

AC MOTOR DRIVE for PUMP

RM6F5

Water Footprint Design

Water drops every little bit and converges together to Water Footprint which taking down honestly energy waste during production - As Rhymebus drive varying the constant voltage and frequency to increase the energy use efficiency and let the green technology extend to all the world in order to save the energy to green environment for our life and future.

Green Tech
Green Life



Starting Drives to A Greener Lives

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Constant Pressure & Energy Saving Variable Frequency Control System

Suitable for water supply of residentials, commercial buildings, apartments, factories, etc. Providing green life with constant pressure control system.



Simple and Simplified Control Framework.

Easy installing, standard parts, parallel connection of 4 inverters by parameters setting.

Manual/Automatic Switching Optional.

Smart Adjustment of Water Supply for Periodical Demands.

Automatic Compensation of Pipes Loss.

Dry-Run Protection.

Low and High Pressure Feedback Detection and Alert.

Automatic Pipe Leakage Adjustment of Start/Stop.

User Friendly Control Mode.

Easy Operation with Built-in Multi Constant Pressure Control Mode.

Water Cooling System in Processing PCW(Process Cooling Water).

Temperature Control by Fan Inverter.

Re-start Automatically after Abnormal Tripping.

Set Value (SV) and Practical Value (PV) Shown Simultaneously.

Electrical specification table

Three-Phase 200V Series

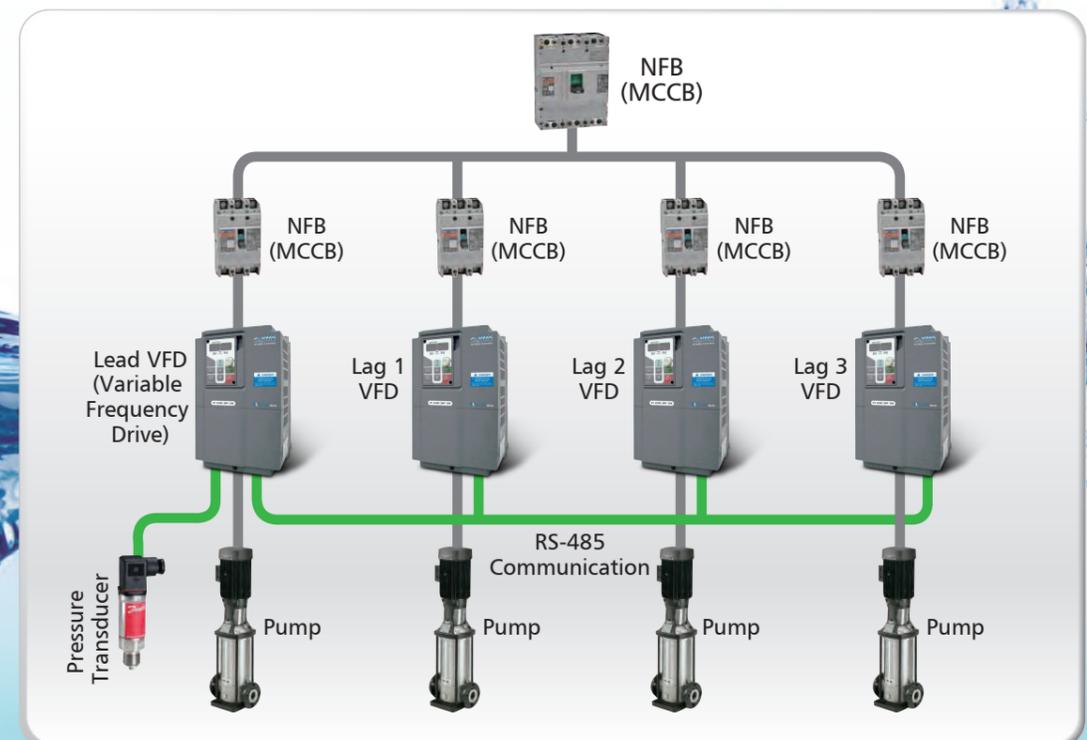
| Model name (RM6F5-□□□□) | 2001 | 2002 | 2003 | 2005 | 2007 | 2010 | 2015 | 2020 | 2025 | 2030 | 2040 | 2050 | 2060 | 2075 | 2100 | 2125 | 2150 | 2200 | 2250 |
|---|--|-------|-------|-------|---------|--------|-------|-------|---------|--------------------|-------|-------|-------|-------|--------|--------|---------|---------|---------|
| Maximum applicable motor (HP / kW) | 1/0.75 | 2/1.5 | 3/2.2 | 5/3.7 | 7.5/5.5 | 10/7.5 | 15/11 | 20/15 | 25/18.5 | 30/22 | 40/30 | 50/37 | 60/45 | 75/55 | 100/75 | 125/90 | 150/110 | 200/160 | 250/200 |
| Rated output capability (kVA) | 1.6 | 2.6 | 3.8 | 5.8 | 9.5 | 12 | 16 | 22 | 28 | 34 | 43 | 55 | 67 | 83 | 105 | 132 | 154 | 223 | 267 |
| Rated output current (A) | 4.2 | 6.8 | 10 | 15.2 | 25 | 31 | 42 | 58 | 74 | 90 | 112 | 144 | 175 | 218 | 275 | 346 | 405 | 585 | 700 |
| Rated output voltage (V) | Three-phase 200~240V | | | | | | | | | | | | | | | | | | |
| Range of output frequency (Hz) | 0.1~120.00Hz | | | | | | | | | | | | | | | | | | |
| Power source (φ, V, Hz) | Three-phase 200~240V 50/60Hz | | | | | | | | | | | | | | | | | | |
| Input current (A) | 5 | 8 | 12 | 18 | 30 | 41 | 55 | 66 | 85 | 103 | 128 | 176 | 200 | 240 | 280 | 330 | 380 | 550 | 660 |
| Permissible AC power source fluctuation | 176~264V 50/60Hz / ±5% | | | | | | | | | | | | | | | | | | |
| Overload protection | 120% of drive rated output current for 1 min | | | | | | | | | | | | | | | | | | |
| Cooling method | Nature cooling | | | | | | | | | Fan cooling | | | | | | | | | |
| Protective structure | IP20 | | | | | | | | | IP00 (IP20 OPTION) | | | | | | | | | |
| Weight / Mass(kg) | 1.8 | 1.8 | 1.9 | 2 | 5.3 | 5.3 | 5.4 | 5.7 | 16 | 16 | 16 | 17 | 40 | 41 | 44 | 61 | 89 | 164 | 164 |

Three-Phase 400V Series

| Model name (RM6F5-□□□□) | 4001 | 4002 | 4003 | 4005 | 4007 | 4010 | 4015 | 4020 | 4025 | 4030 | 4040 | 4050 | 4060 | 4075 | 4100 | 4125 | 4150 | 4175 | 4200 | 4250 | 4300 | 4350 | 4420 | 4500 | 4600 | 4700 | |
|---|--|-------|-------|-------|---------|--------|-------|-------|---------|--------------------|-------|-------|-------|-------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| Maximum applicable motor (HP / kW) | 1/0.75 | 2/1.5 | 3/2.2 | 5/3.7 | 7.5/5.5 | 10/7.5 | 15/11 | 20/15 | 25/18.5 | 30/22 | 40/30 | 50/37 | 60/45 | 75/55 | 100/75 | 125/90 | 150/110 | 175/132 | 200/160 | 250/200 | 300/250 | 350/250 | 420/315 | 500/375 | 600/450 | 700/500 | |
| Rated output capability (kVA) | 1.9 | 2.7 | 3.7 | 6.1 | 8.4 | 13 | 17 | 23 | 28 | 34 | 43 | 56 | 66 | 82 | 105 | 134 | 160 | 193 | 232 | 287 | 316 | 366 | 396 | 533 | 655 | 732 | |
| Rated output current (A) | 2.5 | 3.5 | 4.8 | 8 | 11 | 17 | 22 | 30 | 37 | 45 | 56 | 73 | 87 | 108 | 138 | 176 | 210 | 253 | 304 | 377 | 415 | 480 | 520 | 700 | 860 | 960 | |
| Rated output voltage (V) | Three-phase 380~480V | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Range of output frequency (Hz) | 0.1~120.00Hz | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power source (φ, V, Hz) | Three-phase 380~480V 50/60Hz | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input current (A) | 3 | 4.2 | 5.8 | 9.6 | 13 | 20 | 25 | 38 | 42 | 52 | 64 | 84 | 100 | 130 | 155 | 177 | 196 | 217 | 282 | 355 | 385 | 440 | 540 | 650 | 800 | 900 | |
| Permissible AC power source fluctuation | 332~528V 50/60Hz / ±5% | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Overload protection | 120% of drive rated output current for 1 min | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cooling method | Nature cooling | | | | | | | | | Fan cooling | | | | | | | | | | | | | | | | | |
| Protective structure | IP20 | | | | | | | | | IP00 (IP20 OPTION) | | | | | | | | | | | | | | | | | |
| Weight / Mass(kg) | 1.8 | 1.8 | 1.9 | 2 | 2 | 5.3 | 5.4 | 5.6 | 5.7 | 5.8 | 16 | 16 | 17 | 18 | 44 | 45 | 47 | 65 | 91 | 95 | 97 | 159 | 163 | 217 | 217 | 272 | |

Simple and easy control framework, stable system

Simple and easy control framework, time saving installation, single spare parts; only need to set parameter to expand number of VFDs in parallel connection (maximum number of machines in parallel connection: four VFDs), lag VFD will automatically take over when the lead VFD behaves abnormally, so eliminated the risk of system shutdown caused by traditional controller failure.



Smart manual / automatic separation function (in parallel connection constant pressure mode)

Specially designed for Process Cooling Water (PCW), to provide a separation function for pumps in parallel connection with stable pressure; in a multiple pumps constant pressure system, if any one of the pumps been shut down in the automatic control mode, a process abnormality will be caused by excessive and instant fluctuation of pressure in the system; the manual separation function can maintain the operation frequency in the automatic control mode, and the user can manually adjust the frequency to slow down the system in order to maintain stable system pressure during the separation of pumps in parallel connection.



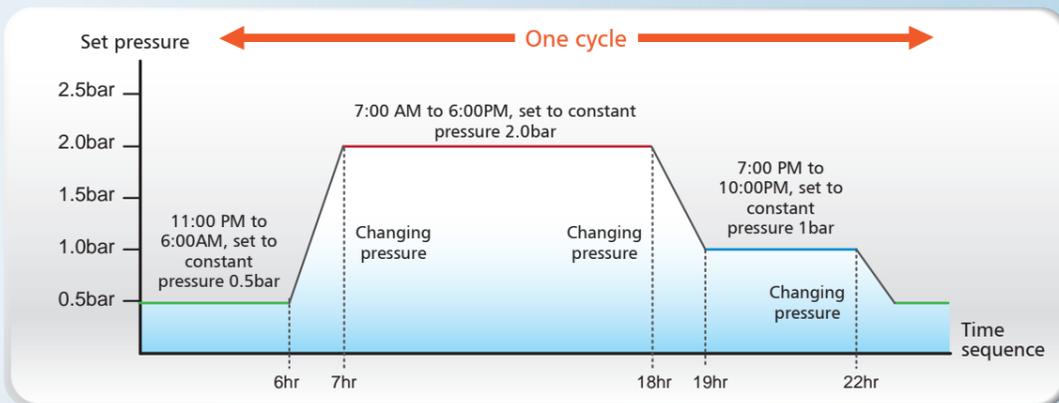
If Pump A is in automatic constant pressure mode, in case of emergency, the pump must be separated from automatic constant pressure mode the user can directly press the "HAND ON" button to manually reduce the frequency from the operation frequency memorized in automatic constant pressure mode to stop system.



Pump B is in standby mode; while Pump A is switched into manual mode, Pump B will automatically take over operation, so that the separation of Pump A will not cause a sudden drop in system water pressure.

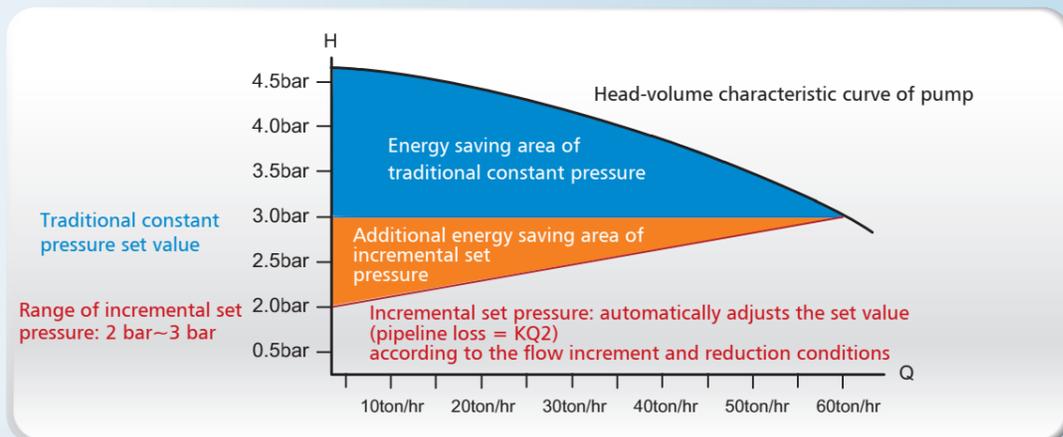
Smart sequential constant pressure adjustment in water supply

Smart period constant pressure adjustment in water supply can set water supply pressure according to daily routines and automatically adjust the water supply pressure during peak / non-peak hours in order to save energy, reduce leakage and protect the pipelines; eight periods can be set at most, with the longest cycle period being one week; a gradient adjustment function is also available.



Pipeline loss automatic compensation function

Calculates pipeline loss according to the flow, and automatically adjusts the pressure set value for the water supply in constant pressure, making it more energy saving than the general frequency conversion constant pressure water supply systems.

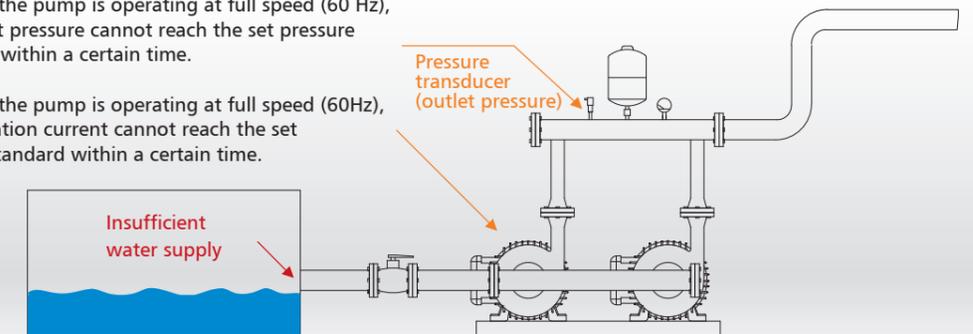


No flow / Deadhead protection system

Protection function specially designed for the pump, which can set protection parameters according to environment requirements in order to avoid shaft seal or impeller damages caused by the pump running without water.

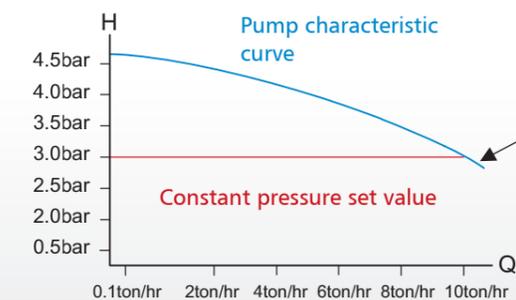
No flow / Deadhead protection

- (1) When the pump is operating at full speed (60 Hz), the outlet pressure cannot reach the set pressure standard within a certain time.
- (2) When the pump is operating at full speed (60Hz), the operation current cannot reach the set current standard within a certain time.

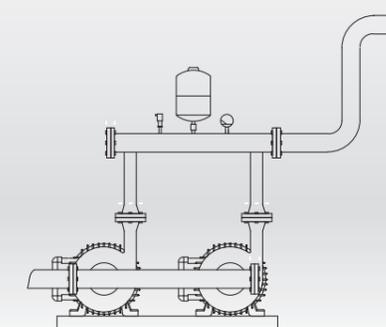


Low Pressure Feedback Protection and High Pressure Feedback Alert

This function specially designed for centrifugal pump, when the pump operated in dry-running or out of the constant pressure curve, it will be protected or send an alarm according to the parameter settings to avoid damages caused by dry-running or cavitation.



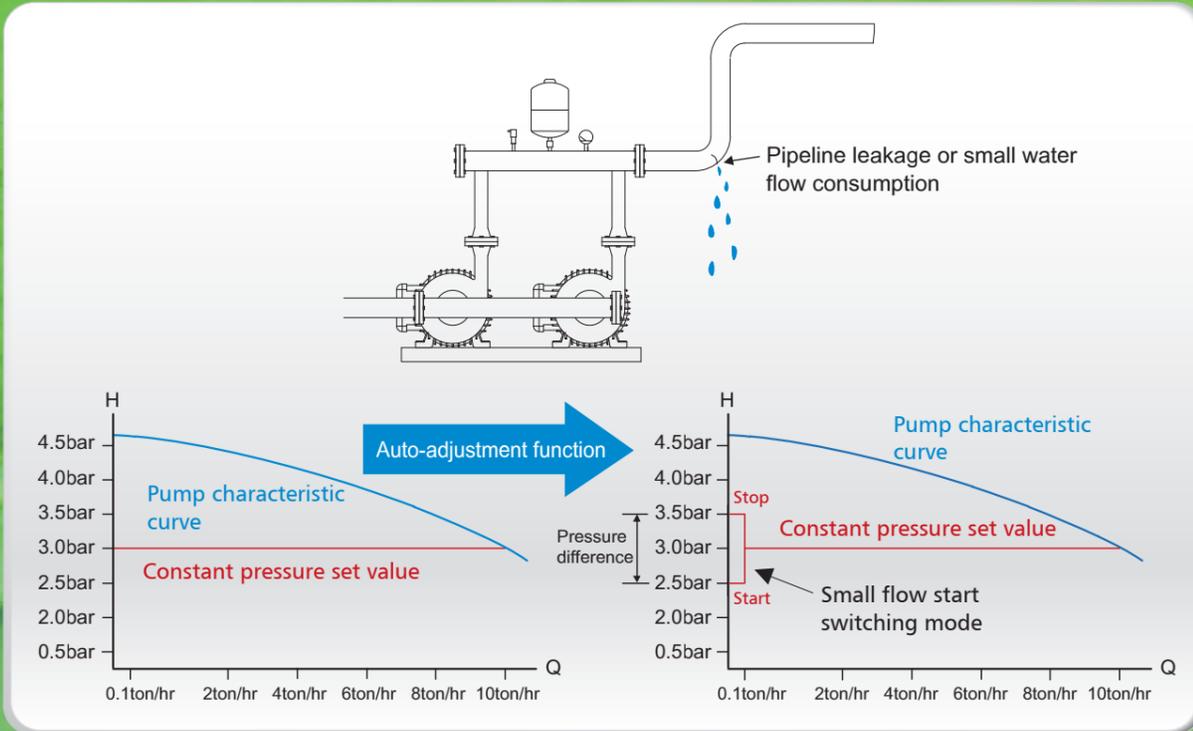
Low pressure feedback protection: When the pump is operating at full speed (60Hz), the outlet pressure cannot reach the set pressure point at the pump curve end within a certain time.



High pressure feedback alarm: When the outlet water pressure reaches the excessive pressure protection point and lasts for a certain time, the frequency inverter will start the alarm function.

Automatic adjustment for start and stop while pipeline leakage

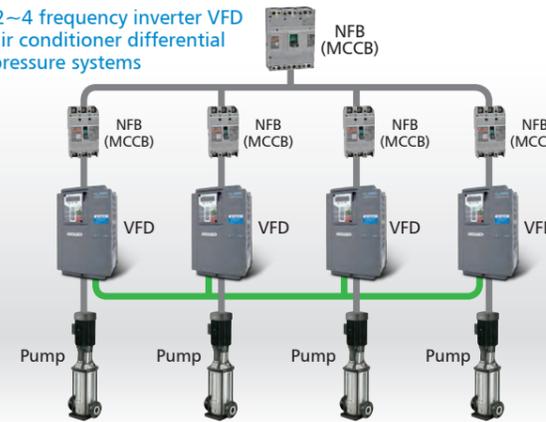
While pipeline leakage or frequently small water flow consumption occurs, the automatic adjustment function can be set to avoid wasting the energy of a long period pump keep running in low speed and to reduce unnecessary operation noise.



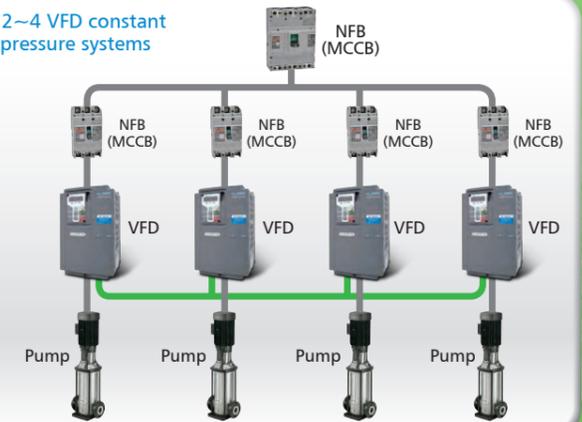
Switching between different system control mode

Build-in several constant pressure control modes for different applications, and only need simple and easy parameters setting to switch between a different control modes.

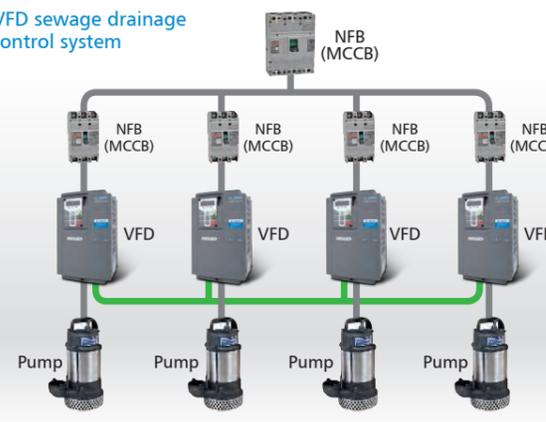
(A) 2~4 frequency inverter VFD air conditioner differential pressure systems



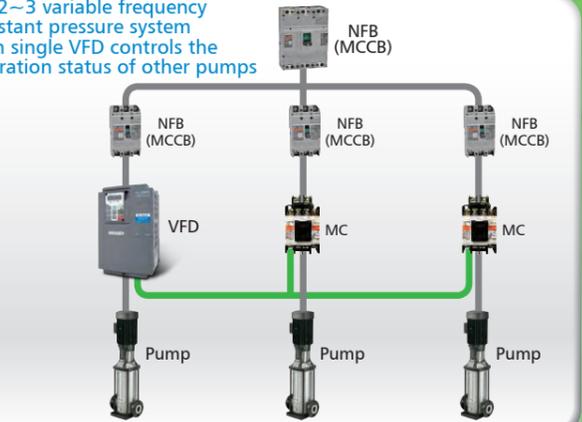
(B) 2~4 VFD constant pressure systems



(C) VFD sewage drainage control system



(D) 2~3 variable frequency constant pressure system with single VFD controls the operation status of other pumps



User friendly control mode

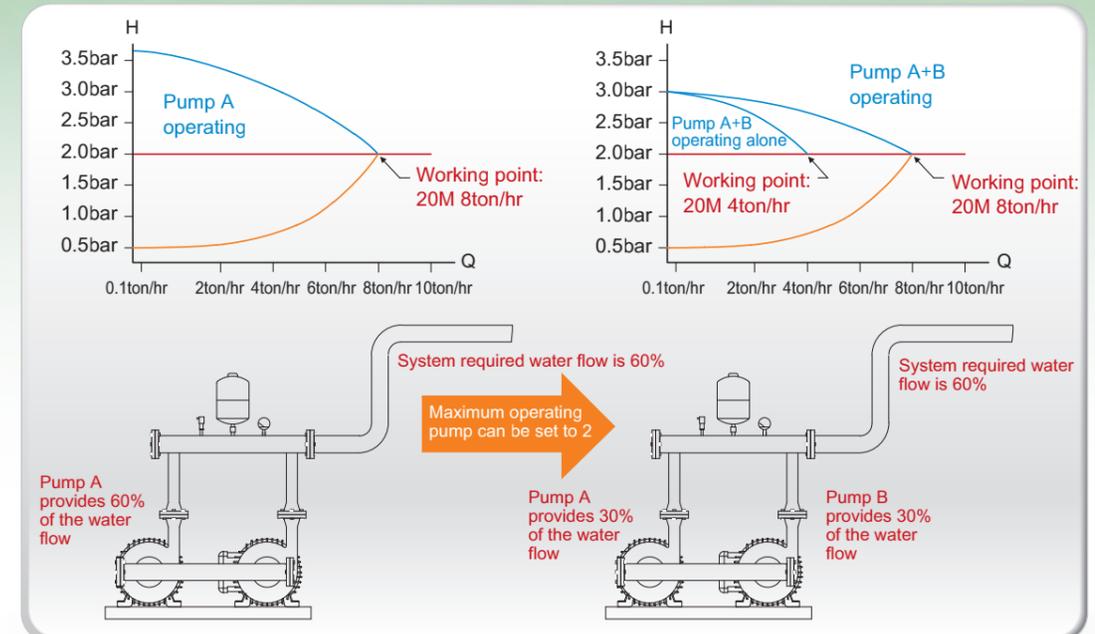
Build-in multiple parallel constant pressure control mode: While expending or replacing VFD for maintenance, the parameter settings of the lead VFD can be directly copied into other lag VFDs through internal communication; furthermore, the operation of the VFD can also be controlled by the HMI (human machine interface) or a PC through external communication.

Copy the parameter settings of lead VFD to lag VFD through internal communication



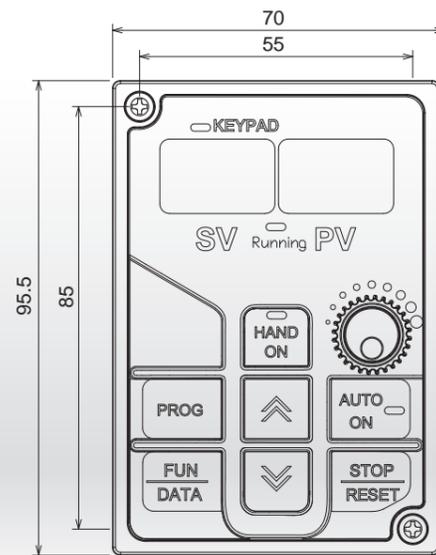
Process Cooling Water system operation function

Specially designed for processed cooling water (PCW), you can set up a minimum number of operating pumps to avoid process system abnormalities caused by an instant change of pressure when the operation of a single pump fails.

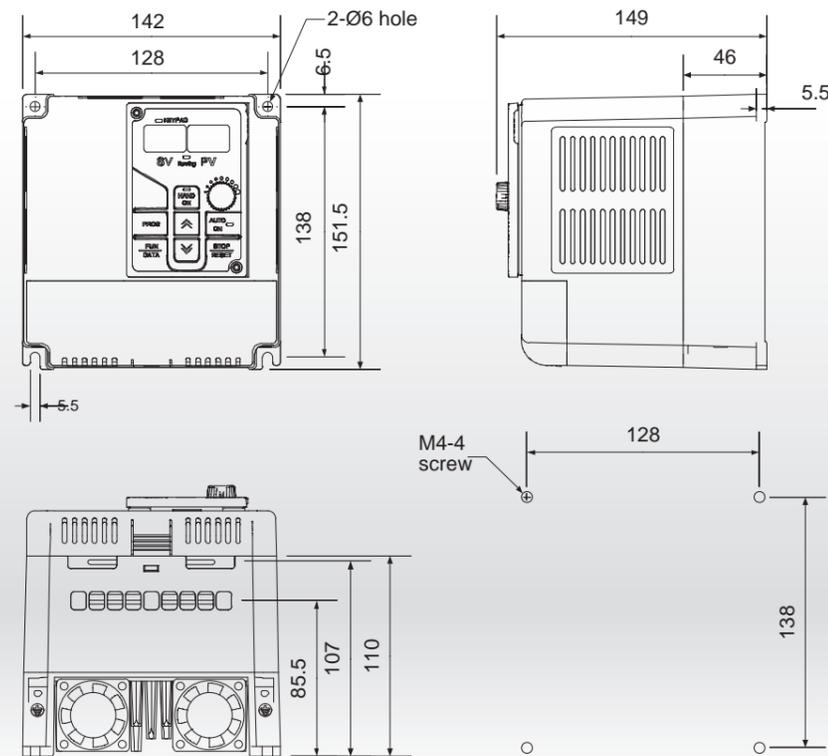


Outline Dimension Drawing of Drives

Dimension of Keypad (KP-605)

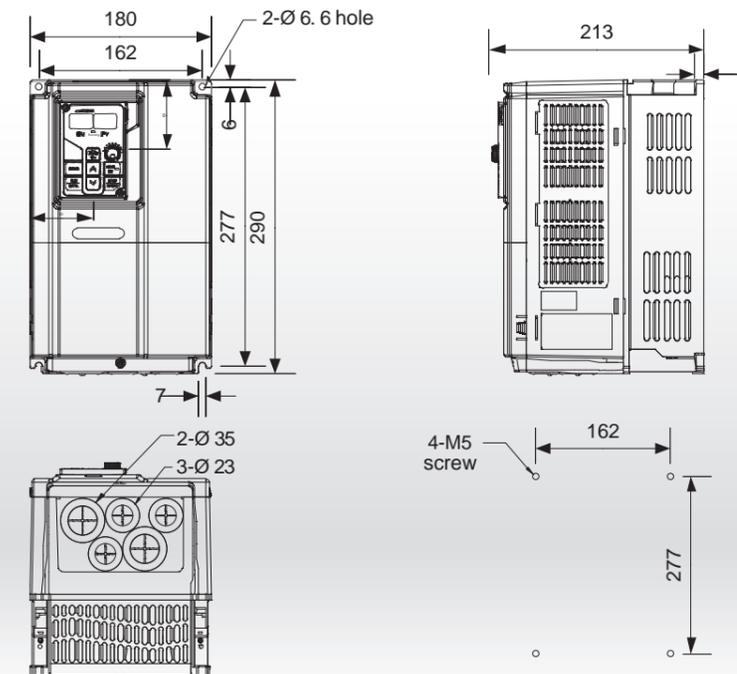


Model Number : RM6F5-2001,2002,2003,2005
RM6F5-4001,4002,4003,4005,4007



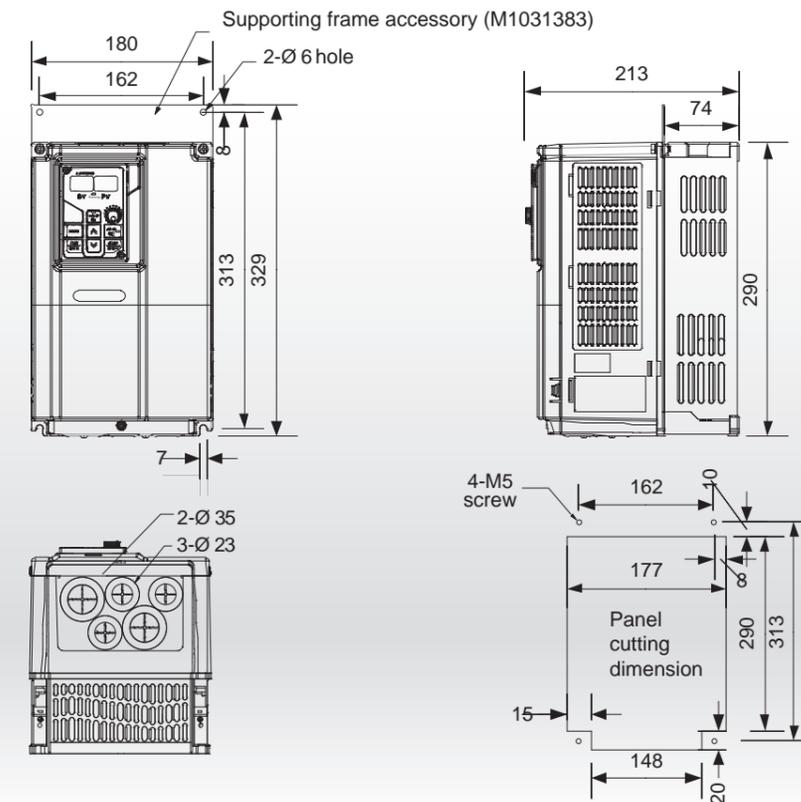
Internal cooling type

Model Number : RM6F5-2007,2010,2015,2020
RM6F5-4010,4015,4020,4025,4030



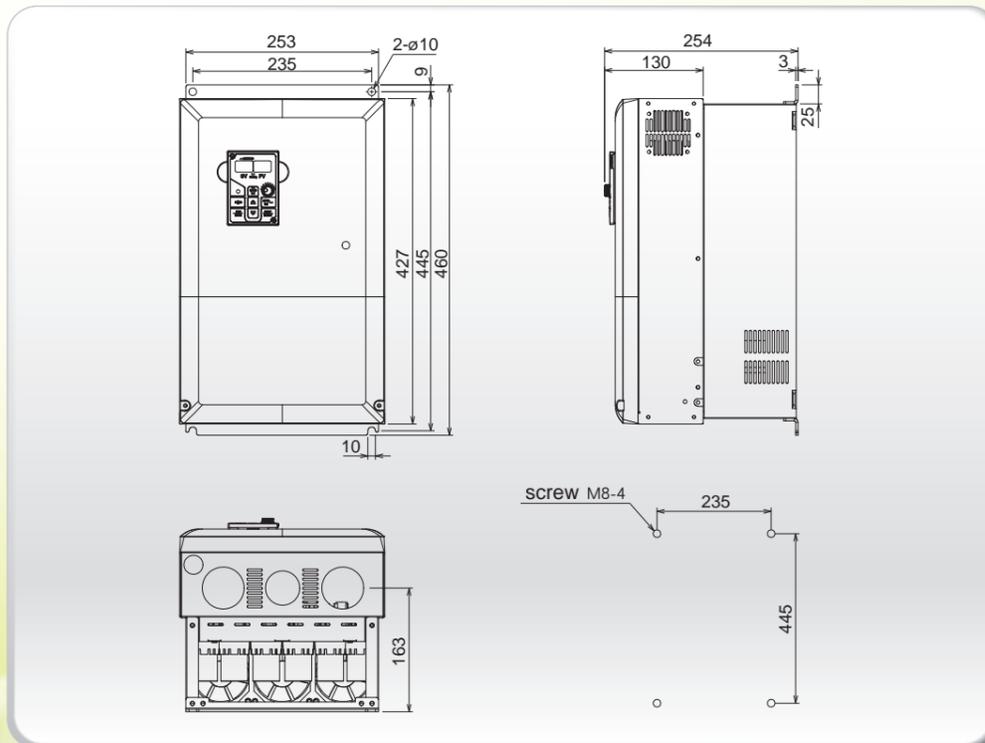
External cooling type

Model Number : RM6F5-2007,2010,2015,2020
RM6F5-4010,4015,4020,4025,4030



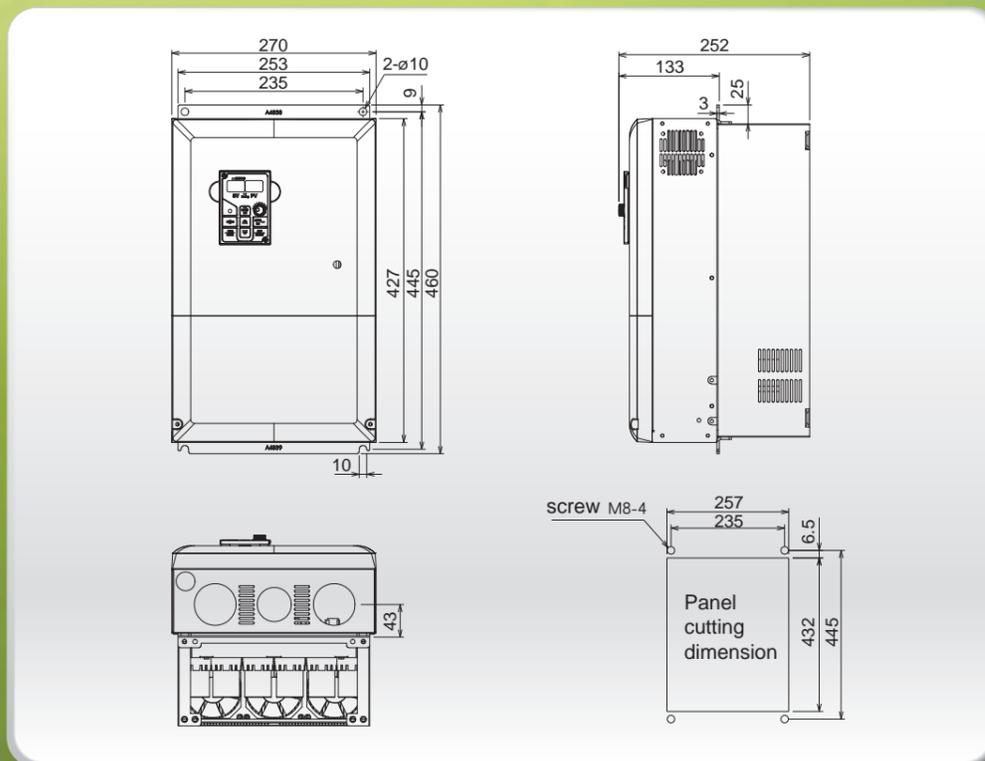
Internal cooling type

Model Number : RM6F5-2025,2030,2040,2050
RM6F5-4040,4050,4060,4075



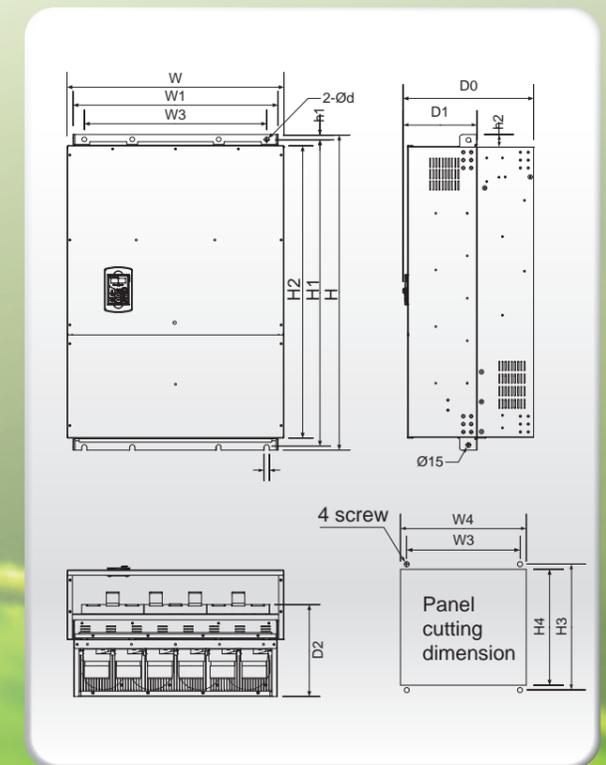
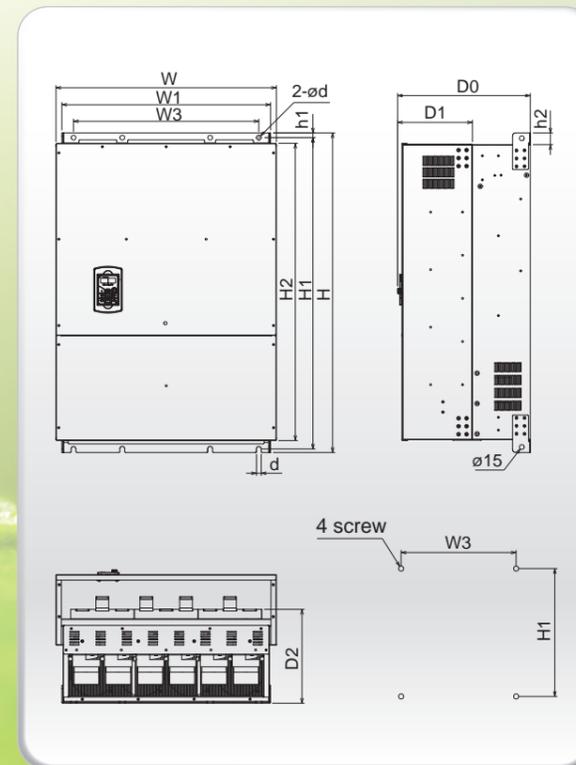
External cooling type

Model Number : RM6F5-2025,2030,2040,2050
RM6F5-4040,4050,4060,4075



Internal cooling type

Model Number : RM6F5-2060,2075,2100,2125,2150,2200,2250
RM6F5-4100,4125,4150,4175,4200,4250,4300,4350,4420,4500,4600,4700



| Model number | Dimension (mm) | | | | | | | | | | | | | | | | Screw (mm) | |
|----------------------|----------------|-----|-----|-----|------|------|-----|------|-----|----|----|----|-----|-----|-----|----|------------|-----|
| | W | W1 | W3 | W4 | H | H1 | H2 | H3 | H4 | h1 | h2 | h3 | D0 | D1 | D2 | d | | d1 |
| RM6F5-2060,2075,2100 | 386 | 361 | 275 | 365 | 584 | 562 | 539 | 564 | 545 | 11 | 25 | 10 | 339 | 184 | 242 | 10 | 3 | M8 |
| RM6F5-4100,4125,4150 | | | | | | | | | | | | | | | | | | |
| RM6F5-2125 | 446 | 418 | 275 | 427 | 685 | 660 | 630 | 662 | 634 | 14 | 30 | 12 | 348 | 186 | 246 | 12 | 3 | M10 |
| RM6F5-4175 | | | | | | | | | | | | | | | | | | |
| RM6F5-2150 | 508 | 479 | 275 | 487 | 818 | 785 | 751 | 788 | 758 | 19 | 35 | 12 | 380 | 197 | 257 | 15 | 3 | M12 |
| RM6F5-4200,4250,4300 | | | | | | | | | | | | | | | | | | |
| RM6F5-2200,2250 | 696 | 654 | 580 | 657 | 1000 | 974 | 929 | 978 | 936 | 15 | 39 | 18 | 419 | 238 | 294 | 15 | 3 | M12 |
| RM6F5-4350,4420 | | | | | | | | | | | | | | | | | | |
| RM6F5-4500,4600,4700 | 992 | 954 | 710 | 958 | 1030 | 1003 | 963 | 1007 | 968 | 15 | 39 | 19 | 433 | 249 | 308 | 15 | 3 | M12 |