# PowerFlex 525 Adjustable Frequency AC Drive

## Parameter Groups

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|---|---|---|---|---|---|---|---|---|---|
| **Basic Display** | **b** | Drive Status | b006 | Control Source | b012 | Power Saved | b018 | Accum kWh Sav | b024 |
| Output Freq | b001 | Fault 1 Code | b007 | Contrl In Status | b013 | Elapsed Run Time | b019 | Accum Cost Sav | b025 |
| Commanded Freq | b002 | Fault 2 Code | b008 | Dig In Status | b014 | Average Power | b020 | Accum CO2 Sav | b026 |
| Output Current | b003 | Fault 3 Code | b009 | Output RPM | b015 | Elapsed kWh | b021 | Drive Temp | b027 |
| Output Voltage | b004 | Process Display | b010 | Output Speed | b016 | Elapsed MWh | b022 | Control Temp | b028 |
| DC Bus Voltage | b005 | Process Fract | b011 | Output Power | b017 | Energy Saved | b023 | Control SW Ver | b029 |
| **Basic Program** | **P** | Motor NP FLA | P034 | Torque Perf Mode | P039 | Maximum Freq | P044 | Speed Reference2 | P049 |
| Language | P030 | Motor NP Poles | P035 | Autotune | P040 | Stop Mode | P045 | Start Source 3 | P050 |
| Motor NP Volts | P031 | Motor NP RPM | P036 | Accel Time 1 | P041 | Start Source 1 | P046 | Speed Reference3 | P051 |
| Motor NP Hertz | P032 | Motor NP Power | P037 | Decel Time 1 | P042 | Speed Reference1 | P047 | Average kWh Cost | P052 |
| Motor OL Current | P033 | Voltage Class | P038 | Minimum Freq | P043 | Start Source 2 | P048 | Reset To Defalts | P053 |
| **Terminal Blocks** | **t** | Opto Out1 LevelF | t071 | Relay Out2 Sel | t081 | Anlg In 0-10V Lo | t091 | Sleep Level | t101 |
| DigIn TermBlk 02 | t062 | Opto Out2 Sel | t072 | Relay Out2 Level | t082 | Anlg In 0-10V Hi | t092 | Sleep Time | t102 |
| DigIn TermBlk 03 | t063 | Opto Out2 Level | t073 | Relay Out2 LevelF | t083 | 10V Bipolar Enbl | t093 | Wake Level | t103 |
| 2-Wire Mode | t064 | Opto Out2 LevelF | t074 | Relay 2 On Time | t084 | Anlg In V Loss | t094 | Wake Time | t104 |
| DigIn TermBlk 05 | t065 | Opto Out Logic | t075 | Relay 2 Off Time | t085 | Anlg In4-20mA Lo | t095 | Safety Open En | t105 |
| DigIn TermBlk 06 | t066 | Relay Out1 Sel | t076 | EM Brk Off Delay | t086 | Anlg In4-20mA Hi | t096 | SafetyFlt RstCfg[1] | t106 |
| DigIn TermBlk 07 | t067 | Relay Out1 Level | t077 | EM Brk On Delay | t087 | Anlg In mA Loss | t097 | | |
| DigIn TermBlk 08 | t068 | Relay Out1 LevelF | t078 | Analog Out Sel | t088 | Anlg Loss Delay | t098 | | |
| Opto Out1 Sel | t069 | Relay 1 On Time | t079 | Analog Out High | t089 | Analog In Filter | t099 | | |
| Opto Out1 Level | t070 | Relay 1 Off Time | t080 | Anlg Out Setpt | t090 | Sleep-Wake Sel | t100 | | |
| **Communications** | **C** | EN IP Addr Cfg 3 | C131 | EN Comm Flt Actn | C143 | EN Data In 4 | C156 | Opt Data Out 3 | C167 |
| Comm Write Mode | C121 | EN IP Addr Cfg 4 | C132 | EN Idle Flt Actn | C144 | EN Data Out 1 | C157 | Opt Data Out 4 | C168 |
| Cmd Stat Select | C122 | EN Subnet Cfg 1 | C133 | EN Flt Cfg Logic | C145 | EN Data Out 2 | C158 | MultiDrv Sel | C169 |
| RS485 Data Rate | C123 | EN Subnet Cfg 2 | C134 | EN Flt Cfg Ref | C146 | EN Data Out 3 | C159 | Drv 1 Addr | C171 |
| RS485 Node Addr | C124 | EN Subnet Cfg 3 | C135 | EN Flt Cfg DL 1 | C147 | EN Data Out 4 | C160 | Drv 2 Addr | C172 |
| Comm Loss Action | C125 | EN Subnet Cfg 4 | C136 | EN Flt Cfg DL 2 | C148 | Opt Data In 1 | C161 | Drv 3 Addr | C173 |
| Comm Loss Time | C126 | EN Gateway Cfg 1 | C137 | EN Flt Cfg DL 3 | C149 | Opt Data In 2 | C162 | Drv 4 Addr | C174 |
| RS485 Format | C127 | EN Gateway Cfg 2 | C138 | EN Flt Cfg DL 4 | C150 | Opt Data In 3 | C163 | DSI I/O Cfg | C175 |
| EN Addr Sel | C128 | EN Gateway Cfg 3 | C139 | EN Data In 1 | C153 | Opt Data In 4 | C164 | | |
| EN IP Addr Cfg 1 | C129 | EN Gateway Cfg 4 | C140 | EN Data In 2 | C154 | Opt Data Out 1 | C165 | | |
| EN IP Addr Cfg 2 | C130 | EN Rate Cfg | C141 | EN Data In 3 | C155 | Opt Data Out 2 | C166 | | |
| **Logic** | **L** | Stp Logic 6 | L186 | Stp Logic Time 5 | L195 | Step Units 2 | L204 | Step Units F 5 | L211 |
| Stp Logic 0 | L180 | Stp Logic 7 | L187 | Stp Logic Time 6 | L196 | Step Units F 2 | L205 | Step Units 6 | L212 |
| Stp Logic 1 | L181 | Stp Logic Time 0 | L190 | Stp Logic Time 7 | L197 | Step Units 3 | L206 | Step Units F 6 | L213 |
| Stp Logic 2 | L182 | Stp Logic Time 1 | L191 | Step Units 0 | L200 | Step Units F 3 | L207 | Step Units 7 | L214 |
| Stp Logic 3 | L183 | Stp Logic Time 2 | L192 | Step Units F 0 | L201 | Step Units 4 | L208 | Step Units F 7 | L215 |
| Stp Logic 4 | L184 | Stp Logic Time 3 | L193 | Step Units 1 | L202 | Step Units F 4 | L209 | | |
| Stp Logic 5 | L185 | Stp Logic Time 4 | L194 | Step Units F 1 | L203 | Step Units 5 | L210 | | |
| **Advanced Display** | **d** | Timer StatusF | d366 | Encoder Speed | d378 | PID2 Fdbk Displ | d385 | RdyBit Mode Act | d392 |
| Analog In 0-10V | d360 | Drive Type | d367 | Encoder Speed F | d379 | PID2 Setpnt Disp | d386 | Drive Status 2[1] | d393 |
| Analog In 4-20mA | d361 | Testpoint Data | d368 | DC Bus Ripple | d380 | Position Status | d387 | Dig Out Status[1] | d394 |
| Elapsed Time-hr | d362 | Motor OL Level | d369 | Output Powr Fctr | d381 | Units Traveled H | d388 | | |
| Elapsed Time-min | d363 | Slip Hz Meter | d375 | Torque Current | d382 | Units Traveled L | d389 | | |
| Counter Status | d364 | Speed Feedback | d376 | PID1 Fdbk Displ | d383 | Fiber Status | d390 | | |
| Timer Status | d365 | Speed Feedback F | d377 | PID1 Setpnt Disp | d384 | Stp Logic Status | d391 | | |

**Additional parameters are listed on the previous page.**

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|---|---|---|---|---|---|---|---|---|---|
| **Advanced Program** | **A** | Accel Time 3 | A444 | PID 2 Invert Err | A479 | PM HIFI NS Cur[1] | A519 | Drv Ambient Sel | A554 |
| Preset Freq 0 | A410 | Decel Time 3 | A445 | Process Disp Lo | A481 | PM Bus Reg Kd[1] | A520 | Reset Meters | A555 |
| Preset Freq 1 | A411 | Accel Time 4 | A446 | Process Disp Hi | A482 | Freq 1 Kp | A521 | Text Scroll | A556 |
| Preset Freq 2 | A412 | Decel Time 4 | A447 | Testpoint Sel | A483 | Freq 1 Ki | A522 | Out Phas Loss En | A557 |
| Preset Freq 3 | A413 | Skip Frequency 1 | A448 | Current Limit 1 | A484 | Freq 2 Kp | A523 | Positioning Mode | A558 |
| Preset Freq 4 | A414 | Skip Freq Band 1 | A449 | Current Limit 2 | A485 | Freq 2 Ki | A524 | Counts Per Unit | A559 |
| Preset Freq 5 | A415 | Skip Frequency 2 | A450 | Shear Pin1 Level | A486 | Freq 3 Kp | A525 | Enh Control Word | A560 |
| Preset Freq 6 | A416 | Skip Freq Band 2 | A451 | Shear Pin 1 Time | A487 | Freq 3 Ki | A526 | Home Save | A561 |
| Preset Freq 7 | A417 | Skip Frequency 3 | A452 | Shear Pin2 Level | A488 | PM FWKn 1 Kp[1] | A527 | Find Home Freq | A562 |
| Preset Freq 8 | A418 | Skip Freq Band 3 | A453 | Shear Pin 2 Time | A489 | PM FWKn 2 Kp[1] | A528 | Find Home Dir | A563 |
| Preset Freq 9 | A419 | Skip Frequency 4 | A454 | Load Loss Level | A490 | PM Control Cfg[1] | A529 | Encoder Pos Tol | A564 |
| Preset Freq 10 | A420 | Skip Freq Band 4 | A455 | Load Loss Time | A491 | Boost Select | A530 | Pos Reg Filter | A565 |
| Preset Freq 11 | A421 | PID 1 Trim Hi | A456 | Stall Fault Time | A492 | Start Boost | A531 | Pos Reg Gain | A566 |
| Preset Freq 12 | A422 | PID 1 Trim Lo | A457 | Motor OL Select | A493 | Break Voltage | A532 | Max Traverse | A567 |
| Preset Freq 13 | A423 | PID 1 Trim Sel | A458 | Motor OL Ret | A494 | Break Frequency | A533 | Traverse Inc | A568 |
| Preset Freq 14 | A424 | PID 1 Ref Sel | A459 | Drive OL Mode | A495 | Maximum Voltage | A534 | Traverse Dec | A569 |
| Preset Freq 15 | A425 | PID 1 Fdback Sel | A460 | IR Voltage Drop | A496 | Motor Fdbk Type | A535 | P Jump | A570 |
| Keypad Freq | A426 | PID 1 Prop Gain | A461 | Flux Current Ref | A497 | Encoder PPR | A536 | Sync Time | A571 |
| MOP Freq | A427 | PID 1 Integ Time | A462 | Motor Rr | A498 | Pulse In Scale | A537 | Speed Ratio | A572 |
| MOP Reset Sel | A428 | PID 1 Diff Rate | A463 | Motor Lm | A499 | Ki Speed Loop | A538 | Mtr Options Cfg | A573 |
| MOP Preload | A429 | PID 1 Setpoint | A464 | Motor Lx | A500 | Kp Speed Loop | A539 | RdyBit Mode Cfg | A574 |
| MOP Time | A430 | PID 1 Deadband | A465 | PM IR Voltage[1] | A501 | Var PWM Disable | A540 | Flux Braking En[1] | A575 |
| Jog Frequency | A431 | PID 1 Preload | A466 | PM IXd Voltage[1] | A502 | Auto Rstrt Tries | A541 | Phase Loss Level[1] | A576 |
| Jog Accel/Decel | A432 | PID 1 Invert Err | A467 | PM IXq Voltage[1] | A503 | Auto Rstrt Delay | A542 | Current Loop BW[1] | A580 |
| Purge Frequency | A433 | PID 2 Trim Hi | A468 | PM BEMF Voltage[1] | A504 | Start At PowerUp | A543 | PM Stable 1 Freq[1] | A581 |
| DC Brake Time | A434 | PID 2 Trim Lo | A469 | Speed Reg Sel | A509 | Reverse Disable | A544 | PM Stable 2 Freq[1] | A582 |
| DC Brake Level | A435 | PID 2 Trim Sel | A470 | Freq 1 | A510 | Flying Start En | A545 | PM Stable 1 Kp[1] | A583 |
| DC Brk Time@Strt | A436 | PID 2 Ref Sel | A471 | Freq 1 BW | A511 | FlyStrt CurLimit | A546 | PM Stable 2 Kp[1] | A584 |
| DB Resistor Sel | A437 | PID 2 Fdback Sel | A472 | Freq 2 | A512 | Compensation | A547 | PM Stable Brk Pt[1] | A585 |
| DB Threshold | A438 | PID 2 Prop Gain | A473 | Freq 2 BW | A513 | Power Loss Mode | A548 | PM Stepload Kp[1] | A586 |
| S Curve % | A439 | PID 2 Integ Time | A474 | Freq 3 | A514 | Half Bus Enable | A549 | PM 1 Efficiency[1] | A587 |
| PWM Frequency | A440 | PID 2 Diff Rate | A475 | Freq 3 BW | A515 | Bus Reg Enable | A550 | PM 2 Efficiency[1] | A588 |
| Droop Hertz@ FLA | A441 | PID 2 Setpoint | A476 | PM Initial Sel[1] | A516 | Fault Clear | A551 | PM Algor Sel[1] | A589 |
| Accel Time 2 | A442 | PID 2 Deadband | A477 | PM DC Inject Cur[1] | A517 | Program Lock | A552 | | |
| Decel Time 2 | A443 | PID 2 Preload | A478 | PM Align Time[1] | A518 | Program Lock Mod | A553 | | |
| **Network** | **N** | This group contains parameters for the network option card that is installed. | | | | | | | |
| **Modified** | **M** | This group contains parameters that have their values changed from the factory default. | | | | | | | |

**Additional parameters are listed on the next page.**

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|---|---|---|---|---|---|---|---|---|---|
| **Fault and Diagnostic** | **F** | Fault 7 Time-min | F627 | Fault 1 BusVolts | F651 | EN Rate Act | F685 | Drv 1 Logic Cmd | F709 |
| Fault 4 Code | F604 | Fault 8 Time-min | F628 | Fault 2 BusVolts | F652 | DSI I/O Act | F686 | Drv 1 Reference | F710 |
| Fault 5 Code | F605 | Fault 9 Time-min | F629 | Fault 3 BusVolts | F653 | HW Addr 1 | F687 | Drv 1 Logic Sts | F711 |
| Fault 6 Code | F606 | Fault10 Time-min | F630 | Fault 4 BusVolts | F654 | HW Addr 2 | F688 | Drv 1 Feedback | F712 |
| Fault 7 Code | F607 | Fault 1 Freq | F631 | Fault 5 BusVolts | F655 | HW Addr 3 | F689 | Drv 2 Logic Cmd | F713 |
| Fault 8 Code | F608 | Fault 2 Freq | F632 | Fault 6 BusVolts | F656 | HW Addr 4 | F690 | Drv 2 Reference | F714 |
| Fault 9 Code | F609 | Fault 3 Freq | F633 | Fault 7 BusVolts | F657 | HW Addr 5 | F691 | Drv 2 Logic Sts | F715 |
| Fault10 Code | F610 | Fault 4 Freq | F634 | Fault 8 BusVolts | F658 | HW Addr 6 | F692 | Drv 2 Feedback | F716 |
| Fault 1 Time-hr | F611 | Fault 5 Freq | F635 | Fault 9 BusVolts | F659 | EN IP Addr Act 1 | F693 | Drv 3 Logic Cmd | F717 |
| Fault 2 Time-hr | F612 | Fault 6 Freq | F636 | Fault10 BusVolts | F660 | EN IP Addr Act 2 | F694 | Drv 3 Reference | F718 |
| Fault 3 Time-hr | F613 | Fault 7 Freq | F637 | Status @ Fault 1 | F661 | EN IP Addr Act 3 | F695 | Drv 3 Logic Sts | F719 |
| Fault 4 Time-hr | F614 | Fault 8 Freq | F638 | Status @ Fault 2 | F662 | EN IP Addr Act 4 | F696 | Drv 3 Feedback | F720 |
| Fault 5 Time-hr | F615 | Fault 9 Freq | F639 | Status @ Fault 3 | F663 | EN Subnet Act 1 | F697 | Drv 4 Logic Cmd | F721 |
| Fault 6 Time-hr | F616 | Fault10 Freq | F640 | Status @ Fault 4 | F664 | EN Subnet Act 2 | F698 | Drv 4 Reference | F722 |
| Fault 7 Time-hr | F617 | Fault 1 Current | F641 | Status @ Fault 5 | F665 | EN Subnet Act 3 | F699 | Drv 4 Logic Sts | F723 |
| Fault 8 Time-hr | F618 | Fault 2 Current | F642 | Status @ Fault 6 | F666 | EN Subnet Act 4 | F700 | Drv 4 Feedback | F724 |
| Fault 9 Time-hr | F619 | Fault 3 Current | F643 | Status @ Fault 7 | F667 | EN Gateway Act 1 | F701 | EN Rx Overruns | F725 |
| Fault10 Time-hr | F620 | Fault 4 Current | F644 | Status @ Fault 8 | F668 | EN Gateway Act 2 | F702 | EN Rx Packets | F726 |
| Fault 1 Time-min | F621 | Fault 5 Current | F645 | Status @ Fault 9 | F669 | EN Gateway Act 3 | F703 | EN Rx Errors | F727 |
| Fault 2 Time-min | F622 | Fault 6 Current | F646 | Status @ Fault10 | F670 | EN Gateway Act 4 | F704 | EN Tx Packets | F728 |
| Fault 3 Time-min | F623 | Fault 7 Current | F647 | Comm Sts - DSI | F681 | Drv 0 Logic Cmd | F705 | EN Tx Errors | F729 |
| Fault 4 Time-min | F624 | Fault 8 Current | F648 | Comm Sts - Opt | F682 | Drv 0 Reference | F706 | EN Missed IO Pkt | F730 |
| Fault 5 Time-min | F625 | Fault 9 Current | F649 | Com Sts-Emb Enet | F683 | Drv 0 Logic Sts | F707 | DSI Errors | F731 |
| Fault 6 Time-min | F626 | Fault10 Current | F650 | EN Addr Src | F684 | Drv 0 Feedback | F708 | | |

(1) Parameter is available in FRN 5.xxx and later.

## AppView Parameter Groups

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|---|---|---|---|---|---|---|---|---|---|
| **Conveyor** | **G1** | Motor NP FLA | P034 | Stop Mode | P045 | Anlg In 0-10V Hi | t092 | Jog Accel/Decel | A432 |
| Language | P030 | Motor NP Poles | P035 | Start Source 1 | P046 | Anlg In4-20mA Lo | t095 | S Curve % | A439 |
| Output Freq | b001 | Autotune | P040 | Speed Reference1 | P047 | Anlg In4-20mA Hi | t096 | Reverse Disable | A544 |
| Commanded Freq | b002 | Accel Time 1 | P041 | DigIn TermBlk 02 | t062 | Anlg In mA Loss | t097 | | |
| Motor NP Volts | P031 | Decel Time 1 | P042 | DigIn TermBlk 03 | t063 | Slip Hz Meter | d375 | | |
| Motor NP Hertz | P032 | Minimum Freq | P043 | Relay Out1 Sel | t076 | Preset Freq 0 | A410 | | |
| Motor OL Current | P033 | Maximum Freq | P044 | Anlg In 0-10V Lo | t091 | Jog Frequency | A431 | | |
| **Mixer** | **G2** | Motor NP Hertz | P032 | Decel Time 1 | P042 | Relay Out1 Sel | t076 | Preset Freq 0 | A410 |
| Language | P030 | Motor OL Current | P033 | Minimum Freq | P043 | Anlg In 0-10V Lo | t091 | Stall Fault Time | A492 |
| Output Freq | b001 | Motor NP FLA | P034 | Maximum Freq | P044 | Anlg In 0-10V Hi | t092 | | |
| Commanded Freq | b002 | Motor NP Poles | P035 | Stop Mode | P045 | Anlg In4-20mA Lo | t095 | | |
| Output Current | b003 | Autotune | P040 | Start Source 1 | P046 | Anlg In4-20mA Hi | t096 | | |
| Motor NP Volts | P031 | Accel Time 1 | P041 | Speed Reference1 | P047 | Anlg In mA Loss | t097 | | |
| **Compressor** | **G3** | Motor OL Current | P033 | Minimum Freq | P043 | Anlg In 0-10V Lo | t091 | Auto Rstrt Tries | A541 |
| Language | P030 | Motor NP FLA | P034 | Maximum Freq | P044 | Anlg In 0-10V Hi | t092 | Auto Rstrt Delay | A542 |
| Output Freq | b001 | Motor NP Poles | P035 | Stop Mode | P045 | Anlg In4-20mA Lo | t095 | Start At PowerUp | A543 |
| Commanded Freq | b002 | Autotune | P040 | Start Source 1 | P046 | Anlg In4-20mA Hi | t096 | Reverse Disable | A544 |
| Motor NP Volts | P031 | Accel Time 1 | P041 | Speed Reference1 | P047 | Anlg In mA Loss | t097 | Power Loss Mode | A548 |
| Motor NP Hertz | P032 | Decel Time 1 | P042 | Relay Out1 Sel | t076 | Preset Freq 0 | A410 | Half Bus Enable | A549 |
| **Centrifugal Pump** | **G4** | Motor NP Poles | P035 | Speed Reference1 | P047 | PID 1 Trim Hi | A456 | PID 1 Deadband | A465 |
| Language | P030 | Autotune | P040 | Relay Out1 Sel | t076 | PID 1 Trim Lo | A457 | PID 1 Preload | A466 |
| Output Freq | b001 | Accel Time 1 | P041 | Anlg In 0-10V Lo | t091 | PID 1 Ref Sel | A459 | Auto Rstrt Tries | A541 |
| Commanded Freq | b002 | Decel Time 1 | P042 | Anlg In 0-10V Hi | t092 | PID 1 Fdback Sel | A460 | Auto Rstrt Delay | A542 |
| Motor NP Volts | P031 | Minimum Freq | P043 | Anlg In4-20mA Lo | t095 | PID 1 Prop Gain | A461 | Start At PowerUp | A543 |
| Motor NP Hertz | P032 | Maximum Freq | P044 | Anlg In4-20mA Hi | t096 | PID 1 Integ Time | A462 | Reverse Disable | A544 |
| Motor OL Current | P033 | Stop Mode | P045 | Anlg In mA Loss | t097 | PID 1 Diff Rate | A463 | | |
| Motor NP FLA | P034 | Start Source 1 | P046 | Preset Freq 0 | A410 | PID 1 Setpoint | A464 | | |

| Additional groups are listed on the previous page. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Blower/Fan** | **G5** | Motor NP Poles | P035 | Speed Reference1 | P047 | PID 1 Trim Hi | A456 | PID 1 Deadband | A465 |
| Language | P030 | Autotune | P040 | Relay Out1 Sel | t076 | PID 1 Trim Lo | A457 | PID 1 Preload | A466 |
| Output Freq | b001 | Accel Time 1 | P041 | Anlg In 0-10V Lo | t091 | PID 1 Ref Sel | A459 | Auto Rstrt Tries | A541 |
| Commanded Freq | b002 | Decel Time 1 | P042 | Anlg In 0-10V Hi | t092 | PID 1 Fdback Sel | A460 | Auto Rstrt Delay | A542 |
| Motor NP Volts | P031 | Minimum Freq | P043 | Anlg In4-20mA Lo | t095 | PID 1 Prop Gain | A461 | Start At PowerUp | A543 |
| Motor NP Hertz | P032 | Maximum Freq | P044 | Anlg In4-20mA Hi | t096 | PID 1 Integ Time | A462 | Reverse Disable | A544 |
| Motor OL Current | P033 | Stop Mode | P045 | Anlg In mA Loss | t097 | PID 1 Diff Rate | A463 | Flying Start En | A545 |
| Motor NP FLA | P034 | Start Source 1 | P046 | Preset Freq 0 | A410 | PID 1 Setpoint | A464 | | |
| **Extruder** | **G6** | Motor OL Current | P033 | Maximum Freq | P044 | Anlg In4-20mA Lo | t095 | Pulse In Scale | A537 |
| Language | P030 | Motor NP FLA | P034 | Stop Mode | P045 | Anlg In4-20mA Hi | t096 | Power Loss Mode | A548 |
| Output Freq | b001 | Motor NP Poles | P035 | Start Source 1 | P046 | Anlg In mA Loss | t097 | Half Bus Enable | A549 |
| Commanded Freq | b002 | Autotune | P040 | Speed Reference1 | P047 | Slip Hz Meter | d375 | | |
| Output Current | b003 | Accel Time 1 | P041 | Relay Out1 Sel | t076 | Speed Feedback | d376 | | |
| Motor NP Volts | P031 | Decel Time 1 | P042 | Anlg In 0-10V Lo | t091 | Preset Freq 0 | A410 | | |
| Motor NP Hertz | P032 | Minimum Freq | P043 | Anlg In 0-10V Hi | t092 | Stall Fault Time | A492 | | |
| **Textile/Fiber** | **G8** | Autotune | P040 | DigIn TermBlk 03 | t063 | Preset Freq 0 | A410 | Traverse Inc | A568 |
| Language | P030 | Accel Time 1 | P041 | Relay Out1 Sel | t076 | Jog Frequency | A431 | Traverse Dec | A569 |
| Output Freq | b001 | Decel Time 1 | P042 | Anlg In 0-10V Lo | t091 | Jog Accel/Decel | A432 | P Jump | A570 |
| Commanded Freq | b002 | Minimum Freq | P043 | Anlg In 0-10V Hi | t092 | S Curve % | A439 | Sync Time | A571 |
| Motor NP Volts | P031 | Maximum Freq | P044 | Anlg In4-20mA Lo | t095 | Reverse Disable | A544 | Speed Ratio | A572 |
| Motor NP Hertz | P032 | Stop Mode | P045 | Anlg In4-20mA Hi | t096 | Power Loss Mode | A548 | | |
| Motor OL Current | P033 | Start Source 1 | P046 | Anlg In mA Loss | t097 | Half Bus Enable | A549 | | |
| Motor NP FLA | P034 | Speed Reference1 | P047 | Slip Hz Meter | d375 | Bus Reg Enable | A550 | | |
| Motor NP Poles | P035 | DigIn TermBlk 02 | t062 | Fiber Status | d390 | Max Traverse | A567 | | |

## CustomView Parameter Group

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|---|---|---|
| **Custom** | **GC** | This group can store up to 100 of your frequently used parameters for your application. |

## Fault Descriptions

| No. | Fault | Type[1] | Description | Action |
|---|---|---|---|---|
| F000 | No Fault | – | No fault present. | – |
| F002 | Auxiliary Input | 1 | External trip (Auxiliary) input. | • Check remote wiring.<br>• Verify communications programming for intentional fault. |
| F003 | Power Loss | 2 | Single phase operation detected with excessive load. | • Monitor the incoming AC line for low voltage or line power interruption.<br>• Check input fuses.<br>• Reduce load. |
| F004 | UnderVoltage | 1 | DC bus voltage fell below the minimum value. | Monitor the incoming AC line for low voltage or line power interruption. |
| F005 | OverVoltage | 1 | DC bus voltage exceeded maximum value. | Monitor the AC line for high line voltage or transient conditions. Bus overvoltage can also be caused by motor regeneration. Extend the decel time or install dynamic brake option. |
| F006 | Motor Stalled | 1 | Drive is unable to accelerate or decelerate motor. | • Increase P041, A442, A444, A446 [Accel Time x] or reduce load so drive output current does not exceed the current set by parameter A484, A485 [Current Limit x] for too long.<br>• Check for overhauling load. |
| F007 | Motor Overload | 1 | Internal electronic overload trip. | • An excessive motor load exists. Reduce load so drive output current does not exceed the current set by parameter P033 [Motor OL Current].<br>• Verify A530 [Boost Select] setting. |

**Additional faults are listed on the next page.**

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|---|---|---|---|---|
| F008 | Heatsink OvrTmp | 1 | Heatsink/Power Module temperature exceeds a predefined value. | • Check for blocked or dirty heat sink fins. Verify that ambient temperature has not exceeded the rated ambient temperature.<br>• Check fan. |
| F009 | CC OvrTmp | 1 | Control module temperature exceeds a predefined value. | • Check product ambient temperature.<br>• Check for airflow obstruction.<br>• Check for dirt or debris.<br>• Check fan. |
| F012 | HW OverCurrent | 2 | The drive output current has exceeded the hardware current limit. | Check programming. Check for excess load, improper A530 [Boost Select] setting, DC brake volts set too high or other causes of excess current. |
| F013 | Ground Fault | 1(2) | A current path to earth ground has been detected at one or more of the drive output terminals. | Check the motor and external wiring to the drive output terminals for a grounded condition. |
| F015 | Load Loss | 2 | The output torque current is below the value programmed in A490 [Load Loss Level] for a time period greater than the time programmed in A491 [Load Loss Time]. | • Verify connections between motor and load.<br>• Verify level and time requirements |
| F021 | Output Ph Loss | 1 | Output Phase Loss (if enabled).<br>Configure with A557 [Output Phas Loss En]. | • Verify motor wiring.<br>• Verify motor. |
| F029 | Analog In Loss | 1 | An analog input is configured to fault on signal loss. A signal loss has occurred.<br>Configure with t094 [Anlg In V Loss] or t097 [Anlg In mA Loss]. | • Check for broken/loose connections at inputs.<br>• Check parameters. |
| F033 | Auto Rstrt Tries | 2 | Drive unsuccessfully attempted to reset a fault and resume running for the programmed number of A541 [Auto Rstrt Tries]. | Correct the cause of the fault and manually clear. |
| F038 | Phase U to Gnd | 2 | A phase to ground fault has been detected between the drive and motor in this phase. | • Check the wiring between the drive and motor.<br>• Check motor for grounded phase.<br>• Replace drive if fault cannot be cleared. |
| F039 | Phase V to Gnd | | | |
| F040 | Phase W to Gnd | | | |
| F041 | Phase UV Short | 2 | Excessive current has been detected between these two output terminals. | Check the motor and drive output terminal wiring for a shorted condition.<br>Replace drive if fault cannot be cleared. |
| F042 | Phase UW Short | | | |
| F043 | Phase VW Short | | | |
| F048 | Params Defaulted | 1 | The drive was commanded to write default values to EEPROM. | • Clear the fault or cycle power to the drive.<br>• Program the drive parameters as needed. |
| F059 | Safety Open | 1 | Both of the safety inputs (Safety 1, Safety 2) are not enabled.<br>Configure with t105 [Safety Open En]. | Check safety input signals. If not using safety, verify and tighten jumper for I/O terminals S1, S2 and S+. |
| F063 | SW OverCurrent | 1 | Programmed A486, A488 [Shear Pinx Level] has been exceeded for a time period greater than the time programmed in A487, A489 [Shear Pin x Time]. | • Verify connections between motor and load.<br>• Verify level and time requirements. |
| F064 | Drive Overload | 2 | Drive overload rating has been exceeded. | Reduce load or extend Accel Time. |
| F070 | Power Unit | 2 | Failure has been detected in the drive power section. | • Check maximum ambient temperature has not been exceeded.<br>• Cycle power.<br>• Replace drive if fault cannot be cleared. |
| F071 | DSI Net Loss | 2 | Control over the Modbus or DSI communications link has been interrupted. | • Cycle power.<br>• Check communications cabling.<br>• Check Modbus or DSI setting.<br>• Check Modbus or DSI status. |
| F072 | Opt Net Loss | 2 | Control over the network option card's remote network has been interrupted. | • Cycle power.<br>• Check communications cabling.<br>• Check network adapter setting.<br>• Check external network status. |
| F073 | EN Net Loss | 2 | Control through the embedded EtherNet/IP adapter has been interrupted. | • Cycle power.<br>• Check communications cabling.<br>• Check EtherNet/IP setting.<br>• Check external network status. |
| F080 | Autotune Failure | 2 | The autotune function was either cancelled by the user or failed. | Restart procedure. |

**Additional faults are listed on the next page.**

| | | | | |
|---|---|---|---|---|
| F081 | DSI Comm Loss | 2 | Communications between the drive and the Modbus or DSI master device have been interrupted. | • Cycle power.<br>• Check communications cabling.<br>• Check Modbus or DSI setting.<br>• Check Modbus or DSI status.<br>• Modify using C125 [Comm Loss Action].<br>• Connecting I/O terminals C1 and C2 to ground may improve noise immunity.<br>• Replace wiring, Modbus master device, or control module. |
| F082 | Opt Comm Loss | 2 | Communications between the drive and the network option card have been interrupted. | • Cycle power.<br>• Reinstall option card in drive.<br>• Modify using C125 [Comm Loss Action].<br>• Replace wiring, port expander, option card, or control module. |
| F083 | EN Comm Loss | 2 | Internal communications between the drive and the embedded EtherNet/IP adapter have been interrupted. | • Cycle power.<br>• Check EtherNet/IP setting.<br>• Check drive's Ethernet settings and diagnostic parameters.<br>• Modify using C125 [Comm Loss Action].<br>• Replace wiring, Ethernet switch, or control module. |
| F091 | Encoder Loss | 2 | Requires differential encoder.<br>One of the 2 encoder channel signals is missing. | • Check Wiring.<br>• If P047, P049, P051 [Speed Referencex] = 16 "Positioning" and A535 [Motor Fdbk Type] = 5 "Quad Check", swap the Encoder channel inputs or swap any two motor leads.<br>• Replace encoder. |
| F094 | Function Loss | 2 | "Freeze-Fire" (Function Loss) input is inactive, input to the programmed terminal is open. | Close input to the terminal and cycle power. |
| F100 | Parameter Chksum | 2 | Drive parameter non-volatile storage is corrupted. | Set P053 [Reset To Defalts] to 2 "Factory Rset". |
| F101 | External Storage | 2 | External non-volatile storage has failed. | Set P053 [Reset To Defalts] to 2 "Factory Rset". |
| F105 | C Connect Err | 2 | Control module was disconnected while drive was powered. | Clear fault and verify all parameter settings. Do not remove or install the control module while power is applied. |
| F106 | Incompat C-P | 2 | The PowerFlex 525 control module does not support power modules with 0.25 HP power rating. | • Change to a different power module.<br>• Change to a PowerFlex 523 control module. |
| F107 | Replaced C-P | 2 | The control module could not recognize the power module. Hardware failure. | • Change to a different power module.<br>• Replace control module if changing power module does not work. |
| F109 | Mismatch C-P | 2 | The control module was mounted to a different drive type power module. | Set P053 [Reset To Defalts] to 3 "Power Reset". |
| F110 | Keypad Membrane | 2 | Keypad membrane failure / disconnected. | • Cycle power.<br>• Replace control module if fault cannot be cleared. |
| F111 | Safety Hardware | 2 | Safety input enable hardware malfunction. One of the safety inputs is not enabled. | • Check safety input signals. If not using safety, verify and tighten jumper for I/O terminals S1, S2 and S+.<br>• Replace control module if fault cannot be cleared. |
| F114 | uC Failure | 2 | Microprocessor failure. | • Cycle power.<br>• Replace control module if fault cannot be cleared. |
| F122 | I/O Board Fail | 2 | Failure has been detected in the drive control and I/O section. | • Cycle power.<br>• Replace drive or control module if fault cannot be cleared. |
| F125 | Flash Update Req | 2 | The firmware in the drive is corrupt, mismatched, or incompatible with the hardware. | Perform a firmware flash update operation to attempt to load a valid set of firmware. |
| F126 | NonRecoverablErr | 2 | A non-recoverable firmware or hardware error was detected. The drive was automatically stopped and reset. | • Clear fault or cycle power to the drive.<br>• Replace drive or control module if fault cannot be cleared. |
| F127 | DSIFlashUpdatReq | 2 | A critical problem with the firmware was detected and the drive is running using backup firmware that only supports DSI communications. | Perform a firmware flash update operation using DSI communications to attempt to load a valid set of firmware. |

(1) Type 1 = Auto-Reset/Run faults. Type 2 = Non-Resettable faults.

(2) This fault may be cleared by the auto-restart routine and will be attempted only once. It ignores the value set in parameter A541 [Auto Rstrt Tries].

All the recommended documentation listed in this section is available online at http://www.rockwellautomation.com/literature.

The following publications provide general drive information:

| Title | Publication |
|---|---|
| Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives | DRIVES-IN001 |
| Preventive Maintenance of Industrial Control and Drive System Equipment | DRIVES-TD001 |
| Safety Guidelines for the Application, Installation and Maintenance of Solid State Control | SGI-1.1 |
| A Global Reference Guide for Reading Schematic Diagrams | 100-2.10 |
| Guarding Against Electrostatic Damage | 8000-4.5.2 |

The following publications provide specific PowerFlex 520-Series information on drive installation, features, specifications, and service:

| Title | Publication |
|---|---|
| PowerFlex 520-Series Drive Adjustable Frequency AC Drive User Manual | 520-UM001 |
| PowerFlex 520-Series Drive AC Drive Specifications | 520-TD001 |
| PowerFlex Dynamic Braking Resistor Calculator | PFLEX-AT001 |
| PowerFlex AC Drives in Common Bus Configurations | DRIVES-AT002 |

The following publications provide specific Network Communications information:

| Title | Publication |
|---|---|
| PowerFlex 525 Embedded EtherNet/IP Adapter | 520COM-UM001 |
| PowerFlex 25-COMM-D DeviceNet Adapter | 520COM-UM002 |
| PowerFlex 25-COMM-E2P Dual-Port EtherNet/IP Adapter | 520COM-UM003 |
| PowerFlex 25-COMM-P PROFIBUS DPV1 Adapter | 520COM-UM004 |



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