

Product Details and Certifications

Cross Reference RA Part Number: PN-164061

 **Product: 25B-D017N104**

Description: PowerFlex 525 AC Drive, With Embedded Ethernet/IP and Safety, 480V AC
3 Phase, 10 HP, 7.5 kW Normal Duty / Heavy Duty, Frame C, IP20 NEMA /



Representative Photo Only (actual product may vary based on configuration sections)

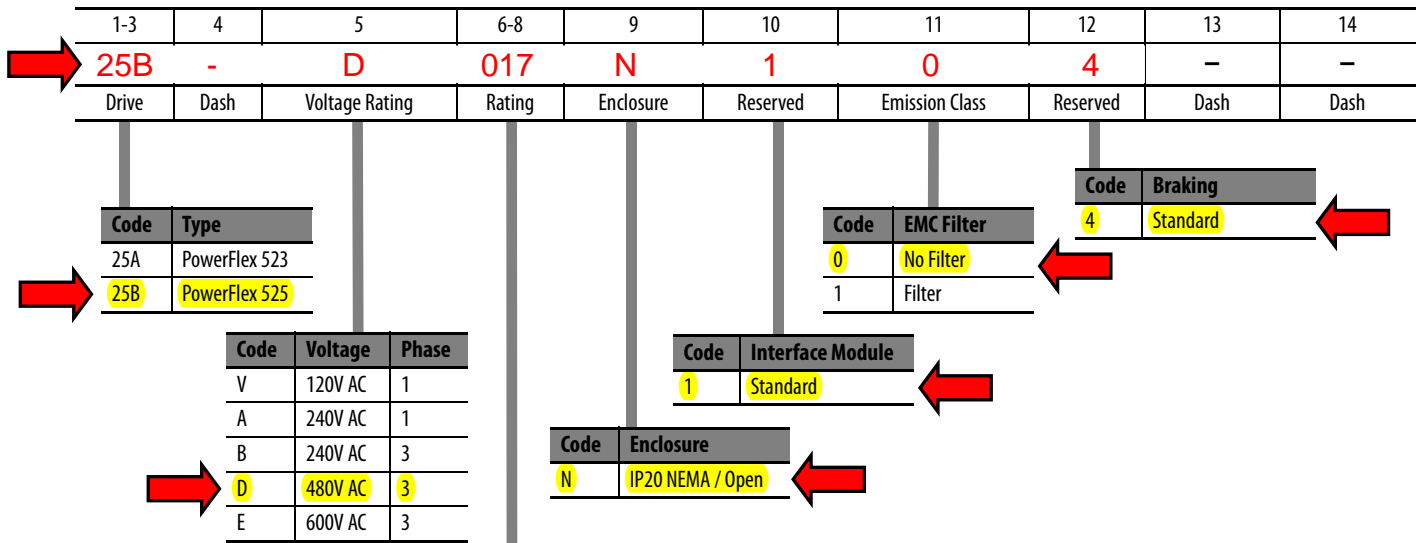
BASE DRIVE INFORMATION

Bulletin Number	PowerFlex 525 AC Drive, with Embedded Ethernet/IP and Safety
Input Voltage	480 VAC
Phases	3 Phases
Current Power Rating	17 Amps
Enclosure Type	IP20 NEMA / Open Type
Frame Size	Frame C
Interface Module	Standard
EMC Filtering Options	No Filter

CERTIFICATIONS AND APPROVALS

UL
C-TICK
CE
KCC

Catalog Number Explanation



Output Current @ 1 Phase, 100...120V Input

Code	Amps	Frame	ND		HD	
			HP	kW	HP	kW
1P6 ⁽¹⁾	1.6	A	0.25	0.2	0.25	0.2
2P5	2.5	A	0.5	0.4	0.5	0.4
4P8	4.8	B	1.0	0.75	1.0	0.75
6P0	6.0	B	1.5	1.1	1.5	1.1

Output Current @ 3 Phase, 380...480V Input

Code	Amps	Frame	ND		HD	
			HP	kW	HP	kW
1P4	1.4	A	0.5	0.4	0.5	0.4
2P3	2.3	A	1.0	0.75	1.0	0.75
4P0	4.0	A	2.0	1.5	2.0	1.5
6P0	6.0	A	3.0	2.2	3.0	2.2
010	10.5	B	5.0	4.0	5.0	4.0
013	13.0	C	7.5	5.5	7.5	5.5
017	17.0	C	10.0	7.5	10.0	7.5
024	24.0	D	15.0	11.0	15.0	11.0
030 ⁽²⁾	30.0	D	20.0	15.0	15.0	11.0
037 ⁽²⁾	37.0	E	25.0	18.5	20.0	15.0
043 ⁽²⁾	43.0	E	30.0	22.0	25.0	18.5

Output Current @ 1 Phase, 200...240V Input

Code	Amps	Frame	ND		HD	
			HP	kW	HP	kW
1P6 ⁽¹⁾	1.6	A	0.25	0.2	0.25	0.2
2P5	2.5	A	0.5	0.4	0.5	0.4
4P8	4.8	A	1.0	0.75	1.0	0.75
8P0	8.0	B	2.0	1.5	2.0	1.5
011	11.0	B	3.0	2.2	3.0	2.2

Output Current @ 3Phase, 200...240V Input

Code	Amps	Frame	ND		HD	
			HP	kW	HP	kW
1P6 ⁽¹⁾	1.6	A	0.25	0.2	0.25	0.2
2P5	2.5	A	0.5	0.4	0.5	0.4
5P0	5.0	A	1.0	0.75	1.0	0.75
8P0	8.0	A	2.0	1.5	2.0	1.5
011	11.0	A	3.0	2.2	3.0	2.2
017	17.5	B	5.0	4.0	5.0	4.0
024	24.0	C	7.5	5.5	7.5	5.5
032	32.2	D	10.0	7.5	10.0	7.5
048 ⁽²⁾	48.3	E	15.0	11.0	10.0	7.5
062 ⁽²⁾	62.1	E	20.0	15.0	15.0	11.0

Output Current @ 3 Phase, 525...600V Input

Code	Amps	Frame	ND		HD	
			HP	kW	HP	kW
0P9	0.9	A	0.5	0.4	0.5	0.4
1P7	1.7	A	1.0	0.75	1.0	0.75
3P0	3.0	A	2.0	1.5	2.0	1.5
4P2	4.2	A	3.0	2.2	3.0	2.2
6P6	6.6	B	5.0	4.0	5.0	4.0
9P9	9.9	C	7.5	5.5	7.5	5.5
012	12.0	C	10.0	7.5	10.0	7.5
019	19.0	D	15.0	11.0	15.0	11.0
022 ⁽²⁾	22.0	D	20.0	15.0	15.0	11.0
027 ⁽²⁾	27.0	E	25.0	18.5	20.0	15.0
032 ⁽²⁾	32.0	E	30.0	22.0	25.0	18.5

(1) This rating is only available for PowerFlex 523 drives.
 (2) Normal and Heavy Duty ratings are available for this drive.

Technical Specifications

Protection

Specifications	PowerFlex 523	PowerFlex 525
Bus Overvoltage Trip 100...120V AC Input: 200...240V AC Input: 380...480V AC Input: 525...600V AC Input:	405V DC bus (equivalent to 150V AC incoming line) 405V DC bus (equivalent to 290V AC incoming line) 810V DC bus (equivalent to 575V AC incoming line) 1005V DC bus (equivalent to 711V AC incoming line)	
Bus Undervoltage Trip 100...120V AC Input: 200...240V AC Input: 380...480V AC Input: 525...600V AC Input P038 = 3 "600V": P038 = 2 "480V":	190V DC bus (equivalent to 75V AC incoming line) 190V DC bus (equivalent to 150V AC incoming line) 390V DC bus (equivalent to 275V AC incoming line) 487V DC bus (equivalent to 344V AC incoming line) 390V DC bus (equivalent to 275V AC incoming line)	
Power Ride-Thru:	100 ms	
Logic Control Ride-Thru:	0.5 s minimum, 2 s typical	
Electronic Motor Overload Protection:	Provides class 10 motor overload protection according to NEC article 430 and motor over-temperature protection according to NEC article 430.126 (A) (2). UL 508C File 29572.	
Overcurrent:	200% hardware limit, 300% instantaneous fault	
Ground Fault Trip:	Phase-to-ground on drive output	
Short Circuit Trip:	Phase-to-phase on drive output	

Electrical

Specifications	PowerFlex 523	PowerFlex 525
Voltage Tolerance:	-15% / +10%	
Frequency Tolerance:	47...63 Hz	
Input Phases:	Three-phase input provides full rating. Single-phase input provides 35% rating on three-phase drives.	
Displacement Power Factor:	0.98 across entire speed range	
Maximum Short Circuit Rating:	100,000 Amps Symmetrical	
Actual Short Circuit Rating:	Determined by AIC Rating of installed fuse/circuit breaker	
Transistor Type:	Isolated Gate Bipolar Transistor (IGBT)	
Internal DC Bus Choke 200...240V AC Input: 380...480V AC Input: 525...600V AC Input:	Only for Frame E drive ratings 11 kW (15 HP) 15...18.5 kW (20...25 HP) – Heavy Duty 15...18.5 kW (20...25 HP) – Heavy Duty	

Control

Specifications	PowerFlex 523	PowerFlex 525
Method	Sinusoidal PWM, Volts/Hertz, Sensorless Vector Control, Economizer SVC motor control, and Closed Loop Velocity Vector Control (Closed Loop Velocity Vector Control is not applicable to PowerFlex 523 drives)	
Carrier Frequency	2...16 kHz, Drive rating based on 4 kHz	
Frequency Accuracy Digital Input: Analog Input: Analog Output:	Within $\pm 0.05\%$ of set output frequency Within 0.5% of maximum output frequency, 10-Bit resolution –	$\pm 2\%$ of full scale, 10-Bit resolution

Specifications	PowerFlex 523	PowerFlex 525
Performance V/Hz (Volts per Hertz): SVC (Sensorless Vector): SVC Economizer: VVC (Velocity Vector Control):	±1% of base speed across a 60:1 speed range ±0.5% of base speed across a 100:1 speed range ±0.5% of base speed across a 100:1 speed range ±0.5% of base speed across a 60:1 speed range – Not applicable to PowerFlex 523 drives	
Performance with Encoder SVC (Sensorless Vector): SVC Economizer: VVC (Velocity Vector Control):	–	±0.1% of base speed across a 100:1 speed range ±0.1% of base speed across a 100:1 speed range ±0.1% of base speed across a 1000:1 speed range
Output Voltage Range:	0V to rated motor voltage	
Output Frequency Range:	0...500 Hz (programmable)	
Efficiency:	97.5% (typical)	
Stop Modes:	Multiple programmable stop modes including – Ramp, Coast, DC-Brake, and Ramp-to-Stop	
Accel/Decel:	Four independently programmable accel and decel times. Each time may be programmed from 0...600 s in 0.01 s increments.	
Intermittent Overload Normal Duty:	–	110% Overload capability for up to 60 s, 150% for up to 3 s Applies for power rating above 15 kW (20 HP) only. Based on 480V drive rating.
Heavy Duty:	150% Overload capability for up to 60 s, 180% for up to 3 s (200% programmable)	

 **Control Inputs**

Specifications	PowerFlex 523	PowerFlex 525
Digital	Bandwidth:	10 Rad/s for open and closed loop
	Quantity:	(1) Dedicated for stop (4) Programmable
	Current:	6 mA
	Type Source Mode (SRC): Sink Mode (SNK):	18...24V = ON, 0...6V = OFF 0...6V = ON, 18...24V = OFF
	Pulse Train Quantity: Input Signal: Input Frequency: Current Consumption:	(1) Shared with one of the programmable digital input terminals. Transistor contact (open collector) 0...100 kHz 7 mA @ 24V DC maximum
Analog	Quantity:	(2) Isolated, 0-10V and 4-20 mA
	Specification Resolution: 0-10V DC Analog: 4-20 mA Analog: External Pot:	(2) Isolated, -10-10V and 4-20 mA 10-bit 100k ohm input impedance 250 ohm input impedance 1...10k ohm, 2 W minimum

 **Control Outputs**

Specifications	PowerFlex 523	PowerFlex 525
Relay	Quantity:	(1) Programmable Form C
	Specification Resistive Rating: Inductive Rating:	(2) 1 Programmable Form A and 1 Programmable Form B 3.0 A @ 30V DC, 3.0 A @ 125V, 3.0 A @ 240V AC 0.5 A @ 30V DC, 0.5 A @ 125V, 0.5 A @ 240V AC

Specifications		PowerFlex 523	PowerFlex 525
Opto	Quantity:	–	(2) Programmable
	Specification:		30V DC, 50 mA Non-inductive
Analog	Quantity:	–	(1) Non-Isolated 0-10V or 4-20 mA
	Specification Resolution: 0-10V DC Analog: 4-20 mA Analog:		10-bit 1 k ohm minimum 525 ohm maximum


Encoder

Specifications	PowerFlex 523	PowerFlex 525
Type:	–	Incremental, dual channel
Supply:		12V, 250 mA
Quadrature:		90°, ±27° @ 25 °C
Duty Cycle:		50%, +10%
Requirements:		Encoders must be line driver type, quadrature (dual channel) or pulse (single channel), 3.5...26V DC output, single-ended or differential and capable of supplying a minimum of 10 mA per channel. Allowable input is DC up to a maximum frequency of 250 kHz. The encoder I/O automatically scales to allow 5V, 12V and 24V DC nominal voltages.