

# PRODUCT COMPARISON

## FP605 VS. P1000

### MAIN FEATURE COMPARISON

Attribute	P1000	FP605
240 VAC, 3-Phase, UL Type 1	0.75 to 175 HP	3 to 150 HP
480 VAC, 3-Phase, UL Type 1	0.75 to 1000 HP	3 to 600 HP
240 VAC, 3-Phase, UL Type 12	N/A	3 to 40 HP
480 VAC, 3-Phase, UL Type 12	N/A	3 to 100 HP
240 VAC, 3-Phase, UL Type 12 w/Switch	N/A	3 to 40 HP
480 VAC, 3-Phase, UL Type 12 w/Switch	N/A	3 to 75 HP
Motor Control	V/F	V/F, OLV/PM, EZ Vector
5% Built-in Split-Choke	N/A	≤ 60 HP at 240 VAC ≤ 125 HP at 480 VAC
3% Built-in DC Link	≥ 40 HP	≥ 75 HP at 240 VAC ≥ 150 HP at 480 VAC
DC Input Power Ratings	N/A	✓
Maximum Output Frequency	400 Hz	400 Hz
Maximum Altitude, with Derate	3000 m	4000 m
Overload Tolerance	120% for 60 s	110% for 60 s 140% for 2 s 175% instantaneous

### PHYSICAL COMPARISON

Attribute	P1000	FP605
IP20/Protected Chassis	✓	✓
IP20/UL Type 1	✓	✓
IP55/UL Type 12	N/A	✓
IBC,OSHDP	✓	Future
Maximum Temp w/Derate (IP20)	50°C	60°C
Maximum Temp w/Derate (IP55)	N/A	50°C
Maximum Storage Temperature	-20 to +60°C	-20 to +70°C
Keyhole Mounting	N/A	✓
Side-by-Side Mountable	≤30 HP (240 V) ≤30 HP (480 V)	≤40 HP (240 V) ≤100 HP (480 V)
Euro-Style Power Terminals	N/A	≤ 20 HP (240 V) ≤ 50 HP (480 V)
Cooling Fan Control	N/A	✓
Conformal Coating	✓	✓

✓: Standard

\*1: Contact factory for details.



### EASE OF USE COMPARISON

Attribute	P1000	FP605
Mobile Programming App *1	N/A	✓
Cloud Service/Storage *1	N/A	✓
Dedicated/Color Coded Keys	✓	✓
Remote Mountable Keypad	✓	✓
LED Status Ring	N/A	✓
Program without Main Power	N/A	✓
Firmware Upgrade without Main Power	N/A	✓
QR Code	N/A	✓
Real Time Clock	✓	✓
Keypad Parameter Storage	1 set	4 sets
Data Logging	N/A	✓

### FLEXIBILITY COMPARISON

Attribute	P1000	FP605
Enhanced PM Motor Control	N/A	✓
SynRM Motor Control	N/A	✓
Safe-Torque-Off	N/A	SIL3, PLe
24 VDC Power Output	Option	✓
24 VDC External Power Input	Not dedicated	✓
Recycling and Harmful Materials	RoHS	RoHS 2
DC / Common Bus	✓	✓

# PRODUCT COMPARISON: FP605 VS. P1000

## FP605 HARDWARE ENHANCEMENTS

### POWER ENHANCEMENTS

- Standalone drives: IP20/UL Type1, IP55/UL Type 12
- 24 VDC customer input terminal to maintain network communications and allow for keypad programming and monitoring without three-phase power
- Functional safety certified (PLe, SIL3) w/ functional safety inputs and programmable EDM output
- Keyhole mounting built into heatsink for fast and easy installation
- Extended maximum altitude (4000 m, with derate)
- 40 °C standard ambient for IP20/UL Type 1 & IP55/UL Type 12
- 50 °C standard ambient for IP20/UL Protected Chassis
- 50 °C maximum ambient with derate for IP55/UL Type 12
- 60 °C maximum ambient with derate for IP20/UL Type 1 and IP20/UL Open Type
- Temperature controlled fans
- Access main power terminals without removing covers
- Euro-style power terminals for bare wire or straight wiring
- Conformal coated (IEC 60721-3-3, IP20/UL Type 1: 3C2, 3S2; IP55/UL Type 12: 3C2, 3S3)
- Improved keypad (dedicated tactile, direction, color and coded buttons)
- Side-by-side mounting (2011 to 2114 and 4005 to 4124)

### EASE OF USE ENHANCEMENTS

- LED Status Ring for clear drive operational status
- No power programming and firmware upgrade
- QR code for fast and easy Yaskawa Drive Cloud registration
- Short circuit current rating (SCCR) stated on nameplate
- Updated inbox media
  - Installation and primary operation
  - Mounting and drilling templates
  - Quick setup procedures

### FLEXIBILITY ENHANCEMENTS

- USB On-The-Go communications via DriveWizard Mobile app
- Cloud service (Yaskawa Drive Cloud) for product registration and parameter storage
- 24 VDC customer supplied input terminal for power loss ride-through
- Integrated 24 VDC control power for customer use (150 mA, max)
- Simplified Integrated Modbus RTU control (D+/D-)
- Mini-B USB PC interface port

## FP605 PROGRAMMING ENHANCEMENTS

### KEY PROGRAMMING ENHANCEMENTS

- Expert access level for power users
- Digital input on and off delay time settings (0.0 to 300.0 Seconds)
- Digital output off-delay time settings
- Control additional digital inputs using Modbus registers and with other network protocols
- Control digital outputs using Modbus register/other network protocols
- Digital output logic operation – output activates based on results of two digital output functions
- Control analog inputs using Modbus register and with other network protocols
- Custom analog output power level (set % kW equal to 10 VDC)
- Change Modbus and network parameter without power cycling
- Analog/Digital Virtual I/O – internally sends an output to an input (no wiring needed)
- Modbus CE error response settings – go-to-frequency, go-to-timeout, fault restart
- Customizable fault reset – enable/disable fault reset for low feedback, high feedback, feedback loss, speed search retry, setpoint not met, loss of prime
- Improved DC bus stabilization (quicker deceleration times, less programming for continuous operation)
- Custom monitors – customizable home screen, up to 12 custom monitors
- Custom screens – bar graphs, trend plot, and analog gauge
- Date/time stamp for all drive faults
- Keypad backlight adjustment – backlight on/off selection and delay to off time
- Initial setup screen – language selection, set date and time
- Select motor power unit display (HP or kW)
- Auto parameter back up into keypad
- Store up to four additional parameter sets in keypad
- Data logging – record status of up to 10 monitors with adjustable sample time
- Dedicated PID Setpoint setting and LOCAL selection
- Keypad RUN status saved during power loss
- Improvements to emergency override – min/max speed setting, 16 preset speeds, and more
- Fully customizable auxiliary PID control
- Output current limit selection: limit current output based on amp setting

### STANDARD PID CONTROL ENHANCEMENTS

- Integrator ramp limit
- Select PID feedback to be a drive monitor
- Custom characters (3) for PID units
- 4-20 mA wire break detection
- Go-to-frequency ability after wire break detected
- Loss of prime feedback loss detection

### PID MULTIPLEX MODE

- Self-regulating contactor multiplexing (up to five fixed speed lag pump motors)
- Up to four PID setpoints
- Draw down level selection for PID setpoint
- Anti-no-flow control for deadhead protection
- Pre-charge pump functionality
- Low city alarm digital input
- Stage/de-stage control – add/remove drive based on feedback or output frequency

IT'S PERSONAL

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