

Power Gate

The HVAC SOLUTION



DELIVERING POWER...SAVING ENERGY

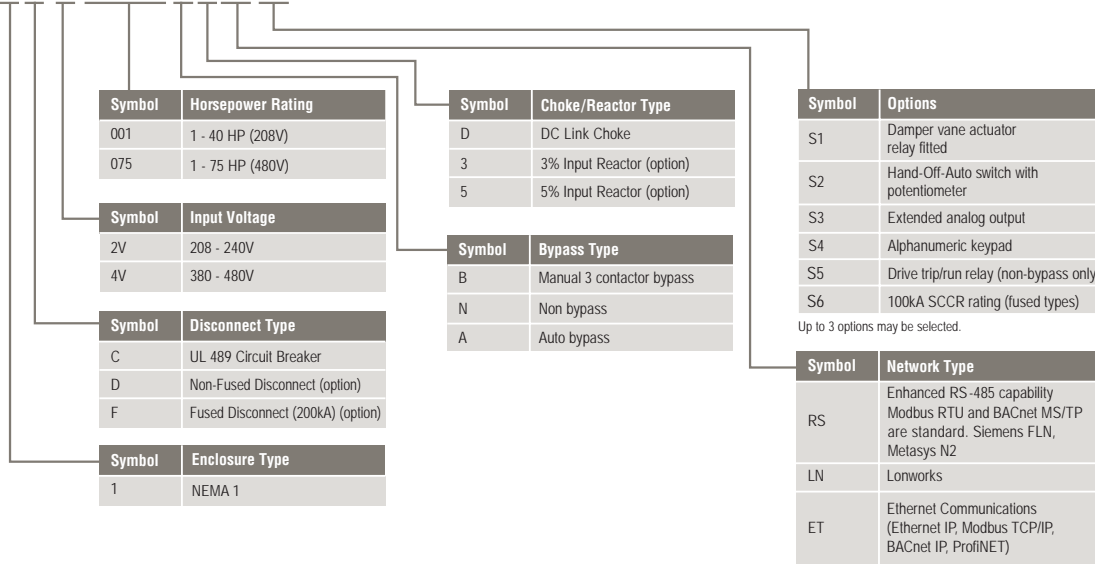
**Empowering
Industries**

 **MITSUBISHI ELECTRIC
AUTOMATION, INC.**



POWERGATE - COST EFFECTIVE SOLUTIONS FOR

F 1



Select one option if required.

NEMA 1 CONTROLLERS

NEMA 1, UL-1 construction

Sizes up to 40HP 208V, 75HP 480V

Plenum rated

Compact and high quality construction

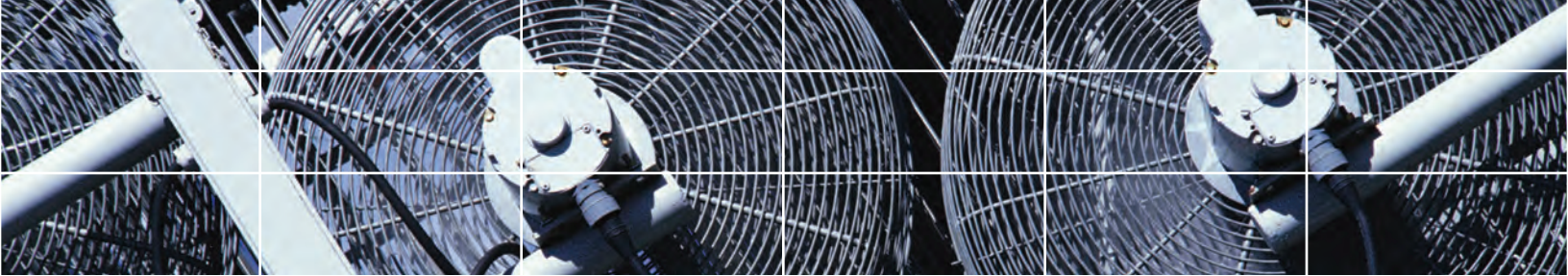
DC link choke as standard

Option of 3% or 5% input reactor

Molded case circuit breaker as standard

Option of plain or fused disconnect





OUTSTANDING PERFORMANCE

F

Symbol	Horsepower Rating
001	1 - 250 HP (480V)
250	1 - 150 HP (208V)

Symbol	Input Voltage
2V	208 - 240V
4V	380 - 480V

Symbol	Disconnect Type
C	UL 489 Circuit Breaker
D	Non-Fused Disconnect (option)
F	Fused Disconnect (200KA) (option)

Symbol	Enclosure Type
2	NEMA 12
3	NEMA 3R

Symbol	Choke/Reactor Type
D	DC Link Choke
3	3% Input Reactor (option)
5	5% Input Reactor (option)

Symbol	Bypass Type
B	Manual 3 contactor bypass
N	3 Contactor non bypass (option)
A	Auto bypass (option)

Symbol	Options
S1	Damper vane actuator relay fitted
S2	Hand-Off-Auto switch with potentiometer
S3	Extended analog output
S4	Alphanumeric keypad
S5	Drive trip/run relay (non-bypass only)
S6	100kA SCCR rating (fused types)

Up to 3 options may be selected.

Symbol	Network Type
RS	Enhanced RS-485 capability Modbus RTU and BACnet MS/TP are standard. Siemens FLN, Metasys N2
LN	Lonworks
ET	Ethernet Communications (Ethernet IP, Modbus TCP/IP, BACnet IP, ProfiNET)

Select one option if required.

NEMA 3R AND NEMA 12 CONTROLLERS

Anti-condensation heater as standard (NEMA 3R)

Reflective paint for cool operation outside

Wall or floor mounted versions

NEMA 3R and NEMA 12 types have shared platform

Standard versions up to 250HP available

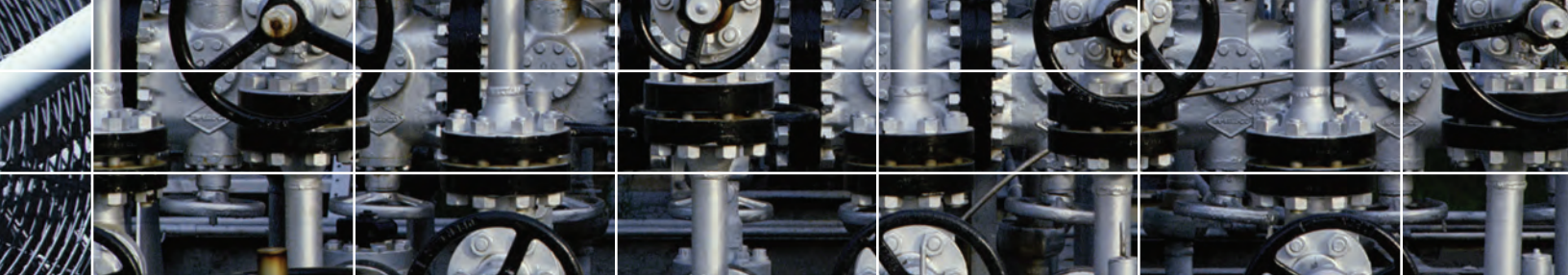
DC link choke as standard

Option of 3% or 5% input reactor

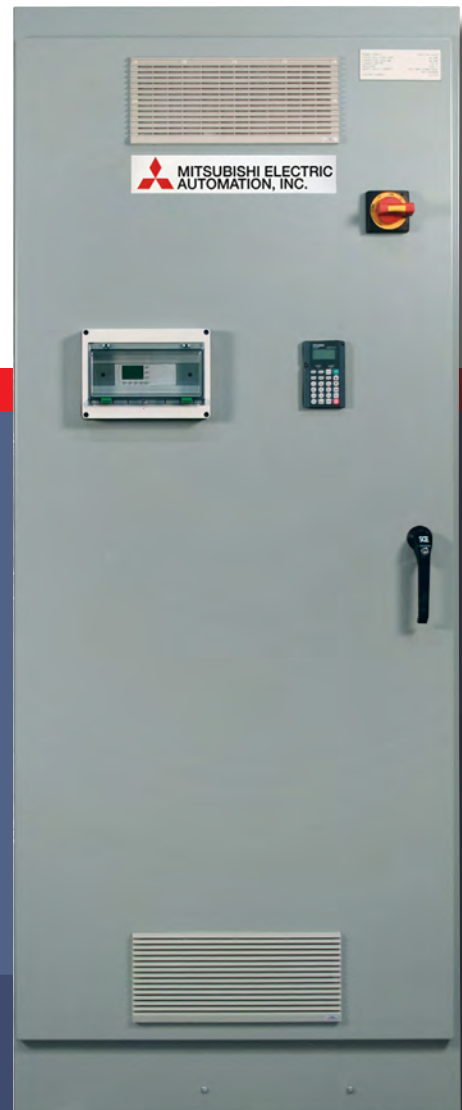
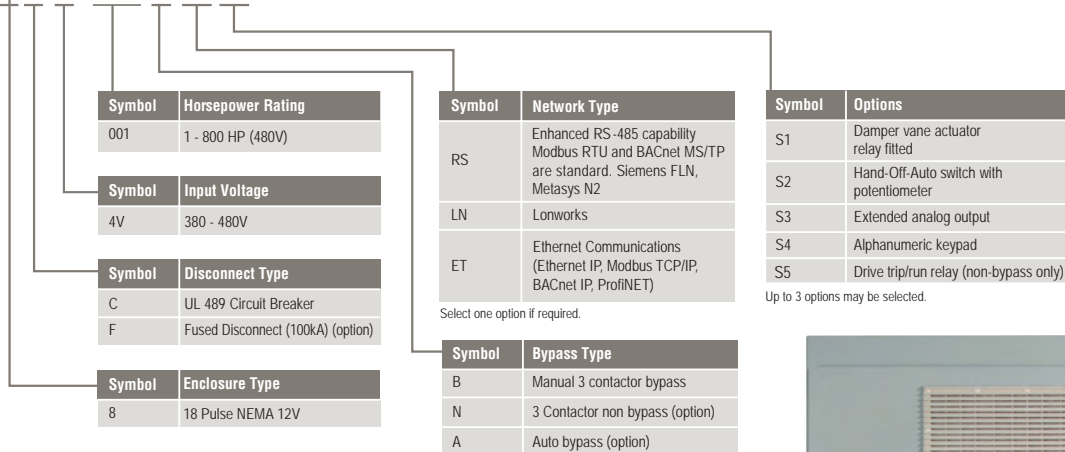
Molded case circuit breaker as standard

Option of plain or fused disconnect





F 8 4V 001



18 PULSE CONTROLLERS

Where power quality is the top priority

Meets the toughest demands of IEEE519*

Current harmonic distortion < 5%

Voltage harmonic distortion < 5%

NEMA 12V construction

Top or bottom power entry

Integral phase shift transformer

Available in sizes up to 800HP

* Compliance with IEEE519 is dependent upon site conditions.
Site harmonic calculations can be provided free of charge on request

POWERGATE VFD SYSTEM

The flexible design of the PowerGate VFD system delivers class-leading performance and value to the HVAC industry; starting with an easy-to-use and dependable range of basic controllers, PowerGate can easily be specified with as many additional features as needed – making it a perfect match for any pump or fan control application, from the simplest to the most demanding.

Simple to Use

- Average set-up is less than eight parameters
- Multi-function programmer and display for intuitive commissioning
- All controls pre-wired to the easy-to-reach terminal block
- Mitsubishi's Energy Optimization mode maximizes energy savings automatically
- Internal fused control transformer*
- HELP function with troubleshooting feature
- Last 8 trip messages stored permanently in memory
- AUTO CAD documentation package supplied with every unit

Safe

- Interlocked 3 contactor bypass circuit with 'Test' mode*
- Dedicated emergency stop circuit*
- Dedicated 'Fireman's mode'*
- Class 20 thermal overload relay*

Versatile

- Multiple options – Flexible enough for any application
- 2 independent PID control loops
- 3 programmable skip frequency bands
- Can communicate with any BAS / BEMS system
- Damper end switch and damper actuator relay*
- Manual or Auto Bypass versions*
- Bi-directional coasting restart
- 15 pre-set speeds
- Accepts any analog signal

Dependable

- Mitsubishi class leading drive technology
- Generously sized components – prevents nuisance tripping
- UL508A construction; made in the USA
- ISO9000 certified
- Backed by 2 year warranty
- 5 second power dip ride-through

* These features are for Bypass Controllers only

TECHNICAL DATA

Input Ratings

- Voltage: 3-phase, 200-240V; 380-480V -15% / +10%
- Frequency: 50/60 Hz; ±5%

Output Ratings

- 0 volts to max voltage
- Frequency 0-400Hz
- Overload rating
- 120% for 60s (150% for 3s)

Environment

- 95% RH (non-condensing)
- 14°F to 104°F ambient (-10°C to + 40°C)

I/O Control

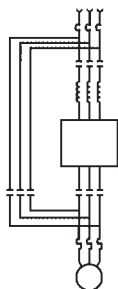
- 4 programmable analog inputs
- 7 programmable digital inputs
- 6 programmable open collector outputs
- 2 programmable analog outputs
- 2 system fault outputs

Protection

- Over-current (3 modes)
- Overload (2 modes)
- Under-voltage
- Ground-fault
- Motor stall
- Retry time-out
- Microprocessor fault (2 modes)
- Over-voltage (3 modes)
- Instant power loss
- Overheat
- Motor overheat (I²t)
- Option alarm
- CPU fault (3 modes)
- Output phase loss
- Power supply fault

Options

- BAS Network Package (RS-485)
- BAS Network Package (Ethernet)
- Circuit breaker or fused disconnect
- 3% or 5% input reactors
- Hand-Off-Auto switch with potentiometer
- Alphanumeric keypad
- Automatic bypass
- Non bypass
- NEMA 12 version
- 18 pulse version
- 100kA SCCR rating



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