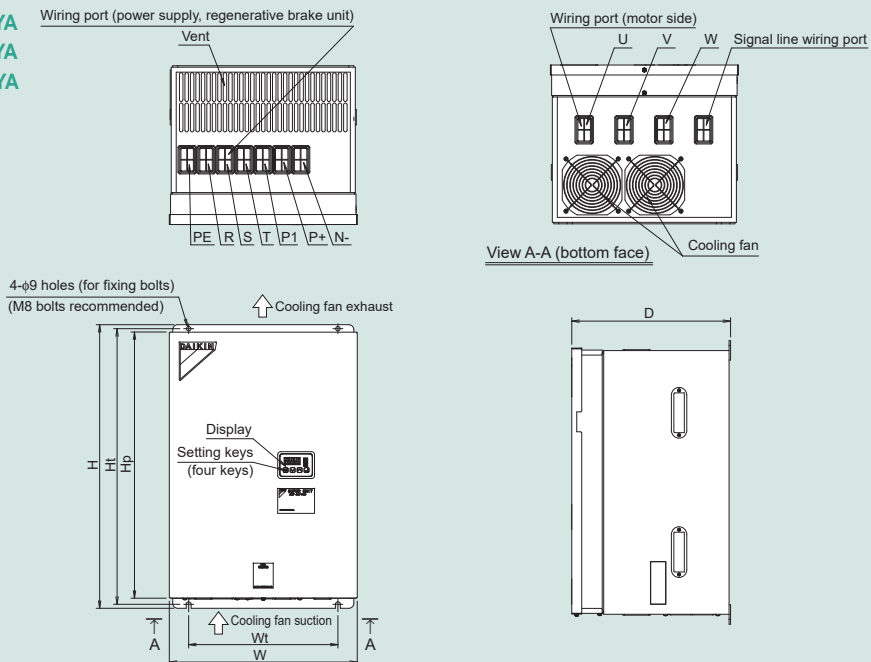
S-SUT00D20025-20YL



Model code	Power supply specifications	Pump specifications
S-SUT00D20025-20YL	400 V	Double

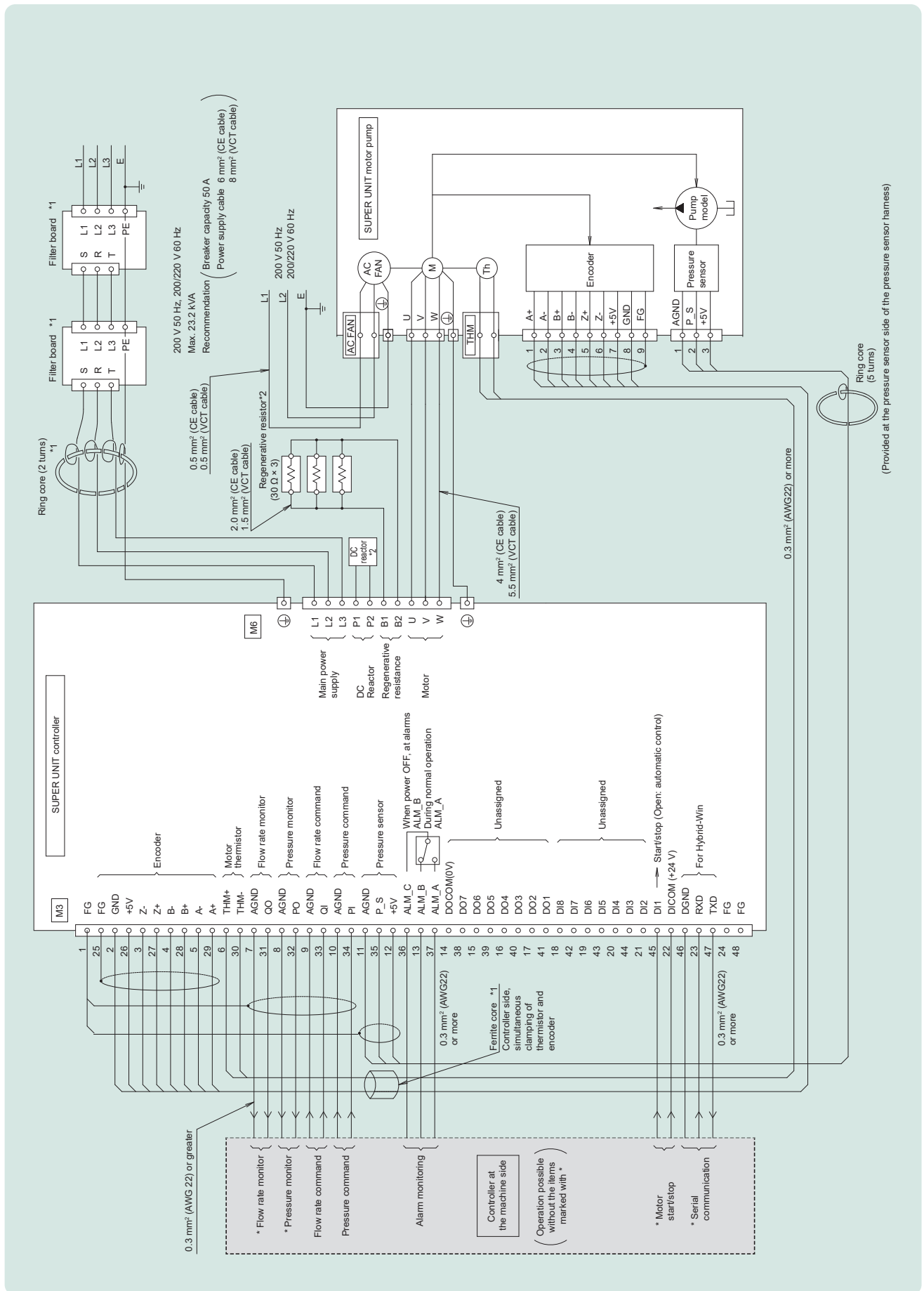
380 V 250 L/min 17.6 MPa, 300 L/min 17.6 MPa (Single pump) 380 V 300 L/min 25 MPa (Double pump)

S-SUT00S25018-10YA
S-SUT00S30018-10YA
S-SUT00D30025-10YA

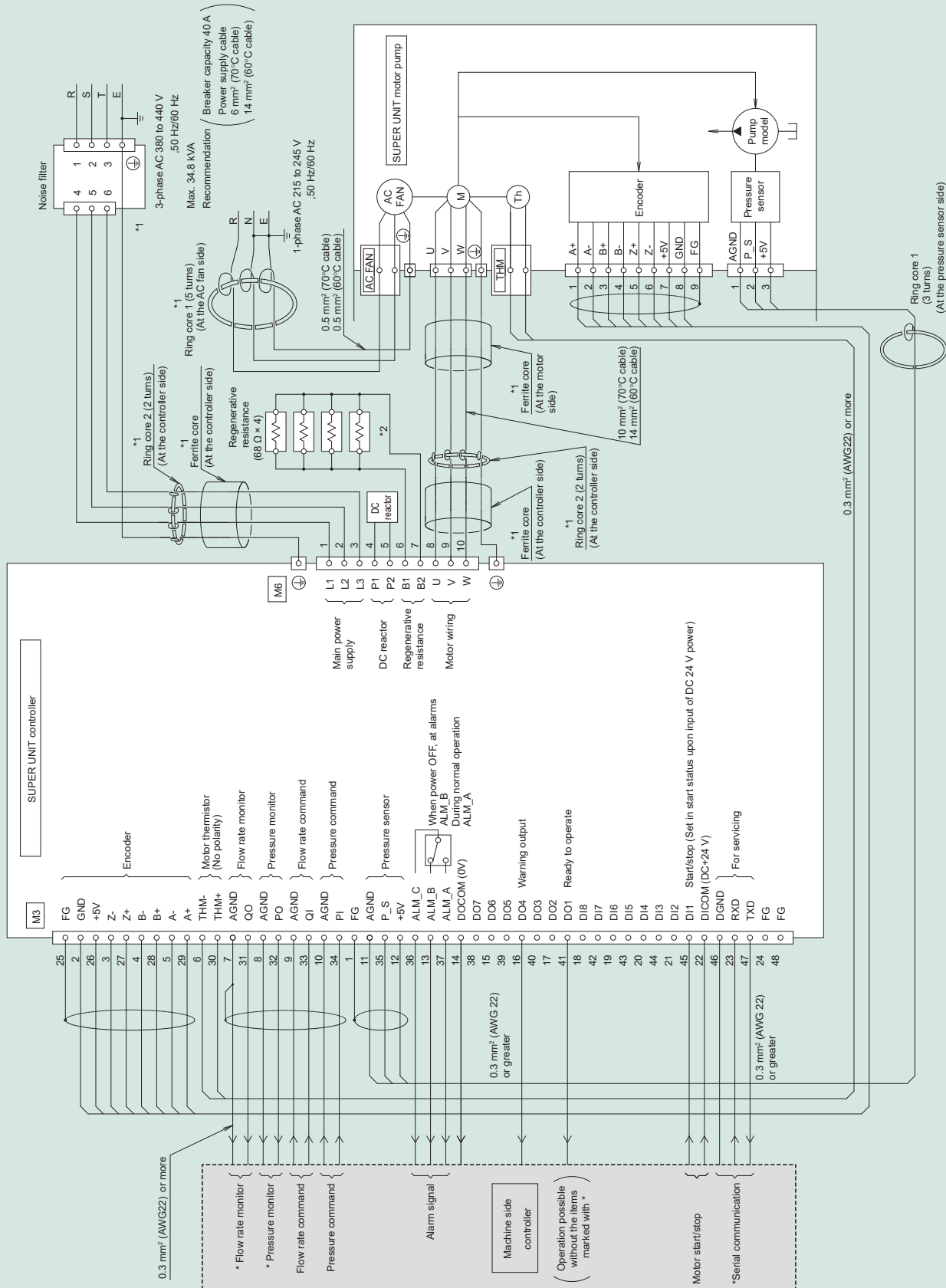


Model code	Power supply specifications	Pump specifications	H	Ht	Hp	W	Wt	D
S-SUT00S25018-10YA	380 V	Single	570	554	535	378	300	319
S-SUT00S30018-10YA	380 V	Single	610	590	565	388	250	332
S-SUT00D30025-10YA	380 V	Double	610	590	565	388	250	332

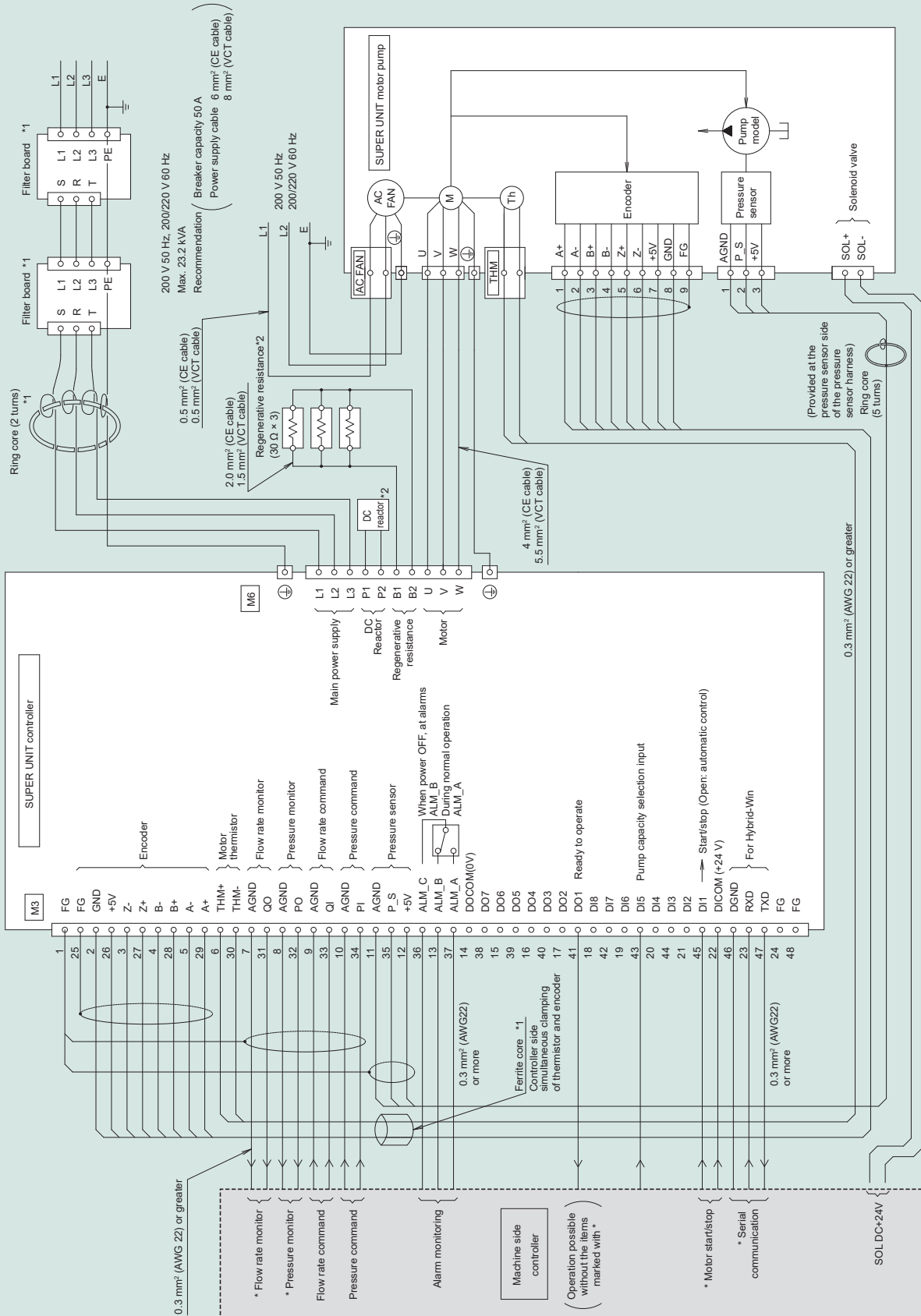
Electric Wiring Diagram (Example with 200 V single pump type SUT00S5021 and SUT00S8018)



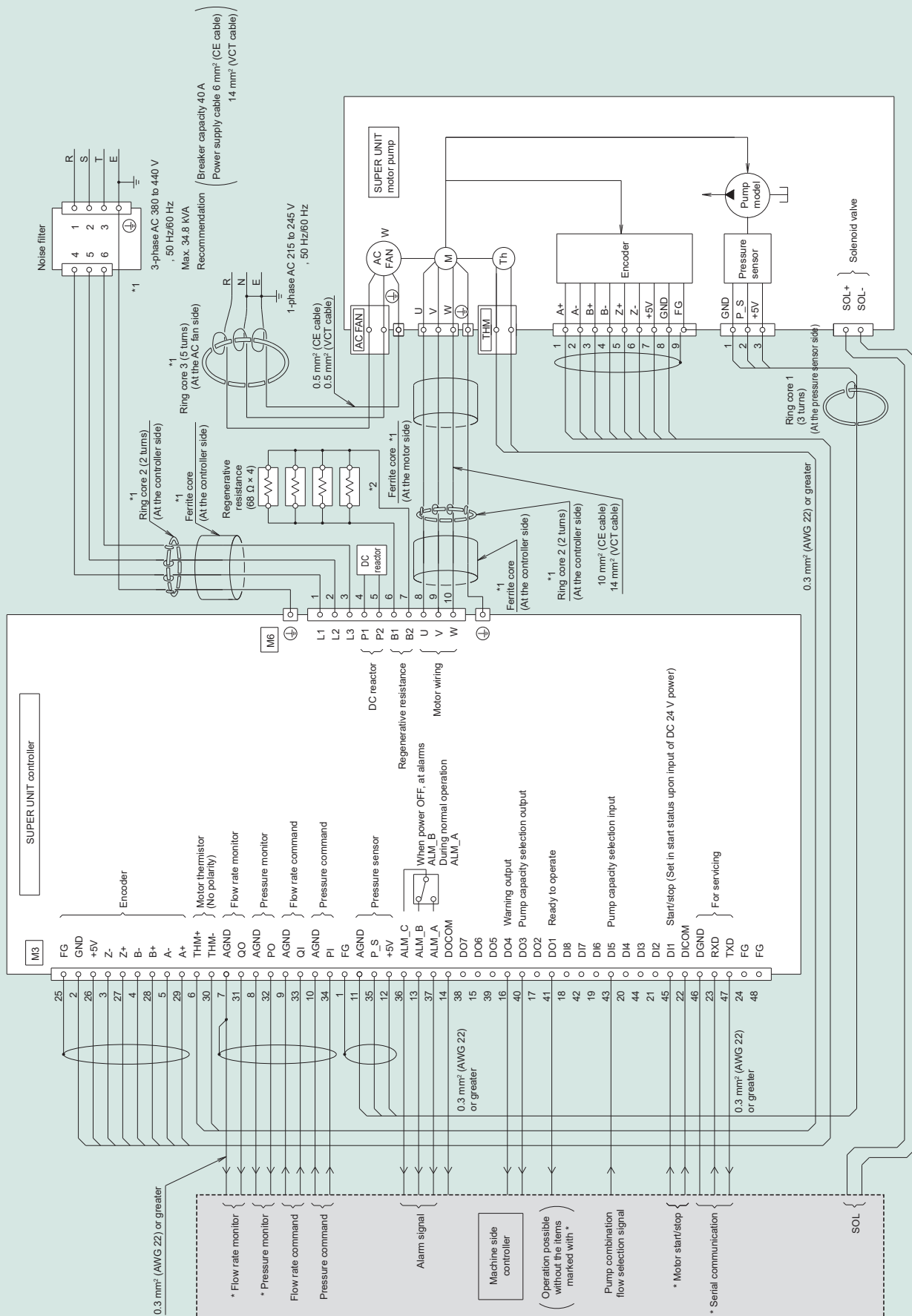
Electric Wiring Diagram (Example with 400 V single pump type SUT00S13018)



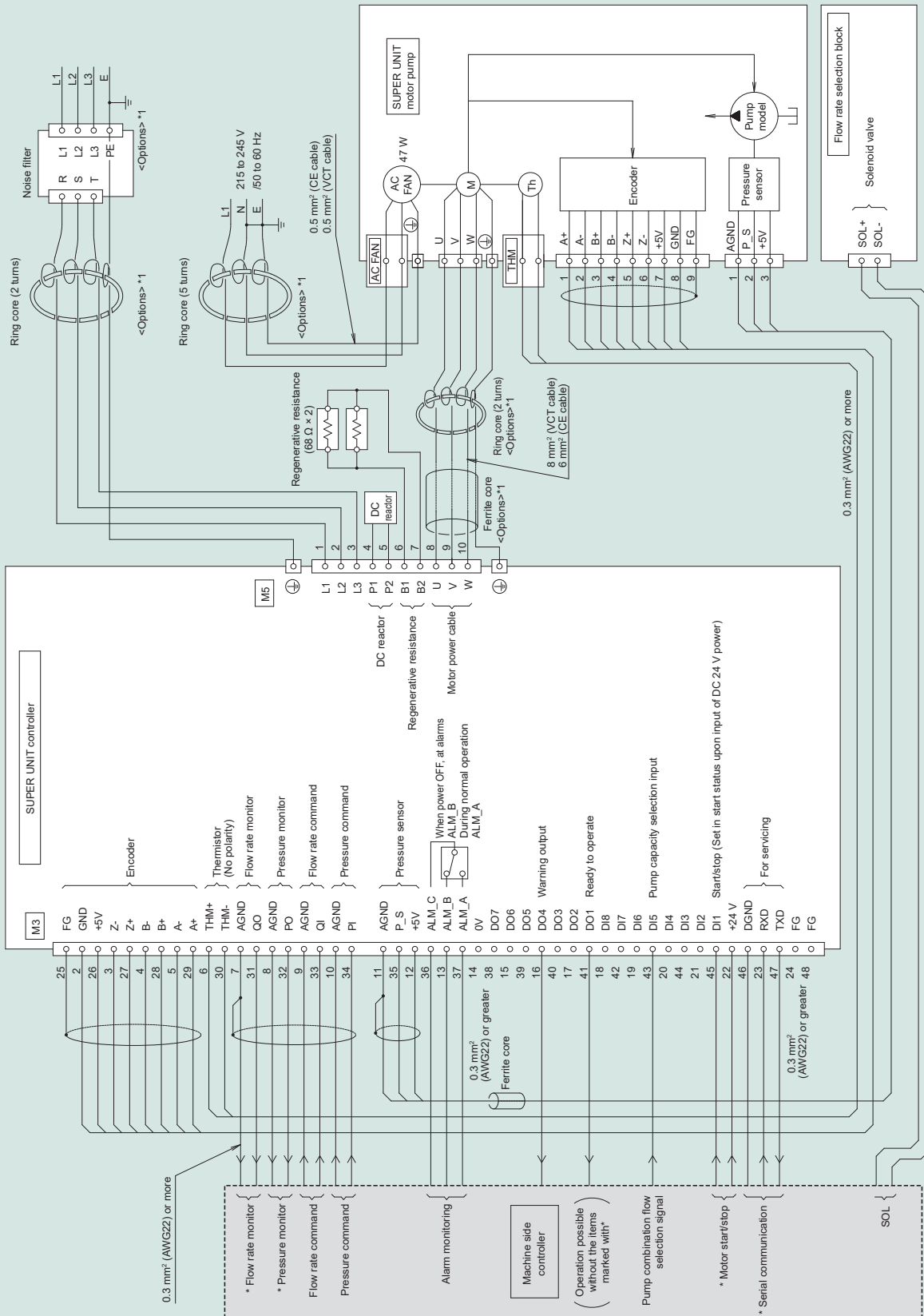
Electric Wiring Diagram (Example with 200 V double pump type SUT00D8021)



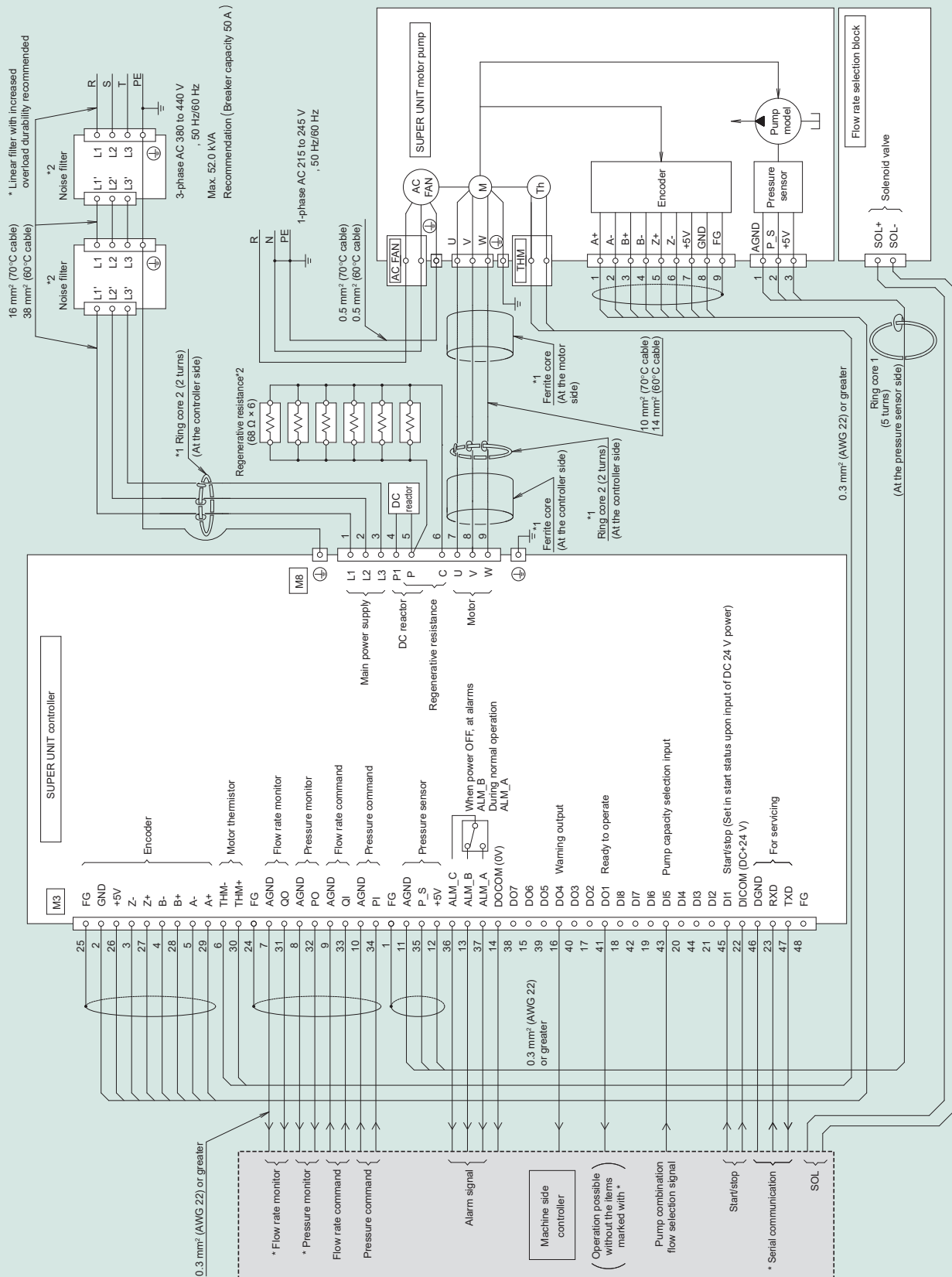
Electric Wiring Diagram (Example with 400 V double pump type SUT00D13021)



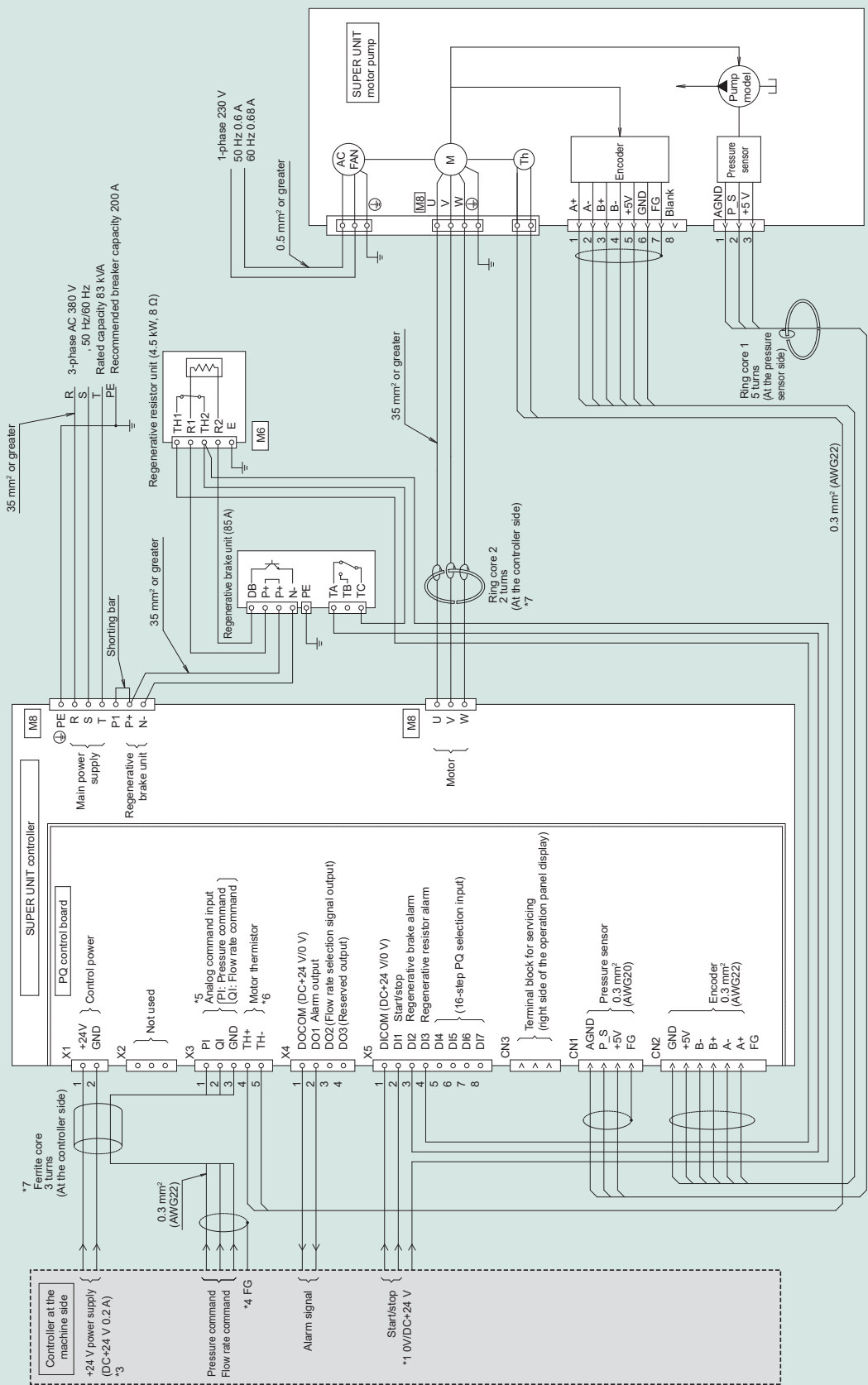
Electric Wiring Diagram (Example with 400 V double pump type S-SUT00D8025)



Electric Wiring Diagram (Example with 400 V double pump type S-SUT00D20025)



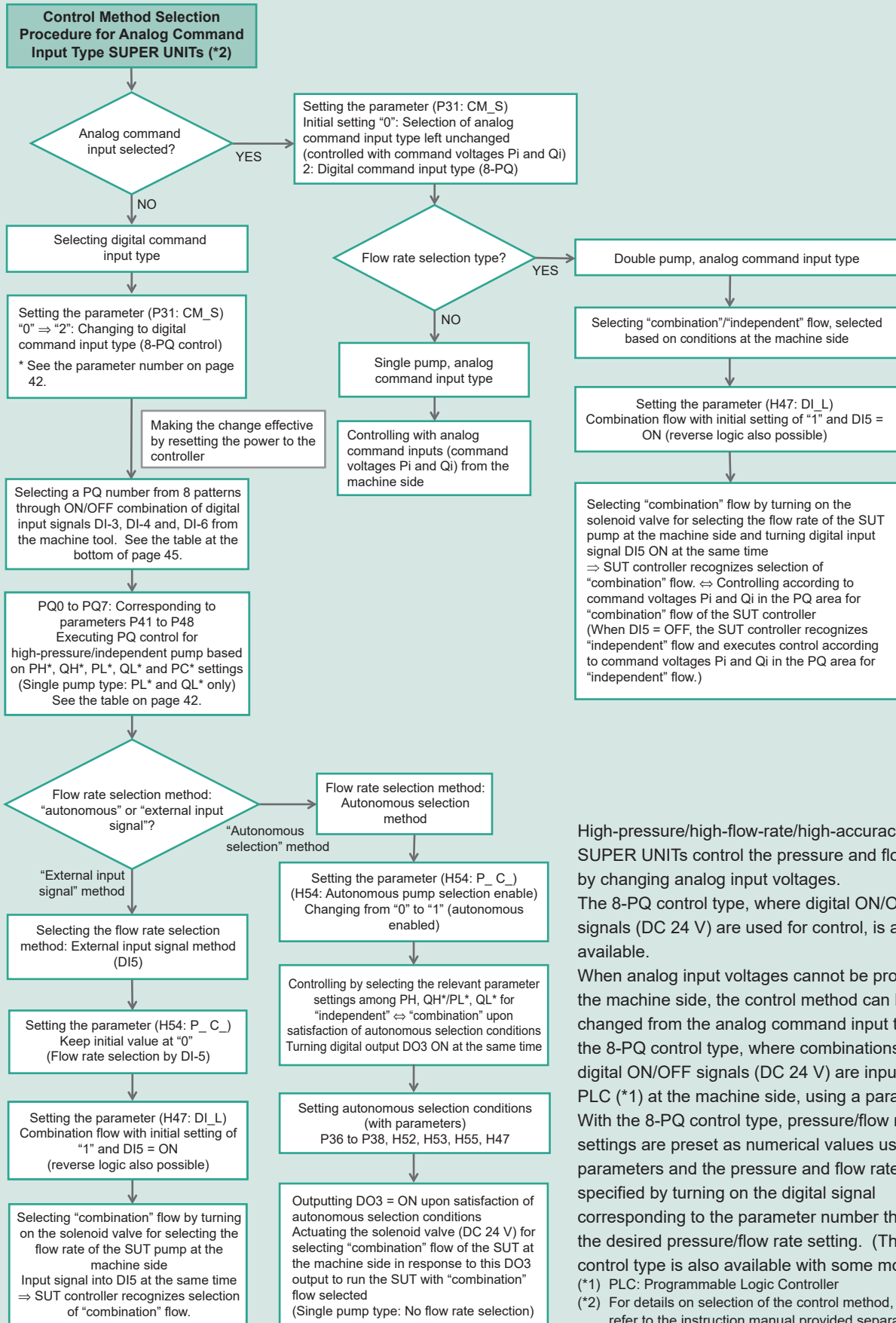
Electric Wiring Diagram (Example with 400 V double pump type S-SUT00S30018)



Memo

A large, light gray rectangular area with rounded corners, containing horizontal dashed lines for writing notes.

8-PQ Control



The following table shows the settings and details of parameters given in “Control Method Selection Procedure for Analog Command Input Type SUPER UNITS (SUT/S-SUT)”. (For details, please refer to the instruction manuals for the analog command input type and for the 8-PQ control type.)

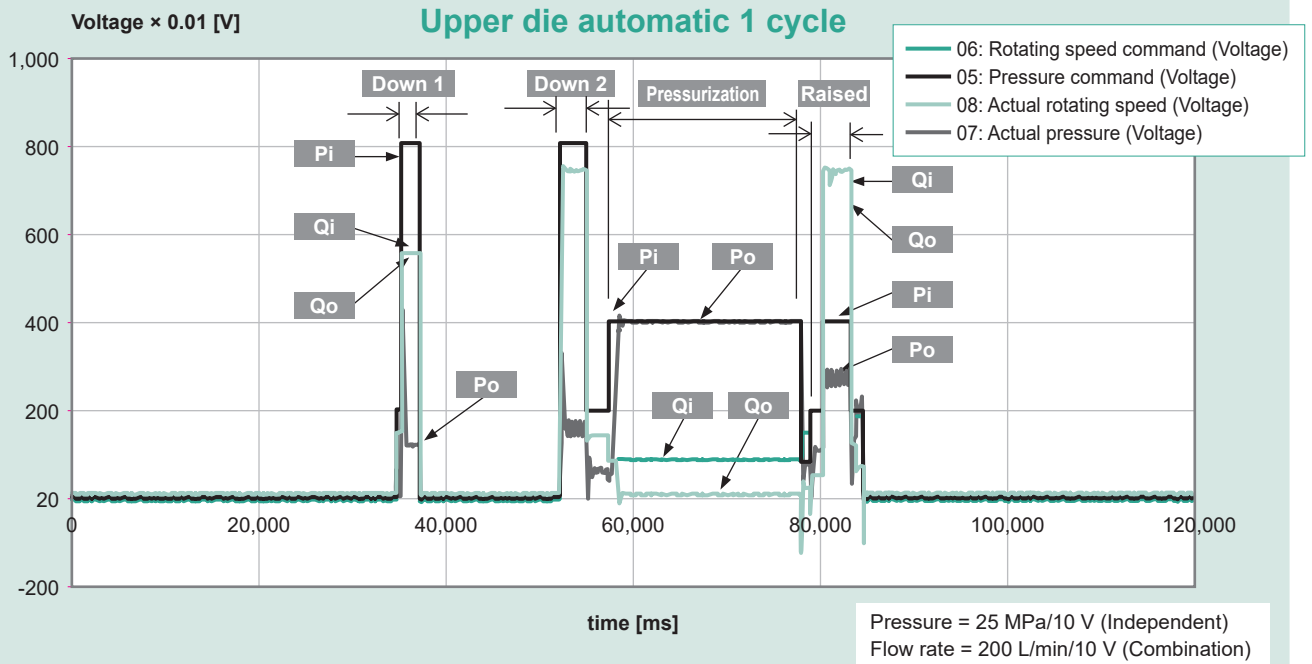
	Parameter No.	Code	Name	Initial value	Description
	P31	CM_S	Command input target selection	0	Pressure/flow rate command input target selection 0: Analog input 1: Cannot be set (reserved by system) 2: Digital input (8-pattern PQ type (8-PQ))
For setting the pressure/flow rate for each of eight PQ patterns	P41	-	PQ selection 0 (PQ_0)		- Double pump type (*1) PH*: High-pressure (independent) side pressure setting QH*: High-pressure (independent) side flow rate setting PL*: Low-pressure (combination) side pressure setting QL*: Low-pressure (combination) side flow rate setting PC*: Pump selection condition (enabled when using the autonomous selection function) - Single pump type PL*: Low-pressure (combination) side pressure setting QL*: Low-pressure (combination) side flow rate setting
	P42	-	PQ selection 1 (PQ_1)		
	P43	-	PQ selection 2 (PQ_2)		
	P44	-	PQ selection 3 (PQ_3)		
	P45	-	PQ selection 4 (PQ_4)		
	P46	-	PQ selection 5 (PQ_5)		
	P47	-	PQ selection 6 (PQ_6)		
	P48	-	PQ selection 7 (PQ_7)		
For digital input	H47	DI_L	Pump combination flow signal selection	1	Combination/independent selection logic for digital input signal DI5 ON/OFF setting 0: Combination when DI5 = OFF, independent when DI5 = ON 1: Combination when DI5 = ON, independent when DI5 = OFF
	H54	P_C_	Pump autonomous selection enable	0	Double pump autonomous selection enable/disable setting 0: Disabled (pump selection according to digital input DI5) 1: Enabled (autonomous selection according to selection conditions)
For autonomous selection setting (condition)	P36	CS_P	Independent flow selection pressure offset	1.0	Pressure condition setting for autonomous combination ⇒ independent pump selection Selecting independent flow under the following condition: "PL*" + "CS_P" < Control pressure
	P37	CS_N	Independent flow selection flow rate offset	100	Flow rate condition setting for autonomous combination ⇒ independent pump selection Selecting independent flow under the following condition: Control flow rate < "QH*" - Flow rate conversion of "CS_N"
	P38	CD_P	Combination flow selection pressure offset	1.0	Pressure condition setting for autonomous independent ⇒ combination pump selection Selecting combination flow under the following condition: Control pressure < "PL*" - "CD_P"
	H52	CS_T	Independent flow hold time	0.3	Setting the time to maintain independent flow by disabling independent ⇒ combination pump selection, immediately after combination ⇒ independent pump selection
	H53	CD_T	Combination flow hold time	0.3	Setting the time to maintain combination flow by disabling combination ⇒ independent pump selection, immediately after independent ⇒ combination pump selection
	H55	SD_T	Pump combination flow hold time at startup	0.1	Time to maintain combination flow after starting the pumps from the stopped state or standby state
	H47	DI_L	Pump combination flow signal selection	1	Pump capacity selection output logic in the autonomous selection method (switching the solenoid valve for selecting the flow rate at the machine side according to digital output DO3) 0: Combination when DO3 = OFF, independent when DO3 = ON 1: Combination when DO3 = ON, independent when DO3 = OFF

Note 1: "*" in PH*, QH*, PL* and QL* in the above table represents a PQ number from "0" to "7".

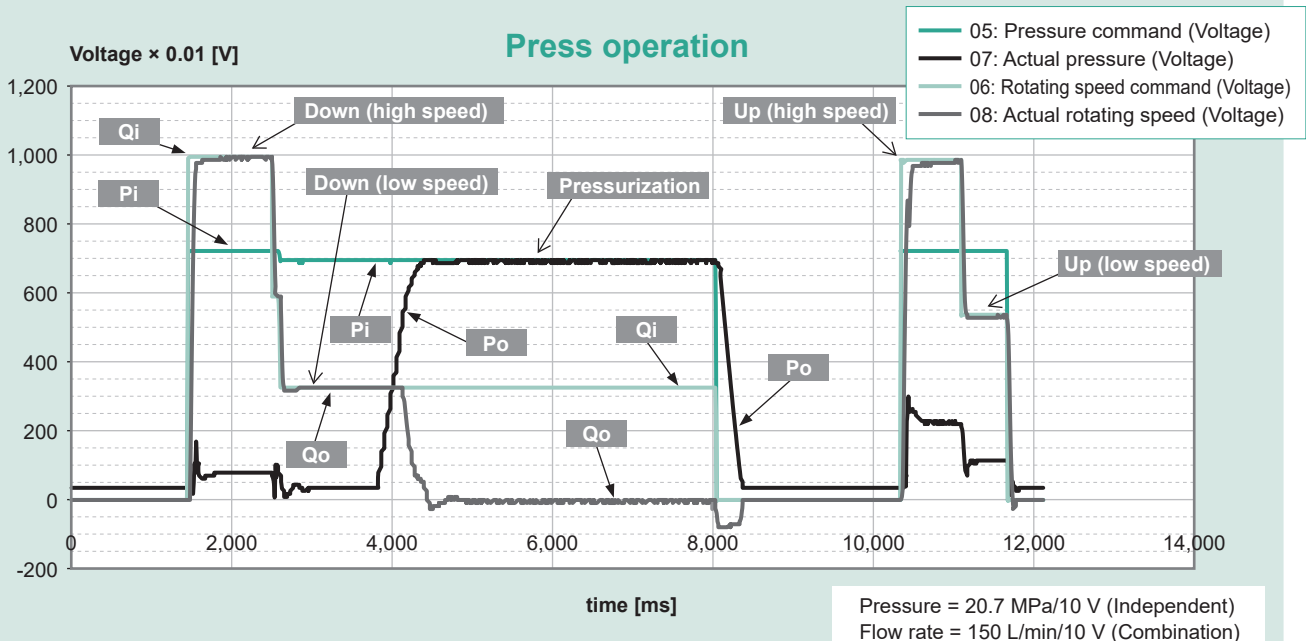
Example Control

* The following shows example waveforms while controlling the pressure and flow rate on press machine a SUPER UNIT incorporated.

Example with S-SUT00D20025-12YL ($P_{max} = 25 \text{ MPa}$ (independent), $Q_{max} = 200 \text{ L/min}$ (combination), 400 V specifications)



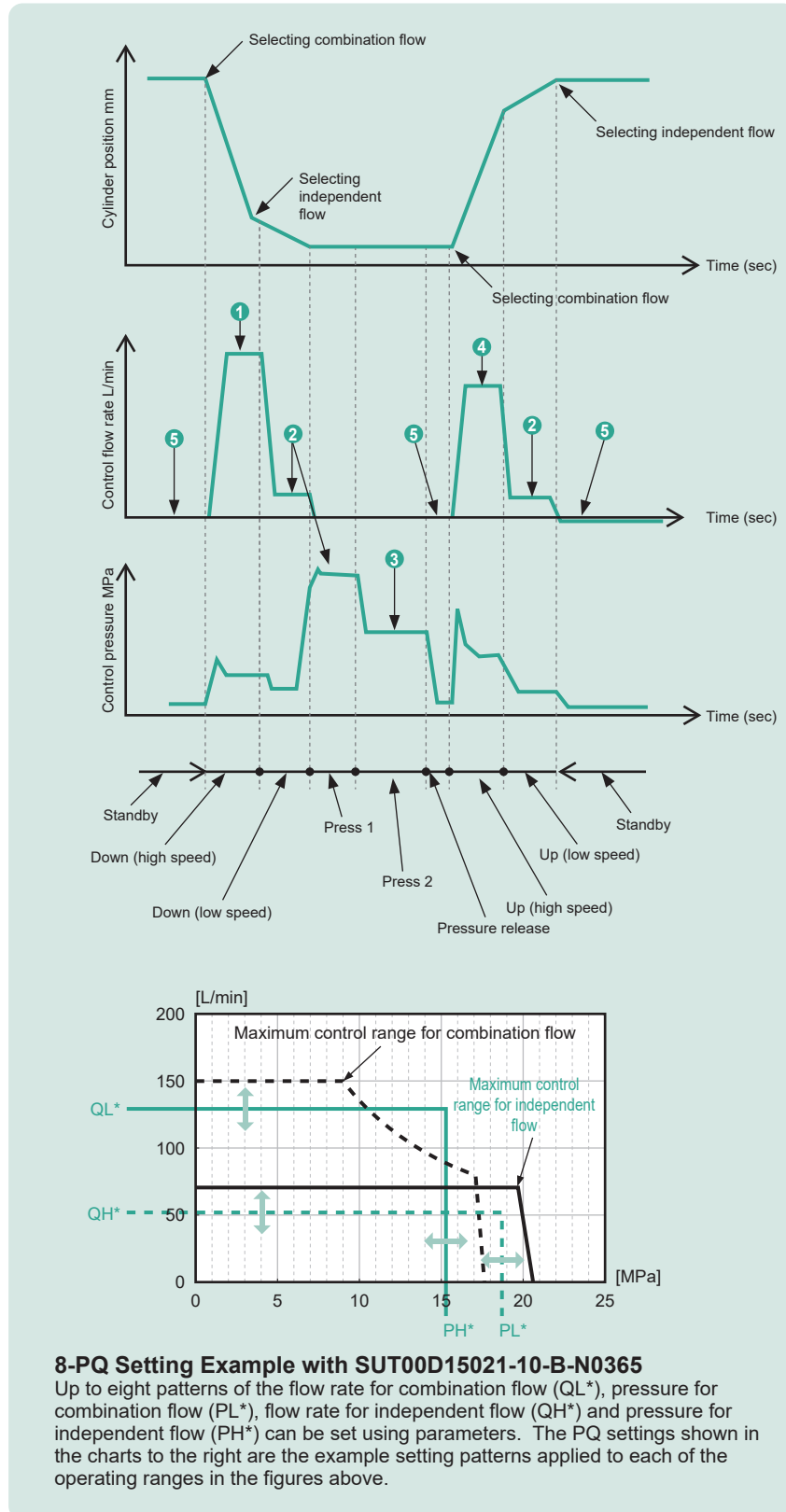
Example with SUT00D15021-10-B ($P_{max} = 20.7 \text{ MPa}$ (independent), $Q_{max} = 150 \text{ L/min}$ (combination), 200 V specifications)



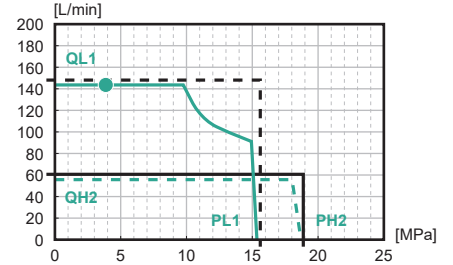
Example Timing Chart for Cylinder Operation and Signals on a Press

Example Press Operation (Down-Press-Up) in 8-PQ Control (SUT00D15021, 200V Specifications)

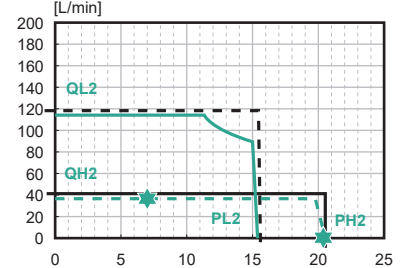
The following shows an operation example using five setting patterns by setting the pressure and flow rate for each process for PQ numbers 0 to 4, corresponding to PQ setting charts 1 to 5. (In this example, the selection of combination/independent flow is controlled from the machine using an external signal (DI5).)



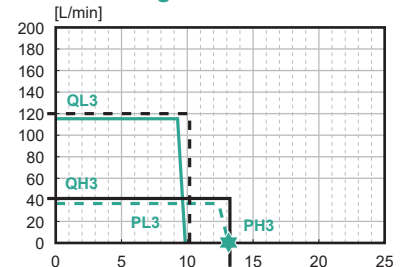
1 PQ setting



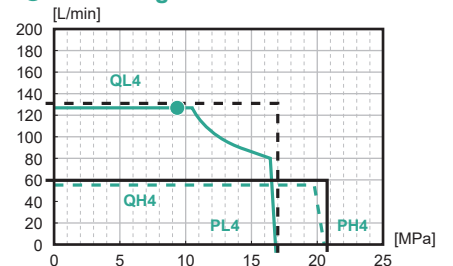
2 PQ setting



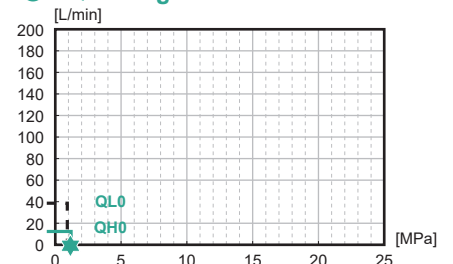
3 PQ setting



4 PQ setting



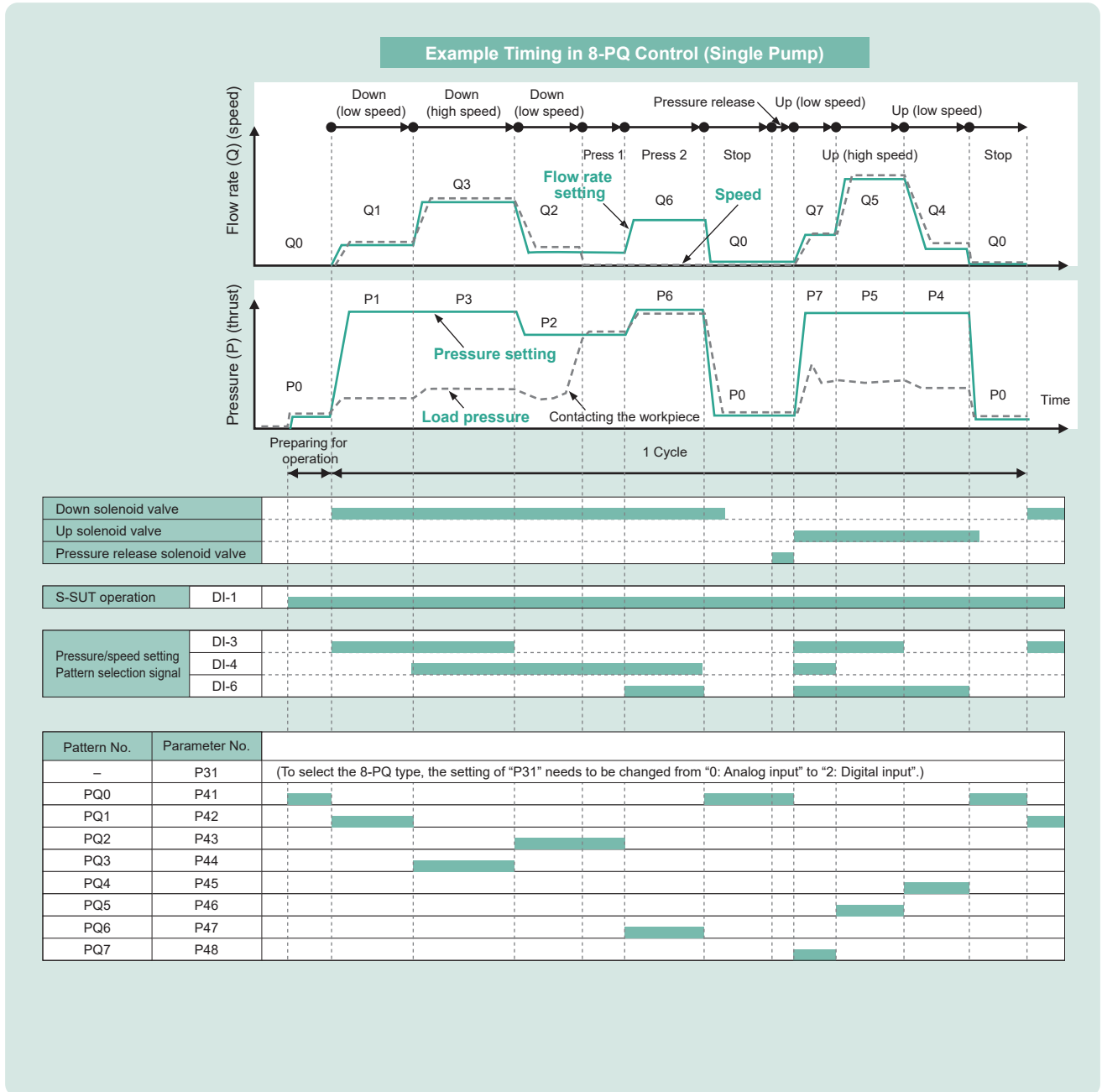
5 PQ setting



- indicates an example operating point when combination flow is selected.
- ★ indicates an example operating point when independent flow is selected.

Example Timing Chart for Cylinder Operation and Signals on a Press

Example of 8-PQ Function: Example Timing Chart with SUT00S/S-SUT00S (Single Pump, 8-PQ Type)



Digital Selection Signals and PQ Numbers

DI-3	DI-4	DI-6	Pattern No.
off	off	off	PQ0
on	off	off	PQ1
off	on	off	PQ2
on	on	off	PQ3
off	off	on	PQ4
on	off	on	PQ5
off	on	on	PQ6
on	on	on	PQ7

PQ Numbers and Example Pressure/Flow Rate Settings

	PL* [MPa]	QL* [L/min]
PQ0	0.5	0.0
PQ1	16.0	10.0
PQ2	12.0	8.0
PQ3	16.0	70.0
PQ4	16.0	6.0
PQ5	16.0	80.0
PQ6	17.6	50.0
PQ7	16.0	10.0

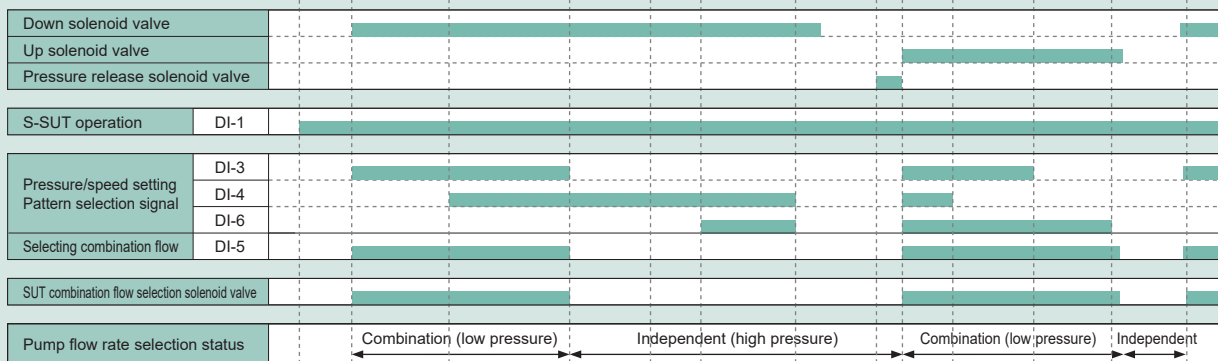
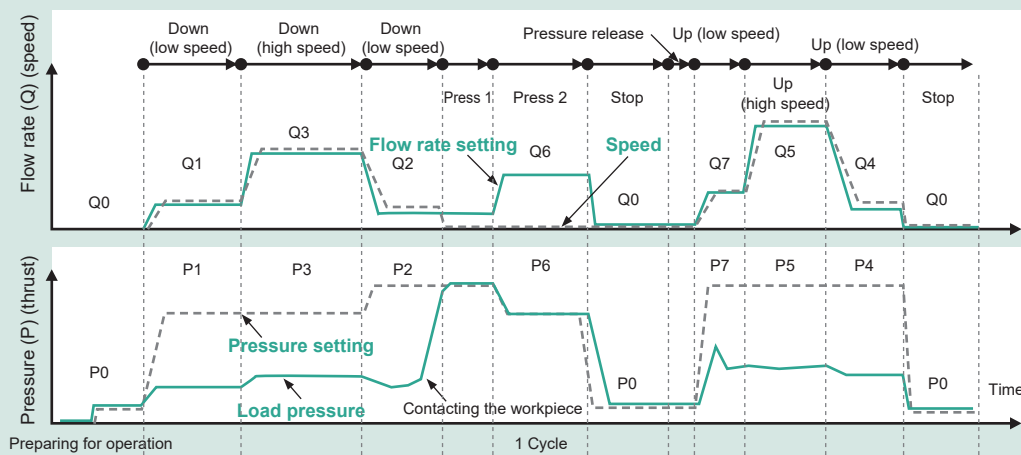
Note: The analog command input type is selected by the default parameter settings of SUT/S-SUT before shipment. (Parameter P31 (command input target selection) is set to "0: Analog input".)

The setting of parameter P31 needs to be changed to "2: Digital input (8-PQ)". (The setting change takes effect upon restarting the power.)

To achieve shockless control on a machine, the flow rate, pressure, response time and other settings need to be adjusted according to the machine.

Example of 8-PQ Function: Example Timing Chart with SUT00D13021 (Double Pump, 8-PQ Type, Flow Rate Selection by External Signal)

Example Timing with 8-PQ, Double Pump, External Signal (DI5) Selection Specifications



Pattern No.	Parameter No.	
-	P31	(To select the 8-PQ type, the setting of "P31" needs to be changed from "0: Analog input" to "2: Digital input".) (The above charts show the status with "H47: Pump combination flow signal selection" set to "1: Combination when DI5 = ON" (default setting).) ("H54: Autonomous pump selection enable" is set to "0: Disabled (pump selection according to digital input DI5)" (default setting).)
-	P47	
-	P54	
PQ0	P41	
PQ1	P42	
PQ2	P43	
PQ3	P44	
PQ4	P45	
PQ5	P46	
PQ6	P47	
PQ7	P48	

Digital Selection Signals and PQ Numbers

DI-3	DI-4	DI-6	Pattern No.
off	off	off	PQ0
on	off	off	PQ1
off	on	off	PQ2
on	on	off	PQ3
off	off	on	PQ4
on	off	on	PQ5
off	on	on	PQ6
on	on	on	PQ7

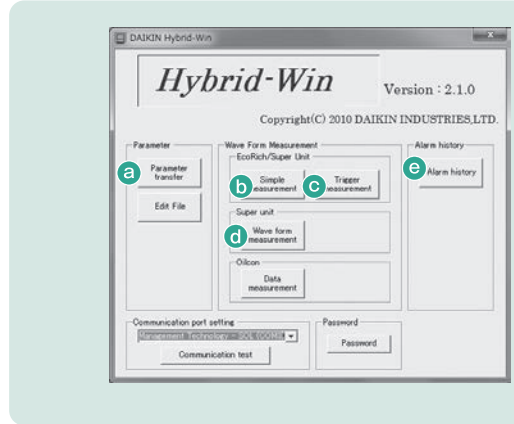
PQ Numbers and Example Pressure/Flow Rate Settings

	PH* [MPa]	QH* [L/min]	PL* [MPa]	QL* [L/min]	PC*
PQ0	1.0	5.0	1.0	10.0	1
PQ1	20.6	30.0	12.0	50.0	1
PQ2	20.6	30.0	18.0	30.0	1
PQ3	20.7	30.0	12.0	130.0	1
PQ4	20.6	30.0	14.0	30.0	1
PQ5	20.6	30.0	18.0	130.0	1
PQ6	17.0	40.0	17.6	40.0	1
PQ7	20.6	30.0	18.0	50.0	1

Note: This example shows operation of SUT00D13021 (200 V specifications) with 8-PQ type and flow rate selection by external signal (DI5) selected. Flow rate selection by the 8-PQ function can also be used in the autonomous selection mode. For details on the 8-PQ control, please refer to the instruction manual provided separately.
To achieve shockless control on a machine, the flow rate, pressure, response time and other settings need to be adjusted according to the machine.

Maintenance/Management Tool (Hybrid-Win)

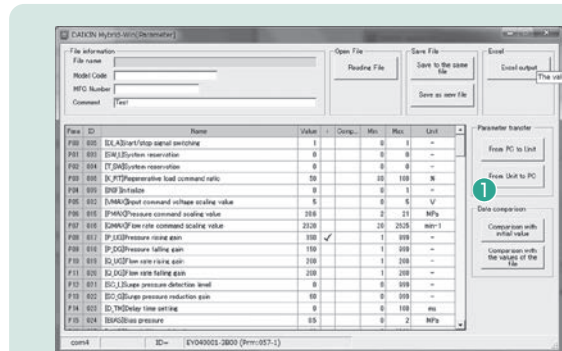
Hybrid-Win is a software tool that connects your personal computer running Windows 7/8 to a SUPER UNIT through communications (RS232C) to enable editing/saving of SUPER UNIT parameters and measurement of waveforms that result from the pressure/flow rate control. Hybrid-win and its instruction manual are available from the website (<http://www.daikinpmc.com>) after registering as a member. A personal computer and an RS232C/USB conversion cable are necessary.



Startup Window of Hybrid-Win

Hybrid-Win can also be used for maintenance of other hybrid products from DAIKIN such as ECORICH products and oil cooling units. The startup window has the [Parameter transfer], [Simple measurement], [Trigger measurement], [Wave form measurement] and [Alarm history] buttons as shown in the figure to the left to provide access to the major functions of Hybrid-Win. Some basic functions are covered here. (Please refer to the instruction manual provided separately for details.)

- a : [Parameter transfer]
- b : Waveform measurement: [Simple measurement]
- c : [Trigger measurement]
- d : Waveform measurement: [Wave form measurement]
- e : [Alarm history]



Loading Parameters from SUPER UNIT (Parameter Transfer)

Clicking the “From Unit to PC” button transfers parameter data from the Super Unit to the personal computer and displays the parameters on the Hybrid-Win window shown to the left. The parameters can be edited and saved in this window.

- 1 : [From Unit to PC] button

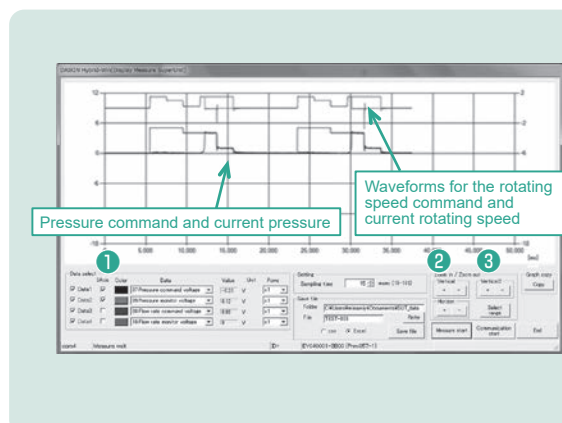


Measuring Waveforms of SUPER UNIT

Click the [Communication start] button and select four data types to be displayed.

Clicking the [Measure start] button starts the measurement and the waveforms are displayed on the software screen as shown in the figure to the left over an extended period (90 seconds, when the sampling time is set to 15 ms for example) until the [measure stop] button is clicked. The waveform data can also be saved in the Excel graph format.

- 1 : [Communication start] button
- 2 : Selecting data to be displayed
- 3 : [Measure start] button



Zooming the Measured Waveforms In/Out

By checking “2Axis” for data types to be displayed, the chart can be zoomed along each of the vertical axes as shown in the figure to the left. The figure to the left shows the waveforms with the command pressure (voltage) and current pressure (voltage) assigned to the left axis, the command rotating speed (voltage) and current rotating speed (voltage) assigned to the right axis, and both axes zoomed using the “Vertical” and “Vertical 2” [+] buttons. It is also possible to zoom the chart along the horizontal axis (time).

This function can be used for monitoring waveforms on the screen while the SUPER UNIT is running and saving some significant waveforms as Excel data.

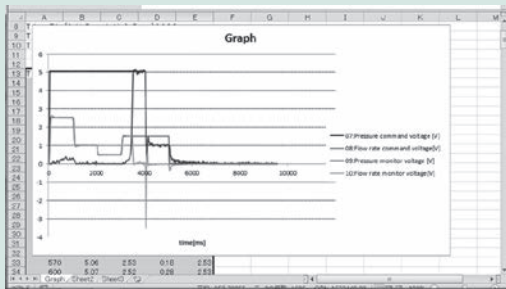
- 1 : Selecting data type to be displayed as “2Axis”
- 2 : “Vertical” zoom in/out buttons
- 3 : “Vertical 2” zoom in/out buttons



Window Displayed by Clicking [Trigger measurement]

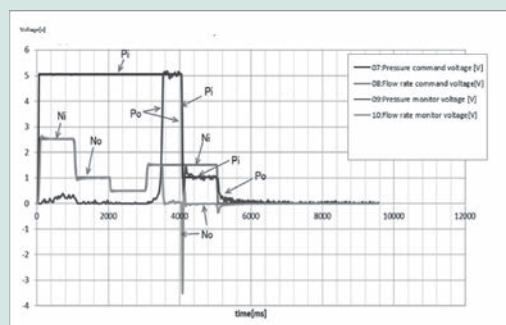
This window appears when the [Communication start] button is clicked after the [Trigger measurement] button in the start window to enable selection of the sampling time, four data types to be measured and trigger conditions. When the trigger conditions are satisfied after clicking the [Measurement start] button, the measurement starts and the waveforms are displayed as an Excel graph upon completing the measurement. (When Excel is selected as the file saving format) When the sampling time is set to 20 ms for example, measurement is possible for 5.1 seconds. It is also possible to save the data in the CSV format.

- 1 : [Communication start] button
- 2 : Selecting "Measurement data"
- 3 : "Trigger condition setting"
- 4 : [Measurement start] button



Measurement Results when Excel File Selected as the Target with [Simple measurement] or [Trigger measurement]

When Excel file is selected as the file saving format with the [Simple measurement] or [Trigger measurement] function, Excel window as shown in the figure to the left automatically appears upon completing the measurement to show the measurement data in a graph. The graph can be adjusted for better visibility by correcting/modifying its time axis and vertical axes using Excel, and saved as Excel data.



Example of Measured Waveforms after being Edited in Excel

When Excel file is selected as the file saving format with the [Simple measurement] or [Trigger measurement] function, the waveforms are displayed in an Excel graph automatically upon completing the measurement. The figure to the left shows an example after editing the displayed waveforms for better visibility.

Alarm No.	Alarm Name	Alarm Level	Alarm Time	Alarm Status
1	01-Pressure command error	High	10/10/2023 10:00:00	Clear
2	02-Flow rate command error	High	10/10/2023 10:00:00	Clear
3	03-Pressure monitor error	High	10/10/2023 10:00:00	Clear
4	04-Flow rate monitor error	High	10/10/2023 10:00:00	Clear
5	05-Pressure monitor error	High	10/10/2023 10:00:00	Clear
6	06-Flow rate monitor error	High	10/10/2023 10:00:00	Clear
7	07-Pressure monitor error	High	10/10/2023 10:00:00	Clear
8	08-Flow rate monitor error	High	10/10/2023 10:00:00	Clear
9	09-Pressure monitor error	High	10/10/2023 10:00:00	Clear
10	10-Flow rate monitor error	High	10/10/2023 10:00:00	Clear

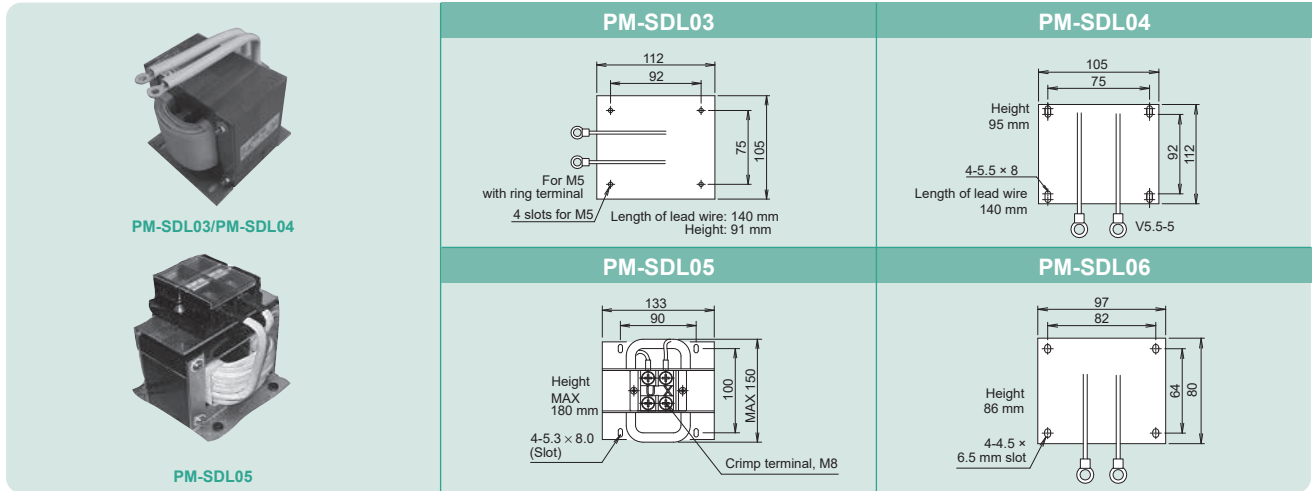
Alarm Window Displayed by Clicking [Alarm history]

The window displays details on the latest 10 alarms. Information on the alarms including the alarm number and the total operating time at the occurrence of the alarm can be checked in the table as shown in the figure to the left. The data can also be saved as Excel data or in other formats.

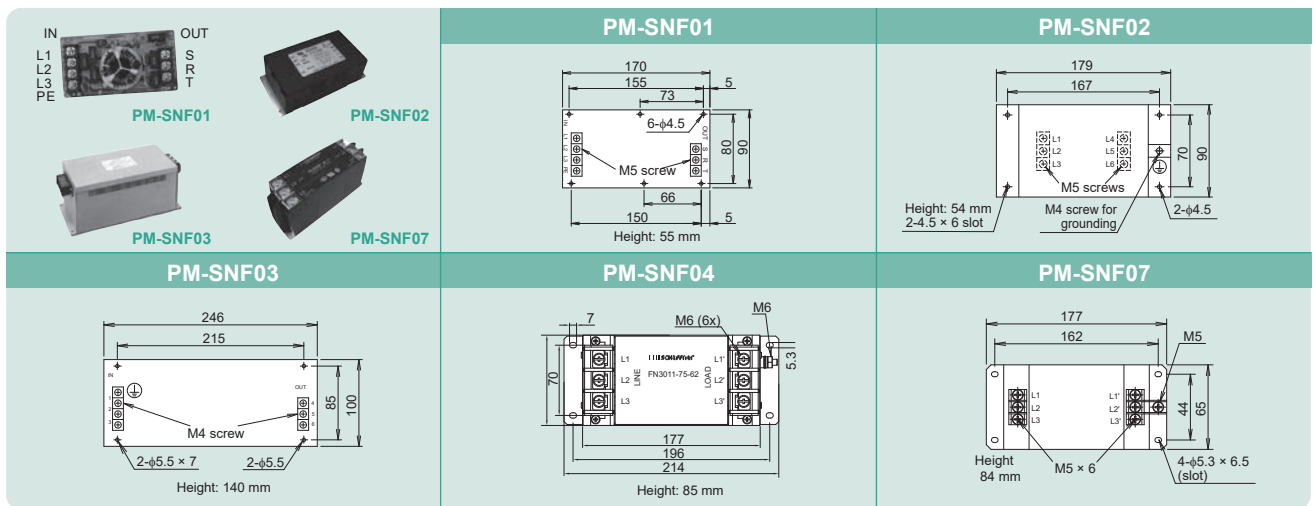
- 1 : [Excel output] button
- 2 : Alarm number
- 3 : Total operating time (after shipment)

External/Installation Dimension Diagrams for Electrical Components

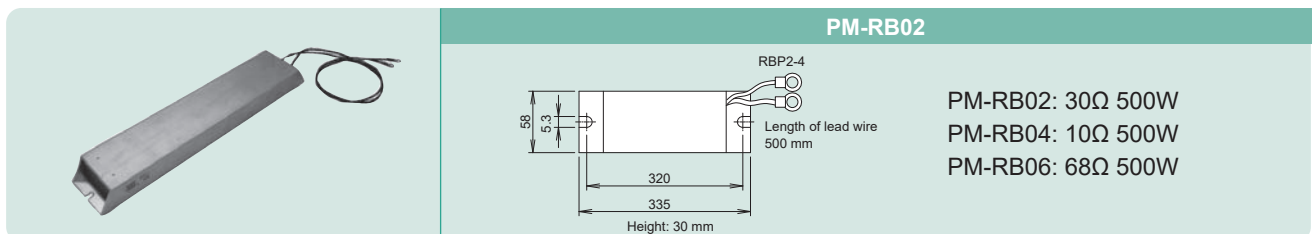
DC Reactor



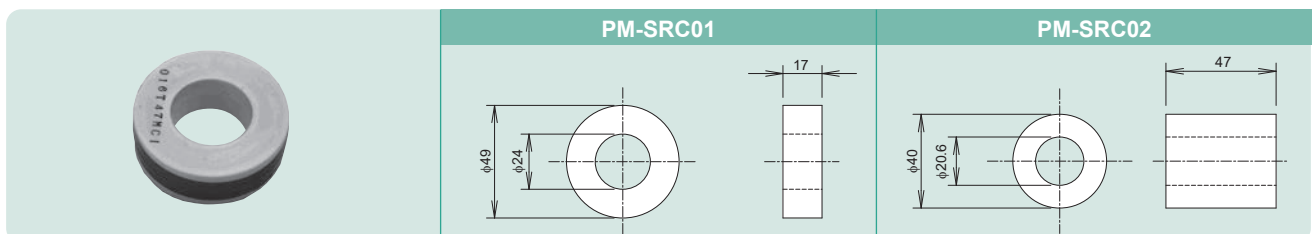
Noise Filter




Regenerative Resistance



Ring Core

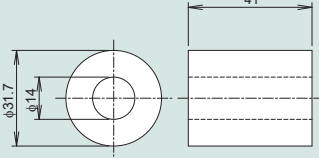


Ferrite Core

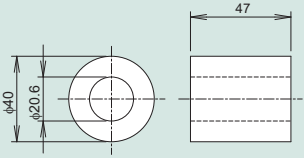


PM-FC01

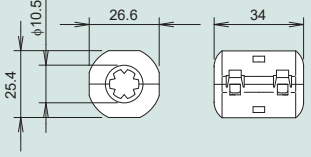
PM-FC01



PM-FC04




PM-FC05




Pressure Sensor Harness/Encoder Harness

PM-SPH05/PM-SH10 Pressure sensor harness



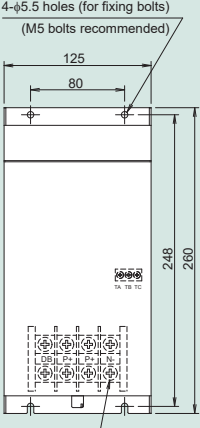
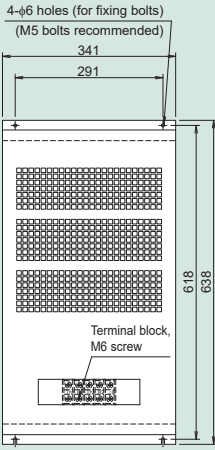
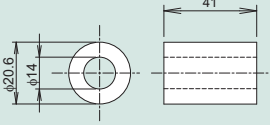

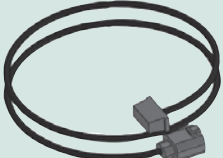
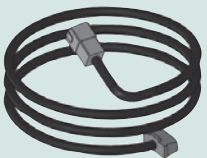
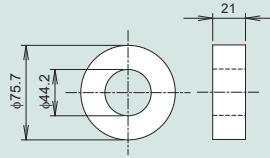

Model code	Cable length	Remarks
PM-SPH05-001	5 m	With ferrite core 2T
PM-SPH05-002		With ring core 3T
PM-SPH05-003		Ring core
PM-SPH10	10 m	Ring core


PM-SEH05-P22-A09R/PM-SEH05-P22-A12R Encoder harness



Model code	Cable length	Remarks
PM-SEH05-P22-A09R	5 m	9-pin
PM-SEH05-P22-A12R		12-pin
PM-SEH10-P22-A09R		10 m

Electrical Components Provided with S-SUT00S25018, S-SUT00S30018, S-SUT00D30025

<p>Regenerative brake unit SB-PP03158-03</p>  <p>Terminal block, M6 screw</p>	<p>Regenerative resistance SB-PP03159-05</p>  <p>Terminal block, M6 screw</p>	<p>Ferrite core SB-PP02137-02</p>  
<p>Pressure sensor harness SB-PP03151-01</p>  <p>Length: L = 5 m with ring core</p>	<p>Encoder harness SB-PP03706-01</p>  <p>Length: L = 5 m</p>	<p>Ring core SB-PP0404-02</p>  



High Pressure High Flow Rate
Analog Command Input High Accuracy

SUPER UNIT

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